1. Legal Ad

   Documents: PB LGL AD 3-3-15.PDF
2. Agenda

   Documents: PB AGENDA 3-3-15.PDF
3. Midtown Project - Somerset Street

   3.I. Report

   Documents: SOMERSET ST. (REPORT).PDF

   3.II. Staff Attachments

   Documents: SOMERSET ST. (STAFF ATTACHMENTS).PDF

   3.III. Application And Written Submission

   Documents: SOMERSET ST. (APPLICATION AND WRITTEN SUBMISSION).PDF

   3.IV. Responses To Planning Staff Comments Dated 11-24-14

   Documents: SOMERSET ST. (MIDTOWN) RESPONSE TO STAFF COMMENTS 11-24-14 .PDF

   3.V. Responses To Planning Staff Comments Dated 1-13-15

   Documents: SOMERSET ST. (MIDTOWN) RESPONSE TO STAFF COMMENTS 1-13-15.PDF

   3.VI. Submission Including Summary Of Revisions Dated 2-20-15

   Documents: SOMERSET ST. (MIDTOWN) SUBMISSION INCLUDING SUMMARY OF REVISIONS 2-20-15.PDF

   3.VII. Plans (Changes Are Highlighted In Bubbles)

   Documents: SOMERSET ST. (MIDTOWN) PLANS 1-10 (CHANGES HIGHLIGHTED IN BUBBLES).PDF

   3.VIII. Civil Plans (1 Of 2)

   Documents: SOMERSET ST. (MIDTOWN) CIVIL PLANS (1 OF 2).PDF

   3.IX. Civil Plans (2 Of 2)

   Documents: SOMERSET ST. (MIDTOWN) CIVIL PLANS (2 OF 2).PDF

   3.X. Architectural Plans (1 Of 3)

   Documents: SOMERSET ST. (MIDTOWN) ARCHITECTURAL PLANS (1 OF 3).PDF

   3.XI. Architectural Plans (2 Of 3)

   Documents: SOMERSET ST. (MIDTOWN) ARCHITECTURAL PLANS (2 OF 3).PDF

   3.XII. Architectural Plans (3 Of 3)

   Documents: SOMERSET ST. (MIDTOWN) ARCHITECTURAL PLANS (3 OF 3).PDF

   3.XIII. Context Renderings Of Midtown Development

   Documents: SOMERSET ST. (MIDTOWN) CONTEXT RENDERINGS OF MIDTOWN DEVELOPMENT.PDF

   3.XIV. Landscape And Lighting Plans

   Documents: SOMERSET ST. (MIDTOWN) LANDSCAPE AND LIGHTING PLANS.PDF

LEGAL ADVERTISEMENT
PORTLAND PLANNING BOARD MEETING

The Portland Planning Board will hold a meeting on Tuesday, March 3, 2015, Room 209, 2nd Floor, City Hall, 389 Congress Street. **Public comments will be taken at this meeting.**

PUBLIC HEARING – 5:30 p.m.

i. Midtown Project; Level III Subdivision and Site Plan, Conditional Use, Site Location of Development, and Traffic Movement Permit; Somerset Street; Federated Companies, Applicant. The Board will consider the final plan application for the "midtown" project, which is located in the B-7 zone. The 3.5 acres site is bounded by Somerset Street, Elm Street, the Bayside Trail and the extension of Pearl Street. The mixed-use proposal includes 445 residential units in 3 buildings with a maximum height of six stories. A seven story parking structure with 828 vehicle spaces is also proposed as a conditional use. The total footprint of the buildings is 121,400 sf and the total floor area is 750,200 sf with 87,200 sf of retail space proposed.

STUART O'BRIEN, CHAIR - PORTLAND PLANNING BOARD

CITY OF PORTLAND, MAINE

PLANNING BOARD

Stuart G. O'Brien, Chair
Elizabeth Boepple, Vice Chair
Sean Dundon
Bill Hall
Carol Morrissette
Jack Soley
Timothy Dean

AGENDA
PORTLAND PLANNING BOARD

The Portland Planning Board will hold a meeting on Tuesday, March 3, 2015, Room 209, 2nd Floor, City Hall, 389 Congress Street. **Public comments will be taken at this meeting.**

Public Hearing Meeting Only

PUBLIC HEARING – 5:30 p.m.

1. ROLL CALL AND DECLARATION OF QUORUM
2. COMMUNICATIONS AND REPORTS
3. REPORT OF ATTENDANCE AT THE FEBRUARY 24, 2015 MEETING:

Workshop: O'Brien, Dean, Dundon, Hall, Morrissette and Soley (arrived at 5:25 p.m.) present; Boepple absent.
Public Hearing: O'Brien, Dean, Dundon, Hall, Morrissette and Soley present; Boepple absent.

4. REPORT OF DECISIONS AT FEBRUARY 24, 2015 MEETING:

i. 58 Fore Street; Zoning Map Amendment; CPB2, LLC. and CPB2 Management, LLC., Applicants. Morrissette moved and Hall seconded a motion to find the proposed map amendment from Waterfront Special Use Zone to B-6 and the Eastern Waterfront Port Zone, the extension of the B-6 Building Height Overlay & Building Envelopes map, and the accompanying text amendments, are consistent with the Comprehensive Plan and recommends adoption of the proposed amendment to the City Council. Board voted 6-0, Boepple absent.

5. NEW BUSINESS

i. Midtown Project; Level III Subdivision and Site Plan, Conditional Use, Site Location of Development, and Traffic Movement Permit; Somerset Street; Federated Companies, Applicant. The Board will consider the final plan application for the "midtown" project, which is located in the B-7 zone. The 3.5 acres site is bounded by Somerset Street, Elm Street, the Bayside Trail and the extension of Pearl Street. The mixed-use proposal includes 445 residential units in 3 buildings with a maximum height of six stories. A seven story parking structure with 828 vehicle spaces is also proposed as a conditional use. The total footprint of the buildings is 121,400 sf and the total floor area is 750,200 sf with 87,200 sf of retail space proposed.

STUART O'BRIEN, CHAIR - PORTLAND PLANNING BOARD

PLANNING BOARD REPORT
PORTLAND, MAINE

Midtown Development Review
Vicinity of Somerset, Chestnut and Elm Streets
The Federated Companies, Applicant.

Submitted to: Portland Planning Board **Public Hearing Date:** March 3, 2015 **Project #:** 2014-203 **CBL:** 34-B-2, 3, 4, 5, 22 and 34-D-3, 9, 10	**Prepared by:** Department of Planning and Urban Development **Date Report Prepared:** February 27, 2015

I. INTRODUCTION

A public hearing has been scheduled to consider a proposed mixed use development on the former Bayside rail yard property in the vicinity of Somerset Street, Chestnut Street and Elm Street. The project is called Midtown. The application name has recently been changed from The Federated Companies to FEDEQ DV001, LLC.

The previously scheduled February 3, 2015 public hearing was postponed at the applicant's request.

Table of Contents
A Table of Contents for this report is shown below:

I. Introduction
II. Project Data
III. Background
IV. Development Scheme
V. Staff Review Introduction
VI. Subdivision Review (amending subdivision)
VII. Conditional Use Review (parking garage)
VIII. Technical and Design Waiver Review
IX. B-7 Design Principles and Standards Waiver Review
X. Site Plan Review (site location of development law and traffic movement permit)
XI. B-7 Design Principles and Standards
XII. Motions For The Board To Consider

Updated Submissions from January 13, 2015 to January 26, 2015
Updated submissions received from the applicant since Board's January 13, 2015 workshop includes the following material:

- Traffic Impact Study Supplement (and other Supplemental Traffic Information (received Jan 17, 2015 with later updates)…See Exhibit 9a
- Applicant Responses to Staff Comments (dated and received Jan. 21, 2015)…See Attachment C
- Partial Updated Site Plans (dated and received Jan. 21, 2015)…See Attachment Plans and Attachment C-E for status of completed plan sheets.
- Updated Somerset Street Cross Section (updated Jan. 26, 2015)…See Attachment Civil Plans C-15.

Updated Submissions from February 3, 2015 to Present
On February 20, 2015 applicant submitted a cover letter describing certain minor changes to the architectural plans and a response to staff comments on parking garage circulation issues. See Attachment CC. The most significant change to the architectural plans is a reduction of EIFS material for Midtown Three from 60% to 39% with metal siding (43%) and windows (18%) constituting the remainder of façade materials above the first floor. The architectural plan sheets reflect the name of the new project architect, THA Architects, LLC of Stratham, NH. See Architectural Plans starting on sheet 1-A101. Please refer to memorandum from Caitlin Cameron, *Summary of Midtown Design Changes,* Attachment 13.

Present Midtown Application
As the Board will recall, The Federated Companies midtown proposal received a number of Planning Board development approvals on January 14, 2014. Subsequently, a law suit challenging these approvals was filed and a settlement has been reached between Federated and the plaintiff, which has resulted in significant changes to the development plan that are reflected in the new proposal.

The new application reduces the maximum residential height from 165 to 72 feet. The overall number of residential units has been reduced from 650 units to 445 units. The building footprints are virtually the same as were presented in the Master Plan and Phase I subdivision and site plan. The 700 space parking garage will add another level, bringing the total number of spaces to 801 spaces. The 400 space parking deck west of Chestnut Street has been eliminated. Retail remains a first floor use in all the buildings.

Rather than three development phases all construction takes place in one phase thus the applicant no longer seeks a Master Development Plan approval. Phase one was the only section of the development that received site plan and subdivision approval.

Federated is not seeking an amendment to their original approval rather they are filing a new application (and related submissions) therefore the new submission must be reviewed in its entirety with all of the applicable ordinance review standards. This preserves their existing approval status for Phase I intact for the January, 2014 plan until the new plan is approved and replaces the prior plan.

The present application identifies four buildings: Midtown One (residential building by Pearl Street); Midtown Two (parking garage); Midtown Three (residential buildings between Chestnut and Elm) and Midtown Four (residential building behind Trader Joes)

Development Reviews

A comparison of the Board's January 14, 2014 approvals with the current submission is shown below. Two less approvals are required this round since the applicant no longer seeks a master development plan approval and a conditional use review for height is not necessary since all buildings are under 125 feet.

P.B. Jan. 14, 2014 Approval	**Current Submission**
Master Development Plan (all phases)	Applicant no longer seeking a Master Development Plan
Amend 2008 Subdivision Recording Plat	Amends the previously amended Subdivision
Conditional Use Height exceeding 125 feet Parking Garage	 N.A., height less than 125 feet Yes
Technical and Design Waivers (requested waivers for all phases)	Waivers requested
B-7 Design Principles and Standards Waivers (requested waivers for all phases)	Waivers requested
Subdivision (phase one only)	Covers entire site/project
Site Plan (phase one only)	Covers entire site/project
Site Location of Development Law (Phase one)	Covers entire site/project
Traffic Movement Permit (all three phases)	Covers entire site/project
B-7 Design Principles and Standards (phase one except for granted waivers)	Covers entire site/project

Notice
Notice has been sent to 76 area property owners and individuals on the interested parties list. Notice was printed in the February 23, 2015 and February 24, 2015 editions of the *Portland Press Herald*.

Planning Board Process
The Planning Board held workshops on the Midtown development on November 12, 2014, December 9, 2014 and January 13, 2014. The initial application was submitted October 17, 2014. A public hearing originally scheduled for February 3, 2015 was postponed at the request of the applicant.

Neighborhood Meeting
The applicant held a neighborhood meeting on November 13, 2014. Further information on the meeting is shown on Attachment A, Exhibit 1.

II. PROJECT DATA

Zoning: B-7 Mixed Development District

Land Area: 3.49 acres

Existing Use: Vacant land plus a former scrap metal site

P.B. January 14, 2014 Approval			**Current Submission**
Proposed Uses:			
Housing			
	Phase One	(up to 235 units)	445 units (total)
	All Phases	(650 to 850 units)	120 studios 30 1BR 195 2BR
Retail			
	Phase One	(43,617 sf)	91,500 sf (total)
	All Phases	(100,000 sf)	
Parking Garage			
	Phase One	(700 spaces)	801 spaces (in one garage)
	Phase Two	(400 spaces)	
Buildings:	5 residential 1 parking garage plus parking in res. bldg.		4 residential 1 parking garage
Building Height:			
Tallest residential building	165 feet		72 feet
Parking garage	85 feet		92 feet
Impervious Area:			
Entire site	151,769 sf		150,000 sf plus
Building Footprint	124,570 sf		121,400 sf
Building Floor Area	1,161,950 sf		750,200 sf
Parking Spaces:	1,100 spaces		801 spaces

Bicycle Spaces:	44 spaces on street/trail 154 internal bike room	192 spaces - parking garage
Estimated Project Cost:	$150 to $160 million $ 45 to $50 million (phase one)	$85 million
Subdivision:	Total Land Area Existing Lots Proposed Lots	6.2 acres 9 4 (plus 2 for Bayside Trail)

III. BACKGROUND

Prior Planning Board Reviews

On November 8, 2012, Federated submitted an application for various B-7 zoning and site plan amendments to facilitate the development project. The Planning Board initially held a workshop on November 27, 2012 to consider the amendments followed by four other workshops with two public hearing hearings held on March 13 and March 21, 2013. The City Council enacted the amendments on April 22, 2013.

Federated submitted a development application on May 7, 2013 and an initial workshop was scheduled on May 28, 2013. Subsequently five other workshops were scheduled to review and discuss development review issues. Two public hearings were held with the last one on January 14, 2014 resulting in development approval for phase one and a master plan approval for all phases (up to 850 dwelling units, 1100 parking garage spaces with building floor space exceeding one million SF.) Development was subsequently delayed by litigation which has resulted in the present development application.

Bayside Planning and Parcel History

Midtown takes place in the context of the City's ongoing efforts to implement A New Vision For Bayside (also referred to as the Bayside Plan), which has served as the policy document for revitalizing Bayside and was adopted by the City Council as an element of the City's comprehensive plan in 2000. To summarize the plan, Bayside is viewed as a dense mixed use urban district with an emphasis on housing, economic development opportunities, a walkable pedestrian environment, transit oriented development and trail/open space (Bayside Trail). The plan envisions a total build out of 940 housing units, 950,000 sq. ft. of open space and 230,000 of retail space. An excerpt of the Bayside Plan is shown as Attachment 1.

A key recommendation of the Bayside Plan was acquisition of the Bayside railroad property which the City accomplished in 2001. The railroad property includes a rail corridor from Tukey's Bridge to Forest Avenue and a much wider 7 acre (rail yard) parcel between Franklin Street and Elm Street. The City's goal in purchasing this property was to (1) establish a bicycle/pedestrian trail through Bayside linking the Eastern Prom Trail to Deering Oaks and (2) create development lots within the Bayside rail yard. The Bayside Plan also proposed relocation of the NEMR and E. Perry scrapyards. In 2009 the City was able to acquire the NEMR scrapyard and relocate their operations to Riverside Street.

In 2008 the City received Planning Board approval for a subdivision plan that divided the City's landholdings within the rail yard into 8 developments lots and 2 open space lots for the Bayside Trail. Note the City acquired the NEMR scrap yard (also known as the Finkleman or Schnitzer property) which was incorporated into the subdivision.

The subdivision plan was designed within the context of a rail yard master plan which was developed for the site in 2006. The plan indicates development parcels along Somerset Street with trail/open space occupying the interior of the rail yard which is reflected on the approved subdivision plan. The land area of the trail/open space between Elm and Franklin Street totals 3.24 acres. The master plan was developed in conjunction with the Bayside Trail/Open Space Committee.

In 2006, in conjunction with a HUD funding program of approximately $12 million in Section 108 loans, and Brownfield Economic Development Initiative (BEDI) grants, the City proposed a 700 space parking garage on the site of the NEMR scrap yard to help spur redevelopment of the rail yard and other nearby properties. The parking garage received Planning Board site plan approval but the project was never built because of cost considerations.

In 2008 the City entered into a purchase and sales agreement with Maine Health (Bayco) to redevelop the rail yard lots west of Chestnut Street (lots 1, 2 and 3). Maine Health proposed a 98,000 sq. ft. office building, a 700 space parking garage and future development of the remaining lots. Although the project received Planning Board site plan approval, the development did not move forward.

After receiving Planning Board approval, the City initiated construction of the Bayside Trail in the Fall of 2009 from Tukey's Bridge through the rail yard to Elm Street. The trail utilized the footprint of the trail/open spaces lots denoted in the 2006 subdivision plan. Construction continued into the following year and the trail was completed in the summer of 2010.

Following extensive negotiations, the City and Federated entered into a purchase and sales agreement for the rail yard subdivision development parcels.

IV. DEVELOPMENT SCHEME

A. Development Program

The new Midtown proposal has been downsized from the previously approved master plan in terms of dwelling units (650 units to 445 units), maximum residential building height (165 feet to 72 feet) and parking garage spaces (1100 spaces to 800 spaces). Total building square footage has been reduced to 750,200 sf.

First floor retail is proposed in all of the residential buildings as well as the parking garage. Rather than three phases, the development will be constructed in one. Individual building footprints are virtually identical to the previous plan. The only section of Midtown previously receiving site plan and subdivision approval was the Chestnut Street to Pearl Street block. The entire site did receive a Master Development Plan approval but in the new application the developer is not seeking this approval.

The new application identifies four buildings: Midtown One (residential building by Pearl Street); Midtown Two (parking garage); Midtown Three (residential buildings between Somerset and Elm) and Midtown Four (residential building behind Trader Joes)

A. <u>Chestnut Street to Pearl Extension Street Block</u>

From a building layout perspective this section of the development appears identical to the original plan. A residential building and a parking garage are proposed in this block. In the original proposal up to 235 dwellings were proposed in Midtown One.

1. Midtown One

Residential Building - The residential building is located on the corner of Somerset Street and the projected footprint of Pearl Street extension. The building mass has been configured in a L-shape to avoid a large rectangle cube. The residential building is setback 10 feet from Somerset Street while the parking garage is proposed at the street line. A pedestrian access (mews) 30 feet wide has been sited between the parking garage and the residential building which provides a trail connection from Somerset Street. A plaza or court yard is proposed between the building and the Bayside Trail. Both spaces are privately owned but with public access.

Eighty residential units are proposed with 15 studio apartments, 40 one bedroom apartments and 25 two bedroom apartments. Net retail space is 7,500 SF. Gross building area is 90,600 SF.

There will be retail doors along Somerset Street. Rather than 15 stories (165 feet), the residential building will be 6 stories (72 feet) with retail on the first floor and 5 residential floors above.

The applicant is using the projected footprint of Pearl Street extension as a driveway for the residential building. The primary public pedestrian entrance to the residential building is along Pearl Street extension at the far end of the building where a drop off area has been created by the entrance.

2. Midtown Two

Parking Garage - The second building in this block is the parking garage (labeled Midtown Two) which occupies the space between the mews and Chestnut Street. The parking garage will be increased in height from 85 feet to 92 feet to accommodate an additional level of parking which will increase the parking garage capacity from 705 spaces to 801. The 400 space parking structure in the Chestnut to Elm block is proposed to be eliminated. The parking garage continues to have retail on the first floor (32,000 SF). The garage is served by a single driveway on the far easterly side of the garage along Somerset Street.

The parking garage has 7 levels of parking but has a two story appendage about 10 feet in width that provides a retail presence and a stepped back building mass along Chestnut Street. The building is 320 feet long. Retail is proposed along the entire frontage of

Somerset Street (except for the driveway opening and stair tower) and appears to cover a significant percentage of the garage's Bayside Trail frontage. Total gross building area is 266,500 SF.

B. Chestnut Street to Elm Street Block

The new Midtown Three and Midtown Four are located in this block. This section previously received master development plan review but did not receive subdivision and site plan approval.

Original Proposal - This section (Phase Two) originally included first floor retail with a 400 space parking garage sandwiched between two residential buildings (projected 320 to 370 housing units). A Phase Three building behind Traders Joes on Elm Street was proposed with a projected 150 to 180 housing units. All three buildings were proposed in the vicinity of 165 feet high.

1. Midtown Three

Midtown Three features a one story retail building that extends 430 feet along Somerset Street. Mounted on top of the base are two separate five story residential buildings containing a total of 260 housing units, one of which is oriented toward Somerset Street with the second oriented toward the Bayside Trail. The two buildings are configured with an interior court yard in which 16 units per floor (or 80 units) will have windows facing each other across a court yard that measures 18 feet 7 inches wide over a span of 260 feet. See Attachment Architectural Plans 3-A102. While there is no zoning requirement regarding minimum setbacks within court yards it does raise quality of life issues for future residents. For example, the Bayside Village student housing project has a similar court yard concept but the interior distance between the two buildings generally exceeds 30 feet (up to 50 feet) except for a small pinch point of 15 feet. We have suggested that the 430 foot long building profile along Somerset Street be split in two buildings which would improve the residential environment, reduce the apparent building mass and provide mid-block permeability. The project architect indicates that such a change would increase costs. (See further discussion of this issue in the B-7 Design Standards and Subdivision, below).

Unit mix includes 90 one bed room units and 170 two bed room units. Retail space totals 44,000 SF. Gross building area is 289,000 SF.

2. Midtown Four

Midtown Four incorporates a building on Elm Street behind Trader Joes. It is described as having first floor retail (8,000 sf) with 5 floors of residential above. The building will have 105 studio or loft apartments with a lobby entry facing Elm Street. Applicant is proposing to add new parking spaces on Elm Street and creating a new service driveway on the Trader Joes side of the building.

C. Bayside Trail

The Midtown proposal requires reorganization of the Bayside Trail between Chestnut Street and Pearl Street. A 230 foot section of the Bayside Trail east of Chestnut Street will be relocated to accommodate the parking garage. The remainder of the trail also shifts to the north resulting in a 5 foot buffer to the DHS (Fore River Company) fence/property line. See Attachment Landscape Plans L2.2. The trail width largely remains unchanged at 16 feet but applicant is adding a minimum 7.5 foot wide strip of concrete pavers between the parking garage and the trail. Near the mews and residential building courtyard area, the modular paver treatment is extended further into trail corridor resulting in a visual connection between public and privately owned space. An elliptical granite block seating wall provides a further amenity to the area. The trail near Pearl Street is shown at 12 feet. That should be increased in width to the desired 16 feet.

The grade of the Bayside Trail will be raised to provide an at-grade access to the mews by midtown one. Previously identified issues regarding drainage associated with the trail re-location and raising the grade have been addressed.

One of the challenges of the Midtown project was finding an appropriate space for the transformers for Midtown One and Two since there was no obvious area on site short of putting the transformers underground. A number of siting options were reviewed but after much consideration an off-site location has been selected adjacent to the Department of Human Services parking lot fence near the Bayside Trail and Pearl Street extension. While technically on the trail corridor it appears to be best location for the transformers in terms of aesthetic issues. The applicant submitted several sketches depicting the transformers and a future extension of Pearl Street to Marginal Way to determine if there was a significant conflict. A review of these sketches indicates the transformer location is compatible with a Pearl Street extension. The transformers will be enclosed in a metal ornamental fence.

D. Raising Grade of Somerset Street and Somerset Street Improvements

As discussed in previous workshops the developer plans to elevate Somerset Street so the first floor of all Midtown buildings is above the flood hazard elevation of Back Cove. The Back Cove flood hazard zone elevation is 10 feet and although the Bayside has a similar elevation, it is still classified as outside the 100 year flood hazard area based on the latest FEMA issued maps. In the interests of addressing potential sea rise and flood hazard concerns in the future, the applicant is proposing a first floor elevation of 12 feet for all the buildings. Since Somerset Street has an existing elevation in the 8 to 10 feet range there is a significant grade difference to overcome in providing handicap access into the first floor of each building. This grade difference is unlikely to be addressed on the site or within the sidewalk area so the City commissioned Haley & Aldrich geotechnical consultants to undertake a feasibility study of raising the Somerset Street grade to address flooding conditions and accommodate the needed first floor elevation.

Filling or raising the grade of Somerset Street has implications regarding utility line compaction, street improvements and drainage as well as impacts on surrounding properties. Haley & Aldrich concluded that it is feasible to raise the elevation of Somerset Street. A key report recommendation is the use of a special concrete material which is much lighter than fill typically used in street construction. This avoids the problem of excessive weight on utility lines when additional fill is added to the street.

Street Cross Section – The applicant revised the Somerset Street cross section which is shown as Attachment Civil Plans C-2. The plan addresses the following considerations:

1. The street design follows the geotechnical recommendations referenced in the Haley & Aldrich report. See Exhibit 15.
2. The design accommodates a first floor building elevation of 12 feet while providing handicap access into all midtown buildings along Somerset Street. At the extreme ends of the project site near Pearl Street extension and Elm Street) where the elevation is lower than remaining sections of Somerset Street, handicap landings and steps are required to reach elevation 12. Should Somerset Street be raised in the future east of Pearl Street Extension, the stairs and ramps can be removed.
3. The raising of the street grade allows the parking garage to be shifted a few feet closer to the street which gives more breathing space for the Bayside Trail (minimum 27 feet 7 inches) and provides a 14 foot wide sidewalk along Somerset Street in front of the parking garage. Previously an extended parking garage setback from Somerset Street was needed to address grade issues
4. The street design accommodates potential impacts of other abutting properties (Oakhurst Dairy truck parking lot and Noyes brick storage building). The Noyes storage building wall has no setback and is located on the street right-of-way edge. To elevate Somerset Street the grade along this building must be raised several feet. This is not expected to have an adverse impact on the structural integrity of the building.
5. To accomplish on-street parking and an appropriate width sidewalk, the right of way width was increased from 50 feet to 54 feet. The additional property for the increased right-of-way came from the midtown property.

During the initial review, the Planning Board approved the elevated Somerset Street design from Pearl Street to Chestnut Street which paralleled the first phase of the project. The street design between Chestnut and Elm proved more complicated. FST (applicant's engineer) submitted a number of proposals to address drainage and grading concerns expressed by the Noyes family who own the brick warehouse between Chestnut and Elm. Mr. Noyes' primary concern was that the new street elevation was higher than the current elevation which he believes increases the risk of flooding for his building although the first floor elevation will still be above the adjacent grade of the street.

The FST design required certain waivers in street design standards (between Chestnut and Elm) to address this concern but the City was not comfortable supporting these waivers during the initial review. Although the Pearl to Chestnut street design was approved by the Board, the Chestnut to Elm section was left as a condition of approval.

Subsequently the Department of Public Services met with Planning staff and development review consultants to discuss street design waivers for the street adjacent to the Noyes building. These discussions concluded the City could support certain design exceptions (waivers) for the Somerset Street cross section between Chestnut and Elm as stated below:

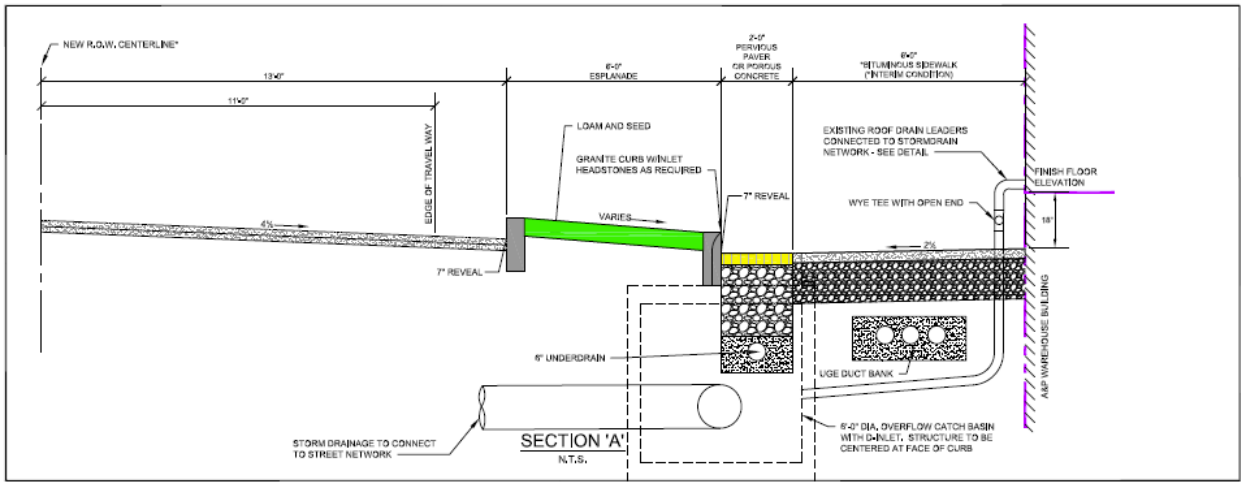
- Curb reveal of 6 inch (minimum) in lieu of City Standard of 7 inches. Note: Curb reveal should be the same height along entire block and on both sides of street to aid in future pavement milling and/or overlay projects.
- Sidewalk cross slope of 0.5% minimum in certain unique locations and 2% maximum in lieu of City Standard of 2%; okay for certain areas to exceed 2% cross slope (up to 4% max) so long as there is 5 feet wide accessible route with 2 % maximum cross slope at that location.
- Roadway cross slope of 4% maximum in lieu of City Standard of 2%, should be consistent across full width of any travel lane or parking lane (no offset crown or offset gutter line; crown should be at road centerline and gutter line should be at curb edge or along parking lane edge)
- The City would consider alternative drainage structures (alternatives from City Standards) in the Somerset Street Right-of-Way to accommodate roof drains, building access ways, and foundation drainage along the Noyes warehouse building. These structures should be designed and proposed by the midtown Applicant in consultation with the Noyes family and their engineering/legal counsel. Maintenance of drainage structures that are proposed to accommodate the needs of the adjacent private property shall not be the responsibility of the city; the Midtown applicant will be required to identify maintenance requirements and responsible parties (along with development of applicable maintenance agreements).

Presently there is an existing 24 inch storm drain in Elm Street by Trader Joes that connects into an existing Back Cove stormwater outfall. As discussed at the last workshop, extension of a 24 inch storm drain to Somerset Street would provide a larger capacity pipe to drain stormwater from Somerset Street and significantly improve stormwater issues by the Noyes property. The City has agreed to pay for the installation of this storm drain improvement.

Current Somerset Street Cross Section Proposal

More recently City staff and FST (developers consultant) have met and discussed a street cross section alternative that would address the Noyes family concern of maintaining an 18 inch freeboard of first floor space above the adjacent grade of Somerset Street. This is the design concept proposal presently before the Board. This cross section eliminates on–street parking along the Noyes warehouse side of Somerset Street to accommodate this design but in the event the warehouse is converted to a future use needing at grade access (such as retail), it is believed on-street parking can be introduced in the future. Drainage structures and curbing have been strategically placed to facilitate this change should it occur. The cross section is shown as

Attachment Civil Plans C-15, and excerpted below. The cross section is a design concept thus the engineering plans submitted by the applicant do not currently reflect the layout, grading, drainage and materials illustrated in this concept. The final design of the plan would need to be subject to review and approval by the City. The abutters have requested an opportunity to review and comment on the final grading plan as well, which has been incorporated into the proposed condition of approval.



D. Architectural Design and B-7 Design Standards

Architecture related material submitted by the applicant includes the following:

- Building elevations (updated Feb. 19, 2015) including façade plans, ground floor plans, typical floor plans and roof plans by THA Architects – Attachment Architectural Plans - 1-A101 to 4-A201
- Building elevations (pre-Feb. 2015) submission including façade plans, ground floor plans, roof plans and signage plans - Attachment Architectural Plans - A101 to A800.
- B-7 Design Standard Responses – Exhibit 17 and Attachment B-C.
- Computer generated rendering of Midtown Three building façade perspective (dated Dec 1, 2014) - Attachment B-5.
- Pedestrian Wind Conditions/Assessment – Attachment B-5
- Shadow Study – Exhibit 17
- Updated Contextual Rendering (Jan. 29, 2015) – Architectural Plans
- Exterior materials – Dryvit color samples (on file)

The submission states that the architectural design of all buildings will be "modern industrial" incorporating twentieth and twenty-first century materials and sensibilities derived from industrialized production and building techniques. The building designs are intended to both of their time and timeless – to bridge the century from the neighborhood's railroad/industrial past to its mixed use residential future".

The latest architectural plans are dated February 19, 2015. The most significant change to the drawings relates to Midtown Three which now has an exterior material composition of metal siding (43%), EIFS (39%) and windows (18%) above the first floor visible from the public realm. The previous submission had a 60% EIFS façade coverage.

The parking garage façade is framed by precast panels and precast finishes as the dominant material but there is less glazing than the other buildings except for the first floor retail space. A dominant feature of the façade is a green screen which will be planted with vegetation. The green screen contrasts with precast concrete material of the façade which helps provide visual relief for the 320 foot long façade. EIFS is shown as a detail material above the first floor retail window units.

The applicant is requesting a number of waivers to the B-7 design standard issues.
A discussion of the more significant waiver requests such as mid-block permeability (standard B-3) and building materials (standard E-12) are provided below and in the B-7 Design Principles and Standards of this report.

1. Mid-block Permeability (Standard B-3)

Midtown Three features a one story retail building that extends 430 feet along Somerset Street. Mounted on top of the base are two separate five story residential buildings containing a total of 260 housing units, one of which is oriented toward Somerset Street with the second oriented toward the Bayside Trail, as described above.

Staff suggested that the 430 foot long building profile along Somerset Street be split in two buildings which would improve the residential environment, reduce the building footprint while providing full mid-block permeability. The project architect indicates that such a change would increase costs and reduce the unit count and is not advancing such a concept at this time.

The B-7 Design Standards require mid-block permeability as presented in Standard B-3 below.
Mid-Block Permeability. *"Development shall incorporate mid-block permeability that is perpendicular to Marginal Way, and where feasible that is parallel to Marginal Way,* ***in order to encourage building footprints that are in scale with the existing traditional pattern of development in Portland*** *(emphasis added). These corridors shall be developed as street extensions, service alleys with public access, pedestrian corridors, trail access plazas and pocket parks. These corridors shall be designed for the pedestrian first, with limited vehicular accessibility…"*

The standard further states: *"A primary circulation system shall be developed through streets, alleys, sidewalks and trails. A secondary circulation system shall be provided internally within buildings for public use through the use of fully functioning entrances on all street sides of a building, and internal lobbies and corridors that permeate through the ground floor of a building…"*

Mid-block permeability achieves several critical urban design goals as stated in Standard B-3. Passages help organize blocks to encourage building footprints in scale with the existing traditional development in Portland. They also support a pedestrian network by enhancing opportunities for connectivity. As applied to Midtown Three, the subject building is 430 feet long, which we observed earlier could benefit from a midblock split.

To get a sense of dimensions, below is a sample of well-known buildings on the peninsula. The Civic Center at 430 feet long is believed to be the longest peninsula building with the exception of certain institutional buildings such as hospitals, parking garages and the St John Street shopping center. Bayside Village predates B-7 standards.

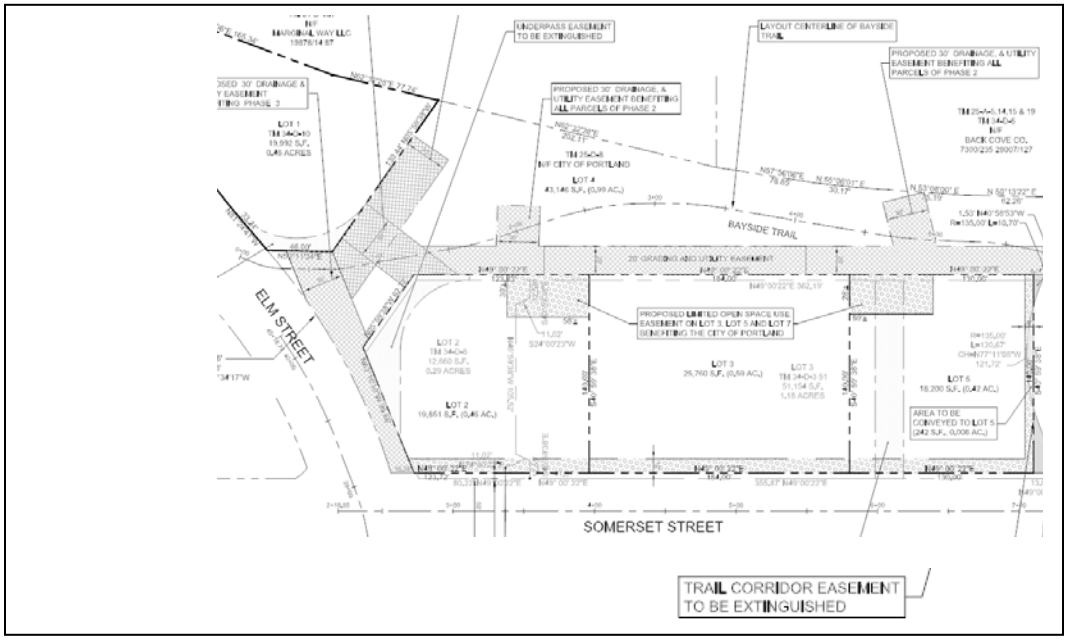
Civic Center (Spring Street dimension)…430 feet
Bayside Village (Marginal Way dimension)…340 feet
Thomas Block (Commercial Street dimension)…190 feet
One Portland Square (Union Street dimension)…160 feet
Portland City Hall (Congress Street dimension)…225 feet
100 Middle Street (Middle Street dimension)…240 feet
One Post Office Square (Congress Street dimension-entire block)…330 feet

Mid-block permeability was achieved in the Pearl to Chestnut block with the mews but was not provided in the Chestnut to Elm block. The applicant previously requested a waiver from this standard for Midtown Three. In the earlier review the Planning Board voted to remove the easement for a passageway from the subdivision with general concurrence that some midblock access would be provided in a subsequent site plan review.

The northerly side of the building is adjacent to a berm which is part of the Bayside Trail open space. The berm contains contaminants from the Bayside Rail Yard and the Midtown Three site which are considered to be a lower level contaminant (lead, coal ash). A note on the site plan indicates the berm will be removed (by others) so it will no longer pose an obstacle for midblock permeability.

The Planning Board's January 14, 2014 Midtown approval letter for the amended subdivision plan featured the following condition of approval:

5. That the passage easement between Chestnut and Elm be removed on the Amended Overall Subdivision Plat provided that a pedestrian passage be provided in the Phase Two site plan between the two residential towers in Phase Two or through one of the residential structures.



20' wide x 20' high x 140' long "Trail Corridor Easement" located on lot 2 about 125' west of Chestnut Street, removed from subdivision subject to condition, January, 2014

The original passageway easement was an internal easement which was 20 feet wide and 20' high. It is the Planning Department's recommendation that an internal public pedestrian passage easement be provided between Chestnut and Elm as a condition of granting the B-7 Design Standard B-3 waiver request, or, if a waiver is deemed not needed, as a condition of approval. Applicant most recently has stated they are withdrawing the waiver request because they believe their internal permeability proposal and the existing trail alignment west of Midtown Three meets the standard. Staff notes although they may be able to meet the "secondary" or internal requirement referenced in the above standard, applicant's plan does not meet the "primary circulation" standard such as an alley if the building was split in two. Please see the excerpt from the applicant's response to staff comments on this subject, below. Section XII of this report includes a waiver motion for the "primary circulation" standard provided certain conditions are met regarding the "secondary access".

The Board must determine whether the proposal meets B-7 Design Standard B-3, either in a fully sufficient manner as argued by the applicant in the excerpt below, or whether the proposal partially does or does not meet the standard with the proposed secondary access provision and a waiver is or is not justified for the primary mid-block permeability standard. As written, the proposed secondary means of access lacks specificity. We acknowledge that its exact placement might need to remain flexible, but the parameters and terms of use of the access should be more carefully spelled out.

In the previous staff report we stated that the Board needed to make a finding that the proposed provision for an internal passage meets the condition of the January, 2014 subdivision amendment *"That the passage easement between Chestnut and Elm be removed… provided that a pedestrian passage be provided in the Phase Two site plan*

between the two residential towers in Phase Two or through one of the residential structures" The plans had been changed to the extent that the previously proposed garage with two residential towers above has been replaced by a retail first floor structure with two 5-story residential structures above. Upon further consideration Corporation Counsel has determined that such a finding is not necessary since the mid-block permeability standard is being reviewed in the context of a new proposal. As a result a previously drafted motion entitled "Compliance With January 2014 Subdivision Condition of Approval" has been removed as an approval motion.

The proposed condition of approval for mid-block permeability addresses the staff concerns about the terms and details of the access through the building, while recognizing that these details are dependent on the end user/tenant of the first floor. The proposed condition therefore allows for review of those aspects prior to a certificate of occupancy of the first floor, and also addresses the trail side improvements and berm removal, and associated cost allocations between the applicant and the City. The City has agreed to pay for the costs associated with the removal of the berm containing contaminated soils to the extent that such soils cannot be used as fill under the project foundations, which usage appears to be unlikely based on the latest information available.

While reliance is placed on the trailhead and adjacent publicly accessible space as substantial evidence that this standard is satisfied, however, an additional effort is also being made to incorporate a reasonable approach to secondary permeation through the interior of midtownThree. A note on the revised plans will read as follows:

AS SECONDARY MEANS OF PROVIDING MID-BLOCK PERMEABILITY, APPLICANT IS AGREEABLE TO LOCATING STOREFRONTS ON THE FRONT AND BACK PORTION OF THE BUILDING, PRECISE SIZE, NUMBER AND LOCATION TO BE DETERMINED, SOMEWHERE WITHIN THE MIDDLE 50% OF THE STRUCTURE, ALLOWING FOR PHYSICAL AND VISUAL PERMEABILITY.

This approach, as noted in the Design Manual itself, is common throughout Downtown Portland. One and Two Monument Square, the buildings connecting Monument Way with Free Street, Reny's Department Store, Starbucks on Congress Street in the Hay Building, the building at 37 Exchange Street (former home of the JavaNet coffee house and most recently home to the Thirsty Pig), the Time and Temperature Building, and One City Center, likely amongst others, all successfully use this approach to enable the high-quality urbanism we expect to create with this development. Therefore, while we believe the basic standard is satisfied in a very straightforward manner by the trailhead alone, we are amenable to fostering further permeation as described above.

To summarize and conclude, the position advanced is that, upon further consideration, as an alternative to the previous waiver request we believe the standard for mid-block permeability is in fact satisfied perfectly and directly already by existing conditions, which the plan note described above will only serve to amplify as opposed to being necessary in its own right to satisfy.

Excerpt from Applicant's Response to Planning Staff
Comments, Re: Mid-Block Permeability – Vic. of midtownThree; January 21, 2015

2. Building Materials (Standard E-12)

Applicant is requesting a waiver to use EIFS and light metal panels as the primary exterior material of the midtown buildings. A waiver request to use vinyl siding has been withdrawn. Applicant's waiver request is explained in detail in Attachment C-B and Exhibit 23.

The standard states that "facades visible from public rights of way shall use natural and authentic building materials that are expected to last 50 years". Materials such as "*brick, stone, concrete and other masonry products, wood, glass and high quality metals such as steel, titanium and copper*" fall within that category. This standard further states "*materials such as thin gauge metal panels, exterior insulations and finish systems (EIFS), panelized "thin brick", vinyl siding, or stucco on Styrofoam or a similar backing shall not be used on facades visible from public rights of way.*"

EIFS has had an uneven reputation as a quality and durable exterior material. Changes within the EIFS industry has resulted in a redesigned product that has apparently addressed moisture concerns. What is clear from reading various articles on the subject is that a properly installed EIFS application is much improved over those installed in the 1990s or before. In a study conducted by the Oak Ridge National Laboratory between January 2005 and June 2007 EIFS was found to have the "best performing cladding" in relation to thermal and moisture control. An article reported "this study was intended to measure only the moisture and thermal performance of these wall assemblies – there are other criteria design/construction professionals and building owners will take into consideration when selecting materials for their projects".

What is not known is the documented longevity of EIFS in terms of a quality exterior building surface as expressed in the B-7 standard ("expected to last 50 years"). The only newly constructed building of note in downtown Portland that has used an EIFS like material is the Portland Harbor Hotel. Dryvit has probably been used as an accent piece in small applications in some buildings on the peninsula. The Maine Historical Society Building (489 Congress Street) was remodeled with a drivit-like exterior.

The durability is one concern about EIFS. The other is about its character. While some EIFS may be acceptable as part of the exterior, the Board needs to make a determination about what level of EIFS is acceptable. The Department is comfortable with the applicant's present proposal, which has reduced the extent of EIFS on midtown3 in the latest drawing set received on February 20, 2015. Caitlin Cameron's memo describes the changes in façade materials in this latest submission.

A sample of periodicals providing background information on EIFS is shown as Attachment 11.

3. Multi-family Standard

While the Midtown project will be reviewed under the extensive B-7 design standards, it is also subject to the standards in the Design Manual for multiple family dwellings. The standards and a commentary on the project's compliance with these standards follow.

(i) **TWO-FAMILY, SPECIAL NEEDS INDEPENDENT LIVING UNITS, MULTIPLE-FAMILY, LODGING HOUSES, BED AND BREAKFASTS, AND EMERGENCY SHELTERS:**

(1) **STANDARDS.** Two-family, special needs independent living units, multiple-family, lodging houses, bed and breakfasts, and emergency shelters shall meet the following standards:

a. Proposed structures and related site improvements shall meet the following standards:

1. The exterior design of the proposed structures, including architectural style, facade materials, roof pitch, building form and height, window pattern and spacing, porches and entryways, cornerboard and trim details, and facade variation in projecting or recessed building elements, shall be designed to complement and enhance the nearest residential neighborhood. The design of exterior facades shall provide positive visual interest by incorporating appropriate architectural elements;

Comment: This standard is largely redundant with the more extensive B-7 Design Standards. Please refer to the memo from Caitlin Cameron dated December 1, 2014, from the December 9 workshop packet and the B-7 standards analysis contained in this report. The proposed development shall respect the existing relationship of buildings to public streets. New development shall be integrated with the existing city fabric and streetscape including building placement, landscaping, lawn areas, porch and entrance areas, fencing, and other streetscape elements;

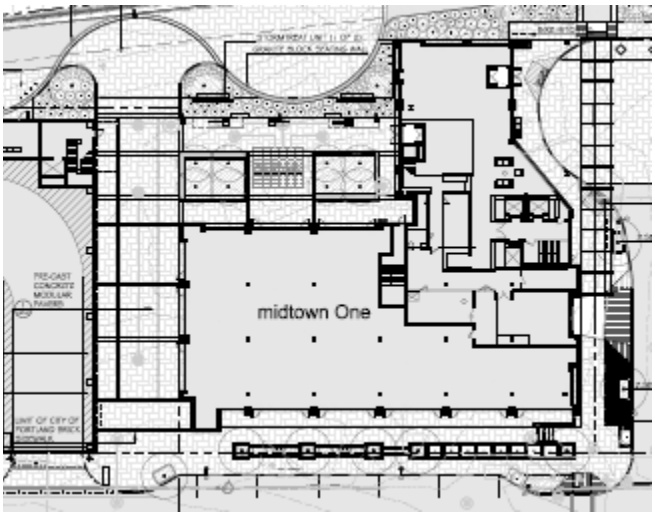
2. The proposed development shall respect the existing relationship of buildings to public streets. New development shall be integrated with the existing city fabric and streetscape including building placement, landscaping, lawn areas, porch and entrance areas, fencing, and other streetscape elements;

Comment: Please refer to the B-7 design review memo cited above. In general, the buildings are placed close to the street and the retail first floor use and storefront architecture create a positive relationship of buildings to the public street.

3. Open space on the site for all two-family, special needs independent living unit, bed and breakfast and multiple-family development shall be integrated into the development site. Such open space in a special needs independent living unit or a multiple-family development shall be designed to complement and enhance the building form and development proposed on the site. Open space functions may include but are not limited to buffers and screening from streets and neighboring properties, yard space

for residents, play areas, and planting strips along the perimeter of proposed buildings;

Comment: The predominant open space for this development is the Bayside Trail, which was developed for the purpose of providing a recreation and transportation facility and amenity for the community as a whole and for these parcels in particular. In addition to the off-site trail, there is proposed on site a 30' wide x 150' long mews connecting Somerset Street to the trail and a 40' x 78' courtyard in the ell of Midtown One, adjacent to the trail. (See figure below) The mews and courtyard are attractively detailed and landscaped, and will be a positive complement to the Bayside Trail. We have recommended that a midblock passage be provided in Midtown Three, with direct access to the trail. Assuming appropriate working details of a Midtown Three passage are provided, a more positive integration with and access from all buildings to the Bayside Trail, along with the proposed Mews and Courtyard of Midtown One and Two, the open space standard is achievable.

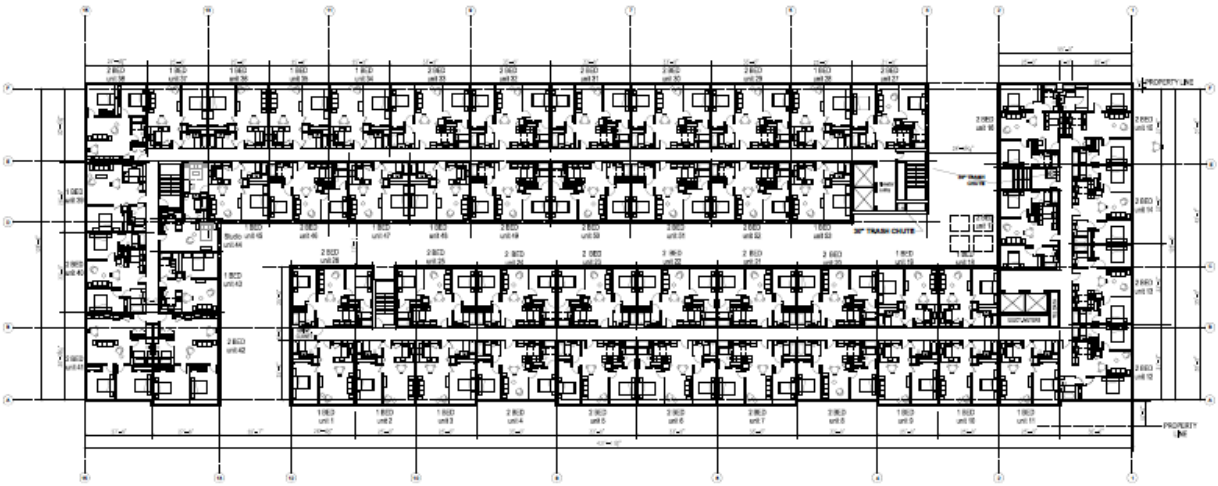


Mews and Courtyard Area

4. *The design of proposed dwellings shall provide ample windows to enhance opportunities for sunlight and air in each dwelling in principal living areas and shall also provide sufficient storage areas;*

Comment: This standard mirrors to some extent the requirements of the B-7 Design Standards, specifically the Purpose Statement #4 and Standard A-1, which reference "access to light and air". Midtown One and Four are designed with all units facing exterior views with ample sunlight and air. Midtown Three is comprised of

two long (346’ x 55’) ‘L’-shaped buildings above the retail first floor, (see floor plan below) Subject to verification with the architects, we understand that each dwelling has a sufficient amount of windows. The Department’s position is that Midtown Three meets this standard for sunlight and air.



Midtown Three Typical Floor Plans

5. *The scale and surface area of parking, driveways and paved areas are arranged and landscaped to properly screen vehicles from adjacent properties and streets;*

Comment: The parking is contained within the garage of Midtown Two which has retail on the first floor, with a green screen on a portion of the façade facing the trail, both of which effectively screen the adjacent sidewalks and properties from the parked cars. A single 24' driveway serves the garage, which minimizes the visual impact of the parking facility. See the B-7 design review for a review of the parking garage.

b. *Two-family or multiple-family dwellings shall not be converted to lodging houses unless all units in the building have been vacant for at least one (1) year prior to the date conversion is sought or unless the individual multiple-family units are less than one thousand (1,000) square feet in size. In no event shall any single-family dwelling in the R-5 or R-6 zone be converted in whole or in part to a lodging house.*

Comment: Not applicable.

V. STAFF REVIEW INTRODUCTION

The application and supporting documents have been reviewed for conformance with the review standards of the ordinances referenced in this report by City staff from the Departments of Planning and Urban Development, Fire Safety, Public Services, Parking and the Corporation Counsel's Office. The plans have also been reviewed by consulting engineers for civil engineering and traffic. Review comments are referenced below.

Tom Errico, Traffic Review Consultant…Attachment 2
John Peverada, Parking Manager…Attachment 3
Bruce Hyman, Transportation Program Manager…Attachment 4
David Senus, Engineering Review Consultant…Attachment 5
David Margolis-Pineo, Deputy City Engineer…Attachment 6
Jeff Tarling, City Arborist….Attachment 7
Keith Gautreau and Craig Messinger, Portland Fire Department…Attachment 8

VI. SUBDIVISION REVIEW

The Midtown development incorporates 445 dwelling units on 4 lots including 80 units on lot # 7 (Midtown One), 260 units on lot # 3(Midtown Three) and 105 units on lot #1 (Midtown Four). The parking garage (Midtown Two) is on lot #6.

A subdivision plan for the Bayside Rail Yard was approved by the Planning Board in 2008. See Attachment Civil Plans. The subdivision included land from the Bayside Rail Yard as well as the NEMR scrap yard property which the city acquired from the owner. The plan was heavily influenced by the Bayco (Maine Health) development that planned to purchase all lots west of Chestnut Street. The original subdivision included two lots for the Bayside Trail and seven development lots.

As part of the Jan 14, 2014 Midtown approval, the 2008 subdivision plan was amended reconfiguring most of the lots as well as other revisions. This resulted in a consolidation of development lots from 7 to 4 but with the same number of lots for the trail. The subdivision plan was approved but not recorded.

With a full build-out of the Midtown development, three of the development parcels are now proposed to have dwelling units which triggers subdivision review. Previously only Midtown One (up to 235units) had housing units as part of the initial "first phase". A number of the easements shown on the 2014 approved subdivision plan have been or will need to be reconfigured as part of the current approval. Presumably the arrangements for mid-block permeability should be referenced on the subdivision plan since it is an integral part of the approval.

Comments on the recording plat are highlighted later in this section.

<u>Subdivision Standards</u>

Subdivision review standards (sec. 14-497) are shown below. The review standards are summarized below in *italics*, with planning staff comment and analysis following in regular font.

1. *Will not result in undue water or air pollution;*

The site plan, grading and utility plans are designed to adequately address stormwater quality and to minimize pollution from the site. See the Site Plan Review section of this report for further discussion. Undue air pollution is not anticipated.

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

The Portland Water District indicates there is sufficient capacity to serve the development. See Attachment B-2 and Site Plan Review section of this report.

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

The site is designed to minimize erosion and has incorporated an appropriate stormwater management plan for the site. See Site Plan Review section of this report.

The applicant has requested a waiver from the high intensity soil survey, due to the fact this is a filled site that has been disturbed for environmental remediation. In addition geotechnical analysis has been performed related to the raising of Somerset Street which has guided the recommendations of the street design.

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

The project is designed to be consistent with a MDOT Traffic Movement Permit. The traffic impacts of the project are discussed in the Site Plan Review Section of this report.

See also comments from Tom Errico (Attachment 2) and David Margolis-Pineo (Attachment 6).

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

Sanitary waste from the development will connect into an existing sewer main in Somerset Street (midtown one, two and three) and Elm Street (midtown four). Excess storm water from the site will be directed into a separate storm sewer in Somerset Street. A new 24 inch storm drain line will be extended from Somerset Street to an existing 24 inch line in Elm Street by Trader Joes that will reduce stormwater impacts on the Noyes warehouse building.

Stormwater management is more thoroughly addressed in the Site Plan Review portion of this report.

See also comments of David Margolis-Pineo, Deputy City Engineer, shown on Attachment 6.

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

Solid waste is to be privately handled and disposed of. See Exhibit 19. Sewage is addressed above and in the Site Plan Review section of this report.

8. *Will not have an undue adverse effect on the scenic or natural beauty of the area, aesthetics, historic sites, significant wildlife habitat identified by the department of inland fisheries and wildlife or by the city, or rare and irreplaceable natural areas or any public rights for physical or visual access to the shoreline;*

Except for the footprint of the Bayside Trail and related green space, the site is void of any natural beauty, irreplaceable natural areas, natural habitat or aesthetic qualities. Applicant has contacted several state and federal agencies regarding potential impacts of the project on natural resources. The Maine Department of Conservation (Natural Areas Program) indicates there are no known rare botanical features documented in the project area. The Maine Department of Inland Fisheries and Wildlife states that their records

"indicate no occurrences of rare, threatened, or endangered animal species within the project area". The US Department of Interior indicates that no federally listed or proposed threatened and endangered species under the jurisdiction of the US Fish and Wildlife Service are known to occur in the project area, with the exception of occasional, transit bald eagles. See Exhibit 16.

Past industrial activities (rail yard, scrap yard) of this site including filling of Back Cove removed such natural qualities many years ago. The Maine Historic Preservation Commission concluded there will be no historic properties affected by the proposed undertaking by Section 106 of the National Historic Preservation Act. The site is not located within a local historic district nor a historic landmark in close proximity to the site.

The Bayside Trail is an important green space resource for the site and the neighboring area. Although the footprint of the trail is proposed to be shifted the developer will be responsible for rebuilding the trail and replacing the trail amenities displaced by construction.

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

The site is zoned B-7 in compliance with the Comprehensive Plan and proposed uses permitted in the B-7 zone. The plan is in conformance with A New Vision For Bayside by incorporating the plan's principles including strengthening Bayside's role as an urban gateway; providing economic and employment opportunities; improving the walkability of the district; increasing housing units; providing structured parking rather than surface parking, reinforcing a transit oriented development concept for Bayside; remediating a brownfields site and redeveloping a former scrap yard. See Attachment 1.

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

The applicant has submitted a letter from HFF, a mortgage banking company, regarding financial capacity . The letter (dated Nov. 3, 2014) states that the "borrower has the financial capacity and relevant experience to acquire financing for the midtown project in Portland, ME., as revised, the estimated cost of which is +/ - $85M." See Exhibit 4.

Note that a revised development application was filed on January 9, 2015 changing the applicant's name from The Federated Companies to FEDEQ DV001, LLC to "avoid clerical issues with signing documents in the future".

The applicant's technical consultants are referenced in the applicant's submissions. The most recent submission (Feb 20, 2015) indicates THA Architects of Stratham, N.H. is new the project architect.

Staff previously requested technical capacity information regarding other development projects the applicant has developed. This information was submitted for the original development but has not been submitted for the present application.

11. *Water Quality and Shoreland Zoning;*

Stormwater quality is addressed in the Site Plan Review section of this report. The site is not in a shoreland zone.

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

The project is served by public water and public sewer.

13. *Is or is not in a flood-prone area, based on the Federal Emergency Management Agency's Flood Boundary and Floodway Maps and Flood Insurance Rate Maps;*

Back Cove has a flood plain elevation of 10 feet while the project site has a present elevation in the 8 to 10 range. The developer is proposing a first floor building elevation of 12 feet for the project. The proposed raising of Somerset Street will allow the developer to achieve this goal.

At this time the Midtown development is outside a flood hazard zone and is in compliance with applicable regulations. The latest FEMA map indicates the site is in a 500 year zone not a 100 flood hazard zone. Should the proposed map change be enacted in the future, Midtown has provided a reasonable building elevation to address this concern.

14. *All potential wetlands within the proposed subdivision shall be identified on any maps;*

There are no wetlands on the site.

15. *Any river, stream or brook within or abutting the proposed subdivision shall be identified on any map;*

Such features do not exist on the site.

Subdivision Recording Plat Comments
Applicant has submitted an updated subdivision recording plat. See Attachment Civil Plans C-1.2. Staff is recommending that the review of the subdivision plat be subject to Planning, Public Services and Corporation Counsel review and approval prior to Planning Board signature. The subdivision plat needs to be stamped by a licensed surveyor. Easement language needs to be reviewed. The subdivision easement notes and general notes need to be fully vetted. For example easement note 2A references an easement for snow removal activities over the entire Bayside Trail corridor which raises concerns. The configuration of proposed easements needs to

checked. Certain easements shown on the plan may more appropriately be handled as a license. A deed is required for the proposed four foot widening of Somerset Street plus the widening needs to be graphically shown on the plat. Private responsibility for maintenance of the stairs and retaining walls as well maintenance of stormwater quality systems needs to shown on the plat.

VII. CONDITIONAL USE REVIEW

Parking garages are a conditional use in the B-7 zone. The Midtown Two building is a parking garage and thus subject to this review.

Conditional use review standards are shown in *italics*, with planning staff comment and analysis in regular font.

B-7 Parking Garage Use Standards

Structured parking in the B-7 zone is required to meet B-7 section 14-296(3) and the Zoning Code, section 14-474.

1. B-7 Section 14-296(3). Conditional Use

1. Structured parking provided that:

a. Parking located in the B-7 zone shall adhere to the following conditions:

i. The first floor of any parking structure shall contain one or more permitted uses (not conditional uses) found in section 14-295 along all primary street frontages (excluding frontage dedicated to entrances, lobbies, and stair towers). Such first floor space shall be provided with a minimum of nine (9) foot floor to ceiling clearance height and a minimum twenty-five foot depth (measured from the exterior building wall); ***or***

This standard is met. First floor garage space will be retail along Somerset Street and Chestnut Street. It appears that the floor to ceiling height meets the minimum height requirement of nine feet. The depth of the parking garage retail space exceeds 25 feet.

ii. The parking structures shall be set back at least thirty-five feet from the primary street right-of-way. The land located between the parking structure and the street right-of-way may not be occupied by surface parking, and shall be designated for future use development. Such land between the garage and the street shall not by lease or other prohibition be encumbered against future development. The land shall be provided with all stubbed utilities and other provisions needed to accommodate further development; or to accommodate; ***or***

Not applicable. Project met *paragraph i* above.

iii. *The parking structures shall be designed with a façade (to a height of the first two floors) that enhances the pedestrian experience as described in the City of Portland B-7 bayside design standards.*

A review of the submitted building elevations indicates a façade with a design that enhances the pedestrian experience at the first two floors of the building along Somerset Street and Chestnut Street. Note project already met the requirements of this section under paragraph *i* above.

2. Zoning Code, Section 14-474

The Board shall, after review of required materials, authorize issuance of a conditional use permit, upon a showing that the proposed use, at the size and intensity contemplated at the proposed location, will not have substantially greater negative impacts than would normally occur from surrounding uses or other allowable uses in the same zoning district. The Board shall find that this standard is satisfied if it finds that:

a. *The volume and type of vehicle traffic to be generated, hours of operation, expanse of pavement, and the number of parking spaces required are not substantially greater than would normally occur at surrounding uses or other allowable uses in the same zone; and*

The proposed use is a parking garage which in itself does not generate a traffic or parking demand rather it serves the needs of the surrounding uses which generate the need for parking. The garage will provide for the parking needs of midtown as well as other surrounding properties in the area.

Except for the parking garage driveway there is no external pavement since the parking spaces are located within a building.

A traffic impact study has been submitted (Exhibit 9). See Site Plan, Transportation Section of this report.

The use as a parking garage and location in a business zone (B-7) are such that the impacts of this use are not substantially greater than would normally occur at surrounding uses or other allowable uses in the same zone.

b. *The proposed use will not create unsanitary or harmful conditions by reason of noise, glare, dust, sewage disposal, emissions to the air, odor, lighting, or litter; and will be an adverse impact upon the health, safety, or welfare of the public or the surrounding area;*

The parking garage will be served by a public sewer.

Applicant is proposing external light fixtures that will be required to meet Technical and Design Standards regarding glare and photometric levels.

Applicant should demonstrate that the lower wall or screen at each parking garage level sufficiently screens motor vehicle headlight glare. Likewise the internal parking garage lights need to be non-glaring.

With the exception of commercial restaurant kitchen equipment, no permanently installed combustion equipment or appliances are proposed at midtown therefore the only anticipated emissions will be general residential ventilation.

The use does not generate noise other than motor vehicles which are part of commercial district activities.

The use in and of itself does not generate dust or litter.

This use does not appear to generate known adverse impacts upon health, safety or welfare of the public or surrounding area. Traffic and circulation safety issues are discussed in Site Plan, Transportation section.

c. *The design and operation of the proposed use, including but not limited to landscaping, screening, signs, deliveries, trash or waste generation, arrangement of structures, and materials storage will not have a substantially greater effect/impact on surrounding properties than those associated with surrounding uses or other allowable uses in the zone.*

All proposed refuse and recycling containers will be held within the midtown buildings awaiting pick-up. Material storage is not associated with the proposed use.

The parking garage will have 9 trees along Somerset, 4 trees along Chestnut, 4 trees along the Bayside Trail including ornamental plantings at the northeast corner of the parking garage by the trail.

Vehicle parking is screened by the parking garage structure.

Signage is proposed along three sides of the parking garage and will be subject to Planning Authority review and approval.

Deliveries to serve the first floor retail will take place curb side or possibly within the parking garage if a small vehicle.

Trash or material storage takes place within the building.

In totality the above factors will not have a substantially greater affect/impact on surrounding properties than those associated with surrounding uses or other allowable uses in the zone.

Civil Engineering Waivers from Attachment J (Exhibit 23), as updated with Part 2 Waiver Request for Civil Design Prepared by FST Engineers (Knowland submission, dated January 21, 2015) and Part 3 for Landscaping and Landscap Preservation prepared by Mitchell & Associates

Section 1 - Transportation and Street Design

Technical Standard	Waiver Criteria	Description of Change	Applicant's Request	Review Comments
1.4.1 Street Grades (page 3): *The cross slope for local streets shall be 0.03. The cross slope for other street classifications shall be 0.02.*	Section 14-526 (f) General Waiver: Except for the requirements set forth in section 14-526 (a)--(d) for which individual waiver criteria are provided, the Reviewing Authority if it finds that extraordinary conditions exist or that undue hardship may result from stricct compliance with these regulations may vary the regulations so that subtantial justice may be done and the public interest secured; provided that such variation will not have the effect of nullifying the intent and purpose of the land development plan and the regulations of this article.	The traverse street grades required for this project are provided on Drawing 3.9 which is a tabulation of street grades by 25 foot stations. The proposed transverse street grades are shwon for Somerset Street in an area from centerline to 19 feet right; from centerline to 12 feet left; and from 12 feet left to 19 feet left. Illustraive cross sections shown on Drawings C-10.1 illustrate those grades. Drawing C-7.0 provides a typical cross section showing warping of the area from 12 to 19 feet right.	Applicant's submission, Exhibit 23, page 4. The project will require the reconstruction of Somerset Street. The building will be set at elevation 12.0 to be 2 feet above the higher flood hazards anticipated to increase over time. There are existing buildings with finish floors, entrances, and exits at lower elevations. The Federated plan for the midtown project has extensive ground floor retail which requires flush accessible entrances. On the other hand, there are existing buildings across the street (most notably the "Noyes" property with existing floors and entrance elevations which will not change. Because the buildings on either side of the street are near or on the right of way, some variation from transverse slopes and location of the street crown from the City's typical cross section within the street right of way will be required.	David Senus Review- Jan. 28, 2015: The project will require the reconstruction of Somerset Street. The building will be set at elevation 12.0 to be 2 feet above the higher flood hazards anticipated to increase over time. There are existing buildings with finish floors, entrance, and exits at lower elevations. The Federated plan for the midtown project has extensive ground floor retail which requires flush accessible entrances. On the other hand, there are existing buildings across the street (most notably the "Noyes" property with existing floors and entrance elevations which will not be changed). Because the buildings on either side of the street are near or on the right of way, some variation from transverse slopes and location of the street crown from the City's typical cross section with the street right of way will be required. **Staff Recommendation: Given the unique circumstances relating to the location of this property in a flood zone, the desire to both address existing flood conditions and improve flood conditions in the future, and the need to account for impacts on abutting properites, deviation from the typical street grade seems necessary. Staff supports a waiver from roadway cross slope standard in accordance with the concepts presented on Figure 1- Somerset Street Schematic Maintain 18" of Freeboard Adjacent to Noyes Building, rev. dated Junuary 26, 2015, prepared by FST Engineers on behalf of the The Federated Companies.**
1.5 Vertical Alignment (pages 3 and 4) : *Vertical Alignment: Parabolas at grade changes (K values) The K values corresponding to the minimum vertical curve lengths for the above street classifications and vertical curve types (sag curve or crest curve) are as follows: (excerpt for Collector Street only)* *Collector Streets* *Crest Vertical Curves: K = 30* *Sag Vertical Curves: K = 40*	Section 14-526 (f) General Waiver.	The profiles for the streets are shown on Drawings C-8.0 and C-8.1. These show minor variations from the "K" values required by the City of Portland from the value of 30 required in the crests and 40 required in the sags for a collector street. The reduced crest in Somerset Street on the Pearl Street end will reduce the amount of rework when Pearl Street and the Whole Foods end of Somerset are raised.	Applicant's submission, Exhibit 23, page 5. The profiles for the reconstruction of Chestnut, Somerset, Elm, and Pearl Streets are included in the Plan Documents. Minor Variations from the City Standards for the "K" values (30 and 40 for crests and sags) will be requested. It is anticipated, the variation of the K value for the sags on Chestnut Street is expected to have a "k" value of 33.56 and Elm Street is expected to have a value of 39.89.	Tom Errico Review- Jan. 7, 2015: The applicant has requested the following waiver: "The profiles for the reconstruction of Chestnut, Somerset, Elm, and Pearl Streets are included in the Plan Documents. Minor Variations from the City Standards for the "K" values (30 and 40 for crests and sags) will be requested. It is anticipated, the variation of the K value for the sags on Chestnut Street is expected to have a "k" value of 33.56 and Elm Street is expected to have a value of 39.89". **Staff Recommendation: Given the street design needed in order to mitigate current and future flooding on this site and the overall design proposed to address those concerns as they relate to this property and abutting properties, it appears to Mr. Errico that the unique circumstances required by the waiver provision exist and that the geometric design details (K Factor) of Somerset Street, Pearl Street, and Chestnut Street to be acceptable consistent with the overall land development plan of the City. Tom Errico, P.E. supports the approval of this a waiver.**

Section 2- Sanitary Sewer and Storm Drain Design Standards				
Technical Standard	**Waiver Criteria**	**Description of Change**	**Applicant's Request**	**Review Comments**
2.7 Catch Basins, 2.7.8 (page 82) *No storm drain lines, with the exception of field inlets and underdrains, shall be connected into a catch basin structure.*	Section 14-526 (f) General Waiver.	The stormwater design is to connect the proposed project storm lines into the catch basins within the street right of way, rather than install a separate connection to the stormwater main in the street.	Representatives from the City of Portland have indicted the technical standards are being revised and will remove this restriction. If the standards have been revised, this waiver will not be required. The waiver is very important to avoid excessive piping and appurtenances in the public streets.	David Margolis-Pineo Review- Jan. 7, 2015: The City is receptive of allowing stormwater treatment connections to catchbasins. David Senus review- Jan. 28, 2015: Support waiver to allow drain line connections into catch basin structures. The proposed stormwater treatment system design requires direct connections into catch basins to comply with design guidance outlined in MaineDEP Chapter 500 BMP Manual. **Staff Recommendation: Given this state requirement and the fact that the State has in fact approved the system as a best management practice, Staff believes that the Applicant has demonstrated sufficiently unique circumstances relating to this property and this proposed system to justify a waiver of the City's usual requirements.**
Section 4. Landscaping and Landscape Preservation Standards				
Ordinance or Technical Standard	**Waiver Criteria**	**Description of Change**	**Applicant's Request**	**Review Comments**
Site Plan Ordinance, Section 14-526 -2 b (iii) Street Trees: *All development shall include street trees in numbers and locations as specified in Section 4 of the Technical Manual. Street trees shall be planted in the right of way, as specified in Section 4 of the Technical Manual. Street trees shall be of a species identified on the City of Portland Recommended Tree List, unless otherwise approved by the Portland City Arborist or his/her designee.* ***Technical Standard 4.6 Street Trees, 4.6.1 Residential Development:*** *Multi-family residential: Multi-family residential developments shall provide a minimum of one tree per unit, planted in the City right of way unless otherwise approved and spaced thirty (30) to forty-five (45) on center. Cross reference B-7 D Open Space and Public Realm Standards and Waiver Requests*	**Waiver, Site Plan Ordinance 14-526 2 (b) iii (b):** Where the applicant can demonstrate that site constraints prevent the planting of required street trees in the City right of way, the Reviewing Authority may permit the planting of street trees in the front yard, within ten feet of the property line. Existing preserved healthy trees that are six (6) inches or more in caliper and are on the site within ten (10) feet of the property line may be counted towards this requirement. If planting street trees is neither feasible in the City right of way nor within the site, the applicant shall contribute to the City of Portland Tree Fund an amount proportionate to the cost of required street trees.	The applicant is proposing raised planting beds for the 2 9 trees is proposing a total of 115 trees along the streets and the Bayside Trail. Midtown 1: 8 trees with 3 raised granite platers; Midtwon 2: 21 trees; 13 with raised grainte planters in right of way, 5 raised granite planters on private land, 3 trees in Chestnut island; Midtown 3 : 20 trees, 13 with raised granite planers in public way, 7 replacement trees; midtown 4 : 3 trees.	Applicant is requesting a waiver of the requirement for providing one street tree per residential unit. Maximum number of residential units is 445. A total of 97 trees, not including replaced street trees along Elm St., are being provided along Chestnut, somerest, Pearl and along the Bayside Trail. The request is based upon the enhanced planting method that includes 4 FT x 8 FT raised granite planting beds and a structural system below grade that provides for an expanded root zone that is approx. 60% larger than typical street tree planting area. There are 29 planters located along the street frontages and the cost to install improvements for these trees well exceeds the fee in lieu for the additional 349 trees.	**Jeff Tarling, City Arborist, review dated January 30, 2015. Jeff Tarling estimates that the cost for each raised planter is $2,000, thus the toal cost of the raised planters is roughly $58,000. The financial contribution to the City's tree fund for each street tree is $200, thus the total amount for the required number of street trees for the residential units would be $66,000 (formula: 445 units - 115 street trees= 330 X $200 = 66,000). The City Arborist recommends granting the waiver subject to a financial contribution to the street tree fund of $8,000, which is the difference between the cost for the required number of trees and the cost of the 29 raised planters.**

Section 5 Portland Stormwater Management Standards and Maine DEP Chapter 500 Stormwater Management				
Technical Standard				
Stormwater Chapter 5 Section E.2, Technical	**Waiver Criteria**	**Description of Change**	**Applicant's Request**	**Review Comments**
Stormwater Chapter 5 Section E.2, Technical Manual, pg 149: *Flooding Standard: If a project results in 3 acres or more of impervious area or 20 acres or more of developed are, requires review pursuant to the site law, or is a modification of any size as described in Section 16 of this Chapter, the flooding standard must be met. Stormwater management systems for these projects must detain, retain, or result in the infiltration of stormwater from 24-hour storms of the 2-year, 10 year, and 25-year frequencies such that the peak flows of stormwater from the project site do not exceed the peak flows of stormwater prior to undertaking the project.*	Waiver of Flooding Standard: (a) Discharge to the ocean, a great pond, or a major river segment. A waiver is available for a project in the watershed of the ocean, a great pond, or a major river sement provided the applicant demonstrates that the project conveys stormwater exclusively in sheet flow, in a manmade open channel, or in a piped system directly into one of these resources. " The applicant shall also demonstrate that any piped or open-channel system in which the runoff will flow has adequate capacity and stability to receive the project's runoff plus any off-site runoff passing through the system. "	The location of the site within the watershed results in a condition where pasing flow from this area as soon as possible allows capacity to free up to receive and convey flows from upstream areas (refer to the Stromwater Management Report filed with the Master Plan).	Applicant's Attachment Waiver Requests Civil Site Issues, Exhibit 23, page 5. The requirements include stormwater detention for flood control. The applicant is requesting a waiver to the requirement for detention as part of the Stormwater Management Plan. The location of the site within the watershed results in a condition where passing flow from this area as soon as possible allows capacity to free up to receive and convey flows from upstream areas.	David Senus, P.E. review, January 28 2015: Support waiver from Flooding Standard. **The Applicant has provided an engineering evaluation indicating that cumulative changes to peak flow rate from the site will be minimal and can be accommodated in the City's municpal drainage infrastructure. Staff Recommendation: Therefore, the proposal appears to meet the waiver requirements necessitating adequate capacity of piped systems, etc.**

Section 7 Soil Survey Standards (Technical Manual, Chapter 7, page 209)				
Technical Standard	**Waiver Criteria**	**Description of Change**	**Applicant's Request**	**Review Comments**
7. Soil Survey Standards. 7.1 Applicability: *Development proposals required to submit soil surveys include: Level III site plans as defined in the site plan standards of the land use code; Subdivisions as defined in the subdivision standards of the Land Use Code except for those projects which do not inovlve construction of significant new infrastructure; and other projects where the review authority determines that unusual conditions specific to the site warrant a high intensity soil survey.* ***7.4 Submissions Class A:*** *where phophorous control measures in include wet ponds, infiltration and buffer strips. Subdivisions where subsurface wasterwater disposal is proposed. Class B: subdivisions where lots less than 2 acres, more than 20 lots, and no on-site waster water disposal is proposed and new city streets are proposed. INcludes Condominimums, commercial and industrial developments that are greater than 3 acres of new non-vegetated service. Class C; subdivisions with lots greater than 2 acres and on-site subsurface is proposed. Class D: all other developments.*	Class D (Medium Intensity) Soil Survey (page 211): In the event that greater than 50 % of a proposed development site is currently developed, an applicant may petition the Planning Authority to accept a lower class soil survey. The Planning Authority shall review the request, and their decision on the appropriate level of mapping shall be final.	The request for a waiver from the high intensity soil survey is made because the site is on filled land, has been heavily disturbed as part of environmental cleanup measures and will be nearly impervious after development. The City has the recent Haley & Aldrich report for the work they commissioned to examine the impact of raising Somerset Street as well as past reports for previous development proposal for this site.	The applicant is requesting a waiver from the City of Portland's requirement to provide a high intensity soil survey. This request is made after considering that the site is on fill land, the site has been heavily distured as part of environmental cleanup measures over the past several years, the site will be nearly impervious after development such that hydrologic soils rating is not a significant issue.	The City also has had soil assessments conducted by John Tewey of the brownfields site. David Margolis-Pineo review, January 7, 2015: This department is agreeable to the requested waiver to delete the high intensity soil survey. **Staff Recommendation: The applicant has submitted evidence that there have been sufficient soil evaluations and thus, the Staff supports granting this waiver of the Technical Standard.**

IX. B-7 Design Principles and Standards Waiver Review

PRINCIPLE A URBAN DESIGN	
B-7 Design Standard Provisions	***Applicant's Requested Waiver***
Principle A: Urban Design **Standard A-4 Views and Landmarks: (***City's Design Manual, Appendix 4, page 5).* *View corridors to buildings and natural resources help to define the character of Bayside. New development shall be designed with consideration for its impact on significant views and view corridors as shown on the Downtown Height Study and the Bayside Height Overlay Map, as well as other important views as may be identified during the City's development review process. View corridors shall be highlighted with significant architecture and quality materials. New development shall be sited so that it does not block view corridors. Taller portions of structures shall step back out of the view corridor. Roof top appurtenances shall not be visible form view corridors, nor shall they obscure important landmarks. Additionally, development along corridors on the east-west axis through Bayside shall be evaluated to maximize sun and light.*	**Views and Landmarks: (Request submitted December 1, 2014)** The applicant requests a limited variance of the requirements to provide open view corridors along north-south streets for the reasons stated below. As noted, the project as a whole complies with the intent to keep street views open. The existing blockage of the Cedar Street and partial blockage of Myrtle Street view corridors, which are constraints relating to building design and lot configuration, as well as other factors are extraordinary conditions of the midtown site. The topmost story of the proposed buildings may intrude slightly into these view corridors. If the applicant were required to lower these buildings undue hardship might result from such strict compliance. Substantial justice will be done and the public interest will be secured with the variation in that the open sky and distant views will be preserved. This variation will allow the garage building, midtownTwo, and the residential building, midtownThree, to minimally obstruct the Myrtle and Cedar Street view corridors without compromising the quality of the distant views. **Staff Comment:** Planning Staff supports the request for waivers of the view corridors for Cedar Street and Myrtle Street.
PRINCIPLE B ACCESS AND CIRCULATION	
B-7 Design Standard Provisions	***Applicant's Requested Waiver***
Principle B: Access and Circulation **Standard B-2: Street Connectivity (***City's Design Manual, Appendix 4, page 7).* *The prevailing pattern of streets on the Portland peninsula runs parallel and perpendicular to the waterfront. This pattern is expressed in relatively short blocks, buildings with small footprints and narrow facades, reasonable walking distances between blocks, and frequent opportunities to turn corners or move from one street to parallel streets. Extension of the street grid pattern will ensure that the massing of new development is consistent with the traditional scale and urban patterns of*	**Street Connectivity: (Request submitted December 1, 2014)** The applicant requests a waiver from the extension of street grid pattern that the public interest may be secured with this variance. That Cedar and Myrtle streets do not abut the subject property is an extraordinary condition of these sites not applicable to sites where these streets do abut. The applicant's proposed mews provides an alternate access between Somerset Street and the trail; the applicant has designed the project to extend Pearl Street; and the applicant proposes enhanced open access to the trail at Elm and Somerset streets. Undue hardship would result from strict compliance, substantial justice will be done, the public interest will be secured with this variation, and the variation is consistent with the intent to the ordinance in that the existing street grid of Bayside has been preserved and will be substantially enhanced.

Portland, project view corridors, provide opportunities for sun and airflow, enable efficient and flexible vehicular and pedestrian circulations, and provide opportunities for service alleys. New development shall coordinate with, intersect, and extend existing streets and sidewalks at multiple access points. *See the Downtown height Study and the Bayside Height Overlay Map for key view corridors and potential street extensions. As land use and development opportunity allow, Somerset Street shall be extended west towards Forest Avenue.*	**Staff Comment** Planning Staff supports the request for waiver of the extension of Myrtle and Cedar Streets
Principle B Access and Circulation **Standard B-3:Mid-Block Permeability** (*City's Design Manual, Appendix 4, page 7).* *Development shall incorporate mid-block permeability that is perpendicular to Marginal Way, and where feasible that is parallel to Marginal Way, in order to encourage building footprints that are in scale with the existing traditional pattern of development in Portland. These corridors shall be developed as street extension, service alleys and public access, pedestrian corridors, trail access, plazas and pocket parks. These corridors shall be designed for the pedestrian first, with limited vehicular accessibility. These corridors shall not be designed solely as access to parking or loading areas, and shall be designed to be handicap accessible, well lit, paved in concrete, brick or stone, and appropriately landscaped. Asphalt surfaces shall not be allowed. (Wharf Street in the Old Port is an example of a desired level of design for this type of public way).* *A primary circulation system shall be developed through streets, alleys, sidewalks and trails. A secondary circulation system shall be provided internally within buildings for public use through the use of fully functioning entrances on all street sides of a building, and internal lobbies and*	**Mid-Block Permeability: (Request submitted December 1, 2014)** The applicant requests a very limited variance of the requirements to incorporate mid-block permeability perpendicular to Marginal Way, only in the block between Chestnut and Elm Streets, for the reasons stated below. As noted in both the detailed response to individual B-3 requirements, and the applicant's memo, both of which are attached, the project as a whole complies with all requirements except for a limited instance where continuity of street pattern is blocked by existing buildings and current development patterns. We note that the Board recognized, in a finding concerning a previous project proposed for the site that, in relevant park, a street extension of Myrtle Street would not be required between Somerset St. and the Bayside Trail because: "*Myrtle street [does]not abut the subject property,…[and therefore] the Planning Board finds that extraordinary conditions exist or undue hardship may result from strict compliance, substantial justice and the public interest are secured with the variation, and the variation is consistent with the intent of the ordinance, and therefore…[the board granted] a waiver of the requirement that the development be required to extend… Myrtle Street through the project."* The same extraordinary circumstances pertain with respect to this waiver request for variance of the requirement for mid-block permeability: the continuity of a path or pedestrian desire line north-south from the Bayside neighborhood to Marginal Way is blocked by the A&P warehouse (Noyes storage building forming a continuous frontage along the south side of Somerset St. From Chestnut to Elm Streets), a contaminated soil berm along the trail that directly abuts the property, a chain link fence, and parking lots on the north side of the trail. With no natural desire line for pedestrians, a connection of Somerset St to the trail perpendicular to Marginal Way would serve little if any pedestrian traffic, and the unused passage could become a security nuisance. In other sites surrounded or abutted by open land or cross-streets, the creation of street extensions or mid-block connections would serve the useful purpose of encouraging further extension as adjacent blocks are developed – this is simply not the case with the midtownThree block. Hardship form strict compliance with this requirement would result from two issues: the need to secure a seldom used passage, and the inflexibility of leasing program resulting from creating a passage separating the leasable floor area into two distinct and unconnected areas of floor space. Granting of a waiver from the requirements for a street extension, service alley, or pedestrian corridor through the

corridors that permeate through the ground floor of a building, unless the building program precludes such design and cannot be modified to meet this requirement due to small scale or security reasons. *Many larger buildings in Downtown Portland have incorporated frequent opportunities to pass through the interiors of street-level spaces. This element is important to the liveliness and accessibility of retail businesses and cultural amenities. The development or redevelopment of larger sites, and the potential assembly of more than one block or parcel through the discontinuance of intervening streets, shall carefully consider this characteristic pattern of pedestrian circulation.*	midtownThree block is the minimum condition to relieve the applicant's hardship in this extraordinary circumstance. Substantial justice would be done by this variance in relieving the applicant of undue hardship in this extraordinary circumstance. The public interest would be secured in that new continuous retail frontage will be developed on Somerset Street and doors to access this retail will be provided on the trail side; not having a designated and dedicated passage will allow flexibility in retail leasing that will allow the diverse mix of first-class tenants that will make this a successful, pedestrian-friendly environment. The applicant also proposes to create a broader open space and protected view corridor on its private land at Em Street between midtownThree and Four which will additionally facilitate passage from Somerset St to the trail. The requested limited waiver does not nullify intent or purpose of the Ordinance which is to develop a pedestrian friendly retail "Main Street" for Bayside. There will no adverse effect on section 14-536 regulated issues of a) transportation, b) environmental quality, c) public infrastructure and community safety standards, d) site design standards (massing, ventilation, wind, shadow, snow and ice loading, view corridors, historic resources, exterior lighting, noise and vibrations, signage and way finding); or of zoning-related design standards (except for B-7 Standard B-3 from this limited variance is sought). The lack of a through block passage will not have any effect on the value or utility of nearby private property; in fact the development of midtown is expected to have a positive impact on the value of all neighboring properties through raising the streets and trail above flood level and by brining 500 or more new resident to the district. The variance of standard B-3 in the particularly instance of midtownThree is the minimum non-compliance necessary to overcome the hardship of this extraordinary circumstance. There no adverse environmental effects associated with this variance. The following table lists for the development as a whole the design response to each of the individual requirements of Standard B-3 Mid-Block Permeability ***"…shall incorporate… permeability.. perpendicular to marginal way."*** Response: 1. Pearl Street is extended to the Trail and allowance has been made for its future extension to Marginal Way 2. Chestnut Street has been extended across the trail to Marginal Way with a traffic calming island at the trail intersection. 3. A courtyard and mews have been created making a second entrance/egress from the garage and the access point for bicycle storage. The land south of this mews across Somerset St is currently vacant, and the existence of this permeability between Pearl and Chestnut Streets will encourage continuation of mid-block access to Kennebec and possibly Lancaster Streets as those properties are developed. 4. The midtownThree building is deliberately held back from the west property line and aligned with the building face of Elm Street to preserve the view corridor down Elm Street. 5. No Somerset Street to Bayside Trail Connector Between Chestnut Street and Elm Street is proposed because continuity is blocked by the existing storage building the berm along the trail and the chain-link property fence and grade change.

"…shall incorporate… permeability…parallel to Marginal Way."

Unnecessary and infeasible as the Bayside Trail and Somerset Street are only 120 feet apart.

"…corridors shall be developed as street extensions, service alleys, pedestrian corridors, trail access, plazas, and pocket parks…"

1. Pearl Street is extended as a street which one day may be continuous from the top of the peninsula to Marginal Way.
2. The mews and courtyard form a pedestrian corridor and plaza.
3. The added public open space at Elm Street enhances the park-like setting of the intersection of the Bayside Trail with the Elm/Somerset Street intersection.

"Corridors shall not be designed solely as access to parking or loading areas."

1. The mews is pedestrian and cyclist only.
2. Elm Street park is pedestrian and cyclist only.

"…handicap accessible…"

Compliant

"…paved in brick, stone, or concrete… landscaped…asphalt… not allowed…"

Compliant

"…primary circulation shall be developed through streets, alleys, sidewalks, and trails."

Compliant through extension of Pearl Street and the Elm Street sidewalk and adjacency of Bayside Trail.

"…secondary circulation… shall be provided internally…unless…building program precludes such design due to security reasons…"

Not provided due to security reasons.

"…potential assembly of more than one block or parcel through the discontinuance of intervening streets shall carefully consider… pedestrian circulation."

Does not apply – no discontinuance contemplated. In fact applicant is dedicating private property to public use at Pearl Street, the mews, and Elm Street, and substantially enhancing the pedestrian experience on Somerset Street.

(Refer to Applicant's memorandum-3 Mid-Block Permeability, Applicant's submission, Exhibit 23 and Response to Staff comments, December 1, 2014, Exhibit 3.)

Staff Comment:

This issue is also discussed in a prior section of this report on page 13. The Planning Board is being asked to consider a partial waiver of this standard. As the Board will recall a condition of approval of the subdivision amendment t granted in January, 2014 which removed a 20' wide by 20 ' high by 140' long easement through the lot on which MidtownThree is located, "*provided that a pedestrian passage be provided in the Phase Two site plan*". .

The Standard anticipates a "primary" circulation system and a "secondary" circulation system. The recently added doors on the trail side of MidtownThree imply a circulation system that is internal to the building, and therefore not a primary circulation system. Staff believes that a partial waiver from this standard is still needed.

	Ideally this circulation through the building would be an arcade-style hallway, open during normal business hours, to provide passage through the building. If that is not possible, staff has a concern that the retail tenant of the space would discourage or simply not allow passage through their space by the general public. For example, some tenants might require a membership to enter the space, which would mean that the general public may not be able to use the space, or at the least may feel unwelcome there. Staff supports a partial waiver of this standard to provide only a secondary circulation system, if the secondary system can be shown to provide an adequate substitute for the "primary " option.. Ways of achieving this objective include a specific plan for specific access through the first floor of Midtown Three including posting that the public is welcome to travel through the space during normal business hours, good lighting and accessibility, and/or a way finding measure. As noted elsewhere, the north side of Midtown Three shows storefront facing the Bayside Trail, and will allow passage from both sides and through, but there is no plan for surface treatments between Midtown Three and the trail. The issues discussed in this paragraph are addressed as conditions of approval to the waiver request as reflected in the Motions section of this report. The proposed condition of approval for mid-block permeability addresses the staff concerns about the terms and details of the access through the building, while recognizing that these details are dependent on the end user/tenant of the first floor. The proposed condition therefore allows for review of those aspects prior to a certificate of occupancy of the first floor, and also addresses the trail side improvements and berm removal, and associated cost allocations between the applicant and the City. The City has agreed to pay for the costs associated with the removal of the berm containing contaminated soils to the extent that such soils cannot be used as fill under the project foundations, which usage appears to be unlikely based on the latest information available.
Principle B: Access and Circulation **Standard B-7: Continuity of Street Level Uses** **(***City's Design Manual, Appendix 4, page 8)* *Continuity of pedestrian-oriented uses along street frontages, particularly A and B streets, is important to encourage pedestrian interest, movement and safety. Service entrances and vehicular entrances which interrupt the continuity of street-level uses shall not be located along A or B streets, or areas of high pedestrian activity. Where such uses are unavoidable, extraordinary care shall be taken to assure that the pedestrian environment remains both attractive and safe, and such interruptions shall be kept to a minimum in both numbers and lengths. In such instances, the pedestrian shall clearly have the priority.*	**Continuity of Street Level Uses: (request from December 1, 2014 Submission)** The applicant requests a waiver from the prohibition of service and vehicular entrances to the buildings of midtown along Somerset and Elm streets on the basis that extraordinary conditions exist at these sites which have led to this choice and that hardship for the applicant would result from strict compliance with the standard [B-7]. The sites are relatively narrow and located between the Bayside Trail and Somerset Street. While access to the midtownOne has been successfully located on a raise portion of Pearl Street, midtown Two and Three are prevented access from Chestnut Street by the center island and slope. MidtownFour has street frontage only on Elm Street. The location of such entrances on Somerset and Elm streets is unavoidable due to block configuration. Undue hardship would result from strict compliance but substantial justice may be done, the public interest will be secured with the variation. The variation is consistent with the intent of the ordinance, in that the applicant will take care to assure that the pedestrian environment will remain attractive and safe, and required interruptions are minimized in number and length to allow a maximum of retail frontage.. **Staff Comment:** Planning Staff supports the waiver.
Principle B: Access and Circulation **Standard B-11: Lighting (***City's Design Manual,*	**Lighting: (request from December 1, 2014 Submission)** The applicant requests a waiver from strict compliance with the lighting requirements of the Technical and Design

Appendix 4, page 9). *Street lights along public streets shall be scaled to the size, traffic volume and use that is typical for that street, as defined in the street hierarchy in Standard B-1 Streets and Alleys. Street lighting shall comply with the Technical and Design Standards and Guidelines at a minimum and may also be required to meet The Illuminating Engineering Society of North American Standards (IESNA), and the Leadership I Energy and Environmental Design (LEED) standards for light pollution. (Excerpt)* *B-Streets: Cumberland, Lancaster, Kennebec, Somerset, Preble and Elm* ***(Bayside District Medium Scale Light- Figure X-2D, attachment 7)*** *C Streets: Parris, Hanover, Chestnut, Pearl, Portland, Oxford.* ***(Bayside District Medium Scale Residential Light Figure X-2E, attachment 7)*** ***Sidewalk Lighting:*** *Sidewalks shall be lit with a combination of pole mounted, building mounted, or bollard lighting, as well as light from store windows, entries and other building features. The placement of lighting fixtures shall be pedestrian scaled, downwardly directed, and shielded or reflected so as to prevent glare and excess lighting spilling onto private property or skyward.* ***Technical Manual. Chapter 10 Municipal Street Lighting Standards. Chapter 10, 10.4 Standards for Special Lighting Districts:*** Locations, Specifications and Colors: Figure X-1 identifies the established special Street Light Districts city-wide. The following tables and Figures X-2 through X-7K illustrate the requirements for fixture type, height, layout and color for each district, according to street name. **West Bayside:** **Chestnut Street:** Lancaster Street to Marginal Way, **Somerset St., Preble Street and Elm Street** (Cumberland Ave to Marginal	Standards and Guidelines for the street light spacing along Somerset street on the basis that extraordinary conditions exist at this site which have led to the spacing shown on the site plan. The street lighting has been coordinated with tree placement, existing and proposed utility structures, required service and vehicular entrance, steps and ramps, bus stop, and accessible crosswalks. The result is non-standard spacing. The proposed lighting plan will enable and enhance retail and pedestrian sidewalk lighting conditions on Somerset Street and undue hardship might result from strict compliance. Substantial justice will be done, the public interest will be secured with the variation, and the variation is consistent with the intent of the ordinance, in that the lighting will be scaled to the size, use, and traffic volumes of the streets and trail in order to provide an efficiently-lit, attractive, pedestrian-friendly urban street. **Staff Comment:** **David Margolis-Pineo, DPS, Review dated January 7, 2015, revised 1/9/15.** The Department is supportive of waiver request #3 for brighter illumination, with the following conditions: • All light fixtures shall be LED; • All fixtures shall be shielded for down lighting and light spacing shall be per Code requriements. • The applicant is encouraged to consider supplemental lighting on the applicant's property. • All proposed lighting with the street right of way will be owned and maintained by the City of Portland and shall be on a separately metered circuit. The Planning staff suggests that a condition of approval be considered with this waiver that would require a final lighting plan and photometrics be submitted for review and approval by the Department of Public Services and the Planning Authority.

Way),**Pearl St:** Lancaster to Marginal Way,**Kennebec, Hanover St** (Somerset to Marginal) Fixture type: Bayside District Medium Scale Light (*see Figure X-2C), Fixture Height:* 19 ft 3 inch Layout: 80 – 100 ft on center (one side only); 150 – 200 feet on center (staggered pattern on both sides of street) Color: Silver Metallic Natural Aluminum – Tiger Drylac Old Navy Silver Y003J	
PRINCIPLE C PARKING, LOADING AND SERVICE AREAS	
B-7 Design Standard Provisions	***Applicant's Requested Waiver***
Principle C Parking, Loading and Service Areas **Standard C-2: Parking Entrances (**City's Design Manual, Appendix 4, page 10) The entrance to parking garages shall respect the pedestrian realm and minimize the visual impact of the garage through provision of design elements such as: enhancement of the pedestrian entries; physical separation of entrances and exits; recessing the entry or extending portions of the structure over the entry; and incorporation of landscaping or artwork. The exits from parking garages shall be designed to inform the driver that s/he is entering in to a pedestrian realm. Gates shall be located interior to the building at a distance that allows cars to stack internal to the structure rather than on the street.	**Parking Entrances: (request from December 1, 2014 submission)** The applicant requests a waiver from the requirement to separate entrance from exit at the midtownTwo parking garage. A single wide common curb-cut is proposed for both entry and exit from the garage. Access and exit gates are located well inside the garage to provide sufficient off-street queuing space. There will be three gates allowing double inward or outward flow at peak times. The exit will be designed to inform the exiting driver of the sidewalk pedestrian realm. Undue hardship would be caused if substantially separate ingress and exit ramps were required. The shallow lots and constrained garage layout constitute an extraordinary condition of this site and undue hardship would result from strict compliance. Substantial justice may be done the public interest will be secured, and the variation is consistent with the intent of the ordinance, in that the pedestrian realm is favored by minimizing the number of interruptions to the retail frontage and all other requirements of the standard will be met. **Staff Comment:** The single entry and exit meets the intent of the standard and thus a waiver is not required.
Principle C Parking, Loading and Service Areas **Standard C-5: Decks and Ramps (***City's Design Manual, Appendix 4,page 11).* *Parking structures shall have horizontal decks on all levels where the decks are visible from the public rights of way. Ramps and non-horizontal parking decks shall be screened from all visible angles and shall not be permitted on facades located along or within 45 feet of a public right of way.*	**Decks and Ramps:** The applicant requests a waiver from the requirement to have horizontal parking decks on all facades of the MidtownTwo garage visible from public rights of way on the basis that extraordinary conditions exist at this site, and that undue hardship for the applicant would result from strict compliance with the standard C-5. The garage is the most efficient possible layout with five percent sloped parking ramps on the trail side and level decks on the Somerset Street side. The garage exactly fits the available site. The sloped ramps are screened with durable materials to give the façade an orthogonal appearance consisting of screens mounted in horizontal and vertical framework. The shallow lot and constrained garage layout are the only feasible layout and undue hardship would result strict compliance by requiring substantially less efficient layouts. Substantial justice will be done, the public interest will

	be secure, and the variation is consistent with the intent of the ordinance, in that the unavoidable sloped ramps will be screened with façade materials with horizontal and vertical members. **Staff Comment:** Staff has reviewed the plans and elevation drawings of the garage. The northerly (trailside) façade of the garage reveals the sloped ramps, while the southerly (Somerset Street) façade has flat or horizontal internal ramps. The northerly side adjacent to the trail is on a public right of way, so a waiver is needed. The design of this façade includes a significant "green screen" which over time will mask the non-horizontal decks sufficiently. Staff therefore supports this waiver.
Principle C Parking, Loading and Service Areas **Service, Utility and Mechanical Infrastructure (Standard C-8):** *City's Design Manual, Appendix 4, Principle C, Parking, Loading and Service Areas, C-8.* ***[Excerpt]*** *Service, utility and mechanical infrastructure (such as…) shall be located at the rear of side of buildings, along service alleys, or in the interior of parking garages. Such uses shall not result in adverse visual and audible or other noxious impacts on adjacent properties and public streets and spaces. Areas for outdoor storage and trash collection or compaction shall not be visible form public rights of way, or located within 20 feet of any public street, sidewalk, or open space. Mechanical equipment shall be located away from pedestrian ways and seating areas to minimize noise, exhaust or visual impacts. Mechanical equipment shall not be located in the front setbacks between building and public rights-of-way.* *All service, utility and mechanical infrastructure shall be visually screened form adjacent uses, adjoining properties and public rights of way.* ***[Excerpt]…..***	**Service and Delivery Areas: (request from December 2014 submission)** The applicant requests a waiver from the requirement that service equipment and infrastructure be located at the side or back of the buildings. The sites exhibit the extraordinary condition that there are no sides or backs- all facades are visible from the public right of way. Except for MidtownFour, which shares a common property line with Trader Joes, all facades of the building of midtown face public rights of way- Pearl, Chestnut, Elm, and Somerset Streets, the Mews and the Bayside Trail. Where feasible, utility infrastructure will be placed interior to the buildings, where it must be located outside it will be screened from view or unobtrusively integrated with the design of the buildings. Because these buildings have no side or rear elevations, an extraordinary condition exists and undue hardship would result from strict compliance with these requirements. Substantial justice will be done, the public interest will be secured, and the variation is consistent with the intent of the ordinance, in that utility and mechanical infrast4ucture, loading docks, delivery areas, will be internal or screed as required. **Staff Comment:** Planning Staff supports the waiver request.
PRINCIPLE D OPEN SPACE AND THE PUBLIC REALM	
B-7 Design Standard Provisions	***Applicant's Requested Waiver***
Principle D: Open Space and the Public Realm **Standard D-2: Bayside Trail** *(City's Design Manual, Appendix 4, page 12)* *A conceptual or final plan for the Bayside Trail*	**Bayside Trail: (request from November 14 submission)** Applicant requests a partial waiver from Standard D-1 requirement that buildings adjacent to the trail have active doors in the building on facades facing the trail. All the midtown buildings are designed with façade elements adjacent to the Bayside Trail that enhance the trail

from Franklin Arterial to Elm Street shall be considered in the review of all new development. Buildings adjacent to the Bayside Trail shall be designed so that the façades along the trail incorporate design elements that enhance the trail use such as active doors into the building, plazas, outdoor seating, and food service. The design of retail or restaurant uses shall incorporate a means of ingress and egress that is oriented to the trail. Businesses that complement the use of the trail, such as sporting goods stores, equipment rentals, coffee and ice cream shops, etc. shall orient entrances to the trail where feasible.	experience. As noted above, these facades are not designed as "back", and they provide the important element of residential windows overlooking the trail. Food Service establishments are the planned as part of the retail leasing program for the ground floors of the all the buildings. This may provide some entrances and egresses facing the trail. The partial waiver is sought on the requirement of having "active building ingress and egress" on the portion of midtownThree facing the trail because of natural changes in grade. **Staff Comments:** The proposed plan recognizes the importance of having active uses along the trail side of the parking garage and residential building. Both buildings will have retail storefronts along the trail including the plaza area. Portions of the retail use within the parking garage will have a grade about two feet higher than the trail which would complicate trail user access into the building. The mews and plaza enhance interaction between the development and the trail by providing mid-block connections and increased store frontage. The developer has stated that the berm will be removed behind MidtownThree which will improve the interaction of the building's retail uses with the trail, however there is no plan at present to provide paved surfaces, landscaping, amenities, or paved access to the Bayside Trail. At minimum, it is recommended that a 15' paved area be installed along the northerly storefront edge, approximately 155 feet long, and paved 12' walkways be provided connecting to the Bayside Trail, one in each direction. A fully developed landscape plan is desirable in this location, with materials comparable in character and quality to those proposed for the mews and courtyard associated with MidtownOne and Two, to fully complement the Bayside Trail as envisioned by this standard. The minimum standards noted above will at least provide an engaging interface and enable the trail and the storefront and its midblock passage to function. The proposed condition of approval for mid-block permeability addresses the staff concerns about the terms and details of the access through the building, while recognizing that these details are dependent on the end user/tenant of the first floor. The proposed condition therefore allows for review of those aspects prior to a certificate of occupancy of the first floor, and also addresses the trail side improvements and berm removal, and associated cost allocations between the applicant and the City. .
B-7 Design Standard - Standard D OPEN SPACE AND PUBLIC REALM D-3 Landscaping and Street Furniture: *Planters, wells and tree grates: Raised planters shall be used wherever possible to increase the viability of plant materials. Such planters shall be consistent in style and character throughout Bayside. Where individual tree wells are located along streets, the wells shall be as large as possible to allow adequate water and air to the soil and root system. Where the dimensions of the sidewalk area permit, planting strips or portions of brick sidewalk set on sand shall be considered to allow an even greater area of permeable surface. Tree grates and guards*	The applicant is requesting a waiver for raised planting beds associated with the ramp system located within the right of way that occur along the Somerset Street sidewalk adjacent to Pearl Street extension and Elm Street as designed. **Staff Comments:** Jeff Tarling, City Arborist, comments pending.

shall be provided in order to assure adequate air and water access and to provide protection for trees located within pedestrian activity areas. In certain areas, where wide sidewalks exist and ample pedestrian circulation area is available, the use of granite pavers may be substituted for tree grates.	
B-7 Design Standard - Standard D OPEN SPCAE AND PUBLIC REALM D-3 Irrigation and Drainage. An adequate provision of a water source, irrigation system and method of drainage shall be provided for planted areas. Such areas shall also have drainage systems designed to prevent excess water accumulation or runoff onto FINAL Approved March 26, 2008 O:\PLAN\Development Design Manual\B-7 Design Standards (FINAL Approved 032608 by PB).doc 14 pedestrian walk areas. Individual tree wells shall be designed to allow adequate drainage, tying into curb line drainage systems wherever possible.	The applicant is requesting a waiver of the requirement for an irrigation system. All plant material selected shall conform the city standards, be selected for drought tolerance in addition, will be located in larger raised planting areas. **Staff Comment:** Jeff Tarling, City Arborist, comments pending.
PRINCIPLE E: ARCHITECTURAL DESIGN	
B-7 Design Standard Provisions	***Applicant's Requested Waiver***
Principle E: Architectural Design **Standard E-12: Materials: (***City's Design Manual, Appendix 4, page 19).* *Facades visible from public rights of way shall use natural and authentic materials that are expected to last 50 years. Predominant materials shall be brick, stone, precast concrete and other masonry products, wood, glass and high quality metals such as steel, titanium and copper. Traditional stucco on wire lath or masonry may be used. Renewable and recyclable materials approved for use by LEED Standards (Leadership in Energy and Environmental Design) may be used. Cellular PVC trim and dimensional stock shall be allowed.* *Materials such as thin gauge metal panels, exterior insulation and finish systems (EIFS),*	**Materials:** The applicant requests a waiver from the prohibition of EIFS and single gauge metal siding as primary façade materials for the buildings of midtown on the basis that extraordinary conditions exist at this site which have led to this choice of materials, and that hardship for the applicant would result from strict compliance with standard E. 12. An extraordinary condition present at the midtown parcels, but not generally applicable to other parcels in Bayside, is the building code requirement to establish first floor level above the FEMA 100 –yr flood elevation. This requires filling the sites and building at elevation 12.0. Coupled with the Bayside Vision intent to create pedestrian-friendly active streets, Somerset St. must be raise as well, so that sidewalks will be at this high level (and therefore protected from flooding also) and pedestrians, including the movement challenged, will be able to freely and easily access the retail space. In order to make the retail space accessible from the Bayside Trail, a major part of the trail adjacent to the project will be raised to allow direct access. Hardship exists as a result of this extraordinary condition in that the costs of this civil site work is distributed across only 400 dwelling units (although commitments to the work were made on the basis of nearly twice that number of dwellings, and the applicant is honoring the commitment). This in turn requires economies in all systems of building construction including structure and exterior materials. Standard E-12 requires heavy façade materials like brick, stone, or re-cast concrete and states "…thin gauge metal

panelized "thin brick", vinyl siding, or stucco on Styrofoam or a similar backing shall not be used on facades visible from public rights of way. Fiber-cement clapboard and shingles may be used. Fiber cement panels shall only be used on portions of the building not visible from public rights of way. Public spaces shall be constructed of permanent durable materials such as concrete, brick or stone.	panels [and] exterior insulations finish systems (EIFS)…shall not be used on facades visible from public rights of way." The chosen wood framing system cannot support the heavier materials and requires the lighter weight of siding materials; while fiber-cement clapboard and shingles are allowed, we don't believe these are appropriate materials for the contemporary industrially based expression of these 6 story flat roofed residential buildings in this district. Strict compliance with the requirements of E-12 in this instance would create undue hardship for the applicant by requiring a steel and concrete structure which is unnecessary for the buildings proposed. The minor variance sought, to waive strict compliance and allow EIFS and light weight corrugated metal siding as primary façade materials visible from the public right of way, will provide substantial justice in recognition of the hardship caused by the expense of meeting the extraordinary condition of raising Somerset St and the Bayside Trail. These materials have proven long term durability, can certainly last 50 years on longer, and can be used to produce buildings which contribute positively to a new identity for the neighborhood in an architectural style expressive of the time when built. The design of the buildings will be completed with functional and aesthetic architectural details, with massing and fenestration reflecting the evolving industrial context, and exploiting the important features of these materials. EIFS particularly provides a layer of continuous insulations which meets a sustainable goal of energy efficiency by counteracting the effects of thermal bridging commonly associated with stud construction. The wood frame structures similarly support sustainability goals by sequestering carbon from the atmosphere, and by embodying far less carbon per sq ft of supported structure than a steel and concrete structure. The public interest will be secured in that the project in total will bring an active friendly pedestrian setting and excellent streetscape to more than 1000 ft of currently unused Somerset street frontage and an equal length of trail side which will, by construction of the project, gain 24/7 "eyes on the park." This waiver will not nullify the intent and purpose of the Land Development Plan in that the project fully supports the intention to "recast Bayside as a productive and connected urban neighborhood" and "[provides]…entrances to apartments, shops and stores, all within walking distance." The project as a whole (except where minor variance for waiver of specific conditions is requested) is in compliance with the requirements of, and will not nullify the intent of the Ordinance. The impact of the midtown development on other nearby private property is certainly positive, not adverse. Bringing more than 500 new residents to the neighborhood will certainly enhance property values, and the raising of the Bayside Trail and Somerset street above flood level will enhance utility of these properties. The variance to waive strict compliance with the exterior material requirements will not have an adverse effect on the value or utility adjacent properties.

	Other than the strict compliance with exterior materials listed in E-12, the building design and aesthetics will be fully in compliance with all the other Section E Architectural Design requirements of the B-7 standards, with the Land Development, and with the regulations of Article IV of the Ordinance. These proposed façade materials have no adverse environmental effects. The applicant respectfully requests waiver of strict compliance with the requirements of B-7 Standard E-12 and offers further justification in a memo attached hereto. (Refer to Applicant's memorandum , Standard E-12 Waiver Applicant's December submission, Exhibit 3) **Staff Comment:** *The material choices and color palette are contemporary and acknowledge the industrial context but remain residential in application. Building materials for the residential buildings include architectural metals, EIFS, ground faced CMU at the ground floor, and aluminum window frames. The finish and texture of these materials were not specified in detail. The parking garage is predominantly precast concrete and green screen with the use of metal panels and screens at the circulation towers. All buildings use aluminum storefront systems at the ground floor with EIFS siding at the storefront transom. In several instances, MidtownFour uses EIFS at the ground level but not along public rights-of-way.* *The staff memo for the 1/13 workshop stated that, while the Design Standards for the B-7 zone do not permit the use of EIFS in areas visible from a public right of way, staff could support a design where EIFS is not the predominant material (i.e. less than 50% of the exterior material surface above the first floor, not including windows.) Since EIFS is not an allowable façade cladding according to the B-7 standard E-12, a waiver is required to allow its use. Since the initial submission the applicant has reduced the amount of EIFS on the façade of Midtown Three. According to the applicant the façade now has a coverage of 39% EIFS (down from 60%), 43% metal siding and 18% windows visible from the public realm.* *While that percentage is by necessity a guideline only, it appears to be met in MidtownOne and, possibly, MidtownFour. In MidtownThree, the previous plans fell short of the 50% goal, however the February 20, 2015 revisions have addressed this by reducing the EIFS and substituting metal siding is various locations. Staff therefore is able to support the materials waiver for this project based on the latest drawings.* *As outlined above, staff does not support the use of EIFS on the ground level in locations visible from a public way. An approval at this time should include a condition that the storefronts should be subject to approval of the Planning Authority and, as the rest of the ground level, be completed in materials on the*

	“predominant materials” list in Standard E-12 .

X. SITE PLAN REVIEW

Site plan standards (sec. 14-526) are summarized below in *italics*, with City staff comment and analysis following in regular font.

A. ***Transportation Standards***

1. Impact on Surrounding Street Systems

The project is subject to a Traffic Movement Permit. The permit is intended to cover traffic generated for all four Midtown buildings. The current proposal is smaller than the original proposal thus projected traffic volumes are less than the originally approved project.

An updated traffic impact study has been submitted by FST (dated January 16, 2015) as well as further supplemental information on behalf of the applicant. See Exhibit 9

The report indicates the project is forecast to generate 316 trip ends and 392 trip ends during the AM and PM peak hours respectively. This trip generation is based on a 7 percent reduction taken for TDM measures.

The report forecasts that 79 vehicles will enter the site during the AM peak hour with 124 exiting for a total of 203 trips. During the PM peak hour 184 vehicles enter the site while 165 will exit the site for a total of 349 vehicles.

Sixty percent of the AM peak will be generated by housing while 60 percent of the PM peak is associated with retail.

Nine intersections were studied in the vicinity of the project site.

The report offers the following conclusions:

1. Optimization of signal timings can reduce the impacts of the site generated traffic at most of the study intersections.
2. A signal at the Marginal Way/Chestnut Street intersection is warranted.
3. Implementation of the above recommendations will mitigate the traffic impacts of midtown.

TRAFFIC MOVEMENT PERMIT

Review Comments of Tom Errico, Traffic Review Consultant, regarding the Traffic Movement Permit are shown below. Mr. Errico's complete traffic review comments are shown on Attachment 2.

- The applicant has submitted a traffic study and supplemental information that is compliant with the Traffic Scoping Meeting requirements. The following summarizes the traffic recommendations for the project and therefore represent the requirements for issuance of a Traffic Movement Permit.

- The applicant will be required to install a traffic signal at the Marginal Way/Chestnut Street intersection. This intersection currently meets signal warrants and accordingly this improvement shall be installed prior to certificate of occupancy. It should be noted that the applicant will be responsible for the development of design plans and specifications for review and approval by the City.

- The applicant shall install improvements to the Marginal Way eastbound approach at Franklin Street as documented in their traffic study. This improvement consists of changing the lane assignment on eastbound Marginal Way to a left-lane and a shared through/right lane (it current consist of a shared left/through lane and a right-turn lane). This improvement is to consist of pavement marking and signing changes only (signal head modifications may be required). No roadway widening is anticipated as part of this work. The improvement shall be installed prior to certificate of occupancy. The applicant shall submit plans for review and approval.

- The applicant shall develop updated traffic signal timing plans for Franklin Street for the three intersections with I-295 Northbound Ramps, Marginal Way, and Somerset Street/Fox Street. The timing plans shall be implemented within 6 months following certificate of occupancy. The applicant shall submit plans for review and approval.

- The applicant shall make a $24,000 contribution towards improvements to Franklin Street in the Somerset Street/Fox Street and Marginal Way intersection areas. This contribution is related to addressing sub-standard traffic conditions along Franklin Street. This contribution amount is for the full build project and may be proportioned according to traffic generation levels for project phases.

- The applicant shall make a $26,000 contribution towards implementation of the Marginal Way Master Plan. This requirement is to address traffic issues at the Marginal Way intersections with Preble Street and Forest Avenue and general multi-modal improvements along the corridor. This contribution amount is for the full build project and may be proportioned according to traffic generation levels for project phases.

- The applicant shall make a $21,000 contribution towards the implementation of the Somerset Street extension project. This requirement is to address traffic issues along Marginal Way, particularly at Forest Avenue, Preble Street, and Franklin Street. This contribution amount is for the full build project and may be proportioned according to traffic generation levels for project phases.

- Somerset Street/Pearl Street – The applicant has conducted a detailed evaluation of this installation of a four-way STOP sign traffic control condition and has determined that this type of control is warranted and from a traffic operations perspective performs at acceptable levels of service following project build-out. Accordingly, the applicant shall be responsible for the installation of a four-way STOP intersection.

Construction Management Plan: The applicant shall provide a detailed Construction Management Plan. The information provided by the applicant is insufficient. I would note that significant construction activity will be occurring along Marginal Way in 2016 and this project must account for this activity in the Plan.

2. *<u>Access and Circulation</u>*

a. *Site Access and Circulation.*

(i) *The development shall provide safe and reasonable access and internal circulation for the entire site for all users of the site.*

<u>Pedestrian Circulation</u>

Brick sidewalks are proposed along the entire street frontage of the project. Sidewalk width varies depending on the location. In areas where there are significant grade issues such as the corner of Somerset/Pearl and Somerset/Elm the sidewalk is divided into two levels. Midtown One has a split sidewalk with a retaining wall/ramp in the middle with a 5 foot sidewalk along the curb and a 8 to 10 foot sidewalk along the building face. A sidewalk is provided along Pearl Street from Somerset to the project entrance and eventually connecting to the Bayside Trail. By the parking garage it is 14 feet while along Midtown Three 16 feet is provided except at the corner of Somerset and Elm where it is split by a retaining wall/ramp, the sidewalk is 10 feet along the building and 6 feet by the curb.

Along Elm Street there are several pedestrian challenges. The presence of ramp and stairways at the corner of Somerset and Elm squeezes pedestrian movement along the curb side section of the sidewalk and constrains a smooth transition for the future Bayside Trail extension that will cross Elm at Somerset. By Midtown Four, steps and retaining walls limit sidewalk width along the curb side of Elm Street which provides a connection to Back Cove and Marginal Way. Just a few feet to the north is an existing sidewalk “pinch point” by Trader Joes.

All these considerations point to addressing these issues as a whole given their close proximity and pending construction activity. Applicant has shifted the stairs by Midtown Three which provides a more rational travel path for pedestrians. The Elm Street pavement width is very wide so the curb alignment can be adjusted to increase sidewalk width. Accordingly the Trader Joes sidewalk can be widened by shifting the existing Elm Street curb alignment to the west. The City has agreed to fund this improvement. The most recent site plan shortens the parking area in front of Midtown Four since a new service driveway has been provided on the Trader Joes side of the building. To help address the limited public sidewalk width by Midtown Four, staff is suggesting that the parking spaces shown in front of Midtown Four be shifted to the south freeing up space for pedestrians in front of the building. Improvements to Elm Street will require MDOT approval since MDOT has retained control over Elm Street which the City is in the process of pursuing. Also the stairs in front of Midtown Four could be shifted in a parallel configuration with Elm Street further freeing space for public sidewalk circulation. This concept is further discussed in the Bayside Trail section below. Attachment 12 is a revision sketch provided by DPS to the applicant that depicts the desired modifications to this section of Elm Street. There is a condition of approval proposed under the site plan transportation standards to require the applicant to revise the plans in this area to conform to the City funded improvements adjacent to Trader Joe's, and to relocate the parking pocket.

The plan shows a bus shelter in front of Midtown Three on Somerset Street. The design of the bus shelter should be submitted. Staff is suggesting final location of the shelter be subject to Staff review and approval as it may be desirable to make some minor streetscape revisions in this area to improve pedestrian circulation such as shifting or consolidating a landscaped planter with a filterra unit.

Bayside Trail – The project accommodates connectivity to the Bayside Trail at several locations. A sidewalk along the easterly side of Midtown One along Pearl Street connects to the trail. A 30 foot wide mews between Midtown One and Midtown Two provides a further connection to the trail from Somerset Street. Previously the applicant had not shown connectivity in the block between Chestnut and Elm through Midtown Three. Applicant is now proposing an internal connection to trail through Midtown Three, the details of which will need to be further refined.

As in the previous plan, in order to accommodate the Midtown building footprints between Pearl and Chestnut the applicant proposes to shift the trail a few feet to the north. The trail will retain the present minimum width of 16 feet throughout the midtown project. A cross section of the trail (sheet L42) indicates a 16 foot wide trail with a 7'6" retail entry zone between the trail and the parking garage. A 5 foot landscape zone on the north side includes the trail lights and a retaining wall adjacent to the 161 Marginal Way property. The grade of the trail will be raised in this area so that there will be at grade access to the mews. The plan should have an affirmative statement that the applicant shall be responsible for all costs associated with the reconstruction of the Bayside Trail.

As discussed above staff is suggesting the proposed curb side parking on Elm Street by Midtown Four be shifted to the south in order to open up space in front of the building for a wider pedestrian sidewalk. In the general area where the parking spaces could be relocated, two underground transformers are proposed which will likely impact one or two existing street trees.

Adjacent to this area is a triangular shaped landscaped area which is a "mini-gateway" for the Bayside Trail. With these various infrastructure improvements being proposed including the proximity of Midtown Four, it is suggested that the applicant submit a revised site plan for this area so that circulation and streetscape needs can be more adequately addressed including pedestrian/bicycle movements for the Bayside Trail as well as pedestrians circulating from Midtown Four.

Vehicle Circulation

On-site vehicle circulation is limited to a driveway for the parking garage on Somerset Street and a service driveway for Midtown Four on Elm Street.

The developer is extending Pearl Street along the face of the residential building which provides vehicle access to a pedestrian entrance near the northerly end of the building. A vehicle drop-off area has been incorporated by the entrance which allows vehicles to turnaround and head back to Somerset Street. Pearl Street ends just short of the trail. A connection from Pearl Street to the trail is shown on the plan providing a connection for pedestrians, bicycles and CMP vehicles to service project transformers.

The latest plan shows a service truck delivery driveway on Elm Street for Midtown Four. Midtown Four is located along a sharp curve which poses challenges in terms of on-street circulation. Limiting this driveway for service deliveries only while reducing the number of on-street parking spaces balances the need for service deliveries and short term parking while addressing roadway safety concerns.

Review Comments of Tom Errico:

- It is requested that the applicant incorporate special pavement surface treatment in the area approaching the parking garage entry gates for added traction during winter periods given the slope of this area. Specifications shall be provided to the city for review and approval. In addition, the applicant shall be responsible for development of a parking operations management plan that will review traffic flow at the entry and exit gates to ensure the system is fully utilized from a capacity perspective and that winter operations are acceptable. The applicant shall perform a monitoring survey of operations that shall be reported 12 months after opening and annually thereafter. The applicant will be responsible for implementing improvements that respond to full usage of gate capacity or winter issues, if problems are identified.

- The revised gate layout has a transition area that entering the garage that is short and vehicles exiting the garage will block entry movement. The applicant shall revise the layout to prevent this blocking condition. [Updated Comment from Mr. Errico (Feb. 20, 2015) indicates "the applicant has revised the plan to address this comment, but given that blockage may be a problem, I would suggest that the applicant conduct a monitoring study both when the project opens and after the garage is fully occupied and be responsible for revising the entry layout if blockage problems are identified".]

(ii) Points of access and egress shall be located to avoid conflicts with existing turning movements and traffic flows.

- Revised garage plan notes a ramp of 6% at the back of the sidewalk. I am concerned about this slope and potential impact to pedestrian safety on the sidewalk. The applicant should revise the plans to address this safety concern.

- The applicant has conducted the requested analysis and has determined that the parking garage driveway at Somerset Street will operate at an acceptable level of service when fully occupied. I would note that while the delay is not expected to be significant, vehicle queues of in excess of 250 feet (12 vehicles) are projected leaving the garage during peak conditions and will back up through the gate system.

Vehicle access on Somerset Street is limited to one driveway for the parking garages and access from Pearl Street extension. The Elm Street driveway is intended to function for service deliveries only.

Review Comments of Tom Errico:

- A detailed traffic operation analysis shall be provided at the garage entrance onto Somerset Street given that the size of the garage has increased thus traffic volumes entering and exiting would also increase during peak hours. The applicant has conducted the requested analysis and has determined that the parking garage driveway at Somerset Street will operate at an acceptable level of service when fully occupied.

  See also comments on Elm Street service delivery driveway in Loading and Servicing section below:

(iii) Drive up features

There are no drive up features on the site except an internal gate within the parking garages.

b. *<u>Loading and Servicing</u>*

Service deliveries for Midtown buildings (residential and retail uses) generally takes place along the street in parking spaces or designated delivery zones (if so designated) as there is no room onsite for such activities. The exception is the residential building in midtown One which has a drop-off area along Pearl Street extension and an internal loading area (total length of the bay is about 35 feet) for smaller trucks. For Midtown Three there are two doors along Somerset Street one for trash/recycling with a second for tenant move-ins. Trucks will stay at the

curb line with equipment wheeled back and forth between the doors and the truck.

As recommended by staff, the applicant has created a new service driveway for Midtown Four on the Trader Joes side of the building. This is intended to accommodate single unit truck activity for deliveries, trash removal and other appropriate small truck deliveries. This avoids the concern of service trucks wheeling trash/recycling containers (or move-in activity) over the Bayside Trail from curb side to the building. This earlier design would have posed conflicts with trail activity and degradation of the trail surface and environment.

Since a new service driveway has been created, the applicant has decreased the length of curb side parking along Elm Street.

Review Comments of Tom Errico:

- Elm Street has a very different transportation function as compared to Somerset Street and thus street cross-sectional elements must be carefully reviewed. I would further note that the horizontal curve on Elm Street also complicates traffic safety in this area.

- The revised plan included a new driveway (on the northerly side of Trader Joes) that is intended for single-unit trucks and I find it to be acceptable. I would suggest that the on-street parking bay be shifted to the south so it does not constrain the sidewalk in front of the building. I would also suggest that the sidewalk and curbing be implemented to match the City plan to modify Elm Street to eliminate that narrow sidewalk at the corner of the Trader Joes building.

c. *<u>Sidewalks</u>*

(i/ii) *All proposed developments shall provide sidewalks along all frontages in accordance with Sections 14-498 and 14-499 of the City Code and replace substandard sidewalks in substandard condition.*

Applicant proposes to construct new brick sidewalks along the entire street project frontage of Somerset, Chestnut and Elm. A brick sidewalk will be installed along the building side of Pearl Street extension though technically not a city street at this point.

Review Comments of Bruce Hyman:
In numerous locations, the project as currently designed does not meet City Technical Manual standards for ADA-compliance and does not meet the streetscape design and pedestrian accessibility standards as described by the B-7

Design Principles and Standards. See Attachment 4 for Mr. Hyman's complete comments.

Specifics include:

- The ramp and landing system on the NE corner of Elm Street-Somerset significantly interferes with pedestrians walking along Elm Street and is not ADA-compliant. The tree in front of this ramp and landing area hinders the pedestrian access route along the street and should be relocated or eliminated. Comment has been addressed although the configuration remains non-ideal.
- The section of sidewalk along Elm Street between Midtown 3 and Midtown 4 does not provide a direct accessible pedestrian route (as depicted on Sheet C-2.0B). Pedestrians should not need to divert along the Bayside Trail for an ADA-compliant route on Elm Street.
- The configuration of several curb ramps are not ADA-compliant; they are not aligned perpendicular to the flush curb portion of the ramp.
- Portions of the accessible pedestrian route depicted on C-2.0B are not ADA-compliant due to reliance on crossing the flare of a curb ramp.
    - The ADA-compliant accessible pedestrian route relies heavily on the building frontage zone immediately adjacent to all of the buildings. Assurances should be provided that no intrusions will restrict the accessibility of this route by the retail/commercial uses within (no outdoor seating, etc). With the newly reconfigured sidewalk, an updated graphic (C-2.0B) illustrating the ADA-compliant pedestrian access routes should be prepared. It is not possible to know if this comment has been addressed.
- The configuration of the sidewalk with the indented parking area in front of Midtown 4 will degrade the pedestrian environment along the section of sidewalk. A re-design of this Elm Street street frontage is desired to better comply with the B-7 Design Principles and Standards. This has been somewhat addressed see Tom Errico's comments.

(iii) Continuous internal walkways shall be provided between existing or planned public sidewalks adjacent to the site, transit stops and street crossings and primary building entrances on the site.

The Bayside Trail abuts the project on the northerly side of the property. Internal connections between the trail and Somerset Street are available from the mews and Pearl Street extension. Sidewalks are also planned along Chestnut and Elm to the Bayside Trail. Applicant is planning internal access through the Midtown Three retail space from Somerset

Street to the trail. All primary building entrances are adjacent to public sidewalks. A bus stop is proposed in front of Midtown Three within a public sidewalk.

Review Comments of Tom Errico:

- The plans are not clear as to the construction of the sidewalk on the south side of Somerset Street. The applicant is suggesting that this be adjusted during final design and thus a condition of approval should be included.

- Applicant has been requested to detail pedestrian routings between generators and the parking garage and note the adequacy of facilities for providing safe and direct accommodations. Applicant has provided a graphic illustrating the routings but applicant should provide information that specifies for all routings, compliant cross slopes are provided, including driveway aprons. Applicant has requested that this information be provided as a condition of approval.

3. *Public Transit Access*

A bus shelter has been shown on the plan in front of Midtown Three near the location of an existing Metro bus stop. The exact location of the bus shelter requires further staff review and approval.

Review Comments of Tom Errico:

- The revised bus shelter location should be reviewed and approved by METRO. The City is requesting an in-line Transit Stop on Somerset Street and coordination with METRO is required to finalize details.

Review Comments of Bruce Hyman:

- The proposed bus stop location does not (per drawing C-2.0B) provide the required ADA-compliant bus stop landing area (5'x8') nor does the bus stop directly connect to the ADA-compliant pedestrian access route at this location. A note has been added to the plan but no other information/design changes made.

4. *Parking*

a. *Location and Required Number of Vehicle Parking Spaces*

(i) *Off-street parking*

According to the most recent applicant submission, the Midtown Two parking garage will accommodate 801 spaces although a figure of 828 spaces was given on the prior submission. As a development of over

50,000 square feet, the Planning Board establishes the number of required parking spaces based on the applicant's analysis as reviewed by the City Parking Manager and the consulting traffic engineer. With the Midtown parking garage, the project appears to have a surplus of parking spaces for the 445 residential units and the commercial space, but this needs to be formally documented. The final parking demand is dependent upon which commercial users are secured for the space, so the management of the parking will be part of the final TDM.

Review Comments of Tom Errico:
The applicant has not provided a parking demand analysis for the Midtown project (residential and retail space).

(ii) Where a parking study is required, the City encourages Transportation Demand Management (TDM) strategies to be employed.

A draft TDM plan has been submitted. See Attachment C-D.

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

The purpose of the parking garage is to serve the Midtown development as well as surrounding businesses and the general public. The parking garage is intended to be a parking resource for the area so as to avoid surface parking which would undermine the city policy of a dense urban neighborhood in Bayside. Two hundred spaces will be assigned for public turnover parking per the City/Federated Agreement.

(iv) Parking spaces and aisles shall meet applicable dimensional standards as detailed in Section 1 of the Technical Manual.

The parking garage has a minimum parking aisle width of 24 feet. The primary parking space dimension within the parking garage is 9ft by 18ft. Compact spaces (9ft by 16ft) totaling 109 spaces are provided on all upper floors of the garage which is within the compact space standard of 20 percent for parking facilities. The applicable dimensional standards required by this section have been met.

Review Comments of Tom Errico:

- Project meets the standard. Compact parking spaces exceed the city's dimensional standards which is acceptable.

(v) Parking lots, except for temporary lots to be used for less than one year, shall be constructed of a permanent and durable hard surface that is not subject to ponding or erosion.

Not applicable.

b. Location and Required Number of Bicycle Parking Spaces:

Attachment Architectural Plans A101A indicates that 192 bike storage spaces will be provided within the parking garage. Also if cars are parked adjacent to the bike storage areas, it will be difficult to gain access. While this is a significant number unfortunately they are located on floors 2 through 7 (32 per floor) which is not the most convenient scenario for bicyclists. Previous plans had a bike storage room on the first floor. Bike racks are distributed at various locations outside Midtown buildings.

Bruce Hyman Review:

- The exterior bike rack locations are not designed with adequate spacing between the racks or with adequate spacing from the street or other structures.
    - The bike racks shown on Attachment Landscape Plans L4.0 (the Olympia Rack) do not meet the Technical Manual standard for bicycle racks for installation within the public right of way. These racks should be replaced with either the Bike Hitch or Downtown rack.
    - Bicycle Parking within the Parking Garage: A detailed layout should be provided to ensure the functionality and accessibility to the clusters of 8 bike racks, with 2 clusters per level. It does not appear that the racks will be fully accessible when cars are parked immediately adjacent to the clusters.

Further information should be provided to clarify the number and location of bike parking spaces as well as the project's compliance with the bike parking standard.

c. Motorcycle and Scooter Parking.

Six motor cycle/scooter spaces are proposed within the parking garage. The submitted TDM plan suggests 20 spaces allocated for motor cycle/scooter parking.

d. Snow Storage.

Submission states: "The applicant intends to contract with a local snow

removal/grounds maintenance operator who will be responsible to conduct snow removal in accordance with typical protocols in the City of Portland".

Specific information has not been provided by the applicant regarding removal of snow from the top floor of the parking garage. This needs to be clarified. The City's Parking Manager, John Peverada, has expressed concerns regarding structural issues that may arise if snow is stored on top of parking garages.

Attachment Plans (C.2.0) states "snow on parking decks to be plowed and stored in designated areas of the upper level on the garage. Snow melt equipment may be installed, refer to parking garage drawings". The specifics of snow removal from the parking garage should be clarified particularly in avoiding snow loads that might jeopardize the structural integrity of the parking garage.

Also, on sheet C.2.0, in an area within the Bayside Trail corridor near Midtown One, a note states "snow storage to be removed by Federated". The subdivision recording plat, note 2A states "an easement for snow removal activities in a location over lot 4 and lot 9". Lots 4 and 9 constitute the Bayside Trail corridor. The notes referred to in this paragraph should be removed from the plans as staff does not support using the trail corridor for private snow storage.

5. *Transportation Demand Management (TDM):*

A TDM plan has been submitted. See Attachment C-D.

Review Comment of Tom Errico:

- The submitted TDM is draft and needs to be finalized. An annual monitoring program is required and thus other strategies will be reviewed on a year-by-year basis.

Review Comments of Bruce Hyman:

- Minimum bicycle parking is a site plan requirement according to Section 14-526 of the Land Use Code. The TDM plan may incorporate additional bicycle parking, bicycle wayfinding, and/or covered parking to further encourage bicycle use.
- While the Midtown project technically meets the minimum requirements for the quantity of bicycle parking, it does not meet the requirement that the amount and distribution of parking to help attain its stated TDM objective to encourage bicycling. Specifically, there is no long-term resident bicycle parking being provided in Midtown 1, 3 or 4.

All long-term resident bicycle parking is consolidated within the parking garage. For instance, the long-term resident bicycle parking for residents of Midtown 4 is approximately 800 feet from the bicycle parking in the parking garage (Midtown 2). The layout of the bike racks and adjacent parking needs to be examined to ensure that bike racks are accessible – it does not appear to be the case.

B. <u>Environmental Quality Standards</u>

1. Preservation of Significant Natural Features:

a. Significant natural features by incorporating them into site design. Significant natural features shall be defined as:

Past industrial activities (rail yard, scrap yard) of this site including the filling of Back Cove removed significant natural resources many years ago.

(i) *Populations of trees and plants listed on the Official List of Endangered and Threatened Plants in Maine, published by the Maine Natural Areas Program.*

The site is void of any significant vegetation.

(ii) Habitat for species appearing on the official state or federal list of endangered or threatened animal species;

The Maine Department of Inland Fisheries and Wildlife states their records "indicate no occurrence of rare, threatened, or endangered animal species within the project area". The US Department of Interior indicates that no federally listed or proposed threatened and endangered species under the jurisdiction of the US Fish and Wildlife Service are known to this project area, with the exception of occasional transit eagles". See Exhibit 16.

(iii) High and moderate value waterfowl and wading bird habitat including nesting and feeding areas, as defined by the Department of Inland Fisheries and Wildlife;

This site does not have these characteristics.

(iv) Casco Bay Island Aquifers

Not applicable.

(v) Waterbodies

Not applicable.

2. *Landscaping and Landscape Preservation*

a. *Landscape Preservation*

(i) Site development shall be designed to incorporate, and limit disturbance to or removal of existing trees, as specified below. Preserved trees may be counted towards site landscaping requirements.

- Review Comment of Jeff Tarling:

  Landscape proposes to remove and replace existing trees. The site does not have any "mature" trees on the site

(ii) All development subject to zoning setbacks shall preserve a minimum of 30% of existing trees ten (10) inches DBH or greater within the required setback area unless trees are non-native invasive species, as identified in Section 4 of the Technical Manual, or are deemed unsalvageable by the Portland City Arborist or their designee.

- Review Comment: No trees of 10" DBH are on site.

(iii) Protection during Construction: The site plan shall include adequate measures to protect vegetation to be preserved from construction impacts, in accordance with the tree preservation standards listed in Section 4 of the Technical Manual.

- Review Comment of Jeff Tarling:

Landscape plan proposes to remove & replace certain existing trees. The plan should show all "tree save" areas and protection areas and protection measures. This includes physical barriers/construction fencing, no construction equipment or storage near root zones. Web links for Tree Save measures referenced in memo.

Existing trees to be relocated – The project landscape contractor shall properly prepare trees to be relocated to be made available to the City of Portland for reuse. This includes digging and preparing the rootball with "balled and burlap" standard. Trees should be cared for on-site as needed for an agreed upon period of time, this includes watering and site protection in safe location.

(iv) Waiver: Where the applicant can demonstrate that preservation of existing vegetation would compromise development of the site, the Reviewing Authority may permit the substitution of replacement landscaping in other areas of the site, and/or a financial contribution to the City of Portland

Tree Fund for an amount proportionate to the cost of trees removed, as described below**:** N/A

(a) For each tree required to be preserved that is removed and is greater than 16" in caliper DBH, two (2) replacement trees of a species identified on the City of Portland Recommended Tree List shall be planted on the site as detailed in Section 4 of the Technical Manual).

Review: N/A

(b) For each tree required to be preserved that is removed and is between ten (10) and sixteen (16) inch DBH, one (1) replacement tree of a species identified on the City of Portland Recommended Tree List shall be planted on the site as detailed in Section 4 of the Technical Manual).

Review: N/A

(c) Where the planting of replacement trees on the site is not feasible, the applicant shall contribute an amount proportionate to the cost of required replacement trees to the City of Portland Tree Fund, as detailed in Section 4 of the Technical Manual.

Review: N/A

(v) In addition to the provisions of this section, all development within the Shoreland Zone shall meet the requirements of Division 26, Shoreland Regulations.

Review: N/A

b. Site Landscaping

(i) Landscaped Buffers:

(a) Screening. Loading and servicing areas, dumpsters, storage areas and utility structures, except for renewable energy systems, shall be screened from view from public sidewalks, streets and adjacent properties by dense evergreen landscaping, fencing, masonry wall building walls, or a combination thereof.

- Review Comment of Jeff Tarling:

The proposed landscape plan shows adequate buffering with the exception of the trail side of Midtown Three. The trail side of Midtown Three shows a row of 26 Pagoda Dogwood, shown as C.ALT (26) on the landscape sheet, these should be upgraded to a larger tree species. This might include: Yellow Birch, River Birch, Red Maple, Swamp White Oak (examples) planted in fewer

numbers then the 26 Dog Woods, perhaps in groves. This request is to improve the scale as the Pagoda Dogwoods mature is a low 10' in height. The City Arborist and Planning Authority is willing to work with the project team to find a compromise on the revised tree types, numbers and spacing for the trail section of Midtown Three. Also due to the number of Cornus or Dogwood species in this area planted prior to the project an alternate species is needed to add plant diversity and long term sustainability to avoid mono-culture plantings.

(b) Understory Plantings. All development subject to required zoning setbacks shall include a minimum of six (6) shrubs per forty five (45) linear feet of all frontages as measured along the property line. A shrub shall be defined as one shrub, one ornamental grass, and/or 3 perennials. Required shrubs may be installed anywhere on the site, including a green roof, if proposed, and may be planted in any arrangement. Existing vegetation to be preserved on the site may be counted towards this requirement as detailed in Section 4 of the Technical Manual.

- Review Comment of Jeff Tarling:

Earlier review comment mentions that plants should meet or exceed minimum sizes. All shrubs should be minimum 5 gal versus the small residential scale 3 gal size. Green wall vines shall be minimum 5 gal. minimum. All perennials should be 3 gal minimum size.

(c) Industrial and Commercial Zones. For non-residential development proposed in an industrial or commercial zone subject to required zoning setbacks and abutting a residential zone, an evergreen, densely landscaped buffer of not less than ten (10) ft wide and six (6) ft tall is required along the side abutting the residential zone. Where site constraints prevent such a buffer from being established, the width of the landscaped buffer may be reduced but shall include architectural quality fencing of not less than six (6) ft tall and a mix of evergreen and deciduous trees spaced no further than twenty (20) ft apart along the abutting the residential zone.

Review: N/A

(d) Buffer from Surrounding Development. All residential development shall provide and/or preserve evergreen vegetated buffers where necessary to buffer the development from detrimental impacts of existing surrounding development.

- Jeff Tarling Review Comment:

The proposed landscape plan meets this standard provided tree & plant sizes meet standards with upgrade of pot sizes to 5 gallon for shrubs and 3 gallon for all perennials, grasses and vines.

(ii) Parking Lot Landscaping:

(a) Developments with five (5) or more parking spaces shall include at least two (2) trees (or one (1) tree and three (3) shrubs) per five (5) parking spaces planted in landscaped islands to screen shade and break up parking. Trees and shrubs in parking lots may be in informal groups, straight rows, or concentrated in clusters as detailed in Section 4 of the Technical Manual.

Review Comment: Project proposes indoor parking garage.

(b) Landscaped islands shall be distributed so that uninterrupted pavement does not exceed forty (40) parking spaces.

Review: N/A

(c) Landscaped islands shall be curbed and a minimum of eight (8) feet in width, not including curbing. The incorporation of bio retention into landscaped islands is strongly encouraged.

Review Comment: The project does include bio retention features all of which should be maintained by the project including those within the public way but serves the proposed development. This includes the required maintenance and reporting aspect. (this is likely covered in the Engineering Review comments)

(d) Vehicle display lots shall be subject to the parking lot landscaping standards of this section.

Review: N/A

(e) <u>Waiver:</u> Where site constraints prevent implementation of all or a portion of required parking lot landscaping, as determined by the Reviewing Authority, the requirements may be all or partially waived and the applicant shall contribute an amount proportionate to the cost of required parking lot trees to the City of Portland Tree Fund.

Review: N/A

(iii) Street Trees:

(a) All development shall include street trees in numbers and locations as specified in Section 4 of the Technical Manual. Street trees shall be planted in the right of way, as specified in Section 4 of the Technical Manual. Street trees shall be of a species identified on

the City of Portland Recommended Tree List, unless otherwise approved by the Portland City Arborist or his/her designee.

- Review Comments of Jeff Tarling:

The proposed landscape plan appears to meet the standard. Trees must be from the approved list, no Callery Pear or Lindens.

The raised granite planter for the street trees should change from saw-cut to "Thermal Top".

(b) Waiver. Where the applicant can demonstrate that site constraints prevent the planting of required street trees in the City right of way, the Reviewing Authority may permit the planting of street trees in the front yard, within ten feet of the property line. Existing preserved healthy trees that are six (6) inches or more in caliper and are on the site within ten (10) feet of the property line may be counted towards this requirement. If planting street trees is neither feasible in the City right of way nor within the site, the applicant shall contribute to the City of Portland Tree Fund an amount proportionate to the cost of required street trees.

- Jeff Tarling Review Comment:

Applicant requests a waiver from the street tree requirement of one tree for per residential unit (445 units). Applicant is proposing 97 trees along the project street frontage including the Bayside Trail not including replaced trees along Chestnut. Applicant is proposing 29 granite planters along street frontages which exceeds the fee in lieu of the additional trees. Mr. Tarling recommends granting the waiver subject to a financial contribution to street tree fund of $8,000, which is the difference between the cost for the required number of trees and the cost of the 29 raised planters. See Section VIII of this report Technical and Design Waiver Review for more details.

3. Water Quality, Stormwater Management and Erosion Control:

The proposed development is subject to the requirements of the city's Stormwater Management Standards and the Maine DEP Chapter 500 Stormwater Management Standards relative to Site Location of Development, including the Basic and General Standards. David Senus (Development Review Consultant) has confirmed that the applicant's submission meets the standards and requirements of these regulations. Mr. Senus's review comments later in this section and in their entirety on Attachment 5.

Stormwater Management Overview - Although new buildings and paving treatments will be added to the site, the impervious surface increase is considered minimal if any, given the compact soil conditions from the prior scrap yard and rail yard activities. The site is

presently considered to be 95% impervious. Stormwater calculations were provided as part of the submitted Stormwater Management Report. See Exhibit 13. Stormwater detention is not required because of the existing high impervious surface coverage, capacity of the separated storm drains in the vicinity of the site and its close location to a stormwater outfall in Back Cove.

For the easterly end of the site, the project will tie into storm drain pipes (18 inch to 30 inch) in Somerset Street which convey stormwater to Franklin Street. At Franklin Street the pipe enlarges to 36 inches and later connects into a 72 inch pipe which outfalls directly into Back Cove downstream of the Franklin Street interceptor and tide gate structure. An 18 inch storm drain is also located along the Bayside Trail.

The westerly side of the site is served by a storm drain in Somerset Street which flows to Elm Street and then down to Marginal Way to a 60 inch line that discharges to Back Cove. Staff is recommending the existing 12 inch storm drain in Elm Street be replaced with a 24 inch line to help address drainage concerns expressed by the Noyes family regarding the elevation of Somerset Street.

Water Quality Overview -. Stormwater treatment for the Midtown site is accomplished in several ways. Tree-Box filters (Filterra unit) will be sited within the sidewalk area along Somerset Street (8), Chestnut Street (2) and Pearl Street ext (1) with an accompanying underground storage system. By locating the units within the street right of way and treating roadway stormwater, applicant receives credit for required on site stormwater treatment. Roof run-off from Midtown Three however will flow underground to Filterra units in Somerset Street. From the surface, the units measure 4ft by 6ft and will have small plantings in them.

An underground storm treatment unit within the Midtown plaza treats stormwater from that roof as well as the plaza and the roof of the parking garage.

An oil water separator for the internal garage floors of Midtown Two (1,000 gallon capacity) will be discharged into the Somerset Street sewer.

Stormwater associated with Midtown Four will be treated by an underground StormTreat tank which is located behind the building.

An inspection and maintenance manual for stormwater management and related facilities has been submitted. See Exhibit 13.

Sanitary Waste Overview - The project will connect into the existing 36 inch sanitary sewer in Somerset Street. Grease traps (1,000 gallon capacity) will be installed for each building. A memo (Attachment C-C) from Public Services states “the existing thirty-six, fifty-four inch and sixty-six inch reinforced concrete sewer pipes, located in Somerset Street, have adequate capacity to transport, while the Portland Water District sewage facility…has adequate

capacity to treat, the total anticipated increase in wastewater flows of 171,110 GPD, from the proposed mixed use development towers."

Water Quality, Stormwater Management and Erosion Control (sec. 14-526(b)(3)

a. All development must demonstrate that the proposed site improvements are designed to minimize the amount of stormwater leaving the site. This must include consideration of the design and location of improvements to minimize the total area of impervious surface on the site and stormwater management techniques to minimize both the volume and rate of runoff from the lot. The stormwater management plan must demonstrate the following:

(i) Any stormwater draining onto or across the lot in its pre-improvement state will not be impeded or re-directed so as to create ponding on, or flooding of, adjacent lots;

Review Comment of David Senus:

- Standard met. The Applicant's design incorporates numerous and appropriately located drainage inlets to collect and convey stormwater runoff draining from the project site and from adjacent lands abutting the project site into the municipal storm drain system so as not to create ponding on, or flooding of, adjacent lots. Other review comments are highlighted below.
- Bayside Trail - The following comments are specific to the proposed grading and drainage concept for the areas behind midtown One and midtown Two, from Bayside Trail STA 6+50 to STA 12+50; refer to sheets C-3.0 and C-7.12:
  - i. The drainage concept, as proposed, provides an adequate means of collecting and conveying stormwater runoff from the midtown property, City property (Bayside Trail), and adjacent properties north of the Bayside Trail.
  - ii. The face of the retaining wall and fence are proposed primarily on the property line between City of Portland (Bayside Trail) property and the parcels located north of the Bayside Trail. Temporary construction agreements will be required from the adjacent property owner to complete the work as proposed, as construction activity will be required on adjacent property to install the retaining wall and the associated grading.

- Elm Street Storm Drain - The Applicant, City, and adjacent landowners have acknowledged that drainage issues exist during certain storm events along Somerset Street, specifically in and around a low point at the Somerset Street / Elm Street intersection. A proposal has been discussed between the City and the Applicant to install a 24" storm drain pipe from the Somerset / Elm intersection to an existing 24" storm drain pipe in Elm Street, near Trader Joe's. We recommend moving forward with the proposal to install a 24" storm drain pipe at this location. It is our

understanding that the City has agreed to pay for the installation of this pipe, and that the Applicant will provide design plans.

- Somerset Street Design - To address concerns raised by the Noyes family, owners of the properties located on the south / east side of Somerset Street between Elm and Pearl Streets, the Applicant has prepared Figure 1, *Somerset Street Schematic Maintain 18" of Freeboard Adjacent to Noyes Building*, rev. dated January 26, 2015. See Attachment Civil Plans C-15. We have reviewed this figure with input from the City's Planning and Public Services Engineering Departments, and we recommend approving the design concepts presented on this figure. The civil engineering plans submitted by the Applicant do not currently reflect the layout, grading, drainage, and materials that are presented on Figure 1 in the Somerset Street Right-of-Way. We recommend including a condition of approval requiring that the Applicant design the Somerset Right-of-Way to reflect the concepts presented on Figure 1 as part of their final plan, to be submitted for review prior to construction.

- Plan Note: Numerous design plans within the Applicant's most recent submittal include a note on Somerset Street that reads "*midtown HAS BEEN DESIGNED TO REFLECT THE PROPOSED RAISING AT SOMERSET STREET BASED ON CITY GUIDANCE. SOMERSET STREET DESIGN AND CONSTRUCTION SHALL BE COMPLETED BY OTHERS*". The aforementioned recommended condition of approval (see Comment #6) will require that the applicant design and submit Somerset Street plans for review and approval. We also understand that the City and the Applicant have entered into a cost sharing agreement which requires the Applicant to construct the improvements proposed within Somerset Street. This note should be struck from future submittals.

(ii) *Any increase in volume or rate of stormwater draining from the lot onto an adjacent lot following the improvement can be handled on the adjacent lot without creating ponding, flooding or other drainage problems and that the owner of the lot being improved has the legal right to increase the flow of stormwater onto the adjacent lot;*

Review Comment of David Senus:

Standard met. The Applicant's design does not propose to increase the volume or rate of stormwater runoff onto adjacent lots.

(iii) *Any increase in volume or rate of stormwater draining from the lot onto City property following the improvement can be handled without creating ponding, flooding or other drainage problems and that the owner of the lot being improved has the legal right to increase the flow of stormwater onto the City's property; and*

Review Comment of David Senus:

Standard met. The Applicant has provided an engineering evaluation indicating that cumulative changes to peak flow rate and volume from the site will be minimal and can be accommodated in the City's municipal drainage infrastructure.

(iv) *Any increase in volume or rate of stormwater draining from the lot into the City's separate storm sewer system can be accommodated in the system without creating downstream problems or exceeding the capacity of the storm sewer system.*

Review Comment of David Senus:

Standard met. The Applicant has provided an engineering evaluation indicating that cumulative changes to peak flow rate and volume from the site will be minimal and can be accommodated in the City's municipal drainage infrastructure.

b. *All development, except Level I minor residential development, shall comply with the standards of 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.*

Review Comment of David Senus:

Standard met for Basic & General Standards; Waiver requested from Flooding Standard.

c. *All development, except Level I minor residential development, that are located within the watershed of an Urban Impaired Stream shall comply with the Urban Impaired Stream standards pursuant to Maine DEP Chapter 500 Stormwater Management Rules, as described in Section 5 of the Technical Manual.*

Review: Standard not applicable. The project is not located in the watershed of an Urban Impaired Stream.

d. *Level I: minor residential development shall comply with basic erosion control standards, as described in Section 6 of the City of Portland Technical Manual.*

Review: Standard not applicable. The project is not a Level I minor residential development.

e. *Development shall not pose a risk of groundwater contamination either during or post-construction, as described in Sections 5 and 9 of the Technical Manual.*

Review Comment of David Senus:

Standard met. The Applicant proposes methods for stormwater management that are designed in accordance with Section 5 of the Technical Manual to limit risk to groundwater contamination. Project is located in area of City serviced by PWD drinking water distribution system, therefore the water supply standards of Section 9 are not applicable.

f. *Development shall provide for adequate and sanitary disposal of sewage as described in Section 2 of the Technical Manual.*

Review Comment of David Senus:

Standard met. The design incorporates acceptable means of connecting the project's sanitary sewer systems to the City's combined sewer system.

3. *<u>Water Quality, Stormwater Management and Erosion Control:</u>*

a. *All development must demonstrate that the proposed site improvements are designed to minimize the amount of stormwater leaving the site. This must include consideration of the design and location of improvements to minimize the total area of impervious surface on the site and stormwater management techniques to minimize both the volume and rate of runoff from the lot. The stormwater management plan must demonstrate the following:*

(i) *Any stormwater draining onto or across the lot in its pre-improvement state will not be impeded or re-directed so as to create ponding on, or flooding of, adjacent lots;*

Review Comment of David Senus:
Standard met. The Applicant's design incorporates numerous and appropriately located drainage inlets to collect and convey stormwater runoff draining from the project site and from adjacent lands abutting the project site into the municipal storm drain system so as not to create ponding on, or flooding of, adjacent lots.

(ii) *Any increase in volume or rate of stormwater draining from the lot onto an adjacent lot following the improvement can be handled on the adjacent lot without creating ponding, flooding or other drainage problems and that the owner of the lot being improved has the legal right to increase the flow of stormwater onto the adjacent lot;*

Review Comment of David Senus:
Standard met. The Applicant's design does not propose to increase the volume or rate of stormwater runoff onto adjacent lots.

(iii) *Any increase in volume or rate of stormwater draining from the lot onto City property following the improvement can be handled without creating ponding, flooding or other drainage problems and that the owner of the*

lot being improved has the legal right to increase the flow of stormwater onto the City's property; and

Review Comment of David Senus: Standard met. The Applicant has provided an engineering evaluation indicating that cumulative changes to peak flow rate and volume from the site will be minimal and can be accommodated in the City's municipal drainage infrastructure.

(iv) *Any increase in volume or rate of stormwater draining from the lot into the City's separate storm sewer system can be accommodated in the system without creating downstream problems or exceeding the capacity of the storm sewer system.*

Review Comment of David Senus: Standard met. The Applicant has provided an engineering evaluation indicating that cumulative changes to peak flow rate and volume from the site will be minimal and can be accommodated in the City's municipal drainage infrastructure.

b. *All development, except Level I minor residential development, shall comply with the standards of 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.*

Review Comment of David Senus:

Standard met for Basic & General Standards; Waiver requested from Flooding Standard.

c. *All development, except Level I minor residential development, that are located within the watershed of an Urban Impaired Stream shall comply with the Urban Impaired Stream standards pursuant to Maine DEP Chapter 500 Stormwater Management Rules, as described in Section 5 of the Technical Manual.*

Review: Standard not applicable. The project is not located in the watershed of an Urban Impaired Stream.

d. *Level I: minor residential development shall comply with basic erosion control standards, as described in Section 6 of the City of Portland Technical Manual.*

Review: Standard not applicable. The project is not a Level I minor residential development.

e. *Development shall not pose a risk of groundwater contamination either during or post-construction, as described in Sections 5 and 9 of the Technical Manual.*

Review Comment of David Senus:

Standard met. The Applicant proposes methods for stormwater management that are designed in accordance with Section 5 of the Technical Manual to limit risk to groundwater contamination. Project is located in area of City serviced by PWD drinking water distribution system, therefore the water supply standards of Section 9 are not applicable.

f. Development shall provide for adequate and sanitary disposal of sewage as described in Section 2 of the Technical Manual.

Review Comment of David Senus:

Standard met. The design incorporates acceptable means of connecting the project's sanitary sewer systems to the City's combined sewer system.

C. <u>Public Infrastructure and Community Safety Standards</u>

1. Consistency with City Master Plans:

a. The proposal appears generally consistent with applicable approved master plans such as <u>A New Vision For Bayside.</u>

See Attachment 1 for discussion of the Midtown's consistency with <u>A New Vision For Bayside.</u>

2. Public Safety and Fire Prevention:

a. The development shall incorporate the following public safety principles for Crime Prevention through Environmental Design (CPTED) into site design to enhance the security of public and private spaces and to reduce the potential for crime.

(i) Natural surveillance that promotes visibility of public spaces and areas.

All of the principle open spaces on the development are visible with clear lines of site from multiple vantage points and/or buildings with windows. The first floor retail and upper story residential units have an abundance of glazing which provides the opportunity for significant observation of outdoor activities.

The lighting plan shows a well distributed level of lighting over the public and private circulation areas of the project. Lighting issues are additionally addressed under site plan standard 14-526 (d)6. below.

(ii) Access control that promotes authorized and/or appropriate access to the site.

The circulation areas around the parking garage and residential building

are accessible to the public but given the density of development and high degree of glazing found on the first floor retail and the residential tower there will be plenty of "eyes" observing the comings and goings on the site.

(iii) Territorial reinforcement that promotes a sense of ownership and responsibility through environmental design.

The mews and plaza are linked to the first floor retail and residential tower because of their proximity and design which promotes territorial reinforcement. Likewise these spaces are also visually and physically linked to the Bayside Trail. Pedestrian friendly first floor retail with large windows and the possibility of outside cafes also reinforces this feeling.

b. Provide adequate emergency vehicle access to the site in accordance with City standards for street widths and turning radii, as described in Section 1 of the Technical Manual.

The nearby street network is adequate for emergency vehicle access. The initial driveway plan of Pearl Street extension was widened at the request of the Fire Department. The first part of Pearl St is 28 feet wide while the remainder varies in width but generally there is at least 26 feet of pavement width when taking into account the surface area of the drop-off area.

A new service driveway has been added on the Traders Joes side of Midtown Four which provides a second means of access to the building as required by the Fire Dept. Comments from the Fire Dept. indicate the driveway should be widened from 15 feet to a minimum of 16 feet for fire service access.

c. Be consistent with City public safety standards, Section 3 of the City of Portland Technical Manual, including but not limited to availability and adequacy of water supply and proximity of fire hydrants to structures.

Comments from Acting Assistant Chief Keith Gautreau and Lt. Craig Messinger are shown as Attachment 8. They have concluded the site plan is acceptable provided their review comments are addressed. A summary of the review comments is provided below.

- A Dumpster is proposed to be placed inside of Building #3 for the trash holding area. Although this building will be provided with a full sprinkler system, we are requiring a two hour separation between this space and the remainder of the building.
- Mid-Town building #4 site plan has been updated to provide a service driveway on the Trader Joes side of the building which

provides a second means of access as required by fire access standards. The new service driveway needs to be widened from 15 feet to a minimum of 16 feet. Also signage and striping on the driveway shall be required indicating Fire Lane NO Parking.

- At this point, the PFD has not seen any current plans for Fire Alarm and/or Sprinkler systems.

- During construction, the PFD will require the following:
  Per NFPA 1, 16.3.4, Access for firefighting equipment.
  Per NFPA1,16.4.3, Fire Protection during construction. (Water supply)
  Per NFPA 16.4.3.3.2, Standpipe Installations in Buildings under construction.
  Per NFPA 16.7.1.6, Fire Extinguishers

Applicant has submitted supplemental information prepared by Fire Risk Assessment Inc. to evaluate the fire protection features of the general layout of the development. See Exhibit 6.

Each of the four buildings has a fire hydrant in front of it. The Pearl Street hydrant was tested in 2006 and had a static pressure of 112 psi and a residual pressure of 108 psi with a flow of 2,846 GPM according to the Portland Water District.

3. Availability and Adequate Capacity of Public Utilities:

Sanitary Waste

Public Services indicates there is adequate capacity to transport and adequate capacity to treat the waste flows of this project which is anticipated to generate wastewater flows of 102,194 gallons per day. All of the buildings will be served by an existing sewer in Somerset Street. See Attachment B-2.

Water

A letter from the Portland Water District confirms they will be able to serve the proposed project. Midtown One to Three will be served by an existing 16 inch water line in Somerset Street. In regard to Midtown Four, the "District will require that 350 feet of existing 6 inch main be replaced with 8 inch in Preble/Elm St. from Marginal Way". See Attachment B-2.

Power

CMP has confirmed their ability to serve the project. See Attachment B-2. The submitted midtown site plans reflects complete underground power service on

Somerset Street from Pearl Street to Elm Street although by necessity there may be a lone pole remaining at the corner of Somerset and Pearl (south side). With the construction of the midtown project and the raising of Somerset Street this represent a unique opportunity to bury the lines.

The two pad mounted transformers behind Midtown Four have been shifted to an underground location between Midtown Four and Midtown Three near the Elm Street sidewalk/esplanade. An underground transformer is proposed on the Chestnut Street side of Midtown Three. The only pad mounted transformers will be two transformers behind Midtown One adjacent to the Bayside Trail/ 161Marginal Way office building property line. An underground transformer will be placed along the Noyes warehouse street frontage to replace an existing transformer within the warehouse.

D. ***Site Design Standards***

1. Massing, Ventilation and Wind Impact:

a. The bulk, location and structures or height of proposed buildings and structures shall not result in health or safety problems from a reduction in ventilation to abutting structures or changes to the existing wind climate that could result in unsafe wind conditions for users of the site and or/or adjacent public spaces.

The minimum distances midtown buildings and or abutting buildings should not result in ventilation becoming a health or safety problem. For example, the distance between Midtown One and Two is 30 feet. The nearest offsite building to theses structure is in excess of 80 feet (E.Perry maintenance building). The nearest building to Midtown Three is the Noyes warehouse building a distance of about 60 feet. Midtown Four is located a distance varying from 7 to 28 feet from the Trader Joes building.

In regard to wind conditions, a wind study was previously prepared by RWDI based upon 165 foot high buildings which did identify some potential impacts. The report suggested that winter winds from the north and northwest might cause probable discomfort for sitting activities in the courtyard if Midtown One were built. See Attachment B-4.

As the current project is less than half that height, wind impacts are expected to be significantly moderated. Submission states “it is highly improbable that pedestrians on the trail, Elm St or Somerset St in this vicinity would experience any discomfort due to wind while sitting, walking, or jogging. As no dangerous wind conditions were found for any spaces with the taller buildings so no dangerous wind conditions will result from the substantially shorter buildings.”

b. The bulk, location or height of proposed buildings and structures shall minimize, to the extent feasible, any substantial diminution in the value or utility to neighboring structures under different ownership and not subject to legal servitude in favor of the site being developed.

The Midtown development abuts the Bayside Trail. At its closet point, Midtown One is 85 feet from the E. Perry scrap yard maintenance building and over 150 feet from the DHS building. Across the street from street from Midtown One and Two is a truck parking lot. Across from Midtown Three is a brick warehouse. Adjacent to Midtown Four is Trader Joes. All the buildings are 6 stories or 72 feet high except for the parking garage. In the surrounding context of the project site, the proposed building program and investment being made by the developer, the development is unlikely to diminish the value of neighboring structures based upon bulk, location or height.

c. HVAC venting systems

Submitted materials appear to indicate that HVAC systems will be located on the roofs of proposed structures away from public spaces and residential properties.

2. Shadows:

Not applicable. This standard excludes the B-7 zone.

3. Snow and Ice Loading:

See snow storage in Transportation Section of this report.

4. View corridors:

The massing, location and height of development shall not substantially obstruct public view corridors identified in the Downtown View Corridor Protection Plan, as provided in the City of Portland Design Manual, Appendix 1.

The proposed development is not located within a view corridor identified in the Downtown View Corridor Protection Plan.

5. Historic Resources:

a. Developments affecting designated landmarks or within designated historic districts or historic landscape districts:

Not applicable. The site does not follow within any of these categories.

b. Development adjacent to designated landmarks, historic districts or

historic landscape districts: when any part of a proposed development is within 100 feet.

Not applicable. The site does not follow within any of these categories.

c. Preservation and/or Documentation of Archaeological Resources.

There are no known documented archeological resources associated with the site.

6. Exterior Lighting

Street and Bayside Trail Lighting
Applicant is proposing to install the designated Bayside street light fixture and pole (medium height of 19 feet) along Elm Street (5 fixtures), Somerset Street (15 fixtures) and Pearl Street (2). The submission indicates these will be LED fixtures. The normal pole spacing as specified in the technical and design Standards is 80 to 100 feet on center assuming streets lights are on one side of the street. Applicant is proposing pole spacing along Somerset Street closer to a 60 foot interval and has requested a waiver according from this standard to enhance pedestrian lighting.

Applicant proposes to relocate the existing Bayside Trail lights between Chestnut and Pearl from the southerly to the northerly side of the trail in concert with raising the trail grade.

A written supplement indicates "all proposed fixtures; Bayside fixture and Bayside Trail fixture, are proposed as LED…"

Site Lighting
An updated site lighting plan including photometrics has been submitted. See Attachment Landscape and Lighting Plans L3.1.

The plan lists the following fixtures:
S1: Holophane Bayside medium fixture mounting height: 19'3"
S2: Relocated existing Bayside Trail light fixture
S3: Kim Altitude mounting height:10'
FX1: Wall mounted Olympus MH: 9'-0"
FX2: Wall mounted Prescolite 6" LED Lite Box, MH 9'-0"
FX5: Canopy Light: Prescolite 4" LED Downlight D4LED3 MH:16'
CB: AAL CB9R Concrete Bollards 31 5/8" light center height

Midtown Two features 27 wall mounted FX 2 fixtures while Midtown One has 17 of the same fixtures with 4 FX1 fixtures by the Pearl Street entrances.

Midtown Three includes 15 apparent wall mounted fixtures (FX2?) on the Somerset and Chestnut building sides but the plan doesn't match the light fixture

key. One light fixture is shown on the Bayside trail side. On Midtown Four 14 wall mounted light fixtures are shown but the plan doesn't match the light key.

The plan indicates that a "recessed LED stair lighting" is proposed by Midtown Four on the Elm Street side of the building. The note does not appear for the reminder of the stairways within the public right of way.

Catalog cuts need to be submitted for the wall mounted fixtures to confirm they are non-glaring and deflected downward.

A lighting plan for the parking garage has been submitted. See Attachment L3.2. The plan lists the following fixtures to be utilized for the parking garage.

G1: Beacon Lighting Viper LED Pole Mounted Light Fixture (MH: 20")
G2 Hubbell Loredo Series Wall Mounted LED (MH: 8")
G3 Hubbell Sedona Series Ceiling Mounted LED
G4 New Star Victory 2-4 N LED Linear Luminaire (Stairwells)

Three of fixture G1 (20 foot mounting height) will be mounted on top of the parking garage. Typically about 46 G3 ceiling mounted fixtures will be installed for each floor of the garage.

Catalog cuts of the fixtures need to be submitted to confirm that they are non-glaring and deflected downward.

Exhibit 19 under exterior lighting states "exterior lighting will be located only at entrances for safety, security and a sense of welcome, and at egress and service doors as required by code. These lights will be shielded or cut-off fixtures that will emit light upwards nor into adjacent residential properties."

Summary

A lighting and photometric plan has been submitted. Catalog cuts of the light fixtures need to be submitted except for the Bayside street light fixture and Bayside Trail fixture. The exterior photometric plans indicate that the average illumination levels for each building site (1.81 to 2.4) exceeds the technical lighting standard (section 12.2.3; illumination levels) of 1.25 for average illumination. Two of the Midtown building sites meet the maximum illumination levels while Midtown Three and Midtown Four exceeds the maximum illumination levels (7.7 and 6.8 respectively).

The previous approval referenced that the parking garage would include a motion sensor unit to address energy efficiency and public safety and that the fixtures would operate at 50% output until activated by either pedestrian or vehicle motion. The fixtures were to be mounted between the double T beam structure to allow uniform distribution while screened from exterior view. Confirmation of

whether these fixtures were to be included in the present plan was not evident in the current submission.

Given the above, we are recommending that site lighting be a condition of approval with staff review and approval. We will work with the applicant to reduce the lighting levels while recognizing the applicant's desire to have an appropriate level of light. During this process staff can approve a waiver of the site lighting standards as necessary.

The Planning Board will be processing a waiver for the spacing of street lights for the Bayside light fixture as previously discussed.

7. Noise and Vibration

HVAC equipment appears to be located on top of buildings in enclosed screening. No generators are shown on the site plan.

8. Signage and Wayfinding

A signage plan has been submitted for all four buildings with 15 sides of the buildings represented. The plan is shown on Attachment Architectural Plans A800 (signage elevations). These drawings serve as signage concepts for each façade but do not denote a final sign design for individual tenants. The drawings show signage placement on the building and a calculation in square feet for each sign.

Staff has reviewed the sign plan with Ann Machado, Zoning Specialist, for conformance with zoning requirements. Comments regarding particular signs not meeting maximum size requirements are noted below.

Unless otherwise indicated in the description that follows, proposed signs are mounted at the first floor level just above the storefront windows. Such retail signage is described as internally illuminated.

Midtown One – A residential identification sign (marquee mounted) is shown on the Pearl Street side of the building not to exceed 150 sf. On the Somerset Street side (south) a retail signage of up to 300 sf is proposed which exceeds the staff calculated maximum allowable size of 286 sf. Retail signage of up to 144 sf is proposed along the mews (west).

Midtown Two – On the Somerset Street side (south) of the building, applicant is proposing up to 620 sf of first floor retail signage which exceeds the staff calculated maximum allowable size of 480 sf. A building identification sign (200 sf) placed vertically on the stairway/elevator tower spanning four floors is proposed.

On the trail side (north), applicant is proposing up to 620 sf of first floor signage which exceeds the staff calculated allowable maximum size of 480 sf. Two upper level tenant signs are proposed (top of the building) with each sign having 100 sf.

On the Chestnut Street side (west) the first floor tenant signage of up to 860 sf exceeds the staff calculated allowable maximum size of 244 sf. A 200 sf upper level building identity sign is proposed vertically adjacent to the stair tower.
A street number building sign (not to exceed 6 sf) and a parking identity sign (not to exceed 50 sf) is proposed along the Somerset Street side of the building.

Midtown Three – On the Somerset Street elevation, a first floor retail signage of up to 860 sf is proposed which exceeds the staff calculated maximum allowable size of 800 sf. A residential identification marquee sign is proposed not to exceed 150 sf.
On trail or north side, first floor retail signage of 160 sf is proposed. We assume this will change since the applicant at the January 13th workshop indicated the berm will be removed exposing more retail frontage to the trail. The plan should be updated if that is the case.

On the west side of the building first floor retail signage of 60 sf is proposed which exceeds the staff maximum calculation of 56 sf. The east side retail signage of 160 sf is within allowable limits.

A building street number sign (4 sf) is proposed along Somerset Street.

Midtown Four – On the east side, applicant proposes up to 150 sf and an additional 80 sf of retail signage while staff calculates the maximum allowable signage as 142 sf and 68 sf, respectively. On the south retail signage is proposed at 250 sf which is within allowable limits.

Wayfinding – Applicant has not submitted wayfinding signage but that is relatively minor issue that can be handled administratively. Signage related to the Bayside Trail will be important so the public is aware of the pedestrian passageways between Somerset Street and the trail.

Summary: The submitted concept signage plan indicates size and placement of proposed signs on the buildings. A number of the signs shown on the façade elevations exceed the maximum size requirements. The signage plan should be revised reflecting a signage plan in conformance with the sign ordinance unless the applicant seeks a waiver from these requirements. We are recommending that the signage plan be a condition of approval with final review and approval by the Planning Authority.

9. *Zoning Related Design Standards:*

(a)(i) B-7 design standards: Development shall be designed to support the

development of dense, mixed-use neighborhoods with attractive, safe and convenient street level pedestrian environments as demonstrated by compliance with all applicable design standards listed in the Design Manual.

The B-7 design principles and standards are addressed in section XII of this report.

XI. B-7 Mixed Use Urban District Zone Design Principles and Standards

The development is subject to the B-7 Mixed Use Urban District Zone Design Principles and Standards. For the Board's convenience we have included the complete text of the standards along with staff review comments. For standards in which the applicant is requesting a waiver, the applicable text was shifted to the Requested Waivers section of this report rather than repeating the standard twice in both sections.

The Design Manual, under Review and Determination of Compliance, states the following: *"To be approved, site plans must adhere to the applicable design standards taken as a whole, and present the best deign response to the standards achievable for the overall design program. A project shall be rejected as not meeting the applicable design standards if the project, taken as a whole, fails to meet or address applicable design criteria."*

The applicant's response to the standards is shown in Exhibit 17 although the complete text of the standards is not shown.

I. PURPOSE
II. APPLICABILITY
III. PRINCIPLES AND STANDARDS

PRINCIPLE A: URBAN DESIGN
STANDARD A-1: **Sense of Place**
STANDARD A-2: **Edges and Transitions**
STANDARD A-3: **Gateways**
STANDARD A-4: **Views and Landmarks**
STANDARD A-5: **Pedestrian Environment**
STANDARD A-6: **Mix of Uses**
STANDARD A-7: **Building Orientation**

PRINCIPLE B: ACCESS AND CIRCULATION
STANDARD B-1: **Streets and Alleys**
STANDARD B-2: **Street Connectivity**
STANDARD B-3: **Mid-Block Permeability**
STANDARD B-4: **Sidewalks and Crosswalks**
STANDARD B-5: **Green Streets**
STANDARD B-6: **Multi-modality**
STANDARD B-7: **Continuity of street level uses**

STANDARD B-8: **Traffic-calming**
STANDARD B-9: **Streetscape Design**
STANDARD B-10: **Encroachments**
STANDARD B-11: **Lighting**

PRINCIPLE C: PARKING, LOADING AND SERVICE AREAS
STANDARD C-1: **Parking Structures**
STANDARD C-2: **Parking Entrances**
STANDARD C-3: **Active Uses**
STANDARD C-4: **Back of Parking Structures**
STANDARD C-5: **Decks and Ramps**
STANDARD C-6: **Surface Lots**
STANDARD C-7: **Bike Racks and Pedestrian Amenities**
STANDARD C-8: **Service, Utility and Mechanical Infrastructure**

PRINCIPLE D: OPEN SPACE AND THE PUBLIC REALM
STANDARD D-1; **Open Space Design**
STANDARD D-2: **Bayside Trail**
STANDARD D-3: **Landscaping and Street Furniture (private and public)**
STANDARD D-4: **Pedestrian Amenities**
STANDARD D-5: **Public Art**

PRINCIPLE E: ARCHITECTURAL DESIGN
STANDARD E-1: **Architectural Design**
STANDARD E-2: **Height**
STANDARD E-3: **Massing**
STANDARD E-4: **Articulation**
STANDARD E-5: **Flexibility of Interior Layout**
STANDARD E-6: **Entrances**
STANDARD E-7: **Windows**
STANDARD E-8: **Storefronts**
STANDARD E-9: **Back Sides of Buildings**
STANDARD E-10: **Rooftop Appurtenances**
STANDARD E-11: **Fences and Walls**
STANDARD E-12: **Materials**
STANDARD E-13: **Transparency**
STANDARD E-14: **Illumination**
STANDARD E-15: **Weather Protection**
STANDARD E-16: **Signage**
STANDARD E-17: **Historic Buildings**
STANDARD E-18: **Sustainable Design**
STANDARD E-19: **Shadows**
STANDARD E-20: **Wind**

I. PURPOSE

The *B-7 Design Principles and Standards* are intended to guide Bayside neighborhood residents, developers, designers, City officials and staff and others in the creation of a vibrant, aesthetic and sustainable neighborhood which is dense, mixed-use, and pedestrian-friendly. The B-7 Design Standards support excellence in urban and architectural design which contributes to a strong sense of place, encourages 24-hour activity, promotes multi-modal transportation, provides public spaces and protects scenic views. The B-7 Design Standards meet the following goals:

1. Support and reinforce the goals of *A New Vision for Bayside*.

2. Accentuate Bayside as a gateway to the city by highlighting major corridors and corners.

3. Preserve the neighborhood building scale that is typical of the small blocks of Portland.

4. Extend the existing street grid and create mid-block permeability, in order to provide opportunities for multi-modal access, service alleys, public spaces, view corridors, and access to light and air. Design pedestrian oriented streets with significant landscaping.

5. Preserve view corridors toward Back Cove and the White Mountains, as well as views looking toward the spine of the Portland peninsula, as shown in the *Bayside Height Map*.

6. Create dense, mixed-use, multi-modal development that is adjacent to infrastructure, highways, jobs and educational opportunities.

7. Create spaces of various scales that are attractive to creative industries, such as art, architecture, design, film, media, music, performing arts, publishing and software design

8. Allow building heights that create space for a critical mass of people needed to make a new urban neighborhood successful. Ensure that development is human in scale at the pedestrian level.

9. Encourage architecture which expresses the aesthetic of the time in which it was built, that respects local urban design patterns, and that is compatible with adjacent traditional residential neighborhoods. The Portland Peninsula has been Maine's most urban area for several centuries and new architectural styles and materials are often introduced here. It is expected that this will continue to be the case as sites in the B-7 Zone are redeveloped.

10. Incorporate "green" design, smart growth policies, and sustainable technology into the urban design, site plan design, and architectural designs of the Bayside neighborhood.

11. Create a variety of mixed-use commercial opportunities that serve the neighborhood, city and region. Ensure that commercial development which is regional in scale, is compatible in design and massing to the adjacent traditional residential neighborhoods.

12. Provide a hierarchy of green spaces on public and private land with parks, playgrounds, plazas and trails. Ensure that the streetscape design enhances the pedestrian experience.

13. Use authentic building materials and construction methods that are of the highest quality and appropriate to an urban environment and expected to last at least 50 years.

14. Adaptively reuse existing buildings.

III. PRINCIPLES AND STANDARDS

PRINCIPLE A: Urban Design

All development in Bayside shall be designed to create a strong urban identity and sense of place. *Buildings may be a variety of architectural styles, particularly those that are innovative and express the aesthetic of the time in which they were built, and shall be organized according to principles of urban design that integrate with the urban fabric of surrounding neighborhoods and Portland as a whole. These principles shall strengthen the overall sense of place, accentuate views, gateways and landmarks, establish defined boundaries and ensure sensitive transitions to surrounding neighborhoods, enhance the physical amenities of the neighborhood, and create a pedestrian oriented environment with safe and vital streets.*

STANDARD A-1: **Sense of Place.** The identity and "sense of place" of Bayside is based on design elements that contribute to the character of the district. New development shall respond to unique characteristics such as: existing patterns of design and development; opportunities to extend the street grid; changes in topography; proximity and views to significant buildings, amenities or natural features; access to light and air; connection to the pedestrian and bicycle network and public spaces; access to the regional transportation system, and opportunity for innovative design.

All development shall meet the goals of *A New Vision for Bayside*. The City's Bayside Streetscape Subcommittee further identified characteristics which will strengthen the identity of the district such as building on the industrial heritage of the past; enhancing the artistic personality of Bayside in the future; respecting the vernacular of existing buildings; encouraging innovative architectural design that expresses the aesthetic of the time in which it was built; encouraging adaptive reuse; respecting the "patina" of age and

maintaining historic materials; strengthening the connections to adjacent neighborhoods of Bayside, Downtown, Back Cove, Deering Oaks, and the East End; preserving views; mitigating the widths of the major arterials such as Marginal Way and Franklin Arterial which border the neighborhood; highlighting Portland and Cumberland Streets as "Main Streets" to the traditional residential portions of the neighborhood; mitigating traffic/pedestrian concerns across major streets, creating mixed uses that have a neighborhood scale; creating neighborhood green spaces as places to gather; and utilizing native plant materials in landscaping.

> **Staff Comment:** The development meets goals of the Bayside Plan by building new housing, remediating a brownfields site, providing a multi-level parking garage, supporting transit-oriented development, and installing new streetscape improvements that improve walkability. The project incorporates mixed uses including first floor retail with residential above. The mews and attached plaza provide gathering spaces that residents, as well as the public, can enjoy. New connections to the Bayside Trail include the mews and Pearl Street extension. The project takes the approach of providing new design elements to the neighborhood while making reference to the industrial context.
>
> The area behind MidtownThree was recently revised to open the retail space to the Bayside Trail, while reducing or eliminating the berm in this location. As of this submission, there is not a treatment plan for the open space abutting MidtownThree and the connections to the trail. (See also *Principle D Open Space and the Public Realm*).

STANDARD A-2: **Edges and Transitions.** Transitions between larger scale, mixed use buildings and smaller-scale residential uses shall be designed so that there is a seamless connection to adjacent residential neighborhoods to ensure that these zones remain stable, quiet, and secure. This shall be achieved through the mitigation of height, massing, stepbacks, materials, and details and design of the façade at the pedestrian level. Potentially nuisance features or uses, such as dumpsters and air handlers, parking, service areas, blank walls, or backs of buildings shall not be sited or designed in a manner that forms a boundary to the residential neighborhood. Larger scale developments may use public open spaces to provide transitions to lower scale uses. [See Standard C-8 Service, Utility and Mechanical Infrastructure, and Standard E-9 Back Sides of Buildings].

> **Staff Comment:** Midtown does not directly abut a residential block. The retail storefronts provide a pedestrian scale to the lower floors of the building. The project mitigates height and scale to some degree in its façade articulation and upper floor stepback strategies.

STANDARD A-3: **Gateways.** Gateways serve as landmarks, signal arrival into neighborhood and the city, and help to promote the distinct identity of Bayside. The designated gateways in Bayside are shown on the *Bayside Street Hierarchy Map.* These gateways shall be visible to and oriented to vehicular, bicycle, and pedestrian traffic; and shall be of the highest quality materials appropriate to an urban environment.

Development at designated gateways shall include elements such as dramatic architectural forms and details, public space, distinctive paving patterns and landscaping, public art, historical markers, water features, unique accent lighting, wayfinding or "welcome" signage, and crosswalks.

> **Staff Comment:** Not applicable. This project is not located at one of the identified Gateways for Bayside.

STANDARD A-4: **Views and Landmarks.** View corridors to buildings and natural resources help to define the character of Bayside. New development shall be designed with consideration for its impact on significant views and view corridors as shown on the Downtown Height Study and the Bayside Height Overlay Map, as well as other important views as may be identified during the City's development review process. View corridors shall be highlighted with significant architecture and quality materials. New development shall be sited so that it does not block view corridors. Taller portions of structures shall step back out of the view corridor. Roof top appurtenances shall not to be visible from view corridors, nor shall they obscure important landmarks. Additionally, development along corridors on the east-west axis through Bayside shall be evaluated to maximize sun and light. [Also see Standard E-10 Rooftop Appurtenances].

> **Staff Comment:** Applicant requests a waiver from the View Corridors and Building Stepbacks requirements of this section.
>
> The Myrtle Street corridor will be blocked by the 7 story parking garage while the Cedar Street corridor will be blocked by the 6 story residential building, MidtownThree. The Cedar Street corridor is less impacted because there are already buildings within the view corridor, including the Noyes storage building uphill, and the student housing at Marginal Way. The Planning Staff support the request for waivers of the view corridors for Myrtle and Cedar Streets due to the existing structures partially blocking the Cedar Street views and the partial blocking of Myrtle Street.
>
> Staff identified the approach from Elm Street to MidtownFour as a view corridor to a building that will help define the character of Bayside (as the standard calls for). The MidtownFour building should highlight its prominence in the Elm Street view corridor through its architecture. The revised architecture acknowledges and highlights this context by 1) orienting the primary entry façade of the building to face the Elm Street approach, 2) adding emphasis to this elevation of the building with additional height and a cornice line, and 3) providing façade articulation and a canopy which direct visual attention to the building entry. In order to better assess the success of these design features at meeting the standard, refer to the contextual renderings depicting how the building will be viewed coming down Elm Street.
>
> Of additional concern is the view of MidtownFour from the Bayside Trail approach. The proposed building elevation shows a high proportion of solid,

EIFS wall facing the trail. If additional fenestration could be provided on this facade it would alleviate the concerns about the quality of building facing the public amenity of the Bayside Trail.

STANDARD A-5: **Pedestrian Environment.** Development on public streets or public spaces shall be human scale at the pedestrian level and enhance the pedestrian environment through the use of elements at the first floor such as a mix of uses; detailed facades; building materials and signage of the highest quality; fully-functioning entries oriented to the street; active windows and storefronts; awnings and weather protection; outdoor seating and sales displays; traffic calming; adequately sized sidewalks; appropriately scaled streetlights; gathering spaces; trees and landscaping; street furniture; and amenities such as public art, water features, and historical markers. [See Principle B Access and Circulation, Principle D Open Space and the Public Realm, and Principle E Architectural Design].

Staff Comment: All buildings including the parking garage will have retail on the first floor along street frontages. All buildings have fully functioned entries oriented to the street. Street lights (Bayside light fixture) are proposed along the project street frontage while the Bayside Trail light fixture will be retained along the trail. The project will have double the normal number of Bayside streetlight fixtures. Generally, proposed sidewalks are ample and appropriate for a pedestrian oriented environment with appropriate revisions at the Somerset and Elm corner as previously noted. Street trees are proposed along the street frontage and the trail. Benches are proposed along the street and trail. The mews and plaza as well as the granite block seating wall enhance the pedestrian experience. The retail space adjacent to the Courtyard is designed to allow entry doors, however the location of any such doors will depend upon tenant fit-out preferences.

The Bayside Trail forms the northerly edge of the project. Retail on the first floor of the garage near Chestnut Street has the possibility of entry doors, but there is no assurance of functioning doors being provided. Applicant has indicated that the berm behind Midtown Three will be removed providing potential access from the Bayside Trail with storefronts and public entry points mid-block. Details of the site treatment adjoining the Bayside Trail are a proposed condition of approval.

Of concern is the note on sheet 1-A201 that indicates any proposed storefront depicted in the plan may be substituted at the discretion of the developer for EIFS panel. In order to maintain a high quality pedestrian environment, staff recommends that any substitution of other materials for storefront glass be minimized, and that if substitutions are permitted, the substitute material should be one of the “predominant” materials listed in Standard E-12 subject to the approval of the Planning Authority.

STANDARD A-6: **Mix of Uses.** New development in Bayside shall incorporate a mix of residential, retail, commercial and open space uses of various types and scales in order to serve the neighborhood, city and the region. All new development shall be designed to allow a flexibility of use over time [See Standard E-5 Flexibility of Interior Layout].

> **Staff Comment:** The development provides a mix of uses including retail and residential uses. Private open space (but publicly accessible) has been provided near the Bayside Trail such as the mews and plaza adjacent to midtown one.

STANDARD A-7: **Building Orientation.** Buildings shall be located at or near the property street line in order to provide very clear definition and character to the street. This will complement and complete the established streetwall pattern that is predominant on the Portland peninsula. The primary facades and entrances of buildings shall be oriented to streets, major pedestrian routes, or open spaces in order to enhance the pedestrian-oriented environment. The primary facades and entrances of buildings shall not be oriented toward parking lots.

> **Staff Comment:** All buildings will be built within 10 feet of the street right-of-way line. Such facades are oriented to the street.

PRINCIPLE B: Access and Circulation

Streets and sidewalks in Bayside shall be designed to encourage a pedestrian friendly, walkable environment. *The goal is to create streets that are scaled and designed for pedestrian and bicycle use; are well landscaped; promote traffic calming; allow for mid-block permeability, and extend the pattern and scale of Portland's traditional street grid and blocks in accordance with the 1914 Atlas of the City of Portland.*

STANDARD B-1: **Streets and Alleys.** Streets and alleys shall be scaled for expected vehicle, pedestrian, bicycle, and transit activity; support mixed use development; be well landscaped; promote traffic calming; allow for on-street parking; and follow the existing scale and pattern of Portland's street grid and blocks. All development shall extend the grid as feasible. The *Bayside Street Hierarchy Map* details the hierarchy of streets.

Development along all streets, public rights of ways and open space shall incorporate the City's streetscape standards for Bayside which include specifications for sidewalks, streetlights, street furniture, fencing and walls, landscaping and signage.

> **Staff Comment:** The plan reflects the City streetscape standards including brick sidewalks, street trees/planters, brick sidewalks and the Bayside street light fixture. On-street parking is proposed. Issues involving functional sidewalk width at MidtownFour and at the corner of Somerset and Elm are discussed in other sections of this report.

STANDARD B-2: **Street Connectivity.** The prevailing pattern of streets on the Portland peninsula runs parallel and perpendicular to the waterfront. This pattern is expressed in relatively short blocks, buildings with small footprints and narrow facades, reasonable walking distances between blocks, and frequent opportunities to turn corners or move from one street to parallel streets. Extension of the street grid pattern will ensure that the massing of new development is consistent with the traditional scale and urban patterns of Portland, protect view corridors, provide opportunities for sun and airflow, enable efficient and flexible vehicular and pedestrian circulation, and provide opportunities for service alleys. New development shall coordinate with, intersect, and extend existing streets and sidewalks at multiple access points. See the Downtown Height Study and the Bayside Height Overlay Map for key view corridors and potential street extensions. As land use and development opportunity allow, Somerset Street shall be extended west towards Forest Avenue.

> **Staff Comment:** Applicant requests a waiver from the extension of street grid pattern requirements of this section for Myrtle Street and Cedar Street.
>
> The Applicant has allowed for the extension of Pearl Street in its design in order to meet this standard. The proposed placement of buildings preclude extension of the street grid pattern for Myrtle Street and Cedar Street, however, the streets that would intersect the garages terminate three and two blocks respectively away from the Project and do not presently abut the applicant's property. The applicant is providing the 30' wide mews from Somerset to the Bayside Trail, which, although it does not line up with Myrtle Street, provides a good mid-block connection from Somerset Street to the Bayside Trail between Pearl and Chestnut. **Staff therefore supports the request for a waiver from the extension of Cedar and Myrtle Streets.**

STANDARD B-3: **Mid-Block Permeability**. Development shall incorporate mid-block permeability that is perpendicular to Marginal Way, and where feasible that is parallel to Marginal Way, in order to encourage building footprints that are in scale with the existing traditional pattern of development in Portland. These corridors shall be developed as street extensions, service alleys with public access, pedestrian corridors, trail access, plazas and pocket parks. These corridors shall be designed for the pedestrian first, with limited vehicular accessibility. These corridors shall not be designed solely as access to parking or loading areas, and shall be designed to be handicap accessible, well lit, paved in concrete, brick or stone, and appropriately landscaped. Asphalt surfaces shall not be allowed. (Wharf Street in the Old Port is an example of a desired level of design for this type of public way).

A primary circulation system shall be developed through streets, alleys, sidewalks and trails. A secondary circulation system shall be provided internally within buildings for public use through the use of fully functioning entrances on all street sides of a building, and internal lobbies and corridors that permeate through the ground floor of a building, unless the building program precludes such design and cannot be modified to meet this requirement due to small scale or security reasons.

Many larger buildings in Downtown Portland have incorporated frequent opportunities to pass through the interiors of street-level spaces. This element is important to the liveliness and accessibility of retail businesses and cultural amenities. The development or redevelopment of larger sites, and the potential assembly of more than one block or parcel through the discontinuance of intervening streets, shall carefully consider this characteristic pattern of pedestrian circulation.

> **Staff Comment:** This issue is also discussed in a prior section of this report starting on page 13. The Planning Board is being asked to consider a partial waiver of this standard. As the Board will recall a condition of approval of the subdivision amendment granted in January, 2014 which removed a 20' wide by 20 ' high by 140' long easement through the lot on which MidtownThree is located, "*provided that a pedestrian passage be provided in the Phase Two site plan*".
>
> The Standard anticipates a "primary" circulation system and a "secondary" circulation system. The recently added doors on the trail side of MidtownThree represent a "secondary" circulation system because it is internal to the building. Staff believes that a partial waiver from this standard is therefore needed. Ideally this circulation through the building would be an arcade-style hallway, open during normal business hours, to provide passage through the building. If that is not possible, staff has a concern that the retail tenant of the space would discourage or simply not allow passage through their space by the general public. For example, some tenants might require a membership to enter the space, which would mean that the general public may not be able to use the space, or at the least may feel unwelcome there.
>
> Staff supports a partial waiver of this standard to provide only a secondary circulation system, if the secondary system can be shown to provide an adequate substitute for the "primary" options. Ways of achieving this objective include a specific plan for specific public access through the first floor of Midtown Three including posting that the public is welcome to travel through the space through normal business hours, good lighting and accessibility, and/or a wayfinding measure. As noted elsewhere, the north side of MidtownThree shows storefront facing the Bayside Trail, and will allow passage from both sides and through, but there is no plan for surface treatments between Midtown Three and the trail. The issues discussed in this paragraph are addressed as conditions of approval to the waiver request as reflected in the Motions section of this report.
>
> The proposed condition of approval for mid-block permeability addresses the staff concerns about the terms and details of the access through the building, while recognizing that these details are dependent on the end user/tenant of the first floor. The proposed condition therefore allows for review of those aspects prior to a certificate of occupancy of the first floor, and also addresses the trail side improvements and berm removal, and associated cost allocations between the

applicant and the City. The City has agreed to pay for the costs associated with the removal of the berm containing contaminated soils to the extent that such soils cannot be used as fill under the project foundations, which usage appears to be unlikely based on the latest information available.

Applicant is providing mid-block permeability between Pearl Street and Chestnut Street in the form of a mews. This is an excellent solution to meeting this Standard.

STANDARD B-4: **Sidewalks and Crosswalks.** The provision of all sidewalks and crosswalks shall conform to the specifications and details contained within the City's *Technical and Design Standards and Guidelines*, and the City's Crosswalk Standards at a minimum. New sidewalks along public streets shall be at least 10 feet wide measured from curb to property line where feasible, except where it can be demonstrated that site constraints preclude such width. Sidewalks that are 12-15 feet wide and bump-outs shall be provided along A and B Streets where feasible, in order to allow for amenities such as larger tree wells, landscaping, café seating, shop displays and public art. Where appropriate, crosswalks shall be transversely striped and at a minimum as wide as the sidewalk to which it connects.

Staff Comment: The sidewalk in front of the phase one parking garage is 14 feet wide. The residential building (MidtownOne) has 2 sidewalks at different levels because of the grade difference between Somerset Street and the first floor elevation of the building. A 6 foot wide sidewalk is provided adjacent to street curb while a 9 to 12 foot wide sidewalk is provided along the face of the building. Should this section of Somerset Street near Pearl Street be raised in the future, the ramp system could be eliminated and the sidewalk could have an overall width of 20 feet.

The functional widths of the sidewalks and the Somerset-Elm corner are discussed in earlier sections of this report. Bump outs and cross walks are provided at all street intersections.

In numerous locations, the project as currently designed does not meet City Technical Manual standards for ADA-compliance and does not meet the streetscape design and pedestrian accessibility standards as described by the B-7 Design Principles and Standards. An approval of this project should include a condition that this issue be resolved to the satisfaction of the Planning Authority. The proposed conditions of approval under the site plan transportation standards address the revisions needed to comply with this and the site plan pedestrian circulation standards. These proposed conditions also require appropriate public access easements be provided for portions of sidewalks located on private property outside of the street right of way, especially those portions critical to the ADA accessible path.

STANDARD B-5: **Green Streets.** Frederick Law Olmsted created networks of "Green Streets" in many cities in which major streets were landscaped to enhance the connection between parks and open spaces throughout a city, and were designed for both pedestrian and vehicular use. The Olmsted firm created a plan for Marginal Way as a green boulevard that would have connected Deering Oaks to the Eastern Prom. As feasible, new development shall support the opportunity to realize this historic plan, and to shall apply the principles of Green Streets to streets in Bayside. This will reinforce connections to Back Cove, Deering Oaks and the Eastern Prom.

> **Staff Comment:** Applicant proposes street trees along Somerset Street and will plant additional trees along the Bayside Trail. A greenscreen will be planted along the Somerset Street and Bayside Trail façade sides of the parking garage.

STANDARD B-6: **Multi-modality.** *A New Vision for Bayside* designates all of Bayside as a transit-oriented development. All new development in Bayside shall accommodate a full range of multi-modal transportation options. New development shall create a functional and safe environment that provides a continuous travel corridor for pedestrians and bicycles which serves the same major destinations as automobiles. New development along transit corridors shall incorporate facilities for transit users. A future train station is proposed at the end of Chestnut Street at I-295. Development along Marginal Way shall be designed to address the potential for rail service.

> **Staff Comment:** The project accommodates a range of multi-modal transportation options including pedestrians (wide sidewalks and connections to the trail), bicycle (bike storage and connections to the trail), vehicles (parking garage) and transit (site is on a bus line and a bus shelter is shown on the plan). The reconstruction of Somerset Street accommodates multi-modal users.

STANDARD B-7: **Continuity of Street Level Uses.** Continuity of pedestrian-oriented uses along street frontages, particularly A and B streets, is important to encourage pedestrian interest, movement and safety. Service entrances and vehicular entrances which interrupt the continuity of street-level uses shall not be located along A or B streets, or areas of high pedestrian activity. Where such uses are unavoidable, extraordinary care shall be taken to assure that the pedestrian environment remains both attractive and safe, and such interruptions shall be kept to a minimum in both numbers and lengths. In such instances, the pedestrian shall clearly have priority.

> **Staff Comment:** Applicant requests a waiver from the requirement that service entrances and vehicular shall not be located along A or B (Somerset) streets or areas of high pedestrian activity. The B-7 standard recognizes that this may unavoidable in some instances. Constraints such as limited lot depth and dense development require that service and loading take activities takes place in parking areas along the street. Staff supports the waiver requested to allow vehicular entrances on Somerset Street.

STANDARD B-8: **Traffic-calming.** Development on public streets shall support traffic calming measures to the extent allowed by City and State policies and requirements at a minimum. Particular attention shall be paid to the traffic calming measures taken where the Bike Trail will cross Chestnut Street. Potential traffic calming measures include gateway treatments, corner neck-downs, narrowed travel lanes, speed tables, trees and landscaping, and transversely striped crosswalks. Crosswalks shall be at a minimum as wide as the sidewalk to which they connect.

> **Staff Comment:** Proposed streetscape improvement such as street lights, street trees, sidewalk neck-downs and on-street parking along Somerset and Elm Streets contribute to traffic calming. An existing four way stop at Chestnut and Somerset Street will also help calm the additional increment of traffic associated with this development.

STANDARD B-9: **Streetscape Design.** New development in the public realm shall utilize the City's streetscape standards for Bayside which include specifications for sidewalks, streetlights, street furniture, fencing and walls, landscaping and signage in order to create a unified image of the neighborhood. This information is provided in the appendix. Privately owned, publicly accessible open spaces shall be designed to coordinate with the surrounding area by incorporating the City's standards for streetscape design elements. Streetscape design on privately owned, publicly accessible open spaces may select a different style which complements the City's standard for the area if the design of the space commands a special, unique, and equally distinctive feature.

> **Staff Comment:** Proposed streetscape improvements largely follow City streetscape standards such as brick sidewalks, lighting, street lights, granite raised planters and bike hitches. Other streetscape improvements such as the granite block seating wall, modular pavers in the trail, and ornamental metal fence also help create a unified image and compliment City standards. Comments on the functional width of the Midtown Four sidewalk and Somerset-Elm corner sidewalk are discussed earlier in this report.

STANDARD B-10: **Encroachments.** Encroachments on the sidewalk shall be sited and designed to encourage pedestrian activity. The design, location, and construction or installation of such features shall be human scale, shall be appropriate in character with the surrounding buildings and open space, shall be comprised of durable and attractive materials, and shall be consistent with the City's streetscape standards. The encroachment shall not impede the visual transparency or the perceived physical interaction with the internal uses of the building.

> **Staff Comment:** Encroachments within the sidewalk include raised granite planters, handicap ramps with planters, benches, street lights and benches. The materials are durable and consistent with city streetscape standards. A challenge in terms of pedestrian flow has been the placement of handicap ramps and planters to address grade issues such as in front of the Midtown One and Midtown Three at the corner of Somerset and Elm. In this case a lower level sidewalk is

provided near the street curb while a second sidewalk (at the higher level) has been provided adjacent to the residential building which encourages and promotes pedestrian activity.

There is a possibility that the Elm Street and Somerset intersection could be raised to eliminate the existing sag in Elm and match the elevated grade of Somerset Street in the future, thereby reducing or eliminating the need for ramps and stairs at the westerly end of the project but no funding source has been identified.

In numerous locations, the project as currently designed does not meet the City Technical Manual standards for ADA-compliance and does not meet the streetscape design and pedestrian accessibility standards as described by the B-7 Design Principles and Standards. An approval of this project should include a condition that this issue be resolved to the satisfaction of the Planning Authority.

STANDARD B-11: **Lighting.** Street lights along public streets shall be scaled to the size, traffic volume and use that is typical for that street, as defined in the street hierarchy in Standard B-1 Streets and Alleys. Street lighting shall comply with the *Technical and Design Standards and Guidelines* at a minimum and may also be required to meet The Illuminating Engineering Society of North America Standards (IESNA), and the Leadership in Energy and Environmental Design (LEED) standards for light pollution.

Staff Comment: The applicant will utilize the appropriate Bayside street light fixture along all street frontages as provided for in the Technical and Design Standards and Guidelines. (Note that we are in the process of updating our specification to LED versions of the Bayside lights, which should be utilized in this development.) Midtown however wishes to install more street lights at closer spacing than provided for in the standards. Applicant has requested a waiver from the normal spacing requirements. See discussion in Section 10, summarized as follows:

> Higher intensity lighting is appropriate for such retail locations and the applicant sees to create a uniform appearance along the ground floor retail areas for all phases of the development. The lighting will enhance the retail streetscape surrounding Somerset Street and the Bayside Trail, as well as the public areas created within the development, and will enable nighttime use of these areas, while also creating a safer environment for these public areas at night. The applicant is proposing the Bayside standard light at a closer spacing, 60' on center, versus the Technical Manual spacing specification of 80 to 100 feet on center for one-side lighting applications. **Planning staff supports the waiver of the spacing of streetlights on Somerset Street.**

Sidewalk Lighting: Sidewalks shall be lit with a combination of pole mounted, building mounted, or bollard lighting, as well as light from store windows, entries and other building features. The placement of lighting fixtures shall be pedestrian scaled, downwardly directed, and shielded or reflected so as to prevent glare and excess lighting spilling onto private property or skyward.

Staff Comment: See above comment.

Open Space: Lighting along public open spaces shall be of a height in scale with the space, as determined by City staff. Privately owned, publicly accessible open spaces may select a different luminaire style which complements the City's standard for the area if the design of the space commands a special, unique, and equally distinctive feature.

Staff Comment: Applicant is relocating the existing Bayside Trail light fixtures and poles from the southerly side to the northerly side of the trail.

PRINCIPLE C: Parking, Loading and Service Areas

Parking, loading and service areas shall be designed and located so as to present an attractive façade to neighboring use, to minimize their visual presence in the neighborhood, and to minimize the impact along pedestrian oriented streets and residential areas.

STANDARD C-1: **Parking Structures**. Parking structures shall be designed to be compatible with adjacent uses and architecture in form, bulk, massing, articulation, and materials. These structures shall incorporate architectural design elements that provide visual interest on all sides visible from public rights of way, for the full height of the structure. The visual impact of parking garages along primary and secondary streets shall be mitigated through the use of features such as the site topography and façade articulation such as decorative metal grills, green screens with plant materials or artwork. The parking garage may incorporate "green roof" technologies. Internal lighting shall not include bare overhead lighting. The glare of headlights shall be screened from view of adjacent structures. Pedestrian level lighting shall be provided on the exterior.

Staff Comment: The parking garage has been designed with design features with visual interest along all 4 sides of the building so there is no "backside" to the building. The visual impact of the parking is mitigated by the presence of ground floor storefronts that extend up to the second floor as well as a green screens that break up the apparent massing of the building.

STANDARD C-2: **Parking Entrances.** The entrance to parking garages shall respect the pedestrian realm and minimize the visual impact of the garage through provision of design elements such as: enhancement of the pedestrian entries; physical separation of entrances and exits; recessing the entry or extending portions of the structure over the entry; and incorporation of landscaping or artwork. The exits from parking garages shall be designed to inform the driver that s/he is entering in to a

pedestrian realm. Gates shall be located interior to the building at a distance that allows cars to stack internal to the structure rather than on the street.

Parking structures shall have horizontal decks on all levels where the decks are visible from the public rights of way. Ramps and non-horizontal parking decks shall be screened from all visible angles and shall not be permitted on facades located along or within 45 feet of a public right of way. (Note: such space would allow for the construction of a liner building and a ten foot separation).

> **Staff Comment:** Applicant requests a waiver from the requirement of separating parking garage entrances and exits.
>
> The narrow blocks and tight spaces involved do not allow for separation of the parking entrances and exits, while providing for continuity of street level uses to the greatest degree possible as required by standard B-7. **Staff supports this waiver request.** Combining the entrance and exit lanes increases the continuity of first floor active space with negligible impact on the pedestrian environment.

STANDARD C-3: **Active Uses.** Parking structures shall incorporate liner buildings along the full front façade, or enclosed active uses on the first floors along all A and B streets (excluding frontage dedicated to entrances, lobbies, and stair towers). Such space shall be provided with a minimum of 10 foot floor to ceiling clearance height, a 25 foot depth (measured from the exterior building wall), and a column spacing that would allow commercial uses to be developed in the structure, shall the structure be adapted for such uses in the future. [See also Standard E-5 Flexibility of Interior Layout].

> **Staff Comment:** Retail uses are proposed along the first floor of the parking garage.

STANDARD C-4: **Back of Parking Structures.** Parking structures that have a rear or side elevation along a right of way, pedestrian access route, trail, open space, or which can be viewed from the public right of way, must incorporate design considerations noted in Standard E-9: Back Sides of Buildings

> **Staff Comment:** The parking garage has not been designed with a “back side”. The parking garage has frontage along the Bayside Trail and the mews but the façade design and materials are similar in quality as the façade design along Somerset.

STANDARD C-5: **Decks and Ramps.** Parking structures shall have horizontal decks on all levels where the decks are visible from the public rights of way. Ramps and non-horizontal parking decks shall be screened from all visible angles and shall not be permitted on facades located along or within 45 feet of a public right of way. (Note: such space would allow for the construction of a liner building and a ten foot separation).

Staff Comment: The applicant seeks a partial waiver of the requirement that all ramps and non-horizontal (sloped) parking decks shall be screened from all visible angles, and shall not be permitted on facades located along or within 45' of a public right of way. See Section X of this report:

Although the project is designed with the non-horizontal parking decks of the open air garage structures along Somerset Street, the shallow block configuration does not allow such decks to be completely excluded from within 45 feet of a public right of way, such as along Chestnut Street and the Bayside Trail, or completely screened from all possible visible angles, and the shallow design does not allow center located ramps and horizontal decks. To require such a design would result in a significant loss of parking spaces, would make the garages unfeasible and create undue hardship. The parking garages utilize a "green screen: design utilizing live plan material to block the openings that expose portions of the non-horizontal parking decks. This approach, while visually attractive and interesting, will not completely screen the non-horizontal decks, during periods of the year when the foliage off the plant material, however, the attractive design when pedestrian uses are most active will create a visually interesting design that adequately mitigates the conditions that this standard seeks to prevent. **Staff supports the waiver request on the basis that the design features of the parking garage façade balance out the aesthetic benefits of having all of the parking decks horizontal or completely screened.**

STANDARD C-6: **Surface Lots**.

Staff Comment: Not applicable. Surface parking is not proposed.

STANDARD C-7: **Bike Racks.** Bike racks shall be provided in a convenient location, proximate to the entry or entries of the building(s), either immediately adjacent to or no further than the associated motor vehicle parking, and shall be visible from the street or provided with prominent directional signage visible from the street as detailed in the Technical and Design Standards and Guidelines Manual and in compliance with the City's Off-street bicycle parking standards - *Chapter 14-332.1*

Staff Comment: The project technically meets the minimum requirements for the quantity of bicycle parking. However, exterior bike rack locations, spacing, and specifications do not meet the Technical Manual standards as shown. As currently shown, bicycle racks would not be accessible when cars are parked immediately adjacent. A condition of approval should involve providing detailed layout for bicycle parking within the parking garage that ensures functionality and accessibility to the satisfaction of the Planning Authority.

STANDARD C-8: **Service, Utility and Mechanical Infrastructure.** Service, utility and mechanical infrastructure (such as loading docks, delivery areas, truck parking, outdoor storage, utility meters, HVAC equipment, visible rooftop mechanicals, pipes, ducts, vents, access doors, meters, transformers and other building systems equipment,

trash collection, trash compaction, power generators, fuel tanks and similar services) shall be located at the rear or side of buildings, along service alleys, or in the interior of parking garages. Such uses shall not result in adverse visual and audible or other noxious impacts on adjacent properties and public streets and spaces. Areas for outdoor storage and trash collection or compaction shall not be visible from public rights of way, or located within 20 feet of any public street, sidewalk, or open space. Mechanical equipment shall be located away from pedestrian ways and seating areas to minimize noise, exhaust or visual impacts. Mechanical equipment shall not be located in the front setbacks between building and public rights-of-way.

All service, utility and mechanical infrastructure shall be visually screened from adjacent uses, adjoining properties and public rights of way. Screening materials, landscaping, colors, and design shall conform to those used on the building. Roof equipment shall be fully screened from street level and all view corridors by parapets, roof screens or equipment wells. Wherever possible, roof equipment shall be clustered and included in one screen. New buildings and new additions shall plan for roof equipment screens and include them in the design of the building. Garage doors and loading areas shall be screened from view of public rights of way with materials, colors and finishes that are consistent with the exterior elevations of the overall building. Loading docks shall be screened from residential uses by a minimum 8 foot high masonry wall with 10 foot wide landscaped strip. Loading ramps and service entrances with garage doors visible from primary and secondary streets shall be recessed behind the front façade of the main structure. The garage door width may be no more than 10% of the width of the building's overall façade width, except that no garage door need be reduced to less than 9 feet in width. Outdoor storage and trash collection areas visible from public streets and spaces shall be screened, recessed or enclosed with solid fences or walls. Materials, colors, and design of screening walls and fences shall conform to those used on the building.

> **Staff Comment:** Applicant requests a waiver of the requirement that all loading docks, delivery areas, truck parking shall be located at the rear or side of buildings and not along public ways.
>
> The project fronts on streets on all sides or on the Bayside Trail, and must accommodate deliveries from public streets. As stated by the project architect, the project has been designed to have no back side, and it is impossible to locate delivery and loading areas off public streets. The applicant will establish guidelines and procedures for deliveries and loading to mitigate the effect of utilizing loading areas on public streets. In an effort to create a pedestrian friendly environment there are no handy backsides of the building where loading can take place. That being said, the applicant has created some internal loading area within the residents building but they are too small for larger tractor trailer trucks. **Staff therefore supports the waiver of building service locations.**

PRINCIPLE D: Open Space and the Public Realm

Public and privately owned open spaces shall be designed to promote a visually pleasing, safe, and active environment. *Opportunities to extend the City's bike and pedestrian trail system shall be maximized. Landscaping throughout the neighborhood shall be designed to complement the architecture, enhance the human scale, add seasonal interest, reinforce pedestrian circulation paths, and provide a more comfortable urban environment.*

NOTE:The *Bayside Open Space Priorities and Principles* document was adopted by the Bayside Trail and Open Space Committee on 7/24/06 and was used as a reference document in the drafting of these guidelines. This document shall be considered in the provision and design of open space in the B-7 Zone of Bayside. All new development shall consider this document for specifications on desired locations, components, and design of open space.

STANDARD D-1: **Open Space Design**. Publicly-accessible parks, plazas, and other open space shall be accessible from sidewalks and surrounding buildings. Further, publicly accessible open space shall be located and designed to allow views from the sidewalk, street, and surrounding buildings into the open space as well as outward from within the space. Pedestrian amenities such as seating, lighting, artwork, trash receptacles, etc. shall be compatible with the City's Streetscape Standards for Bayside. Streetscape design on privately owned, publicly accessible open spaces may select a different style which complements the City's standard for the area if the design of the space commands a special, unique, and equally distinctive feature. Solar access, wind protection, and landscaping shall be considered to enhance pedestrian comfort and provide a variety of sunny and shaded areas.

Staff Comment: The mews and plaza adjacent to the residential building are visually and physically accessible from the trail and Somerset Street. The elliptical seating wall and landscaping provides a pleasant environment for pedestrians and extends the public realm to the publicly accessible but privately owned mews and plaza. The pedestrian amenities are compatible with the streetscape standards for Bayside. The improvements to the Bayside Trail are compatible with streetscape standards for Bayside.

STANDARD D-2: **Bayside Trail.** A conceptual or final plan for the Bayside Trail from Franklin Arterial to Elm Street shall be considered in the review of all new development. Buildings adjacent to the Bayside Trail shall be designed so that the façades along the trail incorporate design elements that enhance the trail use such as active doors into the building, plazas, outdoor seating, and food service. The design of retail or restaurant uses shall incorporate a means of ingress and egress that is oriented to the trail. Businesses that complement the use of the trail, such as sporting goods stores, equipment rentals, coffee and ice cream shops, etc. shall orient entrances to the trail where feasible.

Staff Comment: The proposed plan recognizes the importance of having active uses along the trail side of the parking garage and residential building. Both buildings will have retail storefronts along the trail including the plaza area. Portions of the retail use within the parking garage will have a grade about two

feet higher than the trail which would complicate trail user access into the building. The mews and plaza enhance interaction between the development and the trail by providing mid-block connections and increased store frontage. The developer has stated that the berm will be removed behind MidtownThree which will improve the interaction of the building's retail uses with the trail, however there is no plan at present to provide paved surfaces, landscaping, amenities, or paved access to the Bayside Trail. At minimum, it is recommended that a 15' paved area be installed along the northerly storefront edge, approximately 155 feet long, and paved 12' walkways be provided connecting to the Bayside Trail, one in each direction. A fully developed landscape plan is desirable in this location, with materials comparable in character and quality to those proposed for the mews and courtyard associated with midtownOne and Two, to fully complement the Bayside Trail as envisioned by this standard. The minimum standards noted above will at least provide an engaging interface and enable the trail and the storefront and its midblock passage to function.

The proposed condition of approval for mid-block permeability addresses the staff concerns about the terms and details of the access through the building, while recognizing that these details are dependent on the end user/tenant of the first floor. The proposed condition therefore allows for review of those aspects prior to a certificate of occupancy of the first floor, and also addresses the trail side improvements and berm removal, and associated cost allocations between the applicant and the City.

STANDARD D-3: **Landscaping and Street Furniture.**

Staff Comment: Applicant requests a waiver of the requirement for an irrigation system.

STANDARD D-4: **Pedestrian Amenities.**

1. Seating. Seating along heavily used pedestrian routes shall be provided to accommodate pedestrian related activities. Placement of seating shall not obstruct pedestrian circulation, and shall assure maintenance and appropriate use. One linear foot of seating for each thirty (30) square feet of open space, or 30 linear feet of pedestrian route shall be provided within publicly accessible open space.

   Staff Comment: Applicant is providing enough benches to meet this standard.

2. Bus shelters. Bus shelters or sheltered waiting areas along building frontages shall be provided along designate bus routes. The placement and design of shelters shall not obstruct pedestrian circulation and shall ensure maintenance and proper use. Shelters shall provide a heated waiting area wherever feasible and shall be adequately illuminated and provide seating, signage, and schedule/route information.

Staff Comment: A bus shelter is proposed in front of MidtownThree near an existing bus stop on Somerset Street. The bus stop should be shifted closer to the curb line as it presently could interfere with pedestrian circulation within the sidewalk. A design of the bus shelter should be submitted. METRO's approval of a bus shelter at this location should be confirmed.

The proposed bus stop location does not (per drawing C-2.0B) provide the required ADA-compliant bus stop landing area (5'x8') nor does the bus stop directly connect to the ADA-compliant pedestrian access route at this location. A note has been added to the plan but no other information/design changes made. An approval of this project should include a condition that this issue be resolved to the satisfaction of the Planning Authority.

3. Streetscape Amenities. Streetscape amenities such as trash receptacles, mailboxes, and newspaper boxes shall not create a visual appearance of clutter, shall not obstruct pedestrian circulation, shall be designed to ensure maintenance and proper use, and shall complement the character of surrounding buildings, streets and open space. Streetscape amenities shall be designed and sited so as to prevent vehicles from parking on the sidewalk.

   Staff Comment: The proposed streetscape amenities complement the character of surrounding buildings, streets and open space. The amenities such as curb, planters and limited driveways are designed to prevent parking on the sidewalk. Comments on the functional width of the MidtownFour sidewalk and the corner of Somerset-Elm have been discussed earlier in this report.

4. Directional and Informational Signage. It is important that adequate orientation be provided in order to assure the greatest possible use of the area by pedestrians, Directional and Informational Signage shall be consistent with guidelines established within STANDARD E-16: Signage, with signage requirements of the City Land Use Code, and with other applicable City signage plans such as the results of the City's Wayfinding Study (underway in 2008), as identified during review.

   Staff Comment: A complete directional and information plan has not been submitted but this can be handled administratively as a condition of approval.

STANDARD D-5: **Public Art and other special features.** The provision of art and other special features such as fountains and kiosks adds visual interest, a sense of creativity; and elements of discovery that enhance the pedestrian experience. All public art shall be designed and implemented in accordance with the *Guidelines for the City of Portland's Public Art Program.* The location of such features shall not obstruct pedestrian circulation and shall complement the character of surrounding buildings, streets and open space.

Staff Comment: Near the Somerset and Elm corner (adjacent to midtownThree) the small triangular plaza is noted as an "Urban Art Park (Commissioned Works)". The plan indicates that the final design will be coordinated with City Staff. This is an interesting concept that should be further explored.

On the Pearl Street side of midtown one-half of the façade is labeled as a public art opportunity. On midtownThree (Elm Street side), the lower retail level is labeled as a public art opportunity. The easterly elevation of midtown four (upper stories) is noted as a public art opportunity. Staff has discussed with the applicant design team the preference for increased fenestration in residential units at these locations rather than unidentified art. Without a specific public art design drawing in hand to review, staff recommendation is that approval at this time should include a condition that the treatment of that location should be subject to approval of the Planning Authority and, as the rest of the ground level, be completed in materials on the "predominant materials" list in Standard E-12. A specific public art opportunity could be reviewed in the future.

PRINCIPLE E: Architectural Design

New development shall contribute positively to a new identity for the neighborhood as outlined in A New Vision for Bayside. New development shall create a mixed-use, pedestrian-friendly setting that contributes to the context of the surrounding urban fabric and provides a sensitive transition to adjacent residential neighborhoods. The Portland peninsula has a coherent urban fabric of traditional building forms, street grid, and streetscape design that contributes to the legibility of the city. New development in Bayside may be a variety of architectural styles, particularly those that are innovative and express the aesthetic of the time in which it was built, and shall be organized according to principles of urban design that integrate with the urban fabric of surrounding neighborhoods and Portland as a whole. The scale, massing and fenestration of new development shall reflect its context, include the highest quality design, materials and construction systems expected to last at least 50 years; flexible and adaptable floor plates; functional and aesthetic architectural details; sustainable and green design; and excellence in streetscape, landscape, signage and lighting which is appropriate for an urban setting in the northeastern United States.

STANDARD E-1: **Architectural Design.** New development in Bayside may be a variety of architectural styles, particularly that which is innovative and expresses the aesthetic of the time in which it was built, and shall be organized according to principles of urban design that integrate with the urban fabric of surrounding neighborhoods and Portland as a whole. A respectful integration of contemporary design within the existing context shall complement, reinforce and enhance the prevailing patterns and proportions of adjacent buildings without requiring imitation or repetition.

Staff Comment: The design intent of the three residential buildings is to create Modern Industrial buildings in recognition of the history and character of the Bayside neighborhood. The surrounding context immediately adjacent to the project is industrial and commercial, often with utilitarian aesthetic and low building heights. Prevailing patterns come from the brick and concrete Noyes

storage building across the street as well as very recent buildings such as Intermed and the student housing on Marginal Way which employ glass, metal siding, and brick. There is very little context of mixed-use buildings at this scale. Given that context, the proposed design is contemporary and mitigates the mass and height of the buildings through articulation and material changes. The material choices and color palette are contemporary and reflect the industrial feel of the context. This project will be of unique scale and height and in part, creating a pattern language and adding new context to the neighborhood for future architecture.

STANDARD E-2: **Height.** In general, building heights shall meet the heights approved on the *Bayside Height Overlay Map*. Heights along the edges of the B-7 Zone shall transition to the scale of adjacent neighborhood development through design elements such as variations in massing; articulation of the facades in intervals that reflect existing structures or platting pattern, stepping the architecture to adjacent buildings and/or contextual proportions of building elements, use of architectural style and details such as roof lines, belt courses, cornices, or fenestration, and color or materials that derive from the less intensive zone.

The street wall heights of buildings shall be stepped back 15 feet minimum once they exceed by 50% the average height of the buildings 4 stories or taller on both side of the street within the block of the proposed site.

The design of the building top, roofline or vertical termination shall be designed to create visual interest on the skyline.

Staff Comment: The composition of the façade through fenestration, color, materials, and variations in the façade and massing provides visual interest that reduces the relative proportions of the building facades. MidtownThree, 430' in length, poses a massing challenge that the variations in material and roof line help mitigate.

Each building top provides some moderate variation from the base of the building and has been designed to create visual interest. These variations include height variation with circulation towers and parapets, and with architectural components such as cornices or "fin walls" and changes in materials.

STANDARD E-3: **Massing**. Large expanses of undifferentiated facade or uniform cladding are not allowed along public rights of way. The composition of a proposed building façade shall be defined by horizontal and vertical articulation, with vertical articulation being predominant, in keeping with the local context of the urban form.

New buildings that are four stories or higher shall have three components: base; middle; and top. The base provides a portion of the building with a scale and articulation that is related directly to the pedestrian. The middle portion of the building provides a pattern of fenestration and detail that lends a sense of rhythm and scale to a building both

horizontally and vertically. The top portion of the façade typically receives special treatment that terminates the building in a distinctive manner. Exceptions shall be permitted, as determined by the City's planning staff, only when a specific architectural style offers other types of facade articulation that are consistent with that style.

> **Staff Comment:** The residential facades demonstrate each building has a base (retail storefronts); middle (residential block with consistent fenestration patterns and façade articulation that relates to the unit configuration) and a top (design element above the main roofline such as parapets and cornices as well as stepbacks in midtownThree).
>
> Staff support the waiver request from this Standard for the garage building, midtownTwo.

STANDARD E-4: **Articulation.** Blank, flat, unadorned, or repetitive facades shall not be allowed on facades visible from public rights of way. Facades visible from public rights of way shall incorporate design elements that break the facades into components scaled to the pedestrian, and to the context of other buildings on the street. This may be accomplished through an expression of the building's base, middle and top, vertical fenestration, variation in the planes of the façade, architectural details such as windows, doors, bays, balconies, cornices, reveals, expansion joints, trim, changes in color, texture, and material, permanent artwork, etc. The maximum length of blank or undifferentiated facades shall not exceed thirty feet horizontally or vertically and shall not exceed 15 feet horizontally or vertically along streets, primarily A and B Streets. The design elements listed above may be used to mitigate blank walls if it can be demonstrated that the program of the building precludes the use of windows or functional doors every 30 feet at the pedestrian level.

The base of the building which relates to the pedestrian realm shall be designed with a high level of detailing and material quality utilizing the options listed above. Buildings which are less than four stories must meet this standard on the entire height of the façade. Buildings that are four or five stories shall meet this standard on the first 14 feet, or the first floor at a minimum. Buildings which are six and seven stories shall meet this standard on the first 24 feet, or the first two floors at a minimum. Buildings which are eight stories or higher shall meet this standard on the first 35 feet of the building façade, or the first three levels at a minimum. A deviation shall be made from this standard only to the closest natural breaking point in the building.

All buildings shall maintain a pedestrian scale through the use of building elements at the street level such as windows, entries, commercial displays, building entries, a variety of materials, colors, ornamentation, texture, elements indicating floor-to-floor heights, appropriately scaled building materials, cornice lines, signage, awnings and canopies. Ground floor facades that face public streets shall actively engage pedestrians through such features listed above along no less than 60 percent of their horizontal length.

For interior uses which require large volumes of windowless space, every effort shall be made to contain these uses within the central portion of a site away from street fronting facades of the building. Building entrances and large windows may not be feasible in some cases, due to topographic change or windowless interior uses which cannot be located in any other portion of a site. In such situations, it is important that the design of the facades incorporate features such as those listed above.

> **Staff Comment:** The proposed design allows for the opportunity for most of the facades to be active with storefront and entrances. In those places where retail frontage is not possible, alternative, active uses such as bicycle parking along the adjacent sidewalk have been incorporated. The applicant reiterated that some of the ground floor design will depend on the tenants, however, staff encourages those stretches of façade that may not have direct retail access still incorporate visibility or alternative uses in order to prevent 'dead zones' along the trail and mews. The plans show retail entries on most storefront facades, but the actual placement of retail entries is left indeterminate. To meet this standard, a commitment to provide at least one fully functional entry should be provided along the trail side of each building.
>
> As the design develops, high level of detailing is encouraged to ensure that the building does not appear monolithic and monotonous from the pedestrian experience. MidtownThree has added features such as cornices, stepbacks at upper levels, and variation in materials to bring additional articulation and detail to the long facades.
>
> There is sufficient articulation in general to meet this standard, although the garage facades pose some functional challenges for the level of detail and scale. We encourage the use of materials that have texture or dimension (such as the metal siding) to add visual interest and shadow lines to the facades. We believe that the plan meets this standard.

STANDARD E-5: **Flexibility of Interior Layout.** The interior layout of a space can impact its viability for pedestrian oriented uses. The first forty (40) feet of depth of floor area along street frontages shall be laid out to be able to accommodate retail or other pedestrian oriented uses. Placement of exterior and interior building features at the first floor level (such as columns, bearing walls, stairs, elevators, and mechanical systems) shall be designed and constructed to be flexible over time and to accommodate the broadest possible variety of layouts, or be able to be modified at reasonable cost to accommodate future pedestrian oriented uses. New commercial development shall incorporate floor plates that can accommodate different sized spaces, storefront windows with the ability to provide separate entrances from the sidewalk, and floor to ceiling heights of 14' on the ground floor. Parking garages shall be designed to be convertible to future uses through the provision of a minimum of a 10 floor to ceiling height, if feasible.

Staff Comment: The residential buildings provide repetitive retail storefronts at the base for flexibility. It appears all proposed retail spaces are at least 40 feet in depth. The parking garage has structural bay spacing of 48 feet by 60 feet.

STANDARD E-6: **Entrances.** Buildings along public streets shall have the primary entrances oriented to the street. Primary entrances shall not be oriented to a parking lot or structure. If a building sits at a corner of two streets that are defined as A or B Streets, the primary building entrance shall orient to the corner unless the building program precludes such design. An exception to a corner entrance may be considered where an alternative orientation achieves a superior relationship of the building to the adjacent streets. Primary building entrances shall be fully functional in design and use and shall provide access to lobbies, elevators, stairs and common areas. Entrances shall be scaled to the overall massing of the building. Commercial and mixed use buildings shall be permeable and accessible on all sides from the public way, unless the building program precludes such design due to building scale or for reasonably necessary security purposes. Residential buildings are only required to have one entrance for security purposes.

Staff Comment: The applicant chose to emphasize the retail uses along Somerset Street. The result is that the primary residential entrances for MidtownOne are not oriented to the A street or the corner. For circulation and internal organization/programmatic reasons, the designers cannot change the location of the primary entrances to be closer to Somerset Street. The compromise arrived at is for a secondary entrance at the egress stair to be emphasized with a canopy, glazed storefront, and an accessible entry. MidtownTwo uses circulation towers with a taller height and different materials to emphasize entrances to the garage at the building corners. MidtownThree differentiates and emphasizes the residential entrance on Somerset Street, which is mid-block, with a canopy and architectural fin wall element using a highlight color to bring additional visibility. Because midtownThree is a long building, staff feels it is especially important for the residential entry to be discernable from the pedestrian realm. MidtownFour orients its main entrance façade to the Elm Street approach and to the Bayside Trail. This building entry, as discussed in Standard A-4 Gateways, should be emphasized at a scale proportionate with its prominence on the view corridor. This is achieved with increased height, an articulated cornice line, and a canopy.

Each building provides some storefront presence with access points on the Bayside Trail.

STANDARD E-7: **Windows.** Windows shall be located on all facades visible from public rights of way. Window style shall be appropriate to the overall building style and scaled to the overall massing. The first floor transparency along public streets and the trail shall be equal to at least 50% of the wall area between the height of 2 and 9 feet. The first floor windows and storefronts shall be transparent with active uses visible behind them. Opaque glass shall not be allowed at the first floor level [See Standard E-

13 Transparency]. Upper floors of all new buildings shall have at least 15% to 40% transparency of wall surface along public rights of way, with the range depending on program requirements. If it can be demonstrated that the building program precludes windows along first floor street frontages, then other surface details shall be used in accordance with Standard E-4Articulation].

> **Staff Comment:** The apartment buildings have windows located on all facades. The upper floors of the parking garage do not have windows but will have openings that will meet the transparency percentage standard. The retail frontage of both buildings between 2 and 9 feet above the floor exceeds 50%. All glass will have a light transmittance of over 75%.
>
> As discussed earlier in the review, opportunities to add fenestration to residential units should be fully taken advantage of. Especially of high priority is the midtownFour East Elevation which presents two significant areas of blank wall facing the Bayside Trail. Additional fenestration could be provided on this facade and would alleviate two concerns - that of quality light and air for multi-family residential units, and the quality of building facing the public amenity of the Bayside Trail. Some of the interior-facing units of midtownThree could also potentially accommodate additional windows, eg the west-facing, interior units. The latest elevation drawings from February 20 address the missing windows shown on floor plans but not in the previous set of elevation drawings. No additional fenestration has been provided.

STANDARD E-8: **Storefronts.** Storefronts shall be designed to accommodate doors at regular intervals, so that doors may be installed in the future as the building program changes over time. Storefront glass shall be transparent in accordance with Standard E-13: Transparency, and shall not be blocked with opaque glass, or other means. Fixed, collapsible and rolling security grills and gates shall not be allowed on display windows and doors visible from public rights of way.

> **Staff Comment:** All buildings are proposed to have storefront systems at the ground floor. Storefront glass will meet the transparency standard of E-13. Of concern is the note on sheet 1-A201 that indicates any proposed storefront depicted in the plan may be substituted at the discretion of the developer for EIFS panel. Staff is not in favor of the use of EIFS at the pedestrian level on sidewalk-facing facades. This standard states that storefront glass shall be transparent and shall not be blocked with opaque glass or other means. Although staff understands the need for some design flexibility based on tenancy, the proposed note results in an uncertainty about how much storefront the project will actually have and implies that the level of storefront and transparency depicted could change an indeterminate amount. See Standard E-6 above for a recommended condition of approval that would address this issue to staff satisfaction.

STANDARD E-9: **Back Sides of Buildings.** The back sides of buildings, particularly along streets, the trail, alleys, or other pedestrian access ways, or which face an adjacent residential neighborhood, shall be designed in a manner that incorporates high quality facade materials, transparent windows, operable building entrances, and other design features that are consistent with the primary facades of the building. Exterior fire escapes, ladders, standpipes, vents, etc. shall be well maintained and painted to blend with the color of the building, or painted a dark recessive color. Utility meters, exhaust vents, etc. shall be unobtrusive and located at the side or rear of the building. See also Standard C-8: Service, Utility and Mechanical Infrastructure.

> **Staff Comment:** The building has been designed with "no backside" thus the quality of design and materials is similar on all four sides of the building. Applicant states that a partial waiver is sought on the requirement of having "operable building entrances" on the back portion of the garage due to natural changes in grade and safety concerns. As stated Standard A-4, of additional concern is the view of MidtownFour from the Bayside Trail approach. The proposed building elevation shows a high proportion of solid, EIFS wall facing the trail. If additional fenestration could be provided on this facade it would alleviate the concerns about the quality of building facing the public amenity of the Bayside Trail. See also comment in Standard E-4 regarding functional entries facing the Bayside Trail, which is equally relevant under this standard.

STANDARD E-10: **Rooftop Appurtenances.** Rooftop appurtenances shall not be visible along or block view corridors, or views to specific landmark features such as the City Hall Clock Tower, Portland Observatory, the Cathedral of the Immaculate Conception or important views as may be identified during the City's development review process. Rooftop appurtenances shall be consolidated physically or visually through unified screening. Rooftop appurtenances shall be located and designed so to appear as an integral part of the architectural character of the building on which they are located. The exterior appearance of these features shall incorporate a scale, shape and choice of materials that is consistent with the principal building.

> **Staff Comment:** Roof top appurtenances (HVAC, mechanical functions, elevators) appear to be enclosed within the massing of the buildings behind parapets and therefore having a unified design with scale, shape, and materials consistent with the principle buildings.

STANDARD E-11: **Fences and Walls.** Fences and walls along public streets, trails, alleys, or public spaces shall be made of high quality, durable and weather resistant materials such as brick, stone, wood, and high grade metals. The Bayside parking lot fence detail consists of granite posts with pipe rails. This design shall be used at parking lots edges and other appropriate locations. An alternate fence design of equal or higher quality may be presented for consideration during the development review process. Ornamental fencing and walls shall be as low as possible and integrated with plant materials or other amenity wherever adequate space allows. Chain link fences, plastic fences, or fences which are rustic or rural in character, shall not be allowed anywhere that

is visible from the public right of way. Chain link fences used on areas internal to a property shall be black vinyl coated. The fence design shall not create a blank façade at the pedestrian level.

> **Staff comment:** The two transformers will be enclosed with a high quality metal ornamental fence. No other fencing is proposed.
>
> A series of low lying walls are proposed at various changes of grade that will be of masonry materials.

STANDARD E-12: **Materials.** Facades visible from public rights of way shall use natural and authentic building materials that are expected to last at least 50years. Predominant materials shall be brick, stone, precast concrete and other masonry products, wood, glass and high quality metals such as steel, titanium and copper. Traditional stucco on wire lath or masonry may be used. Renewable and recyclable materials approved for use by LEED Standards (Leadership in Energy and Environmental Design) may be used. Cellular PVC trim and dimensional stock shall be allowed.

Materials such as thin gauge metal panels, exterior insulation and finish systems (EIFS), panelized "thin brick", vinyl siding, or stucco on Styrofoam or a similar backing shall not be used on facades visible from public rights of way. Fiber-cement clapboard and shingles may be used. Fiber cement panels shall only be used on portions of the building not visible from public rights of way. Public spaces shall be constructed of permanent, durable materials such as concrete, brick or stone.

> **Staff Comment:** The material choices and color palette are contemporary and acknowledge the industrial context but remain residential in application. Building materials for the residential buildings include architectural metals, EIFS, ground faced CMU at the ground floor, and aluminum window frames. The finish and texture of these materials were not specified in detail. The parking garage is predominantly precast concrete and green screen with the use of metal panels and screens at the circulation towers. All buildings use aluminum storefront systems at the ground floor with EIFS siding at the storefront transom. In several instances, MidtownFour uses EIFS at the ground level but not along public rights-of-way.
>
> The staff memo for the 1/13 workshop stated that, while the Design Standards for the B-7 zone do not permit the use of EIFS in areas visible from a public right of way, staff could support a design where EIFS is not the predominant material (i.e. less than 50% of the exterior material surface above the first floor, not including windows.) Since EIFS is not an allowable façade cladding according to the B-7 standard E-12, a waiver is required to allow its use. Since the initial submission the applicant has reduced the amount of EIFS on the façade of Midtown Three. According to the applicant the façade now has a coverage of 39% EIFS (down from 60%), 43% metal siding and 18% windows visible from the public realm.

While that percentage is by necessity a guideline only, it appears to be met in MidtownOne and, possibly, MidtownFour. In MidtownThree, the previous plans fell short of the 50% goal, however the February 20, 2015 revisions have addressed this by reducing the EIFS and substituting metal siding is various locations. Staff therefore is able to support the materials waiver for this project based on the latest drawings.

As outlined above, staff does not support the use of EIFS on the ground level in locations visible from a public way. An approval at this time should include a condition that the storefronts should be subject to approval of the Planning Authority and, as the rest of the ground level, be completed in materials on the "predominant materials" list in Standard E-12

STANDARD E-13: ***T*ransparency.** Windows shall use untinted, lightly tinted, or the minimum tint needed to meet LEED Standards. Windows that have daylighting application on all levels of the façade shall use glass with a visible transmittance (VT) value above 60% which looks clear. Any value below 60% shall not be allowed as it looks dark and/or reflective. The VT rating shall apply to the glass only, not the frame components.

Staff Comment: Applicant is proposing windows with a VT rating of over 75%.

STANDARD E-14: **Illumination**. Prominent building facades shall be lit by carefully designed downwash systems of appropriate color and intensity. Only historic landmarks and civic buildings shall be fully illuminated, as well as buildings which substantially contribute to the character of the street, and have sufficient ornamental detail to provide visual interest. See also STANDARD B-12 Lighting. Also see the City's Revised Lighting Standards for Architectural Up-lighting.

Staff Comment: See Site Plan Review section of this report regarding lighting. Applicant proposes a string of LED lighting along parking garage green screen. Lighting is recommended to be a condition of approval.

STANDARD E-15: **Weather Protection.** Pedestrian sidewalks and walkways shall include weather protection features such as awnings or arcades a minimum of 30 feet at all entrances along A and B streets parallel to the building façade, or along at least 60% of that frontage. Canopies shall be constructed of permanent, durable materials, with glass and steel preferred.

Staff Comment: The Somerset St. frontage of the buildings will have awnings at the storefronts. The apartment entrances will be provided with canopies for protection.

STANDARD E-16: **Signage.**

> **Staff Comment:** Applicant has submitted a master signage plan part of the site plan review process. See Site Plan Review section of this report for comments on the plan.

STANDARD E-17: **Historic Buildings.**

> **Staff Comment:** Not applicable. Property is not located in a historic district.

STANDARD E-18: **Sustainable Design.**
Property that is controlled or conveyed by the City shall be developed at a minimum in a manner that is certifiable within the standards for building and neighborhood design in accordance with the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED).

> **Staff Comment**: Applicant has provided LEED checklists for the buildings showing how it will be able to achieve the necessary prerequisites and credits to receive Certification.

STANDARD E-19: **Shadows.**All new development along the Bayside Trail, and all buildings in excess of 65 feet in height, shall be designed so that substantial shadow impacts on accessible open space are avoided. All development along the Trail and buildings in excess of 65 feet in height shall conduct a shadow study during the equinoxes and solstices of the year, at 9:00 am, noon, and 3:00pm. New development shall not increase the area in shadow by more than 10 percent during the period from March 21 to September 21. Shadow impacts which shall be evaluated include: 1. the amount of area of publicly-accessible open space that is shadowed; 2. the time and duration of the shadow impact within the open space; and 3. the importance of sunlight to the utility of the type of open space being shadowed.

> **Staff Comment:** The applicant has submitted a shadow study (Exhibit 17) which compares the proposed development with a 65 foot development. They conclude that the development casts a minimal amount of additional shadow compared to a 65 foot building and does not exceed the maximum shadow increase of 10%, thus meeting this standard.

STANDARD E-20: **Wind.** Consideration of wind impact relating to new construction shall establish and maintain a comfortable pedestrian environment. Comfort levels for pedestrian use are related to wind speed, reflect the type of pedestrian activity that might be acceptable, and can be categorized (Melbourne's Criteria) as: 1. unacceptable and dangerous; 2. uncomfortable for walking; 3. acceptable for walking; 4. acceptable for short periods of standing or sitting; and 5. acceptable for long periods of standing or sitting.

The following factors shall be considered in evaluating whether adverse wind impacts are created: 1. Pre-development and projected post-development wind speeds and their impact on pedestrian movement; and 2. Impact of projected wind speed on the use of and comfort within existing and proposed pedestrian seating areas and other adverse impacts on the surrounding area.

> **Staff Comment:** The applicant has submitted a wind analysis by RWDI, the consultants who had reviewed the prior development scheme. Recognizing that this project is substantially lower than the previous concept, the consultants conclude as follows:
>
> > "Overall, the pedestrian wind conditions for the current design are predicted to be better than those predicted by our previous assessment. Wind conditions are expected to meet the effective gust criterion and no dangerous wind conditions are predicted at any locations, including public sidewalks and Bayside Trail. Suitable wind conditions can be achieved through architectural and landscaping design for outdoor amenity spaces in the summer when these areas will typically be in use."

XII. Motions for the Board to Consider

A. CONDITIONAL USE

On the basis of the application (2014-203), plans, reports, and other information submitted by the applicant, findings and recommendations contained in the Planning Board report for application #2014-203 relevant to Portland's B-7 zone, the City's Site Plan Ordinance, the City's Conditional Use Standards and other regulations, as well as the Planning Board deliberations and the testimony presented at the Planning Board Hearing:

1. The Planning Board **(finds/does not find)** the proposed conditional use for the parking garage **(does/does not)** meet the standards of B-7 Conditional Use, Sec. 14-296 (3) governing structured parking and Zoning Code Section 14-474.

B. TECHNICAL AND DESIGN WAIVERS

On the basis of the application (2014-203) plans, reports and other information submitted by the applicant, findings, recommendations, contained in the Planning Board Report for midtown site plan and subdivision (application 2014-203), including but not limited to Section VIII Technical Waivers, of the report and the reviews by Thomas Errico, PE of T.Y Lin (dated January 27, 2015, Attachment 2), David Senus, P,E of Woodard and Curran, (dated January 28, 2015, Attachment 5) , David Margolis-Pineo, Deputy City Engineer, (dated January 7, 2015 Attachment 6), and Jeff Tarling, City Arborist (dated January 30, 2015, Attachment 8) for the Midtown Site Plan and Subdivision Plan relevant to Portland's Technical and Design Standards and other regulations, as well as the Planning Board deliberations and the testimony presented at the Planning Board hearing, the Planning Board finds the following:

<u>Transportation and Street Design</u>

1. <u>Street Grades:</u>
   The Planning Board ***(finds/does not find)*** that the applicant has demonstrated that extraordinary conditions unique to this property exist including that the existing and anticipated flood hazards in Somerset Street require the proposed buildings to be at elevation 12 (2 feet above flood hazard elevation) and the existing building elevations across Somerset Street are at lower elevations such that relief from strict compliance with the 0.03 cross slope regulations for a local street is necessary; and the Board ***(finds/does not find)*** that the public interest and purposes of the land development plan are secured by the proposed variation in street grades as shown on Figure 1 – Somerset Street Schematic Maintain 18" of Freeboard adjacent to Noyes Building, rev. dated January 26, 2015, prepared by FST Engineers on behalf of the Federated Companies. The Planning Board therefore ***(waives/does not waive)*** Section 1.4.1 Street Grades of Portland's Technical Manual to allow the roadway cross slope to be modified as shown in Figure 1.

   Staff Recommendation: Support waiver from roadway cross slope standard in accordance with the concepts presented on Figure 1 – Somerset Street Schematic Maintain 18" Freeboard adjacent to Noyes Building, rev. dated January 26, 2015, prepared by FST on behalf of The Federated Companies.

2. <u>Vertical Alignment:</u>
   The Planning Board ***(finds/does not find)*** that the applicant has demonstrated that extraordinary conditions unique to this property exist, including that the existing and anticipated flood hazards

in Somerset Street require the proposed buildings to be at elevation 12 (2 feet above flood hazard elevation) such that the proposed alterations to Somerset Street and the existing building elevations across Somerset Street are at lower elevations; the Planning Board (*finds/does not find*) that, given these circumstances, relief from strict compliance with the requirement to maintain the vertical alignment for Crest Vertical Curves K=3- and Sag Vertical Curves K=40 for City streets is necessary to avoid undue hardship ; and that the public interest and purposes of the land development plan are secured by the proposed variation in the K value. The Planning Board ***(waives/does not waive)*** Section 1.5 Vertical Alignment of Portland's Technical Manual to allow K values for the sags on Chestnut Street to be 33.56 and Elm Street to be 38.89.

Staff Recommendation: Thomas Errico, P.E, Jan. 7, 2015 finds the geometric design details (K Factor) of Somerset, Pearl and Chestnut to be acceptable and supports the waiver.

Sanitary Sewer and Storm Drain Design

3. Catch Basins:

The Planning Board (***finds/does not find***) based upon the January 7, 2015 review by David Margolis Pineo (Attachment 6) and the January 28, 2015 David Senus review (Attachment 5) that extraordinary conditions unique to this property and related to existing and potential future flooding exist or undue hardship would result from strict compliance with the Technical Standard 2.7.8, including that compliance with that standard would result in excessive piping and appurtenances in the public street; and the Planning Board (finds/does not find) that the proposed stormwater treatment system design requires direct connections into catch basins to comply with design guidance outlined in MaineDEP Chapter 500 BMP Manual and, the public interest is secured, and the variation is consistent with the intent of the ordinance. The Planning Board (***waives/does not waive***) Section 2.7.8 Catch Basin of the Technical Manual to allow the connection of storm drain lines into a catch basin structure.

Staff Recommendation: David Margolis-Pineo, Deputy Engineer DPS and David Senus, P.E. Woodard and Curran, recommend granting this waiver.

Landscaping and Landscape Preservation Standards

4. Street Trees

The Planning Board (***finds/does not find***) that the applicant has demonstrated that due to site constraints preventing the planting of required street trees in the right of way, the requirements of Section 14-526(2)(b)(iii) of the Site Plan Ordinance cannot be met; and the Board ***(finds/does not find)*** that the applicant has satisfied the waiver criteria set out in Section 14-526(2)(b)(iii)(b). The Planning Board therefore (***waives/does not waive***) Section 14-526 (b)(2)(b)(iii) Street Trees of the Site Plan Ordinance and, further **(grants/does not grant)** a partial reduction in the financial contribution to the tree fund due to the applicant's commensurate infrastructure investment in twenty-nine (29) raised tree wells, as presented in the application to a contribution to the tree fund to $8,000, which is the difference between the cost for the required number of rees and the cost of the 29 raised planters.

Staff Recommendation: Jeff Tarling estimates that the cost for each raised planter is $2,000, thus the total cost of the raised planters is roughly $58,000. The financial contribution to the City's tree fund for each street tree is $200, thus the total amount for the required number of street trees for the residential units would be $66,000 (formula: 445 units - 115 street trees= 330 X $200 = 66,000). The City Arborist recommends granting the waiver subject to a financial contribution to the street tree fund of $8,000, which is the

difference between the cost for the required number of trees and the cost of the 29 raised planters.

Stormwater Management Standards and ME DEP Stormwater Management

5. Flooding Standard
The Planning Board (***finds/does not find***) that the project satisfies the waiver criteria contained in Stormwater Chapter 5 Section E.2 of the City's Technical Manual relating to Stormwater Management Standards because it conveys stormwater exclusively in a piped system directly into the ocean as confirmed by David Senus' review (Attachment 5) and that the applicant has provided an engineering evaluation indicating that cumulative changes to peak flow rate from the site will be minimal and can be accommodated in the City's municipal drainage infrastructure. The Planning Board therefore ***waives/does not waive*** Chapter 5, Section E.2 Flooding Standard of the Technical Manual that requires stormwater detention for flood control to allow the storm water to be directly piped to the ocean.

Staff Recommendation: David Senus, P.E., Woodard and Curran Civil Engineer recommends granting this waiver.

Soil Survey Standards

6. Soil Survey – High Intensity Soil Survey
The Planning Board (***finds/does not find***) that the applicant has demonstrated that greater than 50% of the site will be developed on a filled site and remediated as a Brownfields site, which has had soil analysis done for the site and street right-of-way, and has therefore met the waiver criteria contained in the Technical Manual. The Planning Board therefore***(waives/does not waive)*** Section 7.1 Soil Survey Standards of the Technical Manual, as recommended by David Margolis-Pineo (Attachment 6) and as authorized by Section 7.4.1 of the Technical Manual.

Staff Recommendation: David Margolis-Pineo, Deputy City Engineer DPS, recommends granting this waiver.

Street Lighting Standards

7. The Planning Board (***finds/does not find***) that the applicant has demonstrated that extraordinary circumstance unique to this property exist relating to its size and location andthe anticipated significant increase in pedestrian activity in the area; and the Planning Board (finds/does not find) that the proposed LED lights, shielded fixtures for down lighting, and the separately metered circuit for the street light secure the public interest and address the overall intent of the City's land development plan, including its lighting standards along public ways. Thus, The Planning Board ***(waives/does not waive)*** Section 10.4 Standards for Special Lighting Districts in the Technical Manual to allow a closer spacing of light poles as shown on the site plan.

Staff Recommendation: The applicant is proposing LED lights, separate metered circuitry and light shields as requested in David Margolis-Pineo's January 7, 2015 review. The Department of Public Services and the Planning Authority recommend that the waiver be granted to reduce the separation between light poles due to the unique circumstance that this area will have significantly increased pedestrian traffic and the overall lighting plan meets the intent of the lighting standards of the Technical Manual.

C. B-7 DESIGN WAIVERS

On the basis of the applications 2014-203 plans, reports and other information submitted by the applicant, findings, recommendations, contained in the Planning Board Report for the public hearing on the March 3, 2015 on application 2014-203, including but not limited to Appendix 4 of Portland's Design Manual, B-7 Design Standard Waivers of the report for the Midtown Development Plan relevant to Portland's Design Manual and other regulations, as well as the Planning Board deliberations and the testimony presented at the Planning Board hearing, the Planning Board finds the following:

1. B-7 Standard A-4, Views and Landmarks: Recognizing the existing blockage of the Cedar Street views and partial blockage of Myrtle Street view corridors, constraints relating to building design and block configuration, as well as other factors outlined in the applications and the Planning Board Report, the Planning Board **[finds / does not find]** that extraordinary conditions exist or undue hardship may result from strict compliance, substantial justice and the public interest are secured with the variation, and the variation is consistent with the intent of the ordinance, and therefore (**waives/does not waive**) B-7 Standard A-4, Views and Landmarks, to grant a partial waiver of the requirement that new development be sited so that it does not block view corridors, to allow the midtown development to partially obstruct the Myrtle Street and Cedar Street view corridor.

   Staff Recommendation: The Planning Staff support the request for waivers of the view corridors for Myrtle and Cedar Streets.

2. B-7 Standard B-2, Street Connectivity: Recognizing that Cedar and Myrtle streets do not abut the subject property, and in consideration of the proposed mews providing an alternate access between Somerset Street and the trail, the Planning Board **[finds / does not find]** that extraordinary conditions exist or undue hardship may result from strict compliance, substantial justice and the public interest are secured with the variation, and the variation is consistent with the intent of the ordinance, and therefore (**waives/does not waive**) B-7 Standard B-2, Street Connectivity, to grant a waiver of the requirement so that the development not be required to extend Cedar Street and Myrtle Street through the project.

   Staff Recommendation: The Planning Staff support the request for waiver of the extension of Myrtle and Cedar Streets.

3. B-7 Standard B-3, Mid-Block Permeability: Due to the proposed building form and program of midtownThree, the Planning Board **[finds / does not find]** that extraordinary conditions exist or undue hardship may result from strict compliance, substantial justice and the public interest are secured with the variation, and the variation is consistent with the intent of the ordinance, and therefore (**waives/does not waive**) B-7 Standard B-3, Mid-Block Permeability, for that portion of the block bounded by Marginal Way, Chestnut Street, Somerset Street and Elm Street in order to not require mid-block permeability of the development between Chestnut and Elm Streets at the site of midtownThree.

   Staff Recommendation: Staff can support a partial waiver of this standard to the extent necessary to provide only a secondary internal circulation system, provided that the following conditions of approval are met:

   i. Clear posting that the public is welcome to travel through the space during normal business hours shall be provided,

   ii. That a plan for public access through the first floor of midtownThree during normal business hours (which are assumed will approximate 9am-5pm daily but must by necessity be allowed to fluctuate in accordance with particular tenant

arrangements, holiday schedules, and other commercially reasonable variables), including a fully ADA accessible route with functioning access doors on both the Somerset Street and Bayside Trail sides of midtownThree, shall be submitted for Planning Authority review and approval prior to issuance of an occupancy permit for the first floor of midtownThree.

iii. That the City and Federated shall work together to resolve the costs and responsibilities for utilization of contaminated berm soils as fill under the project buildings to the extent feasible, or, to the extent required,at City expense the removal of such soils and establishment of post development grades, landscape, surface treatments and access ways between the northerly façade of midtownThree and the Bayside Trail. Plans for this area shall be determined collaboratively with the Planning Authority and, to the extent it is necessary, approval shall not be unreasonably withheld.

4. B-7 Standard B-7, Continuity of Street Level: Uses Recognizing that there is no other location for such entrances other than on Somerset Street due to block configuration, the Planning Board **[finds / does not find]** that extraordinary conditions exist or undue hardship may result from strict compliance, substantial justice and the public interest are secured with the variation, and the variation is consistent with the intent of the ordinance, and therefore (**waives/does not waive**) B-7 Standard B-7, Continuity of Street Level Uses, to allow service entrances and vehicular entrances on Somerset Street.

Staff Recommendation: Planning Staff supports this waiver request.

5. B-7 Standard B-11, Lighting: In order to enable an enhanced retail and pedestrian sidewalk lighting condition on Somerset Street, the Planning Board **[finds / does not find]** that extraordinary conditions exist or undue hardship may result from strict compliance, substantial justice and the public interest are secured with the variation, and the variation is consistent with the intent of the ordinance, and therefore (**waives/does not waive**) B-7 Standard B-11, Lighting, to allow closer spacing of the street lights on Somerset Street.

Staff Recommendation: Planning Staff supports this waiver.

6. B-7 Standard C-2 Parking Entrances: Recognizing the shallow lots and constrained garage layout, the Planning Board **[finds / does not find]** that extraordinary conditions exist or undue hardship may result from strict compliance, substantial justice and the public interest are secured with the variation, and the variation is consistent with the intent of the ordinance, and therefore (**waives/does not waive**) B-7 Standard C-2 Parking Entrances, to allow the entry and exit of the garage entry to be combined on Somerset Street.

Staff Recommendation: The Planning Staff supports this waiver request.

7. B-7 Standard C-5, Decks and Ramps: Recognizing the shallow lots and constrained garage layout, and that the garage design incorporates a green screen on the northerly sloped side along with other architectural devices, the Planning Board **[finds / does not find]** that extraordinary conditions exist or undue hardship may result from strict compliance, substantial justice and the public interest are secured with the variation, and the variation is consistent with the intent of the ordinance, and therefore (**waives/does not waive**) B-7 Standard C-5, Decks and Ramps, to allow visible non-horizontal ramps on the north face of the garage.

Staff Recommendation: The Planning Staff supports this waiver request

8. B-7 Standard C-8, Service, Utility and Mechanical Infrastructure: Because this project has no rear elevation, the Planning Board **[finds / does not find]** that extraordinary conditions exist or undue hardship may result from strict compliance, substantial justice and the public interest are secured with the variation, and the variation is consistent with the intent of the ordinance, and therefore (**waives/does not waive**) B-7 Standard C-8, Service, Utility and Mechanical Infrastructure, to not require all loading docks, delivery areas, truck parking shall be located at the rear or side of buildings and not along public ways.

   Staff Recommendation: The Planning Staff supports this waiver request.

9. B-7 Standard E-3, Massing: The Planning Board **[finds / does not find]** that extraordinary conditions exist or undue hardship may result from strict compliance, substantial justice and the public interest are secured, and the variation is consistent with the intent of the ordinance, and therefore (**waives/does not waive**) B-7 Standard E-3, Massing, to waive the requirement of a differentiated top to the parking garage.

   Staff Recommendation: Planning Staff supports this waiver.

10. B-7 Standard E-12: Materials: The Planning Board [**finds / does not find**] that extraordinary conditions exist or undue hardship may result from strict compliance, substantial justice and the public interest are secured, and the variation is consistent with the intent of the ordinance, and therefore (waives/does not waive) B-7 Standard E-7, Materials to permit the project's current design

    Staff Recommendation: Staff supports the waiver for the present design as shown in the plans dated February 20, 2015. The design of the buildings has improved significantly since the initial submission. In particular, the applicant has done an excellent job in articulating the rooflines of the buildings and in providing a mix of building materials and good fenestration.

D. TRAFFIC MOVEMENT PERMIT

On the basis of the application (2014-203), plans, reports, and other information submitted by the applicant, findings and recommendations contained in the Planning Board Report for Application 2014-203 relevant to the Traffic Movement Permit, Site Plan and Subdivision reviews and other regulations, as well as the Planning Board deliberations and the testimony presented at the Planning Board hearing, the Planning Board finds the following:

That the plan **(is/is not)** in conformance with the standards of the Traffic Movement Permit, as reviewed by Thomas Errico, P.E and comments submitted on January 29, 2015, subject to the following conditions of approval to be met prior to the issuance of a building permit unless otherwise stated:

1. The Marginal Way/Chestnut Street intersection currently meets signal warrants. A traffic signal will be installed in this location as part of this project. Given the nature of the public-private partnership to construct this project, which includes a publicly-funded parking structure, as well as the fact that the City has already collected partial funding from other nearby developments for such a signal, cost will be shared between the City and the applicant. The applicant shall contribute one-third of the cost associated with installation of a traffic signal at that location, and the City shall fund the remainder. The applicant will be responsible for the development of design plans and specifications for review and approval by the Traffic Engineer and Planning Authority.

2. The applicant shall install improvements to the Marginal Way eastbound approach at Franklin Street as documented in their traffic study. This improvement consists of changing the lane assignment on eastbound Marginal Way to a left-lane and a shared through/right lane (it currently consists of a shared left/through lane and a right-turn lane). This improvement is to consist of pavement marking and signing changes only (signal head modifications may be required). No roadway widening is anticipated as part of this work. The improvement shall be installed prior to certificate of occupancy. The applicant shall submit plans for review and approval by the Traffic Engineer and Planning Authority.

3. The applicant shall develop updated traffic signal timing plans for Franklin Street for the three intersections with I-295 Northbound Ramps, Marginal Way, and Somerset Street/Fox Street. The timing plans shall be implemented within 6 months following certificate of occupancy. The applicant shall submit plans for review and approval by the Traffic Engineer and Planning Authority.

4. Pursuant to Chapter 305 of the MDOT Rules and Regulations, the applicant shall make a $24,000 contribution towards improvements to Franklin Street in the Somerset Street/Fox Street and Marginal Way intersection areas. This contribution is related to addressing sub-standard traffic conditions along Franklin Street.

5. Pursuant to Chapter 305, of the MDOT Rules and Regulations Pertaining to Traffic Movement Permits, the applicant shall make a $26,000 contribution towards implementation of the Marginal Way Master Plan. This requirement is to address traffic issues at the Marginal Way intersections with Preble Street and Forest Avenue and general multi-modal improvements along the corridor.

6. Pursuant to Chapter 305, of the MDOT Rules and Regulations Pertaining to Traffic Movement Permits, the applicant shall make a $21,000 contribution towards the implementation of the Somerset Street extension project. This requirement is to address traffic issues along Marginal Way, particularly at Forest Avenue, Preble Street, and Franklin Street.

7. Somerset Street/Pearl Street – The applicant has conducted a detailed evaluation of this installation of a four-way STOP sign traffic control condition and has determined that this type of control is warranted and from a traffic operations perspective performs at acceptable levels of service following project build-out. Accordingly, in order to meet the requirements of Chapter 305, of the MDOT Rules and Regulations Pertaining to Traffic Movement Permits, the applicant shall be responsible for the installation of a four-way STOP intersection. The applicant shall submit plans for review and approval by the Traffic Engineer and Planning Authority.

E. AMENDED OVERALL SUBDIVISION PLAT AND SUBDIVISION PLANS:

On the basis of the application (2014-203), plans, reports, and other information submitted by the applicant, findings and recommendations contained in Planning Board Report for application 2014-203 relevant to the Subdivision Ordinance, the MaineDEP Chapter 500 Stormwater Management Standards relative to Site Location of Development, the delegated review of the Site Location of Development Application, and other regulations, as well as the Planning Board deliberations and the testimony presented at the Planning Board hearings, the Planning Board finds the following:

That the plan **(is/is not)** in conformance with the subdivision standards of the land use code, subject to the following conditions of approval to be met prior to the issuance of a building permit unless otherwise stated:

1. The configuration of the Elm Street sidewalk frontage with the indented parking area in front of Midtown 4 will be re-designed as follows: the on-street parking bay shall be shifted to the south so that it does not constrain the sidewalk in front of building Four. In addition, the sidewalk and curbing must be implemented in a manner that will match an MDOT approved, City plan to modify Elm Street to eliminate that narrow sidewalk at the corner of the Trader Joe's Building. The plans shall be revised in coordination with and in accordance with input from Public Services and the Planning Authority

2. The final plans shall be updated for review and approval to address the Technical Manual standards for ADA compliance and meet the streetscape design and pedestrian accessibility standards as described by the B-7 Design Principles and Standards as follows:

    i. Continue to improve the ramp and landing system on the NE corner of Elm Street – Somerset Street for ADA compliance and to provide quality pedestrian street crossings and a quality pedestrian environment along Elm Street and Somerset Street. The new configuration is to be reviewed and approved by the Traffic Engineer and Planning Authority;
    ii. An updated ADA-compliant accessible pedestrian route graphic (previously C-2.0B) shall be prepared for review and approval. The earlier version (October 2014) relies heavily on the building frontage zone immediately adjacent to all of the buildings. Assurances shall be provided that no intrusions will restrict the accessibility of this route by the retail/commercial uses within (no outdoor seating, etc);
    iii. The applicant shall provide an updated sheet C-2.0B to show revised pedestrian access routes based on the reconfigured sidewalks and ramps on Somerset Street that will provide a direct accessible pedestrian route along Elm Street –;
    iv. The configuration of several curb ramps shall be revised for review and approval by the Traffic Engineer and Planning Authority, so the ramps are aligned to be perpendicular to the flush curb portion of the ramp; and
    v. In order to bring the project into compliance with the ADA, the applicant shall provide an updated sheet C-2.0B to show revised pedestrian access routes based on the reconfigured sidewalks and ramps on Somerset Street.

3. All ramps/stairs/planters/retaining walls for the midtown development that are located within the street right of way shall require a license from the Portland City Council, the terms of which shall require the owner and assigns to be responsible for the maintenance, repair, and long term upkeep of such improvements. Such license shall be recorded in the Cumberland County Registry of Deeds. This responsibility shall be expressly noted on the subdivision plat and in any lease, assignment or other agreements purporting to transfer that responsibility.

4. The applicant shall provide public pedestrian access easements for all sidewalks on private property that are adjacent to the street right of way. All easements shall be submitted for Public Services, Planning Authority and Corporation Counsel review and approval Easements shall specify the function, responsibility of maintenance and repair, as well as ownership of all improvements. The ADA compliant accessible route shall meet the Technical Manual standards for ADA-compliance and the streetscape design and pedestrian accessibility standards as described by the B-7 Design Principles and Standards be resolved to the satisfaction of the Planning Authority.

5. The curb extension on the north side of Somerset Street near the Mews must be extended to the beginning of the nearest on-street parking space along Somerset Street.

6. The applicant shall adjust the final plans to address the pedestrian routings along Chestnut Street and the path of accessibility shall not include the ramp features at the Bayside Trail on Chestnut Street. These revised plans shall be submitted for review and approval by the Traffic Engineer and Planning Authority.

7. The final design of the sidewalk on the south side of Somerset Street shall be submitted for review and approval by the Planning Authority.

8. The applicant shall provide the specific design details for the pedestrian facility infrastructure for all routings and compliant cross slopes, including driveway aprons and which meet the standards contained in Technical Manual for final review and approval by the Traffic Engineer and the Planning Authority.

9. The Applicant's submittal is in conformance with the requirements of the City's Stormwater Management Standards and the MaineDEP Chapter 500 Stormwater Management Standards relative to Site Location of Development, including the Basic and General Standards. All stormwater infrastructure designed to provide water quality treatment to meet the General Standards, including infrastructure proposed in the public right-of-wayshall be privately maintained as stated in the notes on the recording plat and subject to the following conditions:

    i. The developer/contractor/subcontractor must comply with conditions of the construction stormwater management plan and sediment and erosion control plan based on City standards and state guidelines.
    ii. The owner/operator of the approved stormwater management system and all assigns shall comply with the conditions of Chapter 32 Stormwater including Article III, Post Construction Stormwater Management, which specifies the annual inspections and reporting requirements.
    iii. A maintenance agreement for the stormwater drainage system, as attached, or in substantially the same form with any changes to be approved by Corporation Counsel, shall be submitted and signed prior to the issuance of a building permit with a copy to the Department of Public Services.
    iv. Applicant shall secure a license from the Portland City Council for the installation of all stormwater quality treatment units located within the public rights of way. Such license shall be recorded in the Cumberland County Registry of Deeds.

10. The proposed development will require filing a notice of intent to comply with the Maine Construction General Permit with the MaineDEP; a copy of this notice shall be submitted to the City upon filing with MaineDEP for the project record.

11. The Applicant shall continue to coordinate their design with all impacted utility providers, including but not limited to the Portland Water District, Unitil, Central Maine Power, Fairpoint, and Time Warner Cable, to ensure that the design meets applicable standards and to meet specific conditions and requests made by each utility. The location of all exterior utility and gas meters shall be reviewed and approved by the Planning Authority and City Arborist.

12. For the areas behind midtown One and midtown Two, from Bayside Trail STA 6+50 to STA 12+50 (refer to sheets C-3.0 and C-7.12), the face of the retaining wall and fence are proposed primarily on the property line between City of Portland (Bayside Trail) property and the parcels located north of the Bayside Trail. Temporary construction agreements shall be

obtained by the Applicant from the adjacent property owner(s) to complete the work as proposed.

13. The City has agreed to design and fund the installation of the 24" storm drain pipe in Elm Street from Somerset Street to the existing 24" pipe in Elm Street. This extension of 24"pipe shall be constructed by the applicant in the course of project development, at City cost, with the City billed directly by contractor if permissible under applicable procurement policies, otherwise to reimburse applicant directly and within a reasonable time following payment requisition.

14. The Applicant has submitted Figure 1, *Somerset Street Schematic Maintain 18" of Freeboard Adjacent to Noyes Building*, rev. dated January 26, 2015. The civil engineering plans do not currently reflect the layout, grading, drainage, and materials presented on Figure 1 within the Somerset Street Right-of-Way. The Applicant shall update the plans depicting the proposed improvements to the Somerset Right-of-Way to reflect the concepts presented on Figure 1 as part of their final plan, to be submitted for Public Services review and approval prior to issuance of a building permit. Prior to approval of the final grading plan, the City shall make such plans available to abutters for their review and comment, and the applicant shall work together with the City and abutters to coordinate reasonable resolutions to any outstanding details of the street interface with abutting property.

15. The following note shall be amended to read on all final plans: "midtown HAS BEEN DESIGNED TO REFLECT THE PROPOSED RAISING AT SOMERSET STREET BASED ON CITY GUIDANCE. SOMERSET STREET DESIGN AND IMPROVEMENT CONSTRUCTION SHALL BE COMPLETED IN ACCORDANCE WITH THE COST SHARING ARRANGEMENT EMBODIED IN EXHIBIT C TO 2nd AMENDMENT TO PURCHASE AND SALE AGREEMENT, DATED OCTOBER 14, 2014, FOR THIS WORK".

16. That the site plan shall be revised depicting all areas of the Bayside Trail as having a minimum width of 16 feet.

17. Applicant shall be responsible for all costs associated with the repair or reconstruction of the Bayside Trail where damaged or disturbed by applicant construction activity associated with the project. If the plans submitted show changes to the trail grading that are not identified as being completed by others, the applicant is responsible for the costs of those changes.

18. The applicant shall submit examples of other development projects undertaken by the applicant to confirm technical capacity to meet the standards of the subdivision ordinance for Planning Authority review and approval..

19. The Subdivision Plans and Recording Plat shall be subject to review and approval of the Planning Authority, Corporation Counsel, and Department of Public Services, including but not limited to the following:

    i. Detailed references to labeling of easements, content and dimensions of easements, temporary construction easements, subdivision notes, maintenance and repair responsibilities, ownership of all improvements, and other relevant conditions;

ii. The DPS comments submitted on the Amended Subdivision /Recording Plat, dated April 10, 2013 must be met and the plan shall be stamped by a registered land surveyor.
iii. The applicant shall submit a deed for the proposed four foot widening of Somerset Street and the recording plat shall be revised to show the widening on the plat.
iv. All relevant plans and documents cited in notes shall be recorded.
v. The Subdivision Plat shall be revised to show property pins to be set at all locations to define the applicant's property.

20. In the event that the elevation of Somerset Street is raised east of Pearl Street, the applicant or successor shall be responsible for removing ramps, steps and other impediments in providing a continuous at-grade pedestrian access along the front of midtown One. Applicant or successor shall also be responsible for installing new streetscape materials and amenities that achieves a continuous at-grade sidewalk with review and approval by the Planning Authority. The applicant or its successor shall also be responsible for sidewalk and related improvements within their property line along Pearl Street extension should Pearl Street extension be reconstructed in the future.

F. LEVEL III SITE PLAN REVIEW

On the basis of the application (2014-203), plans, reports, and other information submitted by the applicant, findings and recommendations contained in Planning Board Report for application 2014-203 relevant to the Site Plan Ordinance, the MaineDEP Chapter 500 Stormwater Management Standards relative to Site Location of Development, the delegated review of the Site Location of Development Application, and other regulations, as well as the Planning Board deliberations and the testimony presented at the Planning Board hearings, the Planning Board finds the following:

That the plan **(is/is not**) in conformance with the site plan standards of the Land Use Code, Site Location of Development review and DEP Stormwater Permit, subject to the following conditions of approval to be met prior to the issuance of a building permit unless otherwise stated:

a) <u>Transportation Standards</u>

1. The applicant shall provide a detailed Construction Management Plan as a condition of approval. The plan shall be submitted for review and approval by Public Services prior to issuance of any City permit.

2. The configuration of the sidewalk with the indented parking area in front of Midtown 4 will degrade the pedestrian environment along the section of sidewalk. A re-design of this Elm Street frontage is required to comply with the B-7 Design Principles and Standards. Therefore, the on-street parking bay shall be shifted to the south so that it does not constrain the sidewalk in front of building Four. In addition, the sidewalk and curbing must be implemented in a manner that will match an MDOT approved, City plan to modify Elm Street to eliminate that narrow sidewalk at the corner of the Trader Joe's Building.

3. The final plans shall be updated for review and approval by Public Services to address the Technical Manual standards for ADA compliance and meet the streetscape design and pedestrian accessibility standards as described by the B-7 Design Principles and Standards as follows:

i. The ramp and landing system on the NE corner of Elm Street – Somerset Street must be revised to achieve ADA compliance and to provide quality pedestrian street crossings and a quality pedestrian environment along Elm Street and Somerset Street. The new configuration is to be reviewed and approved by the Traffic Engineer and Planning Authority;
ii. An updated ADA-compliant accessible pedestrian route graphic (previously C-2.0B) shall be prepared for review and approval. The earlier version (October 2014) relies heavily on the building frontage zone immediately adjacent to all of the buildings. Assurances shall be provided that no intrusions will restrict the accessibility of this route by the retail/commercial uses within (no outdoor seating, etc);
iii. The section of sidewalk along Elm Street between Midtown 3 and Midtown 4 does not provide a direct accessible pedestrian route (as depicted on Sheet C-2.0B) along Elm Street – the applicant shall provide an updated C-2.0B to show revised pedestrian access routes based on the reconfigured sidewalks and ramps on Somerset Street;
iv. The configuration of several curb ramps shall be revised for review and approval, so the ramps are aligned to be perpendicular to the flush curb portion of the ramp; and
v. Portions of the accessible pedestrian route depicted on C-2.0B are not ADA-compliant due to reliance on crossing the flare of a curb ramp and the final plans shall be revised for review and approval – the applicant shall provide an updated C-2.0B to show revised pedestrian access routes based on the reconfigured sidewalks and ramps on Somerset Street.

4. Required easements for pedestrian public access along the ADA – compliant accessible pedestrian routes located on private property shall be provided for review and approval by Corporation Counsel.

5. The curb extension on the north side of Somerset Street near the Mews must be extended to the beginning of the nearest on-street parking space along Somerset Street.

6. The applicant shall adjust the final plans to address the pedestrian routings along Chestnut Street and that the path of accessibility shall not include the ramp features at the Bayside Trail on Chestnut Street for review and approval by the Traffic Engineer and Planning Authority.

7. The final design of the sidewalk on the south side of Somerset Street shall be submitted for review and approval by the Planning Authority.

8. The applicant shall provide the specific design details for the pedestrian facility infrastructure for all routings and compliant cross slopes, including driveway aprons for review and approval.

9. An in-line Transit Stop on Somerset Street is required and coordination with METRO is required to finalize details for the bus shelter. The proposed bus stop location does not provide the required ADA-compliant bus stop landing area (5’x8’) nor does the bus stop directly connect to the ADA-compliant pedestrian access route at this location (per drawing C-2.0B). The final plans must address ADA compliance and the applicant must confirm that METRO has reviewed and approved the location.

10. The applicant shall provide a parking demand and supply analysis that demonstrates the adequacy of the proposed parking garage for the entire project as part of the TDM to be reviewed and approved by the Traffic Engineer and the Planning Authority.

11. The final plans shall be revised to provide the following:

    i. Adequate spacing between the racks or with adequate spacing from the street or other structures, defined as spacing of 36" (min.) on center between bike hitches that are parallel to each other; spacing of 72" (min) on center between bike hitches that are in line with each other; separation of 30" (min.) on center between a bike hitch mounted parallel to a structure, wall or building; 48" (min.) on center between a bike rack mounted perpendicular to a structure, wall or building.

    ii. The selected bike racks (shown on Sheet L4.0, the Olympia Rack) do not meet the Technical Manual standard for installation within the public right of way. These racks should be replaced with either the Bike Hitch or Downtown rack; and

    iii. A detailed layout of the bicycle parking with the parking garage should be provided to ensure the functionality and accessibility to the clusters of 8 bike racks, with 2 clusters per level. It does not appear that the racks will be fully accessible when cars are parked immediately adjacent to the clusters.

12. The TDM Plan shall be finalized for review and approval by the Traffic Engineer and the Planning Authority. An annual monitoring program is required for the TDM with reports provided to the City and pursuant to which other strategies will be reviewed on an annual basis.

13. The Applicant shall be responsible for the maintenance and repair of all stairways, landings and retaining walls required by the development located within the public right-of-way along Midtown's street frontage and shall secure a license from the City Council for these improvements,, which shall be recorded at the registry of deeds. This responsibility shall be noted on the both the subdivision plat and the site plan.

14. That the site plan shall be revised depicting all areas of the Bayside Trail as having a minimum width of 16 feet.

15. Applicant shall be responsible for all costs associated with the repair or reconstruction of the Bayside Trail where damaged or disturbed by applicant construction associated with the project.

b) <u>Environmental Quality Standards</u>

1. A final landscape plan shall be submitted that makes the following changes to the last plan submitted.:
    i. Show all tree save areas, protection areas and protection measures, including physical barriers/protective fencing during construction. No ~~no~~ construction equipment or storage shall take place near root zones.
    ii. Specify that the landscape contractor shall properly prepare trees to be relocated to be made available to the city of Portland for reuse. Such preparation includes digging and preparing the rootball with "balled and burlap" standard. Trees shall be cared for on-site

as needed for an agreed upon period of time, which includes watering and site protection in a safe location.

iii. All plant material shall meet the size and species requirements of the arboricultural standards of Portland's Technical Manual, with the exception that some Dog Woods may be included in the tree mix;

iv. The raised granite planter for the street trees should change from saw-cut to "Thermal Top".

v. Landscape plant sizes shall be 5 gallon for shrubs; green vines and perennials shall be a minimum 3 gallon size.

vi. The 26 Pagoda Dogwood trees on the trail side of Midtown Three should be upgraded to a larger tree species such as Yellow Birch, River Birch, Red Maple, or Swamp Oak and planted in fewer numbers, in groves if feasible..

2. The Applicant's submittal is in conformance with the requirements of the City's Stormwater Management Standards and the MaineDEP Chapter 500 Stormwater Management Standards relative to Site Location of Development, including the Basic and General Standards. All stormwater infrastructure designed to provide water quality treatment to meet the General Standards, including infrastructure proposed in the public right-of-way, shall be privately maintained as stated in the notes on the recording plat and subject to the following conditions:

   i. The developer/contractor/subcontractor must comply with conditions of the construction stormwater management plan and sediment and erosion control plan based on City standards and state guidelines;

   ii. The owner/operator of the approved stormwater management system and all assignsshall comply with the conditions of Chapter 32 Stormwater including Article III, Post Construction Stormwater Management, which specifies the annual inspections and reporting requirements;

   iii. A maintenance agreement for the stormwater drainage system, as attached, or in substantially the same form with any changes to be approved by Corporation Counsel, shall be submitted and signed prior to the issuance of a building permit with a copy to the Department of Public Services; and

   iv. Applicant shall secure a license from the City Council for the installation of stormwater quality treatment units within public rights-of-way.

3. The proposed development will require filing a notice of intent to comply with the Maine Construction General Permit with the MaineDEP; a copy of this notice shall be submitted to the City upon filing with MaineDEP for the project record.

4. The Applicant shall continue to coordinate their design with all impacted utility providers, including but not limited to the Portland Water District, Unitil, Central Maine Power, Fairpoint, and Time Warner Cable, to ensure that the design meets applicable standards and to meet specific conditions and requests made by each utility. The location of all exterior utility and gas meters shall be reviewed and approved by the Planning Authority and City Arborist.

5. For the areas behind midtown One and midtown Two, from Bayside Trail STA 6+50 to STA 12+50 (refer to sheets C-3.0 and C-7.12), the face of the retaining wall and fence are proposed primarily on the property line between City of Portland (Bayside Trail) property and the parcels located north of the Bayside Trail. Temporary construction agreements shall be obtained by the Applicant from the adjacent property owner(s) to complete the work as proposed.

6. The City has agreed to design and fund the installation of the 24" storm drain pipe in Elm Street from Somerset Street to the existing 24" pipe in Elm Street. This extension of 24"pipe shall be constructed by the applicant in the course of project development , at City cost, with the City billed directly by contractor if permissible under applicable procurement policies, otherwise to reimburse applicant directly and within a reasonable time following payment requisition.

7. The Applicant has submitted Figure 1, *Somerset Street Schematic Maintain 18" of Freeboard Adjacent to Noyes Building*, rev. dated January 26, 2015. The civil engineering plans do not currently reflect the layout, grading, drainage, and materials presented on Figure 1 within the Somerset Street Right-of-Way. The Applicant shall update the plans depicting the proposed improvements to the Somerset Right-of-Way to reflect the concepts presented on Figure 1 as part of their final plan, to be submitted for review and approval by Public Services prior to issuance of a building permit. Prior to approval of the final grading plan, the City shall make such plans available to abutters for their review and comment, and the applicant shall work together with the City and abutters to coordinate reasonable resolutions to any outstanding details of the street interface with abutting property.

8. The following note shall be amended to read on all final plans: "midtown HAS BEEN DESIGNED TO REFLECT THE PROPOSED RAISING AT SOMERSET STREET BASED ON CITY GUIDANCE. SOMERSET STREET DESIGN AND IMPROVEMENT CONSTRUCTION SHALL BE COMPLETED IN ACCORDANCE WITH THE COST SHARING ARRANGEMENT EMBODIED IN EXHIBIT C TO 2nd AMENDMENT TO PURCHASE AND SALE AGREEMENT, DATED OCTOBER 14, 2014, FOR THIS WORK ".

c) <u>Public Infrastructure and Community Safety Standards</u>

i. The final location of the hydrant to be relocated along Lancaster street shall be reviewed and approved by the Fire Department.

ii. A Dumpster is proposed to be placed inside of Midtown Three for the trash holding area. Although this building will be provided with a full sprinkler system, a two hour separation between this space and the remainder of the building shall be required.

iii. The new proposed curb cut and access off Elm Street to the small side of Midtown Four must be a minimum of 16' wide for fire access. The final plans shall be revised showing the required signage and striping on the driveway indicating Fire Lane NO PARKING for review and approval.

iv. During construction, the Fire Department requires the following:
    i. Per NFPA 1, 16.3.4, Access for firefighting equipment.
    ii. Per NFPA1,16.4.3, Fire Protection during construction. (Water supply)
    iii. Per NFPA 16.4.3.3.2, Standpipe Installations in Buildings under construction.
    iv. Per NFPA 16.7.1.6, Fire Extinguishers
    v. Per NFPA 16.7.2, Fuel Systems.

v. The Applicant must continue to coordinate their design with all impacted utility providers to ensure that the design meets applicable standards and to meet specific conditions and requests made by each utility. The location of all exterior utility and gas meters shall be reviewed and approved by the Planning Authority and City Arborist.

d) Site Design Standards

1. The lighting plan with the photometrics shall be subject to the Planning Authority's review and approval.

2. Signage shall meet zoning ordinance requirements and the overall signage plan shall be subject to the Planning Authority's review and approval.

3. References to snow storage within the Bayside Trail Corridor shall be removed from all plans and the final management of snow storage submitted for review and approval by the Planning Authority.

4. The location of all exterior utility and gas meters shall be reviewed and approved by the Planning Authority and City Arborist.

5. Applicant shall submit catalog cut and or samples of exterior materials used for the retaining walls and stairs for Planning Staff review and approval.

6. The proposed development is consistent with the B-7 Design Standards subject to the following conditions of approval:

   The mid-block permeability plan is subject to the following conditions of approval:

   a. Clear posting that the public is welcome to travel through the space during normal business hours shall be provided,
   b. That a plan for public access through the first floor of Midtown Three during normal business hours (which are assumed will approximate 9am-5pm daily but must by necessity be allowed to fluctuate in accordance with particular tenant arrangements, holiday schedules, and other commercially reasonable variables), including a fully ADA accessible route with functioning access doors on both the Somerset Street side and, when berm removal and resultant conditions permit, the Bayside Trail side of Midtown Three, shall be submitted for Planning Authority review and approval prior to issuance of an occupancy permit for the first floor of Midtown Three.
   c. That the City and Federated shall work together to resolve the costs and responsibilities for utilization of contaminated berm soils as fill under the project buildings to the extent feasible or, to the extent required, at City expense the removal of such soils and establishment of post development grades, landscape, surface treatments and access ways between the northerly façade of Midtown Three and the Bayside Trail. Plans for this area shall be determined collaboratively with the Planning Authority and, to the extent it is necessary, approval shall not be unreasonably withheld..

ii. Standard B-4: Sidewalks and Crosswalks: The accessible route shall meet the Technical Manual standards for ADA-compliance and the streetscape design and pedestrian accessibility standards as described by the B-7 Design Principles and Standards be resolved to the satisfaction of the Planning Authority.

i. **Standard B-10: Encroachments:** The accessible route shall meet the Technical Manual standards for ADA-compliance and the streetscape design and pedestrian accessibility standards as described by the B-7 Design Principles and Standards be resolved to the satisfaction of the Planning Authority.

ii. **Standard C-7: Bike Racks:** A detailed layout for bicycle parking within the parking garage shall be provided that ensures functionality and accessibility that meets the Technical Manual Standards to the satisfaction of the Planning Authority.

iii. **Standard D-4: Pedestrian Amenities 2. Bus Shelters:** Bus stop location and level of ADA-compliance shall be resolved to meet the Technical Manual Standards to the satisfaction of the Planning Authority.

iv. **Standard D-5: Public Art and other special features:** The treatment of any building location shown to potentially host public art should be subject to approval of the Planning Authority and, as the rest of the ground level, be completed in materials on the "predominant materials" list in Standard E-12.

v. **Standard E-12: Materials:** Final storefront design shall be subject to approval of the Planning Authority and, as the rest of the ground level, be completed in materials on the "predominant materials" list in Standard E-12.

Prior to receiving a building permit, the applicant shall submit a final set of elevations and site plans dated March 3, 2015 or a later date that shall removal any scriveners errors and incorporate any changes made in the plans between the initial submission and Planning Board approval.

STAFF ATTACHMENTS

1. Bayside Vision and Midtown, Supplement to Planning Staff Memo for Dec. 9, 2014 Workshop
2. Memo from Tom Errico, Traffic Review Consultant (dated Jan. 27, 2015)

2A. Memo from Tom Errico, Traffic Review Consultant (dated Feb. 26, 2015)

3. Memo from John Peverada, Parking Manager (dated Jan. 5, 2015)
4. Memo from Bruce Hyman, Transportation Program Manager (dated Jan. 28, 2015)
5. Memo from David Senus, Development Review Consultant (dated Jan. 28, 2015)
6. Memo from David Margolis-Pineo, Deputy City Engineer (dated Jan. 7, 2015)
7. Memo from Keith Gautreau and Craig Messinger, Fire Department (dated Jan. 23, 2015)
8. Memo from Jeff Tarling, City Arborist (dated Jan. 6, 2015)
9. Memo from Greg Mitchell, Economic Development Director (dated Jan. 29, 2015)
10. Memo from Greg Mitchell, Economic Development Director
11. Background Information on EIFS
12. Elm Street Curb Plan
13. Memo from Caitlin Cameron, Urban Designer (dated 2-26-15)
14. January 14, 2014 Midtown Planning Board Approval Letter
15. Public Comment
    PC1 – Matt Baxter dated 1-8-15
    PC2 – John Bannon dated 1-9-15
    PC3 – Robert Gerber dated 1-8-15

APPLICANT ATTACHMENTS

A. Application and Written Submission

Exhibit 1 – Level III Final Site Plan and Subdivision Application
Exhibit 2 – Project Description
Exhibit 3 – Title, Right or Interest
Exhibit 4 – Technical and Financial Capacity
Exhibit 5 – Utilities Narrative
Exhibit 6 – Fire Department Review and Life Safety Plan
Exhibit 7 – State and Federal Permit Requirements
Exhibit 8 – Construction Management Plan
Exhibit 9 – Traffic Report
Exhibit 9a – Updated Traffic Report dated 1-2015
Exhibit 9b – Supplemental Traffic Information dated 1-29-15
Exhibit 10 – Transportation Demand Management
Exhibit 11 – AutoTURN Templates
Exhibit 12 – Transit Stop for Metro
Exhibit 13 – Stormwater Management Report and O & M Manual
Exhibit 14 – Erosion and Sediment Control Plan
Exhibit 15 – Geotechnical Report
Exhibit 16 – Environmental and Historical Considerations

Exhibit 17 – Compliance with Zoning and B-7 Requirements
Exhibit 18 – Proposed Easements, Covenants
Exhibit 19 – Review of Section 14-526 Design Standards
Exhibit 20 – Compliance with Comprehensive Plan
Exhibit 21 – Areas to be Disturbed by Construction
Exhibit 22 – Sample of Exterior Materials
Exhibit 23 – Written Waivers
Exhibit 24 – Leed Information
Exhibit 25 – Traffic Movement Permit Application

B. Responses to Planning Staff Comments of November 24, 2014 (December 1, 2014)

1. Cover Letter
2. PWD, Unitil and CMP Responses
3. CBT Response to B07 Waivers
4. Pedestrian Wind Conditions/Assessment
5. Updated Building Façade Perspective

C. Responses to Planning Staff Comments of January 13, 2015

Att. A - Letter from The Federated Companies Addressing Non-Technical issues
Att. B - Letter of Response Regarding Waiver Requests & B-7 Design Guidelines
Att. C - Capacity Availability Letter - Wastewater
Att. D - Updated Transportation Demand (TDM) Plan
Att. E - Plan Sheet Index Updated to Reflect Changes dated 1-21-15

CC. February 20, 2015 Submission including Summary of Revisions

D. Plans

Plans 1-10 (Changes are highlighted in bubbles) (Revised 1-21-15)
Plan 1 Amended Subdivision/Recording Plat
Plan 2 Site Layout Plan – midtownOne and midtownTwo
Plan 3 Site Layout Plan – midtownThree
Plan 4 - Site Layout Plan – midtownFour
Plan 5 - Overall Utility plan
Plan 6 - Utility Plan – midtownOne and midtownTwo
Plan 7 - Utility Plan – midtownThree
Plan 8 - Utility Plan – midtownFour
Plan 9 - Bayside Trail Retaining Wall Details and Abutter Options
Plan 10 - Bayside Trail Profile

Civil Plans
C-1.0 Cover Sheet
C-1.1 General Notes and Legend
C-1.2 Draft Amended Subdivision-Recording Plat (Revised 1-21-15)
C-1.2A2006 Existing Conditions Survey Prepared by SGC (Reference Only)
C-1.3 ALTA-ACSM Land Title Survey (by City of Portland)

C-1.4 2012 Boundary and Topographic Survey (by Owen Haskell) C-1.5 Residential Subdivision of Lot 7
C-1.8 Existing Conditions and Removals Plan
C-2.0 Overall Site Plan
C-2.0A Overall Site Plan and Dimensions
C-2.0B Accessible Route Plan
C-2.1 Site Layout Plan – midtownOne and midtownTwo (Revised 1-21-15)
C-2.2 Site Layout Plan – midtownThree (Revised 1-21-15)
C-2.3 Site Layout Plan – midtownFour (Revised 1-21-15)
C-2.4 midtownOne and midtownTwo Building Envelope and Open Space Computations
C-2.5 midtownThree Building Envelope and Open Space Computations
C-2.6 midtownFour Building Envelope and Open Space Computations
C-3.0 Grading and Drainage Plan – midtownOne and midtownTwo (Revised 1-22-15)
C-3.1 Grading Plan – midtownThree (Revised 1-22-15)
C-3.2 Grading Plan – midtownFour (Revised 1-22-15)
C-3.3 Proposed Spot Grades for East Side of Somerset
C-3.4 Proposed Spot Grades for West Side of Somerset
C-3.5 Proposed Spot Grades for Chestnut Street North
C-3.6 Proposed Spot Grades for Chestnut Street South
C-3.7 Proposed Spot Grades for Pearl Street Extension
C-3.8 Proposed Spot Grades for Elm Street
C-3.9 Data Summary Sheet (Somerset and Chestnut)
C-3.10 Proposed Stormdrain Schedules for StormTreat Units
C-3.11 Proposed Stormdrain Schedules for Tree Box Filter Systems Sheet 1 of 3
C-3.12 Proposed Stormdrain Schedules for Tree Box Filter Systems Sheet 2 of 3
C-3.13 Proposed Stormdrain Schedules for Tree Box Filter Systems Sheet 3 of 3
C-3.14 midtownOne and midtownTwo Courtyard Cross Sections
C-3.15 Courtyard and Mews Spot Grades and Water Quality System
C-4.0 Overall Utility Plan (Revised 1-21-15)
C-4.1 Utility Plan – midtownOne and midtownTwo (Revised 1-21-15)
C-4.2 Utility Plan – midtownThree (Revised 1-21-15)
C-4.3 Utility Plan – midtownFour (Revised 1-21-15)
C-4.4A Electrical Distribution Plan Prepared by FST
C-4.4B Electrical Distribution Plan Prepared by CMP
C-6.0 Erosion Control Plan
C-6.1 Erosion and Sediment Control Details
C-6.2 Erosion and Sediment Control Details
C-7.0 Street and Driveway Cross Sections
C-7.0A Miscellaneous Sections and Details
C-7.1 Transportation Systems and Street Design
C-7.2 Transportation Systems and Street Design
C-7.3 San Sewer and Storm Drain Details
C-7.4 San Sewer and Storm Drain Details
C-7.5 Water Details

C-7.6 Water Details
C-7.7 Stormwater Details Stormtreat Systems
C-7.8 Treebox Filter with Underground Storage Details
C-7.9 Stormtreat and Brentwood Underground Storage Details
C-7.10 Treebox Filter with Underground Storage Details
C-7.11 Boxless Tree Filter for system A
C-7.12 Bayside Trail Retaining Wall Details and Abutter Options (Revised 1-21-15)
C-7.13 Retaining Wall Details
C-8.0 Somerset Street Profile
C-8.0A Somerset Street Profile Facing Noyes Building
C-8.1 Elm Street, Chestnut Street and Pearl Street Extension Profiles
C-8.2 Bayside Trail Profile (Revised 1-21 15)
C-10.0 Somerset Street Cross Sections
C-10.1 Somerset Street Cross Sections
C-10.2 Somerset Street Cross Sections
C-14.0 Predevelopment Watershed Map
C-14.1 Postdevelopment Watershed Map
C-15 Somerset Street Revised Cross Section

<u>Architectural Plans</u>
1-A101 Ground and Roof Plan – midtownOne (Revised 2-19-15)
1-A102 Typical Plan – midtownOne (Revised 2-19-15)
1-A201 Elevations – midtownOne (Revised 2-19-15)
2-A101 Ground and Entry Plan – midtownTwo (Revised 2-19-15)
2-A102 Typical and Roof Plan – midtownTwo (Revised 2-19-15)
2-A201 Elevations – midtownTwo (Revised 2-19-15)
3-A101 Ground Plan – midtownThree (Revised 2-19-15)
3-A102 Typical Plan – midtownThree (Revised 2-19-15)
3-A103 Roof Plan – midtownThree (Revised 2-19-15)
3-A201 Elevations – midtownThree (Revised 2-19-15)
3-A202 Elevations – midtownThree (Revised 2-19-15)
4-A101 Ground and Roof Plan – midtownFour (Revised 2-19-15)
4-A102 Typical Plan- midtownFour (Revised 2-19-15)
4-A201 Elevations – midtownFour (Revised 2-19-15)
A101A Ground and Entry Plan – midtownTwo (Revised 1-20-15)
A101B Ground and Roof Plan – midtownFour (Revised 1-20-15)
A101C Ground and Roof Plan – midtownOne (Revised 1-20-15)
A101D Ground Plan – midtownThree (Revised 1-20-15)
A102 Typical and Roof Plan – midtownTwo (Revised 1-20-15)
A102A Typical Plan – midtownOne (Revised 1-20-15)
A102B Typical Plan – midtownThree (Revised 1-20-15)
A102C Typical Residential Plan - midtownFour (Revised 1-20-15)
A103 Roof Plan – midtownThree (Revised 1-20-15)
A201A Elevations – midtownFour (Revised 1-20-15)
A201B Elevations – midtownOne (Revised 1-20-15)
A201C Elevations – midtownThree (Revised 1-20-15)

A201D Elevations – midtownTwo (Revised 1-20-15)
A202 Elevations – midtownThree
A800 Signage Elevations (11-14-14)
Context Renderings 1-29-15 (Revised 1-20-15)

<u>Landscape and Lighting Plans</u>
L1 Landscape and Lighting Plan
L1.1 Detail Landscape and Lighting Plan
L2 Landscape and Lighting Plan
L2.0 Landscape Details
L2.1 Landscape Details
L2.2 Lighting Details
L3 Landscape and Lighting Plan
L3.0 Photometrics – midtown 1 and 2
L3.1 Photometrics – midtown 3 and 4
L3.2 Photometrics – Garage Floor 7
L3.3 Photometrics – Garage Floors 3-6
L3.4 Photometrics – Garage Floor 2
L3.5 Photometrics – Garage Floor 1

ATT. 1

Supplement to Planning Staff Workshop Memo of December 9, 2014

Bayside Vision and Midtown

At the November 12, 2014 workshop Staff was asked to respond to a question whether the midtown development met the objectives of A New Vision For Bayside (Bayside Plan).

In a nutshell, the Bayside Plan envisions Bayside as a dense, urban, mixed use, walkable neighborhood. The basic underpinning of the plan are the 11 Development Principles which are listed below. The entire text of the principles are attached.

1. Urban gateway
2. Economic and employment opportunities
3. A walkable district
4. A critical mass of dwellings
5. Transit-oriented development
6. Multi-level parking structures
7. A neighbor center
8. Recreation and open space
9. Social service network
10. Environmental remediation
11. Scrapyard redevelopment

In reviewing the midtown submission with the Development Principles it is evident that the project provides economic and employment opportunities **(#2)**; builds new housing contributing towards a critical mass of dwellings **(#4)**; adds development to support a transit oriented development **(#5)**; constructs a multi-level parking garage **(#6)**; and remediates and redevelops a brownfields site including a scrap yard site **(#10** and **#11)**.

Other Development Principles are less clear as we are in the process of reviewing the development plan. In a gateway location **(#1)** midtown contributes toward activity and vitality but we are still reviewing the physical and architectural elements of the development program. Midtown is making significant improvements in making the project site more walkable **(#3)** but in the review process we are trying to address pedestrian circulation issues as discussed in today's memo. In terms of recreation and open space (#8), the Bayside Trail is already in place and the developer has created a mews and is lifting the grade of the trail. In the review process we are seeking to address issues of access and circulation issues related to the trail and the surrounding pedestrian network. The remaining Development Principles of neighborhood center **(#7)** and social service network **(#9)** do not apply.

B-7 Mixed Use Development District

In terms of specific zoning regulations (such as building height) the Bayside Plan is largely silent. The Bayside Plan did anticipate the need for new zoning to guide Bayside's future however implementation of zoning regulations was left as a separate process after the plan was adopted by the City Council in 2000. The product of that zoning process was the new B-7 Mixed Use Development District which was enacted in 2006.

The purpose section of the B-7 zone (sec. 14-294) states in part: "Certain districts, including but not limited to bayside, lie at the perimeter of the established downtown and contain significant redevelopment opportunities. The B-7 zone encourages these districts to acquire a distinctly urban form through dense development featuring a mix of uses such as housing, retail, offices, research and development, and artisan studios and that emphasize a quality pedestrian experience, promotes public transit, and demonstrates exemplary urban design...The zone promotes a wide range of uses in high quality structures and public open spaces to achieve twenty-four (24) hour vitality and shared parking infrastructure."

The B-7 zone sets the basic framework for regulating uses, setbacks, height and other space and bulk requirements in creating an urban district with maximum building setbacks, minimum building height, no limit on housing density, restrictions on surface parking and other measures that support an urban environment. The submitted midtown plan meets the B-7 zoning standards including the minimum height requirement of 4 stories.

B-7 Mixed Use Urban District Zone Design Principles and Standards

To provide further guidance in reviewing development proposals beyond zoning and the site plan ordinance, the B-7 Design Principles and Standards were created in 2008. The purpose section of the B-7 design standards is shown below.

> The *B-7 Design Principles and Standards* are intended to guide Bayside neighborhood residents, developers, designers, City officials and staff and others in the creation of a vibrant, aesthetic and sustainable neighborhood which is dense, mixed-use, and pedestrian-friendly. The B-7 Design Standards support excellence in urban and architectural design which contributes to a strong sense of place, encourages 24-hour activity, promotes multi-modal transportation, provides public spaces and protects scenic views. The B-7 Design Standards meet the following goals:
>
> 1. Support and reinforce the goals of *A New Vision for Bayside*.

2. Accentuate Bayside as a gateway to the city by highlighting major corridors and corners.

3. Preserve the neighborhood building scale that is typical of the small blocks of Portland.

4. Extend the existing street grid and create mid-block permeability, in order to provide opportunities for multi-modal access, service alleys, public spaces, view corridors, and access to light and air. Design pedestrian oriented streets with significant landscaping.

5. Preserve view corridors toward Back Cove and the White Mountains, as well as views looking toward the spine of the Portland peninsula, as shown in the *Bayside Height Map*.

6. Create dense, mixed-use, multi-modal development that is adjacent to infrastructure, highways, jobs and educational opportunities.

7. Create spaces of various scales that are attractive to creative industries, such as art, architecture, design, film, media, music, performing arts, publishing and software design

8. Allow building heights that create space for a critical mass of people needed to make a new urban neighborhood successful. Ensure that development is human in scale at the pedestrian level.

9. Encourage architecture which expresses the aesthetic of the time in which it was built, that respects local urban design patterns, and that is compatible with adjacent traditional residential neighborhoods. The Portland Peninsula has been Maine's most urban area for several centuries and new architectural styles and materials are often introduced here. It is expected that this will continue to be the case as sites in the B-7 Zone are redeveloped.

10. Incorporate "green" design, smart growth policies, and sustainable technology into the urban design, site plan design, and architectural designs of the Bayside neighborhood.

11. Create a variety of mixed-use commercial opportunities that serve the neighborhood, city and region. Ensure that commercial development which is regional in scale, is compatible in design and massing to the adjacent traditional residential neighborhoods.

12. Provide a hierarchy of green spaces on public and private land with parks, playgrounds, plazas and trails. Ensure that the streetscape design enhances the pedestrian experience.

13. Use authentic building materials and construction methods that are of the highest quality and appropriate to an urban environment and expected to last at least 50 years.

14. Adaptively reuse existing buildings.

Summary: A New Vision For Bayside is a policy document that forms the policy basis for land development regulations and is not intended to be a prescriptive regulatory document. The regulatory tools available to the Board (such as B-7 design standards) have a direct lineage from the Bayside Plan. A policy document such as the Bayside Plan cannot be expected to include the detailed code requirements that a zoning ordinance or design standards may provide. The standards however do help implement the basic policies established by the Bayside Plan.

BAYSIDE REDEVELOPMENT MISSION STATEMENT

Bayside presents an opportunity to shape the last and largest land resource of the Portland Peninsula. Much of this land has an industrial heritage and is vacant or underutilized. Surrounding these parcels is a district with a multitude of uses ranging from industrial to commercial and residential.

Environmental conditions inhibit further investment, but can be overcome with reasonable and attainable remediation measures. Market forces are favorable, and the community is activated to seize the moment. The positive potential of this area will contribute to the future prosperity and quality of life for all Portlanders.

It is time to shed the back door image of Marginal Way, to recast Bayside as a productive and connected urban neighborhood, the front and center of the Portland peninsula. Bayside can support development of housing, commerce, and community resources, and represent the pride and the quality of the City of Portland.

Development Principles

Urban gateway...

1

Bayside will be an attractive urban gateway and extension of the downtown business district for the City of Portland, This district will create a new front face of the City, and present the character of Portland which will encourage people to stop, visit, and enjoy all that the downtown and Portland peninsula have to offer. A fully functioning urban district and neighborhood will reconnect with and add to the fabric of the peninsula from downtown to the adjacent neighborhoods. A compact blend of uses fosters lively daily interaction and a sense of community spirit. A wide variety of housing, shops, workplaces, open spaces, centers of community and civic activity, and needed social services will comprise the future of Bayside.

Economic and employment opportunities...

2

Bayside's location between downtown and I-295 presents a significant economic and market opportunity to be planned and managed to create the best value for development and quality of life improvements for the community, generate a broad range of employment opportunities and improve the tax base. Bayside presents prime real estate development prospect to expand the central business district with new office and commercial space, along with small-scale affordable spaces for start-up and small business.

A walkable district...

3

Bayside will contain housing, workplaces, services, transportation, recreation, dining and shopping, all within comfortable walking distance of each other and the downtown. Attractive lighted sidewalks, bicycle and pedestrian trail linkages will connect these uses, designed for full and maximum accessibility. Key features will include Bayside Avenue (currently Marginal Way) as a landscaped boulevard, with Chestnut, Elm, Oxford, and the rail-to-trail corridor forming major pedestrian axes.

A critical mass of dwellings...

An urban district must have a mix of residences to be truly vital. The Bayside plan will fill in, extend, and enhance the existing residential fabric with a substantial amount of new housing units. A diversity of dwelling types will enable citizens from a wide range of economic levels, age groups, and life circumstances to live in Bayside. Careful attention to design, scale, density and variety will strive to create a healthy and compatible neighborhood similar to other successful urban neighborhoods on the Portland peninsula.

Transit-oriented development...

Mixed use, compact and intensive land development, and quick and convenient transit service combine to make Bayside a neighborhood that has genuine mobility choice. This model for the peninsula and beyond will be designed from the ground up, free from dependence upon the automobile. Features including the trail connectors and frequent shuttle service throughout the peninsula area and to all major transportation centers will signify progress and commitment by the city to implement the 1993 *Portland Transportation Plan.*

Multi-level parking structures...

Ample parking is needed to serve the needs of the Bayside residents, visitors and workforce. Strategically located parking structures will serve multiple functions, connect with transit services, facilitate the flow of traffic with minimal impact on neighborhood residents, and avoid extensive land consumption by surface parking lots. The location and timing of development of parking structures must complement and enhance the function of Bayside as a transit-oriented district and respond to the policies of the *Portland Transportation Plan.*

A neighborhood center...

The community centers at the Chestnut Street church, Boys and Girls Club, and Portland High School combine to form a significant center for the neighborhood with space for youth and family recreation and community gatherings.

Recreation and open space...

Development of a multi-use trail and bikeway on the abandoned rail corridor will be a significant cornerstone feature of the Bayside plan. The trail and open spaces such as squares, greens, parks and community gardens will be located and designed to encourage active use, and to link with the Eastern Prom Trail, Back Cove, and Deering Oaks Parks. The plaza at the base of Chestnut Street will provide a focal open space.

A social service resource network...

Bayside will continue to fulfill its role as the hub of a social service network of substantial recognized value to the city, the region and the State of Maine. The homeless, the disabled, and those in poverty rely on these services for survival and hope. Vital facilities such as the homeless shelters and related services will remain in this area. Service clusters will provide a permanent and stable working environment, integral to the fabric of the community, that builds upon new and established working relationships to best serve the needs of the community.

Environmental Remediation...

The USEPA Brownfields Program encourages the reuse of vacant and underutilized land by providing for practical cleanup standards that are based on the future use of the land. Bayside redevelopment projects will clean up the soil and recycle these underutilized parcels into productive resources for the future of the Portland community. Redevelopment of brownfields in Bayside counters the trend toward sprawl development in this region, adding the vigorous urban center of Portland

Scrapyard Redevelopment...

Removal and redevelopment of the current scrapyards into more compatible and productive uses is another cornerstone to the Bayside redevelopment plan, that will spur private development and improve aesthetic, economic, and community character of the Bayside district.

ATT 2

Criteria for Planning Board Report
Transportation Standards

Comments Provided by Thomas Errico, PE (1-27-2015)

A. Section 14-526 Site Plan Standards:

Requirements for approval

(a) *Transportation Standards*

1. *Impact on Surrounding Street Systems*

The provisions for vehicular loading and unloading and parking and for vehicular and pedestrian circulation on the site and onto adjacent public streets and ways; and the incremental volume of traffic will not create or aggravate any significant hazard to safety at or to and including intersections in any direction where traffic could be expected to be impacted; and will not cause traffic congestion on any street which reduces the level of service below Level "D" as described in the 1985 Highway Capacity Manual published by the Transportation Research Board of the National Research Council, a copy of which manual is on file with the public works authority, or substantially increase congestion on any street which is already at a level of service below Level "D".

Review:

- 11/6/2014 Comment: A Traffic Movement Permit (TMP) that complies with MaineDOT Law was issued as part of the previous approval process. Given that the current development program is expected to generate less traffic, the applicant has two options for consideration. Option 1 would be for the applicant to retain the current TMP (and the trips levels) and meet all requirements as defined previously. A second option would be for the applicant to seek an amended or new TMP and follow all procedures and requirements as defined by MaineDOT. I would note that I am in the process of coordinating this issue with MaineDOT and will provide additional clarification as soon as possible.

- 12/4/2014 Comment: The applicant is proceeding with a new Traffic Movement Permit Application. A Traffic Movement Permit Application has been submitted and deemed complete. A Traffic Study Scoping meeting has been scheduled for December 9th at 9am in the Planning Conference Room. The Scoping meeting will define specific requirements of the traffic study for the project. General traffic mobility and safety issues will be reviewed after the receipt of the final traffic study.

- 1/7/2015 Comment: The applicant has continued to coordinate on assumptions for the Traffic Impact Study and comments will be provided upon receipt of the Study.

Status: The applicant has submitted a traffic study and supplemental information that is compliant with the Traffic Scoping Meeting requirements. The following summarizes the traffic recommendations for the project and therefore represent the requirements for issuances of a Traffic Movement Permit.

- ***The applicant will be required to install a traffic signal at the Marginal Way/Chestnut Street intersection. This intersection currently meets signal warrants and accordingly this improvement shall be installed prior to***

certificate of occupancy. It should be noted that the applicant will be responsible for the development of design plans and specifications for review and approval by the City.

- *The applicant shall install improvements to the Marginal Way eastbound approach at Franklin Street as documented in their traffic study. This improvement consists of changing the lane assignment on eastbound Marginal Way to a left-lane and a shared through/right lane (it current consist of a shared left/through lane and a right-turn lane). This improvement is to consist of pavement marking and signing changes only (signal head modifications may be required). No roadway widening is anticipated as part of this work. The improvement shall be installed prior to certificate of occupancy. The applicant shall submit plans for review and approval.*

- *The applicant shall develop updated traffic signal timing plans for Franklin Street for the three intersections with I-295 Northbound Ramps, Marginal Way, and Somerset Street/Fox Street. The timing plans shall be implemented within 6 months following certificate of occupancy. The applicant shall submit plans for review and approval.*

- *The applicant shall make a $24,000 contribution towards improvements to Franklin Street in the Somerset Street/Fox Street and Marginal Way intersection areas. This contribution is related to addressing sub-standard traffic conditions along Franklin Street. This contribution amount is for the full build project and may be proportioned according to traffic generation levels for project phases.*

- *The applicant shall make a $26,000 contribution towards implementation of the Marginal Way Master Plan. This requirement is to address traffic issues at the Marginal Way intersections with Preble Street and Forest Avenue and general multi-modal improvements along the corridor. This contribution amount is for the full build project and may be proportioned according to traffic generation levels for project phases.*

- *The applicant shall make a $21,000 contribution towards the implementation of the Somerset Street extension project. This requirement is to address traffic issues along Marginal Way, particularly at Forest Avenue, Preble Street, and Franklin Street. This contribution amount is for the full build project and may be proportioned according to traffic generation levels for project phases.*

- *Somerset Street/Pearl Street – The applicant has conducted a detailed evaluation of this installation of a four-way STOP sign traffic control condition and has determined that this type of control is warrant and from a traffic operations perspective performs at acceptable levels of service following project build-out. Accordingly, the applicant shall be responsible for the installation of a four-way STOP intersection.*

- 12/4/2014 Comment: The applicant shall provide a detailed Construction Management Plan. The information provided by the applicant is insufficient. I

would note that significant construction activity will be occurring along Marginal Way in 2016 and this project must account for this activity in the Plan.

- 1/7/2015 Comment: Outstanding

Status: The applicant shall provide a detailed Construction Management Plan as a condition of approval. The plan shall be provided for review and approval prior to issuance of any City permit.

- 1/7/2015 Comment: The applicant has requested the following waiver: "The profiles for the reconstruction of Chestnut, Somerset, Elm, and Pearl Streets are included in the Plan Documents. Minor Variations from the City Standards for the "K" values (30 and 40 for crests and sags) will be requested. It is anticipated, the variation of the K value for the sags on Chestnut Street is expected to have a "k" value of 33.56 and Elm Street is expected to have a value of 39.89". I find the geometric design details (K Factor) of Somerset Street, Pearl Street, and Chestnut Street to be acceptable and approve a waiver.

2. *Access and Circulation*

a. Site Access and Circulation

(i) The development shall provide safe and reasonable access and internal circulation for the entire site for all users of the site and shall comply with the standards set forth in Sections 1 of the Technical Manual.

Review:

- 11/6/2014 Comment: A review of the parking garage layout and circulation will be reviewed upon receipt of that information.
- 12/4/2014 Comment: The applicant has provided parking garage layout plans for the ground and entry floor levels. Plans for all garage levels shall be provided. In respect to the plans provided, the following comments are noted:
  - The geometric details of the ticket area should be provided on one plan and not illustrated on two separate plans. The match line details do not seem to be accurate.
  - 1/7/2015 Comment: I find conditions to be acceptable.

  Status: The revised gate layout has a transition area that entering the garage that is short and vehicles exiting the garage will block entry movements. The applicant shall revise the layout to prevent this blocking condition.

  - The grades of the parking garage vehicle ramps are a concern given conditions at other City garages. I will be reviewing this issue as it relates to providing grades that meet standard design practices and will report back in the future.
  - 1/7/2015 Comment: Given that parking spaces are not located on the steeper grade ramps, I find conditions to be acceptable. It is requested that the applicant incorporate special pavement surface

treatment in the area approaching the entry gates for added traction during winter periods. Specifications shall be provided to the City for review and approval. In addition, the applicant shall be responsible for development of a parking operations management plan that will review traffic flow at the entry and exit gates to ensure the system is fully utilized from a capacity perspective and that winter operations are acceptable. The applicant shall perform a monitoring survey of operations that shall be reported 12 months after opening and annually thereafter. The applicant will be responsible for implementing improvements that respond to full usage of gate capacity or winter issues, if problems are identified.

Status: Revised plan note a ramp slope of 6% at the back of sidewalk. I'm concerned about this slope and potential impact to pedestrian safety on the sidewalk. The applicant should revise the plans to address this safety concern.

- The compact parking spaces located on the entry level are located near the gate/ticket area and use of these spaces by larger vehicles may complicate traffic flow into and out of the garage.
- 1/7/2015 Comment: A response should be provided.

Status: The spaces have been converted to motorcycle spaces and therefore I find conditions to be acceptable.

(ii) Points of access and egress shall be located to avoid conflicts with existing turning movements and traffic flows.

Review:

- 11/6/2014 Comment: A detail traffic operation analysis shall be provided at the garage entrance onto Somerset Street given that the size of the garage has increased and thus traffic volumes entering and exiting would also increase during peak hours.
- 12/4/2014 Comment: Outstanding
- 1/7/2015 Comment: This item was identified at the TMP scoping meeting and will be included in the Traffic Impact Study.

Status: The applicant has conducted the requested analysis and has determined that the parking garage driveway at Somerset Street will operate at an acceptable level of service when fully occupied. I would note that while the delay is not expected to be significant, vehicles queues of in excess of 250 feet (12 vehicles) are projected leaving the garage during peak conditions and will back up through the gate system.

(iii) Where drive up features such as gasoline pumps, vacuum cleaners and menu/order boards are permitted, they shall not extend nearer than twenty five (25) feet to the street line. The site must have stacking capacity for vehicles waiting to use these service features without impeding on-site vehicular circulation or creating hazards to vehicular circulation on adjoining streets.

Review: Not Applicable

b. Loading and Servicing

(i) All developments served by delivery or other service vehicles shall provide a clear route and travel way geometric design that permits safe turning and backing for the maximum vehicle length that would service the development and does not impede site access, vehicle circulation, pedestrian movements or parking;

Review:

- 11/6/2014 Comment: I am concerned about the provision of on-street parking and truck delivery/loading on Elm Street next to the Midtown Four building. Elm Street has a very different transportation function as compared to Somerset Street and thus street cross-sectional elements must be carefully reviewed. I would further note that the horizontal curve on Elm Street also complicates traffic safety issues in this area. The applicant should provide specific information on the use and design of the curb-side cut-out areas (vehicle parking, deliveries, drop-offs, etc.).
- 12/4/2014 Comment: The applicant should investigate the provision of a single-unit truck loading area on the north side of the Midtown Building Four that could be used for trash removal and other appropriate small truck deliveries. It should be noted that the design should only consider a single-unit truck and the driveway should be as narrow as possible (Given that truck activity should be light, I envision trucks backing into the driveway). The provision of short-term parking spaces in front of the building seems appropriate, but the number of spaces should be minimized and the design should be cognizant of Elm Street multi-modal functions (both existing and future) and any re-design of Elm Street.
- 1/7/2015 Comment: Outstanding

Status: The revised plan included a new driveway that is intended for single-unit trucks and I find it to be acceptable. I would suggest that the on-street parking bay be shifted to the south so that it does not constrain the sidewalk in front of the building. I would also suggest that the sidewalk and curing be implemented to match the City plan to modify Elm Street to eliminate that narrow sidewalk at the corner of the Trader Joe's Building.

c. Sidewalks

(i) All proposed developments shall provide sidewalks along all frontages in accordance with Sections 14-498 and 14-499 of the City Code, installed to City specifications as described in Section 1 of the Technical Manual. An applicant may request a waiver from curb and sidewalk installation requirements if they meet applicable waiver criteria listed in Section 14-506 (b) of the City Code.

Review:

- 11/6/2014 Comment: The sidewalk system along Elm Street near the Midtown Four building will need to be closely reviewed for ADA compliance and general pedestrian needs given the ramping, steps, and retaining walls proposed.
- 12/4/2014 Comment: It is my understanding that the applicant is investigating potential changes to the Elm Street/Somerset Street intersection and these changes my impact this area and accordingly I will review this in the future.
- 1/7/2015 Comment: Outstanding

Status: See prior comments as it relates to Building Four sidewalk design.

- 11/6/2014 Comment: It appears that pedestrian use easements would be required on the sidewalk in front of Midtown Four.
- 12/4/2014 Comment: Outstanding
- 1/7/2015 Comment: Outstanding

Status: The applicant has noted that they are open to providing a pedestrian use easement and a condition of approval should be included that notes that this will be coordinated in the future.

- 11/6/2014 Comment: It would seem important that a formalized pedestrian crossing of Elm Street at Somerset Street be provided following the completion of this project.
- 12/4/2014 Comment: The plans have been revised to include two crosswalks on Elm Street at Somerset Street. The applicant should provide details on how the sidewalk ramp will be constructed given the existing driveway apron to the Noyes Building. As proposed the landing areas on the west side of Elm Street do not connect with any facility. Further review of this condition is required.
- 1/7/2015 Comment: Outstanding

Status: Given site conditions and constraints the crosswalk on the south side of Elm Street has been eliminated. I find conditions to be acceptable and have no further comment.

- 12/4/2014 Comment: The curb extension on the north side of Somerset Street near the Mews should be extended to the beginning of the nearest on-street parking space.
- 1/7/2015 Comment: Outstanding

Status: The applicant has noted that this change is pending until the Somerset Street design is finalized.

- 12/4/2014 Comment: The sidewalk ramp on the southeast corner of Chestnut Street does not appear to have an ADA compliant maneuver/turning spaces at the interface with the sidewalk. It is also unclear how the sidewalk will be constructed in this area.
- 1/7/2015 Comment: Outstanding

Status: The applicant has indicated that ADA standards have been met and therefore I have no further comment.

- 12/4/2014 Comment: The ramps at the Bayside Trail on Chestnut Street should consider pedestrian routings along Chestnut Street and that the path of accessibility should not include the ramp features.
- 1/7/2015 Comment: Outstanding

Status: The applicant is suggesting that this be adjusted during final design and thus a condition of approval should be included.

- 12/4/2014 Comment: Two rectangle symbols are illustrated on the Landscape Plan in the sidewalk at the garage entrance on Somerset Street. The applicant should note what is being proposed.
- 1/7/2015 Comment: Outstanding

Status: The noted symbols have been removed and therefore I have no further comment.

(ii) Where sidewalks already exist but are in substandard condition, they shall be repaired or replaced in conformance with Chapter 25 of the City Code and Section 1 of the Technical Manual.

Review: By Others

(iii) Continuous internal walkways shall be provided between existing or planned public sidewalks adjacent to the site, transit stops and street crossings and primary building entrances on the site.

Review:

- 12/4/2014 Comments: The plans are not clear as to the construction of the sidewalk on the south side of Somerset Street. The sidewalk is an important part of overall pedestrian accommodations and should be part of the design and construction of the project.
- 1/7/2015 Comment: Outstanding

Status: The applicant is suggesting that this be adjusted during final design and thus a condition of approval should be included.

- 11/6/2014 Comment: The applicant shall detail pedestrian routings between the generators and the parking garage and note the adequacy of facilities for providing safe and direct accommodations.
- 12/4/2014 Comment: The applicant has provided a graphic illustrating the routings and I find the general routings to be acceptable. Specific design detail comments for the pedestrian facility infrastructure are noted elsewhere. The applicant should provide information that specifies for all routings, compliant cross slopes are provided, including driveway aprons.
- 1/7/2015 Comment: Outstanding

Status: The applicant has requested that this information be provided as a condition of approval.

3. *Public Transit Access*

a. For any residential development consisting of twenty (20) or more dwelling units or commercial or institutional development of at least 20,000 square feet gross floor area, a transit facility shall be constructed where the following criteria are met:

(i) The development is proposed along an existing public transit route on a local principal or minor arterial roadway, as shown in the Federal Street Classification Map provided in Section 1 of the Technical Manual.

Review: This standard is met.

(ii) The nearest existing transit shelter and/or bus pullout on the route is ¼ mile(1,320 feet) or more away from the closest primary building on the site, 1measured along rights-of-way.

Review: This standard is met.

- 12/4/2014 Comment: The Bus Shelter location shall be adjusted to be closer to the street and in conjunction with this the curb extension should be extended to the vehicle delivery driveway.
- 1/7/2015 Comment: Outstanding

Status: The plans have been revised to reflect this comment. I would suggest that the revised location be reviewed and approved by METRO.

b. Transit facilities shall consist of a transit shelter and a transit pullout bay.

Review: The City is requesting an in-line Transit Stop on Somerset Street and coordination with METRO is required to finalize details.

c. Transit facilities shall be connected to the public sidewalk system.

Review: This standard is met.

d. Waiver: All or some of this standard may be waived if the Reviewing Authority determines one or more of the following:

(i) That some or all of the required improvements cannot reasonably be made due to site constraints and/or insufficient right of way width; or

Review: Not Applicable

(ii) That the development is not anticipated to generate public transit usage due to particular characteristics or proposed use of the development.

Review: Not Applicable

4. *Parking*

a. Location and Required Number of Vehicle Parking Spaces

(i) Off-street parking shall meet the applicable zoning requirements, except the Planning Board shall determine the parking requirement, based upon the applicant's parking study and a recommendation from the City Transportation Engineer, for new structures, building additions and changes of use with a total floor area of 50,000 sf or more and for projects, regardless of size, in the B-6, B-7 and USM Overlay zone.

Review:

- 11/6/2014 Comment: The applicant should provide a parking demand and supply analysis that demonstrates the adequacy of the proposed parking garage for the entire project.
- 12/4/2014 Comment: Outstanding
- 1/7/2015 Comment: Outstanding

Status: Outstanding

- 12/4/2014 Comment: It should be noted that on-street parking regulation changes requires action by the City Council as part of amending the City's Traffic Schedule and the applicant will be required to provide information in support of this process.
- 1/7/2015 Comment: The applicant has provided a proposed on-street parking regulation plan and minor comments/changes will be provided.

Status:

(ii) Where a parking study is required, the City encourages Transportation Demand Management (TDM) strategies to be employed.

Review: A draft TDM Plan has been submitted.

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

Review: This standard is not relevant given that the parking garage will also serve other Bayside parking demand needs.

(iv) Parking spaces and aisles shall meet applicable dimensional standards as detailed in Section 1 of the Technical Manual.

Review:

Status: The project meets this standard. Compact parking spaces exceed the City's dimensional standard and I find this condition to be acceptable.

(v) Parking lots, except for temporary lots to be used for less than one year, shall be constructed of a permanent and durable hard surface that is not subject to ponding or erosion.

Review: Not Applicable

b. Location and Required Number of Bicycle Parking Spaces

(i) The site plan shall provide secure bicycle parking in conformance with Section 1 of the Technical Manual and shall meet the following requirements:

(a) *Residential structures*. Two (2) bicycle parking spaces for every five (5) dwelling units shall be required.

Review: By Others

(b) *Non-residential structures*. Two (2) bicycle parking spaces for every ten (10) vehicle parking spaces for the first one hundred (100) required vehicle parking spaces, plus one (1) bicycle parking space for every twenty (20) required motor vehicle parking space over one hundred (100) required vehicle parking spaces.

Review: By Others

(c) Development with zero (0) to ten (10) required vehicle parking spaces shall provide at least two (2) bicycle parking spaces.

Review: By Others

(ii) *Waiver:* The reviewing authority may reduce the required number of bicycle parking spaces if it is determined, based on evidence submitted by the applicant, that the proposed development is expected to generate reduced demand for bicycle parking due to characteristics or uses such as elderly or disabled persons housing or industrial uses located in outlying areas.

c. Motorcycle and Scooter Parking

(i) The site plan shall accommodate access and parking for two-wheeled motorized vehicles such as motorcycles and scooters.

Review: By Others

d. Snow Storage

(i) The site plan shall include areas for snow storage or shall include an acceptable snow removal plan.

Review: By Others

(ii) Snow storage areas may not encroach on areas designated to meet minimum parking requirements or on pedestrian walkways and shall not be located where they would adversely impact the functionality of bio retention or other stormwater management

systems. Landscaping in designated snow storage areas shall be such that it can withstand the snow pile.

Review: By Others

5. *Transportation Demand Management (TDM)*

a. The following types of development shall design and implement a Transportation Demand Management (TDM) plan:

(i) All Level III development in the B7 zone;

(ii) All commercial or institutional uses of 50,000 sf or more total floor area;

(iii) All commercial or institutional uses designed to accommodate 100 or more employees and, for educational institutions, 100 or more students.

Review:
Status: The project meets the above criteria and the applicant has submitted a draft TDM Plan

b. The TDM Plan shall establish trip reduction targets and shall employ a combination of the following elements to achieve these targets:

(i) Public transit incentives;

Review:
Status: The TDM Plan will investigate transit incentives and thus this standard is met.

(ii) Parking cash-out;

Review:
Status: This was not included in the TDM Plan.

(iii) Car sharing;

Review:
Status: The TDM Plan will investigate car sharing opportunities and thus this standard is met.

(iv) Car and van pooling incentives;

Review:

Status: The TDM Plan will investigate car and van pooling opportunities and thus this standard is met.

(v) Guaranteed ride home programs;

Review:
Status: This was not included in the TDM Plan.

(vi) Other such strategies that reduce single occupancy vehicle trips to and from the development.

Review:
Status: An annual monitoring program is required and thus other strategies will be review on a year-by-year basis.

c. The development shall comply with the City of Portland TDM standards as described in Section 1 of the Technical Manual.

Review:
Status: This standard is met, but the TDM Plan will need to be finalized.

ATT 2 A

Rick Knowland - Midtown Project

From: Tom Errico <thomas.errico@tylin.com>
To: Rick Knowland <RWK@portlandmaine.gov>
Date: 2/26/2015 1:18 PM
Subject: Midtown Project

Rick – Based upon a review of the February 20, 2015 submission materials, my previous comments remain with the exception of the following comment:

a) Transportation Standards

2. The revised Parking Garage gate layout has a transition area entering the garage that is short and vehicles exiting the garage will block entry movements. The applicant shall revise the layout to prevent this blocking condition for review and approval by the Traffic Engineer and Planning Authority.

The applicant has revised the plan to address this comment, but given that blockage still may be a problem, I would suggest that the applicant conduct a monitoring study both when the project opens and after the garage is fully occupied and be responsible for revising the entry layout if blockage problems are identified.

If you have any questions, please contact me.

Best regards,

Thomas A. Errico, PE
Senior Associate
Traffic Engineering Director
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"One Vision, One Company"

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ATT 3

CITY OF PORTLAND
MEMORANDUM

TO: Rick Knowland, Senior Planner

FROM: John Peverada, Parking Manager

DATE: January 5, 2015

RE: Midtown

While I think Federated's proposed Midtown development in Bayside will be an overall benefit to the City, I have several concerns. I have indicated my concerns under the Review heading after each of the Review Standards listed below.

A. Section 14-526 Site Plan Standards:
Requirements for approval

(a) Transportation Standards

1. *Impact on Surrounding Street Systems*

The provisions for vehicular loading and unloading and parking and for vehicular and pedestrian circulation on the site and onto adjacent public streets and ways; and the incremental volume of traffic will not create or aggravate any significant hazard to safety at or to and including intersections in any direction where traffic could be expected to be impacted; and will not cause traffic congestion on any street which reduces the level of service below Level "D" as described in the 1985 Highway Capacity Manual published by the Transportation Research Board of the National Research Council, a copy of which manual is on file with the public works authority, or substantially increase congestion on any street which is already at a level of service below Level "D".

Review: How will off street loading and delivery for both the retail businesses and the apartments be dealt with ? The applicant has shown one delivery bay in each of the two buildings on Somerset St., but they are only 30-35' deep, and there is absolutely no off street delivery space for the building on Elm St.
How will large delivery vehicles such as moving vans and tractor trailers such as those now being used by Coke a Cola etc...be accommodated without blocking traffic. Unlike some other streets in the City, Somerset St has two way traffic and is relatively narrow. If given no alternative the large trucks will double park blocking traffic causing traffic flow and safety issues, for vehicles, pedestrians and emergency vehicles.

2. ***Access and Circulation***

a. Site Access and Circulation

(i) The development shall provide safe and reasonable access and internal circulation for the entire site for all users of the site and

shall comply with the standards set forth in Sections 1 of the Technical Manual.

Review: With the entrance gate to the garage being located on the ramp leading from the ground level to the first supported deck, what measures will be taken to prevent vehicles from being stuck (tires spinning on wet slush covered incline after stopping to pull a ticket), a 6% slope seems to be steep especially if vehicles stop to pull a ticket or swipe their card, then try to start up again, this too could cause traffic to back up in the garage and onto Somerset St..
The following is an excerpt from a e-mail I received from a parker in the Casco Bay garage after a snow event, and he didn't even have to stop on the ramp !

"I'm writing to you on Monday evening, as a very disappointed and frustrated parking customer of the Casco Bay Condo Association. I have been paying for monthly parking for at least 4 years, probably longer. The frustration and aggravation came at 3:00 this afternoon, when I came back to the garage on my way home to Peaks Island. The garage was packed (as usual) and the snow had not been plowed out. I made it easily up to the corner between the 2nd and 3rd floors, and then on the uphill slope my vehicle skidded and slid sideways in the snowy mess and I finally had to back down around and past another car coming up behind me. With no way to get to a parking space, I then had to leave the garage. I don't drive a particularly wimpy car: it's a front-wheel drive VW Passat with regular tires. I shouldn't have to drive an all-wheel drive vehicle just to park in a city garage!"

(ii) Points of access and egress shall be located to avoid conflicts with existing turning movements and traffic flows.

Review: With only one entry and one exit lane what happens if a vehicle is "stuck" blocking the lane, and how would maintenance be performed without closing the garage? Additionally, with only one entry lane will vehicles be queued up onto Somerset St blocking traffic and the sidewalk while waiting to enter the garage at peak times?

b. Loading and Servicing

(i) All developments served by delivery or other service vehicles shall provide a clear route and travel way geometric design that permits safe turning and backing for <u>the maximum vehicle length</u> that would service the development and does not impede site access, vehicle circulation, pedestrian movements or parking;

Review: Once again, the applicant has shown one delivery bay in each of the two buildings on Somerset St., but they are only 30-35' deep, and there is absolutely no off street delivery space for the building on Elm St.
How will large delivery vehicles such as moving vans and tractor trailers such as those now being used by Coke a Cola etc...be accommodated without blocking traffic? Unlike some other streets in the City, Somerset St has two way traffic and is relatively narrow. If given no

alternative the large trucks will double park, blocking traffic impeding traffic flow, pedestrian movements, and access for emergency vehicles.

4. *Parking*

d. Snow Storage

(i)The site plan shall include areas for snow storage or shall include an acceptable snow removal plan.

(ii)Snow storage areas may not encroach on areas designated to meet minimum parking requirements or on pedestrian walkways and shall not be located where they would adversely impact the functionality of bio retention or other stormwater management systems. Landscaping in designated snow storage areas shall be such that it can withstand the snow pile.

Review: What is the plan for snow removal from the roof ? Snow left on the roof will result in a loss of parking spaces, and the additional weight can cause serious safety concerns.

Who will be responsible for removing the wind rows on Somerset St after a snow storm to maintain adequate street width? The City is responsible for snow removal in the PDD and some businesses off peninsula contract for their own snow removal.

In summary my concerns are:
1. Ingress and egress capacities IE # of entrances and exits

2. The slope of the ramps. The international Building Code (IBC) states that ramp slopes should not exceed a 6.67% slope. As stated in my previous e-mails, if a vehicle stops on the ramp they may have trouble proceeding forward if their tires spin on a wet surface, and cause traffic to back up.

Can we require the applicant to pay to have a third party "Parking Engineer" review the garage parking design. National companies such as Walker Parking, Carl Walker Assoc., Desman Assoc, Rich Assoc. are a list of some of the engineering firms that specialize in parking garages.

Finally, can we meet with the developer to review the proposed on street parking layout, IE vehicle loading zones, disabled parking, bus stops and parking meters. If we install the new multi space meters, it makes most sense to have one machine service 7-10 contiguous space.

Is the street wide enough to accommodate parking on both sides? After yesterdays storm, our office has received numerous complaints about streets being too narrow.

Please forward these comments onto the Planning Board.

Thanks
John

ATT 4

Criteria for Planning Board Report
Transportation Standards
Review Comments of Bruce Hyman,Transportation Coordinator
January 28, 2015

A. Section 14-526 Site Plan Standards:

Requirements for approval

(a) *Transportation Standards*

1. *Impact on Surrounding Street Systems*

The provisions for vehicular loading and unloading and parking and for vehicular and pedestrian circulation on the site and onto adjacent public streets and ways; and the incremental volume of traffic will not create or aggravate any significant hazard to safety at or to and including intersections in any direction where traffic could be expected to be impacted; and will not cause traffic congestion on any street which reduces the level of service below Level "D" as described in the 1985 Highway Capacity Manual published by the Transportation Research Board of the National Research Council, a copy of which manual is on file with the public works authority, or substantially increase congestion on any street which is already at a level of service below Level "D".

Review:

2. *Access and Circulation*

a. Site Access and Circulation

(i) The development shall provide safe and reasonable access and internal circulation for the entire site for all users of the site and shall comply with the standards set forth in Sections 1 of the Technical Manual.

Review:

(ii) Points of access and egress shall be located to avoid conflicts with existing turning movements and traffic flows.

Review:

(iii) Where drive up features such as gasoline pumps, vacuum cleaners and menu/order boards are permitted, they shall not extend nearer than twenty five (25) feet to the street line. The site must have stacking capacity for vehicles waiting to use these service features without impeding on-site vehicular circulation or creating hazards to vehicular circulation on adjoining streets.

Review:

b. Loading and Servicing

(i) All developments served by delivery or other service vehicles shall provide a clear route and travel way geometric design that permits safe turning and backing for the maximum vehicle length that would service the development and does not impede site access, vehicle circulation, pedestrian movements or parking;

Review:

c. Sidewalks

(i) All proposed developments shall provide sidewalks along all frontages in accordance with Sections 14-498 and 14-499 of the City Code, installed to City specifications as described in Section 1 of the Technical Manual. An applicant may request a waiver from curb and sidewalk installation requirements if they meet applicable waiver criteria listed in Section 14-506 (b) of the City Code.

Review: In numerous locations, the project as currently designed does not meet our Technical Manual standards for ADA-compliance and does not meet the streetscape design and pedestrian accessibility standards as described by the B-7 Design Principles and Standards.

Specifics include:

- The ramp and landing system on the NE corner of Elm Street-Somerset significantly interferes with pedestrians walking along Elm Street and is not ADA-compliant. The tree in front of this ramp and landing area hinders the pedestrian access route along the street and should be relocated or eliminated.
    - **Addressed – although the configuration remains non-ideal**
- The section of sidewalk along Elm Street between Midtown 3 and Midtown 4 does not provide a direct accessible pedestrian route (as depicted on Sheet C-2.0B). Pedestrians should not need to divert along the Bayside Trail for an ADA-compliant route on Elm Street.
    - **Not addressed**
- The configuration of several curb ramps are not ADA-compliant; they are not aligned perpendicular to the flush curb portion of the ramp.
    - **Not addressed – see attached**
- Portions of the accessible pedestrian route depicted on C-2.0B are not ADA-compliant due to reliance on crossing the flare of a curb ramp.
    - **Not addressed**
- The ADA-compliant accessible pedestrian route relies heavily on the building frontage zone immediately adjacent to all of the buildings. Assurances should be provided that no intrusions will restrict the accessibility of this route by the retail/commercial uses within (no outdoor seating, etc).

- **Unknown: With the newly reconfigured sidewalk, an updated graphic (C-2.0B) illustrating the ADA-compliant pedestrian access routes should be prepared. It is not possible to know if this comment has been addressed.**

- The configuration of the sidewalk with the indented parking area in front of Midtown 4 will degrade the pedestrian environment along the section of sidewalk. A re-design of this Elm Street street frontage is desired to better comply with the B-7 Design Principles and Standards.
  - **Somewhat addressed – see Tom Errico's comments.**

(ii) Where sidewalks already exist but are in substandard condition, they shall be repaired or replaced in conformance with Chapter 25 of the City Code and Section 1 of the Technical Manual.

Review:

(iii) Continuous internal walkways shall be provided between existing or planned public sidewalks adjacent to the site, transit stops and street crossings and primary building entrances on the site.

Review:

3. *Public Transit Access*

a. For any residential development consisting of twenty (20) or more dwelling units or commercial or institutional development of at least 20,000 square feet gross floor area, a transit facility shall be constructed where the following criteria are met:

(i) The development is proposed along an existing public transit route on a local principal or minor arterial roadway, as shown in the Federal Street Classification Map provided in Section 1 of the Technical Manual.

Review:

(ii) The nearest existing transit shelter and/or bus pullout on the route is ¼ mile(1,320 feet) or more away from the closest primary building on the site, 1measured along rights-of-way.

Review:

b. Transit facilities shall consist of a transit shelter and a transit pullout bay.

Review:

c. Transit facilities shall be connected to the public sidewalk system.

Review: The proposed bus stop location does not (per drawing C-2.0B) provide the required ADA-compliant bus stop landing area (5'x8') nor does the bus stop directly connect to the ADA-compliant pedestrian access route at this location.

- **Not addressed: A note has been added to the plan but no other information/design changes made.**

d. Waiver: All or some of this standard may be waived if the Reviewing Authority determines one or more of the following:

(i) That some or all of the required improvements cannot reasonably be made due to site constraints and/or insufficient right of way width; or

Review:

(ii) That the development is not anticipated to generate public transit usage due to particular characteristics or proposed use of the development.

Review:

4. *Parking*

a. Location and Required Number of Vehicle Parking Spaces

(i) Off-street parking shall meet the applicable zoning requirements, except the Planning Board shall determine the parking requirement, based upon the applicant's parking study and a recommendation from the City Transportation Engineer, for new structures, building additions and changes of use with a total floor area of 50,000 sf or more and for projects, regardless of size, in the B-6, B-7 and USM Overlay zone.

Review:

(ii) Where a parking study is required, the City encourages Transportation Demand Management (TDM) strategies to be employed.

Review:

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

Review:

(iv) Parking spaces and aisles shall meet applicable dimensional standards as detailed in Section 1 of the Technical Manual.

Review:

(v) Parking lots, except for temporary lots to be used for less than one year, shall be constructed of a permanent and durable hard surface that is not subject to ponding or erosion.

Review:

b. Location and Required Number of Bicycle Parking Spaces

(i) The site plan shall provide secure bicycle parking in conformance with Section 1 of the Technical Manual and shall meet the following requirements:

(a) *Residential structures*. Two (2) bicycle parking spaces for every five (5) dwelling units shall be required.

Review:

(b) *Non-residential structures.* Two (2) bicycle parking spaces for every ten (10) vehicle parking spaces for the first one hundred (100) required vehicle parking spaces, plus one (1) bicycle parking space for every twenty (20) required motor vehicle parking space over one hundred (100) required vehicle parking spaces.

Review: The exterior bike rack locations are not designed with adequate spacing between the racks or with adequate spacing from the street or other structures.

- **Not addressed**
- **The bike racks shown on Sheet L4.0 (the Olympia Rack) do not meet the Technical Manual standard for bicycle racks for installation within the public right of way. These racks should be replaced with either the Bike Hitch or Downtown rack.**

- **Bicycle Parking within the Parking Garage: A detailed layout should be provided to ensure the functionality and accessibility to the clusters of 8 bike racks, with 2 clusters per level. It does not appear that the racks will be fully accessible when cars are parked immediately adjacent to the clusters.**

(c) Development with zero (0) to ten (10) required vehicle parking spaces shall provide at least two (2) bicycle parking spaces.

Review:

(ii) *Waiver:* The reviewing authority may reduce the required number of bicycle parking spaces if it is determined, based on evidence submitted by the applicant, that the proposed development is expected to generate reduced demand for bicycle parking due to characteristics or uses such as elderly or disabled persons housing or industrial uses located in outlying areas.

c. Motorcycle and Scooter Parking

(i) The site plan shall accommodate access and parking for two-wheeled motorized vehicles such as motorcycles and scooters.

Review:

d. Snow Storage

(i) The site plan shall include areas for snow storage or shall include an acceptable snow removal plan.

Review:

(ii) Snow storage areas may not encroach on areas designated to meet minimum parking requirements or on pedestrian walkways and shall not be located where they would adversely impact the functionality of bio retention or other stormwater management systems. Landscaping in designated snow storage areas shall be such that it can withstand the snow pile.

Review:

5. *Transportation Demand Management (TDM)*

a. The following types of development shall design and implement a Transportation Demand Management (TDM) plan:

(i) All Level III development in the B7 zone;

Review:

(ii) All commercial or institutional uses of 50,000 sf or more total floor area;

Review:

(iii) All commercial or institutional uses designed to accommodate 100 or more employees and, for educational institutions, 100 or more students.

Review:

b. The TDM Plan shall establish trip reduction targets and shall employ a combination of the following elements to achieve these targets:

(i) Public transit incentives;

Review: The plan (dated November 2014) does not meet this requirement.

(ii) Parking cash-out;

Review: The plan (dated November 2014) does not meet this requirement.

(iii) Car sharing;

Review: The plan (dated November 2014) does not meet this requirement.

(iv) Car and van pooling incentives;

Review: The plan (dated November 2014) does not meet this requirement.

(v) Guaranteed ride home programs;

Review: The plan (dated November 2014) does not meet this requirement.

(vi) Other such strategies that reduce single occupancy vehicle trips to and from the development.

Review: The plan (dated November 2014) does not meet this requirement.

c. The development shall comply with the City of Portland TDM standards as described in Section 1 of the Technical Manual.

Review: Bicycle Parking: Minimum bicycle parking is a site plan requirement according to Section 14-526 of the Land Use Code The TDM plan may incorporate additional bicycle parking, bicycle wayfinding, and/or covered parking to further encourage bicycle use.

While the Midtown project technically meets the minimum requirements for the quantity of bicycle parking, it does not meet the requirement that the amount and distribution of parking to help attain its stated TDM objective to encourage bicycling. Specifically, there is no long-term resident bicycle parking being provided in Midtown 1, 3 or 4. All long-term resident bicycle parking is consolidated within the parking garage (80 spaces). For instance, the long-term resident bicycle parking for residents of Midtown 4 is approximately 800 feet from the bicycle parking in the parking garage (Midtown 2).

- **Not addressed: the layout of the bike racks and adjacent parking needs to be examined to ensure that the bike racks are accessible – it does not appear that this is the case.**

7.4.2 Influence of turning radii on curb ramp design

Curb ramps should be built so that the beginning of the sloped area is perpendicular to the user's path of travel. At a corner with a tight turning radius, the ramp of a perpendicular curb ramp will be at a 90 degree angle to the curb and will be oriented parallel to the crosswalk. This is helpful to users because they can follow the ramp path directly across the street. Curb ramps aligned with the crosswalk also minimize the maneuvering that wheelchair users must perform to use the ramp.

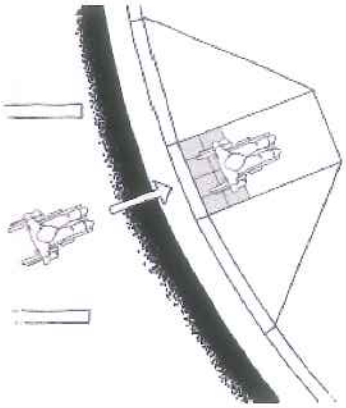

Figure 7-32. Sidewalks are easier for wheelchair users to travel on if the ramp slope is perpendicular to the curb because the chair does not become unstable as it does when one front wheel strikes a curb ramp before the other.

At corners with larger turning radii, the curb ramp cannot always be parallel to the direction of the crosswalk while the ramp slope is perpendicular to the curb. In this situation, priority should be given to ensuring that the ramp slope is perpendicular to the curb. However, because the curb ramp is not aligned with the crosswalk, the crosswalk must be sufficiently wide enough to allow the user to line up with the curb ramp while still in the street.

If the ramp slope is not perpendicular to the curb, wheelchair users either have to:

- Negotiate changing cross slopes and changing grades simultaneously since one side of the chair will be in the gutter while the other is still on the ramp; or
- Turn on the ramp in order to have both wheels move from the ramp to the gutter at the same time. When traveling down a curb ramp, the turn must be completed while on a significant grade and within a narrow space.

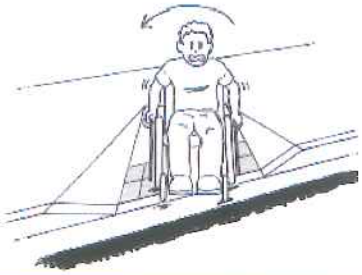

Figure 7-33. PROBLEM: Wheelchair users can be very unstable when traveling down a narrow ramp with a slope that is not perpendicular to the curb, because all four wheels are not touching the ground at all times.

Both of these situations significantly reduce the accessibility of the curb ramp for wheelchair users.

In some cities, designers have chosen to align curb ramps on large radii curves parallel to the crosswalk, even though the curb ramp is not perpendicular to the curb. As a result, the change of grade between the ramp and street becomes skewed relative to the path of travel. The theoretical advantage of this design is that people with vision impairments could use the

path of the curb ramp to direct them across the street. However, this benefit has limited impact because people with vision impairments tend not to rely on curb ramps for directional information due to the abundance of curb ramps that are not aligned with the proper crossing direction.

COMMITMENT & INTEGRITY
DRIVE RESULTS

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ATT 5

MEMORANDUM

WOODARD &CURRAN

TO: Rick Knowland, Planner
FROM: David Senus, P.E.
DATE: January 28, 2015
RE: Midtown, Final Subdivision & Level III Site Plan Application

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Woodard & Curran has reviewed the final application materials submitted for the Midtown development to be located along Somerset Street, between Elm and Pearl Streets. The project consists of a 3.5-acre mixed-use commercial complex with four buildings that will house a parking garage, residential units, and retail space.

Final Documents Reviewed By Woodard & Curran

- Subdivision & Final Level III Site Plan Development Review Application and attachments, dated November 13, 2014, prepared by FST Engineers on behalf of The Federated Companies.
- Applicant's Response to Planning Staff Comments letter, dated December 1, 2014, prepared by FST Engineers on behalf of The Federated Companies.
- Applicant's Response to Planning Staff Comments letter, dated January 21, 2015, prepared by FST Engineers on behalf of The Federated Companies.
- Civil-Related Site Development Plans for midtown, rev. dated January 21, 2015, prepared by FST Engineers on behalf of The Federated Companies, including C-1.2, C-2.0, C-2.0A, C-2.1, C-2.2, C-2.3, C-3.0 to C-3.2, C-4.0 to C-4.3, C-7.12, and C-8.2.
- Figure 1 – Somerset Street Schematic Maintain 18" of Freeboard Adjacent to Noyes Building, rev. dated January 26, 2015, prepared by FST Engineers on behalf of The Federated Companies.

Review Comments

1. The Applicant's submittal is in conformance with the requirements of the City's Stormwater Management Standards and the MaineDEP Chapter 500 Stormwater Management Standards relative to Site Location of Development, including the Basic and General Standards. The Applicant has requested a waiver from the requirement to meet the Flooding Standard under the City's Stormwater Management Standards and MaineDEP Site Law / Chapter 500 Standards. The Applicant has provided adequate engineering justification to support this waiver request.
2. The proposed development will require filing a notice of intent to comply with the Maine Construction General Permit with the MaineDEP; a copy of this notice should be submitted to the City upon filing with MaineDEP for the project record.
3. The Applicant will need to continue to coordinate their design with all impacted utility providers to ensure that the design meets applicable standards and to meet specific conditions and requests made by each utility.
4. The following comments are specific to the proposed grading and drainage concept for the areas behind midtown One and midtown Two, from Bayside Trail STA 6+50 to STA 12+50; refer to sheets C-3.0 and C-7.12:
    a. The drainage concept, as proposed, provides an adequate means of collecting and conveying stormwater runoff from the midtown property, City property (Bayside Trail), and adjacent properties north of the Bayside Trail.
    b. The face of the retaining wall and fence are proposed primarily on the property line between City of Portland (Bayside Trail) property and the parcels located north of the Bayside Trail. Temporary construction agreements will be required from the adjacent property owner to complete the work as proposed, as construction activity will be required on adjacent property to install the retaining wall and the associated grading.

5. The Applicant, City, and adjacent landowners have acknowledged that drainage issues exist during certain storm events along Somerset Street, specifically in and around a low point at the Somerset Street / Elm Street intersection. A proposal has been discussed between the City and the Applicant to install a 24" storm drain pipe from the Somerset / Elm intersection to an existing 24" storm drain pipe in Elm Street, near Trader Joe's. We recommend moving forward with the proposal to install a 24" storm drain pipe at this location. It is our understanding that the City has agreed to pay for the installation of this pipe, and that the Applicant will provide design plans. We recommend including a condition of approval requiring the Applicant to design the 24" storm drain pipe in Elm Street as part of their final plan, to be submitted for review prior to construction.
6. To address concerns raised by the Noyes family, owners of the properties located on the south / east side of Somerset Street between Elm and Pearl Streets, the Applicant has prepared Figure 1, *Somerset Street Schematic Maintain 18" of Freeboard Adjacent to Noyes Building*, rev. dated January 26, 2015. We have reviewed this figure with input from the City's Planning and Public Services Engineering Departments, and we recommend approving the design concepts presented on this figure. The civil engineering plans submitted by the Applicant do not currently reflect the layout, grading, drainage, and materials that are presented on Figure 1 in the Somerset Street Right-of-Way. We recommend including a condition of approval requiring that the Applicant design the Somerset Right-of-Way to reflect the concepts presented on Figure 1 as part of their final plan, to be submitted for review prior to construction.
7. Numerous design plans within the Applicant's most recent submittal include a note on Somerset Street that reads "*midtown HAS BEEN DESIGNED TO REFLECT THE PROPOSED RAISING AT SOMERSET STREET BASED ON CITY GUIDANCE. SOMERSET STREET DESIGN AND CONSTRUCTION SHALL BE COMPLETED BY OTHERS*". The aforementioned recommended condition of approval (see Comment #6) will require that the applicant design and submit Somerset Street plans for review and approval. We also understand that the City and the Applicant have entered into a cost sharing agreement which requires the Applicant to construct the improvements proposed within Somerset Street. This note should be struck from future submittals.

Conformance with City of Portland Code of Ordinances, Chapter 14 Land Use Section 14-526 Site Plan Standards, (b) Environmental Quality Standards

3. *Water Quality, Stormwater Management and Erosion Control:*

a. *All development must demonstrate that the proposed site improvements are designed to minimize the amount of stormwater leaving the site. This must include consideration of the design and location of improvements to minimize the total area of impervious surface on the site and stormwater management techniques to minimize both the volume and rate of runoff from the lot. The stormwater management plan must demonstrate the following:*

(i) *Any stormwater draining onto or across the lot in its pre-improvement state will not be impeded or re-directed so as to create ponding on, or flooding of, adjacent lots;*
Review: Standard met. The Applicant's design incorporates numerous and appropriately located drainage inlets to collect and convey stormwater runoff draining from the project site and from adjacent lands abutting the project site into the municipal storm drain system so as not to create ponding on, or flooding of, adjacent lots.

(ii) *Any increase in volume or rate of stormwater draining from the lot onto an adjacent lot following the improvement can be handled on the adjacent lot without creating ponding, flooding or other drainage problems and that the owner of the lot being improved has the legal right to increase the flow of stormwater onto the adjacent lot;*
Review: Standard met. The Applicant's design does not propose to increase the volume or rate of stormwater runoff onto adjacent lots.

(iii) *Any increase in volume or rate of stormwater draining from the lot onto City property following the improvement can be handled without creating ponding, flooding or other drainage problems and that the owner of the lot being improved has the legal right to increase the flow of stormwater onto the City's property; and*

Review: Standard met. The Applicant has provided an engineering evaluation indicating that cumulative changes to peak flow rate and volume from the site will be minimal and can be accommodated in the City's municipal drainage infrastructure.

(iv) *Any increase in volume or rate of stormwater draining from the lot into the City's separate storm sewer system can be accommodated in the system without creating downstream problems or exceeding the capacity of the storm sewer system.*

Review: Standard met. The Applicant has provided an engineering evaluation indicating that cumulative changes to peak flow rate and volume from the site will be minimal and can be accommodated in the City's municipal drainage infrastructure.

b. *All development, except Level I minor residential development, shall comply with the standards of 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.*

Review: Standard met for Basic & General Standards; Waiver requested from Flooding Standard.

c. *All development, except Level I minor residential development, that are located within the watershed of an Urban Impaired Stream shall comply with the Urban Impaired Stream standards pursuant to Maine DEP Chapter 500 Stormwater Management Rules, as described in Section 5 of the Technical Manual.*

Review: Standard not applicable. The project is not located in the watershed of an Urban Impaired Stream.

d. *Level I: minor residential development shall comply with basic erosion control standards, as described in Section 6 of the City of Portland Technical Manual.*

Review: Standard not applicable. The project is not a Level I minor residential development.

e. *Development shall not pose a risk of groundwater contamination either during or post-construction, as described in Sections 5 and 9 of the Technical Manual.*

Review: Standard met. The Applicant proposes methods for stormwater management that are designed in accordance with Section 5 of the Technical Manual to limit risk to groundwater contamination. Project is located in area of City serviced by PWD drinking water distribution system, therefore the water supply standards of Section 9 are not applicable.

f. *Development shall provide for adequate and sanitary disposal of sewage as described in Section 2 of the Technical Manual.*

Review: Standard met. The design incorporates acceptable means of connecting the project's sanitary sewer systems to the City's combined sewer system.

<u>Exhibit 23 of Application - Written Waiver Requests by Applicant</u>

Comments on waiver requests that are applicable to Woodard & Curran's review:

11. *1.4 Street Grades (reference page 3 of Technical Standards)*

- *The cross slope for local streets shall be 0.03. The cross slope for other street classifications shall be 0.02.*

The project will require the reconstruction of Somerset Street. The building will be set at elevation 12.0 to be 2 feet above the higher flood hazards anticipated to increase over time. There are existing buildings with finish floors, entrances, and exits at lower elevations. The Federated plan for the midtown project has extensive ground floor retail which requires flush accessible entrances. On the other hand, there are existing buildings across the street (most notably the "Noyes" property with existing floors and entrance elevations which will not be changed. Because the buildings on either side of the street are near or on the right of way, some variation from transverse slopes and location of the street crown from the City's typical cross section within the street right of way will be required.

Review: Support waiver from roadway cross slope standard in accordance with the concepts presented on Figure 1 – Somerset Street Schematic Maintain 18" of Freeboard Adjacent to Noyes Building, rev. dated January 26, 2015, prepared by FST Engineers on behalf of The Federated Companies.

13. *Section 2 – Sanitary Sewer and Storm Drain Design Standards*

    2.7.8. No storm drain lines, with the exception of field inlets and underdrains, shall be connected into a catch basin structure (Reference Page 82 of the Technical Standards)

    Representatives from the City of Portland have indicated the technical standards are being revised and will remove this restriction. If the standards have been revised, this waiver will not be required. The waiver is very important to avoid excessive piping and appurtenances in the public streets.

    Review: Support waiver to allow drain line connections into catch basin structures. The proposed stormwater treatment system design requires direct connections into catch basins to comply with design guidance outlined in MaineDEP Chapter 500 BMP Manual.

14. *Section 5 - Portland Stormwater Management Standards and MaineDEP Chapter 500 Stormwater Management (Reference Page 149; Section E. 2 6 of this Chapter of the Technical Standards)*

    The requirements include stormwater detention for flood control. The applicant is requesting a waiver to the requirement for detention as part of the Stormwater Management Plan. The location of the site within the watershed results in a condition where passing flow from this area as soon as possible allows capacity to free up to receive and convey flows from upstream areas.

    Review: Support waiver from Flooding Standard. The Applicant has provided an engineering evaluation indicating that cumulative changes to peak flow rate from the site will be minimal and can be accommodated in the City's municipal drainage infrastructure.

ATT 6

Rick Knowland - Revised Comments for Midtown

From: David Margolis-Pineo
To: Barbara Barhydt; Rick Knowland
Date: 1/7/2015 3:21 PM
Subject: Revised Comments for Midtown
CC: DEVELOPMENT REVIEW GROUP

January 7, 2015

Memo To: Rick Knowland
Barbara Barhydt
From: David Margolis-Pineo
Re: Midtown Development - Preliminary Comments – Federated Properties

The Department of Public Services has the following comments.

1. **Survey Related Comments**
   a. Comments on the submitted Amended Subdivision/Recording Plat Dated April 10, 2013 have not been address by the applicant and the plan has not been stamped by a registered land surveyor. This issue may need to be a condition of approval.
   b. Easements notes on drawings C-3.1, C-3.4 etc. need to be reviewed and shown on the plat.
   c. A deed is required for the proposed four foot widening of Somerset Street plus this widening needs to be shown on the Plat.
   d. Plans are referenced but appear not to be recorded. This needs to be addressed.
   e. All property corners have not been shown.
2. **Waiver Request**
   a. The Department is supportive of waiver request # 3, with the following conditions: All light fixtures shall be LED, all fixtures shall be shielded for down lighting and light spacing shall be per Code requirements. The applicant is encouraged to consider supplemental lighting on the applicant's property. All proposed lighting within the street right of way will be owned and maintained by the City of Portland and shall be on a separately metered circuit.
   b. With the Midtown Two drive now consolidated to a 24' width, waiver request #4 can be removed.
   c. The City is receptive of allowing stormwater treatment connections to catchbasins. This Department is supportive of waiver request #13.
   d. The City is supportive in waiving request #15, the requirement for a high intensity soils investigation.
   e. All proposed stormwater treatment and storage devices as a result of this project within or outside the road right of way shall be owned and maintained by the applicant and noted on the Plat.
3. **Sewer and Drainage Issues**
   a. Where all sewers are scheduled to be abandoned within the street right of way, the pipes

shall be filled with grout.

b. The plans show a 12" catchbasin lead from E-9 on drawing C-3.3 connecting to a 24" sewer without a manhole at the intersection of Pearl and Somerset Streets. This is not allowed by City Code which states: All connecting pipes eight inches and larger require manholes. Please provide a manhole at this junction point.

c. Please indicate for Elm St that the 12" drainage line will be increased to 24". It is the City's intend to pay for this drain extension which will be bid with the applicant's work. Plans will need to be submitted for review.

d. A catchbasin is proposed in the sidewalk, approximate station 2+90, drawing C-3.3, at the Noyes building near the corner of Elm Street. Catchbasin in sidewalks are not allowed.

e. All the proposed underdrain along the face of the Noyes building does not appear to be shown. Drawing C3.4 approximate station 5+25. Please verify.

f. Please correct 6" SD location from structure S-0. Drawing C-3.4

4. **Road Right of Way Issues**

a. Further discussions are necessary on how does applicant propose to access for maintenance the electrical transformer behind Midtown 4. The City is not receptive to traveling over the trail unless something can be mutually agreed upon to reinforce the trail.

b. Any lite bollards to be located within the street right of way shall be Halophane.

c. A license for the proposed canopy for Midtown Three extending over the street right of way will be required.

d. As a result on proposed Midtown 4 curb cut, new 24" storm drain and the replacement of the water main on Elm St., this opportunity should be used to re-align the curbing on the North side of Elm Street between the Trader Joes and Somerset Street to remove the three foot sidewalk pinch point at the Trader Joes building. Again it is the City's intent to pay for a portion of the curb realignment. Construction plans should be developed as part of the Midtown project showing these changes.

e. There are three issues at the intersection of Elm and Somerset Streets which need to be addressed. It is felt that a meeting with the applicant's engineer and a representative of the City's engineering staff could quickly resolve these three issues.

   i. The proposed alignment of Somerset Street Extension and Somerset Street at Elm Street,

   ii. The proposed crosswalk alignment across Elm Street at the Somerset Street intersection, and

   iii. The proposed layout of the crosswalk across Somerset Street at the Elm Street intersection to open pedestrian clearance on the Midtown side of Somerset Street.

f. The sidewalk along the face of the Noyes building shall be constructed of brick. The sidewalk along the Noyes parking lot shall be constructed of asphalt as proposed.

g. Currently parallel parking is proposed in front of the drive cut to the Noyes parking lot. This is the only drive cut to access that lot. Alternatives to the proposed design will need to be resolved.

h. The right turn radius from both Elm and Chestnut Streets on to Somerset St will force certain vehicles into the on-coming traffic. The City staff will work with the applicant's engineers to address this issue for the final design submittal.

i. Several of the proposed treebox filters are located in the sidewalk area. Assurance is needed that all locations will be ADA compliant.

j. The minimum lane travel width for all potions of Somerset St shall be 13 feet. This impacts only the curb bump out areas.

k. Due to the existence of the Noyes Storage Building and the desire to raise the level of

Somerset Street between Chestnut and Elm Street, City staff is requesting to meet with the applicant's engineers to discuss and resolve possible street and sidewalk design variances to accommodate this goal and to assure positive drainage away from the Noyes building.

ATT 7

Rick Knowland - Midtown Tree & Landscape Revised

From: Jeff Tarling
To: Rick Knowland
Date: 1/30/2015 12:48 PM
Subject: Midtown Tree & Landscape Revised
CC: Barbara Barhydt

Hi Rick -

In review of the latest Midtown landscape plan I wanted to offer the following 'review & comments' on the tree and landscape plan as proposed:

a) 'Street-trees', 'trees per unit standard', trees proposed for overall project.

Proposed tree calculations: from Landscape Plan key, 125 trees

Midtown I - 64 trees
Midtown II & III - 61 trees

Trees with raised granite planters 29 in Public Way, 5 on private or project land

Midtown 1 -
3 with raised granite planter in Public Way

Midtown 2 -
13 with raised granite planters in Public Way
5 with raised granite planters on project land

Midtown 3 -
13 with raised granite planters in Public Way

Cost estimate for raised granite tree planters is $50 per foot or $2,000 each.

b. General Landscape Notes, recommendations / conditions of approval:

Plant sizes: (UPGRADE AS REQUESTED EARLIER)

ALL SHRUBS should be 5 Gal minimal vs the small residential scale 3 Gal size.

Green Wall Vines - ALL PLANTS should be 3 GAL minimum

ALL PERENNIALS should be 3 GAL minimum size

Raised granite planter - Note should change saw-cut top to "Thermal Top"

TREE SAVE - plan should show all 'tree save' areas and protection measures. This includes physical barriers / construction fencing, no construction equipment or storage near root zones. This is for trees to remain along the Bayside Trail etc. Web links for Tree Save measures, See:

http://www.treesaregood.com/treecare/resources/AvoidingTreeDamage.pdf

http://www.treesaregood.com/treecare/resources/ConstructionDamage.pdf

(Unknown if row of Norway Maples along street can be saved)

Existing trees to be relocated - the project landscape contractor shall properly prepare trees to be relocated to be made available to the City of Portland for reuse. This includes digging and preparing the rootball with 'balled & burlap' typical standard. Trees should be cared for on-site as needed for an agreed upon period of time, this includes watering and site protection in safe location. (add to Note 17)

Trees within the Public Right of Way - should not include 'tree wrap', staking / guying unless directed by City Arborist.

Criteria for Planning Board Report
Environmental Quality Standards

A. Section 14-526 Site Plan Standards:

Requirements for approval
(b) *Environmental Quality Standards*

1. *Preservation of Significant Natural Features*

a. The site plan shall preserve and protect significant natural features by incorporating them into site design. Significant natural features shall be defined as:

(i) Populations of trees and plants listed on the Official List of Endangered and Threatened Plants in Maine, published by the Maine Natural Areas Program.

Review:

(ii) Habitat for species appearing on the official state of federal list of endangered or threatened animal species;

Review:

(iii) High and moderate value waterfowl and wading bird habitat including nesting and feeding areas, as defined by the Department of Inland Fisheries and Wildlife;

Review:

(iv) Aquifers on islands in Casco Bay, as identified in the City of Portland Island Groundwater Management Study and/or by the Maine Geological Survey;

Review:

(v) Waterbodies including wetlands, watercourses, significant vernal pools and floodplains. These features may also be regulated by Division 26, Shoreland Regulations, Division 26.5, Flood Plain Management Regulations and Division 26.7, Stream Protection Ordinance of the City Code, along with Sections 5 and 8 of the Technical Manual or other State regulations.

Review:

b. Where areas set aside for preservation are part of a larger existing habitat block extending beyond the boundaries of the site, the contiguity of these features shall be preserved, where possible.

Review:

c. Waiver: Where complete preservation of significant natural features substantially compromises development of the site otherwise permitted by zoning, the Reviewing Authority may reduce the requirement to accommodate development provided that the applicant demonstrates compliance with applicable state and federal regulations and implements preservation measures to the extent practicable.

Review:

2. ***Landscaping and Landscape Preservation***

a. Landscape Preservation

(i) Site development shall be designed to incorporate, and limit disturbance to or removal of existing trees, as specified below. Preserved trees may be counted towards site landscaping requirements.

Review: Landscape plan proposes to remove & replace existing trees. The site does not have any 'mature' trees.

(ii) All development subject to zoning setbacks shall preserve a minimum of 30% of existing trees ten (10) inches DBH or greater within the required setback area unless trees are non-native invasive species, as identified in Section 4 of the Technical Manual, or are deemed unsalvageable by the Portland City Arborist or their designee.

Review: No trees of 10" DBH are on site.

(iii) Protection during Construction: The site plan shall include adequate measures to protect vegetation to be preserved from construction impacts, in accordance with the tree preservation standards listed in Section 4 of the Technical Manual.

Review: N/A

(iv) Waiver: Where the applicant can demonstrate that preservation of existing vegetation would compromise development of the site, the Reviewing Authority may permit the substitution of replacement landscaping in other areas of the site, and/or a financial contribution to the City of Portland Tree Fund for an amount proportionate to the cost of trees removed, as described below: N/A

(a) For each tree required to be preserved that is removed and is greater than 16" in caliper DBH, two (2) replacement trees of a species identified on the City of Portland Recommended Tree List shall be planted on the site as detailed in Section 4 of the Technical Manual).

Review: N/A

(b) For each tree required to be preserved that is removed and is between ten (10) and sixteen (16) inch DBH, one (1) replacement tree of a species identified on the City of Portland Recommended Tree List shall be planted on the site as detailed in Section 4 of the Technical Manual).

Review: N/A

(c) Where the planting of replacement trees on the site is not feasible, the applicant shall contribute an amount proportionate to the cost of required replacement trees to the City of Portland Tree Fund, as detailed in Section 4 of the Technical Manual. (See notes)

Review:

(v) In addition to the provisions of this section, all development within the Shoreland Zone shall meet the requirements of Division 26, Shoreland Regulations.

Review: N/A

b. *Site Landscaping*

(i) Landscaped Buffers:

(a) *Screening.* Loading and servicing areas, dumpsters, storage areas and utility structures, except for renewable energy systems, shall be screened from view from public sidewalks, streets and adjacent properties by dense evergreen landscaping, fencing, masonry wall building walls, or a combination thereof.

Review: The proposed landscape plan shows adequate buffering with the exception of the trail side of Midtown Three. The trail side of Midtown Three shows a row of 26 Pagoda Dogwood, shown as 'C. ALT (26) on the landscape sheet, these should be upgraded to a larger tree species. This might include: Yellow Birch, River Birch, Red Maple, Swamp White Oak (examples) planted in fewer numbers then the proposed 26 Dogwoods, perhaps in groves. This request is to improve the scale as the Pagoda Dogwoods mature size is a low 10' in height. The City Arborist & Planning authority is willing to work with the project team to find a compromise on the revised tree types, numbers & spacing for the trail section of Midtown Three. Also due to the number of Cornus or Dogwood species in this area planted prior to the project an alternate species is needed to add plant diversity and long term sustainability which is low in mono-culture plantings.

(b) Under story*Under story Plantings.* All development subject to required zoning setbacks shall include a minimum of six (6) shrubs per forty five (45) linear feet of all frontages as measured along the property line. A shrub shall be defined as one shrub, one ornamental grass, and/or 3 perennials. Required shrubs may be installed anywhere on the site, including a green roof, if proposed, and may be planted in any arrangement. Existing vegetation to be preserved on the site may be counted towards this requirement as detailed in Section 4 of the Technical Manual.

Review: The proposed landscape plan appears to have met this standard. Earlier review comment mentions that plants should meet or exceed minimum sizes.
warrantedwarrantedwarrantedwarrantedwarrantedwarrantedwarrantedwarrantedwarrantedwarrantedwarrantedExample - a minimum size for ornamental grasses, perennials & vines should be 3 gallon pot size and all shrub planting should be 5 gallon pot size minimum. I have checked local nursery vendors and found these sizes available. Due to the size & scale of the project this upgrade of plant sizes is warrentted as requested earlier.

(c) *Industrial and Commercial Zones.* For non-residential development proposed in an industrial or commercial zone subject to required zoning setbacks and abutting a residential zone, an evergreen, densely landscaped buffer of not less than ten (10) ft wide and six (6) ft tall is
required along the side abutting the residential zone. Where site constraints prevent such a buffer from being established, the width of the landscaped buffer may be reduced but shall include architectural quality fencing of not less than six (6) ft tall and a mix of evergreen and deciduous trees spaced no further than twenty (20) ft apart along the abutting the residential zone.

Review: N/A

(d) *Buffer from Surrounding Development.* All residential development shall provide and/or preserve evergreen vegetated buffers where necessary to buffer the development from detrimental impacts of existing surrounding development.

Review: The proposed landscape plan meets this standard provided tree & plant sizes meet standards with the upgrade of pot sizes to 5 Gallon for Shrubs and 3 Gallon for all perennials, grasses & vines.

(ii) *Parking Lot Landscaping:*

(a) Developments with five (5) or more parking spaces shall include at least two (2) trees (or one (1) tree and three (3) shrubs) per five (5) parking spaces planted in landscaped islands to screen shade and break up parking. Trees and shrubs in parking lots may be in informal groups, straight rows, or concentrated in clusters as detailed in Section 4 of the Technical Manual.

Review: Project proposes indoor parking garage.

(b) Landscaped islands shall be distributed so that uninterrupted pavement does not exceed forty (40) parking spaces.

Review: N/A

(c) Landscaped islands shall be curbed and a minimum of eight (8) feet in width, not including curbing. The incorporation of bio retention into landscaped islands is strongly encouraged.

Review: The project does include bio retention features all of which should be maintained by the project including those within the public way but serves the proposed development. This includes the required maintenance and reporting aspect. (this is likely covered in the Engineering Review comments)

(d) Vehicle display lots shall be subject to the parking lot landscaping standards of this section.

Review: N/A

(e) Waiver: Where site constraints prevent implementation of all or a portion of required parking lot landscaping, as determined by the Reviewing Authority, the requirements may be all or partially waived and the applicant shall contribute an amount proportionate to the cost of required parking lot trees to the City of Portland Tree Fund.

Review: N/A

(iii) *Street Trees:*

(a) All development shall include street trees in numbers and locations as specified in Section 4 of the Technical Manual. Street trees shall be planted in the right of way, as specified in Section 4 of the Technical Manual. Street trees shall be of a species identified on the City of Portland Recommended Tree List, unless otherwise approved by the Portland City Arborist or his/her designee.

Review: The proposed landscape plan appears to meet the standard. Trees must be from the approved list, no Callery Pear or Lindens.

(b) Waiver. Where the applicant can demonstrate that site constraints prevent the planting of required street trees in the City right of way, the Reviewing Authority may permit the planting of street trees in the front yard, within ten feet of the property line. Existing preserved healthy trees that are six (6) inches or more in caliper and are on the site within ten (10) feet of the property line may be counted towards this requirement. If planting street trees is neither feasible in the City right of way nor within the site, the applicant shall contribute to the City of Portland Tree Fund an amount proportionate to the cost of required street trees.

Review: Contribution to the City of Portland Tree Fund is recommended with a reduction of the cost for granite tree planters. A cost estimate of $50 per foot for granite planters is current. Thus a reduction of this cost for trees in the public right of way could be considered reasonable.

3. *Water Quality, Stormwater Management and Erosion Control*

a. All development must demonstrate that the proposed site improvements are designed to minimize the amount of stormwater leaving the site. This must include consideration of the design and location of improvements to minimize the total area of impervious surface on the site and stormwater management techniques to minimize both the volume and rate of runoff from the lot. The stormwater management plan must demonstrate the following:

(i) Any stormwater draining onto or across the lot in its pre-improvement state will not be impeded or re-directed so as to create ponding on, or flooding of, adjacent lots;

Review:

(ii) Any increase in volume or rate of stormwater draining from the lot onto an adjacent lot following the improvement can be handled on the adjacent lot without creating ponding, flooding or other drainage problems and that the owner of the lot being improved has the legal right to increase the flow of stormwater onto the adjacent lot;

Review:

(iii) Any increase in volume or rate of stormwater draining from the lot onto City property following the improvement can be handled without creating ponding, flooding or other drainage problems and that the owner of the lot being improved has the legal right to increase the flow of stormwater onto the City's property; and

Review:

(iv) Any increase in volume or rate of stormwater draining from the lot into the City's separate storm sewer system can be accommodated in the system without creating downstream problems or exceeding the capacity of the storm sewer system.

Review:

b. All development, except Level I minor residential development, shall comply with the standards of 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.

Review:

c. All development, except Level I minor residential development, that are located within the watershed of an Urban Impaired Stream shall comply with the Urban Impaired Stream standards pursuant to Maine DEP Chapter 500 Stormwater Management Rules, as described in Section 5 of the Technical Manual.

Review:

d. Level I: minor residential development shall comply with basic erosion control standards, as described in Section 6 of the City of Portland Technical Manual.

Review:

e. Development shall not pose a risk of groundwater contamination either during or post-construction, as described in Sections 5 and 9 of the Technical Manual.

Review:

f. Development shall provide for adequate and sanitary disposal of sewage as described in Section 2 of the Technical Manual.

Review:

ATT 8

January 23, 2015

To: Rick Knowland

From: Keith Gautreau & Craig Messinger

Dear Sir,

Pursuant to your request for a summary of the proposed Mid-Town project, we have the following Life Safety issues /concerns that we feel need to be addressed for the project to be moved forward.

We have been told that a hydrant will be relocated along Lancaster street, Portland Water District has assured us that it will only be moved a very short distance.

A Dumpster is proposed to be placed inside of Building #3 for the trash holding area. Although this building will be provided with a full sprinkler system, we are requiring a two hour separation between this space and the remainder of the building.

Mid-Town building #4 currently shows emergency access to only one side of the structure, the PFD has always required two sides of a structure to be access for emergency vehicles.

The new proposed curb cut and access off Elm Street to the small side of Midtown #4 must be a minimum of 16' wide. Also we will require signage and striping on driveway indicating Fire Lane NO PARKING.

At this point, the PFD has not seen any current plans for Fire Alarm and/or Sprinkler systems.

During construction, the PFD will require the following:

Per NFPA 1, 16.3.4, Access for firefighting equipment.

Per NFPA1,16.4.3, Fire Protection during construction. (Water supply)

Per NFPA 16.4.3.3.2, Standpipe Installations in Buildings under construction.

Per NFPA 16.7.1.6, Fire Extinguishers

Per NFPA 16.7.2, Fuel Systems.

Respectfully Submitted,

Keith

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

Economic Development Department
Gregory A. Mitchell, Director

MEMORANDUM

To: Planning Board

From: Greg Mitchell, Economic Development Director

Date: January 29, 2015

Subject: Somerset Street Cost Share Agreement

You have asked for information about the City and Federated Companies partnership to invest in grade adjustment to Somerset Street, between Pearl and Elm Streets.

Attached is a copy of the "Somerset Street Cost Share Agreement" which assigns responsibilities for funding and construction of this public improvement.

Agreement highlights include:

Cost: $4 million total.

Cost Share: Federated Companies funds 1/3 of the cost and the City funds 2/3rds. The City financial sources are as follows:

$1 million from Bayside HUD 108 and BEDI Grant funds;
$1 million from Bayside Tax Increment Financing District existing available funds; and,
$700,000 in City General Obligation debt which has been approved by the City Council.

Project Construction Responsibility: Federated, under the supervision and inspection of the City.

Project Timing: During construction of the midtown Project.

I will be attending the February 3rd Planning Board public hearing for the Midtown Project and will be available to answer your questions.

Agreement by and between
FEDEQ DV001 and City of Portland
on Costs For Off-Site Improvements
Improving Somerset Street,
To be Partially Funded by City of Portland

THIS AGREEMENT dated Oct. 14, 2014 is made by and between THE **CITY OF PORTLAND**, a body politic and corporate with a place of business at 389 Congress Street, Portland, Maine 04101 (the "City" or "Seller"), and **FEDEQ DV001, LLC**, a Maine limited liability company with a mailing address of PO BOX 370008, Miami, Florida 33137 ("FEDEQ" or "Buyer").

RECITALS

WHEREAS, an Agreement for the purchase and sale of real estate (the "P&S Agreement") has been made between the City and FEDEQ Apartments, LLC, a Florida limited liability company with a place of business at 3301 NE 1st Avenue, Suite M-302, Miami, Florida 33137, assignee of said P&S Agreement from the Federated Companies LLC, a Florida limited liability company with a principal place of business at 3301 NE 1st Avenue, Suite M-302, Miami, Florida 33137 ("Federated"); and FEDEQ Apartments LLC has recently assigned its rights in and to the P&S Agreement to **FEDEQ DV001, LLC**, a Maine limited liability company with a mailing address of PO BOX 370008 , Miami, Florida 33137 ("FEDEQ");

WHEREAS, related to, and benefiting the development planned by Buyer on the real property which is the subject of the P&S Agreement, and integral thereto, are certain improvements detailed herein to the adjacent public way known as Somerset Street, and more specifically for the portion thereof between Pearl Street and Elm Street (the "Project"), which both the City and Buyer wish to see made;

WHEREAS, the estimated total costs of the Project are $4,000,000; and

WHEREAS, the City and the Buyer are willing to share these costs, as set out herein;

NOW, THEREFORE, the parties hereto hereby agree as follows:

1. **Project and Scope and Cost and Timeline/Schedule:** FEDEQ and the City have jointly agreed to the scope of Project which work is more specifically described in Attachment A attached hereto with an estimated total project cost of $4,000,000 (the "Total Project Cost"). FEDEQ and the City have jointly agreed to a schedule or timeline for the Project, which is attached hereto as Attachment B. The term "Total Project Cost" shall mean the actual Project cost as established by FEDEQ and the City following receipt of a guaranteed maximum cost construction contract acceptable to the City and FEDEQ.

2. **Cost Sharing and Conditions Precedent:** Subject to the terms hereof, the City will fund two-thirds (2/3) of the Total Project Cost, and FEDEQ will fund one-third (1/3) of the Total Project Cost.

FEDEQ's agreement to fund said one-third (1/3) of the Total Project Cost is contingent upon: FEDEQ (or assigns) closing on acquisition of the real estate which is subject matter of the P&S Agreement.

In the event FEDEQ (or assigns) fails to close on the acquisition of the real estate which is the subject matter of the P&S Agreement, FEDEQ shall have the right to cancel and terminate this Agreement by giving written notice of such cancellation and termination to the City, and upon the giving of such notice, this Agreement shall be terminated and FEDEQ shall be relieved of all further obligations hereunder.

Prior to the issuance of a Building Permit for the Project, FEDEQ shall provide the City with evidence of its financial resources, in the amount of at least one-third of the Total Project Cost, available and dedicated to the costs of this Project, in a form reasonably acceptable to the City's Director of Finance, which may include a commitment from a commercial lender to fund requisitions for payment of Project costs.

More than likely, the actual total project cost will not be precisely the amount of the Total Project Cost stated above. Therefore, the parties agree:

(a) The contract(s) for the Project will not be 'mixed' with any other work needed by either party. Notwithstanding the foregoing, nothing herein shall prevent FEDEQ from entering into contracts with the same contractor for construction of other portions of the midtown project to be coordinated with the work on the Project, provided, however, that costs must be allocable to the Project and the midtown project.

(b) In order to address both parties' concerns that the Total Project Costs could exceed the estimate stated above, the City and, FEDEQ will meet early in the development and design of this project to jointly and cooperatively manage said project's design, staging, procurement costs and construction costs; and said parties will continue to meet as reasonably necessary for this same purpose, and will work collaboratively to control procurement and construction costs. And in particular, before FEDEQ executes contracts for the construction of the Project, the parties shall meet and agree on the scope and cost of those contracts, including amounts for project supervision and construction management, general conditions, building permit fees, bonding costs, insurance and including an

appropriate construction contingency amount. All such construction contracts shall be in the form of guaranteed maximum cost contracts.

(c) Any changes to the Project cost over and above any established contingency included in the Total Project Cost during construction shall require mutual review and agreement in writing, which shall not be unreasonably withheld or delayed.

3. **Procedures for Making Disbursements (Payments).** With respect to all requisitions for disbursements of the City's share of Total Project Costs, the City and FEDEQ agree as follows:

   a. FEDEQ shall deliver to the City a written request for payment (a "Requisition") which shall be in substantially the same form as AIA Forms G702 and G703. The Requisition shall be accompanied by: (i) a summary of all expenses requested, (ii) copies of invoices, bills, receipts and such other information as may be reasonable to document the expenditures described in the Requisition, (iii) mechanics' lien affidavits and/or written lien waivers from such contractors, laborers, subcontractors and materialmen for work done and materials supplied which were paid for pursuant to the immediately preceding Requisition, and (iv) a certified payroll in conformance with the requirements of the Davis-Bacon Act of 1931, as amended, for all contractors and subcontractors on site and for which invoices are included.

   b. Requisitions shall be submitted by FEDEQ no more frequently than monthly. Prior to the disbursement by the City of any requested Requisition, City's construction inspector shall certify to City that the work for which a Requisition has been submitted has been completed and the City's Housing and Neighborhood Services staff will verify all workers are being paid the prevailing wage.

   c. A copy of the construction schedule will be submitted to the City at the beginning of the project. Updates will be provided by FEDEQ as necessary to remain accurate.

   d. City shall make disbursements to FEDEQ only after such certification and verification, and with a certified payroll, all the same must be correct and

complete. Each Requisition for disbursement shall be submitted at least five (5) days before the date for which the disbursement is requested, and the City shall make such advancement no later than fifteen (15) days after receipt of each Requisition to make such disbursement.

4. **Project Administration and Supervision:** FEDEQ will be responsible for procuring the construction contracts and for providing for the owner's administration for the Project, consistent with the scope of Project contained in Attachment A, hereto, and upon the Timeline attached hereto as Attachment B. All FEDEQ's costs for procurement of construction contracts, administration or the like shall not be shared by the City, nor shall the City be required to share in any other type of internal costs of FEDEQ. Notwithstanding the foregoing, the items described in section 2(b) above shall be payable as part of the Total Project Costs.

The City of Portland will monitor and inspect the work of the Project, including for compliance with City Rules and Ordinances. The City shall have the right to suspend work on the Project as it reasonably deems necessary, to provide for such compliance, and for compliance with the Scope of Work in Attachment A. The City's monitoring and inspection will be collaborative with FEDEQ.

The Contracts for the work of the Project between FEDEQ and its vendors and contractors shall contain these two provisions:

> Prior to the execution of this Agreement, the **CONTRACTOR** will procure and maintain Automobile Insurance and General Public Liability Insurance coverage and coverage in amounts of not less than Four Hundred Thousand Dollars ($400,000.00) per occurrence for bodily injury, death and property damage, naming the **CITY OF PORTAND** as an additional insured thereon, and also Workers' Compensation Insurance coverage. With respect to the Liability Insurance, the **CONTRACTOR** will provide the **CITY OF PORTLAND** a certificate of insurance evidencing such coverage, in this way: certificate must say either: A) "the policy has been endorsed to name the City of Portland as an Additional Insured" and a copy of the endorsement must come to the City of Portland with the certificate, or B) "the policy already includes an endorsement, such as the General Liability Extension Endorsement, by which the City of Portland is automatically made an additional insured." A Certificate which merely has a box checked under "Addl Insr," or the like, or which merely states the City of Portland is named as an Additional Insured, will not be acceptable. The **CONTRACTOR** shall furnish the **CITY OF PORTLAND** and thereafter maintain certificates evidencing all such coverages, which certificates shall provide for thirty (30) days' notice to the **CITY OF PORTLAND** of termination of insurance from insurance company or agent.
>
> The **CONTRACTOR** shall furnish to FEDEQ and to the **CITY OF PORTLAND**, upon execution of the Contract, a Contract Performance Bond and a Contract Labor and Materials Payment Bond each for the full amount of the Contract and issued by a surety

company or surety companies authorized to do business in the State of Maine and approved by the **CITY OF PORTLAND**. The Bonds shall remain in effect for one year after final acceptance of the Work, and protect both FEDEQ and **CITY OF PORTLAND** for at least one year of warranty of the Work hereunder, and also shall insure settlement of claims for the payment of all bills for labor, materials and equipment. The bonds described in this section shall be deemed to satisfy the performance guaranty requirements for the Project as required by section 14-501 of the City of Portland Code of Ordinances, and no further performance guaranty shall be required.

5. **Requirements related to Funding Sources.** FEDEQ, its employees, assigns, agents and subcontractors for this project, at all times shall comply with the requirements of the Section 108 Loan Guarantee and Brownfields Economic Development Initiative Grant program and Federal Labor Standards pursuant to Davis Bacon and related Acts, specifically including:

   a. Davis-Bacon Act, as amended.(40 U.S.C 276a - 276a-5.) All laborers and mechanics employed by contractors or subcontractors, including employees of other governments, on construction work assisted under this contract, and subject to the provisions of the federal acts and regulations listed in this paragraph, shall be paid wages at rates not less than those prevailing on similar construction in the locality as determined by the Secretary of Labor in accordance with the Davis-Bacon Act.

   b. Contract Work Hours and Safely Standards Act, as amended. (40 U.S.C. 327-333). All laborers and mechanics employed by contractors or subcontractors shall receive overtime compensation in accordance with and subject to the provisions of the Contract Work Hours and Safety Standards Act, and the contractors and subcontractors shall comply with all regulations issued pursuant to these acts and with other applicable Federal laws and regulations pertaining to labor standards.

   c. Copeland Anti-Kickback Act, as amended. (18 U.S.C. 874 and 40 U.S.C. 276c). This Act requires that workers be paid at least once a week, and without any deductions or rebates except permissible deductions.

6. **Entire Agreement.** This Agreement (i) constitutes the entire agreement between the parties hereto with respect to the Project and it supersedes all prior discussions, undertakings or agreements between the parties in respect to the Project; (ii) shall not be modified except by a written agreement executed by both parties; (iii) shall be binding upon and inure to the benefit of the parties hereto, and their respective successors and assigns; (iv) may be executed in counterparts; and (v) may be executed by facsimile signatures. This Agreement shall not confer any rights or remedies upon any third-party

other than the parties to this Agreement and their respective successors and permitted assigns.

7. **Notices.** Any notice by either party to the other party shall be in writing and shall be deemed to have been duly given when either delivered personally, or mailed by certified mail, return receipt requested, or sent by nationally recognized overnight courier, or sent by facsimile to the City at Portland City Hall, 389 Congress Street, Portland, Maine 04101, Attn: City Manager facsimile 207-874-8669, with a copy to, the Director of Economic Development, facsimile 207-756-8217, and another copy to Corporation Counsel, at the same address, facsimile 207-874-8497), and to FEDEQ, at the address recited above, with a copy to The Federated Companies, 801 Brickell Avenue, Suite 720, Miami, Florida 33131, Attn: Jonathan Cox, facsimile (800) 523-5931.

8. **Severability.** In the event any one or more of the provisions contained in this Agreement shall be for any reason held invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provision of this Agreement, and this Agreement shall be construed as if such invalid, illegal or unenforceable provision had never been contained in this Agreement.

IN WITNESS WHEREOF, the City and FEDEQ, by their representatives duly authorized, have caused this instrument to be executed as of Oct. 14, 2014.

FEDEQ DV001, LLC

By_____,
Jonathan Cox
Its: Manager

CITY OF PORTLAND

By_____
Sheila Hill-Christian, Acting City Manager

By_____
Suzanne Knight, Acting Finance Director

By_____
Corporation Counsel Attorney

Budget Site Construction Cost Estimate Peer Review

Midtown - Somerset Street Improvements
12/5/2013

WOODARD &CURRAN

Description	Site Development Costs		Somerset Street Costs		Total Costs	
	Total	% of Total	Total	% of Total	Total	% of Total
Item (a) Basis of Design:						
Site Demolition	$ -	0.0%	$ 28,055	2.1%	$ 28,055	0.8%
Preliminary Site Work	$ -	0.0%	$ 61,241	4.6%	$ 61,241	1.8%
Earthwork	$ -	0.0%	$ 32,447	2.4%	$ 32,447	0.9%
Dewatering	$ -	0.0%	$ 10,000	0.8%	$ 10,000	0.3%
Storm Drainage (See Note 1)	$ 202,470	9.7%	$ 1,260	0.1%	$ 203,730	6.0%
Sanitary Systems	$ 20,596	1.0%	$ -	0.0%	$ 20,596	0.6%
Water Systems	$ 118,118	5.7%	$ 1,200	0.1%	$ 119,318	3.5%
Portland Water District - Water Service Fees	*$ 15,000*	0.7%	$ -	0.0%	$ 15,000	0.4%
Misc Site Utilities (See Note 2)	$ 175,933	8.4%	$ 240,948	18.1%	$ 416,881	12.2%
Unitil - Gas Utility Fees (Allowance)	*No Cost*	0.0%	*No Cost*	0.0%	$ -	0.0%
Central Maine Power - Phase 1 Electrical Utility Fees	*$ 268,000*	12.8%	*$ 332,000*	24.9%	$ 600,000	17.5%
Central Maine Power - Phase 2 Electrical Utility Fees	*$ 317,000*	15.2%	*$ 83,000*	6.2%	$ 400,000	11.7%
Time Warner - Communication Utility Fees (Allowance)	*No Cost*	0.0%	*No Cost*	0.0%	$ -	0.0%
Fairpoint - Communication Utiltiy Fees	*No Cost*	0.0%	*No Cost*	0.0%	$ -	0.0%
Roads/Walks (See Note 3)	$ 99,463	4.8%	$ 540,113	40.5%	$ 639,576	18.7%
Site Improvements (See Note 4)	$ 550,623	26.4%	$ 2,398	0.2%	$ 553,021	16.2%
Concrete (See Note 4)	$ 161,666	7.7%	$ -	0.0%	$ 161,666	4.7%
Misc Metals (See Note 4)	$ 40,991	2.0%	$ -	0.0%	$ 40,991	1.2%
Electrical Site (See Note 5)	$ 116,953	5.6%	$ -	0.0%	$ 116,953	3.4%
Item (a) Basis of Design Sub-Total	***$ 2,086,813***	***100%***	***$ 1,332,662***	***100%***	***$ 3,419,475***	***100%***
Estimate Adjustment and Indirect Costs:						
Cost Estimate Adjustments (See W&C 11/15/2013 Memo	$ 11,900	3.1%	$ 40,000	14.3%	$ 51,900	7.8%
Contractor General Conditions (See Note 6)	$ 166,945	43.1%	$ 106,613	38.1%	$ 273,558	41.0%
Contractor OH&P, Insurance, Bonds (See Note 7)	$ 208,681	53.8%	$ 133,266	47.6%	$ 341,948	51.2%
Estimate Adjustment and Indirect Costs	***$ 387,526***	***100.0%***	***$ 279,879***	***100.0%***	***$ 667,406***	***100.0%***
Somerset Street Improvements Total (Rounded)	***$ 2,474,000***		***$ 1,613,000***		***$ 4,087,000***	

Notes:

1) Cost segregation assumes Site Development Costs include off-site drainage piping/structures required for on-site stormwater treatment system.
   a) Cost to raise existing storm drainange manholes/catch basins is included in the Somerset Street Costs.
2) Cost segregation assumes Site Development Costs will include electrical trenching, backfill and precast concrete light pole bases.
   a) Infrastructure and utility company fees to relocate overhead electrical/communication utilities are shared based on scope of work.
3) Cost segregation assumes Site Development Costs will include new and existing granite curbing along Somerset, Elm, Chestnut and Pearl Streets.
   a) Cost for approximately 1,080 CY of lightwieght concrete fill under new sidewalks is included in the Site Development Costs.
   b) Cost to remove and re-set approximately 1,120 LF of existing granite curb on the southeast side is included in the Somerset Street Costs.
4) Cost segregation assumes Site Development Costs will include all brick pavers, concrete ramps/planters/stairs/rails and trees.
5) Cost segregation assumes Site Development Costs will include all site lighting concrete bases, light poles, luminaires and wiring.
6) Contractor General Conditions (not included in PC estimate) may range in the amount of 8-10% depending on schedule and concurrent activities.
7) Contractor OH&P, Insurance, Bonds and Contingency (not included in PC estimate) may range in the amount of 10-12%.
8) Allowance has been included for electrical utility company fees for relocating existing overhead electrical services to underground.
   a) CMP Phase 1 cost assumes Site Development Costs include (1)-2000 & (1)-500 KVA pad mount transformers, 500 CU cable and junction pole.
   b) CMP Phase 1 cost assumes Somerset Street Costs include (1)-1000 KVA submersible transformer, 500 CU cable and riser poles.
   c) CMP Phase 2 cost assumes Site Development Costs include (3)-2000 & (1)-500 KVA pad mount transformers and 500 CU cable.
   d) CMP Phase 2 cost assumes Somerset Street Costs include 500 CU primary cable at Elm Street.
9) Allowance has been included for water utility company fees for new Site Development fire and domestic water services.
10) No allowances have been included for gas, telephone and cable utility company fees since there should be no charge for this work.
11) No allowances have been included for unsuitable soils or contaminated groundwater treatment/disposal.
12) No allowances have not been included for offsite improvements or traffic control signalization.

ATTACHMENT B TO COST SHARING ARRANGEMENT
TIMELINE FOR PROJECT -
TO BE PROVIDED

Portland, Maine Yes. Life's good here.

Economic Development Department
Gregory A. Mitchell, Director

MEMORANDUM

To: Planning Board

From: Greg Mitchell, Economic Development Director

Date: January 29, 2015

Subject: Midtown Project Parking Garage Contribution Agreement

City of Portland and Federated Companies midtown Project partnership documents require Federated to construct one parking garage with "no less than 800 spaces".

You have asked for information concerning the public benefit aspects associated with the City of Portland planned investment in the proposed Midtown Two Parking Garage.

Conditions included in the referenced Agreement include:

"5. Garage Operations.

(a) Key Card. The Garage shall be equipped with a "key card" system (or its equivalent) whereby weekly, monthly or longer term users shall have 24-hour access to the Garage 7 days a week, it being understood that certain users may only have access at certain hours based on contractual agreements with the owners of Garage. Legacy Park shall make the Garage available for public (hourly access) use during the "Start-Up Phase" at such times as established by Legacy Park during reasonable commercial business hours, which shall at a minimum be from 7 a.m. to 7 p.m., Monday through Saturday, and 10 a.m. to 7 p.m., Sundays and Holidays. The expression "Start-Up Phase" shall mean that period commencing when the Garage receives a Certificate of Occupancy allowing operation of the parking garage portion of the Garage facility and ending the date when the first other building (and not merely the retail portion within the parking garage structure) within the Project is issued a Certificate of Occupancy and that building starts using parking in the Garage. During and after the Start-Up Phase the Garage shall be open during reasonable hours, seven days per week, subject to modification from time to time by Legacy Park based on historical and projected volume of usage.

(b) Additional Requirements:

(i) Hourly and monthly rates for the Garage shall be based upon prevailing market rates, defined as follows: in no event shall rates be greater than 110% of the average market rates charged by City at City-owned and operated garages or the average of the three highest rates charged by garages within the City, excluding any garages that may be owned by Legacy Park or any of its affiliates;

(ii) The Garage shall participate in the Park and Shop Program;

(iii) The Garage shall be available for City snow ban parking, and the overnight (i.e. 5:00 p.m. to 8:00 a.m.) snow ban parking rate per hour shall not exceed three times the then-current maximum hourly rate charged by the Garage;

(iv) Upon written request of the City in each such instance, the Garage shall be available at customary rates for parking for special events held on the Portland Peninsula after 5:30 pm on weekdays and if requested, at requested reasonable times on weekends.

(v) The Garage shall have shared use with the public 7 days a week, 24 hours per day.

(vi) The Garage shall provide a minimum of 200 hourly turnover parking to the general public, and will provide within 2 days upon request data and information, including the number of non-turnover parkers present in the Garage at any given time, in order for the City to verify compliance with this condition.

(vii) The Garage will accept both cash and credit card payments.

(viii) The Garage will be maintained so long as it is a public parking facility, in accordance with the then current edition of the National Parking Association's "Parking Garage Maintenance Manual (now in its Fourth Edition) , and in particular in accordance with the Recommended Maintenance Checklist contained therein.

(c) The Garage will remain a public parking facility for a minimum of thirty (30) years.

These requirements (a) through (c) shall be a covenant contained in the deed to Lots 6 and 7and the covenant shall run with the Land for the stated thirty (30) year period from the date of conveyance of Lots 6 and 7 from the City to Legacy Park and thereafter shall automatically expire."

A copy of the complete Agreement is attached for your information.

I will be attending the February 3rd Planning Board public hearing on the Midtown Project and would be happy to answer any questions.

PARKING GARAGE CONTRIBUTION AND FUNDING AGREEMENT

This Parking Contribution and Funding Agreement (the "Parking Garage Agreement") is made this 15th day of October, 2012, by and between the **CITY OF PORTLAND, MAINE**, a body politic and corporate with a place of business at 389 Congress Street, Portland, Maine (hereinafter "City") and **LEGACY PARK APARTMENTS LLC**, a Florida limited liability company with a place of business at 801 Brickell Avenue, Suite 720, Miami, Florida 33131 (hereinafter "Legacy Park").

WHEREAS Legacy Park is the assignee, by virtue of an Assignment and Assumption Agreement effective June 27, 2011, ("Assignment"), of a Purchase and Sale Agreement between The City of Portland, Maine, ("City"), effective June 23, 2011, ("Agreement"), for the purchase of certain blighted and brownfield real property located on Somerset Street, Portland, Maine known as Lots 1, 2, 3, 5, 6, 7,8 and a portion of Lot 9,(collectively, "the Land"), consisting of approximately 3.25 acres formerly known as the "Bayside Railyard";

WHEREAS City, in order to create jobs and economic growth for the Citizens of Portland, Maine, has agreed to make a $9,007,000.00 contribution, ("City Grant Funds"), to Legacy Park from funds being provided to the City by the U.S. Department of Housing and Urban Development pursuant to the Bayside Redevelopment Project, Maine BEDI Grant and Section 108 Loan Program, ("HUD Funds"), toward the expense of the construction of a garage, with no fewer than 700 parking spaces and at least thirty thousand square feet of retail space on the first floor on a portion of Lot 5 and all of Lots 6 and 7 and a portion of Lot 9, ("Garage");

WHEREAS Section 11 of the Agreement requires City and Legacy Park to enter into a formal Parking Garage Agreement stipulating the terms and conditions of the contribution of the City Grant Funds to Legacy Park for the construction of the Garage.

NOW THEREFORE, in consideration of the foregoing and for good and valuable consideration the parties covenant and agree in this Parking Garage Agreement as follows:

1. Garage Construction. Subject to the terms and conditions of this Parking Garage Agreement and the City contributing City Grant Funds as described below, Legacy Park or its nominee shall construct the Garage in the location depicted on the plan attached hereto and incorporated herein by reference as Exhibit "A". The Garage shall have reached "Start-up Phase" as defined below within two (2) years after the date on which a total of $1,000,000.00 in City Grant Funds has been requisitioned by Legacy Park and disbursed by the City to Legacy Park. Notwithstanding the above, Legacy Park will diligently work to have constructed a sufficient percentage of the Garage so as to permit Legacy Park to requisition the City Grant Funds in full by November 31, 2014, so as to allow full disbursement of the City Grant Funds by December 31, 2014. If Legacy Park informs the City, in good faith, before October 1, 2014 that Legacy Park will not meet this requisition timetable, with evidence and reasons for this, the City will use its best

efforts to obtain an extension of this disbursement deadline for the HUD Funds from HUD, and if it obtains such an extension, it shall immediately transmit to Legacy Park evidence of this extension by HUD, and this timetable shall thereby be correspondingly changed, without further action of the parties hereto being required.

Legacy Park shall construct the Garage and any attached structures or units designed for non-garage use using sustainable and energy efficient construction methods, including, but not limited to, energy efficient lighting.

2. City Grant Funds. The City shall provide a grant to Legacy Park or its nominee of Nine Million Seven Thousand Dollars ($9,007,000.00) in City Grant Funds for use by Legacy Park for the City Grant Funds Uses as defined below. This funding is being provided in part as an incentive to build the Garage which would otherwise not be commercially viable. Accordingly, the City agrees that the first $9,007,000.00 of City Grant Funds Uses, disbursed in accordance with this Parking Garage Agreement, shall be City Grant Funds, but subject to and less the retainage described below. The City Grant Funds may be used for all purposes related to the Garage allowed with such HUD Funds, including but not limited to design, planning, permitting, environmental testing and remediation, and construction ("City Grant Funds Uses").

3. Legacy Park Contribution. Following the disbursement of City Grant Funds, less the retainage, Legacy Park shall provide sufficient additional funds for completion of the construction of the Garage, ("Legacy Park Contribution"). The Legacy Park Contribution shall either come from its own equity or financing from a construction lender. The Legacy Park Contribution, in addition to the City Grant Funds will cover the complete cost of constructing the Garage to completion.

4. Procedures for Making Disbursements (Payments). With respect to all requisitions for disbursements of the City Grant Funds, the City and Legacy Park agree as follows:

   (a) Legacy Park shall deliver to the City a written request for payment (a "Requisition") which shall be in substantially the same form as AIA Forms G702 and G703. The Requisition shall be accompanied by: (i) a summary of all expenses requested, (ii) copies of invoices, bills, receipts and such other information as may be reasonable to document the expenditures described in the Requisition, (iii) mechanics' lien affidavits and/or written lien waivers from such contractors, laborers, subcontractors and materialmen for work done and materials supplied which were paid for pursuant to the immediately preceding Requisition, and (iv) a certified payroll in conformance with the requirements of the Davis-Bacon Act of 1931, as amended, for all contractors and subcontractors on site and for which invoices are included.

(b) Requisitions shall be submitted by Legacy Park no more frequently than monthly. Prior to the disbursement by the City of any requested Requisition, City's construction inspector shall certify to City that the work for which a Requisition has been submitted has been completed and the City's Housing and Neighborhood Services staff will verify all workers are being paid the prevailing wage.

(c) A copy of the construction schedule will be submitted to the City at the beginning of the project. Updates will be provided by Legacy Park as necessary to remain accurate.

(d) City shall make disbursements to Legacy Park only after such certification and verification, and with a certified payroll, all the same must be correct and complete. Each Requisition for disbursement shall be submitted at least five (5) days before the date for which the disbursement is requested, and the City shall make such advancement no later than fifteen (15) days after receipt of each Requisition to make such disbursement. If the City fails to make any disbursement within fifteen (15) calendar days after such requisition with all required and correct and complete paperwork as delineated in this Parking Garage Agreement, such disbursement shall be paid with interest at a rate of one-quarter of one percent per month, from that date until the disbursement is in fact made ("Interest For Late Payment"). If any such Interest For Late Payment is owed then such amount shall be in addition to the City Grant Funds.

(e) City shall retain ten percent (10%) of the City Grant Funds as retainage, which shall be disbursed to Legacy Park upon receipt of the Certificate of Occupancy for the Garage or as mutually agreed upon between the City and Legacy Park.

5. Garage Operations.

(a) Key Card. The Garage shall be equipped with a "key card" system (or its equivalent) whereby weekly, monthly or longer term users shall have 24-hour access to the Garage 7 days a week, it being understood that certain users may only have access at certain hours based on contractual agreements with the owners of Garage. Legacy Park shall make the Garage available for public (hourly access) use during the "Start-Up Phase" at such times as established by Legacy Park during reasonable commercial business hours, which shall at a minimum be from 7 a.m. to 7 p.m., Monday through Saturday, and 10 a.m. to 7 p.m., Sundays and Holidays. The expression "Start-Up Phase" shall mean that period commencing when the Garage receives a Certificate of Occupancy allowing operation of the parking garage portion of the Garage facility and ending the date when the first other building (and not merely the retail portion within the parking garage structure) within the Project is issued a Certificate of Occupancy and that building starts using parking in the Garage. During and after

the Start-Up Phase the Garage shall be open during reasonable hours, seven days per week, subject to modification from time to time by Legacy Park based on historical and projected volume of usage.

(b) Additional Requirements:

(i) Hourly and monthly rates for the Garage shall be based upon prevailing market rates, defined as follows: in no event shall rates be greater than 110% of the average market rates charged by City at City-owned and operated garages or the average of the three highest rates charged by garages within the City, excluding any garages that may be owned by Legacy Park or any of its affiliates;

(ii) The Garage shall participate in the Park and Shop Program;

(iii) The Garage shall be available for City snow ban parking, and the overnight (i.e. 5:00 p.m. to 8:00 a.m.) snow ban parking rate per hour shall not exceed three times the then-current maximum hourly rate charged by the Garage;

(iv) Upon written request of the City in each such instance, the Garage shall be available at customary rates for parking for special events held on the Portland Peninsula after 5:30 pm on weekdays and if requested, at requested reasonable times on weekends.

(v) The Garage shall have shared use with the public 7 days a week, 24 hours per day.

(vi) The Garage shall provide a minimum of 200 hourly turnover parking to the general public, and will provide within 2 days upon request data and information, including the number of non-turnover parkers present in the Garage at any given time, in order for the City to verify compliance with this condition.

(vii) The Garage will accept both cash and credit card payments.

(viii) The Garage will be maintained so long as it is a public parking facility, in accordance with the then current edition of the National Parking Association's "Parking Garage Maintenance Manual (now in its Fourth Edition) , and in particular in accordance with the Recommended Maintenance Checklist contained therein.

(c) The Garage will remain a public parking facility for a minimum of thirty (30) years.

These requirements (a) through (c) shall be a covenant contained in the deed to Lots 6 and 7and the covenant shall run with the Land for the stated thirty (30) year period from the date of

conveyance of Lots 6 and 7 from the City to Legacy Park and thereafter shall automatically expire.

7. Payments in Lieu of Taxes. In consideration of the City Grant Funds paid to Legacy Park by the City, Legacy Park agrees, for itself and its successors, assigns and lessees for a period of thirty (30) years starting on the closing date of the purchase of the Land, that in the event that any portion of the Land is ever exempt from real or personal property tax, then a yearly payment by the then owner of the exempt portion shall be made in lieu of taxes equivalent to the property taxes that would otherwise be paid on the exempt portion of the real and personal property situated on the property. This requirement shall be a covenant contained in the deed to the Land and the covenant shall run with the land for the stated thirty (30) year period.

8. Compliance with HUD requirements.

(a) Job Creation. HUD regulations require that the City, as the original grantee of the HUD Funds, document all jobs created through the use of HUD Funds disbursed to Legacy Park as City Grant Funds. Legacy Park recognizes that one of the primary goals of City's contribution of the City Grant Funds is the creation of jobs, and Legacy Park agrees to create the required number of jobs necessary for the City's use of the HUD Funds and to provide City with timely and complete documentation of all jobs created or caused to be created as a result of receiving the City Grant Funds, and requirements related to job creation shall be contained in a Job Creation Agreement to be entered into between the parties.

(b) Section 108 Compliance. Legacy Park, its employees, assigns, agents and subcontractors for this project, at all times shall comply with the requirements of the Section 108 Loan Guarantee and Brownfields Economic Development Initiative Grant program and Federal Labor Standards pursuant to Davis Bacon and related Acts, specifically including:

A. Davis-Bacon Act, as amended.(40 U.S.C 276a - 276a-5.) All laborers and mechanics employed by contractors or subcontractors, including employees of other governments, on construction work assisted under this contract, and subject to the provisions of the federal acts and regulations listed in this paragraph, shall be paid wages at rates not less than those prevailing on similar construction in the locality as determined by the Secretary of Labor in accordance with the Davis-Bacon Act.

B. Contract Work Hours and Safely Standards Act, as amended. (40 U.S.C. 327-333). All laborers and mechanics employed by contractors or subcontractors shall receive overtime compensation in accordance with

and subject to the provisions of the Contract Work Hours and Safety Standards Act, and the contractors and subcontractors shall comply with all regulations issued pursuant to these acts and with other applicable Federal laws and regulations pertaining to labor standards.

C. Copeland Anti-Kickback Act, as amended. (18 U.S.C. 874 and 40 U.S.C. 276c). This Act requires that workers be paid at least once a week, and without any deductions or rebates except permissible deductions.

9. Default. In the event that Legacy Park is in default of a material provision on any of the obligations contained in this Parking Garage Agreement, and Legacy Park fails to cure said default within ninety (90) days of receipt of written notice issued by the City, then Legacy Park shall, if requested to do so by the City, convey to the City the Garage and the related real property, on these terms and conditions:

- This conveyance to the City shall be without the requirement of further legal action by the City.
- The cost to the City for this purchase will, in concept, be the sum of the cost of construction of the Garage and all related improvements associated with the Garage, plus the cost to the cost to Legacy Park for the related land upon which the Garage sits (the "Garage Land"), less the amount of the City Grant Funds actually disbursed up to the time of this purchase.
- The City acknowledges that Legacy Park will most likely use the Garage and the Garage Land as collateral for a construction loan for the purpose of finishing the construction of the Garage and other costs and improvements related to the project. The City therefore agrees to work on documents at the time of such financing, with Legacy Park and its construction lender, to make it possible for the City to have the remedy described above in concept, and to also permit such construction financing.

The City agrees that Legacy Park's obligations under this Parking Garage Agreement are "non-recourse" and that any recovery by the City shall be limited to the Garage. None of Legacy Park, its officers, members, employees, attorneys, agents or affiliates (collectively, "Legacy Park Persons") shall be personally liable for the performance of this Parking Garage Agreement, and the City shall not commence or prosecute any action against any Legacy Park Person, for payment or performance of any obligations under this Parking Garage Agreement. The City shall not seek, obtain, or enforce a deficiency judgment against any Legacy Park Person. Notwithstanding this provision, the rights and obligations under the Agreement between the parties and the Corporate Guaranty Agreement of near or even date are cumulative and in addition to the rights described herein.

In the event of an alleged default by the City, Legacy Park, at its sole election, shall have the right to seek specific performance and any and all other relief to be provided

by a Court, at law or in equity, including, but not limited to, common law writs. City expressly consents to the jurisdiction of the Maine Courts in the event of an alleged City breach under this Parking Garage Agreement.

10. Assignment. Legacy Park shall be entitled, without the City's consent, to assign all of its right, title, interest and obligations in and to this Parking Garage Agreement to any lender or to any entity in which Legacy Park maintains a majority interest and management control. The City must be notified within thirty (30) days or Legacy Park will be in default of this Parking Garage Agreement as described in Section 9 of this Agreement.

11. Termination. In the event that the Parking Garage Agreement is terminated on account of Legacy Park's default, the obligation of the City to provide the City Grant Funds described herein is terminated.

12. Miscellaneous Provisions. In the event of litigation, the prevailing party shall be entitled to receive its reasonable legal fees and court costs from the other party. This provision shall survive the Closing and delivery of the Deed pursuant to the Agreement.

13. Entire Agreement. This Parking Garage Agreement (i) constitutes the entire agreement between the parties hereto with respect to the construction and operation of the Garage and it supersedes all prior discussions, undertakings or agreements between the parties in respect to the Garage; (ii) shall not be modified except by a written agreement executed by both parties; (iii) shall be binding upon and inure to the benefit of the parties hereto, and their respective successors and assigns; (iv) may be executed in counterparts; and (v) may be executed by facsimile signatures. This Parking Garage Agreement shall not confer any rights or remedies upon any third-party other than the parties to this Parking Garage Agreement and their respective successors and permitted assigns.

14. Notices. Any notice by either party to the other party shall be in writing and shall be deemed to have been duly given when either delivered personally, or mailed by certified mail, return receipt requested, or sent by nationally recognized overnight courier, or sent by facsimile, or sent by e-mail addressed to the City at Portland City Hall, 389 Congress Street, Portland, Maine 04101, Attn: City Manager facsimile 207-874-8669, email: MHR@portlandmaine.gov, with a copy to, the Director of Economic Development, facsimile 207-756-8217, email: gmitchell@portlandmaine.gov, and another copy to Corporation Counsel, at the same address, facsimile 207-874-8497), email: gary@portlandmaine.gov , and to Buyer c/o The Federated Companies, 801 Brickell Avenue, Suite 720, Miami, Florida 33131, Attn: Jonathan Cox, facsimile (800) 523-5931, email: j_cox@federatedcompanies.com

15. Severability. In the event any one or more of the provisions contained in this Parking Garage Agreement shall be for any reason held invalid, illegal or unenforceable in any

respect, such invalidity, illegality or unenforceability shall not affect any other provision of this Parking Garage Agreement, and this Parking Garage Agreement shall be construed as if such invalid, illegal or unenforceable provision had never been contained in this Parking Garage Agreement.

In Witness Whereof, the parties have hereunto executed this Parking Garage Agreement as of the day and year set forth next to their respective signatures below.

LEGACY PARK APARTMENTS LLC

By: Jonathan Cox
Its: Member
Date of Execution: 10/15/12

CITY OF PORTLAND

By: Mark Rees
Its: City Manager
Date of Execution: 10-15-12

Approved: Ellen Sanborn, Finance Director

Approved as to Form: Corp. Counsel

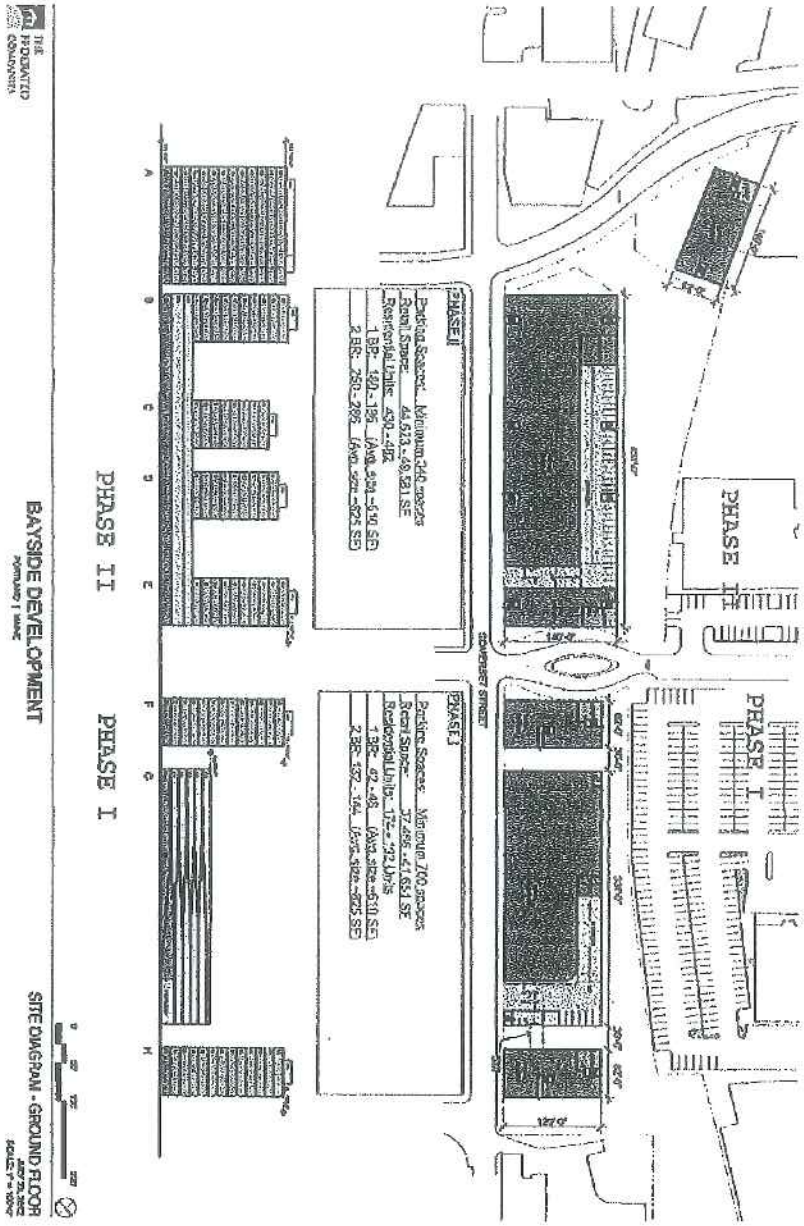
PHASE I
PHASE II
PHASE I
PHASE II
PHASE I
SOMERSET STREET
BAYSIDE DEVELOPMENT
SITE DIAGRAM - GROUND FLOOR

Exhibit A

ATT 11

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Technology

Posted on: August 5, 2013 From: ARCHITECT July 2013

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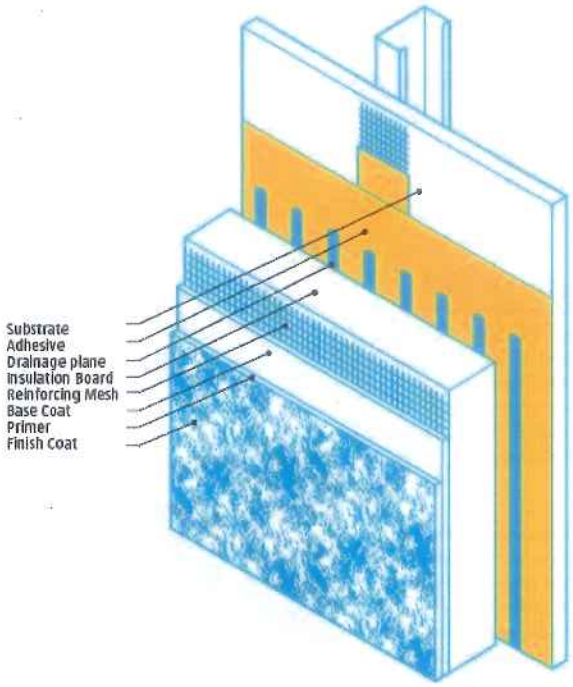
TECHNOLOGY

Water Under the Bridge

EIFS became known as a lawsuit magnet in the 1990s. But with new energy codes for commercial buildings imminent, is the cladding system poised for a comeback?

By Elizabeth Evitts Dickinson

Drainable EIFS



The new drainable EIFS feature a drainage plain that helps provide protection from moisture for the underlying materials.

Credit: Jameson Simpson

In 1996, a homeowner living in Wilmington, N.C., made a call to Daniel Bryson, an attorney based in nearby Raleigh. Bryson specializes in construction defects involving mass torts and class action lawsuits, but he had never heard a story like this one. "The homeowner was putting a new shutter on the garage. And he missed the shutter, and the nail went straight through the wall," Bryson says. The man then broke open a piece of the exterior cladding and uncovered a horrific scene: the wood underneath had deteriorated from pervasive rot. "He thought he had stucco, but what he saw inside the wall he called Styrofoam," Bryson says. "The building inspector had no idea what the product was. I had never seen anything like it."

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The house was actually wrapped in a proprietary lightweight synthetic cladding known as an Exterior Insulation and Finishing System (EIFS)—a multilayered wall system with thermal insulation built right in. It is composed of expanded polystyrene insulation board covered with glass fiber mesh and layers of thin synthetic coating for the exterior finish. Early system designs used an adhesive to bond the insulation board directly to the building's sheathing. These systems, known as "barrier EIFS," were touted for their insulation capacity and affordability. But what Bryson soon discovered was that they failed to drain moisture that got behind the finish coating of the system. "Water was getting in through windows and other wall penetrations, but the system had no way for the water to escape."

Bryson filed one of the first EIFS lawsuits in the country and secured a settlement for his Wilmington client. He went on to win about $150 million in claims against EIFS manufacturers in the U.S., and was one of a handful of prominent attorneys in the 1990s who filed hundreds of lawsuits against the manufacturers for structural damage. Bryson and other lawyers dubbed barrier EIFS the ultimate roach motel: The water could get in, but it couldn't get out. "The original iteration of this product was one of the worst I have ever seen in over 25 years of litigation, second only to Chinese drywall," Bryson says.

Fast-forward to today. EIFS manufacturers such as Dryvit, Sto, and BASF have redesigned their products to include a drainage plane and a weather resistive barrier between the sheathing and insulation board. The drainage happens in one of two ways, most commonly through the use of vertically troweled mortar, which leaves adequate space for moisture to exit. Some systems specify drainage through a grooved composite board. These "drainable" versions of EIFS, first introduced in the U.S. around 1995, provide protection from moisture for the underlying materials. Bryson says that their introduction dried up the court cases: "The litigation has virtually disappeared."

Joseph Lstiburek, principal of Boston-based Building Science Corporation and an ASHRAE fellow, was one of the first forensic engineers to sound the alarm over moisture buildup within barrier EIFS in the late 1980s. Lstiburek served as an expert witness for Bryson and became instrumental in the class-action lawsuits against EIFS manufacturers. Today, however, his assessment of EIFS has evolved: It's "a phenomenal system," he says. "They addressed the fundamental flaws that they had in the 1990s, which is they added moisture management. And now EIFS resembles the perfect wall."

This October, when the U.S. Department of Energy strengthens regulations on energy efficiency for commercial buildings, some designers believe EIFS may become the best available cladding option. In an article published this winter in the trade magazine *Walls & Ceiling*, an architect named Chris Dixon wrote that "EIFS is positioned for a huge comeback in buildings in the United States."

The EIFS industry hopes to finally shake the hangover of past litigation and become the comeback kid of cladding for both commercial and residential projects. In the meantime, the story of how this wall system evolved over the last four decades offers a valuable reminder for a building industry rushing to embrace ever-greater energy efficiency standards.

EIFS began as a pragmatic solution to a pervasive problem. After World War II, Europe needed to rebuild, and the system was invented to repair damaged masonry buildings. In 1969, Dryvit set up shop in Rhode Island and brought the technology to the United States. The American energy crises of the 1970s propelled more architects and developers to spec EIFS because it mimicked the look of stucco while providing something known as Continuous Insulation, or CI. Instead of placing insulation inside the wall cavity, which creates opportunities for thermal bridging, CI is wrapped around the exterior, creating an uninterrupted barrier. According to the EIFS Industry Members Association (EIMA), most EIFS systems use an insulation board with an R-value of R-5.6 per inch, which, when combined with traditional cavity insulation, can result in an overall value of R-16 or more.

When the EIFS problem surfaced in North Carolina in 1996, Tom Kenney, vice president of engineering and research at the National Association of Home Builders' Home Innovation Research Labs, participated in a task force led by the Wilmington Buildings Codes Department. He spent a good portion of a year getting to the root causes of the issue and writing EIFS standards. He says the problem wasn't solely with the EIFS walls, but with the entirety of a building's construction. "The building codes back in the day were wholly inadequate with detailing the flashing systems that were necessary to keep water out of the walls," Kenney says. "It really woke up the home building industry in general with regard to moisture management. It was a complete blindspot," he says.

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The Lido Beach Towers on Long Beach Island in New York, a structure that was re-clad in EIFS, survived Superstorm Sandy intact, despite the devastation of the property and the interiors.

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In 2009, the International Code Council added drainable EIFS to the international commercial and residential building codes as acceptable for use. Current versions of the system feature advancements in the synthetic coating that enable EIFS to aesthetically mimic any finish—wood, stone, brick, even metal—at a fraction of the cost of the real thing. Moreover, the reinforcing mesh can be customized to climate and geography, offering things like increased impact resistance for hurricane-prone areas. Bob Dazel, AIA, marketing manager for strategic initiatives at Dryvit, says his company's Outsulation product can withstand a small missile impact test; indeed, a hospital clad in impact-resistant EIFS won't need to evacuate during a Category 4 hurricane.

David Boivin, CEO of Sto, points to the Lido Beach Towers on Long Beach Island as a good example of EIFS evolution. Five years ago the 1920s structure was re-clad in EIFS and after Superstorm Sandy destroyed several floors of the interior—depositing sand up to the ceiling of first floor units—the exterior survived. "Literally, the whole beach came up on that project, and the bottom floors were completely inundated with water and sand," Boivin says. "When they cleared everything away, the EIFS wall structure suffered virtually no damage. The owners were stunned."

Ryan Johnson, Assoc. AIA, of LSE Architects has worked on several hotel and casino projects that used EIFS. He says the insulation and the aesthetics make it a popular choice for commercial clients. "We've been trying to move the insulation to the outside of the building on all of our projects, no matter if it's an EIFS project," he says. But EIFS is the only option that offers true CI, he says: "Other product manufacturers aren't figuring out how to attach their product back to the building without going through the exterior insulation. If it's metal panel on the outside, and it's got exterior insulation, you're still punching little holes all through the insulation to attach it to the building."

Today, EIFS manufacturers sell primarily to the commercial industry. Chances are you've seen the product, even if you didn't realize what it was. Much of the Vegas Strip is covered in EIFS, including the Bellagio. Estimates give the system about 20 to 25 percent of the commercial cladding business. Dryvit, whose Outsulation product covers the Bellagio, has about 40 percent of the total market in the U.S. The company says that 95 percent of its business is commercial and 5 percent residential, which may reflect the stagnant residential market over the last few years, but mostly points to the residual reputaiton damage from past litigation. A look back at market share of EIFS usage shows an overall decline in the residential sector once the lawsuits hit. In 1998, EIFS was on the rise, with 4.7 percent of the market in new construction single-family and townhouses, according to the NAHB. In 2012, the residential market share for EIFS was 2 percent.

The challenge in rebuilding that residential market is dispelling leftover concerns among Realtors, insurance companies, and others who still malign the product even though the lawsuits are now well over a decade old. "I am perplexed why people would not want to use a system that is so flexible, so energy efficient, and so easy to apply, and extremely cost competitive to other wall claddings," says David Johnston, the executive director of EIMA. "We need to move on."

Nevertheless, Kenney hopes that some of the lessons born out of EIFS travails won't be forgotten. The issues did spur building codes to evolve, he says, and ensured that "other cladding systems had a new awareness of that moisture management issue."

Today, "as we ratchet up the energy codes, there are consequences," Kenney says. What other building issues could emerge as the result of product innovation? "We're in the midst of a sea change, and the marketplace is doing what it does best: innovation. But uncontrolled and unregulated, it can be the Wild West."

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Dick Trigger 495 days ago

The product creates the perfect storm for mold and rot, with it's compartmentalization and channels, layers and absorption. Proper flashing indeed, that is a myth. The installers are not educated and don't understand the physics of proper flashing, they are hired because they don't mind working on a shaky scaffold 100 feet above the ground in the cold or direct sun all day. Even if someone makes the proper flashing for them--which won't happen because some pieces have to be molded to fit at the install event--they will misuse it, nail it improperly and otherwise end up with a rotting stinking mess. Big mistake to take chances with this product, and it only sells because of ignorance of the client, who is misled to believe it is a solid stone type stucco.

Reply 0

Tom MacKnight 497 days ago

I know too many folks who make their living in litigation and remediation for EFIS. I wouldn't touch the stuff for any project where the life of the building was over 10 years, and I'd never, ever use it near the coast.

Reply 1 reply 0

David Gregory 496 days ago

Are you talking about the original approach, or the back-drained EIFS? Does the latter (updated) assembly have other longevity problems or problems in coastal areas? Would love to hear more details.

Reply 0

Anonymous 498 days ago

An additional issue: the material is in my opinion too vulnerable to impact and abrasion damage close to landscaping and walkways - anywhere adjacen to public access. The fiberglass coated trims hold up fairly well if properly detailed, but there still can be issues. The fact is that EIFS systems require special detailing for window and door openings, proximity to deck drainage surfaces, drip screeds at the foundation, and sundry flashing details, i.e., at parapet copings, water tables, roof/wall rakes, etc. It may be a less than perfect substrate for stick-on faux stone and brick finishes. It would still not be my first choice.

Reply 2 replies 0

David Gregory 496 days ago

From the article, sounds like lots of the original problems were due to poor flashing details (plus lack of back drainage), which is the weak point of lots of building assemblies - any system needs its own particular water management details. Seems like the weakness of lots of 'composite' cladding systems is that it's harder to physically lap the different layers of protection, putting lots of pressure on the sealants of the few remaining joints.

You're right about impact and other damage, though; probably best to keep it 'out of reach'; perhaps adding a harder-wearing surface from ground to ~7' ht? And at a minimum, strengthen corners where they could get bumped...

Reply 1 reply 0

Richard 488 days ago

If you have basic building science knowledge .... it was already known the system had a MAJOR FLAW!!!!!!!!!!!!!

Knowing government agency's allowed Company's such as Dryvit to manufacturing and marketing EIFS components knowing it would cost Americans Billions of dollars in repairs for a product which was known to be FLAWED!

From the legal side of the matter who got the SHAFT? Everyone that had EIFS installed on there home or business lost there shirts. All of the EIFS manufactures blamed it on the installers and walked away Scotts free.....

Looking at some of the drainage plain details they recommend now!!!!!! I still see flaws!!!!

They all should not be given a second chance!!!!!!

Reply 0

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Exterior insulation finishing system

From Wikipedia, the free encyclopedia

Exterior insulation and finishing system (EIFS) is a type of building exterior wall cladding system that provides exterior walls with an insulated finished surface and waterproofing in an integrated composite material system.

A historic brick building in Germany covered with EIFS on the right side.

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Terminology

According to the definitions of the International Building Code and ASTM International, an Exterior Insulation and Finish System (EIFS) is a nonload bearing, exterior wall cladding system that consists of an insulation board attached either adhesively or mechanically, or both, to the substrate; an integrally reinforced base coat; and a textured protective finish coat.[1]

EIFS with Drainage, another EIFS system, is the predominate method of EIFS applied today. As the name implies, EIFS with Drainage provides a way for moisture that may accumulate in the wall cavity to evacuate.[2]

Although often called "synthetic stucco", EIFS is not stucco. Traditional stucco is a centuries-old material which consists of aggregate, a binder, and water, and is a hard, dense, thick, non-insulating material. EIFS is a lightweight synthetic wall cladding that includes foam plastic insulation and thin synthetic coatings. There are also *specialty stuccos* that use synthetic materials but no insulation, and these are also not *EIFS*. A common example is what is called *one-coat stucco*, which is a thick, synthetic stucco applied in a single layer (traditional stucco is applied in 3 layers).

EIFS are proprietary systems of a particular EIFS manufacturer and consist of specific components. EIFS are not *generic* products made from common separate materials. To function properly, EIFS needs to be architecturally designed and installed as a system.

EIFS typically consist of the following components:

- An optional water-resistive barrier (WRB) that covers the substrate
- A drainage plane between the WRB and the insulation board that is most commonly achieved with vertical ribbons of adhesive applied over the WRB
- Insulation board typically made of expanded polystyrene (EPS) which is secured with an adhesive or mechanically to the substrate
- Glass-fiber reinforcing mesh embedded in the base coat
- A water-resistant base coat that is applied on top of the insulation to serve as a weather barrier
- A finish coat that typically uses colorfast and crack-resistant acrylic co-polymer technology.

[3]

The technical definition of "an EIFS" does not include wall framing, sheathing, flashings, caulking, water barriers, windows, doors, and other wall components. However, as of recently, architects have begun specifying flashings, sealants, and wiring fasteners (such as Viperstrap) as being a part of the EIFS scope of work, essentially requiring EIFS contractors to carry out that work as well. The technical national consensus standard for the definition of an EIFS, as published by ASTM International organization (http://www.astm.org), does not include flashing or sealants as part of the EIFS. Many of the EIFS manufacturers have their own standard details showing typical building conditions for window and door flashings, control joints, inside/outside corners, penetrations, and joints at dissimilar materials which should be followed for that manufacturers warranty.

How EIFS is installed

EIFS is typically attached to the outside face of exterior walls with an adhesive (cementitious or acrylic based) or mechanical fasteners. Adhesives are commonly used to attach EIFS to gypsum board, cement board, or concrete substrates. EIFS is attached with mechanical fasteners (specially designed for this application) when installed over sheet-good weather barriers such as are commonly used over wood sheathings. The supporting wall surface should be continuous (not "open framing") and flat.

EIFS today

EIFS today are one of the most tested and well researched claddings in the construction industry. Research, conducted by the Oak Ridge National Laboratory and supported by the Department of Energy, has validated that EIFS are the "best performing cladding" in relation to thermal and moisture control (http://www.eima.com/pdf/EIFS-Performance-and-Modeling-Study-Summary.pdf) when compared to brick, stucco, and cementitious fiberboard siding. In addition EIFS is in full compliance with modern building codes which emphasize energy conservation through the use of CI (continuous insulation) and a

continuous air barrier. Both these components are built into today's EIFS products to provide maximum energy savings, reduced environmental impact over the life of the structure, and improved IAQ, Indoor Air Quality. Along with these functional advantages come virtually unlimited color, texture, and decorative choices to enhance curb appeal and enjoyment of almost any home or structure. [4]

EIFS before 2000 was a barrier system, meaning the EIFS system itself was the weather barrier. After 2000 the EIFS industry introduced the air/moisture barrier that resides behind the foam. In a study done by the The Department Of Energy's Office of Science - Oak Ridge National Laboratory it was found that the best air/moisture barrier was a fluid barrier. The Oak Ridge National Laboratory, ATLANTA, Oct. 28, 2006 — EIFS "outperformed all other walls in terms of moisture while maintaining superior thermal performance." The National Institute of Standards and Technology (NIST) have evaluated the 5 life cycle stages of the environmental impact of EIFS alongside brick, aluminum, stucco, vinyl, and cedar. Depending on a variety of site and project specific conditions, EIFS has the potential to save money in construction costs and contribute toward energy efficient operations and environmental responsibility when correctly designed and executed.

EIFS have also passed a variety of fire tests that range from resistance to ignitability, that include: ASTM E 119, NFPA 268, NFPA 285, ANSI FM 4880.[5]

Composition and types of EIFS

The most common type of EIFS used today is the system that includes a drainage cavity, which allows any and all moisture to exit the wall. EIFS with drainage typically consists of the following components:

- An optional water-resistive barrier (WRB) that covers the substrate
- A drainage plane between the WRB and the insulation board that is most commonly achieved with vertical ribbons of adhesive applied over the WRB
- Insulation board typically made of expanded polystyrene (EPS) which is secured with an adhesive or mechanically to the substrate
- Glass-fiber reinforcing mesh embedded in the base coat
- A water-resistant base coat that is applied on top of the insulation to serve as a weather barrier
- A finish coat that typically uses colorfast and crack-resistant acrylic co-polymer technology.

[6]

If an EIFS with Drainage, or water-managed EIFS is installed, a water resistive barrier (aka a WRB) is first installed over the substrate (generally glass faced exterior-grade gypsum sheathing, OSB or plywood). The moisture barrier is applied to the entire wall surface with a mesh tape over joints and a liquid-applied membrane or a protective wrap like Tyvek or felt paper. Then a drainage cavity is created (usually by adding some sort of space between the foam and the WRB). Then the other 3 layers, described above, are added. This type of EIFS is required by many building codes areas on wood frame construction, and is intended to provide a path for incidental water that may get behind the EIFS with a safe route back to the outside. The purpose is to preclude water from damaging the supporting wall.

Adhesives and Finishes are water-based, and thus must be installed at temperatures well above freezing. Two types of Adhesives are used with EIFS: those that contain Portland Cement ("cementitious"), or do not have any Portland Cement ("cementless"). Adhesives that contain Portland Cement harden by the chemical reaction of the cement with water. Adhesives and Finishes that are cementless harden by the evaporation of water – like house paint. Adhesives come in two forms. The most common is in a plastic pail as a paste, to which Portland Cement is added. Adhesives are also available as dry powders in sacks, to which water is added. Finishes come in a plastic pail, ready to use, like paint. EIFS insulation comes in individual pieces, usually 2' x 4', in large bags. The pieces are trimmed to fit the wall at the construction site.

History of EIFS

EIFS was developed in Europe after World War II and was initially used to retrofit solid masonry walls. EIFS started to be used in North America in the 1960s, and became very popular in the mid- 1970s due to the oil embargo and the resultant surge in interest in high energy efficiency wall systems (such as EIFS provides). The use of EIFS over stud-and-sheathing framing (instead of over solid walls) is a technique used primarily in North America. EIFS is now used all over North America, and also in many other areas around the world, especially in Europe and the Pacific Rim.

In North America, EIFS was initially used almost exclusively on commercial buildings. As the market grew, prices dropped to the point where its use became widespread on normal single family homes.

In the late 1980s problems started developing due to water leakage in EIFS-clad homes and buildings. This created an international controversy and numerous lawsuits. Critics argue that, while not inherently more prone to water penetration than other exterior finishes, barrier-type EIFS systems (non-water-managed systems) do not allow water that may penetrate the building envelope to escape.[7]

The EIFS industry has consistently maintained that the EIFS itself was not leaking, but rather poor craftsmanship and bad architectural detailing at the perimeter of the EIFS was what was causing the problems. The building codes reacted by mandating EIFS with Drainage on wood frame building and additional on-site inspection.

Most homeowner insurance policies cover EIFS and EIFS-like systems. Though there are some cases where insurance companies may not offer coverage for EIFS several companies do.[8] Also, some facility owners have found that EIFS systems that are installed at lower building levels are subject to vandalism as the material is soft and can be chipped or carved resulting in significant damage. If these concerns exist specifying heavier ounce reinforcing mesh can be the answer, these specifications can drastically increase the durability of the EIFS system.[9]

EIFS installation was found to be a contributing factor in the multi-billion dollar problem known as the "Leaky condo crisis" in southwestern British Columbia and the "Leaky homes" issue in New Zealand that emerged separately in the 1980s and 1990s.[10][11][12][13]

Legal issues

EIFS systems have been the subject of several lawsuits, mostly related to the installation process and failure of the system causing moisture buildups and subsequent mold growth. The most notable case concerned the former San Martin, California courthouse. This case was settled for 12 million dollars.[1] (http://www.stuccolaw.com/news/santaclara.html)

The basic underlying problem behind EIFS litigation was that EIFS was marketed as a cost-effective replacement for stucco. Stucco is expensive to install because it must be carefully applied by skilled craftsmen and takes a month to cure between coats. General contractors switched to EIFS because it was supposed to be easy to install with unskilled or semi-skilled labor and would not crack like traditional stucco will if it is not cured properly. Although EIFS *if properly installed* according to the manufacturer's directions should not have water intrusion problems, many GCs cut corners by using unqualified labor (that is, illiterate laborers unable to read or follow directions) and also failed to adequately supervise their work. In turn, thousands of EIFS installations were noncompliant and suffered severe water intrusion and mold as a result. While the EIFS industry has consistently tried to shift the blame to GCs, the construction industry has retorted that using professional unionized journeymen carpenters in turn eliminates the cost advantage of EIFS over stucco, and that the EIFS industry should have anticipated this issue and engineered its products from the beginning to be installed by unskilled labor or semi-skilled labor (that is, it should have been a fault-tolerant design).

Marketing of EIFS and the EIFS industry

EIFS accounts for about 10% of the US commercial wall cladding market. There are several dozen EIFS manufacturers in North America. Some sell nationwide, and some are regional in their area of business operations. The EIFS manufacturers sell the various system components (adhesives, coatings, etc.) through specialty building product distributors who in turn resell the components to local EIFS installers. The top 5 EIFS producers account for about 90% of the US market. These producers include Dryvit Systems, STO Corp., BASF Wall Systems, Master Wall, and Parex.

EIFS architectural details

Another benefit of EIFS is the option to add architectural details that are composed of the same materials. EIFS mouldings or as they are commonly referred to, stucco mouldings, come in a large variety of shapes and sizes. They are widely used on residential/commercial projects in North America and are gaining popularity worldwide. Production methods have come a long way since their inception which allow manufacturers to create with great efficiency in a cost effective manner. The production of architectural foam mouldings was recently showcased on How It's Made airing on The Discovery Channel Network. (http://www.youtube.com/watch?v=MAT2-H8NESQ)

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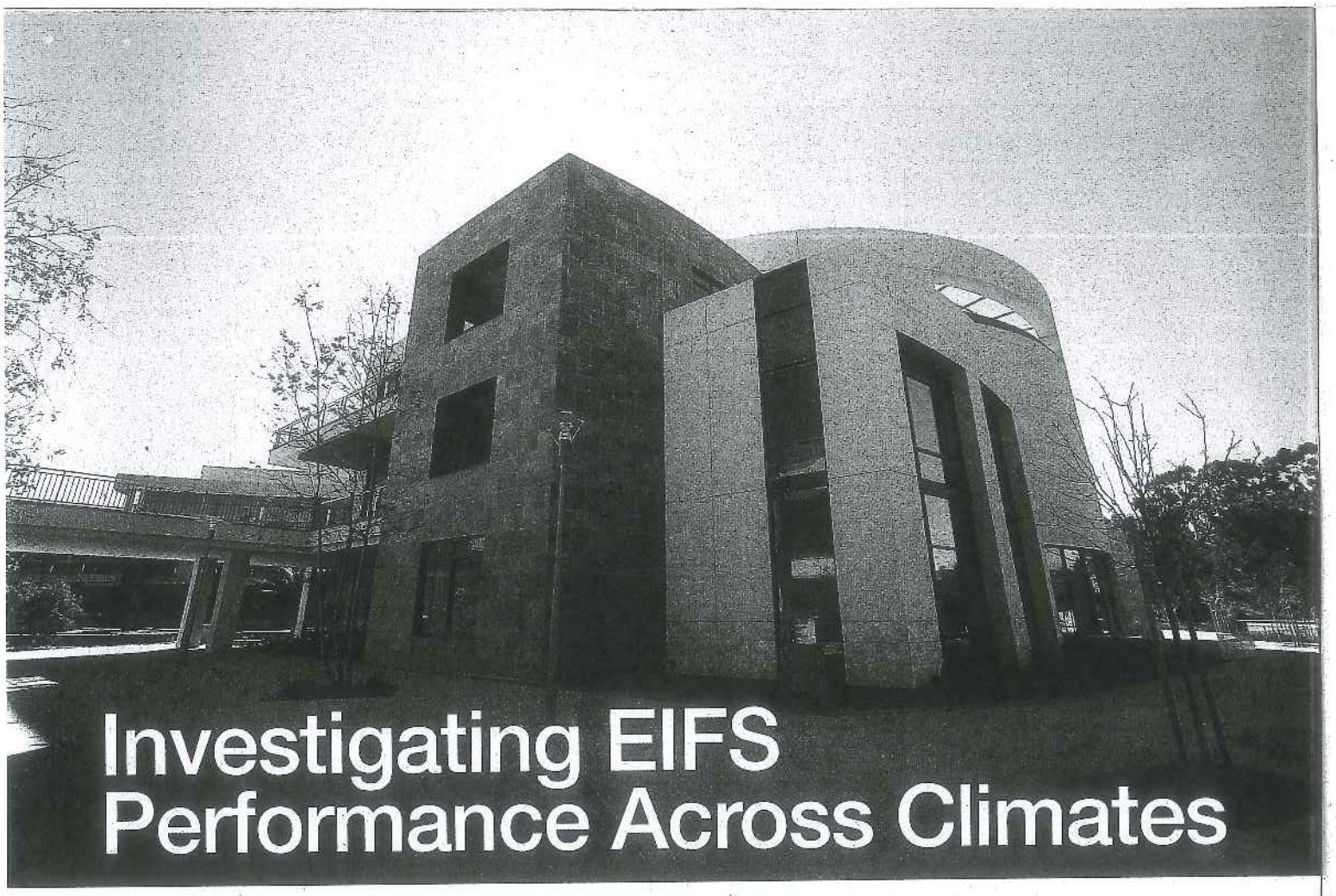


Investigating EIFS Performance Across Climates

Exterior insulation and finishing systems studied in long-term test

by Ulf Wolf

Photo courtesy EIFS Industry Members Association

BETWEEN JANUARY 2005 AND JUNE 2007, THE OAK RIDGE NATIONAL LABORATORY (ORNL) UNDERTOOK AN EXTENSIVE EIFS INDUSTRY MEMBERS ASSOCIATION (EIMA)-SPONSORED TRIAL COMPARING THE MOISTURE AND TEMPERATURE MANAGEMENT PROPERTIES OF SEVERAL EXTERIOR INSULATION AND FINISHING SYSTEM CONFIGURATIONS WITH THOSE OF OTHER CLADDINGS IN A HOT AND HUMID CLIMATE. NOW, A NEW THIRD PHASE OF THE STUDY IS DEMONSTRATING THE ASSEMBLY'S POTENTIAL FOR OTHER CLIMATE ZONES.

As part of Phase I of the initial study, researchers designed and built a test facility in Hollywood, South Carolina near Charleston—a location typical of a mixed, coastal, Zone 3 climate, as prescribed in the 2006 *International Energy Conservation Code* (*IECC*). The flexible design allowed researchers to change the wall panels with ease and to control conditions inside the building by creating two zones within the building interior.

Interior temperature and relative humidity (RH) conditions were selected based on the proposed American Society of Heating, Refrigerating, and Air-conditioning Engineers (ASHRAE) SPC 160P, *Criteria for Moisture Control Design Analysis in Buildings*. Building orientation and placement of the wall panels were determined based on a comprehensive study of historical weather patterns, including prevailing wind and precipitation direction.

The data were collected in two phases. In Phase I, 15 exterior cladding configurations—not only EIFS, but also stucco, brick, and cementitious paneling—were integrated into one side of the building (southeastern exposure), with the goal of having all the claddings exposed to similar weather conditions for a full weather year (15 months from January 2005 through May 2006).

In Phase II, simulated building envelope defects were introduced into some of the wall panels, which included newly constructed wall panels as well as some of the 20-month-aged wall panels from Phase I. (To simulate leaks, these defects allowed a certain amount of water to penetrate the outer envelope.) The goal was to assess the performance of cladding

Figure 1

System	EPS	Attachment	Drainage/ Air Space	Weather Barrier	Sheathing	Framing	Insulation	Vapor Retarder
EIFS 2 (SE)	1 ½" Flat	Notched Trowel	Vertical Ribbons	Liquid	Plywood	2 x 4@16"	R-11 Unfaced	None
EIFS 3 (SE) with flaw	1 ½" Flat	Notched Trowel	Vertical Ribbons	Liquid	Plywood	2 x 4@16"	R-11 Unfaced	None
EIFS 4 (SE)	1 ½" Flat	Notched Trowel	Vertical Ribbons	Liquid	Plywood	2 x 4@16"	R-11 Unfaced	6-mil poly
EIFS 5 (SE)	4" Flat	Notched Trowel	Vertical Ribbons	Liquid	Plywood	2 x 4@16"	0	None
EIFS 6 (SE) Commercial	1 ½" Flat	Notched Trowel	Vertical Ribbons	Liquid	Plywood	18 ga. @16"	R-11 Unfaced	None
Brick 14 (SE)	No	N/A	Air Cavity 1"	1-Layers Grade D 60 Minute	OSB	2 x 4@16"	R-11 Unfaced	None
EIFS 18 (NW) With flaw	1 ½" Flat	Notched Trowel	Vertical Ribbons	Liquid	Plywood	2 x 4@16"	R-11 Unfaced	None
EIFS 26 (NW) Ventilated	1 ½" Flat	Adhesive	Lath	Liquid	Plywood	2 x 4@16"	R-11 Unfaced	None

Emulated wall assemblies used for model validation.

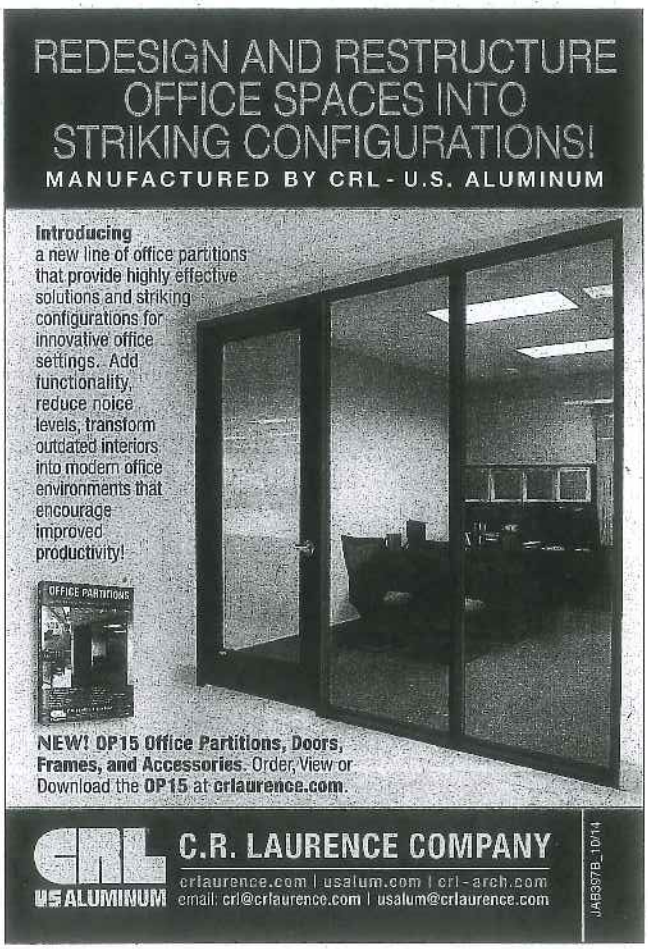
assemblies to water penetration, as well as the impact on the performance of wall assemblies from wall orientation on moisture infiltration, the type of water-resistive barriers (WRBs) used (*e.g.* sheet membranes versus liquid-applied), and different exterior cladding systems (*e.g.* EIFS and brick). In Phase II, wall panels were placed on both the building's southeast and northwest sides, with data collected from May 2006 to June 2007.

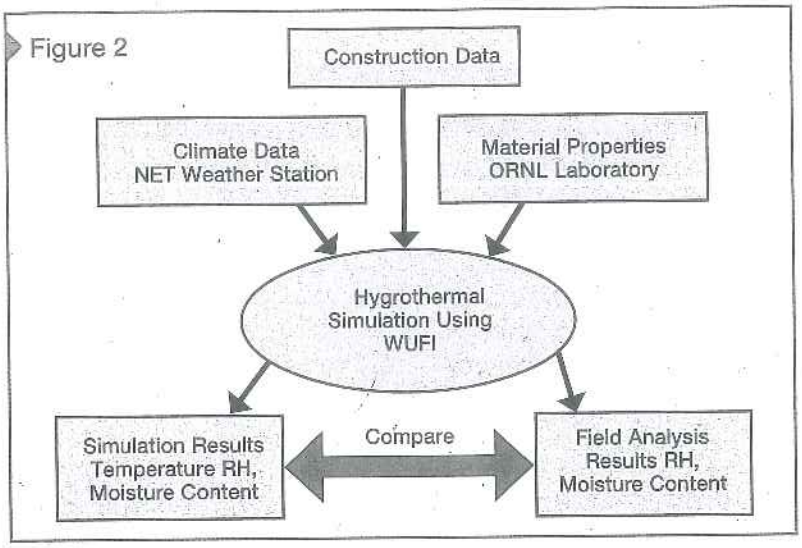
Zone 3 conclusions

The findings of these trials, as published at the time, showed EIFS was capable of controlling temperature and moisture within the wall system; it also showed these assemblies outperformed other exterior claddings during the monitored year. Phase II further established that an EIFS system, with drainage consisting of a liquid-applied water-resistive barrier coating and 100 mm (4 in.) of expanded polystyrene (EPS) insulation board, performed the best of all tested systems.

In other words, given the specific parameters of this study, the EIFS wall configurations performed better than stucco (both three- and one-coat) and brick. The EIFS wall systems with drainage maintained a consistent, acceptable level of moisture (average monthly RH below 80 percent, as defined by ASHRAE SPC 160P) within the cladding, despite varying outdoor conditions when appropriate interior vapor retarders were used. Brick and stucco tended to accumulate slightly more moisture during both Phase I and Phase II of the project and retained moisture longer than EIFS.

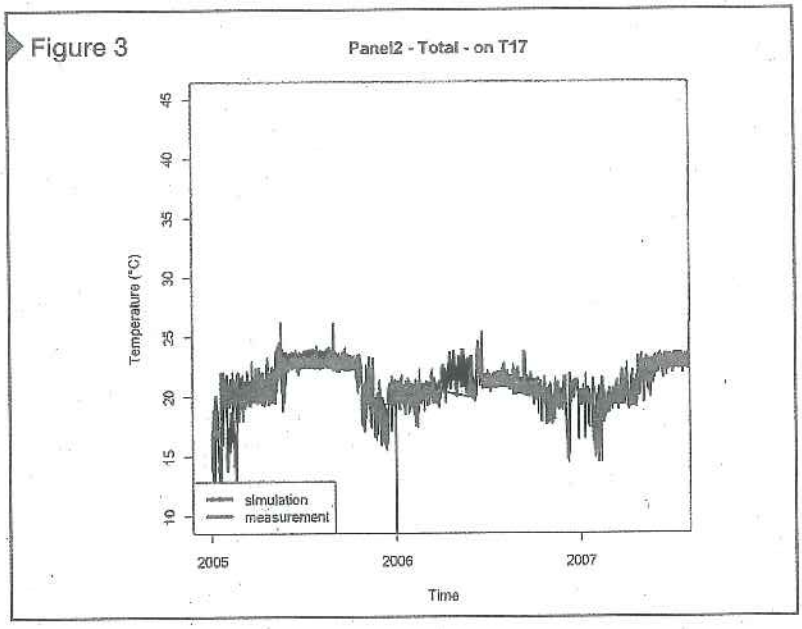
The trial also found EIFS with a liquid-applied, water-resistive barrier coating readily dispersed moisture introduced by the building envelope flaws installed for Phase II, unlike other claddings that retained more water. Both Phase I and II trials also confirmed vertical ribbons of adhesive provide an effective means of drainage within an EIFS-clad wall assembly.





Validation analysis process.

Images courtesy Oak Ridges National Laboratory



Transient temperature at the interior surface of the wall (both Phases 1 and 2).

The research showed EIFS has the ability to maintain the acceptable balance of moisture and temperature control indicative of a well-designed, properly operating, energy-efficient building without moisture problems. To quote the ORNL report summary:

EIFS-clad wall assemblies with drainage outperform other typical exterior claddings during most of the year. The results also showed that EIFS is an excellent exterior cladding choice for achieving key building performance goals in a hot and humid climate, specifically a mixed, coastal, Zone 3 climate.

These trials, however, did not necessarily answer the questions or concerns any designer, contractor, or insurer operating outside mixed, coastal, Zone 3 might have about EIFS. In other words, how does it perform in Zones 1 to 2 and 4 to 8? This is where Phase III of the ORNL trials enters the picture.

ORNL trials' Phase III

Having compiled the full data set from Phases I and II for the mixed, coastal climate, the task remained to extrapolate these findings across all U.S. climatic regions. One way to achieve this would have been to select sites in the various climate zones and constructed additional test facilities there for live data-collection. This, however, would have been neither practical nor cost-efficient. Rather, the task fell to ORNL (more specifically, program manager Andre Desjarlais) to create a reliable, computer-simulated trial for the remaining climate zones. Desjarlais' reports, and a recent interview with this author, has provided the overview and summary of this third phase of the EIMA-sponsored EIFS trials in this article.

Running a computer simulation of this kind requires two virtual constructs validated as behaving and performing like real-world ones. First, there are the virtual panels, which are the computerized equivalent of the real-life, constructed panels used in the Phase I and II trials. Then, there are also the virtual climate zones—the computerized equivalent of the real-life humidity levels and weather patterns of actual climate zones.

The simulation consisted of creating four virtual panels (each fully corresponding to its live counterpart), which were then placed in each of the eight different virtual climate zones. They were then virtually exposed over three simulated 'years' to the humidity fluctuations and weather conditions of each respective zone. At the same time, the same hygrothermal measurements of these panels, as had been monitored during the live trials, were taken:

- temperature;
- relative humidity (RH);
- heat flux; and
- moisture content.

By the end of these simulated trials, ORNL had collected performance data equivalent to four different panels in eight different locations over three years.

The software tool

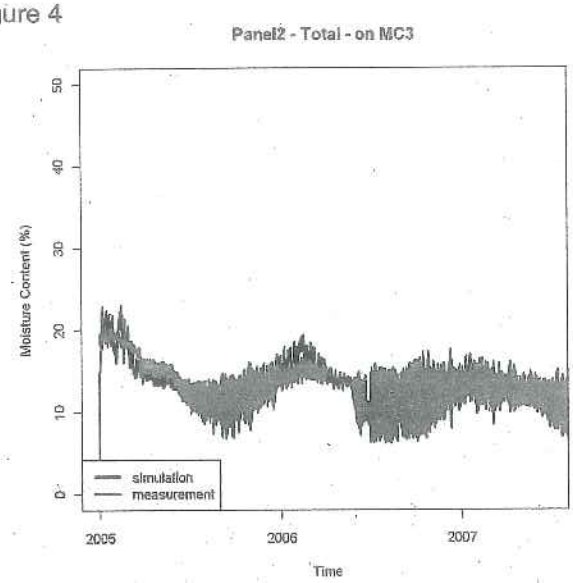
Virtual panels and climate require validated software tools to construct them. The tool used

for this third phase of the trials was WUFI, which stands for Wärme und Feuchte Instationär (*i.e.* heat and moisture fluctuations)—a true and tested software tool long used to calculate the coupled heat and moisture transfer in building components.

This PC program allows realistic calculation of the transient coupled one-dimensional heat and moisture transport in multi-layer building components exposed to natural weather. WUFI is based on the latest findings regarding vapor diffusion and liquid transport in building materials and has been validated by detailed comparison with measurements obtained in the laboratory and on outdoor testing fields. The underlying model has been validated for more than 20 years.

WUFI, like the live study, takes into account not only thermal properties of a building component and their impact on heating losses, but also its hygric (moisture) performance since thermal and hygric behavior of a building component are closely interrelated—increased moisture content leads to heat loss, while thermal situation in turn affects moisture transport. Therefore, both have to be tracked in their mutual interdependence for an accurate result. WUFI accomplishes this.

Figure 4

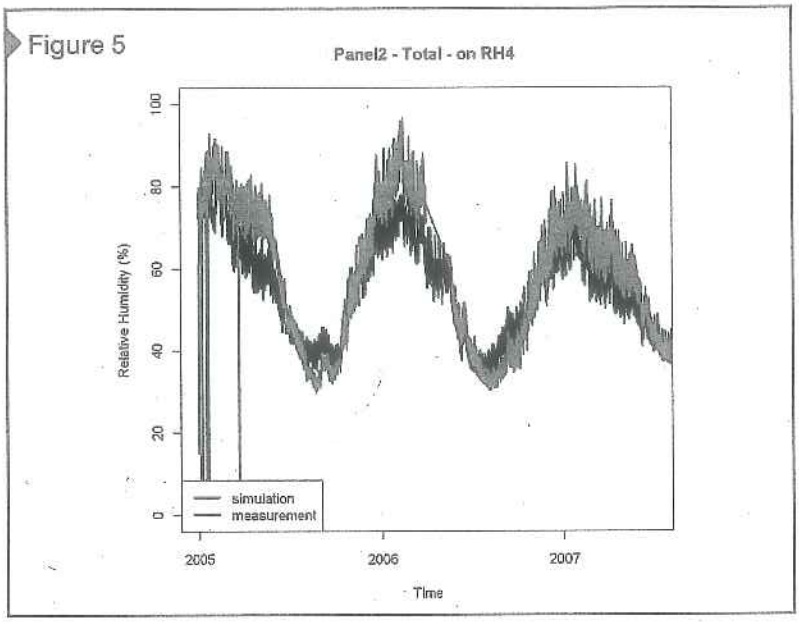


Transient moisture content in plywood sheathing board (both Phases 1 and 2).

Virtual panels and locations

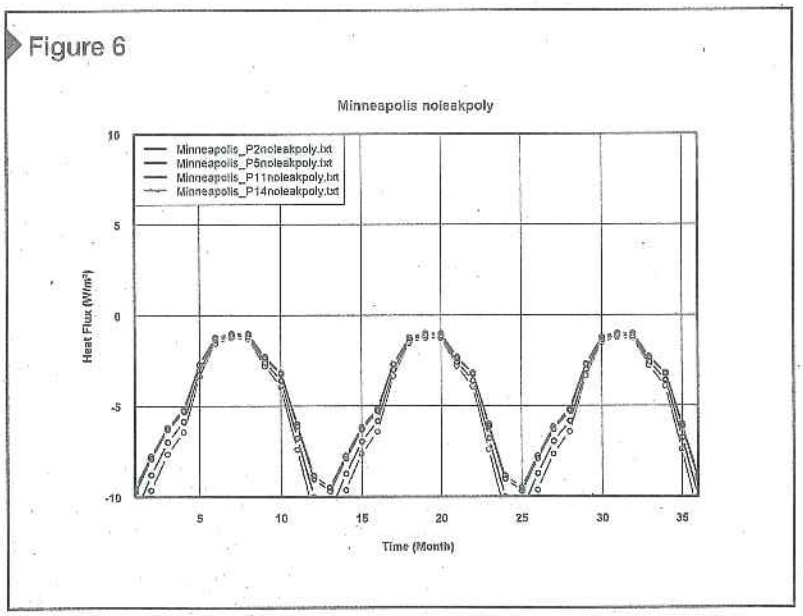
Following the guidelines summarized in ASHRAE 160-2009, *Criteria for Moisture-control Design Analysis in Buildings*, each simulation was undertaken for a three-year period using the design 'cold' year. Four wall systems were selected for study, comprising the following components:

Figure 5



Transient relative humidity (RH) at interior plywood sheathing board is shown for both Phases 1 and 2.

Figure 6



Heat flux for test walls in Zone 6 with no leak and a poly vapor retarder.

- EIFS Panel 2 (P2): 40-mm (1 1/2-in.) flat insulation, notched trowel attachment, drainage airspace created by vertical ribbons, liquid-applied weather barrier, plywood exterior sheathing, 50 x 100-mm (2 x 4-in.) framing 400-mm (16-in.) on center (oc), with unfaced R-11 fiberglass batts and no vapor retarder, a 13-mm (1/2-in.) gypsum board, and a 10-perm paint layer;
- EIFS Panel 5 (P5): 100-mm (4-in.) flat insulation, notched trowel attachment, drainage airspace created by vertical ribbons, liquid-applied weather barrier, plywood exterior sheathing, 50 x 100-mm (2 x 4-in.) framing 400-mm (16 in.) oc, with no cavity insulation and no vapor retarder, a 13-mm (1/2-in.) gypsum board, and a 10-perm paint layer.
- EIFS Panel 11 (P11): 40-mm (1 1/2-in.) flat insulation, notched trowel attachment, drainage airspace created by vertical ribbons, a liquid-applied weather barrier, ASTM C1177 exterior gypsum board,[1] 18-gauge 50 x 100-mm (2 x 4-in.) steel framing 400-mm (16-in.) oc, with unfaced R-11 fiberglass batts and no vapor retarder, a 13-mm (1/2-in.) gypsum board, and a 10-perm paint layer; and
- brick Panel 14 (P14): brick façade, 25-mm (1-in.) airspace, one layer of Grade D 60-minute building paper, oriented strandboard (OSB) exterior sheathing, 50 x 100-mm (2 x 4-in.) framing 400-mm (16-in.) oc, with unfaced R-11 fiberglass batts and no vapor retarder, a 13-mm (1/2-in.) gypsum board, and a 10-perm paint layer. Airspace was considered ventilated (open top and bottom).

The eight *IECC* climate zones modeled in this simulation (representing cities for Climate Zones 1 through 8, respectively) were:

- Miami, Florida;
- Austin, Texas;
- Atlanta, Georgia;
- Baltimore, Maryland;
- Chicago, Illinois;
- Minneapolis, Minnesota;
- Fargo, North Dakota; and
- Fairbanks, Alaska.

Model validation

The first step of this simulation was to validate the model itself—that is, to ensure the virtual panels behave precisely like their real counterparts, given the same hygrothermal loads. For purposes of validation, the researchers selected eight different panels from Phases I and II to emulate with computer configurations. The panels chosen for this, and their makeup, are shown in Figure 1 (page 35), which is taken from the ORNL report, "Energy and Moisture Impact on EIFS Walls in the USA." (Note: The typical interior finish for all emulated systems was 13-mm [(½-in.)] drywall, primed and painted [one coat of acrylic paint]).

The validation of these eight selected wall systems ran for the combined length of Phases I and II and was performed using the measured Natural

Exposure Test facility (NET) weather station data for Charleston, South Carolina, along with the measured indoor data, and all hygrothermal material properties measured during Phases I and II of this trial.

Figure 2 (page 36) illustrates the validation process. Completed, this analysis demonstrated good agreement between the WUFI hygrothermal model and the Charleston South Carolina field data, the model trends at all times following those of the Phases I and II experimental data. Consequently, the researchers could now confidently predict the heat and moisture performance of the four walls systems selected for the final simulation.

Figures 3 through 5 illustrate the type of data collected during the validation phase. EIFS Panel 2 is used as an example in this case. These figures depict both the measured and predicted (simulated) factors as follows:

- Figure 3 (page 36)—interior surface temperature as measured by Thermistor 17 (T17);
- Figure 4 (page 37)—moisture content of the plywood sheathing as measured by Moisture Content Sensor 3 (MC3); and
- Figure 5— relative humidity of the interior surface of the plywood as measured by Relative Humidity Sensor 4 (RH4).

In all instances, the predicted parameters agreed with the measured results.

The simulation

Using the validated model, the researchers now performed a hygrothermal WUFI analysis following the guidelines summarized in ASHRAE 160-2009. Each simulation was undertaken for a three-year period using the design 'cold' year. As mentioned, the four wall systems studied were identified as P2, P5, P11, and P14.

Each wall system was evaluated with and without a vapor retarder, and with and without water penetration as specified in ASHRAE 160-2009. Traditional practice does not typically require a vapor retarder in the southern climates, but these walls were modeled as well for completeness.

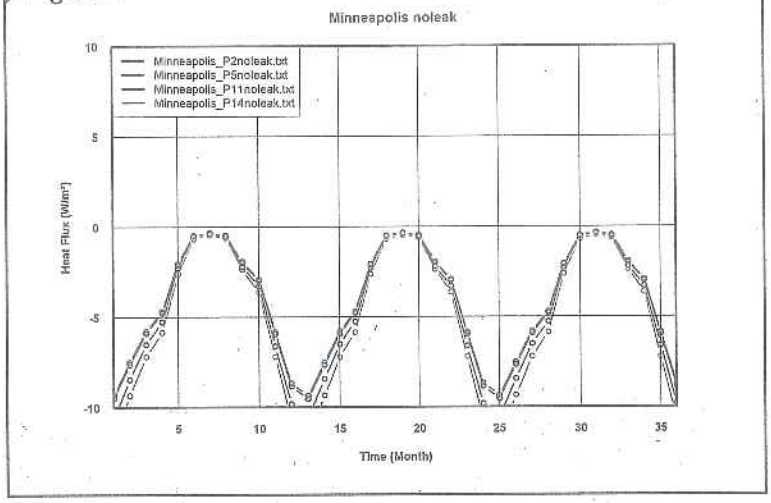
The wall orientation provided the maximum amount of rain to emulate water penetration. Therefore, whenever rainfall was detected, one percent of the rain incident on the exterior surface of the wall system was deposited into the wall's exterior sheathing.

The interior boundary conditions were developed as per ASHRAE 160-2009 and the initial moisture contents of all wall components were set at their equilibrium moisture content at 80 percent RH. Solar radiation and cooling due to night sky radiation were included in the analyses.

Resulting data

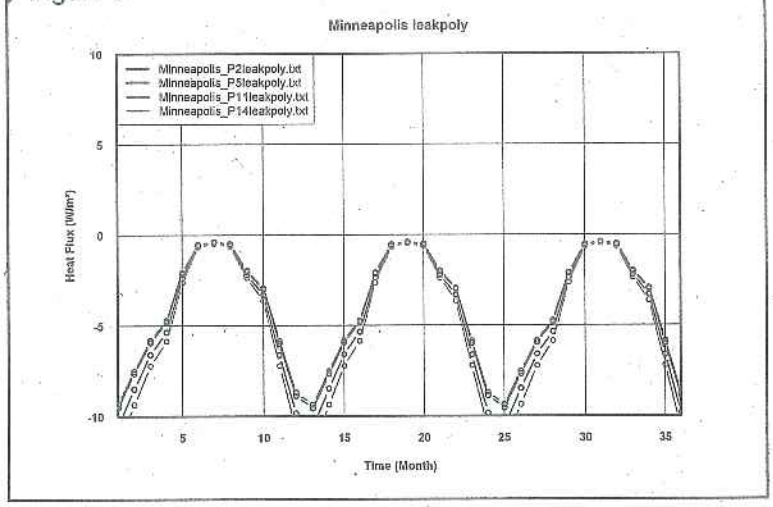
The volume of data generated by these simulations cannot adequately be summarized in a short article. To trim it down into a digestible portion, the results

Figure 7



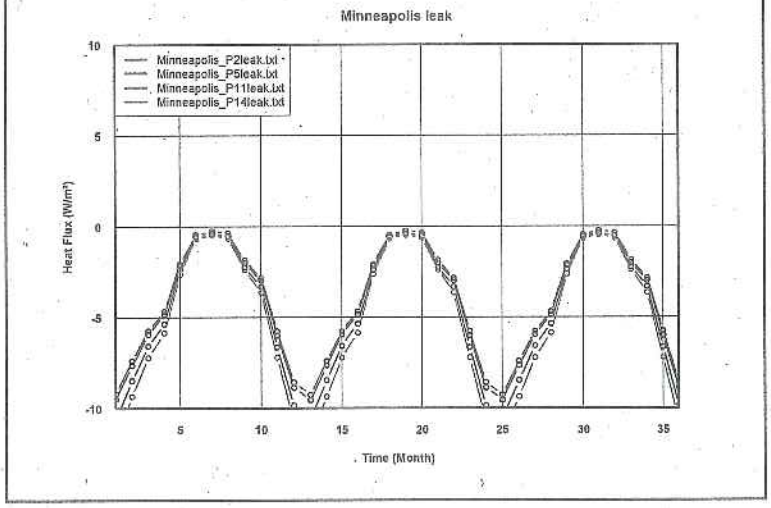
Heat flux for test walls in Zone 6 with no leak and no poly vapor retarder.

Figure 8



Heat flux for test walls in Zone 6 with a leak and a poly vapor retarder.

Figure 9



Heat flux for test walls in Zone 6 with a leak and no poly vapor retarder.

of Climate Zone 6 (Minneapolis) will be the focus—however, it is representative of the data generated by remaining seven Climate Zones.

Figures 6 through 12 summarize the monthly average heat flux through the four wall systems, and the moisture content of their exterior sheathings in Climate Zone 6 weather conditions over a three-year period. The four pairs of graphs compare the effects of leakage (none vs. ASHRAE 160) and the inclusion of a vapor retarder (none vs. 6-mil poly).

It is important to note EIFS configurations P2 and P11 yield the same energy efficiency, followed by EIFS P5 and Brick P14. The addition of leaks and vapor retarders does little to modify the energy performance of these walls in this climate; the walls are hygrothermally efficient enough to prevent sufficient moisture accumulation to impact their energy efficiency.

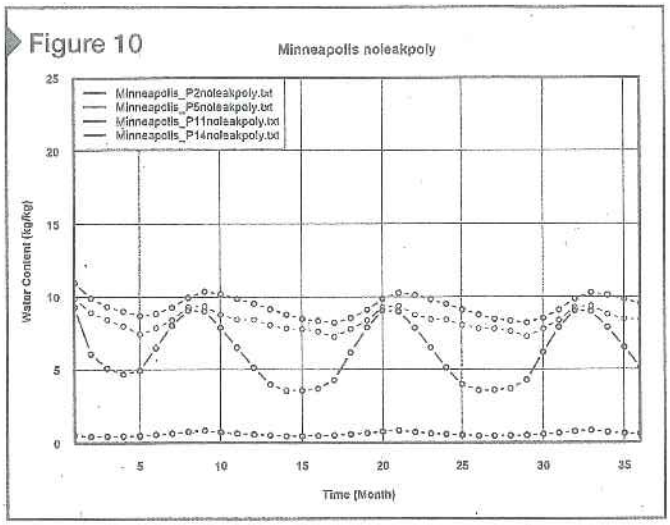
With no leakage and no poly, all wall systems maintain exterior sheathing moisture contents well below 80 percent RH. The addition of poly has little impact on the moisture contents. Wall EIFS P5 outperforms the other wall assemblies; the low interior RH maintains the exterior sheathing to a very low level of relative humidity.

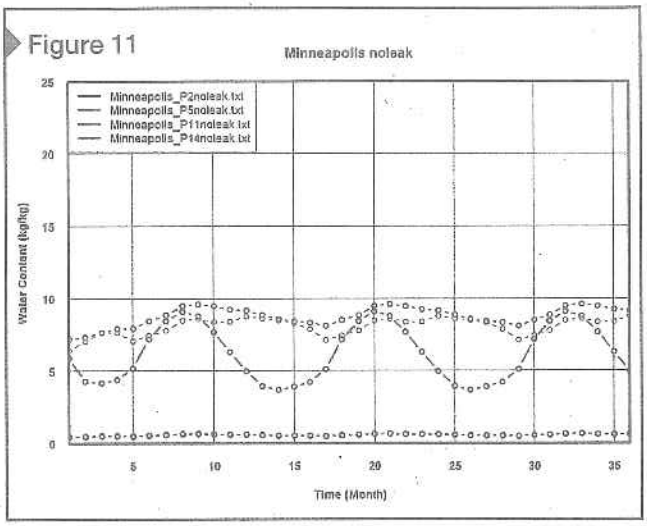
When leakage is added to the wall assemblies in this climate, their hygrothermal performance changes minimally. Both configurations do add to the moisture contents of the walls' exterior sheathings, but they are maintained at moisture content levels at or below the 80 percent RH level.

Energy efficiency

For all climate zones, the addition of the leak did not appreciably increase the heat flux. Adding a vapor retarder on the inside of the test walls, which would retard the internal drying potential or decrease the moisture flow from the building interior, did not change the moisture contents of the walls enough to affect their energy efficiency.

The researchers found little difference in the heat flux through the four test walls in Zone 1. Moving the wall systems to colder climates, EIFS Panels 2 and 11 exhibited the best energy performance, followed by EIFS Panel 5 and Brick Panel 14. The facts the simulations are one-dimensional—and the calculations are performed in the center of the cavity—explain why one sees no effect of the metal studs in EIFS Panel 11. The differences between EIFS Panels 2 and 11 and the other two test panels increase in colder climates.





Water content for test walls in Zone 6: at left, with no leak and a poly vapor retarder; at right, with no leak and no poly vapor retarder.

Moisture performance

For all climate zones, panels combining no leakage and no vapor retarder deliver acceptable performance. That is also true for all panels with no leakage and a poly vapor retarder. The addition of the vapor retarder increases the sheathing moisture contents for all walls in the warmer Climate Zones 1 through 4, but this addition is relatively small and on the order of two to three mass percent—in other words, not enough to compromise the durability of the wall systems. In the more northern zones, the addition of a vapor retarder is neutral; all panels behave similarly with or without the vapor retarder.

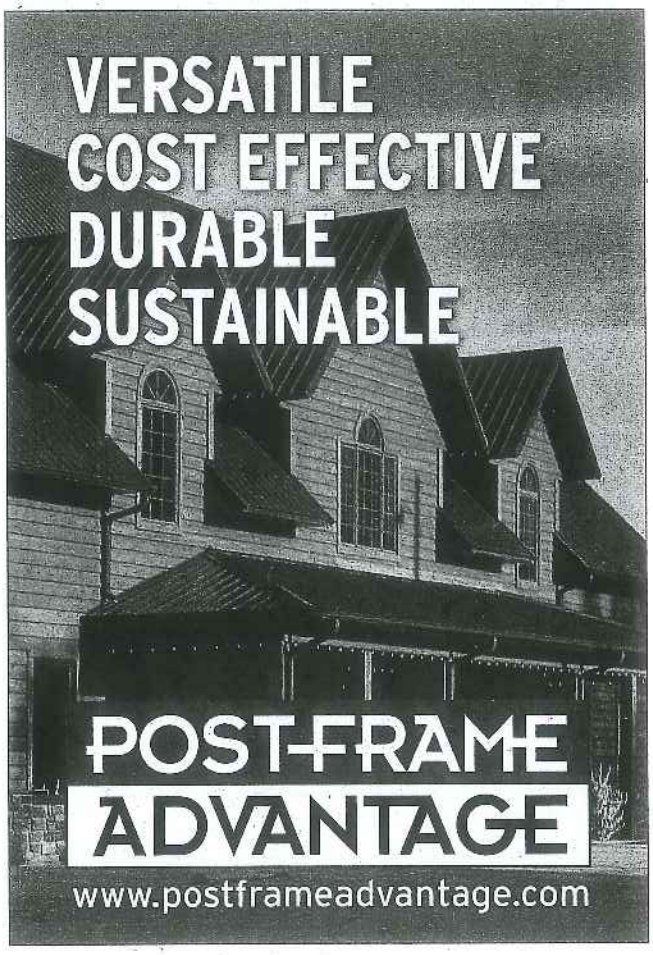
The addition of a leak substantially increases the moisture contents of all wall assemblies. In Climate Zones 1 through 4, the panels without a vapor retarder come close to the 80 percent RH threshold (levels above 80 percent for extended periods are detrimental).

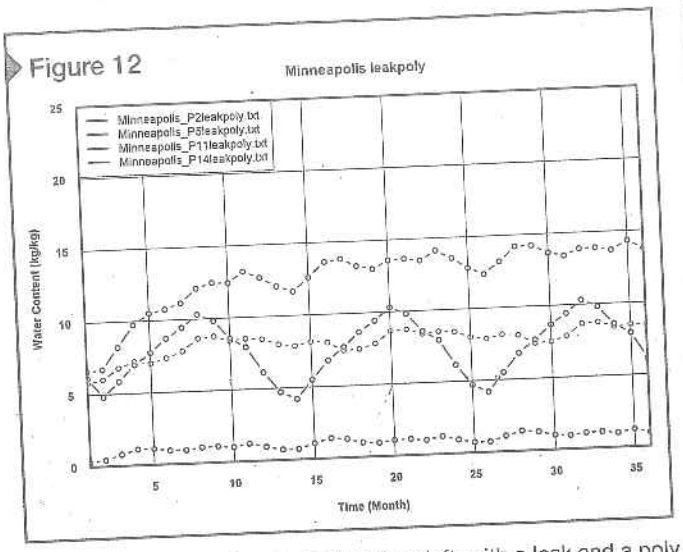
When a vapor retarder is added, the moisture contents rise even further and are at levels above 80 percent RH for months each year and as systems will eventually fail. In colder Climate Zones 5 through 8, the increase in moisture content after adding a vapor retarder is less severe, and the time the sheathing is at moisture contents exceeding 80 percent RH is substantially shorter.

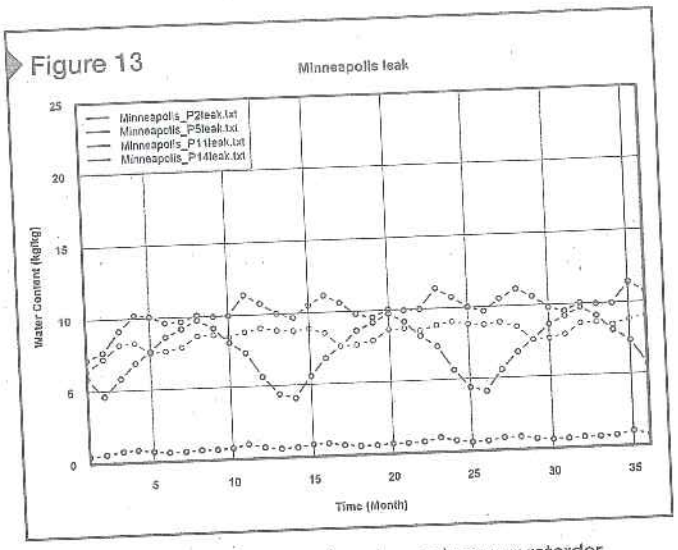
Conclusion

Throughout the simulation, the three exterior insulation and finishing system configurations outperformed the brick wall system for the specific measured criteria across all climate zones, with EIFS Panel 5 performing the best overall. Joseph Lstiburek, an ASHRAE fellow and a principal at Building Science Corporation, was one of the first forensic engineers to sound the alarm over moisture buildup problems within barrier EIFS in the late 1980s. At that point, he did not think highly of the assemblies. This, however, has changed over time, and today he confirms he believes EIFS to be "a phenomenal system. They addressed the fundamental flaws they had in the 1990s by adding moisture management. And now EIFS resembles the perfect wall."[2]

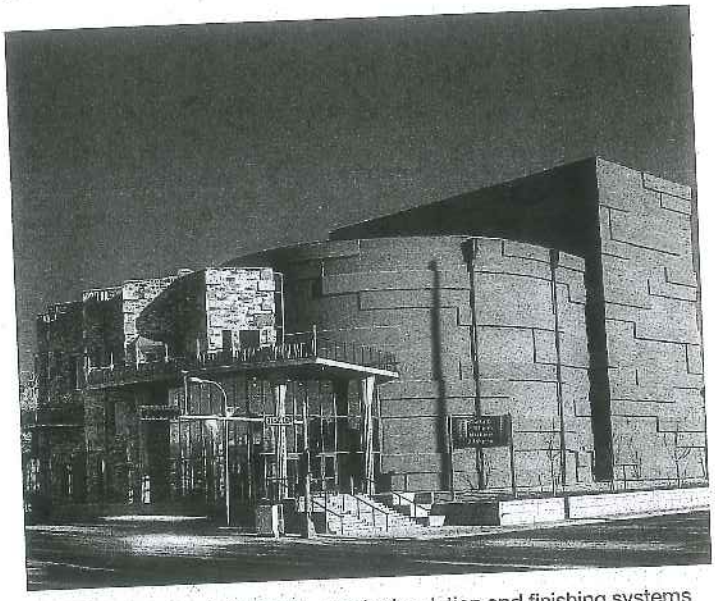
When considering the research in this article, it is important to remember all 'test walls' were constructed new. A test like this will not highlight differences 20 years down the road. Further, a scientific tracking of various actual envelopes built in many climate zones as to moisture and thermal performance, as well as to insurance costs and claims, will paint a broader, fuller comparative picture amongst claddings. Finally, this







Water content for test walls in Zone 6: at left, with a leak and a poly vapor retarder; at right, with a leak and no poly vapor retarder.



As a lightweight wall cladding, exterior insulation and finishing systems (EIFS) combines insulation with various thin synthetic coatings.

Photo courtesy EIFS Industry Members Association

study was intended to measure only the moisture and thermal performance of these wall assemblies—there are other criteria design/construction professionals and building owners will take into consideration when selecting materials for their projects.

With both the 2012 *IECC* and ASHRAE 90-1 now stipulating continuous insulation building envelope for new construction, the outcome of this third and final phase of the ORNL trials is very good news indeed for EIFS. **CS**

Notes

[1] This is per ASTM C1177, *Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.*

[2] For more, see the August 2013 issue of *Architect*, which featured the article, "Water Under the Bridge," by Elizabeth Evitts Dickinson. Visit www.architectmagazine.com/technology/water-under-the-bridge.aspx. (This author recently spoke with Lstiburek and confirmed his quotation still stands.)

ADDITIONAL **INFORMATION**

Author

Ulf Wolf is the senior writer at Words & Images (www.words-images.com). Since 2007, he has been a regular contributor of articles to the Association of the Wall and Ceiling Industry's (AWCI's) *Construction Dimensions* magazine. Previously, he contributed "Greener Than You Think: Exterior Organic Solvent-based coatings" to the February 2011 issue of *The Construction Specifier.* He can be reached via e-mail at ulfwolf@gmail.com.

Abstract

The Oak Ridge National Laboratory (ORNL) recently undertook a series of trials comparing the moisture and temperature management properties of several different exterior insulation and finishing system (EIFS) configurations with those of other claddings. This article looks at how the research was conducted (along with related modeling software), and focuses on the findings for different types of climate locations, and other data.

MasterFormat No.

07 24 00–Exterior Insulation and Finish Systems

UniFormat No.

B2010–Exterior Walls

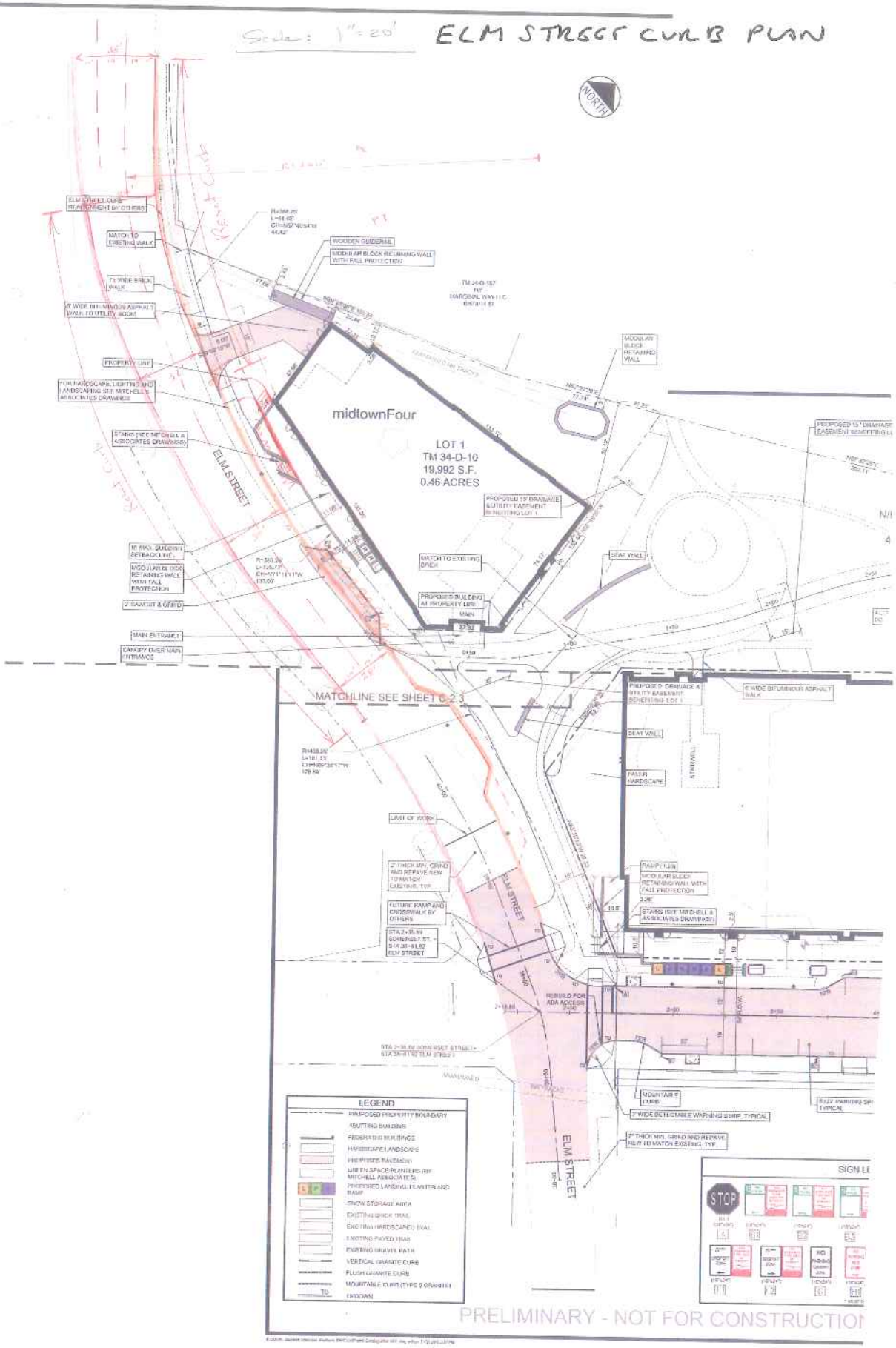
Key words

Division 07
Claddings
EIFS
Moisture protection
Oak Ridge National Laboratory
Testing

ATT 12

Scale: 1" = 20'

ELM STREET CURB PLAN



ATT 13

Planning and Urban Development Department
Planning Division

Subject: Summary of Midtown Design Changes

Written by: Caitlin Cameron, Urban Designer

Date of Review: Thursday, February 26, 2015

Additional Information:

- MidtownFour: An additional elevation of the entry façade of was provided in order to better evaluate the building entry and façade facing Elm Street sight lines (Sheet 4-A201 – drawing 3)

Revisions:

The building designs of the midtown project have been revised in the following ways:

Façade Composition:

- MidtownOne: Applicant changed West Elevation to reflect the fenestration pattern shown in floor plan. This includes an increase of windows on the elevation (Sheet 1-A201 drawing 3).
- MidtownTwo: No apparent changes
- MidtownThree: The placement of metal siding was shifted on each elevation so that the proportion of metal siding around the window was swapped (occurring in the left-most bay section of each elevation drawing – Sheets 3-A201 and 3-A202).
- MidtownFour: No apparent changes

Materials:

- MidtownOne: Windows added in West Elevation include metal siding to break up expanse of EIFS (Sheet 1-A201 drawing 3).
- MidtownTwo: No apparent changes
- MidtownThree: The amount of EIFS has been decreased on all facades and metal siding was inserted along all facades. In the case of the East and West elevations, metal siding was added to two columns of windows each. In the case of the South and North elevations, more extensive sections of EIFS were replaced with metal siding in the upper floors of the middle bays. The change in façade composition as mentioned above also effectively added more metal siding/reduced EIFS siding on this building (Sheets 3-A201 and 3-A202).
- MidtownFour: No apparent changes

CITY OF PORTLAND, MAINE

PLANNING BOARD

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January 28, 2014

The Federated Companies
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Greg Shinberg
Suite 1012
477 Congress Street
Portland, Maine 04101

Project Name:	midtown	Project ID:	#2013-105
Address:	59 Somerset Street	CBL:	34-B-2, 3, 4, 5; 34-D-3, 8 and 10
Applicant:	Federated Companies		
Planner:	Richard Knowland		

Dear Mr. Cox,

On January 14, 2014, the Planning Board considered the midtown development application submitted by the Federated Companies (hereinafter, the "applicant."). The Planning Board reviewed the proposal for conformance with the standards, outlined in the City Code, for Conditional Use approval (Phase One); Master Development Plan approval (all phases); Subdivision approval; a Traffic Movement Permit; and Site Plan approval (Phase One), including Site Development of Location Act.

A. CONDITIONAL USE

On the basis of the applications (2013-105 and 2013-128), plans, reports and other information submitted by the applicant, findings and recommendations contained in the Planning Board Reports #58-13 and the report for the January 14, 2014 public hearing, including but not limited to Section VIII of the January 14, 2014, relevant to Portland's B-7 zone, the City's Site Plan Ordinance, the City's Conditional Use Standards and other regulations, as well as the Planning Board deliberations and the testimony presented at the Planning Board hearing:

1. The Planning Board finds the proposed conditional use for the increase in building height to 165 feet does meet the standards of B-7 Conditional Use (Sec. 14-296), Site Plan Sec. 14-526 (d)(9) (viii), and City Code Section 14-474 (2), and therefore voted 7-0 to approve an increase in building height to 165 feet, subject to the following conditions of approval:

a. Wind Mitigation Condition for Phase One:
The applicant shall submit plans and specifications for all recommended wind mitigation measures contained in the RWDI wind study for the mews, the courtyard, and the residential entry area to achieve a condition comfortable for standing in the mews area and comfortable for sitting in the courtyard area, and comfortable for walking in the building entrance area, for review and approval by the Planning Board prior to issuance of a building permit. At the same time, the applicant shall submit a wind condition monitoring plan for Planning Board review and approval, which will specify how the wind conditions will be monitored and recorded over a twelve month period from the date of the Phase One residential building certificate of occupancy. A performance guarantee shall be retained at the time of issuance of a building permit to cover the estimated cost of constructing the potential wind mitigation measures, which shall remain at the full amount until the satisfactory completion of any required mitigation improvements, at which time it shall be reduced to a 10% defect guarantee.

After 12 months from the issuance of the Certificate of Occupancy (C of O), but not more than 15 months after the C of O is issued, the applicant shall submit the wind monitoring report to the Planning Board. If the comfort and safety level in the mews, courtyard, and/or entry area is not satisfactory in the judgment of the Planning Board, the applicant shall be required to implement and install some or all of the wind mitigation measures contained in the RWDI wind study within a time certain as directed by the Planning Board

b. Wind Mitigation Condition for Phases Two and Three:
At time of Level III Site Plan Review of Phase Two, the applicant shall submit a detailed wind study of Phases Two and Three, which shall include an instrumented physical model wind tunnel study and impact assessment for the Planning Board's review. The master development plan and site plan shall be revised to mitigate projected wind impacts to achieve a satisfactory level of comfort for standing or sitting in public places for a substantial majority of the time in all seasons, including but not limited to the trail corridor behind and between the buildings proposed in Phases Two and Three.

2. The Planning Board finds that the development meets the requirements for modifying the stepback provisions of 14-296(a)(5)(b) relating to stepbacks as required under sec. 14-526(9)(viii)(b) and therefore voted 6 to 1 (Morrissette) to approve such modification..

3. The Planning Board finds the proposed conditional use for the Phase One parking garage does meet the standards of B-7 Conditional Use, Sec. 14-296 (3) governing structured parking and Zoning Code Section 14-474 (2), and therefore voted 7 to 0 to approve the parking garage use.

B. MASTER DEVELOPMENT PLAN

On the basis of the applications (2013-105 and 2013-128), plans, reports and other information submitted by the applicant, findings and recommendations contained in Planning Board Reports # 58-13 and the report for the January 14, 2014 public hearing for application for the Midtown Master Development Plan and Midtown Phase One relevant to the Site Plan and Subdivision ordinances and other regulations, as well as the Planning Board deliberations and the testimony presented at the Planning Board hearing, the Planning Board finds the following:

That the Master Development Plan is in conformance with the standards of the Master Development Plan provisions of the Site Plan Ordinance, and therefore voted 7 to 0 to approve the Master Development Plan for all three phases, subject to the following conditions of approval:

1. That a pedestrian passage be provided in the Phase Two site plan between the two residential towers in Phase Two or, the alternative, through one of the residential towers located in Phase Two, unless the Planning Board waives this requirement during the Phase 2 Level III site plan review process.

2. The final Master Development Plan shall be revised to reflect Planning Board decisions outlined herein that impact the overall Master Development Plan, including but not limited to waivers, conditional use review, subdivision review and site plan review.

3. For Phases Two and Three, include and install erosion control measures meeting best management practices and maintain the erosion controls for the site prior to mulching disturbed areas. The site shall be maintained clean and free of debris at all times. The City may request the applicant to conduct additional maintenance activities or grading corrections to Phase Two and Phase Three, if debris or sedimentation is found in the surrounding catch basins which diminishes the capacity or causes back-ups of the basins. All sidewalks shall be cleared of snow by the property owner, including sidewalks located in Phase Two and Phase Three.

4. The proposed Bus shelter location shown on Somerset Street in Phase Two shall be coordinated and further refined in the future during site plan review for Phase Two.

5. The Drop-off area, sidewalk ramps, sidewalks, and other features within the public right-of-way on Elm Street for Midtown Four, which is included in Phase Three, are not acceptable. Details of the sidewalk, curb line, and other features shall be revised and submitted for approval during future site plan reviews.

C. TECHNICAL AND DESIGN WAIVERS

On the basis of the applications (2013-105 and 2013-128) plans, reports and other information submitted by the applicant, findings and recommendations contained in the Planning Board Reports # 58-13 and the report for the January 14, 2014 public hearing, including but not limited to Section IX of the report for January 14, 2014 titled "Technical Waivers," the report and the reviews by Tom Errico, PE dated January 6, 2014 (Attachment 3) and David Margolis-Pineo, Deputy City Engineer dated January 9, 2014 (Attachment 4), for the Midtown Master Development Plan and Midtown Phase One relevant to Portland's Technical and Design Standards and other regulations, as well as the Planning Board deliberations and the testimony presented at the Planning Board hearings, the Planning Board voted 7 to 0 on the following findings:

<u>Street Trees</u>

1. The Planning Board finds that the applicant has demonstrated that site constraints prevent the planting of required street trees on the site and/or in the City right of way. The Planning Board voted 7 to 0 to waive Section 14-526 (b)(2)(b)(iii) Street Trees of the Site Plan Ordinance and concluded that the applicant shall make a financial contribution of $5,000 to the tree fund, which amount takes into consideration the applicant's commensurate infrastructure investment in twenty-one (21) raised tree wells as presented in the application. This waiver applies to Phase One only.

<u>Transportation and Street Design</u>

2. The Planning Board finds, based, among other things, on Tom Errico's review (Attachment 3) that extraordinary conditions exist or undue hardship may result from strict compliance, substantial justice and the public interest are secured with the variation, and the variation is consistent with the intent of the ordinance. The Planning Board voted 7 to 0 to waive Section 1.4 Street Grades of the Technical Manual to modify the cross slopes as presented in the application for a local street from the 0.03 requirement. This waiver applies to Phase One only.

<u>Section 1.4 Street Grades</u>

3. The Planning Board does not find based upon the reviews by Tom Errico and David Margolis Pineo (Attachments 3 and 4) that extraordinary conditions exist or undue hardship may result from strict compliance, substantial justice and the public interest are secured with the variation, and the variation is consistent with the intent of the ordinance. The Planning Board voted (7 to 0) not to waive Section 1.4 Street Grades of the Technical Manual to modify the cross slopes for a sidewalk as presented in the application from the 0.02 requirement.

Section 1.5 Vertical Alignment

4. The Planning Board finds based, among other things on Tom Errico's review (Attachment 3) that extraordinary conditions exist or undue hardship may result from strict compliance, substantial justice and the public interest are secured with the variation, and the variation is consistent with the intent of the ordinance. The Planning Board voted to 7 to 0 to waive Section 1.5 Vertical Alignment of the Technical Manual to modify the K values as presented in the application. This waiver applies to Phase One only.

Section 1.7.2.5 Curbing of Driveways

5. The Planning Board finds based, among other things on Tom Errico's review (Attachment 3) that extraordinary conditions exist or undue hardship may result from strict compliance, substantial justice and the public interest are secured with the variation, and the variation is consistent with the intent of the ordinance. The Planning Board voted 7 to 0 waive Section 1.7.2.5 Curbing of Driveways of the Technical Manual to allow the tip down granite curbs rather than radius curbs at driveways, subject to the condition that the exact details of the aprons shall be provided for review and approval.

Section 1.7.1.9 Number of Driveways

6. The Planning Board finds based, among other things on the reviews by Tom Errico and David Margolis Pineo (Attachments 3 and 4) that extraordinary conditions exist or undue hardship may result from strict compliance, substantial justice and the public interest are secured with the variation, and the variation is consistent with the intent of the ordinance. The Planning Board voted 7 to 0 to waive Number of Driveway of the Technical Manual to allow the Master Development Plan project to have five (5) curb cuts: two (2) in Phase One; two (2) in Phase Two; and one (1) in Phase Three; with the condition that curb cuts in Phases Two and Three will be reviewed at the Level III site plan reviews and only the Phase One curb cuts will be installed with the Somerset reconstruction as presented on the applicant's Phase One plan.

Sanitary Sewer and Storm Drain Design

7. The Planning Board finds based, among other things, upon the review by David Margolis Pineo (Attachment 4) that extraordinary conditions exist or undue hardship may result from strict compliance, substantial justice and the public interest are secured with the variation, and the variation is consistent with the intent of the ordinance. The Planning Board voted 7 to 0 to waive Section 2.7.8 Catch Basin of the Technical Manual to allow the connection of storm drain lines into a catch basin structure.

Stormwater Management Standards and ME DEP Stormwater Management

8. The Planning Board finds that the project conveys stormwater exclusively in a piped system directly into the ocean as confirmed by David Senus' review (Attachment 5) and therefore, extraordinary conditions exist or undue hardship may result from strict compliance, substantial justice and the public interest are secured with the variation, and the variation is consistent with the intent of the ordinance. The Planning Board voted 7 to 0 to waive Chapter 5, Section E.2 Flooding Standard of the Technical Manual to allow the stormwater to be directly piped to the ocean.

Soil Survey Standards

9. The Planning Board finds based upon David Margois-Pineo's recommendation (Attachment 4) that greater than 50% of the site was developed on a filled site and remediated as a Brownfields site, which has had soil analysis done for the site and street right-of-way and therefore, extraordinary conditions exist or undue hardship may result from strict compliance, substantial justice and the public interest are secured with the variation, and the variation is consistent with the intent of the ordinance. . The Planning Board voted 7 to 0 waive Section 7.1 Soil Survey Standards of the Technical Manual related to the requirement for a high intensity soil survey.

D. B-7 WAIVERS

On the basis of the applications (2013-105 and 2013-128) plans, reports and other information submitted by the applicant, findings, recommendations, contained in the Planning Board Reports # 58-13 and the report for the January 14, 2014 public hearing, including but not limited to Section X, B-7 Design Standard Waivers of the January 14, 2014 report for the Midtown Master Development Plan and Midtown Phase One relevant to Portland's Design Manual, and other regulations, as well as the Planning Board deliberations and the testimony presented at the Planning Board hearings, the Planning Board finds the following:

1. Recognizing the existing blockage of the Cedar Street views and partial blockage of Myrtle Street view corridors, constraints relating to building design and block configuration, as well as other factors outlined in the applications and the Planning Board Report, the Planning Board finds that extraordinary conditions exist or undue hardship may result from strict compliance, substantial justice and the public interest are secured with the variation, and the variation is consistent with the intent of the ordinance, and therefore voted 7 to 0 waive B-7 Standard A-4, Views and Landmarks, to grant a partial waiver of the requirement that new development be sited so that it does not block view corridors, to allow the garages in Phases One and Two to partially obstruct the Myrtle Street and Cedar Street view corridor.

2. Recognizing that Cedar and Myrtle streets do not abut the subject property, and in consideration of the proposed mews providing an alternate access between Somerset Street and the trail, the Planning Board finds that extraordinary conditions exist or undue hardship may result from strict compliance, substantial justice and the public interest are secured with the variation, and the variation is consistent with the intent of the ordinance, and therefore voted 7 to 0 to waive to B-7 Standard B-2, Street Connectivity, to grant a waiver of the requirement that the development be required to extend Cedar Street and Myrtle Street through the project.

3. Due to the proposed placement of the garage and buildings in Phase II, the Planning Board does not find that extraordinary conditions exist or undue hardship may result from strict compliance, substantial justice and the public interest are secured with the variation, and the variation is consistent with the intent of the ordinance, and therefore voted 7 to 0 not to approve a waiver of B-7 Standard B-3, Mid-Block Permeability, for Phase Two development which requires mid-block permeability of the development between Chestnut and Elm Streets.

4. Recognizing that there is no other location for such entrances other than on Somerset Street due to block configuration, the Planning Board finds that extraordinary conditions exist or undue hardship may result from strict compliance, substantial justice and the public interest are secured with the variation, and the variation is consistent with the intent of the ordinance, and therefore voted 7 to 0 to waive B-7 Standard B-7, Continuity of Street Level Uses, to allow service entrances and vehicular entrances on Somerset Street.

5. In order to enable and enhanced retail and pedestrian sidewalk lighting conditions on Somerset Street, the Planning Board finds that extraordinary conditions exist or undue hardship may result from strict compliance, substantial justice and the public interest are secured with the variation, and the variation is consistent with the intent of the ordinance, and therefore voted 7 to 0 to waive B-7 Standard B-11, Lighting, to allow closer spacing of the street lights on Somerset Street as depicted on the submitted site plan._.

6. Recognizing the shallow lots and constrained garage layout, the Planning Board finds that extraordinary conditions exist or undue hardship may result from strict compliance, substantial justice and the public interest are secured with the variation, and the variation is consistent with the intent of the ordinance, and therefore voted 7 to 0 to waive B-7 Standard C-2 Parking Entrances, to allow the entry and exit of the garage entry to be combined on Somerset Street.

7. Recognizing the shallow lots and constrained garage layout, the Planning Board finds that extraordinary conditions exist or undue hardship may result from strict compliance, substantial justice and the public interest are secured with the variation, and the variation is consistent with the intent of the ordinance, and therefore voted 7 to 0 to waive B-7 Standard C-5, Decks and Ramps, to allow visible non-horizontal ramps on the north face of the garage.

8. Because this project has no rear elevation, the Planning Board therefore finds that extraordinary conditions exist or undue hardship may result from strict compliance, substantial justice and the public interest are secured with the variation, and the variation is consistent with the intent of the ordinance, and therefore voted 7 to 0 to waive B-7 Standard C-8, Service, Utility and Mechanical

Infrastructure, which requires all loading docks, delivery areas, truck parking shall be located at the rear or side of buildings and not along public ways.

9. Recognizing that the shadow study (Exhibits 20 and 20A) demonstrate that for half of the 12 time/seasons reported, a 65 foot tall building would impose a shadow impact on the trail and open space that subsumes the longer shadow of the taller building. Further, the six times that show increased shadow from the taller building, the shadow impact is limited in area and duration, therefore the overall increase in shadow created by the taller heights is not substantially more detrimental to the trail than would result from an as-of-right (65 foot tall) development, thus undue hardship may result from strict compliance with Standard E-19. The Planning Board finds that extraordinary conditions exist or undue hardship may result from strict compliance, substantial justice and the public interest are secured, and the variation is consistent with the intent of the ordinance, and therefore voted 7 to 0 to waive B-7 Standard E-19, Shadows, to allow an increase of more than 10% shadow on the Bayside Trail.

E. TRAFFIC MOVEMENT PERMIT

On the basis of the applications (2013-105 and 2013-128), plans, reports and other information submitted by the applicant, findings and recommendations contained in Planning Board Reports # 58-13 and the report for the January 14, 2014 public hearing for application for the Midtown Master Development Plan and Midtown Phase One relevant to the Site Plan and Subdivision reviews and other regulations, as well as the Planning Board deliberations and the testimony presented at the Planning Board hearing, the Planning Board finds the following:

That the plan is in conformance with the standards of the Traffic Movement Permit, and therefore voted 7 to 0 to approve the Traffic Movement Permit, subject to the following conditions of approval to be met prior to the issuance of a building permit unless otherwise stated:

1. The applicant will be required to install a traffic signal at the Marginal Way/Chestnut Street intersection. This intersection currently meets signal warrants and accordingly this improvement shall be installed prior to certificate of occupancy of Phase One. It should be noted that the applicant will be responsible for the development of design plans and specifications for review and approval by the City.

2. The applicant shall install improvements to the Marginal Way eastbound approach at Franklin Street as documented in their traffic study. This improvement consists of changing the lane assignment on eastbound Marginal Way to a left-lane and a shared through/right lane (it current consist of a shared left/through lane and a right-turn lane). This improvement is to consist of pavement marking and signing changes only (signal head modifications may be required). No roadway widening is anticipated as part of this work. The improvement shall be installed prior to certificate of occupancy for Phase One. The applicant shall submit plans for review and approval.

3. The applicant shall develop updated traffic signal timing plans for Franklin Street for the three intersections with I-295 Northbound Ramps, Marginal Way, and Somerset Street/Fox Street. The timing plans shall be implemented within 6 months following certificate of occupancy. The applicant shall submit plans for review and approval.

4. The applicant shall make a $32,000 contribution towards improvements to Franklin Street in the Somerset Street/Fox Street and Marginal Way intersection areas. This contribution is related to addressing sub-standard traffic conditions along Franklin Street. This contribution amount is for the full build project and may be proportioned according to traffic generation levels for each project phase.

5. The applicant shall make a $30,000 contribution towards implementation of the Marginal Way Master Plan. This requirement is to address traffic issues at the Marginal Way intersections with Preble Street and Forest Avenue and general multi-modal improvements along the corridor. This contribution amount is for the full build project and may be proportioned according to traffic generation levels for each project phase.

6. The applicant shall make a $51,000 contribution towards the implementation of the Somerset Street extension project. This requirement is to address traffic issues along Marginal Way, particularly at Forest Avenue, Preble Street, and Franklin Street. This contribution amount is for the full build project and may be proportioned according to traffic generation levels for each project phase.

7. Somerset Street/Pearl Street - This intersection was determined to operate at unacceptable conditions following project build-out. It is recommended that the applicant conduct a monitoring study following the construction of Phase One. The monitoring study would be required for Phase 2 of the project.

F. AMENDED OVERALL SUBDIVISION PLAT AND PHASE ONE SUBDIVISION PLANS:

On the basis of the applications (2013-105 and 2013-128), plans, reports and other information submitted by the applicant, findings and recommendations contained in Planning Board Reports # 58-13 and the report for the January 14, 2014 public hearing for application for the Midtown Master Development Plan and Midtown Phase One relevant to the Site Plan and Subdivision ordinances and other regulations, as well as the Planning Board deliberations and the testimony presented at the Planning Board hearing, the Planning Board finds the following:

That the Amended Overall Subdivision plat (dated 12-20-2013) and the Phase One Subdivision Plans are in conformance with the subdivision standards of the City's Code, and therefore voted 5 to 2 (Hall and O'Brien opposed) to approve the subdivision plans, subject to the following conditions of approval to be met prior to the issuance of a building permit unless otherwise stated:

1. That the Phase One Subdivision Plan shall be finalized to the satisfaction of the Planning Authority, Corporation Counsel, and Department of Public Services and include detailed references to labeling of easements, subdivision notes and other relevant conditions meeting the requirements for a recording plat as contained in Portland's Subdivision Ordinance and Maine State statute, and incorporating the phasing plan as described in condition 3, below.

2. That the Amended Overall Subdivision Plat shall be finalized to the satisfaction of the Planning Authority, Corporation Counsel, and Department of Public Services including detailed references to labeling of easements, subdivision notes and other relevant conditions.

3. That Somerset Street improvements may be constructed in two phases with design details subject to review and approval by the City's Department of Public Services as further described in a letter from Michael Bobinsky, Director of Public Services, dated January 9, 2014, see Attachment 2. The construction of lot 6 and or lot 7 (Phase One) shall require the reconstruction of Somerset Street from Pearl Street to Chestnut Street along with necessary grade tapering west of Chestnut Street and additional related tapering on Chestnut Street, which shall be implemented in conjunction with Phase One of the Master Development Plan and Level III Site Plan review. Initiation of construction on lots 2, 3 and or 5 (Phase Two) requires reconstruction of the remainder of Somerset Street west of Chestnut Street to Elm Street, which shall be implemented in conjunction with development of Phase Two and/or Phase Three of the Master Development Plan, or at such earlier time as may approved by the Department of Public Services and Planning Authority.

4. That all easements shall be submitted for Public Services, Planning Authority and Corporation Counsel review and approval. Easements shall specify the function, responsibility of maintenance and repair as well as ownership of all improvements.

5. That the passage easement between Chestnut and Elm be removed on the Amended Overall Subdivision plat provided that a pedestrian passage be provided in the Phase Two site plan between the two residential towers in Phase Two or through one of the residential structures.

6. The applicant shall be totally responsible for the reconstruction of the Bayside Trail to the satisfaction of the City.

7. That the applicant and all assigns shall comply with the conditions of Chapter 32 of the City Code governing Stormwater, including Article III, "Post-Construction Storm Water Management," which specifies the City's annual inspections and reporting requirements. The applicant/developer/contractor/subcontractor must comply with conditions of the construction stormwater management plan and

sediment & erosion control plan based on City standards and state guidelines. A maintenance agreement for the stormwater drainage system shall be submitted for review and approval by Corporation Counsel and the Department of Public Services, and submitted and signed prior to the issuance of a Certificate of Occupancy with a copy to the Department of Public Services; and

8. That the Subdivision Plat shall be revised to address the following review comments from the Department of Public Services:

   a. Show property pins to be set at all locations to define the applicant's property.

9. That the Subdivision Plans shall be revised for review and approval by the Department of Public Services to address the Department of Public Services review of the subdivision plans as presented in a January 9, 2014 memo from David Margolis-Pineo, Deputy City Engineer.

10. In the event that the elevation of Somerset Street is raised east of Pearl Street, the applicant or successor shall be responsible for removing ramps, steps and other impediments in providing a continuous at-grade pedestrian access along the frontage of Phase One. Applicant or successor shall also be responsible for installing new streetscape materials and amenities that achieves a continuous at-grade sidewalk with review and approval by the Planning Authority. The applicant or its successor shall also be responsible for sidewalk and related improvements within their property line along Pearl Street extension should Pearl Street extension be reconstructed in the future.

11. The applicant and all assigns shall be responsible for the maintenance and upkeep of all ramps/stairs/planters in the sidewalk along Somerset Street in front of the residential tower, whether such ramps/stairs/planters are located within the street right or way or on private property.

12. The applicant shall revise the subdivision plat to remove the limited open space easement on lot 4, (adjacent and west of Lot 2) benefiting lot 2.

G. SITE PLAN REVIEW

On the basis of the applications (2013-105 and 2013-128), plans, reports and other information submitted by the applicant, findings and recommendations contained in Planning Board Reports # 58-13 and the report for the January 14, 2014 public hearing for application for the Midtown Master Development Plan and Midtown Phase One relevant to the Site Plan and Subdivision ordinance and other regulations, as well as the Planning Board deliberations and the testimony presented at the Planning Board hearings, the Planning Board finds the following:

That the plan is in conformance with the site plan standards of the Land Use Code, Site Location of Development review and DEP Stormwater Permit, and therefore voted 7 to 0 to approve the proposed site plan, subject to the following condition(s) of approval to be met prior to the issuance of a building permit unless otherwise stated:

1. The applicant shall submit revised plans that provide the details for the mountable curbs, and provide details of the driveway apron areas meeting City standards for review and approval by the Planning Authority for the proposed mountable curbs.

2. According to information provided by the applicant, large delivery vehicles cannot be accommodated in the proposed service entrances provided for the project. For Phase One the on-street parking spaces on Somerset Street shall be designated as a Loading Zone with Dual Rear Wheel vehicle use requirements. The site plan shall correctly indicate such signage along Somerset Street and the No Parking signs on Pearl Street shall be revised to add "Tow Away Zone" for review approval by Department of Public Services. A large delivery vehicle management plan for the site shall be submitted to the Traffic Engineer for review and approval. For other future phases, it is recommended that the details on large truck loading be determined during Site Plan review.

3. The City shall retain the opportunity for a 60-foot right-of-way on Pearl Street north of Somerset Street. Therefore, the applicant shall submit a revised plan for review and approval that shifts the right-of-way line to the west 5-feet in anticipation of the City acquiring 5 feet of right-of-way width in the future to the east as it intends to do.

4. The TDM Plan provides general information on strategies and notes requirements for conducting tenant surveys as required by the City's Code. Following the 6 month survey and monitoring report, the City may require the applicant to aggressively implement strategies such as METRO pass subsidies, if trip reduction targets contained in the TDM plan are not met.

5. The applicant has submitted a general Construction Management plan that primarily details how the Bayside Trail will be closed and temporarily relocated to Somerset Street. The applicant shall submit a more detailed plan for review and approval by the Department of Public Services that provides the specific details on the trail facility as well as general pedestrian circulation throughout the area. The applicant shall submit a fully detailed construction management plan with a timeline prior to obtaining any City permits.

6. Details of the sidewalk ramps adjacent to the proposed crosswalk on Pearl Street to the Whole Foods corner shall be revised to the satisfaction of Department of Public Services.

7. The applicant shall provide a plan that specifically documents the sidewalk compliance with maximum cross slope requirements and sidewalk ramps that meet City standards for review and approval.

8. The location of the on-street ticket dispenser and related signage shall be revised to the satisfaction of the City's Parking Division. Additionally, it is recommended that the ticket system include the parking spaces on the south side of Somerset Street so the applicant will be responsible for the foundation and signage changes.

9. Phase One includes a Turn-Out on Pearl Street at the Entrance to the residential building. The turn-out will function independently of public traffic without a Pearl Street connection to Marginal Way; however, the design does not function when Pearl Street is extended. When Pearl Street is connected to Marginal Way, the turn-out shall be eliminated and a standard curbside drop-off area shall be implemented. This should be noted as a future condition of approval.

10. A sidewalk ramp at the corner of Somerset Street and Elm Street may be necessary in conjunction with interfacing this project with the City's Somerset Street Extension project. The applicant shall be responsible for revising the plan accordingly.

11. That the signage depicted in the Master Plan shall be revised to meet zoning ordinance requirements and shall be subject to Planning Board review and approval.

12. That the lighting plan shall be subject to Planning Staff review and approval.

13. That the landscaping plan shall be subject to City Arborist review and approval.

14. That the site plan shall be revised to clarify the number and location of bicycle spaces subject to Planning Authority review and approval.

15. That the final height of the ornamental fence around the transformers shall be subject to Planning Authority review and approval.

16. That the site plan shall be revised to widen the Pearl Street extension sidewalk to a minimum of ten (10) feet.

16. That references to snow storage within the Bayside Trail corridor shall be removed from all site plans.

17. That the site plan and related documentation shall be revised reflecting the comments of Capt. Chris Pirone of the Fire Department, in a memo dated January 6, 2014.

18. That the site plan and related documentation shall be revised reflecting the comments of David Senus, Consulting Review Engineer, in a memo dated January 6, 2014.

19. That the site plan and related documentation shall be revised reflecting the comments of David Margolis-Pineo, in a memo dated January 9, 2014.

20. That the site plans shall be revised removing discrepancies and inconsistencies among plans for Planning Authority review and approval.

21. That the location of all exterior gas meters shall be reviewed and approved by the Planning Authority.

22. That the final design of the Bayside Trail shall be revised for review and approval by Public Services and Planning Authority reflecting a goal of eliminating a second fence/rail proposed along the northerly edge of the trail.

23. The applicant shall install a public entrance to the retail building space for the Phase One residential building and parking garage, adjoining the courtyard and trail respectively, if appropriate to the use, to the satisfaction of the Planning Authority.

The approval is based on the submitted plans and the findings related to the development review standards as contained in Planning Report for application #2013-105 which is attached.

STANDARD CONDITIONS OF APPROVAL

Please note the following standard conditions of approval and requirements for all approved development plans:

1. **Subdivision Recording Plat** A revised recording plat listing all conditions of subdivision approval must be submitted for review and signature prior to the issuance of a performance guarantee. The performance guarantee must be issued prior to the release of the recording plat for recording at the Cumberland County Registry of Deeds.

2. **Subdivision Waivers** Pursuant to 30-A MRSA section 4406(B)(1), any waiver must specified on the subdivision plan or outlined in a notice and the plan or notice must be recorded in the Cumberland County Registry of Deeds within 90 days of the subdivision approval.

3. **Develop Site According to Plan** The site shall be developed and maintained as depicted on the site plan and in the written submission of the applicant. Modification of any approved site plan or alteration of a parcel which was the subject of site plan approval after May 20, 1974, shall require the prior approval of a revised site plan by the Planning Board or Planning Authority pursuant to the terms of Chapter 14, Land Use, of the Portland City Code.

4. **Separate Building Permits Are Required** This approval does not constitute approval of building plans, which must be reviewed and approved by the City of Portland's Inspection Division.

5. **Site Plan Expiration** The site plan approval will be deemed to have expired unless work has commenced within one (1) year of the approval or within a time period up to three (3) years from the approval date as agreed upon in writing by the City and the applicant. Requests to extend approvals must be received before the one (1) year expiration date.

6. **Subdivision Plan Expiration** The subdivision approval is valid for up to three years from the date of Planning approval.

7. **Master Development Plan Expiration** A master development plan is valid for up to six (6) years from the date of Planning Board approval with potential extension periods as provided for in Section 14-532(d).

8. **Performance Guarantee and Inspection Fees** A performance guarantee covering the site improvements, inspection fee payment of 2.0% of the guarantee amount and seven (7) final sets of plans must be submitted to and approved by the Planning Division and Public Services Department prior to the release of a building permit, street opening permit or certificate of occupancy for site plans. If you need to make any modifications to the approved plans, you must submit a revised site plan application for staff review and approval.

8. **Defect Guarantee** A defect guarantee, consisting of 10% of the performance guarantee, must be posted before the performance guarantee will be released.

10. **Preconstruction Meeting** Prior to the release of a building permit or site construction, a pre-construction meeting shall be held at the project site. This meeting will be held with the contractor, Development Review Coordinator, Public Service's representative and owner to review the construction schedule and critical aspects of the site work. At that time, the Development Review Coordinator will confirm that the contractor is working from the approved site plan. 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. (If applicable)

11. **Department of Public Services Permits** 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.)

12. **As-Built Final Plans** Final sets of as-built plans shall be submitted digitally to the Planning Division, on a CD or DVD, in AutoCAD format (*,dwg), release AutoCAD 2005 or greater.

13. **Mylar Copies** Mylar copies of the as-built drawings for the public streets and other public infrastructure in the subdivision must be submitted in the Public Services Dept. prior to the issuance of a certificate of occupancy.

The Development Review Coordinator must be notified five (5) working days prior to the date required for final site inspection. The Development Review Coordinator can be reached at the Planning Division at 874-8632. 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 Richard Knowland at (207) 874-8725.

Sincerely,

Stuart O'Brien
Portland Planning Board

Attachments:
1. (Insert applicable staff memos)
2. Planning Board Report
3. City Code: Chapter 32
4. Sample Stormwater Maintenance Agreement [if applicable]
5. Performance Guarantee Packet

Electronic Distribution:

cc: Jeff Levine, AICP, Director of Planning and Urban Development
Alexander Jaegerman, FAICP, Planning Division Director
Barbara Barhydt, Development Review Services Manager
Rick Knowland, Senior Planner
Philip DiPierro, Development Review Coordinator, Planning
Marge Schmuckal, Zoning Administrator, Inspections Division
Tammy Munson, Inspection Division Director
Lannie Dobson, Administration, Inspections Division
Gayle Guertin, Administration, Inspections Division
Michael Bobinsky, Public Services Director
Katherine Earley, Engineering Services Manager, Public Services
Bill Clark, Project Engineer, Public Services
David Margolis-Pineo, Deputy City Engineer, Public Services

Doug Roncarati, Stormwater Coordinator, Public Services
Greg Vining, Associate Engineer, Public Services
Michelle Sweeney, Associate Engineer
John Low, Associate Engineer, Public Services
Rhonda Zazzara, Field Inspection Coordinator, Public Services
Mike Farmer, Project Engineer, Public Services
Jane Ward, Administration, Public Services
Jeff Tarling, City Arborist, Public Services
Jeremiah Bartlett, Public Services
Captain Chris Pirone, Fire Department
Danielle West-Chuhta, Corporation Counsel
Thomas Errico, P.E., TY Lin Associates
David Senus, P.E., Woodard and Curran
Rick Blackburn, Assessor's Department
Approval Letter File

>>> matthew baxter <ppsc.me@gmail.com> Thursday, January 08, 2015 5:37 PM >>>
To whom it may concern,

Although I will not be able to make the planning board meeting in regards to the Midtown project, and I am slightly disappointed at the scaled back version (but not as disappointed as I am with fellow citizens civil dissent and lack of support of our city's planners & leaders), I would be very happy and excited to see this project get off the ground and get moving and am still in support of the wasteland that is this portion of Bayside, Portland,being developed with the current scale and designs.

Please get this project moving! The planning, litigation, and citizen opinion and appeal has long ago eclipsed the boring and tiresome stage, and at times (especially while tied in litigation and ulterior motives) become nauseating.

Build Midtown now!

Thank you for your time,

Matt Baxter

MURRAY PLUMB & MURRAY
ATTORNEYS AT LAW

January 9, 2015

Jeff Levine, AICP, Director
Department of Planning and Urban Development
City of Portland
389 Congress Street
Fourth Floor
Portland, Maine 04101

Gregory A. Mitchell, Director
Department of Economic Development
389 Congress Street
Room 308
Portland, Maine 04101

Michael Bobinski, Director
Department of Public Services
City of Portland
55 Portland Street
Portland, Maine 04101

Re: Earle W. Noyes & Sons Moving Specialists, Inc. / Concerns Relating to the Possible Elevation of Somerset Street in Connection with The Federated Companies' Proposed "Midtown" Project

Dear Jeff, Greg, and Mike:

This office represents Earle W. Noyes & Sons Moving Specialists, Inc. (hereafter "Noyes") in protecting its interests in the property at 93 Kennebec Street commonly known as "Noyes Self-Storage," as well as the two parking lots at 53 Kennebec Street it owns and leases to Oakhurst Dairy and Whole Foods (hereafter collectively the "Property"). Noyes is concerned about potential damage to the Property resulting from one aspect of that project: the proposed raising of Somerset Street by approximately 3.25 vertical feet.

To be clear, Noyes is not opposed to the Midtown project per se; it could potentially cure the blight on the neighborhood caused by past environmental contamination of the project site. However, from Noyes's perspective, any positive effects of the project will be moot if, even indirectly, it causes significant financial harm to Noyes. Based on the information available to it, Noyes has deep concerns that one aspect of the project – the proposed raising of Somerset Street – will, in fact, lead to potentially catastrophic damage to its Property.

For many years Noyes has kept a wary eye on the periodic flooding of Somerset Street by storm water and run-off from melting snow. The City, as I understand it, is well aware of that problem, and has devised, as a strategy to combat it, the elevation of Somerset Street and other public ways in the vicinity.

In the exercise of due diligence, Noyes contracted with Robert G. Gerber, P.E. of Ransom Consulting to study the potential effects of the elevating Somerset Street on the Property. Because of his well-known expertise in water-related environmental issues in general and the effects of sea level rise in particular, Mr. Gerber was an ideal choice for that assignment. Indeed, Mr. Gerber has assisted the City of Portland itself in challenging FEMA's proposed revisions to its flood insurance maps covering the City.

Attached to this letter as Exhibit A is Mr. Gerber's analysis of the short- and long-term effects of attempting to manage storm water near the Property by elevating existing, flood-prone public ways such as Somerset Street. Although that letter speaks for itself, suffice it to say that Noyes has legitimate cause for apprehension that the proposed elevation of Somerset Street will not, in fact, eliminate storm water accumulation adjacent to its Property, but will instead significantly increase the risk that storm water flowing from an elevated Somerset Street would enter, damage, and undermine the first floor and foundation of its warehouse building. Whereas the warehouse floor is currently situated about 3.5 feet above the level of Somerset Street, the proposed raising of the street would result in the warehouse floor being only a few inches above the road's surface, rendering the warehouse vulnerable to frequent and potentially devastating storm water intrusions. Noyes would be put to a choice between being put out of business or else spending enormous sums raise the surface of its Property and the ground floor of its building to match Somerset Street's increased height.

The potential threats to Noyes' parking lots at 53 Kennebec Street are also grave. Those parking lots are currently level with the surface of Somerset Street. Thus, if Somerset Street is raised, Noyes' parking lots will be more than three feet below grade and will inevitably collect storm water running off the street.

It is of only slight consolation to Noyes that Maine law would allow it to recover from the City for any diminution in the fair market value of its Property caused by the raising of Somerset Street. 23 M.R.S.A. § 3607 provides in pertinent part as follows:

> When a way or street is raised or lowered by a road commissioner or person authorized to the injury of an owner of adjoining land, he may within a year apply in writing to the municipal officers, and they shall view such way or street and assess the damages, if any have been occasioned thereby, to be paid by the town. Any person aggrieved by said assessment may have them determined, on complaint to the Superior Court...

Although Noyes has no interest in becoming involved in such a dispute with the City, it will have no choice but to resort to that remedy if Mr. Gerber's analysis is correct. Given Mr. Gerber's' well-known expertise in this area, it would be reckless for Noyes or the City to gamble that he is wrong. That gamble becomes even more foolhardy given the likelihood that, within a few decades, sea level rise will obliterate any temporary gains achieved by the elevation of Somerset Street and other roads in the Bayside area.

Based on all the foregoing, Noyes urges the Planning Board to review the Midtown project based on the stipulation that Somerset Street will *not* be elevated as had previously been proposed. By that means, Noyes will have no reason to become an adversary either to The Federated Companies or the City with respect to the development of the project site, nor will the City face potential liability to Noyes from the adverse effects Mr. Gerber predicts will follow from raising Somerset Street in the vicinity of the Property.

Thank you for your attention to this letter.

Sincerely,

John C. Bannon

JCB/kpm
Enclosure

cc: Stuart O'Brien, Chair, Planning Board (w/encl)
Rick Knowland, Senior Planner (w/encl)
Barbara Barhydt, Development Review Manager (w/encl)
Kevin J. Donaghue, City Councilor and Chair, Housing & Community Development Committee (w/encl)
David Margolis-Pineo, Deputy City Engineer (w/encl)
Peter Quesada (w/encl)
Peter Noyes (w/encl)
Brent Noyes (w/encl)
Robert G. Gerber (w/encl)
Edward S. McColl, Esq. (w/encl)

RANSOM
Consulting, Inc.

Consulting
Engineers
and Scientists

EXHIBIT
A
ALL-STATE LEGAL®

R141.06141.001

January 8, 2015

Howles Incorporated
Earl W. Noyes & Sons
c/o Peter Noyes, President
127 Oxford, Street
Portland, ME 04104

via email

Re: Noyes Self-Storage Building – Somerset Street

Dear Peter:

I am writing to comment on the City of Portland's proposal to re-construct Somerset Street. This re-construction involves a significant raising of the street and sidewalk elevations in conjunction with the proposed Mid-Town Federated project. The last set of plans that I have seen show part of the street proposed to be raised to within 3 inches of the Noyes warehouse floor elevation from the current 3.6' between road and floor elevation. The small separation of the road level from the floor level of the warehouse is of concern, particularly under conditions of a heavy snowfall followed immediately by rain.

There are two sources of flooding in this area: rain and snowmelt runoff; and coastal storm surge. Without including any wave setup, Back Cove floods to elevation 8.0' NAVD88 (about 8.7' NGVD29) in a 10-year storm and to 8.4' NAVD88 in a 25-year storm. A large area of the Bayside area of Portland should be zoned to be in a 100-year flood zone due to the fact that Back Cove floods to elevations of about 9' NAVD88 during a 100-year storm surge and seawater either flows back through the current stormwater system and up through city street stormwater inlets and/or runoff from rainfall and snowmelt in the upland areas will pond in low-lying areas of Bayside during extra high tides. When these surges occur in Bayside, no removal of ponded water by the storm sewer system can occur at or below the storm surge elevation, regardless of how little intensity the upland rainfall exhibits. With sea level rising, this problem will only grow worse with time.

In concert with raising Somerset Street, the City is also planning to install storm drains in the two parking lots at 53 Kennebec Street that Noyes owns and leases to Oakhurst Dairy and Whole Foods. My concerns with the installation of these storm drains is that although there might appear to the lay person to be a benefit, the plan does not take into account the longer term plan to raise all the streets in the area, nor does it consider issues of possible back-flooding from Back Cove during times of extra high tides. Specifically my concerns are: 1) the amount of additional flooding to these lots during times of extra high tides (by reverse flow of seawater up through the storm drains) has not been quantified as far as we can determine; 2) we have not seen a demonstration that the proposed addition of four catch basins—that could easily plug with debris or winter ice—will drain the lots as efficiently as current sheet flow does; 3) presumably when other streets in the City street grid are eventually raised, that will also raise the grades of all streets adjacent to the parking lots. The long term plans for

400 Commercial Street, Suite 404, Portland, Maine 04101, Tel (207) 772-2891, Fax (207) 772-3248
Pease International Tradeport, 112 Corporate Drive, Portsmouth, New Hampshire 03801, Tel (603) 436-1490
12 Kent Way, Suite 100, Byfield, Massachusetts 01922, Tel (978) 465-1822
2127 Hamilton Avenue, Hamilton, New Jersey 08619, Tel (609) 584-0090
60 Valley Street, Building F, Suite 106, Providence, Rhode Island 02909, Tel (401) 433-2160

www.ransomenv.com

raising all the streets and the analysis of flooding impacts on adjacent properties have not been completed as far as we can determine.

The Portland Planning Department and/or Dept. of Public Works have apparently decided that the best current approach to adjusting to sea level rise is the raising of streets in the low-lying areas of Bayside. However, it is my understanding that there is no comprehensive plan for raising all the streets, nor any cost estimate to re-design and re-construct the streets and utilities as part of this comprehensive street raising. In my opinion, it is a big mistake and waste of money to spend a million dollars raising one street and changing all the underground utilities without the knowledge of how this would function when all streets are raised, and what it will cost to re-construct all the streets in Bayside like this.

Further, I think street raising is bad policy, particularly since it is being done in a vacuum with no other current policy for dealing with sea level rise. What if street raising were the policy in New Orleans as the delta sank and the City were threatened by the relative rise of the sea? Is Portland going to raise all its Bayside streets 10' if sea level rises 10'? Sea level rise and climate change (the latter seems to be causing an increase in rainfall intensity and coastal storm intensity) are problems that are going to become serious issues for Bayside in the next 10 to 20 years. It is not a problem off in the distance that allows a leisurely pace to address it.

The City has to make some hard choices: 1) let the Bayside flood as sea level rises and, with this laissez-faire attitude, property owners will eventually move (at their own expense) their commercial/residential land uses out of that area and the area will become wetland; 2) do something actively to save this tax base or at least provide further time for a transition to a different future for the Bayside, whether it be wetland, or a Venice-type area, or a New Orleans type area (the 3rd option based on building levees and pumping water from behind them). Raising the streets seems to me to have the least benefit/cost ratio to the City property owners. In fact it probably is a negative ratio. What good are the streets if the properties between are flooded?

A million dollars would be much better spent doing a feasibility study of putting a storm surge gate under Tukey's Bridge. Tukey's Bridge offers an unusual opportunity for the construction of a storm surge barrier at relatively reasonable cost. The benefit of building such a structure would accrue to all low-lying property owners in the Bayside area instead of just one or two projects. A thoroughly engineered comprehensive solution is needed soon, not 30 or 40 years from now. In fact I would say it is needed in 10 years. Since the lead time to design, perform studies, obtain permits, develop a financing plan, and build a surge barrier would be about 10 years, that work needs to start now.

With the above perspective, and as a past consultant to the City on the matter of flood risk, I strongly recommend against raising Somerset Street but rather putting that money to better use on a feasibility study to mitigate ocean storm surge flooding. Leaving Somerset Street at its current level is at least maintaining the status quo and posing no more flood risk than exists at present. Raising the street in the absence of a comprehensive plan to deal with sea level rise in the Back Cove area may, in fact, increase the risk of localized flooding and provide no benefit to existing landowners but rather cost them money to adapt to the street raising.

Sincerely,
Ransom Consulting, Inc.

Robert G. Gerber, P.E.

Digitally signed by Robert G. Gerber
Location: Portland, ME
Date: 2015.01.08 17:22:57 -05'00'

Cc: John Bannon, Esq.

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

Jeff Levine, AICP, Director
Planning & Urban Development Department

Electronic Signature and Fee Payment Confirmation

Notice: Your electronic signature is considered a legal signature per state law.

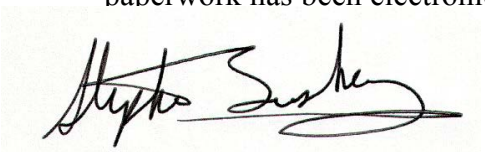
By digitally signing the attached document(s), you are signifying your understanding this is a legal document and your electronic signature is considered a ***legal signature*** per Maine state law. You are also signifying your intent on paying your fees by the opportunities below.

I, the undersigned, intend and acknowledge that no Site Plan or Historic Preservation Applications can be reviewed until payment of appropriate application fees are ***paid in full*** to the Inspections Office, City of Portland Maine by method noted below:

☐ Within 24-48 hours, once my complete application and corresponding paperwork has been electronically delivered, I intend to **call the Inspections Office** at 207-874-8703 and speak to an administrative representative and provide a credit/debit card over the phone.

☐ Within 24-48 hours, once my application and corresponding paperwork has been electronically delivered, I intend to **call the Inspections Office** at 207-874-8703 and speak to an administrative representative and provide a credit/debit card over the phone.

☒ I intend to deliver a payment method through the U.S. Postal Service mail once my application paperwork has been electronically delivered.



Applicant Signature: November 14, 2014 Date:

Stephen R. Bushey, P.E. - Sr. Principal Engineer

I have provided digital copies and sent them on: November 14, 2014 Date:

NOTE: All electronic paperwork must be delivered to buildinginspections@portlandmaine.gov or by physical means i.e. a thumb drive or CD to the Inspections Office, City Hall, 3rd Floor, Room 315.

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

Planning and Urban Development Department
Planning Division

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

Level III: Site Plan Development includes:

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

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

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

Planning Division
Fourth Floor, City Hall
389 Congress Street
(207) 874-8719

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

Updated: April 23, 2014

PROJECT NAME: "midtown" Project

PROPOSED DEVELOPMENT ADDRESS:

Somerset Street between Elm and Pearl Street (northwesterly side) and Elm Street between Portland Trail and lot with Trader Joe's - mixed use.

PROJECT DESCRIPTION:

A 3.50 a.c. mixed-use development with a 828 space parking garage and up to 445 residential units and 91,500 s.f. of retail space.

CHART/BLOCK/LOT: 034/D009001; 025/A022001 034/D010001; 034/D003; 025/A022; 025/B002; 025/B003; 025/B004; 025/B005

PRELIMINARY PLAN 10/17/2014 (date)
FINAL PLAN 11/14/2014 (date)

CONTACT INFORMATION:

Applicant – must be owner, Lessee or Buyer Name: Jonathan Cox Business Name, if applicable: The Federated Companies Address: P.O. Box 370008 City/State : Miami, FL Zip Code: 33137-4110	**Applicant Contact Information** Work # (305) 974-1454 Home# Cell # (978) 375-1414 Fax# e-mail: j_cox@federatedcompanies.com
Owner – (if different from Applicant) Name: City of Portland, Maine Address: 389 Congress Street City/State : Portland, ME Zip Code: 04101	**Owner Contact Information** Work # Home# Cell # Fax# e-mail:
Agent/ Representative Name: Stephen R. Bushey, P.E. Address: 778 Main Street, Suite 8 City/State : South Portland, ME Zip Code: 04106	**Agent/Representative Contact information** Work # 207-775-1121 Cell # 207-756-9359 207-879-0896 e-mail: sbushey@fstinc.com
Billing Information Name: SAME AS APPLICANT Address: City/State : Zip Code:	**Billing Information** Work # Cell # Fax# e-mail:

Engineer Name: Bo E. Kennedy, P.E. - Engineer Stephen R. Bushey, P.E. - Sr. Principal Engineer Address: 778 Main Street, Suite 8 City/State : South Portland, ME Zip Code: 04106	**Engineer Contact Information** Work # 207-775-1121 Cell # 207-318-8364 Fax# 207-879-0896 e-mail: bkennedy@fstinc.com; sbushey@fstinc.com
Surveyor Name: Owen Haskell, Inc. - Ellen Brewer Address: 390 U.S. Route 1 City/State : Falmouth, ME Zip Code: 04105	**Surveyor Contact Information** Work # 207-774-0424 Cell # Fax# e-mail: ebrewer@owenhaskell.com
Architect Name: David Hancock AIA LEED CBT Architects Address: 110 Canal Street City/State : Boston, MA Zip Code: 02114	**Architect Contact Information** Work # 617-646-5353 Cell # Fax# e-mail: hancock@cbtarchitects.com
Attorney Name: TO BE DETERMINED Address: City/State : Zip Code:	**Attorney Contact Information** Work # Cell # Fax# e-mail:

APPLICATION FEES:

Check all reviews that apply. (Payment may be made by Credit Card, Cash or Check payable to the City of Portland.)

Level III Development (check applicable reviews) ___ Less than 50,000 sq. ft. ($500.00) ___ 50,000 - 100,000 sq. ft. ($1,000) _x_ 100,000 – 200,000 sq. ft. ($2,000) ___ 200,000 – 300,000 sq. ft. ($3,000) ___ over $300,00 sq. ft. ($5,000) ___ Parking lots over 11 spaces ($1,000) ___ After-the-fact Review ($1,000.00 plus applicable application fee) **Plan Amendments (check applicable reviews)** ___ Planning Staff Review ($250) ___ Planning Board Review ($500) _____ The City invoices separately for the following: • Notices ($.75 each) • Legal Ad (% of total Ad) • Planning Review ($40.00 hour) • Legal Review ($75.00 hour) Third party review fees are assessed separately. Any outside reviews or analysis requested from the Applicant as part of the development review, are the responsibility of the Applicant and are separate from any application or invoice fees.	**Other Reviews (check applicable reviews)** _x_ Traffic Movement ($1,000) ___ Stormwater Quality ($250) _x_ Subdivisions ($500 + $25/lot) # of Lots 445 x $25/lot = $11,125 ___ Site Location ($3,000, except for residential projects which shall be $200/lot) # of Lots ___ x $200/lot = _____ ___ Other _____ ___ Change of Use ___ Flood Plain ___ Shoreland ___ Design Review ___ Housing Replacement ___ Historic Preservation *As indicated in previous conversations with City Staff and the Applicant, the Fees will be determined by City Staff corresponded directly to the applicant.

Updated: April 23, 2014

APPLICATION SUBMISSION:

1. All site plans and written application materials must be submitted electronically on a CD or thumb drive with each plan submitted as separate files, with individual file which can be found on the **Electronic Plan and Document Submittal** page of the City's website at http://me-portland.civicplus.com/764/Electronic-Plan-and-Document-Submittal

2. In addition, one (1) paper set of the plans (full size), one (1) paper set of plans (11 x 17), paper copy of written materials, and the application fee must be submitted to the Building Inspections Office to start the review process.

The application must be complete, including but not limited to the contact information, project data, application checklists, wastewater capacity, plan for fire department review, and applicant signature. The submissions shall include one (1) paper packet with folded plans containing the following materials:

1. **One (1) full size site plans** that must be **folded.**
2. One (1) copy of all written materials or as follows, unless otherwise noted:
   a. Application form that is completed and signed.
   b. Cover letter stating the nature of the project.
   c. All Written Submittals (Sec. 14-525 2. (c), including evidence of right, title and interest.
3. A stamped standard boundary survey prepared by a registered land surveyor at a scale not less than one inch to 50 feet.
4. Plans and maps based upon the boundary survey and containing the information found in the attached sample plan checklist.
5. One (1) set of plans reduced to 11 x 17.

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

APPLICANT SIGNATURE:

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

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

Signature of Applicant:	**Date:** November 14, 2014

PROJECT DATA

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

Total Area of Site	152,296	sq. ft.
Proposed Total Disturbed Area of the Site	152,296	sq. ft.
If the proposed disturbance is greater than one acre, then the applicant shall apply for a Maine Construction General Permit (MCGP) with DEP and a Stormwater Management Permit, Chapter 500, with the City of Portland.		
Impervious Surface Area		
Impervious Area (Total Existing)	Disturbed Site - >95%	sq. ft.
Impervious Area (Total Proposed)	>150,000	sq. ft.
Building Ground Floor Area and Total Floor Area		
Building Footprint (Total Existing)	1,127	sq. ft.
Building Footprint (Total Proposed)	113,900	sq. ft.
Building Floor Area (Total Existing)	1,127	sq. ft.
Building Floor Area (Total Proposed)	715,100	sq. ft.
Zoning		
Existing	B-7	
Proposed, if applicable	B-7	
Land Use		
Existing	Unimproved Former Rail Yard and Metal Recycling	
Proposed	Mixed Use	
Residential, If applicable		
# of Residential Units (Total Existing)	0	
# of Residential Units (Total Proposed)	445	
# of Lots (Total Proposed)	6 (2 of which are retained by the City)	
# of Affordable Housing Units (Total Proposed)	0	
Proposed Bedroom Mix		
# of Efficiency Units (Total Proposed)	120	
# of One-Bedroom Units (Total Proposed)	130	
# of Two-Bedroom Units (Total Proposed)	195	
# of Three-Bedroom Units (Total Proposed)		
Parking Spaces	On Street	Garage
# of Parking Spaces (Total Existing)	65	0
# of Parking Spaces (Total Proposed)	49	828
# of Handicapped Spaces (Total Proposed)	0	17
Bicycle Parking Spaces		
# of Bicycle Spaces (Total Existing)	0	
# of Bicycle Spaces (Total Proposed)	176	
Estimated Cost of Project	$85 Million	

Updated: April 23, 2014

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

FINAL PLAN - Level III Site Plan			
Applicant Checklist	Planner Checklist	# of Copies	**GENERAL WRITTEN SUBMISSIONS CHECKLIST (* If applicant chooses to submit a Preliminary Plan, then the * items were submitted for that phase and only updates are required)**
X		1	* Completed Application form
X		1	* Application fees
X		1	* Written description of project
X		1	* Evidence of right, title and interest
X		1	* Evidence of state and/or federal permits
X		1	* Written assessment of proposed project's specific compliance with applicable Zoning requirements
X		1	* Summary of existing and/or proposed easements, covenants, public or private rights-of-way, or other burdens on the site
X		1	* Evidence of financial and technical capacity
X		1	Construction Management Plan
X		1	A traffic study and other applicable transportation plans in accordance with Section 1 of the technical Manual, where applicable.
X		1	Written summary of significant natural features located on the site (Section 14-526 (b) (a))
X		1	Stormwater management plan and stormwater calculations
X		1	Written summary of project's consistency with related city master plans
X		1	Evidence of utility capacity to serve
X		1	Written summary of solid waste generation and proposed management of solid waste
X		1	A code summary referencing NFPA 1 and all Fire Department technical standards
X		1	Where applicable, an assessment of the development's consistency with any applicable design standards contained in Section 14-526 and in City of Portland Design Manual
X		1	Manufacturer’s verification that all proposed HVAC and manufacturing equipment meets applicable state and federal emissions requirements.

Applicant Checklist	Planner Checklist	# of Copies	**SITE PLAN SUBMISSIONS CHECKLIST** **(* If applicant chooses to submit a Preliminary Plan, then the * items were submitted for that phase and only updates are required)**
X		1	* Boundary Survey meeting the requirements of Section 13 of the City of Portland's Technical Manual
X		1	**Final Site Plans including the following:**
X		Existing and proposed structures, as applicable, and distance from property line (including location of proposed piers, docks or wharves if in Shoreland Zone);	
X		Existing and proposed structures on parcels abutting site;	
X		All streets and intersections adjacent to the site and any proposed geometric modifications to those streets or intersections;	
X		Location, dimensions and materials of all existing and proposed driveways, vehicle and pedestrian access ways, and bicycle access ways, with corresponding curb lines;	
X		Engineered construction specifications and cross-sectional drawings for all proposed driveways, paved areas, sidewalks;	
X		Location and dimensions of all proposed loading areas including turning templates for applicable design delivery vehicles;	
X		Existing and proposed public transit infrastructure with applicable dimensions and engineering specifications;	
X		Location of existing and proposed vehicle and bicycle parking spaces with applicable dimensional and engineering information;	
X		Location of all snow storage areas and/or a snow removal plan;	
X		A traffic control plan as detailed in Section 1 of the Technical Manual;	
N/A		Proposed buffers and preservation measures for significant natural features, where applicable, as defined in Section 14-526(b)(1);	
N/A		Location and proposed alteration to any watercourse;	
N/A		A delineation of wetlands boundaries prepared by a qualified professional as detailed in Section 8 of the Technical Manual;	
N/A		Proposed buffers and preservation measures for wetlands;	
X		Existing soil conditions and location of test pits and test borings;	
X		Existing vegetation to be preserved, proposed site landscaping, screening and proposed street trees, as applicable;	
X		A stormwater management and drainage plan, in accordance with Section 5 of the Technical Manual;	
X		Grading plan;	
N/A		Ground water protection measures;	
X		Existing and proposed sewer mains and connections;	

- Continued on next page -

X		Location of all existing and proposed fire hydrants and a life safety plan in accordance with Section 3 of the Technical Manual;
X		Location, sizing, and directional flows of all existing and proposed utilities within the project site and on all abutting streets;
X		Location and dimensions of off-premises public or publicly accessible infrastructure immediately adjacent to the site;
X		Location and size of all on site solid waste receptacles, including on site storage containers for recyclable materials for any commercial or industrial property;
X		Plans showing the location, ground floor area, floor plans and grade elevations for all buildings;
X		A shadow analysis as described in Section 11 of the Technical Manual, if applicable;
X		A note on the plan identifying the Historic Preservation designation and a copy of the Application for Certificate of Appropriateness, if applicable, as specified in Section Article IX, the Historic Preservation Ordinance;
X		Location and dimensions of all existing and proposed HVAC and mechanical equipment and all proposed screening, where applicable;
X		An exterior lighting plan in accordance with Section 12 of the Technical Manual;
N/A		A signage plan showing the location, dimensions, height and setback of all existing and proposed signs;
X		Location, dimensions and ownership of easements, public or private rights of way, both existing and proposed.

Neighborhood Meeting Certification

I, Steve Bushey, FST (consultant) hereby certify that a neighborhood meeting was held on November 13, 2014 at USM Abromson Center – Room 216; 88 Bedford Street at 5:30 p.m.

I also certify that on October 31, 2014 invitations were mailed to all addresses on the mailing list provided by the Planning Division, including property owners within 500 feet of the proposed development or within 1,000 feet of a proposed industrial subdivision or industrial zone change and on the "interested parties" list.

A digital copy of the notice was also provided to the Planning Division (jmy@portlandmaine.gov and ldobson@portlandmaine.gov) and the assigned planner to be forwarded to those on the interested citizen list who receive e-mail notices.

Signed,

Attached to this certification are:

1. Copy of the invitation sent
2. Sign-in sheet
3. Meeting minutes

October 31, 2014

Dear Neighbor:

Please join us for a **Neighborhood Meeting** to discuss our request for Final Level III Subdivision and Site Plan approval to allow for the construction of the **midtown project** on Somerset Street between Elm Street and Pearl Street, and Elm Street between the Portland Trail and lot with Trader Joe's.

Meeting Location:	**University of Southern Maine** **Abromson Center, Room #216** **88 Bedford Street, Portland, Maine** **(parking is available in the adjacent parking garage)**
Meeting Date:	**Thursday, November 13, 2014**
Meeting Time:	**5:30-7:30 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. A sign-in sheet will be circulated and minutes of the meeting will be taken. Both the sign-in sheet and minutes will be submitted to the Planning Board.

If you have any questions, please feel free to contact me at 207-775-1121.

Sincerely,

FAY, SPOFFORD & THORNDIKE

Stephen R. Bushey, P.E.
Senior Principal Engineer

SRB/smk

R:\3062B - midtown Amended - Portland, ME\Admin\Permitting\Local\Final Site Plan & Subdivision\2014.10.30 Neighborhood Meeting Notice.doc

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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 or by email to: bab@portlandmaine.gov

778 Main Street, Suite 8
South Portland, ME 04106
T: 207.775.1121
F: 207.879.0896
www.fstinc.com

FAY, SPOFFORD & THORNDIKE
Offices in: Massachusetts, New Hampshire, Maine, Connecticut and New York

MIDTOWN PROJECT
NEIGHBORHOOD MEETING
NOVEMBER 13, 2014 AT 5:30 PM
SIGN IN SHEET

Steve Bushey	FST Inc.	775-1121
DAVE McKEONE	LABORERS 327	207-458-7700
Don Berry	LMCE 567	207 358-2181
Reggie Munson	IRON WORKERS 7	207-314-3530
James E Hewey	LABORERS local 327	207-312-1028
Kenneth TAVARES	LABORERS 327	207 9518908
Luke J LACROIX -	LABORERS 976	207-725-7348
Jeff Grinnutsky	Portland Resident	207-408-7666
Cicely Russell		207-781-4860
Tim PARADIS	OLD PORT PORTIANO	207-871-9895
Celine Daniell	FST INC	~~885~~ 775-1121
TOM MANNING		917 951 4109
Dan McNutt		207 751 1679

DEVIN MAYO	PORTLAND RESIDENT	207-951-6381
Chris Tucker	LIUNA	207-951-6280
Lewis Overlock	LiUNA	207 951 6353
Tom Donnelly.	CCB.	207 887 3244
Steve Hirshon		3211056
BOB MOZAF		774-4427
DAVID HANCOCK		(617) 262 4354
Alex Landry		alex@citymouse.us

midtown Project
Neighborhood Meeting Minutes
November 14, 2014

Consultant Team: **David Hancock, CBT Architects**
Jonathan Cox, The Federated Companies
Steve Bushey, P.E., FST
Celina Daniell, FST
Bob Metcalf, Mitchell & Associates

Location: **USM Abromson Center – Room 216**
88 Bedford Street, Portland, ME

- Steve Bushey opened the doors at approximately 5:20 p.m. and participants signed in.

- Meeting commenced at approximately 5:40 p.m.

- David Hancock introduced the project and explained that the project had been scaled down from the previous midtown submission made in December 2013.

- A participant inquired about the elevation transition at Somerset Street near the Noyes Building. He wanted clarification how why would you raise to that level since it was abutting right next to the building.

  David H. indicated they were raising the street to level to slightly below the Noyes Building

  David H. and Jonathan C. explained that the City of Portland has a long term plan to raise the Bayside area and the City had mandated The Federated Companies to raise Somerset street to offset the cost to the City.

- No further questions were asked.

- Meeting adjourned 6:30 p.m.

Prepared by:

FAY, SPOFFORD & THORNDIKE

Stephen R. Bushey, P.E.
Senior Principal Engineer

R:\3062B - midtown Amended - Portland, ME\Admin\Correspondence Out\3062b 2014.11.13.2014 Neighborhood Meeting Min..docx

EXHIBIT 2

WRITTEN DESCRIPTION OF THE PROJECT

MIDTOWN PROJECT DESCRIPTION

The proposed project is a mixed-use residential/retail development in the Bayside area of Portland. It consists of four buildings designated *"midtownOne", "midtownTwo", "midtownThree",* and *midtownFour*" further described below. The project will contribute about 90,000 square feet of direct street access retail space at the ground level, about 445 new apartments ranging from 400 square foot studios to 1050 square foot two-bedroom units, and structured off street parking for about 820 vehicles.

The project site is bound on the north by the Bayside Trail, on the East by Pearl Street, on the South by Somerset Street, and on the West by Elm Street. Chestnut Street bisects the site. Immediately neighboring uses consist of Whole Foods to the southeast at Somerset and Franklin Streets, warehousing and open land along Somerset Street opposite the project and low-rise retail and commercial development supported by surface parking extending from the Bayside Trail to Marginal Street to the North. Low and mid-rise residential development extends up the slope from Somerset Street to Portland's downtown district along Congress Street.

The proponent's intent is to lead the way in creating a compact walkable mixed-use residential "main street" anchoring the Bayside neighborhood with continuous retail frontage along Somerset Street, while also improving the trail.

Concurrent with the project portions of both Somerset Street and the Bayside Trail will be raised above FEMA predicted 100-year storm surge/flood level between Pearl Street and Elm Street. Future projects may be expected to raise this infrastructure to the East and West of the project site. Pearl Street to the north of Somerset Street has been designed in such a way as to allow its extension to Marginal Street in the future.

midtownOne and ***Two*** are located between Pearl and Chestnut Streets. They are separated by a mews and courtyard providing public access between Somerset Street and the Bayside Trail. *midtownOne* will be a six-story building containing 80 dwelling units in a mix of studio, one, and two bedroom apartments with a main entrance on Pearl Street. The ground floor retail space is provided with frontage on Somerset Street, the mews, and the courtyard. *midtownOne's* façade will be a mix of synthetic, manufactured and recycled siding materials with vinyl windows on the upper residential levels and glass storefront in aluminum frames on the retail level at grade.

midtownTwo is a seven story-parking garage. The entire ground floor is retail space accessible from Somerset Street, Chestnut Street, and the trail. Elevator and stair cores are located in the northeast and southwest corners to provide access and egress to the mews/courtyard at one end and the corner of Somerset and Chestnut streets at the other. Garage vehicular entrance and retail service access is located at the eastern end to allow the greatest flexibility in retail leasing. This building's facades will consist of architectural precast concrete, painted railings, and "green screen" living plant panels.

The four buildings abut public space on all sides and therefore do not have "fronts" and "backs". All facades of each building are composed of the same materials.

midtownThree is located between Chestnut Street and the Bayside Trailhead connection at the intersection of Elm and Somerset Streets. It consists of 260 apartments in a mix of one and two bedroom dwelling units in a pair of five story buildings over a continuous one-story retail base. The retail space has frontage on all four sides, although access to/from the trail is prevented by a six-foot high berm containing contaminated soil abutting the building along most of its trailside facade. Apartments are accessed through a lobby and elevators on Chestnut Street. Service is located at a single point along Somerset Street contiguous with the apartment building cores. The unobstructed retail space west of these core functions allows the greatest possible flexibility to attract the variety and high quality of merchants who will make the project a success and contribute to the pedestrian desirability of Somerset Street. This building's facades feature projected bays and recesses to give an intermediate scale between the pedestrian scale of the shop fronts and the larger scale created by the block layout of this part of the Bayside neighborhood. Materials are in the same pallet as midtownOne; all buildings will feature neutral gray colors with strong colored accents.

midtownFour is of similar construction to *midtownOne* and *midtownThree*; five stories of residential development over one story of retail space. This building will have 105 studio or loft apartment units with a lobby entry facing Elm Street near the trail. Retail frontage will face Elm Street and the trail. The building's service entrance will be located to the east adjacent to the building's entrance. Move in/move out, delivery and trash/recycling vehicles will use the pull-off provided on Elm St for convenient access to these entrances. This building's façade will also be composed of synthetic, manufactured and recycled siding materials with vinyl windows on the upper residential levels and glass storefront in aluminum frames on the retail level at grade.

In total, the project will consist of approximately 715,100 square feet of new construction in the four buildings. The garage will provide about 828 off-street parking spaces, providing more than one space per dwelling unit and four spaces per thousand square feet of retail space. The development of the midtown buildings will provide construction jobs for the next two to three years and permanent retail jobs to support Portland's entrepreneurial and creative economies.

The buildings will form essentially continuous active street frontage along Somerset, Chestnut, Pearl, and Elm Streets and along the Bayside Trail. The height of the residential buildings at 75 feet, and of the parking garage at 92 feet, are substantially lower than the 105 and 125 foot heights allowed by the B-7 height overlay map for these parcels. The design of the buildings will be in keeping with the city's comprehensive plan for the district. This project will bring great enhancement to Somerset Street, provide residential development immediately adjacent and overlooking the Bayside Trail, and will provide the catalyst for a walkable retail district from Whole Foods to Trader Joe's in the spirit of Portland's other great streets.

A capsule summary of the areas and unit counts in each of the proposed buildings follows on the next page. This also includes a total area of each use and apartment type in the project.

*midtown*One Building:
7,500 sq. ft. net retail area
15 studio apartments, 1 full bath each, average 455 net sq. ft. each
40 1BR apartments, 1 full bath each, average 715 net sq. ft. each
25 2BR apartments, 2 full baths each, average 955 net sq. ft. each
[each apartment and studio has one kitchen sink, dishwasher, and washer/dryer]
[residential heating and cooling by electric split-system heat pumps; retail AC by air-cooled electric AC machines]
Total 80 apartments, net rental area 59,300 sq. ft. +/- Gross building area 90,600 sq. ft. +/-

*midtown*Two Building:
32,000 sq. ft. net retail area
828 total (including 17 handicap and 25 coin-op EV charging stations) parking spaces
[garage is naturally ventilated; elevator machine rooms will have electric heat pumps; retail AC by air-cooled electric AC machines]
Gross building area 266,500 sq. ft. +/-

*midtown*Three Building:
44,000 sq. ft. net retail space
90 1BR apartments, 1 full bath each, average 600 net sq. ft. each
170 2 BR apartments, 2 full baths each, average 800 net sq. ft. each
[each apartment has one kitchen sink, dishwasher, and washer dryer]
[residential heating and cooling by electric split-system heat pumps; retail AC by air-cooled electric AC machines]
Total 260 apartments, net rental area 190,000 sq. ft. +/- Gross building area 289,000 sq. ft. +/-

*midtown*Four Building:
8,000 sq. ft. net retail area
105 studio apartments, 1 full bath each, average 400 net sq. ft. each [each studio has kitchen sink and dishwasher
no washer dryers in units; building will have coin-op W/Ds
[residential heating and cooling by packaged terminal air conditioners; retail AC by air-cooled electric AC machines]
Total 105 studio/lofts; Net rental area 42,000 sq. ft. +/- Gross building area 69,000 sq. ft. +/-

Total *midtown* Project:
Total 91,500 sq. ft. +/- net retail space
Total 828 off-street parking spaces
Total 291,300 sq. ft. +/- net rental area
Total 445 apartments, of which:
- 120 studios
- 130 1BR
- 195 2BR

Total 715,100 sq. ft. +/- gross building area

Prepared by CBT Architects

November 14, 2014

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SURFICIAL GEOLOGY MAP
midtown
PORTLAND, MAINE

SOURCE: MAINE OFFICE OF GIS - SURF LAYER

DeLuca-Hoffman Associates, Inc.
778 MAIN STREET, SUITE 8
SOUTH PORTLAND, ME 04106
207-775-1121
www.delucahoffman.com

DRAWN:	DED
CHECKED:	WGH
DATE:	NOV 2012
FILENAME:	3062-GEOLOGY
SCALE:	1 inch = 1,000 feet

FIGURE

10

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NWI MAP
midtown
PORTLAND, MAINE

SOURCE: CITY OF PORTLAND

DeLuca-Hoffman Associates, Inc.
778 MAIN STREET, SUITE 8
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207-775-1121
www.delucahoffman.com

DRAWN:	DED
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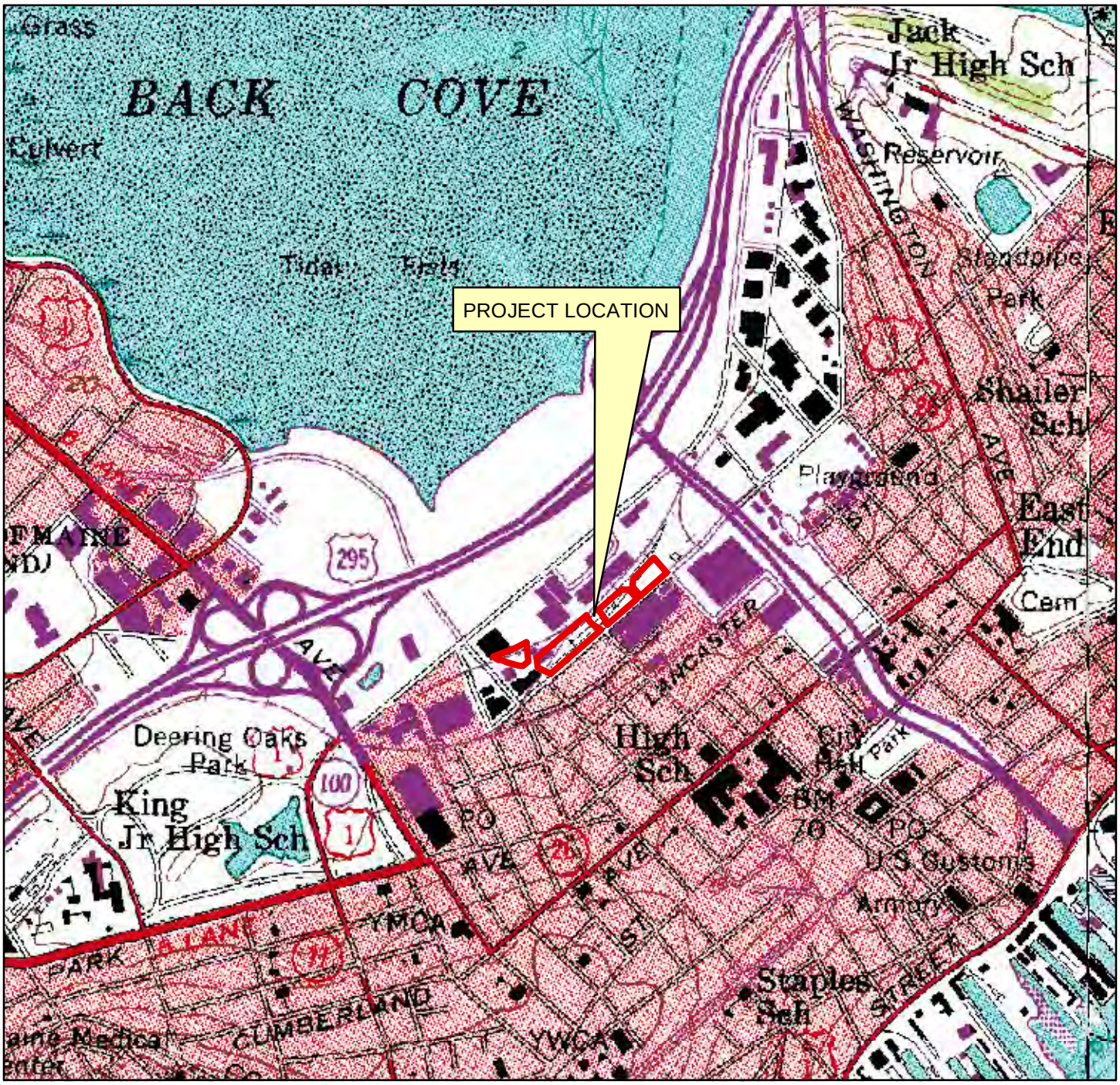
DATE:	NOV 2012
FILENAME:	3062-NWI
SCALE:	1 inch = 1,000 feet

FIGURE

11



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USGS LOCATION MAP
midtown
PORTLAND, MAINE

SOURCE: MAINE OFFICE OF GIS - MAPS

DeLuca-Hoffman Associates, Inc.
778 MAIN STREET, SUITE 8
SOUTH PORTLAND, ME 04106
207-775-1121
www.delucahoffman.com

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DATE:	NOV 2012
FILENAME:	3062-USGS
SCALE:	1 inch = 1,000 feet

FIGURE

2

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TAX MAP
midtown
PORTLAND, MAINE

SOURCE: CITY OF PORTLAND

DeLuca-Hoffman Associates, Inc.
778 MAIN STREET, SUITE 8
SOUTH PORTLAND, ME 04106
207-775-1121
www.delucahoffman.com

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DATE:	NOV 2012
FILENAME:	3062-TAX MAP
SCALE:	1 inch = 1,000 feet

FIGURE

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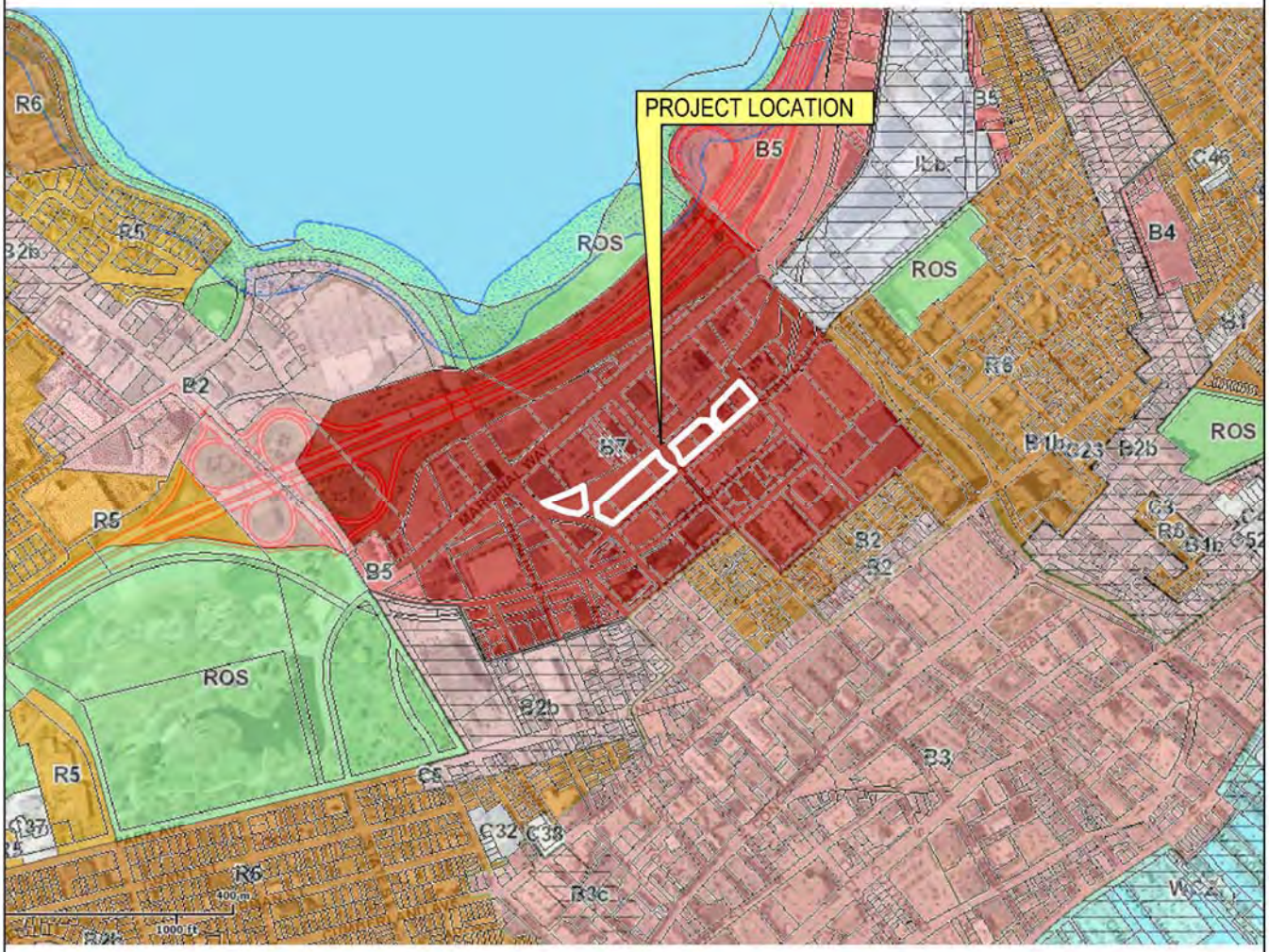

ZONE B7 - URBAN COMMERCIAL BUSINESS

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ZONING MAP
midtown
PORTLAND, MAINE

SOURCE: CITY OF PORTLAND

DeLuca-Hoffman Associates, Inc.
778 MAIN STREET, SUITE 8
SOUTH PORTLAND, ME 04106
207-775-1121
www.delucahoffman.com

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DATE:	NOV 2012
FILENAME:	ZONING
SCALE:	1" = 2000'

FIGURE
4

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AERIAL PHOTOGRAPH
midtown
PORTLAND, MAINE

SOURCE: MAINE OFFICE OF GIS - MAPS

DeLuca-Hoffman Associates, Inc.
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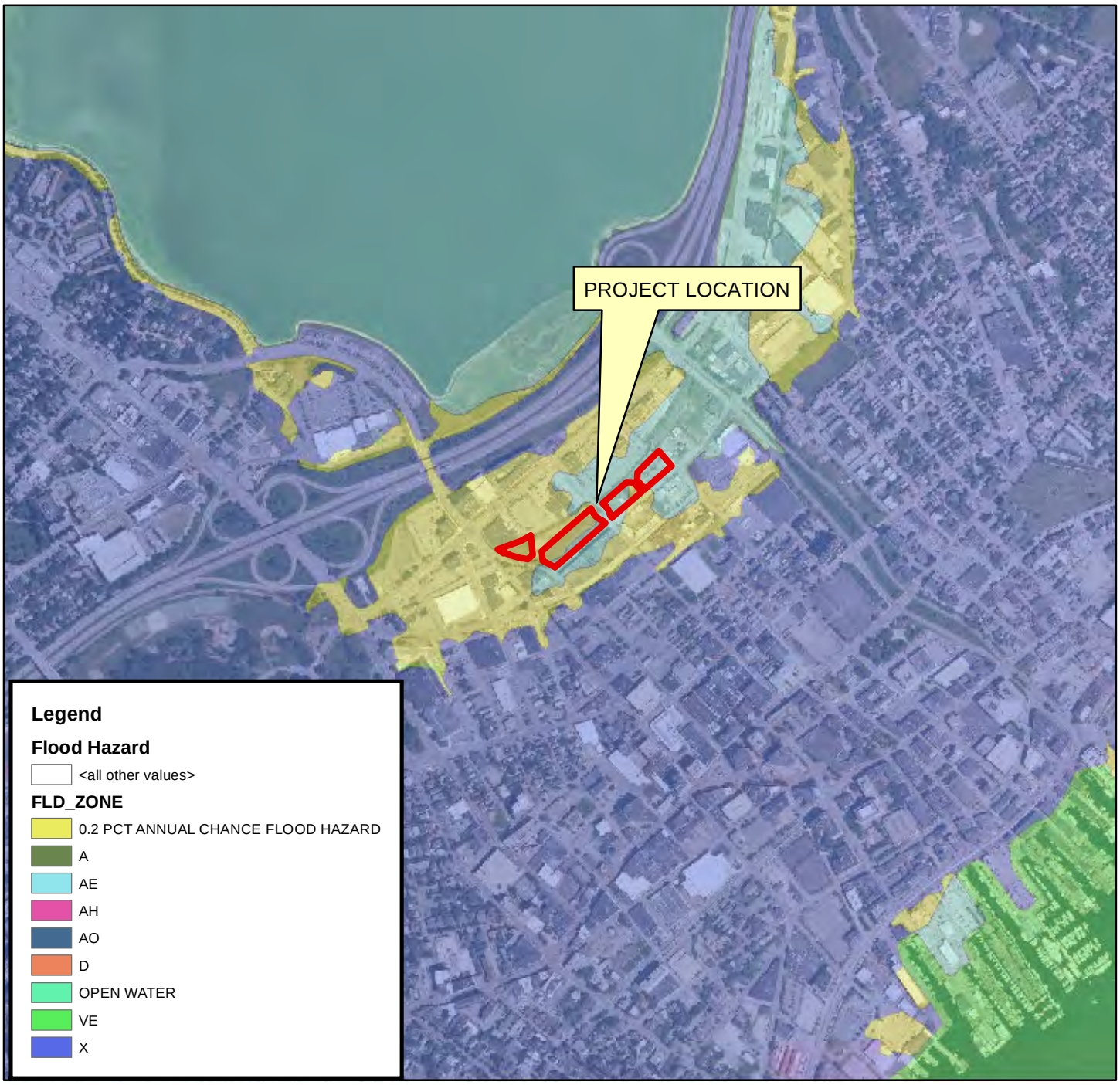
DATE:	NOV 2012
FILENAME:	3062-AERIAL
SCALE:	1 inch = 1,000 feet

FIGURE

5



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FLOOD MAP
midtown
PORTLAND, MAINE

SOURCE: CITY OF PORTLAND

DeLuca-Hoffman Associates, Inc.
778 MAIN STREET, SUITE 8
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207-775-1121
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DRAWN:	DED
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DATE:	NOV 2012
FILENAME:	3062-FLOOD
SCALE:	1 inch = 1,000 feet

FIGURE

7

Soil Legend		
Symbol	Description	Slope
Au	Au Gres loamy sand	--
Cu	Cut and Fill land	--

N
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SOILS MAP
midtown
PORTLAND, MAINE

SOURCE: MAINE OFFICE OF GIS

DeLuca-Hoffman Associates, Inc.
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SOUTH PORTLAND, ME 04106
207-775-1121
www.delucahoffman.com

DRAWN:	DED
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DATE:	NOV 2012
FILENAME:	3062-SOILS
SCALE:	1 inch = 1,000 feet

FIGURE

8

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SAND AND GRAVEL AQUIFER MAP

midtown

PORTLAND, MAINE

SOURCE: MAINE OFFICE OF GIS

DeLuca-Hoffman Associates, Inc.
778 MAIN STREET, SUITE 8
SOUTH PORTLAND, ME 04106
207-775-1121
www.delucahoffman.com

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DATE:	NOV 2012
FILENAME:	3062-AQUIFER
SCALE:	1 inch = 1,000 feet

FIGURE

9

EXHIBIT 3

EVIDENCE OF TITLE, RIGHT OR INTEREST

The following information is included with this Exhibit:

- Corporate Guaranty Agreement
- Purchase and Sale Agreement

CORPORATE GUARANTY AGREEMENT

THIS CORPORATE GUARANTY AGREEMENT, (this "Guaranty"), is made as of the 15th day of Oct, 2012, by **LEGACY PARK APARTMENTS, LLC**, a Florida limited liability company, with a principal place of business at 801 Brickell Avenue, Suite 720, Miami, Florida 33131 ("Guarantor"), and, jointly and severally, by **THE FEDERATED COMPANIES LLC** , a Florida limited liability company, with a principal place of business at 801 Brickell Avenue, Suite 720, Miami, Florida 33131, see below and **THE CITY OF PORTLAND, MAINE**, a body politic and corporate with a place of business at 389 Congress Street, Portland, Maine 04101, ("City").

WHEREAS Guarantor is the assignee, by virtue of an Assignment and Assumption Agreement effective June 27, 2011, ("Assignment"), of a Purchase and Sale Agreement between The City of Portland, Maine, ("City"), effective June 23, 2011, ("Agreement"), as amended, for the purchase of certain blighted and brownfield real property located on Somerset Street, Portland, Maine known as Lots 1, 2, 3, 5, 6, 7,8 and a portion of Lot 9, (collectively, "the Land"), consisting of approximately 3.25 acres formerly known as the "Bayside Railyard";

WHEREAS City, in order to create jobs and economic growth for the Citizens of Portland, Maine, has agreed to make a $9,007,000.00 contribution, ("City Grant Funds"), to Legacy Park Apartments, LLC from funds being provided to the City by the U.S. Department of Housing and Urban Development, ("HUD Funds"), toward the expense of the design, development and construction of a garage, with no fewer than 700 parking spaces on a portion of Lot 5 and all of Lots 6 and 7 and a portion of Lot 9, ("Garage"), pursuant to the terms of a Parking Garage Contribution and Funding Agreement of even or near date hereto between City and Guarantor. ("Parking Garage Agreement").

WHEREAS City, in order to induce Guarantor to enter into this Guaranty and a Job Creation Agreement, hereby agrees to pay the City Grant Funds to Guarantor, Legacy Park Apartments, LLC or its nominee ("Receiving Entity") in accordance with the terms of the Parking Garage Agreement.

WHEREAS Guarantor, contingent on receiving the City Grant Funds, hereby makes the following Guaranty, subject to the conditions contained herein.

NOW THEREFORE in consideration of the mutual promises contained herein and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, City hereby agrees to pay the City Grant Funds to the Receiving Entity and Guarantor guarantees to City that:

1. Guaranty: Guarantor shall construct and substantially complete Phase I of the Project, as more particularly described in the attached Phase I Site Plan, Design Guidelines, and Specifications Sheet, ("Exhibit 4," parts 1, 2, and 3), within three (3) years after the date of on which a total of $1,000,000.00 in City Grant Funds has been requisitioned by the Receiving Entity and disbursed by the City to the Receiving Entity ("Guaranty Deadline"). The annual penalty for not meeting the Guaranty Deadline shall be limited to Guarantor paying to City, on an annual basis for a maximum term of 17 years, the annual difference between the actual tax revenue realized from Phase I, as constructed, and the Phase I tax revenue the City would have received had Phase I been substantially completed (The "Phase I Projected Value") by the Guaranty Deadline. The Phase I Projected Value shall be the City of Portland Asessor's estimated assessed value of the Phase I property (real and personal), made on the April 1 following the Guaranty Deadline, and based on the

description of Phase I in Exhibit 4, and the related specifications and design guidelines provided by the Guarantor on or about July 1, 2012. Notwithstanding anything in the forgoing, this Guaranty is contingent on the full $9,007,000.00 in City Grant Funds being contributed to Guarantor for the construction of the Garage. Guarantor's aggregate, maximum penalty liability under this Guaranty shall not exceed $9,007,000. Finally, regardless of when substantial completion of all buildings in Phase I is achieved, this Guaranty shall automatically terminate, Guarantor shall have zero financial liability under this Guaranty and City shall provide Guarantor with a release from any financial liability under this Guaranty effective as of the earlier of the date of substantial completion of Phase I or as of the date of the timely and valid exercise of the City's right of repurchase under Section 9 of the Parking Garage Agreement, as amended. For purposes of this Guaranty, "substantial completion" is deemed to mean a structure having received a Certificate of Occupancy from the City of Portland, and the complete 'fit-out' of all commercial portions of Phase I.

The rights and obligations under the Agreement between the parties hereto, and under the Parking Garage Contribution Agreement of near or even date, are cumulative and in addition to the rights described herein.

2. Warranties and Representations: In connection with the foregoing, City and Guarantor hereby make the following warranties and representations:

(a) The financial liability limitations of this Guaranty are intended by the parties to supersede and amend the defense and indemnification obligations of the Buyer/Guarantor to City in regard to the City Grant under Section 11 of the Agreement. Similarly, the provisions of the Job Creation Agreement are intended by the parties to supersede and amend the job creation duties and obligations of the Buyer/Guarantor to City under Section 11 of the Agreement. Accordingly, this Guaranty is contingent upon the City paying the City Grant Funds to Guarantor in accordance with the terms of the Parking Garage Agreement, irrespective of the source of funds utilized by the City for such City Grant Funds.

(b) Apart from the express modifications stated in this Guaranty, the Parking Garage Agreement and Job Creation Agreement, the Agreement for the purchase of the Land, as assigned and amended, remains in full force and effect and has not been otherwise modified, amended or terminated.

(c) Attached as Exhibit 1 to this Guaranty is a true, accurate and complete copy of the Purchase and Sale Agreement and First Amendment thereto.

(d) Attached as Exhibit 2 to this Guaranty is a true, accurate and complete copy of the Assignment.

(e) Attached to Exhibit 3 to this Guaranty is a true, accurate and complete copy of the Parking Garage Agreement.

(f) Attached as Exhibit 4 to this Guaranty is the, Phase I Site Plan, Design Guidelines, and Specifications Sheet.

(g) Attached as Exhibit 5 to this Guaranty is a true, accurate and complete copy of the Job Creation Agreement.

(h) Neither the Guarantor, nor the City is in default of the Agreement.

3. Successors and Assigns and Enforcement: This Guaranty shall be binding upon and inure to the benefit of the Guarantor's respective successors and assigns. Guarantor pledges that:

(a) it will not assign its rights hereunder without the City's consent, and only to a related entity;

(b) it will permit the City's Corporation Counsel, Manager, Director of Economic Development and Finance Director to review balance sheet, to satisfy themselves of the strong solvency and net worth of both the Guarantor and The Federated Companies LLC;

(c) it will not substantially change such strong solvency and net worth without notifying the City of such changes;

(d) it will not alter its corporate structure or transfer substantially all its assets without providing the City a replacement Guaranty from another entity with strong solvency and net worth, or in the alternative, a letter of credit for the obligations hereunder; and

(e) In any legal proceeding with respect to the obligations created by this Guaranty, all parties hereto waive jury trial, agree that the Maine Superior Court shall have exclusive jurisdiction, that the substantive and choice of law used shall be Maine law and that the prevailing party shall be awarded the reasonable attorneys' fees and costs incurred in regard to any legal proceeding arising out of the obligations created by this Guaranty, including, should the City prevail, a reasonable hourly fee for the services of the City's employee attorneys, that is, its Corporation Counsel.

(f) This Agreement and the performance hereof by Guarantor will not contravene any law, judgment, order, injunction, decree or any contractual restriction or arrangement binding on Guarantor, at the time execution hereof. All parties hereto acknowledge that this Agreement is a legally enforceable instrument and the obligations stated herein are likewise legally enforceable, and that at the time of execution hereof they have no reason to believe otherwise.

4. Counterparts: This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

5. Amendments: This Guaranty may not be amended in any respect whatsoever except by a further agreement, in writing, fully executed by each of the parties.

(Signature page follows on p. 4.)

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their duly authorized representatives under seal as of October 19, 2012.

LEGACY PARK APARTMENTS LLC, a Florida limited liability company

Brett DePetrillo
COMMISSION # DD992811
EXPIRES: MAY 17, 2014
WWW.AARONNOTARY.com

By:_____
Jonathan Cox, Manager

CITY OF PORTLAND

By:_____
Mark H. Rees
City Manager

JOINDER

THE FEDERATED COMPANIES LLC, a Florida limited liability company, with a principal place of business at 801 Brickell Avenue, Suite 720, Miami, Florida 33131, hereby joins in this Guaranty, agreeing that it is jointly and severally liable for, and hereby makes, the same guaranty and other obligations as described in the paragraphs numbered 1, 2 and 3 above, subject to the terms and conditions stated therein.

THE FEDERATED COMPANIES, LLC, a Florida limited liability company

By:_____
Jonathan Cox, Manager

Finance Director
City of Portland, Maine

APPROVED AS TO FORM:

CORPORATION COUNSEL'S OFFICE

EXHIBIT 1

[P&S]

EXHIBIT 2

[Assignment to Legacy Park]

FIRST AMENDMENT TO PURCHASE AND SALE AGREEMENT

THIS FIRST AMENDMENT TO PURCHASE AND SALE AGREEMENT, ("Amendment"), is entered into as of Oct. 15, 2012, by and between **THE CITY OF PORTLAND, MAINE**, a body politic and corporate with a place of business at 389 Congress Street, Portland, Maine 04101 ("Seller") and **LEGACY PARK APARTMENTS LLC**, a Florida limited liability company with a place of business at 801 Brickell Avenue, Suite 720, Miami, Florida 33131, or its nominee or assignee ("Buyer"). (Seller and Buyer are also hereinafter referred to individually as "party" or, collectively, "parties").

WHEREAS Buyer is the assignee, by virtue of an Assignment and Assumption Agreement, ("Assignment"), effective June 27, 2011 of a Purchase and Sale Agreement, effective June 23, 2011, between The Federated Companies LLC and Seller ("Agreement"). Assignment and Agreement are attached hereto and incorporated herein by reference, collectively, as Exhibit "A".

WHEREAS Section 11 of the Agreement requires that the Seller and Buyer enter into a formal agreement stipulating to the terms and conditions of the Seller's contribution of HUD Funds during the Inspection Period.

WHEREAS Section 11 of the Agreement provides that the Inspection Date shall be extended until the parties have reached agreement on the use of HUD Funds for the garage.

NOW THEREFORE for good and valuable consideration, including the mutual promises made below, the receipt and sufficiency of which are hereby acknowledged, the parties hereby agree that the Agreement is amended as follows:

A. Section 4 of the Agreement is amended by deletion of the original text of Paragraph 2 and insertion of the following text in its place:

"The term "Inspection Date" means midnight on the sixtieth (60th) day following full execution by the parties and HUD approval, if HUD approval is required, of the formal agreement stipulating the terms and conditions of the HUD Funds contribution identified under Section 11 of this Agreement."

B. Section 5 of the Agreement is amended by deletion of the original text and insertion of the following in its place:

C. Section 5. **Use Restrictions and Environmental Matters**. Buyer understands that lots 1, 2, 3, 5 and a portions of lot 6 and a portion of lot 9 were encumbered with deeds restrictions, including but not limited to a restriction on residential uses on a portion of the Property. Pan Am/Guilford, the holder of those restrictions has released these restrictions, and before the start of construction by Buyer the Seller will secure environmental liability insurance on the Railyard to protect Pan

Am/Guilford, which was a condition of its releasing these restrictions.

The Seller, through its consultant and others has undertaken a number of environmental studies which are referenced in Exhibit B to this Amendment. The Maine Department of Environmental Protection (hereinafter "DEP") has issued one or more letter(s) confirming their approval of a Voluntary Response Action Program ("VRAP") Plan for the former rail yard property which is contained within lots 1, 2, 3, 5 and a portion of lot 6 and a portion of lot 9 (hereinafter "Railyard"). The VRAP includes a remediation plan approved on the Railyard property by the DEP. As part of the development plan for the Railyard property, Buyer is responsible for complying with the remediation VRAP Plan for the Property. To the extent required by law, the approval of the U.S. Environmental Protection Agency shall also be obtained for both of these VRAP Plans.

The Seller has commenced review of the environmental conditions for on the portion of Property which is contained within a portion of Lot 6 and Lots 7, 8 and a portion of Lot 9, (hereinafter "Scrapyard"). The Seller will secure a VRAP for the Scrapyard (subject to Buyer's input and approval) and Buyer shall undertake remediation in accordance with the VRAP. The Seller will reimburse Buyer for its first Fifty Thousand Dollars ($50,000.00) of actual expense for such remediation, and all other costs of remediation, which shall fully comply with such VRAP, shall be paid by the Buyer from City Grant Funds received from City. The Seller will work together with the Buyer to ensure the timely remediation in accordance with the Buyer's development plans.

Although Buyer is under no obligation to obtain such environmental liability insurance, should Buyer, at Buyer's sole election, secure environmental liability insurance on the Scrapyard and/or any other portion of the Property, Buyer will use best efforts to secure for the Seller the option to obtain coverage under such insurance policy(ies) as an Additional Insured, by endorsement in any other form; provided, however, that any additional cost for such additional coverage shall be paid by the Seller and shall not relieve Seller of the duty of providing the environmental liability insurance required to provide on the Railyard for the benefit of PanAm/Guilford described above.

D. Section 6 of the Agreement is amended by adding, at the end of the existing first sentence, "including but not limited to Site Plan approval from the City of Portland, Subdivision Approval Amendment(s) from the City of Portland, and any amendments to the Land Use Code of the City of Portland."

E. The first sentence of Section 11 of the Agreement is amended by deleting the existing text, and replacing it with the following:

Contingent on the full disbursement of $9,007,000.00 in City Grant Funds from Seller to Buyer as provided in the Parking Garage Contribution Agreement, and as a condition of this sales transaction, the Buyer will construct, at its expense, a parking garage on (approximately, as the exact location is not yet set), a portion of Lot 5 and all

of Lots 6 and 7 and a portion of Lot 9 which shall contain not less than 700 parking spaces. ("Garage").

F. Section 11 of the Agreement is amended by deleting the original text of numbered Paragraph 4 and the insertion of the following text in its place:

"Buyer shall construct the Garage using sustainable and energy efficient construction methods, including, but not limited to, energy efficient lighting."

G. Section 15 of the Agreement is amended by deletion of the original text and insertion of the following in its place:

"Section 15. Rights of Seller to Repurchase Undeveloped Property.

(a) If three years after the substantial completion of the Garage, construction activity has not been commenced and diligently pursued on any other portions of the Property, the Seller shall have a one-time right to notify Buyer in writing of such default under this Section within thirty (30) days of such default and Buyer shall have ninety (90) days thereafter to cure such default. Provided, however, that there shall be no event of default by Buyer if the City is in default of any provision of the Parking Garage Contribution Agreement. If Seller fails to provide Buyer with written notice of default within thirty (30) days of such default, then the provisions of this Section shall be deemed waived by Seller.

(b) If the Garage does not reach substantial completion within three years after the date of closing on the purchase by Buyer of the Property related to the Garage then the Seller shall have a one-time right to notify Buyer in writing of such default under this Section within thirty (30) days of such default and Buyer shall have ninety (90) days thereafter to cure such default. If Seller fails to provide Buyer with written notice of default within thirty (30) days of such default, then the provisions of this Section shall be deemed waived by Seller.

If Buyer fails to cure a default under either 15(a) or 15(b) above, the Seller shall have the right or remedy, but not the obligation, which is described in this paragraph in concept: namely, to repurchase any or all such portions of the undeveloped Property at Buyer's Purchase Price (prorated with respect to the quantity of land, as necessary). Seller may, at the closing of such repurchase, use such consideration (that is, the prorated portion of Buyer's Purchase Price) to pay-off and remove any and all then existing mortgages, liens, assessments or other encumbrances on the undeveloped Property being repurchased. Any amounts by which such then existing mortgages, liens, assessments and other encumbrances exceed such consideration, shall continue to the obligations of Buyer, or its successors or assigns; and Buyer, its successors or assigns, shall indemnify Seller with respect to such excess amounts.

The City acknowledges that Legacy Park will most likely use the entire Property as collateral for a construction loan for the purpose of developing and building all portions of the project. The City therefore agrees to work on documents at the time of such financing, with Buyer and its construction lender, to make it possible for the City to have the remedy described above in concept, and to also permit such construction financing. Buyer agrees that while this right or remedy exists as described in the paragraph above no portion of the Property will not be mortgaged for any purpose other than development and construction of the Project.

It is noted here that the 'Parking Garage Contribution Agreement' contains Seller's remedies with respect re-acquisition of the parking garage portion of the Property, and the Rights created by this Section do not pertain to that property." The rights and obligations under the Corporate Guaranty Agreement and the Parking Garage Contribution Agreement, both of near or even date are cumulative and in addition to the rights described herein.

H. The original description of the Land in the Purchase and Sale Agreement is hereby modified to include this conveyance a portion of Lot 9, and the "Exhibit ~~A~~ C" to the Purchase and Sale Agreement is hereby replaced with the "Exhibit ~~A~~ C to the Purchase and Sale Agreement, [2012]" attached hereto.

Except as amended above, all other terms and conditions of the Agreement remain unaffected by this Amendment, are in full force and effect between the parties and are hereby ratified by the parties.

All terms capitalized herein shall have their original meaning as defined in the Agreement unless otherwise defined herein. In the event of conflicting provisions or language in this Amendment and the Agreement, this Amendment is intended to control.

This Amendment may be signed in counterparts, which shall be construed together as one document.

IN WITNESS WHEREOF, the parties hereto have executed this Amendment as of the day and year first written above.

SELLER:

CITY OF PORTLAND

By: _____
Name: Mark H. Rees
Title: City Manager
Date of Execution: 10-15-12

BUYER:

THE FEDERATED COMPANIES, LLC

By: _____
Name: Jonathan Cox
Title: Manager
Date of Execution: 10/9/12

September 6, 2012 by LCW
O: Bayside - Federated Companies Purchase and Sale Agreement 2final FIRST AMENDMENT TO PURCHASE AGREEMENT for Execution.doc

Approved: Ellen Sanborn, Finance Director

Approved as to Form: Corp. Counsel

EXHIBIT "A"
TO FIRST AMENDMENT TO
PURCHASE AND SALE AGREEMENT

[insert Assignment AND P&S]

EXHIBIT A

ASSIGNMENT AND ASSUMPTION AGREEMENT

THIS ASSIGNMENT AND ASSUMPTION AGREEMENT (this "Agreement") is made as of the 27th day of June, 2011, by and between **THE FEDERATED COMPANIES, LLC**, a Florida limited liability company, with an address of 404 Washington Avenue, Suite PH, Miami Beach, FL 33139 (together, the "Assignor") and **LEGACY PARK APARTMENTS LLC**, a Florida limited liability company, with an address of 404 Washington Avenue, Suite PH, Miami Beach, FL 33139 (the "Assignee").

For and in consideration of the sum of One Dollar ($1.00) and other valuable consideration to it in hand paid by the Assignee to the Assignor and the mutual covenants herein contained, the receipt and sufficiency of the foregoing consideration being hereby acknowledged, the parties hereto agree as follows:

1. **ASSIGNMENT:** The Assignor hereby assigns, transfers, sets over and conveys to the Assignee all of the Assignor's right, title and interest in, to and under that certain Purchase and Sale Agreement by and between The City of Portland, Maine (the "City") and Assignor, with respect to certain real property described therein (the "Purchase Agreement").

2. **ASSUMPTION:** The Assignee does hereby assume and agree to perform all of the Assignor's obligations with respect to the Agreement accruing from and after the date hereof. Assignee acknowledges that Assignor has posted the required deposit under the Purchase Agreement and agrees that such deposit shall be refunded to Assignor upon Assignee's closing on the acquisition under the Purchase Agreement.

3. **WARRANTIES AND REPRESENTATIONS:** In connection with the foregoing assignment and assumption of the Purchase Agreement, the Assignor does hereby make the following warranties and representations:

(a) The Purchase Agreement remains in full force and effect and has not been modified, amended or terminated;

(b) Attached as Exhibit A to this Agreement is a true, accurate and complete copy of the Purchase Agreement; and

(c) Neither the Assignor nor, to the best of Assignor's knowledge without inquiry, the City is in default of the Purchase Agreement.

With the exception of the foregoing warranties, this Assignment is made without recourse or representation or warranty, express, implied or by operation of law, of any kind and nature whatsoever.

4. **SUCCESSORS AND ASSIGNS:** This Agreement shall be binding upon and inure to the benefit of the Assignor and the Assignee and their respective successors and assigns.

5. **COUNTERPARTS:** This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

6. **AMENDMENTS:** This Agreement may not be amended in any respect whatsoever except by a further agreement, in writing, fully executed by each of the parties.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their duly authorized representatives under seal as of June 27, 2011.

ASSIGNOR:

THE FEDERATED COMPANIES, LLC, a Florida limited liability company

By:_____
Jonathan Cox, Manager

ASSIGNEE:

LEGACY PARK APARTMENTS LLC, a Florida limited liability company

By:_____
Jonathan Cox, Manager

Exhibit A

PURCHASE AND SALE AGREEMENT

This Purchase Agreement (this "Agreement"), is entered into as of the Effective Date, as defined below, by and between The City of Portland, Maine a body politic and corporate with a place of business at 389 Congress Street, Portland, Maine 04101 ("Seller") and The Federated Companies LLC, a Florida limited liability company with a place of business at 404 Washington Avenue, Suite PH, Miami Beach, FL 33139 or its nominee or assignee ("Buyer").

WHEREAS, Seller is the Owner of a certain real property located on Somerset Street, Portland, Maine which contains approximately 3.25 acres and which is known as lots 1, 2, 3, 5, 6, 7 and 8, which land is further described in Exhibit A, attached hereto and incorporated herein (collectively "the Land") and

WHEREAS, Seller seeks to sell the Land for development purposes; and

WHEREAS, Buyer desires to acquire the Land from Seller, and Seller seeks to sell the same to Buyer on such terms as are set out herein,

Now Therefore, in consideration of the foregoing and for good and valuable consideration, the parties intend to be legally bound as follows:

Section 1. Property. The Land, all rights and privileges appurtenant to the Land and all improvements located on the land, are referred to collectively as the "Property." The Seller agrees to sell the Property to Buyer on the terms and conditions contained herein. The parties understand and agree that a portion of land representing a trail access from Somerset Street as shown on Exhibit A-1, may need to be adjusted depending on the nature and extent of development on Lots 6 and 7. The trail access adjustment shall be subject to the mutual agreement of the parties on the placement of the lot lines and the trail access

Section 2. Purchase Price and Deposit. The "Purchase Price" for the Property shall be Seven Hundred Thousand Dollars ($700,000) per acre and shall be paid in cash (or by certified or bank check or federal funds wire transfer) at the Closing as defined in Section 8 of this Agreement subject to the adjustments described in this Agreement. The calculation of the acreage of the Property shall be made by the Seller providing, not later than forty-five (45) days after the Effective Date, an ALTA survey, satisfactory to Buyer and Buyer's lender, of the Property, excluding that portion of land utilized for trail access as described above. Within ten (10) business days after the Effective Date of this Agreement, Buyer shall deliver to a nationally-recognized title company ("Escrow Agent") the sum of Twenty Five Thousand Dollars ($25,000) (the "Initial Deposit"), which shall be held in escrow in accordance with the terms of Section 14 of this Agreement. The Initial Deposit, and any other deposits made by Buyer under the terms of this Agreement shall be held by the Escrow Agent, and is referred to collectively as the "Deposit." The Deposit shall be

applied toward the Purchase Price at the Closing unless otherwise forfeited by the Buyer pursuant to the terms of this Agreement.

Section 3. Title.

(a) Seller shall convey its interest in the Property to Buyer by a good and sufficient quitclaim deed with covenant (the "Deed"). The Deed shall convey insurable title to the Property and be free of encumbrances except (i) zoning, environmental and subdivision laws, rules, regulations and restrictions and other land use matters; and (ii) any "Defects of Title" (as defined below) accepted or waived by Buyer pursuant to Section 3(b). Buyer acknowledges that: the deed of conveyance shall contain a restriction lasting for 30 years, including the 30th year, starting on the closing date, that, in the event that the property or any portion thereof shall be exempt from real and personal property taxes then a yearly payment by the then-owner of the exempt portion shall be made in lieu of taxes equivalent to the property taxes that would otherwise be paid on the exempt portion of the real and personal property situated on Property, which restriction shall also confirm that Buyer and its successors and assigns shall possess and be vested with all rights and privileges as to abatement and appeal of valuations, rates and the like as are accorded owners of real and personal property in Maine. For purposes of this Agreement, insurable title means title which an insurance company with a rating of B+ or better by Standard & Poor's (or other comparable rating by another rating organization) licensed to do business in Maine is willing to insure upon payment of a premium at customary and filed rates on a standard ALTA Form B Policy (rev. October 17, 1992) with no exceptions listed on Schedule B, Part I thereof, except for the standard exceptions and Defects of Title pursuant to paragraph 3(b) below, with no indemnification or legal opinion to be required from Buyer to issue such policy, and with the creditor's rights exception deleted.

(b) On or before the date that is forty-five (45) days after the Effective Date, Buyer shall notify Seller of any defects in title that would make Seller unable to give title to the Property as herein stipulated or which would otherwise adversely affect Buyer's intended development of the Land (any of which is called herein a "Defect of Title"). Buyer shall be deemed to have waived any objection to any Defect of Title that existed as of the Effective Date if Buyer fails to notify Seller of such Defect of Title on or before the end of such 45-day period. With respect to the existence of any Defect of Title that does not exist on the Effective Date but which arises prior to the Closing Date, Buyer shall notify Seller of any such Defect of Title on or prior to the Closing Date as defined in Section 8 hereof. Seller shall have, at its option, a period of not more than sixty (60) days after receipt of notice(s) of any defect in title within which to remedy or cure any Defect of Title and Seller agrees to use good faith efforts to cure such Defect of Title. If the Closing Date shall fall within the said 60-day period, it shall be extended to the date that is the date that is ten (10) business days after the expiration of such 60-day period or after the date such Defect of Title is cured to Buyer's reasonable satisfaction (but in no event shall the Closing Date be earlier than is otherwise provided herein). Buyer shall have ten (10) business days after receipt of notification by Seller that the Defect of Title has been cured to advise Seller whether it is satisfied with the title defect cure. If such Defects of Title are not corrected or remedied within such 60-day period, then Buyer shall elect by written notice to the Seller on or before the Closing Date, as the same may be extended, either (i) to accept title to the Property subject to the uncured Defects of Title without reduction of

the purchase price and without any right to damages and without any other liability on the part of Seller, or (ii) to terminate this Agreement, whereupon the Deposit shall be returned to Buyer and all obligations of the parties hereunder shall cease and neither party shall have any claim against the other by reason of this Agreement, except with respect to any provision hereof that expressly survives the termination of this Agreement. For purposes of this subsection (b), Seller may elect to cure or remedy any Defect of Title by providing Buyer with a binding commitment from a title insurance company licensed to do business in Maine committing to issue an endorsement to Buyer's owner's title insurance policy providing affirmative coverage for such Defect of Title at no additional premium to Buyer beyond any premium required for such title policy without such endorsement; and Buyer agrees to accept such affirmative coverage as a cure or remedy for such Defect of Title provided that the form and content of such affirmative coverage is satisfactory to Buyer and its advisors in their reasonable discretion; or the Seller may cure by other means satisfactory to the Buyer.

Any time taken to cure any defect in title shall extend by the same amount of time the Inspection Date described by section 4 of this Agreement.

(c) Seller represents and warrants to Buyer, effective as of the date of this Agreement and also effective as of the date of Closing, that: (i) Seller holds good and clear, record and marketable title to the Property in fee simple; (ii) there are no uncorrected violations of any laws or codes with respect to the Property, its condition, or use; (iii) no options, rights of first refusal, or other contracts have been granted or entered into which give any other party a right to purchase or acquire any interest in the Property or obligate the Seller in any respect; (iv) there are no leases, licenses, or other occupancy agreements in effect with respect to any part of the Property, other than a deed restriction preventing residential use and other uses as required which Seller shall seek to lift before Closing; (v) Seller has not received written notice of any planned or threatened condemnation or eminent domain proceedings with respect to the Property; (vi) the Property abuts a public way which imposes no access restrictions; (vii) this Agreement has been duly authorized by all requisite action and is not in contravention of any law or organizational documents and this Agreement has been duly executed by a duly authorized officer or official of Seller; (vii) Seller's execution of this Agreement does not violate any other contracts, agreements, or any other arrangements of any nature whatsoever that Seller has with third parties and (ix) the Seller shall seek to obtain, at its sole cost and expense, such environmental insurance as may be agreed upon by Seller and PanAm/Guilford, as a prior titleholder, that is sufficient to get PanAm/Guilford to lift the current deed restrictions on uses. Seller will not cause nor, to the best of Seller's ability, permit any action to be taken which would cause any of Seller's representations or warranties to be false as of Closing, and in any event shall notify Buyer of any change in these representations and warranties. Seller's representations and warranties shall survive the Closing and the delivery of the Deed.

Section 4. Inspection of Property. Buyer, and those parties controlled by Buyer or associated with Buyer, shall have the right to access the Property to inspect its condition, including, without limitation, making surveys, testing the geotechnical quality of soils and whether any Hazardous Materials exist (including sub-surface), and pursuing permits and approvals. Seller shall cooperate with Buyer, without material cost to Seller, in connection with all such inspections and

actions by Buyer, including without limitation, by delivering to Buyer within ten (10) days of the effective date of this agreement, copies of any and all surveys, permits, title reports, hazardous waste reports, environmental assessments, geotechnical reports, samplings and investigations, all contracts and leases affecting the Property, any documents relating to the physical condition of the Property (including, without limitation, any improvements located thereon) and the status of the Property's compliance with applicable building code, zoning, land use and environmental laws, rules and regulations, feasibility studies (including financing), building and site plans, floor plans, property inspections, elevation studies, appraisals or other such pertinent information Seller has compiled related to the property and/or the proposed development that is in the Seller's possession or control, and signing any consents or authorizations for permit applications that may be required. If Buyer does not purchase the Property for any reason then Buyer shall promptly repair any damage that it may have caused.

The term "Inspection Date" means midnight on the sixtieth (60th) day following the Effective Date.

If Buyer is not satisfied with the condition of the Property for any reason, or no reason, in its sole discretion, then Buyer may terminate this Agreement by delivering written notice of such termination to Seller no later than five (5) days after the Inspection Date, in which event the Escrow Agent shall immediately return the Initial Deposit to Buyer. However, if Buyer does not so terminate this Agreement, then the parties shall proceed forward in this transaction. Upon Buyer's election to move forward, the Buyer shall deposit, within five (5) days, an additional Twenty Five Thousand Dollars ($25,000) in escrow with the Escrow Agent as Additional Earnest Money ("Additional Deposit"). Both the Deposit and the Additional Deposit shall be deemed non-refundable except in the event that the Seller fails to perform or the Buyer is unable to obtain the permits and approvals. The Deposit and the Additional Deposit shall be credited against the purchase price upon closing unless forfeited as otherwise provided in this Agreement.

Section 5. Covenants of the Seller. The Seller, through its consultant and others have undertaken a number of environmental studies which are referenced in Exhibit B to this agreement. The Maine Department of Environmental Protection (hereinafter "DEP") has issued one or more letter(s) confirming their approval of a Voluntary Response Action Program ("VRAP") Plan for the former rail yard property which is contained within lots 1, 2, 3, 5 and a portion of 6 (hereinafter "Railyard"). The VRAP includes a remediation plan approved on the Railyard property by the DEP. As part of the development plan for the Railyard property, Buyer shall be responsible for complying with the remediation plan for the property.

Buyer understands that lots 1, 2, 3, 5 and a portion of lot 6 are encumbered with deed restrictions, including but not limited to a restriction on residential uses on a portion of the Property. Pan Am/Guilford, a prior owner of the property has the sole discretion and is under no obligation to remove said deed restrictions. Provided that Pan Am/Guilford is in agreement with the insurance coverage provided by the Seller, the Seller will secure environmental liability insurance on the Railyard portion of the Property which will permit Pan Am/Guilford and the Seller to remove the deed restrictions on the property for residential and other uses, as required by Buyer.

The Seller has commenced review of the environmental conditions on the portion of the Property which is contained within a portion of Lot 6 and Lots 7 and 8 (hereinafter "Scrapyard"). The Seller will secure a VRAP for the Scrapyard (subject to Buyer's input and approval) and shall undertake remediation at its sole cost and expense in accordance with the VRAP. The Seller will work together with the Buyer to ensure the timely remediation in accordance with the Buyer's development plans. Buyer understands and agrees that no residential uses shall be approved on Lots 7 and 8 of the Scrapyard, even if such uses are allowed by the VRAP.

Section 6. Permit Period. Buyer shall have an additional One Hundred and Eighty (180) days following the Inspection Date (the "Permit Period") in which to obtain the permits and approvals that are necessary or desirable for Buyer's contemplated development of the Property for a mixed-use project including a parking garage as described in Section 11 of this Purchase Agreement. Buyer shall work with the City on the development of a master plan of all properties. Subject to the mutual agreement of the parties, the master plan may, but is not required to, include the elimination of the accessway from Somerset St to the Bayside Trail between Lots 6 and 7 or the 20ft wide accessway from Somerset St. to the Bayside Trail running through Lot 3, and the purchase of the underlying property in the accessway between Lots 6 and 7 by Buyer. It is the intent of the Buyer to build a mixed-use project which incorporates goals proposed by the City in its "A New Vision for Bayside", including, but not limited to, provide commercial and/or retail space on the first floor to allow for a user friendly neighborhood. If, by the end of the Permit Period, Buyer has not obtained all such permits and approvals, with all appeal periods with respect to such permits and approvals having expired with no appeal having been taken (or if taken, then with such appeal having been resolved to Buyer's satisfaction), then Buyer may terminate this Agreement by delivering written notice of such termination to Seller no later than five (5) business days after the end of the Permits Period, in which event the Deposit shall be returned to Buyer as provided in the Escrow Agreement. However, if Buyer does not so terminate this Agreement then the parties shall proceed forward in this transaction in accordance with the terms of this Agreement and the Deposit shall become non-refundable (except in the event of a Seller default, or because the Closing does not occur due to the failure of a condition precedent or as otherwise provided in this Agreement), but the Deposit shall always remain applicable to the Purchase Price unless otherwise provided by this Agreement.

During the Permit Period, as soon as practicable but no later than the same time as the Buyer presents its formal application for site plan approval, the Seller will present its plan for subdivision amendments to the Land consistent with the needs of the Buyer's site plan approval. The Seller shall be the applicant for the subdivision amendment, whether the review is done administratively or otherwise. Buyer shall provide, at its sole cost and expense, all required surveys in connection with the necessary subdivision amendments.

Notwithstanding anything in the foregoing to the contrary, Buyer shall have the right to extend the Permit Period up to three times, each extension for a period of thirty (30) days, by notifying Seller in writing of such extension within five (5) business days after the end of the then-current Permits Period, and depositing with Escrow Agent an additional deposit of Three Thousand Dollars ($3,000) per extension (the "Permit Extension Deposit"). The Permit Extension Deposit shall be

considered part of the Deposit and shall non-refundable (except in the event of a Seller default, or because the Closing does not occur due the failure of a condition precedent or if Buyer/Seller is unable to obtain the permits and approvals or as otherwise provided in this Agreement), but the Deposit shall always remain applicable to the Purchase Price as provided herein. All references in this Agreement to the Permit Period shall mean the Permit Period as the same may be extended in accordance with the terms of this paragraph.

Section 7. Conditions Precedent to Closing. Seller and Buyer's obligation to Close hereunder are conditioned upon the satisfaction of the following conditions:

(a) there shall be no pending or threatened action, suit, litigation, hearing or administrative proceeding relating to Seller, any entity comprising Seller, or to all or any portion of the Property;
(b) the Property shall be free and clear of any leases, licenses, occupancy agreements, and any other parties in possession;
(c) Seller shall have delivered to Buyer such documentary and other evidence as the Buyer's title company may reasonably require evidencing Seller's authority, the absence of mechanic's liens and parties in possession, and any other matters that the title company may reasonable require;
(d) all of Seller's obligations under this Agreement shall have been performed and all its representations and warranties shall be true and correct;
(e) the condition of the Property (including without limitation the condition of the Property with respect to title and survey matters, as well as the presence of fixtures, equipment, and other personal property that is to be transferred at the Closing as elected by Buyer) shall be as required by this Agreement and no changes shall have occurred to such condition of the Property since the date of this Agreement (Buyer shall have the right to re-inspect the Property prior to the Closing to confirm the foregoing);
(e) notwithstanding anything in this Agreement to the contrary, Buyer shall have obtained any and all permits and approvals necessary or desirable for its contemplated development of the Property, with all appeal periods with respect to such permits and approvals having expired with no appeal having been taken (or if taken, then with such appeal having been resolved to Buyer's satisfaction);
(f) any hazardous materials on the property shall be handled in accordance with the requirements of the applicable VRAP agreement and this Agreement;
(g) Seller shall have paid, or will pay at or prior to Closing, all taxes, assessments, charges, fees, levies and impositions, coming due prior to the Closing Date;
(h) if any subdivision or other governmental approval is required in order to convey the Property as a separate parcel or lot then Seller shall have obtained all such subdivisions and/or other governmental approvals and shall have recorded any and all required plans in connection with the same;
(i) from and after the Effective Date, there shall have occurred no material adverse change to the Property (or any material portion thereof) which is continuing at the date and time scheduled for Closing which could have an adverse impact on Buyer's intended use of the Property; and
(k) Buyer shall have secured all permits, licenses and approvals (not subject to further action) necessary to construct its proposed mixed-use facility and parking garage on the Property.

Section 8. Closing. The Closing shall be held and completed at 10:00 A.M. or at such other time as may be agreeable to the parties at the office of the Buyer's lender's counsel in Portland, Maine, or through electronic communication or by mail by agreement of the parties, on the date that is thirty (30) days (or such shorter period of time as Buyer may elect upon five (5) days written notice to Seller) following the end of the Permit Period, time being of the essence. Notwithstanding the foregoing, in no event shall Buyer be obligated to close sooner than the fifth (5th) day following the satisfaction of the conditions precedent set forth in this Agreement. At the Closing, Seller shall cause the release of the Property from all loans and other monetary encumbrances secured by the Property, including, without limitation, municipal liens and utility fees of all kinds, and Seller shall pay all prepayment penalties or fees assessed by the holders of such loans and encumbrances, if any.

Seller is exempt from real estate transfer tax pursuant to 36 M.R.S.A. § 651. Seller shall pay the brokerage commission due to the brokers(s) described below, and all of its costs incurred.

Buyer shall pay its share of the real estate transfer tax and for all recording costs, Buyer shall be responsible for all of its own costs incurred, including, without limitation, the cost of studies or inspections desired by Buyer. The real estate taxes and other customary items of proration and adjustment shall be computed as of the date of Closing and added to or deducted from the net proceeds as the case may be. In the event accurate prorations or other adjustments cannot be made at Closing because of the lack of necessary information, the parties shall prorate and adjust based on the best available information, subject to prompt modification upon the receipt of the necessary information. At the Closing, Seller shall deliver to Buyer: (i) a Quitclaim Deed with covenant (ii) releases of any real estate liens or other instruments or agreements to be cancelled pursuant to the terms of this Agreement, in form appropriate for recording; (iii) an updated certification of the warranties and representations contained herein; (iv) an assignment of permits and warranties; (v) a Bill of Sale (if applicable), in form and substance satisfactory to Buyer, transferring to Buyer, without additional charge, all fixtures, equipment, and other personal property located at the Property (except for any fixtures, equipment and other personal property that Buyer has directed Seller in writing to remove on or before the date of the Closing, which Seller shall so remove, without causing damage to the Property); (vi) an assignment, transferring ownership of all the permits, plans and approvals which are part of the Property and (vii) such other documents required under the terms of this Agreement or customarily delivered at closings in the State of Maine. On or before Closing, Seller shall terminate any contracts relating to the Property that Buyer has not agreed to assume and shall pay all costs associated with such contracts. On or before Closing, Seller will do, make, execute and deliver all such additional and further acts, instruments and documents as may be consistent with this Agreement and customarily and reasonably required by Buyer and/or the Buyer's title company to complete the transactions described in this Agreement.

Section 9. Condemnation and Casualty. If, prior to Closing, all or any part of the Property or access to the Property shall become subject to condemnation through eminent domain by governmental or other lawful authority, or should be subject to damage or destruction by fire or other casualty, then Buyer shall have the option of either (a) completing the purchase, in which event all condemnation proceeds or claims thereof (or, in the event of a fire or other casualty, all

casualty insurance proceeds, together with a credit against the Purchase Price for the amount of any insurance deductible) shall be assigned to Buyer, or (b) terminating this Agreement, in which event, notwithstanding any provision herein to the contrary, the Deposit shall be returned to the Buyer, and this Agreement shall have no further force or effect. Seller shall bear the risk of loss to the Property due to condemnation or casualty until the Closing and the recording of the Deed. Seller shall keep the Property insured at its presently insured levels from the date of this Agreement until the Closing and the recording of the Deed.

Section 10. Broker. At the Closing, Seller shall pay any and all fees or other commissions due and payable to CBRE| The Boulos Company (the "Broker"), pursuant to separate agreement. Except for the Broker, Seller and Buyer represent and warrant to each other that neither has dealt with any other real estate broker, agent, or salesperson. Seller agrees to defend, indemnify, and hold Buyer harmless from any claims, costs, judgments, or liabilities of any kind advanced by persons claiming real estate brokerage fees through Seller. Buyer agrees to defend, indemnify and hold Seller harmless from any claims, costs, judgments, or liabilities of any kind advanced by persons (other than the Broker) claiming real estate brokerage fees through Buyer. The indemnities set forth in this Section shall survive Closing.

Section 11. Conditions Which Survive Closing As a condition of this sales transaction, the Buyer will construct, at its expense, a parking garage on a portion of Lot 6 and all of Lots 7 and 8 which shall contain not fewer than 500 parking spaces. The Seller shall make a contribution to the cost of construction from the funds being provided to the Seller from the U.S. Department of Housing and Development (the "HUD Funds") in accordance with and to the extent allowed by federal law and regulations, including HUD's regulations. During the inspection period described in Section 4 above, the Seller and the Buyer shall enter into a formal agreement stipulating the terms of this contribution and the conditions of the contribution, which are expected to include the following:

1. The garage shall be open during reasonable hours 7 days per week subject to modification from time to time by buyer based on historical and projected volume of usage of the garage.

2. The garage shall have shared use with residents 7 days a week, 24 hours per day.

3. During snow bans, garage shall be available for snow ban parking and the overnight snow ban parking rate shall not exceed 50% of the then current daily maximum rate charged for parking at the garage.

4. The garage shall be made available for special event parking during off hours.

5. The garage shall provide turnover parking for the general public.

6. Rates shall be based upon market conditions.

7. The garage shall participate in the Park & Shop program.

8. The garage must accept both cash and credit card payments.

9. The garage must remain as a public parking facility for a minimum of 30 years.

The agreement referred to in this section shall further provide that Buyer shall comply with all the terms and conditions related to the use of HUD funds including, but not limited to, providing documentation of job creation. The Inspection Date shall be extended until the parties have reached agreement on these issues.

The agreement shall further provide that HUD has to approve the use of its funds for the garage and that if such approval is obtained, Buyer or any nominees, assigns or successors in interest shall be responsible for complying with any conditions required by HUD in addition to the conditions listed above and shall defend and indemnify Seller against any actions brought by HUD to enforce any HUD conditions and any sanction or fines resulting from an enforcement action.

In return for the use of HUD funds, the garage and any attached structures or units in it designed for non garage use shall comply with and be certified by the U.S. Green Building Counsel's (USGBC) Leadership in Energy and Environmental Design (LEED) Silver Standard, and shall achieve the minimum LEED optimize energy performance points necessary to meet the targets of the 2030 challenge as published by Architecture 2030, pursuant to the City of Portland's City Code, Section 6, Article VII.

Section 12. Default.

(a) Buyer Default. If Buyer defaults and fails to perform its obligations under this Agreement under this Agreement, Seller, at no cost, shall receive the Deposit and all interest thereon, as well as the results and reports of all development studies, testing reports, construction and design documents related to the garage, and surveys of the Property completed by the Buyer. The parties agree that the Deposit and development studies and surveys are a reasonable liquidated measure of Seller's damages and not a penalty and shall be Seller's sole and exclusive remedy at law and in equity because of the difficulty in ascertaining the exact amount of damages sustained by Seller.

(b) Seller's Default. If Seller defaults and fails to perform its obligations under this Agreement, then Buyer may, without limitation of its other rights and remedies, terminate this Agreement upon written notice to Seller, upon which event the Deposit and all interest thereon shall be immediately refunded to Buyer, and/or exercise all of its available remedies at law or in equity, including, but not limited to, the right to seek a judgment compelling the specific performance of this Agreement and/or an action for damages.

(c) Attorney Fees. In the event of litigation, the substantially prevailing party shall be entitled to receive its reasonable legal fees and court costs from the other party. This provision shall survive the Closing and delivery of the Deed.

Section 13. Miscellaneous. This Agreement (i) constitutes the entire agreement between the parties hereto with respect to the transaction contemplated herein and it supersedes all prior discussions, undertakings or agreements between the parties; (ii) shall not be modified except by a written agreement executed by both parties; (iii) shall be binding upon and inure to the benefit of the parties hereto, and their respective successors and assigns; (iv) may be executed in counterparts; and (v) may be executed by facsimile signatures. This Agreement shall be governed by and construed and enforced in accordance with the laws of the State of Maine. Any notice by either party to the other party shall be in writing and shall be deemed to have been duly given when either delivered personally, or mailed by certified mail, return receipt requested, or sent by nationally recognized overnight courier, or sent by facsimile, or sent by e-mail addressed to Seller, at Portland City Hall, 389 Congress Street, Portland, Me 04101, Attn: City Manager facsimile 207-874-8669, email: pfinnigan@portlandmaine.gov , with a copy to , the Director of Economic Development facsimile 207-756-8217, email: gmitchell@portlandmaine.gov, and another copy to Corporation Counsel, at the same address (facsimile 207-874-8497), email: gary@portlandmaine.gov; and to Buyer c/o The Federated Companies, 404 Washington Ave, Floor 8, Miami Beach, FL 33139, Attn: Jonathan Cox, facsimile (800) 523-5931, email: j_cox@federatedcompanies.com with a copy to Marc Shandler, Esq., The Federated Companies, 404 Washington Ave, Floor 8, Miami Beach, FL 33139, facsimile (800) 523-5931, email: m_shandler@federatedcompanies.com .

In the event any one or more of the provisions contained in this Agreement shall be for any reason held invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provision of this Agreement, and this Agreement shall be construed as if such invalid, illegal or unenforceable provision had never been contained in this Agreement.

The term "Effective Date" as used in this Agreement shall mean the first date upon which both Buyer and Seller have executed a final counterpart of this Agreement and delivered the same to the other party.

The term "day" or "days" as it relates to a time or timeline for performance shall mean business days and shall not include weekends or state or federal holidays.

Buyer shall be entitled without Seller's consent to assign all of its right, title and interest in and to this Agreement to any primary lender or to any entity in which Buyer maintains a controlling interest. Buyer shall also be entitled with Seller's consent, which shall not be unreasonably withheld, to assign all or part of its right, title and interest in and to this Agreement to any other entity. Buyer may also take title in the name of a nominee at the closing in which case the nominee shall be subject to all obligations of Buyer under this Agreement, and all rights of Seller. If the end of any time period herein, or if any specified date, falls on a weekend or state or federal holiday, then the end of such time period, or such date, as the case may be, shall be extended to the next business day thereafter. At the request of either party, Buyer and Seller agree to reasonably cooperate with the

other and Escrow Agent in structuring and documenting the sale of the Property to effect a tax deferred exchange in accordance with the provisions of Section 1031 of the Internal Revenue Code and its corresponding regulations. Such cooperation shall be at no cost to the other party. In no event shall such cooperation require a delay of the Closing. The Section headings as used in this Agreement are for convenience or reference only and shall not be deemed to vary the content of this Agreement.

Section 14. Escrow Provisions. As an inducement to Escrow Agent to act as escrow agent, Buyer and Seller agree that: (a) Escrow Agent will hold the Deposit in an interest-bearing account at a banking institution with which Escrow Agent has an established banking relationship, and such interest shall follow the disposition of the Deposit in accordance with the terms of this Agreement; (b) the Escrow Agent shall disburse the Deposit (and the interest earned thereon) only in accordance with this Agreement; (c) Escrow Agent will not be liable for any error or judgment, or for any act or omission under this Agreement made in good faith, except for Escrow Agent's own gross negligence or willful misconduct; (d) Buyer and Seller will jointly and severally indemnify and hold harmless Escrow Agent from and against any claim, costs, damages, attorneys' fees, expenses, obligations, or charges made against Escrow Agent by reason of its action or failure to act in connection with any of the transactions contemplated by this Agreement, unless caused by Escrow Agent's gross negligence or willful misconduct; (e) Escrow Agent will have no liability for any claim, costs, damage, attorneys' fees, expenses, obligations, or charges resulting from a delay in the electronic wire transfer of funds, unless such matters arise as a result of Escrow Agent's gross negligence or willful misconduct; and (f) in the event Escrow Agent receives or becomes aware of conflicting instructions, demands, or claims with respect to this Agreement or the Deposit, Escrow Agent may file a suit in interpleader, and upon the filing of such suit in interpleader and placing of the Deposit with a court of competent jurisdiction, Escrow Agent shall be fully released and discharged from all further obligations imposed by this Agreement with respect to the Deposit.

Section 15. Right of Seller to Repurchase the Property. If construction activity is not commenced and diligently pursued on any or all lots within two years of the date of receipt by the Buyer of final site plan approval, the Seller shall have the right, but not the obligation, to repurchase said lots at Buyer's purchase price

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year set forth next to their respective signatures below.

[Signature page to follow]

PURCHASER:

The Federated Companies LLC

By: _____
Jonathan Cox, Manager
Date of Execution: 6/23/11

SELLER:

City of Portland

By: _____
Patricia A. Finnigan
Acting City Manager
Date of Execution: 6.16.2011

JOINDER OF ESCROW AGENT

Escrow Agent joins in the execution of this Agreement to acknowledge its agreement to act as escrow agent hereunder and to handle the Deposit in accordance with the terms and conditions set forth herein.

ESCROW AGENT:

_____

By: _____
Name: _____
Title: _____
Date: _____

PURCHASER:

The Federated Companies LLC

By: _____
Jonathan Cox, Manager
Date of Execution: 6/23/11

SELLER:

City of Portland

By: Patricia A. Finnigan
Patricia A. Finnigan
Acting City Manager
Date of Execution: 6.16.2011

JOINDER OF ESCROW AGENT

Escrow Agent joins in the execution of this Agreement to acknowledge its agreement to act as escrow agent hereunder and to handle the Deposit in accordance with the terms and conditions set forth herein.

ESCROW AGENT:

Monument Title Company

By: _____
Name: Karen L. Pelletier
Title: Managing Director/Exec VP
Date: July 1, 2011

EXHIBITS

A - Description of Land
A-1 Proposed Somerset Street Subdivison plan, showing possible trail access
B -- index of environmental studies

EXHIBIT A

Description of Land Being Purchased:

Lots 1,2, 3, 5, 6, 7 and 8 as shown on a subdivision plan entitled "Bayside Railyard Portland, Maine" prepared for the Downtown Portland Corporation by SGC Engineering, LLC as approved by the Portland Planning Board on December 9, 2008 and recorded in the Cumberland County Registry of Deeds on 1/27/09 in Book 209, Page 36.

EXHIBIT A-1

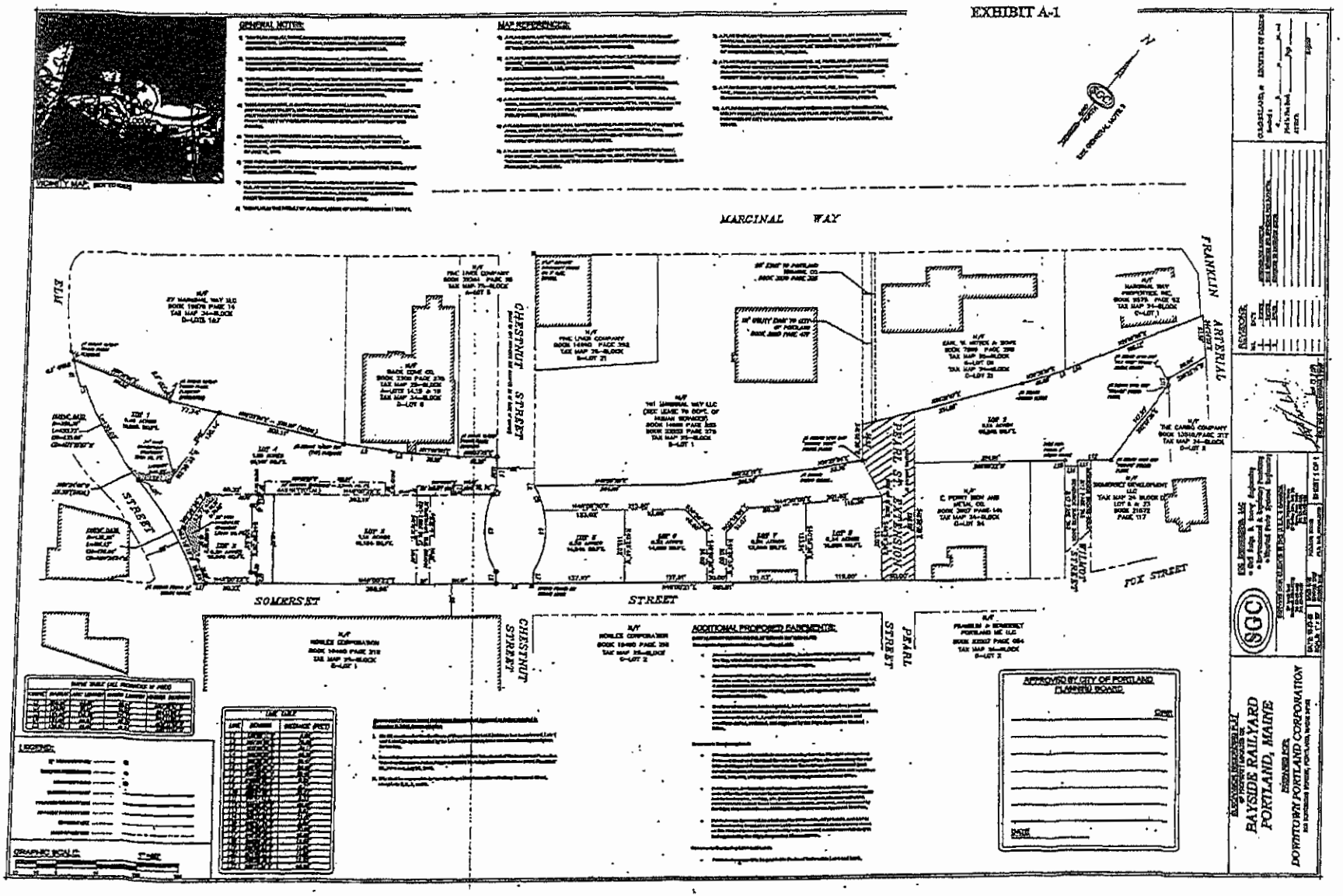
GENERAL NOTES:
MAP REFERENCES:
VICINITY MAP
MARGINAL WAY
FRANKLIN ARTERIAL
ELM STREET
CHESTNUT STREET
SOMERSET STREET
PEARL STREET
PEARL ST. EXTENSION
FOX STREET
ADDITIONAL PROPOSED EASEMENTS:
APPROVED BY CITY OF PORTLAND PLANNING BOARD
LEGEND:
GRAPHIC SCALE
SGC
BAYSIDE RAILYARD
PORTLAND, MAINE
DOWNTOWN PORTLAND CORPORATION

Exhibit B

List of Bayside Rail Yard Related Environmental Reports

Site Assessment and Environmental Analysis: Phase I of the Portland Brownfields Project, Portland, Maine, Tewhey Associates, April 1999

Environmental Remediation Plan, Phase III of the Portland Brownfields Project, Portland, Maine, Tewhey Associates, Nov. 1998

Phase II Environmental Site Assessment, Union Branch Rail Line Property, Portland, Maine, Haley & Aldrich, Inc. Dec. 2000

Environmental Conditions at the Proposed DHS Building Land annex, Portland, Maine, Tewhey Associates, August 2003

Tewhey Associates Memo from J. Tewhey to M. Adelson of the City of Portland Re: Results of Testing of Excavated Soil at the Former Rail Yard Site in Bayside, Tewhey Associates, December 13, 2003

Subsurface Soil Observations and Testing at Northern End of Proposed Chestnut Street Extension, Tewhey Associates, Jan 2005

Phase I Environmental Site Assessment, Rail Yard Subdivision Lots 1,2,3,4 and 9 Somerset Street, Portland, Maine, Tewhey Associates, Dec. 2008

VRAP Completion Document, Bayside Trail Project, Former Union Branch Rail Line, Portland, Maine, Tewhey Associates, August 2010

Bayside Rail Yard DEP VRAP, July 2001

Bayside Rail yard DEP VRAP, November 2008

Chestnut Street Extension DEP VRAP, May 2005

DHS Annex Property DEP VRAP Certification, April 2004

Soil Remediation Consideration, Tewhey Associates, January 2002

Stockpiled Group 2 Soils at Brownfields Property Site, June 2005

NEMR Concrete Pad Sampling, September 2008

NEMR Phase I Environmental Site Assessment, February 2009

NEMR Phase II Soil Investigation, February 2007

NEMR Phase II Soil Investigation, July 2009

EXHIBIT "B"
TO FIRST AMENDMENT TO
PURCHASE AND SALE AGREEMENT

[insert Environmental Studies]

Exhibit B

List of Bayside Rail Yard Related Environmental Reports

Site Assessment and Environmental Analysis: Phase I of the Portland Brownfields Project, Portland, Maine, Tewhey Associates, April 1999

Environmental Remediation Plan, Phase III of the Portland Brownfields Project, Portland, Maine, Tewhey Associates, Nov. 1998

Phase II Environmental Site Assessment, Union Branch Rail Line Property, Portland, Maine, Haley & Aldrich, Inc. Dec. 2000

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VRAP Completion Document, Bayside Trail Project, Former Union Branch Rail Line, Portland, Maine, Tewhey Associates, August 2010

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Bayside Rail yard DEP VRAP, November 2008

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NEMR Concrete Pad Sampling, September 2008

NEMR Phase I Environmental Site Assessment, February 2009

NEMR Phase II Soil Investigation, February 2007

NEMR Phase II Soil Investigation, July 2009

Amended Exhibit ~~A~~ C to the Purchase and Sale Agreement

[2012]

Description of the Land Being Purchased

Lots 1, 2, 3, 5, 6, 7, 8 and a portion of Lot 9 as shown on a subdivision plan entitled "Bayside Railyard, Portland, Maine" prepared for Downtown Portland Corporation by SGC Engineering, LLC as approved by the Portland Planning Board on December 9, 2008, and recorded in the Cumberland County Registry of Deeds in on January 27, 2009, in Plan Book 209, Page 36; the portion of Lot 9 included is that portion which is within 120 feet of northwesterly sideline of Somerset Street.

EXHIBIT 3

[Parking Garage Agreement]

PARKING GARAGE CONTRIBUTION AND FUNDING AGREEMENT

This Parking Contribution and Funding Agreement (the "Parking Garage Agreement") is made this 15th day of October, 2012, by and between the **CITY OF PORTLAND, MAINE**, a body politic and corporate with a place of business at 389 Congress Street, Portland, Maine (hereinafter "City") and **LEGACY PARK APARTMENTS LLC**, a Florida limited liability company with a place of business at 801 Brickell Avenue, Suite 720, Miami, Florida 33131 (hereinafter "Legacy Park").

WHEREAS Legacy Park is the assignee, by virtue of an Assignment and Assumption Agreement effective June 27, 2011, ("Assignment"), of a Purchase and Sale Agreement between The City of Portland, Maine, ("City"), effective June 23, 2011, ("Agreement"), for the purchase of certain blighted and brownfield real property located on Somerset Street, Portland, Maine known as Lots 1, 2, 3, 5, 6, 7,8 and a portion of Lot 9,(collectively, "the Land"), consisting of approximately 3.25 acres formerly known as the "Bayside Railyard";

WHEREAS City, in order to create jobs and economic growth for the Citizens of Portland, Maine, has agreed to make a $9,007,000.00 contribution, ("City Grant Funds"), to Legacy Park from funds being provided to the City by the U.S. Department of Housing and Urban Development pursuant to the Bayside Redevelopment Project, Maine BEDI Grant and Section 108 Loan Program, ("HUD Funds"), toward the expense of the construction of a garage, with no fewer than 700 parking spaces and at least thirty thousand square feet of retail space on the first floor on a portion of Lot 5 and all of Lots 6 and 7 and a portion of Lot 9, ("Garage");

WHEREAS Section 11 of the Agreement requires City and Legacy Park to enter into a formal Parking Garage Agreement stipulating the terms and conditions of the contribution of the City Grant Funds to Legacy Park for the construction of the Garage.

NOW THEREFORE, in consideration of the foregoing and for good and valuable consideration the parties covenant and agree in this Parking Garage Agreement as follows:

1. Garage Construction. Subject to the terms and conditions of this Parking Garage Agreement and the City contributing City Grant Funds as described below, Legacy Park or its nominee shall construct the Garage in the location depicted on the plan attached hereto and incorporated herein by reference as Exhibit "A". The Garage shall have reached "Start-up Phase" as defined below within two (2) years after the date on which a total of $1,000,000.00 in City Grant Funds has been requisitioned by Legacy Park and disbursed by the City to Legacy Park. Notwithstanding the above, Legacy Park will diligently work to have constructed a sufficient percentage of the Garage so as to permit Legacy Park to requisition the City Grant Funds in full by November 31, 2014, so as to allow full disbursement of the City Grant Funds by December 31, 2014. If Legacy Park informs the City, in good faith, before October 1, 2014 that Legacy Park will not meet this requisition timetable, with evidence and reasons for this, the City will use its best

efforts to obtain an extension of this disbursement deadline for the HUD Funds from HUD, and if it obtains such an extension, it shall immediately transmit to Legacy Park evidence of this extension by HUD, and this timetable shall thereby be correspondingly changed, without further action of the parties hereto being required.

Legacy Park shall construct the Garage and any attached structures or units designed for non-garage use using sustainable and energy efficient construction methods, including, but not limited to, energy efficient lighting.

2. City Grant Funds. The City shall provide a grant to Legacy Park or its nominee of Nine Million Seven Thousand Dollars ($9,007,000.00) in City Grant Funds for use by Legacy Park for the City Grant Funds Uses as defined below. This funding is being provided in part as an incentive to build the Garage which would otherwise not be commercially viable. Accordingly, the City agrees that the first $9,007,000.00 of City Grant Funds Uses, disbursed in accordance with this Parking Garage Agreement, shall be City Grant Funds, but subject to and less the retainage described below. The City Grant Funds may be used for all purposes related to the Garage allowed with such HUD Funds, including but not limited to design, planning, permitting, environmental testing and remediation, and construction ("City Grant Funds Uses").

3. Legacy Park Contribution. Following the disbursement of City Grant Funds, less the retainage, Legacy Park shall provide sufficient additional funds for completion of the construction of the Garage, ("Legacy Park Contribution"). The Legacy Park Contribution shall either come from its own equity or financing from a construction lender. The Legacy Park Contribution, in addition to the City Grant Funds will cover the complete cost of constructing the Garage to completion.

4. Procedures for Making Disbursements (Payments). With respect to all requisitions for disbursements of the City Grant Funds, the City and Legacy Park agree as follows:

   (a) Legacy Park shall deliver to the City a written request for payment (a "Requisition") which shall be in substantially the same form as AIA Forms G702 and G703. The Requisition shall be accompanied by: (i) a summary of all expenses requested, (ii) copies of invoices, bills, receipts and such other information as may be reasonable to document the expenditures described in the Requisition, (iii) mechanics' lien affidavits and/or written lien waivers from such contractors, laborers, subcontractors and materialmen for work done and materials supplied which were paid for pursuant to the immediately preceding Requisition, and (iv) a certified payroll in conformance with the requirements of the Davis-Bacon Act of 1931, as amended, for all contractors and subcontractors on site and for which invoices are included.

(b) Requisitions shall be submitted by Legacy Park no more frequently than monthly. Prior to the disbursement by the City of any requested Requisition, City's construction inspector shall certify to City that the work for which a Requisition has been submitted has been completed and the City's Housing and Neighborhood Services staff will verify all workers are being paid the prevailing wage.

(c) A copy of the construction schedule will be submitted to the City at the beginning of the project. Updates will be provided by Legacy Park as necessary to remain accurate.

(d) City shall make disbursements to Legacy Park only after such certification and verification, and with a certified payroll, all the same must be correct and complete. Each Requisition for disbursement shall be submitted at least five (5) days before the date for which the disbursement is requested, and the City shall make such advancement no later than fifteen (15) days after receipt of each Requisition to make such disbursement. If the City fails to make any disbursement within fifteen (15) calendar days after such requisition with all required and correct and complete paperwork as delineated in this Parking Garage Agreement, such disbursement shall be paid with interest at a rate of one-quarter of one percent per month, from that date until the disbursement is in fact made ("Interest For Late Payment"). If any such Interest For Late Payment is owed then such amount shall be in addition to the City Grant Funds.

(e) City shall retain ten percent (10%) of the City Grant Funds as retainage, which shall be disbursed to Legacy Park upon receipt of the Certificate of Occupancy for the Garage or as mutually agreed upon between the City and Legacy Park.

5. Garage Operations.

(a) Key Card. The Garage shall be equipped with a "key card" system (or its equivalent) whereby weekly, monthly or longer term users shall have 24-hour access to the Garage 7 days a week, it being understood that certain users may only have access at certain hours based on contractual agreements with the owners of Garage. Legacy Park shall make the Garage available for public (hourly access) use during the "Start-Up Phase" at such times as established by Legacy Park during reasonable commercial business hours, which shall at a minimum be from 7 a.m. to 7 p.m., Monday through Saturday, and 10 a.m. to 7 p.m., Sundays and Holidays. The expression "Start-Up Phase" shall mean that period commencing when the Garage receives a Certificate of Occupancy allowing operation of the parking garage portion of the Garage facility and ending the date when the first other building (and not merely the retail portion within the parking garage structure) within the Project is issued a Certificate of Occupancy and that building starts using parking in the Garage. During and after

the Start-Up Phase the Garage shall be open during reasonable hours, seven days per week, subject to modification from time to time by Legacy Park based on historical and projected volume of usage.

(b) Additional Requirements:

(i) Hourly and monthly rates for the Garage shall be based upon prevailing market rates, defined as follows: in no event shall rates be greater than 110% of the average market rates charged by City at City-owned and operated garages or the average of the three highest rates charged by garages within the City, excluding any garages that may be owned by Legacy Park or any of its affiliates;

(ii) The Garage shall participate in the Park and Shop Program;

(iii) The Garage shall be available for City snow ban parking, and the overnight (i.e. 5:00 p.m. to 8:00 a.m.) snow ban parking rate per hour shall not exceed three times the then-current maximum hourly rate charged by the Garage;

(iv) Upon written request of the City in each such instance, the Garage shall be available at customary rates for parking for special events held on the Portland Peninsula after 5:30 pm on weekdays and if requested, at requested reasonable times on weekends.

(v) The Garage shall have shared use with the public 7 days a week, 24 hours per day.

(vi) The Garage shall provide a minimum of 200 hourly turnover parking to the general public, and will provide within 2 days upon request data and information, including the number of non-turnover parkers present in the Garage at any given time, in order for the City to verify compliance with this condition.

(vii) The Garage will accept both cash and credit card payments.

(viii) The Garage will be maintained so long as it is a public parking facility, in accordance with the then current edition of the National Parking Association's "Parking Garage Maintenance Manual (now in its Fourth Edition) , and in particular in accordance with the Recommended Maintenance Checklist contained therein.

(c) The Garage will remain a public parking facility for a minimum of thirty (30) years.

These requirements (a) through (c) shall be a covenant contained in the deed to Lots 6 and 7and the covenant shall run with the Land for the stated thirty (30) year period from the date of

conveyance of Lots 6 and 7 from the City to Legacy Park and thereafter shall automatically expire.

7. Payments in Lieu of Taxes. In consideration of the City Grant Funds paid to Legacy Park by the City, Legacy Park agrees, for itself and its successors, assigns and lessees for a period of thirty (30) years starting on the closing date of the purchase of the Land, that in the event that any portion of the Land is ever exempt from real or personal property tax, then a yearly payment by the then owner of the exempt portion shall be made in lieu of taxes equivalent to the property taxes that would otherwise be paid on the exempt portion of the real and personal property situated on the property. This requirement shall be a covenant contained in the deed to the Land and the covenant shall run with the land for the stated thirty (30) year period.

8. Compliance with HUD requirements.

(a) Job Creation. HUD regulations require that the City, as the original grantee of the HUD Funds, document all jobs created through the use of HUD Funds disbursed to Legacy Park as City Grant Funds. Legacy Park recognizes that one of the primary goals of City's contribution of the City Grant Funds is the creation of jobs, and Legacy Park agrees to create the required number of jobs necessary for the City's use of the HUD Funds and to provide City with timely and complete documentation of all jobs created or caused to be created as a result of receiving the City Grant Funds, and requirements related to job creation shall be contained in a Job Creation Agreement to be entered into between the parties.

(b) Section 108 Compliance. Legacy Park, its employees, assigns, agents and subcontractors for this project, at all times shall comply with the requirements of the Section 108 Loan Guarantee and Brownfields Economic Development Initiative Grant program and Federal Labor Standards pursuant to Davis Bacon and related Acts, specifically including:

A. Davis-Bacon Act, as amended.(40 U.S.C 276a - 276a-5.) All laborers and mechanics employed by contractors or subcontractors, including employees of other governments, on construction work assisted under this contract, and subject to the provisions of the federal acts and regulations listed in this paragraph, shall be paid wages at rates not less than those prevailing on similar construction in the locality as determined by the Secretary of Labor in accordance with the Davis-Bacon Act.

B. Contract Work Hours and Safely Standards Act, as amended. (40 U.S.C. 327-333). All laborers and mechanics employed by contractors or subcontractors shall receive overtime compensation in accordance with

and subject to the provisions of the Contract Work Hours and Safety Standards Act, and the contractors and subcontractors shall comply with all regulations issued pursuant to these acts and with other applicable Federal laws and regulations pertaining to labor standards.

C. Copeland Anti-Kickback Act, as amended. (18 U.S.C. 874 and 40 U.S.C. 276c). This Act requires that workers be paid at least once a week, and without any deductions or rebates except permissible deductions.

9. Default. In the event that Legacy Park is in default of a material provision on any of the obligations contained in this Parking Garage Agreement, and Legacy Park fails to cure said default within ninety (90) days of receipt of written notice issued by the City, then Legacy Park shall, if requested to do so by the City, convey to the City the Garage and the related real property, on these terms and conditions:

- This conveyance to the City shall be without the requirement of further legal action by the City.
- The cost to the City for this purchase will, in concept, be the sum of the cost of construction of the Garage and all related improvements associated with the Garage, plus the cost to the cost to Legacy Park for the related land upon which the Garage sits (the "Garage Land"), less the amount of the City Grant Funds actually disbursed up to the time of this purchase.
- The City acknowledges that Legacy Park will most likely use the Garage and the Garage Land as collateral for a construction loan for the purpose of finishing the construction of the Garage and other costs and improvements related to the project. The City therefore agrees to work on documents at the time of such financing, with Legacy Park and its construction lender, to make it possible for the City to have the remedy described above in concept, and to also permit such construction financing.

The City agrees that Legacy Park's obligations under this Parking Garage Agreement are "non-recourse" and that any recovery by the City shall be limited to the Garage. None of Legacy Park, its officers, members, employees, attorneys, agents or affiliates (collectively, "Legacy Park Persons") shall be personally liable for the performance of this Parking Garage Agreement, and the City shall not commence or prosecute any action against any Legacy Park Person, for payment or performance of any obligations under this Parking Garage Agreement. The City shall not seek, obtain, or enforce a deficiency judgment against any Legacy Park Person. Notwithstanding this provision, the rights and obligations under the Agreement between the parties and the Corporate Guaranty Agreement of near or even date are cumulative and in addition to the rights described herein.

In the event of an alleged default by the City, Legacy Park, at its sole election, shall have the right to seek specific performance and any and all other relief to be provided

by a Court, at law or in equity, including, but not limited to, common law writs. City expressly consents to the jurisdiction of the Maine Courts in the event of an alleged City breach under this Parking Garage Agreement.

10. Assignment. Legacy Park shall be entitled, without the City's consent, to assign all of its right, title, interest and obligations in and to this Parking Garage Agreement to any lender or to any entity in which Legacy Park maintains a majority interest and management control. The City must be notified within thirty (30) days or Legacy Park will be in default of this Parking Garage Agreement as described in Section 9 of this Agreement.

11. Termination. In the event that the Parking Garage Agreement is terminated on account of Legacy Park's default, the obligation of the City to provide the City Grant Funds described herein is terminated.

12. Miscellaneous Provisions. In the event of litigation, the prevailing party shall be entitled to receive its reasonable legal fees and court costs from the other party. This provision shall survive the Closing and delivery of the Deed pursuant to the Agreement.

13. Entire Agreement. This Parking Garage Agreement (i) constitutes the entire agreement between the parties hereto with respect to the construction and operation of the Garage and it supersedes all prior discussions, undertakings or agreements between the parties in respect to the Garage; (ii) shall not be modified except by a written agreement executed by both parties; (iii) shall be binding upon and inure to the benefit of the parties hereto, and their respective successors and assigns; (iv) may be executed in counterparts; and (v) may be executed by facsimile signatures. This Parking Garage Agreement shall not confer any rights or remedies upon any third-party other than the parties to this Parking Garage Agreement and their respective successors and permitted assigns.

14. Notices. Any notice by either party to the other party shall be in writing and shall be deemed to have been duly given when either delivered personally, or mailed by certified mail, return receipt requested, or sent by nationally recognized overnight courier, or sent by facsimile, or sent by e-mail addressed to the City at Portland City Hall, 389 Congress Street, Portland, Maine 04101, Attn: City Manager facsimile 207-874-8669, email: MHR@portlandmaine.gov, with a copy to, the Director of Economic Development, facsimile 207-756-8217, email: gmitchell@portlandmaine.gov, and another copy to Corporation Counsel, at the same address, facsimile 207-874-8497), email: gary@portlandmaine.gov , and to Buyer c/o The Federated Companies, 801 Brickell Avenue, Suite 720, Miami, Florida 33131, Attn: Jonathan Cox, facsimile (800) 523-5931, email: j_cox@federatedcompanies.com

15. Severability. In the event any one or more of the provisions contained in this Parking Garage Agreement shall be for any reason held invalid, illegal or unenforceable in any

respect, such invalidity, illegality or unenforceability shall not affect any other provision of this Parking Garage Agreement, and this Parking Garage Agreement shall be construed as if such invalid, illegal or unenforceable provision had never been contained in this Parking Garage Agreement.

In Witness Whereof, the parties have hereunto executed this Parking Garage Agreement as of the day and year set forth next to their respective signatures below.

LEGACY PARK APARTMENTS LLC

By: Jonathan Cox
Its: Member
Date of Execution: 10/15/12

CITY OF PORTLAND

By: Mark Rees
Its: City Manager
Date of Execution: 10-15-12

Approved: Ellen Sanborn, Finance Director

Approved as to Form: Corp. Counsel

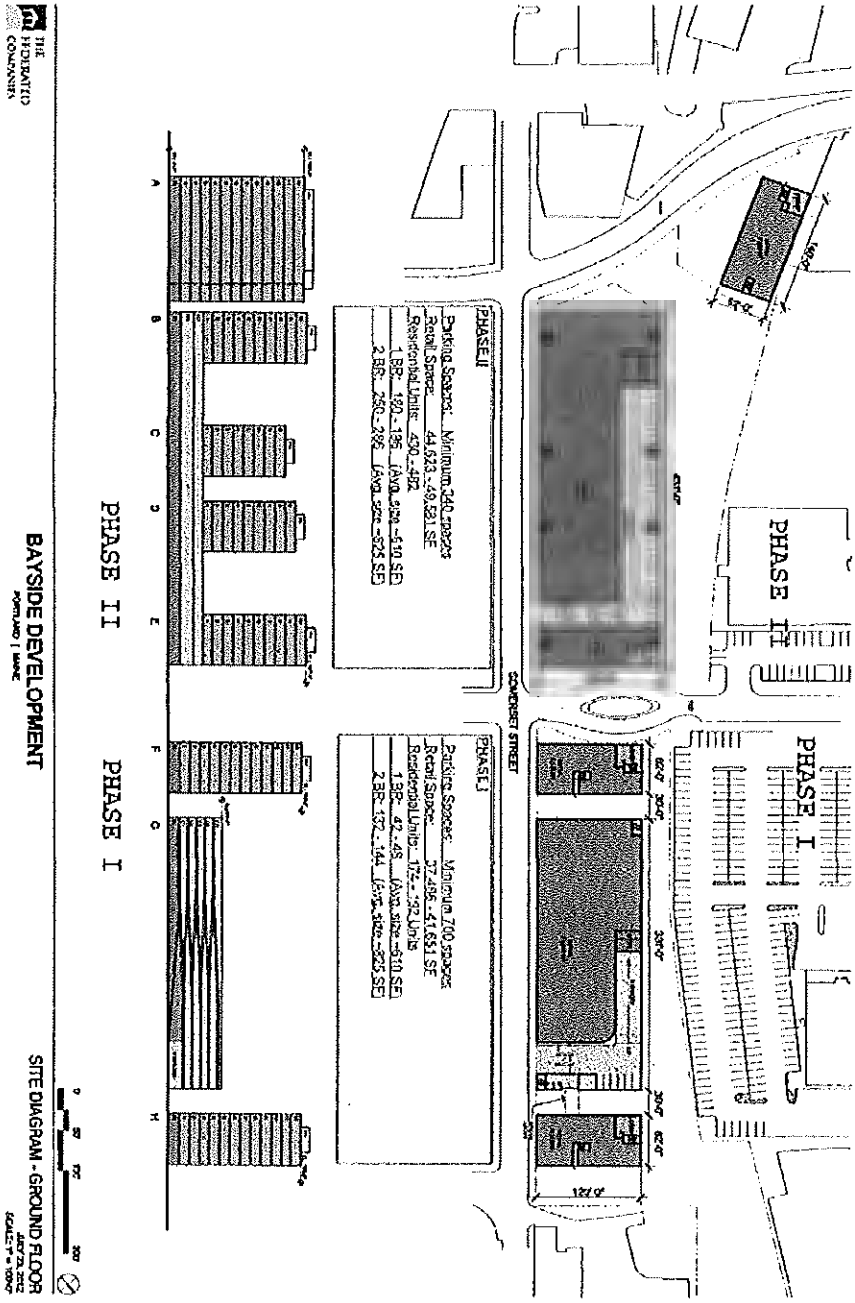
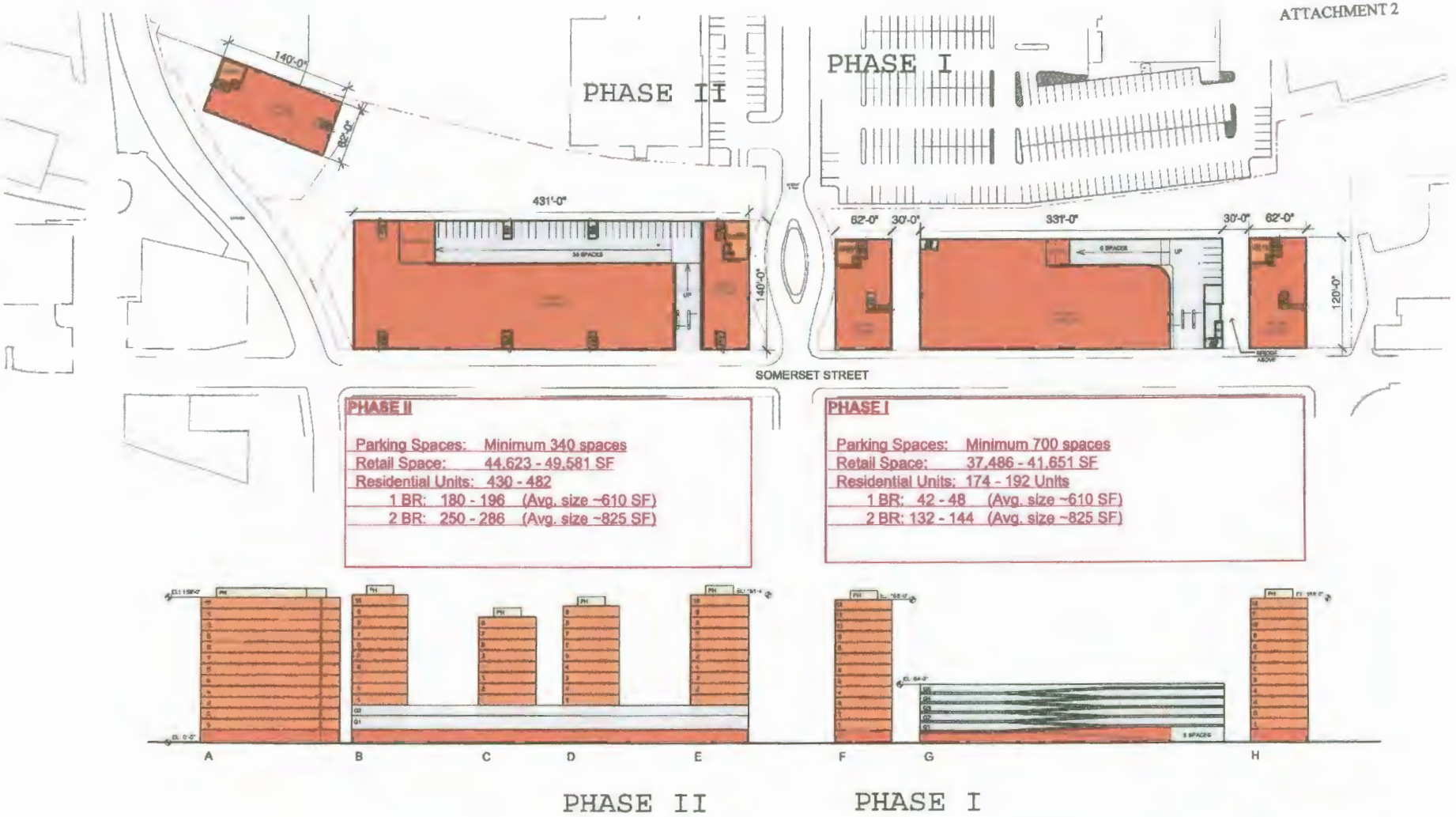

THE FEDERATED COMPANIES
BAYSIDE DEVELOPMENT
PORTLAND | MAINE
SITE DIAGRAM - GROUND FLOOR
PHASE II
PHASE I
PHASE II
Parking Spaces: Minimum 240 spaces
Retail Space: 44,623 - 49,521 SF
Residential Units: 450 - 492
1 BR: 190 - 195 (Avg. size - 510 SF)
2 BR: 260 - 296 (Avg. size - 825 SF)
PHASE I
Parking Spaces: Minimum 700 spaces
Retail Space: 37,496 - 41,631 SF
Residential Units: 172 - 192 Units
1 BR: 42 - 48 (Avg. size - 510 SF)
2 BR: 132 - 144 (Avg. size - 825 SF)
SOMERSET STREET
PHASE I
PHASE II

Exhibit A

EXHIBIT 4 (part 1 of 3)

[Phase I Site Plan]

ATTACHMENT 2



PHASE II

Parking Spaces: Minimum 340 spaces
Retail Space: 44,623 - 49,581 SF
Residential Units: 430 - 482
1 BR: 180 - 196 (Avg. size ~610 SF)
2 BR: 250 - 286 (Avg. size ~825 SF)

PHASE I

Parking Spaces: Minimum 700 spaces
Retail Space: 37,486 - 41,651 SF
Residential Units: 174 - 192 Units
1 BR: 42 - 48 (Avg. size ~610 SF)
2 BR: 132 - 144 (Avg. size ~825 SF)

0 50' 100' 200'

THE FEDERATED COMPANIES

BAYSIDE DEVELOPMENT
PORTLAND | MAINE

SITE DIAGRAM - GROUND FLOOR
JULY 23, 2012
SCALE: 1" = 100'-0"

EXHIBIT 4 (part 2 of 3)
[Phase I Design Guidelines]

1. Introduction
The emphasis of the Guidelines is on the public spaces. The goal of the Guidelines is to provide high quality, attractive and active spaces that employ contemporary techniques but connect to the unique history of the site and Portland, ME as a whole. To this end, the Guidelines are focused on the impact of buildings on the public environment. These Guidelines seek to create spaces, not projects. The goal is to create an ever□changing, lively atmosphere with visual appeal throughout (this is not a traditional business or residential district). The focus is on the pedestrian □ to provide a human scale, good way finding, and a comfortable walking environment. The Guidelines are also intended to create visual interest from near and far. Up close, ground level design standards produce comfortable, inviting, and stimulating environments. From afar, a variable skyline of roof edges, vertical shafts, and signage create interest.

2. Use

2.1 Active Ground Floor Uses
Active uses that engage pedestrians shall be located along all street frontages. Ground level land uses shall be established and designed to animate public sidewalks, the wharf and alleys/mews to provide visual appeal. In required active ground floor areas, the following uses are acceptable:

• Commercial uses, such as retail stores, retail service establishments, food and beverage establishments; and/or entertainment facilities, and
• Lobbies for above grade uses such as office, residential, and hotel with an emphasis on high quality design, visual transparency, and where possible, uses that engage the street.

3. Massing
The Guidelines describe the overarching design principles for all future construction in the Project Area. The Guidelines define the intended quality, characteristics and coherence of the urban elements, which regulate how the site shall be used for civic and commercial purposes. The Guidelines define building mass, street wall heights, and façade articulation necessary to create a lively urban waterfront environment.

Building setbacks above the lower levels should be employed to help limit the perceived mass of the structure and to insure that buildings maintain a human scale and a consistent street wall throughout. Setbacks for upper stories may vary in accordance with the Master Development Plan.

The buildings will have three basic components: base; middle; and top. The base will be designed in a scale and articulation that is related directly to the pedestrian. The middle portion of the building will provide scale to the buildings both horizontally and vertically. And finally, the top will be designed in a manner to provide unique articulation that visually terminates the top of the building.

3.1 Build□to□Lines
Street walls on public rights□of□way are encouraged to vary in height and express distinguishable facade types to evoke multiple buildings/uses. A minimum of 75% of the lineal length of the mandatory building frontage shall be set at the parcel boundary line or within 10 feet there from. The first two stories of a building are required to be set at this mandatory front parcel line. Variation in street wall facades is encouraged along upper levels and roof lines. In areas where active ground floor uses are required, building entrances should be located at least every 75 feet (preferably every 30□35 feet).

The character and scale of facades forming the street wall may involve the combined use of traditional and innovative materials to express a transition from a historical□era to a more modern□era design vernacular. The character, height and massing of street walls should include:

• Commercial uses, such as retail stores, retail service establishments, food and beverage establishments; and/or entertainment facilities, and
• Define a continuous street and highly articulated building by building wall mass along all build□to lines (i.e., zero front yard setbacks along public rights of way)
• Encourage projections, canopies, signage, lighting, and variation of building size
• Discourage projecting balconies
• Encourage balconies recessed within or integral with the façade wall where balconies are proposed.
• Encourage articulation of the façade that could include changing design treatment and/or materials to reduce the apparent mass of long building facades.

Encroachments on the sidewalk will be designed to encourage pedestrian activity and will be human scale. The encroachment will not impede the visual.

4.0 Circulation & Service.
Streetscapes in the Project Area are meant to be pedestrian friendly environments, featuring a consistent pallet of signage, lighting, paving, and furniture. Streets should be well lit, active, human scaled, and feel safe day and night.

The City's streetscape standards will be used for public sidewalks, streetlights, street furniture, fencing and walls, landscaping and signage in order to create a unified image of the neighborhood.

Street lighting shall comply with the *Technical and Design Standards and Guidelines*.

4.1 Parking
The provision of off□street parking within the Project Area will be as set forth in the approved planned unit development.

Parking structures will be designed to be compatible and integral to adjacent architecture in form, bulk, massing, articulation, and materials; incorporating design elements that provide visual interest on all sides visible from public rights of way.

Parking structures will be designed above grade and in a way to provide natural ventilation.

The entrance to parking structures will minimize impact on the pedestrian realm and be designed to maximize driver and pedestrian safety.

4.2 Refuse Collection
Refuse collection areas and dumpster locations shall be fully enclosed within portions of principal buildings for which they proposed to serve and shall be screened from view so as not to affect other views from around the site.

5. Architectural Features
Design references to Portland's are encouraged. The design of new buildings and structures should be timeless and enduring, seeking inspiration from the rich industrial and architectural precedents of Portland's downtown and waterfront and should seek to uphold its strong history.

5.1 Edges
Special care and design attention along with more decorative treatment and materials are desired for all edges of buildings. These are the most visible part of the urban scene. Edges include roof lines, canopies, cornices, and more prominent window openings and entrances.

5.2 Bases
Buildings should be articulated to respond to individual users. The diversity of storefront articulation will break down the scale of the overall project and street wall. The first level of buildings should be articulated by material change to express a building base and use other elements such as color, design detail, smaller scale, and higher quality materials to provide visual interest. Building ground floor bases, typically 25□40', should emphasize the ground floor activity and provide the highest quality of pedestrian environment.

5.3 Storefront and Retail Facades
See Article 9.

5.4 Corners
Corners are particularly visible and are suggested to be made more noticeable. Changes in orientation, shapes, additional materials, colors, and projections are all favored means of adding special visual appeal to interesting streets, wharf, and public spaces.

5.5 Cornices
A crowning projection, or cornice, shall be encouraged at the top of a building along the street wall (top of the building for those under 60', and at the setback for those over). These elements can be very modest in detail.

5.6 Appurtenances
Canopies, awnings, and marquees are permitted and encouraged as they provide weather protection and provide visual interest and delight to the streetscape environment. These elements are to be decorative and light weight. Variety and non□repetitive design are desired. Canopies can be constructed of a variety of materials including both fabric and metal. Fabric awnings can be retractable.

Lettering and logos are permitted on the valence flap of the awning but lettering is generally discouraged on the main body of the awning. It is desirable for these projecting elements to incorporate outdoor heating systems to lengthen the comfortable use of outdoor spaces.

Backlit awnings and canopies are expressly prohibited. Awnings and canopies may be lit from the exterior.

5.7 Skyline
A goal for the project is to create a varied and highly decorative skyline as seen from afar. The varied rooflines can be achieved by changing heights, also by varying roof types, roof angles, and the addition of vertical elements to contrast with the roofs.

Rooftop terrace structures shall not be enclosed and are not considered an additional building level. Rooftop terraces are encouraged to take advantage of views.

All exposed mechanical equipment and bulkheads shall be mounted on roofs. Equipment should be integrated into the roof design and screened in a method that is integral to the architectural design of the building and adds visual interest to the skyline. All venting of HVAC equipment shall occur on the interior of development parcels. All venting runs for cooking fans shall be fully enclosed and incorporated into the interior of proposed buildings and vented though the highest roof of the building podium.

5.8 Back Sides of Buildings.
The back sides of buildings will be designed with high quality facade materials, transparent windows, operable building entrances, and other design features consistent with the primary facades of the building. Utility meters, exhaust vents, fire escapes etc. will be designed in a manner to be unobtrusive.

6. Materials

6.1 Building Materials and Color

Use of innovative building technologies is encouraged throughout the project and should be contrasted with traditional building materials that reference Portland's history.

Recent innovations in building materials can showcase advancements in environmentally conscious design and provide a sense of excitement for project visitors.

New buildings shall be constructed with materials common throughout the Portland's downtown and waterfront rich architectural history. Use of materials such as brick, stone, steel and wood is required for the first 40 vertical feet of a building's base, especially on pedestrian□oriented street wall facades. The use of these high□quality materials is intended to convey a solid, lasting look. Buildings should employ industrial materials as a way of visually and conceptually evoking the industrial/working heritage of Portland's downtown and waterfront. These include timber, forged and cast metals as well as rough hewn stone and metal cables.

The use of cement fiber shingles, imitation stone, imitation brick, stucco or exterior insulation finish systems will be considered on any building façade above the first 40 vertical feet of the buildings.

Facade coloration shall be achieved by use of the inherent color of building materials rather than the application of color to the surface of materials. Paint should be reserved for trims and accents on metal, wood, cornices, frames and the like. Use of material's inherent color sets a standard of authenticity associated with industrial structures. Examples of this type of façade coloration desired are a variety of earth tones achieved through the use of unglazed brick, wood, concrete and steel.

Masonry facades shall include the use of stone as architectural accents for lintels, sills, copings and keystones. Foundation bases, sills and lintels shall to the greatest extent possible use local (within 500 mile radius) stone or limestone. Masonry finishes are encouraged to be natural rather than highly finished or polished.

6.2 Glass and Fenestration

The base of buildings should feature the use of glass for the first story to emphasize the importance of the ground level active use (only one level of active use is required). Glazing and openings shall promote a flexibility of ground floor uses and the potential for change over time. Proportion of glazing to overall wall area shall be a minimum of 75% on ground level street wall frontages facing public rights□of□way. The first floor windows and storefronts will be transparent with active uses visible behind them. Opaque glass shall not be used at the first floor level. Window openings shall express sills and headers of metal or stone. Storefronts should be integrated into the design and materials of the entire building. The storefront's bulkhead/knee wall should be constructed of a durable and evocative material. Transoms are encouraged for larger window units. In all building facades windows are encouraged to be set back from the wall surface a minimum of six inches from the surface of masonry to the glazing. Tinted or reflective glass will not be utilized.

Window proportions, groupings and rhythms shall be integral elements of the design of each building facade and urban street□wall. Punched windows are desired above the 2nd floor. Curtain walls are discouraged unless used to define a vertical corner or other discreet architectural emphasis. Glazing systems shall be designed to promote area□wide visibility, accessibility and safety during evening hours and during the winter season. Well designed fenestration patterns that evoke historic fenestration are preferred over attempts to replicate historic patterns.

7. Signage

Signage lighting should come from direct shielded light sources and be carefully integrated into the overall design of the building so as to provide visibility and safety but avoid creating glare or light distribution that adversely affects motorists or pedestrians. Backlit signage is generally discouraged.

Neon signs may be allowed so long as they are carefully designed in size, shape and color that complement the architecture of the building and the district.

8. Lighting
The vision for Bayside seeks a maximum amount of light that creates a variety of environments and experiences. Lighting should be used for artistic purposes and carefully integrated with the architecture and buildings, such as to accent edges.

The commercial buildings are intended to be inviting to the public, to encourage visitors to enter the site from the city streets, to shop at the retail stores and eat at the restaurants, and to generally stay longer and take full advantage of the waterfront area. Balanced against an appropriate level of street illumination, there is a need to limit light that is cast up and into upper floors of buildings or the atmosphere. Lighting fixtures should be scaled to the pedestrian and have a distinctive industrial character. Architectural accent lighting should highlight corners and roof edges.

Storefront lighting is one of the best sources of sidewalk lighting in urban areas. It is warm and welcoming, and contributes to a sense of activity and watchfulness. It also generally provides a greater amount of light directly onto the sidewalk than do street□level luminaries. Retail storefronts are an effective way to provide lighting from the buildings.

The first four feet inside any retail or restaurant establishment shall have decorative lighting, preferably with visible point sources. Occupancies on the first floor that do not have active, bright window displays shall be designed to provide visual articulation from lighting at no greater than 25 feet intervals. This can be accomplished in a variety of ways, such as:

• Decorative luminaries mounted to walls, posts, brackets, etc.
• Lighting surfaces, textures and objects such as pilasters, wall features, banners, sculptures, graphics, etc.
• Internally lighted glowing architectural or graphic elements such as glass block, display cases, signage panels, canopies, transparencies, etc.
• Lighting at entryways (especially if they are recessed).
• Lighting property addresses.

9. Retail

9.1 Retail Storefront Requirements
All buildings with retail on the first floor shall incorporate a traditional storefront design with a large display window or windows of clear glass, bulkheads, recessed entries (where appropriate), transom windows, and suitable locations for signs at their ground levels. Blank walls should be minimized and static displays (including photographs) will discouraged in display windows. Modern and creative design solutions may be employed as long as the traditional storefront proportions are referenced. Multiple storefronts within the same building should be visually compatible in terms of scale, alignment, color and materials. The intent is to encourage creativity by individual retailers to add to the character and place making of Bayside.

9.1.1 Storefront Character
Storefronts should be individual expressions of a tenant's identity; however, tenants will be discouraged from using national brand standard storefronts and/or representations of their identity in an effort to create a retail environment that is uniquely Bayside Storefronts should be integral to the building design but should also provide a distinct retail identity at the ground level.

9.1.2 Storefront Entries and Doors
Door placement and design are an integral part of each storefront, as they are the prevalent method of entry into each space. Placement and design should provide a direct "connection" to the sidewalks and streets. Restaurants tenants are encouraged to provide a clear thru□way and a visual connection to exterior seating areas, if any.

9.1.3 Storefront Materials
The design, fit, and finish of all components for each storefront should be of the highest quality. Additional focus should be on window design to create a visual connection between the interior and exterior. Durable materials should be utilized for storefront construction as these are especially critical at street level where pedestrian contact will be considerable. Storefronts should be pre□dominantly glass to provide views into the store, but glass should not be the exclusive material.

9.1.4 Storefront Lighting
Night lighting of retail will help animate Bayside, prolong street life after business hours, and increase pedestrian safety. Storefront facades, recessed doorways, outdoor spaces and passageways should be well lit. Sign lighting, including flat□mounted signs, blade and banner signs, must be lit with concealed lighting or from above with down□lighting. Fixtures should be located and angled to ensure that they spotlight the tenant's merchandise and do not point toward the window or cause distracting reflections. Include "after hour" lighting within the front of stores to contribute to pedestrian lighting and provide for a comfortable night time strolling experience.

9.1.5 Storefront Canopies and Awnings
Design and placement should complement the scale of the store facade design. Collective placement of canopies and/or awnings along a street should maintain overall design integrity and avoid a uniform layout providing weather protection at a minimum of 20 feet at all storefront and building entrances. Canopies shall be constructed of permanent, durable materials, with glass and steel preferred. Awning material should be of a woven fabric or other material that projects the natural appearance of canvas, metal, glass, etc. Retractable or open side awnings are acceptable. Vinyl awnings and internally lit awnings are not allowed.

9.1.6 Storefront Signage
Creativity in signage design is encouraged and adds to the ground level experience at Bayside. Non□descript box signs are discouraged.

10. Sustainability
The project will be designed in accordance with the energy standards of the building codes and using new sustainability construction practices.

EXHIBIT 4 (part 3 of 3)
[Phase I Specifications Sheet]

Standard Features

EXTERIOR FEATURES
- Pile / Grade Beam Foundation Construction
- Parapet roof design
- Multi-ply Insulated Roofing Membrane system
- Parking Garage access
- Direct access to ground floor retail
- Connecting walkways to Bayside trail
- Multi material exterior facade; brick, exterior insulated finish systems, glazing and metals

BATHROOMS
- 2- Bedroom Units shall have 2 baths; 1- Bedroom Units shall have 1 ½ baths
- Polished Brass/Chrome Fixtures & Accessories in Bathrooms
- Surface mount brushed nickel/brass vanity lights
- Half Baths/Powder rooms Pedestal Sink
- Full and ½ baths shall have White Laminate Cabinets and solid surface vanity tops with integral sink
- Baths shall have ceramic on floor and walls
- Elongated Commodes in all Baths
- Handicapped Units equipped per code
- Energy Star Rated Bathroom Fans per specification

KITCHEN
- Maple Cabinets with 30" – 42" Upper Wall Cabinets
- Premium grade Formica Counter Tops with 3 ½" backsplash
- Single Bowl Stainless Steel Drop in Sink
- Garbage disposal
- Single Lever Polished Chrome Faucet with spray
- Energy Efficient Appliance Package to include: Dishwasher, Self-Cleaning Oven, Microwave with re-circulating exhaust fan, Side x Side Refrigerator
- Appliance Packages to be Profile or Stainless Steel
- Surface mount light in Kitchen and Dining areas

ENERGY EFFICIENCY
- Energy Star Forced Warm Air High Efficiency Electric Furnace with Central Air Conditioning per unit
- Energy Star Rated 45 Gallon Electric Hot Water Heater per unit
- Energy Star Rated Efficient Double Glazed Double Hung Vinyl Tilt Windows with Screens and Grilles
- Energy Star Rated Insulation in Attic ceiling areas and Interior Walls

FLOORING
- Vinyl Flooring in Foyer, Kitchen, Laundry and Baths
- Carpeting in Hallways, Bedrooms, Dining Room, Living Room and Closets

INTERIOR FEATURES
- Six Panel Masonite Interior Doors with Brushed Nickel/Brass Hardware
- All doors, windows and cased openings shall be trimmed with 2 ½" casing. Baseboard shall be 3 ¼"
- Walls are painted one prime and one matte flat finish Sherwin Williams Linen White; trim is painted one prime and two coats semi-gloss latex Sherwin Williams White. Ceilings are smooth finish and painted white
- Ventilated Shelving in closets
- Washer and Electric Dryer per unit
- Approximately 8' Ceiling Height on all levels
- Cable/Data/Telephone ports in all bedrooms and living areas
- Outlets per code

COMMON AREAS

- Vestibules and lobby areas shall have tile and carpet flooring and painted walls
- Common hallways shall have carpeting and painted walls
- Centralized elevator lobby location (pedestrian and service) per building
- Centralized mail center per building
- Fully furnished amenity areas
- Management/Leasing Office on-site
- Private ground floor door entry with security system

CONSTRUCTION FEATURES

- Type I Construction, steel and concrete frame
- Concrete/Metal decking Flooring system
- Panelized exterior wall system; EIFS, glazing, brick
- Concrete/Metal decking Flooring system
- Interior Walls and Ceilings are gypsum wall board per code
- Closed Loop Mechanical System
- 150 Amp Electrical Service per unit
- Hard wired smoke and heat detectors with battery backup and one combination smoke/carbon monoxide detector per code
- Ground Fault Interrupt (GFI) installed per code
- Fire Suppression designed per code
- STC Rating designed per code

EXHIBIT 5

[Job Creation Agreement]

JOB CREATION AGREEMENT

THIS JOB CREATION AGREEMENT made this 15th day of October between **LEGACY PARK APARTMENTS LLC**, a Florida limited liability company, with a principal place of business at 801 Brickell Avenue, Suite 720, Miami, Florida 33131, its nominee or assignee, ("Legacy Park"), and **CITY OF PORTLAND, MAINE** a municipal corporation located at 389 Congress Street, Portland, Maine 04101 ("City").

WHEREAS Legacy Park is the assignee, by virtue of an Assignment and Assumption Agreement effective June 27, 2011, ("Assignment"), of a Purchase and Sale Agreement between The City of Portland, Maine, ("City"), effective June 23, 2011, (collectively, "Agreement"), as amended, for the purchase of certain blighted and brownfield real property located on Somerset Street, Portland, Maine known as Lots 1, 2, 3, 5, 6, 7, 8 and a portion of Lot 9, (collectively, "the Land"), consisting of approximately 3.25 acres formerly known as the "Bayside Railyard";

WHEREAS City, in order to create jobs and economic growth for the Citizens of Portland, Maine, has agreed to make a $9,007,000.00 contribution, ("City Grant Funds"), to Legacy Park from funds being provided to the City by the U.S. Department of Housing and Urban Development pursuant to the Bayside Redevelopment Project, Maine BEDI Grant and Section 108 Loan Program, ("HUD Funds"), toward the expense of the construction of a garage, with no fewer than 700 parking spaces and approximately thirty thousand square feet of commercial space on the first floor on a portion of Lot 5 and all of Lots 6 and 7 and a portion of Lot 9, ("Garage");

WHEREAS Section 11 of the Agreement requires Legacy Park to comply with all the terms and conditions related to the use of the HUD Funds contributed by the City as City Grant Funds to Legacy Park for the construction of the Garage related to providing documentation of job creation in accordance with the terms of this Job Creation Agreement.

NOW THEREFORE, in consideration of the foregoing and for good and valuable consideration the parties covenant and agree in this Job Creation Agreement as follows:

1. Job Creation Requirement:

   (a) Legacy Park shall create a minimum of 40 new[1] permanent, full-time or full-time equivalent jobs[2] in the Bayside neighborhood resulting from or related to the disbursement of the City Grant Funds for the construction of the Garage. ("Job Creation Requirement"). For the purpose of this Jobs Creation Agreement, Legacy Park may meet the Job Creation Requirement with jobs related to the operation of the Garage or jobs related to new or existing Bayside neighborhood business activity created or increased by the operation of the Garage. The new jobs may be, but are not required to be, employees of Legacy Park, or its lessees.

[1] In accord with HUD law and regulations, these must be new jobs, and not re-located jobs.

[2] Per currently applicable regulations, full time jobs require a worker to work at least 1750 hours per year. Part time jobs require a worker to work at least 875 hours but less than 1750 hours per year. Part-time jobs **must** be converted to Full Time Equivalents (FTE). An FTE can be defined as two part time jobs. Also or said another way, no more than two part-time jobs can equal one full-time job.

City agrees to assist Legacy Park with information required by Legacy Park to meet the Reporting Requirements of this Job Creation Agreement related to Job Creation Requirement. In particular, when 'countable' new jobs are created by businesses that are not lessees of Legacy Park, the City will use best efforts to assist Legacy Park to obtain the necessary documentation from such employers or otherwise, to 'count' these jobs to, in part, meet this Job Creation Requirement; Legacy Park, however, acknowledges that this Job Creation Requirement (and the related reporting) remains its obligation. The jobs must be created within two (2) years from the issuance of the Certificate of Occupancy for the Garage.

(b) Legacy Park shall be deemed to have met the Job Creation Requirement and this Job Creation Agreement shall terminate upon submission to the City of a Position Summary Quarterly Report identifying the 40th full time or full time equivalent new job created in accordance with the provisions of Section 1(a) of this Job Creation Agreement, and verification and approval of the same by the City.

2. Reporting Requirements:

Legacy Park shall submit a Position Summary Quarterly Report, (Attachment A), for all new jobs created under this Job Creation Agreement on a quarterly basis until the Job Creation Requirement is met:

(a) total number of full time persons employed as a result of the completion of the Garage;

(b) total number of part time persons employed as a result of the completion of the Garage; and

(c) the employee name, job title, and average number of hours worked per week for the previous quarter.

AND EITHER (Choose 1 or 2 to be used for Legacy Park and it's Lessees reporting job creation):

1) Applicant/employer certifications (Attachment B) to be completed by all potential employees and the employer;

OR

2) A copy of the companies' payrolls. A baseline payroll must be submitted prior to the completion of the Garage.

3. Default. Legacy Park shall be deemed to be in default of this Job Creation Agreement if there is a failure to comply with any of the terms, conditions, provisions, or covenants of this Job Creation Agreement, or its obligations hereunder, including its obligation to meet

the Job Creation Requirement set forth herein. Any default will be considered a breach of this Job Creation Agreement and Section 9 of the Parking Garage Contribution Agreement. If Legacy Park informs the City, in good faith, at least 3 months before the deadline for its meeting this Job Creation Requirement that Legacy Park may not meet this deadline, with evidence and reasons for this, the City will use its best efforts to obtain an extension of this deadline from HUD or to otherwise change this requirement, such as a reduction in the number of required new jobs, and if it obtains such an extension or change, it shall immediately transmit to Legacy Park evidence of this extension or change by HUD, and this timetable shall thereby be correspondingly changed, without further action of the parties hereto being required.

4. Records. Legacy Park agrees to maintain a copy of all records related to the creation of jobs as required by this Job Creation Agreement for a period of four years after the creation of the 40th job. Legacy Park will, at any time during normal business hours, and as often as the City may deem necessary, permit the City, HUD or its designee to have full and free access to Legacy Park's records related to the new jobs identified in the Position Summary Quarterly Reports submitted under this Job Creation Agreement and to make copies of same at no cost or expense to the City. This right also extends to verification of the wages paid related to the new jobs. City agrees to review and maintain copies of such employment related records in complete confidentiality and in accordance with all State and Federal laws related to employment information and records.

5. Compliance with Laws and Regulations. Legacy Park, as the recipient City Grant Funds, shall comply with all applicable requirements of Federal laws related to the HUD Funds received by the City including, but not limited to, the applicable provisions of Title 24 Code of Federal Regulations, Section 570, state or local laws, regulations or ordinances and further agrees to abide by Title VIII of the Civil Rights Act of 1968 barring discrimination upon the basis of race, color, religion, familial status, sex or national origin, in the sale, lease, rental, use or occupancy of Legacy Park's property

6. Entire Agreement. This Job Creation Agreement and the Parking Garage Contribution Agreement constitute the entire agreement between the parties arising out of or related to Section 11 of the Agreement, as assigned and amended, and supersedes all prior representations and understandings of the parties. No modifications or amendments of the Job Creation Agreement shall be binding unless executed in writing by all the parties.

7. Waiver. No waiver of any of the provisions of this Job Creation Agreement shall be deemed, or shall constitute, a waiver of any other provisions, whether or not similar, nor shall any waiver constitute a continuing waiver. No waiver shall be binding unless executed in writing by the party making the waiver.

8. Successors. This Job Creation Agreement shall be binding upon and shall inure to the benefit of, the parties, their respective personal representatives, heirs, successors and assigns.

9. Assignment. Legacy Park shall not have the right to assign this Job Creation Agreement, or any rights hereunder, to any person or entity without the express written consent of the City. Such consent by the City shall not be unreasonably withheld.

10. Governing Law. This Job Creation Agreement shall be governed by and construed in accordance with the State of Maine.

11. Notices. Any notice by either party to the other party shall be in writing and shall be deemed to have been duly given when either delivered personally, or mailed by certified mail, return receipt requested, or sent by nationally recognized overnight courier, or sent by facsimile, or sent by e-mail addressed to the City at Portland City Hall, 389 Congress Street, Portland, Maine 04101, Attn: City Manager facsimile 207-874-8669, email: MHR@portlandmaine.gov, with a copy to, the Director of Economic Development, facsimile 207-756-8217, email: gmitchell@portlandmaine.gov, and another copy to Corporation Counsel, at the same address, facsimile 207-874-8497), email: gary@portlandmaine.gov , and to Buyer c/o The Federated Companies, 801 Brickell Avenue, Suite 720, Miami, Florida 33131, Attn: Jonathan Cox, facsimile (800) 523-5931, email: j_cox@federatedcompanies.com.

12. Counterparts. This Job Creation Agreement may be executed in any number of counterparts, which together shall constitute one document.

13. Paragraph Headings. The paragraph headings hereof are for convenience only and shall not form a part of this Job Creation Agreement or be used in the interpretation hereof.

IN WITNESS WHEREOF, the parties have executed this Job Creation Agreement as of the date first written above.

Legacy Park Apartments LLC:

Witness

By: Jonathan Cox
Its: Member

City of Portland, Maine

Witness

By: Mark H. Rees
Its: City Manager

Approved: Ellen Sanborn/Finance Director

Approved as to Form/Corp. Counsel

ATTACHMENT A

POSITION SUMMARY QUARTERLY REPORT

This report summarizes all the *new* employee information you have collected for new positions created since your last report. Please list all new employees hired. *Do not include new employees hired to fill job vacancies caused by an employee who left.* The report should be completed as of the last day of each quarter (March 31, June 30, September 30, and December 31) and submitted to avp@portlandmaine.gov by the 10th of the month following the quarterly period covered. The report is to be submitted by Legacy Park with either: 1) the Applicant/ Employer Certifications (attachment B) or 2) a copy of the company's payroll, including all weeks in the quarter. If you decide to submit the company payrolls you will need to provide a baseline payroll prior to utilizing the garage. If you have any questions, please do not hesitate to call at 207-874-8731.

Date: _____
*Company Name:*_____

Employee's Name	Job Title	Work Hours per Week

Number of Full Time Employees at End of Last Quarter _____

Number of Part Time Employees at End of Last Quarter _____

Number of New Full Time Positions Filled in this Quarter _____

Number of New Part Time Positions Filled in this Quarter _____

Total Full Time and Part Time Employees Ending this Quarter _____

(No more than two part time jobs can be added to create one full time equivalent.)

Employer Certification

To the best of my knowledge, I certify that the information contained in this position Summary Report is true and accurate.

_____ _____

Quarter Ending Signature/Title

_____ _____

Date Company

ATTACHMENT B

Applicant/Employer Certification

This employer has received funding from the City of Portland for business expansion that will create new jobs. The funding for this program comes from the U.S. Department of Housing and Urban Development. One of the requirements of this program is that we must report information about potential employees. Please complete the information requested below and return it to the employer. The information will not be used to evaluate you for this position.

Thank you in advance for your cooperation. If you have any questions about completing this form, please feel free to contact us at 207-874-8731.

APPLICANT CERTIFICATION

Name:_____Address:_____

Employer:_____Job Applied For: _____

How many persons live in your household? ___
The Head of Household is female ___ or male___

Check all that apply. I am:
_____ Hispanic or Latino
_____ American Indian or Alaskan Native
_____ Asian
_____ Black or African American
_____ Native Hawaiian or Other Pacific Islander
_____ White

Date: _____ Signature: _____

EMPLOYER CERTIFICATION

Job Title: _____

Full Time _____Part Time _____ # of Hours per Week _____

Starting Pay/Hourly Rate $

Date Interviewed: ___/___/___Date Hired: ___/___/

Employer Name_____ Signature/Title_____

EXHIBIT 4

TECHNICAL AND FINANCIAL CAPACITY

TECHNICAL & FINANCIAL CAPACITY

The applicant has assembled a highly qualified team of professionals to plan, permit, and develop construction documents for the project. The Team is working under the direction of Mr. Jonathan Cox, The Federated Companies as Project Developer.

The Team services will be provided by the following companies and their respective team leaders:

CONSULTANT TEAM

Agent	Stephen B. Bushey, P.E. Fay, Spofford & Thorndike 778 Main Street, Suite 8 South Portland, ME 04106 (207) 775-1121 – Work (207) 879-0896 – Fax (207) 756-9359 – Cell sbushey@fstinc.com
Civil Engineer	Bo E. Kennedy, P.E. Fay, Spofford & Thorndike 778 Main Street, Suite 8 South Portland, ME 04106 (207) 775-1121 – Work (207) 879-0896 – Fax (207) 318-8364 – Cell bkennedy@fstinc.com
Architect	David Hancock AIA LEED CBT Architects 110 Canal Street Boston, MA 02114 (617) 646-5353– Work Hancock@cbtarchitects.com
Surveyor	Ellen Brewer Owen Haskell, Inc. 390 US Route 1, Unit 10 Falmouth, Maine 04105 (207) 774-0424 – Work (207) 774-0511 – Fax ebrewer@owenhaskell.com
Landscape Architect	Robert Metcalf, RLA Mitchell & Associates 70 Center Street Portland, Maine 04101 (207) 774-4427 rmetcalf@mitchellassociates.biz

EXPERIENCE OF PROJECT TEAM

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. A listing of the additional real estate projects for which the Applicant's development team has been involved can be provided upon request.

FINANCIAL CAPACITY

The applicant has the means at its disposal for financing the proposed midtown project. A Financial Capacity letter is included at the end of this attachment.

HFF

Jonathan Cox
PO Box 370008
Miami, FL 33137-4110
Sent via e-mail: j_cox@federatedcompanies.com

November 3, 2014

Re: Letter Regarding Federated Companies

Dear Mr. Cox,

The following memorandum confirms HFF's long standing relationship with the Federated Companies, the proposed borrower for your loan. HFF confirms that and the borrower has the financial capacity and relevant experience to acquire financing for the "midtown" project in Portland, ME, as revised, the estimated cost of which is +/- $85M. Our firm has worked closely with the Federated Companies on a number of recent transactions including arranging financing for a variety of multi-housing and retail properties.

HFF is a leading mortgage banker in the U.S. whose extraordinary transaction volume provides the unparalleled capital markets knowledge necessary to develop the creative financing strategies, meeting and exceeding client expectations. Our long established relationships with insurance companies, investment banks, foreign and domestic banks, a Fannie Mae lender, Freddie Mac, and pension funds have allowed us to provide our clients with the most competitive terms and most reliable executions in the market.

Should you have any questions feel free to contact us at the address below.

Sincerely,

Scott Wadler

HFF | 1450 Brickell Avenue, Suite 2950| Miami, FL 33131
tel 305.448.1333.| **fax** 305.448.9499 | www.hfflp.com
swadler@hfflp.com

EXHIBIT 5

UTILITIES NARRATIVE

UTILITIES NARRATIVE

The public utility providers, which will serve the project, are as follows:

Water Attn: Norm Twaddell Portland Water District 22 Douglas Street P.O. Box 3533 Portland, Maine 04104 207.761.8310	**Sewer** Attn: Frank Brancely, B.A., M.A. David-Margolis-Pineo, P.E. City Of Portland Public Services Department 55 Portland Street Portland, Maine 04102 207.874.8840
Power Attn: Jamie Cough Central Maine Power 162 Canco Road Portland, Maine 04103 207.791.1023	**Telephone** Attn: John Caprio Fairpoint Communications 5 Davis Farm Road Portland, Maine 04103 207.797.1678
Cable Attn: Andrew Trottier Time Warner Cable 118 Johnson Road Portland, Maine 04102 877.546.0962	**Natural Gas** Attn: Joe Render, Kelly Fowler Unitil (formerly Northern Utilities) 1075 Forest Avenue Portland, Maine 04103 207.541.2505

Previous approvals for a larger scale midtown project demonstrated the utility infrastructure was adequate to serve the project. Previously in 2013, CMP cautioned the electrical demand was approaching a threshold wherein an upgrade to the substation behind the Portland Post Office would be required. This new application will place substantially less demand on the utility infrastructure than the previous plan. This is demonstrated by the following comparison of the scope of the project:

Previous (2013)	Proposed (Nov. 2014)	Change
100,000 SF of Retail	91,500 SF of Retail	-8,500 SF of Retail
560 Apartments	445 Apartments	-115 Apartments
160 Condominiums	--	-160 Condominiums

For this new application, the applicant has requested new "ability to serve" letters from the various utilities. Jamie Cough of CMP is coordinating with the project design team to determine if the substation will be adequate for the midtown project. The applicant is confident the combination of the following will keep the electric demand levels below those which would exceed current capacity of the existing substation:

1. The substantial reduction in the size and scope of the project of this application compared with the prior application;
2. The use of highly efficient lighting and power equipment; and
3. The use of natural gas in lieu of electrical power, where appropriate, to reduce the electrical demand.

The precise method of avoiding a demand load which exceeds CMP's substation capability at the Post Office will be part of the final building design by the project's MEP consultants. The applicant will coordinate with CMP during the design of the building.

The applicant has investigated the availability of utility service in the area. Existing conditions and proposed plans showing the current sewer, water, storm drainage, gas, communications, and electrical services along the streets, accompany this submission.

All utilities except a limited amount of storm drainage will come from services along Somerset Street. The exceptions are:

1. Sewer, power, and water services for midtown one will come from services connected to extensions of the mains on Pearl Street Extension from Somerset Street;
2. midtownThree will have sewer service from the Chestnut Street sewer;
3. midtownFour will have sewer, water, gas, power, and communications services from utility extensions along Elm Street; and
4. The distribution system for power and individual services to the midtown project will come from the northerly (public trail side) of the project.

Conservative assumptions were used to determine a flow rate for use in requesting the ability to serve the project with sewer and water. The flows used for this purpose were based upon a tabulation of flow for water and sewer based upon the Maine State Plumbing Code Part II and the assumed uses within the project. This tabulation is attached and shows that a flow of about 106,500 gallons per day was used when the ability to serve letter was requested from both the City (sewer) and the Portland Water District.

The utility service adjustments, replacement, and design required numerous meetings with the utility providers, the City and the Federated team to insure the layout met the utility needs of the project, did not preclude future development in other portions of Bayside, to satisfy aesthetic concerns, and to avoid conflict with other project elements. Resolution of utility issues is also needed as part of the City's application to re-subdivide the property since the requirement to place the utilities underground is part of the subdivision. Federated will become the owner of the lots with the City retaining lots two and nine.

PREVIOUS ABILITY TO SERVE INFORMATION

- **Water:** The Portland Water District's previous ability to serve letter (11/19/12) for the project is enclosed with a schematic of the area showing hydrants and recent hydrant flow data. The data shows the 16-inch main on Somerset Street is expected to have adequate fire flow capacity. An estimate of the available fire flow will need to consider a pressure reduction of about 75 psi to account for the elevation difference between the top and bottom floors of the building. Losses inside the building and the sprinkler distribution system will need to be computed by the designer of the sprinkler system. The Portland Water attended several of the past year's utility coordination meetings. Their comments have been fully addressed except for a requirement to conduct test pits to allow the relative water main and lightweight concrete elevations to be confirmed such that adequate provisions are made to protect the main during construction.
- **Sewer:** The separated sewer along Somerset Street has stubs that were placed for serving the project site. Some of these existing stubs will be used but other new services will be required as

shown on the utility plans that accompany this application. An updated wastewater capacity application has been submitted. The previous ability to serve and capacity letter received from the City of Portland is enclosed. David Margolis-Pineo facilitated many of the utility coordination meetings as well as reviewed the sewer plans for the project.

Grease traps to permit potential restaurants to occupy portions of the project are included on the plans. midtownOne, Two, Three and Four will have this capacity. The plans also include oil water separators and service connections for the internal decks of the parking garage with surface water from the top deck being directed to the water quality pretreatment systems prior to discharge to municipal storm drains.

- **Gas:** Unitil has indicated they have the ability to serve the project but work will be required to permit the project to use gas as a major energy source. The work will include replacement of the gas line along portions of Somerset Street where reconstruction to raise the street elevation is proposed.

- **Drainage:** The project site is served by a separated storm sewer, which was constructed as part of a sewer separation project around 2003. The City's storm drain construction included drainage stubs to serve the project. A formal drainage study has been prepared to determine storm water management for the project.

  The project is required to meet City's water quality standards. A series of options to meet the stormwater quality standards is provided in the stormwater management plan that accompanies this submission. The selected options are depicted on the plan set that accompanies this application.

- **Power and Communications:** The existing electrical and communications lines are currently overhead along Somerset Street. The power includes a three-phase service. The telephone and communications lines will be placed underground on the northerly side of Somerset Street when it is reconstructed. CMP has issued an ability to serve letter for the project with financial obligations for the relocation and new services under discussion between the City (who is the subdivider of the property) and Federated (who plans to purchase lots 1, 2, 3, 4, 6, and 7) who will construct the midtown project.

<u>Attachment A – Ability to Serve Information</u>

- Portland Water District
- Fairpoint Communications
- Time Warner Cable
- Central Maine Power
- Unitil
- City of Portland Wastewater Application

<u>Attachment B – Previous Ability to Serve Information</u>

- Portland Water District
- Fairpoint Communications
- Time Warner Cable
- Central Maine Power
- City of Portland Wastewater Capacity Application and Ability to Serve Letter

Utility Plans (Drawings C-4.0 to C-4.4 in Plan Set) show the utility extension and plans for the entire midtown project.

ATTACHMENT A

From:	Celina Daniell
To:	"AMAP Means E-mail"; "Cough, Jamie"; "Caprio, John"; "andrew.trottier@twcable.com"; "Fowler, Kelly"; "ghavu@pwd.org"; Norman Twaddel (ntwaddel@pwd.org)
Subject:	Ability to Serve Request midtown Project
Date:	Monday, November 10, 2014 2:44:00 PM
Attachments:	midtown Project program statement11.10.2014.pdf

Our office sent Ability to Serve Request letters to you on November 3, 2014 regarding the midtown project in Portland. Please note the project numbers have changed slightly from 440 units to 445 and 800 spaces to 828 off street parking spaces. Please see attached breakdown.

If you have any questions with regards to the number changes, please contact our office.

Thank you,

Celina Daniell

Celina M. Daniell | Technical Assistant
FAY, SPOFFORD & THORNDIKE
Celebrating a Century of Engineering Excellence
778 Main Street, Suite 8 | South Portland, ME 04106
T: 207-775-1121 x4101 | F: 207-879-0896
cdaniell@fstinc.com | www.fstinc.com |

midtown Project, Somerset St., Portland, ME

The accommodation in the four buildings is as follows:

*midtown*One Building:
7,500 sq. ft. net retail area
15 studio apartments, 1 full bath each, average 455 net sq. ft. each
40 1BR apartments, 1 full bath each, average 715 net sq. ft. each
25 2BR apartments, 2 full baths each, average 955 net sq. ft. each
[each apartment and studio has one kitchen sink, dishwasher, and washer/dryer]
[residential heating and cooling by electric split-system heat pumps; retail AC by air-cooled electric AC machines]
Total 80 apartments, net rental area 59,300 sq. ft. +/- Gross building area 90,600 sq. ft. +/-

*midtown*Two Building:
32,000 sq. ft. net retail area
828 total (including 17 handicap and 25 coin-op EV charging stations) parking spaces
[garage is naturally ventilated; elevator machine rooms will have electric heat pumps; retail AC by air-cooled electric AC machines]
Gross building area 266,500 sq. ft. +/-

*midtown*Three Building:
44,000 sq. ft. net retail space
90 1BR apartments, 1 full bath each, average 600 net sq. ft. each
170 2 BR apartments, 2 full baths each, average 800 net sq. ft. each
[each apartment has one kitchen sink, dishwasher, and washer dryer]
[residential heating and cooling by electric split-system heat pumps; retail AC by air-cooled electric AC machines]
Total 260 apartments, net rental area 190,000 sq. ft. +/- Gross building area 289,000 sq. ft. +/-

*midtown*Four Building:
8,000 sq. ft. net retail area
105 studio apartments, 1 full bath each, average 400 net sq. ft. each [each studio has kitchen sink and dishwasher
no washer dryers in units; building will have coin-op W/Ds
[residential heating and cooling by packaged terminal air conditioners; retail AC by air-cooled electric AC machines]
Total 105 studio/lofts; Net rental area 42,000 sq. ft. +/- Gross building area 69,000 sq. ft. +/-

Total *midtown* Project:
Total 91,500 sq. ft. net retail space
Total 828 off-street parking spaces
Total 445 apartments, of which:
- 120 studios
- 130 1BR
- 195 2BR

Total gross building area 715,100 sq. ft. +/-

November 3, 2014

Mr. Rico Spugnardi
Portland Water District
225 Douglass Street
PO Box 3553
Portland, ME 04104-3553

Subject: Request for Ability to Serve
midtown Project
Somerset Street – Portland, Maine

Dear Rico:

Fay, Spofford & Thorndike has been retained by The Federated Companies who plan to develop a mixed-use project on Somerset and Chestnut Street. An aerial photograph of the site and a survey are enclosed which identify the locus of the site. The midtown project will continue to consist of Retail shops or restaurants on the ground floor level with about five stories of housing three of the four buildings. The fourth building will have six stories of structured parking above the ground floor retail or restaurants.

The average daily consumptive flows are not expected to exceed 105,000 gallons per day, an average of 73 gallons per minute, and a peak flow of about 353 gallons per minute. There may be a small irrigation system for landscaping and the buildings will be sprinkled with fire services.

We are required to include an updated ability to serve letters from all utility providers as part of our final technical submission for the city application that we will make on November 14, 2014.

Our office is interested in the following information:

1. Any up updated records of hydrant tests bounded by the project area including Preble Street, Marginal Way, Franklin Arterial, and Somerset Street.

2. Can each building have its own service if there are multiple buildings even though there may be a single owner?

3. Verification that Portland Water District has the ability to provide water for the project.

778 Main Street, Suite 8
South Portland, ME 04106
T: 207.775.1121
F: 207.879.0896
www.fstinc.com

FAY, SPOFFORD & THORNDIKE
Offices in: Massachusetts, New Hampshire, Maine, Connecticut and New York

If you have any questions with regards to this request, please contact our office.

Sincerely,

FAY, SPOFFORD & THORNDIKE

Bo Kennedy, P.E.
Project Engineer

BEK/cmd

Enclosure

c: Nick Wexler
David Hancock
AP Means – Glissen Havu

R:\3062B - midtown Amended - Portland, ME\Admin\Correspondence Out\Utilities\3062B 2014.10.31 PWD.doc

midtown by Federated Companies

Portland, Maine

31-Oct-14

The exact size and makup of the mixed used development is unknown and subject to refinement.

A program that Fay, Spofford &Thorndike would anticipate to be adequate and conservative for the "ability to serve" requests for water and sewer would be as follows:

Use	Quantity	Description	Unit	Unit Flow (gpd)	Total Flow (gpd)
midtownOne	80	Dwelling Units	Two bedroom apartments[1]	180	14,400
midtownOne	11,000	Retail	Area (SF)	N/A	N/A
midtownOne	10	Retail	Employee	12	120
midtownOne	2	Retail-Toilet	Toilet	325	650
midtownOne	114	Restaurants - Eating Place 2 meals/Day	Seats	25	2,850
				midtownOne Subtotal	18,020
midtownTwo	0	Dwelling Units	Two bedroom apartments[1]	180	-
midtownTwo	27,200	Retail	Area (SF)	N/A	N/A
midtownTwo	24	Retail	Employee	12	288
midtownTwo	3	Retail-Toilet	Toilet	325	975
midtownTwo	281	Restaurants - Eating Place 2 meals/Day	Seats	25	7,025
				midtownTwo Subtotal	8,288
midtownThree	260	Dwelling Units	Two bedroom apartments[1]	180	46,800
midtownThree	40,000	Retail	Area (SF)	N/A	N/A
midtownThree	35	Retail	Employee	12	420
midtownThree	4	Retail-Toilet	Toilet	325	1,300
midtownThree	413	Restaurants - Eating Place 2 meals/Day	Seats	25	10,325
				midtownThree Subtotal	58,845
midtownFour	100	Dwelling Units	Two bedroom apartments[1]	180	18,000
midtownFour	9,000	Retail	Area (SF)	N/A	N/A
midtownFour	8	Retail	Employee	12	96
midtownFour	1	Retail-Toilet	Toilet	325	325
midtownFour	93	Restaurants - Eating Place 2 meals/Day	Seats	25	2,325
				midtownFour Subtotal	20,746
midtown	440	Dwelling Units	Two bedroom apartments[1]	180	79,200
midtown	87200	Retail	Area (SF)	N/A	N/A
midtown	77	Retail	Employee	12	924
midtown	10	Retail-Toilet	Toilet	325	3,250
midtown	901	Restaurants - Eating Place 2 meals/Day	Seats	25	22,525
				midtown Total	105,899
Daily Flow (gpd)	105,899				
population (65 gpcapd)	1,629.22				
Peak Factor [4]	4.80				
Daily Flow (gpm)	74				
Peak Flow (gpm)	353				

Basis Notes:

1. Multifamily dwelling units assume 120 gpd for 1-bedroom units or 90 gpd/bedroom bedroom. The distribution of unit sizes are unknown and FST has assumed a conservative approach of all 2-bedroom units

2. These flows are based upon the State of Maine Subsurface Disposal Rules.

3. Generally FST finds the rates in the Code to be about double the average daily flows.

4. Peaking factor is based on McGraw-hill Series in Water Resources and Environmental Engineering, the peaking factor would be in the order of 4.8 (Page 30, Figure 2-4).

5. Acutal flows may be substantially less. This data is for the purpose of the ability to serve request only, not for use computation

November 3, 2014

Mr. Marty Pease
FairPoint Communications
5 Davis Farm Road
Portland, ME 04103

Subject: Request for Ability to Serve
midtown Project
Somerset Street – Portland, Maine

Dear Mr. Pease:

The Federated Companies intends to construct a mixed-use project on Somerset Street in Portland, Maine. A conceptual rendering of the proposal is enclosed. This will be changed as the design proceeds over the course of the next few months as part of a new permitting effort.

Our office has been retained by The Federated Companies to assist in the civil engineering and preparation of permit applications. The midtown project has been scaled down from the project presented to you in 2012. The exact number of living units, retail, or commercial spaces will be better known over the next month or so. However, we are confident the mix will consist of approximately:

- 440 residential dwelling units; and
- 87,200 square feet of retail, restaurants or commercial space

A parking garage will be constructed on site and will provide approximately 800 parking spaces.

We are required to include ability to serve letters from all utility providers as part of our final technical submission for the City application which we would we will make on November 14, 2014.

If you have any questions with regards to this request, please contact our office.

Sincerely,

FAY, SPOFFORD & THORNDIKE

Bo Kennedy, P.E.
Project Engineer

BEK/cmd

Enclosure

c: Nick Wexler
David Hancock

R:\3062B - midtown Amended - Portland, ME\Admin\Correspondence Out\Utilities\3062B 2014.11.04 (Fairpoint).doc

778 Main Street, Suite 8
South Portland, ME 04106
T: 207.775.1121
F: 207.879.0896
www.fstinc.com

FAY, SPOFFORD & THORNDIKE
Offices in: Massachusetts, New Hampshire, Maine, Connecticut and New York

Fairpoint Communications
Engineering Dept.
5 Davis Farm Rd
Portland, Me. 04103
November 4, 2014

Bo Kennedy, P.E. Project Engineer
FAY, SPOFFORD & THORNDIKE
778 Main St
Suite 8
South Portland, Me. 04106

To whom it may concern:

Fairpoint Communications does have the ability to service the proposed Federated Companies "Midtown Project" located on Somerset St Portland, Me. per the Public Utilities Commission Tariff.

Sincerely,
John Caprio
Senior Network Engineer
Fairpoint Communications
jcaprio@fairpoint.com
207-797-1678

November 3, 2014

Mr. Andrew Trottier
Time Warner Cable
118 Johnson Road
Portland, ME 04102

Subject: Request for Ability to Serve
midtown Project
Somerset Street – Portland, Maine

Dear Mr. Trottier:

The Federated Companies intends to construct a mixed-use project on Somerset Street in Portland, Maine. A conceptual rendering of the proposal is enclosed. This will be changed as the design proceeds over the course of the next few months as part of a new permitting effort.

Our office has been retained by The Federated Companies to assist in the civil engineering and preparation of permit applications. The midtown project has been scaled down from the project presented to you in 2012. The exact number of living units, retail, or commercial spaces will be better known over the next month or so. However, we are confident the mix will consist of approximately:

- 440 residential dwelling units; and
- 87,200 square feet of retail, restaurants or commercial space

A parking garage will be constructed on site and will provide approximately 800 parking spaces.

We are required to include ability to serve letters from all utility providers as part of our final technical submission for the City application which we would we will make on November 14, 2014.

If you have any questions with regards to this request, please contact our office.

Sincerely,

FAY, SPOFFORD & THORNDIKE

Bo Kennedy, P.E.
Project Engineer

BEK/cmd

Enclosure

c: Nick Wexler
David Hancock

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778 Main Street, Suite 8
South Portland, ME 04106
T: 207.775.1121
F: 207.879.0896
www.fstinc.com

FAY, SPOFFORD & THORNDIKE
Offices in: Massachusetts, New Hampshire, Maine, Connecticut and New York

From: Pelletier, Mark
To: Celina Daniell
Subject: RE: Ability to Serve Request midtown Project
Date: Tuesday, November 11, 2014 9:19:06 AM

Celina,

This will by my project as Portland has been my area for many years now, Please remove Andy Trottier to all your correspondence. I have been involved with correspondence with this propose project from the beginning. I believe in November of 2012 I sent a letter out for Ability to Serve?

I will get another one to you here later today as I'm heading out to 2 Pre-con meetings this morning.

Mark

Time Warner Cable
118 Johnson Rd,
Portland Maine 04072
207-253-2325

October 15, 2014

Mr. Jamie Cough
Central Maine Power Company
162 Canco Road
Portland, ME 04103

Subject: midtown Project
New Plan

Dear Jamie:

The Federated Companies are reducing the scale of this project and will be submitting a new Preliminary Level 3 Site Plan to the City of Portland on Friday. The project will be constructed at one time and not phased.

The uses for the property will remain retail on the ground floor with residential units above and one parking garage (not 2).

The prior retail was calculated on 100,000 SF of retail.

Comparably, the makeup of the project changes are as follows:

Building A:

- 6,300 SF net retail area
- 15 studio apartments, 1 full bath each, average 455 net SF each
- 40 1 BR apartments, 1 full bath each, average 715 net SF each
- 25 2 BR apartments, 2 full baths each, average 955 net SF each
- Each apartments and studio has one kitchen sink, dishwasher, and washer/dryer
- Total 90 apartments

Building B:
30,700 SF net retail area

Building C:

- 40,000 SF net retail space
- 90 1 BR apartments, 1 full bath each, average 600 net SF each
- 170 2 BR apartments, 2 full baths each, average 800 net SF each
- Each apartment has one kitchen sink, dishwasher, and washer dryer
- Total 260 apartments

778 Main Street, Suite 8
South Portland, ME 04106
T: 207.775.1121
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www.fstinc.com

FAY, SPOFFORD & THORNDIKE
Offices in: Massachusetts, New Hampshire, Maine, Connecticut and New York

Building D:

- 7,400 SF net retail area
- 100 studio apartments, 1 full bath each, average 420 net SF each
- Each studio has kitchen sink and dishwasher - no washer dryer; building will have coin-op W/Ds

Total 84,400 SF retail space
Total 440 apartments

The property along the northerly side of Somerset Street between Chestnut and Elm Street was previously three parcels. This is being changed to one parcel. We assume the number of transformers to serve this can be reduced from three to one. Subsequently it seems that the midtown 4 building could be fed from a second transformer located adjacent to the midtown 3 parcel. Do you concur?

Our office received this information just recently. In addition to wanting to provide you with the most recent information we have, we also wanted to get your concurrence on the reduction of the number of transformers and well as moving the transformer for midtown 4. We intend to file a preliminary plan on Friday with this reduction in the number of transformer.

We would appreciate your concurrent on reducing the number of transformers at your earliest convenience.

Sincerely,

FAY, SPOFFORD & THORNDIKE

William G. Hoffman, P.E.
President

WGH/cmd

Enclosures

c: Marshal Ripley

R:\3062B - midtown Amended - Portland, ME\Admin\Correspondence Out\3062B 2014.10.17 Cough (CMP).doc

11/11/2014

Celina M. Daniell
Technical Assistant
FAY, SPOFFORD & THORNDIKE
778 Main Street, Suite 8
South Portland, ME 04106
T: 207-775-1121 x4101
cdaniell@fstinc.com
Sent via email

RE: Ability to Serve Letter for Midtown Project in Portland

Dear Ms. Daniell:

CMP has the ability to serve the proposed project located on Somerset Street in Portland, Maine, in accordance with our CMP Handbook (web link below). We can provide you the desired pad or pole mounted transformers per your request and city approval, in accordance with our CMP Standards Handbook. If you have any questions on the process, or need help in completion of the documents, please feel free to contact me.

New Service Milestones

- Call 1-800-565-3181 to establish a new account and an SAP work order.
- Submit any electronic drawings (PDF (preferred) or DWG files) of the site layout and proposed electrical connections if you have them.
- Submit Load information. Please complete this CMP spreadsheet using load information
- Submit the easement information worksheet. Please complete this CMP form and either email or fax back to us.
- Preliminary meetings with CMP to determine the details of job
- Field planner design appointment to cost out job and develop CMP Invoice.
- Submit invoice for payment.
- Easements signed and payment received.
- Job scheduled for completion after the electrical inspection has been received.

This process can take several months, depending upon several factors including transformer delivery, potential substation upgrades, return of completed paperwork, and other jobs in the system that may be ahead of yours. In addition, contact with the other utilities, including telephone and cable, should be

commenced as soon as practical. They may have additional work or charges in addition to the CMP work required to bring your project on line.

For your convenience, here is a link to the CMP Website which contains our Handbook with details on most service requirements:

CMP Handbook of Standard Requirements
(http://www.cmpco.com/MediaLibrary/3/6/Content%20Management/YourAccount/PDFs%20and%20Docs/handbook.pdf)

If you have any questions, please contact me.

Regards,

Jamie Cough
Energy Services Advisor
Central Maine Power Company
162 Canco Road
Portland, ME 04103
207-842-2367 office
207-458-0382 cell
207-626-4082 fax

November 3, 2014

Ms. Kelly Fowler, Sr. Business Development Rep.
Unitil
1075 Forest Avenue
P.O. Box 3586
Portland, Maine 04104

Subject: Request for Ability to Serve
midtown Project
Somerset Street – Portland, Maine

Dear Ms. Fowler:

The Federated Companies intends to construct a mixed-use project on Somerset Street in Portland, Maine. A conceptual rendering of the proposal is enclosed. This will be changed as the design proceeds over the course of the next few months as part of a new permitting effort.

Our office has been retained by The Federated Companies to assist in the civil engineering and preparation of permit applications. The midtown project has been scaled down from the project presented to you in 2012. The exact number of living units, retail, or commercial spaces will be better known over the next month or so. However, we are confident the mix will consist of approximately:

- 440 residential dwelling units; and
- 87,200 square feet of retail, restaurants or commercial space

A parking garage will be constructed on site and will provide approximately 800 parking spaces.

The residential units will operate on electrical heat pumps, electrical dryers and appliances and will NOT include a gas supply component; however, the first floor retail space will have a gas supply.

On behalf of The Federated Companies, we are requesting the following information as soon as possible:

1. Assuming the above are typical restaurants, and retail space, what would you expect the typical demand or range of demand would be:
    - Gas heat?
    - Gas heat with commercial kitchens and a laundry mat?

778 Main Street, Suite 8
South Portland, ME 04106
T: 207.775.1121
F: 207.879.0896
www.fstinc.com

FAY, SPOFFORD & THORNDIKE
Offices in: Massachusetts, New Hampshire, Maine, Connecticut and New York

2. Does Unitil expect to have or expect to be able to provide natural gas service options for the project tenants?

3. Will you continue to be the point of contact at Unitil for this project?

We are required to include ability to serve letters from all utility providers as part of our final technical submission for the City application which we would we will make on November 14, 2014.

If you have any questions with regards to this request, please contact our office.

Sincerely,

FAY, SPOFFORD & THORNDIKE

Bo Kennedy, P.E.
Project Engineer

BEK/cmd

Enclosure

c: Nick Wexler
David Hancock

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Unitil
ME GAS OPERATIONS

November 12, 2014

Mr. Bo Kennedy, P.E.
Project Engineer
Fay, Spofford &Thorndike
778 Main Street, Suite 8
South Portland,ME 04106

Re: midtown Project, Somerset Street, Portland, ME

Dear Mr. Kennedy:

Thank you for your interest in using natural gas for the above referenced project.

Unitil has natural gas in the vicinity of this project to provide service. The evaluation to complete the design, costs and determining what the customer contribution is, can be completed once Unitil receives the completed design and load information. Unitil welcomes the opportunity for further discussions regarding this project.

If you have any further questions or require additional information, please contact me directly at (207) 541-2505 or at fowler@unitil.com.

Sincerely,

Kelly Fowler
Sr. Business Development Representative
Unitil Corporation
(o) 207-541-2505 (f) 207-541-2565

ATTACHMENT B

Portland Water District
FROM SEBAGO LAKE TO CASCO BAY

November 19, 2012

DeLuca-Hoffman Associates, Inc.
778 Main Street, STE 8
South Portland, ME 04106

Attn: William Hoffman, P.E.
Re: Proposed Maritime Landing Project; Somerset Street, Portland
Ability to Serve with PWD Water

Dear Mr. Hoffman:

The Portland Water District has received your request for an Ability to Serve determination for the noted site submitted on October 26, 2012. Based on the information provided, we can confirm that the District will be able to serve the proposed project as further described in this letter.

Please note that this letter does not constitute approval of this project from the District. Please review this letter for any special conditions specified by the District and to determine the appropriate next steps to take to move your project through the submittal and approval process.

Existing Site Service

According to District records, the project site does currently have existing water service. A 1-inch diameter copper water service line at 25 Somerset Street, a ¾-inch diameter plastic water service line at 3 Somerset Street and a ¾-inch diameter copper water service line at 107 Somerset Street, located as shown on the attached water service cards, provide water service to this site. Please refer to the "Conditions of Service" section of this letter for requirements related to the use of these services.

Water System Characteristics

According to District records, there is a 16-inch diameter ductile iron water main on the north side of Somerset Street west of the Chestnut Street intersection and a 16-inch diameter ductile iron water main on the south side of Somerset Street east of the Chestnut Street intersection and a public fire hydrant located adjacent to the site.

The current data from the nearest hydrant with flow test information is as follows:

Hydrant Location:	Somerset Street opposite Pearl Street
Hydrant Number:	POD-HYD01864
Last Tested:	6/22/2006
Static Pressure:	112 psi
Residual Pressure:	108 psi
Flow:	2,846 GPM

225 DOUGLASS STREET P.O. BOX 3553 PORTLAND, MAINE 04104-3553
PHONE: 207.774.5961 FAX: 207.761.8307 WEB: WWW.PWD.ORG

Public Fire Protection

You have not indicated whether this project will include the installation of new public hydrants to be accepted into the District water system. The decision to require new hydrants and to determine their locations is solely that of the local fire department. It is your responsibility to contact the Portland Fire Department to ensure that this project is adequately served by existing and/or proposed hydrants.

Domestic Water Needs

The ability to serve requested noted that the average daily consumptive flows are not expected to exceed 170,000 gallons per day (GPD), an average of 118 gallons per minute (GPM), and a peak flow of 400 GPM. The data noted above indicates there should be adequate pressure and volume of water to serve the domestic water needs of your proposed project. Based on the high water pressure in this area, we recommend that you consider the installation of pressure reducing devices that comply with state plumbing codes.

Private Fire Protection Water Needs

You have indicated that this project will require water service to provide private fire protection to the site. Please note that the District does not guarantee any quantity of water or pressure through a fire protection service. Please share these results with your sprinkler system designer so that they can design the fire protection system to best fit the noted conditions. If the data is out of date or insufficient for their needs, please contact the MEANS Division to request a hydrant flow test and we will work with you to get more complete data.

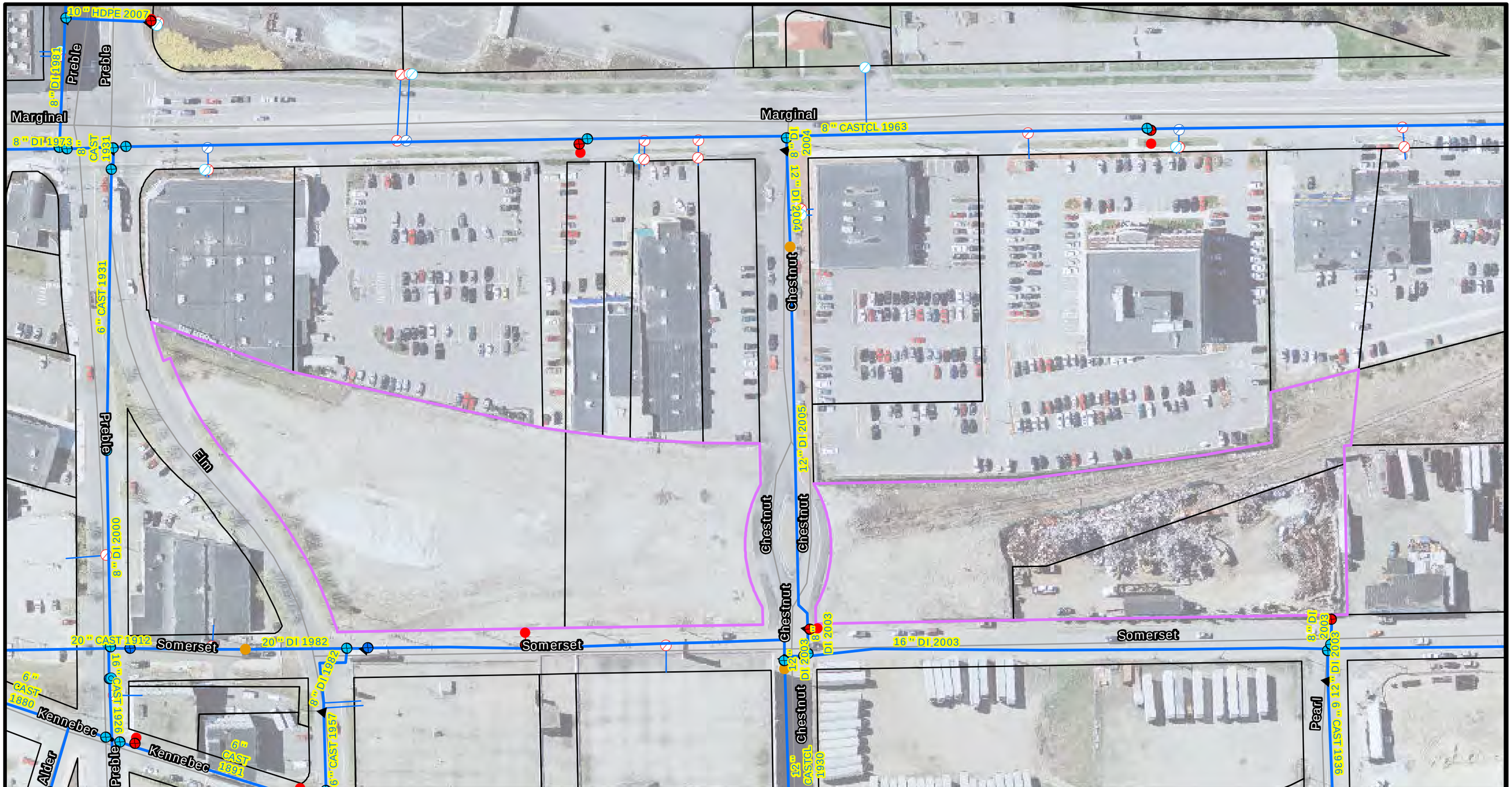
Conditions of Service

The District can confirm that the existing water system has the capacity to serve the proposed mixed use development on Somerset Street in Portland. If any of the existing services will no longer be used as a result of the development then they must be retired per PWD standards. This includes shutting the corporation valve and cutting the pipe from the water main (for 2-inch and smaller services) or removing the gate valve and capping the tapping sleeve (for 4-inch and larger services). New services may be installed from the water main in Somerset Street or Preble Street along the frontage of each respective parcel. Please note that only one meter and one bill will be associated to each domestic service line. This meter must be located in a common space that all tenants could gain access to if necessary. Multiple fire and domestic services may be installed to a single site if desired.

As your project progresses, we advise that you submit any preliminary design plans to the MEANS Division for review of the water service line configuration. We will work with you or your representative to ensure that the design meets our current standards. If the District can be of further assistance in this matter, please let us know.

Sincerely,
Portland Water District

Rico Spugnardi, P.E.
Business Development Engineer



0 50 100 200 300 400 500 Feet

1 inch = 100 feet

PORTLAND WATER DISTRICT
225 Douglass Street
Portland, ME 04104

Legend

- Air Valve
- Blow Off
- By Pass
- Distribution
- Transmission
- Connection
- Attribute Change
- Reducer
- Hydrant
- Hydrant Control
- Combined Service
- Domestic Service
- Fire Service
- Private Hydrants
- Meter Pits
- Manhole
- CSO
- Gravity
- Force

Somerset Street

Portland

Disclaimer: This map is suitable for preliminary study and analysis and is based on PWD record information. PWD is not liable for any damages whatsoever resulting from inaccurate data or from errors made in the location and marking of its infrastructure.

Drawn By: GJH

Prepared For: DeLuca-Hoffman Associates

Scale: As Noted

Date: November 2, 2012

Fairpoint Communications
Engineering Dept.
5 Davis Farm Rd
Portland, Me. 04103
November 26, 2012

William G. Hoffman
Deluca- Hoffman Associates Inc.
778 Main St
Suite 8
South Portland, Me. 04106

Bill,

Enclosed is the "Ability to Serve Letter" as requested for the Somerset St Project.
I have also enclosed info pertaining to the Somerset St project from 2003. What the City of Portland has actual constructed would need to be verified with the City. Fairpoint would also need as built plans if in fact the City has constructed the Manhole systems on Somerset St.

Regards

John R Caprio
Engineer
Fairpoint Communications
5 Davis Farm Rd
Portland, Me. 04103
jcaprio@fairpoint.com
207-797-1678

NOV 27 2012

Fairpoint Communications
Engineering Dept.
5 Davis Farm Rd
Portland, Me. 04103
November 26, 2012

William G. Hoffman
Deluca- Hoffman Associates Inc.
778 Main St
Suite 8
South Portland, Me. 04106

To whom it may concern:

Fairpoint Communications does have the ability to service the proposed Maritime Landing Project located on Somerset St Portland, Me. per the Public Utilities Commission Tariff. Fairpoint would need a path from building to Fairpoint's manhole system.

Sincerely,
John Caprio
Engineer
Fairpoint Communications
jcaprio@fairpoint.com
207-797-1678

Department of Public Works

CITY OF PORTLAND

January 27, 2003

Susan Sarrette, Engineer
VERIZON COMMUNICATIONS
5 Davis Farm Road, Floor 2
Portland, ME 04103

Re: Somerset Street Sewer Separation & City of Portland Future Technology/Business Park Development

Dear Sue:

The purpose of this letter is to summarize our discussions from Thursday, January 23, 2003, regarding the City's offer to install a duct bank to benefit Verizon Communications. As we discussed, it is our intention to install a duct bank, per your details and specification, in conjunction with the Somerset Street Sewer Separation project. The purpose of this duct bank is to support the anticipated future needs associated with the potential tenants of the City's Technology/Business Park. During our meeting, you indicated a preference for locating your facility on the southerly side of Somerset Street, outside of the paved roadway.

Our request is that you provide a preliminary duct bank layout that serves future needs for the development of this area. Your layout should include locations for the required manhole structures, as well as any "street crossings" that may be necessary to access the City land. As part of our constructions plan set, we would appreciate construction details for the following:

1. Duct bank detail (include conduit size, spacing, number of conduits, etc.)
2. Manhole structure (include specifications for the access cover, steps, etc.)

Our hope is that you will be able to attend the February 4th "Utility Meeting" and can bring this preliminary design for discussion. Enclosed are the plans for your use.

We appreciate your efforts and cooperation with this project. We also look forward to working with you and providing a system that can accommodate your futures needs for the development of the Bayside area.

If you have any questions during the interim, please do not hesitate to contact me by phone at 874-8848 or e-mail at awl@ci.portland.me.us.

Sincerely,

CITY OF PORTLAND
Anthony W. Lombardo, P.E., Project Engineer

55 Portland Street • Portland, Maine 04101 • (207) 874-8801 • Fax (207) 874-8816

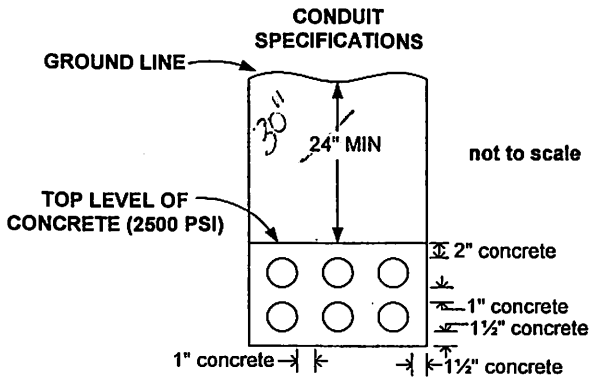
WORK ORDER PLAN

SOMERSET FUTURE TECHNOLOGY/BUSINESS PARK DEVELOPMENT

PREPARED BY SUE SARRETTE
OSP ENGINEER
207 797-1842
2/7/03

CONDUIT SPECIFICATION:

4" B PLASTIC DUCT
DUCT BANK DETAIL SEE BELOW



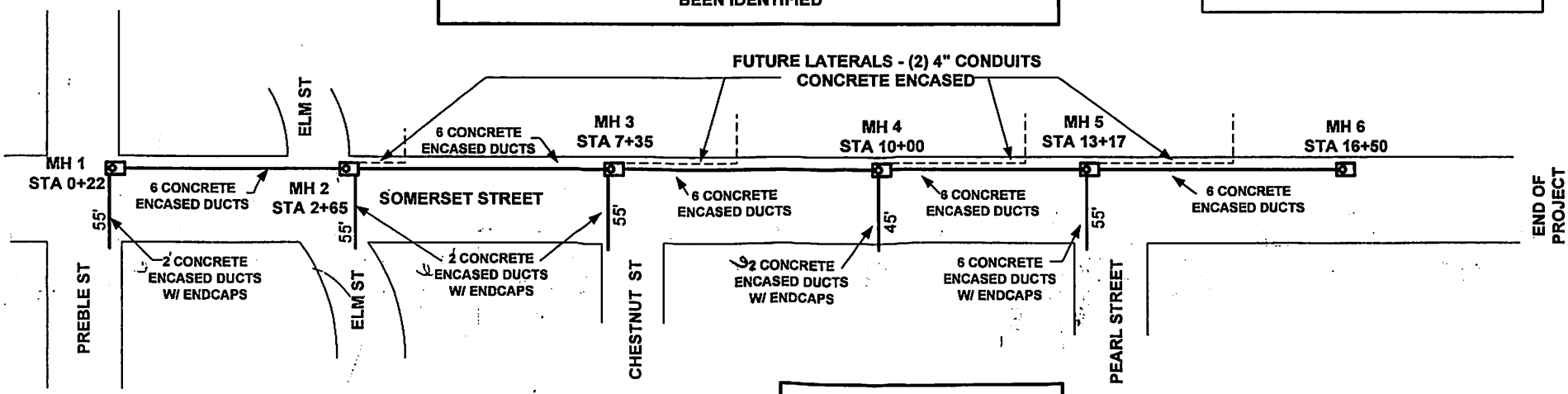
MANHOLE SPECIFICATION:

VERIZON'S STANDARD 4J MANHOLE - 6'-0"W X 12'0"L X 7'-0"H
12 TERMINATORS ON EACH OF 4 WALLS- TOP SECTIONS.
PULLING EYES AND INSERTS REQUIRED.
SURFACE OF ROOF MUST HAVE A MIN OF ~~2~~ 30" COVER.
ATTACHED FIND 2 QUOTES FROM SUPPLIERS VERIZON USES -
SUPERIOR CONCRETE & PRECAST CONCRETE PRODUCTS OF MAINE.
COVERS NEED TO HAVE BELL LOGO.
VERIZON TO PROVIDE RACKING AND STEEL LADDER ONCE CABLING NEEDED

VERIZON REQUIRES THEIR CONTRACT WORK INSPECTOR TO BE PRESENT DURING INSTALLATION

UNDERGROUND UTILITY SEPARATIONS : SEE ATTACHMENT #1

NOTE:LATERALS WILL BE REQUIRED ONCE BUILDING LOCATIONS HAVE BEEN IDENTIFIED



NOT TO SCALE

NOTE: PEARL STREET WILL BE THE INITIAL FEED FOR THIS NEW SYSTEM.

Visio Pld 2003 (Somerset) no job#

PLACEMENT

Duct Arrangements

Duct Arrangements are subject to trench width and/or depth constraints imposed by terrain, the presence of other structures, required workman space, etc. The arrangement of ducts in a conduit run should be compatible with the manhole cable racking arrangement. (Refer to "Manholes" later in this section.) Generally, 2–, 3–, or 4–wide arrangements are preferred for single– or double–wall racking. Where a large number of ducts or other circumstances require center racking as well as wall racking, wider duct arrangements may be appropriate.

Separation From Other Structures

Practices 622–100–010, 622–300–205, NESC Rule 320, 919–000–100

The following separations are required for safety of personnel and for protection of telephone equipment:

Structure	Minimum Separation
Power or other foreign conduit	3–inch concrete 4–inch masonry 12–inch earth
Pipes (gas, oil) water, etc.)	6 inches when crossing 12 inches when parallel
Power conduit terminated on poles	Separate poles, if possible. If same pole, preferably 180°, but, not less than 90° F.
Railroads (except street railways)	Crossing: 5 feet below top of rail.* Terminating on poles: 12 feet from nearest rail, except 7 feet as sidings
Street railways	3 feet below top of rail.*

*Exception: Where impractical, or for other reasons, these clearances may be reduced; however, the top of the conduit or conduit protection shall in no case extend above the bottom of the ballast section which is subject to working or cleaning. Local requirements will prevail.

Spacing and Backfill Requirements

622–020–020
914–240–100
Practice 919–240–400

The next three pages show spacing and backfill requirements for single–bore conduit. The volume of concrete or granular backfill will vary with the trench width and the degree of irregularity of the trench surfaces. Volumes given for each arrangement are for the minimum trench width consistent with the specified clearances. Volumes for sand or granular backfill include an allowance of about 1/12 for compaction.

Precast Concrete Products of Maine, Inc.

Topsham, Maine 04086

Tel: 207-729-1629 Fax 207-729-8710

Tel:1-800-696-8265 (Maine)

QUOTATION

www.precastofmaine.com

TO: Verizon / Attn: Corey McDonald
BID DATE:
PROJECT: 38Y Telephone Manholes / ~~Kennebec~~ Somerset Street
LOCATION: Portland, ME.

Precast Concrete Products of Maine, Inc. proposes to furnish the following materials required for the above project, in accordance with the standards of the American Society for Testing Materials. The terms and provisions are agreed to and accepted by you upon acceptance of this proposal.

6 – 6' x 12' 38Y telephone manholes..... $ 2300.00/ EA
Terminators, duct openings and pulling eyes cast in as required.
Cable racks provided by others.

6 – 32" diameter cast iron frames and covers marked TELEPHONE
..... $ 425.00 / EA

SALES TAX: Prices Quoted Do Not Include Sales Tax.
RETURNS: All returned product will be subject to a 15% re-stocking fee.
TERMS: 100% net within 30 days of delivery; Finance Charge of 2% per month (24% APR) will be applied to overdue invoices. There is no retainage. These terms apply to approved credit accounts in good standing. Contracts with others may be subject to additional terms to be established at the time of order. Date of invoice shall be date of shipment. Precast Concrete Products of Maine, Inc. retains security interest in its delivered product until final payment. Acceptance of this quotation by you and our written approval shall constitute a binding contract. This quote is valid for 30 days.

THE ABOVE PROPOSAL IS ACCEPTED

BY:
DATE:

Precast Concrete Products of Maine, Inc.

BY: Paul A. Beers
Date:2/4/03

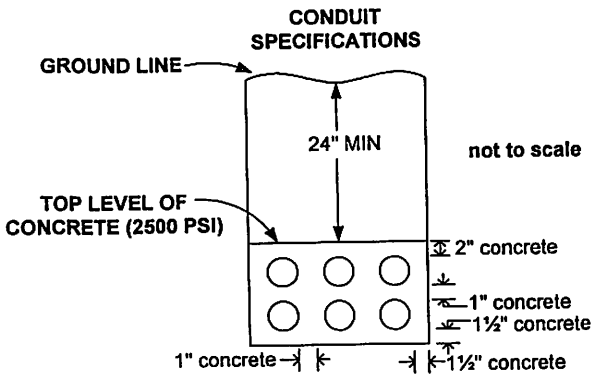
WORK ORDER PLAN

SOMERSET FUTURE TECHNOLOGY/BUSINESS PARK DEVELOPMENT

PREPARED BY SUE SARRETTE
OSP ENGINEER
207 797-1842
2/7/03

CONDUIT SPECIFICATION:

4" B PLASTIC DUCT
DUCT BANK DETAIL SEE BELOW



MANHOLE SPECIFICATION:

VERIZON'S STANDARD 4J MANHOLE - 6'-0"W X 12'0"L X 7'-0"H
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ATTACHED FIND 2 QUOTES FROM SUPPLIERS VERIZON USES -
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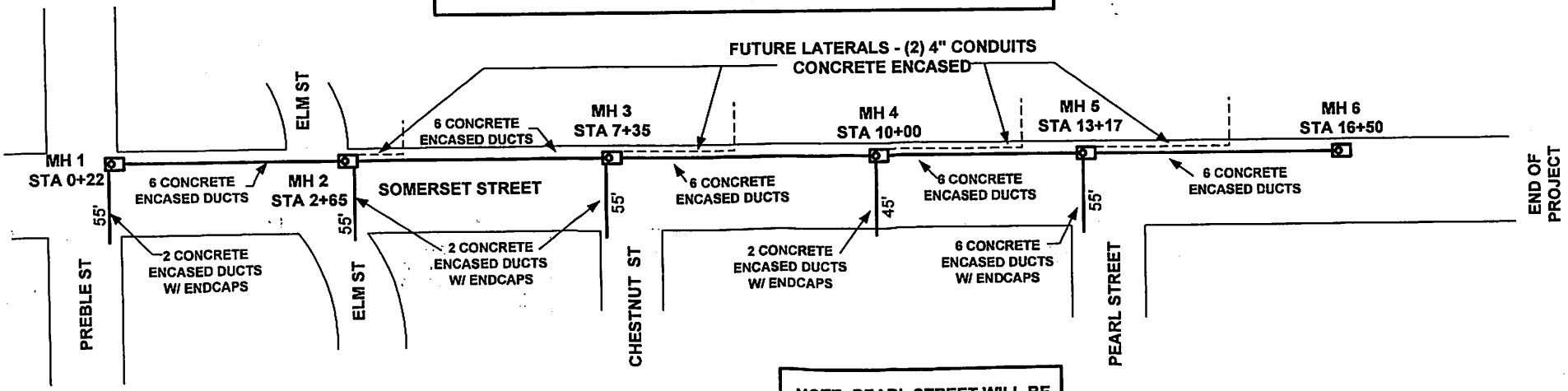
COVERS NEED TO HAVE BELL LOGO.
VERIZON TO PROVIDE RACKING AND STEEL LADDER ONCE CABLING NEEDED

VERIZON REQUIRES THEIR CONTRACT WORK INSPECTOR TO BE PRESENT DURING INSTALLATION

UNDERGROUND UTILITY SEPARATIONS : SEE ATTACHMENT #1

NOTE:LATERALS WILL BE REQUIRED ONCE BUILDING LOCATIONS HAVE BEEN IDENTIFIED



NOTE: PEARL STREET WILL BE THE INITIAL FEED FOR THIS NEW SYSTEM.

NOT TO SCALE

Underground Utility Separations

The minimum recommended separation between telephone conduit systems and structures are as follows:

From Telephone Conduit

A. Electric power and other conduits - at least 3 inches of concrete, 4 inches of masonry or 12 inches of well tamped earth.

B. Other pipes - at least 6 inches of clearance when crossing and 12 inches when paralleling.

From Telephone Manholes

C. Power conduits - at least 3 inches of clearance from the outside surfaces of the manhole walls, floor or roof.

D. Other pipes - at least 12 inches of clearance.

The clearances in B and D are required to allow for the maintenance of the foreign structures. If they have to be reduced, they should be discussed with a responsible representative of the owning company. When telephone conduit is being planned close to gas, steam or water mains, it is more desirable to cross under them so that adequate room is provided to maintain the foreign structures.

Attachment #1

NOTICE
Not for disclosure outside the Bell Atlantic Corporation.
or any of it's subsidiaries except under written agreement.

FYI

SUPERIOR CONCRETE CO
a division of Oldcastle Precast, Inc.

www.oldcastle-precast.com

P.O. Box 223
Auburn, ME 04212

Phone: (207) 784-9144
Fax: (207) 784-9647

Quotation Contract

February 5, 2003

Bid Date: February 5, 2003
Quote No: 11317-30131

COREY MACDONALD
VERIZON of MAINE
5 DAVIS FARM ROAD
PORTLAND, ME 04103

Dear COREY MACDONALD:

Superior Concrete Company is pleased to provide your company with the following quotation for:

PORTLAND, ME., VERIZON MANHOLES,

7 EA	PRECAST CONCRETE TELEPHONE MANHOLES MEASURING 6'-0" WIDE, x 12'-0" LONG, x 7'-0" HIGH INSIDE. MANHOLES PROVIDED WITH 4" TERMINATORS, PULL EYES, INSERTS, AND JOINT SEALANT.	2,400.00 / EA	16,800.00
EA	PRECAST CONCRETE 38Y RISER MEASURING 3'-0" ID x 12" HIGH @ $120.00/EA	/ EA	
EA	NEENAH MODEL R-1750-C TELEPHONE DESIGN LARGE MANHOLE FRAME & SOLID COVER WITH BELL LOGO @ $555.00/EA	/ EA	
		Total:	**$16,800.00**

Delivery

- Product will be delivered and set in your excavation providing our trucks can set up within 15 feet of the center point of the structure. If additional crane rental is necessary, it will be provided by others and at the expense of others.
- Delivery on weekdays during normal daylight hours, excluding holidays.

Terms

- Taxes not included.
- No retainage shall be deducted from payment.
- All Invoices are due and payable within thirty (30) days from date of invoice, **subject to purchaser's credit approval.**
- This Proposal shall be valid for 90 days from the date hereof.
- We must have a signed proposal or purchase order before we release your order to production.

Excludes

- UNLESS SPECIFICALLY STATED ABOVE, THIS PROPOSAL DOES NOT INCLUDE THE FOLLOWING:
- Permits.
- All items not specifically listed in this quote.
- All frames and covers.
- Excavation, backfill or compaction.
- Racking and associated equipment.

Production

- We currently have all (7) seven manholes in stock.

Materials

- Concrete Minimum Strength: 5000 psi @ 28 days, standard grey cement with local sand and aggregates.
- Steel Reinforcing: ASTM-A-615-85, Grade 60, Black.
- Design Loading: AASHTO HS20-44

If you have any questions, please call me at (207) 784-9144.

Accepted By _____ Date

Matt Mosher 2/5/03
Matt Mosher Date

Sincerely,

Matt Mosher

9/11/2013

William Hoffman
778 Main Street
Suite 8
South Portland, ME 04106
Email: WHoffman@fstinc.com

RE: Ability to Serve Letter for Midtown Project, Somerset Street, Portland, ME

Dear Mr. Hoffman:

CMP has the ability to serve your proposed project located along Somerset Street in Portland, Maine, in accordance with our CMP Handbook (web link below). We can provide you the desired pad, submersible or pole mounted transformers per your request and city approval, in accordance with our CMP Standards Handbook. If you have any questions on the process, or need help in completion of the documents, please feel free to contact our Portland Service Center.

New Service Milestones

- Call 1-800-565-3181 to establish a new account and an SAP work order.
- Submit any electronic drawings (PDF (preferred) or DWG files) of the site layout and proposed electrical connections if you have them.
- Preliminary meetings with CMP to determine the details of job
- Field planner design appointment to cost out job and develop CMP Invoice.
- Submit invoice for payment.
- Easements signed and payment received. Please note that the customer is responsible for obtaining all easements necessary to complete the work.
- Job scheduled for completion after the electrical inspection has been received.

This process can take several months, depending upon several factors including transformer delivery, potential substation upgrades, return of completed paperwork, and other jobs in the system that may be ahead of yours. In addition, contact with the other utilities, including telephone and cable, should be commenced as soon as practical. They may have additional work or charges in addition to the CMP work required to bring your project on line.

For your convenience, here is a link to the CMP Website which contains our Handbook with details on most service requirements:

162 Canco Road Portland, ME 04103
Tel (800) 750-4000
207-842-2367 office
207-458-0382 cell
207-626-4082 fax

www.cmpco.com

An equal opportunity employer

CMP Handbook of Standard Requirements
(http://www.cmpco.com/MediaLibrary/3/6/Content%20Management/YourAccount/PDFs%20and%20Docs/handbook.pdf)

If you have any questions, please contact CMP at 1-800-565-3181.

Regards,

Jamie Cough

Jamie Cough
Energy Services Advisor
Central Maine Power Company
162 Canco Road
Portland, ME 04103
207-842-2367 office
207-458-0382 cell
207-626-4082 fax

CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

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

Date: _____

Mr. Frank J. Brancely,
Senior Engineering Technician,
Phone #: (207) 874-8832,
Fax #: (207) 874-8852,
E-mail:fjb@portlandmaine.gov

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

Site Address: Lots located on Elm and Somerset Streets

(Regarding addressing, please contact Leslie Kaynor, either at 756-8346, or at LMK@portlandmaine.gov)

Chart Block Lot Number: 034 D003; D010; D009 025 A022; B002; B003; B004; B005

Proposed Use: Please see attached sheet

Previous Use: Industrial

Existing Sanitary Flows: 0 GPD

Existing Process Flows: 0 GPD

Description and location of City sewer, at proposed building sewer lateral connection:

Existing sewer is 36" to 72"diameter - See attached sketch

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

Site Category

Commercial	X
Industrial *(complete part 4 below)*	
Governmental	
Residential	
Other *(specify)* (mixed-use)	X

2. Please, Submit Domestic Wastewater Design Flow Calculations.

Estimated Domestic Wastewater Flow Generated: 170,000 GPD

Peaking Factor/ Peak Times: 3.5 - typical diurnal flow of residential uses

Specify the source of design guidelines: *(i.e.* x *"Handbook of Subsurface Wastewater Disposal in Maine,"* __ *"Plumbers and Pipe Fitters Calculation Manual,"* __ *Portland Water District Records,* __ *Other (specify)*

Note: Please submit calculations showing the derivation of your design flows, either on the following page, in the space provided, or attached, as a separate sheet. (see attached spreadsheet)

3. Please, Submit Contact Information.

Owner/Developer Name: The Federated Companies c/o Greg Shinberg

Owner/Developer Address: Shinberg Consulting-477 Congress Street, Suite 1012 Portland, Maine 04101

Phone: 207-653-7510 Fax: 207-772-7080 E-mail: gls@shinbergconsulting.com

Engineering Consultant Name: William G. Hoffman, P.E., DeLuca-Hoffman Associates, Inc.

Engineering Consultant Address: 778 Main Street, Suite 8, South Portland, ME 04106

Phone: 207-775-1121 Fax: 207-879-0896 E-mail: whoffman@delucahoffman.com

City Planner's Name: Rick Knowland Phone: 207-874-8725

Note: Consultants and Developers should allow +/- 15 days, for capacity status, prior to Planning Board Review.

4. Please, Submit Industrial Process Wastewater Flow Calculations

Estimated Industrial Process Wastewater Flows Generated: _____ GPD

Do you currently hold Federal or State discharge permits? Yes ____ No ____

Is the process wastewater termed categorical under CFR 40? Yes ____ No ____

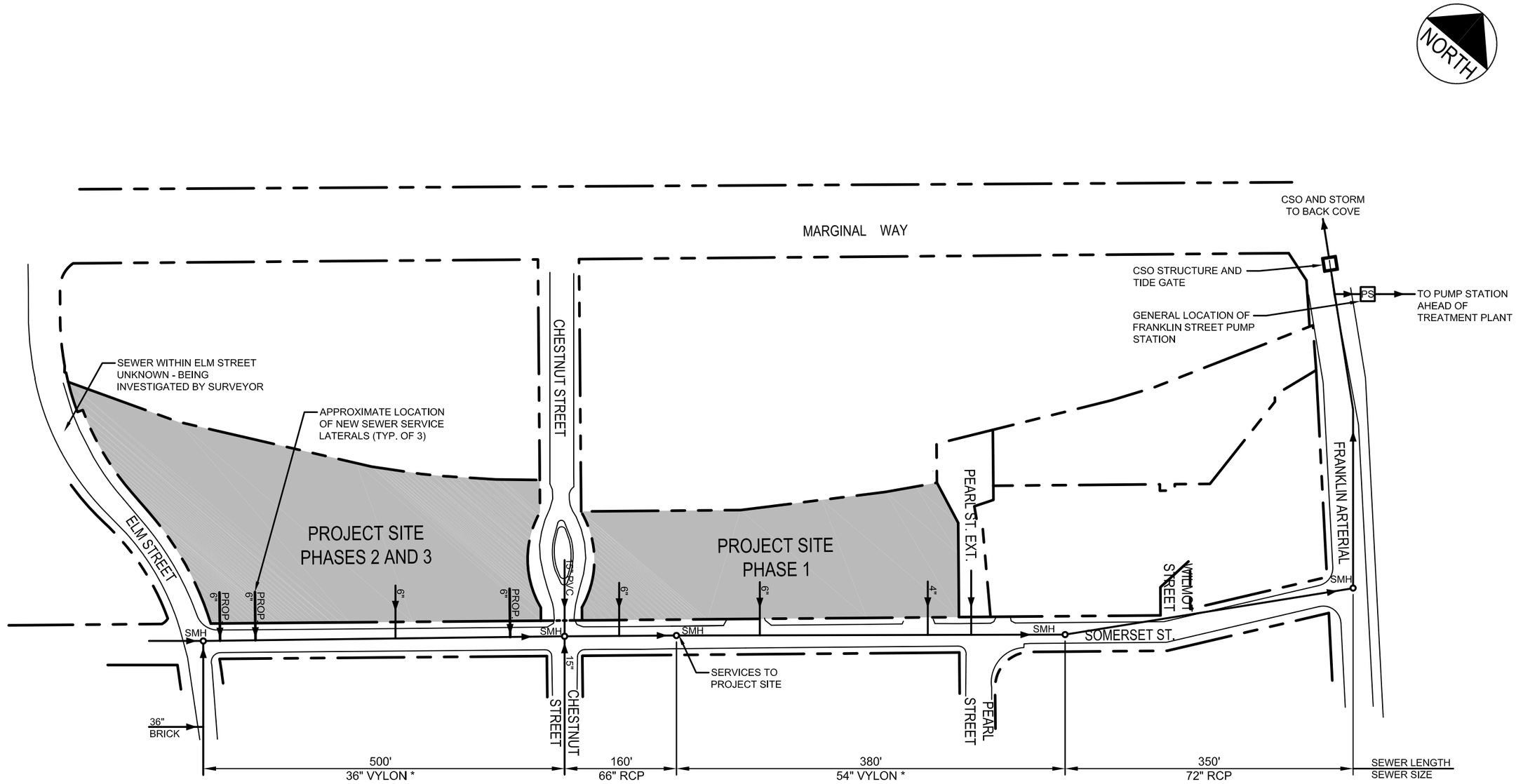
OSHA Standard Industrial Code (SIC): *(http://www.osha.gov/oshstats/sicser.html)*

Peaking Factor/Peak Process Times: _____

Note: On the submitted plans, please show the locations, where the building's sanitary, and process water sewer laterals, exit the facility, where they enter the city's sewer, the location of any control manholes, wet wells, or other access points, and the locations of any filters, strainers, or grease traps.

Notes, Comments, or Calculations:

The proposal is for mixed-use development with residential units above the first floor, retail or commercial uses on the ground floor, and off-street parking garages. The sanitary sewer along Somerset Street will be used for lateral connections. The applicant will use existing laterals for the connections to the extent possible and likely add two or three new services. Refer to Figures 1 and 2 for a schematic of the sewer system and lateral connections.



THE 2003 CSO PROJECT INCLUDED THE INSTALLATION OF THREE 6" AND ONE 4" SEWER LATERALS TO SERVE THE PROJECT SITE

THREE NEW SERVICE LATERALS ARE PROPOSED

* INSTALLED IN 2003

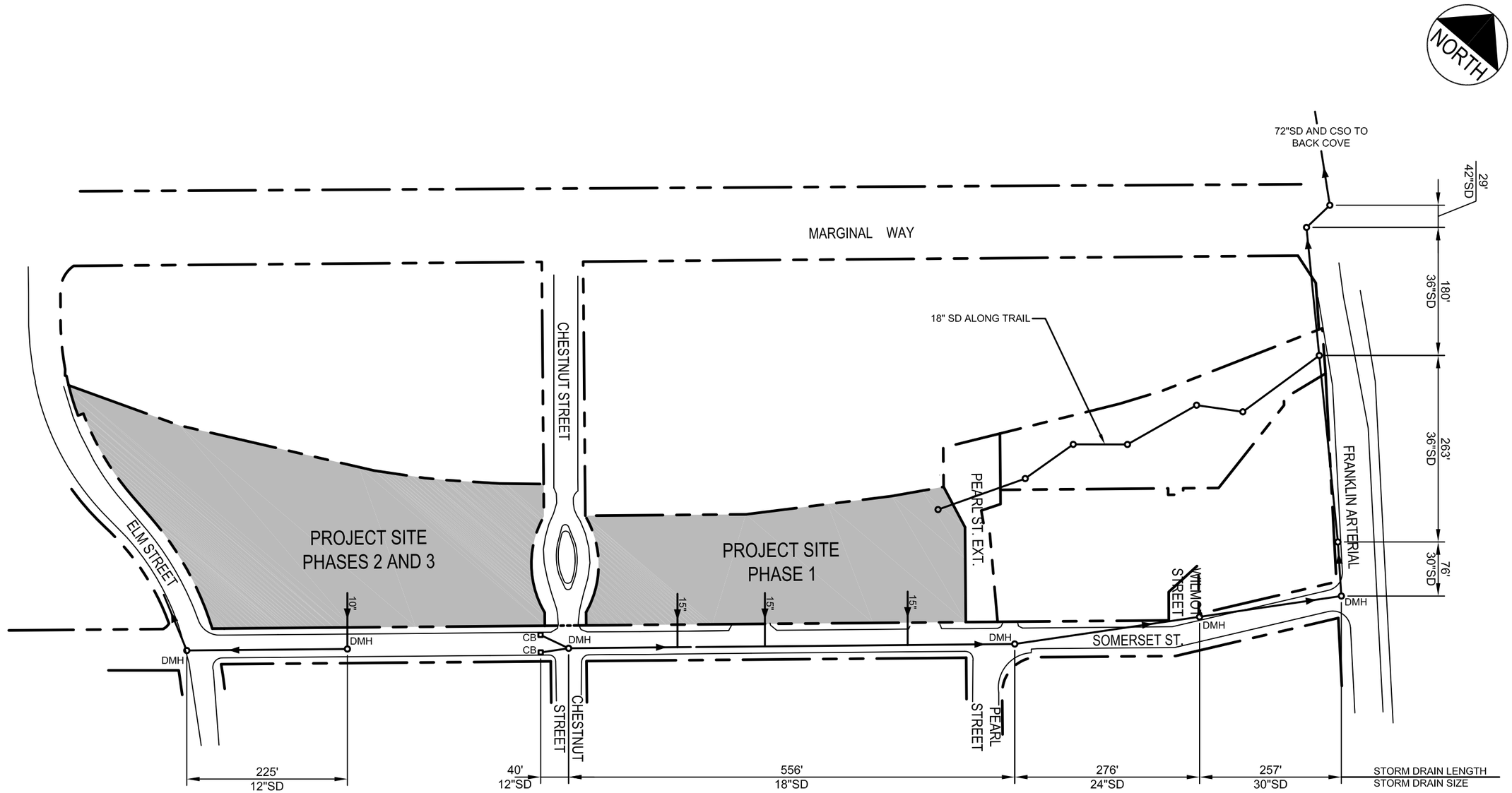
DeLuca-Hoffman Associates, Inc.
778 MAIN STREET, SUITE 8
SOUTH PORTLAND, ME 04106
207.775.1121
WWW.DELUCAHOFFMAN.COM

DRAWN:	LA	DATE:	10.26.12
DESIGNED:	WGH	SCALE:	N.T.S.
CHECKED:	WGH	JOB NO.	3062
FILE NAME:	3062-PERMITS		

midtown
PROJECT

SANITARY SEWER SCHEMATIC
ALONG SOMERSET STREET

FIGURE
S-1
REVISED 12.20.12



THE 2003 CSO PROJECT INCLUDED THE INSTALLATION OF THREE 15" AND ONE 10" SD LATERALS TO SERVE THE PROJECT SITE

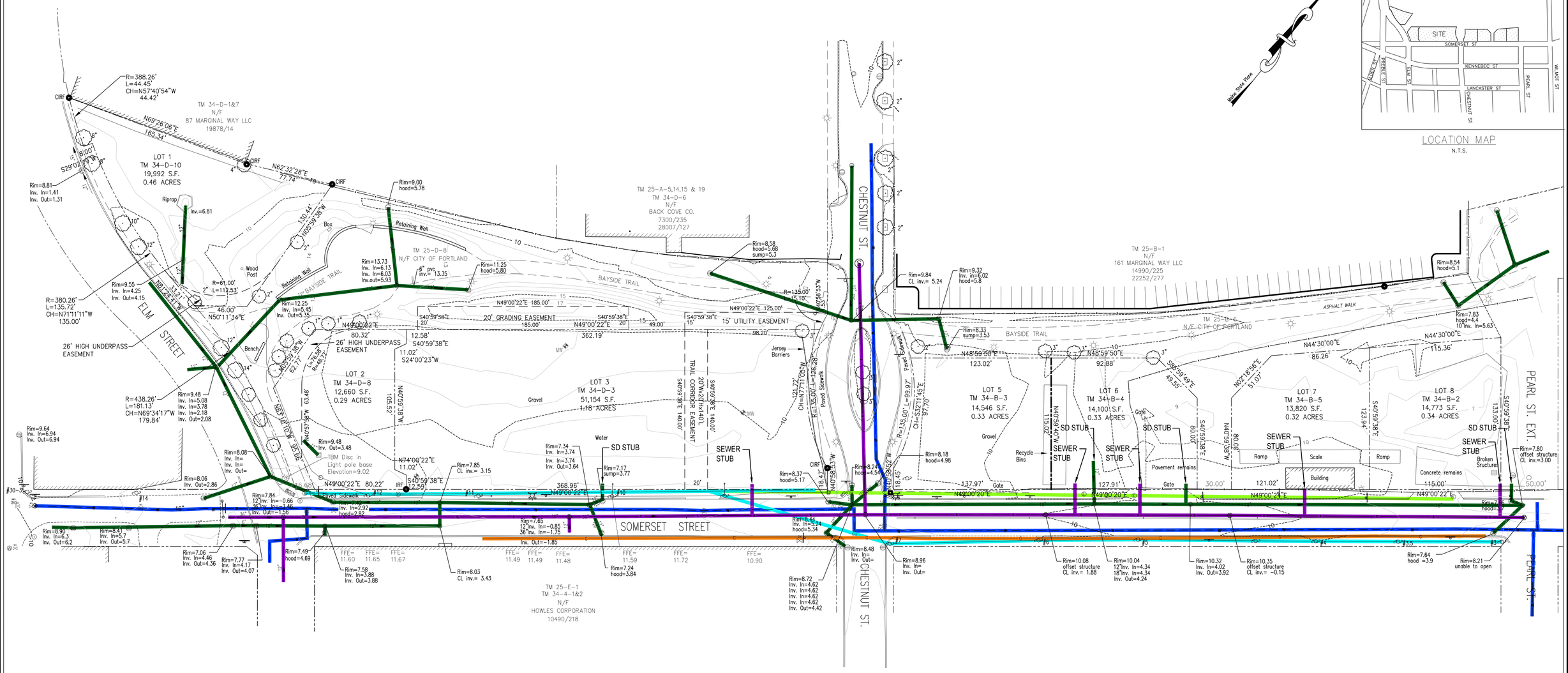
DeLuca-Hoffman Associates, Inc.
778 MAIN STREET, SUITE 8
SOUTH PORTLAND, ME 04106
207.775.1121
WWW.DELUCAHOFFMAN.COM

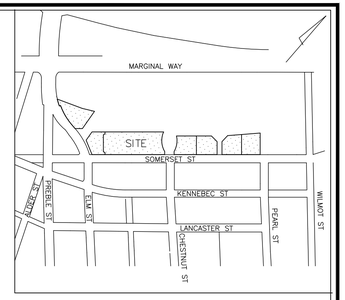
DRAWN:	LA	DATE:	10.26.12
DESIGNED:	WGH	SCALE:	N.T.S.
CHECKED:	WGH	JOB NO.	3062
FILE NAME:	3062-PERMITS		

midtown
PROJECT

STORM DRAIN SCHEMATIC ALONG SOMERSET STREET

FIGURE
S-2
REVISED 12.19.12





LOCATION MAP

N.T.S.

UTILITY NOTE:

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEY FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. CALL 1-800-DIGSAFE AT LEAST THREE BUSINESS DAYS BEFORE PERFORMING ANY CONSTRUCTION. DUE TO OSHA CONFINED SPACE REQUIREMENTS, ALL INVERTS AND PIPE SIZES MUST BE VERIFIED PRIOR TO ANY CONSTRUCTION.

UTILITY LEGEND

- COMMUNICATIONS
- ELECTRICITY
- GAS
- SEWER
- STORM DRAIN
- WATER MAIN

LEGEND

- MONUMENT FOUND
- IRON PIPE OR ROD FOUND
- HYDRANT
- WATER VALVE
- UTILITY POLE
- LIGHT POLE
- MANHOLE
- CATCH BASIN
- SIGN
- FENCE
- 1' CONTOUR
- OVERHEAD WIRES
- WATER LINE
- SEWER LINE
- DECIDUOUS TREE
- MONITORING WELL

GRAPHIC SCALE

0 20' 40' 80'

PLAN REFERENCES:

1. "SUBDIVISION RECORDING PLAT OF PROPERTY LOCATED ON BAYSIDE RAILWAY, PORTLAND, MAINE PREPARED FOR DOWNTOWN PORTLAND CORPORATION" DATED OCTOBER 30, 2008 REV. 3 1/13/09 BY SGC ENGINEERING, LLC RECORDED IN C.C.R.D. PLAN BOOK 209 PAGE 36.

2. "EXISTING CONDITIONS SURVEY OF PROPERTY LOCATED ON SOMERSET STREET, PORTLAND, MAINE PREPARED FOR CITY OF PORTLAND" DATED OCTOBER 30, 2008, REV. 1 10/20/11 BY SGC ENGINEERING, LLC.

3. "STANDARD BOUNDARY SURVEY FOR BAYSIDE TRAIL & PROPOSED SOMERSET STREET EXTENSION" DATED SEPTEMBER 2012 PREPARED BY CITY OF PORTLAND, MAINE PUBLIC SERVICES DEPARTMENT ENGINEERING DIVISION.

NOTES:

1. OWNER OF RECORD: CITY OF PORTLAND, C.C.R.D. BOOK 27870 PAGE 299.

2. BASIS OF BEARINGS: MAINE STATE PLANE COORDINATE SYSTEM WEST ZONE NAD83.

3. ELEVATIONS ARE BASED ON CITY DATUM. BENCH MARK: MDOT DISK "612-(1)-10 1983"

4. THIS PLAN IS THE RESULT OF A FIELD SURVEY CONDUCTED BY OWEN HASKELL, INC. NOVEMBER 2012 AND DATA TAKEN FROM PLAN REFERENCE 2 AS SHOWN ABOVE.

CERTIFICATE:

OWEN HASKELL, INC. CERTIFIES THAT THIS PLAN IS BASED ON, AND THE RESULT OF, AN ON THE GROUND FIELD SURVEY AND THAT TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, IT CONFORMS TO THE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS CURRENT STANDARDS OF PRACTICE.

DATE

JOHN W. SWAN, PLS NO. 1038

BOUNDARY & TOPOGRAPHIC SURVEY

ON

SOMERSET STREET, PORTLAND, MAINE

MADE FOR

DELUCA HOFFMAN ASSOCIATES

MAIN STREET, SOUTH PORTLAND, MAINE

OWEN HASKELL, INC.
390 U.S. ROUTE ONE, FALMOUTH, ME 04105 (207) 774-0424
PROFESSIONAL LAND SURVEYORS

Drwn By	RS	Date	Job No.
Trace By	JLW	NOVEMBER 9, 2012	12012-180 P
Check By	JWS	Scale	Drwg. No.
Book No.	FILE	1" = 40'	1

PORTLAND MAINE

Strengthening a Remarkable City, Building a Community for Life ▪ www.portlandmaine.gov

Public Services Department
Michael J. Bobinsky, Director

CORRECTED COPY

4 October 2013

Mr. William G. Hoffman, P.E.,
Fay, Spofford & Thorndike,
778 Main Street, Suite 8,
South Portland, Maine 04106

RE: The Capacity to Handle Wastewater Flows, from "midtown," the Mixed Use (Residential, Retail, Parking Garage) Development Towers Proposed by Federated Companies, along The Northern Side of Somerset Street (23-63 Somerset), between Pearl Street Extension and Chestnut Street (Phase 1) and Continuing along The Northern Side of Somerset Street (69-105 Somerset), from Chestnut to Elm Street (Phases 2 and 3) including (127-161 Elm Street).

Dear Mr. Hoffman:

It has come to my attention that this project, formerly known as "Maritime Landing," is now known as "midtown." This letter corrects the name of the project and supercedes the letter of 2 October 2013.

The existing thirty-six inch, fifty-four inch, and sixty-six inch reinforced concrete sewer pipes, located in Somerset Street, have adequate **capacity to transport,** while The Portland Water District sewage treatment facility, located off Marginal Way, has adequate **capacity to treat,** the total anticipated increase in wastewater flows of **171,110 GPD**, from the proposed mixed use development towers.

The City combined sewer overflow (C.S.O.) abatement consent agreement (with the U.S.E.P.A., and with the Maine D.E.P.) requires C.S.O. abatement, as well as storm water mitigation, in order to offset any increase in sanitary flows, from all projects. If the City can be of further assistance, please call 874-8832.

Sincerely,
CITY OF PORTLAND

Frank Brancely

Frank J. Brancely, B.A., M.A.
Senior Engineering Technician

FJB

C:\Frank's\Capacity Letters\Somerset Street 23-105 & Elm Street 127-161
O:\Engshare\FJB\Capacity Letters\Somerset Street 23-105 & Elm Street 127-161

Anticipated Increase in Wastewater Flows from the Proposed Residential, Retail, Restaurant and Parking Garage Units

The Proposed Residential Units:		
800 Proposed Units @ 180 GPD/Unit	=	144,000 GPD
The Proposed Retail Outlets:		
75 Proposed Employees @ 12 GPD/Employee	=	900 GPD
8 Proposed Toilets @ 325 GPD/Toilet	=	2,600 GPD
The Proposed Restaurants:		
900 Proposed Seats @ 25 GPD/Seat	=	22,500 GPD
The Proposed Parking Garages:		
1,110 Proposed Spaces @ 1GPD/Space	=	1,110 GPD
Total Wastewater Design Flow, from the Proposed Mixed Use Project:	=	171,110 GPD
Total Anticipated Increase in Wastewater Flows for this Project	**=**	**171,110 GPD**

CC: Jeffrey Levine, Director, Department of Planning, and Urban Development, City of Portland
Barbara Barhydt, Development Review Services Manager, Department of Planning, and Urban Development, City of Portland
Rick Knowland, City Planner, Department of Planning, and Urban Development, City of Portland
David Margolis-Pineo, Deputy City Engineer, City of Portland
Michael Farmer, P.E., Project Engineer, City of Portland
Bradley A. Roland, P.E., Environmental Projects Engineer, City of Portland
John Emerson, Wastewater Coordinator, City of Portland
Rhonda Zazzara, Field Inspection Coordinator, City of Portland
Harold Downs, Senior Wastewater Technician, City of Portland
Jane Ward, Administrative Assistant, City of Portland

EXHIBIT 6

FIRE DEPARTMENT REVIEW & LIFE SAFETY PLAN INFORMATION

November 6, 2014
Revised November 13, 2014

Capt. David Petruccelli
City of Portland
Fire Department Prevention & Education
380 Congress Street
Portland, ME 04101

Subject: "midtown" Project – Portland, ME
Fire Department Site Review Checklist

Dear Captain Petruccelli:

In accordance with instructions in the City's Level III Site Plan Review packet, enclosed please find the drawings necessary for your review of the proposed "midtown" project. We have listed each item in your checklist below, followed by our response.

1. *Name, address, telephone number of applicant.*

   The Federated Companies
   Attn: Nick Wexler
   3301 NE 1st Avenue, Suite M-302
   Miami, FL 33137-4110

2. *Name, address, telephone number of architect.*

   Project Architect: CBT Architects
   Attn: Mr. David Hancock
   110 Canal Street
   Boston, MA 02114

3. *Proposed uses of any structures.*

Parking Garage-midtownTwo	IBC Code	NFPA Code	Sprinkler
First Floor Retail	Mercantile/IA	New Mercantile/II (000)	NFPA 13
Floors 2-7 Open Parking Structure	Storage-2/IIB	Storage/II (000)	N/A

Residential Building – midtownOne, midtownThree, midtownFour	IBC Code	NFPA Code	Sprinkler
First Floor Lobby & Leasing	R-2/IA	New Apartment/II(032)	NFPA 13
First Floor Retail	Mercantile/IA	New Mercantile/II(030)	NFPA 13
Floors 2-6 Residential Apartments	R-2/IIIB	New Apartment/II(032)	NFPA 13

4. *Square footage of all structures (total and per story).*

Building Name	No. of Stories	Total Gross ARBA (SF)	Gross Floor Area (SF)
midtownOne	6	90,600	16,200
midtownTwo	7	266,500	38,000 (parking)
midtownThree	6	289,000	48,200
midtownFour	6	69,000	11,500

5. *Elevation of all structures.*

The finish floor for the buildings and parking garage will be Elevation 12. The three residential buildings will be about 72 feet height; the garage building is 7 stories including 1 floor of retail and parking on the top deck; it will be 92 feet in height.

6. *Proposed fire protection of all structures.*

The occupied mercantile and residential spaces will all be sprinkled; the garage will not be sprinklered but will be provided with dry standpipes in the stairwells.

7. *Hydrant locations.*

Hydrant locations are shown on Drawing C-4.0. This includes a relocated hydrant on Pearl Street Extension and a new hydrant on Elm Street. MidtownOne will have a fire department standpipe connection on Pearl Street Extension near the apartment entry. Building two has wet sprinklers in retail space, and dry standpipes in stair towers, so we show two FDC's -- the one to the east next to the parking entrance would serve the sprinkler system and the standpipe in the north east stair tower, the one to the west along Somerset near Chestnut Street would serve the standpipe in the southwest stair. Building three has two upper level residential buildings over a common podium level. The two upper buildings are entered through a common lobby. We show 2 FDC's – one near the common residential lobby entry, and the other near the west end of the retail façade. We assume these two are interconnected internally. MidtownFour will have a fire department connection near the apartment entrance accessible from Elm Street. Fire Department connections will be provided in accordance with Code requirements.

8. *Water main(s) size and location.*

The Portland Water District maintains a 16-inch line in Somerset Street. An 8-inch line looped between the 16-inch main in Somerset Street and a 6-inch main in Preble Street.

9. *Access to all structures (min. 2 sides).*

The structures will be accessible from two sides, which will have major access from Somerset Street. Access for emergency vehicles could occur on the trail, which was designed with a 16-foot section and reportedly designed for fire apparatus loads. (Confirmation of the basis of design should be verified by the City of Portland).

10. *A code summary shall be included referencing NFPA 1 and all fire department technical standards.*

NFPA 1 – Chapter 18 Fire Department Access and Water Supply

18.2 Fire Department Access:

The streets in the area have 12-foot travel lanes and a minimum pavement width of 24 feet. The pavement expands to 32 feet in areas with designated deliveries and parking. The applicant will be constructing a driveway from Somerset Street on Pearl Street Extension. The width of this driveway varies from 21 to 24 feet.

Per NFPA 1 – Chapter 18.2.3.2.2.1, all first story floors shall be located not more than 450 ft. from a Fire Department access road.

City of Portland Technical Manual – Section 3 Public Safety

3.4.1 Every dead-end roadway more than one hundred fifty (150') feet in length shall provide a turnaround at the closed end. Turnarounds shall be designed to facilitate future street connectivity and shall always be designed to the right (refer to Figure I-5).

Supporting Evidence: The applicant is proposing Pearl Street Extension as a driveway. The City of Portland may construct this as a through street between Somerset and Marginal Way sometime in the future. The City would need to acquire additional property in the future in order to construct Pearl Street Extension as a public street. The length of driveway was reviewed with the City and changes incorporated to address this comment.

3.4.2 Where possible, developments shall provide access for Fire Department vehicles to at least two sides of all structures. Access may be from streets, access roads, emergency access lanes, or parking areas.

Supporting Evidence: The buildings are accessible on two sides except for:

- midtownOne which will have a 21 to 24 foot driveway in the Pearl Street Extension Right-of-Way and access for emergency vehicles along the trail; and

- midtownFour which has trail access on both sides of the building.

3.4.3 Building setbacks, where required by zoning, shall be adequate to allow for emergency vehicle access and related emergency response activities and shall be evaluated based on the following factors:

- *Building Height*
- *Building Occupancy*
- *Construction Type*
- *Impediments to the Structures*
- *Safety Features Provided*

Supporting Evidence: Refer to the Site Plans, Utility Plans and information provided herein.

3.4.4. Fire Dept. access roads shall extend to within 50' of an exterior door providing access to the interior of the structure.

Supporting Evidence: The public streets and building locations will allow an emergency vehicle to pull within less than 50 feet of the structures.

3.4.5. Site access shall provide a minimum of nine (9) feet clearance height to accommodate ambulance access.

Supporting Evidence: There are no planned obstructions to the vertical access.

3.4.6. Elevators shall be sized to accommodate an 80 x 24 inch stretcher.

Supporting Evidence: The building designs meet this requirement.

3.4.7. All structures are required to display the assigned street number. Numbers shall be clearly visible from the public right of way.

Supporting Evidence: The applicant will work with the City's Public Services Division to assign street addresses and numbering to meet City Standards.

If you need any further information, please contact our office.

Sincerely,

FAY, SPOFFORD & THORNDIKE

Stephen R. Bushey, P.E.
Senior Principal Engineer

SRB/cmd

Enclosure

c: w/o enc: Nick Wexler
David Hancock

R:\3062B - midtown Amended - Portland, ME\Admin\Correspondence Out\3062B 2014.11.14 Petruccelli (Rev. fire).doc

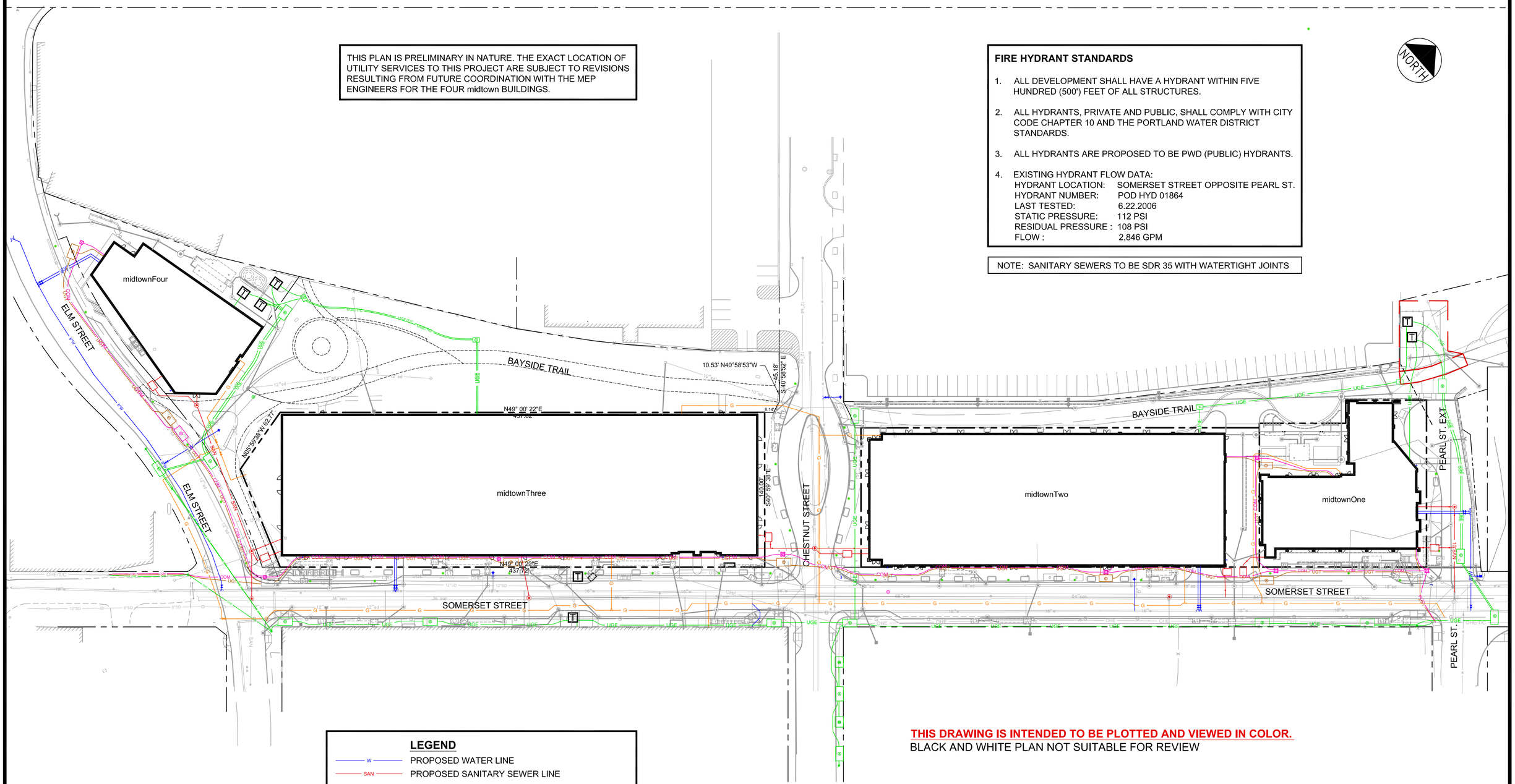
THIS PLAN IS PRELIMINARY IN NATURE. THE EXACT LOCATION OF UTILITY SERVICES TO THIS PROJECT ARE SUBJECT TO REVISIONS RESULTING FROM FUTURE COORDINATION WITH THE MEP ENGINEERS FOR THE FOUR midtown BUILDINGS.

FIRE HYDRANT STANDARDS

1. ALL DEVELOPMENT SHALL HAVE A HYDRANT WITHIN FIVE HUNDRED (500') FEET OF ALL STRUCTURES.
2. ALL HYDRANTS, PRIVATE AND PUBLIC, SHALL COMPLY WITH CITY CODE CHAPTER 10 AND THE PORTLAND WATER DISTRICT STANDARDS.
3. ALL HYDRANTS ARE PROPOSED TO BE PWD (PUBLIC) HYDRANTS.
4. EXISTING HYDRANT FLOW DATA:

HYDRANT LOCATION:	SOMERSET STREET OPPOSITE PEARL ST.
HYDRANT NUMBER:	POD HYD 01864
LAST TESTED:	6.22.2006
STATIC PRESSURE:	112 PSI
RESIDUAL PRESSURE :	108 PSI
FLOW :	2,846 GPM

NOTE: SANITARY SEWERS TO BE SDR 35 WITH WATERTIGHT JOINTS



LEGEND

W	PROPOSED WATER LINE
SAN	PROPOSED SANITARY SEWER LINE
G	PROPOSED NATURAL GAS LINE
UGE	PROPOSED UNDERGROUND ELECTRIC LINE
UGT	PROPOSED UNDERGROUND TELEPHONE LINE
COM	PROPOSED UNDERGROUND COMMUNICATION LINE
OHE	PROPOSED OVERHEAD ELECTRIC LINE
T	PROPOSED TRANSFORMER PAD

THIS DRAWING IS INTENDED TO BE PLOTTED AND VIEWED IN COLOR.
BLACK AND WHITE PLAN NOT SUITABLE FOR REVIEW

GRAPHIC SCALE
40 0 20 40 80
(IN FEET)
1 inch = 40 ft.

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE WILLIAM R. MOORE 13547 LICENSED PROFESSIONAL ENGINEER 11/14/14
P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT: midtown, PORTLAND, MAINE

SHEET TITLE: OVERALL UTILITY PLAN

CLIENT: THE FEDERATED COMPANIES

FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW/DED	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	1" = 40'
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-UTIL		
SHEET	C-4.0		

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FIRE RISK MANAGEMENT, INC
1 Front St., Bath, ME 04530
207/442-7200 [207/221-1295 (fax)]
www.fireriskmgt.com

Date: 13 November, 2014

Memo Report

From: W. Mark Cummings, P.E.

To: Mr. Bo Kennedy; Fay, Spofford, & Thorndike, Inc. (FST)

CC: Mr. Steve Bushey; FST

Subject: Fire Protection Review of Site Plans, ICW the Midtown Project in Portland, ME

As requested, Fire Risk Management, Inc. (FRM) reviewed the information you provided with regards to the overall site plan for the new Midtown development in Portland, ME. The focus for this review was to evaluate the fire protection features of the general layout for the development to ensure that all State and Municipal codes, regulations, and ordinances are adequately addressed.

The primary codes and regulations used as reference for this review included;

1. The City of Portland Code of Ordinances; primarily Chapter 10, *Fire Prevention and Protection,* (Rev. 1-20-11),
2. City of Portland Technical Manual, Section 3 – Public Safety, (Rev. 6/17/11), and
3. National Fire Protection Association's *Fire Code*® (NFPA 1, 2012 ed.).

For this review, the primary areas of interest are to ensure that an adequate water supply is available; including location and spacing of fire hydrants within the vicinity of the new development, and that proper access to the various structures by firefighting equipment and personnel is available.

The proposed plan for adding and modifying the locations of hydrants in the vicinity of the Midtown development appear to be compliant with the requirements of both the City of Portland and NFPA 1. The plan for providing adequate access to fire hydrants includes;

1. Providing an additional hydrant off the north side of Elm Street, between Midtown Four and Three,
2. Slightly relocating the existing hydrant along Somerset Street, adjacent to Midtown Three, to allow for an increase in the street width,
3. The relocation of the existing hydrant at the corner of Somerset and Chestnut Streets to a new location further west on Chestnut Street, adjacent to the southwest corner of Midtown Two,
4. Providing an additional hydrant along Somerset Street adjacent to Midtown Two, and
5. Relocating the existing hydrant at the corner of Somerset and Pearl Streets to a location on the northwest corner of Somerset Street and the (new) Pearl Street extension.

The planned hydrant locations are included on the Overall Utility Plan for the project; drawing C-4.0. Although the fire hydrant flow test data that are provided on the Utility Plan were obtained in 2006, these data are indicative of the general capabilities of Portland's municipal water supply system. Once the new hydrants are installed, it will be necessary to confirm the adequacy of the municipal water supply to meet the fire flow requirements for the new development.

Based on the construction classifications listed for the Midtown buildings on the FST letter to the City of Portland, dated 5 November, 2014, the municipal water supply will be required to support the fire flow requirements for the "worst-case" scenario involving one of the buildings within this development. In this instance, it will be the building with the largest total floor area, Midtown Three, using requirements for Type III construction; per NFPA 1. The construction plans for this development call for all buildings to be fully protected with automatic fire sprinkler systems. Based on the fire flow area for Midtown Three, along with the use of a Type III (unprotected) construction, a minimum fire flow demand of

8000 gpm for four (4) hours would be required. However, given that the buildings are to be fully sprinklered, this flow value can be reduced by 75%; to 2000 gpm. Hence, the municipal water supply system will be expected to provide at least 2000 gpm for a minimum of 4 hours. Based on the hydrant flow test data and the fact that this development is served by a 16" supply main, it is considered very likely that the supply system will easily support this level of flow at the minimum residual pressure of 20 psig, which is defined as being needed to support "fire flow" requirements.

Based on the total fire flow demand, NFPA 1 (Annex E) indicates that at least two (2) hydrants be provided, at a maximum spacing of 450 ft between each hydrant, as measured along the fire department access road(s). However, due to the size of the development, along with other requirements, five hydrants are to be located in the vicinity of this development to ensure that all firefighting capability requirements are met.

The level of detail provided for the individual buildings is such that the specific locations for the fire department connection (FDCs) for each building cannot be determined as part of this review. However, each building will be required to have at least one FDC that is readily accessible to the responding fire department. Previously, the City of Portland has required that the FDC be located such that it is within 100 ft of a hydrant. It must be verified if the City intends to continue to impose this requirement on new construction. Additionally, it should be verified as to the preferred type of FDC to be used. Depending on the size of the building(s) involved, the City has requested the use of either a "Siamese" type (two 2½-inch connections) or, for larger buildings, a single 5-inch storz connection.

NFPA 1 requires that any portion of a building, or the exterior walls of the building, can be no more than 450 ft from an access road, when the building is fully protected by an automatic sprinkler system. The proposed hydrant locations shown on Dwg. C-4.0 were specifically designed to ensure compliance with this requirement. NFPA 1 also requires that at least one exterior door, which can be accessed (opened) from the exterior and provides direct access to the building's interior, be provided within 50 ft. of an access roadway for each building. The drawings provided for this review do not provide a level of detail for the individual buildings that would include locations for exterior doorways. However, based on the availability of access to at least three sides of each building, it is likely that this requirement will be met.

Chapter 10 of the Portland City Ordinances also has a requirement that, where available, the fire department vehicles should have access to at least two (2) sides of each building. Based on the current site plan provided, it will be possible for all buildings to be accessed from at least two sides.

Based on the information provided, the proposed site plan for the Midtown development appears to comply with all applicable State (National) and City fire code requirements. Should there be any questions regarding this assessment and the recommendations contained herein, please do not hesitate to contact me.

W. Mark Cummings, P.E.
Principal Engineer

EXHIBIT 7

STATE AND FEDERAL PERMIT REQUIREMENTS

STATE AND FEDERAL PERMIT REQUIREMENTS

Work in the project area will proceed after the City of Portland confirms environmental remediation activities conducted under the auspices of the State of Maine's Voluntary Remedial Action Plan (VRAP) are complete. The project will need to conform to the VRAP or modify it and secure regulatory approval for any deviations.

The project will require a Maine Department of Transportation Traffic Permit and a MeDEP Site Location of Development Permit (including the Stormwater Permit, and Maine General Construction Permit). The City of Portland has delegated review authority for projects which require Site Location of Development Permits from the MaineDEP and the Traffic Permit from MaineDOT.

The project may also require a MaineDEP Air Emissions Permit. The Owner's mechanical engineers have not yet developed the projection of BTU's which will be required to support the energy needs of this project. Once the projection of BTU's is made, the need for an air emissions permit can be assessed.

There are no federal permits identified by the City of Portland, the project team, or the owner as being required for the project. Copies of permits from State officials not issued under delegated review will be provided to the City Planning Staff upon receipt.

EXHIBIT 8

CONSTRUCTION MANAGEMENT PLAN

midtown Construction Management Plan

The midtown construction project will be managed by a project team located in PC Construction's Portland, Maine, office. Day-to-day project oversight will be conducted by field staff and various support personnel who will be on site throughout the duration of construction.

The project involves construction of three, six-story buildings each comprising concrete ground-floor retail space topped with five stories of wood-frame apartments; and a seven-story, approximately 800-space precast concrete parking structure, also with ground-floor retail space. Additionally, the overall project involves raising and rebuilding approximately 1,000 feet of Somerset Street between Elm Street and Pearl Streets; 150 feet of Pearl Street; 200 feet of Chestnut Street; and 500 feet of the Bayside Trail.

The midtown project construction approach is to work on all the structures and street raisings concurrently in a single phase. In order to keep pedestrians, neighbors and adjacent businesses safe and segregated from construction activities, the project team proposes detouring Somerset Street and Bayside Trail pedestrian and vehicular traffic around the project site. This will be accomplished by using:

- Crosswalks
- Signage
- Education
- Coordination
- Temporary surfaces

Additionally, the project team plans to erect construction fencing around the entire project site. The proposed location of the construction trailers and office will be inside the fence and out of the way of construction. The laydown area for construction will be adjacent to the work in any open spaces inside the fence and, as needed, at offsite locations. Excess contractor parking will be located offsite.

Key issues to be addressed include:

- Public safety
- Coordination with the City of Portland, neighbors and utilities
- Bayside Trail, pedestrian and vehicular traffic detours and management
- Groundwater control/treatment
- Waste management and site clean-up
- Coordination of material deliveries
- Material laydown/storage, office trailers and contractor parking
- Dust and erosion control
- Clean streets surrounding the project
- Construction entrances

EXHIBIT 9

TRAFFIC REPORT

DRAFT

TRAFFIC IMPACT STUDY SUPPLEMENT

Midtown Development
105 Somerset Street
Portland, Maine

Prepared for
The Federated Companies
3301 NE 1st Avenue, Suite M-302
Miami, FL 33137-4110

Prepared by

Fay, Spofford & Thorndike, LLC
Engineers ● Planners ● Scientists
Portland, Massachusetts

November 2014

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Synchro /SimTraffic Results

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1.0 OVERVIEW

1.1 Executive Summary

The Federated Companies has retained Fay, Spofford & Thorndike, LLC, (FST) to provide a supplement to the original Traffic Impact Study that was submitted on April 22, 2013 for the proposed Midtown Development to be located at 105 Somerset Street in Portland, ME.

The original Traffic Impact Study was completed for a development that consisted of 664 residential units (544 residential apartments, 120 residential condominiums) as well as 100,000 sf of retail space. The current proposal is smaller and consists of 440 residential apartment units along with 87,200 sf of retail development.

Since the size of the development will be DECREASING, the amount of traffic to be generated by the project will decrease from the original study. This supplement has been prepared to present the changes due to the project. Therefore, this supplement only provides a discussion of the elements of the original study that have changed.

Similar to the original development, the proposed development will consist of a multiuse site composed of apartments, retail space and garage level parking. No turning lanes are required along Somerset Street to accommodate the proposed traffic. The midtown development will include a traffic demand management plan to assist in reducing site-generated traffic impacts.

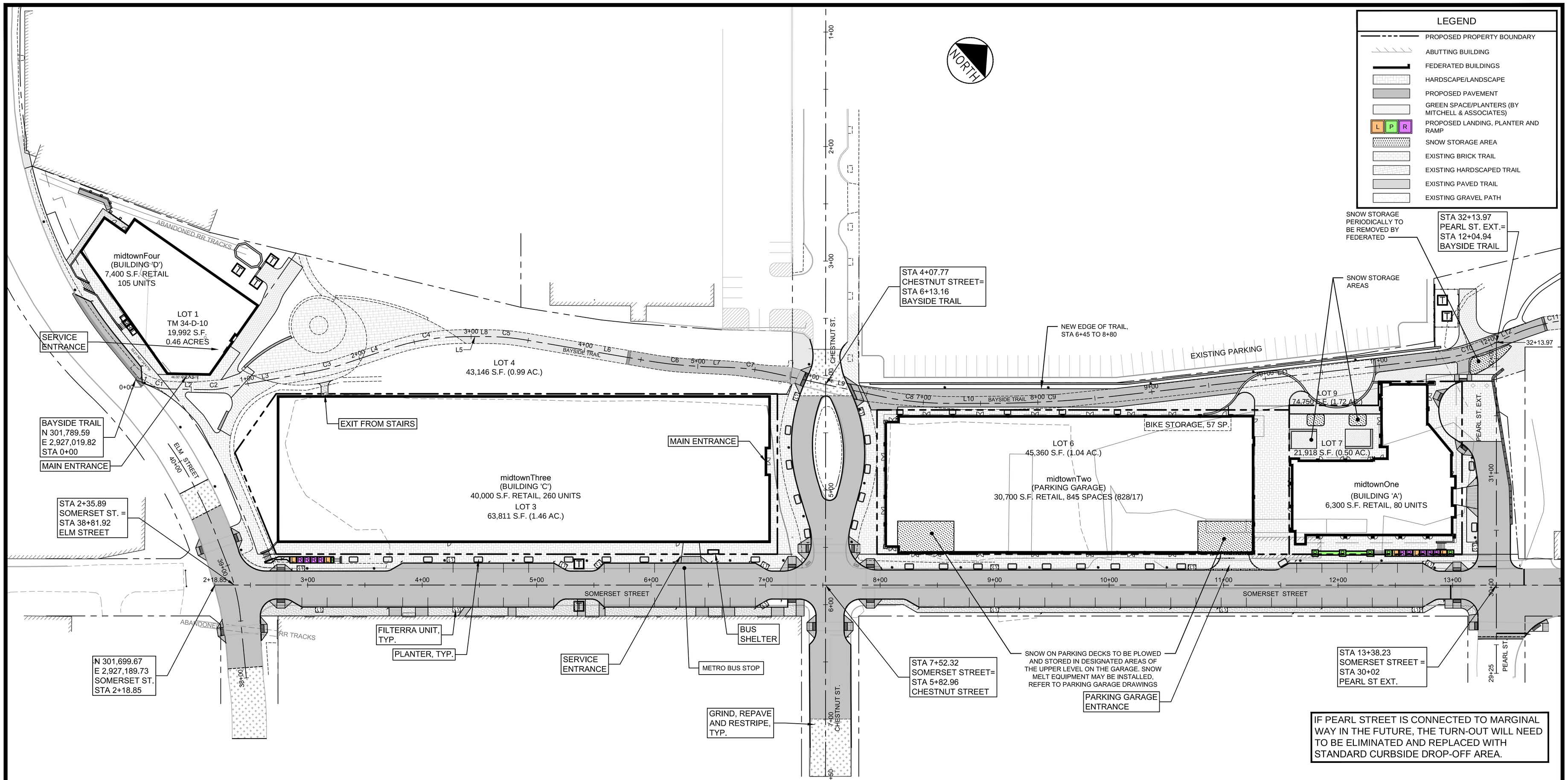
The same improvements are being proposed as the previous development, consisting of the following:

1. Optimization of signal timings to reduce the impacts of the site generated traffic at most of the study intersections.
2. A new traffic signal is proposed at the intersection of Marginal Way/Chestnut Street & the park and ride lot. This signal has been considered previously by the City of Portland and is desirable with or without the midtown development project.

As shown in the results of this supplement, the implementation of the proposed mitigation will mitigate the traffic impacts of the midtown development.

1.2 Site Description and Site Plan

The current site development will consist of four buildings. One parking garage will be constructed as part of the development. The breakout of floor space usage is proposed as 440 residential apartment units and 87,200 sf of retail space. A 700 space parking garage is proposed and will be accessed by a single driveway on Somerset Street. This driveway will serve both entering and exiting traffic. The proposed site plan is shown on the following page.



LINE TABLE: ALIGNMENTS		
ID	LENGTH	DIRECTION
L1	11.70	N71° 04' 02.06"E
L2	34.95	N50° 11' 33.96"E
L3	82.21	N38° 43' 25.92"E
L4	44.18	N30° 40' 45.73"E
L5	20.19	N49° 00' 22.29"E
L6	106.00	N58° 43' 25.61"E
L7	21.70	N50° 49' 52.46"E
L8	20.19	N49° 00' 22.29"E
L9	95.15	N61° 14' 33.58"E
L10	32.69	N48° 56' 24.17"E
L11	284.79	N42° 26' 52.98"E
L12	13.41	N23° 46' 17.31"E
L13	50.38	N51° 49' 50.37"E

CURVE TABLE: ALIGNMENTS						
ID	RADIUS	ARC LENGTH	DELTA	TANGENT	PC STATION	PT STATION
C1	50.00	18.22	020° 52'	9.21	0+11.70	0+29.91
C2	50.00	10.01	011° 28'	5.02	0+64.86	0+74.87
C3	200.00	28.08	008° 03'	14.06	1+57.08	1+85.16
C4	200.00	63.97	018° 20'	32.26	2+29.34	2+93.31
C5	200.00	33.92	009° 43'	17.00	3+13.50	3+47.42
C6	400.00	52.25	007° 29'	26.16	4+53.42	5+05.66
C7	200.00	36.34	010° 25'	18.22	5+27.37	5+63.71
C8	300.00	64.42	012° 18'	32.33	6+58.86	7+23.28
C9	1000.00	113.31	006° 30'	56.71	7+55.97	8+69.28
C10	150.00	48.90	018° 41'	24.67	11+54.07	12+02.96
C11	170.00	83.25	028° 04'	42.48	12+16.37	12+99.62

GRAPHIC SCALE

40 0 20 40 80

(IN FEET)
1 inch = 40 ft.

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
OVERALL SITE PLAN

CLIENT
THE FEDERATED COMPANIES

FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW/LA	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	1" = 40'
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-SITE		
SHEET	C-2.0		

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2.0 TRIP GENERATION/ASSIGNMENT

2.1 Trip Generation

Vehicle-trips expected to be generated by the proposed building were obtained from consulting the Institute of Transportation Engineers (ITE) Trip Generation. The ITE ***Trip Generation*** is widely used by traffic engineers for this application. The manual provides vehicle-trip generation projections for a number of land uses. The data contained in ***Trip Generation*** have been obtained from the research and experiences of transportation engineering and planning professionals and is based on over 3,700 trip generation studies submitted by public agencies, developers, consulting firms and associations.

Similar to the original study, the retail trip generation is based on land use code #814 (Specialty Retail Center) and land use code #820 (Shopping center), while the residential apartment portion of the site is based on land use code #222 High Rise Apartment. The trip generation results were then reduced to account for shared trips between the land uses based on ITE and National Cooperative Highway Research Program (NCHRP) data and procedures. The same shared trip methodology was used for both the original development plan and the current development plan.

Trip reductions due to TDM (traffic demand management) were calculated based on access to alternative transportation – such as the existing bus stops and access to the Bayside Trail. A 7% credit was taken for the TDM measures. The same TDM reductions were used for both the original development plan and the current development plan.

The previous development proposal consisted of 100,000 gross sq. ft. of retail, 554 apartments and 120 condominiums and was expected to generate 304 and 379 trip ends during the AM and PM peak hours respectively. A follow up memorandum recalculated a slightly larger development to generate 316 and 392 trip ends during the AM and PM peak hours respectively. The Trip Generation from the original study is shown in Table 1 below, while the Trip Generation for the current proposal is shown in Table 2.

Table 1 – Trip Generation – Previous Development Proposal

	Entering	Exiting	Total
AM Peak Hour	106	198	304
PM Peak Hour	201	178	379

Source ITE Trip Generation Manual 9th edition

Table 2 – Trip Generation – Current Development Proposal

	Entering	Exiting	Total
AM Peak Hour	80	123	203
PM Peak Hour	140	135	276

Source ITE Trip Generation Manual 9th edition

Table 2 shows the trips estimated to be generated by the current proposal. As shown in Table 2, the current development, which will consist of 87,200 gross sq. ft. of retail and 440 apartments, is expected to generate 203 and 276 trip ends during the AM and PM peak hours respectively. **Therefore, the current proposal will generate 101 fewer trips (26 in/75 out) during the morning peak hour and 103 fewer trips (61 in/43 out) during the weekday evening peak hour than was originally studied. The current proposal is also smaller than the previously revised proposal, and will generate 113 fewer trips (28 in/85 out) during the morning peak hour and 117 fewer trips (69 in/48 out) fewer trips during the weekday evening peak hour.**

2.2 Post Development Traffic

In order to evaluate the effect of the project on traffic in the study area, vehicle-trips associated with the proposed development are projected, distributed and assigned to the adjacent roadway network. These incremental vehicle-trips are added to the Pre Development Condition traffic volumes to form the updated Post Development Condition traffic volume networks for the morning and evening commuter peak hours.

Incremental peak hour traffic volumes expected to be generated by the proposed development have been distributed according to the traffic patterns identified in the original traffic impact study and are presented in Figures 2 and 3.

Year 2018 Post Development peak hour traffic volumes, which consist of the addition of peak hour project generated traffic to 2018 Pre Development traffic volumes, are displayed in Figures 4 and 5.

Site Generated Trip Ends

AM Peak Hour

TOTAL ENTERING TRIPS = 80

TOTAL EXITING TRIPS = 123

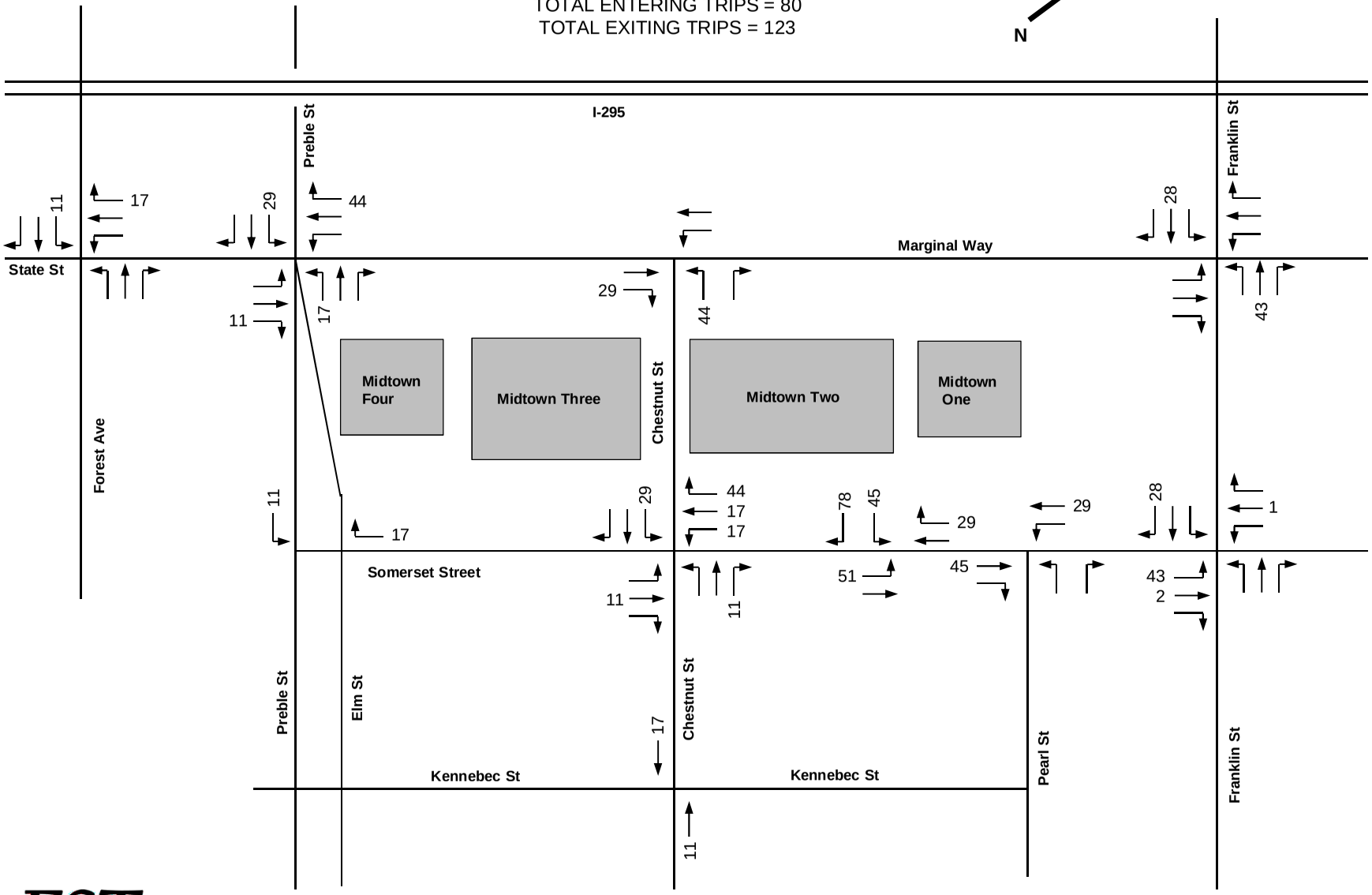

Figure 2
Not to Scale

Site Generated Trip Ends

PM Peak Hour

TOTAL ENTERING TRIPS = 140

TOTAL EXITING TRIPS = 135

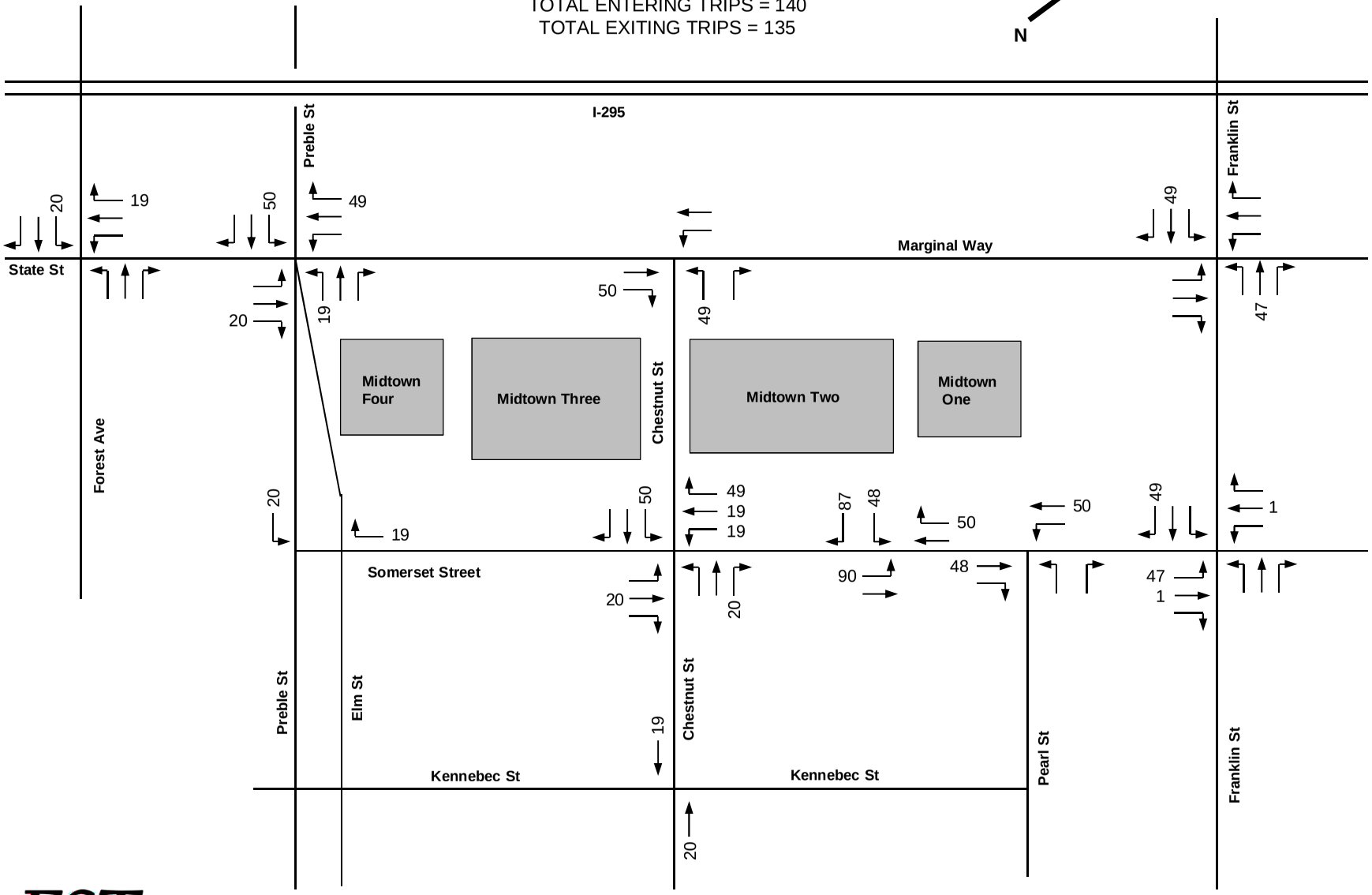

Figure 3
Not to Scale

Post-Development Turning Movement Counts

AM Peak Hour

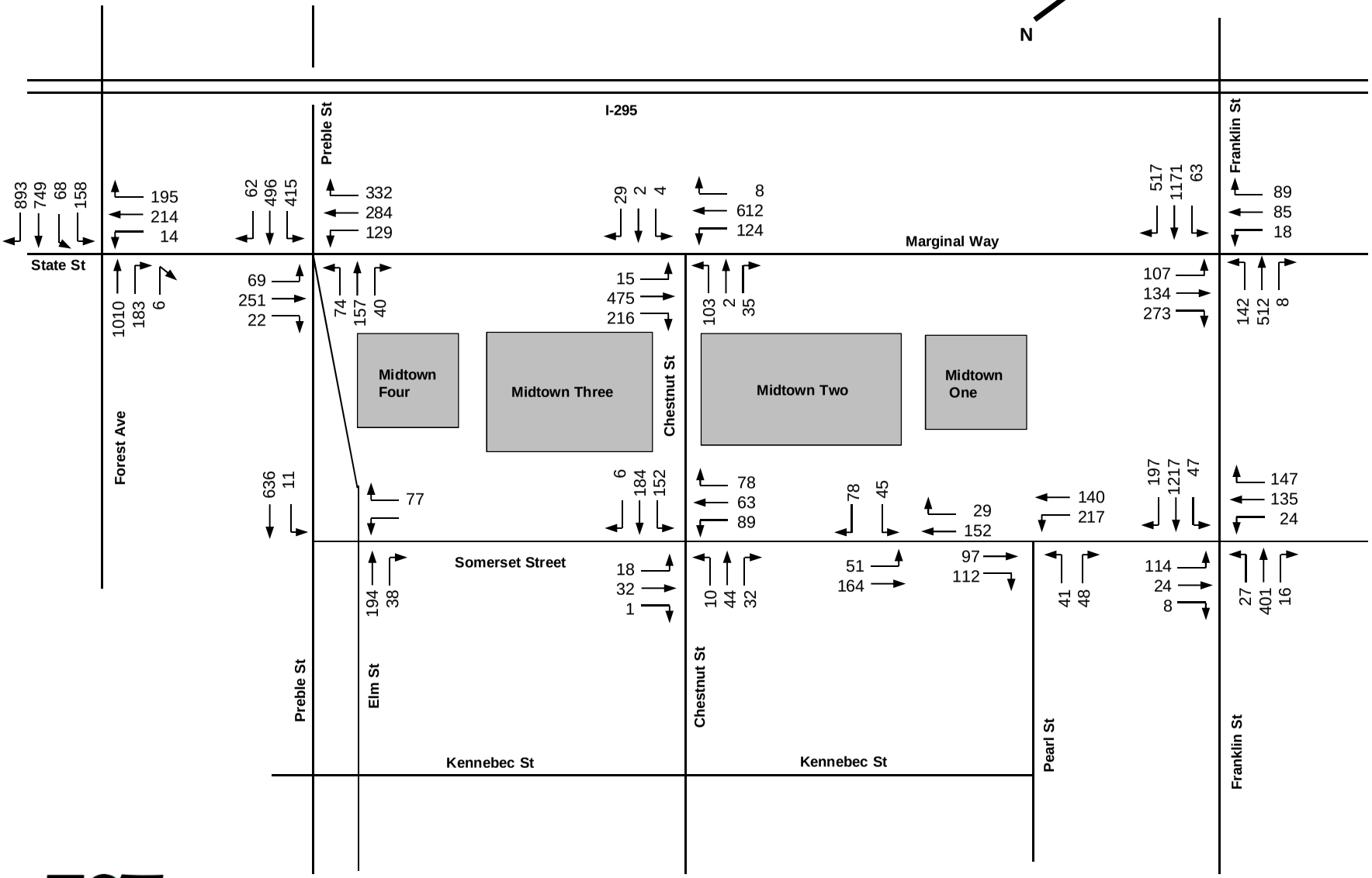

Figure 4
Not to Scale

Post-Development Turning Movement Counts

PM Peak Hour

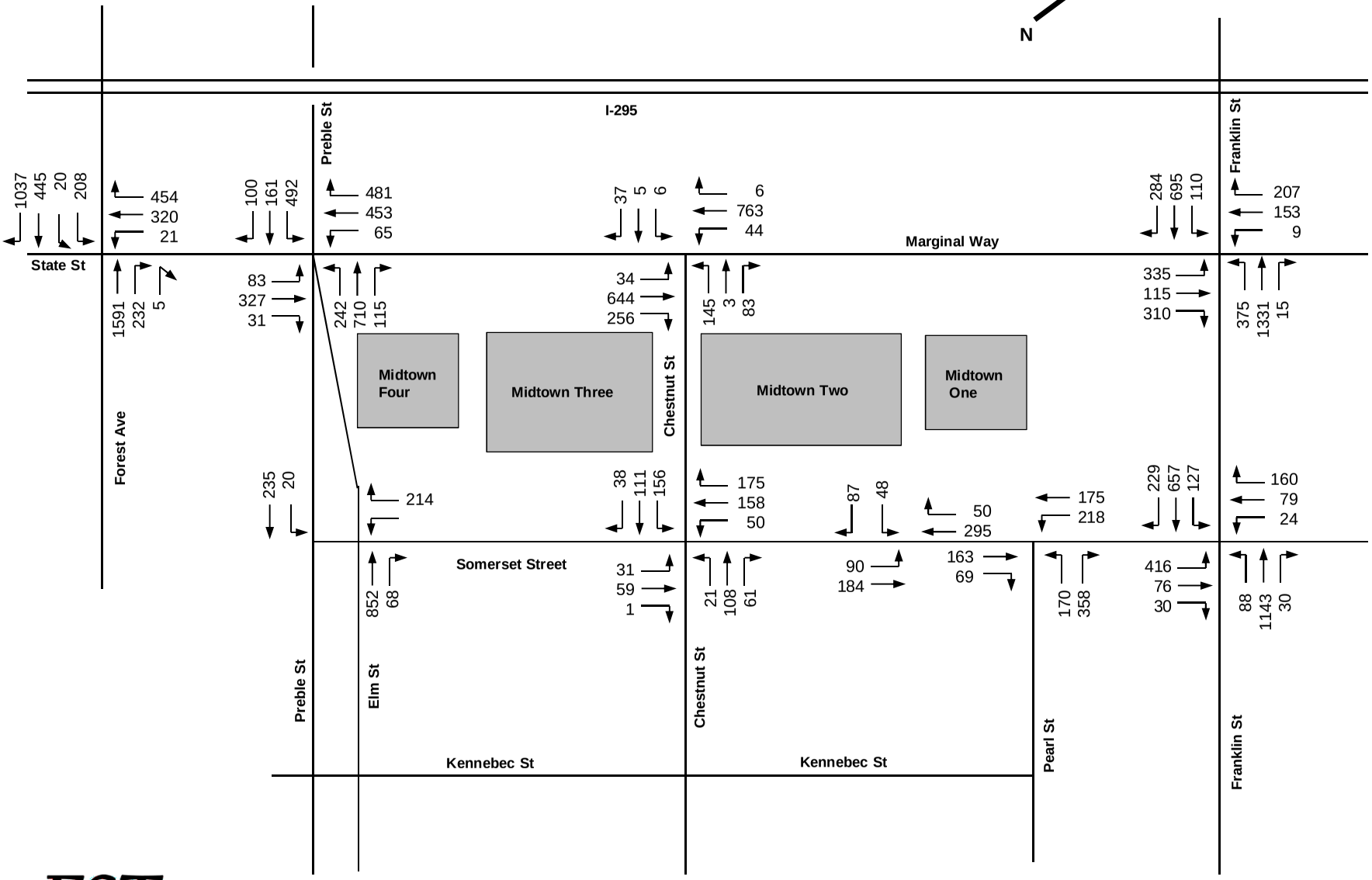

Figure 5
Not to Scale

3.0 CAPACITY ANALYSIS

To assess quality of flow, capacity analyses were conducted for the study area intersections. The capacity analyses provide a standardized indication of the ability of the intersections to accommodate traffic demands placed upon them.

Level of Service Criteria

Capacity Analyses were conducted using Simtraffic simulation software for the signalized and unsignalized intersections. The Level of Service is conceptually defined as a quantitative measure describing operational conditions within a traffic stream and their perception by motorists.

A Level of Service definition generally describes these conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. In doing so, Level of Service provides an index to quality of traffic flow.

Six Levels of Service are defined for each type of facility. They are given letter designations, from A to F, with Level of Service (LOS) A representing the best operating conditions and LOS F representing the worst. Since the Level of Service of a traffic facility is a function of traffic flows placed upon it, an intersection may operate at a wide range of Levels of Service, depending on time of day, day of week, or period of year.

The average delay per vehicle approaching an intersection is used to quantify the Level of Service at a particular intersection. This is discussed briefly below, and LOS designations are defined in Table 3. Average delay measures the mean stopped delay experienced by vehicles entering an intersection during the design period. Average delay is measured for each individual turning movement that must yield the right of way, and for the intersection as a whole (including through vehicles that experience no delay).

Table 3 – Intersection Level of Service Criteria

Level of Service	Unsignalized Delay (sec/veh.)	Signalized Delay (sec/veh)
A	≤10	≤10
B	>10 to 15	>10 to 20
C	>15 to 25	>20 to 35
D	>25 to 35	>35 to 55
E	>35 to 50	>55 to 80
F	>50	>80

Source: ***Highway Capacity Manual, 2010, TRB***

3.1 Operating Conditions

The Synchro traffic analysis software package (Version 8) with Simtraffic was employed along to evaluate operating conditions at study area intersections. Capacity analyses worksheets for each intersection can be found in the Appendix. The simulations were run for a full hour. Five simulations were run for each scenario and averaged. Since simulations were utilized as opposed to formulaic calculations, the operations at one intersection can greatly impact the operations at an upstream or downstream location.

The results of the analysis at each intersection are documented in the following pages. The 2018 Pre-Development and 2018 Post Development (Previous Development) results have been copied from the previous study. The 2018 Post Development (Current proposal) results are shown in the rightmost columns for comparison.

The 2018 AM and PM peak hour post-development results are based on the following changes:

1. Proposed development driveways,
2. Updated signal timings and phasing,
3. An adjusted lane configuration at the intersection of Franklin Street & Marginal Way, and;
4. A proposed signal at the intersection of Chestnut Street & Marginal Way.

The lane group letter identifies direction of travel and lane configuration. “L” = Left, “R” = Right, “LT” = Left and Thru combined, “RT” = Right and Thru combined and “T” is a Thru only lane. Queue lengths are expressed in feet while Delay is shown as seconds per vehicle.

Sim Traffic Results for Marginal Way, Preble Street & Elm Street

Signalized

Lane Group		2018 AM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan		
		Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS
Marginal Way	SE L	245	34.7	C	225	12.7	B	253	17.2	B
	SE LT	407	70.0	E	267	25.6	C	331	42.7	D
	SE TR	339	17.0	B	221	11.5	B	272	22.5	C
	NE L	98	45.0	D	92	26.0	C	98	24.3	C
	NE TR	306	43.8	D	240	24.8	C	239	25.9	C
Preble St/ Elm St	NW L	85	44.1	D	97	35.4	D	79	21.6	C
	NW T	97	19.8	B	99	27.5	C	84	18.9	B
	NW TR	100	16.7	B	107	20.7	C	91	13.2	B
	SW L	145	42.3	D	168	44.9	D	191	67.5	E
	SW T	222	29.2	C	306	33.0	C	208	28.6	C
	SW R	142	3.2	A	242	27.4	C	154	5.4	A
Overall			**32.4**	**C**		**25.0**	**C**		**26.4**	**C**

Sim Traffic Results for Marginal Way, Preble Street & Elm Street

Signalized

Lane Group		2018 PM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan		
		Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS
Marginal Way	SE L	245	46.4	D	245	46.5	D	249	23.6	C
	SE LT	382	106.7	F	734	137.2	F	323	54.2	D
	SE TR	282	25.1	C	656	31.8	C	238	21.7	C
	NE L	98	49.0	D	103	44.9	D	97	40.6	D
	NE TR	251	29.3	C	302	36.7	D	250	26.2	C
Preble St/ Elm St	NW L	211	60.8	E	207	49.4	D	220	26.8	C
	NW T	289	42.8	D	287	30.3	C	282	32.9	C
	NW TR	280	41.7	D	269	28.8	C	269	33.0	C
	SW L	200	41.3	D	257	62.6	E	185	41.1	D
	SW T	557	52.3	D	707	77.3	E	436	40.2	D
	SW R	227	7.6	A	290	7.7	A	264	13.1	B
Overall			**42.8**	**D**		**47.2**	**D**		**31.2**	**C**

At the intersection of Marginal Way, Preble Street Elm Street, the intersection will operate similar to the previous proposal during the morning peak hour, but considerably better during the evening peak hour. The signal timing has been modified to accommodate the NW L movement since the development is expected to increase volumes.

Sim Traffic Results for Somerset Street & Chestnut Street
Stop Controlled

Lane Group		2018 AM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan		
		Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS
Somerset St	NE LTR	52	5.1	A	73	5.4	A	58	5.4	A
	SW LTR	74	5.4	A	93	5.5	A	89	5.3	A
Chestnut St	NW LTR	51	4.7	A	54	5.2	A	53	4.9	A
	SE LTR	85	6.3	A	101	7.6	A	109	7.7	A
Overall			**5.8**	**A**		**6.3**	**A**		**6.4**	**A**

Sim Traffic Results for Somerset Street & Chestnut Street
Stop Controlled

Lane Group		2018 PM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan		
		Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS
Somerset St	NE LTR	73	13.7	B	58	5.9	A	52	4.6	A
	SW LTR	421	53.3	F	106	7.3	A	93	6.4	A
Chestnut St	NW LTR	245	37.4	E	75	6.5	A	72	6.2	A
	SE LTR	77	6.0	A	103	7.7	A	97	7.3	A
Overall			**31.1**	**D**		**7.1**	**A**		**6.3**	**A**

The intersection of Somerset Street/ Chestnut Street operates similar to the previous development proposal. There is a significant improvement during the evening peak hour over Pre-development conditions due to the proposed signal at the Chestnut Street/Marginal Way intersection. Under the pre-development scenario queues extended from Marginal Way to the Somerset Street/Chestnut Street four-way stop controlled intersections and caused an excessive delay during the evening peak hour.

Sim Traffic Results for Somerset Street & Elm Street
Stop Controlled

Lane Group		2018 AM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan		
		Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS
Somerset St	SW R	464	4.3	A						
	SW TR				51	3.8	A	56	4.9	A
	NE T				37	6.2	A	38	5.9	A
Elm St	NW L	0	0.2	A	4	0.2	A	4	0.2	A
	NW LR	526	0.3	A	3	0.2	A	4	0.2	A
Overall			**1.1**	**A**		**1.6**	**A**		**1.8**	**A**

Sim Traffic Results for Somerset Street & Elm Street
Stop Controlled

Lane Group		2018 PM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan		
		Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS
Somerset St	SW R	143	20.2	C						
	SW TR				191	22.9	C	147	18.5	C
	NE T				49	14.6	B	85	19.2	C
Elm St	NW L	105	2.2	A	95	2.0	A	57	1.4	A
	NW LR	67	1.0	A	74	0.8	A	36	0.9	A
Overall			**4.8**	**A**		**6.5**	**A**		**5.6**	**A**

It was assumed that Somerset Street will be extended to Preble Street in the Post development scenario. In the predevelopment scenario Somerset Street ends at Elm Street. The intersection operates at LOS A under all scenarios.

Sim Traffic Results for Marginal Way & Franklin Street

Signalized

Lane Group		2018 AM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan		
		Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS
Marginal Way	NB LT	233	35.9	D						
	NB L				124	34.2	C	112	36.9	D
	NB R	189	20.3	C						
	NB TR				414	46.9	D	411	43.7	D
	SB LT	153	47.1	D	151	51.7	D	163	54.4	D
	SB R	63	5.9	A	74	6.8	A	77	7.2	A
Franklin Street	EB L	145	41.4	D	151	33.8	C	123	32.0	C
	EB T	222	17.2	B	222	15.4	B	223	21.4	C
	EB T	212	15.8	B	223	14.6	B	201	21.1	C
	EB R	212	10.5	B	203	9.0	A	207	12.6	B
	WB L	202	53.4	D	168	49.5	D	208	63.5	E
	WB T	236	19.2	B	223	18.4	B	182	19.1	B
	WB TR	159	15.6	B	147	15.6	B	194	17.0	B
Overall			**20.5**	**C**		**22.3**	**C**		**25.7**	**C**

Sim Traffic Results for Marginal Way & Franklin Street

Signalized

Lane Group		2018 PM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan		
		Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS
Marginal Way	NB LT	949	162.3	F						
	NB L				339	44.7	D	398	61.5	E
	NB R	568	16.7	B						
	NB TR				298	27.7	C	323	29.0	C
	SB LT	181	41.3	D	244	66.7	E	216	54.3	D
	SB R	149	20.7	C	192	27.0	C	187	30.1	C
Franklin Street	EB L	170	69.4	E	168	81.1	F	160	69.5	E
	EB T	223	48.2	D	222	47.0	D	234	58.4	E
	EB T	209	10.3	D	210	37.4	D	207	47.4	D
	EB R	146	16.9	B	139	16.5	B	212	20.6	C
	WB L	445	90.6	F	430	62.7	E	377	58.7	E
	WB T	536	34.9	C	511	21.0	C	427	27.2	C
	WB TR	455	31.9	C	506	36.5	D	428	33.3	C
Overall			**53.8**	**D**		**39.5**	**D**		**40.9**	**D**

The current proposal will operate with similar conditions as the previous proposal at the intersection of Marginal Way and Franklin Street. The signal timings at the Franklin Street intersections were optimized to mitigate the changed traffic patterns. It is assumed that these signal operations will be more thoroughly examined by an ongoing study to improve the Franklin Street facility by the City of Portland.

Sim Traffic Results for Franklin Street, Somerset Street & Fox

Signalized

Lane Group		2018 AM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan		
		Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS
Franklin Street	EB L	140	37.5	D	205	36.0	D	183	39.3	D
	EB T	368	13.1	B	453	18.5	B	437	15.3	B
	EB TR	391	15.9	B	470	21.7	C	452	18.4	B
	WB L	55	44.3	D	68	42.9	D	80	52.5	D
	WB T	203	23.2	C	221	26.0	C	233	28.9	C
	WB TR	136	22.4	C	161	21.6	C	169	24.6	C
Somerset Street	NB L	91	41.5	D	124	39.0	D	97	32.2	C
	NB L	54	36.3	D	85	37.2	D	111	47.4	D
	NB TR	70	26.7	C	71	24.4	C	67	25.2	C
Fox Street	SB LT	168	39.3	D	189	39.4	D	182	45.2	D
	SB R	99	6.5	A	117	6.4	A	104	6.9	A
Overall			**19.0**	**B**		**23.1**	**C**		**22.2**	**C**

Sim Traffic Results for Franklin Street, Somerset Street & Fox

Signalized

Lane Group		2018 PM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan		
		Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS
Franklin Street	EB L	226	58.5	E	150	52.5	D	186	62.7	E
	EB T	202	12.6	B	285	23.5	C	239	23.9	C
	EB TR	209	15.6	B	329	24.1	C	260	24.8	C
	WB L	251	62.3	E	248	62.0	E	225	47.3	D
	WB T	591	45.7	D	672	55.1	E	452	36.3	D
	WB TR	548	32.6	C	619	46.5	D	399	27.7	C
Somerset Street	NB L	354	130.8	F	322	96.1	F	198	39.3	D
	NB L	384	102.2	F	352	98.7	F	221	54.4	D
	NB TR	513	76.1	E	386	57.5	E	119	30.4	C
Fox Street	SB LT	219	60.1	E	165	49.6	D	144	43.4	D
	SB R	170	34.4	C	136	22.3	C	128	20.2	C
Overall			**45.4**	**D**		**48.5**	**D**		**33.5**	**C**

The current proposal will operate with similar conditions as the pre development condition and the previous proposal at the intersection of Marginal Way and Franklin Street during the weekday morning peak hour, and operate better during the evening peak hour.

Sim Traffic Results for East Entrance & Somerset Street

Stop Controlled

Lane Group		2018 AM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan		
		Queue	**Delay**	**LOS**	**Queue**	**Delay**	**LOS**	**Queue**	**Delay**	**LOS**
Somerset St	NE LT				12	0.9	A	52	2.1	A
	SW TR				11	1.5	A	12	0.7	A
Driveway	SE L				43	2.9	A	40	4.4	A
	SE R				35	2.0	A	53	1.3	A
Overall						**1.5**	**A**		**1.6**	**A**

Sim Traffic Results for East Entrance & Somerset Street

Stop Controlled

Lane Group		2018 PM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan		
		Queue	**Delay**	**LOS**	**Queue**	**Delay**	**LOS**	**Queue**	**Delay**	**LOS**
Somerset St	NE LT				20	0.9	A	92	3.9	A
	SW TR				24	1.6	A	25	1.0	A
Driveway	SE L				38	4.3	A	45	6.7	A
	SE R				35	2.9	A	53	1.6	A
Overall						**1.7**	**A**		**2.4**	**A**

The proposed driveway intersection with Somerset Street is expected to function at LOS A during both the morning and evening peak hours.

Sim Traffic Results for Marginal Way, State, Forest Avenue & Kennebec Street

Signalized

Lane Group		2018 AM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan		
		Queue	**Delay**	**LOS**	**Queue**	**Delay**	**LOS**	**Queue**	**Delay**	**LOS**
Marginal Way	WB LT	165	54.7	D	160	53.8	D	146	50.3	D
	WB T	168	76.8	E	176	78.3	E	146	69.2	E
	WB R	160	9.9	A	171	9.4	A	38	2.4	A
Forest Ave	NB T	51	2.7	A	33	2.3	A	74	4.0	A
	NB TR	118	8.7	A	97	6.3	A	88	5.1	A
	SB L	201	59.2	E	235	59.7	E	271	68.5	E
	SB LT	294	58.2	E	284	55.4	E	295	54.3	D
	SB T	272	26.3	C	262	20.9	C	268	23.5	C
	SB R	97	2.7	A	102	2.7	A	201	3.0	A
Overall			**19.4**	**B**		**18.5**	**B**		**17.7**	**B**

Sim Traffic Results for Marginal Way, State, Forest Avenue & Kennebec Street

Signalized

Lane Group		2018 PM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan		
		Queue	**Delay**	**LOS**	**Queue**	**Delay**	**LOS**	**Queue**	**Delay**	**LOS**
Marginal Way	WB LT	228	61.1	E	220	59.1	E	220	61.4	E
	WB T	905	214.4	F	870	201.0	F	282	95.8	F
	WB R	327	39.0	D	312	38.6	D	243	7.1	A
Forest Ave	NB T	119	5.5	A	104	5.3	A	137	7.3	A
	NB TR	148	12.7	B	143	12.5	B	166	10.8	B
	SB L	358	160.4	F	361	150.8	F	358	231.1	F
	SB LT	200	41.4	D	194	38.6	D	357	194.1	F
	SB T	207	27.3	C	191	26.1	C	329	71.3	E
	SB R	170	3.2	A	158	3.1	A	377	7.1	A
Overall			**32.5**	**C**		**31.5**	**C**		**34.7**	**C**

The intersection of Marginal Way, State Forest Avenue and Kennebec Street will operate at an overall LOS of B during the morning peak hour and LOS C during the evening peak hour. This is the same level of service as pre development conditions.

Sim Traffic Results for Somerset Street & Pearl Street

Stop Controlled

Lane Group		2018 AM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan		
		Queue	**Delay**	**LOS**	**Queue**	**Delay**	**LOS**	**Queue**	**Delay**	**LOS**
Pearl Street	NW LR	56	6.6	A	59	6.9	A	64	7.0	A
Somerset St	NE TR	17	1.2	A	18	0.6	A	15	0.6	A
	SW LT	96	3.7	A	99	3.7	A	95	3.5	A
Overall			**3.4**	**A**		**3.1**	**A**		**3.1**	**A**

Sim Traffic Results for Somerset Street & Pearl Street

Stop Controlled

Lane Group		2018 PM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan		
		Queue	**Delay**	**LOS**	**Queue**	**Delay**	**LOS**	**Queue**	**Delay**	**LOS**
Pearl Street	NW LR	643	82.5	F	586	69.8	F	467	39.6	D
Somerset St	NE TR	87	5.2	A	51	2.3	A	14	0.9	A
	SW LT	149	6.4	A	100	3.8	A	89	3.3	A
Overall			**42.8**	**E**		**32.9**	**D**		**19.3**	**B**

During the morning peak hour, the intersection will operate at LOS A. During the evening peak hour, the Pearl Street approach will operate at LOS F under the pre-development scenario and LOS D with the current proposal. This improvement at Pearl Street is due to the proposed signal at the Chestnut Street/Marginal Way intersection. In the pre-development conditions queues extended from Marginal Way to Somerset Street and over to the intersection with Pearl Street causing excessive delay.

Sim Traffic Results for Marginal Way, Chestnut Street & Park and Ride

Stop Controlled – Pre, Signalized Post

Lane Group		2018 AM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan		
		Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS
Marginal Way	NE LT	45	3.3	A	119	13.3	B	142	12.9	B
	NE TR	31	3.8	A	191	12.4	B	205	12.8	B
	SW L	80	8.6	A	187	48.2	D	170	37.8	D
	SW TR	3	3.1	A	374	20.1	C	280	15.1	B
Chestnut St	NW LTR	110	33.7	D	86	10.3	B	98	13.4	B
Park and Ride	SE L	14	10.1	B	13	6.5	A	16	15.0	B
	SE TR	45	9.6	A	39	7.4	A	40	7.0	A
Overall			**5.7**	**A**		**17.9**	**B**		**15.5**	**B**

Sim Traffic Results for Marginal Way, Chestnut Street & Park and Ride

Stop Controlled – Pre, Signalized Post

Lane Group		2018 PM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan		
		Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS
Marginal Way	NE LT	105	4.9	A	235	24.9	C	196	20.5	C
	NE TR	59	3.6	A	277	13.9	B	238	12.8	B
	SW L	54	6.7	A	173	45.1	D	104	25.5	C
	SW TR	70	3.8	A	735	33.8	C	359	16.9	B
Chestnut St	NW LTR	583	146.9	F	177	15.8	B	141	13.8	B
Park and Ride	SE L	29	32.9	D	18	17.0	B	28	21.2	C
	SE TR	72	33.3	D	50	14.0	B	53	12.9	B
Overall			**23.5**	**C**		**24.0**	**C**		**16.0**	**B**

In the pre-development scenarios Marginal Way is free flowing while drivers on Chestnut Street is required to stop. Chestnut Street currently experiences significant delays during the evening peak hour. Adding a new traffic signal will improve the operations on Chestnut Street. With the change in development size, this intersection will operate better than previously analyzed.

4.0 CONCLUSION

FST has completed a supplement to the original Traffic Impact Study for the proposed midtown development located at 105 Somerset Street in Portland. This supplement highlights the change in impacts due to the change in the development. The following results have been identified in the original traffic study and this supplement;

1. The current proposal is smaller than originally proposed and consists of 440 residential apartment units along with 87,200 sf of retail development. Since the size of the development will be DECREASING, the amount of traffic to be generated by the project will decrease from the original study.
2. The proposed development is forecasted to generate 203 and 276 trip ends during the AM and PM peak hours respectively.
3. The current proposal will generate 101 fewer trips (26 in/75 out) during the morning peak hour and 103 fewer trips (61 in/43 out) during the weekday evening peak hour than was originally studied.
4. The proposed development will include a Traffic Demand Management Plan to assist in reducing site-generated traffic impacts.
5. There will be one access drive to the proposed garage, which will be located on Somerset Street.
6. Optimization of signal timings will reduce the impacts of the site generated traffic at most of the study intersections.
7. A new traffic signal is proposed at the intersection of Marginal Way/Chestnut Street & the park and ride lot. This signal has been considered previously by the City of Portland and is desirable with or without the midtown development project.

With the implementation of the proposed mitigation, the traffic impacts of the midtown development will operate similar to the pre-development conditions.

Appendix

Trip Generation Calculations

The current proposed development consists of

Total 87,200 sf retail space
Total 440 apartments.

The trip Generation was calculated using the following methodology. First the Trip Generation for each use was calculated.

Table A – Trip Generation – Current Development – For Individual Land Uses			
	Entering	Exiting	Total
AM – Retail	55	35	90
AM – Residential	33	99	132
AM - Total	**88**	**134**	**222**
PM – Retail	102	129	231
PM – Residential	93	60	153
PM - Total	**195**	**189**	**384**

Then the "shared trips" between the retail and residential uses were accounted for.

Table B – Trip Generation – Current Development – Shared Trip Credit			
	Entering	Exiting	Total
AM – Total	88	134	222
AM – External	**86**	**132**	**218**
PM – Total	195	189	384
PM – External	**151**	**145**	**296**

Lastly, a TDM credit was applied to the trip generation.

Table C – Trip Generation – Current Development – TDM Credit			
	Entering	Exiting	Total
AM – Unadjusted	86	132	218
AM- TDM (7%)	6	9	15
AM – Net Trips	**80**	**123**	**203**
PM – Unadjusted	151	145	296
PM- TDM (7%)	11	10	21
PM – Net Trips	**140**	**135**	**275**

Table 1 – Trip Generation – Current Development			
	Entering	Exiting	Total
AM	**80**	**123**	**203**
PM	**140**	**135**	**276**

Date: _____

Multi-Use Trip Generation Calculation

Time Period AM Peak Hour
Job # _____

LAND USE A RETAIL

ITE Land Use 814
Size 87,200 sf

	Total	Internal	External
Enter	55	1	54
Exit	35	1	34
Total	90	2	88
%	100%	2%	98%

Enter From External: 34

Exit to External: 54

Demand 0 | 0 | 14% 5 | 17% 9 Demand

Balanced 0 | 0 Balanced | Balanced 1 | 1 Balanced

Demand 0 | 0 | 2% 1 | 1% 1 Demand

LAND USE B OFFICE

ITE Land Use
Size sf

	Total	Internal	External
Enter		0	0
Exit		0	0
Total		0	0
%	100%	#DIV/0!	#DIV/0!

Exit to External: 0

Enter From External: 0

Demand 0 | Balanced 0 | Demand 0

Demand 0 | Balanced 0 | Demand 0

LAND USE C RESIDENTIAL

ITE Land Use 232
Size 440 units

	Total	Internal	External
Enter	33	1	32
Exit	99	1	98
Total	132	2	130
%	100%	1%	99%

Enter From External: 32

Exit to External: 98

Net External Trips for Multi_Use Development				
	Land Use A	Land Use B	Land Use C	Total
Enter	54	0	32	86
Exit	34	0	98	132
Total	88	0	130	219
Single Use Trip Gen Estimate	90	0	132	222

INTERNAL CAPTURE 1%

Date: _____

Multi-Use Trip Generation Calculation

Time Period PM Peak Hour
Job # _____

LAND USE A RETAIL

ITE Land Use	814		
Size	87,200 sf		
	Total	Internal	External
Enter	102	**10**	**92**
Exit	129	**34**	**95**
Total	231	**44**	**187**
%	100%	**19%**	**81%**

Enter From External: **95**

Exit to External: **92**

Demand		0		0		26%	34	10%	10	Demand
Balanced	0		0	Balanced	Balanced	34		10	Balanced
Demand		0		0		46%	43	42%	25	Demand

LAND USE B

Exit to External: **0**

Enter From External: **0**

ITE Land Use			
Size	sf		
	Total	Internal	External
Enter		**0**	**0**
Exit		**0**	**0**
Total	0	**0**	**0**
%	**100%**	**#DIV/0!**	**#DIV/0!**

Demand		Balanced	Demand	
0%	0	0	0%	0
2%	0	0	2%	2
Demand		Balanced	Demand	

LAND USE C RESIDENTIAL

Enter From External: **59**

Exit to External: **50**

ITE Land Use	232		
Size	440 units		
	Total	Internal	External
Enter	93	**34**	**59**
Exit	60	**10**	**50**
Total	153	**44**	**109**
%	**100%**	**29%**	**71%**

Net External Trips for Multi_Use Development				
	Land Use A	Land Use B	Land Use C	Total
Enter	**92**	**0**	**59**	**151**
Exit	**95**	**0**	**50**	**145**
Total	**187**	**0**	**109**	**297**
Single Use Trip Gen Estimate	231	0	153	384

INTERNAL CAPTURE **23%**

Synchro/SimTraffic Results

Summary of All Intervals

Run Number	1	2	3	4	5	Current Proposal	Avg
Start Time	7:50	7:50	7:50	7:50	7:50	7:50	7:50
End Time	9:00	9:00	9:00	9:00	9:00	9:00	9:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded mScheduledIntervals	1	1	1	1	1	1	1
Vehs Entered	9315	9371	9136	9304	9272	9235	9268
Vehs Exited	9188	9326	9088	9228	9268	9158	9207
Starting Vehs	363	360	408	369	393	353	361
Ending Vehs	490	405	456	445	397	430	431
Denied Entry Before	1	0	2	1	5	0	0
Travel Distance (mi)	4793	4783	4723	4789	4791	4755	4772
Travel Time (hr)	522.5	363.6	467.7	388.5	443.3	478.3	444.0
Total Delay (hr)	355.8	197.7	303.2	221.9	276.3	313.8	278.1
Total Stops	16666	15065	15915	15584	15858	15525	15768
Fuel Used (gal)	254.4	219.2	240.9	225.5	237.1	243.9	236.8

Interval #0 Information Seeding

Start Time	7:50
End Time	8:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	8:00
End Time	9:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Current Proposal	Avg
Vehs Entered	9315	9371	9136	9304	9272	9235	9268
Vehs Exited	9188	9326	9088	9228	9268	9158	9207
Starting Vehs	363	360	408	369	393	353	361
Ending Vehs	490	405	456	445	397	430	431
Denied Entry Before	1	0	2	1	5	0	0
Travel Distance (mi)	4793	4783	4723	4789	4791	4755	4772
Travel Time (hr)	522.5	363.6	467.7	388.5	443.3	478.3	444.0
Total Delay (hr)	355.8	197.7	303.2	221.9	276.3	313.8	278.1
Total Stops	16666	15065	15915	15584	15858	15525	15768
Fuel Used (gal)	254.4	219.2	240.9	225.5	237.1	243.9	236.8

1: Performance by lane

Lane	EB	EB	WB	All
Movements Served	T	T	R	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	2.2	2.3	3.0	2.5

6: Marginal Way Performance by lane

Lane	SE	SE	SE	NW	NW	NW	NE	NE	SW	SW	SW	All
Movements Served	L	LT	TR	L	T	TR	L	TR	L	T	R	
Denied Del/Veh (s)												0.2
Total Del/Veh (s)	17.2	42.7	22.5	21.6	18.9	13.2	24.3	25.9	67.5	28.6	5.4	26.4

7: Somerset St & Chestnut St Performance by lane

Lane	SE	NW	NE	SW	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					0.0
Total Del/Veh (s)	7.7	4.9	5.4	5.3	6.4

10: NB off-ramp/NB on-ramp Performance by lane

Lane	EB	EB	EB	WB	WB	NB	NB	All
Movements Served	T	T	T	T	R	R	R	
Denied Del/Veh (s)								0.0
Total Del/Veh (s)	43.6	61.9	42.1	2.1	2.1	31.5	27.8	30.7

11: Performance by lane

Lane	WB	SE	SE	SE	NW	NW	All
Movements Served	R	T	T	T	T	T	
Denied Del/Veh (s)							0.1
Total Del/Veh (s)	17.1	0.3	0.9	1.7	0.9	3.5	3.7

13: Somerset St & Elm St Performance by lane

Lane	NW	NW	NE	SW	All
Movements Served	L	LR	T	TR	
Denied Del/Veh (s)					0.1
Total Del/Veh (s)	0.2	0.2	5.9	4.9	1.8

14: Performance by lane

Lane	SE	SE	SE	NW	NW	NW	All
Movements Served	T	T	T	T	T	TR	
Denied Del/Veh (s)							0.0
Total Del/Veh (s)	0.2	0.5	1.0	6.6	6.3	5.5	3.4

15: Marginal Way & Franklin Street Performance by lane

Lane	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	All
Movements Served	L	T	T	R	L	T	TR	L	TR	LT	R	
Denied Del/Veh (s)												0.1
Total Del/Veh (s)	32.0	21.4	21.1	12.6	63.5	19.1	17.0	36.9	43.7	54.4	7.2	25.7

16: Performance by lane

Lane	EB	WB	SE	SE	NW	NW	NW	All
Movements Served	R	R	T	T	T	T	T	
Denied Del/Veh (s)								43.3
Total Del/Veh (s)	3.8	306.8	0.2	1.1	41.8	37.9	19.5	19.3

20: Somerset St/Fox St & Franklin Street Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	All
Movements Served	L	T	TR	L	T	TR	L	L	TR	LT	R	
Denied Del/Veh (s)												0.3
Total Del/Veh (s)	39.3	15.3	18.4	52.5	28.9	24.6	32.2	47.4	25.2	45.2	6.9	22.2

25: Preble St & Elm St Performance by lane

Lane	WB	WB	SE	SE	All
Movements Served	R	R	T	T	
Denied Del/Veh (s)					0.0
Total Del/Veh (s)	0.3	0.3	1.6	1.7	1.2

26: Somerset St & Driveway Performance by lane

Lane	SE	SE	NE	SW	All
Movements Served	L	R	LT	TR	
Denied Del/Veh (s)					0.0
Total Del/Veh (s)	4.4	1.3	2.1	0.7	1.6

27: Driveway Performance by lane

Lane	EB	NW	All
Movements Served	R	L	
Denied Del/Veh (s)			0.1
Total Del/Veh (s)	4.0	2.1	3.4

30: I-295 NB mainline & NB off-ramp Performance by lane

Lane	NB	NB	All
Movements Served	T	TR	
Denied Del/Veh (s)			1.8
Total Del/Veh (s)		1.3	1.4

36: Preble St & Somerset St Performance by lane

Lane	SE	SE	SW	All
Movements Served	LT	T	L	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	0.2	0.3	6.3	0.4

40: I-295 SB mainline Performance by lane

Lane	SB	SB	SB	All
Movements Served	T	R	R	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)		1.8	1.4	1.7

92: Forest Avenue & High St Performance by lane

Lane	EB	EB	NB	NB	SB	SB	All
Movements Served	L	LR	T	T	T	T	
Denied Del/Veh (s)							4.8
Total Del/Veh (s)	58.4	102.6	48.9	21.7	2.3	1.7	45.5

93: Kennebec St & State St/Marginal Way Performance by lane

Lane	WB	WB	WB	NB	NB	SB	SB	SB	SB	All
Movements Served	LT	T	R	T	TR>	<	LT	T	R	
Denied Del/Veh (s)										0.0
Total Del/Veh (s)	50.3	69.2	2.4	4.0	5.1	68.5	54.3	23.5	3.0	17.7

94: Bedford St & Forest Avenue Performance by lane

Lane	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	All
Movements Served	LT	R	L	T	R	L	T	TR	T	TR	
Denied Del/Veh (s)											0.4
Total Del/Veh (s)	62.7	8.1	59.1	41.4	5.0	105.2	46.5	26.7	43.5	50.9	43.3

252: Performance by lane

Lane	EB	SE	SE	SE	NW	NW	All
Movements Served	R	T	T	T	T	T	
Denied Del/Veh (s)							0.0
Total Del/Veh (s)	111.6	1.8	3.1	2.2	0.8	4.4	12.6

902: Somerset St & Pearl St Performance by lane

Lane	NW	NE	SW	All
Movements Served	LR	TR	LT	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	7.0	0.6	3.5	3.1

905: Marginal Way & Chestnut St Performance by lane

Lane	SE	SE	NW	NE	NE	SW	SW	All
Movements Served	L	TR	LTR	LT	TR	L	TR	
Denied Del/Veh (s)								0.0
Total Del/Veh (s)	15.0	7.0	13.4	12.9	12.8	37.8	15.1	15.5

Total Network Performance

Denied Del/Veh (s)	18.1
Total Del/Veh (s)	86.3

Intersection: 1:

Movement	EB	EB	B85	B85
Directions Served	T	T	T	T
Maximum Queue (ft)	161	170	15	21
Average Queue (ft)	15	17	1	1
95th Queue (ft)	101	112	10	14
Link Distance (ft)	210	210	353	353
Upstream Blk Time (%)	1	1		
Queuing Penalty (veh)	9	9		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Marginal Way

Movement	SE	SE	SE	NW	NW	NW	NE	NE	SW	SW	SW
Directions Served	L	LT	TR	L	T	TR	L	TR	L	T	R
Maximum Queue (ft)	209	372	315	94	108	109	84	262	221	256	224
Average Queue (ft)	168	236	179	38	47	52	49	137	100	121	81
95th Queue (ft)	253	331	272	79	84	91	98	239	191	208	154
Link Distance (ft)		844	844		225	225		876		640	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	185			150			60		300		200
Storage Blk Time (%)	0	17			0		4	28	0	1	0
Queuing Penalty (veh)	2	36			0		12	19	0	4	0

Intersection: 7: Somerset St & Chestnut St

Movement	SE	NW	NE	SW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	136	55	74	111
Average Queue (ft)	68	33	30	53
95th Queue (ft)	109	53	58	89
Link Distance (ft)	497	403	464	303
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 10: NB off-ramp/NB on-ramp

Movement	EB	EB	EB	WB	WB	NB	NB
Directions Served	T	T	T	T	R	R	R
Maximum Queue (ft)	385	373	369	126	65	276	255
Average Queue (ft)	244	248	229	7	2	151	131
95th Queue (ft)	377	372	352	54	36	229	208
Link Distance (ft)	322	322	322	137	137	866	866
Upstream Blk Time (%)	7	5	5	0	0		
Queuing Penalty (veh)	31	22	19	0	0		
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 11:

Movement	WB	SE	SE	SE	NW	NW
Directions Served	R	T	T	T	T	T
Maximum Queue (ft)	320	32	112	188	79	164
Average Queue (ft)	133	1	8	17	7	49
95th Queue (ft)	286	22	71	134	50	144
Link Distance (ft)	416	249	249	249	148	148
Upstream Blk Time (%)	1		0	1	0	2
Queuing Penalty (veh)	0		0	5	1	10
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 13: Somerset St & Elm St

Movement	NW	NW	NE	SW
Directions Served	L	LR	T	TR
Maximum Queue (ft)	5	5	38	69
Average Queue (ft)	0	0	13	33
95th Queue (ft)	4	4	38	56
Link Distance (ft)	528	528	156	464
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 14:

Movement	SE	SE	NW	NW	NW
Directions Served	T	T	T	T	TR
Maximum Queue (ft)	14	50	94	117	140
Average Queue (ft)	0	4	28	33	42
95th Queue (ft)	7	28	133	146	175
Link Distance (ft)	133	133	249	249	249
Upstream Blk Time (%)			0	0	1
Queuing Penalty (veh)			1	2	7
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 15: Marginal Way & Franklin Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	TR	LT	R
Maximum Queue (ft)	136	223	206	210	230	236	235	140	495	199	106
Average Queue (ft)	55	190	185	179	117	93	108	62	237	85	38
95th Queue (ft)	123	223	201	207	208	182	194	112	411	163	77
Link Distance (ft)		137	137	137		426	426	992	992	481	
Upstream Blk Time (%)	0	29	40	22							
Queuing Penalty (veh)	0	168	235	132							
Storage Bay Dist (ft)	50				350						150
Storage Blk Time (%)	12	42								3	
Queuing Penalty (veh)	73	26								2	

Intersection: 16:

Movement	EB	WB	SE	SE	B22	B22	NW	NW	NW
Directions Served	R	R	T	T	T	T	T	T	T
Maximum Queue (ft)	214	221	36	158	32	61	254	260	234
Average Queue (ft)	62	156	1	24	1	2	129	141	123
95th Queue (ft)	155	270	19	85	20	34	313	324	288
Link Distance (ft)	325	200	145	145	119	119	133	133	133
Upstream Blk Time (%)	0	63		0	0	0	32	33	24
Queuing Penalty (veh)	0	0		2	0	0	125	128	94
Storage Bay Dist (ft)									
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 20: Somerset St/Fox St & Franklin Street

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	L	TR	LT	R
Maximum Queue (ft)	323	459	452	163	272	232	119	122	88	233	143
Average Queue (ft)	53	209	233	22	121	68	42	68	29	102	53
95th Queue (ft)	183	437	452	80	233	169	97	111	67	182	104
Link Distance (ft)		426	426		655	655			464	695	
Upstream Blk Time (%)		1	2								
Queuing Penalty (veh)		5	11								
Storage Bay Dist (ft)	175			150			275	275			100
Storage Blk Time (%)		7			8					15	0
Queuing Penalty (veh)		3			2					22	0

Intersection: 25: Preble St & Elm St

Movement	WB
Directions Served	R
Maximum Queue (ft)	9
Average Queue (ft)	0
95th Queue (ft)	7
Link Distance (ft)	257
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 26: Somerset St & Driveway

Movement	SE	SE	NE	SW
Directions Served	L	R	LT	TR
Maximum Queue (ft)	31	67	80	28
Average Queue (ft)	21	30	15	1
95th Queue (ft)	40	53	52	12
Link Distance (ft)	5	5	303	129
Upstream Blk Time (%)	5	4		
Queuing Penalty (veh)	5	4		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 27: Driveway

Movement	EB	NW
Directions Served	R	L
Maximum Queue (ft)	84	42
Average Queue (ft)	46	28
95th Queue (ft)	73	45
Link Distance (ft)	192	5
Upstream Blk Time (%)		2
Queuing Penalty (veh)		2
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 30: I-295 NB mainline & NB off-ramp

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 36: Preble St & Somerset St

Movement	SW
Directions Served	L
Maximum Queue (ft)	31
Average Queue (ft)	9
95th Queue (ft)	31
Link Distance (ft)	156
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 40: I-295 SB mainline

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 92: Forest Avenue & High St

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	LR	T	T	T	T
Maximum Queue (ft)	464	478	350	175	39	24
Average Queue (ft)	388	449	203	141	5	2
95th Queue (ft)	517	504	290	220	24	13
Link Distance (ft)	441	441	513		123	123
Upstream Blk Time (%)	7	44				
Queuing Penalty (veh)	0	0				
Storage Bay Dist (ft)				150		
Storage Blk Time (%)			22	2		
Queuing Penalty (veh)			43	3		

Intersection: 93: Kennebec St & State St/Marginal Way

Movement	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	LT	T	R	T	TR>	<	LT	T	R
Maximum Queue (ft)	160	169	75	117	136	295	302	274	275
Average Queue (ft)	94	93	6	21	27	150	202	197	54
95th Queue (ft)	146	146	38	74	88	271	295	268	201
Link Distance (ft)		876		123	123	191	191	191	191
Upstream Blk Time (%)				0	0	9	15	14	1
Queuing Penalty (veh)				1	2	44	68	64	3
Storage Bay Dist (ft)	200		125						
Storage Blk Time (%)	0	3							
Queuing Penalty (veh)	0	10							

Intersection: 94: Bedford St & Forest Avenue

Movement	EB	EB	WB	WB	WB	B258	NB	NB	NB	B22	B22	B22
Directions Served	LT	R	L	T	R	T	L	T	TR	T	T	T
Maximum Queue (ft)	365	446	215	292	88	84	232	230	219	243	255	241
Average Queue (ft)	210	97	171	134	9	6	196	196	193	197	206	207
95th Queue (ft)	343	290	237	306	43	41	213	213	213	277	275	275
Link Distance (ft)		948		220		292	119	119	119	145	145	145
Upstream Blk Time (%)		0	3	5			87	87	54	72	70	54
Queuing Penalty (veh)		0	0	0			388	387	244	320	311	243
Storage Bay Dist (ft)	330		140		75							
Storage Blk Time (%)	2	0	31	2								
Queuing Penalty (veh)	11	0	41	8								

Intersection: 94: Bedford St & Forest Avenue

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	358	428
Average Queue (ft)	244	275
95th Queue (ft)	343	392
Link Distance (ft)	760	760
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 252:

Movement	EB	B9	SE	SE	SE	NW	NW
Directions Served	R	T	T	T	T	T	T
Maximum Queue (ft)	459	348	55	123	161	49	140
Average Queue (ft)	274	73	6	14	23	3	18
95th Queue (ft)	510	320	50	91	119	37	100
Link Distance (ft)	378	411	148	148	148	191	191
Upstream Blk Time (%)	25	12	0	2	3		1
Queuing Penalty (veh)	0	0	3	10	14		4
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 902: Somerset St & Pearl St

Movement	NW	NE	SW
Directions Served	LR	TR	LT
Maximum Queue (ft)	76	27	127
Average Queue (ft)	39	2	43
95th Queue (ft)	64	15	95
Link Distance (ft)	522	129	464
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 905: Marginal Way & Chestnut St

Movement	SE	SE	NW	NE	NE	SW	SW
Directions Served	L	TR	LTR	LT	TR	L	TR
Maximum Queue (ft)	30	56	112	168	220	174	338
Average Queue (ft)	2	13	54	75	116	86	161
95th Queue (ft)	16	40	98	142	205	170	280
Link Distance (ft)		179	497	640	640		992
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	25					150	
Storage Blk Time (%)	1	5				2	6
Queuing Penalty (veh)	0	0				15	7

Network Summary

Network wide Queuing Penalty: 3475

Summary of All Intervals

Run Number	1	2	3	4	5	Current Proposal	Avg
Start Time	4:50	4:50	4:50	4:50	4:50	4:50	4:50
End Time	6:00	6:00	6:00	6:00	6:00	6:00	6:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded mScheduledIntervals	1	1	1	1	1	1	1
Vehs Entered	10872	10740	10723	11030	10763	11209	10884
Vehs Exited	10658	10476	10503	10736	10548	11025	10661
Starting Vehs	471	417	434	450	474	448	442
Ending Vehs	685	681	654	744	689	632	672
Denied Entry Before	15	3	34	6	2	3	10
Travel Distance (mi)	5137	5100	5074	5247	5161	5319	5173
Travel Time (hr)	841.1	771.7	726.0	739.8	754.6	581.2	735.7
Total Delay (hr)	653.4	585.6	541.0	548.7	566.1	387.7	547.1
Total Stops	21920	22686	20807	22308	22292	21780	21969
Fuel Used (gal)	343.2	326.9	315.6	324.3	325.2	289.8	320.8

Interval #0 Information Seeding

Start Time	4:50
End Time	5:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	5:00
End Time	6:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Current Proposal	Avg
Vehs Entered	10872	10740	10723	11030	10763	11209	10884
Vehs Exited	10658	10476	10503	10736	10548	11025	10661
Starting Vehs	471	417	434	450	474	448	442
Ending Vehs	685	681	654	744	689	632	672
Denied Entry Before	15	3	34	6	2	3	10
Travel Distance (mi)	5137	5100	5074	5247	5161	5319	5173
Travel Time (hr)	841.1	771.7	726.0	739.8	754.6	581.2	735.7
Total Delay (hr)	653.4	585.6	541.0	548.7	566.1	387.7	547.1
Total Stops	21920	22686	20807	22308	22292	21780	21969
Fuel Used (gal)	343.2	326.9	315.6	324.3	325.2	289.8	320.8

1: Performance by lane

Lane	EB	EB	WB	All
Movements Served	T	T	R	
Denied Del/Veh (s)				0.2
Total Del/Veh (s)	24.7	32.9	4.4	12.8

6: Marginal Way Performance by lane

Lane	SE	SE	SE	NW	NW	NW	NE	NE	SW	SW	SW	All
Movements Served	L	LT	TR	L	T	TR	L	TR	L	T	R	
Denied Del/Veh (s)												0.3
Total Del/Veh (s)	23.6	54.2	21.7	26.8	32.9	33.0	40.6	26.2	41.1	40.2	13.1	31.2

7: Somerset/Somerset St & Chestnut St Performance by lane

Lane	SE	NW	NE	SW	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					0.0
Total Del/Veh (s)	7.3	6.2	4.6	6.4	6.3

10: NB off-ramp/NB on-ramp Performance by lane

Lane	EB	EB	EB	WB	WB	NB	NB	All
Movements Served	T	T	T	T	R	R	R	
Denied Del/Veh (s)								0.0
Total Del/Veh (s)	175.3	178.7	138.6	4.0	3.4	28.4	20.6	33.5

11: Performance by lane

Lane	WB	SE	SE	SE	NW	NW	All
Movements Served	R	T	T	T	T	T	
Denied Del/Veh (s)							30.7
Total Del/Veh (s)	158.6	77.9	53.7	39.1	0.7	1.5	33.4

13: Somerset & Elm St & Elm Performance by lane

Lane	NW	NW	NE	SW	All
Movements Served	L	LR	T	TR	
Denied Del/Veh (s)					0.2
Total Del/Veh (s)	1.4	0.9	19.2	18.5	5.6

14: Performance by lane

Lane	SE	SE	SE	NW	NW	NW	All
Movements Served	T	T	T	T	T	TR	
Denied Del/Veh (s)							9.2
Total Del/Veh (s)	4.5	4.4	17.3	1.6	1.9	3.7	5.9

15: Marginal Way & Franklin Street Performance by lane

Lane	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	All
Movements Served	L	T	T	R	L	T	TR	L	TR	LT	R	
Denied Del/Veh (s)												0.2
Total Del/Veh (s)	69.5	58.4	47.4	20.6	58.7	27.2	33.3	61.5	29.0	54.3	30.1	40.9

16: Performance by lane

Lane	EB	WB	SE	SE	NW	NW	NW	All
Movements Served	R	R	T	T	T	T	T	
Denied Del/Veh (s)								47.6
Total Del/Veh (s)	76.2	54.2	0.7	15.3	5.3	5.1	5.6	15.2

20: Somerset St/Fox St & Franklin Street Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	All
Movements Served	L	T	TR	L	T	TR	L	L	TR	LT	R	
Denied Del/Veh (s)												0.4
Total Del/Veh (s)	62.7	23.9	24.8	47.3	36.3	27.7	39.3	54.4	30.4	43.4	20.2	33.5

25: Preble St & Elm Performance by lane

Lane	WB	WB	SE	SE	All
Movements Served	R	R	T	T	
Denied Del/Veh (s)					0.0
Total Del/Veh (s)	3.8	3.8	1.3	1.3	3.3

26: Somerset St & Driveway Performance by lane

Lane	SE	SE	NE	SW	All
Movements Served	L	R	LT	TR	
Denied Del/Veh (s)					0.0
Total Del/Veh (s)	6.7	1.6	3.9	1.0	2.4

27: Driveway Performance by lane

Lane	EB	NW	All
Movements Served	R	L	
Denied Del/Veh (s)			0.1
Total Del/Veh (s)	4.3	2.0	3.2

30: I-295 NB mainline & NB off-ramp Performance by lane

Lane	NB	NB	All
Movements Served	T	TR	
Denied Del/Veh (s)			1.4
Total Del/Veh (s)	130.5	1.7	1.9

36: Preble St & Somerset Performance by lane

Lane	SE	SE	SW	All
Movements Served	LT	T	L	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	0.3	0.1	6.0	0.3

40: I-295 SB mainline Performance by lane

Lane	SB	SB	SB	All
Movements Served	T	R	R	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)		1.2	0.9	1.1

92: Forest Avenue & High St Performance by lane

Lane	EB	EB	NB	NB	SB	SB	All
Movements Served	L	LR	T	T	T	T	
Denied Del/Veh (s)							29.8
Total Del/Veh (s)	53.6	77.8	166.4	51.3	4.2	2.3	68.5

93: Kennebec St & State St/Marginal Way Performance by lane

Lane	WB	WB	WB	NB	NB	SB	SB	SB	SB	All
Movements Served	LT	T	R	T	TR>	<	LT	T	R	
Denied Del/Veh (s)										0.4
Total Del/Veh (s)	61.4	95.8	7.1	7.3	10.8	231.1	194.1	71.3	7.1	34.7

94: Bedford St & Forest Avenue Performance by lane

Lane	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	All
Movements Served	LT	R	L	T	R	L	T	TR	T	TR	
Denied Del/Veh (s)											7.3
Total Del/Veh (s)	67.0	35.4	67.0	49.5	5.2	92.9	36.2	22.2	60.7	113.3	55.3

252: Performance by lane

Lane	EB	SE	SE	SE	NW	NW	All
Movements Served	R	T	T	T	T	T	
Denied Del/Veh (s)							0.0
Total Del/Veh (s)	1075.5	102.0	78.7	14.4	1.3	6.4	34.6

902: Somerset St & Pearl St Performance by lane

Lane	NW	NE	SW	All
Movements Served	LR	TR	LT	
Denied Del/Veh (s)				0.2
Total Del/Veh (s)	39.6	0.9	3.3	19.3

905: Marginal Way & Chestnut St Performance by lane

Lane	SE	SE	NW	NE	NE	SW	SW	All
Movements Served	L	TR	LTR	LT	TR	L	TR	
Denied Del/Veh (s)								0.0
Total Del/Veh (s)	21.2	12.9	13.8	20.5	12.8	25.5	16.9	16.0

Total Network Performance

Denied Del/Veh (s)	46.0
Total Del/Veh (s)	128.1

Intersection: 1:

Movement	EB	EB	B85	B85	B55	WB
Directions Served	T	T	T	T	T	R
Maximum Queue (ft)	188	194	124	100	3	106
Average Queue (ft)	62	59	19	16	0	4
95th Queue (ft)	237	227	127	119	2	49
Link Distance (ft)	210	210	353	353	222	322
Upstream Blk Time (%)	13	11	0	0		
Queuing Penalty (veh)	31	26	1	0		
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 6: Marginal Way

Movement	SE	SE	SE	NW	NW	NW	NE	NE	SW	SW	SW
Directions Served	L	LT	TR	L	T	TR	L	TR	L	T	R
Maximum Queue (ft)	210	367	267	175	270	259	84	315	296	575	225
Average Queue (ft)	168	223	132	142	206	198	55	144	67	240	163
95th Queue (ft)	249	323	238	220	282	269	97	250	185	436	264
Link Distance (ft)		844	844		225	225		875		640	
Upstream Blk Time (%)					10	9				0	
Queuing Penalty (veh)					53	47				1	
Storage Bay Dist (ft)	185			150			60		300		200
Storage Blk Time (%)	1	14		4	21		11	27	0	9	3
Queuing Penalty (veh)	2	35		13	51		38	23	0	48	14

Intersection: 7: Somerset/Somerset St & Chestnut St

Movement	SE	NW	NE	SW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	123	78	64	107
Average Queue (ft)	60	47	33	61
95th Queue (ft)	97	72	52	93
Link Distance (ft)	497	403	464	303
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 10: NB off-ramp/NB on-ramp

Movement	EB	EB	EB	WB	WB	NB	NB
Directions Served	T	T	T	T	R	R	R
Maximum Queue (ft)	341	342	328	182	187	295	287
Average Queue (ft)	221	221	189	23	25	149	132
95th Queue (ft)	435	424	392	117	122	243	227
Link Distance (ft)	322	322	322	137	137	866	866
Upstream Blk Time (%)	30	24	15	0	0		
Queuing Penalty (veh)	48	38	24	4	4		
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 11:

Movement	WB	SE	SE	SE	NW	NW
Directions Served	R	T	T	T	T	T
Maximum Queue (ft)	466	382	393	422	34	107
Average Queue (ft)	415	159	161	255	1	14
95th Queue (ft)	525	420	408	561	20	63
Link Distance (ft)	416	249	249	249	148	148
Upstream Blk Time (%)	81	22	21	49	0	0
Queuing Penalty (veh)	0	115	111	256	0	1
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 13: Somerset & Elm St & Elm

Movement	NW	NW	NE	SW
Directions Served	L	LR	T	TR
Maximum Queue (ft)	92	64	107	207
Average Queue (ft)	11	6	46	76
95th Queue (ft)	57	36	85	147
Link Distance (ft)	528	528	156	464
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 14:

Movement	SE	SE	SE	NW	NW	NW
Directions Served	T	T	T	T	T	TR
Maximum Queue (ft)	137	148	223	93	100	221
Average Queue (ft)	19	35	126	11	12	25
95th Queue (ft)	91	125	287	82	84	129
Link Distance (ft)	133	133	133	249	249	249
Upstream Blk Time (%)	2	1	42	0	0	0
Queuing Penalty (veh)	8	4	202	1	0	1
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 15: Marginal Way & Franklin Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	TR	LT	R
Maximum Queue (ft)	136	233	207	188	384	437	444	422	393	253	217
Average Queue (ft)	94	203	185	155	254	254	283	213	167	118	105
95th Queue (ft)	160	234	207	212	377	427	428	398	323	216	187
Link Distance (ft)		137	137	137		426	426	992	992	481	
Upstream Blk Time (%)	4	56	54	18		2	1				
Queuing Penalty (veh)	0	206	198	65		15	8				
Storage Bay Dist (ft)	50				350						150
Storage Blk Time (%)	51	65			5	1				7	3
Queuing Penalty (veh)	177	72			34	4				15	5

Intersection: 16:

Movement	EB	WB	SE	SE	B22	B22	NW	NW	NW
Directions Served	R	R	T	T	T	T	T	T	T
Maximum Queue (ft)	343	180	134	237	212	231	167	182	159
Average Queue (ft)	222	81	10	129	53	86	46	54	41
95th Queue (ft)	432	201	71	282	174	249	184	203	154
Link Distance (ft)	325	200	145	145	119	119	133	133	133
Upstream Blk Time (%)	46	15	0	29	1	18	5	5	2
Queuing Penalty (veh)	0	0	2	224	9	136	28	31	15
Storage Bay Dist (ft)									
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 20: Somerset St/Fox St & Franklin Street

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	L	TR	LT	R
Maximum Queue (ft)	248	340	317	225	498	448	206	220	163	182	158
Average Queue (ft)	97	139	164	94	278	238	119	148	59	78	74
95th Queue (ft)	186	239	260	225	452	399	198	221	119	144	128
Link Distance (ft)		426	426		655	655			464	695	
Upstream Blk Time (%)		0	0		0						
Queuing Penalty (veh)		0	0		0						
Storage Bay Dist (ft)	175			150			275	275			100
Storage Blk Time (%)	4	4		0	30		0	0		7	5
Queuing Penalty (veh)	13	5		2	27		0	0		12	5

Intersection: 25: Preble St & Elm

Movement	WB	WB
Directions Served	R	R
Maximum Queue (ft)	163	166
Average Queue (ft)	44	47
95th Queue (ft)	147	149
Link Distance (ft)	257	257
Upstream Blk Time (%)	1	0
Queuing Penalty (veh)	3	3
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 26: Somerset St & Driveway

Movement	SE	SE	NE	SW
Directions Served	L	R	LT	TR
Maximum Queue (ft)	57	81	136	42
Average Queue (ft)	23	29	38	5
95th Queue (ft)	45	53	92	25
Link Distance (ft)	5	5	303	129
Upstream Blk Time (%)	8	5		
Queuing Penalty (veh)	8	5		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 27: Driveway

Movement	EB	NW
Directions Served	R	L
Maximum Queue (ft)	91	64
Average Queue (ft)	46	34
95th Queue (ft)	74	49
Link Distance (ft)	192	5
Upstream Blk Time (%)		5
Queuing Penalty (veh)		7
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 30: I-295 NB mainline & NB off-ramp

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 36: Preble St & Somerset

Movement	SW
Directions Served	L
Maximum Queue (ft)	31
Average Queue (ft)	5
95th Queue (ft)	24
Link Distance (ft)	156
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 40: I-295 SB mainline

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 92: Forest Avenue & High St

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	LR	T	T	T	T
Maximum Queue (ft)	446	473	554	175	50	25
Average Queue (ft)	394	442	498	172	7	3
95th Queue (ft)	505	484	631	181	31	18
Link Distance (ft)	431	431	513		149	149
Upstream Blk Time (%)	13	48	46			
Queuing Penalty (veh)	0	0	0			
Storage Bay Dist (ft)				150		
Storage Blk Time (%)			65	34		
Queuing Penalty (veh)			198	103		

Intersection: 93: Kennebec St & State St/Marginal Way

Movement	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	LT	T	R	T	TR>	<	LT	T	R
Maximum Queue (ft)	223	396	265	179	194	334	337	304	307
Average Queue (ft)	147	162	103	69	99	290	285	233	147
95th Queue (ft)	220	282	243	137	166	358	357	329	377
Link Distance (ft)		875		149	149	191	191	191	191
Upstream Blk Time (%)				1	0	83	79	41	3
Queuing Penalty (veh)				5	4	355	337	177	13
Storage Bay Dist (ft)	200		125						
Storage Blk Time (%)	2	23	8						
Queuing Penalty (veh)	15	146	26						

Intersection: 94: Bedford St & Forest Avenue

Movement	EB	EB	WB	WB	WB	B258	NB	NB	NB	B22	B22	B22
Directions Served	LT	R	L	T	R	T	L	T	TR	T	T	T
Maximum Queue (ft)	411	757	215	289	64	155	225	222	213	227	240	238
Average Queue (ft)	238	240	176	139	8	21	191	191	187	141	154	145
95th Queue (ft)	418	708	237	327	34	123	225	216	221	275	279	275
Link Distance (ft)		948		220		292	119	119	119	145	145	145
Upstream Blk Time (%)		4	5	9		1	72	73	42	33	31	24
Queuing Penalty (veh)		0	0	0		0	297	301	175	136	127	101
Storage Bay Dist (ft)	330		140		75							
Storage Blk Time (%)	5	10	36	2	0							
Queuing Penalty (veh)	25	28	49	5	0							

Intersection: 94: Bedford St & Forest Avenue

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	687	719
Average Queue (ft)	348	425
95th Queue (ft)	667	749
Link Distance (ft)	760	760
Upstream Blk Time (%)	2	12
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 252:

Movement	EB	B9	SE	SE	SE	NW	NW
Directions Served	R	T	T	T	T	T	T
Maximum Queue (ft)	453	421	258	263	255	34	102
Average Queue (ft)	396	277	154	153	171	1	4
95th Queue (ft)	574	564	297	288	319	20	47
Link Distance (ft)	378	411	148	148	148	191	191
Upstream Blk Time (%)	79	55	52	45	42		0
Queuing Penalty (veh)	0	0	269	233	215		1
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 902: Somerset St & Pearl St

Movement	NW	NE	SW
Directions Served	LR	TR	LT
Maximum Queue (ft)	526	20	116
Average Queue (ft)	237	2	41
95th Queue (ft)	467	14	89
Link Distance (ft)	522	129	464
Upstream Blk Time (%)	1		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 905: Marginal Way & Chestnut St

Movement	SE	SE	NW	NE	NE	SW	SW
Directions Served	L	TR	LTR	LT	TR	L	TR
Maximum Queue (ft)	39	62	154	221	271	174	433
Average Queue (ft)	6	22	88	110	135	37	199
95th Queue (ft)	28	53	141	196	238	104	359
Link Distance (ft)		179	497	640	640		992
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	25					150	
Storage Blk Time (%)	4	12				0	11
Queuing Penalty (veh)	2	1				0	5

Network Summary

Network wide Queuing Penalty: 5882

Exhibit 9a

TRAFFIC IMPACT STUDY SUPPLEMENT

Midtown Development
105 Somerset Street
Portland, Maine

Prepared for
The Federated Companies
3301 NE 1st Avenue, Suite M-302
Miami, FL 33137-4110

Prepared by

FST
100 YEARS

Fay, Spofford & Thorndike
Engineers • Planners • Scientists
South Portland, Maine

January 2015

STATE OF MAINE
WALTSON WOO
No. 13572
LICENSED
PROFESSIONAL ENGINEER

JANUARY 16, 2015

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1.0 OVERVIEW

1.1 Executive Summary

The Federated Companies has retained Fay, Spofford & Thorndike, LLC, (FST) to provide a supplement to the original Traffic Impact Study that was submitted on April 22, 2013 for the proposed Midtown Development to be located at 105 Somerset Street in Portland, ME.

The original Traffic Impact Study was completed for a development that consisted of 664 residential units (544 residential apartments, 120 residential condominiums) as well as 100,000 sf of retail space. The current proposal is smaller and consists of 445 residential apartment units along with 91,500 sf of retail development.

Since the size of the development will be DECREASING, the amount of traffic to be generated by the project will decrease from the original study. This supplement has been prepared to present the changes due to the project. Therefore, this supplement only provides a discussion of the elements of the original study that have changed.

Similar to the original development, the proposed development will consist of a multiuse site composed of apartments, retail space and garage level parking. No turning lanes are required along Somerset Street to accommodate the proposed traffic. The midtown development will include a traffic demand management plan to assist in reducing site-generated traffic impacts.

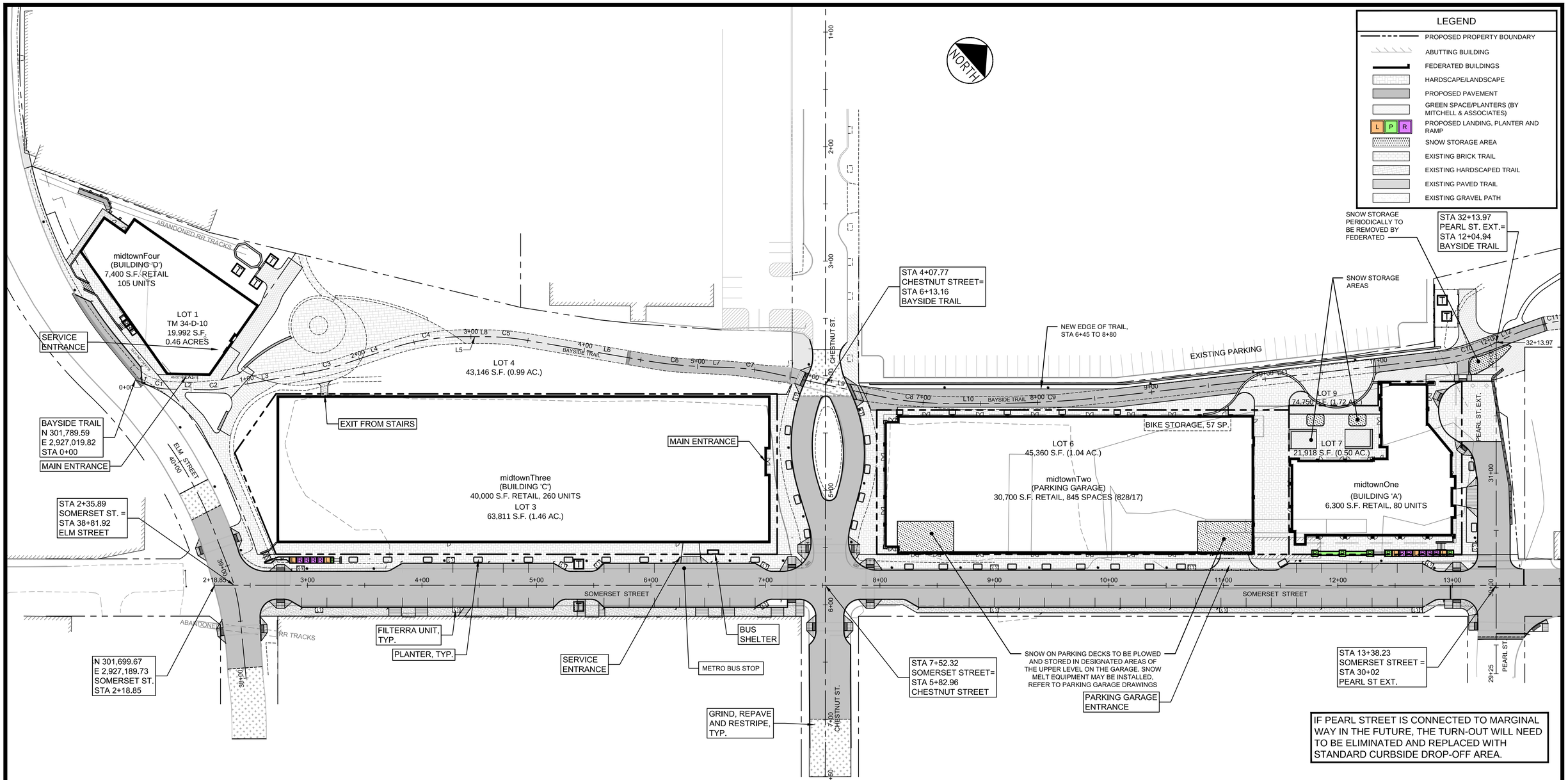
The same improvements are being proposed as the previous development, consisting of the following:

1. Optimization of signal timings to reduce the impacts of the site generated traffic at most of the study intersections.
2. A new traffic signal is proposed at the intersection of Marginal Way/Chestnut Street & the park and ride lot. This signal has been considered previously by the City of Portland and is desirable with or without the midtown development project.

As shown in the results of this supplement, the implementation of the proposed mitigation is expected to mitigate the traffic impacts of the midtown development.

1.2 Site Description and Site Plan

The current site development will consist of four buildings. One parking garage will be constructed as part of the development. The breakout of floor space usage is proposed as 445 residential apartment units and 91,500 sf of retail space. A parking garage is proposed and will be accessed by a single driveway on Somerset Street. This driveway will serve both entering and exiting traffic. The proposed site plan is shown on the following page.



LINE TABLE: ALIGNMENTS		
ID	LENGTH	DIRECTION
L1	11.70	N71° 04' 02.06"E
L2	34.95	N50° 11' 33.96"E
L3	82.21	N38° 43' 25.92"E
L4	44.18	N30° 40' 45.73"E
L5	20.19	N49° 00' 22.29"E
L6	106.00	N58° 43' 25.61"E
L7	21.70	N50° 49' 52.46"E
L8	20.19	N49° 00' 22.29"E
L9	95.15	N61° 14' 33.58"E
L10	32.69	N48° 56' 24.17"E
L11	284.79	N42° 26' 52.98"E
L12	13.41	N23° 46' 17.31"E
L13	50.38	N51° 49' 50.37"E

CURVE TABLE: ALIGNMENTS						
ID	RADIUS	ARC LENGTH	DELTA	TANGENT	PC STATION	PT STATION
C1	50.00	18.22	020° 52'	9.21	0+11.70	0+29.91
C2	50.00	10.01	011° 28'	5.02	0+64.86	0+74.87
C3	200.00	28.08	008° 03'	14.06	1+57.08	1+85.16
C4	200.00	63.97	018° 20'	32.26	2+29.34	2+93.31
C5	200.00	33.92	009° 43'	17.00	3+13.50	3+47.42
C6	400.00	52.25	007° 29'	26.16	4+53.42	5+05.66
C7	200.00	36.34	010° 25'	18.22	5+27.37	5+63.71
C8	300.00	64.42	012° 18'	32.33	6+58.86	7+23.28
C9	1000.00	113.31	006° 30'	56.71	7+55.97	8+69.28
C10	150.00	48.90	018° 41'	24.67	11+54.07	12+02.96
C11	170.00	83.25	028° 04'	42.48	12+16.37	12+99.62

GRAPHIC SCALE

40 0 20 40 80

(IN FEET)
1 inch = 40 ft.

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
OVERALL SITE PLAN

CLIENT
THE FEDERATED COMPANIES

FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW/LA	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	1" = 40'
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-SITE		
SHEET	C-2.0		

R:\3062B - Midtown Amended - Portland, ME\Cadd\Permit Set\dwg\3062-SITE.dwg anthon_j 11/11/2014 11:44 AM

2.0 TRIP GENERATION/ASSIGNMENT

2.1 Trip Generation

Vehicle-trips expected to be generated by the proposed building were obtained from consulting the Institute of Transportation Engineers (ITE) Trip Generation. The ITE *Trip Generation* is widely used by traffic engineers for this application. The manual provides vehicle-trip generation projections for a number of land uses. The data contained in *Trip Generation* have been obtained from the research and experiences of transportation engineering and planning professionals and is based on over 3,700 trip generation studies submitted by public agencies, developers, consulting firms and associations.

At the request of the City of Portland peer review consultant, the retail trip generation is based on land use code #820 (Shopping center) for both the AM and PM peak hour; whereas the original trip generation was based on land use code #820 for the AM peak hour and #814 Specialty Retail for the PM peak. The residential apartment portion of the site is based on land use code #222 High Rise Apartment. The trip generation results were then reduced to account for shared trips between the land uses based on ITE and National Cooperative Highway Research Program (NCHRP) data and procedures. The same shared trip methodology was used for both the original development plan and the current development plan.

Trip reductions due to TDM (traffic demand management) were calculated based on access to alternative transportation – such as the existing bus stops and access to the Bayside Trail. A 7% credit was taken for the TDM measures. The same TDM reductions were used for both the original development plan and the current development plan.

The previous development proposal consisted of 100,000 gross sq. ft. of retail, 554 apartments and 120 condominiums and was expected to generate 304 and 379 trip ends during the AM and PM peak hours respectively. A follow up memorandum recalculated a slightly larger development to generate 316 and 392 trip ends during the AM and PM peak hours respectively. The Trip Generation from the original study is shown in Table 1 below, while the Trip Generation for the current proposal is shown in Table 2.

Table 1 – Trip Generation – Previous Development Proposal

	Entering	Exiting	Total
AM Peak Hour	106	198	304
PM Peak Hour	201	178	379

Source ITE Trip Generation Manual 9th edition

Table 2 – Trip Generation – Current Development Proposal

	Entering	Exiting	Total
AM Peak Hour	79	124	203
PM Peak Hour	184	165	349

Source ITE Trip Generation Manual 9th edition

Table 2 shows the trips estimated to be generated by the current proposal. As shown in Table 2, the current development, which will consist of 91,500 gross sq. ft. of retail and 445 apartments, is expected to generate 203 and 349 trip ends during the AM and PM peak hours respectively. **Therefore, the current proposal will generate 101 fewer trips (27 in/74 out) during the morning peak hour and 30 fewer trips (17 in/13 out) during the weekday evening peak hour than was originally studied. The current proposal is also smaller than the previously revised proposal, and will generate 113 fewer trips (29 in/84 out) during the morning peak hour and 43 fewer trips (25 in/18 out) fewer trips during the weekday evening peak hour.**

2.2 Post Development Traffic

In order to evaluate the effect of the project on traffic in the study area, vehicle-trips associated with the proposed development are projected, distributed and assigned to the adjacent roadway network. These incremental vehicle-trips are added to the Pre Development Condition traffic volumes to form the updated Post Development Condition traffic volume networks for the morning and evening commuter peak hours.

Incremental peak hour traffic volumes expected to be generated by the proposed development have been distributed according to the traffic patterns identified in the original traffic impact study and are presented in Figures 2 and 3.

Year 2018 Post Development peak hour traffic volumes, which consist of the addition of peak hour project generated traffic to 2018 Pre Development traffic volumes, are displayed in Figures 4 and 5.

Site Generated Trip Ends

AM Peak Hour

TOTAL ENTERING TRIPS = 79

TOTAL EXITING TRIPS = 124

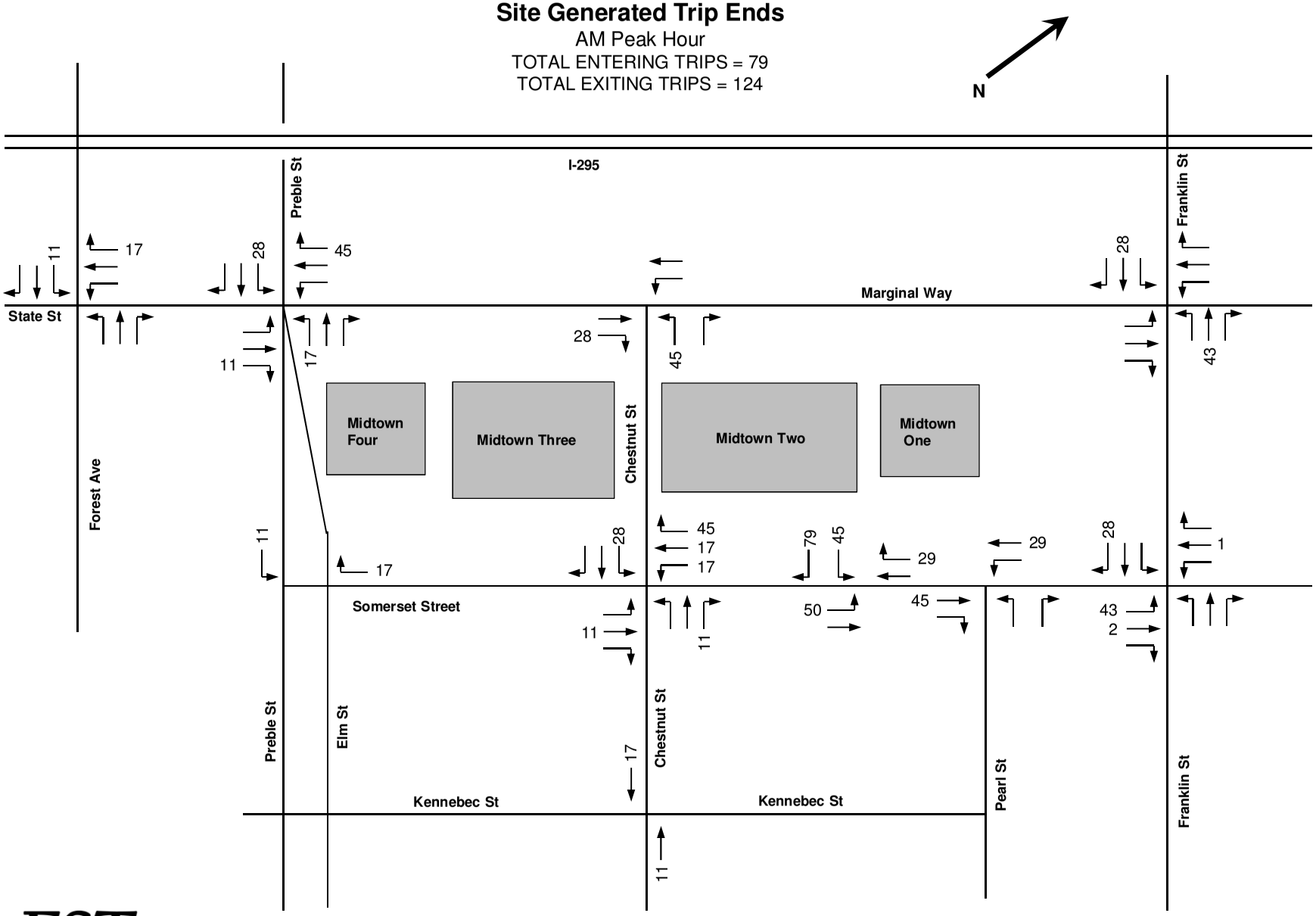


Figure 2
Not to Scale

Site Generated Trip Ends

PM Peak Hour

TOTAL ENTERING TRIPS = 184

TOTAL EXITING TRIPS = 165

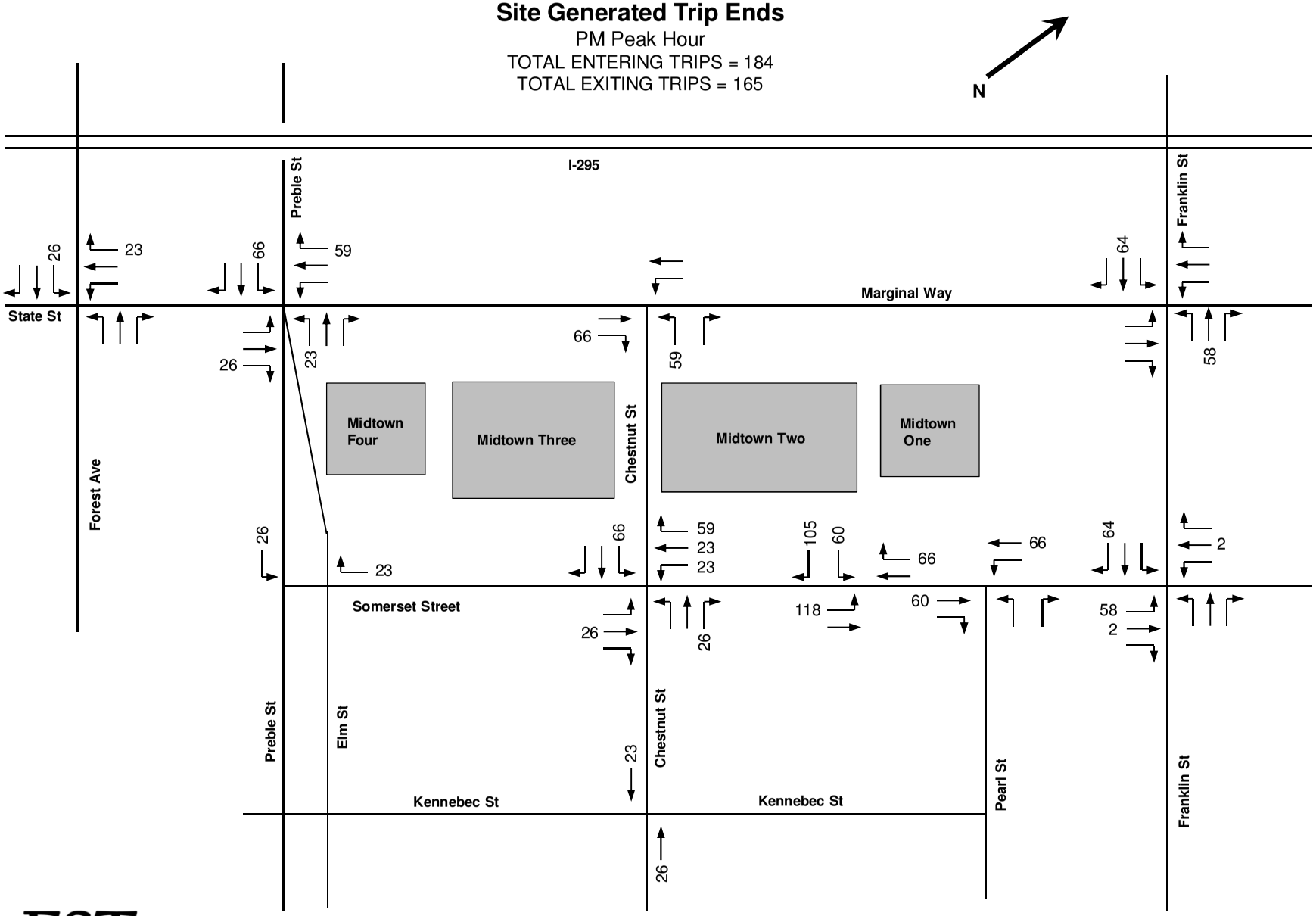


Figure 3
Not to Scale

Post-Development Turning Movement Counts

AM Peak Hour

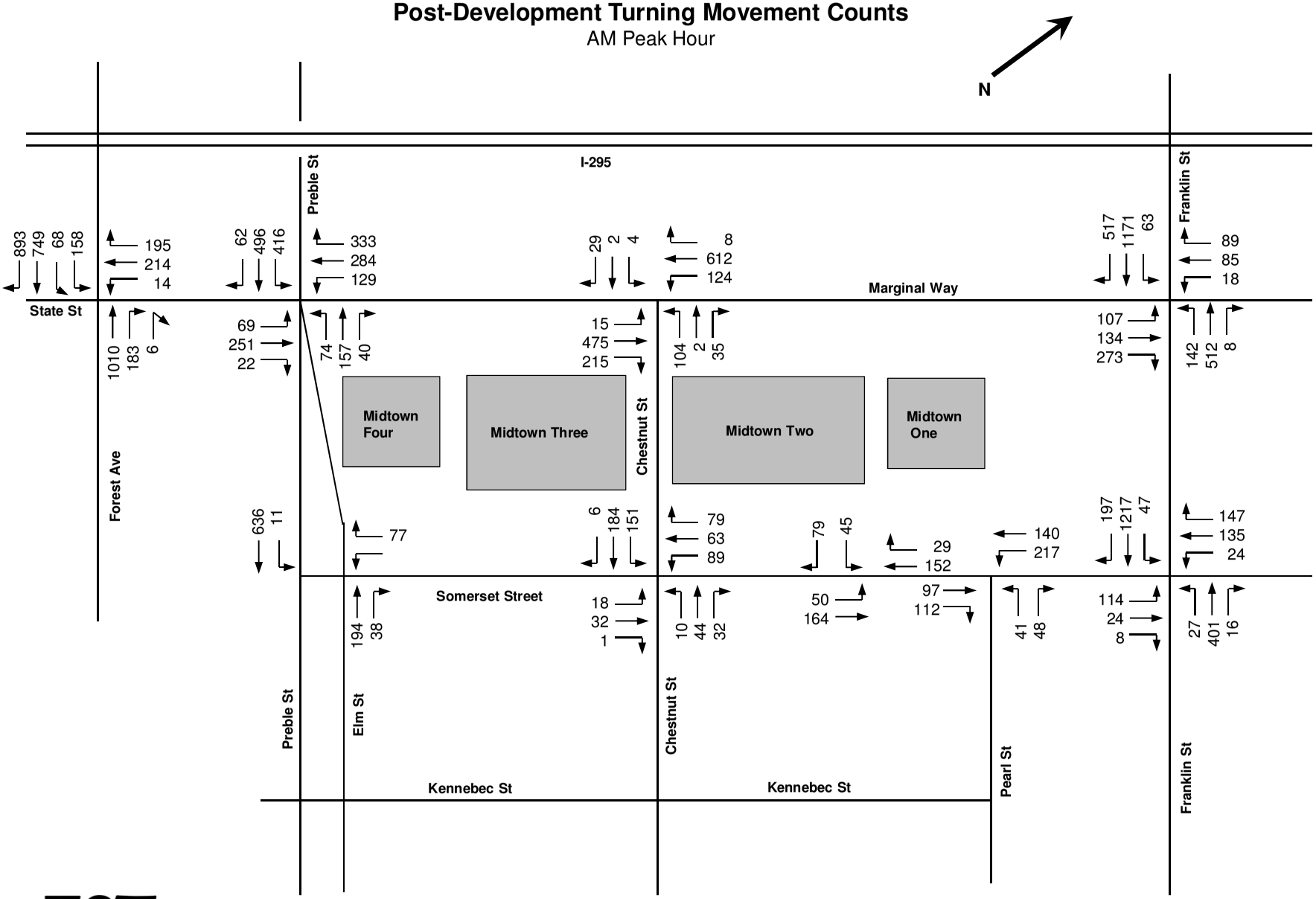


Figure 4
Not to Scale

Post-Development Turning Movement Counts

PM Peak Hour

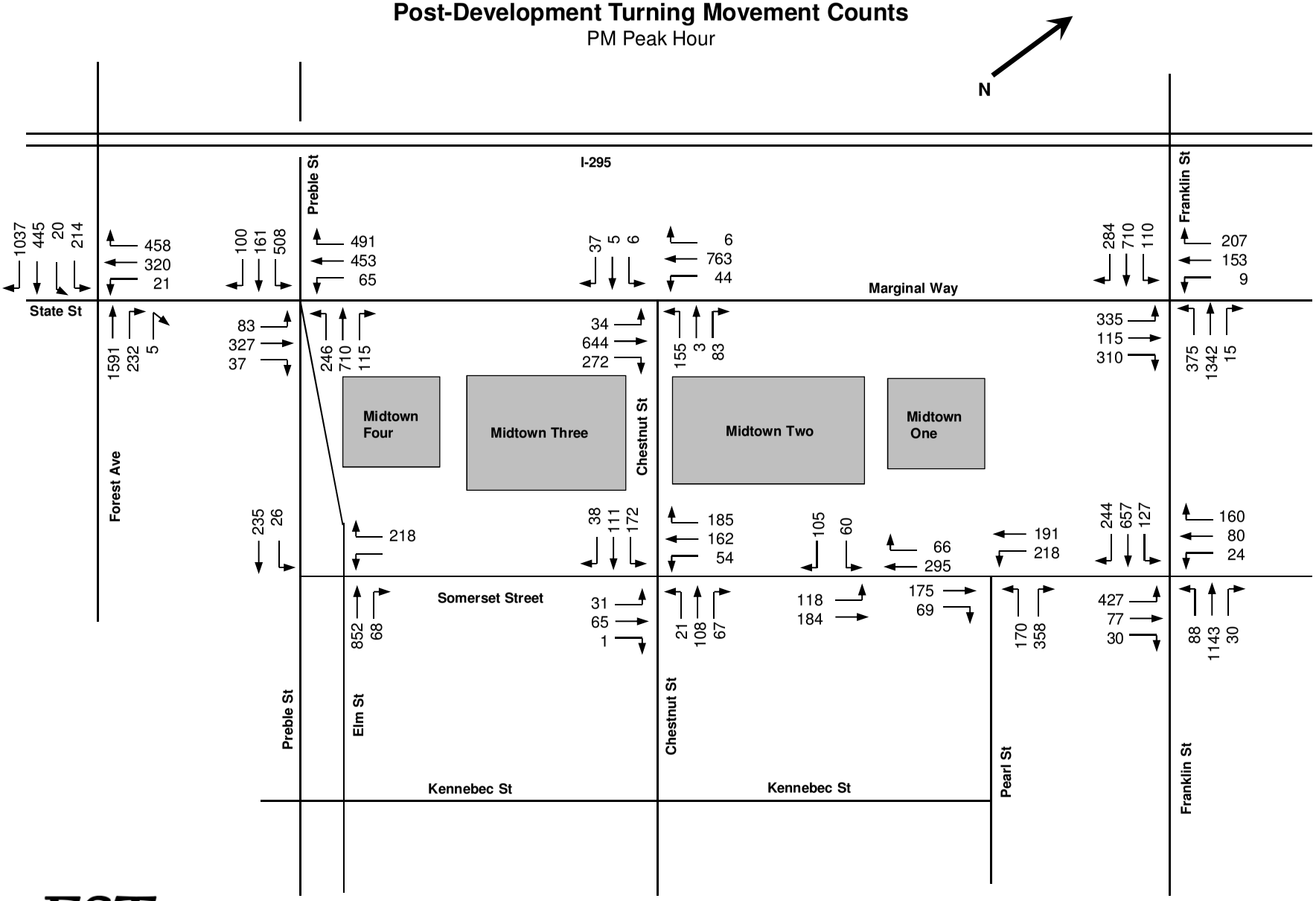


Figure 5
Not to Scale

3.0 CAPACITY ANALYSIS

To assess quality of flow, capacity analyses were conducted for the study area intersections. The capacity analyses provide a standardized indication of the ability of the intersections to accommodate traffic demands placed upon them.

Level of Service Criteria

Capacity Analyses were conducted using Simtraffic simulation software for the signalized and unsignalized intersections. The Level of Service is conceptually defined as a quantitative measure describing operational conditions within a traffic stream and their perception by motorists.

A Level of Service definition generally describes these conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. In doing so, Level of Service provides an index to quality of traffic flow.

Six Levels of Service are defined for each type of facility. They are given letter designations, from A to F, with Level of Service (LOS) A representing the best operating conditions and LOS F representing the worst. Since the Level of Service of a traffic facility is a function of traffic flows placed upon it, an intersection may operate at a wide range of Levels of Service, depending on time of day, day of week, or period of year.

The average delay per vehicle approaching an intersection is used to quantify the Level of Service at a particular intersection. This is discussed briefly below, and LOS designations are defined in Table 3. Average delay measures the mean stopped delay experienced by vehicles entering an intersection during the design period. Average delay is measured for each individual turning movement that must yield the right of way, and for the intersection as a whole (including through vehicles that experience no delay).

Table 3 – Intersection Level of Service Criteria

Level of Service	Unsignalized Delay (sec/veh.)	Signalized Delay (sec/veh)
A	≤10	≤10
B	>10 to 15	>10 to 20
C	>15 to 25	>20 to 35
D	>25 to 35	>35 to 55
E	>35 to 50	>55 to 80
F	>50	>80

Source: Highway Capacity Manual, 2010, TRB

3.1 Operating Conditions

The Synchro traffic analysis software package (Version 8) with Simtraffic was employed along to evaluate operating conditions at study area intersections. Capacity analyses worksheets for each intersection can be found in the Appendix. The simulations were run for a full hour. Five simulations were run for each scenario and averaged. Since simulations were utilized as opposed to formulaic calculations, the operations at one intersection can greatly impact the operations at an upstream or downstream location.

The results of the analysis at each intersection are documented in the following pages. The 2018 Pre-Development and 2018 Post Development (Previous Development) results have been copied from the previous study. The 2018 Post Development (Current proposal) results are shown in the rightmost columns for comparison.

The 2018 AM and PM peak hour post-development results are based on the following changes:

1. Proposed development driveways,
2. Updated signal timings and phasing,
3. An adjusted lane configuration at the intersection of Franklin Street & Marginal Way, and;
4. A proposed signal at the intersection of Chestnut Street & Marginal Way.

The lane group letter identifies direction of travel and lane configuration. “L” = Left, “R” = Right, “LT” = Left and Thru combined, “RT” = Right and Thru combined and “T” is a Thru only lane. Queue lengths are expressed in feet while Delay is shown as seconds per vehicle.

Sim Traffic Results for Marginal Way, Preble Street & Elm Street

Signalized

Lane Group		2018 AM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan)		
		Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS
Marginal Way	SE L	245	34.7	C	225	12.7	B	253	21.0	C
	SE LT	407	70.0	E	267	25.6	C	334	41.1	D
	SE TR	339	17.0	B	221	11.5	B	271	22.5	C
	NE L	98	45.0	D	92	26.0	C	96	25.4	C
	NE TR	306	43.8	D	240	24.8	C	233	24.2	C
Preble St/ Elm St	NW L	85	44.1	D	97	35.4	D	77	21.1	C
	NW T	97	19.8	B	99	27.5	C	82	18.2	B
	NW TR	100	16.7	B	107	20.7	C	85	13.4	B
	SW L	145	42.3	D	168	44.9	D	174	54.8	D
	SW T	222	29.2	C	306	33.0	C	199	28.8	C
	SW R	142	3.2	A	242	27.4	C	131	5.4	A
Overall			**32.4**	**C**		**25.0**	**C**		**25.5**	**C**

Sim Traffic Results for Marginal Way, Preble Street & Elm Street

Signalized

Lane Group		2018 PM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan)		
		Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS
Marginal Way	SE L	245	46.4	D	245	46.5	D	242	29.4	C
	SE LT	382	106.7	F	734	137.2	F	287	48.6	D
	SE TR	282	25.1	C	656	31.8	C	207	21.3	C
	NE L	98	49.0	D	103	44.9	D	103	44.5	D
	NE TR	251	29.3	C	302	36.7	D	327	32.4	C
Preble St/ Elm St	NW L	211	60.8	E	207	49.4	D	213	28.5	C
	NW T	289	42.8	D	287	30.3	C	273	33.2	C
	NW TR	280	41.7	D	269	28.8	C	262	33.7	C
	SW L	200	41.3	D	257	62.6	E	166	43.3	D
	SW T	557	52.3	D	707	77.3	E	454	41.5	D
	SW R	227	7.6	A	290	7.7	A	275	14.2	B
Overall			**42.8**	**D**		**47.2**	**D**		**32.3**	**C**

At the intersection of Marginal Way, Preble Street Elm Street, the intersection will operate similar to the previous proposal during the morning peak hour, but considerably better during the evening peak hour. The signal timing has been modified to accommodate the NW L movement since the development is expected to increase volumes.

Sim Traffic Results for Somerset Street & Chestnut Street
Stop Controlled

Lane Group		2018 AM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan		
		Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS
Somerset St	NE LTR	52	5.1	A	73	5.4	A	58	5.2	A
	SW LTR	74	5.4	A	93	5.5	A	87	5.3	A
Chestnut St	NW LTR	51	4.7	A	54	5.2	A	52	5.0	A
	SE LTR	85	6.3	A	101	7.6	A	104	7.5	A
Overall			**5.8**	**A**		**6.3**	**A**		**6.3**	**A**

Sim Traffic Results for Somerset Street & Chestnut Street
Stop Controlled

Lane Group		2018 PM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan		
		Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS
Somerset St	NE LTR	73	13.7	B	58	5.9	A	54	4.8	A
	SW LTR	421	53.3	F	106	7.3	A	97	6.5	A
Chestnut St	NW LTR	245	37.4	E	75	6.5	A	73	6.4	A
	SE LTR	77	6.0	A	103	7.7	A	93	7.4	A
Overall			**31.1**	**D**		**7.1**	**A**		**6.5**	**A**

The intersection of Somerset Street/ Chestnut Street operates similar to the previous development proposal. There is a significant improvement during the evening peak hour over Pre-development conditions due to the proposed signal at the Chestnut Street/Marginal Way intersection. Under the pre-development scenario queues extended from Marginal Way to the Somerset Street/Chestnut Street four-way stop controlled intersections and caused an excessive delay during the evening peak hour.

Sim Traffic Results for Somerset Street & Elm Street
Stop Controlled

Lane Group		2018 AM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan		
		Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS
Somerset St	SW R	464	4.3	A						
	SW TR				51	3.8	A	44	4.7	A
	NE T				37	6.2	A	35	5.4	A
Elm St	NW L	0	0.2	A	4	0.2	A	6	0.2	A
	NW LR	526	0.3	A	3	0.2	A	4	0.3	A
Overall			**1.1**	**A**		**1.6**	**A**		**1.7**	**A**

Sim Traffic Results for Somerset Street & Elm Street
Stop Controlled

Lane Group		2018 PM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan		
		Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS
Somerset St	SW R	143	20.2	C						
	SW TR				191	22.9	C	158	19.2	C
	NE T				49	14.6	B	80	18.0	C
Elm St	NW L	105	2.2	A	95	2.0	A	41	1.1	A
	NW LR	67	1.0	A	74	0.8	A	34	0.9	A
Overall			**4.8**	**A**		**6.5**	**A**		**5.6**	**A**

It was assumed that Somerset Street will be extended to Preble Street in the Post development scenario. In the predevelopment scenario Somerset Street ends at Elm Street. The intersection operates at LOS A under all scenarios.

Sim Traffic Results for Marginal Way & Franklin Street

Signalized

Lane Group		2018 AM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan		
		Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS
Marginal Way	NB LT	233	35.9	D						
	NB L				124	34.2	C	119	36.8	D
	NB R	189	20.3	C						
	NB TR				414	46.9	D	427	44.9	D
	SB LT	153	47.1	D	151	51.7	D	213	64.2	E
	SB R	63	5.9	A	74	6.8	A	111	7.4	A
Franklin Street	EB L	145	41.4	D	151	33.8	C	143	36.0	D
	EB T	222	17.2	B	222	15.4	B	233	17.1	B
	EB T	212	15.8	B	223	14.6	B	218	15.6	B
	EB R	212	10.5	B	203	9.0	A	217	9.2	A
	WB L	202	53.4	D	168	49.5	D	198	63.4	E
	WB T	236	19.2	B	223	18.4	B	250	21.5	C
	WB TR	159	15.6	B	147	15.6	B	165	18.7	B
Overall			**20.5**	**C**		**22.3**	**C**		**24.2**	**C**

Sim Traffic Results for Marginal Way & Franklin Street

Signalized

Lane Group		2018 PM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan		
		Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS
Marginal Way	NB LT	949	162.3	F						
	NB L				339	44.7	D	553	83.2	F
	NB R	568	16.7	B						
	NB TR				298	27.7	C	337	28.7	C
	SB LT	181	41.3	D	244	66.7	E	215	60.7	E
	SB R	149	20.7	C	192	27.0	C	169	26.0	C
Franklin Street	EB L	170	69.4	E	168	81.1	F	173	94.7	F
	EB T	223	48.2	D	222	47.0	D	230	47.8	D
	EB T	209	10.3	D	210	37.4	D	209	36.9	D
	EB R	146	16.9	B	139	16.5	B	155	17.9	B
	WB L	445	90.6	F	430	62.7	E	355	51.4	D
	WB T	536	34.9	C	511	21.0	C	391	26.0	C
	WB TR	455	31.9	C	506	36.5	D	405	27.9	C
Overall			**53.8**	**D**		**39.5**	**D**		**39.6**	**D**

The current proposal will operate with similar conditions as the previous proposal at the intersection of Marginal Way and Franklin Street. The signal timings at the Franklin Street intersections were optimized to mitigate the changed traffic patterns. It is assumed that these signal operations will be more thoroughly examined by an ongoing study to improve the Franklin Street facility by the City of Portland.

Sim Traffic Results for Franklin Street, Somerset Street & Fox

Signalized

Lane Group		2018 AM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan		
		Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS
Franklin Street	EB L	140	37.5	D	205	36.0	D	181	40.5	D
	EB T	368	13.1	B	453	18.5	B	458	17.0	B
	EB TR	391	15.9	B	470	21.7	C	480	19.1	B
	WB L	55	44.3	D	68	42.9	D	74	44.5	D
	WB T	203	23.2	C	221	26.0	C	233	26.4	C
	WB TR	136	22.4	C	161	21.6	C	149	22.0	C
Somerset Street	NB L	91	41.5	D	124	39.0	D	116	40.5	D
	NB L	54	36.3	D	85	37.2	D	69	38.8	D
	NB TR	70	26.7	C	71	24.4	C	72	28.2	C
Fox Street	SB LT	168	39.3	D	189	39.4	D	179	42.0	D
	SB R	99	6.5	A	117	6.4	A	109	6.9	A
Overall			**19.0**	**B**		**23.1**	**C**		**22.1**	**C**

Sim Traffic Results for Franklin Street, Somerset Street & Fox

Signalized

Lane Group		2018 PM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan		
		Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS
Franklin Street	EB L	226	58.5	E	150	52.5	D	166	57.4	E
	EB T	202	12.6	B	285	23.5	C	214	18.7	B
	EB TR	209	15.6	B	329	24.1	C	244	22.5	C
	WB L	251	62.3	E	248	62.0	E	241	47.6	D
	WB T	591	45.7	D	672	55.1	E	589	44.8	D
	WB TR	548	32.6	C	619	46.5	D	539	32.8	C
Somerset Street	NB L	354	130.8	F	322	96.1	F	248	56.6	E
	NB L	384	102.2	F	352	98.7	F	230	47.1	D
	NB TR	513	76.1	E	386	57.5	E	161	29.9	C
Fox Street	SB LT	219	60.1	E	165	49.6	D	124	37.2	D
	SB R	170	34.4	C	136	22.3	C	102	16.0	B
Overall			**45.4**	**D**		**48.5**	**D**		**35.1**	**D**

The current proposal is expected to operate with similar conditions as the pre development condition and the previous proposal at the intersection of Marginal Way and Franklin Street during the weekday morning peak hour, and operate better during the evening peak hour.

Sim Traffic Results for East Entrance & Somerset Street

Stop Controlled

Lane Group		2018 AM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan		
		Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS
Somerset St	NE LT				12	0.9	A	44	1.9	A
	SW TR				11	1.5	A	18	0.7	A
Driveway	SE L				43	2.9	A	41	4.2	A
	SE R				35	2.0	A	58	1.3	A
Overall						**1.5**	**A**		**1.5**	**A**

Sim Traffic Results for East Entrance & Somerset Street

Stop Controlled

Lane Group		2018 PM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan		
		Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS
Somerset St	NE LT				20	0.9	A	106	5.5	A
	SW TR				24	1.6	A	31	1.1	A
Driveway	SE L				38	4.3	A	39	8.1	A
	SE R				35	2.9	A	59	2.3	A
Overall						**1.7**	**A**		**3.3**	**A**

The proposed driveway intersection with Somerset Street is expected to function at LOS A during both the morning and evening peak hours.

Sim Traffic Results for Marginal Way, State, Forest Avenue & Kennebec Street

Signalized

Lane Group		2018 AM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan		
		Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS
Marginal Way	WB LT	165	54.7	D	160	53.8	D	154	46.8	D
	WB T	168	76.8	E	176	78.3	E	172	68.0	E
	WB R	160	9.9	A	171	9.4	A	154	7.7	A
Forest Ave	NB T	51	2.7	A	33	2.3	A	36	2.4	A
	NB TR	118	8.7	A	97	6.3	A	96	6.9	A
	SB L	201	59.2	E	235	59.7	E	190	47.5	D
	SB LT	294	58.2	E	284	55.4	E	249	43.1	D
	SB T	272	26.3	C	262	20.9	C	254	20.5	C
	SB R	97	2.7	A	102	2.7	A	33	2.7	A
Overall			**19.4**	**B**		**18.5**	**B**		**16.6**	**B**

Sim Traffic Results for Marginal Way, State, Forest Avenue & Kennebec Street

Signalized

Lane Group		2018 PM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan		
		Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS
Marginal Way	WB LT	228	61.1	E	220	59.1	E	215	52.3	D
	WB T	905	214.4	F	870	201.0	F	616	127.2	F
	WB R	327	39.0	D	312	38.6	D	317	25.7	C
Forest Ave	NB T	119	5.5	A	104	5.3	A	77	4.6	A
	NB TR	148	12.7	B	143	12.5	B	138	11.9	B
	SB L	358	160.4	F	361	150.8	F	309	72.7	E
	SB LT	200	41.4	D	194	38.6	D	191	37.6	D
	SB T	207	27.3	C	191	26.1	C	190	24.0	C
	SB R	170	3.2	A	158	3.1	A	201	3.6	A
Overall			**32.5**	**C**		**31.5**	**C**		**22.4**	**C**

The intersection of Marginal Way, State Forest Avenue and Kennebec Street is expected to operate at an overall LOS of B during the morning peak hour and LOS C during the evening peak hour. This is the same level of service as pre development conditions.

Sim Traffic Results for Somerset Street & Pearl Street

Stop Controlled

Lane Group		2018 AM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan		
		Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS
Pearl Street	NW LR	56	6.6	A	59	6.9	A	56	6.7	A
Somerset St	NE TR	17	1.2	A	18	0.6	A	16	0.6	A
	SW LT	96	3.7	A	99	3.7	A	101	3.6	A
Overall			**3.4**	**A**		**3.1**	**A**		**3.1**	**A**

Sim Traffic Results for Somerset Street & Pearl Street

Stop Controlled

Lane Group		2018 PM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan		
		Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS
Pearl Street	NW LR	643	82.5	F	586	69.8	F	571	56.6	E
Somerset St	NE TR	87	5.2	A	51	2.3	A	16	1.1	A
	SW LT	149	6.4	A	100	3.8	A	99	3.5	A
Overall			**42.8**	**E**		**32.9**	**D**		**26.5**	**C**

During the morning peak hour, the intersection is expected to operate at LOS A. During the evening peak hour, the Pearl Street approach is expected to operate at LOS F under the pre-development scenario and LOS D with the current proposal. This improvement at Pearl Street is due to the proposed signal at the Chestnut Street/Marginal Way intersection. In the pre-development conditions queues extended from Marginal Way to Somerset Street and over to the intersection with Pearl Street causing excessive delay.

Sim Traffic Results for Marginal Way, Chestnut Street & Park and Ride

Stop Controlled – Pre, Signalized Post

Lane Group		2018 AM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan		
		Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS
Marginal Way	NE LT	45	3.3	A	119	13.3	B	143	16.0	B
	NE TR	31	3.8	A	191	12.4	B	233	13.7	B
	SW L	80	8.6	A	187	48.2	D	180	39.7	D
	SW TR	3	3.1	A	374	20.1	C	335	17.8	B
Chestnut St	NW LTR	110	33.7	D	86	10.3	B	106	14.9	B
Park and Ride	SE L	14	10.1	B	13	6.5	A	15	10.6	B
	SE TR	45	9.6	A	39	7.4	A	44	10.8	B
Overall			**5.7**	**A**		**17.9**	**B**		**17.5**	**B**

Sim Traffic Results for Marginal Way, Chestnut Street & Park and Ride

Stop Controlled – Pre, Signalized Post

Lane Group		2018 PM Peak Hour								
		Predevelopment			Post Development (Previous Development Plan)			Post Development (Current Development Plan		
		Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS
Marginal Way	NE LT	105	4.9	A	235	24.9	C	222	24.7	C
	NE TR	59	3.6	A	277	13.9	B	283	14.1	B
	SW L	54	6.7	A	173	45.1	D	138	39.6	D
	SW TR	70	3.8	A	735	33.8	C	317	16.0	B
Chestnut St	NW LTR	583	146.9	F	177	15.8	B	152	14.4	B
Park and Ride	SE L	29	32.9	D	18	17.0	B	21	16.1	B
	SE TR	72	33.3	D	50	14.0	B	55	12.0	B
Overall			**23.5**	**C**		**24.0**	**C**		**16.9**	**B**

In the pre-development scenarios Marginal Way is free flowing while drivers on Chestnut Street is required to stop. Chestnut Street currently experiences significant delays during the evening peak hour. Adding a new traffic signal is expected to improve the operations on Chestnut Street. With the change in development size, this intersection will operate better than previously analyzed.

4.0 CONCLUSION

FST has completed a supplement to the original Traffic Impact Study for the proposed midtown development located at 105 Somerset Street in Portland. This supplement highlights the change in impacts due to the change in the development. The following results have been identified in the original traffic study and this supplement;

1. The current proposal is smaller than originally proposed and consists of 445 residential apartment units along with 91,500 sf of retail development. Since the size of the development will be DECREASING, the amount of traffic to be generated by the project will decrease from the original study.
2. The proposed development is forecasted to generate 203 and 349 trip ends during the AM and PM peak hours respectively.
3. The current proposal is expected to generate 101 fewer trips (27 in/74 out) during the morning peak hour and 30 fewer trips (17 in/13 out) during the weekday evening peak hour than was originally studied.
4. The proposed development will include a Traffic Demand Management Plan to assist in reducing site-generated traffic impacts.
5. There will be one access drive to the proposed garage, which will be located on Somerset Street.
6. Optimization of signal timings will reduce the impacts of the site generated traffic at most of the study intersections.
7. A new traffic signal is proposed at the intersection of Marginal Way/Chestnut Street & the park and ride lot. This signal has been considered previously by the City of Portland and is desirable with or without the midtown development project.

With the implementation of the proposed mitigation, the traffic operations with the proposed midtown development will operate similar to the pre-development conditions and similar or slightly better than the previous proposal for the site.

Appendix

Trip Generation Calculations

The current proposed development consists of

Total 91,500 sf retail space
Total 445 apartments.

The trip Generation was calculated using the following methodology. First the Trip Generation for each use was calculated.

Table A – Trip Generation – Current Development – For Individual Land Uses			
	Entering	Exiting	Total
AM – Retail	54	34	88
AM – Residential	33	101	134
AM - Total	**87**	**135**	**222**
PM – Retail	163	177	340
PM – Residential	95	60	155
PM - Total	**258**	**237**	**495**

Then the "shared trips" between the retail and residential uses were accounted for.

Table B – Trip Generation – Current Development – Shared Trip Credit			
	Entering	Exiting	Total
AM – Total	87	135	222
AM – External	**85**	**133**	**218**
PM – Total	258	237	495
PM – External	**198**	**177**	**375**

Lastly, a TDM credit was applied to the trip generation.

Table C – Trip Generation – Current Development – TDM Credit			
	Entering	Exiting	Total
AM – Unadjusted	85	133	218
AM- TDM (7%)	6	9	15
AM – Net Trips	**79**	**124**	**203**
PM – Unadjusted	198	177	375
PM- TDM (7%)	14	12	26
PM – Net Trips	**184**	**165**	**349**

Table 1 – Trip Generation – Current Development			
	Entering	Exiting	Total
AM	**79**	**124**	**203**
PM	**184**	**165**	**349**

Date: _____

Multi-Use Trip Generation Calculation

Time Period AM Peak Hour
Job # _____

LAND USE A RETAIL

ITE Land Use 820
Size 91,500 sf

	Total	Internal	External
Enter	54	**1**	**53**
Exit	34	**1**	**33**
Total	88	**2**	**86**
%	100%	**2%**	**98%**

Enter From External: **33**

Exit to External: **53**

Demand 0 | 0 | 14% 5 | 17% 9 Demand

Balanced 0 | 0 Balanced | Balanced 1 | 1 Balanced

Demand 0 | 0 | 2% 1 | 1% 1 Demand

LAND USE B OFFICE

ITE Land Use
Size sf

	Total	Internal	External
Enter		**0**	**0**
Exit		**0**	**0**
Total		**0**	**0**
%	**100%**	**#DIV/0!**	**#DIV/0!**

Exit to External: **0**

Enter From External: **0**

Demand 0 | Balanced 0 | Demand 0

Demand 0 | Balanced 0 | Demand 0

LAND USE C RESIDENTIAL

ITE Land Use 222
Size 445 units

	Total	Internal	External
Enter	33	**1**	**32**
Exit	101	**1**	**100**
Total	134	**2**	**132**
%	**100%**	**1%**	**99%**

Enter From External: **32**

Exit to External: **100**

Net External Trips for Multi_Use Development					
	Land Use A	Land Use B	Land Use C	Total	
Enter	**53**	**0**	**32**	**85**	
Exit	**33**	**0**	**100**	**133**	
Total	**86**	**0**	**132**	**219**	INTERNAL CAPTURE
Single Use Trip Gen Estimate	88	0	134	222	**2%**

Date: _____

Multi-Use Trip Generation Calculation

Time Period PM Peak Hour
Job # _____

LAND USE A **RETAIL**

ITE Land Use	820		
Size	91,500 sf		
	Total	Internal	External
Enter	163	**16**	**147**
Exit	177	**44**	**133**
Total	340	**60**	**280**
%	100%	**18%**	**82%**

Enter From External: **133**

Exit to External: **147**

Demand		0		0	26%	46	10%	16	Demand
Balanced	0		0	Balanced	Balanced	44		16	Balanced
Demand		0		0	46%	44	42%	25	Demand

LAND USE B

Exit to External: **0**

Enter From External: **0**

ITE Land Use			
Size		sf	
	Total	Internal	External
Enter		**0**	**0**
Exit		**0**	**0**
Total	0	**0**	**0**
%	**100%**	**#DIV/0!**	**#DIV/0!**

Demand		Balanced	Demand	
0%	0	0	0%	0
2%	0	0	2%	2
Demand		Balanced	Demand	

LAND USE C **RESIDENTIAL**

Enter From External: **51**

Exit to External: **44**

ITE Land Use	222		
Size	445 units		
	Total	Internal	External
Enter	95	**44**	**51**
Exit	60	**16**	**44**
Total	155	**60**	**95**
%	**100%**	**39%**	**61%**

Net External Trips for Multi_Use Development				
	Land Use A	Land Use B	Land Use C	Total
Enter	**147**	**0**	**51**	**198**
Exit	**133**	**0**	**44**	**177**
Total	**280**	**0**	**95**	**375**
Single Use Trip Gen Estimate	340	0	155	495

INTERNAL CAPTURE **24%**

SimTraffic Results

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:50	7:50	7:50	7:50	7:50	7:50
End Time	9:00	9:00	9:00	9:00	9:00	9:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	9286	9004	9128	9211	9070	9141
Vehs Exited	9288	8998	9122	9167	9010	9115
Starting Vehs	365	338	324	349	323	343
Ending Vehs	363	344	330	393	383	356
Travel Distance (mi)	4782	4637	4681	4741	4643	4697
Travel Time (hr)	506.3	518.0	483.8	486.0	489.3	496.7
Total Delay (hr)	340.5	357.5	321.1	322.6	328.3	334.0
Total Stops	14182	13502	13947	13951	13581	13836
Fuel Used (gal)	250.5	249.2	242.3	244.7	242.8	245.9

Interval #0 Information Seeding

Start Time	7:50
End Time	8:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	8:00
End Time	9:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	9286	9004	9128	9211	9070	9141
Vehs Exited	9288	8998	9122	9167	9010	9115
Starting Vehs	365	338	324	349	323	343
Ending Vehs	363	344	330	393	383	356
Travel Distance (mi)	4782	4637	4681	4741	4643	4697
Travel Time (hr)	506.3	518.0	483.8	486.0	489.3	496.7
Total Delay (hr)	340.5	357.5	321.1	322.6	328.3	334.0
Total Stops	14182	13502	13947	13951	13581	13836
Fuel Used (gal)	250.5	249.2	242.3	244.7	242.8	245.9

1: Performance by lane

Lane	EB	EB	WB	All
Movements Served	T	T	R	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	1.1	1.2	2.8	1.6

6: Marginal Way Performance by lane

Lane	SE	SE	SE	NW	NW	NW	NE	NE	SW	SW	SW	All
Movements Served	L	LT	TR	L	T	TR	L	TR	L	T	R	
Denied Del/Veh (s)												0.2
Total Del/Veh (s)	21.0	41.1	22.5	21.1	18.2	13.4	25.4	24.2	54.8	28.8	5.4	25.5

7: Somerset St & Chestnut St Performance by lane

Lane	SE	NW	NE	SW	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					0.0
Total Del/Veh (s)	7.5	5.0	5.2	5.3	6.3

10: NB off-ramp/NB on-ramp Performance by lane

Lane	EB	EB	EB	WB	WB	NB	NB	All
Movements Served	T	T	T	T	R	R	R	
Denied Del/Veh (s)								0.0
Total Del/Veh (s)	34.0	36.3	24.0	1.7	1.2	25.6	24.5	22.0

11: Performance by lane

Lane	WB	SE	SE	SE	NW	NW	All
Movements Served	R	T	T	T	T	T	
Denied Del/Veh (s)							0.1
Total Del/Veh (s)	12.6	0.1	0.3	0.8	1.0	4.1	3.2

13: Somerset St & Elm St Performance by lane

Lane	NW	NW	NE	SW	All
Movements Served	L	LR	T	TR	
Denied Del/Veh (s)					0.1
Total Del/Veh (s)	0.2	0.3	5.4	4.7	1.7

14: Performance by lane

Lane	SE	SE	SE	NW	NW	NW	All
Movements Served	T	T	T	T	T	TR	
Denied Del/Veh (s)							0.0
Total Del/Veh (s)	0.4	0.6	1.0	0.4	0.8	2.6	1.2

15: Marginal Way & Franklin Street Performance by lane

Lane	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	All
Movements Served	L	T	T	R	L	T	TR	L	TR	LT	R	
Denied Del/Veh (s)												0.2
Total Del/Veh (s)	36.0	17.1	15.6	9.2	63.4	21.5	18.7	36.8	44.9	64.2	7.4	24.2

16: Performance by lane

Lane	EB	WB	SE	SE	NW	NW	NW	All
Movements Served	R	R	T	T	T	T	T	
Denied Del/Veh (s)								0.1
Total Del/Veh (s)	5.3	6.2	0.4	1.5	0.2	0.3	1.7	2.0

20: Somerset St/Fox St & Franklin Street Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	All
Movements Served	L	T	TR	L	T	TR	L	L	TR	LT	R	
Denied Del/Veh (s)												0.3
Total Del/Veh (s)	40.5	17.0	19.1	44.5	26.4	22.0	40.5	38.8	28.2	42.0	6.9	22.1

25: Preble St & Elm St Performance by lane

Lane	WB	WB	SE	SE	All
Movements Served	R	R	T	T	
Denied Del/Veh (s)					0.0
Total Del/Veh (s)	0.3	0.3	1.6	1.7	1.2

26: Somerset St & Driveway Performance by lane

Lane	SE	SE	NE	SW	All
Movements Served	L	R	LT	TR	
Denied Del/Veh (s)					0.0
Total Del/Veh (s)	4.2	1.3	1.9	0.7	1.5

27: Driveway Performance by lane

Lane	EB	NW	All
Movements Served	R	L	
Denied Del/Veh (s)			0.1
Total Del/Veh (s)	3.9	2.1	3.3

30: I-295 NB mainline & NB off-ramp Performance by lane

Lane	NB	NB	NB	All
Movements Served	T	TR	R	
Denied Del/Veh (s)				2.0
Total Del/Veh (s)		2.2	0.1	1.3

36: Preble St & Somerset St Performance by lane

Lane	SE	SE	SW	All
Movements Served	LT	T	L	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	0.2	0.3	6.8	0.3

40: I-295 SB mainline Performance by lane

Lane	SB	SB	SB	All
Movements Served	T	R	R	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)		1.7	1.6	1.6

92: Forest Avenue & High St Performance by lane

Lane	EB	EB	NB	NB	SB	SB	All
Movements Served	L	LR	T	T	T	T	
Denied Del/Veh (s)							231.4
Total Del/Veh (s)	123.1	122.9	73.8	33.4	2.3	1.6	56.5

93: Kennebec St & State St/Marginal Way Performance by lane

Lane	WB	WB	WB	NB	NB	SB	SB	SB	SB	All
Movements Served	LT	T	R	T	TR>	<	LT	T	R	
Denied Del/Veh (s)										0.0
Total Del/Veh (s)	46.8	68.0	7.7	2.4	6.9	47.5	43.1	20.5	2.7	16.6

94: Bedford St & Forest Avenue Performance by lane

Lane	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	All
Movements Served	LT	R	L	T	R	L	T	TR	T	TR	
Denied Del/Veh (s)											0.6
Total Del/Veh (s)	56.1	8.8	55.2	37.4	4.6	58.2	20.7	21.7	40.9	50.1	34.0

252: Performance by lane

Lane	EB	SE	SE	SE	NW	NW	All
Movements Served	R	T	T	T	T	T	
Denied Del/Veh (s)							0.0
Total Del/Veh (s)	196.1	0.2	0.6	1.3	1.5	8.6	22.6

902: Somerset St & Pearl St Performance by lane

Lane	NW	NE	SW	All
Movements Served	LR	TR	LT	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	6.7	0.6	3.6	3.1

905: Marginal Way & Chestnut St Performance by lane

Lane	SE	SE	NW	NE	NE	SW	SW	All
Movements Served	L	TR	LTR	LT	TR	L	TR	
Denied Del/Veh (s)								0.0
Total Del/Veh (s)	10.6	10.8	14.9	16.0	13.7	39.7	17.8	17.5

Total Network Performance

Denied Del/Veh (s)	53.3
Total Del/Veh (s)	74.1

Intersection: 1:

Movement	EB	EB	B85	B85
Directions Served	T	T	T	T
Maximum Queue (ft)	92	135	12	21
Average Queue (ft)	4	6	0	1
95th Queue (ft)	45	56	9	15
Link Distance (ft)	210	210	353	353
Upstream Blk Time (%)	0	0		
Queuing Penalty (veh)	1	2		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Marginal Way

Movement	SE	SE	SE	NW	NW	NW	NE	NE	SW	SW	SW
Directions Served	L	LT	TR	L	T	TR	L	TR	L	T	R
Maximum Queue (ft)	210	365	334	96	94	94	84	264	203	236	192
Average Queue (ft)	165	229	175	35	47	48	46	127	94	122	75
95th Queue (ft)	253	334	271	77	82	85	96	233	174	199	131
Link Distance (ft)		844	844		225	225		876		640	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	185			150			60		300		200
Storage Blk Time (%)	1	16					3	23		1	0
Queuing Penalty (veh)	3	32					9	16		4	0

Intersection: 7: Somerset St & Chestnut St

Movement	SE	NW	NE	SW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	126	59	78	106
Average Queue (ft)	65	32	28	53
95th Queue (ft)	104	52	58	87
Link Distance (ft)	497	403	464	303
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 10: NB off-ramp/NB on-ramp

Movement	EB	EB	EB	WB	WB	NB	NB
Directions Served	T	T	T	T	R	R	R
Maximum Queue (ft)	370	380	278	19	6	189	291
Average Queue (ft)	237	244	129	1	0	103	147
95th Queue (ft)	354	362	225	9	4	169	246
Link Distance (ft)	322	322	322	137	137	866	866
Upstream Blk Time (%)	3	4	0				
Queuing Penalty (veh)	13	15	0				
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 11:

Movement	WB	NW	NW
Directions Served	R	T	T
Maximum Queue (ft)	252	92	167
Average Queue (ft)	114	8	63
95th Queue (ft)	218	46	171
Link Distance (ft)	416	148	148
Upstream Blk Time (%)		0	4
Queuing Penalty (veh)		0	21
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 13: Somerset St & Elm St

Movement	NW	NW	NE	SW
Directions Served	L	LR	T	TR
Maximum Queue (ft)	12	6	31	53
Average Queue (ft)	0	0	12	30
95th Queue (ft)	6	4	35	44
Link Distance (ft)	528	528	156	464
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 14:

Movement	SE	SE
Directions Served	T	T
Maximum Queue (ft)	42	33
Average Queue (ft)	1	2
95th Queue (ft)	30	16
Link Distance (ft)	133	133
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 15: Marginal Way & Franklin Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	TR	LT	R
Maximum Queue (ft)	136	207	197	189	245	328	214	143	484	280	190
Average Queue (ft)	71	177	176	131	116	125	79	62	238	103	44
95th Queue (ft)	143	233	218	217	198	250	165	119	427	213	111
Link Distance (ft)		137	137	137		426	426	992	992	481	
Upstream Blk Time (%)	0	19	18	9							
Queuing Penalty (veh)	0	113	107	51							
Storage Bay Dist (ft)	50				350						150
Storage Blk Time (%)	18	37				0				7	0
Queuing Penalty (veh)	108	23				0				6	0

Intersection: 16:

Movement	EB	WB	SE	SE	B22	B22	NW	NW
Directions Served	R	R	T	T	T	T	T	T
Maximum Queue (ft)	236	84	14	154	65	101	3	17
Average Queue (ft)	80	37	0	33	3	12	0	1
95th Queue (ft)	179	71	7	97	32	57	2	9
Link Distance (ft)	325	200	145	145	119	119	133	133
Upstream Blk Time (%)				0	0	0		
Queuing Penalty (veh)				2	0	0		
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 20: Somerset St/Fox St & Franklin Street

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	L	TR	LT	R
Maximum Queue (ft)	324	444	449	160	276	207	142	91	97	220	166
Average Queue (ft)	58	223	253	19	120	61	60	28	30	101	52
95th Queue (ft)	181	458	480	74	233	149	116	69	72	179	109
Link Distance (ft)		426	426		655	655			464	695	
Upstream Blk Time (%)		1	2								
Queuing Penalty (veh)		10	17								
Storage Bay Dist (ft)	175			150			275	275			100
Storage Blk Time (%)		8			7					15	1
Queuing Penalty (veh)		4			2					22	1

Intersection: 25: Preble St & Elm St

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 26: Somerset St & Driveway

Movement	SE	SE	NE	SW
Directions Served	L	R	LT	TR
Maximum Queue (ft)	42	82	65	34
Average Queue (ft)	21	31	12	3
95th Queue (ft)	41	58	44	18
Link Distance (ft)	5	5	303	129
Upstream Blk Time (%)	5	4		
Queuing Penalty (veh)	4	4		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 27: Driveway

Movement	EB	NW
Directions Served	R	L
Maximum Queue (ft)	94	40
Average Queue (ft)	46	28
95th Queue (ft)	75	44
Link Distance (ft)	192	5
Upstream Blk Time (%)		2
Queuing Penalty (veh)		2
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 30: I-295 NB mainline & NB off-ramp

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 36: Preble St & Somerset St

Movement	SW
Directions Served	L
Maximum Queue (ft)	31
Average Queue (ft)	8
95th Queue (ft)	30
Link Distance (ft)	156
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 40: I-295 SB mainline

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 92: Forest Avenue & High St

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	LR	T	T	T	T
Maximum Queue (ft)	477	475	413	175	32	21
Average Queue (ft)	452	457	181	149	4	2
95th Queue (ft)	488	464	346	199	19	15
Link Distance (ft)	441	441	513		123	123
Upstream Blk Time (%)	54	89	0			
Queuing Penalty (veh)	0	0	0			
Storage Bay Dist (ft)				150		
Storage Blk Time (%)			5	17		
Queuing Penalty (veh)			9	32		

Intersection: 93: Kennebec St & State St/Marginal Way

Movement	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	LT	T	R	T	TR>	<	LT	T	R
Maximum Queue (ft)	183	225	218	81	136	202	274	279	65
Average Queue (ft)	97	101	55	6	34	113	178	185	2
95th Queue (ft)	154	172	154	36	96	190	249	254	33
Link Distance (ft)		876		123	123	191	191	191	191
Upstream Blk Time (%)				0	1	1	7	8	0
Queuing Penalty (veh)				0	4	4	34	37	0
Storage Bay Dist (ft)	200		125						
Storage Blk Time (%)	0	3	2						
Queuing Penalty (veh)	0	11	6						

Intersection: 94: Bedford St & Forest Avenue

Movement	EB	EB	WB	WB	WB	B258	NB	NB	NB	B22	B22	B22
Directions Served	LT	R	L	T	R	T	L	T	TR	T	T	T
Maximum Queue (ft)	348	285	215	287	126	94	205	200	225	125	162	218
Average Queue (ft)	198	114	167	107	13	7	152	165	188	22	36	72
95th Queue (ft)	305	234	231	276	57	52	227	222	220	81	119	168
Link Distance (ft)		948		220		292	119	119	119	145	145	145
Upstream Blk Time (%)			2	4			32	21	33	0	0	2
Queuing Penalty (veh)			0	0			141	96	145	1	2	9
Storage Bay Dist (ft)	330		140		75							
Storage Blk Time (%)	1	0	28	1	0							
Queuing Penalty (veh)	3	0	38	4	0							

Intersection: 94: Bedford St & Forest Avenue

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	398	453
Average Queue (ft)	230	283
95th Queue (ft)	342	414
Link Distance (ft)	760	760
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 252:

Movement	EB	B9	SE	SE	NW	NW
Directions Served	R	T	T	T	T	T
Maximum Queue (ft)	471	450	42	79	166	246
Average Queue (ft)	403	266	2	10	12	46
95th Queue (ft)	573	566	24	44	84	183
Link Distance (ft)	378	411	148	148	191	191
Upstream Blk Time (%)	74	41		0	0	3
Queuing Penalty (veh)	0	0		0	1	17
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 902: Somerset St & Pearl St

Movement	NW	NE	SW
Directions Served	LR	TR	LT
Maximum Queue (ft)	75	29	119
Average Queue (ft)	35	3	46
95th Queue (ft)	56	16	101
Link Distance (ft)	522	129	464
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 905: Marginal Way & Chestnut St

Movement	SE	SE	NW	NE	NE	SW	SW
Directions Served	L	TR	LTR	LT	TR	L	TR
Maximum Queue (ft)	21	53	121	179	252	174	405
Average Queue (ft)	2	16	57	70	137	97	196
95th Queue (ft)	15	44	106	143	233	180	335
Link Distance (ft)		179	497	640	640		992
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	25					150	
Storage Blk Time (%)	1	8				1	10
Queuing Penalty (veh)	0	0				6	12

Network Summary

Network wide Queuing Penalty: 1208

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:50	4:50	4:50	4:50	4:50	4:50
End Time	6:00	6:00	6:00	6:00	6:00	6:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	10689	10776	10761	10850	10811	10776
Vehs Exited	10716	10790	10793	10822	10784	10782
Starting Vehs	483	464	474	426	483	465
Ending Vehs	456	450	442	454	510	457
Travel Distance (mi)	5197	5238	5192	5222	5279	5226
Travel Time (hr)	768.4	738.6	839.4	765.4	822.6	786.9
Total Delay (hr)	579.3	548.0	649.8	575.1	630.2	596.5
Total Stops	19218	18907	18363	19002	19414	18982
Fuel Used (gal)	327.2	322.0	343.0	328.0	342.0	332.4

Interval #0 Information Seeding

Start Time	4:50
End Time	5:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	5:00
End Time	6:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	10689	10776	10761	10850	10811	10776
Vehs Exited	10716	10790	10793	10822	10784	10782
Starting Vehs	483	464	474	426	483	465
Ending Vehs	456	450	442	454	510	457
Travel Distance (mi)	5197	5238	5192	5222	5279	5226
Travel Time (hr)	768.4	738.6	839.4	765.4	822.6	786.9
Total Delay (hr)	579.3	548.0	649.8	575.1	630.2	596.5
Total Stops	19218	18907	18363	19002	19414	18982
Fuel Used (gal)	327.2	322.0	343.0	328.0	342.0	332.4

1: Performance by lane

Lane	EB	EB	WB	All
Movements Served	T	T	R	
Denied Del/Veh (s)				0.1
Total Del/Veh (s)	0.9	0.9	4.6	3.3

6: Marginal Way Performance by lane

Lane	SE	SE	SE	NW	NW	NW	NE	NE	SW	SW	SW	All
Movements Served	L	LT	TR	L	T	TR	L	TR	L	T	R	
Denied Del/Veh (s)												0.3
Total Del/Veh (s)	29.4	48.6	21.3	28.5	33.2	33.7	44.5	32.4	43.3	41.5	14.2	32.3

7: Somerset/Somerset St & Chestnut St Performance by lane

Lane	SE	NW	NE	SW	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					0.0
Total Del/Veh (s)	7.4	6.4	4.8	6.5	6.5

10: NB off-ramp/NB on-ramp Performance by lane

Lane	EB	EB	EB	WB	WB	NB	NB	All
Movements Served	T	T	T	T	R	R	R	
Denied Del/Veh (s)								0.0
Total Del/Veh (s)	55.6	47.4	18.4	2.5	2.0	19.4	16.7	12.7

11: Performance by lane

Lane	WB	SE	SE	SE	NW	NW	All
Movements Served	R	T	T	T	T	T	
Denied Del/Veh (s)							59.2
Total Del/Veh (s)	202.4	0.2	0.2	0.8	0.5	1.7	18.3

13: Somerset & Elm St & Elm Performance by lane

Lane	NW	NW	NE	SW	All
Movements Served	L	LR	T	TR	
Denied Del/Veh (s)					0.2
Total Del/Veh (s)	1.1	0.9	18.0	19.2	5.6

14: Performance by lane

Lane	SE	SE	SE	NW	NW	NW	All
Movements Served	T	T	T	T	T	TR	
Denied Del/Veh (s)							0.0
Total Del/Veh (s)	0.3	0.5	1.1	0.4	0.6	2.7	1.2

15: Marginal Way & Franklin Street Performance by lane

Lane	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	All
Movements Served	L	T	T	R	L	T	TR	L	TR	LT	R	
Denied Del/Veh (s)												0.2
Total Del/Veh (s)	94.7	47.8	36.9	17.9	51.4	26.0	27.9	83.2	28.7	60.7	26.0	39.6

16: Performance by lane

Lane	EB	WB	SE	SE	NW	NW	NW	All
Movements Served	R	R	T	T	T	T	T	
Denied Del/Veh (s)								0.1
Total Del/Veh (s)	7.5	4.7	0.3	2.1	0.2	0.2	1.9	2.2

20: Somerset St/Fox St & Franklin Street Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	All
Movements Served	L	T	TR	L	T	TR	L	L	TR	LT	R	
Denied Del/Veh (s)												0.8
Total Del/Veh (s)	57.4	18.7	22.5	47.6	44.8	32.8	56.6	47.1	29.9	37.2	16.0	35.1

25: Preble St & Elm Performance by lane

Lane	WB	WB	SE	SE	All
Movements Served	R	R	T	T	
Denied Del/Veh (s)					0.0
Total Del/Veh (s)	3.0	2.2	1.3	1.3	2.4

26: Somerset St & Driveway Performance by lane

Lane	SE	SE	NE	SW	All
Movements Served	L	R	LT	TR	
Denied Del/Veh (s)					0.0
Total Del/Veh (s)	8.1	2.3	5.5	1.1	3.3

27: Driveway Performance by lane

Lane	EB	NW	All
Movements Served	R	L	
Denied Del/Veh (s)			0.1
Total Del/Veh (s)	5.5	2.4	4.0

30: I-295 NB mainline & NB off-ramp Performance by lane

Lane	NB	NB	NB	All
Movements Served	T	TR	R	
Denied Del/Veh (s)				1.6
Total Del/Veh (s)	147.0	2.4	0.1	1.6

36: Preble St & Somerset Performance by lane

Lane	SE	SE	SW	All
Movements Served	LT	T	L	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	0.4	0.1	6.0	0.4

40: I-295 SB mainline Performance by lane

Lane	SB	SB	SB	All
Movements Served	T	R	R	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)		1.2	1.0	1.1

92: Forest Avenue & High St Performance by lane

Lane	EB	EB	NB	NB	SB	SB	All
Movements Served	L	LR	T	T	T	T	
Denied Del/Veh (s)							378.0
Total Del/Veh (s)	88.0	105.9	237.5	58.1	2.6	1.7	86.8

93: Kennebec St & State St/Marginal Way Performance by lane

Lane	WB	WB	WB	NB	NB	SB	SB	SB	SB	All
Movements Served	LT	T	R	T	TR>	<	LT	T	R	
Denied Del/Veh (s)										0.2
Total Del/Veh (s)	52.3	127.2	25.7	4.6	11.9	72.7	37.6	24.0	3.6	22.4

94: Bedford St & Forest Avenue Performance by lane

Lane	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	All
Movements Served	LT	R	L	T	R	L	T	TR	T	TR	
Denied Del/Veh (s)											1.4
Total Del/Veh (s)	54.8	9.7	65.0	53.2	3.8	56.5	18.6	20.1	45.2	57.4	36.6

252: Performance by lane

Lane	EB	SE	SE	SE	NW	NW	All
Movements Served	R	T	T	T	T	T	
Denied Del/Veh (s)							0.0
Total Del/Veh (s)	80.8	2.0	0.3	1.2	1.1	9.0	7.4

902: Somerset St & Pearl St Performance by lane

Lane	NW	NE	SW	All
Movements Served	LR	TR	LT	
Denied Del/Veh (s)				4.8
Total Del/Veh (s)	56.6	1.1	3.5	26.5

905: Marginal Way & Chestnut St Performance by lane

Lane	SE	SE	NW	NE	NE	SW	SW	All
Movements Served	L	TR	LTR	LT	TR	L	TR	
Denied Del/Veh (s)								0.0
Total Del/Veh (s)	16.1	12.0	14.4	24.7	14.1	39.6	16.0	16.9

Total Network Performance

Denied Del/Veh (s)	99.7
Total Del/Veh (s)	90.1

Intersection: 1:

Movement	EB	EB
Directions Served	T	T
Maximum Queue (ft)	32	30
Average Queue (ft)	3	3
95th Queue (ft)	35	36
Link Distance (ft)	210	210
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Marginal Way

Movement	SE	SE	SE	NW	NW	NW	NE	NE	SW	SW	SW
Directions Served	L	LT	TR	L	T	TR	L	TR	L	T	R
Maximum Queue (ft)	210	321	266	175	257	247	84	377	283	559	225
Average Queue (ft)	162	198	110	144	202	200	59	194	61	254	176
95th Queue (ft)	242	287	207	213	273	262	103	327	166	454	275
Link Distance (ft)		844	844		225	225		875		640	
Upstream Blk Time (%)					8	7				0	
Queuing Penalty (veh)					44	39				0	
Storage Bay Dist (ft)	185			150			60		300		200
Storage Blk Time (%)	1	10		5	21		15	31		11	4
Queuing Penalty (veh)	4	24		17	52		53	26		64	19

Intersection: 7: Somerset/Somerset St & Chestnut St

Movement	SE	NW	NE	SW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	108	81	67	111
Average Queue (ft)	61	48	33	65
95th Queue (ft)	93	73	54	97
Link Distance (ft)	497	403	464	303
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 10: NB off-ramp/NB on-ramp

Movement	EB	EB	EB	WB	NB	NB
Directions Served	T	T	T	T	R	R
Maximum Queue (ft)	270	250	105	7	187	214
Average Queue (ft)	127	125	33	0	112	127
95th Queue (ft)	273	262	79	5	177	198
Link Distance (ft)	322	322	322	137	866	866
Upstream Blk Time (%)	3	3				
Queuing Penalty (veh)	5	4				
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 11:

Movement	WB	NW	NW
Directions Served	R	T	T
Maximum Queue (ft)	461	24	143
Average Queue (ft)	433	1	27
95th Queue (ft)	452	13	105
Link Distance (ft)	416	148	148
Upstream Blk Time (%)	94		0
Queuing Penalty (veh)	0		3
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 13: Somerset & Elm St & Elm

Movement	NW	NW	NE	SW
Directions Served	L	LR	T	TR
Maximum Queue (ft)	61	64	102	219
Average Queue (ft)	10	7	44	81
95th Queue (ft)	41	34	80	158
Link Distance (ft)	528	528	156	464
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 14:

Movement	SE	NW	NW
Directions Served	T	T	TR
Maximum Queue (ft)	14	10	6
Average Queue (ft)	1	0	0
95th Queue (ft)	9	7	4
Link Distance (ft)	133	249	249
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 15: Marginal Way & Franklin Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	TR	LT	R
Maximum Queue (ft)	137	226	197	180	381	424	431	480	410	246	198
Average Queue (ft)	114	184	175	91	237	248	262	277	177	123	98
95th Queue (ft)	173	230	209	155	355	391	405	553	337	215	169
Link Distance (ft)		137	137	137		426	426	992	992	481	
Upstream Blk Time (%)	10	42	32	4		0	1				
Queuing Penalty (veh)	0	156	119	13		2	5				
Storage Bay Dist (ft)	50				350						150
Storage Blk Time (%)	67	64			1	1				8	1
Queuing Penalty (veh)	239	70			8	3				17	2

Intersection: 16:

Movement	EB	WB	SE	SE	B22	B22	NW
Directions Served	R	R	T	T	T	T	T
Maximum Queue (ft)	296	69	43	193	166	164	6
Average Queue (ft)	97	32	2	53	16	21	0
95th Queue (ft)	224	63	27	153	89	93	4
Link Distance (ft)	325	200	145	145	119	119	133
Upstream Blk Time (%)	1		0	1	0	0	
Queuing Penalty (veh)	0		0	9	2	4	
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 20: Somerset St/Fox St & Franklin Street

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	L	TR	LT	R
Maximum Queue (ft)	193	262	303	224	591	566	261	268	202	136	123
Average Queue (ft)	88	123	154	102	333	285	161	139	70	67	61
95th Queue (ft)	166	214	244	241	589	539	248	230	161	124	102
Link Distance (ft)		426	426		655	655			464	695	
Upstream Blk Time (%)		0	0		3	1					
Queuing Penalty (veh)		0	0		0	0					
Storage Bay Dist (ft)	175			150			275	275			100
Storage Blk Time (%)	2	2		1	36		0	1		6	2
Queuing Penalty (veh)	6	2		3	32		0	1		10	2

Intersection: 25: Preble St & Elm

Movement	WB	WB
Directions Served	R	R
Maximum Queue (ft)	161	142
Average Queue (ft)	44	32
95th Queue (ft)	151	120
Link Distance (ft)	257	257
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 26: Somerset St & Driveway

Movement	SE	SE	NE	SW
Directions Served	L	R	LT	TR
Maximum Queue (ft)	36	88	138	52
Average Queue (ft)	24	34	51	7
95th Queue (ft)	39	59	106	31
Link Distance (ft)	5	5	303	129
Upstream Blk Time (%)	14	7		
Queuing Penalty (veh)	13	7		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 27: Driveway

Movement	EB	NW
Directions Served	R	L
Maximum Queue (ft)	130	57
Average Queue (ft)	53	33
95th Queue (ft)	96	44
Link Distance (ft)	192	5
Upstream Blk Time (%)	0	6
Queuing Penalty (veh)	0	12
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 30: I-295 NB mainline & NB off-ramp

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 36: Preble St & Somerset

Movement	SW
Directions Served	L
Maximum Queue (ft)	31
Average Queue (ft)	9
95th Queue (ft)	31
Link Distance (ft)	156
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 40: I-295 SB mainline

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 92: Forest Avenue & High St

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	LR	T	T	T	T
Maximum Queue (ft)	457	483	555	175	34	18
Average Queue (ft)	438	449	530	172	4	1
95th Queue (ft)	478	463	541	182	21	9
Link Distance (ft)	431	431	513		149	149
Upstream Blk Time (%)	46	80	70			
Queuing Penalty (veh)	0	0	0			
Storage Bay Dist (ft)				150		
Storage Blk Time (%)			26	70		
Queuing Penalty (veh)			79	213		

Intersection: 93: Kennebec St & State St/Marginal Way

Movement	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	LT	T	R	T	TR>	<	LT	T	R
Maximum Queue (ft)	223	667	275	108	153	300	213	216	262
Average Queue (ft)	143	328	236	29	94	195	120	123	51
95th Queue (ft)	215	616	317	77	138	309	191	190	201
Link Distance (ft)		875		149	149	191	191	191	191
Upstream Blk Time (%)				0	0	20	1	1	1
Queuing Penalty (veh)				0	4	84	3	5	6
Storage Bay Dist (ft)	200		125						
Storage Blk Time (%)	1	17	39						
Queuing Penalty (veh)	3	107	133						

Intersection: 94: Bedford St & Forest Avenue

Movement	EB	EB	WB	WB	WB	B258	NB	NB	NB	B22	B22	B22
Directions Served	LT	R	L	T	R	T	L	T	TR	T	T	T
Maximum Queue (ft)	362	356	215	292	148	233	195	209	209	124	139	177
Average Queue (ft)	196	122	183	168	11	24	151	155	176	21	22	42
95th Queue (ft)	314	263	242	347	59	117	221	219	223	82	84	125
Link Distance (ft)		948		220		292	119	119	119	145	145	145
Upstream Blk Time (%)			6	10		0	31	17	25	0	0	1
Queuing Penalty (veh)			0	0		0	128	71	105	1	0	2
Storage Bay Dist (ft)	330		140		75							
Storage Blk Time (%)	1	0	38	3								
Queuing Penalty (veh)	4	1	51	10								

Intersection: 94: Bedford St & Forest Avenue

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	397	478
Average Queue (ft)	258	315
95th Queue (ft)	381	453
Link Distance (ft)	760	760
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 252:

Movement	EB	B9	SE	SE	SE	NW	NW
Directions Served	R	T	T	T	T	T	T
Maximum Queue (ft)	316	48	104	4	28	41	147
Average Queue (ft)	133	4	9	0	2	1	12
95th Queue (ft)	290	48	53	3	14	24	82
Link Distance (ft)	378	411	148	148	148	191	191
Upstream Blk Time (%)	2		0				0
Queuing Penalty (veh)	0		0				4
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 902: Somerset St & Pearl St

Movement	NW	NE	SW
Directions Served	LR	TR	LT
Maximum Queue (ft)	522	29	123
Average Queue (ft)	299	3	46
95th Queue (ft)	571	16	99
Link Distance (ft)	522	129	464
Upstream Blk Time (%)	14		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 905: Marginal Way & Chestnut St

Movement	SE	SE	NW	NE	NE	SW	SW
Directions Served	L	TR	LTR	LT	TR	L	TR
Maximum Queue (ft)	33	85	179	249	314	174	320
Average Queue (ft)	4	22	90	122	158	50	194
95th Queue (ft)	21	55	152	222	283	138	317
Link Distance (ft)		179	497	640	640		992
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	25					150	
Storage Blk Time (%)	3	11				0	11
Queuing Penalty (veh)	1	1				0	5

Network Summary

Network wide Queuing Penalty: 2112

SimTraffic Simulation Summary
2018 AM Post Development Design Hour Volumes-All way stop

1/28/2015

Summary of All Intervals

Run Number	1	2	3	4	5	allwaystop	Avg
Start Time	7:50	7:50	7:50	7:50	7:50	7:50	7:50
End Time	9:00	9:00	9:00	9:00	9:00	9:00	9:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded mScheduledIntervals	1	1	1	1	1	1	1
Vehs Entered	9387	9342	9324	9287	9226	9332	9315
Vehs Exited	9331	9255	9263	9193	9128	9307	9245
Starting Vehs	339	339	329	346	385	376	345
Ending Vehs	395	426	390	440	483	401	414
Denied Entry Before	0	3	0	2	1	1	0
Travel Distance (mi)	4822	4773	4796	4823	4788	4822	4804
Travel Time (hr)	389.6	407.5	395.1	444.7	526.9	440.8	434.1
Total Delay (hr)	222.3	241.6	228.9	277.7	360.8	274.0	267.6
Total Stops	15897	16136	16196	16011	16934	16500	16280
Fuel Used (gal)	226.5	229.6	226.9	239.1	255.4	237.0	235.8

Interval #0 Information Seeding

Start Time	7:50
End Time	8:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	8:00
End Time	9:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	allwaystop	Avg
Vehs Entered	9387	9342	9324	9287	9226	9332	9315
Vehs Exited	9331	9255	9263	9193	9128	9307	9245
Starting Vehs	339	339	329	346	385	376	345
Ending Vehs	395	426	390	440	483	401	414
Denied Entry Before	0	3	0	2	1	1	0
Travel Distance (mi)	4822	4773	4796	4823	4788	4822	4804
Travel Time (hr)	389.6	407.5	395.1	444.7	526.9	440.8	434.1
Total Delay (hr)	222.3	241.6	228.9	277.7	360.8	274.0	267.6
Total Stops	15897	16136	16196	16011	16934	16500	16280
Fuel Used (gal)	226.5	229.6	226.9	239.1	255.4	237.0	235.8

26: Somerset St & Driveway Performance by lane

Lane	SE	NE	SW	All
Movements Served	LR	LT	TR	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	5.4	1.6	1.6	2.5

Intersection: 26: Somerset St & Driveway

Movement	SE	NE	SW
Directions Served	LR	LT	TR
Maximum Queue (ft)	78	41	5
Average Queue (ft)	40	10	0
95th Queue (ft)	65	35	4
Link Distance (ft)	261	319	127
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Summary of All Intervals

Run Number	1	2	3	4	5	Max Parking	Avg
Start Time	7:50	7:50	7:50	7:50	7:50	7:50	7:50
End Time	9:00	9:00	9:00	9:00	9:00	9:00	9:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded mScheduledIntervals	1	1	1	1	1	1	1
Vehs Entered	9423	9512	9396	9500	9322	9472	9442
Vehs Exited	9332	9504	9316	9425	9266	9357	9364
Starting Vehs	360	370	346	346	329	365	345
Ending Vehs	451	378	426	421	385	480	419
Denied Entry Before	1	0	6	2	4	1	1
Travel Distance (mi)	4750	4828	4763	4791	4737	4808	4780
Travel Time (hr)	403.6	367.5	448.6	382.5	414.9	477.9	415.8
Total Delay (hr)	239.1	200.1	283.1	215.8	250.5	311.6	250.0
Total Stops	16042	15731	16160	16004	15879	16261	16007
Fuel Used (gal)	227.7	222.1	237.1	225.3	230.1	245.8	231.3

Interval #0 Information Seeding

Start Time	7:50
End Time	8:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	8:00
End Time	9:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Max Parking	Avg
Vehs Entered	9423	9512	9396	9500	9322	9472	9442
Vehs Exited	9332	9504	9316	9425	9266	9357	9364
Starting Vehs	360	370	346	346	329	365	345
Ending Vehs	451	378	426	421	385	480	419
Denied Entry Before	1	0	6	2	4	1	1
Travel Distance (mi)	4750	4828	4763	4791	4737	4808	4780
Travel Time (hr)	403.6	367.5	448.6	382.5	414.9	477.9	415.8
Total Delay (hr)	239.1	200.1	283.1	215.8	250.5	311.6	250.0
Total Stops	16042	15731	16160	16004	15879	16261	16007
Fuel Used (gal)	227.7	222.1	237.1	225.3	230.1	245.8	231.3

26: Somerset St & Driveway Performance by lane

Lane	SE	NE	SW	All
Movements Served	LR	LT	TR	
Denied Del/Veh (s)				0.1
Total Del/Veh (s)	7.7	2.2	1.6	3.9

Intersection: 26: Somerset St & Driveway

Movement	SE	NE	SW
Directions Served	LR	LT	TR
Maximum Queue (ft)	134	81	41
Average Queue (ft)	61	22	2
95th Queue (ft)	101	61	16
Link Distance (ft)	236	318	128
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

SimTraffic Simulation Summary
2018 PM Design Hour Volumes - all way stop

1/28/2015

Summary of All Intervals

Run Number	1	2	3	4	5	allwaystop	Avg
Start Time	4:50	4:50	4:50	4:50	4:50	4:50	4:50
End Time	6:00	6:00	6:00	6:00	6:00	6:00	6:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded mScheduledIntervals	1	1	1	1	1	1	1
Vehs Entered	10730	10674	10107	11003	11010	10978	10742
Vehs Exited	10439	10554	9876	10820	10792	10750	10538
Starting Vehs	492	514	473	444	450	505	473
Ending Vehs	783	634	704	627	668	733	684
Denied Entry Before	0	5	13	9	9	9	3
Travel Distance (mi)	5123	5146	4880	5266	5311	5248	5162
Travel Time (hr)	868.1	711.9	1158.7	641.0	648.9	691.3	786.6
Total Delay (hr)	681.5	524.1	980.1	448.8	455.3	500.3	598.3
Total Stops	22889	22514	21011	22477	22243	22504	22268
Fuel Used (gal)	350.0	315.4	409.2	302.1	304.5	312.5	332.3

Interval #0 Information Seeding

Start Time	4:50
End Time	5:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	5:00
End Time	6:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	allwaystop	Avg
Vehs Entered	10730	10674	10107	11003	11010	10978	10742
Vehs Exited	10439	10554	9876	10820	10792	10750	10538
Starting Vehs	492	514	473	444	450	505	473
Ending Vehs	783	634	704	627	668	733	684
Denied Entry Before	0	5	13	9	9	9	3
Travel Distance (mi)	5123	5146	4880	5266	5311	5248	5162
Travel Time (hr)	868.1	711.9	1158.7	641.0	648.9	691.3	786.6
Total Delay (hr)	681.5	524.1	980.1	448.8	455.3	500.3	598.3
Total Stops	22889	22514	21011	22477	22243	22504	22268
Fuel Used (gal)	350.0	315.4	409.2	302.1	304.5	312.5	332.3

26: Somerset St & Driveway Performance by lane

Lane	SE	NE	SW	All
Movements Served	LR	LT	TR	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	7.7	2.9	1.6	3.3

Intersection: 26: Somerset St & Driveway

Movement	SE	NE	SW
Directions Served	LR	LT	TR
Maximum Queue (ft)	114	79	11
Average Queue (ft)	48	34	0
95th Queue (ft)	83	70	6
Link Distance (ft)	251	318	128
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Summary of All Intervals

Run Number	1	2	3	4	5	maxParking	Avg
Start Time	4:50	4:50	4:50	4:50	4:50	4:50	4:50
End Time	6:00	6:00	6:00	6:00	6:00	6:00	6:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded mScheduledIntervals	1	1	1	1	1	1	1
Vehs Entered	11251	11263	11228	10808	10760	10986	11047
Vehs Exited	11164	11157	11143	10537	10577	10761	10890
Starting Vehs	514	523	516	457	552	485	507
Ending Vehs	601	629	601	728	735	710	665
Denied Entry Before	10	23	8	2	4	26	9
Travel Distance (mi)	5296	5340	5297	5055	5074	5081	5191
Travel Time (hr)	667.1	672.3	768.5	929.8	1145.2	745.4	821.4
Total Delay (hr)	473.7	477.1	575.0	744.4	960.2	559.2	631.6
Total Stops	23302	23066	24514	22824	24182	21273	23192
Fuel Used (gal)	309.2	311.8	332.6	362.9	411.6	320.7	341.5

Interval #0 Information Seeding

Start Time	4:50
End Time	5:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	5:00
End Time	6:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	maxParking	Avg
Vehs Entered	11251	11263	11228	10808	10760	10986	11047
Vehs Exited	11164	11157	11143	10537	10577	10761	10890
Starting Vehs	514	523	516	457	552	485	507
Ending Vehs	601	629	601	728	735	710	665
Denied Entry Before	10	23	8	2	4	26	9
Travel Distance (mi)	5296	5340	5297	5055	5074	5081	5191
Travel Time (hr)	667.1	672.3	768.5	929.8	1145.2	745.4	821.4
Total Delay (hr)	473.7	477.1	575.0	744.4	960.2	559.2	631.6
Total Stops	23302	23066	24514	22824	24182	21273	23192
Fuel Used (gal)	309.2	311.8	332.6	362.9	411.6	320.7	341.5

26: Somerset St & Driveway Performance by lane

Lane	SE	NE	SW	All
Movements Served	LR	LT	TR	
Denied Del/Veh (s)				0.8
Total Del/Veh (s)	31.0	4.8	1.8	11.1

Intersection: 26: Somerset St & Driveway

Movement	SE	NE	SW
Directions Served	LR	LT	TR
Maximum Queue (ft)	259	152	47
Average Queue (ft)	139	62	5
95th Queue (ft)	257	119	26
Link Distance (ft)	238	319	128
Upstream Blk Time (%)	10		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

EXHIBIT 10

TRANSPORTATION DEMAND MANAGEMENT (TDM) PLAN

MIDTOWN
TRANSPORTATION DEMAND MANAGEMENT (TDM) PLAN
NOVEMBER 2014

Project Description - DRAFT

The **midtown** development seeks to fulfill the Portland planning vision by constructing an urban mixed-use development adjacent to the downtown of Portland. A transformative project, **midtown** seeks to realize and redevelop former industrial sites into a vibrant and urban residential community. The overall project is anticipated to provide about 750 units of residential housing, 100,000 s.f. of retail space, and parking garages to park as many as 1120 vehicles. The design proposes a new neighborhood from Pearl to Elm Streets, and maintains and enhances the adjacent Bayside Trail with stores and pocket parklets along the length.

The master plan for **midtown** will be constructed in three Phases. Phase One is comprised of a 165' high residential tower containing over 40,000 to 45,000 s.f. of retail space on the ground level and about 200 residential units located at the corner of Somerset and extended on Pearl Street, and a 700 space parking garage. The ground floor retail will wrap the buildings. Phase Two is located fronting Somerset Street from Chestnut to Elm Streets and includes two 165' high residential towers for about 370 residential units containing about 45,000 s.f. of retail space over retail podiums with a 420 space parking garage over ground floor retail. Phase 3 will be a 165' high stand-alone 180 unit residential building* condominium above between 10,000 to 15,000 s.f. of retail space located between Elm Street and the trail.

The Federated Companies development team has worked with the City's planning staff and Planning Board to develop the concept for **midtown**. The proposal concentrates development into four towers designed to enhance the City's existing skyline and to preserve prominent views and view corridors to and from City Hall and Portland's Downtown. Similarly, locations of building setbacks and step-backs have been carefully considered to both respect existing zoning ordinances and maintain a vibrant public streetscape, full of natural light and street-level activity. **Midtown's** streetscape has been planned to accommodate new stores and cafés, pedestrian circulation, street trees and parallel parking along Somerset Street. Most importantly, the plan proposes pedestrian walkways that connect Somerset Street to the Bayside Trail. These include a mews located between **midtown 1** and Parking Garage 1, and enhancements to Chestnut Street.

In total, midtown will be a catalyst for the Bayside neighborhood, bringing approximately 100,000 s.f. of retail, and new residents to the heart of the Bayside district with the first phase anticipated to be completed in 2015 along Chestnut Street.

As part of **midtown's** approvals, the City of Portland will require the creation and issuance of a Transportation Demand Management (TDM) Plan. What follows is a Transportation Demand Management Plan that addresses the City's sustainability goals by outlining and committing to a series of measures that encourage and promote bicycling, walking, carpooling, and use of public transit.

Given both the scope of this mixed-use project, and the necessity of having buy-in from prospective tenants, the proposal that follows contemplates a two-tiered approach to the TDM, consisting of:

First Tier – Macro TDM: Consists of an overall approach to TDM for **midtown** including:

- TDM Goals and Methodologies
- Implementation
- Staffing
- Monitoring and Assessment
- Tenant Specifics Plan

Second Tier – Micro TDM(s): Consists of tenant-specific plans, the "framework" of which is articulated in the Macro TDM but which are to be more fully elaborated in dialogue with **midtown's** respective tenants (namely, residents, retailers, and parking garage operators). Each of these tenants will have different constituencies with varying travel patterns and habits and will thus require different approaches, which must be well orchestrated. Although it is not practicable to outline these plans in substantive detail until more formal agreements with tenants are in place, it is important to stress that tenants are expected to be active participants in the overall TDM goals and measures elaborated here, and to take active roles in defining their own mechanisms for participating in these goals; this expectation will be outlined in lease arrangements with tenants.

In its utilization of this tiered approach ("macro" and "micro"), the proposed framework effectively functions as a project-wide Transportation Management Association, linking the various residents, retailers, and neighborhood in general, in a set of shared strategies, to be coordinated by the TDM Coordinator, of which is described more below.

The **midtown** development will be a major multi use project that will allow tenants to live, work, and/or shop onsite, eliminating the need for daily vehicle travel. In addition, the development's approach to TDM represents a significant opportunity to reduce the number of Single Occupant Vehicles (SOVs) in the area.

Proximity to Transit

The Bayside area is currently served by the following transit services:

- Metro Route #8: Portland METRO provides the Portland Peninsula loop service that includes the #8 route that has two bus stops on Marginal Way (northbound) and two bus tops on Somerset Street (southbound). This service route passes by the Forest Avenue Hannaford, Congress Street, the Casco Bay Ferry Terminal, Maine Medical Center, Mercy Hospital, and Portland's West End neighborhood. Additional connections to additional locations throughout the City can be made using other Metro routes including the Portland Transportation Center, Maine Mall, Forest Avenue, North Deering, Westbrook, and Falmouth.

In addition to Metro service, Bayside is 2 miles from the Portland Transportation Center that hosts the following services:

- Downeaster (AMTRAK): This intercity passenger rail service provides connections from Portland to Saco, Old Orchard Beach, and other southerly stops including Boston's North Station. The service also connects northerly to Freeport and Brunswick, providing a direct link to the Maine Eastern Railroad, which provides seasonal service as far as Rockland in 2012. The service currently runs five round trips to and from North Station and three trips to/from Brunswick.

- Concord Coach (Formerly Concord Trailways): This intercity bus service provides non-stop service to South Station in Boston, and northerly both to Augusta and Bangor, Maine, as well as the mid coast region. During the day, buses arrive and depart about once per hour. This service allows for connections to various intercity buses, Amtrak and MBTA commuter rail services at South Station, as well as direct connections to all terminals at Boston's Logan International Airport. In addition, the Bangor bus allows for a connection to the Cyr Bus service, providing a once-daily connection to several destinations in Aroostook County.

Given its adjacency to these amenities, **midtown** is uniquely suited to take advantage of non-motorized vehicle trips, especially transit trips.

Purpose of Plan

The City of Portland requires the creation of a Transportation Demand Management Plan for all projects in excess of 50,000 square feet, or with 100 or more employees or students. The **midtown** development meets both of these criteria. A TDM Plan is key to maximizing the synergies between the project and the transit modes (existing and not yet existing) adjacent to it.

To this end, the objectives of the **midtown** TDM Plan are:

- Make maximum use of existing transit infrastructure adjacent to the project

- Propose partnerships with the City, Metro, MDOT and others aimed at increasing transit opportunities and, in the words of MDOT, contribute to providing "a safe, efficient and reliable transportation system that supports economic opportunity and quality of life".

- Reduce peak hour trip impacts to, and the effects of traffic congestion upon, adjacent roadway infrastructure

- Reduce the amount of needed parking on-site

- Encourage healthy activities such as biking, kayaking, and walking among **midtown** residents and visitors

It is important to note that this Plan should not be viewed as a series of fixed strategies. Rather it is a living document intended to be reviewed and updated on a regular basis as the midtown operators work with tenants to address changes in local transportation patterns, preferences, and prices; by means of effective coordination, goal-setting, and goal-monitoring measures **midtown** will endeavor to reach the goals articulated in this Plan in a way that is not financially or operationally burdensome to the tenants who ultimately must support the Plan. Ultimately, the goal will be to make significant reductions in peak hour single-occupancy vehicle (SOV) activity on the local street network as well as the need for on-site parking in a way that is financially and operationally sustainable for all concerned.

Employee Transportation Coordinator (TDM Coordinator)

The **midtown** developer will employ a TDM Coordinator, charged with coordinating the TDM plan. The TDM coordinator will liaise with resident representatives as well as the retailer/shop owners in order to create an effective overall approach to the following goals:

- Coordinate and promote rideshare opportunities
- Coordinate and promote the use of the following alternatives to SOV travel:
  - METRO
  - AMTRAK
  - Concord Coach and other bus lines as may be applicable
  - U Car Share
  - Car rental companies
  - Bicycle rentals
- Monitoring parking usage in conjunction with parking facility management
- Encouraging the greater use of bicycling, walking, and bus-based transit
- Overseeing ongoing monitoring and updating of the plan
- Convening a committee, ideally comprised of decision-makers representing each of the tenants/users in **midtown,** who will assist the coordinator in TDM planning and assessment
- Filing annual reports with the City

The TDM Coordinator will work with tenants at the MICRO TDM level to explore how to create effective partnerships and incentive packages with AMTRAK, Concord Coach, and METRO; the Coordinator will liaise with tenants and help them identify strategies such as incentives (free or subsidized bus passes for tenants and employees, gift coupons or periodic prize drawings to foster use of alternative modes)and how to establish subsidies and payroll deductions for employee transit passes where this is appropriate for a retail tenant.

Surveys – Employees

Six months after initial occupancy of the **midtown** facilities, and annually thereafter, **midtown** residents and retail employees will be surveyed regarding their transportation choices such as automobile/bicycle/ motorcycle-scooter ownership, parking demand, and the frequency of trips using bicycling, walking, U Car Share, carpool/vanpool, and the bus. The survey will follow the format of the "TDM2go Employee Survey", a copy of which is attached hereto, but may be expanded from time to time by the TDM Coordinator. The surveys will be conducted to determine:

- Mode of travel to and from work (car/carpool/biking/walking/bus)
- Preferences or concerns with mode of travel
- The flexibility and receptivity of employees and residents to utilize various travel modes to access **midtown** (and, crucially, to ascertain whether individuals make use of multiple modes during the course of a given year, or a given season)

Various questions will be created in the survey to determine which measures will encourage increased use of transit, for example, either via costs for parking or stronger subsidies of METRO passes, etc. The TDM Coordinator may seek to partner with the academic and/or the public sector, and public funding, to increase the efficacy of these surveys and mine the information contained therein.

Surveys – Visitors

For visitors to **midtown**, surveys will also be included. These will be provided in the following manner:

- With ticket receipt for parking garage users and retail visitors

The surveys will be conducted to determine:

- Mode of travel to and from midtown (car/carpool/biking/walking/bus)
- Preferences or concerns with mode of travel
- The flexibility and receptivity of visitors to utilizing various travel modes to access **midtown** and the Bayside area in general

Surveys will need to be simple and convenient; they could be filled out in-store, or completed with a link on-line (such as Survey Monkey) to do it afterward. Various questions will be created in the survey to determine measures to encourage increased use of transit, for example, either via costs for parking or greater promotion of transit uses. The TDM Coordinator will work with the residents and retail tenants at the MICRO TDM level to determine what kinds of incentives could elicit consistent and engaged participation in these surveys.

Car Pooling and Sharing

Through various promotional strategies (flyers, email blasts, web updates, social media, and occasional gatherings), the midtown TDM Coordinator will make visitors, workers and guests aware of and encourage use of these services.

U Car Share/Rental Cars

Portland is one of 38 cities in the United States served by U Car Share. In Portland, the service currently provides four vehicles. These vehicles are available on an hourly or daily basis. It is recommended that the **midtown** team negotiate the use of two additional vehicles with U Car Share for visitors to use on an as-needed basis, as well as traditional rental cars. This will allow for the use of a car for certain trips, which can aid in a traveler to or from the **midtown** to choose transit for a mode. Information will be provided to residents, retail workers, and parking garage users. Following the first survey, additions to U Car Share may be made if residents or retail employees desire their use in significant numbers; U-Car share may be an attractive option for local residents who are employed by one of the various tenants at **midtown**.

- Primary User: Residents and Employees
- Responsibility: **midtown**

Education for Residents and Visitors

As discussed, **midtown's** TDM coordinator will provide transit route maps, schedules, and ticket information in packets for residents and visitors. There will also be a travel kiosk(s) in the residence towers offering interactive Google-based travel planning with various vehicular modes; in addition, maps, routes, and ticket information will be posted clearly in the entry areas in each residence tower and the retail spaces. The TDM coordinator will be available, in person and/or virtually, to assist residents, visitors and employees who have questions about travel tips and ideas.

- Primary User: Residents and Employees
- Responsibility: **midtown**

Submission of Monitoring Information/Updated TDM Plan
Based upon the results of the monitoring, the **midtown** team will update the TDM Plan and submit a draft plan to the City's TDM Manager for review and comments.

The primary goal would be to reduce residents, retail, employee and visitor SOV trips by at least 7 percent, which is the level identified in the project's Traffic Impact Study. This level is considered conservative and a greater reduction in SOV trips may be realized. An ultimate goal of greater than 10 percent will be established.

The secondary goal for the initial year will be to reduce the parking demand from the calculated demand, with additional annual reductions targeted, until parking demand is reduced by a minimum of seven percent. This aggregate targeted reduction shall also include individual targets, shared equally, for the following alternative modes: increase use of transit by residents,

retail, employees and visitors; increase carpooling and vanpooling by residents, retail, employees and visitors; and increase bicycle and pedestrian trips by residents and visitors until the overall goal of a 7-10% reduction is reached. The goal will be to achieve this overall 10% reduction by the end of the fifth operating year. At this point, it would be appropriate to reassess the ways in which the TDM plan should be recast in order to set additional goals for the sixth operating year and beyond. Each monitoring period will be accompanied by a parking count of **midtown's** facilities, in accordance with the methodology discussed in the parking count section.

An important responsibility for the TDM Coordinator will be to discuss future options as they become available with the City of Portland and GO MAINE, an organization charged with finding transportation options for the state.

Additional Transit Opportunities

The **midtown** development will generate substantial tax revenue that will be used by the City for transit funding and future opportunities. The **midtown** team looks forward to exploring and benefiting from these opportunities.

- Primary User: Residents and Retail Employees
- Responsibility: **midtown**

Scooter/Motorcycle Parking

Twenty spaces are recommended within the garages for this use, with the potential for more in the future. Those using scooters or motorcycles will also obtain a ticket to be matched with a specific space in the garages. These spaces may be subject to random compliance checks.

- Primary User: Residents and Retail Employees
- Responsibility: **midtown**

Bus Shelter

The **midtown** team is willing to locate a bus shelter on site, for those coming on and off the #8 Bus (discussed above), which will further encourage use of buses by residents, visitors and employees alike. Metro and the City need to establish the final Metro stop locations along Somerset Street.

Monitoring

Parking Counts

As part of its TDM Plan monitoring program, the **midtown** TDM Coordinator will oversee assessment of the use of its various operational components, starting one month after the opening of the first residential tower and annually thereafter. As one critical component of the

TDM program will be to reduce parking demand, the first part of each monitoring effort will include an hourly parking count of the facility from 11:00 AM to 11:00 PM on a weekday and a Saturday.

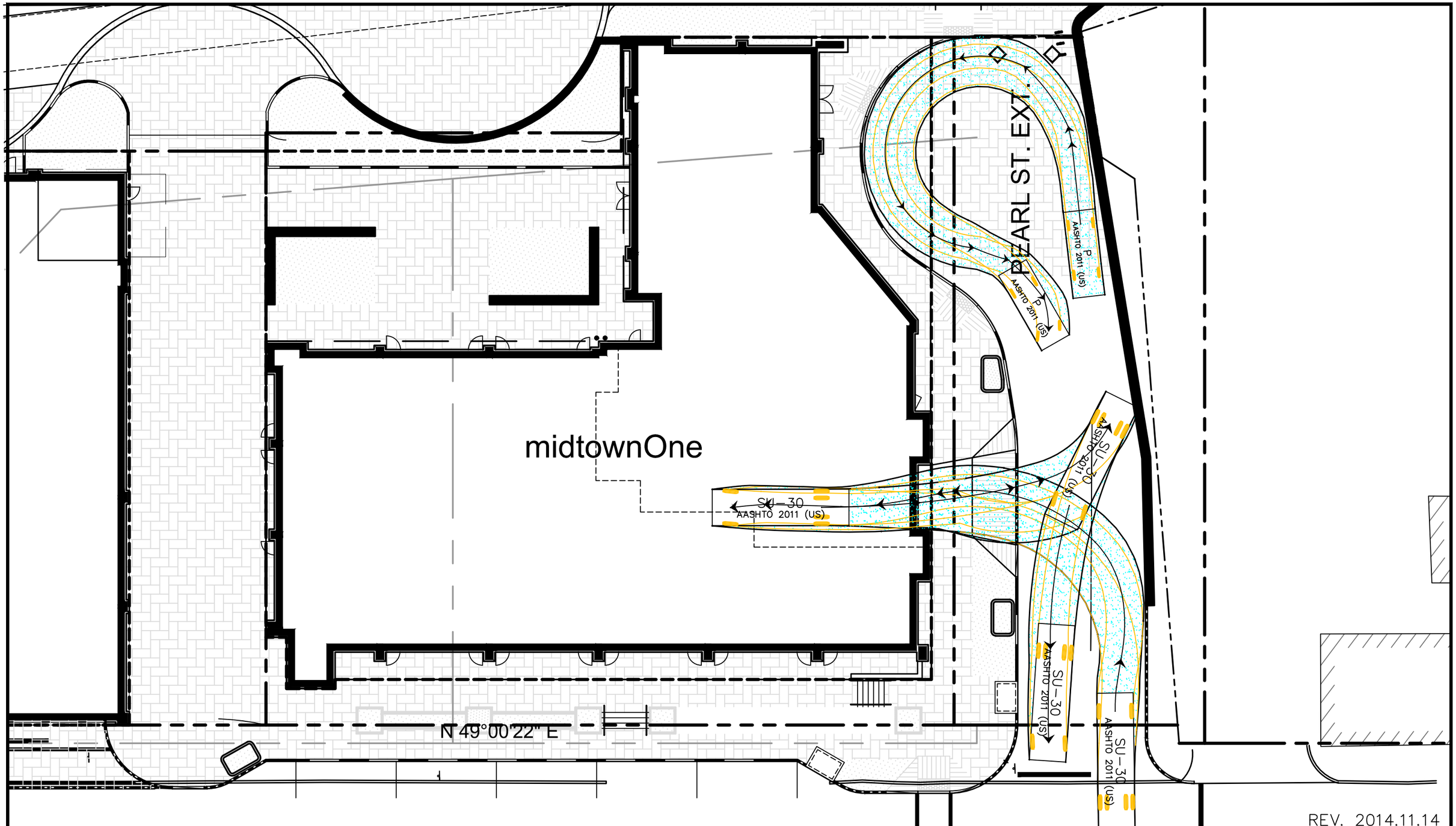
Timetable for Action Items

Action Item	Timeframe for Implementation
Provide update to City regarding progress on TDM plan implementation and status of TMA ("macro TDM")	Fall 2015
Appoint/Confirm TDM Coordinator	6 months prior to opening of residential towers
Assemble "Micro TDM" plans with tenants and create TDM Packets; share complete TDM plan, including Micro-TDM targets and proposed monitoring, with City	Early 2019
TDM Plan Implementation/On-site Parking Monitoring	Assuming final occupancy
Assess success of first six months of TDM Program and Report to City on initial effectiveness	End of 2016
Submit Year Two TDM Program with needed modifications (and annually thereafter)	End of 2017

Prepared by FST
November 14, 2014

EXHIBIT 11

AUTOTURN TEMPLATE FOR DRIVEWAYS



FST 100 YEARS

FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

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midtown
PORTLAND, ME

AUTOTURN TURNING MOVEMENT ANALYSIS
midtownOne -SERVICE ENTRANCE
AASHTO SU-30 (SINGLE UNIT TRUCK) AT 5MPH

RE
AT-1

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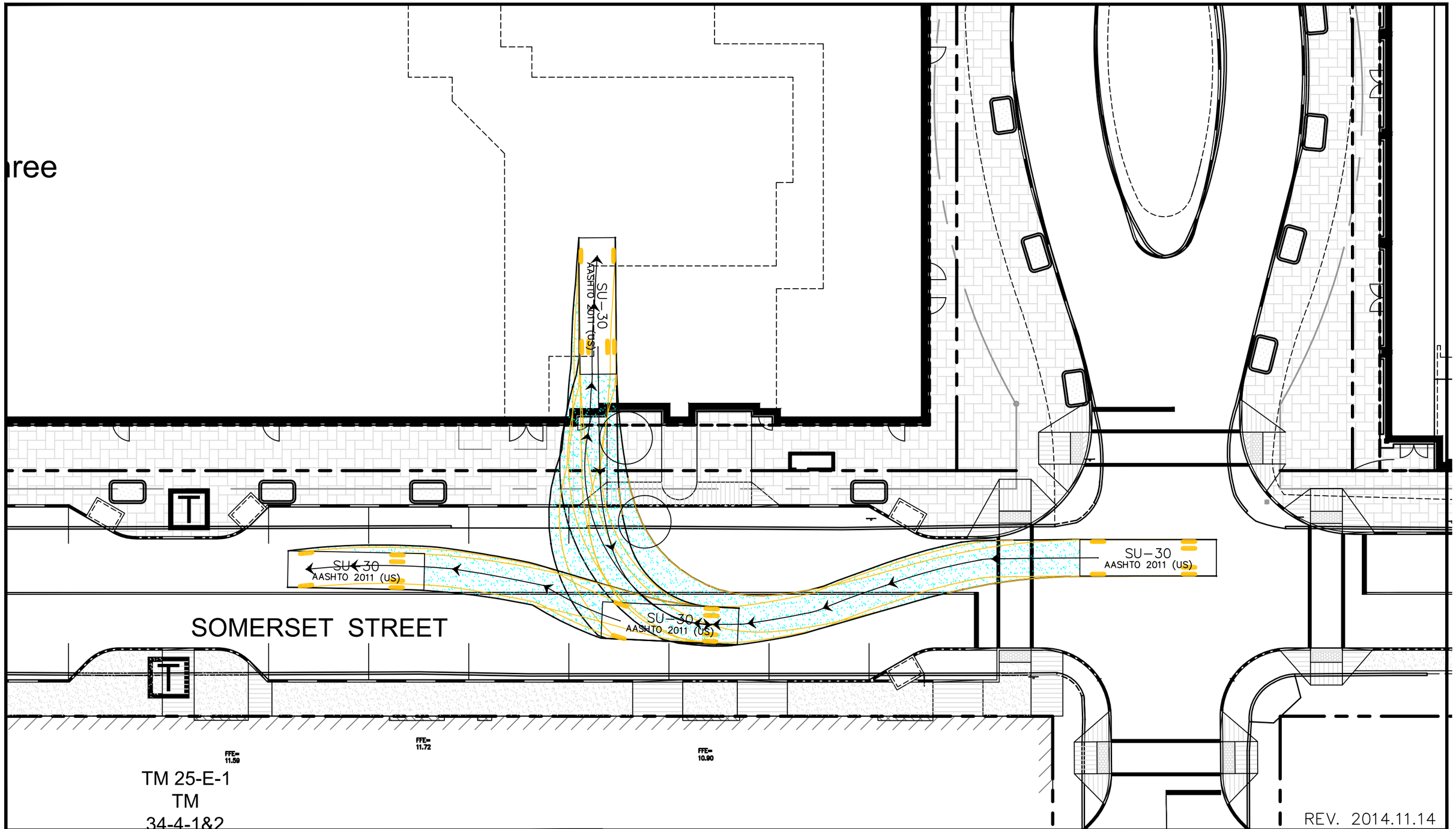

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midtown
PORTLAND, ME

AUTOTURN TURNING MOVEMENT ANALYSIS
midtownThree -SERVICE ENTRANCE
AASHTO SU-30 (SINGLE UNIT TRUCK) AT 5MPH

RE
AT-2

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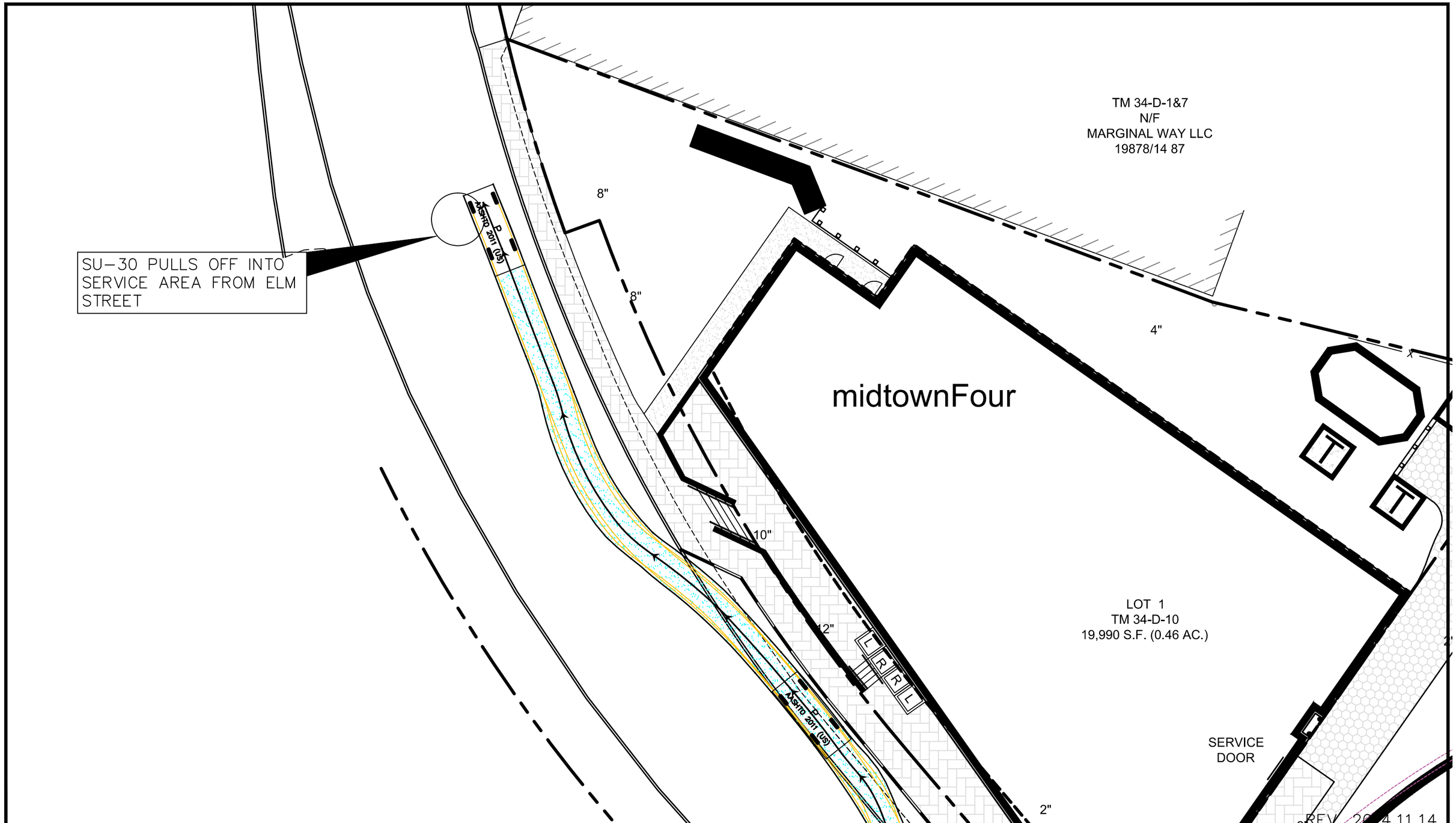

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ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

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midtown
PORTLAND, ME

AUTOTURN TURNING MOVEMENT ANALYSIS
midtownFour -SERVICE ENTRANCE
AASHTO SU-30 (SINGLE UNIT TRUCK) AT 5MPH

DRAWING NO.
AT-4

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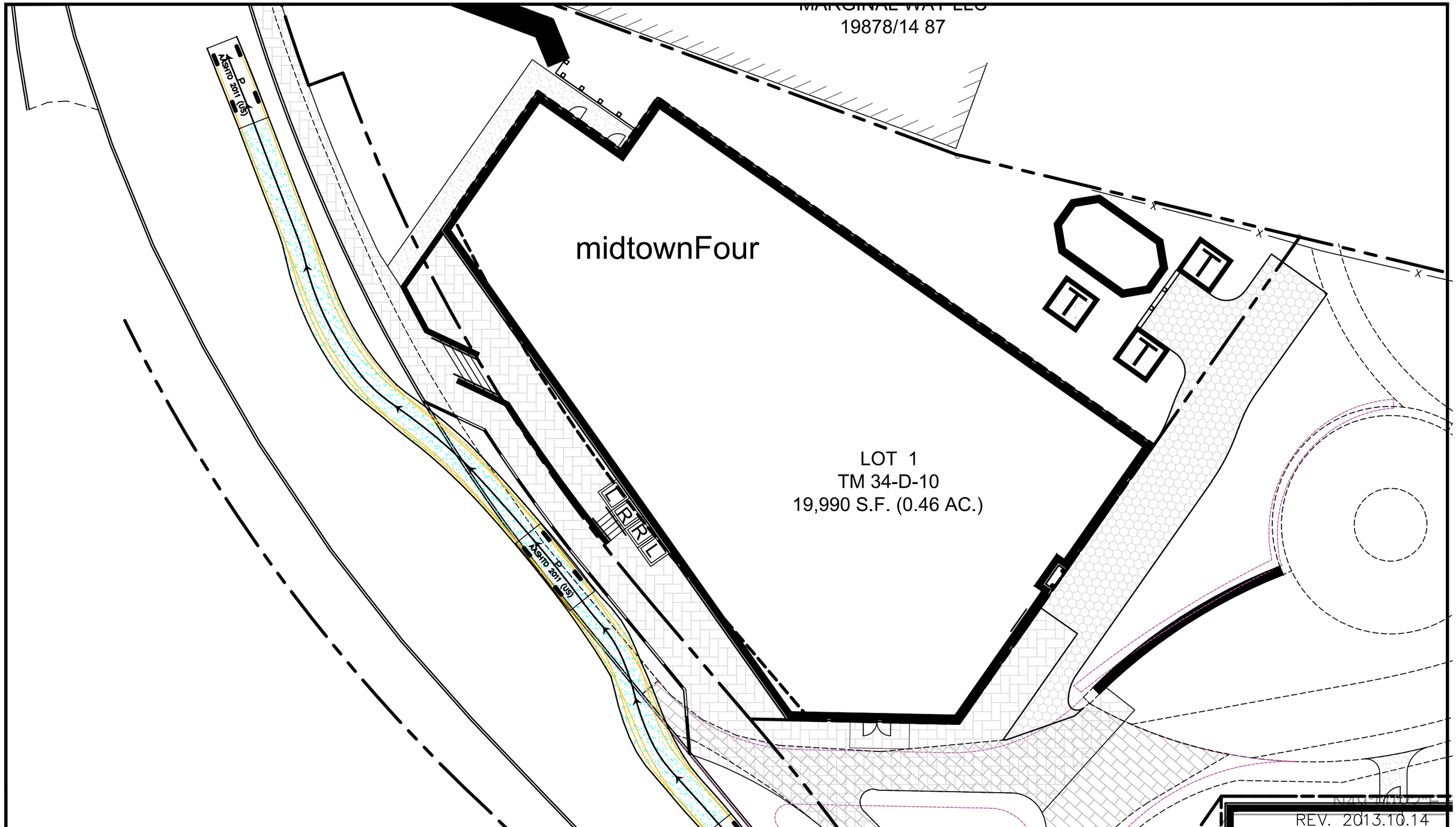

FST 100 YEARS

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FORMERLY DELUCA-HOFFMAN ASSOCIATES

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midtown
PORTLAND, ME

AUTOTURN TURNING MOVEMENT ANALYSIS
midtownFour -SERVICE ENTRANCE
AASHTO P (LARGE CAR) AT 5MPH

FIGURE
AT-4A

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EXHIBIT 12

TRANSIT STOP FOR METRO

From: Celina Daniell
To: "tridge@gpmetrobus.com"
Cc: Bo Kennedy; Stephen Bushey
Subject: FW: midtown, Portland ME - proposed bus stop/shelter for review
Date: Tuesday, November 11, 2014 12:49:00 PM
Attachments: C-2.1.pdf
C-2.2.pdf
C-2.3.pdf

Mr. Ridge,

On behalf of The Federated Companies, our office has been retained to submit a new Site Plan Application for the midtown project. The scope of the midtown project has been reduced from 800± to 440± residential units. The Somerset plans still anticipate to include a Metro Stop pursuant to our previous correspondence. Please find the attached update site plan for your review.

If you have any questions, please contact Bo Kennedy at our office.

Thank you

Celina Daniell

Celina M. Daniell | Technical Assistant
FAY, SPOFFORD & THORNDIKE
Celebrating a Century of Engineering Excellence
778 Main Street, Suite 8 | South Portland, ME 04106
T: 207-775-1121 x4101 | F: 207-879-0896
cdaniell@fstinc.com | www.fstinc.com |

From: Celina Daniell
Sent: Friday, October 18, 2013 2:24 PM
To: Celina Daniell
Subject: FW: midtown, Portland ME - proposed bus stop/shelter for review

---

From: Tom Ridge [mailto:tridge@gpmetrobus.com]
Sent: Thursday, October 17, 2013 10:20 AM
To: Robert Woodman
Subject: RE: midtown, Portland ME - proposed bus stop/shelter for review

Hi Rob,

It was nice speaking with you this morning. Here is a brief list of items we discussed and agreed to.

- 70' with angled ends is enough space for our bus to get in off the road

- Metro will provide a sign for the stop when the pole is installed at the far end of the bay
- City "No Parking Bus Stop" signs will be installed at beginning, middle, and end of bay
- The shelter location will be somewhere from middle bay to far end

If you need more information feel free to contact me.
Thank you,

Tom Ridge
Assistant Transportation Manager
Greater Portland Transit District
tridge@gpmetrobus.com
W - 207-774-0351
C - 207-310-1889

From: Robert Woodman [mailto:rwoodman@fstinc.com]
Sent: Wednesday, October 16, 2013 9:16 AM
To: tridge@gpmetrobus.com
Cc: gjordan@metrobus.com
Subject: midtown, Portland ME - proposed bus stop/shelter for review

Tom/Greg,

Please find attached an overall site plan and the Phase 2 site plan for the midtown project.

The plan identifies a bus stop on the northerly side of Somerset Street adjacent to 'midtown 2'.

The designated bus stop bump out is approx. 70 feet long with 13' long tapers on each end.

We are seeking your review of this location and feedback as to whether or not the proposed location and design will work for METRO.

Could you also email the METRO bus stop sign designs, so we can appropriately sign and designate this area as a METRO bus stop.

We are in the process of wrapping up our plans for final review by the City of Portland, so an expedited review would be appreciated.

Thanks in advance,

Rob

Robert J. Woodman. P.E., C.P.E.S.C. | *Engineer*

FAY, SPOFFORD & THORNDIKE formerly DeLuca Hoffman Associates

778 Main Street, Suite 8 | South Portland, ME 04106
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Please consider the environment before printing this email.

EXHIBIT 13

STORMWATER MANAGEMENT REPORT
&
OPERATION AND MAINTENANCE MANUAL

STORMWATER MANAGEMENT REPORT

midtown
PORTLAND, MAINE

PREPARED FOR:

THE FEDERATED COMPANIES
3301 NE 1ST AVENUE, SUITE M-302
MIAMI, FLORIDA 33137

PREPARED BY:

FAY, SPOFFORD & THORNDIKE
778 MAIN STREET, SUITE 8
SOUTH PORTLAND, MAINE 04106
(207) 775-1121

NOVEMBER 2014

(Draft 11/14/14 subject to ongoing
FST review and City of Portland comments)

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SECTION	DESCRIPTION	PAGE
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4.0	Methods of Analysis – Stormwater Quantity	2
5.0	Existing Storm Drain, Inlet, and Conveyance Conditions	3
6.0	Stormwater Model Results	5
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9.0	Chapter 500 Treatment Percent Compliance	11
10.0	Erosion Control	11
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ATTACHMENTS

Attachment A – Predevelopment Computations
Attachment B – Water Quality Computations
Attachment C – Orifice Drawdown Computations
Attachment D – Operations & Maintenance Manual

1.0 INTRODUCTION

Fay, Spofford, and Thorndike has been retained by The Federated Companies to prepare civil designs and assist with the preparation of technical studies and site permit applications for the proposed midtown project which will be located along Somerset Street in Portland, Maine. The project area is approximately 3.45 acres in size and will be highly developed with parking garages and buildings. Offsite areas contribute to the watersheds which are affected by this project resulting in a total area of 4.44 acres which is examined as part of this plan.

This report presents the stormwater management for the project including prescriptive post development stormwater requirements. This report is intended to summarize the project design's compliance with the storm water requirements for the project.

The project is being designed to comply with MeDEP Chapter 500 standards and Chapter 5 of the City of Portland's Technical Standards, which mirror MeDEP Chapter 500 s tandards. T his project will develop greater than 3 acres of impervious area thus a Site Location of Development Law permit will be required, and MeDEP Chapter 500 water quality standards are required to be met. These permit requirements will be reviewed by the City of Portland under their delegated authority from the MeDEP. A waiver is being requested from the City of Portland and MeDEP flooding standards due to the projects discharge location to back cove and the capacity of the city storm drain systems being discharged to.

FST believes that the information presented herein describes a design that fully complies with the City of Portland and MeDEP chapter 500 stormwater standards.

2.0 REFERENCES

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

1. Technical Release Number 20 – Computer Program for Project Formulation – Hydrology, USDA Soil Conservation Service, May 1983.

2. Section 4 – Hydrology, USDA Soil Conservation Service, March 1985.

3. Technical Release Number 55 – Urban Hydrology for Small Watersheds, USDA Soil Conservation Service, June 1986.

4. Hydro CAD Technical Reference Manual, Applied Micro-Computer System, 2001.

5. Urban Hydrology for Small Watersheds from the USDA SCS; Technical Release 55, dated 1986

6. USDA SCS Medium Intensity Soils Map for Cumberland County (Map 82).

7. Chapter 5, City of Portland Technical Manual, May 11, 2010

8. Chapter 32, City of Portland Technical Manual, May 11, 2010

9. Chapter 500 Stormwater Management 38 M.R.S.A. § 420-D, Amended December 27, 2011

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

1. HydroCAD Stormwater Modeling System, version 7.1, Applied Microcomputer Systems – used for modeling watersheds for pre and postdevelopment conditions;

2. Microsoft Excel, Microsoft Corporation – used for spreadsheet computations.

Resources used to obtain the hydrologic input data for the stormwater models were:

- Existing Conditions Survey prepared by SGC and Owen Haskell, Inc.
- City of Portland Department Public Works Contract Drawings (Sewer Separation Franklin Arterial, Marginal Way, Bayside Trail and Somerset Street)
- Field Reconnaissance

3.0 OVERVIEW OF STORMWATER RUNOFF MODELING

The stormwater analysis evaluates the following:

1. Predevelopment stormwater runoff and peak discharge rates for the watersheds.

2. Postdevelopment stormwater runoff and peak discharge rates at areas of hydrologic interest (aka POI's).

3. The effect of land cover modifications including increased impervious coverage and changes to the boundary of catchment areas.

4.0 METHODS OF ANALYSIS – STORMWATER QUANTITY

The hydrologic analyses for predevelopment and postdevelopment 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 area of Cumberland County, a 24-hour SCS Type III storm distribution was used for the analysis based upon the NRCS Rainfall Distribution Map. The rainfall amounts for various storm events are as follows:

TABLE 1

Storm Event	24-Hour Rainfall
2-Year Storm	3.0
10-Year Storm	4.7
25-Year Storm	5.5

The HydroCAD computer program was used in the analysis. This program determines the critical points of the project watershed and uses SCS TR-20 methodology for evaluation of the anticipated conditions at these points. Drainage areas are defined with runoff curve numbers, times of concentration, and travel time data based on methods outlined in the USDA TR-55 Manual. To assess storage and kinematic effects of runoff, the model uses reservoirs and pipes to imitate actual conditions. Specific hydrologic characteristics including travel times, storage capacity, and the effects of hydraulic head are considered for analysis with this program.

To model any watershed, the drainage system is represented by a system network consisting of four basic components:

- **Subcatchment:** A relatively homogenous area of land that drains into a single reach or pond. Each subcatchment generates a runoff hydrograph.

- **Reach:** A uniform stream, channel, or pipe which conveys water from one point to another reach or pond. The outflow of each reach is determined by a hydrograph routing calculation.

- **Pond:** A pond, swamp, dam, or other impoundment which fills with water from one or more sources and empties in a manner determined by a weir, culvert or other device(s) at its outlet. A pond may empty into a reach or into another pond. The outflow of each pond is also determined by a hydrograph routing calculation.

To calculate the outflow for each structure, HydroCAD automatically performs these steps:

1. If there is more than one inflow, the inflows are summed together to produce a single hydrograph. If a pipe is being re-sized, its diameter will be calculated to handle the peak inflow.

2. The inflow is routed through the structure using the description and method previously specified. For subcatchments, the specified storm type and rainfall are used.

3. For a reach, the peak depth, peak velocity, contact time, etc. is calculated.

4. For a pond, the peak elevation, peak storage, etc. are calculated.

5. Any warning messages are displayed.

6. For the inflow and outflow, the peak flow and time of peak are calculated by interpolating between the three highest points.

7. The total volumes of inflow and outflow are calculated.

8. The results are stored in a database for subsequent calculations or to be examined at any time.

The process is automatically repeated for each structure until the design point is reached. HydroCAD is a hydrograph routing model. It is designed specifically to handle time varying flows, as required for pond design and other volume-sensitive calculations. As such, HydroCAD routes completely through one structure at a time. Only after determining the outflow hydrograph from a given structure does it consider the next structure downstream.

5.0 EXISTING STORM DRAIN, INLET, AND CONVEYANCE CONDITIONS

This portion of the study reviews current conditions and attempts to review 1975 predevelopment conditions.

There is a difference between the predevelopment (1975 conditions) and the current conditions plan since the area has been extensively disturbed since 1975. The following assumptions have been made to attempt to generate the predevelopment condition:

- The soils are Hydrologic Group “C” soils based upon the USDA Cumberland County Medium Intensity Soils Map (Map #82) which shows the area as Au Gres soils and Appendix B of TR55 which lists the hydrologic soil group for various soils.

- All areas within the project and its vicinity are assumed to have been "industrial areas". TR55 assigns a land use curve number of 91 to industrial districts with 28 percent pervious areas. Fay, Spofford and Thorndike believes that a CN of 91 is a conservative characterization of the predevelopment conditions. A CN of 91 is likely to be low because it is based upon pervious area of 28 percent. Therefore, since it is likely the pervious area less than 28 percent the CN value was likely higher than 91.

- The site is assumed to have had drainage patterns similar to what exist today.

- This assumption does not become significant based upon the low hydrologic times of concentration.

- It is assumed that stormwater drained from the areas studied in the pre 1975 condition instead of ponding in surface depressions as it does in current conditions.

The storm drainage includes a system that serves the easterly end of the project area which was constructed around 2003 as part of a sewer separation project. This drainage system ultimately discharges to Back Cove on the northerly side of I-295 near the Franklin Arterial Interchange. This new system starts at a manhole at the intersection of Marginal Way and Franklin Arterial with the existing 72 inch diameter storm drain downstream of the tide gate and combined sewer overflow structure for the Franklin Street Pumping Station. The 72 inch storm drain has an invert of about -4.43 at this location. The new system included approximately 556 feet of 30 to 42 inch storm drain between Marginal Way and Somerset Street with inverts ranging from approximately -1.5 to 2.1 The drain continues in a westerly direction along Somerset Street and is approximately 1013 feet in length with 18 to 30 inch storm drains along Somerset Street to the end of the drainage system. This catchment area limit is located about 40 feet westerly of the intersection of Somerset and Chestnut Street. A branch line feeding the "A" system was constructed along the pedestrian trail which runs along the northerly side of this project. This branch includes piping up to 18 inches in diameter and drains portions of the rear of the subject parcel and along the trail behind the project site.

The second drainage system serves the westerly portion of the project site. Drainage from Somerset Street flows to Elm Street and then continues northerly to Preble Street to a 60 inch diameter line that crosses under Interstate 295 and discharges to Back Cove.

Finally, there is a small catchment that enters the Chestnut Street system identified as System "C".

The new storm drains installed around 2003 included stubs for service to the midtown project area. The approximate locations of the storm drain stubs are as follows:

- 200 feet westerly of Chestnut Street (10" diameter)
- 210 feet easterly of Chestnut Street (15" diameter)
- Opposite of Pearl Street (15 inch diameter)
- 250 feet west of Franklin Arterial (15 inch diameter)

A schematic of the storm drain system and a predevelopment watershed map are provided as Figure S-2 and Drawing C-14.0.

Currently, the site is stable except for some limited rill erosion on the driveway apron of Catchment B-1.

6.0 STORMWATER MODEL RESULTS

Predevelopment Flows:

Three small catchments within or near the midtown project are tributary to the "A" System, three areas are tributary to the "B" System, and one area is tributary to the "C" system in Chestnut Street. The catchment areas and the hydraulic flow paths for these areas are depicted on Drawing C-14.0, the current conditions watershed plan. Under current conditions, two of these areas are tributary to the drainage system along Somerset Street and one is tributary to the branch of the storm drain network that runs behind the site along the trail.

Predevelopment conditions were run using HydroCAD. The convolution of the flows from Area A, Area B, and Area C were also modeled. The piping system in the model is based upon the size, length, and inverts of the existing storm lines shown on the City's 2003 sewer separation plans.

The "B" System which serves the westerly end of the project was also modeled to a point where the subcatchments converge. This is located at the intersection of Elm and Somerset Street. The segments of this drainage system downstream of the project area were originally designed as an 84 inch corrugated aluminum metal pipe and were installed when I-295 was constructed. A combination of ash and salt was very corrosive to this pipe. The line was determined to be severely corroded and was sliplined in 2004 using a smooth wall plastic pipe.

The projected flows for the small tributary area to Chestnut Street designated as Catchment C were also modeled at the inlet catch basin as shown on the pre-development watershed map C-14.0.

The predevelopment flows for this area are summarized in the table below for the 2, 10, and 25, year storm events:

TABLE 2
midtown
PREDEVELOPMENT (1975) RUNOFF AND PEAK DISCHARGE

Catchment	2 Year (3.00" Rainfall)			10 Year (4.70" Rainfall)			25 Year (5.50" Rainfall)		
	Area (ac.)	Runoff Depth	Peak Flow (cfs)	Area (ac.)	Runoff Depth	Peak Flow (cfs)	Area (ac.)	Runoff Depth	Peak Flow (cfs)
A-1	1.30	2.07"	2.99	1.30	3.69"	5.20	1.30	4.47"	6.23
A-2	0.56	2.07"	1.34	0.56	3.69"	2.33	0.56	4.47"	2.79
A-3	0.24	2.07"	0.57	0.24	3.69"	1.00	0.24	4.47"	1.19
B-1	1.37	2.07"	3.28	1.37	3.69"	5.69	1.37	4.47"	6.82
B-2	0.16	2.07"	0.38	0.16	3.69"	0.66	0.16	4.47"	0.80
B-3	0.43	2.07"	1.03	0.43	3.69"	1.79	0.43	4.47"	2.14
C-1	0.38	2.07"	0.91	0.38	3.69"	1.58	0.38	4.47"	1.89
Total	**4.44**	**2.07"**	**10.50**	**4.44**	**3.69"**	**18.25**	**4.44**	4.47"	**21.86**

The range of flows per acre under predevelopment conditions for the various catchment areas is as follows:

TABLE 3 RANGE OF UNIT DISCHARGES FOR PREDEVELOPMENT CONDITIONS			
Storm Event	**Low Range (cfs/acre)**	**High Range (cfs/acre)**	**Ratio High: Low**
2 year	2.30	2.40	1.043
10 year	4.00	4.17	1.043
25 year	4.79	5.00	1.044

The reason the range of flows per acre is not significant and in the order of a 4 percent difference is because the hydrologic travel times only varied between from 6 and 7.1 minutes.

The runoff depths for current conditions are 2.07, 3.69, and 4.47 inches for the 2, 10, and 25 year storms respectively. This compares with rainfall of 3.0, 4.7, and 5.5 inches for the respective storms.

The actual travel time in the pipelines may be slightly different because flows from other portions of the City are tributary to the pipelines and are not included in the model. Consequently, the velocity computed during flood routing by the model is slightly different and probably slower than if the other drainage was included in the model. However, even with the reduced velocity there is little attenuation that results from travel time and routing through the storm drains. This is demonstrated by comparing the sum of the peak flows from each catchment to the convoluted flows for the overall catchment as shown below:

TABLE 4 PREDEVELOPMENT FLOW COMPARISON		
Catchment	**2 Year Peak Flow (cfs)**	**25 year Peak Flow (cfs)**
A-1	2.99	6.23
A-2	1.34	2.79
A-3	0.57	1.19
Sum A1 to A3	**4.90**	**10.21**
Convoluted Flow for Watershed A	4.89	10.17
B-1	3.28	6.82
B-2	0.38	0.80
B-3	1.03	2.14
Sum B1-B3	**4.69**	**9.76**
Convoluted Flow for Watershed B	4.69	9.75
C-1	0.91	1.89

Predevelopment computations can be found in Attachment A.

Postdevelopment Flows:

The Federated site will be redeveloped with mostly rooftop and parking garage deck hard surfaces. The following assumptions have been made:

- The site can be characterized by an RCN of 96. This would permit 95 percent of the 3.45± acre site to be covered with impervious materials and 5 percent (about 0.17) to be covered as lawn.

- The time of concentration will be the minimum permitted by the HydroCAD model (i.e. 6 minutes).
- Discharge locations will use the stubs installed for the property when the City of Portland's 2003 sewer separation project was constructed to the extent possible.
- Detention (if required) will be provided above the storage elevations of the water quality volume.

Since the time of concentration is being set at the minimum, the hydraulic points of connection to the system have the same per acre discharges for different areas are shown in the table below:

TABLE 5
ILLUSTRATION OF PEAK DISCHARGE PER ACRE WHEN CN IS 96 AND HYDROLOGIC TIME OF CONCENTERATION IS 6 MINUTES

Watershed Size (arbitrary)	Peak Discharge 2 Year (cfs)	Peak Discharge Per Acre	Peak Discharge 25 year (cfs)	Peak Discharge Per Acre
¼ acres	0.68	2.73	1.33	5.30
1 acre	2.73	2.73	5.30	5.30
4 acres	10.92	2.73	21.2	5.30

Therefore, the analysis can be conducted with the postdevelopment flows computed on the following basis without requiring formal modeling:

TABLE 6
POSTDEVELOPMENT RUNOFF AND PEAK DISCHARGE VALUES

Storm Event	Discharge Per Acre (cfs)	Runoff Volume (in.)
2	2.73	2.41
10	4.50	4.23
25	5.30	5.03

Peak flows for post development flows compared with predevelopment flows for the same catchment areas would be as follows:

TABLE 7
COMPARISON OF PRE AND POSTDEVELOPMENT RUNOFF AND PEAK FLOWS

Catchment Area	2 Year 3.00" Rainfall				10 Year 4.70" Rainfall				25 Year Rainfall 5.50"			
	Runoff		Peak Discharge		Runoff		Peak Discharge		Runoff		Peak Discharge	
	Pre (in.)	Post (in.)	Pre (cfs)	Post (cfs)	Pre (in.)	Post (in.)	Pre (cfs)	Post (cfs)	Pre (in.)	Post (in.)	Pre (cfs)	Post (cfs)
A-1	2.07	2.41	2.99	3.55	3.69	4.23	5.20	5.85	4.47	5.03	6.23	6.89
A-2	2.07	2.41	1.34	0.15	3.69	4.23	2.33	2.52	4.47	5.03	2.79	2.97
A-3	2.07	2.41	0.57	0.66	3.69	4.23	1.00	1.08	4.47	5.03	1.19	1.27
B-1	2.07	2.41	3.28	3.74	3.69	4.23	5.69	6.17	4.47	5.03	6.82	7.26
B-2	2.07	2.41	0.38	0.44	3.69	4.23	0.66	0.72	4.47	5.03	0.80	0.85
B-3	2.07	2.41	1.03	1.17	3.69	4.23	1.79	1.94	4.47	5.03	2.14	2.28

TABLE 7 COMPARISON OF PRE AND POSTDEVELOPMENT RUNOFF AND PEAK FLOWS												
Catchment Area	2 Year 3.00" Rainfall				10 Year 4.70" Rainfall				25 Year Rainfall 5.50"			
	Runoff		Peak Discharge		Runoff		Peak Discharge		Runoff		Peak Discharge	
	Pre (in.)	Post (in.)	Pre (cfs)	Post (cfs)	Pre (in.)	Post (in.)	Pre (cfs)	Post (cfs)	Pre (in.)	Post (in.)	Pre (cfs)	Post (cfs)
C-1	2.07	2.41	0.91	1.04	3.69	4.23	1.58	1.71	4.47	5.03	1.89	2.01

As demonstrated previously, the routing through the storm drain system does not attenuate the peak discharge flows by any significant amount.

7.0 DETENTION REQUIREMENTS

The changes in peak flows for the overall 4.44 acre watershed analyzed would be approximately 1.71 cubic feet per second for the 25 year storm event. The storm drains along Somerset and Franklin Arterial and their full flow capacity are summarized in the table below:

TABLE 8 STORM DRAIN LINES ON SOMERSET STREET FULL FLOW CAPACITY					
Location	Pipe Dia. (in.)	Lowest Slope	Highest Slope	Lowest Capacity (cfs)	Highest Capacity (cfs)
Somerset Street	12	0.005	0.005	2.65	2.73
	18	0.003	0.003	6.23	6.23
	24	0.003	0.003	13.42	13.42
Franklin & Somerset Street	30	0.003	0.004	24.30	28.10
Franklin Street	36	0.004	0.005	45.70	51.10
	42	0.005	0.005	77.10	77.10
10" Stub*		0.005		1.67	
15" Stub*		0.005		4.94	

*Stubs were installed to project property lines as part of the 2003 sewer separation project.

The location of the project relative to the overall Marginal Way watershed which starts at Congress Street and discharges to Back Cove is near the bottom of the watershed. Consequently, it is better to discharge flows from the base of the watershed as quickly as possible to provide additional capacity in the storm drain system for upstream flows which arrive later during the storm event.

The project conveys stormwater exclusively in a piped system directly into the ocean which is why the applicant is requesting the waiver of Chapter 5, Section E.2 Flooding Standards of the Technical Manual. It should be noted that the planning board granted a waiver for this standard on the previously approved Master Development Plan Approval dated January 28th, 2014. As shown in this report, FST believes that the amendments to the site plan have had a minimal

impact on the overall storm water management for this project and the same reasons as to why the waiver was granted on the original site plan are still valid.

8.0 STORMWATER QUALITY TREATMENT

Since this project requires a Site Location Development Law permit, it is required to meet MeDEP Chapter 500 Standards for water quality. The project must treat 80% of developed area and 95% of re-developed impervious area. For the water quality purposes all of the area on the project site was assumed to be impervious, thus treatment of 95% of project developed area is required.

Approach:

- **Wet Ponds –** Wet ponds are common stormwater treatment devices that retain the water quality volume of storms and also provide detention to control peak flows. A wet pond was ultimately determined unfeasible due to size constraints on the site and for tidal effects that would need to be analyzed.
- **Buffers –** Buffers were not considered as part of the site's stormwater management due to insufficient space. As an example, a minimum forested or meadow buffer width needs to be 75 ft., 100 ft. or 150 ft. with a slope of 0% - 8%, none of which is attainable on the site. Additionally, buffers are required to be encumbered by a conservation easement and deed restrictions.
- **Infiltration** – Our office has reviewed the Geotechnical Report for the site and the USDA medium intensity soil survey. T he medium intensity soil survey maps the site as predominantly Au Gres soils. These soils (hydrologic soil group C) are commonly found to be somewhat excessively drained to poorly drained. Infiltration requires well-draining soils, which are not found on this site.
- **Filter** – Filters cover a broad range of techniques including pre-approved proprietary stormwater treatment devices. The preliminary stormwater management strategy presented herein focuses on proprietary filter systems to meet the General Standard requirements.

Implementation:

Our office has laid out a plan which utilizes proprietary water quality treatment filters as described in Chapter 7.0 Filtration BMPs of the MeDEP Volume III BMPs Technical Design Manual to meet the minimum treatment standards as required by the General Standards.

There are 3 different types of filter treatment units that have been utilized in the design.

- **Tree-Box Filterra Units and "Box-less" Filterra Units**

  Tree-Box Filterra units are utilized to treat micro subcatchments. F or this project, the Filterras are designed to treat existing roadway flow on S omerset Street, Pearl Street and Chestnut Street. Roof runoff from midtownThree will be treated by depressed Filterras on Somerset Street which allows for water to be piped underground directly into the units. Filterras are sized based on total tributary area according to MeDEP volume III BMP's section 7.5. The following table breaks down the sizing criteria for Filterra units.

TABLE 9 FILTERRA SIZING REQUIREMENTS	
Filterra Size	**Maximum Tributary Area Allowed (Acres)**
4'x6' or 6'x4'	0.32
4'x8' or 8'x'4	0.42
6'x'6	0.47
6'x8' or 8'x'6	0.64
6'x10' or 10'x'6	0.79
6'x'12' or 12'x6'	0.95
13'x'7 or 7'x13'	1.20

See water quality computations in Attachment B for sizing of project Tree Box Filterra and boxless Filterra units.

According to the design criteria, Filterra units must be located upstream of an isolator row and designed to treat flow from the Filterra and the bypass overflow. Isolator rows are sized based upon StormTech chambers. For a SC-740 StormTech Chamber the amount of chambers required is equal to: 1-Year flow computed for tributary area (cfs)/0.2.

For example: If the 1-year flow tributary to a Filterra system was = 1.07 CFS, the amount of isolator row chambers required would be: 1.07/0.20 = 5.35 Chambers.

For this project Brentwood Tanks have been used in place of StormTech Chambers. The amount of Brentwood Tanks required has been computed by taking the amount of volume computed for the StormTech chambers and converted to accommodate the different chamber configuration. It should be noted that the isolator row is still providing the same treatment volume using a different storage model.

Full isolator row sizing can be found on the Water Quality Computations in Attachment B.

- **Storm Treats- (Subcatchment D)**

Storm Treats have been designed to treat runoff from midtown Four and the area surrounding the building. The total drainage area tributary to the storm treats is approximately 19,671 sf, all of which is considered impervious.

To meet Chapter 500, the water quality provided must be equal to or greater than the following:

1"/12 x impervious area (19,761 ac) plus 0.4"/12 x landscaped area (0 ac) = Water Quality Volume (1,647 cubic feet)

Computations of the water quality volume are appended in Attachment B.

1,650 cubic feet of storage is provided in a sub-surface storage system which exceeds the required 1,647 CF water quality volume. The sub-surface storage requirements can be found in the Water Quality Calculations found in Attachment B.

Based on the revisions made to Chapter 7 of the MeDEP Best Stormwater Practices in October 2010 the StormTreat™ treatment units shall be sized to treat the entire water quality volume in 24 to 72 hours at a discharge rate of approximately 2 gpm per tank. The system

must have at least one StormTreat™ tank per 1,155 cubic feet of water quality volume. Based on the required volume per tank 1,647/1155= 1.48 tanks are required for this project. Two tanks will be used.

The discharge must pass through the StormTreat™ tanks at a rate less than 2.0 gallons per minute per tank. The discharge from the 2 tanks are piped to a common 4" header and controlled with an orifice plate sized to meet the cumulative 4 gpm flow rate. The orifice drawdown computations are appended in Attachment B.

Discharge from larger storm events overflow over a broad crested weir housed in a precast concrete outlet control structure set at elevation 6.90 (i.e. the basin stage when water quality volume has been reached). The overflow piping network is sized to handle runoff from a 25-year storm event. A rain event exceeding the storm drainage network capacity would flood the channel protection basin and detention basin and discharge over the reinforced turf overflow spillway at the northeast corner of the basin.

Pretreatment for flow entering from all inlet pipes to the storage area will be provided by a Vortex pre-treatment system.

Therefore, water quality goals for the StormTreat™ Proprietary System meet the General Stormwater Standards of the November 2005 Chapter 500 Rules of MeDEP (rev. October 2010).

9.0 CHAPTER 500 TREATMENT PERCENT COMPLIANCE

The proposed redevelopment project creates 3.45 acres of redeveloped impervious area that is required to be treated under state of Maine Site Location of Development Law. All of the area on this site is considered to be impervious area, hence 95% of all developed area on this project must be treated.

Of the 3.45 acres of developed area the proposed Stormwater Management Plan provides treatment for 3.50 acres or 101.44 percent. The stormwater strategy also treats off-site area that is tributary to the designed treatment systems, which explains why the treatment area is greater than the total developed area. Hence, the strategies proposed herein meet the minimum requirements stated in the General Standards.

10.0 EROSION CONTROL

An Erosion Control Narrative, Plan, and Details have been prepared for the project and accompanies this submission in Exhibit 14.

11.0 OPERATIONS AND MAINTENANCE

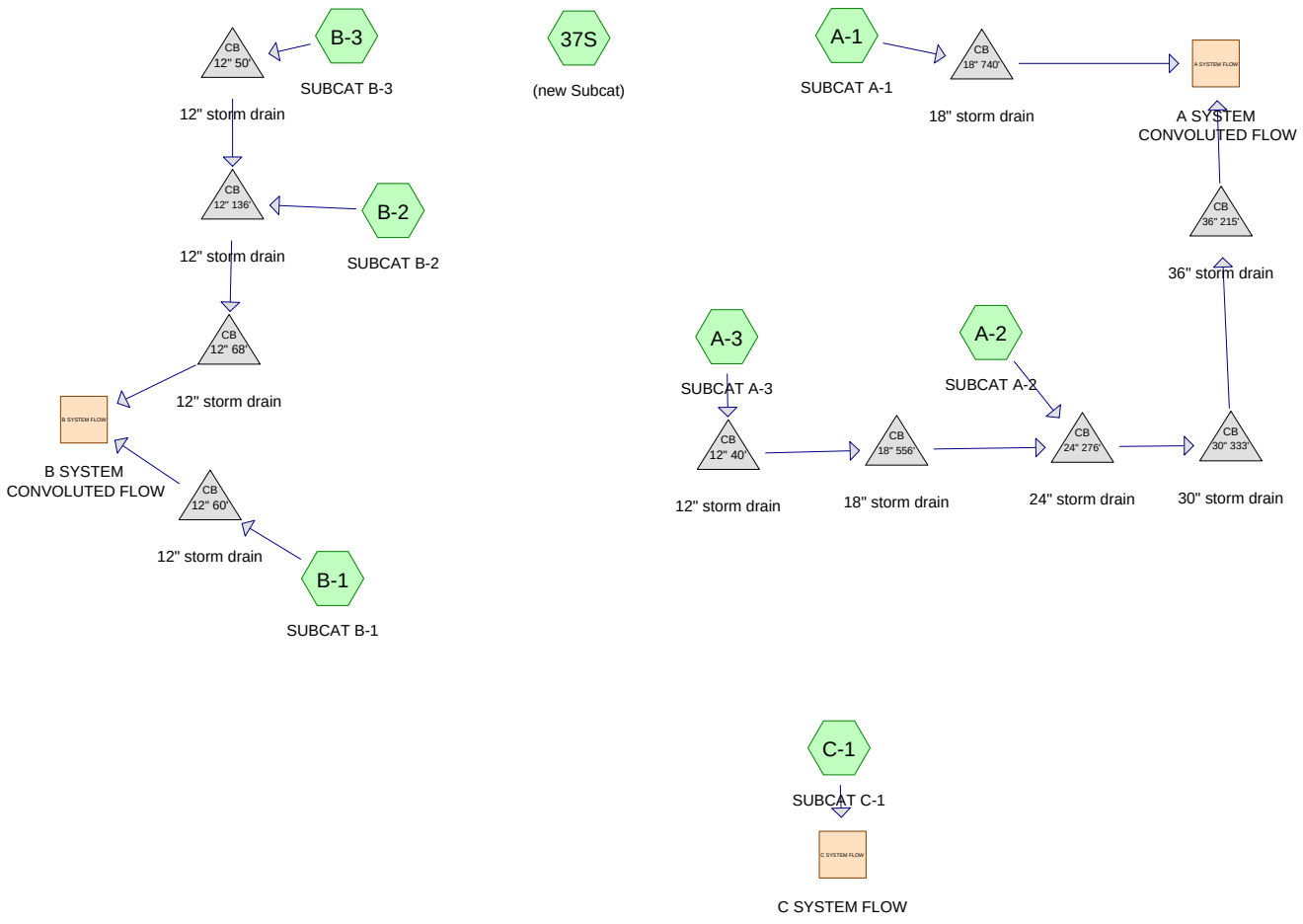
An Operations & Maintenance Manual has been prepared and accompanies this application in Attachment C.

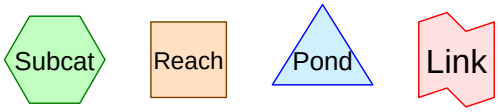
12.0 ATTACHMENTS

Attachment A – Predevelopment Computations
Attachment B – Water Quality Computations
Attachment C – Orifice Drawdown Computations
Attachment D – Operations & Maintenance Manual

ATTACHMENT A

PREDEVELOPMENT COMPUTATIONS





Drainage Diagram for 2012.10.31 Predevelopment Model
Prepared by {enter your company name here}, Printed 11/14/2014
HydroCAD® 8.50 s/n 000734 © 2007 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
4.440	91	(A-1,A-2,A-3,B-1,B-2,B-3,C-1)
4.440	96	(37S)
8.880		**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Goup	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
8.880	Other	37S, A-1, A-2, A-3, B-1, B-2, B-3, C-1
8.880		**TOTAL AREA**

Time span=1.00-72.00 hrs, dt=0.02 hrs, 3551 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 37S: (new Subcat) Runoff Area=4.440 ac 0.00% Impervious Runoff Depth=2.55"
Tc=6.0 min CN=96 Runoff=12.40 cfs 0.944 af

Subcatchment A-1: SUBCAT A-1 Runoff Area=1.300 ac 0.00% Impervious Runoff Depth=2.07"
Flow Length=416' Tc=7.1 min CN=91 Runoff=2.99 cfs 0.224 af

Subcatchment A-2: SUBCAT A-2 Runoff Area=0.560 ac 0.00% Impervious Runoff Depth=2.07"
Flow Length=180' Tc=6.0 min CN=91 Runoff=1.34 cfs 0.097 af

Subcatchment A-3: SUBCAT A-3 Runoff Area=0.240 ac 0.00% Impervious Runoff Depth=2.07"
Flow Length=166' Tc=6.0 min CN=91 Runoff=0.57 cfs 0.041 af

Subcatchment B-1: SUBCAT B-1 Runoff Area=1.370 ac 0.00% Impervious Runoff Depth=2.07"
Flow Length=329' Tc=6.0 min CN=91 Runoff=3.28 cfs 0.236 af

Subcatchment B-2: SUBCAT B-2 Runoff Area=0.160 ac 0.00% Impervious Runoff Depth=2.07"
Flow Length=86' Slope=0.0273 '/' Tc=6.0 min CN=91 Runoff=0.38 cfs 0.028 af

Subcatchment B-3: SUBCAT B-3 Runoff Area=0.430 ac 0.00% Impervious Runoff Depth=2.07"
Flow Length=121' Slope=0.0124 '/' Tc=6.0 min CN=91 Runoff=1.03 cfs 0.074 af

Subcatchment C-1: SUBCAT C-1 Runoff Area=0.380 ac 0.00% Impervious Runoff Depth=2.07"
Flow Length=203' Tc=6.0 min CN=91 Runoff=0.91 cfs 0.066 af

Reach A SYSTEM FLOW: A SYSTEM CONVOLUTED FLOW Inflow=4.89 cfs 0.362 af
Outflow=4.89 cfs 0.362 af

Reach B SYSTEM FLOW: B SYSTEM CONVOLUTED FLOW Inflow=4.69 cfs 0.338 af
Outflow=4.69 cfs 0.338 af

Reach C SYSTEM FLOW: C SYSTEM FLOW Inflow=0.91 cfs 0.066 af
Outflow=0.91 cfs 0.066 af

Pond 12" 136': 12" storm drain Peak Elev=5.08' Inflow=1.41 cfs 0.102 af
12.0" x 136.0' Culvert Outflow=1.41 cfs 0.102 af

Pond 12" 40': 12" storm drain Peak Elev=5.96' Inflow=0.57 cfs 0.041 af
12.0" x 40.0' Culvert Outflow=0.57 cfs 0.041 af

Pond 12" 50': 12" storm drain Peak Elev=6.85' Inflow=1.03 cfs 0.074 af
12.0" x 50.0' Culvert Outflow=1.03 cfs 0.074 af

Pond 12" 60': 12" storm drain Peak Elev=4.81' Inflow=3.28 cfs 0.236 af
12.0" x 60.0' Culvert Outflow=3.28 cfs 0.236 af

Pond 12" 68': 12" storm drain Peak Elev=4.31' Inflow=1.41 cfs 0.102 af
12.0" x 68.0' Culvert Outflow=1.41 cfs 0.102 af

Pond 18" 556': 18" storm drain Peak Elev=5.28' Inflow=0.57 cfs 0.041 af
18.0" x 556.0' Culvert Outflow=0.57 cfs 0.041 af

Pond 18" 740': 18" storm drain Peak Elev=5.46' Inflow=2.99 cfs 0.224 af
18.0" x 740.0' Culvert Outflow=2.99 cfs 0.224 af

Pond 24" 276': 24" storm drain Peak Elev=3.88' Inflow=1.91 cfs 0.138 af
24.0" x 276.0' Culvert Outflow=1.91 cfs 0.138 af

Pond 30" 333': 30" storm drain Peak Elev=2.80' Inflow=1.91 cfs 0.138 af
30.0" x 333.0' Culvert Outflow=1.91 cfs 0.138 af

Pond 36" 215': 36" storm drain Peak Elev=1.40' Inflow=1.91 cfs 0.138 af
36.0" x 215.0' Culvert Outflow=1.91 cfs 0.138 af

Total Runoff Area = 8.880 ac Runoff Volume = 1.711 af Average Runoff Depth = 2.31"
100.00% Pervious = 8.880 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 37S: (new Subcat)

Runoff = 12.40 cfs @ 12.08 hrs, Volume= 0.944 af, Depth= 2.55"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 2yr Rainfall=3.00"

	Area (ac)	CN	Description
*	4.440	96	
	4.440		Pervious Area

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

Summary for Subcatchment A-1: SUBCAT A-1

Runoff = 2.99 cfs @ 12.10 hrs, Volume= 0.224 af, Depth= 2.07"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 2yr Rainfall=3.00"

	Area (ac)	CN	Description
*	1.300	91	
	1.300		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	105	0.0152	1.21		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
1.9	86	0.0023	0.77		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
3.7	225	0.0040	1.02		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
7.1	416	Total			

Summary for Subcatchment A-2: SUBCAT A-2

Runoff = 1.34 cfs @ 12.09 hrs, Volume= 0.097 af, Depth= 2.07"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 2yr Rainfall=3.00"

	Area (ac)	CN	Description
*	0.560	91	
	0.560		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	54	0.0056	0.71		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.6	76	0.0171	2.11		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.8	50	0.0040	1.02		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.7	180	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment A-3: SUBCAT A-3

Runoff = 0.57 cfs @ 12.09 hrs, Volume= 0.041 af, Depth= 2.07"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 2yr Rainfall=3.00"

	Area (ac)	CN	Description
*	0.240	91	
	0.240		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	85	0.0188	1.26		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.9	61	0.0049	1.13		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.1	20	0.0685	4.21		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.1	166	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment B-1: SUBCAT B-1

Runoff = 3.28 cfs @ 12.09 hrs, Volume= 0.236 af, Depth= 2.07"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 2yr Rainfall=3.00"

	Area (ac)	CN	Description
*	1.370	91	
	1.370		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	114	0.0184	1.32		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.9	99	0.0121	1.77		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
1.9	116	0.0026	1.04		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.2	329	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment B-2: SUBCAT B-2

Runoff = 0.38 cfs @ 12.09 hrs, Volume= 0.028 af, Depth= 2.07"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 2yr Rainfall=3.00"

	Area (ac)	CN	Description
*	0.160	91	
	0.160		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	86	0.0273	1.46		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
1.0	86	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment B-3: SUBCAT B-3

Runoff = 1.03 cfs @ 12.09 hrs, Volume= 0.074 af, Depth= 2.07"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 2yr Rainfall=3.00"

	Area (ac)	CN	Description
*	0.430	91	
	0.430		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	121	0.0124	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
1.8	121	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment C-1: SUBCAT C-1

Runoff = 0.91 cfs @ 12.09 hrs, Volume= 0.066 af, Depth= 2.07"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 2yr Rainfall=3.00"

	Area (ac)	CN	Description
*	0.380	91	
	0.380		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	121	0.0107	1.08		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
1.0	82	0.0073	1.38		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.9	203	Total, Increased to minimum Tc = 6.0 min			

Summary for Reach A SYSTEM FLOW: A SYSTEM CONVOLUTED FLOW

Inflow Area = 2.100 ac, 0.00% Impervious, Inflow Depth = 2.07" for 2yr event
Inflow = 4.89 cfs @ 12.09 hrs, Volume= 0.362 af
Outflow = 4.89 cfs @ 12.09 hrs, Volume= 0.362 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs

Summary for Reach B SYSTEM FLOW: B SYSTEM CONVOLUTED FLOW

Inflow Area = 1.960 ac, 0.00% Impervious, Inflow Depth = 2.07" for 2yr event
Inflow = 4.69 cfs @ 12.09 hrs, Volume= 0.338 af
Outflow = 4.69 cfs @ 12.09 hrs, Volume= 0.338 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs

Summary for Reach C SYSTEM FLOW: C SYSTEM FLOW

Inflow Area = 0.380 ac, 0.00% Impervious, Inflow Depth = 2.07" for 2yr event
Inflow = 0.91 cfs @ 12.09 hrs, Volume= 0.066 af
Outflow = 0.91 cfs @ 12.09 hrs, Volume= 0.066 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs

Summary for Pond 12" 136': 12" storm drain

Inflow Area = 0.590 ac, 0.00% Impervious, Inflow Depth = 2.07" for 2yr event
Inflow = 1.41 cfs @ 12.09 hrs, Volume= 0.102 af
Outflow = 1.41 cfs @ 12.09 hrs, Volume= 0.102 af, Atten= 0%, Lag= 0.0 min
Primary = 1.41 cfs @ 12.09 hrs, Volume= 0.102 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Peak Elev= 5.08' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	4.30'	**12.0" x 136.0' long Culvert** CPP, projecting, no headwall, Ke= 0.900 Outlet Invert= 3.58' S= 0.0053 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior

Primary OutFlow Max=1.39 cfs @ 12.09 hrs HW=5.07' TW=4.31' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 1.39 cfs @ 2.94 fps)

Summary for Pond 12" 40': 12" storm drain

Inflow Area =	0.240 ac,	0.00% Impervious,	Inflow Depth =	2.07"	for 2yr event
Inflow =	0.57 cfs @	12.09 hrs,	Volume=	0.041 af	
Outflow =	0.57 cfs @	12.09 hrs,	Volume=	0.041 af,	Atten= 0%, Lag= 0.0 min
Primary =	0.57 cfs @	12.09 hrs,	Volume=	0.041 af	

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Peak Elev= 5.96' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	5.53'	**12.0" x 40.0' long Culvert** CPP, projecting, no headwall, Ke= 0.900 Outlet Invert= 4.83' S= 0.0175 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior

Primary OutFlow Max=0.57 cfs @ 12.09 hrs HW=5.96' TW=5.28' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 0.57 cfs @ 1.76 fps)

Summary for Pond 12" 50': 12" storm drain

Inflow Area =	0.430 ac,	0.00% Impervious,	Inflow Depth =	2.07"	for 2yr event
Inflow =	1.03 cfs @	12.09 hrs,	Volume=	0.074 af	
Outflow =	1.03 cfs @	12.09 hrs,	Volume=	0.074 af,	Atten= 0%, Lag= 0.0 min
Primary =	1.03 cfs @	12.09 hrs,	Volume=	0.074 af	

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Peak Elev= 6.85' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	6.25'	**12.0" x 50.0' long Culvert** CPP, projecting, no headwall, Ke= 0.900 Outlet Invert= 4.30' S= 0.0390 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior

Primary OutFlow Max=1.02 cfs @ 12.09 hrs HW=6.85' TW=5.07' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 1.02 cfs @ 2.08 fps)

Summary for Pond 12" 60': 12" storm drain

Inflow Area = 1.370 ac, 0.00% Impervious, Inflow Depth = 2.07" for 2yr event
Inflow = 3.28 cfs @ 12.09 hrs, Volume= 0.236 af
Outflow = 3.28 cfs @ 12.09 hrs, Volume= 0.236 af, Atten= 0%, Lag= 0.0 min
Primary = 3.28 cfs @ 12.09 hrs, Volume= 0.236 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Peak Elev= 4.81' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	3.06'	**12.0" x 60.0' long Culvert** CPP, projecting, no headwall, Ke= 0.900 Outlet Invert= 2.79' S= 0.0045 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior

Primary OutFlow Max=3.26 cfs @ 12.09 hrs HW=4.80' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 3.26 cfs @ 4.15 fps)

Summary for Pond 12" 68': 12" storm drain

Inflow Area = 0.590 ac, 0.00% Impervious, Inflow Depth = 2.07" for 2yr event
Inflow = 1.41 cfs @ 12.09 hrs, Volume= 0.102 af
Outflow = 1.41 cfs @ 12.09 hrs, Volume= 0.102 af, Atten= 0%, Lag= 0.0 min
Primary = 1.41 cfs @ 12.09 hrs, Volume= 0.102 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Peak Elev= 4.31' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	3.58'	**12.0" x 68.0' long Culvert** CPP, projecting, no headwall, Ke= 0.900 Outlet Invert= 2.79' S= 0.0116 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior

Primary OutFlow Max=1.40 cfs @ 12.09 hrs HW=4.31' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 1.40 cfs @ 2.29 fps)

Summary for Pond 18" 556': 18" storm drain

Inflow Area = 0.240 ac, 0.00% Impervious, Inflow Depth = 2.07" for 2yr event
Inflow = 0.57 cfs @ 12.09 hrs, Volume= 0.041 af
Outflow = 0.57 cfs @ 12.09 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.0 min
Primary = 0.57 cfs @ 12.09 hrs, Volume= 0.041 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Peak Elev= 5.28' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	4.83'	**18.0" x 556.0' long Culvert** CPP, projecting, no headwall, Ke= 0.900 Outlet Invert= 3.17' S= 0.0030 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior

Primary OutFlow Max=0.57 cfs @ 12.09 hrs HW=5.28' TW=3.87' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 0.57 cfs @ 1.90 fps)

Summary for Pond 18" 740': 18" storm drain

Inflow Area =	1.300 ac,	0.00% Impervious,	Inflow Depth =	2.07"	for 2yr event
Inflow =	2.99 cfs @	12.10 hrs,	Volume=	0.224 af	
Outflow =	2.99 cfs @	12.10 hrs,	Volume=	0.224 af,	Atten= 0%, Lag= 0.0 min
Primary =	2.99 cfs @	12.10 hrs,	Volume=	0.224 af	

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Peak Elev= 5.46' @ 12.10 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	4.53'	**18.0" x 740.0' long Culvert** CPP, projecting, no headwall, Ke= 0.900 Outlet Invert= -0.16' S= 0.0063 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior

Primary OutFlow Max=2.99 cfs @ 12.10 hrs HW=5.46' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 2.99 cfs @ 2.59 fps)

Summary for Pond 24" 276': 24" storm drain

Inflow Area =	0.800 ac,	0.00% Impervious,	Inflow Depth =	2.07"	for 2yr event
Inflow =	1.91 cfs @	12.09 hrs,	Volume=	0.138 af	
Outflow =	1.91 cfs @	12.09 hrs,	Volume=	0.138 af,	Atten= 0%, Lag= 0.0 min
Primary =	1.91 cfs @	12.09 hrs,	Volume=	0.138 af	

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Peak Elev= 3.88' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	3.17'	**24.0" x 276.0' long Culvert** CPP, projecting, no headwall, Ke= 0.900 Outlet Invert= 2.16' S= 0.0037 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior

Primary OutFlow Max=1.89 cfs @ 12.09 hrs HW=3.87' TW=2.79' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 1.89 cfs @ 2.86 fps)

Summary for Pond 30" 333': 30" storm drain

Inflow Area =	0.800 ac,	0.00% Impervious,	Inflow Depth =	2.07"	for 2yr event
Inflow =	1.91 cfs @	12.09 hrs,	Volume=	0.138 af	
Outflow =	1.91 cfs @	12.09 hrs,	Volume=	0.138 af,	Atten= 0%, Lag= 0.0 min
Primary =	1.91 cfs @	12.09 hrs,	Volume=	0.138 af	

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs

Peak Elev= 2.80' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	2.16'	**30.0" x 333.0' long Culvert** CPP, projecting, no headwall, Ke= 0.900 Outlet Invert= 0.82' S= 0.0040 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior

Primary OutFlow Max=1.90 cfs @ 12.09 hrs HW=2.79' TW=1.40' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 1.90 cfs @ 2.92 fps)

Summary for Pond 36" 215': 36" storm drain

Inflow Area =	0.800 ac,	0.00% Impervious,	Inflow Depth =	2.07"	for 2yr event
Inflow =	1.91 cfs @	12.09 hrs,	Volume=	0.138 af	
Outflow =	1.91 cfs @	12.09 hrs,	Volume=	0.138 af,	Atten= 0%, Lag= 0.0 min
Primary =	1.91 cfs @	12.09 hrs,	Volume=	0.138 af	

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Peak Elev= 1.40' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.82'	**36.0" x 215.0' long Culvert** CPP, projecting, no headwall, Ke= 0.900 Outlet Invert= -0.16' S= 0.0046 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior

Primary OutFlow Max=1.90 cfs @ 12.09 hrs HW=1.40' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 1.90 cfs @ 3.01 fps)

Time span=1.00-72.00 hrs, dt=0.02 hrs, 3551 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 37S: (new Subcat) Runoff Area=4.440 ac 0.00% Impervious Runoff Depth=4.23"
Tc=6.0 min CN=96 Runoff=20.00 cfs 1.567 af

Subcatchment A-1: SUBCAT A-1 Runoff Area=1.300 ac 0.00% Impervious Runoff Depth=3.69"
Flow Length=416' Tc=7.1 min CN=91 Runoff=5.20 cfs 0.400 af

Subcatchment A-2: SUBCAT A-2 Runoff Area=0.560 ac 0.00% Impervious Runoff Depth=3.69"
Flow Length=180' Tc=6.0 min CN=91 Runoff=2.33 cfs 0.172 af

Subcatchment A-3: SUBCAT A-3 Runoff Area=0.240 ac 0.00% Impervious Runoff Depth=3.69"
Flow Length=166' Tc=6.0 min CN=91 Runoff=1.00 cfs 0.074 af

Subcatchment B-1: SUBCAT B-1 Runoff Area=1.370 ac 0.00% Impervious Runoff Depth=3.69"
Flow Length=329' Tc=6.0 min CN=91 Runoff=5.69 cfs 0.421 af

Subcatchment B-2: SUBCAT B-2 Runoff Area=0.160 ac 0.00% Impervious Runoff Depth=3.69"
Flow Length=86' Slope=0.0273 '/' Tc=6.0 min CN=91 Runoff=0.66 cfs 0.049 af

Subcatchment B-3: SUBCAT B-3 Runoff Area=0.430 ac 0.00% Impervious Runoff Depth=3.69"
Flow Length=121' Slope=0.0124 '/' Tc=6.0 min CN=91 Runoff=1.79 cfs 0.132 af

Subcatchment C-1: SUBCAT C-1 Runoff Area=0.380 ac 0.00% Impervious Runoff Depth=3.69"
Flow Length=203' Tc=6.0 min CN=91 Runoff=1.58 cfs 0.117 af

Reach A SYSTEM FLOW: A SYSTEM CONVOLUTED FLOW Inflow=8.49 cfs 0.646 af
Outflow=8.49 cfs 0.646 af

Reach B SYSTEM FLOW: B SYSTEM CONVOLUTED FLOW Inflow=8.14 cfs 0.603 af
Outflow=8.14 cfs 0.603 af

Reach C SYSTEM FLOW: C SYSTEM FLOW Inflow=1.58 cfs 0.117 af
Outflow=1.58 cfs 0.117 af

Pond 12" 136': 12" storm drain Peak Elev=5.58' Inflow=2.45 cfs 0.181 af
12.0" x 136.0' Culvert Outflow=2.45 cfs 0.181 af

Pond 12" 40': 12" storm drain Peak Elev=6.12' Inflow=1.00 cfs 0.074 af
12.0" x 40.0' Culvert Outflow=1.00 cfs 0.074 af

Pond 12" 50': 12" storm drain Peak Elev=7.11' Inflow=1.79 cfs 0.132 af
12.0" x 50.0' Culvert Outflow=1.79 cfs 0.132 af

Pond 12" 60': 12" storm drain Peak Elev=7.19' Inflow=5.69 cfs 0.421 af
12.0" x 60.0' Culvert Outflow=5.69 cfs 0.421 af

Pond 12" 68': 12" storm drain Peak Elev=4.75' Inflow=2.45 cfs 0.181 af
12.0" x 68.0' Culvert Outflow=2.45 cfs 0.181 af

Pond 18" 556': 18" storm drain Peak Elev=5.44' Inflow=1.00 cfs 0.074 af
18.0" x 556.0' Culvert Outflow=1.00 cfs 0.074 af

Pond 18" 740': 18" storm drain Peak Elev=5.87' Inflow=5.20 cfs 0.400 af
18.0" x 740.0' Culvert Outflow=5.20 cfs 0.400 af

Pond 24" 276': 24" storm drain Peak Elev=4.12' Inflow=3.32 cfs 0.246 af
24.0" x 276.0' Culvert Outflow=3.32 cfs 0.246 af

Pond 30" 333': 30" storm drain Peak Elev=3.01' Inflow=3.32 cfs 0.246 af
30.0" x 333.0' Culvert Outflow=3.32 cfs 0.246 af

Pond 36" 215': 36" storm drain Peak Elev=1.59' Inflow=3.32 cfs 0.246 af
36.0" x 215.0' Culvert Outflow=3.32 cfs 0.246 af

Total Runoff Area = 8.880 ac Runoff Volume = 2.933 af Average Runoff Depth = 3.96"
100.00% Pervious = 8.880 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 37S: (new Subcat)

Runoff = 20.00 cfs @ 12.08 hrs, Volume= 1.567 af, Depth= 4.23"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 10yr Rainfall=4.70"

	Area (ac)	CN	Description
*	4.440	96	
	4.440		Pervious Area

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

Summary for Subcatchment A-1: SUBCAT A-1

Runoff = 5.20 cfs @ 12.10 hrs, Volume= 0.400 af, Depth= 3.69"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 10yr Rainfall=4.70"

	Area (ac)	CN	Description
*	1.300	91	
	1.300		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	105	0.0152	1.21		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
1.9	86	0.0023	0.77		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
3.7	225	0.0040	1.02		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
7.1	416	Total			

Summary for Subcatchment A-2: SUBCAT A-2

Runoff = 2.33 cfs @ 12.08 hrs, Volume= 0.172 af, Depth= 3.69"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 10yr Rainfall=4.70"

	Area (ac)	CN	Description
*	0.560	91	
	0.560		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	54	0.0056	0.71		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.6	76	0.0171	2.11		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.8	50	0.0040	1.02		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.7	180	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment A-3: SUBCAT A-3

Runoff = 1.00 cfs @ 12.08 hrs, Volume= 0.074 af, Depth= 3.69"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 10yr Rainfall=4.70"

	Area (ac)	CN	Description
*	0.240	91	
	0.240		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	85	0.0188	1.26		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.9	61	0.0049	1.13		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.1	20	0.0685	4.21		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.1	166	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment B-1: SUBCAT B-1

Runoff = 5.69 cfs @ 12.08 hrs, Volume= 0.421 af, Depth= 3.69"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 10yr Rainfall=4.70"

	Area (ac)	CN	Description
*	1.370	91	
	1.370		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	114	0.0184	1.32		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.9	99	0.0121	1.77		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
1.9	116	0.0026	1.04		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.2	329	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment B-2: SUBCAT B-2

Runoff = 0.66 cfs @ 12.08 hrs, Volume= 0.049 af, Depth= 3.69"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 10yr Rainfall=4.70"

	Area (ac)	CN	Description
*	0.160	91	
	0.160		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	86	0.0273	1.46		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
1.0	86	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment B-3: SUBCAT B-3

Runoff = 1.79 cfs @ 12.08 hrs, Volume= 0.132 af, Depth= 3.69"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 10yr Rainfall=4.70"

	Area (ac)	CN	Description
*	0.430	91	
	0.430		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	121	0.0124	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
1.8	121	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment C-1: SUBCAT C-1

Runoff = 1.58 cfs @ 12.08 hrs, Volume= 0.117 af, Depth= 3.69"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 10yr Rainfall=4.70"

	Area (ac)	CN	Description
*	0.380	91	
	0.380		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	121	0.0107	1.08		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
1.0	82	0.0073	1.38		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.9	203	Total, Increased to minimum Tc = 6.0 min			

Summary for Reach A SYSTEM FLOW: A SYSTEM CONVOLUTED FLOW

Inflow Area = 2.100 ac, 0.00% Impervious, Inflow Depth = 3.69" for 10yr event
Inflow = 8.49 cfs @ 12.09 hrs, Volume= 0.646 af
Outflow = 8.49 cfs @ 12.09 hrs, Volume= 0.646 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs

Summary for Reach B SYSTEM FLOW: B SYSTEM CONVOLUTED FLOW

Inflow Area = 1.960 ac, 0.00% Impervious, Inflow Depth = 3.69" for 10yr event
Inflow = 8.14 cfs @ 12.08 hrs, Volume= 0.603 af
Outflow = 8.14 cfs @ 12.08 hrs, Volume= 0.603 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs

Summary for Reach C SYSTEM FLOW: C SYSTEM FLOW

Inflow Area = 0.380 ac, 0.00% Impervious, Inflow Depth = 3.69" for 10yr event
Inflow = 1.58 cfs @ 12.08 hrs, Volume= 0.117 af
Outflow = 1.58 cfs @ 12.08 hrs, Volume= 0.117 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs

Summary for Pond 12" 136': 12" storm drain

Inflow Area = 0.590 ac, 0.00% Impervious, Inflow Depth = 3.69" for 10yr event
Inflow = 2.45 cfs @ 12.08 hrs, Volume= 0.181 af
Outflow = 2.45 cfs @ 12.08 hrs, Volume= 0.181 af, Atten= 0%, Lag= 0.0 min
Primary = 2.45 cfs @ 12.08 hrs, Volume= 0.181 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Peak Elev= 5.58' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	4.30'	**12.0" x 136.0' long Culvert** CPP, projecting, no headwall, Ke= 0.900 Outlet Invert= 3.58' S= 0.0053 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior

Primary OutFlow Max=2.38 cfs @ 12.08 hrs HW=5.56' TW=4.75' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 2.38 cfs @ 3.10 fps)

Summary for Pond 12" 40': 12" storm drain

Inflow Area =	0.240 ac,	0.00% Impervious,	Inflow Depth =	3.69"	for 10yr event
Inflow =	1.00 cfs @	12.08 hrs,	Volume=	0.074 af	
Outflow =	1.00 cfs @	12.08 hrs,	Volume=	0.074 af,	Atten= 0%, Lag= 0.0 min
Primary =	1.00 cfs @	12.08 hrs,	Volume=	0.074 af	

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Peak Elev= 6.12' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	5.53'	**12.0" x 40.0' long Culvert** CPP, projecting, no headwall, Ke= 0.900 Outlet Invert= 4.83' S= 0.0175 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior

Primary OutFlow Max=0.99 cfs @ 12.08 hrs HW=6.12' TW=5.44' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 0.99 cfs @ 2.06 fps)

Summary for Pond 12" 50': 12" storm drain

Inflow Area =	0.430 ac,	0.00% Impervious,	Inflow Depth =	3.69"	for 10yr event
Inflow =	1.79 cfs @	12.08 hrs,	Volume=	0.132 af	
Outflow =	1.79 cfs @	12.08 hrs,	Volume=	0.132 af,	Atten= 0%, Lag= 0.0 min
Primary =	1.79 cfs @	12.08 hrs,	Volume=	0.132 af	

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Peak Elev= 7.11' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	6.25'	**12.0" x 50.0' long Culvert** CPP, projecting, no headwall, Ke= 0.900 Outlet Invert= 4.30' S= 0.0390 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior

Primary OutFlow Max=1.78 cfs @ 12.08 hrs HW=7.10' TW=5.56' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 1.78 cfs @ 2.48 fps)

Summary for Pond 12" 60': 12" storm drain

Inflow Area = 1.370 ac, 0.00% Impervious, Inflow Depth = 3.69" for 10yr event
Inflow = 5.69 cfs @ 12.08 hrs, Volume= 0.421 af
Outflow = 5.69 cfs @ 12.08 hrs, Volume= 0.421 af, Atten= 0%, Lag= 0.0 min
Primary = 5.69 cfs @ 12.08 hrs, Volume= 0.421 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Peak Elev= 7.19' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	3.06'	**12.0" x 60.0' long Culvert** CPP, projecting, no headwall, Ke= 0.900 Outlet Invert= 2.79' S= 0.0045 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior

Primary OutFlow Max=5.66 cfs @ 12.08 hrs HW=7.15' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 5.66 cfs @ 7.20 fps)

Summary for Pond 12" 68': 12" storm drain

Inflow Area = 0.590 ac, 0.00% Impervious, Inflow Depth = 3.69" for 10yr event
Inflow = 2.45 cfs @ 12.08 hrs, Volume= 0.181 af
Outflow = 2.45 cfs @ 12.08 hrs, Volume= 0.181 af, Atten= 0%, Lag= 0.0 min
Primary = 2.45 cfs @ 12.08 hrs, Volume= 0.181 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Peak Elev= 4.75' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	3.58'	**12.0" x 68.0' long Culvert** CPP, projecting, no headwall, Ke= 0.900 Outlet Invert= 2.79' S= 0.0116 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior

Primary OutFlow Max=2.44 cfs @ 12.08 hrs HW=4.75' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 2.44 cfs @ 3.10 fps)

Summary for Pond 18" 556': 18" storm drain

Inflow Area = 0.240 ac, 0.00% Impervious, Inflow Depth = 3.69" for 10yr event
Inflow = 1.00 cfs @ 12.08 hrs, Volume= 0.074 af
Outflow = 1.00 cfs @ 12.08 hrs, Volume= 0.074 af, Atten= 0%, Lag= 0.0 min
Primary = 1.00 cfs @ 12.08 hrs, Volume= 0.074 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Peak Elev= 5.44' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	4.83'	**18.0" x 556.0' long Culvert** CPP, projecting, no headwall, Ke= 0.900 Outlet Invert= 3.17' S= 0.0030 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior

Primary OutFlow Max=0.98 cfs @ 12.08 hrs HW=5.44' TW=4.12' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 0.98 cfs @ 2.15 fps)

Summary for Pond 18" 740': 18" storm drain

Inflow Area =	1.300 ac,	0.00% Impervious,	Inflow Depth =	3.69"	for 10yr event
Inflow =	5.20 cfs @	12.10 hrs,	Volume=	0.400 af	
Outflow =	5.20 cfs @	12.10 hrs,	Volume=	0.400 af,	Atten= 0%, Lag= 0.0 min
Primary =	5.20 cfs @	12.10 hrs,	Volume=	0.400 af	

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Peak Elev= 5.87' @ 12.10 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	4.53'	**18.0" x 740.0' long Culvert** CPP, projecting, no headwall, Ke= 0.900 Outlet Invert= -0.16' S= 0.0063 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior

Primary OutFlow Max=5.20 cfs @ 12.10 hrs HW=5.87' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 5.20 cfs @ 3.11 fps)

Summary for Pond 24" 276': 24" storm drain

Inflow Area =	0.800 ac,	0.00% Impervious,	Inflow Depth =	3.69"	for 10yr event
Inflow =	3.32 cfs @	12.08 hrs,	Volume=	0.246 af	
Outflow =	3.32 cfs @	12.08 hrs,	Volume=	0.246 af,	Atten= 0%, Lag= 0.0 min
Primary =	3.32 cfs @	12.08 hrs,	Volume=	0.246 af	

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Peak Elev= 4.12' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	3.17'	**24.0" x 276.0' long Culvert** CPP, projecting, no headwall, Ke= 0.900 Outlet Invert= 2.16' S= 0.0037 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior

Primary OutFlow Max=3.28 cfs @ 12.08 hrs HW=4.12' TW=3.01' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 3.28 cfs @ 3.28 fps)

Summary for Pond 30" 333': 30" storm drain

Inflow Area =	0.800 ac,	0.00% Impervious,	Inflow Depth =	3.69"	for 10yr event
Inflow =	3.32 cfs @	12.08 hrs,	Volume=	0.246 af	
Outflow =	3.32 cfs @	12.08 hrs,	Volume=	0.246 af,	Atten= 0%, Lag= 0.0 min
Primary =	3.32 cfs @	12.08 hrs,	Volume=	0.246 af	

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs

Peak Elev= 3.01' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	2.16'	**30.0" x 333.0' long Culvert** CPP, projecting, no headwall, Ke= 0.900 Outlet Invert= 0.82' S= 0.0040 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior

Primary OutFlow Max=3.29 cfs @ 12.08 hrs HW=3.01' TW=1.59' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 3.29 cfs @ 3.36 fps)

Summary for Pond 36" 215': 36" storm drain

Inflow Area =	0.800 ac,	0.00% Impervious,	Inflow Depth =	3.69"	for 10yr event
Inflow =	3.32 cfs @	12.08 hrs,	Volume=	0.246 af	
Outflow =	3.32 cfs @	12.08 hrs,	Volume=	0.246 af,	Atten= 0%, Lag= 0.0 min
Primary =	3.32 cfs @	12.08 hrs,	Volume=	0.246 af	

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Peak Elev= 1.59' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.82'	**36.0" x 215.0' long Culvert** CPP, projecting, no headwall, Ke= 0.900 Outlet Invert= -0.16' S= 0.0046 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior

Primary OutFlow Max=3.30 cfs @ 12.08 hrs HW=1.59' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 3.30 cfs @ 3.48 fps)

Time span=1.00-72.00 hrs, dt=0.02 hrs, 3551 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 37S: (new Subcat) Runoff Area=4.440 ac 0.00% Impervious Runoff Depth=5.03"
Tc=6.0 min CN=96 Runoff=23.55 cfs 1.861 af

Subcatchment A-1: SUBCAT A-1 Runoff Area=1.300 ac 0.00% Impervious Runoff Depth=4.47"
Flow Length=416' Tc=7.1 min CN=91 Runoff=6.23 cfs 0.484 af

Subcatchment A-2: SUBCAT A-2 Runoff Area=0.560 ac 0.00% Impervious Runoff Depth=4.47"
Flow Length=180' Tc=6.0 min CN=91 Runoff=2.79 cfs 0.209 af

Subcatchment A-3: SUBCAT A-3 Runoff Area=0.240 ac 0.00% Impervious Runoff Depth=4.47"
Flow Length=166' Tc=6.0 min CN=91 Runoff=1.19 cfs 0.089 af

Subcatchment B-1: SUBCAT B-1 Runoff Area=1.370 ac 0.00% Impervious Runoff Depth=4.47"
Flow Length=329' Tc=6.0 min CN=91 Runoff=6.82 cfs 0.510 af

Subcatchment B-2: SUBCAT B-2 Runoff Area=0.160 ac 0.00% Impervious Runoff Depth=4.47"
Flow Length=86' Slope=0.0273 '/' Tc=6.0 min CN=91 Runoff=0.80 cfs 0.060 af

Subcatchment B-3: SUBCAT B-3 Runoff Area=0.430 ac 0.00% Impervious Runoff Depth=4.47"
Flow Length=121' Slope=0.0124 '/' Tc=6.0 min CN=91 Runoff=2.14 cfs 0.160 af

Subcatchment C-1: SUBCAT C-1 Runoff Area=0.380 ac 0.00% Impervious Runoff Depth=4.47"
Flow Length=203' Tc=6.0 min CN=91 Runoff=1.89 cfs 0.142 af

Reach A SYSTEM FLOW: A SYSTEM CONVOLUTED FLOW Inflow=10.17 cfs 0.782 af
Outflow=10.17 cfs 0.782 af

Reach B SYSTEM FLOW: B SYSTEM CONVOLUTED FLOW Inflow=9.75 cfs 0.730 af
Outflow=9.75 cfs 0.730 af

Reach C SYSTEM FLOW: C SYSTEM FLOW Inflow=1.89 cfs 0.142 af
Outflow=1.89 cfs 0.142 af

Pond 12" 136': 12" storm drain Peak Elev=6.35' Inflow=2.94 cfs 0.220 af
12.0" x 136.0' Culvert Outflow=2.94 cfs 0.220 af

Pond 12" 40': 12" storm drain Peak Elev=6.19' Inflow=1.19 cfs 0.089 af
12.0" x 40.0' Culvert Outflow=1.19 cfs 0.089 af

Pond 12" 50': 12" storm drain Peak Elev=7.26' Inflow=2.14 cfs 0.160 af
12.0" x 50.0' Culvert Outflow=2.14 cfs 0.160 af

Pond 12" 60': 12" storm drain Peak Elev=8.77' Inflow=6.82 cfs 0.510 af
12.0" x 60.0' Culvert Outflow=6.82 cfs 0.510 af

Pond 12" 68': 12" storm drain Peak Elev=5.05' Inflow=2.94 cfs 0.220 af
12.0" x 68.0' Culvert Outflow=2.94 cfs 0.220 af

Pond 18" 556': 18" storm drain Peak Elev=5.51' Inflow=1.19 cfs 0.089 af
18.0" x 556.0' Culvert Outflow=1.19 cfs 0.089 af

Pond 18" 740': 18" storm drain Peak Elev=6.14' Inflow=6.23 cfs 0.484 af
18.0" x 740.0' Culvert Outflow=6.23 cfs 0.484 af

Pond 24" 276': 24" storm drain Peak Elev=4.22' Inflow=3.98 cfs 0.298 af
24.0" x 276.0' Culvert Outflow=3.98 cfs 0.298 af

Pond 30" 333': 30" storm drain Peak Elev=3.09' Inflow=3.98 cfs 0.298 af
30.0" x 333.0' Culvert Outflow=3.98 cfs 0.298 af

Pond 36" 215': 36" storm drain Peak Elev=1.67' Inflow=3.98 cfs 0.298 af
36.0" x 215.0' Culvert Outflow=3.98 cfs 0.298 af

Total Runoff Area = 8.880 ac Runoff Volume = 3.514 af Average Runoff Depth = 4.75"
100.00% Pervious = 8.880 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 37S: (new Subcat)

Runoff = 23.55 cfs @ 12.08 hrs, Volume= 1.861 af, Depth= 5.03"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 25yr Rainfall=5.50"

	Area (ac)	CN	Description
*	4.440	96	
	4.440		Pervious Area

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

Summary for Subcatchment A-1: SUBCAT A-1

Runoff = 6.23 cfs @ 12.10 hrs, Volume= 0.484 af, Depth= 4.47"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 25yr Rainfall=5.50"

	Area (ac)	CN	Description
*	1.300	91	
	1.300		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	105	0.0152	1.21		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
1.9	86	0.0023	0.77		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
3.7	225	0.0040	1.02		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
7.1	416	Total			

Summary for Subcatchment A-2: SUBCAT A-2

Runoff = 2.79 cfs @ 12.08 hrs, Volume= 0.209 af, Depth= 4.47"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 25yr Rainfall=5.50"

	Area (ac)	CN	Description
*	0.560	91	
	0.560		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	54	0.0056	0.71		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.6	76	0.0171	2.11		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.8	50	0.0040	1.02		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.7	180	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment A-3: SUBCAT A-3

Runoff = 1.19 cfs @ 12.08 hrs, Volume= 0.089 af, Depth= 4.47"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 25yr Rainfall=5.50"

	Area (ac)	CN	Description
*	0.240	91	
	0.240		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	85	0.0188	1.26		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.9	61	0.0049	1.13		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.1	20	0.0685	4.21		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.1	166	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment B-1: SUBCAT B-1

Runoff = 6.82 cfs @ 12.08 hrs, Volume= 0.510 af, Depth= 4.47"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 25yr Rainfall=5.50"

	Area (ac)	CN	Description
*	1.370	91	
	1.370		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	114	0.0184	1.32		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.9	99	0.0121	1.77		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
1.9	116	0.0026	1.04		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.2	329	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment B-2: SUBCAT B-2

Runoff = 0.80 cfs @ 12.08 hrs, Volume= 0.060 af, Depth= 4.47"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 25yr Rainfall=5.50"

	Area (ac)	CN	Description
*	0.160	91	
	0.160		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	86	0.0273	1.46		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
1.0	86	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment B-3: SUBCAT B-3

Runoff = 2.14 cfs @ 12.08 hrs, Volume= 0.160 af, Depth= 4.47"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 25yr Rainfall=5.50"

	Area (ac)	CN	Description
*	0.430	91	
	0.430		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	121	0.0124	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
1.8	121	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment C-1: SUBCAT C-1

Runoff = 1.89 cfs @ 12.08 hrs, Volume= 0.142 af, Depth= 4.47"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 25yr Rainfall=5.50"

	Area (ac)	CN	Description
*	0.380	91	
	0.380		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	121	0.0107	1.08		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
1.0	82	0.0073	1.38		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.9	203	Total, Increased to minimum Tc = 6.0 min			

Summary for Reach A SYSTEM FLOW: A SYSTEM CONVOLUTED FLOW

Inflow Area = 2.100 ac, 0.00% Impervious, Inflow Depth = 4.47" for 25yr event
Inflow = 10.17 cfs @ 12.09 hrs, Volume= 0.782 af
Outflow = 10.17 cfs @ 12.09 hrs, Volume= 0.782 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs

Summary for Reach B SYSTEM FLOW: B SYSTEM CONVOLUTED FLOW

Inflow Area = 1.960 ac, 0.00% Impervious, Inflow Depth = 4.47" for 25yr event
Inflow = 9.75 cfs @ 12.08 hrs, Volume= 0.730 af
Outflow = 9.75 cfs @ 12.08 hrs, Volume= 0.730 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs

Summary for Reach C SYSTEM FLOW: C SYSTEM FLOW

Inflow Area = 0.380 ac, 0.00% Impervious, Inflow Depth = 4.47" for 25yr event
Inflow = 1.89 cfs @ 12.08 hrs, Volume= 0.142 af
Outflow = 1.89 cfs @ 12.08 hrs, Volume= 0.142 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs

Summary for Pond 12" 136': 12" storm drain

Inflow Area = 0.590 ac, 0.00% Impervious, Inflow Depth = 4.47" for 25yr event
Inflow = 2.94 cfs @ 12.08 hrs, Volume= 0.220 af
Outflow = 2.94 cfs @ 12.08 hrs, Volume= 0.220 af, Atten= 0%, Lag= 0.0 min
Primary = 2.94 cfs @ 12.08 hrs, Volume= 0.220 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Peak Elev= 6.35' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	4.30'	**12.0" x 136.0' long Culvert** CPP, projecting, no headwall, Ke= 0.900 Outlet Invert= 3.58' S= 0.0053 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior

Primary OutFlow Max=2.86 cfs @ 12.08 hrs HW=6.30' TW=5.04' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 2.86 cfs @ 3.64 fps)

Summary for Pond 12" 40': 12" storm drain

Inflow Area =	0.240 ac,	0.00% Impervious,	Inflow Depth =	4.47"	for 25yr event
Inflow =	1.19 cfs @	12.08 hrs,	Volume=	0.089 af	
Outflow =	1.19 cfs @	12.08 hrs,	Volume=	0.089 af,	Atten= 0%, Lag= 0.0 min
Primary =	1.19 cfs @	12.08 hrs,	Volume=	0.089 af	

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Peak Elev= 6.19' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	5.53'	**12.0" x 40.0' long Culvert** CPP, projecting, no headwall, Ke= 0.900 Outlet Invert= 4.83' S= 0.0175 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior

Primary OutFlow Max=1.19 cfs @ 12.08 hrs HW=6.19' TW=5.51' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 1.19 cfs @ 2.18 fps)

Summary for Pond 12" 50': 12" storm drain

Inflow Area =	0.430 ac,	0.00% Impervious,	Inflow Depth =	4.47"	for 25yr event
Inflow =	2.14 cfs @	12.08 hrs,	Volume=	0.160 af	
Outflow =	2.14 cfs @	12.08 hrs,	Volume=	0.160 af,	Atten= 0%, Lag= 0.0 min
Primary =	2.14 cfs @	12.08 hrs,	Volume=	0.160 af	

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Peak Elev= 7.26' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	6.25'	**12.0" x 50.0' long Culvert** CPP, projecting, no headwall, Ke= 0.900 Outlet Invert= 4.30' S= 0.0390 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior

Primary OutFlow Max=2.13 cfs @ 12.08 hrs HW=7.26' TW=6.30' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 2.13 cfs @ 2.71 fps)

Summary for Pond 12" 60': 12" storm drain

Inflow Area = 1.370 ac, 0.00% Impervious, Inflow Depth = 4.47" for 25yr event
Inflow = 6.82 cfs @ 12.08 hrs, Volume= 0.510 af
Outflow = 6.82 cfs @ 12.08 hrs, Volume= 0.510 af, Atten= 0%, Lag= 0.0 min
Primary = 6.82 cfs @ 12.08 hrs, Volume= 0.510 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Peak Elev= 8.77' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	3.06'	**12.0" x 60.0' long Culvert** CPP, projecting, no headwall, Ke= 0.900 Outlet Invert= 2.79' S= 0.0045 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior

Primary OutFlow Max=6.78 cfs @ 12.08 hrs HW=8.72' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 6.78 cfs @ 8.63 fps)

Summary for Pond 12" 68': 12" storm drain

Inflow Area = 0.590 ac, 0.00% Impervious, Inflow Depth = 4.47" for 25yr event
Inflow = 2.94 cfs @ 12.08 hrs, Volume= 0.220 af
Outflow = 2.94 cfs @ 12.08 hrs, Volume= 0.220 af, Atten= 0%, Lag= 0.0 min
Primary = 2.94 cfs @ 12.08 hrs, Volume= 0.220 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Peak Elev= 5.05' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	3.58'	**12.0" x 68.0' long Culvert** CPP, projecting, no headwall, Ke= 0.900 Outlet Invert= 2.79' S= 0.0116 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior

Primary OutFlow Max=2.92 cfs @ 12.08 hrs HW=5.04' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 2.92 cfs @ 3.72 fps)

Summary for Pond 18" 556': 18" storm drain

Inflow Area = 0.240 ac, 0.00% Impervious, Inflow Depth = 4.47" for 25yr event
Inflow = 1.19 cfs @ 12.08 hrs, Volume= 0.089 af
Outflow = 1.19 cfs @ 12.08 hrs, Volume= 0.089 af, Atten= 0%, Lag= 0.0 min
Primary = 1.19 cfs @ 12.08 hrs, Volume= 0.089 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Peak Elev= 5.51' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	4.83'	**18.0" x 556.0' long Culvert** CPP, projecting, no headwall, Ke= 0.900 Outlet Invert= 3.17' S= 0.0030 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior

Primary OutFlow Max=1.18 cfs @ 12.08 hrs HW=5.51' TW=4.22' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 1.18 cfs @ 2.23 fps)

Summary for Pond 18" 740': 18" storm drain

Inflow Area =	1.300 ac,	0.00% Impervious,	Inflow Depth =	4.47"	for 25yr event
Inflow =	6.23 cfs @	12.10 hrs,	Volume=	0.484 af	
Outflow =	6.23 cfs @	12.10 hrs,	Volume=	0.484 af,	Atten= 0%, Lag= 0.0 min
Primary =	6.23 cfs @	12.10 hrs,	Volume=	0.484 af	

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Peak Elev= 6.14' @ 12.10 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	4.53'	**18.0" x 740.0' long Culvert** CPP, projecting, no headwall, Ke= 0.900 Outlet Invert= -0.16' S= 0.0063 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior

Primary OutFlow Max=6.22 cfs @ 12.10 hrs HW=6.14' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 6.22 cfs @ 3.52 fps)

Summary for Pond 24" 276': 24" storm drain

Inflow Area =	0.800 ac,	0.00% Impervious,	Inflow Depth =	4.47"	for 25yr event
Inflow =	3.98 cfs @	12.08 hrs,	Volume=	0.298 af	
Outflow =	3.98 cfs @	12.08 hrs,	Volume=	0.298 af,	Atten= 0%, Lag= 0.0 min
Primary =	3.98 cfs @	12.08 hrs,	Volume=	0.298 af	

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Peak Elev= 4.22' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	3.17'	**24.0" x 276.0' long Culvert** CPP, projecting, no headwall, Ke= 0.900 Outlet Invert= 2.16' S= 0.0037 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior

Primary OutFlow Max=3.93 cfs @ 12.08 hrs HW=4.22' TW=3.09' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 3.93 cfs @ 3.42 fps)

Summary for Pond 30" 333': 30" storm drain

Inflow Area =	0.800 ac,	0.00% Impervious,	Inflow Depth =	4.47"	for 25yr event
Inflow =	3.98 cfs @	12.08 hrs,	Volume=	0.298 af	
Outflow =	3.98 cfs @	12.08 hrs,	Volume=	0.298 af,	Atten= 0%, Lag= 0.0 min
Primary =	3.98 cfs @	12.08 hrs,	Volume=	0.298 af	

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs

Peak Elev= 3.09' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	2.16'	**30.0" x 333.0' long Culvert** CPP, projecting, no headwall, Ke= 0.900 Outlet Invert= 0.82' S= 0.0040 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior

Primary OutFlow Max=3.94 cfs @ 12.08 hrs HW=3.09' TW=1.66' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 3.94 cfs @ 3.51 fps)

Summary for Pond 36" 215': 36" storm drain

Inflow Area =	0.800 ac,	0.00% Impervious,	Inflow Depth =	4.47"	for 25yr event
Inflow =	3.98 cfs @	12.08 hrs,	Volume=	0.298 af	
Outflow =	3.98 cfs @	12.08 hrs,	Volume=	0.298 af,	Atten= 0%, Lag= 0.0 min
Primary =	3.98 cfs @	12.08 hrs,	Volume=	0.298 af	

Routing by Dyn-Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.02 hrs
Peak Elev= 1.67' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.82'	**36.0" x 215.0' long Culvert** CPP, projecting, no headwall, Ke= 0.900 Outlet Invert= -0.16' S= 0.0046 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior

Primary OutFlow Max=3.96 cfs @ 12.08 hrs HW=1.66' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 3.96 cfs @ 3.65 fps)

ATTACHMENT B

WATER QUALITY COMPUTATIONS

Midtown Water Quality Summary, Isolator Row Sizing and Summary of Peak Discharges													
System	Tributary Area (SF)	Tributary Area (acres)	Treatment Approach	Required Filterra Sizing (sf)/Number of Storm Treats (ea)	Filterra Size (sf)/Storm Treats Provided (ea)	Water Quality Volume (CF)	1 Yr. Peak Flow (CFS)	# Chambers (SC740) Required	Storage Volume Required (CF)*	"Brentwood Tanks Required (See Plan for Dimension)"	"Brentwood Tanks Provided (1.5' x 3' x 2)"	"Peak Flow 2 Year Storm (CFS)"	"Peak Flow 25 Year Storm (CFS)"
A	36,988	0.85	Subsurface Filterra Media	12'x8'	12'x15'	3,082	2	10	682	76	84	2.32	4.50
B	13,078	0.30	Boxless Filterra	4'x'6'	4'x'6	1,090	0.71	4	273	31	30*	0.82	1.59
C	13,103	0.30	Boxless Filterra	4'x'6'	4'x'6	1,092	0.71	4	273	31	30*	0.82	1.59
D	19,761	0.45	StormTreat Units	2.00	2.00	1,647	1.07	6	409	126	126	1.24	2.40
E	3,624	0.08	Filterra	4'x'6'	4'x'6	302	0.2	1	68	8	16	0.23	0.44
F	6,373	0.15	Filterra	4'x'6'	4'x'6	531	0.34	2	136	16	16	0.40	0.78
G	2,688	0.06	Filterra	4'x'6'	4'x'6	224	0.15	1	68	8	8	0.17	0.33
H	3,184	0.07	Filterra	4'x'6'	4'x'6	265	0.17	1	68	8	8	0.20	0.39
I	5,497	0.13	Filterra	4'x'6'	4'x'6	458	0.3	2	136	16	16	0.34	0.67
J	4,160	0.10	Filterra	4'x'6'	4'x'6	347	0.22	2	136	16	16	0.26	0.51
K	7,318	0.17	Filterra	4'x'6'	4'x'6	610	0.4	2	136	16	16	0.46	0.89
L	5,295	0.12	Filterra	4'x'6'	4'x'6	441	0.29	2	136	16	16	0.33	0.64
M	3,292	0.08	Filterra	4'x'6'	4'x'6	274	0.18	1	68	8	16	0.21	0.40
N	4426	0.10	Filterra	4'x'6'	4'x'6	369	0.24	2	136	16	16	0.28	0.54
O	3,115	0.07	Filterra	4'x'6'	4'x'6	260	0.22	2	136	16	16	0.20	0.38
P	4,700	0.11	Filterra	4'x'6'	4'x'6	392	0.25	2	136	16	16	0.29	0.57
Q	5,295	0.12	Filterra	4'x'6'	4'x'6	441	0.29	2	136	16	16	0.33	0.64
R	4,173	0.10	Filterra	4'x'6'	4'x'6	348	0.23	2	136	16	16	0.26	0.51
S	6,447	0.15	Filterra	4'x'6'	4'x'6	537	0.35	2	136	16	16	0.40	0.78
*Based on StormTech 740 chambers storage capacity of 68.2 CF per chamber													
*Additional Storage is provided in inspection manholes.													
Systems A & D have 18" storm drain downstream of roof drain connection.													

ATTACHMENT C

ORIFICE DRAWDOWN COMPUTATIONS

ORIFICE DIAMETER FOR STORMTREATS

Depth (ft)	Surface Area (sq.ft)	Area End (sq.ft)	Area End Depth (ft)	Volume (c.f)	Head (ft)	Orifice Flow (cfs)	Drawdown Time (secs)	Drawdown Time (hours)
3.00	565.00	565.00	1.00	565.00	3.42	0.0090	62943.71	17.484
2.00	565.00	565.00	1.00	565.00	2.42	0.0076	74826.89	20.785
1.00	565.00	565.00	1.00	565.00	1.42	0.0058	97683.50	27.134
0.00	565.00	0.00	0.00	0.00	0.42	0.0031	0.00	0.000
							TOTAL	***65.404***

$CA\ (2gh)^{1/2}$

Orifice Diameter	0.43	inch
Area	0.0010	sq.ft
Head	2.53	feet
g	32.174	ft/s^2
C	0.6	Orifice/Grate

DESIRED ORIFICE FLOW = 0.089CFS WHICH IS EQUAL TO 2GPM PER STORMTREAT (I.E. 4GPM = 0.0089CFS)

ATTACHMENT D

OPERATIONS & MAINTENANCE MANUAL

INSPECTION AND MAINTENANCE MANUAL FOR STORMWATER MANAGEMENT AND RELATED STORMWATER FACILITIES

midtown
PORTLAND, MAINE

PREPARED FOR:

THE FEDERATED COMPANIES
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MIAMI, FLORIDA 33137

PREPARED BY:

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NOVEMBER 2014

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Attachment A – Sample Inspection Logs

Attachment B – Permits for Project

Attachment C – Summary Checklist for Inspection and Maintenance

Attachment D – Pump Maintenance History

I. INTRODUCTION

Relatively complex stormwater management facilities are commonly installed in development projects including, commercial facilities, and many other developments. The complexity and goals of these systems vary with the nature of the receiving water, as well as the type of development. Runoff from developed areas of the project, including rooftops, paved, or lawn areas typically contain materials that can impact the receiving waters. Source control and the installation of wet ponds, infiltration galleries, and proprietary water quality units such as StormFilter®, Filterra®, and StormTreat™ units are often combined with pretreatment measures or vegetated buffer strips and other best management practices are also among the options that can significantly reduce the non-point pollution discharge from the developed area. These measures are particularly important to projects in the watersheds of sensitive water bodies, or projects with potential impacts to groundwater. With the increased cost of land and development, there is an increased tendency to construct portions of the stormwater management systems underground.

The effectiveness of water quality management provisions and other components of the stormwater management system are dependent on their design, upkeep, and maintenance to assure they meet their intended function over an extended period of years. It is critical that the stormwater management facilities are regularly inspected, 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 collect and transport the flow to the ponds, infiltration galleries, and other treatment measures. Thus, maintenance should be directed to the total system, not just the pond or primary stormwater management facility. Chapter 32 of the City of Portland's Standards require the applicant perform the Operations and Maintenance for project BMP's and maintain records as suggested herein.

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 when they were designed. Subsequent sections identify individual maintenance items, give a brief commentary of the function and need for 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 for operation and maintenance. Certain facilities, specifically the potential water quality volume storage or treatment measures such as infiltration, StormFilters®, Filterra®, and StormTreat® are not intended to be placed in service until the tributary catchment area has the permanent cover in place and any contributing turf areas have achieved a 90% catch of vegetation (i.e. established).

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: T his section provides the inspection requirements for the individual component.

Maintenance: T he 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. T his is a summary only. T he 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 t he specific program. T his 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. T he 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. Many of these will not be required for the final stormwater management option selected for this project.

II. PROJECT OVERVIEW

Key permits issued (or applied for) on the project include:

- City of Portland Site Plan Approvals
- City of Portland Approval for Stormwater Management Plan

A copy of the permits and Stormwater Management Report should be appended to this manual as Attachment B. The Owner/Operator of the stormwater management system should review these permits for a general description and background of the project, as w ell as an y specific permit conditions or requirements of the project.

The applicant has retained Fay, Spofford & Thorndike (FST) for civil engineering for the midtown project. FST has prepared the design for the stormwater management facilities and may be contacted at:

Fay, Spofford & Thorndike
778 Main Street, Suite 8
South Portland, Maine 04106
(207) 775-1121

It is recommended the preparer of the plan be contacted with any particular questions on the design intent or similar issues.

The applicable plans and design documents which apply to the project are:

1. Civil Site Plans Prepared by Fay, Spofford & Thorndike.
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 may include inlets, stormwater conveyance lines, vortex type pretreatment systems proprietary treatment units, wet ponds, outlet control structures, and backwater isolation valves.

The project is subject to the requirements of the City of Portland Code of Ordinances, Chapter 32. Specifically the post construction stormwater management plan. The City requirements have been reiterated for ease of reference; however, the owner shall be responsible to meet the current City code.

"Any person owning, operating or otherwise having control over a BMP required by a post construction stormwater management plan shall maintain the BMP's in accordance with the approved plan and shall demonstrate compliance with that plan as follows:

(a) Inspections. The owner of operator of a BMP shall hire a qualified post-construction stormwater inspector to at least annually, inspect the BMP's, including but not limited to any parking areas, catch basins, drainage swales, detention basins and ponds, pipes and related structures, in accordance with all municipal and state inspection, cleaning and maintenance requirements of the approved post-construction stormwater management plan.

(b) Maintenance and repair. If the BMP requires maintenance, repair or replacement to function as intended by the approved post-construction stormwater management plan, the owner or operator of the BMP shall take corrective action (s) to address the deficiency or deficiencies as soon as possible after the deficiency is discovered and shall provide a record of the deficiency and corrective action (s) to the department of public services ("DPS") in the annual report.

(c) Annual report. The owner or operator of a BMP or a qualified post-construction stormwater inspector hired by that person, shall, on or by June 30 of each year, provide a completed and signed certification to DPS in a form provided by DPS, certifying that the person has inspected the BMP (s) and that they are adequately maintained and functioning as intended by the approved post-construction stormwater management plan, or that they require maintenance or repair, including the record of the deficiency and corrective action (s) taken.

(d) Filing fee. Any persons required to file an annual certification under this section shall include with the annual certification a filing fee established by DPS to pay the administrative and technical costs of review of the annual certification.

(e) Right of entry. In order to determine compliance with this article and with the post-construction stormwater management plan, DPS may enter upon property at reasonable hours with the consent of the owner, occupant or agent to inspect the BMP's."

III. STANDARD INSPECTION/MAINTENANCE DESCRIPTIONS

The following narratives describe the inspection/maintenance provisions for the Stormwater Management system. These O&M procedures will complement scheduled sweeping of the parking deck which are anticipated to occur at least twice per year. 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 may include catch basins, open culverts, culverts with bar screens, roof scuppers, plaza scuppers, trench drains, and field inlets. Inlets exist throughout the system. The inlets contain oil sorbent booms to capture oil or petroleum/hydrocarbons and avoid discharge to downgradient areas. These will clog over time and require replacement. However, since most of the contributing surface area is rooftop or parking deck, the replacement is anticipated to be infrequent.

Inspection: The inspection of inlet points will need to be coordinated with other maintenance items, these include:

- Parking decks
- 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 decks or plaza areas. Grass clippings and leaves should be bagged and removed particularly near the yard inlets near the building.

Frequency: All inlets should be inspected on a quarterly basis, and after/during significant storm events. Inspection of the parcel including rooftops and upper level parking decks is required.

Maintenance/Inspection Responsibility:

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.

POORLY STABILIZED INLET ALLOWS ENTRANCE OF DEBRIS AND REDUCED CAPACITY

STABILIZED INLETS REDUCE DEBRIS ACCUMULATION AND MAINTAIN DESIGN CAPACITY

B. SORBENT BOOMS

Preface: During construction, sorbent booms will be installed in the catch basins which have pavement areas. The intent of these is to absorb oil and runoff from new pavement surfaces. These will be removed and replaced when construction of the project is complete and should be inspected quarterly for the first year and annually thereafter.

Inspection: The sorbent boom should be raised out of the inlet, inspected, and replaced if necessary. Inspection should occur for the first year and annually thereafter concurrent with the catch basin cleaning.

Recommendation: It is recommended this project have additional sorbent booms or pillows onsite in the event of an unexpected spill or if oil sheen is observed frequently on any inlet.

Maintenance: The inspection and replacement should be conducted as part of a third party O&M contract and require disposal of used sorbent booms as "special wastes".

C. TRIBUTARY DRAINAGE SYSTEM

Preface: Stormwater from most of the project will be directed through a conveyance system which transports the flow to water quality storage units, the vortex based separators, or the City storm drain network. This conveyance system will be principally overland flow discharging to piped drain systems. Most of the sediment is carried by the drainage system is intended to be trapped near the inlets or in pretreatment devices. Maintenance of this system can play a major role in the long-term maintenance costs and the effectiveness of the pond system.

Inspection: The tributary drainage system should be periodically inspected to assure that it is operating as intended, and that its 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 inlet catch basins are normally equipped with sumps and hooded outlets which will remove gross floatables and large sediment particles from the flow stream.

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.

In some projects most of the stormwater is carried in open swales, channels, or ditches. These conveyance channels may be rip rapped or vegetated, depending on the gradient and expected flow velocities. These facilities must be inspected to insure debris or sedimentation does not reduce their carrying capacity. Excess vegetative growth must also be noted. The surface protection for the channels, either stone or vegetation, must be inspected to insure its integrity. Any areas subject to erosion should be noted.

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 sedimentation to any downstream detention pond, 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 filter bag has been designated for the inlet silt or other deleterious materials, can significantly reduce capacity and the bags should be removed with the sediment and replaced. Catch basin cleaning would normally be accomplished with vacuum trucks contracted as a maintenance service for the retail center. 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. The tidal influence can aggregate sedimentation since there are periods of no flow. Backwater valves and connection points are intended to reduce this occurrence.

Frequency: The piped 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.

Maintenance/Inspection Responsibility:

Maintenance Personnel: The Federated Companies Maintenance Personnel.

Special Services: The owner may elect to contract with an independent agent for cleaning of replacement of sorbent booms, catch basins, sumps, and pipelines. Remedial source control measures may be performed by the owner or an outside service depending upon the nature of the particular situation.

Comments: Maintenance of inlets of utmost importance to the project to avoid unintended roof loading, ice accumulation, and cleanliness of the floors of the building.

A WELL STABILIZED VEGETATED SWALE SHOWS LITTLE SIGNS OF EROSIVE VELOCITIES OR FLOWS. THIS SWALE ALSO FUNCTIONS AS A POND SPILLWAY

D. SETTLING TANKS

Preface: In some cases, settling tanks are used ahead of the water quality storage or pretreatment. The units typically have at least a 2:1 length to width ratio and are designed based upon Stokes Law for settlement. The units also have a baffle to retain floatable materials. These units are typically buried with two or three manhole risers at finish grade or access and operate with a relatively deep water depth which is equal to the outlet elevation. The inlet is typically about 3 inches higher. These operate similar to a wet pond sediment sump or a swirl concentrator to capture and reduce the suspended solids before flowing to the storage portion of the management system.

Inspection: A probe or a "sludge judge" can be used to check the depth or sediment in the tank. Typically, the accumulation is highest near the inlet and lowest on the distal end of the tank. If this is not what is observed, it may be necessary to install a tee and vertical drop from the inlet and perhaps some baffles to promote enhanced settlement.

Maintenance: Removal of discernible sediment is recommended. The floatables should be vacuumed from the surface, the clearer water decanted and pumped, and the sediment pumped with a vacuum truck. Dispose of sediment in accordance with local, State, and Federal statutes.

Frequency: Twice per year, unless experience shows little accumulation in which case the frequency can be decreased.

Maintenance Responsibility: The Federated Companies, their assigns, or subcontracted services for SWPP Plan compliance.

E. WATER QUALITY UNITS USING VORTEX BASED DEVICES

Preface: Certain vendors provide pre-manufactured systems which are effective in removal of suspended sediment particularly sand used for winter maintenance. Most units operate on a vortex principal with the sediment being swept from the stormwater stream and stored in the base of the unit. The units are constructed of durable materials requiring little maintenance of the physical component and typically are accessible via an at grade manhole cover.

The vendor of the unit should provide information on suggested maintenance which should be appended to this manual. In certain cases, the vendor will execute an inspection and maintenance agreement for the initial years of operation.

These units typically do not remove nutrients, metals, and dissolved materials.

Inspection: Most water quality units have an access manhole cover for inspection. The sediment storage zone is the bottom of the system and lies below the vortex. Because of the depth, a pole staff, or sludge judge is helpful in determining the depth of the sediment. Inspection should comply with applicable confined space regulations and vendor recommendations.

Maintenance: The typical unit maintenance is the removal of sediment. DeLuca Hoffman Associates, Inc. typically recommends the units be inspected in the spring and late fall with adjustments based on historic operating experience.

The vendor may have specific scheduled maintenance schedules which should be followed.

The structural components of the system are principally stainless steel, concrete, and or climate resistant plastics.

Frequency: Twice per year or as outlined above.

Applicability: Vortex based units are among the devices that may or may not be employed in the final design.

Special Notes: These units are designed for a specific flow and catchment area. If the contributing watershed is increased, the need for design modifications or supplements to the water quality units should be examined.

MAXIMUM IMPERVIOUS TRIBUTARY AREA (ACRES)				
MODEL NUMBER	80% TSS REMOVAL	70% TSS REMOVAL	60% TSS REMOVAL	50% TSS REMOVAL
STC 2400	1.65	2.00	2.50	3.35
STC 3600	2.60	3.15	3.95	5.30
STC 4800	3.60	4.30	5.40	7.25
STC 6000	4.60	5.55	6.95	9.25
STC 7200	5.55	6.70	8.40	11.25

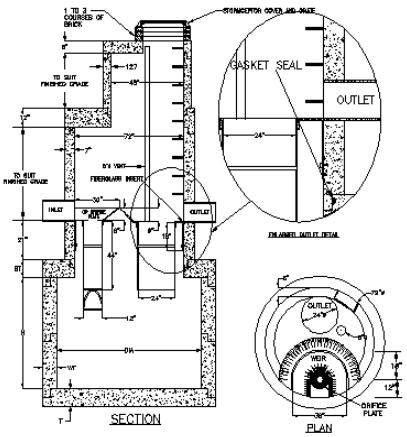
STORMCEPTOR IS PROTECTED BY ONE OR MORE OF THE FOLLOWING PATENTS:
Canadian Patent No. 2,009,208
Canadian Patent No. 2,137,942
U.S. Patent No. 4,985,148
U.S. Patent No. 5,498,331
U.S. Patent No. 5,725,760
U.S. Patent No. 5,753,115

Notes :
1. Dimensions may vary regionally due to different manufacturer's.
2. Access way is offset to allow access to the fibreglass bypass slab and to allow inspection and maintenance from the surface.
3. Pipe installation by grouting or flexible boots.
4. Flexible boots may not be suitable for all installations. Please contact your sales representative for further information.
5. 24" outlet to be used for cleanout access to the treatment chamber.
6. Safety grates for the 24" outlet are available.

MODEL NUMBER	STORAGE CAPACITY	ST	H	T	WT	OP	DIA
STC 2400	2400 U.S. GALLONS	13"	80"	10"	9"	8"	96"
STC 3600	3600 U.S. GALLONS	13"	100"	10"	9"	8"	96"
STC 4800	4800 U.S. GALLONS	17"	90"	12"	10"	10"	120"
STC 6000	6000 U.S. GALLONS	17"	112"	12"	10"	10"	120"
STC 7200	7200 U.S. GALLONS	17"	96"	12"	12"	12"	144"

PRECAST CONCRETE STORMCEPTOR DETAIL - LARGE UNIT

N.T.S.



These units are employed for this project for pretreatment and in lieu of a sediment forebay ahead of the pocket (wet) pond.

F. DEWATERING WATER QUALITY STORAGE TANK OR WET PONDS

Preface: Dewatering water quality storage tanks or wet ponds periodically is desirable in order to check sediment accumulations, side slope conditions and debris accumulation. Typically, dewatering will not be required for water quality storage areas if the outlet control structure is functioning properly. However, wet ponds (if used) will require dewatering.

Dewatering should be done under dry conditions.

Inspection: The purpose of dewatering is to allow observation of sediment buildup and the accumulation of debris. Pump suction should be kept above the sediment level to minimize silt transfer. Filter fabric over the suction or a stone sump may be required to prevent excessive silt from being discharged. The pumping rate should be designed by a professional engineer if over 50 gallons per minute.

Upon draining the tank or pond, the sediment level should be measured at multiple locations to determine a representative depth.

Maintenance: If the volume of sediment recorded exceeds 5% of the normal operating volume designated for water quality storage or 15% of the volume of a wet pond, the sediment should be removed. Prior to removal, the material should be sampled and analyzed in accordance with current practice as promulgated by appropriate regulatory agencies. Upon documentation of its chemical characteristics, the material should be removed by appropriate means for trucking from the site. Disposal of removed material must be in compliance with all regulatory requirements which will vary with the documented characteristics with material. Guidance should be sought from appropriate regulatory agencies.

Frequency: Draining and inspection should be made after the first three years of operation. The rate of recorded sediment buildup will then be utilized to schedule subsequent drainings. Sediment removal will be accomplished when the sediment occupies 5% of the normal water quality storage volume or 15% of the normal wet pond operating volume. Sediment removal once every 15 to 20 years may be expected in most instances. Upon completion of sediment removal, a survey should be accomplished to document pond shape and elevation or depths of storage capacity.

POND HAS BEEN DRAINED TO ALLOW REMOVAL OF SEDIMENTS ACCUMULATED DURING CONSTRUCTION

Comments: If a wet pond is used, it would have a Linear Low-Density Polyethylene Liner. If the pond is excavated to remove sediment, the liner may be damaged. It is recommended the liner specialists be consulted prior to excavation for repair solutions and monitoring.

RECENTLY CONSTRUCTED WET POND

Note: Permanent pool elevation is maintained to allow settlement of suspended solids.

G. CONTROL STRUCTURES

Preface: If water quality measures do not meet the Site Location of Development Permit standards, outlet control structures will be required. These structures regulate the slow discharge of the water quality volume to meet MeDEP Chapter 500 Standards. Flow is anticipated to be released during and every storm event over about 0.10 inches.

The control structure will be designed to be inspected by removing the manhole covers and inspection of the orifices, weir, and channels. Debris should be removed whenever observed and reported to key maintenance personnel since any debris would indicate lack of proper system O&M in the collection and conveyance system. Entry may require CONFINED SPACE ENTRY procedures and appropriately trained personnel.

Inspection: The outlet control structures must be inspected to assure it maintains its intended hydraulic characteristics. The inspection would note any debris or sediment which may accumulate in the structure and in the inlet and outlet pipes. It is noted that it does not take much debris or silt to alter the hydraulic characteristics of the discharge. The inlet should be inspected to assure it is not blocked or restricted or there is sediment to the extent that its flow characteristics may be altered.

Maintenance: Maintenance of the control structure will consist primarily of removing debris which may accumulate and sealing the bulkhead if leakage occurs.

Frequency: The control structure should be inspected quarterly, and after a rainfall event (in excess of 1½ inches in a 24-hour period).

Maintenance/Inspection Responsibility:

Inspection Personnel: The Maintenance Personnel of The Federated Companies will perform the scheduled maintenance/inspection.

Dates of inspections, maintenance performed, and any observed problems should be noted in the logs/records maintained by The Federated Companies

Outside Contract Services: The outlet structure should be opened/inspected by the Maintenance Personnel of The Federated Companies on a quarterly basis. The logs and records of inspections and maintenance of the control structures should also be reviewed by the contract agent if The Federated Companies elects to retain an outside agent for assistance in operation and maintenance of the system.

Replacement Parts/Repairs: No normal replacement parts are repaired. Inspection personnel should have a bucket to remove debris from the structure. If leakage of the bulkhead occurs, it is recommended that repairs be made by a professional contractor familiar with hydraulic grouts. If clogging of small orifices occur, it may be necessary to add a protective vertical grate to reduce the frequency of clogging. However, water is generally filtered before the release through very small outlet orifices (StormFilters® or under drains).

VEGETATION PROVIDES WATER QUALITY TREATMENT AND AESTHETIC ENHANCEMENT OF THE POND

H. IN-LINE STORAGE

Preface: In-line storage may be used for strict detention, storage of water ahead of infiltration systems, for buried under drained filters or proprietary treatment system. Because of the difficulty in access for inspection and maintenance, the units will be preceded with pretreatment to remove sediment.

The underground storage options for this project include buried Brentwood Storm Tanks or buried reinforced Portland Cement Concrete tanks or water quality treatment ahead of water quality treatment units.

In-line storage systems typically have a restrictive outlet when used for detention. This outlet is a separate downstream appurtenance with orifices, weirs, and overflows. The stone storage above the exfiltration surfaces do not have hydraulic restrictions and the disbursement of flow is actually preferred.

Specific design cautions should be considered if in line storage is used as part of a stormwater management system. In-line storage systems have multiple inspection ports. The locations should consider the need for confined space entry.

Inspection*:* Inspection of in-line storage systems should follow all protocols for confined space entry. Inspections should include:

- Observations of standing water and monitoring drainage to make sure drainage is achieved 48 hours after a rainfall of 1 inches or greater (annually).
- Sedimentation
- Outlet Controls
- Inlets
- Inspection of each isolated tank series, run of pipe, distribution of manhole, and header pipe

Maintenance*:* Maintenance of in-line storage systems will vary depending upon the extent of pretreatment, the nature of the receiving bodies, and the design. Leakage, accumulated sediment, and repairs of any damaged portion of the system should be performed immediately upon discovery.

Maintaining Responsibility: The Federated Companies, their assigns, or subcontracted services for SWPP Plan compliance.

Frequency*:* After successful operation of the in-line storage system for one year or two major storms (whichever is longer), quarterly inspections are recommended **except the**

drawdown test after a one-inch rain may be annually only. Maintenance repairs should be performed as soon as possible.

Applicability: Underground detention will be employed on this project for recharge and to reduce discharge rates.

I. STORMTREAT™ UNITS

During the first year, the basin should be inspected semi-annually and following major storm events. Recommended maintenance procedures for the first year are as follows:

- Watering may be necessary to aid plant establishment if rainfall intervals are longer than one week;
- Debris and weeds shall be removed from the bio-filter area as needed;
- Tank lids should be removed and sediment depth checked and recorded;
- Maintenance schedule should be designed based on the sediment loading of the first maintenance visits;
- Sediment should be removed at or before reaching a depth of 5 inches;
- Outflow rate should be checked and reset if necessary; (recommend 2 gpm per tank)
- Perimeter plants should be trimmed or harvested periodically to a minimum height of 6 inches.

The operation and maintenance of the StormTreat™ System, after the first year, is limited to semi-annual inspections and solids removal on an as-needed basis.

The annual inspections should include the following steps:

1. Check the discharge flow rate: The outlet is designed to discharge at a rate of 2.0 gallons/minute per tank. This provides for a retention time of approximately three days for the full tank to empty following a runoff event. The discharge rate can be checked by directly measuring a timed-discharge volume if the outlet is "daylighted" or through "falling-level" measurements inside the central sedimentation chambers (the total static volume of each tank is 1,390 gallons and the height of the tank is 4 feet, therefore a 2.0 gallons/minute discharge rate can be observed as the water level in the tank falling at a rate of one inch per hour). If the falling level test is used, the inlet pipe must be temporarily plugged to avoid filling the underground storage chambers.

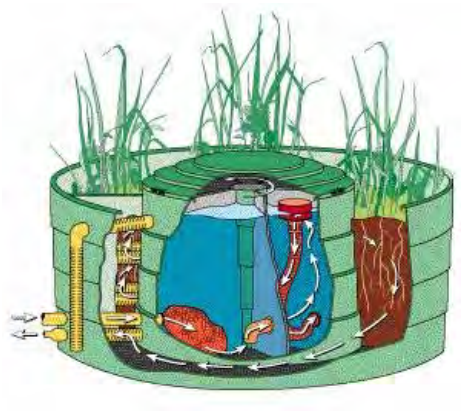
2. Change the inlet grit filter inside the sedimentation chamber.

3. Measure sediment depth inside the sedimentation chamber and schedule a pump-out if depth reaches 6 inches in depth. A future pump-out date can be estimated by projecting based upon sediment accumulation rates since the last measurement or since original installation. On average, StormTreat™ Systems need to have sediment removed once every three years. This can be done using a standard septic system suction pumper or with a vacuum-pumping unit.

4. Observe wetland plant conditions and height (during growing season). Wetland plants may need to be supplemented during the first three growing seasons depending upon local site conditions.

5. Perform (maintenance of) pretreatment devices as required in this manual.

The Federated Companies, their assigns, or subcontracted services for SWPP Plan compliance.



Frequency: Semi-annually or as outlined above.

Applicability: StormTreat™ units are proposed for this project.

Special Note: 1.) These units are designed for a specific flow and catchment area. If the contributing watershed is increased, the need for design modifications or additional StormTreat™ units should be examined. 2.) Fertilization of the planting on the structure must be avoided.

J. FILTERRA® UNITS

Preface: The Filterra units consist of a concrete container with an underdrain at the base, proprietary filtration media, a top layer of mulch and plants specifically selected for nutrient transformation and uptake. Access is provided through a surficial tree grate. Water enters through a curb inlet and discharges through the underdrain at the base of the tank. The Filterra tree box type soil filter is installed upstream of a StormTech Isolator Row to filter pollutants from runoff.

Inspection: Inspection of the Filterra unit should include review of the health and condition of the plant material, the surficial mulch for degradation and accumulation of debris and litter, and the curb inlet for clogging and debris. The access manholes and inspection ports on the Isolator Row should be inspected for evidence of clogging and sediment build-up.

Maintenance: Prune plant material during the spring and fall and replace top layer of mulch annually. The first year's maintenance on the Filterra unit shall be provided by the Manufacturer to ensure the systems are operating as intended. Ongoing inspection and maintenance shall be performed by a professional with knowledge of erosion and stormwater control, including a working knowledge of the Filterra and StormTech products.

Frequency: Inspect quarterly and at any time when sustained ponding is observed near the inlet.

Maintenance/Inspection Responsibility:

Maintenance Personnel: midtown project

Comments: Maintenance of units are critical on this project to prevent short term clogging and replacement.

Applicability: There is one Filterra unit for the project.

K. STORMFILTER® UNITS

Preface: The CONTECH StormFilter® is a water quality treatment device which relies on a proprietary filter cartridge to remove pollutants. The filter must be inspected and maintained annually to prevent sediment accumulation from blocking the flow through the device.

Inspection: At least one scheduled inspection activity should take place per year with maintenance following as warranted.

First, inspection should be done before the winter season. During which, the need for maintenance should be determined and, if disposal during maintenance will be required, samples of the accumulated sediments and media should be obtained.

Second, if warranted, maintenance should be performed during periods of dry weather.

In addition, you should check the condition of the StormFilter® unit after major storms for potential damage caused by high flows and for high sediment accumulation. It may be necessary to adjust the inspection/maintenance activity schedule depending on the actual operating conditions encountered by the system.

Generally, inspection activities can be conducted at any time, and maintenance should occur when flows into the system are unlikely.

It is desirable to inspect during a storm to observe the relative flow through the filter cartridges. If the submerged cartridges are severely plugged, then typically large amounts of sediments will be present and very little flow will be discharged from the drainage pipes. If this is the case, then maintenance is warranted and the cartridges need to be replaced.

Warning: In the case of a spill, the worker should abort inspection activities until the proper guidance is obtained. Notify the local hazard control agency and CONTECH immediately.

To conduct an inspection:

1. If applicable, set up safety equipment to protect and notify surrounding vehicle and pedestrian traffic.
2. Visually inspect the external condition of the unit and take notes concerning defects/problems.
3. Open the access portals to the vault and allow the system vent.
4. Without entering the vault, visually inspect the inside of the unit, and note accumulations of liquids and solids.

5. Be sure to record the level of sediment build-up on the floor of the vault, in the forebay, and on top of the cartridges. If flow is occurring, note the flow of water per drainage pipe. Record all observations. Digital pictures are valuable for historical documentation.
6. Close and fasten the access portals.
7. Remove safety equipment.
8. If appropriate, make notes about the local drainage area relative to ongoing construction, erosion problems, or high loading of other materials to the system.
9. Discuss conditions that suggest maintenance and make decision as to whether or not maintenance is needed.

Maintenance: The need for maintenance is typically based on results of the inspection. Use the following as a general guide. (Other factors, such as regulatory requirements, may need to be considered).

1. Sediment loading on the vault floor. If >4" of accumulated sediment, then go to maintenance.
2. Sediment loading on top of the cartridge. If > 1/4" of accumulation, then go to maintenance.
3. Submerged cartridges. If >4" of static water in the cartridge bay for more than 24 hrs after end of rain event, then go to maintenance.
4. Plugged media. If pore space between media granules is absent, then go to maintenance.
5. Bypass condition. If inspection is conducted during an average rain fall event and StormFilter® remains in bypass condition (water over the internal outlet baffle wall or submerged cartridges), then go to maintenance.
6. Hazardous material release. If hazardous material release (automotive fluids or other) is reported, then go to maintenance.
7. Pronounced scum line. If pronounced scum line (say ≥ 1/4" thick) is present above top cap, then go to maintenance.
8. Calendar lifecycle. If system has not been maintained for 3 years, then go to maintenance.

Assumptions:

- No rainfall for 24 hours or more.
- No upstream detention (at least not draining into StormFilter®).
- Structure is online. Outlet pipe is clear of obstruction. Construction bypass is plugged.

Depending on the configuration of the particular system, workers will be required to enter the vault to perform the maintenance.

Important: If vault entry is required, OSHA rules for confined space entry must be followed.

Filter cartridge replacement should occur during dry weather. It may be necessary to plug the filter inlet pipe if base flow is occurring.

Replacement cartridges can be delivered to the site or customers' facility. Contact CONTECH for more information.

Warning: In the case of a spill, the worker should abort maintenance activities until the proper guidance is obtained. Notify the local hazard control agency and CONTECH immediately.

To conduct cartridge replacement and sediment removal:

1. If applicable, set up safety equipment to protect workers and pedestrians from site hazards.
2. Visually inspect the external conditions of the unit and take notes concerning defects/problems.
3. Open the doors (access portals) to the vault and allow the system to vent.
4. Without entering the vault, give the inside of the unit, including components, a general condition inspection.
5. Make notes about the external and internal condition of the vault. Give particular attention to recording the level of sediment build-up on the floor of the vault, in the forebay, and on top of the internal components.
6. Using appropriate equipment offload the replacement cartridges (up to 150 lbs each) and set aside.
7. Remove used cartridges from the vault using of the following methods:

Method 1:

A. This activity will require that workers enter the vault to remove the cartridges from the under drain manifold and place them underdrain manifold and place them under the vault opening for lifting (removal). Unscrew (counterclockwise rotations) each filter cartridge from the underdrain connector. Roll the loose cartridge, on edge, to a convenient spot beneath the vault access.

   Using appropriate hoisting equipment, attach a cable from the boom, crane, or tripod to the loose cartridge. Contact CONTECH for suggested attachment devices.

   Important: Cartridges contain leaf media (CSF) do not require unscrewing from their connectors. Do not damage the manifold connectors. They should remain installed in the manifold and can be capped during the maintenance activity to prevent sediments from entering the underdrain manifold.

B. Removed the used cartridges (up to 250 lbs) from the vault.

   Important: Avoid damaging the cartridges during removal and installation.

C. Set the used cartridge aside or load onto the hauling truck.

D. Continue Steps A through C until all cartridges have been removed.

Method 2:

A. Enter the vault using appropriate confined space protocols.

B. Unscrew the cartridge cap.

C. Remove the cartridge hood screws (3) hood and float.

D. At location under structure access, tip the cartridge on its side.

Important: Note that cartridges containing media other than the leaf media require unscrewing from their threaded connectors. Take care not to damage the manifold connectors. This connector should remain installed in the manifold and capped if necessary.

E. Empty the cartridge onto the vault floor. Reassemble the empty cartridge.

F. Set the empty, used cartridge aside or load onto the hauling truck.

G. Continue steps A through E until all cartridges have been removed.

8. Remove accumulated sediment from the floor of the vault and from the forebay. Use vacuum truck for highest effectiveness.

9. Once the sediments are removed, assess the condition of the vault and the connectors. The connectors are short sections of 2-inch schedule 40 PVC, or threaded schedule 80 PVC that should protrude about 1" above the floor of the vault. Lightly wash down the vault interior.

   a. If desired, apply a light coating of FDA approved silicon lube to the outside of the exposed portion of the connectors. This ensures a watertight connection between the cartridge and the drainage pipe.

   b. Replace any damaged connectors.

10. Using a vacuum truck boom, crane, or tripod, lower and install the new cartridges. Take care not to damage connections.

11. Close and fasten the door.

12. Remove safety equipment.

13. Finally, dispose of the accumulated materials in accordance with applicable regulations. Make arrangements to return the used empty cartridges to CONTECH.

Material Disposal: The accumulated sediment must be handled and disposed of in accordance with regulatory protocols. It is possible for sediments to contain measurable concentrations of heavy metals and organic chemicals. Areas with the greatest potential for high pollutant loading include industrial areas and heavily traveled roads.

Sediments and water must be disposed of in accordance with applicable waste disposal regulations. Coordinate disposal of solids and liquids as part of your maintenance

procedure. Contact the local public works department to inquire how they dispose of their street waste residuals.

L. BACKWATER VALVES

Preface: The purpose of the backwater valves is to avoid unnecessary periods of slow velocities in the drainage pipelines, protect water quality storage systems, and certain proprietary devices including planted systems that function better without substantial saltwater mixing.

Inspection: The backwater valve can be inspected during periods without rainfall and rising tides. Manholes both upstream and downstream of the backwater valves can be inspected to determine if there is backwater caused by rising tides. A measurement of water depth or depth to water can be taken near the beginning of the rising tide cycle and a couple hours later and in advance of high tide. Increased water depths would indicate the valve may not be functioning properly.

Maintenance: If the backwater valve is not functioning as intended, maintenance will be required. This could include removing debris that prohibits the valve from seating or damage to the hinge mechanism. The project submittal drawings for the backwater valves should be attached to this manual and reviewed to see if any special maintenance is required by the manufacturer of the valve.

Frequency: Annually.

M. PARKING DECK

To protect the stormwater system, the parking decks should be swept at mid winter and spring and power washing with an appropriate vacuum/power wash vehicle once a year.

Maintenance: It is recommended this service be contract with the firm that maintains the other stormwater management facilities.

M. LITTER

Litter should be removed as a matter of course by workers and a part of the grounds maintenance contract.

N. STORMWATER PUMPS

Preface: Storm water pumps are considered an option for pumping the water quality volume and potentially for dewatering of pits and below grade tanks. These pumps may be permanent (sumps or designated water quality pumps) or temporary and used for occasional drawdown of storm water tanks.

If the pumps are permanent, it is recommended:

- The pumps have slide rails for removal if the water depth is over 3 feet;
- The control panels record events and elapsed time; and
- If the pumps are for protection of building related mechanical systems, provisions be afforded for a connection to an emergency generator.

The project shop drawings and submittals will include information on the operation and maintenance for the pump.

Inspection: Any alarm events and quarterly inspection including recording the total running hours and events from the control panel warrant an inspection. If the run time, events, or alarm condition warrant, the pump should be removed and inspected. Also, refer to the pump manufacturers O&M manual.

Frequency: See inspection recommendations.

Maintenance Responsibility: The Federated Company, their assigns, or subcontracted services for SWPP Plan compliance.

O. SUMMARY CHECKLIST

The above described inspection and maintenance items have been summarized on a checklist attached hereto as Attachment C.

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.

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 r esponsible 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 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 for a minimum 5-year time span. 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 Attachment B.

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.

REVISED TEXT TO OPERATION & MAINTENANCE MANAUL (ATTACHED TO RESPONSE TO WOODARD & CURRAN'S COMMENTS)

NOTE: THE REVISED TEXT ABOVE IS PROVIDED IN BOLD FACE AND ITALIZED TEXT

ATTACHMENT A

Sample Inspection Logs

midtown
PORTLAND, MAINE

STORMWATER MANAGEMENT
WATER QUALITY STORAGE OR WET POND
ANNUAL INSPECTION & MAINTENANCE LOG

FACILITY:		**YEAR:**	
LOCATION:		**CONTRACTOR:**	
FUNCTION:		**INSPECTOR:**	
DATE OF INSPECTION:			
ITEM IDENTIFICATION	**DESCRIPTION OF CONDITIONS**	**MAINTENANCE ACCOMPLISHED**	**DATE OF MAINTENANCE**
GENERAL COMMENTS:			

SAMPLE

midtown
PORTLAND, MAINE

STORMWATER MANAGEMENT
STORAGE AREA
MONTHLY INSPECTION & MAINTENANCE LOG

FACILITY:	YEAR:
LOCATION:	CONTRACTOR:
FUNCTION:	

MONTH	DAY	INSPECTOR	WATER DEPTH	OVERFLOW WEIR		WEIR CONDITION
				CLEAR	DEBRIS	
JANUARY						
FEBRUARY						
MARCH						
APRIL						
MAY						
JUNE						
JULY						
AUGUST						
SEPTEMBER						
OCTOBER						
NOVEMBER						
DECEMBER						

LIST SPECIAL MAINTENANCE UNDERTAKEN:

midtown
PORTLAND, MAINE

STORMWATER MANAGEMENT
STORAGE
SEMI-ANNUAL INSPECTION & MAINTENANCE LOG

SEMI-ANNUAL INSPECT 1.2	FACILITY:
DATE:	LOCATION:
INSPECTOR:	FUNCTION:
WEIR CONDITION:	
OUTLET CONDITION	

FORE BAY SUMP	EST. DEPTH SED.	REMOVED? Y/N	EST. VOL. CY	WHERE DISPOSED OF	STRUCTURAL CONDITION

CONTROL STRUCTURE:
DESCRIBE CONDITIONS FOUND & MAINTENANCE ACCOMPLISHED:

ATTACHMENT B

Permits for Project

(To be Added at a Subsequent Time)

ATTACHMENT C

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. Entry may or may not be equipped with a bar rack. Inspect entry for debris accumulation. Remove debris to allow unimpeded entry. Lawn clippings and leaves should be removed from yard areas.		X		X Clearing	
Sorbent Booms	Sorbent boom should be raised out of the inlet, inspected, and replaced if necessary.		X For 1st 12 months		X After 1st year	
Tributary Drainage System	Inspect to assure that the carrying capacity has not been diminished by debris, sediment or other hydraulic impediments.				X	
Settling Tanks	Remove discernible sediment.			X		
Water Quality Units using Vortex Based Devices	Solids removal on an as-needed basis.				X	
Dewatering Water Quality Storage Tank or Wet Ponds	Biofilter should be inspected when normal landscape maintenance is performed. Remove and replace dead vegetation. Remove sediment when it occupies 15% of volume; For wet ponds – 5% for water quality	X		X		X 10-15 yrs
Control Structures	Inspect outlet control to assure it maintains its hydraulic characteristics. Inspect inlets for blockage.		X			
In-Line Storage (Underground detention)	Inspect for standing water, sedimentation, outlet control, inlets.					
StormTreat™ Units	Check units for debris			X After 1st year	X For 1st year	
Filterra® Units	Inspect quarterly and at any time when sustained ponding is observed near the inlet. Inspect landscaping and replace mulch.		X		X	
StormFilter® Units	First inspection before winter season Second inspection, if warranted, during periods of dry weather. Check units after major storm events				X	
Backwater Valves						
Parking Deck	Parking decks should be swept at mid winter and spring. Power washing with an appropriate vacuum/power wash vehicle be done once a year.			X	X	
Litter	Litter should be removed daily.					
Stormwater Pumps		X				

ATTACHMENT D

Pump Maintenance History

PUMP MAINTENANCE HISTORY

PUMP NO._____

LOCATION:_____

EVENT NO._____

DATE	TOTAL RUNNING HOURS	RUNNING HOURS THIS PERIOD	EQUIVALENT ARRIVAL RATE	EVENTS	EVENTS THIS PERIOD	EQUIVALENT ANNUAL NO.	MAINTENANCE PERFORMED	PART(S) USED	SYMBOL NUMBER(S)

PUMP MANUAL TO BE APPENDED (IF APPLICABLE) SHOULD RECOMMEND TO ADD UPON RECEIPT FROM CONTRACTOR DURING SUBMITTAL REVIEWS AND PRIOR TO OCCUPANCY OF THE BUILDING

EXHIBIT 14

EROSION & SEDIMENT CONTROL PLAN

EROSION AND SEDIMENTATION CONTROL REPORT

midtown
PORTLAND, MAINE

PREPARED FOR:

THE FEDERATED COMPANIES
3301 NE 1ST AVENUE, SUITE M-302
MIAMI, FLORIDA 33137

PREPARED BY:

FAY, SPOFFORD & THORNDIKE
778 MAIN STREET, SUITE 8
SOUTH PORTLAND, MAINE 04106
(207) 775-1121

NOVEMBER 2014

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Attachment B – Sample Erosion Control Compliance Certification and Inspection Forms

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Attachment D – DirtGlue™ Application and Use Requirements

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Attachment F – Draft Specification for Groundwater Treatment System

1.0 INTRODUCTION

Fay, Spofford & Thorndike has been retained by The Federated Companies to prepare an Erosion and Sedimentation Control Plan employing BMP's customarily used in Maine and which are applicable to this project. The site was environmentally contaminated and has undergone partial remediation. The residual cleanup is anticipated to be completed before commencing construction on this project. Detailed information on the environmental contamination, the established level of cleanup and remediation, and test results are available at the City of Portland Planning Department. However, the groundwater is potentially contaminated and will require treatment using containerized systems. An outline of the performance standard for the treatment system is provided as Attachment F. The final standards will be established by environmental agencies through the City's selected environmental consultant. The contractor shall be responsible for obtaining and reviewing the final standards from the City of Portland. The Contractor will also need to coordinate work with the qualified environmental professionals working for the City or Federated. The Erosion and Sedimentation Control Plan consists of this report, the appended materials, and the erosion control plans and detail sheets of the drawing set. The erosion controls are the minimum required for each phase of the project and require monitoring during construction to assess their effectiveness for the specific weather conditions occurring during the construction periods. This project is tributary to a separated sewer system meaning that turbid discharges would flow almost immediately to Back Cove. This plan includes rigorous measures and sets a standard to avoid significant discharges of turbid stormwater or environmentally tainted groundwater.

The storm drains in the area include a system that serves the easterly end of the project area which was constructed in about 2003 as part of a sewer separation project. This drainage system ultimately discharges to Back Cove on the northerly side of I-295 near the Franklin Arterial Interchange. This new system starts at a manhole at the intersection of Marginal Way and Franklin Arterial on the existing 72-inch diameter storm drain downstream of the tide gate and combined sewer overflow structure for the Franklin Street Pumping Station. The 72-inch storm drain has an invert of about -4.43 at this location. The new system included approximately 556 feet of 30 to 42 inch storm drain between Marginal Way and Somerset Street with inverts ranging from approximately -1.5 to 2.1 The drain continues in a westerly direction along Somerset Street and is approximately 1,013 feet in length with 18 to 30 inch storm drain along Somerset Street to the end of the drainage system. This catchment area limit is located about 40 feet westerly of the intersection of Somerset and Chestnut Street. A branch line feeding the so called "A" system was constructed along the pedestrian trail which runs along the northerly side of this project. This branch includes piping up to 18 inches in diameter and drains portions of the rear of the subject parcel and along the trail behind the project site.

A second drainage system serves the westerly portion of the project site. Drainage from Somerset Street flows to Elm Street and then continues northerly to Preble Street to a 60-inch diameter line that crosses under Interstate 295 and discharges to Back Cove.

Finally, there is a small catchment that enters the Chestnut Street system identified as System "C".

The construction will result in the majority of the site cover being rooftops or parking decks. There will be very little residual area and these small areas will consist of connecting walkways, hardscape, and landscaping or turf. Somerset and Chestnut Streets will be raised either as part of this project or a separate City Project. Coordination and planning the project to avoid disruption of the lightweight concrete fill to be placed and placement of ballast will be key elements of construction sequencing.

It is anticipated the construction will involve periods where pedestrian and bicycle traffic are detoured around portions of the work site, parking restrictions that do not currently exist will be

made, and the use of a limited area of street pavements for storage of equipment trailers, containerized treatment systems, cranes, other construction equipment, and material stockpiles will occur at some periods during construction. These elements are discussed in more detail in the construction plan for the project, which is a separate document.

The erosion and sedimentation controls are quantified as follows:

- There shall not be any turbid release of storm runoff from the site.
- There shall be no tracking of mud onto the streets. Tracking is defined to be any visible and discernible soil, dirt, or deleterious debris on the street at the intersection of Pearl and Somerset to the east and Elm and Somerset to the west.
- There shall be no release of contaminated ground water from the site. The standard is defined in Attachment F.

Because there is a quantifiable standard, it will be the obligation of the contractor to monitor and meet the standards and the contractor may have options in selecting and locating erosion and sedimentation control devices provided the standards are met.

2.0 OVERVIEW OF SOIL EROSION AND SEDIMENTATION CONCERNS

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 "K" value is frequently used with the universal soil loss equation. The higher values are indicative of the more erodible soils. The relative K values of the underlying material (Au Gres) the site would be as follows:

Soil Symbol	Soil Description	"K" Value
Ag	Au Gres	0.15

The soils will be slightly to moderately susceptible to erosion. The site grades are currently flat and featureless which aids in reducing the erosion potential.

The primary emphasis of the erosion and sedimentation control plan to be implemented for this project is as follows:

- **Temporary Measures:** Planning the project to have erosion resistant measures in place by implementing measures intended to prevent erosion from occurring.
- **Phasing Sequencing:** The plan includes measures to intercept and convey runoff to temporary control devices as the construction of the project occurs. The use of small collection sumps with a clean sand filter above an underdrained discharge is recommended to supplement the principal sumps to help reduce turbidity. Turbidity should be controlled in any discharge through the use of settling, filters, or chemical coagulants.
- **Limit in Area of Exposure:** The phased nature of the project will limit the amount of area exposed at a given time with the Phase 3 area currently stabilized with grass cover.
- **Internal Drainage:** The sites are flat enough to allow temporary grading such that runoff may be collected within the site and not directed to perimeter areas.
- **Use of Type 1 Settling:** Installing sediment traps and swales early in the construction sequence to provide secondary relief for erosion control measures within the site until late in the project when the sedimentation areas need to be removed for final restoration.

- **Restabilization:** Stabilization of areas denuded to underlying parent material must occur within stipulated time frame to minimize the period of soil exposure and stabilization of drainage paths to avoid rill and gully erosion.
- **Interim Entrapment:** The use of on-site measures to capture sediment (hay bales/silt fence, etc.) before it is conveyed to sediment traps.
- **Long Term Site Protection:** The implementation of long-term measures for erosion/sediment and pollutant treatment through the construction of permanent water quality measures.
- **Special Winter Construction Measures:** These will be required for work between September 15 and April 15.
- **Special Provision:** Special provision for pumping storage and treatment of groundwater pumped from the site.
- **Coordination of the Work:** Coordination of the work such that the lightweight concrete fill will not be disturbed after placement. Ballast shall be placed s soon as practicable to avoid damage to the concrete.

3.0 DESCRIPTION AND LOCATION OF LIMITS OF ALL PROPOSED EARTH MOVEMENTS

The construction of the project will disturb about 3.5 acres of land plus the right of way for Somerset Street between Elm Street and Pearl Street, on the Chestnut right of way near the project areas on the future Pearl Street Extension, and limited work on the trail and Elm Street. Chestnut and Somerset Streets will be raised in grade either as part of this project or a separate coordinated City project. The limit of disturbance is generally coincident with the limit of the land area plus the narrow strip of land between the right of way and the cub line of the street.

The earth moving will include trenching for underground utilities, excavation for water quality measures or below grade storage or treatment tanks (if any), earthwork attendant with the pile driving and foundation excavation, earthwork to prepare areas for placement of geofoam, earthwork to reshape the perimeter of the site and the area between the street curb and the property line along Somerset Street, earthwork to prepare and shape the building and parking garage pads, and placement of aggregates below the ground level building or structure pads. The project includes the placement of lightweight concrete fill in non-pile supported (i.e. outside of building) areas. This concrete is to be placed at specified thicknesses and depths and will be used when the finish grade is elevated by more than 6" above historic grades. The lightweight concrete will mitigate any increase in dead loads. The material overlying the lightweight concrete will serve as a ballast to prevent groundwater uplift of the concrete.

4.0 EROSION/SEDIMENTATION CONTROL DEVICES

As part of the site development, the Contractor will be obligated to implement erosion and sediment controls. The following devices are anticipated to be used and shall be installed as indicated on the plans or as described within this report. For further reference on these devices, see the *Maine DEP Best Management Practices for Erosion and Sediment Controls (August, 2005)*.

1. Siltation fence shall be installed down slope of any disturbed areas to trap runoff borne sediments until the site is constructed or revegetated. The silt fence shall be installed per the detail provided in the plan set and inspected immediately after each rainfall and at least daily during prolonged rainfall. The Contractor shall make repairs immediately if there are any signs of erosion or sedimentation below the erosion control fence line. If such erosion is observed, the Contractor shall take proactive action to identify the cause of the erosion and take action to

avoid its reoccurrence. Typically, this requires that stabilization measures be undertaken. Proper placement of stakes and keying the bottom of the fabric into the ground is critical to the fence's effectiveness. If there are signs of undercutting at the center or the edges, or impounding of large volumes of water behind the fence, the barrier shall be replaced with a stone check dam and measures taken to avoid the concentration of flows not directed to the silt fence.

2. Silt fence is shown by three types, depending upon the timing and intent, as follows:

SCHEDULE OF SILT FENCE REQUIREMENTS		
Silt Fence	**Type/Purpose**	**Time of Installation**
Condition 1	To trap sediment along the grading edge where the new contours nearly parallel existing contours and as a perimeter control to help control fugitive dust and grading that could temporarily direct water to an unintended perimeter area.	At initial site preparation, prior to other work.
Condition 2	To trap sediment from the work area; install in short sections parallel to existing contour; typically occurs where proposed and existing contours form a "V" shape.	At initial site preparation, prior to other work. On occasion, this needs to be deferred until the area for the silt fence installation can be reached.
Condition 3	To trap sediment along the base of proposed contours, typically in cut areas.	During construction after new grade is shaped. Time between work in area and shaping new grade to allow silt fence to be installed shall be minimized.

Conditions 2 and 3 silt fence will be used extensively between project activities. In the event of frozen ground where silt fence cannot be installed, a wood waste berm may be used as a substitute.

Wood waste mulch and berms that are at least 18 inches in height and 12 inches across the top are an acceptable alternative to silt fence.

3. Straw or hay mulch including hydroseeding is intended to provide cover for denuded or seeded areas until revegetation is established. Mulching should be occurring several times per week when the site construction activity is high and at sufficient intervals to reduce the period of exposure of bare soils to the time limits set forth in this plan. Mulch placed on slopes of less than 10 percent shall be anchored by applying water; mulch placed on slopes steeper than 10 percent shall be covered with fabric netting as immediately after mulching as practicable and anchored with staples in accordance with the manufacturer's recommendations. Proposed drainage channels, which are to be revegetated, shall receive Curlex blankets by American Green selected for the slope, velocity, and whether the measure is temporary or intended to be in place for a sustained period. Mulch application rates are provided in Attachment A of this section. Hay mulch shall be available on site at all times in order to provide immediate temporary stabilization when necessary. Where necessary, a windrow of crushed stone and/or gravel shall be placed at the top of the slope and directed to a temporary stone channel or pipe sluice to convey runoff down slopes. A dissipation device such as stone or a plunge pool should be installed at the base of the slope and sluice outlet to dissipate the energy of the water from the sluice or channel. It is noted that very little area of the site will be revegetated. Therefore, the use of wood wastes, crushed stone, or materials with low erosive potential are expected to have much higher use than mulching for this project.

4. Temporary sediment traps will provide sedimentation control for stormwater runoff from disturbed areas during construction until stabilization has been achieved. The sediment traps need to include a sand filter above an underdrain or a chemical coagulant to remove fine-grained sediment. The Contractor is encouraged to temporarily drain the site to an internal location where water can accumulate and be pumped to a sediment sump or other treatment measures. This is a recommendation, not a requirement since the erosion control requirements are intended to protect from fugitive dust and turbidity in runoff, not prescribe contractor means and methods,
5. Riprap or stone check dams are intended to stabilize and protect denuded soil surfaces or dissipate the energy and erosive forces from concentrated flows. Installation details and stone sizes are provided in the construction plan set on the erosion control detail sheets.
6. A construction entrance will be constructed at all access points onto the site to prevent tracking of soil onto adjacent streets. It may be necessary to wash the wheels of vehicles exiting the site to avoid tracking mud or material that will generate fugitive dust during certain periods of construction. A wheel wash will be established for this purpose.
7. A pre-manufactured SiltSack™ shall l be installed at catch basin inlets which may receive runoff from the construction activities on the site to prevent silt from entering the storm drain system.
8. Dirtbags™ will be required to be on site and available for construction dewatering. The Contractor will be required to have at least four (4) Dirtbags™ on the site with one prepared for operation prior to commencing any trenching operations. Dirtbags™ will need to be installed above filter sand and crushed stone in accordance with the details shown on the plan set.
9. The constructed surface (rooftop or parking deck) is intended to serve as the primary permanent erosion control device. Loam and seed or landscaped areas will be limited in size. Specific areas as will be shown on the landscape plans will receive sod or mulch for trees, shrubs, or planting beds. Application rates are provided in Attachment A of this section for temporary and permanent seeding.
10. Stone check dams will be installed in areas noted on the plan or as warranted, based upon observations prior to and during construction of the site.
11. Silt logs are an option for stone check dams and may be substituted provided the devices are well anchored.
12. Sorbent booms are intended to capture oils and the asphalt sheen from paved surfaces and shall be installed in all catch basins before pavement is installed.
13. DirtGlue™ is an acceptable means of temporary stabilization and is intended to form a "crust" on the surface that is resistant to erosion. However, applications where DirtGlue™ is used must be protected from traffic that would crack the "crust" and the DirtGlue™ has temperature limitations that restrict the periods of use. Use of this material shall conform to the requirements of Attachment D.
14. Concrete Wash Area: A concrete wash down area will be required and is detailed on the accompanying erosion control plans and details.

5.0 TEMPORARY EROSION/SEDIMENTATION CONTROL MEASURES

The following are planned as temporary erosion/sedimentation control measures during construction:

1. Crushed stone-stabilized construction entrances shall be placed at any construction access points from adjacent streets. The locations of the construction entrances shown on the drawings should be considered illustrative and will need to be adjusted as appropriate and located at any area where there is the potential for tracking of mud and debris onto existing roads or streets. Stone stabilized construction entrances will require the stone to be removed and replaced, as it becomes covered or filled with mud and material tracked by vehicles exiting the site. Wash-off of tires from exiting vehicles will need to be used to supplement the stabilized stone entrance during certain periods of construction particularly those involving the handling or traversing through areas of fine-grained soils.

2. Conditions 1 and 2 silt fence or wood waste berms shall be installed along the downgradient side of the proposed work and staging areas. The silt fence or wood waste berms will remain in place and properly maintained until the site is acceptably stabilized and in proximity to the completion of the project. Condition 3 silt fence is to be used along the contour of significant fill slopes as illustrated on the erosion control plan site drawings. Silt fence needs to be checked to insure the bottom is properly keyed in and inspected after significant rains. Wood chips are often used on the construction side of the silt fence to provide an extra margin of safety and security for the silt fence. This practice is encouraged, provided the chips are removed when the fence is removed.

3. Dirtbags™ shall be installed in accordance with the details in the plan set. The purpose of the Dirtbags™ is to receive any water pumped from excavations during construction. A Dirtbag™ shall be installed and prepared for operation prior to any trenching on site. When Dirtbags™ are observed to be at 50% capacity, they shall be cleaned or replaced. Stone and filter sand under the Dirtbag™ shall be removed and replaced concurrently with the replacement of the Dirtbag™.

4. Temporary stockpiles of common excavation will be protected as follows:
   a) Temporary stockpiles shall not be located within a portion of the site that drains to a sedimentation trap.
   b) Inactive loam or fine-grained soil stockpiles shall be stabilized within five days by either temporarily seeding the stockpile with a hydroseed method containing an emulsified mulch tackifier or by covering the stockpile with mulch. If necessary, mesh shall be installed to prevent wind from removing the mulch.

5. All denuded areas except gravel, crushed stone, or wood waste areas shall receive mulch, erosion control mesh fabric, or other approved temporary erosion sediment measure within 7 days of initial disturbance of soil or before a predicted rain event of >1/2" unless permanent measures are installed.

6. All soils disturbed between September 15 and April 15 will be covered with gravel, crushed stone wood wastes or mulch within five days of disturbance, prior to any predicted storm event of the equivalent of ½" of rainfall in a 24-hour period, or prior to any work shutdown lasting more than 35 hours (including weekends and holidays). The mulch rate shall be double the normal rate.

   For work that is conducted between September 15 and April 15 of any calendar year, all denuded areas not covered with gravel, wood waste, or crushed stone will be covered with hay mulch, applied at twice the normal application rate, and (in areas over 10% grade) anchored with a fabric netting. If the gravel has fines which contribute to sedimentation, it shall be covered with stone or wood wastes. The time period for applying gravel, stone, wood wastes,

or mulch shall be limited to five days for all areas, or immediately in advance of a predicted rainfall event.

7. Stone check dams, silt logs, or hay bale barriers will be installed at any evident concentrated flow discharge points during construction and earthwork operations.

8. Silt fencing with a maximum stake spacing of 6 feet should 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 should be properly anchored a minimum of 6" per the plan detail and backfilled. Any silt fence identified by the Owner or reviewing agencies as not being properly installed during construction shall be immediately repaired in accordance with the installation details.

9. Storm drain catch basin inlet protection shall be provided through the use of a premanufactured SiltSack™. Outside of areas subject to traffic or vehicular movements, the inlets shall be surrounded by rice straw wattles placed in a circumference of 20 feet and across areas where water flows to the inlet. The barriers or SiltSacks™ shall be inspected after each rainfall and repairs made as necessary, including the removal of sediment. Sediment shall be removed and the barrier or SiltSack™ restored to its original dimensions when the sediment has accumulated to one-half the design depth of the barrier. Sediment shall be removed from SiltSacks™ as necessary. Inlet protection shall be removed when the tributary drainage area has been stabilized.

10. All slopes steeper than 4:1 shall receive erosion control mesh.

11. Condition 3 silt fences shall be installed as construction progresses.

12. Areas of visible erosion and the temporary sediment traps shall be stabilized with crushed stone. The size of the stone shall be determined by the Contractor's designated representative in consultation with the Owner.

13. New catch basins within the site catch basins shall all be installed with an opening 2'-6" below finish grade to receive a 4" underdrain with an end cap except for inlets along underdrains. A 3'-0" stub of underdrain surrounded by 6" of ¾" crushed stone and filter fabric shall be installed. The purpose of this measure is to provide drainage relief until site grades are at finish elevations.

14. All catch basins, which receive runoff from current or paved areas being constructed as part of this project, shall have a sorbent boom installed prior to placing the basin in operation installing binder pavement, or overlays. These sorbent booms shall be checked weekly for the three weeks following paving and replaced as necessary with the booms disposed of in accordance with local and State regulations.

15. Any flow from the site that is concentrated must be directed to a sediment trap or Dirtbag with underlying sand filter, an underdrained filter discharge, or a containerized stormwater treatment device.

16. Concentrated runoff shall be diverted away from slopes of over 10 percent unless the slope is armored with stone.

17. Underground utilities must be installed in compliance with the following standards and other requirements of this erosion control plan:

- No more than 500 linear feet of trench may be opened at one time;
- Excavated materials shall be placed on the uphill side of trenches;
- Dewatering of the trench shall be pumped through a Dirtbag™ and appropriate sediment control facilities to avoid a turbid discharge; and
- Stabilization shall occur as soon as practicable.

18. Truck wheel washes will be required if tracking of deleterious material onto local streets is observed.

19. A concrete wash down area shall be provided.

20. Maintenance of the erosion control, sedimentation facilities, and control of fugitive dust must occur until the site is stabilized with permanent erosion control measures. For turf areas, stabilization shall be defined to be the establishment of a 90 percent "catch of grass" with no areas larger than 2 square feet, and no spots that cumulatively add up to more than 5 square feet per 100 square feet.

21. Treatment Tanks: Containerized water treatment devices required to treat any groundwater encountered and pumped from the excavation to the levels defined by the environmental remediation plan. A draft specification is provided as Attachment F. However, this shall be reviewed for consistency with the final requirements of the environmental cleanup plan.

6.0 STANDARDS FOR STABILIZING SITES FOR THE WINTER

The construction of the project will require winter construction with the duration of each phase subject to variation. Winter construction will be allowed but the contractor should be aware that the minimum erosion control measures are substantially more stringent than during other periods of the year due to the cold temperatures and lack of weather conditions which aid in drying the subgrade soils through evaporation.

If construction activities involving earth disturbance continue past September 15 or begin before April 15, the following must be incorporated with the erosion control plan and implementation:

1. Enlarged access points must be stabilized to provide for snow stockpiling.
2. Limits of disturbance shall be reduced to the extent practicable.
3. A snow management plan including adequate storage and control of snowmelt, requiring cleared snow to be stored downgradient of all areas of disturbance shall be prepared by the Contractor and submitted to the Owner for review and approval.
4. Snow shall not be stored in sediment basins or to preclude drainage structures from operating as intended.
5. A minimum 25-foot buffer maintained from perimeter controls such as silt fence shall be maintained on the "work area side" of staging and stockpile areas where possible to allow for snow clearing and maintenance.
6. Drainage systems intended to operate during the winter shall be catalogued, shown on a plan, and inspected after each snow removal period to make sure the drainage structures are open and free of snow and ice dams.
7. To ensure cover of disturbed soil in advance of a melt event, areas of disturbed soil must be stabilized at the end of each work day, with the following exceptions:

- If no precipitation within 24 hours is forecast and work will resume in the same disturbed area within 24 hours, daily stabilization is not necessary.
- Disturbed areas that collect and retain runoff, such as house foundations or open utility trenches.

8. Standard for the timely stabilization of disturbed slopes: The Contractor shall construct and stabilize stone-covered slopes by September 15. The Contractor shall seed and mulch all slopes to be vegetated by September 1. The Owner will consider any area having a grade greater than 15% to be a slope. If the Contractor fails to stabilize any slope to be vegetated by September 1, then the Contractor shall take one of the following actions to stabilize the slope for late fall and winter.

   i. Stabilize the soil with temporary vegetation and erosion control mesh. By September 15, the Contractor 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 Contractor shall monitor growth of the rye over the next 30 days. If the rye fails to grow at least three inches or fails to cover at least 75% of the disturbed slope by September 15, then the Contractor shall cover the slope with a layer of wood waste compost as described in item iii of this standard or with stone rip rap as described in item iv of this standard.

   ii. Stabilize the slope with sod. The Contractor shall stabilize the disturbed slope with properly installed sod by September 15. Proper installation includes the Contractor pinning the sod onto the slope with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil. The Contractor shall not use late-season sod installation to stabilize slopes having a grade greater than 33% (3H:1V) or having groundwater seeps on the slope face.

   iii. Stabilize the slope with wood waste compost. The Contractor shall place a six-inch layer of wood waste compost on the slope by September 15. Prior to placing the wood waste compost, the Contractor shall remove any snow accumulation on the disturbed slope. The Contractor shall not use wood waste compost to stabilize slopes having grades greater than 50% (2H:1V) or having groundwater seeps on the slope face.

   iv. Stabilize the slope with stone rip rap. The Contractor shall place a layer of stone riprap on the slope by September 15. The Contractor shall hire a registered professional engineer to determine the stone size needed for stability and to design a filter layer for underneath the riprap.

9. Standard for the timely stabilization of disturbed soil (not in slope areas): By September 1, the Contractor shall seed and mulch all disturbed soils on areas having a slope less than 15%. If the Contractor fails to stabilize these soils by this date, then the Contractor shall take one of the following actions to stabilize the soil for late fall and winter.

   i. Stabilize the soil with temporary vegetation. By September 15, the Contractor 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 Contractor shall monitor the growth of the rye over the next 30 days. If the rye fails to grow at least three inches or fails to cover at least 75% of the disturbed soil before September 15, then the Contractor shall mulch the area for over-winter protection as described in Item iii of this standard.

   ii. Stabilize the soil with sod. The Contractor shall stabilize the disturbed soil with properly installed sod by September 15. Proper installation includes the Contractor pinning the sod

onto the soil with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil.

iii. Stabilize the soil with mulch or wood waste mulch. By September 15, the Contractor 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 Contractor shall remove any snow accumulation on the disturbed area. Immediately after applying the mulch, the Contractor shall anchor the mulch with plastic netting to prevent wind from moving the mulch off the disturbed soil. Wood waste mulch shall be uniformly applied and a minimum of 3 inches in thickness.

iv. Stabilize all stockpiles with mulch within 24 hours.

7.0 SPECIAL MEASURES FOR SUMMER CONSTRUCTION

The summer period is generally optimum for construction in Northern New England but it is also the period when intense short duration storms are most common, making denuded areas very susceptible to erosion, when dust control needs to be the most stringent, and when the potential to establish vegetation is often restricted by moisture deficit. During these periods, the Contractor must:

1. Implement a program to apply dust control measures on a daily basis except those days where the precipitation exceeds 0.25 inch. This program shall extend to and include adjacent streets used by construction vehicles and include multiple street washings per day. Wheel washing of construction vehicles leaving the site may be necessary.

2. Spray any mulches with water after anchoring to dampen the soil and encourage early growth. Spraying may be required several times. T emporary seed may be required until the late summer seeding season.

3. Mulch, cover, and moisten stockpiles of fine-grained materials, which are susceptible to erosion. In the summer months, the potential for wind erosion is of concern, as well as erosion from the intense, short-duration storms, which are more prevalent in the summer months.

4. Take additional steps needed to control fugitive dust emissions to minimize reductions in visibility and the airborne disbursement of fine-grained soils.

These measures may also be required in the spring and fall during the drier periods of these seasons.

8.0 SEDIMENTATION TRAPS

The sediment trap shall provide 3,600 cubic feet of storage per acre of treated area.

Discharge must be through a sand filter over an underdrained outlet to aid in the control of turbidity levels in the discharge. In the event that two events where the turbidity is excessive, the Contractor will be required to install containerized treatment systems with proper additives to meet the discharge standard.

The contractor may elect not to construct the sedimentation sumps if the work area is covered with non-erodible materials such as gravel, stone or wood waste mulch, and alternative runoff treatment is provided using containerized treatment units and Dirtbags provided they appear to be adequate for turbidity controls.

9.0 GROUNDWATER PUMPED FROM ON SITE EXCAVATIONS

Groundwater pumped from excavations on the site shall be considered contaminated. The contaminated groundwater is to be pumped, stored, and treated.

Only contaminated groundwater that needs to be extracted during site excavations, grading, during construction of foundation systems and other structures, during the installation of underground utilities, and during the construction of other below grade elements of the project items will require storage and treatment. Contaminated groundwater that is not encountered during construction will not be addressed and will remain below the ground surface. All liquids if removed by excavation dewatering requires handling, storage, and treatment in accordance with applicable local, State, and Federal regulations prior to discharge to the municipal stormwater system:

- **Pumping:** Pumping shall be from a sump where the inlet screen has been placed within an encasement of crushed stone. The crushed stone is intended to minimize the unnecessary removal of soil that could otherwise be dislodged during the pumping operation. The amount of stone should be based upon in-situ operations of the discharge stream and turbidity measurements. Testing of groundwater collected before pumping begins shall be used as a baseline. Testing of the discharge stream shall be compared with the pre-pump conditions to determine if unnecessary sediment is being mixed with the groundwater during the pumping process. If excess sediment is being removed either the pump rate needs to be reduced or the amount of stone around the intake needs to be increased.

- **Storage:** Store groundwater that is collected at the Site, as necessary, as part of construction dewatering in frac tanks compliance with all applicable provisions of the federal, state and local laws, regulations, or bylaws for subsequent treatment. Only groundwater that is pumped from the excavation on the site needs to be treated prior to disposal.

- **Treatment:** The treatment requirements are outlined in Attachment F. The requirements shall also be subject to the final land use restrictions included in land deeds and prepared after the final remediation has been completed,.

10.0 PERMANENT EROSION CONTROL MEASURES

The following permanent erosion control measures have been designed as part of the Erosion and Sedimentation Control Plan:

1. The drainage conveyance systems will be or have been designed to intercept and convey the 25-year storm event.

2. All areas disturbed during construction, but not subject to other restoration (rooftops, parking decks, hardscape, mulched planting beds or trees) will be loamed, limed, fertilized, mulched, and seeded or sodded if required by the landscape plan for a particular phase of the project. Fabric netting, anchored with staples, shall be placed over the mulch in areas where the finish grade slope is greater than 10 percent. Native topsoil shall be stockpiled and temporarily stabilized with seed and mulch and reused for final restoration when it is of sufficient quality.

3. Catch basins shall be provided with sediment traps for all outlet pipes that are 12” in diameter or greater. Catch basins within the site have been designed with an under drain connection to allow the subbase gravel to drain and reduce frost heave and movement at the basin. A sediment collection bag and an oil sorbent pillow shall be installed in all basins.

4. Permanent seeding shall be conducted only in April through May and in late summer until September 15.

5. Water quality units and underground storage systems will be incorporated into the project to meet water quality standards. These systems shall not be activated until the site is stabilized and the pavement has "cured" for at least 30 days.

11.0 TIMING AND SEQUENCE OF EROSION/SEDIMENTATION CONTROL MEASURES

The site is quite stable and drained to stable or depressional areas before entering the City's drainage system. Only limited areas of erosion were noted where Catchment B-1 discharges over the driveway apron to Somerset Street. A stone check dam to spread this flow is recommended to be installed early during construction.

The construction sequence will require the scheduling of work below the planned lightweight concrete fill to be in place before the lightweight concrete fill is placed. The lightweight concrete fill will need to be ballasted as soon as possible to prevent potential damage from hydrostatic uplift.

During construction, the following sequence should be used:

- Safety and security fence should be installed around the work areas and any staging or stockpile areas.
- The site should be inspected and any areas that exhibit erosion should be stabilized.
- Inlets to the work area and in close proximity should be protected with silt sacs. The silt sacs have the advantage of not interfering with traffic movements. Where possible, rice straw wattles should be placed circumferally around the portion of the inlet that receives runoff from the project.
- Dirtbags™ should be installed above a sand and crushed stone cushion as depicted on the erosion control detail sheets.
- Stabilized construction entrances should be installed to work and staging areas.
- Silt fence or silt barriers constructed of wood waste should be installed around the perimeter of the site and perpendicular to contours.
- The concrete wash area should be prepared.
- Sedimentation sumps or treatment tanks should be constructed or installed.
- The perimeter of the site should be inspected. Stone check dams should be installed about 30 feet upstream of any discharge leaving the site or flowing to an inlet.
- Material that is highly erodible in the work area or should be either covered with wood waste, stone, or an erosion resistant cover (even a free drainage gravel will be very beneficial).
- Containerized treatment systems should be set up for the treatment of any groundwater encountered and pumped from the work area excavations.

Once construction begins, it will be important to maintain the stabilized construction entrance. Wash-off of the tires from trucks and equipment entering and leaving the site depending upon the time of year and extent of activity to prevent dust or turbidity along the public right of ways.

A discrete parking lot is recommended for construction workers during construction. During some of the work, the use of the parking garage or a leased lot may be required. Any partial or temporary street closures will require the approval from the City of Portland. This element of the project is discussed in the construction phasing portion of the application.

12.0 CONTRACTING PROCEDURE

The project will be constructed by a General Contractor under contract to the lessee. The Contractor shall submit a schedule for the completion of the work, which will satisfy the following criteria:

1. The installation of the "prior to construction activities" shall be completed before other site construction begins. The runoff throughout the duration of the construction shall be pretreated with a Dirtbag™, discharges to a sedimentation trap, and/or treated using containerized treatment systems.

2. The schedule shall be subject to the approval of the Owner.

3. The Contractor must maintain an accurate set of record drawings indicating the date when an area is first denuded, the date of temporary stabilization, and the date of final stabilization. On September 15 of any calendar year, the Contractor shall submit a detailed plan for stabilizing the site for the winter and a description of what activities are planned during the winter.

4. The Contractor must install any added measures which may be necessary to control erosion/sedimentation and fugitive dust emissions from the site, with adjustments made dependent upon forecasted and actual site and weather conditions.

5. Certain erosion control products (such as DirtGlue™) come in a form that a release could occur on the site or into the environs. The Contractor shall include MSDS information for all products that have the potential for release to the environment and shall be responsible for implementing a safety control program for proper handling of these materials on the site.

6. The Stormwater Pollution Prevention Plan (SWPPP) is defined to consist of the Erosion Control Report, the Stormwater Management Plan, and the Stormwater O&M Plan. The SWPPP shall be maintained at a secure locked location at the Contractor's field trailer from commencement of the project. These documents shall be moved to a designated locked location inside the store at the period when the Contractor's trailers are removed and maintained until the Notice of Termination has been filed by the Owner. A notice and point of contact with cell phone number shall be posted at the trailer to permit access to the records during normal work hours.

   All additions and construction records shall be copied via e-mail to the following addresses:

   sbuskey@fstinc.com
   bkennedy@fstinc.com

   The Owner reserves the right to add additional personnel to this list at the pre-construction conference or at reasonable intervals during the project.

7. The Owner will provide a copy of the NOI acceptance letter to the Contractor. This letter shall be maintained at the site with the SWPPP.

8. Any revisions to the SWPPP must be authorized in writing by the Preparer of the Plan (Fay, Spofford & Thorndike) The Preparer of the Plan shall be permitted reasonable time to review and notify the City of Portland and other agencies of said changes. Revisions to the SWPPP will be required:

   a. Whenever the current provisions prove to be ineffective in minimizing pollutants in stormwater *discharges* from the site;

   b. Whenever there is a change in design, construction, or operation at the construction site that has or could have an effect on the discharge of pollutants; and

   c. To address issues or deficiencies identified during an inspection by the *qualified inspector*, the Department, or other regulatory authority.

9. Should the Owner notify the Contractor that the activity on the site is in violation of the SWPPP, the Contractor shall correct the deficiencies and file a photographic log with a list of corrective actions with the Owner within seven (7) days of notification by the Owner.

10. The Contractor shall engage a qualified inspector to monitor the work. This inspector shall be approved by the Owner prior to the individual being engaged on the project. This inspection shall be a part of the Contractor's Quality Control Plan for the project by the Contractor. The inspector's qualifications and duties that he shall perform are as follows:

    a. Licensed Professional Engineer or Certified Professional in Erosion Control

    b. Covered by Workman's Compensation Insurance

    c. Experienced in this type of work, the specific erosion controls applicable to this project with a resume approved by the engineer

    d. Compensated on a unit rate basis with no incentives for reduced costs or subject to any type of compensation for passing inspections

    e. Approved by the Owner and the preparer of this plan

    The *qualified inspector*s shall conduct site inspections in accordance with the following timetable:

    a. Where soil disturbance activities are on-going, the *qualified inspector* shall conduct a site inspection at least once every seven (7) calendar days.

    b. Where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and temporary stabilization measures have been applied to all disturbed areas, the *qualified inspector* shall conduct a site inspection at least once every thirty (30) calendar days. The *inspector* shall notify the Owner's designated representative if any problems or corrective measures are required.

c. Where soil disturbance activities have been shut down with partial project completion, the *qualified inspector* can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The *owner or operator* shall notify the Owner's representative and the City of Portland in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the Contractor shall have the *qualified inspector* perform a final inspection and certify that all disturbed areas have achieved *final stabilization*, and all temporary, structural erosion and sediment control measures have been removed, and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the "Final Stabilization" and "Post-Construction Stormwater Management Practice" certification statements on the NOT. The *owner or operator* shall then submit the completed NOT form to the MeDEP and the City of Portland.

At a minimum, the *qualified inspector* shall inspect all erosion and sediment control practices to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved *final stabilization*, all points of discharge to natural surface water bodies located within, or immediately adjacent to, the property boundaries of the construction site, and all points of discharge from the construction site.

The *qualified inspector* shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:

1. Date and time of inspection;
2. Name and title of person(s) performing inspection;
3. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;
4. A description of the condition of the runoff at all points of discharge from the construction site and sampling results. This shall include identification of any *discharges* of sediment from the construction site. Include *discharges* from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;
5. A description of the condition of all natural surface water bodies located within, or immediately adjacent to, the property boundaries of the construction site which received runoff from disturbed areas. This shall include identification of any *discharge* of sediment to the surface water body;
6. Identification of all erosion and sediment control practices that need repair or maintenance;
7. Identification of all erosion and sediment control practices that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;
8. Description and sketch of areas that are disturbed at the time of the inspection and areas that have been stabilized (temporary and/or final) since the last inspection;
9. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;

10. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s); and

11. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *qualified inspector* shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

12. Within one business day of the completion of an inspection, the *qualified inspector* shall notify the Owner the appropriate Contractor or Subcontractor of any corrective actions that need to be taken. The Contractor or Subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.

13. All inspection reports shall be signed by the *qualified inspector*. The inspection reports shall be maintained on site with the SWPPP and distributed via email at the time of filing.

14. The Owner reserves the right to have quality assurance monitoring of the work. The Contractor shall cooperate with the Owner and their quality assurance monitoring of the work including maintaining an accurate schedule for performing the work. The Owner will notify the Contractor if any particular elements of the work should be uncovered or available for observation by the Quality Assurance Monitor selected by the Owner. The Owner reserves the right to conduct the quality assurance monitoring during working hours at any time during the project.

13.0 PROVISIONS FOR MAINTENANCE OF THE EROSION/SEDIMENTATION CONTROL FEATURES

The project will be contracted to a General Contractor. The project is subject to the requirements of the local permits, and a state regulated Construction General Permit (MCGP).

This project requires the Contractor to prepare a list and designate by name, address and telephone number all individuals who will be responsible for implementation, inspection, and maintenance of all erosion control measures identified within this section and as contained in the Erosion and Sedimentation Control Plan of the contract drawings. Specific responsibilities of the inspector(s) will include:

1. Execution of the Contractor/Subcontractor Certification contained in Attachment B by any and all parties responsible for erosion control measures on the site as required by the permit authorities.

2. Assuring and certifying the Owner's construction sequence is in conformance with the specified schedule of this section. A weekly certification stating compliance, any deviations, and corrective measures necessary to comply with the erosion control requirements of this section shall be prepared and signed by the inspector(s).

3. In addition to the weekly certifications, the inspector(s) shall maintain written reports recording construction activities on site which include:

   - Dates when major grading activities occur in a particular area.
   - Dates when major construction activities cease in a particular area, either temporarily or permanently.
   - Dates when an area is stabilized.

4. Inspection of this project work site on a weekly basis and after each significant rainfall event (0.5 inch or more within any consecutive 24-hour period) during construction until permanent erosion control measures have been properly installed and the site has been stabilized. Inspection of the project work site shall include:

   - Identification of proper erosion control measure installation in accordance with the erosion control detail sheet or as specified in this section.
   - Determine whether each erosion control measure is properly operating. If not, identify damage to the control device and determine remedial measures.
   - Identify areas which appear vulnerable to erosion and determine additional erosion control measures which should be used to improve conditions.
   - Inspect areas of recent seeding to determine percent catch of grass. A minimum catch of 90 percent is required prior to removal of erosion control measures.
   - All erosion controls shall be removed within 30 days of permanent stabilization except for mulch and netting not detrimental to the project. Removals shall include, but not be limited to, all silt fence, hay bales, inlet protection, and stone check dams.
   - Accumulated silt/sediment should be removed when the depth of sediment reaches 50 percent of the barrier height. Accumulated silt/sediment should be removed from behind silt fencing when the depth of the sediment reaches 6 inches.
   - Silt sacks should be removed and replaced at least every three months and at any time where the weekly inspection reveals that siltation has significantly retarded the rate of flow through the silt sack.
   - Documentation of coordination of raw and treated groundwater sampling with the qualified environmental specialist, a summary of groundwater pumping activity since the last site report, and identification of where sample results can be obtained with any exceedance of the standards noted.

5. If inspection of the site indicates a change should be made to the Erosion Control Plan, to either improve effectiveness or correct a site-specific deficiency, the inspector shall immediately implement the corrective measure and notify the Owner of the change.

6. Arranging for an on-site meeting prior to commencing winter construction to assure that all special winter construction measures will be implemented and to review the specific requirements of this plan for winter construction.

All certifications, inspection forms, and written reports prepared by the inspector(s) shall be filed with the Owner, and the Permit File contained on the project site. All written certifications, inspection forms, and written reports must be filed within one (1) week of the inspection date.

The Contractor has sole responsibility for complying with the Erosion and Sedimentation Control Report, including control of fugitive dust, and shall be responsible for any monetary penalties resulting from failure to comply with these standards.

The contract specifications for erosion and sedimentation control have additional requirements and are appended to this narrative (Attachment C). The Contractor shall also comply with the Cumberland County Soils Conservation and the MeDEP Best Management Practices in effect at the time of construction.

Once construction has been completed, long-term maintenance of the stormwater management system will be the responsibility of the Applicant. Inspection and Maintenance items with a list of maintenance requirements and frequency are described in a separate document.

14.0 PRECONSTRUCTION CONFERENCE

Prior to any construction at the site, representatives of the Contractor, the Owner, and the site design engineer and any personnel identified in the permit conditions shall meet to discuss the scheduling of the site construction and the designation of the responsible parties for implementing the plan. The Contractor shall be responsible for scheduling the meeting. Prior to the meeting, the Contractor will prepare a detailed schedule and a marked-up site plan indicating areas and components of the work and key dates showing date of disturbance and completion of the work. The Contractor shall conduct a meeting with employees and sub-contractors to review the erosion control plan, the construction techniques which will be employed to implement the plan, and provide a list of attendees and items discussed at the meeting to the Owner. Three copies of the schedule, the Contractor's meeting minutes, and marked-up site plan shall be provided to the Owner.

15.0 ATTACHMENTS

Attachment A – Seeding Plan

Attachment B – Sample Erosion Control Compliance Certification and Inspection Forms

Attachment C – Erosion Control Specifications

Attachment D – DirtGlue™ Application and Use Requirements

Attachment E – Special Dewatering Specification Prepared by Tewhey Associates and Edited by DeLuca-Hoffman Associates, Inc./Fay, Spofford & Thorndike

Attachment F – Draft Specification for Groundwater Treatment System

16.0 PLAN REFERENCES

Drawings C-6.0 to C-6.5 Erosion & Sedimentation Control Plans and Details

ATTACHMENT A

Seeding Plan

PERMANENT SEEDING PLAN (LAWNS)

Project: _____midtown_____

Site Location: Portland, Maine_____

__X___ Permanent Seeding _____ Temporary Seeding

1. **Area to be Seeded:** Approximately ___ acre(s) or __12_/M. Sq. Ft.

2. **Instructions on Preparation of Soil:** Prepare a good seed bed for planting method used (do not over compact).

3. **Apply Lime as Follows:** _____ #/acres or __138#___/M Sq. Ft. or per soil test

4. **Fertilize:** _____ pounds of _____ - _____N-P-K/ac.

   __20_____ pounds of 10-20-20 N-P-K/M Sq. Ft. or per soil test

5. **Method of Applying Lime and Fertilizer:** Spread and work into the soil before seeding.

6. **Seed with the following mixture:**

   35% Kentucky Bluegrass
   20% Creeping Red Fescue
   15% Chewings Fescue
   15% Perennial Ryegrass
   15% Annual Ryegrass

7. **Mulching Instructions**: Apply at the rate of _____ tons per acre or____230_ pounds per M. Sq. Ft.

8. **Application:**

Type	Unit#	Tons, Etc.
Total Lime	138	#/1,000 s.f.
Total Fertilizer	20	#/1,000 s.f.
Total Seed	5	#/1,000 s.f.
Total Mulch	230	#/1,000 s.f.
Total Other		

9. **Remarks:**

   Seeding dates April 15 to May 31 and August 1 until September 1. Permanent seeding should be made prior to September 1 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.

   Fertilizer requirements shall be subject to actual test results of the topsoil used for the project. The Contractor shall be responsible for providing topsoil test results for pH and recommended fertilizer application rates to the Owner.

Seed mixture shall be fresh, clean, new crop seed. Seed may be mixed by an appropriate method on the site or may be mixed by the dealer. If the seed is mixed on the site, each variety shall be delivered in the original containers bearing the dealer's guaranteed analysis. If seed is mixed by the dealer, the Seeding Contractor shall furnish to the Owner the dealer's guaranteed statement of the composition of the mixture and the percentage of purity and germination of each variety.

Seed shall be purchased from a recognized distributor and shall test to a minimum percentage of 95% for purity and 85% for germination.

All loam shall have compost or peat admixtures to raise the organic content to 8%.

Deep tine aerate if soil is compact.

TEMPORARY SEEDING PLAN (EROSION CONTROL MIX)

Project: midtown

Site Location: Portland, Maine

X Permanent Seeding X Temporary Seeding

1. **Area to be Seeded:** Approximately 1.5 acre(s) or _____/M. Sq. Ft.

2. **Instructions on Preparation of Soil:** Prepare a good seed bed for planting method used.

3. **Apply Lime as Follows:** _____ #/acres or 138# /M Sq. Ft. or per soil test

4. **Fertilize:** _____ pounds of _____ - _____N-P-K/ac.

   20 pounds of 10-10-10 N-P-K/M Sq. Ft. or per soil test

5. **Method of Applying Lime and Fertilizer:** Spread and work into the soil before seeding.

6. **Seed with the following mixture:**

Annual Rye-grass	50%
Timothy	25%
Winter Rye	25%

7. **Mulching Instructions**: Apply at the rate of _____ tons per acre or 230 pounds per M. Sq. Ft.

8. **Application:**

Type	Unit#	Tons, Etc.
Total Lime	138	#/1,000 s.f.
Total Fertilizer	20	#/1,000 s.f.
Total Seed	1	#/1,000 s.f.
Total Mulch	230	#/1,000 s.f.
Total Other		

9. **Remarks:**

For areas with slopes >10% and fall and winter erosion control areas, mulch netting shall be used per manufacturer's specifications.

Permanent seeding should be made prior to September 1 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.

Fertilizer requirements shall be subject to actual test results of the topsoil used for the project. The Contractor shall be responsible for providing topsoil test results for pH and recommended fertilizer application rates to the Owner.

Seed mixture shall be fresh, clean, new crop seed. Seed may be mixed by an appropriate method on the site or may be mixed by the dealer. If the seed is mixed on the site, each variety shall be delivered in the original containers bearing the dealer's guaranteed analysis. If seed is mixed by the dealer, the Seeding Contractor shall furnish to the Owner the dealer's guaranteed statement of the composition of the mixture and the percentage of purity and germination of each variety.

Seed shall be purchased from a recognized distributor and shall test to a minimum percentage of 95% for purity and 85% for germination.

ATTACHMENT B

Sample Erosion Control Compliance Certification and Inspection Forms

MAINE CONSTRUCTION GENERAL PERMIT
CONTRACTOR/SUBCONTRACTOR CERTIFICATION

PROJECT INFORMATION

Project Name: midtown

Address: Portland, Maine

CONTRACTOR/SUBCONTRACTOR INFORMATION

Firm Name:

Address:

Telephone:

Type of Firm:

CERTIFICATION STATEMENT

"I certify under penalty of law that I understand the terms and conditions of the Maine Construction General Permit (MCGP) permit that authorizes the stormwater discharges associated with construction activity from the project site identified as part of this certification."

_____
Signature

_____
Typed Name

_____
Title

_____
Date

MAINE CONSTRUCTION GENERAL PERMIT

INSPECTION REPORT

PROJECT INFORMATION

Project Name: midtown

Address: Portland, Maine

INSPECTOR INFORMATION

Inspector Name: _____

Firm: _____

Title: _____

Qualifications: _____

Weather and Soil Conditions: _____

INSPECTION SUMMARY

Date of Inspection: _____

Major Observations: _____

_____

_____

_____

1. Attach the following to the Report:

   a. A description of the condition of the runoff at all points of discharge from the construction site. This shall include identification of any *discharges* of sediment from the construction site. Include *discharges* from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;

   b. A description of the condition of all natural surface water bodies located within, or immediately adjacent to, the property boundaries of the construction site which received runoff from disturbed areas. This shall include identification of any discharge of sediment to the surface water body;

   c. Identification of all erosion and sediment control practices that need repair or maintenance.

   d. Identification of all erosion and sediment control practices that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;

   e. Description and sketch of areas that are disturbed at the time of the inspection and areas that have been stabilized (temporary and/or final) since the last inspection;

f. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPP and technical standards;

g. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s); and

h. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *qualified inspector* shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

2. Within one business day of the completion of an inspection, the *qualified inspector* shall notify the owner the appropriate contractor or subcontractor of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.

3. All inspection reports shall be signed by the *qualified inspector*. The inspection reports shall be maintained on site with the SWPP and distributed via email at the time of filing.

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 SUBMITTED WITHIN 2 DAYS OF INSPECTION TO OWNER FOR APPROVAL):

_____

_____

_____

_____

CERTIFICATION STATEMENT:

"I certify under penalty of law that this document and all Appendices 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 find and imprisonment for knowing violations."

_____
Signature

_____
Typed Name

_____
Title

_____
Date

ATTACHMENT C

Erosion Control Specifications

SECTION 312513 – EROSION CONTROLS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Temporary and permanent erosion control systems.

B. Slope Protection Systems.

1.2 RELATED SECTIONS

A. Section 017000.01 – Site Permit Requirements

B. Section 311000 – Site Clearing

C. Section 312000 – Earth Moving

D. Erosion and Sedimentation Control Report

E. Construction Requirements

1.3 ENVIRONMENTAL REQUIREMENTS

A. The Contractor shall protect adjacent properties and water resources from erosion and sediment damage throughout the life of the construction contract in accordance with the Erosion and Sediment Control Report prepared for this project and in accordance with the requirements of the MeDEP Chapter 500 Stormwater Standards and special conditions of the permits. The Erosion and Sediment Control Report and Site Permits have specific restrictions on seasonal work limits, the amount of area which can be exposed at a given time, the general sequence of construction, and contractor monitoring. These affect the scheduling of the work.

Protected resources as referred to in this document include wetlands, streams or water bodies, and trees or vegetation outside of the work limit.

Prior to grubbing, orange safety fence shall be installed between the limit of grading and any protected resource. When the protected resource is a tree, the safety fence shall be installed at the drip line of the tree. If disturbance of the root system occurs, the Contractor shall have an Arborist or Nurseryman inspect the root system and provide recommendations to preserve the tree. This information shall be included in the logs for the Erosion Control Plan maintained by the Contractor.

B. The General Contractor will be required to designate, by name, a Registered Professional Engineer or equivalent person responsible for implementation of all erosion control measures as required by the MCGP for this project and this specification. Specific responsibilities will include:

1. Assuring and certifying the contractor's construction sequence is in conformance with the specified schedule. In addition, a weekly certification stating compliance, any deviations, and corrective measures shall be filed with the owner by this person.

   A copy of the certification form is contained the Erosion and Sedimentation Control Report.

2. Inspection of the project work site on a weekly basis, with the installation of added erosion control measures in areas which appear vulnerable to erosion. The erosion and sediment measures shown on the contract documents are minimum provisions. Any additional measures required to comply with the permit or intent of the Erosion and Sedimentation Control plan shall be incidental to the contract.

3. Inspection of all erosion control measures and drainage inlets after any significant rainfall. Accumulated silt/sediment should be removed when the depth of sediment reaches 50 percent of the barrier height. Accumulated silt/sediment should be removed from behind silt fencing when the depth of the sediment reaches 6 inches. A significant rainfall shall be defined as over ½ inch of precipitation in any consecutive 24-hour period.

4. Inspect areas for catch of grass. A minimum catch of 90 percent is required prior to removal of erosion control measures.

5. Maintaining precipitation records and monitoring forecast activity.

C. The Owner/Engineer, Engineer will provide either an FTP site or email address for the erosion control monitoring reports to be provided to the Owner.

D. It shall be the responsibility of the Contractor to implement, maintain, monitor, and document compliance with the erosion and sediment control plan for the project and to avoid turbid discharges from the site, to avoid fugitive dust emissions, to avoid sediment from leaving the site, or affecting areas outside of the project work limits.

   The work includes the submission of logs and photographic evidence of compliance with the plan at the time each pay requisition is submitted. These records shall be certified as complying with the Erosion Control Plan and this specification. Deficiencies in the logs or photographic records identified by the Owner or Engineer shall be corrected before the pay requisition is processed.

   The photographic documentation must include:

   1. A minimum of 10 digital photos per week showing the appropriate erosion control measures in place.

   2. Evidence of stabilization of areas that are not being actively worked.

   3. Documentation of any observed releases of turbid runoff or failure of any erosion control measure.

E. The erosion control measures specified are required to be installed in accordance with the details provided with the construction plans and manufacturer's recommendations. The method and details of the installation of these erosion control methods are of vital importance to insure the effectiveness of the erosion control measures. While precipitation amounts cannot be predicted, the Erosion Control Plan is designed to minimize erosion by restricting the amount of the site that can be open at a given time, limiting the period that an area can be open without stabilization, and requiring weather forecasts to be monitored. It is a requirement of the contract documents that these methods be incorporated on the site.

F. Monthly Training: The Contractor and the designated person responsible for erosion control shall conduct monthly training meetings for anyone working on the site work of the project. A log shall be maintained recording the attendance and the topics of discussion. Each meeting shall include a discussion of problems that occurred in the past month, any approved changes to the Erosion Control Plan, the anticipated upcoming four-week schedule, and a general discussion of the plan requirements.

G. Rain Gauge: The Contractor shall provide and maintain a rain gauge on the site and record the precipitation on the site during the period between the start of construction and substantial completion. A sample log is appended to these specifications.

H. A Stormwater Pollution Control Prevention Plan Log is attached to this specification for use by the Contractor. The Engineer, Regulatory Officials, and the Engineer shall attend the first training session. This shall be conducted prior to any clearing or other land disturbing activities on the site. The Contractor shall have samples and catalog cuts for the erosion control materials that will be employed at the site for review at this initial meeting.

I. Prior to submitting a pay requisition, the Contractor must certify that any employee or subcontractor and their employees working on site work for the project have received training and attended a training session for this project within the past 30 days. Any employee not trained shall not be permitted to work on the site.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Quick growing grasses for temporary seeding (see seed mixes contained in Erosion and Sedimentation Report).

B. Hay or straw bales.

C. Fencing for siltation control as specified on the plans. Mirafi® prefabricated silt fence or approved equal.

D. Curlex blankets by American Excelsior Company or approved equal. Curlex® single net except Curlex double net in winter months.

E. Bale stakes shall be a minimum of 4 feet in length and 1" in width.

F. Temporary mulches such as loose hay, straw, netting, wood cellulose, or agricultural siltage.

G. Fence stakes shall be metal stakes a minimum of 8 feet in length.

H. Stone check dams shall be spaced according to the Erosion Control Detail Plan.

I. Stone Sediment Barriers or SiltSacks™, or approved equal for inlet protection.

J. A stabilized construction entrance to be constructed of the materials identified on the contract drawings.

K. Riprap for slopes, culvert, storm drain inlet, and outlet aprons.

L. Sand blankets, or non-erodible native material, to protect clay or erodible subgrades.

M. Reinforced turf. American Green P300 or approved equal.

N. Wood mulch.

O. Calcium chloride and water for dust control.

P. DIRTBAG® as outlined on the contract drawings and specified in Section 31.

Q. Catch basin inserts. SiltSacks™ or approved equal.

R. Sorbent booms. Ecotech "Hula" Bug or equal.

S. DirtGlue™ Polymar Emulsion Mixes. DirtGlue™ emulsion formulation must be approved by Owner prior to installation.

T. Erosion Control Net. American Excelsior Curlex® "Net Free" or equal.

U. Level Lip Spreader: The level lip spreaders sham consist of the materials depicted on the drawing set including the concrete foundations, the mastic, the Linear low density polyethylene strip, and the rip rap and aggregates depicted on the details and the aluminum plates and components as shown on the drawings.. The aluminum plate shall be cut to meet the V notch specified, have notches to allow leveling and adjustment.

PART 3 - EXECUTION

3.1 PREPARATION

A. Review site erosion control plan.

B. Deficiencies or changes in the erosion control plan as it is applied to current conditions will be brought to the attention of the Engineer and Owner and a remedial action prepared and implemented by the Contractor.

3.2 EROSION CONTROL AND SLOPE PROTECTION IMPLEMENTATION

A. Provide catalog cuts and information concerning the erosion control products which will be used for construction for review by the Owner.

B. Provide information concerning the installation of the erosion sedimentation control including anchorage trench provisions anchorage devices, and spacing for review by the Owner.

C. Place erosion control systems in accordance with the erosion control plan and in accordance with approved installation procedures.

D. This contract limits the surface area of erodible earth material exposed any time by clearing and grubbing, excavation, borrow and embankment operations. The Owner has the authority to direct the Contractor to provide immediate permanent or temporary pollution control measures. The Contractor will be required to incorporate all permanent erosion control features into the project at the earliest practical time to minimize the need for temporary controls. Cut slopes shall be permanently seeded and mulched as the excavation proceeds to the extent considered desirable and necessary to comply with the erosion control plan.

E. The temporary erosion control systems installed by the Contractor shall be maintained to control siltation at all times during the life of the Contract. The Contractor must respond to any maintenance or additional work to comply with this specification within a 48-hour period.

F. DIRTBAGS® are required for the discharge of <u>any</u> construction dewatering or pumping, and the DIRTBAG® shall be operational before any trenching.

G. Certain erosion control measures require staged restoration. For example, reinforced cuts must be completed in 5-foot vertical increments.

H. Areas of water quality filters may be used as temporary sediment sumps but must be removed and the subgrade reworked before the filter is constructed.

I. Catch basins may require an Underdrain connection below subgrade. If the crushed stone and Underdrain fabric become fouled during construction they shall be replaced.

J. Fugitive dust shall be controlled through construction.

K. Sorbent booms must be installed in the catch basin before paving. These shall be replaced prior to requesting substantial completion.

L. DirtGlue™ may be substituted to the Engineer for approval when DirtGlue™ is to be substituted for mulch, dust control, and other erosion controls of the emulsion mix, application rate, and weather condition that exist at the time of proposed installation must be approved by the Engineer.

3.3 CONSTRUCTION OF TEMPORARY EROSION CONTROL MEASURES

A. Earth Dike Construction:

1. All dikes shall be compacted by earth-moving equipment.
2. All dikes shall have positive drainage to an outlet.
3. Top width may be wider and side slopes be flatter if desired to facilitate crossing by construction traffic.

4. Field location should be adjusted as needed to utilize a stabilized safe outlet.
5. Earth dikes shall have an outlet that functions with a minimum of erosion. Runoff shall be conveyed to a sediment trapping device such as a sed iment trap or sediment basin where either the dike channel or the drainage area above the dike are not adequately stabilized.
6. Stabilization shall be (A) in accordance with standard specifications for seed and straw mulch if not in seeding season, (B) flow channel as per the chart on the previous page.

B. Temporary Swale Construction:

1. All temporary swales shall have uninterrupted positive grade to an outlet.
2. Diverted runoff from a disturbed area shall be conveyed to a sediment trapping device.
3. Diverted runoff from an undisturbed area shall outlet directly into an undisturbed stabilized area at non-erosive velocity.
4. All trees, brush, stumps, obstructions, and other objectionable material shall be removed and disposed of so as not to interfere with the proper functioning of the swale.
5. The swale shall be excavated or shaped to line, grade, and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.
6. Fills shall be compacted by earth moving equipment.
7. All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the swale.
8. Stabilization shall be as per the flow channel stabilization chart below:

Type of Treatment	Channel Grade	A (5 AC. or Less)	B (5 AC. or Less)
1	0.5-3.0%	Seed and Straw Mulch	Seed and Straw Mulch
2	3.1-5.0%	Seed and Straw Mulch	Seed Using Jute or Excelsior
3	5.1-8.0%	Seed with Jute or Excelsior, Sod	Lined with 4-8’ Rip-Rap or Recycled Concrete Equivalent
4	8.1-20%	Lined with 4-8’ Rip-Rap	Engineered Design

9. Periodic inspection and required maintenance must be provided after each rain event.

C. Perimeter Dike/Swale Construction

1. All perimeter dike/swale shall have uninterrupted positive grade to an outlet.
2. Diverted runoff from a disturbed area shall be conveyed to a sediment trapping device.
3. Diverted runoff from an undisturbed area shall outlet into an undisturbed stabilized area at non-erosion velocity.
4. The swale shall be excavated or shaped to line grade and cross section as required to meet the criteria specified in the standard.
5. Stabilization of the area disturbed by the dike and swale shall be done in accordance with the standard and specifications for temporary seeding and mulching, and shall be done within 10 days.

6. Periodic inspection and required maintenance must be provided after each rain event.

   Max. Drainage Area Limit: 2 Acres.

D. Level Spreader Construction (Non-Metallic Without V Notch Weirs)

1. The matting should be a minimum of 4 ft. wide extending 6 inches over the lip and buried 6 inches deep in a vertical trench on the lower edge. The upper edge should butt against smoothly cut sod and be securely held in place with closely spaced heavy duty wire staples at least 12 inches in length.
2. Ensure that the lip is level to uniformly spread discharge.
3. The lip shall be constructed on undisturbed soil not fill.
4. A 20 foot transition section will be constructed from the diversion channel to the spreader to smoothly blend the different dimension and grades.
5. The runoff discharge will be outleted onto a stabilized vegetated slope not exceeding 10%.
6. Seed and mulch the disturbed area immediately after construction.

E. Level Lip Spreader

The intent of the level lip spreader is to disperse the flow along the weir and not permit the flow to concentrate. This requires the weir be set level and erosion control provided to protect the area on the downstream side of the spreader. The grades at the end of the spreaders shall be higher than the spreader and consist of a compacted material to prevent washout and bypass around the end of the weir.

In many cases the area downstream of the weir will need to be inspected to make sure there is no inadvertent or unintentional concentration of flows. Erosion control blankets, mats, or crushed stone may be necessary to proven rill erosion. Downstream areas shall be inspected with a representative of the Owner after the weir location has been established in the field, at the time of construction, and a final inspection before substantial completion is issued for the site work.

The level lip spreader shall be checked for level and observed during heavy precipitation to make sure the flow is uniform along the length of the spreader.

F. Straw Bale Dike Construction

1. Bales shall be placed at the toe of a slope or on the contour and in a row with ends tightly abutting the adjacent bales.
2. Each bale shall be embedded in the soil a minimum of (4) inches, and placed so the bindings are horizontal.
3. Bales shall be securely anchored in place by either two stakes or re-bars driven through the bale. The first stake in each bale shall be driven toward the previously laid bale at an angle to force the bales together. Stakes shall be driven flush with the bale.
4. Inspection shall be frequent and repair placement shall be made promptly as needed.
5. Bales shall be removed when they have served their usefulness so as not to block or impede storm flow or drainage.

G. Silt Fence Construction

1. Woven wire fence to be fastened securely to fence posts with wire ties or staples. Posts shall be steel either 'T' or 'U' type or hardwood.
2. Filter cloth to be fastened securely to woven wire fence with ties spaced every 24" at top and mid section. Fence shall be woven wire, 12 ½ gauge, 6" maximum mesh opening.
3. When two sections of filter cloth adjoin each other they shall be overlapped by six inches and folded. Filter cloth shall be either Filter X, Mirafi 100X, Stabilinka T140N, or approved equivalent.
4. Prefabricated units shall be Geofab, EnviroFence, or approved equivalent.
5. Maintenance shall be performed as needed and material removed when 'bulges' develop in the silt fence.

H. Check Dam Construction

1. Stone will be placed on a filter fabric foundation to the lines, grades and locations shown in the plan.
2. Set spacing of check dams to assume that the elevations of the crest of the downstream dam are at the same elevation of the toe of the upstream dam.
3. Extend the stone a minimum of 1.5 feet beyond the ditch banks to prevent cutting around the dam.
4. Protect the channel downstream of the lowest check dam from scour and erosion with stone or liner as appropriate.
5. Ensure that channel appurtenances such as culvert entrances below check dams are not subject to damage or blockage from displaced stone.

   Maximum drainage area 2 acres.

I. Rock Dam Construction

1. The area under the rock dam shall be cleared and stripped of roots and other objectionable material. The reservoir shall be cleared as needed to facilitate sediment removal.
2. Dimensions shown are minimum. Trench shall be excavated from abutment to abutment on the dam centerline. Filter fabric shall be placed from upstream edge of key trench to downstream edge of apron. Joints will lap a minimum of 1 ft. with upstream strip on top.
3. Construct the rock embankment to the dimensions shown on the drawing. Rock abutments shall be maintained 2 ft. above the crest.
4. The rock dam shall be constructed prior to clearing the basin area. Stabilize all disturbed areas, except the basin area, with temporary seeding.
5. Fencing and warning signs should be placed as appropriate.

   Maximum drainage area 50 acres.

J. Excavated Drop Inlet Protection Construction

1. Clear the area of all debris that will hinder excavation.
2. Grade approach to the inlet uniformly around the basin.
3. Weep holes shall be protected by gravel.
4. Upon stabilization of contributing drainage area, seal weep holes, fill basin with stable soil to final grade, compact it properly and stabilize with permanent seeding.

   Maximum drainage area 1 acre.

K. Filter Fabric Drop Inlet Protection Construction

1. Filter fabric shall have an EOS of 40-85. Burlap may be used for short term applications.
2. Cut fabric from a continuous roll to eliminate joints. If joints are needed they will be overlapped to the next stake.
3. Stake materials will be standard 2’ x 4’ wood or equivalent. Metal with a minimum length of 3 feet.
4. Space stakes evenly around inlet 3 feet apart and drive a minimum 18 inches deep. Spans greater than 3 feet may be bridged with the use of wire mesh behind the filter fabric for support.
5. Fabric shall be embedded 1 foot minimum below ground and backfilled. It shall be securely fastened to the stakes and frame.
6. A 2’ x 4’ wood frame shall be completed around the crest of the fabric for over flow stability.

   Maximum drainage area 1 acre.

L. Stone and Block Drop Inlet Protection Construction

1. Lay one block on each side of the structure on its side for dewatering. Foundation shall be 2 inches minimum below rest of inlet and blocks shall be placed against inlet for support.
2. Hardware cloth or ½” wire mesh shall be placed over block openings to support stone.
3. Use clean stone or gravel ½ - ¾ inch in diameter placed 2 inches below top of the block on a 2:1 slope or flatter.
4. For stone structures only, a 1 foot thick layer of the filter stone will be placed against the 3 inch stone as shown on the drawings.

   Maximum drainage area 1 acre.

M. Curb Drop Inlet Protection Construction

1. Filter fabric shall have an EOS of 40-85.
2. Wooden frame shall be constructed of 2’ x 4’ construction grade lumber.
3. Wire mesh across throat shall be a continuous piece 30 inch minimum width with a length 4 feet longer than the throat. It shall be shaped and securely nailed to a 2’ x 4’ weir.

4. The weir shall be securely nailed to 2’ x 4’ spacers 9 inches long spaced no more than 6 feet apart.
5. The assembly shall be placed against the inlet and secured by 2’ x 4’ anchors 2 feet long extending across the top of the inlet and held in place by sandbags or alternate weights.

   Maximum drainage area 1 acre.

N. Pipe Outlet Sediment Trap Construction

1. Area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
2. The fill material for the embankment shall be free of roots or other woody vegetation as well as over-sized stones, rocks, organic material, or other objectionable material. T he embankment shall be compacted by traversing with equipment while it is being constructed.
3. Volume of sediment storage shall be 3600 cubic feet per acre of contributory drainage.
4. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to ½ the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
5. The structure shall be inspected after each rain and repairs made as needed.
6. Construction operations shall be carried out in such a manner that erosion and water pollution are minimized.
7. The structure shall be removed and area stabilized when the drainage area has been properly stabilized.
8. All fill slopes shall be 2:1 or flatter, cut slopes 1:1 or flatter.
9. All pipe connections shall be watertight.
10. The top 2/3 of the riser shall be perforated with one (1) inch diameter holes or slits spaced six (6) inches vertically and horizontally and placed in the concave portion of pipe. No holes will be allowed within six (6) inches of the horizontal barrel.
11. The riser shall be wrapped with ¼ to ½ inch hardware cloth wire then wrapped with filter cloth (having an equivalent sieve size of 40-80). The filter cloth shall extend six (6) inches above the highest hole and six (6) inches below the lowest hole. Where ends of the filter cloth come together, they shall be over-lapped, folded and stapled to prevent bypass.
12. Straps or connecting bands shall be used to hold the filter cloth and wire fabric in place. They shall be placed at the top and bottom of the cloth.
13. Fill material around the pipe spillway shall be hand compacted in four (4) inch layers. A minimum of two (2) feet of hand compacted backfill shall be placed over the pipe spillway before crossing it with construction equipment.
14. The riser shall be anchored with either a co ncrete base or steel plate base to prevent flotation. For concrete based the depth shall be twelve (12) inches with the riser embedded nine (9) inches. A ¼ inch minimum thickness steel plate shall be attached to the riser by a continuous weld around the bottom to form a watertight connection and then place two (2) feet of stone, gravel, or tamped earth on the plate.

O. Grass Outlet Sediment Trap Construction

1. Volume of sediment storage shall be 3,600 cubic feet per acre of contributory drainage area.
2. Minimum crest width shall be 4x drainage area.
3. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to ½ the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
4. The structure shall be inspected after each rain and repairs made as needed.
5. Construction operations shall be carried out in such a manner that erosion and water pollution shall be minimized.
6. The sediment trap shall be removed and area stabilized when the remaining drainage drainage area has been properly stabilized.
7. All cut slopes shall be 1:1 or flatter.

   Maximum drainage area 5 acres.

P. Catch Basin Sediment Trap Construction

1. Sediment shall be removed and the trap restored to its original dimensions when the sediment has accumulated to ½ the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
2. The volume of sediment storage shall be 3600 cubic feet per acre of contributory drainage.
3. The structure shall be inspected after each rain and repairs made as needed.
4. Construction operations shall be carried out in such a manner that erosion and water pollution shall be minimized.
5. The sediment trap shall be removed and the area stabilized when the constructed drainage area has been properly stabilized.
6. All cut slopes shall be 1:1 or flatter.

   Maximum drainage area 3 acres.

Q. Stone Outlet Sediment Trap Construction

1. Area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
2. The fill material for the embankment shall be free of roots and other woody vegetation as well as over-sized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed.
3. All cut and fill slopes shall be 2:1 or flatter.
4. The stone used in the outlet shall be small riprap 4”-8” along with a 1’ thickness of 2’ aggregate placed on the upgrade side on the small riprap or embedded filter cloth in the riprap.
5. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to ½ the design depth of the trap.

6. The structure shall be inspected after each rain and repairs made as needed.
7. Construction operations shall be carried out in such a manner that erosion and water pollution is minimized.
8. The structure shall be removed and the area stabilized when the drainage area has been properly stabilized.

   Maximum drainage area 5 acres.

R. Riprap Outlet Sediment Traps Construction

1. The area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
2. The fill material for the embankment shall be free of roots or other woody vegetation as well as over-sized stones, rocks, organic material or other objectionable material. T he embankment shall be compacted by traversing with equipment while it is being constructed. Maximum height of embankment shall be five (5) feet, measured at centerline of embankment.
3. All fill slopes shall be 2:1 or flatter, cut slopes 1:1 or flatter.
4. Elevation of the top of any dike directing water into trap must equal or exceed the height of embankment.
5. Storage area provided shall be figured by computing the volume available behind the outlet channel up to an elevation of one (1) foot below the level weir crest.
6. Filter cloth shall be placed over the bottom and sides of the outlet channel prior to placement of stone. Sections of fabric must overlap at least one (1) foot with section nearest the entrance placed on top. Fabric shall be embedded at least six (6) inches into existing ground at entrance outlet channel.
7. Stone used in the outlet channel shall be four (4) to eight (8) inch riprap to provide a filtering effect. A layer of filter cloth shall be embedded one (1) foot with section nearest entrance placed on top. Fabric shall be embedded at least six (6) inches into existing ground at entrance of outlet channel.
8. Sediment shall be removed and trap restored to its original dimensions when sediment has accumulated to ½ the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
9. The structure shall be inspected after each rain and repaired as needed.
10. Construction operations shall be carried out in such a manner that erosion and water pollution are minimized.
11. The structure shall be removed and the area stabilized when drainage area has been properly stabilized.
12. Drainage area for this practice is limited to 15 acres or less.

S. Portable Sediment Tank Construction

1. Clean out the sediment tank when one third (1/3) filled with silt.
2. Steel drums are used as an example due to their ready availability. Any tanks may be used, providing that the volume requirements are met.
3. All sediment collected in the tank shall be disposed of in a sediment trapping device or as approved by the inspector.

T. Stabilized Construction Entrance

1. Stone Size – Use 2” stone, or reclaimed or recycled concrete equivalent.
2. Length – Not less than 50 feet (except on a single residence lot where a 30 foot minimum length would apply).
3. Thickness – Not less than six (6) inches.
4. Width – Twelve (12) foot minimum, but not less than the full width at points where ingress or egress occurs. Twenty-four (24) foot if single entrance to site.
5. Filter Cloth – Will be placed over the entire area prior to placing of stone.
6. Surface Water – All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable berm with 5:1 slopes will be permitted.
7. Maintenance – The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way, all sediment spilled, dropped, washed or tracted onto public rights-of-way must be removed immediately.
8. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
9. Periodic inspection and needed maintenance shall be provided after each rain.

U. Sump Pit Construction

1. Pit dimensions are optional.
2. The standpipe should be constructed by perforating a 12-24” diameter corrugated or PVC pipe.
3. A base of 2” aggregate should be placed in the pit to a depth of 12” after installing the standpipe, the pit surrounding the standpipe should be backfilled with 2” aggregate.
4. The standpipe should extend 12-18” above the lip of the pit.
5. If discharge will be pumped directly to a storm drainage system, the standpipe should be wrapped with filtercloth before installation. If desired, ¼” – ½” hardware cloth may be placed around the standpipe, prior to attaching the filtercloth.

3.4 MULCH ANCHORING REQUIREMENTS

Anchoring Method or Material	Kind of Mulch to be Anchored	How to Apply
1. Peg and Twine	Hay or straw	After mulching, divid areas into blocks approximately 1 sq. yd. in size. Drive 4-6 pegs per block to within 2" to 3" of soil surface. Secure mulch to surface by stretching twine between pegs in criss-cross pattern on each block. Secure twine around each peg with 2 or more tight turns. Drive pegs flush with soil. Driving stakes into ground tightens the twine.
2. Mulch Netting	Hall or straw	Staple the light-weight paper, jute, wood fiber, or plastic nettings to soil surface according to manufacturer's recommendations. Should be biodegradable. Most products are not suitable for foot traffic.
3. Wood Cellulose Fiber	Hay or Straw	Apply with hydroseeder immediately after mulching. Use 500 lbs. Wood fiber per acre. Some products contain an adhesive material, possible advantageous.
4. Mulch Anchoring Tool	Hay or Straw	Apply mulch and pull a mulch anchoring tool (blunt, straight discs) over mulch as near to the contour as possible. Mulch material should be "tucked" into soil surface about 3".
5. Chemical	Hay or Straw	Apply Terra Tack AR 120 lbs./ac. in 480 gal. of water (#156/ac.) or Aerospray 70 (60 gal/ac.) according to manufacturer's instructions. Avoid application during rain. A 24-hour curing period and a soil temperature higher than 45º Fahrenheit are required.

END OF SECTION 312513

STORMWATER POLLUTION PREVENTION PLAN

STORM WATER POLLUTION PREVENTION PLAN
MODIFICATION REPORT

midtown
PORTLAND, MAINE

CHANGES REQUIRED FOR STORM WATER POLLUTION PREVENTION PLAN

The SWPPP must be amended whenever there is a change in design, construction, operation, or maintenance at the construction site that has a significant effect on the discharge of pollutants to the waters of the United States that has not been previously addressed in the SWPPP, if inspections or investigations by site staff, local, state or federal officials determine that discharges are causing water quality exceedances or the SWPPP is ineffective in eliminating or significantly minimizing pollutants in storm water discharges from the construction site, or based on the results of an inspection, or there is a release containing a Hazardous Substance or Oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302 occurs during a 24 hour period, the SWPPP must be modified to include additional or modified BMPs designed to correct identified problems. Revisions to the SWPPP must be completed within seven (7) calendar days following the inspection. Modifications that are the result of inspections shall be initialed within 24 hours and completed within 48 hours. All modifications are to be referenced on both Form D-1 and on Progress Drawing.

To:	**Project Manager**	**Date:**	
Address:			
		Project Name:	
Telephone:			
Facsimile:			
Sent Via:	☐ **Facsimile**	☐ **Courier**	☐ **US Mail**

MODIFICATION DATE: _____ MODIFICATION NUMBER: _____

INSPECTOR: _____ _____
(Print Name) (Inspector Signature)

QUALIFICATIONS OF INSPECTOR: _____

CHANGES REQUIRED TO THE STORMWATER POLLUTION PREVENTION PLAN: _____
_____
_____

REASONS FOR CHANGES: _____
_____
_____

TO BE PERFORMED BY: _____ ON OR BEFORE: _____

Operator: _____

Approved by Owner: _____

STORM WATER POLLUTION PREVENTION PLAN

TRAINING LOG

(The Contractor shall provide training sessions at least every 30 days per Section 801(K))

midtown
PORTLAND, MAINE

Storm Water Pollution Prevention Plan Topic: (Check as appropriate, and attach agenda)

☐ **Temporary Soil Stabilization**

☐ **Temporary Sediment Control**

☐ **Wind Erosion Control**

☐ **Tracking Control**

☐ **Non-Storm Water Management**

☐ **Waste Management and Materials Pollution Control**

☐ **Erosion & Sediment Control Plan**

Specific Training Objective: _____

Date: _____

Instructor: _____
Location: _____
Telephone: _____

Attendance Roster

Name	Company	Telephone Number	Signature

Operator: _____

Approved by Owner: _____

STORM WATER POLLUTION PREVENTION PLAN

FINAL STABILIZATION CERTIFICATION /NOTICE OF TERMINATION CHECKLIST

midtown
PORTLAND, MAINE

☐ **All soil disturbing activities are complete.**

2. ☐ **Temporary Erosion and Sediment Control Measures have been removed or will be removed at the appropriate time.**

3. ☐ **All areas of the Construction Site not otherwise covered by a permanent pavement or structure have been stabilized with a uniform perennial vegetative cover with a density of 90% or equivalent measures have been employed.**

CONTRACTOR'S CERTIFICATION: ***[modify the following statement to be consistent with that on the Notice of Termination for the permitting agency]***

"I certify under penalty of law that all storm water discharges associated with Construction Activity from the identified project that are authorized by the NPDES Construction General Permit have been eliminated and that all disturbed areas and soils at the construction site have achieved Final Stabilization and all temporary erosion and sediment control measures have been removed or will be removed at the appropriate time."

Company Name _____

Name (Print) _____

Signature _____

Title _____

Date _____

Date: _____

Received by: _____
[Name]

STORM WATER POLLUTION PREVENTION PLAN
REPORTABLE QUANTITY RELEASE FORM

midtown
PORTLAND, MAINE

The discharges of Hazardous Substances or Oil in storm water discharges from construction sites must be prevented or minimized in accordance with the SWPPP. Where a release containing a Hazardous Substance or Oil in an amount equal to or in excess of a reportable quantity established under 40CFR Part 110, 40CFR Part 117 and 40CFR Part 302 occurs, the following steps must be taken:

1. All measures must be taken to contain and abate the spill and to prevent the discharge of Hazardous Substances or Oil to storm water or off-site.

2. Contact the Owner or Operator's Engineer immediately upon knowledge of release.

3. If a release is equal to or in excess of a reportable quantity, the SWPPP must be modified within seven (7) calendar days of knowledge of the discharge to provide a description of the release, the circumstances leading to the release, and the date of the release. The plans must identify measures to prevent the recurrence of such releases and to respond to such releases.

Date of Spill	Material Spilled	Approximate Quantity of Spill (in gallons)	Agency(s) Notified	Date of Notification	SWPPP Revision Date

YEAR 20___

midtown

PORTLAND, MAINE

STORM WATER POLLUTION PREVENTION PLAN

PROJECT RAINFALL LOG

Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Day												
1												
2												
3												
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PM Initials												

STORM WATER POLLUTION PREVENTION PLAN

CONSTRUCTION SITE NOTICE

The following information is posted in compliance with the Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP)

Information must be typed

Contact Name and Phone Number:	
Brief Project Description:	**[Reference Section 804 of the SWPPP]:**
Location of Storm Water Pollution Prevention Plan (SWPPP):	

A Storm Water Pollution Prevention Plan (SWPPP) has been developed and implemented according to Permit requirements. A full copy of the SWPPP for this construction project can be found at the location identified above.

This permit does not provide the public with any right to trespass on a construction site for any reason, including inspection of a site; nor does this permit require that permittees allow members of the public access to a construction site.

***This notice must be posted conspicuously at the main entrance of the construction site and inside the job trailer and shall also include the NPDES Permit Number for the Project or a "completed" copy of the Notice of Intent (NOI) or other form of request required to obtain coverage under the applicable storm water permit if a number has not yet been assigned. The notice of Coverage (NOC) [or other State or local Jurisdiction approval notice] notifying the applicant that coverage under the applicable permit has been obtained must also be posted, once received. This notice must be updated whenever information related to the contact person has changed or the location of the SWPPP has changed.**

STORM WATER POLLUTION PREVENTION PLAN
PRE-CONSTRUCTION MEETING TRAINING AGENDA

midtown
PORTLAND, MAINE

Topic	Discussed	Further action or Information Required (Yes or No)
Overview of NPDES Permit Program – Owner's Expectations/Contract Provisions		
General Discussion of SWPPP and Records Retention Requirements		
Phasing of Project		
Review of Erosion and Sediment Control Plans (to include all temporary and permanent structural and stabilization measures)		
Locating waste containers, portable toilets, concrete washout areas, fueling areas and tank storage area on designated Erosion and Sediment Control Plans		
Posting Erosion and Sediment Control Plan(s) at job trailer		
Posting requirements for the Notice of Intent (NOI), Notice of Coverage (NOC) and Construction Site Notice (Form I-1)		
Allowable non-storm water discharges and handling procedures		
Materials management to include proper material storage, etc.		
General Contractor's Certification Form		
Subcontractor's Certification Form		
Inspection form and required inspection timeframe		
Stabilization schedule		
Implementation schedule		
Modification report and modifying plans		
Contractor/Subcontractor training		
Final stabilization		
Reportable quantity release procedures		
Rainfall logs		
State specific requirements		
Import/Export – Fill and Spoil Materials		

Attendance Roster **Date: _____**

Name	Company	Telephone Number	Signature

Name	Company	Telephone Number	Signature

Items which require further action or additional information: _____
_____
_____

Additional items discussed (not addressed above): _____
_____
_____

*This completed form is to be included in both the Project Manager's and Construction Site SWPPP Ledger.

ATTACHMENT D

DirtGlue™ Application and Use Requirements

DIRTGLUE™
APPLICATION INSTRUCTIONS FOR DUST CONTROL

METHODOLOGY

A. Heavy Duty Driving Surface

Application Rates (per surface area):

DirtGlue™ polymer emulsion:	2,400 gallons
Water:	3,600 -14,400 gallons

Application Process:

1. Loosen the existing soil using a scarifying attachment mounted on a grader (or similar piece of equipment) or a tractor with an agriculture disk attachment. If additional soil is required, it should be applied and mixed into the existing soil at this time. It is important to loosen the soil to ensure penetration of the DirtGlue™/water mixture into the soil.

2. Apply DirtGlue™/water mixture to soil using a water truck equipped with a gravity feed drip bar, spray bar, or automated distributor truck. Multiple passes will be necessary to get the desired amount of DirtGlue™ polymer emulsion for the specific application. Multiple passes will also ensure gradual, thorough saturation of the soil.

3. Thoroughly blend the DirtGlue™/water mixture into the soil with a rototiller, "S" harrow, or similar attachment. The soil must be evenly mixed and saturated with the DirtGlue™/water mixture to a depth of four (4") inches.

4. Grade the soil to finish grade with a grader, a small dozer or other suitable equipment.

5. Compact the soil with a vibratory roller. The final compaction should be greater than asphalt (Strive for 100% compaction, but always in excess of 95%).

6. Immediately after compacting, apply a topcoat of DirtGlue™ polymer emulsion to seal the road surface. In order to ensure a longer life and superior performance of the application, an additional coat should be applied between twenty four to forty eight hours after completion and then annually as an ongoing maintenance procedure. This topcoat should be applied at a rate of 250 gallons per surface acre.

B. Temporary Light Duty Driving Surface

This type of application will provide acceptable performance when used by cars and light trucks. It is not intended for constant use by heavy-duty trucks and/or tracked construction equipment. Areas that will be used by this type of equipment should be treated as a heavy-duty application as noted above.

Application Rates (per surface acre):

DirtGlue™ polymer emulsion:	1,200 gallons
Water:	3,600-6000 gallons

Application Process:

1. Loosen the existing soil for a depth of two (2") inches using a scarifying attachment mounted on a grader (or similar piece of equipment) or a tractor with a rototiller or agriculture disk attachment. If additional soil is required, it should be applied and mixed into the existing soil at this time. It is important to loosen the soil to ensure penetration of the **DirtGlue™/**water mixture into the soil.

2. Apply **DirtGlue™**/water mixture to soil using a water truck equipped with gravity feed drip bar, spray bar, or automated distributor truck. Multiple passes will be necessary to get the desired amount of **DirtGlue™** polymer emulsion for the specific application. Multiple passes will also ensure gradual, thorough saturation of the soil. Do not apply the **DirtGlue™/**water mixture so heavy as to create run-off.

3. Grade the soil to finish grade with a grader, a small dozer or other suitable equipment.

4. Compact with a vibratory roller. The final compaction should be greater than asphalt (Strive for 100% compaction, but always in excess of 95%).

5. Immediately after compacting, apply a topcoat of **DirtGlue™** polymer emulsion to seal the road surface. In order to ensure a longer life and superior performance of the application, an additional coat should be applied between twenty four to forty eight hours after completion and then again annually as an ongoing maintenance procedure.

C. Dust & Erosion Control (Non-driving Areas)

This type of application is intended for pedestrian use only. Vehicular use will break through the skin and adversely affect the performance of the application. Areas that will require any vehicular use should be treated as a light-duty application as noted above or retreated as traffic damage occurs.

Application Rates (per surface acre):

DirtGlue™ polymer emulsion:	300 gallons (windblown dust control)
	600 gallons (bank stabilization, erosion/silt, run-off control)
Water:	2,000-6,000 gallons

Application Process

1. Apply *DirtGlue*™/water mixture to existing soil using a water truck equipped with a gravity feed spray bar or tank and pump (i.e. hydro seeder).

2. Add *DirtGlue*™ to water rather than water to *DirtGlue*™ or place a fill hose at bottom of tank, underneath surface of liquid to prevent foaming.

3. When applying *DirtGlue*™/water mixture, dispense large droplets. Avoid any fine mist. <u>The intent is to apply a sheet of liquid onto the soil</u>.

4. It is important to determine the moisture content of the soil prior to starting an application. The moisture content will have an effect on the dilution ratio of the *DirtGlue*™/water mixture. Your *DirtGlue*™ representative will assist you in determining the correct dilution ratio for the conditions on your site.

5. Temperature and, to a lesser extent, humidity have a significant effect on curing/drying time. Testing has shown that applications should be done only when the air temperature will be above 50° F for at least 72 hours following the application. Soil temperature must be above 40° F for several days.

6. The *DirtGlue*™ application must be protected from the rain until the curing process has formed a skin on the surface. Uncured *DirtGlue*™ is water soluble. If the application is exposed to rain before it has the opportunity to cure, the rainwater will dilute the polymer and wash it out of the soil. If this happens, the application will not be as strong.

CONDITIONS FOR USE OF DIRTGLUE™ (REGISTERED TRADEMARK OF DIRTGLUE™ ENTERPRISES)
APPROVED MATERIALS LIST

Applicant: DirtGlue™ Enterprises

General Conditions

1. DirtGlue™ Enterprises shall ensure that every applicator of DirtGlue™™ is provided a copy of these conditions.

2. These Conditions do not override the need for any applicator to obtain permits (including DEP permits) or approvals that may be required (e.g., use associated with activities in or near regulated wetlands, surface waters, or other regulated natural resources).

3. DirtGlue™ shall only be used as stated in these conditions and shall not be mixed with any other chemicals, including petroleum products.

4. No application shall be conducted when the National Weather Service forecasts greater than 25% probability of precipitation in the application area to occur within 24 hours, or the temperature will drop below 35° F anytime within 24 hours after the application.

5. Applications shall not be conducted when the ground is saturated (due to precipitation or wetting) as defined by visible pools of water at or in the vicinity of the application, in order to prevent movement of DirtGlue™ beyond the shoulder of the road.

6. DirtGlue™ must not be applied or handled in a manner that could result in spillage or application within 100 feet of a wetland regulated by New York State, or 50 feet of all other water bodies and bridges.

7. Any spill which could enter the waters of the state shall be reported to the DEC Spills Hotline within two hours (1-800-457-7362). Any required response (including any needed cleanup) in addition to that being conducted shall then be determined by the DEC regional office.

8. The time of application shall be chosen to take meteorological conditions into account, to avoid significant potential airborne or odor impacts.

9. Prior to application, DirtGlue™ Material Safety Data Sheet shall be provided to applicators and others who would come in proximity or contact with the material.

ATTACHMENT E

Special Treatment Procedures for Groundwater
Prepared by City of Portland
Environmental Consultant

ATTACHMENT E
DRAFT DEWATERING SPECIFICATION

SECTION 02240 – DEWATERING

PART 1 - GENERAL

1.01 Description of Work

A. Provide, install, and maintain all necessary material and equipment used to keep excavation free of standing or flowing water and to transport water to a suitable discharge point.

B. Provide measures to store water in accordance with all local, state and federal regulations. Notify the City of Portland Environmental Engineering Department prior to conduction dewatering operations. Provide treatment as specified in Attachment G of the Erosion Sediment Control Report.

C. Related Work elsewhere includes:

Earthmoving:	Section 312000
Erosion Control:	Section 312513
Water System Distribution:	Section 331100
Sanitary Sewer:	Section 333100
Stormwater Treatment Systems:	Section 334419.20

1.02 Submittals

A. At least 2 weeks prior to the start of construction in any areas of anticipated dewatering, submit to the Engineer and City of Portland Environmental Engineering Department, a written plan for removal, storage, treatment, and discharge of groundwater from excavations. Do not proceed with construction in any of these areas until the plan has been reviewed and approved by the Engineer and City of Portland Environmental Engineering Department.

PART 2 – PRODUCTS (not applicable)

PART 3 – EXECUTION

3.01 General:

A. Only trained personnel are authorized to conduct dewatering, storage, and discharge operations.

3.02 Dewatering Excavations:

A. Perform all work in the dry. Prevent surface water or groundwater from flowing into excavations and from flooding project site and surrounding area. Do not allow water to accumulate in excavations.

B. Provide and maintain pumps, well points, sumps, hoses, filters, and all other dewatering system components necessary to convey water away from excavations.

C. Minimize the suspended solids content in the water by lining the excavation collection area with crushed stone and placing the pump intake in a perforated bucket.

D. Convey water removed from excavations to a frac tank. Do not use trench excavations as temporary drainage ditches. Do not allow silt laden water to discharge to gutters or storm drainage system. Do not discharge water directly to the storm or sanitary sewer.

E. Any damages to existing facilities or new work resulting from the failure of the Contractor to maintain the work areas in a dry condition shall be repaired by the Contractor, as directed by the Engineer, at no additional expense to the Owner. Pumping shall be continuous where specified or directed or as necessary to protect the work and to maintain satisfactory progress.

3.03 Storage/Treatment/Discharge Process:

A. Water removed from excavations shall be stored in a frac tank to allow settling of solids and testing prior to treatment. The dewatering pump line shall be placed at the opposite end from the tank outlet.

B. Limit circulating tank contents to prevent freezing. Do not discharge from the tank while the circulation pump is operating to allow adequate settling time before discharge.

C. If needed for additional storage and treatment volume, provide a second tank to be placed in series for secondary settlement. Transfer the water from the first tank to the second tank by suspending the intake line immediately below the water level to minimize disturbance of sediment at the bottom of the tank.

D. Prior to discharge of each tank load, collect a water sample for laboratory analysis for Total Petroleum Hydrocarbons (TPH) by EPA Method 8015. Provide test results to the Engineer and City of Portland Environmental Engineering Department. Provide access to the tanks for the City of Portland Environmental Engineering Department to take independent water samples. Do not add water or other materials to the frac tank after collecting the water sample.

E. Follow direction provided by the City of Portland Environmental Engineering Department on further testing and disposal requirements.

F. Obtain all local, state, and federal approvals necessary for the discharge of the water. If water is discharged to the sanitary sewer, bag filters must be installed on the discharge piping and water must meet the Portland POTW discharge limitations.

3.04 Diversion of Water

A. The Contractor shall be responsible for providing and maintaining all ditching, grading, sheeting, and bracing, pumping and appurtenant work for the protection from flooding as necessary to permit the construction of work in the dry.

B. Upon completion of the contract work, the Contractor shall remove all temporary construction and shall do all necessary earthwork and grading to restore the areas disturbed to their original condition or to such other conditions as indicated or directed by the Owner.

C. Water shall not be permitted to flow into or through excavations in which work is under way or has been partially completed. The Contractor shall not restrict or close off the natural flow of water in such a way that ponding or flooding will occur, and shall at all times prevent flooding of public and private property. All damages resulting from flooding or restriction of flows shall be the sole responsibility of the Contractor, at no additional expense to the Owner.

End of Section 02240

ATTACHMENT F

Draft Specification for Groundwater Treatment System

DRAFT

GENERAL CONDITIONS APPLICABLE TO ALL DISCHARGES TO TREATMENT OF GROUNDWATER PUMPED FROM ONSITE EXCAVATION WITH DISCHARGE OPTIONS

1. Advance notice shall be given to the City of Portland of any planned operation of the groundwater treatment facility or activity which may result in noncompliance with effluent limitations. The City will determine whether the discharge should be to the storm drain or sanitary sewer.

2. Any noncompliance which may endanger health or the environment must be reported orally within 24 hours from the time City of Portland becomes aware of the circumstances. A written report shall also be provided within 5 days. The written report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if it has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate and prevent the noncompliance and its recurrence.

3. Wastewater Discharge Limits: Wastewater discharges are classified according to the discharge point i.e. surface water, or publicly-owned treatment works (POTW). The discharge limits are standardized according to these discharge points (surface water or POTW), regardless of the technology being used to treat the wastewater, and regardless of the quality of the receiving stream. Discharges to the storm drain shall not exceed drinking water standard by over 50%. Discharges to the POTW must be authorized by the City of Portland and the Portland Water District using applicable industrial pretreatment protocol.

   A surface water discharge is a wastewater stream which enters a surface water, a lined drainage ditch leading to a surface water, or a portion of the City of Portland's separated storm sewer.

   A discharge to a POTW is a wastewater stream which enters a municipal sewage treatment plant by connection to a pipeline, or is otherwise transported to the treatment plant. The POTW determines the limits appropriate for each wastewater stream according to the operational capacities of the treatment plant.

   The Contractor also has the option to containerize the groundwater and transport it to an approved disposal area provided documentation of the facilities approved and certified bills of laden are provided to the Owner with a copy to the City of Portland.

EXHIBIT 15

HALEY & ALDRICH GEOTECHNICAL INFORMATION

GEOTECHNICAL DATA REPORT
midtown DEVELOPMENT
SOMERSET STREET
PORTLAND, MAINE

by

Haley & Aldrich, Inc.
Portland, Maine

for

The Federated Companies
Miami, Florida

File No. 38354-000
13 November 2014

HALEY & ALDRICH

Haley & Aldrich, Inc.
75 Washington Avenue
Suite 203
Portland, ME 04101

Tel: 207.482.4600
Fax: 207.775.7666
HaleyAldrich.com

13 November 2014
File No. 38354-000

The Federated Companies
3301 NE 1st Avenue, Suite M-302
Miami, Florida 33137

Attention: Nick Wexler
Chief Operating Officer

Subject: Geotechnical Data Report
midtown Development
Somerset Street
Portland, Maine

Ladies and Gentlemen:

This geotechnical data report (GDR) presents the results of previously completed subsurface investigation and laboratory test programs conducted within the proposed midtown Development area, which is located along the portion of Somerset Street between Elm Street and Pearl Street, in Portland, Maine. This work was completed in accordance with our proposal, dated 15 October 2012, and your subsequent authorization.

Please recall that as originally envisioned the midtown Development was to be completed (designed and constructed) in multiple phases. Under this original development scenario we previously submitted a GDR for what was at the time (May 2013) Phase I (Phase I GDR), which included proposed structures on the parcel(s) of land between Chestnut Street and Pearl Street. The Phase I GDR was prepared in support of Fay, Spofford & Thorndike's (FSTs) Level III Site Plan Application submission to the City of Portland (City).

Based on our recent discussions with you and FST, we understand that since the submission of the original Phase I GDR the project has been modified and will be developed (designed and constructed) in a single phase. As a result, a modification of the Level III Site Plan Application to the City is required and FST has requested that we revise and resubmit the GDR to include additional subsurface information on the parcel of land between Elm Street and Chestnut Street. The ultimate goal is to have a GDR that reflects the current scope and phasing of the proposed midtown Development.

We appreciate the opportunity to help support The Federated Companies (TFC) on this significant and challenging project, and we look forward to providing continued assistance to you during subsequent phases of the project.

ELEVATION DATUM

Elevations referenced herein are in feet and reference Portland City Datum (PCD). Portland City Datum relates to tidal datum at the site as follows:

MHHW = El. 5.4
MLLW = El. -4.5

Please note that this tidal information is site specific and is taken from National Oceanic Atmospheric Administration (NOAA) tidal station No. 8418150 located on the Maine State Pier, Portland, Maine. This is the NOAA tidal station closest to the site.

SITE LOCATION, EXISTING CONDITIONS & PREVIOUS USE

The proposed midtown Development area is located in the Bayside region of Portland as shown on Figure 1, Project Locus. This portion of the Back Cove area, including the site, once consisted of tidal mudflats (see 1886 Sanborn Maps for area in Appendix E) and was filled with demolition debris (brick, concrete, rock fragments and wood), refuse, ash and soil during the 18th, 19th and 20th centuries, a great portion of which was generated by the Great Portland Fire of 1866. Historical Sanborn Maps of the site are provided for reference in Appendix E.

More specifically, the midtown Development site consists of two parcels that are separated by Chestnut Street. The southern parcel is bound by Elm Street to the south, Somerset Street to the east, Chestnut Street to the north and the Portland Trails pedestrian walkway and commercial properties to the west. The northern parcel is bound by Chestnut Street to the south, Somerset Street to the east, future Pearl Street Extension to the north and the Portland Trails pedestrian walkway and commercial properties to the west (see Figures 2 and 3, Site and Subsurface Exploration Location Plans). Ground surface elevations across the southern parcel vary from approximately El. 12 along the western boundary (Portland Trails pedestrian walkway) to approximately El. 8 along Somerset Street. The northern parcel is generally flat with existing ground surface elevations varying from approximately El. 8 to El. 10. One localized depression (bottom at approximately El. 6.5) is present near the northern end of the parcel.

PROPOSED SITE DEVELOPMENT

Based on our recent discussions with you and FST, we understand that current development plans call for an urban infill mixed-use development (midtown Development) on a 3.25-acre parcel of land located in the Bayside Area of Portland. The parcel has been subdivided into seven lots, which will be developed in one phase. We understand that the midtown Development will consist of four structures, designated midtownOne through midtownFour (midtownOne and midtownTwo on the northern parcel and midtownThree and midtownFour on the southern parcel). We also understand that midtownOne, midtownThree and midtownFour will consist of 6-story residential structures with one level (ground floor) of retail space. midtownTwo will consist of a 7-story parking garage with one level (ground floor) of retail space. Below grade space is not currently being considered for any of the proposed structures. The proposed building footprints for each structure are shown on Figures 2 and 3.

SUBSURFACE EXPLORATIONS

Multiple subsurface exploration programs have been completed in and around the midtown Development site. Explorations, consisting of test pits and test borings were excavated/drilled by Tewhey Associates in 1998 for the Portland Brownfield's project and by Haley & Aldrich for the Phase II Environmental Site Assessment (ESA) completed in 2000 on the former Union Branch Rail Line, respectively. In addition, test borings were also drilled by Haley & Aldrich in 2006 and 2008 for the proposed Bayside Parking Garage and Master Planning Study (northern parcel; midtownOne and midtownTwo) and the proposed MaineHealth and United Way Development (southern parcel; midtownThree and midtownFour). More recently, Haley & Aldrich also completed a series of test borings along and within Somerset Street in 2013 as part of the proposed Somerset Street improvements project.

The plan locations of the test pits and test borings are shown on Figures 2 (northern parcel; midtownOne and midtownTwo) and 3 (southern parcel; midtownThree and midtownFour), Site and Subsurface Exploration Location Plans. Logs detailing subsurface soil, rock and groundwater conditions encountered in the subsurface explorations (test pits and test borings) are provided in Appendix A. Each exploration program is discussed separately, in the following sections of this report.

Portland Brownfield's Project Test Pits (1998)

A total of ten test pits, designated TP-1 through TP-10, were excavated as part of the Portland Brownfield's project. Of these explorations, only TP-1 through TP-7 and TP-10 were excavated within the vicinity of the proposed midtown Development area and are discussed herein. The test pits were excavated by Commercial Paving & Recycling of Scarborough, Maine in October 1998 under the direction of Tewhey Associates and extended to depths ranging from approximately 6 to 14 ft below ground surface (BGS).

Phase II ESA Test Pits and Test Borings (2000)

A total of fifteen test borings, designated B101 through B115, and twenty-six test pits, designated TP101 through TP125 (including TP102A and TP102B), were drilled/excavated for the Phase II ESA. Of these explorations, only test borings B110-B112 and test pits TP101-TP108 and TP114-TP125 were completed within the vicinity of the proposed midtown Development area. Only these explorations are discussed herein.

The test pits were excavated by Environmental Projects, Inc. of Gray, Maine under the direction of Haley & Aldrich in November 2000. The test pits were excavated to depths ranging from approximately 3.5 to 12.5 ft BGS using a Komatsu tracked excavator.

The test borings were drilled by Maine Test Borings, Inc. of Brewer, Maine under the direction of Haley & Aldrich and were advanced to approximately 12 BGS using a Mobile Drill B-47 track mounted drill rig. Test borings were advanced using 4.25-in. ID hollow stem augers. All soil samples were collected continuously through fill soils and into naturally deposited soils by driving a 1 3/8-in. ID split-spoon sampler with a 140-lb hammer dropped from a height of 30 in., as indicated on the test boring logs. The number of hammer blows required to advance the sampler through each 6 in. interval was recorded and is provided on the test boring logs. The Standard Penetration Test (SPT) N-value is defined as the total number of blows required to advance the sampler through the middle 12 in. of the 24-in. sampling interval.

Observation wells were installed in completed boreholes B110-B112 for the purposes of groundwater sampling and analytical testing. Static water levels within the observation wells were not measured.

Bayside Parking Garage and Master Planning Test Borings (2006)

Eleven test borings, designated HA06-1 through HA06-11, were drilled in association with the proposed Bayside Parking Garage and Master Planning project. Only test borings HA06-1 through HA06-9 were drilled in the vicinity of the proposed midtown Development area and are discussed herein.

The test borings were drilled by Maine Test Borings of Hermon, Maine under the direction of Haley & Aldrich in August 2006 using a trailer-mounted Mobile Drill B-47 drill rig. Test borings were drilled to depths ranging from approximately 41 to 67 ft BGS using 3.0-in. (NW-size) and 4.0-in. (HW-size) ID steel casing. Soil samples were collected at standard, 5-ft intervals using the methodology described in the previous sections.

Test borings HA06-1 and HA06-4 were advanced approximately 14 to 23 ft into bedrock using a 2.0-in. (NQ-size) ID diamond-tipped core barrel.

In-situ vane shear tests were conducted within the marine (clay) deposit in each test boring with the exception of test boring HA06-8. Vane shear tests were performed to provide information on the undrained shear strength and compressibility characteristics of the marine clay at the site. Results of the vane shear testing are summarized in Table II and are provided on the test boring logs in Appendix A.

A single observation well was installed in completed borehole HA06-2 to provide information on the static groundwater level at the site. The observation well consisted of 2-in. ID, machine-slotted PVC pipe and solid PVC riser pipe extending approximately 3 ft above existing ground surface. The observation well was outfitted with a steel guardpipe and steel lock/cap assembly.

Observation well installation and groundwater monitoring reports are provided in Appendix B.

MaineHealth/United Way Development Test Pits and Test Borings (2008)

A total of thirteen test borings, designated HA08-1 through HA08-13, were drilled within the limits of the southern parcel (midtownThree and midtownFour) in association with the proposed MaineHealth/United Way Development.

Subsurface explorations were drilled by Maine Test Borings, Inc. of Brewer, Maine under the direction of Haley & Aldrich in July and August 2008 using track-mounted Mobile Drill B-50 drill rig. Test borings were drilled to depths ranging from 14 to 102 ft BGS using 3.0-in. (NW-size) or 4.0-in. (HW-size) ID steel casing. Soil samples were collected continuously through the fill and harbor bottom deposits and at 5-ft (standard) or 10-ft intervals thereafter using the methodology described in the previous sections.

During the test boring program fill samples were collected, preserved and screened using a Thermo 580B Photoionization Detector (PID) to check for the presence of hydrocarbons. The results of the sample screening are recorded on the Headspace Screening Report provided in Appendix C.

Test borings HA08-5, HA08-7 and HA08-13 were advanced approximately 5 to 10 ft into bedrock using a 2.0-in. (NQ-size) ID diamond-tipped core barrel.

In-situ vane shear tests were conducted within the glaciomarine clay deposit in each of the test borings with the exception of HA08-3, HA08-6, HA08-9 and HA08-12. Results of the vane shear testing are summarized in Table II and are provided on the test boring logs in Appendix A.

A total of five, relatively undisturbed samples of marine clay were obtained in test borings HA08-4, HA08-8 and HA08-10. The samples were collected to perform laboratory consolidation testing aimed at determining the compressibility characteristics and the stress history of the clay. The samples were obtained by advancing a thin-wall Shelby Tube sampler into the clay using a piston sampler. Drilling mud was used while advancing the test borings in order to minimize soil disturbance. The drilling mud consists of a relatively thick and smooth mixture of water and bentonite-based powder.

Three observation wells were installed in completed boreholes HA08-5, HA08-7 and HA08-12 to provide information on the static groundwater level and to determine whether the groundwater levels at the site are affected by tidal fluctuations in nearby Back Cove. The observation wells consisted of 2-in. ID, machine-slotted PVC pipe and solid PVC riser pipe extending approximately 3 ft above existing ground surface. The observation wells were outfitted with a steel guardpipe and steel lock/cap assembly. Observation well installation and groundwater monitoring reports are provided in Appendix B.

Upon completion of the test borings, three test pits designated TP-201 through TP-203 were excavated adjacent to the previously installed observation wells. The test pits were excavated by Environmental Projects, Inc. of Auburn, Maine under the direction of Haley & Aldrich in October 2008. The test pits were excavated to depths ranging from approximately 8 to 11 ft BGS using a Komatsu PC 35MR excavator.

Proposed Somerset Street Improvements Test Borings (2013)

A total of six test borings, designated HA13-1 through HA13-6, were drilled in January 2013 along and within Somerset Street, between Elm and Pearl Streets in association with the proposed Somerset Street Improvements project. Each test boring was drilled adjacent to either the southern parcel (HA13-1-HA13-3; midtownThree and midtownFour) or the northern parcel (HA13-4-HA13-6; midtownOne and midtownTwo) and are discussed herein.

The test borings were drilled by Northern Test Borings, Inc. (NTB) of Gorham, Maine under the direction of Haley & Aldrich using a Diedrich D50 truck-mounted drill rig and 2.5-in ID hollow stem augers (HSAs). Each test boring was advanced to a depth of 20 ft BGS. Soil samples were collected continuously through the man-placed fill, harbor bottom deposit (if present) and into the underlying marine clay using the methodology described in the previous sections of this report.

SUBSURFACE CONDITIONS

Soil Unit and Bedrock Conditions

Generally, subsurface explorations encountered the following geologic units, presented in order of increasing depth below existing ground surface:

- Bituminous/Portland cement concrete and Fill
- Harbor Bottom Deposit
- Marine Clay
- Marine Sand
- Glacial Till
- Bedrock

Not all materials were encountered at each exploration location. Refer to Table I for a summary of the "geotechnical" test borings and Appendix A for logs of test pits and test borings, respectively. A brief description of each geologic unit is provided below.

A. Bituminous/ Portland cement concrete and Fill

Bituminous concrete and concrete surfaces were encountered in explorations along the east side (Somerset Street) of northern parcel (midtownOne and midtownTwo) as well as the 2013 test borings drilled within Somerset Street. The thickness of the material ranged from approximately 0.2 to 1.0 ft.

As previously discussed, the Bayside region of the Back Cove area once consisted of tidal mudflats and has a long history of filling. The subsurface explorations referenced herein encountered approximately 8 to 14 ft of fill, which consisted of the following:

- poorly-graded to well-graded GRAVEL (SP to SW) with varying percentages of silt,
- silty GRAVEL (GM)
- silty SAND (SM) with varying percentages of gravel,
- poorly-graded to well-graded SAND (SP to SM) with varying percentages of silt,
- sandy CLAY (CL) to clayey SAND (SC)
- Rock fill was encountered in test boring HA08-2 between approximately 10 and 14 ft BGS.

The fill soils generally contained ash, cinders, metal, wood, brick and concrete fragments some portions of which were stained black.

The granular fill soils were typically loose to very dense with SPT N-values ranging from 8 to 56 bpf. The cohesive fill soils (CL to SC) were generally soft to hard with SPT N-values ranging from 2 to 67 bpf.

B. Harbor Bottom Deposit

This deposit was encountered in many of the referenced test borings drilled within the northern and southern parcels as well as along and within Somerset Street. This deposit was previously exposed at ground surface in the tidal/mudflat area of the Back Cove prior to site filling (see Sanborn maps in Appendix E). Where encountered, the thickness of the layer ranged from approximately 1 to 9 ft, generally increasing in thickness towards Back Cove. This material typically consisted of gray, sandy SILT (ML) or sandy ORGANIC SOIL (OL/OH) with varying percentages of organic matter (rootlets, wood fragments etc.) and shells. In some locations the lower portions of the deposit consisted of gray silty SAND (SM), gray SILT (ML) with varying amounts of sand or gray lean CLAY (CL) with organic matter and shells. The deposit was generally very soft to very stiff with SPT N-values ranging from 1 to 24 bpf.

C. Marine Clay

Marine clay was encountered at each test boring location. The thickness of the deposit ranged from 20 to in excess of 50 ft, typically increasing in thickness to the south and west. The upper portion of the deposit consisted of olive-gray lean CLAY (CL) and was typically medium stiff to stiff with undrained shear strengths ranging from approximately 1,000 to 1,700 psf (referred to herein as the clay "crust"). The lower portion of the deposit consisted of soft to medium stiff, gray lean CLAY (CL) with undrained shear strengths typically ranging from 400 to 800 psf. The lowest (deepest) portions of the deposit typically contained frequent fine sand seams and partings.

D. Marine Sand

Marine sand was encountered sporadically across the site (northern and southern parcels). Where encountered, the marine sand was present directly beneath the marine clay layer. The thickness ranged from approximately 3 to 12 ft and generally increased to the north and east. The material typically consisted of gray, poorly-graded SAND (SP), well-graded SAND (SW) or silty SAND (SM), and was loose to medium dense with SPT N-values ranging from 3 to 23 bpf.

E. Glacial Till

Glacial till was encountered in several test borings underlying either the marine clay or marine sand layers and ranged in thickness from approximately 2 to 30 ft (typically between 2 and 10 ft), generally increasing to the south and west. The soil unit generally consisted of two different soil types: gray, silty SAND (SM) with a small percentage of fine gravel; and gray, clayey SAND with gravel (SC). The soil was typically medium dense to very dense with SPT N-values ranging from 14 to in excess of 100 bpf. Cobbles and boulders were not encountered in the glacial till during drilling of the test borings. However, their presence within the deposit is common and they may be present at other locations where explorations were not completed.

F. Bedrock

Bedrock was encountered in the majority of explorations completed within the northern and southern parcels at depths ranging from approximately 40 to 99 ft BGS. The bedrock surface generally slopes down from north to south. Bedrock encountered and sampled in the test borings consisted of the following:

- Very soft to soft, moderately to highly weathered PHYLLITE with occasional calcite veins and quartz intrusions,
- Very soft to moderately hard, fresh to highly weathered graphitic or chlorite SCHIST with frequent calcite veins and pyrite seams,
- Moderately hard, moderately to highly weathered SILTSTONE.

All rock types encountered are considered part of the Cape Elizabeth Formation. At most test boring locations several feet (up to approximately 7 ft but more typically 1-2 ft) of highly weathered and/or decomposed bedrock was encountered as indicated on the test boring logs included in Appendix A.

Rock quality designation (RQD) is a common parameter that is used to help assess the competency of sampled bedrock. RQD is defined as the sum of pieces of recovered bedrock greater than 4 in. in length divided by the total length of the bedrock core. RQD values for bedrock encountered at the site ranged from 0 to 78 percent and were typically less than 44 percent.

Groundwater Conditions

Observation wells were installed in completed boreholes HA06-2 (northern parcel; midtownOne and midtownTwo) and HA08-5, HA08-7 and HA08-12 (southern parcel; midtownThree and midtownFour).

Groundwater levels measured in the observation well installed in completed borehole HA06-2 in August and September 2006 ranged between El. 5.2 and El. 6.4, approximately 3 to 4 ft BGS.

In addition, Haley & Aldrich initially measured groundwater levels in the observation wells installed in southern parcel periodically using a manually operated water level indicator. Beginning on 7 August 2008 downhole transducers were installed in the observation wells and were programmed to record the groundwater level in the wells every 15 minutes. This was done to determine whether the static groundwater level is influenced by tidal fluctuations in nearby Back Cove. All groundwater depths were measured relative to the existing ground surface. The transducers were removed from the observation wells on 22 August 2008. Based on the data collected between 7 and 22 August 2008, groundwater levels were measured between 6 and 8 ft below existing ground surface and did not appear to be influenced by tidal fluctuations in Back Cove.

Groundwater levels can be expected to fluctuate, subject to seasonal variation, local soil conditions, topography and precipitation. Groundwater levels encountered during construction may differ from those observed in the test borings or observation well. Observation well installation and groundwater monitoring reports are provided in Appendix B.

GEOTECHNICAL LABORATORY SOIL TESTING

A laboratory testing program was conducted in 2008 in association with the proposed MaineHealth/United Way Development. The testing program was completed to assist in soil classification, evaluate reuse potential of the in-situ fill soils, and for determination of engineering properties (strength and compressibility) of the naturally deposited marine clay soils.

The testing program included four grain size analyses, four natural water content tests, six Atterberg Limits tests, and two constant rate of strain consolidation (CRSC) tests (used to determine the compressibility and stress history characteristics of marine clay). Prior to CRSC testing, radiography tests were conducted on Shelby tube samples collected during the subsurface exploration program. Radiography tests were run on five thin-walled tube samples of soil selected for laboratory testing to aid in assessing the sample quality, general material type and presence of areas of disturbance and variations in soils retrieved.

All laboratory testing was completed in accordance with applicable ASTM test procedures. Grain size analyses were conducted by Haley & Aldrich at our laboratory in Boston, Massachusetts. Natural water content, Atterberg Limits, and CRSC tests were completed by GeoTesting Express of Acton, Massachusetts. Laboratory test results are provided in Appendix D.

SUBSURFACE CONDITIONS IMPACTS ON DEVELOPMENT

Based on the subsurface conditions encountered during the previously completed subsurface investigations we have the following general geotechnical “observations” regarding the potential impacts that the subsurface conditions may have on the proposed midtown Development:

- Due to presence and compressible nature of the fill, harbor bottom and marine clay soils present at the site, pile foundations would likely be needed to support "heavily-loaded" buildings (e.g., greater than two stories). Construction of a single level of below-grade space beneath a "heavily-loaded" building may unload the site enough to eliminate the need for piles. Further study is required.

- Due to presence and compressible nature of the fill, harbor bottom and marine clay soils present at the site, modest raises in grade would likely result in ground surface, ground floor slab and utility settlement. We recommend that this be considered when planning final site grading.

- Due to the proximity of the water table to existing grade at the site and the proposed finish floor elevations, we anticipate that a foundation drainage system would not be needed with the exception of locally depressed portions of the building footprints (elevator pits, utility vaults, etc.).

- Based on the shear strength information obtained during the exploration program and the seismic requirements of the latest edition of the IBC Code, it is likely that proposed would have to be designed in accordance with either "Site Class D" or "Site Class E" classifications.

Please note that additional analyses will be conducted to verify the accuracy of these observations for the proposed midtown Development. Based on the "soft" condition of the soils present at the site, impacts of site grading, pavement evaluations and building and utility support should be considered carefully during the design-phase of the project. We will provide foundation support and other geotechnical design recommendations under separate cover during subsequent phases of the project.

LIMITATIONS

This report has been prepared for the exclusive use of The Federated Companies relative to the proposed midtown Development project in Portland, Maine. There are no intended beneficiaries other than The Federated Companies. Haley & Aldrich shall owe no duty whatsoever to any other person or entity on account of the Agreement or the report. Use of this report by any person or entity other than The Federated Companies for any purpose whatsoever is expressly forbidden unless such other person or entity obtains written authorization from The Federated Companies and from Haley & Aldrich. Use of this report by such other person or entity without the written authorization of The Federated Companies and Haley & Aldrich shall be at such other person's or entities sole risk, and shall be without legal exposure or liability to Haley & Aldrich.

Use of this Report by any person or entity, including by The Federated Companies, for a purpose other than the proposed midtown Development project in Portland, Maine is expressly prohibited unless such person or entity obtains written authorization from Haley & Aldrich indicating that the Report is adequate for such other use. Use of this Report by any other person or entity for such other purpose without written authorization by Haley & Aldrich shall be at such person's or entities sole risk, and shall be without legal exposure or liability to Haley & Aldrich.

The analyses and recommendations are based, in part, upon the data obtained from the referenced subsurface explorations. The nature and extent of variations between explorations may not become evident until construction. If variations then appear, it may be necessary to reevaluate the recommendations of this report.

CLOSURE

We appreciate the opportunity to provide geotechnical consulting services on this project. Please do not hesitate to call if you have any questions or comments.

Sincerely yours,
HALEY & ALDRICH, INC.

STATE OF MAINE
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LICENSED
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Enclosures:

Table I -	Summary of Geotechnical Test Borings
Table II -	In-Situ Vane Shear Test Results (2 pages)
Figure 1 -	Project Locus
Figure 2 -	Site and Subsurface Exploration Location Plan (1 of 2)
Figure 3 -	Site and Subsurface Exploration Location Plan (2 of 2)
Appendix A –	Logs of Subsurface Explorations
Appendix B –	Observation Well Installation and Groundwater Monitoring Reports
Appendix C –	2008 Soil Screening Headspace Reports for Proposed MaineHealth/United Way Development
Appendix D -	2008 Laboratory Test Results for Proposed MaineHealth/United Way Development
Appendix E -	Historic Sanborn Maps

C: Fay, Spofford & Thorndike; Attn.: Bo Kennedy, P.E.

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REFERENCES

1. Report entitled, "Phase II Environmental Site Assessment, Union Branch Rail Line Property, Portland, Maine," prepared by Haley & Aldrich, Inc. for the Maine Department of Transportation, dated December 2000.

2. Report entitled, "Subsurface Explorations & Foundation Design Recommendations, Proposed Bayside Parking Garage, 25 Somerset Street, Portland, Maine," prepared by Haley & Aldrich, Inc. for Scott Simons Architects, dated 22 September 2006.

3. Report entitled, "Master Planning Geotechnical Investigation, Proposed Bayside Development, Parcels A and B, Somerset Street, Portland, Maine," prepared by Haley & Aldrich, Inc. for Scott Simons Architects, dated 25 October 2006.

4. Report entitled, "Geotechnical Data Report, MaineHealth/United Way Development, Somerset and Chestnut Streets, Portland, Maine," prepared by Haley & Aldrich, Inc. for Maine Medical Center, dated 10 September 2008.

5. Memorandum entitled, "Results of Test Pit Exploration Program, MaineHealth/United Way Development, Somerset and Chestnut Streets, Portland, Maine," prepared by Haley & Aldrich, Inc. for Maine Medical Center, dated 4 December 2008.

6. Memorandum entitled, "Subsurface Investigation and Geotechnical Evaluations, Proposed Somerset Street Improvements, Portland, Maine," prepared by Haley & Aldrich, Inc. for the City of Portland, dated 23 April 2013.

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TABLE I
Summary of Geotechnical Test Borings
midtown Development
Somerset Street, Portland, Maine

Test Boring No. [1]	Estimated Ground Surface Elevation [2,3]	Thickness of Strata[4,5,6] (ft)						Approximate Elevation of Top of Bedrock[2,3]	Approximate Elevation of Bottom of Exploration[2,3]
		Bituminous Concrete/ Concrete	Fill	Harbor Bottom Deposit	Marine Deposits		Glacial Till		
					Clay	Sand			
2006 Bayside Parking Garage & Master Planning:									
HA06-1	9.0	NE	11.0	4.0	20.5	2.5	1.8	-30.8	-53.4
HA06-2(OW)	9.0	NE	11.3	3.7	19.5	5.5	NE	-31.0	-38.2
HA06-3	9.0	NE	5.9	9.4	23.7	NE	>3.0	NE	-33.0
HA06-4	9.0	1.0	13.5	NE	27.5	NE	3.0	-36.0	-51.2
HA06-5	10.0	0.3	13.7	NE	29.5	NE	4.0	-37.5	-42.2
HA06-6	10.0	0.4	10.1	3.0	27.0	0.8	NE	-31.3	-31.5
HA06-7	10.5	NE	13.0	NE	51.0	NE	3.0	NE	-56.5
HA06-8	12.0	NE	14.0	NE	36.2	NE	1.6	-39.8	-42.0
HA06-9	9.5	NE	10.2	NE	27.8	NE	3.5	-32.0	-33.2
2008 MaineHealth/United Way Development:									
HA08-1	11.5	0.1	8.9	5.5	54.5	NE	29.5	-87.0	-90.5
HA08-2	9.0	NE	14.0	NE	47.0	NE	5.6	-57.6	-59.7
HA08-3	11.0	1.0	11.0	4.1	>1.9	--	--	--	-7.0
HA08-4	12.0	0.5	12.5	3.9	41.9	NE	5.6	-52.4	-54.0
HA08-5(OW)	9.0	NE	10.5	2.5	40.0	NE	9.5	-53.5	-59.8
HA08-6	10.0	NE	12.3	>1.7	--	--	--	--	-4.0
HA08-7(OW)	12.0	NE	12.5	1.5	24.0	NE	22.1	-48.1	-60.0
HA08-8	9.0	NE	9.5	4.3	29.2	5.6	NE	-39.6	-41.5
HA08-9	11.0	NE	12.0	2.0	>2.0	--	--	--	-5.0
HA08-10	9.0	NE	10.0	1.3	23.9	10.3	2.0	-38.5	-40.5
HA08-11	11.0	NE	12.5	1.7	19.8	12.0	6.5	-41.5	-44.0
HA08-12(OW)	11.0	NE	11.6	2.4	>2.0	--	--	--	-5.0
HA08-13	9.0	NE	12.5	NE	27.1	7.0	NE	-37.6	-47.0
2013 Somerset Street Improvements:									
HA13-1	7.5	0.2	8.3	5.5	>6.0	--	--	--	-12.5
HA13-2	8.0	0.2	8.2	2.6	>9.0	--	--	--	-12.0
HA13-3	7.5	0.3	7.7	3	>9.0	--	--	--	-12.5
HA13-4	9.0	0.3	9.2	3.8	>6.7	--	--	--	-11.0
HA13-5	10.0	0.2	9.3	4.5	>6.0	--	--	--	-10.0
HA13-6	10.0	0.2	8.3	5.0	>6.5	--	--	--	-10.0

Notes:

[1] Approximate test boring locations are shown on Figures 2 and 3, Site and Subsurface Exploration Location Plans.

[2] Ground surface elevations at test boring locations are approximate and were estimated by interpolating between elevation contour data provided by others at the time respective exploration programs were completed.

[3] Elevations are in feet and reference Portland City Datum.

[4] "NE" indicates stratum was not encountered in test boring.

[5] "--" indicates test boring was not drilled deep enough to determine presence of stratum.

[6] ">" indicates test boring was not drilled deep enough to determine full thickness of stratum.

Developed By:	BCS	11/10/2014
Checked By:	EAF	11/10/2014
Reviewed By:	WAC	11/12/2014

TABLE II
2006 Bayside Garage and Master Planning In-Situ Vane Shear Test Results
midtown Development
Somerset Street, Portland, Maine

Test Boring No.[1]	Estimated Ground Surface Elevation [2,3]	Vane Size (in. x in.)	Test No. [4]	Approximate Depth Below Existing Ground Surface (ft)			Approximate Elevation [2,3]			V_{max} [5,7] (in.-lbs)	$V_{remolded}$ [5,7] (in.-lbs)	S_u [6,7] (psf)	$S_{u(remolded)}$ [6,7] (psf)
				Top	-	Bottom	Top	-	Bottom				
HA06-1	9.0	3.5 x 8	FV1	20.4	-	21.0	-11.4	-	-12.0	>600	-	>690	-
		3.5 x 8	FV2	25.4	-	26.0	-16.4	-	-17.0	>600	-	>690	-
		2 x 8.5	FV3	26.3	-	27.0	-17.3	-	-18.0	300	100	1,010	340
		3.5 x 8	FV4	30.4	-	31.0	-21.4	-	-22.0	180	135	210	150
		3.5 x 8	FV5	31.4	-	32.0	-22.4	-	-23.0	>600	-	>690	-
HA06-2(OW)	9.0	2 x 8.5	FV1	20.3	-	21.0	-11.3	-	-12.0	167	49	560	170
		3.5 x 8	FV2	25.4	-	26.0	-16.4	-	-17.0	519	99	590	120
		3.5 x 8	FV3	30.4	-	31.0	-21.4	-	-22.0	528	31	600	40
HA06-3	9.0	2 x 8.5	FV1	15.3	-	16.0	-6.3	-	-7.0	426	123	1,430	410
		2 x 8.5	FV2	25.3	-	26.0	-16.3	-	-17.0	128	32	430	110
		2 x 8.5	FV3	28.3	-	29.0	-19.3	-	-20.0	129	31	430	100
		2 x 8.5	FV4	35.3	-	36.0	-26.3	-	-27.0	161	35	540	120
HA06-4	9.0	2 x 8.5	FV1	20.3	-	21.0	-11.3	-	-12.0	255	49	860	170
		2 x 8.5	FV2	30.3	-	31.0	-21.3	-	-22.0	135	50	450	170
		2 x 8.5	FV3	35.3	-	36.0	-26.3	-	-27.0	145	39	490	130
		2 x 8.5	FV4	40.3	-	41.0	-31.3	-	-32.0	169	39	570	130
HA06-5	10.0	3.5 x 8	FV1	20.4	-	21.0	-10.4	-	-11.0	>600	-	>690	-
		2 x 8.5	FV2	21.3	-	22.0	-11.3	-	-12.0	273	72	920	240
		3.5 x 8	FV3	30.4	-	31.0	-20.4	-	-21.0	508	112	580	130
		3.5 x 8	FV4	40.4	-	41.0	-30.4	-	-31.0	560	42	640	50
HA06-6	10.0	2 x 8.5	FV1	21.3	-	22.0	-11.3	-	-12.0	184	78	620	260
		3.5 x 8	FV2	25.4	-	26.0	-15.4	-	-16.0	465	338	530	390
		3.5 x 8	FV3	30.4	-	31.0	-20.4	-	-21.0	>600	127	>690	150
		3.5 x 8	FV4	36.4	-	37.0	-26.4	-	-27.0	231	110	260	130
		3.5 x 8	FV5	37.4	-	38.0	-27.4	-	-28.0	600	131	690	150
HA06-7	10.5	2 x 8.5	FV1	20.3	-	21.0	-9.8	-	-10.5	>500	-	1,680	-
		2 x 8.5	FV2	25.3	-	26.0	-14.8	-	-15.5	250	83	840	270
		2 x 8.5	FV3	35.3	-	36.0	-24.8	-	-25.5	175	33	590	110
		2 x 8.5	FV4	40.3	-	41.0	-29.8	-	-30.5	172	49	580	170
		2 x 8.5	FV5	56.0	-	56.7	-45.5	-	-46.2	258	-	860	-
HA06-9	9.5	3.5 x 8	FV1	20.4	-	21.0	-10.9	-	-11.5	490	100	560	110
		3.5 x 8	FV2	30.4	-	31.0	-20.9	-	-21.5	560	112	640	130

Notes:
[1] Approximate test boring locations are shown on Figures 2 and 3, Site and Subsurface Exploration Location Plans.
[2] Ground surface elevations at test boring locations are approximate and were estimated by interpolating between 2006 elevation contour data provided by others.
[3] Elevations are in feet and reference Portland City Datum.
[4] Vane numbers are shown on the Test Boring Logs presented in Appendix A.
[5] V_{max} and $V_{remolded}$ represent direct peak and remolded vane torque values, respectively.
[6] S_u and $S_{u(remolded)}$ represent corrected undrained peak and residual shear strengths, respectively, rounded to the nearest 10 psf.
[7] in-lbs = inch-pounds of torque, psf = pounds per square foot.

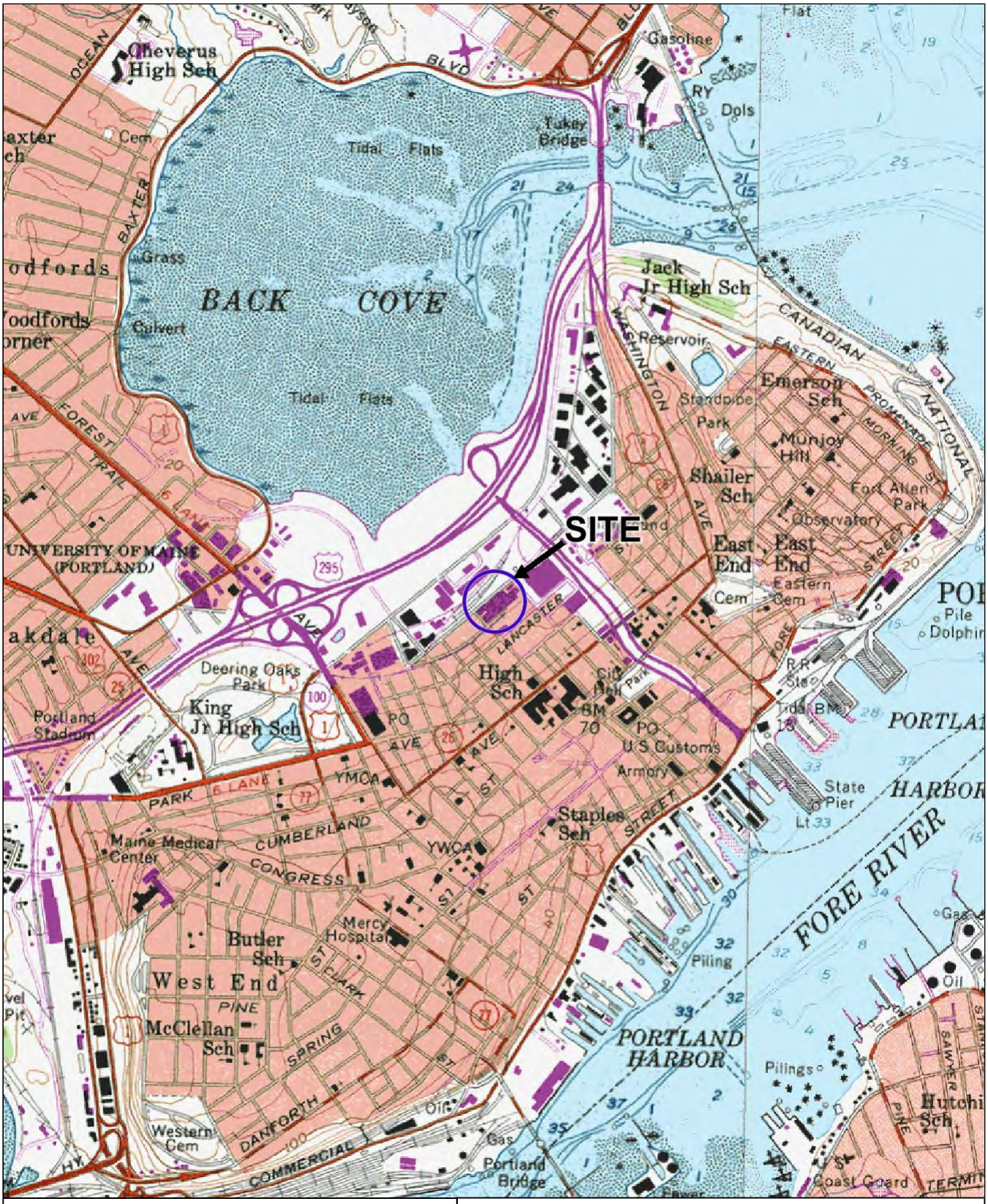
Developed By:	BCS	11/10/2014
Checked By:	EAF	11/10/2014
Reviewed By:	WAC	11/12/2014

TABLE II
2008 MaineHealth/United Way Development In-Situ Vane Shear Test Results
midtown Development
Somerset Street, Portland, Maine

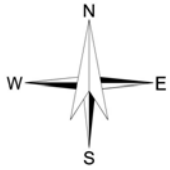
Test Boring No.[1]	Estimated Ground Surface Elevation [2,3]	Vane Size (in. x in.)	Test No. [4]	Approximate Depth Below Existing Ground Surface (ft) Top - Bottom	Approximate Elevation [2,3] Top - Bottom	V_{max} [5,7] (in.-lbs)	$V_{remolded}$ [5,7] (in.-lbs)	S_u [6,7] (psf)	$S_{u(remolded)}$ [6,7] (psf)
HA08-1	11.5	2 x 8.5	FV1	25.3 - 26.0	-13.8 - -14.5	264	72	900	250
		2 x 8.5	FV2	35.3 - 36.0	-23.8 - -24.5	192	96	650	330
		2 x 8.5	FV3	45.3 - 46.0	-33.8 - -34.5	204	120	690	410
		2 x 8.5	FV4	56.3 - 57.0	-44.8 - -45.5	360	156	1,220	530
HA08-2	9.0	2 x 8.5	FV1	25.3 - 26.0	-16.3 - -17.0	180	60	610	200
		2 x 8.5	FV2	35.3 - 36.0	-26.3 - -27.0	120	36	410	120
		2 x 8.5	FV3	45.3 - 46.0	-36.3 - -37.0	168	48	570	160
		2 x 8.5	FV4	55.3 - 56.0	-46.3 - -47.0	144	36	490	120
HA08-4	12.0	3.5 x 8	FV1	22.3 - 23.0	-10.3 - -11.0	950	-	1,050	-
		3.5 x 8	FV2	27.3 - 28.0	-15.3 - -16.0	540	142	590	160
		3.5 x 8	FV3	30.3 - 31.0	-18.3 - -19.0	450	80	500	90
		3.5 x 8	FV4	35.3 - 36.0	-23.3 - -24.0	305	45	340	50
		3.5 x 8	FV5	40.3 - 41.0	-28.3 - -29.0	360	108	400	120
		3.5 x 8	FV6	45.3 - 46.0	-33.3 - -34.0	384	96	420	110
		3.5 x 8	FV7	50.3 - 51.0	-38.3 - -39.0	552	72	610	80
HA08-5(OW)	9.0	2 x 8.5	FV1	20.3 - 21.0	-11.3 - -12.0	212	75	720	260
		2 x 8.5	FV2	25.3 - 26.0	-16.3 - -17.0	213	59	720	200
		2 x 8.5	FV3	30.3 - 31.0	-21.3 - -22.0	215	51	730	170
		2 x 8.5	FV4	35.3 - 36.0	-26.3 - -27.0	175	85	600	290
		2 x 8.5	FV5	40.3 - 41.0	-31.3 - -32.0	175	55	600	190
		2 x 8.5	FV6	50.3 - 51.0	-41.3 - -42.0	205	109	700	370
HA08-7(OW)	12.0	2 x 8.5	FV1	20.3 - 21.0	-8.3 - -9.0	245	95	830	320
		2 x 8.5	FV2	25.3 - 26.0	-13.3 - -14.0	215	51	730	170
		2 x 8.5	FV3	30.3 - 31.0	-18.3 - -19.0	201	82	680	280
		2 x 8.5	FV4	35.3 - 36.0	-23.3 - -24.0	255	62	870	210
HA08-8	9.0	3.5 x 8	FV1	18.3 - 19.0	-9.3 - -10.0	420	60	460	70
		3.5 x 8	FV2	22.3 - 23.0	-13.3 - -14.0	552	48	610	50
		3.5 x 8	FV3	30.3 - 31.0	-21.3 - -22.0	346	108	380	120
		3.5 x 8	FV4	35.3 - 36.0	-26.3 - -27.0	708	132	780	150
		3.5 x 8	FV5	39.3 - 40.0	-30.3 - -31.0	936	72	1,030	80
HA08-10	9.0	3.5 x 8	FV1	19.3 - 20.0	-10.3 - -11.0	468	96	520	110
		3.5 x 8	FV2	23.3 - 24.0	-14.3 - -15.0	660	120	730	130
		3.5 x 8	FV3	27.3 - 28.0	-18.3 - -19.0	360	84	400	90
		3.5 x 8	FV4	30.3 - 31.0	-21.3 - -22.0	204	62	220	70
HA08-11	11.0	2 x 8.5	FV1	25.3 - 26.0	-14.3 - -15.0	215	50	720	170
HA08-13	9.0	2 x 8.5	FV1	20.3 - 21.0	-11.3 - -12.0	199	50	670	170
		2 x 8.5	FV2	25.3 - 26.0	-16.3 - -17.0	174	71	590	240
		2 x 8.5	FV3	30.3 - 31.0	-21.3 - -22.0	82	75	280	250
		2 x 8.5	FV4	35.3 - 36.0	-26.3 - -27.0	215	64	720	220

Notes:
[1] Approximate test boring locations are shown on Figures 2 and 3, Site and Subsurface Exploration Location Plans.
[2] Ground surface elevations at test boring locations are approximate and were estimated by interpolating between 2008 elevation contour data provided by others.
[3] Elevations are in feet and reference Portland City Datum.
[4] Vane numbers are shown on the Test Boring Logs presented in Appendix A.
[5] V_{max} and $V_{remolded}$ represent direct peak and remolded vane torque values, respectively.
[6] S_u and $S_{u(remolded)}$ represent corrected undrained peak and residual shear strengths, respectively, rounded to the nearest 10 psf.
[7] in-lbs = inch-pounds of torque, psf = pounds per square foot.

Developed By:	BCS	11/10/2014
Checked By:	EAF	11/10/2014
Reviewed By:	WAC	11/12/2014



SITE COORDINATES:43°39'45"N 70°15'39"W



U.S.G.S. QUADRANGLE: PORTLAND WEST, ME

HALEY & ALDRICH

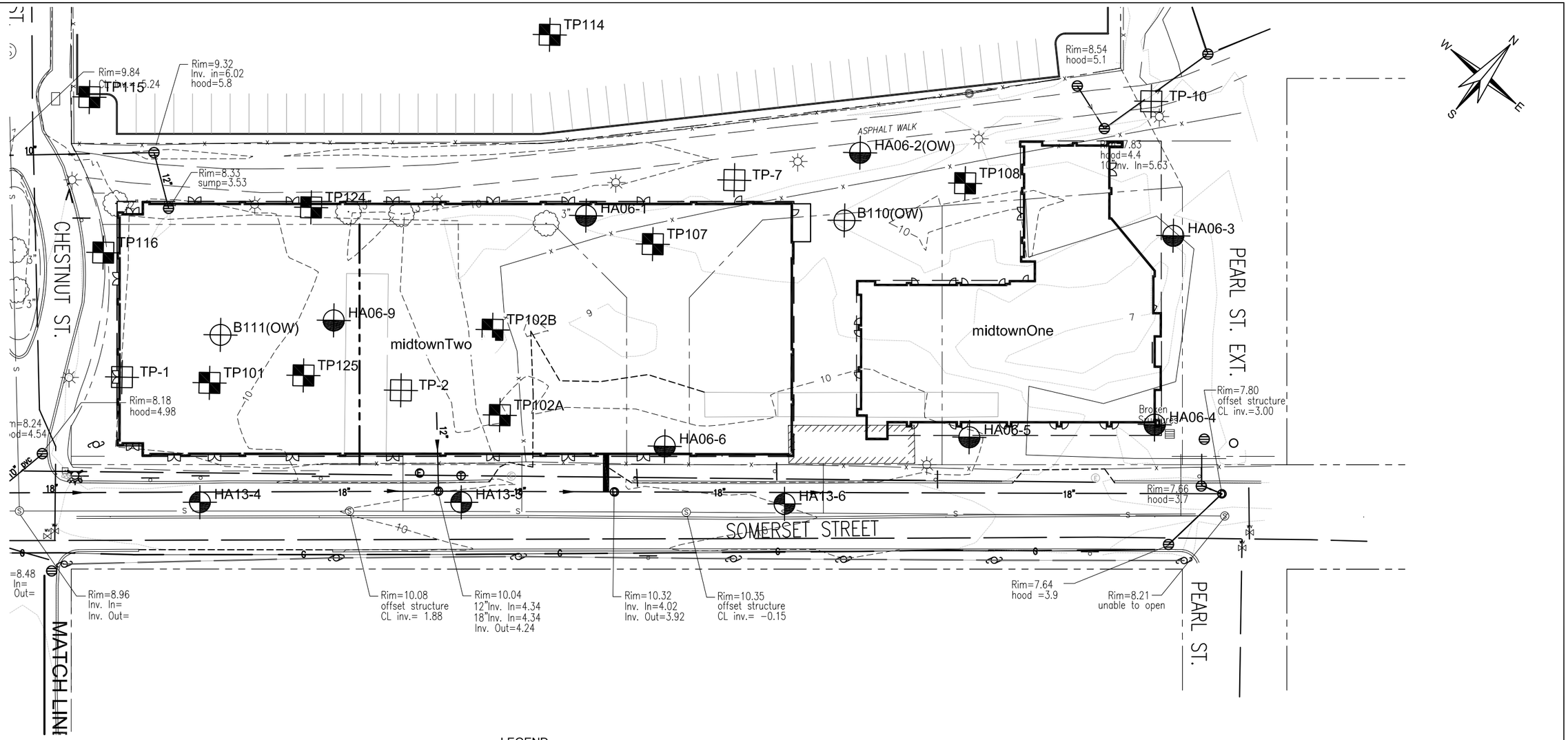
midtown DEVELOPMENT
SOMERSET STREET
PORTLAND, MAINE

PROJECT LOCUS

SCALE: 1:24,000
NOVEMBER 2014

FIGURE 1

38354-000 1.PDF



NOTES:

1. EXISTING SITE CONDITIONS, CONTOURS OF EXISTING GROUND SURFACE ELEVATIONS AND LOCATION AND ORIENTATION OF EXISTING SITE FEATURES ARE TAKEN FROM THE ELECTRONIC AUTOCAD FILE "3062-EXISTING W BLDG.dwg" PROVIDED BY FAY, SPOFFORD & THORNDIKE ON 7 NOVEMBER 2014.
2. THE LOCATION AND ORIENTATION OF PROPOSED BUILDING FOOTPRINTS ARE TAKEN FROM THE ELECTRONIC AUTOCAD FILE "3062-EXISTING W BLDG.dwg" PROVIDED BY FAY, SPOFFORD & THORNDIKE ON 7 NOVEMBER 2014.
3. LOCATIONS OF SUBSURFACE EXPLORATIONS ARE APPROXIMATE AND WERE DETERMINED BY TAPING/PACING DISTANCES FROM EXISTING SITE FEATURES.
4. ELEVATIONS ARE IN FEET AND REFERENCE PORTLAND CITY DATUM.
5. SUBSURFACE EXPLORATIONS WERE MONITORED IN THE FIELD BY HALEY & ALDRICH, INC. OR TEWHEY ASSOCIATES PERSONNEL.
6. REFER TO APPENDIX A FOR LOGS OF SUBSURFACE EXPLORATIONS.

LEGEND:

HA13-4 — DESIGNATION AND APPROXIMATE LOCATION OF TEST BORING DRILLED BY NORTHERN TEST BORING OF GORHAM, MAINE ON 31 JANUARY 2013 FOR THE PROPOSED SOMERSET STREET IMPROVEMENT PROJECT

HA06-1 — DESIGNATION AND APPROXIMATE LOCATION OF TEST BORING DRILLED BY MAINE TEST BORINGS OF HERMON, MAINE IN AUGUST 2006 FOR THE PROPOSED BAYSIDE PARKING GARAGE AND MASTER PLANNING PROJECTS

B110 — DESIGNATION AND APPROXIMATE LOCATION OF TEST BORING DRILLED BY MAINE TEST BORINGS OF HERMON, MAINE IN NOVEMBER 2000 FOR THE UNION BRANCH RAIL LINE PROPERTY PHASE II ENVIRONMENTAL SITE ASSESSMENTS

TP101 — DESIGNATION AND APPROXIMATE LOCATION OF TEST PIT EXCAVATED BY ENVIRONMENTAL PROJECTS, INC. OF GRAY, MAINE IN NOVEMBER 2000 FOR FOR THE UNION BRANCH RAIL LINE PROPERTY PHASE II ENVIRONMENTAL SITE ASSESSMENTS

TP2 — DESIGNATION AND APPROXIMATE LOCATION OF TEST PIT EXCAVATED BY COMMERCIAL PAVING & RECYCLING OF SCARBOROUGH, MAINE IN OCTOBER 1988 FOR PORTLAND BROWNFIELDS PROJECT (PHASE II ESA)

10 — — ELEVATION CONTOUR OF EXISTING GROUND SURFACE

(OW) DENOTES OBSERVATION WELL INSTALLED IN COMPLETED BOREHOLE

0 50 100
SCALE IN FEET

HALEY & ALDRICH

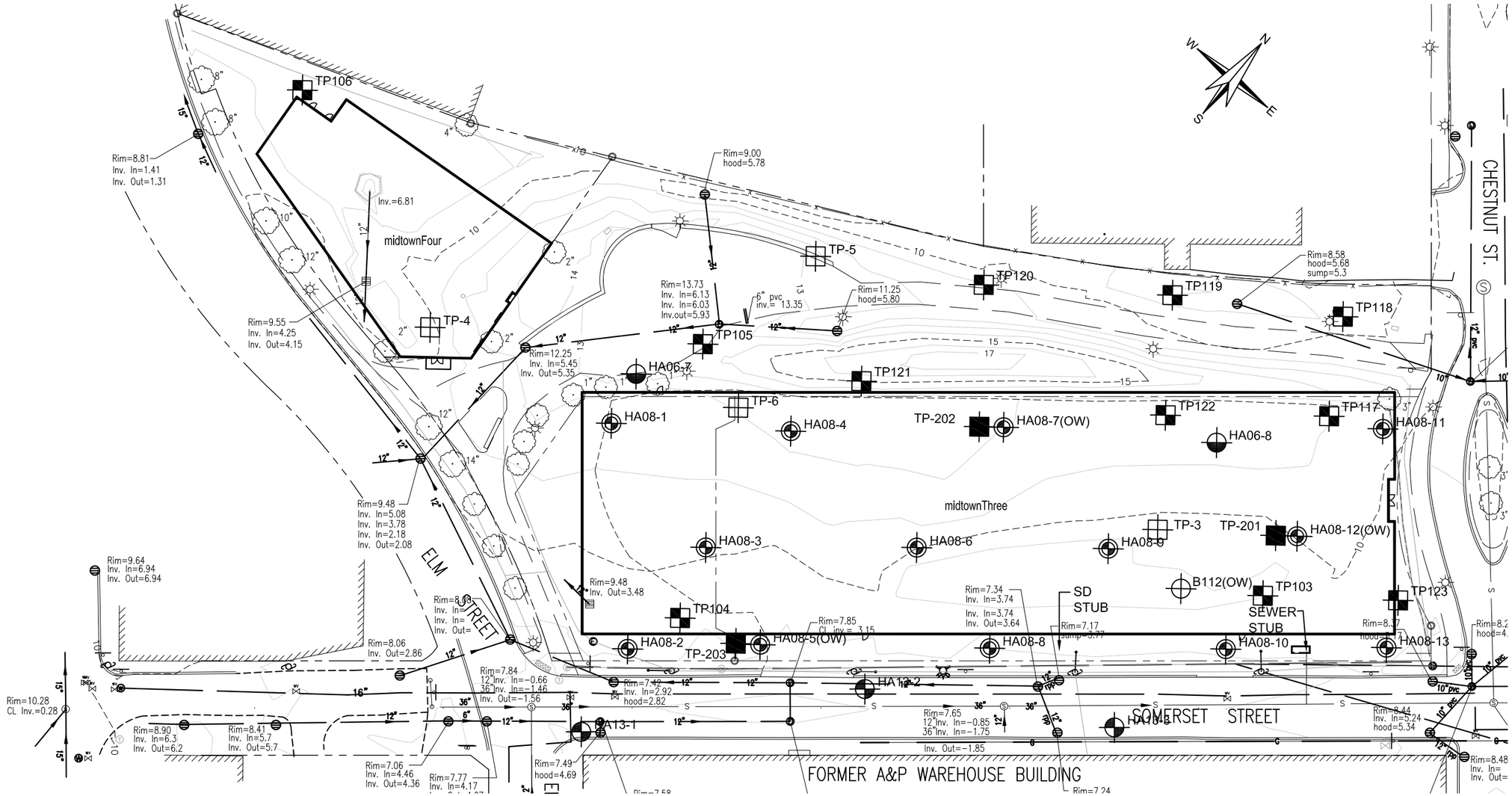
midtown DEVELOPMENT
SOMERSET STREET
PORTLAND, MAINE

SITE AND SUBSURFACE EXPLORATION LOCATION PLAN (1 OF 2)

SCALE: AS SHOWN
NOVEMBER 2014

FIGURE 2

G:\PROJECTS\38354 - MARITIME LANDING\AUTOCAD\2013_0517_HAL FIG2.DWG



NOTES:

1. EXISTING SITE CONDITIONS, CONTOURS OF EXISTING GROUND SURFACE ELEVATIONS AND LOCATION AND ORIENTATION OF EXISTING SITE FEATURES ARE TAKEN FROM THE ELECTRONIC AUTOCAD FILE "3062-EXISTING W BLDG.dwg" PROVIDED BY FAY, SPOFFORD & THORNDIKE ON 7 NOVEMBER 2014.
2. THE LOCATION AND ORIENTATION OF PROPOSED SITE FEATURES ARE TAKEN FROM THE ELECTRONIC AUTOCAD FILE "3062-EXISTING W BLDG.dwg" PROVIDED BY FAY, SPOFFORD & THORNDIKE ON 7 NOVEMBER 2014.
3. LOCATIONS OF SUBSURFACE EXPLORATIONS ARE APPROXIMATE AND WERE DETERMINED BY TAPING/PACING DISTANCES FROM EXISTING SITE FEATURES.
4. ELEVATIONS ARE IN FEET AND REFERENCE PORTLAND CITY DATUM.
5. SUBSURFACE EXPLORATIONS WERE MONITORED IN THE FIELD BY HALEY & ALDRICH, INC. OR TEWHEY ASSOCIATES PERSONNEL.
6. REFER TO APPENDIX A FOR LOGS OF SUBSURFACE EXPLORATIONS.

LEGEND:

HA13-1	DESIGNATION AND APPROXIMATE LOCATION OF TEST BORING DRILLED BY NORTHERN TEST BORING OF GORHAM, MAINE ON 31 JANUARY 2013 FOR THE PROPOSED SOMERSET STREET IMPROVEMENT PROJECT
HA08-1	DESIGNATION AND APPROXIMATE LOCATION OF TEST BORING DRILLED BY MAINE TEST BORINGS OF HERMON, MAINE IN 2008 FOR THE PROPOSED MAINEHEALTH/UNITED WAY DEVELOPMENT
B112	DESIGNATION AND APPROXIMATE LOCATION OF TEST BORING DRILLED BY MAINE TEST BORINGS OF HERMON, MAINE IN NOVEMBER 2000 FOR THE UNION BRANCH RAIL LINE PROPERTY PHASE II ENVIRONMENTAL SITE ASSESSMENTS
TP-201	DESIGNATION AND APPROXIMATE LOCATION OF TEST PIT EXCAVATED BY ENVIRONMENTAL PROJECTS, INC. OF GRAY, MAINE IN OCTOBER 2008 FOR THE MAINEHEALTH/UNITED WAY DEVELOPMENT
TP108	DESIGNATION AND APPROXIMATE LOCATION OF TEST PIT EXCAVATED BY ENVIRONMENTAL PROJECTS, INC. OF GRAY, MAINE IN NOVEMBER 2000 FOR FOR THE UNION BRANCH RAIL LINE PROPERTY PHASE II ENVIRONMENTAL SITE ASSESSMENTS
TP4	DESIGNATION AND APPROXIMATE LOCATION OF TEST PIT EXCAVATED BY COMMERCIAL PAVING & RECYCLING OF SCARBOROUGH, MAINE IN OCTOBER 1988 FOR PORTLAND BROWNFIELDS PROJECT (PHASE II ESA)
10	ELEVATION CONTOUR OF EXISTING GROUND SURFACE
(OW)	DENOTES OBSERVATION WELL INSTALLED IN COMPLETED BOREHOLE

0 60 120
SCALE IN FEET

HALEY & ALDRICH

midtown DEVELOPMENT
SOMERSET STREET
PORTLAND, MAINE

SITE AND SUBSURFACE EXPLORATION LOCATION PLAN (2 OF 2)

SCALE: AS SHOWN
NOVEMBER 2014

FIGURE 3

G:\PROJECTS\38354 - MARITIME LANDING\AUTOCAD\2013_0517_HAI_FIG2.DWG

APPENDIX A

Logs of Subsurface Explorations

1998 Test Pit Logs for
Phase II Environmental Site Assessment
(see Reference 1)

TEWHEY ASSOCIATES		TEST PIT LOG	
PROJECT:	Portland Brownfields - Portland Terminal	BACKHOE:	Commercial Paving
PROJECT NO:	97-005		
DATE:	10-29-98	NO:	TP-1
INVESTIGATOR:	J. Tewhey	LOCATION:	Middle of Site

PID (ppm)	Ref. Soil Samples (Recovery)	Description	Depth (Feet)
<1.0	**S-1**	Coarse black sand and gravel with coal and ash (FILL).	1.0
2.0	S-2	Light brown medium sand with gray ash lenses (FILL).	2.0
			3.0
		Gray to olive stiff sandy silt to blue wet silty clay (FILL).	4.0
			5.0
			6.0
			7.0
			8.0
			9.0
<1.0	S-3		10.0
1.0	**S-4**	Black bay mud with glass and pottery chards.	11.0
			12.0
		Dark gray silty clay with clam shells (native).	13.0
			14.0
		Bottom of Excavation = 14 ft.	15.0
			16.0
			17.0
			18.0
			19.0
			20.0

Comments:	Sample ID in **bold** indicates soil sample was submitted to laboratory for analysis.
Water Table Present:	Wetness observed at 7 ft below ground surface.

WHEY ASSOCIATES — TEST PIT LOG

PROJECT: Portland Brownfields Redfield Terminal — BACKHOE: Commercial Partner
PROJECT NO: [illegible]
DATE: 10/20/98 — NO: TP-2
INVESTIGATOR: J. Tanner — LOCATION: Middle of Site

PID (ppm)	Ref. Soil Samples (Recovery)	Description	Depth (Feet)
2.1	**S-1**	Coarse black sand and gravel with coal and ash (FILL).	1.0
		Light brown medium sand, light gray at depth (FILL).	2.0
73.0	**S-2**		3.0
			4.0
			5.0
			6.0
250	**S-3**	Bottom of Excavation = 6 ft.	7.0
			8.0
			9.0
			10.0
			11.0
			12.0
			13.0
			14.0
			15.0
			16.0
			17.0
			18.0
			19.0
			20.0

Comments:	Sample ID in **bold** indicates soil sample was submitted to laboratory for analysis.
Water Table Present:	Wetness observed at 4 ft below ground surface.

TEWHEY ASSOCIATES		TEST PIT LOG	
PROJECT:	Portland Brownfields - Portland Terminal	BACKHOE:	Commercial Paving
PROJECT NO:	97-005		
DATE:	10-29-98	NO:	TP-9
INVESTIGATOR:	J. Tewhey	LOCATION:	Middle of Site

PID (ppm)	Ref. Soil Samples (Recovery)	Description	Depth (Feet)
1.5	**S-1**	Coarse black sand and gravel with coal and ash (FILL).	1.0
		Light brown coarse sand to gray medium sand and silty sand (FILL).	2.0
			3.0
			4.0
			5.0
			6.0
1.5	S-2		7.0
			8.0
		Black bay mud with glass and pottery chards.	9.0
<1.0	**S-3**		10.0
			11.0
		Bottom of Excavation = 10.5 ft.	12.0
			13.0
			14.0
			15.0
			16.0
			17.0
			18.0
			19.0
			20.0

Comments:	Sample ID in **bold** indicates soil sample was submitted to laboratory for analysis.
Water Table Present:	Wetness observed at 4 ft below ground surface.

TEWHEY ASSOCIATES		TEST PIT LOG	
PROJECT:	Portland Brownfields-Portland Terminal	BACKHOE:	Commercial Paving
PROJECT NO:	97-005		
DATE:	10-29-98	NO:	TP-4
INVESTIGATOR:	J. Tewhey	LOCATION:	West Side of Site

PID (ppm)	Ref. Soil Samples (Recovery)	Description	Depth (Feet)
		4-inches loam over brown gravel with lenses of black granular soils and bricks (FILL).	1.0, 2.0, 3.0
2.0	**S-1**	Dense black medium sand with silt (FILL).	4.0, 5.0, 6.0
1.5	S-2	Gray ash (FILL).	7.0
<1.0	**S-3**	Demolition debris... bricks and wood fragments (FILL).	8.0, 9.0, 10.0, 11.0, 12.0
		Black bay mud with glass and pottery chards.	
		Bottom of Excavation = 12 ft.	13.0, 14.0, 15.0, 16.0, 17.0, 18.0, 19.0, 20.0

Comments:	Sample ID in **bold** indicates soil sample was submitted to laboratory for analysis.
Water Table Present:	Wetness observed at 7 ft below ground surface.

TERRAFIRMA ASSOCIATES		TEST PIT LOG	
PROJECT:	Portland Brownfields- Portland Terminal	BACKHOE:	Commercial Paving
PROJECT NO:	97-005		
DATE:	10-29-98	NO:	TP-5
INVESTIGATOR:	J. Pewhey	LOCATION:	West Side of Site

PID (ppm)	Ref. Soil Samples (Recovery)	Description	Depth (Feet)
2.0	S-1	Brown gravel with lenses of black granular soils and bricks (FILL).	1.0, 2.0, 3.0
2.0	**S-2**	Gray ash (FILL).	4.0, 5.0, 6.0, 7.0, 8.0, 9.0, 10.0
		Black bay mud with glass and pottery shards.	11.0
		Bottom of Excavation = 11 ft.	12.0, 13.0, 14.0, 15.0, 16.0, 17.0, 18.0, 19.0, 20.0

Comments:	Sample ID in **bold** indicates soil sample was submitted to laboratory for analysis.
Water Table Present:	Wetness observed at 4 ft below ground surface.

TEWHEY ASSOCIATES		TEST PIT LOG	
PROJECT:	Portland Brownfields-Portland Terminal	BACKHOE:	Commercial Paving
PROJECT NO:	97-005		
DATE:	10-29-98	NO:	TP-6
INVESTIGATOR	J. Tewhey	LOCATION:	West Side of Site

PID (ppm)	Ref. Soil Samples (Recovery)	Description	Depth (Feet)
1.0	**S-1**	Coarse black sand and gravel with coal and ash (FILL).	1.0, 2.0
		Dark brown, black, silty fine sand (FILL).	3.0, 4.0
2.0	S-2	Gray ash (FILL).	5.0, 6.0
2.0	**S-3**	Black dump refuse... glass, wood, pottery, metal, leather; sewerage odor (FILL).	7.0, 8.0, 9.0
		Dark gray silty clay with clam shells (native).	10.0, 11.0
		Bottom of Excavation = 11 ft.	12.0, 13.0, 14.0, 15.0, 16.0, 17.0, 18.0, 19.0, 20.0

Comments:	Sample ID in **bold** indicates soil sample was submitted to laboratory for analysis.
Water Table Present:	Wetness observed at 5 ft below ground surface.

...WHEY ASSOCIATES		TEST PIT LOG	
...OJECT:	Portland Brownfields- Portland Terminal	BACKFILL:	Compacted Fill
...JECT NO:	[illegible]		
...ATE:	[illegible]	NO.:	TP-[illegible]
...STIGATOR:	J. Fenlay	LOCATION:	Middle of Site

PID (ppm)	Ref. Soil Samples (Recovery)	Description	Depth (Feet)
1.0	**S-1**	Coarse black sand and gravel with coal and ash (FILL).	1.0
		Blue gray silty clay (FILL).	2.0
			3.0
			4.0
			5.0
			6.0
			7.0
			8.0
			9.0
			10.0
			11.0
		Dark gray silty CLAY with clam shells (native).	12.0
		Bottom of Excavation = 12 ft.	13.0
			14.0
			15.0
			16.0
			17.0
			18.0
			19.0
			20.0

...ments:	Sample ID in **bold** indicates soil sample was submitted to laboratory for analysis.
...ater Table Present:	Wetness observed at 11 ft below ground surface.

HEY ASSOCIATES — TEST PIT LOG

TEST: Portland Brownfields, Portland Terminal — BACKHOE: Commercial Equipment

PROJECT NO.: 97-005

DATE: 10/29/98 — NO.: TP-10

INVESTIGATOR: J. Tooley — LOCATION: East Side of Site

PID (ppm)	Ref. Soil Samples (Recovery)	Description	Depth (Feet)
<1.0	**S-1**	Coarse black sand and gravel with coal and ash (FILL).	1.0
		Light brown medium sand (FILL).	2.0
		Gray silty clay (FILL).	3.0
			4.0
			5.0
2.0	**S-2**	Light brown medium sand (FILL).	6.0
			7.0
		Bottom of Excavation = 7 ft.	8.0
			9.0
			10.0
			11.0
			12.0
			13.0
			14.0
			15.0
			16.0
			17.0
			18.0
			19.0
			20.0

ents:	Sample ID in bold indicates soil sample was submitted to laboratory for analysis.
Table Present:	Wetness observed at 5 ft below ground surface.

2000 Test Pit Logs for
Phase II Environmental Site Assessment
(see Reference 1)

HALEY & ALDRICH

TEST PIT LOG

Test Pit No. TP101

Project	Union Branch Acquisition	**File No.**	80509-014
Location	Portland, Maine	**Date**	20 November 2000
Client	Maine Department of Transportation	**Weather**	Cloudy
Contractor	Environmental Projects, Inc.	**H&A Rep**	J. Tewhey
Equipment Used	Komatsu Excavator 0.75 Cubic Yard Bucket		

Ground El.: ft **Location:** See Plan **Groundwater depths/entry rates (in./min.):**

El. Datum:

Depth (ft)	Sample ID	Stratum Change Depth (ft)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	101-1 0'			>50% cinders and coal fragments in black stained matrix of medium to fine SAND with silt										
	101-2 1'	0.8	SW	-RAILYARD FILL- Yellow-brown to light brown well graded SAND with lenses of silty clay as in 101-3, dry			10	80	5	5				
		1.5	ML	-SAND FILL- Olive gray to gray clayey SILT with sand, soft, moist										
2				-CLAYEY SILT FILL-										
	101-3 3.5'													
4														
6														
8														
10		10.0		Bottom of Excavation at 10.0 ft.										

Obstructions:

Remarks: Running sand caused collapse of pit

Field Tests

Dilatancy	R - Rapid	S - Slow	N - None	
Toughness	L - Low	M - Medium	H - High	
Plasticity	N - Nonplastic	L - Low	M - Medium	H - High
Dry Strength	N - None	L - Low	M - Medium	H - High V - Very High

Standing Water in Completed Pit

at depth ft

measured after hours elapsed

Boulders

Diameter (in.)	Number	Approx. Vol. (cu.ft)
12" to 24"		=
over 24"		=

Test Pit Dimensions (ft)

Pit Depth 10.0

Pit Length x Width 4.0 x 12.0

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST PIT LOG

Test Pit No. TP102A

Project	Union Branch Acquisition	**File No.**	80509-014
Location	Portland, Maine	**Date**	20 November 2000
Client	Maine Department of Transportation	**Weather**	Cloudy
Contractor	Environmental Projects, Inc.	**H&A Rep**	J. Tewhey
Equipment Used	Komatsu Excavator 0.75 Cubic Yard Bucket		

Ground El.: ft
El. Datum:
Location: See Plan
Groundwater depths/entry rates (in./min.): Water entering slowly at 5.0 ft.

Depth (ft)	Sample ID	Stratum Change Depth (ft)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test: Dilatancy	Field Test: Toughness	Field Test: Plasticity	Field Test: Strength
0	102A-1 0'			-RAILYARD FILL- (See 101-1)										
	102A-2 1'	0.8	SW	Red-brown, yellow-brown, light brown well-graded SAND with 3-4inch thick lenses of dark granular railbed material as in 102A-1			10	80	5	5				
2				-SAND FILL-										
		2.5	ML	Olive-gray to gray clayey SILT with sand, medium stiff, increasingly moist with depth										
4				-CLAYEY SILT FILL-										
	102A-3 5'													
6														
8														
10		10.0		Bottom of Excavation at 10.0 ft.										

Obstructions:

Remarks: Running sand caused collapse of pit

Field Tests

Dilatancy	R - Rapid S - Slow N - None
Toughness	L - Low M - Medium H - High
Plasticity	N - Nonplastic L - Low M - Medium H - High
Dry Strength	N - None L - Low M - Medium H - High V - Very High

Standing Water in Completed Pit
at depth ft
measured after hours elapsed

Boulders

Diameter (in.)	Number	Approx. Vol. (cu.ft)
12" to 24"		=
over 24"		=

Test Pit Dimensions (ft)
Pit Depth 10.0
Pit Length x Width 4.0 x 12.0

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST PIT LOG

Test Pit No. TP102B

Project	Union Branch Acquisition	**File No.**	80509-014
Location	Portland, Maine	**Date**	20 November 2000
Client	Maine Department of Transportation	**Weather**	Cloudy
Contractor	Environmental Projects, Inc.	**H&A Rep**	J. Tewhey
Equipment Used	Komatsu Excavator 0.75 Cubic Yard Bucket		

Ground El.: ft
El. Datum:
Location: See Plan
Groundwater depths/entry rates (in./min.): Water moderate at 4.0 ft.

Depth (ft)	Sample ID	Stratum Change Depth (ft)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				>50% cinders and coal fragments in black stained matrix of medium to fine SAND with silt -RAILYARD FILL-										
	102B-1 0.5'	0.8	SW	Light brown to brown well-graded SAND, mps= 1.0 inch -SAND FILL-	5	5	10	70	5	5				
2														
4														
	102B-2 5'													
6														
		7.0		Bottom of Excavation at 7.0 ft.										

Obstructions:

Remarks: Running sands at 6.0 ft., pit collapsed

Field Tests

Dilatancy	R - Rapid S - Slow N - None
Toughness	L - Low M - Medium H - High
Plasticity	N - Nonplastic L - Low M - Medium H - High
Dry Strength	N - None L - Low M - Medium H - High V - Very High

Standing Water in Completed Pit
at depth ft
measured after hours elapsed

Boulders

Diameter (in.)	Number	Approx. Vol. (cu.ft)
12" to 24"		=
over 24"		=

Test Pit Dimensions (ft)
Pit Depth 7.0
Pit Length x Width 4.0 x 12.0

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST PIT LOG

Test Pit No. TP103

Project	Union Branch Acquisition	**File No.**	80509-014
Location	Portland, Maine	**Date**	20 November 2000
Client	Maine Department of Transportation	**Weather**	Cloudy
Contractor	Environmental Projects, Inc.	**H&A Rep**	J. Tewhey
Equipment Used	Komatsu Excavator 0.75 Cubic Yard Bucket		

Ground El.: ft
El. Datum:
Location: See Plan
Groundwater depths/entry rates (in./min.): Water inflow is rapid from -HARBOR BOTTOM DEPOSIT-
Water slow at 3.0 ft.(perched), rapid at 10.0 ft.

Depth (ft)	Sample ID	Stratum Change Depth (ft)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	103-1 0'	0.5		-RAILYARD FILL- (See 101-1)										
	103-2 1'		SW	Light brown well-graded SAND, few lenses of dark granular rail bed material as in 103-1 -SAND FILL-			10	80	5	5				
2		2.0	ML	Olive-gray clayey SILT with sand and gravel, medium stiff -CLAYEY SILT FILL-										
	103-3 3'													
4		4.0	ML	Gray clayey SILT with sand, very soft -CLAYEY SILT FILL-										
	103-4 5.5'													
6														
8														
	103-5 9.5'	9.5		Black-brown organic material with some clay -HARBOR BOTTOM DEPOSIT-(FILL)										
10														
	103-6 11'	11.0	CL	Olive-gray lean CLAY with silt, trace medium sand, medium stiff, presence of clam shell fossils is diagnostic of -NATIVE SOILS- <<C>-MARINE DEPOSIT-										
12		12.0		Bottom of Exploration at 12.0 ft.										

Obstructions:

Remarks:

Field Tests

Dilatancy	R - Rapid	S - Slow	N - None	
Toughness	L - Low	M - Medium	H - High	
Plasticity	N - Nonplastic	L - Low	M - Medium	H - High
Dry Strength	N - None	L - Low	M - Medium	H - High V - Very High

Standing Water in Completed Pit
at depth ft
measured after hours elapsed

Boulders

Diameter (in.)	Number	Approx. Vol. (cu.ft)
12" to 24"		=
over 24"		=

Test Pit Dimensions (ft)
Pit Depth 12.0
Pit Length x Width 4.0 x 14.0

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

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TEST PIT LOG

Test Pit No. TP104

Project	Union Branch Acquisition	**File No.**	80509-014
Location	Portland, Maine	**Date**	20 November 2000
Client	Maine Department of Transportation	**Weather**	Cloudy
Contractor	Environmental Projects, Inc.	**H&A Rep**	J. Tewhey
Equipment Used	Komatsu Excavator 0.75 Cubic Yard Bucket		

Ground El.: ft
El. Datum:
Location: See Plan
Groundwater depths/entry rates (in./min.): Water emerges from ash at 6.0 ft., has slight sheen

Depth (ft)	Sample ID	Stratum Change Depth (ft)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	104-1 0.5'			Gray coarse coal ash mixed with 20% silty LOAM -ASH FILL-										
	104-2 1.5'	1.5	ML	Olive-gray clayey SILT with sand, stiff -CLAYEY SILT FILL-										
2		2.5		Gray, coarse coal ash -ASH FILL-										
4														
6		6.0		Dark brown to black heterogeneous mix of ash, organic marine deposit, trash and clayey SILT -ASH AND REFUSE FILL-										
	104-3 7'													
8														
	104-4 9'			Black stained coarse COAL ASH with trash, glass, ceramic, leather, metal, shell, wood										
		9.5	CL	Olive-gray lean CLAY with silt -MARINE DEPOSIT-										
10		10.0		Bottom of Excavation at 10.0 ft.										

Obstructions:

Remarks:

Field Tests

Dilatancy	R - Rapid	S - Slow	N - None		
Toughness	L - Low	M - Medium	H - High		
Plasticity	N - Nonplastic	L - Low	M - Medium	H - High	
Dry Strength	N - None	L - Low	M - Medium	H - High	V - Very High

Standing Water in Completed Pit

at depth 7.5 ft
measured after 0.25 hours elapsed

Boulders

Diameter (in.)	Number	Approx. Vol. (cu.ft)
12" to 24"		=
over 24"		=

Test Pit Dimensions (ft)

Pit Depth 10.0
Pit Length x Width 4.0 x 14.0

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

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TEST PIT LOG

Test Pit No. TP105

Project	Union Branch Acquisition	**File No.**	80509-014
Location	Portland, Maine	**Date**	20 November 2000
Client	Maine Department of Transportation	**Weather**	Cloudy
Contractor	Environmental Projects, Inc.	**H&A Rep**	J. Tewhey
Equipment Used	Komatsu Excavator 0.75 Cubic Yard Bucket		

Ground El.: ft **Location:** See Plan **Groundwater depths/entry rates (in./min.):**

El. Datum:

Depth (ft)	Sample ID	Stratum Change Depth (ft)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				Heterogeneous mix of used brick, sheets of metal, concrete blocks in matrix of brown sandy LOAM										
				-MIXED FILL-										
2				Solid mass of wood in matrix of black rubber/plastic prevented digging										
		3.5		Bottom of Excavation at 3.5 ft.										

Obstructions: Wood and rubber/plastic massive block

Remarks:

Field Tests

Dilatancy	R - Rapid	S - Slow	N - None		
Toughness	L - Low	M - Medium	H - High		
Plasticity	N - Nonplastic	L - Low	M - Medium	H - High	
Dry Strength	N - None	L - Low	M - Medium	H - High	V - Very High

Standing Water in Completed Pit

at depth ft

measured after hours elapsed

Boulders

Diameter (in.)	Number	Approx. Vol. (cu.ft)
12" to 24"		=
over 24"		=

Test Pit Dimensions (ft)

Pit Depth 3.5

Pit Length x Width 4.0 x 10.0

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

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TEST PIT LOG

Test Pit No. TP106

Project	Union Branch Acquisition	**File No.**	80509-014
Location	Portland, Maine	**Date**	20 November 2000
Client	Maine Department of Transportation	**Weather**	Cloudy
Contractor	Environmental Projects, Inc.	**H&A Rep**	J. Tewhey
Equipment Used	Komatsu Excavator 0.75 Cubic Yard Bucket		

Ground El.: ft
El. Datum:
Location: See Plan
Groundwater depths/entry rates (in./min.): Water entering pit slowly at 4.5 ft. (perched)

Depth (ft)	Sample ID	Stratum Change Depth (ft)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	106-1 0'		SW	Brown to dark brown well sorted SAND, mps=1.0 in. -SAND FILL-	10	5	5	70	5	5				
		1.0		-RAILYARD FILL- (See 101-1)										
	106-2 1.5'													
2														
		3.0		Gray coarse coal ash -ASH FILL-										
	106-3 3.5'													
4														
	106-4 4.5'	4.5		Gray-brown coarse SAND with silt -MARINE DEPOSIT-										
		5.0												
6			ML	Olive-gray clayey SILT which becomes silty CLAY with increasing depth; stiff at 6.0 ft. to soft at 10.0 ft., fossil clam shells at 11.0 ft. -MARINE DEPOSIT-										
8														
10			CL											
		11.5		Bottom of Excavation at 11.5 ft.										

Obstructions:

Remarks: Deposit at 4.5 ft. represents former bottom sediments of back cove. Deposit at 5.0 ft. are interpreted to be native soils.

Field Tests

Dilatancy	R - Rapid	S - Slow	N - None	
Toughness	L - Low	M - Medium	H - High	
Plasticity	N - Nonplastic	L - Low	M - Medium	H - High
Dry Strength	N - None	L - Low	M - Medium	H - High	V - Very High

Standing Water in Completed Pit
at depth ft
measured after hours elapsed

Boulders

Diameter (in.)	Number	Approx. Vol. (cu.ft)
12" to 24"		=
over 24"		=

Test Pit Dimensions (ft)
Pit Depth 11.5
Pit Length x Width 4.0 x 13.0

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

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TEST PIT LOG

Test Pit No. TP107

Project	Union Branch Acquisition	**File No.**	80509-014
Location	Portland, Maine	**Date**	21 November 2000
Client	Maine Department of Transportation	**Weather**	Clear
Contractor	Environmental Projects, Inc.	**H&A Rep**	J. Tewhey
Equipment Used	Komatsu Excavator 0.75 Cubic Yard Bucket		

Ground El.: ft **El. Datum:**

Location: See Plan

Groundwater depths/entry rates (in./min.): Water rapid at 9.5 ft.; entering pit on top of native clay soils at 9.75 ft.

Depth (ft)	Sample ID	Stratum Change Depth (ft)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	107-1 0'			-RAILYARD FILL- (See 101-1)										
		0.8												
		1.0	SW	Brown well-graded coarse SAND										
	107-2 1.5'		ML	Olive-brown clayey SILT with sand, medium stiff, dry										
2				-CLAYEY SILT FILL-										
4														
6														
	107-3 7'		ML	Olive-gray clayey SILT with SAND, soft, moist										
8														
10	107-4 9.75'	9.8	CL	Olive-gray lean CLAY with silt and trace medium sand, medium stiff, clam shell fossils are diagnostic of native soils										
		11.0		-MARINE DEPOSIT-										
				Bottom of Excavation at 11.0 ft.										

Obstructions:

Remarks:

Field Tests

Dilatancy	R - Rapid	S - Slow	N - None	
Toughness	L - Low	M - Medium	H - High	
Plasticity	N - Nonplastic	L - Low	M - Medium	H - High
Dry Strength	N - None	L - Low	M - Medium	H - High V - Very High

Standing Water in Completed Pit

at depth ft

measured after hours elapsed

Boulders

Diameter (in.)	Number	Approx. Vol. (cu.ft)
12" to 24"		=
over 24"		=

Test Pit Dimensions (ft)

Pit Depth 11.0

Pit Length x Width 4.0 x 12.0

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

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TEST PIT LOG

Test Pit No. TP108

Project	Union Branch Acquisition	**File No.**	80509-014
Location	Portland, Maine	**Date**	21 November 2000
Client	Maine Department of Transportation	**Weather**	Clear
Contractor	Environmental Projects, Inc.	**H&A Rep**	J. Tewhey
Equipment Used	Komatsu Excavator 0.75 Cubic Yard Bucket		

Ground El.: ft
El. Datum:
Location: See Plan
Groundwater depths/entry rates (in./min.): Water moderately flowing at 3.5 ft.

Depth (ft)	Sample ID	Stratum Change Depth (ft)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	108-1 0'			-RAILYARD FILL- (101-1)										
	108-2 1'	0.8	SW	Yellow-brown to brown well-graded SAND with thin lenses of granular material from railbed as in 108-1			5	80	10	5				
2				-SAND FILL-										
4														
6														
		7.0	SW	Gray-brown well-graded SAND										
8				-SAND FILL-										
		8.5		Bottom of Excavation at 8.5 ft.										

Obstructions:

Remarks: Wet flowing sand at 5-6 ft. caused collapse of test pit.

Field Tests

Dilatancy	R - Rapid S - Slow N - None
Toughness	L - Low M - Medium H - High
Plasticity	N - Nonplastic L - Low M - Medium H - High
Dry Strength	N - None L - Low M - Medium H - High V - Very High

Standing Water in Completed Pit
at depth ft
measured after hours elapsed

Boulders

Diameter (in.)	Number	Approx. Vol. (cu.ft)
12" to 24"		=
over 24"		=

Test Pit Dimensions (ft)
Pit Depth 8.5
Pit Length x Width 4.0 x 13.0

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

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TEST PIT LOG

Test Pit No. TP114

Project	Union Branch Acquisition	**File No.**	80509-014
Location	Portland, Maine	**Date**	21 November 2000
Client	Maine Department of Transportation	**Weather**	Clear
Contractor	Environmental Projects, Inc.	**H&A Rep**	J. Tewhey
Equipment Used	Komatsu Excavator 0.75 Cubic Yard Bucket		

Ground El.: ft
El. Datum:
Location: See Plan
Groundwater depths/entry rates (in./min.): Water slowly seeping at 3-4 ft.

Depth (ft)	Sample ID	Stratum Change Depth (ft)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				-RAILYARD FILL- (See 101-1) with lenses of gray coarse coal ash										
		1.0		Light brown to brown well-graded medium SAND -SAND FILL-										
2'														
4														
		5.5												
6	114-2 6.5'			Dark olive brown well-graded coarse to medium SAND, wet -SAND FILL-		10	30	30	20	5				
8														
		9.0		Bottom of Excavation at 9.0 ft.										

Obstructions:

Remarks: Moist sands flowed into pit from side walls, causing collapse of pit

Field Tests

Dilatancy	R - Rapid	S - Slow	N - None	
Toughness	L - Low	M - Medium	H - High	
Plasticity	N - Nonplastic	L - Low	M - Medium	H - High
Dry Strength	N - None	L - Low	M - Medium	H - High V - Very High

Standing Water in Completed Pit
at depth ft
measured after hours elapsed

Boulders

Diameter (in.)	Number	Approx. Vol. (cu.ft)
12" to 24"		=
over 24"		=

Test Pit Dimensions (ft)
Pit Depth 9.0
Pit Length x Width 4.0 x 12.0

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

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TEST PIT LOG

Test Pit No. TP115

Project	Union Branch Acquisition	**File No.**	80509-014
Location	Portland, Maine	**Date**	21 November 2000
Client	Maine Department of Transportation	**Weather**	Clear
Contractor	Environmental Projects, Inc.	**H&A Rep**	J. Tewhey
Equipment Used	Komatsu Excavator 0.75 Cubic Yard Bucket		

Ground El.: ft
El. Datum:

Location: See Plan

Groundwater depths/entry rates (in./min.): Water entering pit rapidly at 1.0 ft. (from culvert)

Depth (ft)	Sample ID	Stratum Change Depth (ft)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				-HETEROGENEOUS CLAY FILL-										
2				Note: A log platform (road) at 3.5 ft. block digging										
		3.5		Bottom of Excavation at 3.5 ft.										

Obstructions:

Remarks:

Field Tests

Dilatancy	R - Rapid	S - Slow	N - None	
Toughness	L - Low	M - Medium	H - High	
Plasticity	N - Nonplastic	L - Low	M - Medium	H - High
Dry Strength	N - None	L - Low	M - Medium	H - High	V - Very High

Standing Water in Completed Pit

at depth ft
measured after hours elapsed

Boulders

Diameter (in.)	Number	Approx. Vol. (cu.ft)
12" to 24"		=
over 24"		=

Test Pit Dimensions (ft)

Pit Depth 3.5
Pit Length x Width 4.0 x 8.0

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

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TEST PIT LOG

Test Pit No. TP116

Project	Union Branch Acquisition	**File No.**	80509-014
Location	Portland, Maine	**Date**	21 November 2000
Client	Maine Department of Transportation	**Weather**	Clear
Contractor	Environmental Projects, Inc.	**H&A Rep**	J. Tewhey
Equipment Used	Komatsu Excavator 0.75 Cubic Yard Bucket		

Ground El.: ft **Location:** See Plan **Groundwater depths/entry rates (in./min.):**

El. Datum:

Depth (ft)	Sample ID	Stratum Change Depth (ft)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				-RAILYARD FILL- (See 101-1)										
		0.5												
		1.0												
2				Olive brown to olive gray clayey SILT with sand and gravel, medium stiff and becomimg soft at depth	5	5	5	5	20	60				
				-CLAYEY SILT FILL-										
4														
6														
8														
		9.5												
10			CL- ML	Native clay soils										
				-MARINE DEPOSIT-										
12		12.0		Bottom of Excavation at 12.0 ft.										

Obstructions:

Remarks: Clayey silt collapsed into pit, but native clay soils did not.

Field Tests

Dilatancy	R - Rapid S - Slow N - None
Toughness	L - Low M - Medium H - High
Plasticity	N - Nonplastic L - Low M - Medium H - High
Dry Strength	N - None L - Low M - Medium H - High V - Very High

Standing Water in Completed Pit

at depth ft

measured after hours elapsed

Boulders

Diameter (in.)	Number	Approx. Vol. (cu.ft)
12" to 24"		=
over 24"		=

Test Pit Dimensions (ft)

Pit Depth 12.0

Pit Length x Width 4.0 x 14.0

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

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TEST PIT LOG

Test Pit No. TP117

Project	Union Branch Acquisition	**File No.**	80509-014
Location	Portland, Maine	**Date**	21 November 2000
Client	Maine Department of Transportation	**Weather**	Clear
Contractor	Environmental Projects, Inc.	**H&A Rep**	J. Tewhey
Equipment Used	Komatsu Excavator 0.75 Cubic Yard Bucket		

Ground El.: ft **El. Datum:** **Location:** See Plan **Groundwater depths/entry rates (in./min.):** Water entering pit slowly at 5.0 ft.

Depth (ft)	Sample ID	Stratum Change Depth (ft)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	117-1 0.5'	1.0		-RAILYARD FILL- (See 101-1)										
2	117-2 3'			Light brown to brown poorly-graded sand, mps= 0.25 in. with wavy lenses of dark brown sand -SAND FILL-		5	10	80	5					
4		5.0												
6	117-3 7.5'			Olive-gray clayey SILT with sand -CLAYEY SILT FILL-			5	5	30	60				
8		9.5		Bottom of Excavation at 9.5 ft.										

Obstructions:

Remarks: Hole collapsed due to failure of clayey silt fill.

Field Tests

Dilatancy	R - Rapid	S - Slow	N - None	
Toughness	L - Low	M - Medium	H - High	
Plasticity	N - Nonplastic	L - Low	M - Medium	H - High
Dry Strength	N - None	L - Low	M - Medium	H - High, V - Very High

Standing Water in Completed Pit

at depth ft

measured after hours elapsed

Boulders

Diameter (in.)	Number	Approx. Vol. (cu.ft)
12" to 24"		=
over 24"		=

Test Pit Dimensions (ft)

Pit Depth 9.5

Pit Length x Width 4.0 x 11.0

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

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TEST PIT LOG

Test Pit No. TP118

Project	Union Branch Acquisition	**File No.**	80509-014
Location	Portland, Maine	**Date**	21 November 2000
Client	Maine Department of Transportation	**Weather**	Clear
Contractor	Environmental Projects, Inc.	**H&A Rep**	J. Tewhey
Equipment Used	Komatsu Excavator 0.75 Cubic Yard Bucket		

Ground El.: ft
El. Datum:
Location: See Plan
Groundwater depths/entry rates (in./min.): Water slowly seeping at 6.5 ft.

Depth (ft)	Sample ID	Stratum Change Depth (ft)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0		0.5		Brown sandy loam with organics and roots -SILT FILL-										
2	118-1 2.5'			Olive-brown to olive-gray clayey SILT FILL, stiff, becomimg medium stiff to soft with depth -CLAYEY SILT FILL-										
4														
6		6.5		Olive-brown silty SAND, mps= 1.0 inch -SAND FILL-										
8	118-2 7.5'	8.5	SM	Black silty SAND	10	5	5	15	40	25				
		9.0		Bottom of Excavation at 9.0 ft.										

Obstructions:

Remarks: Clayey silt fill collapsed upon setting for a few minutes.

Field Tests

Dilatancy	R - Rapid	S - Slow	N - None	
Toughness	L - Low	M - Medium	H - High	
Plasticity	N - Nonplastic	L - Low	M - Medium	H - High
Dry Strength	N - None	L - Low	M - Medium	H - High	V - Very High

Standing Water in Completed Pit
at depth ft
measured after hours elapsed

Boulders

Diameter (in.)	Number	Approx. Vol. (cu.ft)
12" to 24"		=
over 24"		=

Test Pit Dimensions (ft)
Pit Depth 9.0
Pit Length x Width 4.0 x 12.0

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

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TEST PIT LOG

Test Pit No. TP119

Project	Union Branch Acquisition	**File No.**	80509-014
Location	Portland, Maine	**Date**	21 November 2000
Client	Maine Department of Transportation	**Weather**	Clear
Contractor	Environmental Projects, Inc.	**H&A Rep**	J. Tewhey
Equipment Used	Komatsu Excavator 0.75 Cubic Yard Bucket		

Ground El.: ft **El. Datum:** **Location:** See Plan **Groundwater depths/entry rates (in./min.):** Water emerges from ash at 6.0 ft.

Depth (ft)	Sample ID	Stratum Change Depth (ft)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0		0.3												
	119-1 1'			Light brown to brown well-graded SAND, mps= 1.0 in.										
		1.5		-SAND FILL-										
2	119-2 2'			Gray coarse coal ash with lenses of black railroad yard soils and light brown sand (as in 119-1)										
		3.0		-ASH FILL-										
4	119-3 4.5'			Gray coarse coal ash with mixed trash, all stained jet black, glass, brick, ceramics, leather, metal, wood										
6				-ASH AND REFUSE FILL-										
	119-4 7'													
8														
		9.5		Bottom of Excavation at 9.5 ft.										

Obstructions:

Remarks: Standing water in pit has prominent petroleum sheen; no petroleum odor (cold weather may inhibit odor)

Field Tests

Dilatancy	R - Rapid S - Slow N - None
Toughness	L - Low M - Medium H - High
Plasticity	N - Nonplastic L - Low M - Medium H - High
Dry Strength	N - None L - Low M - Medium H - High V - Very High

Standing Water in Completed Pit

at depth	6.0	ft
measured after	0.25	hours elapsed

Boulders

Diameter (in.)	Number	Approx. Vol. (cu.ft)
12" to 24"		=
over 24"		=

Test Pit Dimensions (ft)

Pit Depth	9.5
Pit Length x Width	4.0 x 14.0

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

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TEST PIT LOG

Test Pit No. TP120

Project	Union Branch Acquisition	**File No.**	80509-014
Location	Portland, Maine	**Date**	21 November 2000
Client	Maine Department of Transportation	**Weather**	Clear
Contractor	Environmental Projects, Inc.	**H&A Rep**	J. Tewhey
Equipment Used	Komatsu Excavator 0.75 Cubic Yard Bucket		

Ground El.: ft
El. Datum:
Location: See Plan
Groundwater depths/entry rates (in./min.): Water entering pit rapidly from 6-7 ft.

Depth (ft)	Sample ID	Stratum Change Depth (ft)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	120-1 0'	0.5		Light brown poorly-graded SAND, mps= 0.25 in., grass, roots			10	80	5	5				
	120-2 1'			-RAILYARD FILL- (See 101-1)										
2		2.5												
4	120-3 5'			Gray coarse coal ash -ASH FILL-										
6														
8		8.5		Bottom of Excavation at 8.5 ft.										

Obstructions:

Remarks: Slight petroleum sheen on standing water, no petroleum odor

Field Tests

Dilatancy	R - Rapid	S - Slow	N - None	
Toughness	L - Low	M - Medium	H - High	
Plasticity	N - Nonplastic	L - Low	M - Medium	H - High
Dry Strength	N - None	L - Low	M - Medium	H - High V - Very High

Standing Water in Completed Pit

at depth 6.5 ft
measured after 0.25 hours elapsed

Boulders

Diameter (in.)	Number	Approx. Vol. (cu.ft)
12" to 24"		=
over 24"		=

Test Pit Dimensions (ft)

Pit Depth 8.5
Pit Length x Width 4.0 x 13.0

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

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TEST PIT LOG

Test Pit No. TP121

Project	Union Branch Acquisition	**File No.**	80509-014
Location	Portland, Maine	**Date**	21 November 2000
Client	Maine Department of Transportation	**Weather**	Clear
Contractor	Environmental Projects, Inc.	**H&A Rep**	J. Tewhey
Equipment Used	Komatsu Excavator 0.75 Cubic Yard Bucket		

Ground El.: ft **Location:** See Plan **Groundwater depths/entry rates (in./min.):**

El. Datum:

Depth (ft)	Sample ID	Stratum Change Depth (ft)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				Brown silty GRAVEL with sand, grass, roots	40	15	10	10	10	15				
	121-1 1'			GRAVEL FILL-										
2	121-2 2'	2.0		-RAILYARD FILL- (See 101-1)										
		2.8				5	10	80	5					
4	121-3 4.5'			Light brown to brown well-graded SAND, mps= 0.25 in., wavy lenses of dark brown sand -SAND FILL-										
6														
	121-4 7'	7.0		Olive-gray calyey SILT with sand and gravel -CLAYEY SILT FILL- Note: Log platform at 8.0 ft.	5	5	5	5	20	60				
8		8.0		Bottom of Excavation at 8.0 ft.										

Obstructions: Wooden (log) platform or road at 8.0 ft. prevented more digging.

Remarks:

Field Tests

Dilatancy	R - Rapid	S - Slow	N - None		
Toughness	L - Low	M - Medium	H - High		
Plasticity	N - Nonplastic	L - Low	M - Medium	H - High	
Dry Strength	N - None	L - Low	M - Medium	H - High	V - Very High

Standing Water in Completed Pit

at depth ft

measured after hours elapsed

Boulders

Diameter (in.)	Number	Approx. Vol. (cu.ft)
12" to 24"		=
over 24"		=

Test Pit Dimensions (ft)

Pit Depth 8.0

Pit Length x Width 4.0 x 11.0

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST PIT LOG

Test Pit No. TP122

Project	Union Branch Acquisition	**File No.**	80509-014
Location	Portland, Maine	**Date**	21 November 2000
Client	Maine Department of Transportation	**Weather**	Clear
Contractor	Environmental Projects, Inc.	**H&A Rep**	J. Tewhey
Equipment Used	Komatsu Excavator 0.75 Cubic Yard Bucket		

Ground El.: ft
El. Datum:
Location: See Plan
Groundwater depths/entry rates (in./min.): Water seeping slowly at 3.5 ft.

Depth (ft)	Sample ID	Stratum Change Depth (ft)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	122-1 0.5'	1.0		-RAILYARD FILL- (See 101-1)										
2	122-2 2'	3.0		Olive-brown clayey SILT with sand and gravel -CLAYEY SILT FILL-										
4	122-3 4'	6.0		Olive-gray clayey SILT with sand and gravel (sand lenses shed water into pit) -CLAYEY SILT FILL-										
6	122-4 8'	10.0		Olive-gray to gray coarse SAND with silt, some ash and marine organics from former back cove bottom -SANDY MIXED FILL-										
8														
10	122-5 10.5'	11.5	CL	Native clay deposits (See 107-4) -MARINE DEPOSIT-										
				Bottom of Excavation at 11.5 ft.										

Obstructions:

Remarks: Water draining from sand lense between clay layers at 3.5 ft.

Field Tests

Dilatancy	R - Rapid	S - Slow	N - None	
Toughness	L - Low	M - Medium	H - High	
Plasticity	N - Nonplastic	L - Low	M - Medium	H - High
Dry Strength	N - None	L - Low	M - Medium	H - High V - Very High

Standing Water in Completed Pit
at depth ft
measured after hours elapsed

Boulders

Diameter (in.)	Number	Approx. Vol. (cu.ft)
12" to 24"		=
over 24"		=

Test Pit Dimensions (ft)
Pit Depth 11.5
Pit Length x Width 4.0 x 12.0

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

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TEST PIT LOG

Test Pit No. TP123

Project	Union Branch Acquisition	**File No.**	80509-014
Location	Portland, Maine	**Date**	21 November 2000
Client	Maine Department of Transportation	**Weather**	Clear
Contractor	Environmental Projects, Inc.	**H&A Rep**	J. Tewhey
Equipment Used	Komatsu Excavator 0.75 Cubic Yard Bucket		

Ground El.: ft **Location:** See Plan **Groundwater depths/entry rates (in./min.):**

El. Datum:

Depth (ft)	Sample ID	Stratum Change Depth (ft)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	123-1 0'			-RAILYARD FILL- (See 101-1)										
	123-2 1'	1.0		Light brown well-graded SAND			5	80	10	5				
	123-3 1.5'	1.5		Olive-brwon clayey SILT with sand and gravel, dry, stiff -CLAYEY SILT FILL-										
2		2.5		Olive-gray clayey SILT with sand and gravel, wet, soft -CLAYEY SILT FILL-										
4	123-4 4'													
6		6.0		Gray coarse coal ash -ASH FILL-										
	123-5 7'													
8		8.5		Gray coarse coal ash with trash; wood, ceramics, glass, leather, metal, brick -ASH AND REFUSE FILL-										
	123-6 9'													
10														
	123-7 11'	11.0	CL	Native clay deposits (See 107-4) -MARINE DEPOSIT-										
12		12.5		Bottom of Excavation at 12.5 ft.										

Obstructions:

Remarks:

Field Tests

Dilatancy	R - Rapid	S - Slow	N - None	
Toughness	L - Low	M - Medium	H - High	
Plasticity	N - Nonplastic	L - Low	M - Medium	H - High
Dry Strength	N - None	L - Low	M - Medium	H - High	V - Very High

Standing Water in Completed Pit

at depth ft

measured after hours elapsed

Boulders

Diameter (in.)	Number	Approx. Vol. (cu.ft)
12" to 24"		=
over 24"		=

Test Pit Dimensions (ft)

Pit Depth 12.5

Pit Length x Width 4.0 x 14.0

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

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TEST PIT LOG

Test Pit No. TP124

Project	Union Branch Acquisition	**File No.**	80509-014
Location	Portland, Maine	**Date**	21 November 2000
Client	Maine Department of Transportation	**Weather**	Clear
Contractor	Environmental Projects, Inc.	**H&A Rep**	J. Tewhey
Equipment Used	Komatsu Excavator 0.75 Cubic Yard Bucket		

Ground El.: ft **El. Datum:** **Location:** See Plan **Groundwater depths/entry rates (in./min.):**

Depth (ft)	Sample ID	Stratum Change Depth (ft)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				-RAILYARD FILL- (See 101-1)										
		0.5		Yellow-brown to brown well-graded SAND with lenses of dark brown and gray sand -SAND FILL-										
2														
4														
		5.0	SW	Olive-gray to gray well-graded SAND -SAND FILL-										
6		6.0		Bottom of Excavation at 6.0 ft.										

Obstructions:

Remarks: Dry running sand cause collapse of pit

Field Tests

Dilatancy	R - Rapid	S - Slow	N - None	
Toughness	L - Low	M - Medium	H - High	
Plasticity	N - Nonplastic	L - Low	M - Medium	H - High
Dry Strength	N - None	L - Low	M - Medium	H - High	V - Very High

Standing Water in Completed Pit

at depth ft

measured after hours elapsed

Boulders

Diameter (in.)	Number	Approx. Vol. (cu.ft)
12" to 24"		=
over 24"		=

Test Pit Dimensions (ft)

Pit Depth 6.0

Pit Length x Width 4.0 x 11.0

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

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TEST PIT LOG

Test Pit No. TP125

Project	Union Branch Acquisition	**File No.**	80509-014
Location	Portland, Maine	**Date**	21 November 2000
Client	Maine Department of Transportation	**Weather**	Clear
Contractor	Environmental Projects, Inc.	**H&A Rep**	J. Tewhey
Equipment Used	Komatsu Excavator 0.75 Cubic Yard Bucket		

Ground El.: ft
El. Datum:
Location: See Plan
Groundwater depths/entry rates (in./min.):

Depth (ft)	Sample ID	Stratum Change Depth (ft)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				-RAILYARD FILL-										
		0.5		Yellow brown to brown well-graded SAND with 3-4 in. thick lenses of black railyard fill										
				-SAND FILL-										
2														
4														
6		6.0		Olive gray well-graded SAND -SAND FILL-										
		7.5		Bottom of Excavation at 7.5 ft.										

Obstructions:

Remarks: Dry running sands cause collapse of hole

Field Tests

Dilatancy	R - Rapid	S - Slow	N - None	
Toughness	L - Low	M - Medium	H - High	
Plasticity	N - Nonplastic	L - Low	M - Medium	H - High
Dry Strength	N - None	L - Low	M - Medium	H - High V - Very High

Standing Water in Completed Pit
at depth ft
measured after hours elapsed

Boulders

Diameter (in.)	Number	Approx. Vol. (cu.ft)
12" to 24"		=
over 24"		=

Test Pit Dimensions (ft)
Pit Depth 7.5
Pit Length x Width 4.0 x 12.0

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

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2000 Test Boring Logs for
Phase II Environmental Site Assessment
(see Reference 1)

TEST BORING REPORT

HALEY & ALDRICH

Boring No. B110

Project	Union Branch Rail Line Property Portland, Maine
Client	Maine Department of Transportation
Contractor	Maine Test Borings, Inc.

File No. 80509-014
Sheet No. 1 of 1
Start 20 November 2000
Finish 20 November 2000
Driller D. McKeen
H&A Rep. K. Stephenson
Elevation
Datum
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Mobile B47 Bombardier
Inside Diameter (in.)	4.25	1 3/8	-	Bit Type:
Hammer Weight (lb.)		140	-	Drill Mud:
Hammer Fall (in.)		30	-	Casing:
				Hoist/Hammer: Winch/ Doughnut Hammer

Depth (ft.)	SPT*	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	2 5 11 25	S1 16"	0.0 2.0		0.4		Loose, black silty SAND with gravel, roots -BALLAST FILL-	20		20	20	10	30				
					1.0		Medium dense, black to brown medium to fine SAND, little coarse sand, damp -GRANULAR FILL-			30	45	20	5				
	17 13 15 15	S2 4"	2.0 4.0				Hard, gray-brown clayey SILT, little fine sand -CLAY FILL- Hard, gray-brown clayey SILT with sand, probable gravel, dry Note: Water encountered at ~2.8 ft.				5	15 10	85 85				
5	2 4 5 5	S3 12"	4.0 6.0		4.0		Loose, brown SAND, wet -GRANULAR FILL-			5	65	30					
	1 3 6 6	S4 16"	6.0 8.0				Loose, gray-brown SAND, black streak ~7.0 ft., wet			10	50	40					
	5 4 2 3	S5 16"	8.0 10.0				Loose, gray-brown SAND, wet			5	65	30					
10	1 4 5 3	S6 24"	10.0 12.0		10.5	OL/ OH	Stiff, gray-brown organic SILT with shells -HARBOR BOTTOM DEPOSIT-					10	90				
					12.0		Bottom of Exploration at 12.0 ft. No refusal										

No elevated PID readings detected during drilling and sampling procedures.

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
11/20/00	1315	-	4.0	6.0	2.8

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 12.0
Rock Cored (lin. ft.) --
Samples 6S

Boring No. B110

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST BORING REPORT

Boring No. B111

Project	Union Branch Rail Line Property Portland, Maine
Client	Maine Department of Transportation
Contractor	Maine Test Borings, Inc.

File No. 80509-014
Sheet No. 1 of 1
Start 16 November 2000
Finish 17 November 2000
Driller D. McKeen
H&A Rep. K. Stephenson
Elevation
Datum
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Mobile B47 Bombardier
Inside Diameter (in.)	4.25	1 3/8	-	Bit Type:
Hammer Weight (lb.)		140	-	Drill Mud:
Hammer Fall (in.)		30	-	Casing:
				Hoist/Hammer: Winch/ Doughnut Hammer

Depth (ft.)	SPT*	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	1 4 11 10	S1 12"	0.0 2.0		0.3		Loose, dark brown to black silty SAND with cinder, roots										
							Loose, black silty SAND			10	20	60	10				
					0.6		Medium dense, gray-brown SAND with silt (damp 0-1.0 ft.)				10	80	10				
	4 5 6 8	S2 16"	2.0 4.0				Medium dense, gray-brown coarse to fine SAND, wet			15	25	50	10				
5	1 2 1 2	S3 12"	4.0 6.0				Loose, gray-brown SAND with silt (wet)		5		15	75	5				
	1 2 4 4	S4 13"	6.0 8.0				Similar to S3										
	1 2 2 2	S5 12"	8.0 10.0				Loose, gray SAND, black silty seam 9.8-9.9 ft., wet -GRANULAR FILL-										
10	1 4 3 2	S6 20"	10.0 12.0		10.5	OL/ OH	Medium stiff, gray sandy organic SILT, shells -HARBOR BOTTOM DEPOSIT-					90	10				
					11.8	CL	Soft, gray lean CLAY -MARINE DEPOSIT-					5	95				
					12.0		Bottom of Exploration at 12.0 ft. No refusal No elevated PID readings detected during drilling and sampling procedures.										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.)	12.0
Rock Cored (lin. ft.)	--
Samples	6S

Boring No. B111

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Toughness: L-Low, M-Medium, H-High Plasticity: N-Nonplastic, L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST BORING REPORT

Boring No. B112

Project	Union Branch Rail Line Property Portland, Maine
Client	Maine Department of Transportation
Contractor	Maine Test Borings, Inc.

File No. 80509-014
Sheet No. 1 of 1
Start 17 November 2000
Finish 17 November 2000
Driller D. McKeen
H&A Rep. K. Stephenson
Elevation
Datum
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Mobile B47 Bombardier
Inside Diameter (in.)	4.25	1 3/8	-	Bit Type:
				Drill Mud:
Hammer Weight (lb.)		140	-	Casing:
Hammer Fall (in.)		30	-	Hoist/Hammer: Winch/ Doughnut Hammer

Depth (ft.)	SPT*	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	5 7 10 23	S1 16"	0.0 2.0				Loose, black silty SAND, glass, roots, debris				10	70	20				
					0.6		-DEBRIS FILL-										
							Medium dense, brown to light brown SAND, little silt			20	50	20	10				
							-GRANULAR FILL-										
	20 13 11 6	S2 12"	2.0 4.0		1.8		Medium dense, gray-brown silty coarse to fine SAND, glass, trace clay (till fill)		5		10	65	20				
							Medium dense, gray silty coarse to fine SAND (damp)		5		15	60	20				
	WOR WOH 1 2	S3 18"	4.0 6.0		4.0		Very soft, fine sandy SILT with clay, trace gravel and coarse to medium sand		5	10	10	25	50				
5																	
	WOH WOH 1 1	S4 12"	6.0 8.0				Similar to S3										
	WOR WOH 2 1	S5 22"	8.0 10.0				Very loose, gray silty SAND, little gravel and clay		10	10		50	30				
					9.4		Very soft, black fine sandy SILT with coal fragments										
10	1 1 2 2	S6 24"	10.0 12.0		9.9	OL/ OH CL	Very soft, dark gray organic SILT					10	90				
							-HARBOR BOTTOM DEPOSIT-										
							Soft, gray SILT to CLAY with sand, shells										
					12.0		Bottom of Exploration at 12.0 ft. No refusal										
							No elevated PID readings detected during drilling and sampling procedures.										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	12.0
Rock Cored (lin. ft.)	--
Samples	6S

Boring No. B112

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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2006 Test Boring Logs for
Proposed Bayside Parking Garage and Master Planning Study
(see References 2 and 3)

TEST BORING REPORT

Boring No. HA06-1

Project: Proposed Bayside Parking Garage & Master Planning Portland, Maine
Client: Scott Simons Architects
Contractor: Maine Test Borings, Inc.

File No. 33538-000
Sheet No. 1 of 3
Start: August 14, 2006
Finish: August 15, 2006
Driller: P. Hatch
H&A Rep.: B. Steinert
Elevation: 9.0 +/-
Datum: Portland City
Location: See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HW	SS	NQ	Rig Make & Model: Mobile Drill / Truck
Inside Diameter (in.)	4.0	1.375	2.0	Bit Type: Roller Bit; Drill Mud: None
Hammer Weight (lb.)	300	140	-	Casing: HW Drive 45 ft
Hammer Fall (in.)	30	30	-	Hoist/Hammer: Winch / Doughnut Hammer

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0		S1	0.0	NO WELL INSTALLED			NOTE: S1 collected from ground surface. Fill placed for access road. -FILL-										
					2.0												
5	15 16 12 12	S2 6	5.0 7.0			SP	Medium dense, yellow brown, poorly graded SAND (SP), mps 4.75 mm, no odor, wet -FILL-	0	0	5	60	30	5				
10	7 6 3 5	S3 12	10.0 12.0			SP	Medium dense, gray, poorly graded SAND (SP), mps 4.75 mm, no odor, wet -FILL-	0	0	0	60	30	10				
					11.0	ML	Medium stiff, gray, sandy SILT (ML), mps 0.42 mm, bonded, organic odor, wet, shells throughout -HARBOR BOTTOM DEPOSIT-					20	80				
15	WOH 2 1 2	S4 24	15.0 17.0		15.0	CL	Soft, gray to olive-gray, sandy lean CLAY (CL), mps 0.42 mm, bonded, no odor, wet, layers of yellow-brown fine sand, mottled, trace organics -MARINE CLAY-					30	70				
					16.7	CL	Soft, gray, lean CLAY (CL), mps 0.075 mm, bonded, no odor, wet -MARINE CLAY-						100				
20							FV1 (20.4 - 21.0 ft), Su > 690 psf										
25																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 40.4
Rock Cored (lin. ft.) 22.0
Samples S8

Boring No. HA06-1

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. HA06-1
File No. 33538-000
Sheet No. 2 of 3

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
25	WOR WOR WOH 1	S5 24	25.0 27.0			CL	Medium stiff, gray, lean CLAY (CL), mps 0.075 mm, bonded, no odor, wet, frequent black streaks -MARINE CLAY- FV2 (25.4 - 26.0 ft), Su = > 690 psf FV3 (26.3 - 27.0 ft), Su = 1010 psf / 340 psf						100				
30	WOR WOR 1 7	S6 24	30.0 32.0		31.0	CL	Soft, gray, lean CLAY (CL), mps 0.075 mm, bonded, no odor, wet, frequent black streaks, frequent fine sand seams at 31.0 ft -MARINE DEPOSIT- FV4 (30.4 - 31.0 ft), Su = 210 psf/150 psf FV5 (31.4 - 32.0 ft), Su > 690 psf										
35	WOR 3 5 6	S7 20	35.0 37.0		35.5	SP	Very loose to loose, gray, poorly graded SAND (SP), mps 2 mm, no structure, no odor, wet -MARINE SAND-	0	0	0	0	70	30				
					38.0		NOTE: Glacial till observed in drill cuttings from 38.0 to 39.8 ft -GLACIAL TILL-										
40	50 (0.4)	S8 0	40.0 42.0		39.8	BR	NOTE: Bedrock encountered at 39.8 ft. Advance roller bit to 40.4 ft. Begin NQ rock core at 40.4 ft. See Core Boring Report for details. NOTE: 1. FV1 (20.4 - 21.0 ft) indicates in-situ field vane performed at depth interval listed, corrected peak / residual shear strengths are provided. See Table II for details. 2. WOR = Weight of drill Rods; WOH = Weight of Hammer										

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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CORE BORING REPORT

Boring No. HA06-1
File No. 33538-000
Sheet No. 3 of 3

Depth (ft)	Drilling Rate Min./ft	Run No.	Depth (ft)	Recovery/RQD in.	Recovery/RQD %	Weathering	Well Diagram	Elev./ Depth (ft)	Visual Description and Remarks
									SEE TEST BORING REPORT FOR OVERBURDEN DETAILS
							NO WELL INSTALLED		NOTE: Bedrock encountered at 39.8 ft. Advance roller bit to 40.4 ft. Begin NQ rock core at 40.4 ft.
40	6	C1	40.4 44.4	18/14	38/78	Fresh			Medium hard to hard, fresh to highly weathered, aphanitic to fine grained, gray, graphitic SCHIST. Primary joints dipping at horizontal to vertical angles, extremely close to moderately spaced, moderately wide, rough, stepped.
	2					High			
	1								
	3					Slight			
	7	C2	44.4 49.4	0/0	0/0	Comp			NOTE: No recovery
45	5								
	6								
	4								
	5								
50									NOTE: Roller cone through weathered bedrock from 49.9 to 52.2 ft.
	4	C3	52.2 57.8	67/17	100/28	Mod/ Slight			Very soft, slightly to moderately weathered, aphanitic, gray to black, graphitic SCHIST. Primary joints dipping at vertical angles parallel to foliation, extremely close to moderately spaced, partly open to moderately wide, undulating to stepped. Some calcite veins, occasional pitting, frequent pyrite seams.
	3								
	3								
55	3								
	3								
	3								Very soft to soft, slightly to moderately weathered, aphanitic, gray to black, graphitic SCHIST. Primary joints dipping at moderate to vertical angles (parallel to foliation), extremely close to moderately spaced, undulating to stepped, partly open to moderately wide, frequent calcite veins in upper half of run, occasional pitting, frequent pyrite seams.
	3	C4	57.8 62.4	55/14	100/44	Slight			
	2								
60	3								
	3								
								62.4	-BOTTOM OF EXPLORATION-

TEST BORING REPORT

HALEY & ALDRICH

Boring No. HA06-2

Project: Proposed Bayside Parking Garage & Master Planning Portland, Maine
Client: Scott Simons Architects
Contractor: Maine Test Borings, Inc.

File No. 33538-000
Sheet No. 1 of 2
Start: August 16, 2006
Finish: August 17, 2006
Driller: P. Hatch
H&A Rep.: B. Steinert
Elevation: 9.0 +/-
Datum: Portland City
Location: See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HW	SS	-	Rig Make & Model: Mobile Drill / Truck
Inside Diameter (in.)	4.0	1.375	-	Bit Type: Roller Bit; Drill Mud: None
Hammer Weight (lb.)	300	140	-	Casing: HW Drive 40.0 ft
Hammer Fall (in.)	30	30	-	Hoist/Hammer: Winch / Doughnut Hammer

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	% Coarse Gravel	% Fine Gravel	% Coarse Sand	% Medium Sand	% Fine Sand	% Fines	Dilatancy	Toughness	Plasticity	Strength
0						NOTE: Fill placed for access road -FILL-										
	13 31 36 23	S1 12	1.5 3.5	1.5	SP CL	Medium dense, yellow-brown to black, poorly graded SAND (SP), mps 4.75 mm, no structure, no odor, dry to moist -FILL-	0	0	0	5	10	85				
				2.0		Hard, olive-gray, sandy lean CLAY (CL), mps 2.0 mm, bonded, mottled, no odor, dry, some reworked glacial till, reworked natural material -FILL-										
5	14 14 16 21	S3 10	5.0 7.0	5.0	SP	Medium dense, yellow-brown, poorly graded SAND (SP), mps 4.75 mm, no odor, wet -FILL-	0	0	5	80	10	5				
10	5 4 5 12	S3 16	10.0 12.0		SP	Medium dense, yellow-brown, poorly graded SAND (SP), mps 4.75 mm, no odor, wet -FILL-			20	70	5	5				
				11.3	ML	Stiff, gray, sandy SILT (ML), mps 0.42 mm, bonded, organic odor, wet, organics and shells throughout -HARBOR BOTTOM DEPOSIT-					15	85				
15	3 3 4 3	S4 24	15.0 17.0	15.0	CL	Medium stiff, olive-gray, lean CLAY (CL), mps 0.075 mm, bonded, mottled, no odor, wet -MARINE CLAY-						100				
				16.7	CL	Soft, gray, lean CLAY (CL), mps 0.075 mm, bonded, mottled, no odor, wet -MARINE CLAY-						100				
20						FV1 (20.3 - 21.0 ft), Su = 560 psf/170 psf										
25																

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 41.2
Rock Cored (lin. ft.) 0.0
Samples S6

Boring No. HA06-2

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. HA06-2
File No. 33538-000
Sheet No. 2 of 2

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
25	WOR WOR WOH WOH	S5 24	25.0 27.0			CL	Medium stiff, gray, lean CLAY (CL), mps 0.42 mm, bonded, no odor, wet, frequent black streaks, occasional fine sand seam -MARINE CLAY- FV2 (25.4 to 26.0 ft.), Su = 590 psf/120 psf FV3 (30.4 - 31.0 ft), Su = 600 psf/40 psf						100				
30																	
35	15 17 6 12	S5 4	35.0 37.0		34.5	SP	Medium dense, gray, poorly graded SAND (SP), mps 2.0 mm, no odor, wet -MARINE SAND-				5	90	5				
40	52 49 50 (0.2)	S6 0	40.0 42.0		40.0	BR	NOTE: No recovery. Split spoon refusal at 41.2 ft. -WEATHERED BEDROCK- NOTE: Rollercone refusal at 47.2 ft. BGS.										
45					47.2		-BOTTOM OF EXPLORATION- NOTE: Observation well installed in completed borehole. See Well Installation Report for details. NOTE: 1. FV1 (20.4 - 21.0 ft) indicates in-situ field vane performed at depth interval listed, corrected peak / residual shear strengths are provided. See Table II for details. 2. WOR = Weight of drill Rods; WOH = Weight of Hammer.										

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. HA06-3

Project: Proposed Bayside Parking Garage & Master Planning Portland, Maine
Client: Scott Simons Architects
Contractor: Maine Test Borings, Inc.

File No. 33538-000
Sheet No. 1 of 2
Start: August 9, 2006
Finish: August 9, 2006
Driller: T. Schaefer
H&A Rep.: K. Stone
Elevation: 9.0 +/-
Datum: Portland City
Location: See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HW	SS	-	Rig Make & Model: Mobile B-47 / Truck
Inside Diameter (in.)	4.0	1.375	-	Bit Type: Roller Bit; Drill Mud: None
Hammer Weight (lb.)	300	140	-	Casing: HW Drive 30.0 ft
Hammer Fall (in.)	30	30	-	Hoist/Hammer: Winch / Doughnut Hammer

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				NO WELL INSTALLED													
	18 23 18 20	S1 18	2.0 4.0			SP	Dense, black, poorly-graded SAND (SP), mps 0.75 in., no structure, slight odor, moist -FILL-		5		50	45					
5	6 5 3 6	S2 13	5.0 7.0			SP	Medium dense, dark gray, poorly-graded SAND (SP), mps 0.75 in., metal fragments present -FILL-				65	35					
					5.9	ML	Stiff, gray, sandy SILT (ML), mps 0.45 mm, numerous shell fragments present, no odor, moist -HARBOR BOTTOM DEPOSIT-					20	80				
10	5 7 4 5	S3 3	10.0 12.0			ML	Stiff, gray, sandy SILT (ML), mps 0.45 mm, numerous shell fragments present, no odor, moist -HARBOR BOTTOM DEPOSIT-					20	80				
	WOH 1 2 3	S4 24	12.0 14.0		12.0	CL	Soft, gray, lean CLAY (CL), mps 0.43 mm, wood fragments, organics present, numerous shells, frequent sand partings, no odor, wet -HARBOR BOTTOM DEPOSIT-										
15					15.3		FV1 (15.3 - 16.0 ft), Su = 1430 psf/410 psf										
20	WOR WOR WOR WOH	S5 24	20.0 22.0			CL	Soft, gray, lean CLAY (CL), mps 0.075 mm, occasional black streaks, wet -MARINE CLAY-						100				
25																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 42.0
Rock Cored (lin. ft.) -
Samples S7

Boring No. HA06-3

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. HA06-3
File No. 33538-000
Sheet No. 2 of 2

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
25							FV2 (25.3 - 26.0 ft), Su = 430 psf/110 psf										
		U1 24	26.0 28.0														
							FV3 (28.3 - 29.0 ft), Su = 430 psf/100 psf										
30	WOR WOR WOR WOH	S6 24	30.0 32.0			CL	Soft, gray, lean CLAY (CL), mps 0.075 mm, some black staining, wet -MARINE CLAY-						100				
35							FV4 (35.3 - 36.0 ft), Su = 540 psf/120 psf										
					39.0												
40	9 12 15 23	S7 18	40.0 42.0			SM	Medium dense, gray, silty SAND (SM), mps 0.75 in., slightly bonded, wet -GLACIAL TILL-		10	15	35	20	20				
					42.0		-BOTTOM OF EXPLORATION-										

NOTE:
1. FV1 (20.4 - 21.0 ft) indicates in-situ field vane performed at depth interval listed, corrected peak / residual shear strengths are provided. See Table II for details.
2. WOR = Weight of drill Rods; WOH = Weight of Hammer.

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size is determined by direct observation within the limitations of sampler size.
NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

HALEY & ALDRICH

Boring No. HA06-4

Project: Proposed Bayside Parking Garage & Master Planning Portland, Maine
Client: Scott Simons Architects
Contractor: Maine Test Borings, Inc.

File No. 33538-000
Sheet No. 1 of 3
Start: August 8, 2006
Finish: August 8, 2006
Driller: T. Schaefer
H&A Rep.: K. Stone
Elevation: 9.0 +/-
Datum: Portland City
Location: See Plan

	Casing	Sampler	Barrel
Type	NW	SS	NQ
Inside Diameter (in.)	3.0	1.375	2.0
Hammer Weight (lb.)	300	140	-
Hammer Fall (in.)	30	30	-

Drilling Equipment and Procedures

Rig Make & Model: Mobile Drill / Truck
Bit Type: Roller Bit
Drill Mud: None
Casing: NW Drive 48.0 ft
Hoist/Hammer: Winch / Doughnut Hammer

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Toughness	Plasticity	Strength
0				NO WELL INSTALLED			-CONCRETE-										
					1.0												
	15 24 32 21	S1 18	2.0 4.0			SM	Very dense, dark gray, silty SAND with gravel (SM), mps 1.0 in., bonded, slight odor, dry -FILL-	5	15	10	10	45	15				
5	9 11 11 3	S2 4	5.0 7.0		5.0	CL	Stiff, gray, sandy lean CLAY (CL), mps 2.0 mm, no odor, wet -FILL-				15	10	75				
10	2 1 1 2	S3 2	10.0 12.0			CL	Very soft, gray, sandy lean CLAY (CL), mps 2.0 mm, no odor, wet -FILL-					25	75				
	4 4 5 8	S4 13	12.0 14.0			CL	Stiff, gray, sandy lean CLAY (CL), mps 2.0 mm, no odor, wet, brick and metal fragments present -FILL-				15	10	75				
15	4 4 5 8	S5 13	15.0 17.0		14.5	CL	Stiff, gray, lean CLAY (CL), mps 0.075 mm, no odor, wet -MARINE CLAY-						100				
20							FV1 (20.3 - 21.0 ft), Su = 860 psf/170 psf										
25																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
8/9/06	06:45	12.5	48.0	60.2	3.6

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 46.0
Rock Cored (lin. ft.) 14.2
Samples S8

Boring No. HA06-4

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. HA06-4
File No. 33538-000
Sheet No. 2 of 3

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
25	WOR WOR WOR WOR	S6 24	25.0 27.0			CL	Soft, gray, lean CLAY (CL), mps 0.43 mm, occasional sand partings, wet -MARINE CLAY-						100				
30							FV2 (30.3 - 31.0 ft), Su = 450 psf/170 psf										
35							FV3 (35.3 - 36.0 ft), Su = 490 psf/130 psf										
40	WOR WOR WOR WOR	S7 24	40.0 42.0			CL	Medium stiff, gray, lean CLAY (CL), mps 0.45 mm, occasional sand layers, wet - MARINE CLAY-						100				
					42.0		FV4 (40.3 - 41.0 ft), Su = 570 psf/130 psf -GLACIAL TILL-										
45					45.0	BR	-WEATHERED BEDROCK-										
	~~50 (.2)~~	~~S8~~	~~45.5~~ 45.7		46.0		NOTE: Bedrock encountered at 45.0 ft. Advance roller bit to 46.0 ft. Begin NQ rock core at 46.0 ft. See Core Boring Report for details.										

NOTE:
1. FV1 (20.4 - 21.0 ft) indicates in-situ field vane performed at depth interval listed, corrected peak / residual shear strengths are provided. See Table II for details.
2. WOR = Weight of drill Rods; WOH = Weight of Hammer.

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size is determined by direct observation within the limitations of sampler size.
NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

CORE BORING REPORT

Boring No. HA06-4
File No. 33538-000
Sheet No. 3 of 3

Depth (ft)	Drilling Rate Min./ft	Run No.	Depth (ft)	Recovery/RQD in.	Recovery/RQD %	Weathering	Well Diagram	Elev./Depth (ft)	Visual Description and Remarks
45									SEE TEST BORING REPORT FOR OVERBURDEN DETAILS
									NOTE: Bedrock encountered at 45.0 ft. Advance roller bit to 46.0 ft. Begin NQ rock core at 46.0 ft.
	3	C1	46.0 50.4	24/0	45/0	Weathered		46.0	Very soft to soft, gray, highly weathered, aphanitic to fine grained PHYLLITE. Joints dipping moderate to high, extremely close to very close, planar and smooth to rough, open, occasional pits, quartz intrusion.
	4								
	2								
	2								
50									
	2	C2	50.4 55.4	34/0	56/0	Weathered			Very soft to soft, gray, highly weathered, aphanitic to fine grained PHYLLITE. Joints dipping moderate to high, extremely close to very close, planar and smooth to rough, open, occasional pits, no quartz, occasional calcite veins.
	2								
	4								
	2								
	2								
55									
	2	C3	55.4 60.2	48/5	86/10	Weathered	NO WELL INSTALLED		Very soft to soft, greenish-gray, moderately weathered, aphanitic to fine grained PHYLLITE, joints dipping moderate to high angle, very close, partly open to open, occasional calcite veins, 2 in. quartz intrusion, pyrite and staurolite present.
	2								
	2								
	2								
	4								
60									
	5							60.2	-BOTTOM OF EXPLORATION-

H+A_CORE+WELL4 USCSLIB4.GLB USCSTB+CORE4.GDT G:\PROJECTS\33538\FIELD FORMS\33538-000.GPJ Sep 12, 06

TEST BORING REPORT

HALEY & ALDRICH

Boring No. HA06-5

Project: Proposed Bayside Parking Garage & Master Planning Portland, Maine
Client: Scott Simons Architects
Contractor: Maine Test Borings, Inc.

File No. 33538-000
Sheet No. 1 of 2
Start: August 10, 2006
Finish: August 11, 2006
Driller: T. Schaefer
H&A Rep.: B. Steinert
Elevation: 10.0 +/-
Datum: Portland City
Location: See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HW	SS	-	Rig Make & Model: Mobile Drill / Truck
Inside Diameter (in.)	4.0	1.375	-	Bit Type: Roller Bit
Hammer Weight (lb.)	300	140	-	Drill Mud: None
Hammer Fall (in.)	30	30	-	Casing: HW Drive 20.0 ft
				Hoist/Hammer: Winch / Doughnut Hammer

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				NO WELL INSTALLED	0.3		-BITUMINOUS CONCRETE-										
	6 11 9 13	S1 14	2.0 4.0			SP	Medium dense, yellow-brown, poorly graded SAND (SP), mps 2 mm, no odor, moist	0	0	0	15	80	5				
					3.0	SP	-FILL-	0	0	0	40	50	10				
					4.0		Medium dense, gray-brown, poorly graded SAND (SP), mps 2.0 mm, fuel like odor, moist -FILL-										
5	3 3 3 3	S2 15	5.0 7.0			SC	Medium stiff, gray, clayey SAND with gravel (SC), mps 1.5 in., bonded, no odor, wet, reworked glacial till -FILL-	10	5	5	15	30	35				
10	3 2 2 3	S3 18	10.0 12.0			SC	Soft, black to gray, clayey SAND (SC), mps 4.75 mm, bonded, slight organic odor, wet, trace shells, trace coal, wood fragments present, reworked natural material -FILL-			5	10	25	60				
					14.0												
15	2 4 4 6	S4 20	15.0 17.0			CL	Medium stiff, olive-gray to gray, lean CLAY (CL), mps 0.075 mm, bonded, mottling becomes less frequent with depth, no odor, wet, some black streaks in lower portion of spoon -MARINE CLAY-						100				
20							FV1 (20.4 - 21.0 ft), Su > 690 psf FV2 (21.3 - 22.0 ft), Su = 920 psf / 240 psf										
					23.0												
25																	

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
8/11/06	12:20	0	-	44.5	10.9

Sample Identification: O Open End Rod; T Thin Wall Tube; U Undisturbed Sample; S Split Spoon; G Geoprobe

Well Diagram: Riser Pipe; Screen; Filter Sand; Cuttings; Grout; Concrete; Bentonite Seal

Summary: Overburden (lin. ft.) 52.2; Rock Cored (lin. ft.) -; Samples S7

Boring No. HA06-5

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA06-5
File No. 33538-000
Sheet No. 2 of 2

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
25	WOR WOR WOR WOH	S5 24	25.0 27.0			CL	Very soft, gray, lean CLAY (CL), mps 0.075 mm, bonded, no odor, wet, frequent black streaks -MARINE CLAY-						100				
30							FV3 (30.4 - 31.0 ft), Su = 580 psf / 130 psf										
35	WOR WOR WOR WOH	S6 24	35.0 37.0			CL	Medium stiff, gray, lean CLAY (CL), mps 0.075 mm, bonded, no odor, wet, some black streaks, increased percentage of fine sand -MARINE CLAY-					10	90				
40							FV4 (40.4 - 41.0 ft), Su = 640 psf / 50 psf										
					43.5												
45	9 19 15 9	S7 12	45.0 47.0			SC	Dense, gray, clayey SAND with gravel (SC), mps 1.5 in., bonded, no odor, wet, some black weathered rock fragments -GLACIAL TILL-		15	5	25	20	35				
					47.5		-WEATHERED BEDROCK-										
50							NOTE: Rollercone refusal at 52.2 ft										
					52.2		-BOTTOM OF EXPLORATION- NOTE: 1. FV1 (20.4 - 21.0 ft) indicates in-situ field vane performed at depth interval listed, corrected peak / residual shear strengths are provided. See Table II for details. 2. WOR = Weight of drill Rods; WOH = Weight of Hammer.										

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

HALEY & ALDRICH

Boring No. HA06-6

Project: Proposed Bayside Parking Garage & Master Planning Portland, Maine
Client: Scott Simons Architects
Contractor: Maine Test Borings, Inc.

File No. 33538-000
Sheet No. 1 of 2
Start: August 15, 2006
Finish: August 15, 2006
Driller: P. Hatch
H&A Rep.: B. Steinert
Elevation: 10.0 +/-
Datum: Portland City
Location: See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HW	SS	-	Rig Make & Model: Mobile Drill / Truck
Inside Diameter (in.)	4.0	1.375	-	Bit Type: Roller Bit
Hammer Weight (lb.)	300	140	-	Drill Mud: None
Hammer Fall (in.)	30	30	-	Casing: HW Drive 40 ft
				Hoist/Hammer: Winch / Doughnut Hammer

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	% Coarse Gravel	% Fine Gravel	% Coarse Sand	% Medium Sand	% Fine Sand	% Fines	Dilatancy	Toughness	Plasticity	Strength
0							-BITUMINOUS CONCRETE-										
	13 25 29 31	S1 10	0.4 2.4	NO WELL INSTALLED	0.4	SW	Very dense, brown, well graded SAND with gravel (SW), mps 1 in., no odor, dry to moist, some faint black staining -FILL-	0	20	20	40	15	5				
					3.2												
5	WOH 3 3 13	S2 5	5.0 7.0			CL	Medium stiff, brown to gray, sandy lean CLAY (CL), mps 2.0 mm, slightly bonded, no odor, moist to wet, reworked natural material -FILL-				15	25	60				
10	2 1 4 2	S3 15	10.0 12.0		10.5	CL / ML	Medium stiff, brown to gray, sandy lean CLAY (CL), mps 2.0 mm, slightly bonded, no odor, moist to wet, reworked natural material -FILL-				15	25	60				
							Very soft, black, SILT (ML), mps 0.42 mm, bonded, organic odor, wet, trace organics, shading to gray with depth -HARBOR BOTTOM DEPOSIT-					5	95				
					13.5												
15	50 (0.2)	S4 0	15.0 16.0				NOTE: Split spoon refusal at 15.2 ft on obstruction NOTE: No recovery, gray clay observed on spoon -MARINE CLAY-										
	71 40 30 32	S5 0	16.0 18.0														
20	WOR WOR WOR WOH	S6 24	20.0 22.0			CL	Medium stiff, gray, lean CLAY (CL), mps 0.075 mm, bonded, no odor, wet, occasional black streaks -MARINE CLAY-						100				
							NOTE: FV1 (21.3 - 22.0 ft), Su = 620 psf / 260 psf										
25																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 41.5
Rock Cored (lin. ft.) 0.0
Samples S8

Boring No. HA06-6

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. HA06-6
File No. 33538-000
Sheet No. 2 of 2

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
25	WOR WOR WOH WOH	S7 24	25.0 27.0		26.0	CL	Medium stiff, gray, lean CLAY (CL), mps 0.075 mm, bonded, no odor, wet, frequent black streaks starting at 26.0 ft -MARINE CLAY- NOTE: FV2 (25.4 - 26.0 ft), Su = 530 psf / 390 psf						100				
30							FV3 (30.4 - 31.0 ft), Su > 690 psf / 150 psf										
35							FV4 (36.4 - 37.0 ft), Su = 260 psf / 130 psf FV5 (37.4 - 38.0 ft), Su = 690 psf / 150 psf										
40	5 4 50 (0.3)	S8 5	40.0 42.0		40.5	SP	Loose, gray, poorly graded SAND (SP), mps 2 mm, no odor, wet -MARINE SAND-				5	90	5				
					41.3	BR	-WEATHERED BEDROCK- -BOTTOM OF EXPLORATION-										
					41.5		NOTE: 1. FV1 (20.4 - 21.0 ft) indicates in-situ field vane performed at depth interval listed, corrected peak / residual shear strengths are provided. See Table II for details. 2. WOR = Weight of drill Rods; WOH = Weight of Hammer.										

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size is determined by direct observation within the limitations of sampler size.
NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA06-7

Project Proposed Bayside Parking Garage & Master Planning Portland, Maine
Client Scott Simons Architects
Contractor Maine Test Borings, Inc.

File No. 33538-000
Sheet No. 1 of 3
Start 7 August 2006
Finish 8 August 2006
Driller T. Schaefer
H&A Rep. K. Stone
Elevation 10.5 +/-
Datum Portland City
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NW	SS	-	Rig Make & Model: Mobile Drill / Truck
Inside Diameter (in.)	3.0	1.375	-	Bit Type: Roller Bit Drill Mud: None
Hammer Weight (lb.)	300	140	-	Casing: NW Drive 65.0 ft
Hammer Fall (in.)	30	30	-	Hoist/Hammer: Winch / Doughnut Hammer

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	10 11 10 18	S1 12	0.0 2.0	NO WELL INSTALLED		SM	Medium dense, dark brown, silty SAND with gravel (SM), mps 1.1 in., no odor, dry -FILL-		15	10	25	35	15				
5	6 8 7 3	S2 8	5.0 7.0			SW	Medium dense, brown, well-graded SAND with gravel (SW), mps 1.0 in., no odor, moist -FILL-		15	25	35	30					
10	9 4 5 8	S3 0	10.0 12.0				NOTE: No recovery, small piece of wood in tip of spoon. Sheen observed in wash water from 10.0 to 13.0 ft -FILL-										
15	7 10 13 21	S4 22	15.0 17.0		13.0	CL	Hard, olive-brown to gray, lean CLAY (CL), mps 0.42 mm, mottled, occasional fine sand and silt partings, no odor, wet -MARINE CLAY-						100				
20	3 4 6 5	S5 22	20.0 22.0			CL	Stiff, gray, lean CLAY (CL), mps 0.075 mm, no odor, wet, frequent black streaks -MARINE CLAY- FV1 (20.3 - 21.0 ft), Su = 1680 psf						100				
25																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
8/8/06	06:30	12.5	60.0	62.0	14.1

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 67.0
Rock Cored (lin. ft.) -
Samples S10

Boring No. HA06-7

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA06-7
File No. 33538-000
Sheet No. 2 of 3

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
25							FV2 (25.3 - 26.0 ft), Su = 840 psf / 270 psf										
30	WOR WOR WOH WOH	S6 24	30.0 32.0			CL	Medium stiff, lean CLAY (CL), mps 0.075 mm, wet, frequent black streaks -MARINE CLAY-						100				
35							FV3 (35.3 - 36.0 ft), Su = 590 psf / 110 psf										
40	WOR WOR WOR WOR	S7 24	40.0 42.0			CL	Medium stiff, lean CLAY (CL), mps 0.075 mm, wet, with frequent black streaks -MARINE CLAY-						100				
45							FV4 (40.3 - 41.0 ft), Su = 580 psf / 170 psf										
50	WOR WOR WOR WOR	S8 24	50.0 52.0			CL	Medium stiff, lean CLAY (CL), mps 0.075 mm, wet, with frequent black streaks -MARINE CLAY-						100				
55							FV5 (56.0 - 56.7 ft), Su = 860 psf										
60	WOR WOR WOR WOR	S9 24	60.0 62.0			CL	Medium stiff, lean CLAY (CL), mps 2.0 mm, wet, trace sand -MARINE CLAY-						100				

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size is determined by direct observation within the limitations of sampler size.
NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA06-7
File No. 33538-000
Sheet No. 3 of 3

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
					64.0												
65	11 32 20 20	S10 15	65.0 67.0			SM	Very dense, gray, silty SAND (SM), mps 0.75 in., bonded, no odor, wet -GLACIAL TILL-		20	10	10	45	15				
					67.0		-BOTTOM OF EXPLORATION-										

NOTE:
1. FV1 (20.4 - 21.0 ft) indicates in-situ field vane performed at depth interval listed, corrected peak / residual shear strengths are provided. See Table II for details.
2. WOR = Weight of drill Rods; WOH = Weight of Hammer.

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size is determined by direct observation within the limitations of sampler size.
NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA06-8

Project: Proposed Bayside Parking Garage & Master Planning Portland, Maine
Client: Scott Simons Architects
Contractor: Maine Test Borings, Inc.

File No. 33538-000
Sheet No. 1 of 2
Start: 10 August 2006
Finish: 10 August 2006
Driller: T. Schaefer
H&A Rep.: B. Steinert
Elevation: 12.0 +/-
Datum: Portland City
Location: See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NW	SS	-	Rig Make & Model: Mobile Drill / Truck
Inside Diameter (in.)	3.0	1.375	-	Bit Type: Roller Bit; Drill Mud: None
Hammer Weight (lb.)	300	140	-	Casing: NW Drive 25.0 ft
Hammer Fall (in.)	30	30	-	Hoist/Hammer: Winch / Doughnut Hammer

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength
0	15 28 32 23	S1 12	0.0 2.0	NO WELL INSTALLED		SP-SM	Very dense, dark brown to black, poorly graded SAND with gravel (SP-SM), mps 1 in., hydrocarbon odor, moist, coal and wood fragments present -FILL-	20	10	10	40	10	10				
							NOTE: Similar material to above observed in auger cuttings from 0.0 to 5.0 ft										
5	52 52 42 28	S2 8	5.0 7.0		5.3	SW-SM	Very dense, dark brown to black, well graded SAND with silt (SW-SM), mps 4.75 mm, slight hydrocarbon odor, moist, trace coal and brick fragments -FILL-	~~0~~ 0	~~0~~ 0	~~10~~ 0	~~50~~ 15	~~30~~ 80	~~10~~ 5				
						SP	Medium dense to dense, yellow-brown, poorly graded SAND (SP), mps 2.0 mm, no odor, moist, wood stuck in tip of spoon -FILL-										
10	2 6 6 8	S3 12	10.0 12.0		10.5	SM	Very loose, yellow-brown to brown, silty SAND (SM), mps 4.75 mm, no odor, wet, trace wood fragments -FILL-	0	0	15	50	20	15				
						SM	Medium dense, dark brown to gray, silty SAND (SM), mps 4.75 mm, no odor, wet, some reworked natural material -FILL-	0	0	20	45	20	15				
15	4 7 8 11	S4 20	15.0 17.0		14.0	CL	Stiff, olive-gray, lean CLAY (CL), mps 0.075 mm, bonded, mottled, no odor, moist to wet -MARINE CLAY-						100				
20	WOH WOH 1 3	S5 24	20.0 22.0		17.0	CL	Very soft, gray, lean CLAY (CL), mps 1 in., bonded, no odor, wet, frequent black streaks -MARINE CLAY-						100				
25																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
8/10/06	11:00	0	-	9.1	6.8

Sample Identification: O Open End Rod; T Thin Wall Tube; U Undisturbed Sample; S Split Spoon; G Geoprobe

Well Diagram: Riser Pipe; Screen; Filter Sand; Cuttings; Grout; Concrete; Bentonite Seal

Summary
Overburden (lin. ft.) 54.0
Rock Cored (lin. ft.) 0.0
Samples S10

Boring No. HA06-8

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA06-8
File No. 33538-000
Sheet No. 2 of 2

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
25	WOR WOR WOR WOR	S6 24	25.0 27.0			CL	Very soft, gray, lean CLAY (CL), mps 0.42 mm, bonded, no odor, wet, frequent black streaks and fine sand partings, trace shells -MARINE CLAY-					10	90				
30	WOR WOR WOR WOR	S7 24	30.0 32.0		30.3	CL	Very soft, gray, lean CLAY (CL), mps 0.075 mm, bonded, no odor, wet, trace shells, black streaks/specs become less frequent with depth -MARINE CLAY-						100				
35																	
40	WOR WOR WOR WOH	S8 24	40.0 42.0			CL	Very soft, gray, lean CLAY (CL), mps 0.075 mm, bonded, no odor, wet, trace fine sand -MARINE CLAY-						100				
45																	
50	3 18 26 22	S9 12	50.0 52.0		50.2	SW-SM	Dense, gray, well graded SAND with silt (SW-SM), mps 4.75 mm, bonded, no odor, wet -GLACIAL TILL-	0	0	30	40	20	10				
	38 40 52 55	S10 12	52.0 54.0		51.8	BR	-WEATHERED BEDROCK-										
					54.0		-BOTTOM OF EXPLORATION-										

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. HA06-8

TEST BORING REPORT

HALEY & ALDRICH

Boring No. HA06-9

Project: Proposed Bayside Parking Garage & Master Planning Portland, Maine
Client: Scott Simons Architects
Contractor: Maine Test Borings, Inc.

File No. 33538-000
Sheet No. 1 of 2
Start: 10 August 2006
Finish: 10 August 2006
Driller: T. Schaefer
H&A Rep.: B. Steinert
Elevation: 9.5 +/-
Datum: Portland City
Location: See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HW	SS	-	Rig Make & Model: Mobile Drill / Truck
Inside Diameter (in.)	4.0	1.375	-	Bit Type: Roller Bit Drill Mud: None
Hammer Weight (lb.)	300	140	-	Casing: HW Drive 20.0 ft
Hammer Fall (in.)	30	30	-	Hoist/Hammer: Winch / Doughnut Hammer

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	10 10 13 14	S1 20	0.0 2.0	NO WELL INSTALLED		SP	Medium dense, brown to black, poorly graded SAND (SP), mps 4.75 mm, no odor, dry, wood fragments present -FILL-	0	0	20	65	10	5				
					1.7	SP	Medium dense, yellow-brown, poorly graded SAND (SP), mps 2mm, no odor, dry -FILL-	0	0	0	15	80	5				
5	2 2 5 5	S2 16	5.0 7.0			SP	Loose, yellow-brown, poorly graded SAND (SP), mps 2 mm, no odor, moist, trace organics -FILL-				15	80	5				
					6.0	SP	Medium dense, brown, poorly graded SAND (SP), mps 2 mm, no odor, wet, trace wood -FILL-				5	90	5				
10	2 2 3 6	S3 12	10.0 12.0		10.2	CL	Medium stiff to stiff, gray, sandy lean CLAY (CL), mps 0.42 mm, bonded, slight organic odor, moist to wet, shells throughout -MARINE DEPOSIT-					40	60				
					14.0												
15	3 3 4 2	S4 15	15.0 17.0			CL	Medium stiff, olive-gray, lean CLAY (CL), mps 0.075 mm, bonded, no odor, wet, slightly mottled -MARINE DEPOSIT-						100				
					16.0	CL	Medium stiff, gray, sandy lean CLAY (CL), mps 0.42 mm, bonded, no odor, wet -MARINE DEPOSIT-					30	70				
20							FV1 (20.4 - 21.0 ft), Su = 560 psf / 110 psf										
25																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
8/10/06	12:15	-	10.0	10.0	4.0
8/10/06	16:00	-	-	-	3.8

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 42.7
Rock Cored (lin. ft.) 0.0
Samples S8

Boring No. HA06-9

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. HA06-9
File No. 33538-000
Sheet No. 2 of 2

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
25	WOR WOR WOR WOH	S5 24	25.0 27.0			CL	Medium stiff, gray, lean CLAY (CL), mps 0.075 mm, bonded, no odor, wet, black streaks -MARINE CLAY-						100				
30							FV2 (30.4 - 31.0 ft), Su = 640 psf / 130 psf										
35	WOR WOR WOR WOH	S6 24	35.0 37.0			CL	Medium stiff, gray, sandy lean CLAY (CL), mps 0.42 mm, bonded, no odor, wet, frequent fine sand seams -MARINE DEPOSIT-					30	70				
					38.0												
40	6 5 5 22	S7 14	40.0 42.0			SC	Medium dense, gray, clayey SAND (SC), mps 4.75 mm, bonded, no odor, wet -GLACIAL TILL-	0	0	5	20	40	35				
					41.5	BR	-WEATHERED BEDROCK-										
	92 50 (0.2)	S8 8	42.0 44.0		42.7		-BOTTOM OF EXPLORATION-										

NOTE:
1. FV1 (20.4 - 21.0 ft) indicates in-situ field vane performed at depth interval listed, corrected peak / residual shear strengths are provided. See Table II for details.
2. WOR = Weight of drill Rods; WOH = Weight of Hammer.

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

USCS_TB4 USCSLIB4.GLB USCSTB+CORE4.GDT G:\PROJECTS\33538\FIELD FORMS\33538-000.GPJ 17 Oct 06

2008 Test Boring Logs for
Proposed MaineHealth/United Way Development
(see Reference 4)

HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA08-1

Project	Maine Health/United Way Development, Portland, Maine
Client	Maine Medical Center
Contractor	Maine Test Borings, Inc.

File No.	35611-000
Sheet No.	1 of 4
Start	8 August 2008
Finish	12 August 2008
Driller	M. Porter
H&A Rep.	O. Lawlor
Elevation	11.5 +/-
Datum	Portland City Datum
Location	See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NW	S	--	Rig Make & Model: Mobile Drill B-50 Bombardier
Inside Diameter (in.)	3.0	1 3/8	--	Bit Type: Roller Bit Drill Mud: None
Hammer Weight (lb)	300	140	-	Casing: NW drive to 102.0 ft.
Hammer Fall (in.)	30	30	-	Hoist/Hammer: Winch Doughnut Hammer PID Make & Model:

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				0.1		-Bituminous Concrete-										
	20 50 23 26	S1 16	1.0 3.0		GW	Very dense, gray, well-graded GRAVEL (GW), mps 1-3/8 in., no structure, no odor, wet, intermixed with 15% concrete -FILL-	35	35	10	10	10					
	5 8 100	S2 19	3.0 4.5	3.0	SM	Very dense, dark gray, silty SAND (SM), mps 1-3/8 in., no structure, no odor, moist, intermixed with 10% concrete and ash -FILL-	5	5	30	30	15	15				
5	18 13 8 6	S3 22	5.0 7.0		SM	Medium dense, dark gray, silty SAND (SM), mps 1-3/8 in., no structure, no odor, moist -FILL-	5	5	30	30	15	15				
	7 4 2 2	S4 11	7.0 9.0		SM	Loose, dark gray, silty SAND (SM), mps 1-3/8 in., no structure, no odor, wet -FILL-	5	5	30	30	15	15				
				9.0												
10	2 1 3 3	S5 7	10.0 12.0		OL/OH	Loose, gray, sandy ORGANIC SILT (OL/OH), trace shells, mps 2.0 mm, no structure, organic odor, wet -HARBOR BOTTOM DEPOSIT-					15	85				
	28 12 11 10	S6 9	12.0 14.0		OL/OH	Medium dense, gray, sandy ORGANIC SILT (OL/OH), trace shells, mps 2.0 mm, no structure, petroleum-like odor, wet, frequent sand partings					15	85				
				14.5												
15	7 11 18 21	S7 24	15.0 17.0		CL	Very stiff, olive-gray, silty lean CLAY (CL), mps 2.0 mm, brown mottling, no structure, no odor, moist -GLACIOMARINE DEPOSIT-						100	N	L	L	
20																

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water
8/12/08	1148		99.0	101.7	19.1
8/12/08	1230		-	76.0	7.1

Sample ID

O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (ft)	98.5
Rock Cored (ft)	0
Samples	18S

Boring No. HA08-1

Field Tests: Dilatancy: R - Rapid S - Slow N - None
Toughness: L - Low M - Medium H - High
Plasticity: N - Nonplastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High V - Very High

*Note: Maximum particle size is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. HA08-1
File No. 35611-000
Sheet No. 2 of 4

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20																
25	WOH WOH WOH WOH	S8 24	25.0 27.0		CL	Medium stiff, gray, lean CLAY (CL), mps 2.0 mm, no structure, no odor, moist FV1 (25.3-26.0 ft), Su = 900/250 psf -GLACIOMARINE DEPOSIT-						100	N	L	L	
30																
35	WOR WOR WOH WOH	S9 21	35.0 37.0		CL	Medium stiff, dark gray, lean CLAY (CL), mps 2.0 mm, no structure, no odor, wet FV2 (35.3-36.0 ft), Su = 650/330 psf -GLACIOMARINE DEPOSIT-						100	N	L	L	
40																
45	WOR WOR WOR WOR	S10 24	45.0 47.0		CL	Very soft, dark gray, lean CLAY (CL), mps 2.0 mm, no structure, no odor, wet FV3 (45.3-46.0 ft), Su = 204/120 psf -GLACIOMARINE DEPOSIT-						100	N	L	L	

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TB+CORE+WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

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TEST BORING REPORT

Boring No. HA08-1
File No. 35611-000
Sheet No. 3 of 4

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
50						Note: Trace of sand and gravel observed in wash water.										
55																
	WOR WOR WOR WOR	NR	56.0 58.0			Note: No recovery, probable gravel or cobble pushed by spoon tip. FV4 (56.3-57.0 ft), Su = 1220/530 psf										
60	WOR WOR WOR WOR	S11 24	60.0 62.0		CL	Very soft, dark gray, lean CLAY (CL), mps 2.0 mm, no structure, no odor, wet, frequent fine sand seams -GLACIOMARINE DEPOSIT-					5	95	N	L	L	
65	5 1 3 10	S12 14	65.0 67.0	65.0	SC/SM	Very loose, gray, clayey SAND to silty SAND (SC/SM), mps 0.25 in., no structure, no odor, wet -GLACIOMARINE DEPOSIT-		5	15	20	45	15				
				69.0												
70	23 24 31 43	S13 24	70.0 72.0		SM	Very dense, gray, silty SAND with gravel (SM), mps 0.25 in., bonded, no odor, moist -GLACIAL TILL-		10	20	25	30	15				
75	44 76 81 100/4"	S14 15	75.0 77.0		SM	Very dense, gray, silty SAND with gravel (SM), mps 0.25 in., bonded, no odor, moist -GLACIAL TILL-	5	5	20	25	30	15				

NOTE: Soil Identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA08-1
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Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
80	50 44 56 65	S15 19	80.0 82.0		SM	Very dense, gray, silty SAND (SM), mps 0.25 in., bonded, no odor, moist -GLACIAL TILL-	5	5	20	25	30	15				
85	57 87 102 90	S16 18	85.0 87.0		SM	Very dense, gray, silty SAND (SM), mps 0.25 in., bonded, no odor, moist -GLACIAL TILL-	5	5	20	25	30	15				
90	8 21 62 87	S17 18	90.0 92.0		SM	Very dense, gray, silty SAND (SM), mps 0.25 in., bonded, no odor, moist, occasional pockets of sandy SILT -GLACIAL TILL-	5	5	20	25	30	15				
95				98.5												
100	34 48 71 146	S18 14	100.0 102.0		BR	Highly weathered SCHIST -WEATHERED BEDROCK- Note: Unable to advance core barrel through casing at 90.0 ft, casing deflected from 90.0 to 100.0 ft.										
				102.0		BOTTOM OF EXPLORATION										

Notes:
1. FV1 (25.3-26.0 ft) indicates in-situ field vane performed at depth interval shown, corrected peak/residual shear strengths are provided. See Table II for details.
2. WOR = Weight of Drill Rods; WOH = Weight of Hammer.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA08-2

Project	Maine Health/United Way Development, Portland, Maine
Client	Maine Medical Center
Contractor	Maine Test Borings, Inc.

File No.	35611-000
Sheet No.	1 of 3
Start	12 August 2008
Finish	13 August 2008
Driller	M. Porter
H&A Rep.	O. Lawlor
Elevation	9 +/-
Datum	Portland City Datum
Location	See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NW	S	--	Rig Make & Model: Mobile Drill B-50 Bombardier
Inside Diameter (in.)	3.0	1 3/8	--	Bit Type: Roller Bit Drill Mud: None
Hammer Weight (lb)	300	140	-	Casing: NW drive to 68.7 ft.
Hammer Fall (in.)	30	30	-	Hoist/Hammer: Winch Doughnut Hammer PID Make & Model:

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	1 5 8 12	S1 24	0.0 2.0		SM	Medium dense, brown, silty SAND (SM), mps 0.25 in., trace wood and ash, no structure, no odor, moist -FILL-			30	30	25	15				
	12 14 12 9	NR	2.0 4.0													
				4.0												
	2 3 4 6	S2 19	4.0 6.0		SP	Loose, red-brown, poorly graded SAND (SP), mps 4.0 mm, no structure, no odor, moist -FILL-			30	30	40					
5	5 6 2 1	S3 14	6.0 8.0		SP	Loose, red-brown, poorly graded SAND (SP), mps 4.0 mm, no structure, no odor, moist -FILL-			30	30	40					
				7.9												
	1 1 1 1	S4 7	8.0 10.0		GM	Very loose, black, silty GRAVEL (GM), mps 0.5 in., trace shells and wood -FILL-	40	30	5	5		20				
				9.8												
10	3 11 51 54	S5 4	10.0 12.0	10.0	OL/OH	Very soft, black, ORGANIC SILT (OL/OH), mps 2.0 mm, no structure, organic odor, wet -FILL-	20	45	5	5	5	100				
					GP	Very dense, gray, poorly graded GRAVEL (GP), mps 1-3/8 in., no structure, no odor, wet -FILL-										
						NOTE: Advanced roller bit through rock fill from 10.0 to 13.8 ft, advance casing to 15.0 ft and resume sampling.										
				14.0												
15	WOH 2 4 4	NR	15.0 17.0			Note: No recovery, probable cobble pushed by spoon tip.										
	4 6 4 4	S6 24	17.0 19.0		CL	Stiff, gray, silty lean CLAY (CL), mps 2.0 mm, no structure, no odor, moist -GLACIOMARINE DEPOSIT-										
20																

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water

Sample ID

O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (ft)	68.7
Rock Cored (ft)	0
Samples	10S

Boring No. HA08-2

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None **Plasticity**: N - Nonplastic L - Low M - Medium H - High
Toughness: L - Low M - Medium H - High **Dry Strength**: N - None L - Low M - Medium H - High V - Very High

***Note: Maximum particle size is determined by direct observation within the limitations of sampler size.**

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA08-2
File No. 35611-000
Sheet No. 2 of 3

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20						Note: Advanced NW casing to 25.0 ft and wash out with roller bit. Bottom 10.0 ft of casing spun off and could not be retrieved. Relocated boring approximately 5 ft west and resumed sampling at 25.0 ft.										
25	WOH WOH WOH WOH	S7 24	25.0 27.0		CL	Very soft, dark gray, lean CLAY (CL), mps 2.0 mm, no structure, no odor, wet FV1 (25.3-26.0 ft), Su = 610/200 psf -GLACIOMARINE DEPOSIT-						100	N	L	L	
30																
35	WOR WOH WOH WOH	S8 4	35.0 37.0		CL	Medium stiff, gray, lean CLAY (CL), trace gravel, mps 1.0 in., no structure, no odor, wet FV2 (35.3-36.0 ft), Su = 410/120 psf -GLACIOMARINE DEPOSIT-						100	N	L	L	
40																
45	WOR WOH WOH WOH	S9 24	45.0 47.0		CL	Medium stiff, gray, lean CLAY (CL), mps 2.0 mm, no structure, no odor, wet FV3 (45.3-46.0 ft), Su = 570/160 psf -GLACIOMARINE DEPOSIT-						100	N	L	L	

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA08-2
File No. 35611-000
Sheet No. 3 of 3

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
50																
55	WOR WOR WOR WOR	NR	55.0 57.0			Note: No recovery, gravel in spoon tip. FV4 (55.3-56.0 ft), Su = 490/120 psf -GLACIOMARINE DEPOSIT-										
60				61.0		Note: Drill action indicates stratum change at 61.0 ft. Gravel in drill wash water.										
65	11 16 16 48/3"	S10 17	65.0 67.0	66.6	SM	Dense, olive-gray, silty SAND (SM), mps 4.0 mm, bonded, no odor, moist -GLACIAL TILL-			30	30	25	15				
				68.7	BR	Note: Recovery from 66.6 to 67.0 ft consists of SCHIST. -WEATHERED BEDROCK- Note: Roller cone refusal. BOTTOM OF EXPLORATION										

Notes:
1. FV1 (25.3-26.0 ft) indicates in-situ field vane performed at depth interval shown, corrected peak/residual shear strengths are provided. See Table II for details.
2. WOR = Weight of Drill Rods; WOH = Weight of Hammer.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TB+CORE+WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA08-3

Project	Maine Health/United Way Development, Portland, Maine
Client	Maine Medical Center
Contractor	Maine Test Borings, Inc.

File No.	35611-000
Sheet No.	1 of 2
Start	24 July 2008
Finish	24 July 2008
Driller	M. Porter
H&A Rep.	O. Lawlor
Elevation	11 +/-
Datum	Portland City Datum
Location	See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NW	S	--	Rig Make & Model: Mobile Drill B-50 Bombardier
Inside Diameter (in.)	3.0	1 3/8	--	Bit Type: Roller Bit Drill Mud: None
Hammer Weight (lb)	300	140	-	Casing: NW drive to 18.0 ft.
Hammer Fall (in.)	30	30	-	Hoist/Hammer: Winch Doughnut Hammer PID Make & Model:

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0						-Bituminous Concrete-										
	32 17 10 7	S1 19	1.0 3.0	1.0	GW	Medium dense, gray, well-graded gravel with sand (GW), intermixed with 30% concrete fragments, no structure, no odor, moist	40	30	15	10	5					
				2.0	SM	Medium dense, gray, silty SAND (SM), mps 0.25 mm, no structure, no odor, moist			30	30	25	15				
	5 12 11 8	S2 20	3.0 5.0		SM	Medium dense, gray, silty SAND (SM), intermixed with 15% ash and cinders, mps 0.25 in, no structure, no odor, moist -FILL-			30	20	25	15				
				4.5	SW	Medium dense, red-brown, well-graded SAND (SW), mps 0.5 in., no structure, no odor, moist, sample composed entirely of cinder and ash, trace brick and coal -FILL-			30	40	30					
5	2 2 1 2	S3 9	5.0 7.0													
	9 8 6 3	S4 4	7.0 9.0		GP	Medium dense, dark brown, poorly-graded GRAVEL (GP), mps 1-3/8 in., trace cinder, glass and wood fragments -FILL-	40	35	10	5	5	5				
10				10.0	SM	Very loose, gray, silty SAND (SM), intermixed with 15% cinders and ash, mps 0.5 in., no structure, no odor, wet, organic silt in tip of spoon -FILL-			30	30	25	15				
	1 1 2 2	S5 20	10.0 12.0													
				12.0	ML	Medium stiff, gray, SILT with sand (ML), mps 2.0 mm, some shell fragments, trace organic matter, no structure, hydrogen sulfide odor, moist -HARBOR BOTTOM DEPOSIT-					10	90				
	1 3 3 2	S6 18	12.0 14.0													
	WOH WOH 1 2	S7 16	14.0 16.0		ML	Very soft, gray, SILT with sand (ML), mps 2.0 mm, some shell fragments, trace organic matter, no structure, hydrogen sulfide odor, moist					10	90				
15				16.1	ML	Very soft, gray, SILT with sand (ML), mps 2.0 mm, some shell fragments, trace organic matter, no structure, hydrogen sulfide odor, moist					10	90				
	WOH 2 5 7	S8 21	16.0 18.0		CL	Medium stiff, gray with occasional mottled brown, lean CLAY (CL), mps 2.0 mm, occasional fine sand pockets, trace root fibers, no odor, moist -GLACIOMARINE DEPOSIT-					5	95				
				18.0		BOTTOM OF EXPLORATION										

Notes:
1. WOH = Weight of Hammer.

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water
7/24/08		0.25	16.0	18.0	4.0
7/24/08		0.5	-	18.0	7.5

Sample ID
O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram
Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (ft)	18.0
Rock Cored (ft)	0
Samples	8S

Boring No. HA08-3

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None **Plasticity**: N - Nonplastic L - Low M - Medium H - High
Toughness: L - Low M - Medium H - High **Dry Strength**: N - None L - Low M - Medium H - High V - Very High

***Note: Maximum particle size is determined by direct observation within the limitations of sampler size.**

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TB+CORE+WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA08-4

Project	Maine Health/United Way Development, Portland, Maine
Client	Maine Medical Center
Contractor	Maine Test Borings, Inc.

File No.	35611-000
Sheet No.	1 of 3
Start	4 August 2008
Finish	4 August 2008
Driller	M. Porter
H&A Rep.	O. Lawlor
Elevation	12 +/-
Datum	Portland City Datum
Location	See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HW	S	--	Rig Make & Model: Mobile Drill B-50 Bombardier
Inside Diameter (in.)	4.0	1 3/8	--	Bit Type: Roller Bit Drill Mud: Bentonite
Hammer Weight (lb)	300	140	-	Casing: HW Drive to 64.4 ft.
Hammer Fall (in.)	30	30	-	Hoist/Hammer: Winch Doughnut Hammer PID Make & Model:

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				0.5		-Bituminous Concrete-										
	15 17 14 11	S1 23	0.5 2.5		SP-SM	Dense, dark brown, poorly-graded SAND with silt (SP-SM), trace gravel, mps 1-3/8 in., intermixed with 5% cinder, ash, no structure, no odor, moist -FILL-	5		30	40	15	10				
	14 12 12 25	S2 7	2.5 4.5		SP-SM	Medium dense, dark brown, poorly-graded SAND with silt (SP-SM), trace gravel, mps 1-3/8 in., intermixed with 5% cinder, ash, no structure, no odor, moist	5		30	40	15	10				
5	8 10 7 8	S3 24	5.0 7.0		SM	Medium dense, brown, silty SAND (SM), mps 0.5 in., intermixed with 20% cinder and ash, no structure, no odor, moist -FILL-			30	30	20	20				
	8 5 3 3	S4 4	7.0 9.0		SP-SM	Loose, dark brown, poorly-graded SAND with silt (SP-SM), mps 0.25 in., trace wood, no structure, no odor, moist			35	40	15	10				
10	2 4 4 6	S5 6	9.0 11.0		SP-SM	Loose, dark brown, poorly-graded SAND with silt (SP-SM), mps 0.25 in., trace wood, trace shells and glass, no structure, no odor, wet			35	40	15	10				
	2 3 4 3	S6 12	11.0 13.0	11.0	SM	Loose, gray, silty SAND (SM), trace gravel and roots, mps 0.25 in., no structure, no odor, wet		5	15	30	30	20				
	WOH 1 3 3	S7 21	13.0 15.0	13.0	ML	Soft, gray, sandy SILT (ML), trace fine gravel, mps 0.25 mm, trace shells, no structure, no odor, wet -HARBOR BOTTOM DEPOSIT-		5		15	30	50				
15	4 12 12 15	S8 5	15.0 17.0		ML	Very stiff, gray, sandy SILT (ML), trace fine gravel, mps 0.25 mm, trace shells, no structure, no odor, wet, clay in tip of spoon		5	10	15	20	50				
	4 6 10 14	S9 24	17.0 19.0	16.9	CL	Very stiff, gray, silty lean CLAY (CL), mps 2.0 mm., occasional brown mottling, no structure, no odor, moist -GLACIOMARINE DEPOSIT-						100	N	L	L	
20																

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water

Sample ID

O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (ft)	66.0
Rock Cored (ft)	0
Samples	17S, 2U

Boring No. HA08-4

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None **Toughness**: L - Low M - Medium H - High **Plasticity**: N - Nonplastic L - Low M - Medium H - High **Dry Strength**: N - None L - Low M - Medium H - High V - Very High

*Note: Maximum particle size is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TB+CORE+WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA08-4
File No. 35611-000
Sheet No. 2 of 3

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	1 3 4 4	S10 24	20.0 22.0		CL	Medium stiff, gray, silty lean CLAY (CL), mps 2.0 mm, occasional brown mottling, no structure, no odor, moist						100	N	L	L	
	1 3 3 3	S11 12	22.0 24.0		CL	Stiff, gray, silty lean CLAY (CL), mps 2.0 mm, occasional brown mottling, no structure, no odor, moist FV1 (22.3-23.0 ft), Su = 1,045 psf -GLACIOMARINE DEPOSIT-						100	N	L	L	
25	P U S H	U1 23	25.0 27.0													
						FV2 (27.3-28.0 ft), Su = 590/160 psf										
30	WOR WOR WOR WOR	S12 22	30.0 32.0		CL	Medium stiff, dark gray, lean CLAY (CL), trace fine sand and gravel from 31.7 to 32.0 ft., no structure, no odor, wet FV3 (30.3-31.0 ft), Su = 500/90 psf					5	95	N	L	L	
	P U S H	U2 23	33.0 35.0													
35						FV4 (35.3-36.0 ft), Su = 340/65 psf -GLACIOMARINE DEPOSIT-										
40	WOR WOR WOR WOR	S13 22	40.0 42.0		CL	Soft, gray, lean CLAY (CL), mps 2.0 mm, no structure, no odor, wet Su = 400/120 psf FV5 (40.3-41.0 ft), Su = 400/120 psf						100	N	L	L	
45	WOR WOR WOR WOR	S14 24	45.0 47.0		CL	Soft, gray, lean CLAY (CL), trace gravel, mps 2.0 mm, no structure, no odor, wet FV6 (45.3-46.0 ft), Su = 420/110 psf -GLACIOMARINE DEPOSIT-						100	N	L	L	

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TB+CORE+WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

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TEST BORING REPORT

Boring No. HA08-4
File No. 35611-000
Sheet No. 3 of 3

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
50	WOR WOR WOR WOR	S15 24	50.0 52.0		CL	Medium stiff, gray, lean CLAY (CL), trace gravel, mps 2.0 mm, no structure, no odor, wet FV7 (50.3-51.0 ft), Su = 610/80 psf						100	N	L	L	
55	WOR 3 3 6	S16 24	55.0 57.0	55.4	SC	Loose, gray, clayey SAND (SC), mps 4.0 mm, no structure, no odor, wet -GLACIOMARINE DEPOSIT-					75	25				
				58.8												
60	13 17 24 34	S17 24	60.0 62.0		SM	Dense, gray, silty SAND (SM), trace gravel, mps 1-3/8 in., bonded, no odor, moist -GLACIAL TILL- Note: Drill action indicates probable bedrock at 64.4 ft.		5	20	30	30	15				
				64.4		-WEATHERED BEDROCK-										
65				66.0		Note: Roller bit refusal at 66.0 ft. BOTTOM OF EXPLORATION										

Notes:
1. FV1 (22.3-23.0 ft) indicates in-situ field vane performed at depth interval shown, corrected peak/residual shear strengths are provided. See Table II for details.
2. WOR = Weight of Drill Rods; WOH = Weight of Hammer.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TB+CORE+WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA08-5(OW)

Project Maine Health/United Way Development, Portland, Maine
Client Maine Medical Center
Contractor Maine Test Borings, Inc.

File No. 35611-000
Sheet No. 1 of 4
Start 31 July 2008
Finish 1 August 2008
Driller M. Porter
H&A Rep. O. Lawlor
Elevation 9 +/-
Datum Portland City Datum
Location See Plan

	Casing	Sampler	Barrel
Type	NW	S	NQ
Inside Diameter (in.)	3.0	1 3/8	2.0
Hammer Weight (lb)	300	140	-
Hammer Fall (in.)	30	30	-

Drilling Equipment and Procedures
Rig Make & Model: Mobile Drill B-50 Bombardier
Bit Type: Roller Bit
Drill Mud: None
Casing: NW drive to 63.8 ft.
Hoist/Hammer: Winch Doughnut Hammer
PID Make & Model:

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	4 9 11 22	S1 11	0.0 2.0		SP	Medium dense, brown, poorly-graded SAND (SP), occasional silt pockets, trace cinder and ash, mps 1.0 in., no structure, no odor, moist -FILL-			30	40	25	5				
	22 19 13 11	S2 14	2.0 4.0		SW-SM	Dense, brown, well-graded SAND with silt (SW-SM), mps 1-3/8 in., trace cinders and ash			30	40	20	10				
5	6 5 2 3	S3 8	4.0 6.0		SW-SM	Loose, brown, well-graded SAND with silt (SW-SM), mps 1-3/8 in., trace cinders and ash -FILL-			30	40	20	10				
	2 1 1 6	S4 5	6.0 8.0		SW-SM	Very loose, brown, well-graded SAND with silt (SW-SM), mps 1-3/8 in., trace cinders and ash, wet			30	40	20	10				
	6 5 2 1	S5 7	8.0 10.0	8.0	SM	Loose, gray, silty SAND (SM), mps 0.5 in., trace shell and brick fragments, no structure, no odor, moist -FILL-			20	30	35	15				
10	2 2 3 3	S6 20	10.5 12.5	10.5	OL/OH	Medium stiff, dark gray, ORGANIC SILT (OL/OH), mps 0.25 in., trace shell fragments, no structure, organic odor, moist -HARBOR BOTTOM DEPOSIT-						100				
	10 11 14 15	S7 6	13.0 15.0	13.0	CL	Medium stiff, olive-gray, silty lean CLAY (CL), mps 2.0 mm, no structure, no odor, moist, probable rock pushed by spoon						100	N	L	L	
15	3 4 4 5	S8 20	15.0 17.0		CL	Medium stiff, gray with brown mottles, silty lean CLAY (CL), mps 2.0 mm, no structure, no odor, moist -GLACIOMARINE DEPOSIT-						100	N	L	L	
20																

Well Diagram

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water

Sample ID
O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram
Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary
Overburden (ft) 63.8
Rock Cored (ft) 5.0
Samples 13S, 1C

Boring No. HA08-5(OW)

Field Tests: **Dilatancy:** R - Rapid S - Slow N - None **Plasticity:** N - Nonplastic L - Low M - Medium H - High
Toughness: L - Low M - Medium H - High **Dry Strength:** N - None L - Low M - Medium H - High V - Very High

***Note: Maximum particle size is determined by direct observation within the limitations of sampler size.**

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TB+CORE+WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA08-5(OW)
File No. 35611-000
Sheet No. 2 of 4

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Well Diagram	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20							FV1 (20.3-21.0 ft), Su = 720/260 psf										
25	WOR WOR WOH WOH	S9 24	25.0 27.0			CL	Medium stiff, gray to black, lean CLAY (CL), mps 2.0 mm, no structure, no odor, moist FV2 (25.3-26.0 ft), Su = 720/200 psf						100	N	M	M	
30							FV3 (30.3-31.0 ft), Su = 730/170 psf -GLACIOMARINE DEPOSIT-										
35	WOR WOR WOR WOR	S10 21	35.0 37.0			CL	Medium stiff, gray, lean CLAY (CL), mps 2.0 mm, no structure, no odor, wet FV4 (35.3-36.0 ft), Su = 600/290 psf						100	N	L	L	
40	WOR WOR WOR WOR	S11 24	40.0 42.0			CL	Medium stiff, gray, lean CLAY (CL), mps 2.0 mm, no structure, no odor, wet FV5 (40.3-41.0 ft), Su = 600/190 psf -GLACIOMARINE DEPOSIT-						100	N	L	L	
45																	

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. HA08-5(OW)

HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA08-5(OW)
File No. 35611-000
Sheet No. 3 of 4

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Well Diagram	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
50	WOR WOR WOR WOR	S12 24	50.0 52.0			CL	Medium stiff, gray, lean CLAY (CL), fine sand in spoon tip, mps 2.0 mm, no structure, no odor, wet FV6 (50.3-51.0 ft), Su = 700/370 psf -GLACIOMARINE DEPOSIT- Note: Sand and fine gravel observed in wash water.					5	95	N	L	L	
					53.0												
55							-PROBABLE GLACIAL TILL-										
60	16 9 7 10	NR	60.0 62.0														
					62.5		Note: Casing refusal at 62.5 ft. Advanced roller bit to 63.8 ft. Begin NQ Rock Core at 63.8 ft. See Core Boring Report for Details. Notes: 1. FV1 (20.3-21.0 ft) indicates in-situ field vane performed at depth interval shown, corrected peak/residual shear strengths are provided. See Table II for details. 2. WOR = Weight of Drill Rods; WOH = Weight of Hammer.										
	36 50/1"	S13 5	63.2 63.7														
65																	

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. HA08-5(OW)

HALEY & ALDRICH

CORE BORING REPORT

Boring No. HA08-5(OW)
File No. 35611-000
Sheet No. 4 of 4

Depth (ft)	Drilling Rate (min./ft)	Run No.	Run Depth (ft)	Recovery/RQD in.	Recovery/RQD %	Weathering	Elev./Depth (ft)	Visual Description and Remarks
								SEE TEST BORING REPORT FOR OVERBURDEN DETAILS
	6	C1	63.8	19	99			Moderately hard, moderate to highly weathered, dark green aphanitic CHLORITE SCHIST. Foliation is extremely thin, vertical. Primary joint set is parallel to foliation, vertical, extremely close, smooth, stepped, fresh to discolored with pyrite, open. Note: RQD affected by extremely close fractures and drill action.
			65.4	0	0			
65	7							
	6	C2	65.4	36	88		65.4	Moderately hard, moderate to highly weathered, dark green aphanitic CHLORITE SCHIST. Occasional, very thin, high angle to vertical quartz veins. Primary joint set is parallel to foliation, vertical, extremely close, smooth, stepped, fresh to discolored with pyrite, open.
			68.8	12	29			
	6							
	7							
							68.8	BOTTOM OF EXPLORATION
70								Note: Observation Well installed in completed borehole. See installation report for details.
75								
80								
85								
90								

H+A_CORE+WELL07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TB+CORE+WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA08-6

Project Maine Health/United Way Development, Portland, Maine
Client Maine Medical Center
Contractor Maine Test Borings, Inc.

File No. 35611-000
Sheet No. 1 of 1
Start 23 July 2008
Finish 24 July 2008
Driller M. Porter
H&A Rep. O. Lawlor
Elevation 10 +/-
Datum Portland City Datum
Location See Plan

	Casing	Sampler	Barrel
Type	NW	S	--
Inside Diameter (in.)	3.0	1 3/8	--
Hammer Weight (lb)	300	140	-
Hammer Fall (in.)	30	30	-

Drilling Equipment and Procedures

Rig Make & Model: Mobile Drill B-50 Bombardier
Bit Type: Roller Bit
Drill Mud: None
Casing: NW drive to 12.0 ft.
Hoist/Hammer: Winch Doughnut Hammer
PID Make & Model:

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	2 5 13 6	S1 22	0.0 2.0		SM	Medium dense, brown, silty SAND (SM), mps 1.0 in., no structure, no odor, moist -FILL-		5	30	30	20	15				
	13 17 17 18	S2 21	2.0 4.0		SM	Dense, gray to brown, silty SAND (SM), mps 1.0 in. trace brick fragments, cinders, wood, no structure, cinder odor, moist		5	30	30	20	15				
	5 6 9 10	S3 20	4.0 6.0		SM	Medium dense, gray to brown, silty SAND (SM), mps 1.0 in. trace brick fragments, cinders, wood, no structure, cinder odor, moist		5	30	30	20	15				
5				5.0	SW	Medium dense, light brown, well-graded SAND (SW), occasional silt pockets, mps 0.5 in., no structure, no odor, moist		5	30	35	30					
	6 2 2 2	S4 16	6.0 8.0		SW	Very loose, brown, well-graded SAND (SW), occasional pockets of dark gray sandy silt, mps 0.25 in., no structure, no odor, moist		5	30	35	30					
	3 4 3 4	S5 8	8.0 10.0		SM	Loose, dark brown, silty SAND with gravel (SM), mps 1.0 in., no structure, no odor, wet -FILL-	5	5	20	25	25	20				
10	5 4 7 5	S6 2	10.0 12.0		SM	Medium dense, dark brown, silty SAND with gravel (SM), mps 1.0 in., no structure, no odor, wet, trace brick and shell fragments	5	5	20	25	25	20				
	4 2 2 5	S7 14	12.0 14.0	12.3	SM	Loose, dark brown, silty SAND with gravel (SM), mps 1.0 in., no structure, no odor, wet, trace brick and shell fragments	5	5	20	25	25	20				
					ML	Soft, gray, sandy SILT (ML), little shell fragments, trace clay, frequent partings along fine sand seams, no odor, moist -HARBOR BOTTOM DEPOSIT-					5	95				
				14.0		BOTTOM OF EXPLORATION										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water
N/A					

Sample ID
O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram
Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary
Overburden (ft) 14.0
Rock Cored (ft) 0
Samples 7S

Boring No. HA08-6

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None **Plasticity**: N - Nonplastic L - Low M - Medium H - High
Toughness: L - Low M - Medium H - High **Dry Strength**: N - None L - Low M - Medium H - High V - Very High

*Note: Maximum particle size is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TB+CORE+WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA08-7(OW)

Project	Maine Health/United Way Development, Portland, Maine
Client	Maine Medical Center
Contractor	Maine Test Borings, Inc.

File No.	35611-000
Sheet No.	1 of 4
Start	30 July 2008
Finish	31 July 2008
Driller	M. Porter
H&A Rep.	O. Lawlor
Elevation	12 +/-
Datum	Portland City Datum
Location	See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NW	S	NQ	Rig Make & Model: Mobile Drill B-50 Bombardier
Inside Diameter (in.)	3.0	1 3/8	2.0	Bit Type: Roller Bit Drill Mud: None
Hammer Weight (lb)	300	140	-	Casing: NW drive to 62.0 ft.
Hammer Fall (in.)	30	30	-	Hoist/Hammer: Winch Doughnut Hammer PID Make & Model:

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Well Diagram	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	6 12 13 12	S1 15	0.0 2.0			SW-SM	Medium dense, dark brown, well-graded SAND with silt (SW-SM), mps 0.25 in., intermixed with 10% ash and brick, trace wood, no structure, no odor, moist -FILL-			30	40	20	10				
	6 12 21 25	S2 16	2.0 4.0			SW-SM	Dense, dark brown, well-graded SAND with silt (SW-SM), mps 0.25 in., intermixed with 10% ash and brick, trace wood, occasional sandy silt pockets, no structure, no odor, moist			30	40	20	10				
5	5 7 12 9	S3 24	4.0 6.0			SM	Medium dense, brown, silty SAND (SM), mps 0.25 in., intermixed with 15% cinder and ash fragments, no structure, no odor, moist -FILL-			20	30	30	20				
	3 4 5 2	S4 24	6.0 8.0		6.2	SM	Loose, brown, silty SAND (SM), mps 0.25 in., intermixed with 15% cinder and ash fragments, no structure, no odor, moist			20	30	30	20				
						SM	Loose, gray, silty SAND (SM), mps 4.0 mm, no structure, no odor, wet			20	30	25	25				
	7 15 14 10	S5 20	8.0 10.0		8.0	SW	Medium dense, light brown, well-graded SAND (SW), mps 1-3/8 in., no structure, no odor, wet -FILL-			35	30	30					
10	3 2 2 2	S6 10	10.0 12.0		10.0	SM	Very loose, gray, silty SAND (SM), trace clay, mps 4.0 mm, no structure, no odor, wet -FILL-			20	30	30	20				
	1 1 2 1	S7 17	12.0 14.0		12.5	SM	Very loose, gray, silty SAND (SM), trace clay, mps 4.0 mm, no structure, no odor, wet			20	30	30	20				
						OL/OH	Soft, dark brown, ORGANIC SILT (OL/OH), trace sand and shells, mps 2.0 mm, no structure, organic odor, wet -HARBOR BOTTOM DEPOSIT-					5	95				
15	4 4 4 7	NR	14.0 16.0		14.0		Note: No recovery, probable gravel pushed by spoon through clay.										
	2 3 4 7	S8 24	16.0 18.0			CL	Medium stiff, mottled olive-gray, lean CLAY (CL), mps 2.0 mm, no structure, no odor, moist -GLACIOMARINE DEPOSIT-						100				
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water

Sample ID

O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (ft)	62.0
Rock Cored (ft)	10.0
Samples	14S, 2C

Boring No. HA08-7(OW)

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None **Plasticity**: N - Nonplastic L - Low M - Medium H - High
Toughness: L - Low M - Medium H - High **Dry Strength**: N - None L - Low M - Medium H - High V - Very High

***Note: Maximum particle size is determined by direct observation within the limitations of sampler size.**

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1 H&A-LIB07-1R-POR-06-03-08.GLB HA-TB+CORE+WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA08-7(OW)
File No. 35611-000
Sheet No. 2 of 4

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Well Diagram	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	WOR WOH WOH WOH	S9 24	20.0 22.0			CL	Medium stiff, gray, lean CLAY (CL), mps 2.0 mm, no structure, no odor, moist FV1 (20.3-21.0 ft), Su = 830/320 psf -GLACIOMARINE DEPOSIT-						100	N	L	L	
25							FV2 (25.3-26.0 ft), Su = 730/170 psf										
30	WOH WOH WOH WOR	S10 24	30.0 32.0			CL	Medium stiff, gray, lean CLAY (CL), occasional partings along fine sand seams, no odor, moist FV3 (30.3-31.0 ft), Su = 680/280 psf -GLACIOMARINE DEPOSIT-						100	N	L	L	
35							FV4 (35.3-36.0 ft), Su = 870/210 psf										
					38.0												
40	5 5 9 19	S11 2	40.0 42.0			SM	Medium dense, gray, silty SAND with gravel (SM), mps 1-3/8 in., well bonded, no odor, wet -GLACIAL TILL-	5		15	30	30	20				
45	12 8 9 10	S12 21	45.0 47.0			SM	Medium dense, gray, silty SAND with gravel (SM), mps 1-3/8 in., well bonded, no odor, wet -GLACIAL TILL-	5	5	15	25	30	20				

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. HA08-7(OW)

HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA08-7(OW)
File No. 35611-000
Sheet No. 3 of 4

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Well Diagram	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
50							Note: Drilled through cobble from 50.1 to 50.5 ft.										
	8 6 9 16	S13 22	50.5 52.5				Medium dense, silty SAND with gravel (SM), mps 1-3/8 in., well bonded, no odor, wet -GLACIAL TILL-	5	5	30	25	20	15				
55																	
60	40 75 125 50/1"	S14 12	60.0 61.6		60.1		Very dense, silty SAND with gravel (SM), mps 1-3/8 in., well bonded, no odor, wet, 1/2 to 1-3/8 in. fragments of weathered CHLORITE SCHIST	5	5	15	25	35	15				
					61.6		-WEATHERED BEDROCK- Note: Bedrock encountered at 61.6 ft. Advanced roller bit to 62.0 ft. Begin NQ rock core at 62.0 ft. See Core Boring Report for details. Notes: 1. FV1 (20.3-21.0 ft) indicates in-situ field vane performed at depth interval shown, corrected peak/residual shear strengths are provided. See Table II for details. 2. WOR = Weight of Drill Rods; WOH = Weight of Hammer.										
65																	
70																	

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TB+CORE+WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

HALEY & ALDRICH

CORE BORING REPORT

Boring No. HA08-7(OW)
File No. 35611-000
Sheet No. 4 of 4

Depth (ft)	Drilling Rate (min./ft)	Run No.	Run Depth (ft)	Recovery/RQD in.	Recovery/RQD %	Weathering	Elev./Depth (ft)	Visual Description and Remarks
								SEE TEST BORING REPORT FOR OVERBURDEN DETAILS
	2	C1	62.0 67.0	36 6	60 10			Moderately hard, moderate to highly weathered, dark gray, aphanitic SILTSTONE. Foliation is extremely thin, high angle to vertical. Primary joint set is parallel to foliation, high angle to vertical, close to extremely close, rough, stepped to undulating, fresh to discolored with pyrite, tight.
	2							
	2							
65	2							
	2							
	2	C2	67.0 72.0	24 0	40 0		67.0	Note: Recovery consists of 1.0 to 3.0 in. pieces and fragments of hard, dark gray, slightly weathered, aphanitic SILTSTONE, due to extremely close fracture spacings and drill action.
	2							
	3							
70	3							
	3							Note: Advanced roller bit to 70.6 ft. to flush unrecovered rock fragments. Borehole caved to 65.0 ft after removal of drill rods.
	2						72.0	BOTTOM OF EXPLORATION
								Note: Observation well installed in completed borehole. See installation report for details.
75								
80								
85								
90								

H+A_CORE+WELL07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TB+CORE+WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

HALEY & ALDRICH — TEST BORING REPORT

Boring No. HA08-8

Project	Maine Health/United Way Development, Portland, Maine
Client	Maine Medical Center
Contractor	Maine Test Borings, Inc.

File No.	35611-000
Sheet No.	1 of 3
Start	6 August 2008
Finish	7 August 2008
Driller	M. Porter
H&A Rep.	O. Lawlor
Elevation	9 +/-
Datum	Portland City Datum
Location	See Plan

	Casing	Sampler	Barrel
Type	HW	S	--
Inside Diameter (in.)	4.0	1 3/8	--
Hammer Weight (lb)	300	140	-
Hammer Fall (in.)	30	30	-

Drilling Equipment and Procedures

Rig Make & Model: Mobile Drill B-50 Bombardier
Bit Type: Roller Bit
Drill Mud: Bentonite
Casing: HW Drive to 50.5 ft.
Hoist/Hammer: Winch Doughnut Hammer
PID Make & Model:

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	2 10 13 14	S1 5	0.0 2.0	0.2	SW	-TOPSOIL- Medium dense, light brown, well-graded SAND with gravel (SW), mps 0.25 in., no structure, no odor, moist	5	5	30	40	20					
	11 14 26 29	S2 16	2.0 4.0	2.0	SM	Dense, gray-green, silty SAND with gravel (SM), mps 1 3/8 in., no structure, no odor, moist, reworked till -FILL- NOTE: Augered through cobble from 4.0 - 4.7 ft.	5	5	25	25	25	15				
5	1 1 1 3	S3 20	5.0 7.0		SM	Very loose, gray-green, silty SAND with gravel (SM), mps 1 3/8 in., no structure, no odor, moist, reworked till -FILL-	5	5	25	25	25	15				
	2 2 4 3	S4 19	7.0 9.0		SM	Loose, gray-green, silty SAND with gravel (SM), mps 1 3/8 in., no structure, no odor, moist, reworked till -FILL-	5	5	25	25	25	15				
10	3 1 1 1	S5 13	9.0 11.0	9.5	OL/OH	Very soft, dark gray, ORGANIC SILT (OL/OH), trace sand, glass and shell fragments, mps 4.0 mm, no structure, no odor, wet -HARBOR BOTTOM DEPOSIT-					5	95				
	6 13 4 6	S6 19	12.0 14.0		OL/OH	Medium dense, dark gray, ORGANIC SILT (OL/OH), trace sand, glass and shell fragments, mps 4.0 mm, no structure, no odor, wet					5	95				
15	2 3 4 7	S7 24	14.0 16.0	13.8	CL	Medium stiff, olive-gray, silty lean CLAY (CL), trace gravel, occasional brown mottles, mps 0.25 in., no structure, no odor, moist -GLACIOMARINE DEPOSIT-		5				95	N	L	L	
	WOR WOH WOH WOH	S8 24	16.0 18.0		CL	Soft, gray, lean CLAY (CL), mps 2.0 mm, no structure, no odor, wet FV1 (18.3-19.0 ft), Su = 460/70 psf -GLACIOMARINE DEPOSIT-						100	N	L	L	
20																

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water
8/7/08			-	50.5	9.0

Sample ID
O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram
Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (ft)	50.5
Rock Cored (ft)	0
Samples	13S, 2U

Boring No. HA08-8

Field Tests: Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High
Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High

*Note: Maximum particle size is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TB+CORE+WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA08-8
File No. 35611-000
Sheet No. 2 of 3

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	P U S H	U1 18	20.0 22.0													
						FV2 (22.3-23.0 ft), Su = 610/50 psf										
25	WOR WOH WOH WOH	S9 24	25.0 27.0		CL	Very soft, gray, lean CLAY (CL), mps 2.0 mm, no structure, no odor, wet -GLACIOMARINE DEPOSIT-						100				
30	WOR WOR 1 WOH	S10 24	30.0 32.0		CL	Soft, gray, lean CLAY (CL), mps 2.0 mm FV3 (30.3-31.0 ft), Su = 380/120 psf -GLACIOMARINE DEPOSIT-						100	N	L	L	
35	WOR WOR WOR WOR	S11 24	35.0 37.0		CL	Medium stiff, gray, lean CLAY (CL), mps 2.0 mm FV4 (35.3-36.0 ft), Su = 780/150 psf -GLACIOMARINE DEPOSIT-						100	N	L	L	
						FV5 (39.3-40.0 ft), Su = 1,030/80 psf										
40	P U S H	U2 24	41.0 43.0													
	2 6 6 7	S12 18	43.0 45.0	43.0	SP	Medium dense, gray, poorly-graded SAND (SP), trace gravel, mps 0.5 in., no structure, no odor, wet -GLACIOMARINE DEPOSIT-	5		20	30	45					
45						Note: Casing refusal on probable bedrock at 48.6 ft.										
				48.6		-WEATHERED BEDROCK-										

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TB-CORE-WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

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TEST BORING REPORT

Boring No. HA08-8

File No. 35611-000

Sheet No. 3 of 3

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
50	100/1"	S13 4	50.2 50.5	50.5		Weathered Rock fragments -WEATHERED BEDROCK- Note: Split spoon refusal BOTTOM OF EXPLORATION										

Notes:
1. FV1 (22.3-23.0 ft) indicates in-situ field vane performed at depth interval shown, corrected peak/residual shear strengths are provided. See Table II for details.
2. WOR = Weight of Drill Rods; WOH = Weight of Hammer.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TB+CORE+WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA08-9

Project Maine Health/United Way Development, Portland, Maine
Client Maine Medical Center
Contractor Maine Test Borings, Inc.

File No. 35611-000
Sheet No. 1 of 1
Start 24 July 2008
Finish 24 July 2008
Driller M. Porter
H&A Rep. O. Lawlor
Elevation 11 +/-
Datum Portland City Datum
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NW	S	--	Rig Make & Model: Mobile Drill B-50 Bombardier
Inside Diameter (in.)	3.0	1 3/8	--	Bit Type: Roller Bit
Hammer Weight (lb)	300	140	-	Drill Mud: None
Hammer Fall (in.)	30	30	-	Casing: NW drive to 16.0 ft.
				Hoist/Hammer: Winch Doughnut Hammer
				PID Make & Model:

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	2 3 5 6	S1 3	0.0 2.0		GM	Loose, gray-brown, silty GRAVEL with sand (GM), mps 0.5 in., no structure, organic odor, wet -FILL-	15	45	10	10	5	15				
	4 6 9 11	S2 22	2.0 4.0	2.0		Note: Sample composed of cinder and ash from 2.0 to 3.0 ft.										
				3.0	SM	Medium dense, gray, silty SAND (SM), trace gravel, mps 0.25 in., no structure, no odor		5	30	30	20	15				
5	1 3 3 3	S3 22	4.0 6.0		SM	Loose, gray, silty SAND (SM), mps 0.25 in., no structure, no odor, moist -FILL-			10	30	30	30				
	1 2 3 3	S4 16	6.0 8.0		SM	Loose, gray, silty SAND (SM) with gravel, mps 0.25 in., no structure, no odor, moist Note: Groundwater encountered at 7.1 ft.	5	5	15	30	15	30				
	WOH 3 6 11	S5 10	8.0 10.0		SM	Loose, gray, silty SAND (SM) with gravel, mps 0.25 in., no structure, no odor, moist -FILL-	5	5	15	30	15	30				
10	4 5 3 2	S6 8	10.0 12.0		SM	Loose, gray, silty SAND (SM) with gravel, mps 0.25 in., no structure, no odor, moist, trace wood and glass fragments	5	5	20	30	25	15				
	2 3 4 5	S7 2	12.0 14.0	12.0	ML	Medium stiff, dark gray, SILT (ML), trace wood, mps 2.0 mm, no structure, organic odor, wet -HARBOR BOTTOM DEPOSIT-					5	95				
15	5 4 6 5	S8 20	14.0 16.0	14.0	CL	Stiff, gray, lean CLAY (CL), mps 2.0 mm, no structure, no odor, moist -GLACIOMARINE DEPOSIT-						100				
				16.0		BOTTOM OF EXPLORATION Note: 1. WOH = Weight of Hammer.										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water
7/24/08	1315	0.25	14.0	16.0	3.7

Sample ID
O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram
Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary
Overburden (ft) 16.0
Rock Cored (ft) 0
Samples 8S

Boring No. HA08-9

Field Tests: **Dilatancy:** R - Rapid S - Slow N - None **Plasticity:** N - Nonplastic L - Low M - Medium H - High
Toughness: L - Low M - Medium H - High **Dry Strength:** N - None L - Low M - Medium H - High V - Very High

*Note: Maximum particle size is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA08-10

Project	Maine Health/United Way Development, Portland, Maine
Client	Maine Medical Center
Contractor	Maine Test Borings, Inc.

File No.	35611-000
Sheet No.	1 of 3
Start	7 August 2008
Finish	7 August 2008
Driller	M. Porter
H&A Rep.	O. Lawlor
Elevation	9 +/-
Datum	Portland City Datum
Location	See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HW	S	--	Rig Make & Model: Mobile Drill B-50 Bombardier
Inside Diameter (in.)	4.0	1 3/8	--	Bit Type: Roller Bit Drill Mud: Bentonite
Hammer Weight (lb)	300	140	-	Casing: HW drive to 49.5 ft.
Hammer Fall (in.)	30	30	-	Hoist/Hammer: Winch Doughnut Hammer PID Make & Model:

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	5 8 17 21	S1 20	0.0 2.0		ML	Medium dense, olive-gray, sandy SILT (ML), trace gravel and brick, mps 0.25 in., bonded, no odor, moist - till fill -FILL-		5	10	15	20	50				
	17 15 14 12	S2 23	2.0 4.0	2.0	SM	Medium dense, olive-gray, silty SAND (SM), trace gravel, mps 0.25 in., no structure, no odor, moist -FILL-		5	15	30	30	20				
5	2 2 3 3	S3 19	4.0 6.0		SM	Loose, olive-gray, silty SAND (SM), trace gravel, mps 0.25 in., no structure, no odor, wet -FILL-		5	15	30	30	20				
	3 5 8 15	S4 12	6.0 8.0		SM	Medium dense, olive-gray, silty SAND (SM), trace gravel, mps 0.25 in., no structure, no odor, wet -FILL-		5	15	30	30	20				
				8.0		NOTE: Wood in spoon tip with creosote-like odor.										
	8 6 6 3	S5 7	8.0 10.0		OL/OH	Medium dense, dark gray to black, sandy ORGANIC SILT (OL/OH), trace brick and metal -HARBOR BOTTOM DEPOSIT-			10	10	10	70				
10	1 2 2 2	S6 24	10.0 12.0	11.3	OL/OH	Soft, dark gray to black, sandy ORGANIC SILT (OL/OH), trace shells -HARBOR BOTTOM DEPOSIT-						100	N	L	L	
	2 3 3 4	S7 15	12.0 14.0		CL	Medium stiff, gray, silty lean CLAY (CL), trace sand, mps 4.0 mm, no structure, no odor, moist -GLACIOMARINE DEPOSIT-					5	95	N	L	L	
15																
20	WOR WOR	S8 24	19.0 21.0		CL	Medium stiff, gray, lean CLAY (CL), mps 2.0 mm, no structure, no odor, wet						100	N	L	L	

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water

Sample ID: O - Open End Rod; T - Thin Wall Tube; U - Undisturbed Sample; S - Split Spoon Sample

Well Diagram: Riser Pipe; Screen; Filter Sand; Cuttings; Grout; Concrete; Bentonite Seal

Summary	
Overburden (ft)	49.5
Rock Cored (ft)	0
Samples	12S, 1U
Boring No.	**HA08-10**

Field Tests: Dilatancy: R - Rapid S - Slow N - None; Toughness: L - Low M - Medium H - High; Plasticity: N - Nonplastic L - Low M - Medium H - High; Dry Strength: N - None L - Low M - Medium H - High V - Very High

*Note: Maximum particle size is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TB+CORE+WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA08-10
File No. 35611-000
Sheet No. 2 of 3

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	WOH WOH					FV1 (19.3-20.0 ft), Su = 520/110 psf -GLACIOMARINE DEPOSIT-										
						FV2 (23.3-24.0 ft), Su = 730/130 psf Note: Wood fibers observed in wash water from 24.5 to 25.0 ft.										
25	P U S H	U1 22	25.0 27.0													
						FV3 (27.3-28.0 ft), Su = 400/90 psf										
30	WOR WOR WOR WOR	S9 24	30.0 32.0		CL	Very soft, gray, lean CLAY (CL), mps 2.0 mm, occasional fine sand partings, no odor, wet FV4 (30.0-31.0 ft), Su = 220/70 psf -GLACIOMARINE DEPOSIT-					5	95	N	L	L	
35	WOR WOR 3 2	S10 24	35.0 37.0	35.2	CL / SM	Very soft, gray, lean CLAY (CL), mps 2.0 mm, occasional fine sand partings, no odor, wet Loose, gray, silty SAND (SM), mps 4.0 mm, no structure, no odor, wet -GLACIOMARINE DEPOSIT-			5	10	5 / 70	95 / 15	N	L	L	
40	5 2 7 7	S11 6	40.5 42.5		SW-SM	Loose, gray, well graded SAND with silt (SW-SM), mps 0.25 in., no structure, no odor, wet -GLACIOMARINE DEPOSIT-	5	5	25	25	30	10				
45	9 9 5 6	S12 6	45.5 47.5	45.5	SP-SM	Medium dense, gray, poorly graded SAND with silt (SP-SM), mps 0.25 in., no structure, no odor, wet, schist fragment in tip of spoon -GLACIAL TILL-	5	5	5	25	50	10				
				47.5	BR	-WEATHERED BEDROCK-										
				49.5												

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. HA08-10

HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA08-10
File No. 35611-000
Sheet No. 3 of 3

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
						Note: Roller cone refusal.										
						BOTTOM OF EXPLORATION										

Notes:
1. FV1 (19.3-20.0 ft) indicates in-situ field vane performed at depth interval shown, corrected peak/residual shear strengths are provided. See Table II for details.
2. WOR = Weight of Drill Rods; WOH = Weight of Hammer.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA08-11

Project Maine Health/United Way Development, Portland, Maine
Client Maine Medical Center
Contractor Maine Test Borings, Inc.

File No. 35611-000
Sheet No. 1 of 3
Start 28 July 2008
Finish 29 July 2008
Driller M. Porter
H&A Rep. O. Lawlor
Elevation 11 +/-
Datum Portland City Datum
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NW	S	--	Rig Make & Model: Mobile Drill B-50 Bombardier
Inside Diameter (in.)	3.0	1 3/8	--	Bit Type: Roller Bit
Hammer Weight (lb)	300	140	-	Drill Mud: None
Hammer Fall (in.)	30	30	-	Casing: NW drive to 55.0 ft.
				Hoist/Hammer: Winch Doughnut Hammer
				PID Make & Model:

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	3 10 13 10	S1 22	0.0 2.0		SM	Medium dense, brown, silty SAND with gravel (SM), mps 0.75 in., intermixed with 10% brick, cinders, and plastics fragments, no structure, no odor, moist -FILL-	5	5	25	30	20	15				
	16 34 29 29	S2 24	2.0 4.0		SM	Very dense, creosote colored, silty SAND with gravel (SM), mps 0.75 in., intermixed with 30% wood, brick, and cinders, no structure, no odor, moist	5	5	25	30	20	15				
	12 20 18 13	S3 24	4.0 6.0	4.1	SM	Very dense, creosote colored, silty SAND with gravel (SM), mps 0.75 in., intermixed with 30% wood, brick, and cinders, no structure, no odor, moist	5	5	25	30	20	15				
5					SW	Dense, light brown, well-graded, SAND (SW), mps 4.0 mm, no structure, no odor, moist			25	30	45					
	7 7 6 7	S4 16	6.0 8.0		SW	Medium dense, gray-brown, well-graded SAND (SW), mps 0.25 in., no structure, no odor, wet			30	35	35					
	7 11 18 11	S5 18	8.0 10.0		SW	Medium dense, gray, well-graded SAND (SW), mps 0.25 in., no structure, no odor, wet -FILL-			35	30	30					
10	2 4 6 2	S6 13	10.0 12.0		SW	Loose, gray, well-graded SAND (SW), mps 0.25 in., occasional silt pockets, material appears reworked, no structure, no odor, wet			30	30	30	10				
						Note: Organics observed in wash water from 12.0 to 12.5 ft.										
	2 3 3 4	S7 24	12.5 14.5	12.5	SM	Loose, gray, silty SAND (SM), mps 0.25 in., some shell fragments, no structure, no odor, wet -HARBOR BOTTOM DEPOSIT-			10	10	55	25				
				14.2	CL	Medium stiff, gray, silty lean CLAY (CL), mps 4.0 mm, no structure, no odor, wet with occasional brown mottles						100				
15	1 2 2 2	S8 24	15.0 17.0		CL	Soft, gray, lean CLAY (CL), mps 4.0 mm, frequent partings along fine sand seams, no odor, moist -GLACIOMARINE DEPOSIT-										
20																

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water

Sample ID
O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram
Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary
Overburden (ft) 55.0
Rock Cored (ft) 0
Samples 12S

Boring No. HA08-11

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None **Toughness**: L - Low M - Medium H - High **Plasticity**: N - Nonplastic L - Low M - Medium H - High **Dry Strength**: N - None L - Low M - Medium H - High V - Very High

*Note: Maximum particle size is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TB+CORE+WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA08-11
File No. 35611-000
Sheet No. 2 of 3

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20																
25	WOR WOH WOH WOH	S9 24	25.0 27.0		CL	Medium stiff, gray, silty lean CLAY (CL), mps 2.0 mm, no structure, no odor, moist FV1 (25.3-26.0 ft), Su = 720/170 psf -GLACIOMARINE DEPOSIT-						100	N	L	N	
30																
				34.0		Note: Drill action indicates probable gravel from 34.0 to 35.0 ft. Fine gravel observed in wash water.										
35	2 3 2 2	S10 19	35.0 37.0		SP-SM	Loose, gray, poorly-graded SAND with silt (SP-SM), trace gravel, mps 0.25 in., no structure, no odor, wet -GLACIOMARINE DEPOSIT-		5		5	80	10				
40	8 11 10 19	S11 4	40.0 42.0		SP-SM	Medium dense, gray, poorly-graded SAND with silt (SP-SM), trace gravel, mps 1-3/8 in., no structure, no odor, wet -GLACIOMARINE DEPOSIT-	5			5	80	10				
45																

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TB+CORE+WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA08-11
File No. 35611-000
Sheet No. 3 of 3

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
50	10 12 19 13	S12 9	50.0 52.0		SM	Dense, gray, silty SAND (SM), trace gravel, mps 0.5 in., bonded, no odor, wet		5	10	10	60	15				
						GLACIAL TILL-										
						Note: Drill action indicates probable bedrock at 52.5 ft.										
				52.5		-WEATHERED BEDROCK-										
55				55.0		Note: Casing refusal at 53.4 ft. Roller bit refusal at 55 ft.										
						BOTTOM OF EXPLORATION										

Notes:
1. FV1 (25.3-26.0 ft) indicates in-situ field vane performed at depth interval shown, corrected peak/residual shear strengths are provided. See Table II for details.
2. WOR = Weight of Drill Rods; WOH = Weight of Hammer.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. HA08-11

HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA08-12(OW)

Project	Maine Health/United Way Development, Portland, Maine
Client	Maine Medical Center
Contractor	Maine Test Borings, Inc.

File No.	35611-000
Sheet No.	1 of 1
Start	24 July 2008
Finish	24 July 2008
Driller	M. Porter
H&A Rep.	O. Lawlor
Elevation	11 +/-
Datum	Portland City Datum
Location	See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NW	S	--	Rig Make & Model: Mobile Drill B-50 Bombardier
Inside Diameter (in.)	3.0	1 3/8	--	Bit Type: Roller Bit Drill Mud: None
Hammer Weight (lb)	300	140	-	Casing: NW drive to 16.0 ft.
Hammer Fall (in.)	30	30	-	Hoist/Hammer: Winch Doughnut Hammer PID Make & Model:

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	4 10 7 7	S1 17	0.0 2.0		SM	Medium dense, gray, silty SAND with gravel (SM), trace cinders, mps 0.5 in., no structure, no odor, moist -FILL-	5	5	10	25	35	20				
	5 11 15 9	S2 21	2.0 4.0		SM	Medium dense, gray, silty SAND with gravel (SM), intermixed with 15% cinders, mps 0.5 in., no structure, no odor, moist	5	5	5	25	40	20				
	3 6 10 12	S3 18	4.0 6.0		SM	Medium dense, gray, silty SAND with gravel (SM), intermixed with 15% cinders, mps 0.5 in., no structure, no odor, moist	5	5	20	20	20	30				
5				5.0	SW	Note: Groundwater encountered at 5.4 ft. Medium dense, light brown, well-graded SAND (SW), mps 0.25 in., no structure, no odor, moist			30	40	30					
	7 11 12 11	S4 20	6.0 8.0		SW	Medium dense, light brown, well-graded SAND (SW), with occasional pockets of fine sand, mps 0.25 in., no structure, no odor, moist			30	40	30					
	7 7 15 15	S5 22	8.0 10.0		SW	Medium dense, gray, well-graded SAND (SW), mps 0.25 in., no structure, no odor, wet -FILL-			35	35	30					
10	4 4 3 2	S6 17	10.0 12.0		SW	Loose, gray, well-graded SAND (SW), mps 0.25 in., no structure, no odor, wet			35	35	30					
				11.6												
	3 4 4 3	NR	12.0 14.0		ML	Medium stiff, dark gray, SILT with sand (ML), mps 4.0 mm, no structure, no odor, moist Note: No Recovery. Probable shells in spoon tip, shells observed in wash water. -HARBOR BOTTOM DEPOSIT-				5	5	90				
				14.0												
15	1 3 3 3	S7 21	14.0 16.0		CL	Medium stiff, gray with occasional brown mottling, lean CLAY (CL), trace root fibers, mps 2.0 mm, no structure, no odor, moist -GLACIOMARINE DEPOSIT-						100				
				16.0		BOTTOM OF EXPLORATION										
						Note: Observation well installed in completed borehole. See Well Installation Report for details.										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water
7/24/08		0.25	14.0	16.0	7.62

Sample ID

O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (ft)	16.0
Rock Cored (ft)	0
Samples	7S

Boring No. HA08-12(OW)

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None **Plasticity**: N - Nonplastic L - Low M - Medium H - High
Toughness: L - Low M - Medium H - High **Dry Strength**: N - None L - Low M - Medium H - High V - Very High

***Note: Maximum particle size is determined by direct observation within the limitations of sampler size.**

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA08-13

Project Maine Health/United Way Development, Portland, Maine
Client Maine Medical Center
Contractor Maine Test Borings, Inc.

File No. 35611-000
Sheet No. 1 of 3
Start 29 July 2008
Finish 29 July 2008
Driller M. Porter
H&A Rep. O. Lawlor
Elevation 9 +/-
Datum Portland City Datum
Location See Plan

	Casing	Sampler	Barrel
Type	NW	S	NQ
Inside Diameter (in.)	3.0	1 3/8	2.0
Hammer Weight (lb)	300	140	-
Hammer Fall (in.)	30	30	-

Drilling Equipment and Procedures
Rig Make & Model: Mobile Drill B-50 Bombardier
Bit Type: Roller Bit
Drill Mud: None
Casing: NW drive to 46.6 ft.
Hoist/Hammer: Winch Doughnut Hammer
PID Make & Model:

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	3 7 11 11	S1 20	0.0 2.0		SP-SM	Medium dense, dark brown, poorly-graded SAND with silt (SP-SM), mps 1.0 in., intermixed with 10% cinders -FILL-			30	40	20	10				
	14 11 10 8	S2 6	2.0 4.0		SP	Medium dense, brown, poorly-graded SAND (SP), occasional silt pockets, mps 1-3/8 in., intermixed with 30% cinder and ash fragments			30	40	20	10				
5	2 2 2 1	S3 8	4.0 6.0		SP	Very loose, brown, poorly-graded SAND (SP), mps 1-3/8 in., intermixed with 30% cinder and ash fragments -FILL-		5	30	40	25					
	1 4 3 3	S4 6	6.0 8.0	6.0	GW	Loose, brown to red-brown, well-graded GRAVEL (GW), mps 1-3/8 in., intermixed with 10% wood and glass fragments, no structure, no odor, wet	30	35	10	10	10					
	5 3 1 1	S5 12	8.0 10.0		GP	Very loose, gray, brown, poorly-graded GRAVEL (GP), mps 1.0 in., trace glass and wood, no structure, no odor, wet -FILL-	30	40	10	10	5	5				
10	1 1 2 107	S6 15	10.0 12.0	10.0	ML	Very loose, gray, sandy SILT (ML), mps 0.25 in., trace wood and glass, shells, no structure, no odor, wet -FILL-			5	10	15	70				
				12.5		Note: Drilled through cobble from 12.0 to 12.4 ft.										
	2 3 3 4	S7 24	12.5 14.5		CL	Medium stiff, gray, lean CLAY (CL), mps 2.0 mm, no structure, no odor, moist, occasional brown mottles -GLACIOMARINE DEPOSIT-						100	N	M	M	
15																
20																

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water

Sample ID
O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram
Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary
Overburden (ft) 46.6
Rock Cored (ft) 9.4
Samples 10S, 2C

Boring No. HA08-13

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None **Plasticity**: N - Nonplastic L - Low M - Medium H - High
Toughness: L - Low M - Medium H - High **Dry Strength**: N - None L - Low M - Medium H - High V - Very High

***Note: Maximum particle size is determined by direct observation within the limitations of sampler size.**

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA08-13
File No. 35611-000
Sheet No. 2 of 3

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	WOR WOR WOH WOH	S8 24	20.0 22.0		CL	Medium stiff, silty lean CLAY (CL), mps 2.0 mm, no structure, no odor, moist FV1 (20.3-21.0 ft), Su = ~670/170 psf -GLACIOMARINE DEPOSIT-						100	N	L	L	
25						Note: Trace fine gravel observed in wash water. FV2 (25.3-26.0 ft), Su = 590/240 psf										
30	WOR WOR WOR WOH	S9 24	30.0 32.0		CL	Soft, gray, silty lean CLAY (CL), mps 2.0 mm, occasional partings along sand seams, no odor, moist FV3 (30.3-31.0 ft), Su = 280/250 psf -GLACIOMARINE DEPOSIT-					5	95	N	L	L	
35						FV4 (35.3-36.0 ft), Su = 720/220 psf Note: Sand observed in wash water and on drill rods.										
				39.6												
40	4 2 2 4	S10 4	40.0 42.0		SP	Very loose, gray, poorly-graded SAND (SP), mps 4.0 mm, no structure, no odor, wet -GLACIOMARINE DEPOSIT-				45	50	5				
45																
				46.6		Note: Casing refusal at 46.6 ft. Advanced roller bit to 46.6 ft. Begin NQ rock core at 46.6 ft. See Core Boring Report for details. Notes: 1. FV1 (20.3-21.0 ft) indicates in-situ field vane performed at depth interval shown, corrected peak/residual shear strengths are provided. See Table II for details. 2. WOR = Weight of Drill Rods; WOH = Weight of Hammer.										

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. HA08-13

HALEY & ALDRICH

CORE BORING REPORT

Boring No. HA08-13
File No. 35611-000
Sheet No. 3 of 3

Depth (ft)	Drilling Rate (min./ft)	Run No.	Run Depth (ft)	Recovery/RQD in.	Recovery/RQD %	Weathering	Elev./Depth (ft)	Visual Description and Remarks
								SEE TEST BORING REPORT FOR OVERBURDEN DETAILS
	2	C1	46.6	40	76			Moderately hard, moderate to highly weathered, dark green, aphanitic CHLORITE SCHIST. Foliation is extremely thin, high angle. Primary joint set is parallel to foliation, high angle, very close to undulating, fresh to discolored with pyrite, very tight to tight
	2		51.0	0	0			
	4							
	7							
50	3							
	2	C2	51.0	60	100		51.0	Moderately hard, slightly weathered to fresh, dark green, aphanitic CHLORITE SCHIST. Foliation is extremely thin, high angle to vertical. Primary joint set is parallel to foliation, high angle to vertical, close to very close, smooth to polished, stepped to undulating, fresh to discolored with pyrite, very tight to tight. Occasional extremely thin to thin, high angle to vertical quartz veins
			56.0	42	70			
	2							
	2							
	2							
55	2							
							56.0	BOTTOM OF EXPLORATION
60								
65								
70								
75								

2008 Test Pit Logs for
Proposed MaineHealth/United Way Development
(see Reference 5)

HALEY & ALDRICH

TEST PIT LOG

Test Pit No. TP-201

Project	Maine Health / United Way Development	**File No.**	35611-000
Location	Somerset & Chestnut Streets, Portland, Maine	**H&A Rep**	B. Steinert
Client	Maine Medical Center	**Date**	20 October 2008
Contractor	Environmental Projects, Inc.	**Weather**	Sunny, 50°
Equipment Used	Komatsu PC 35 MR		

Ground El.: 11 +/-
El. Datum: Portland City Datum
Location: See Plan
Groundwater depths/entry rates (in./min.): 4.6 gal/min

Depth (ft)	Sample ID	Stratum Change Elev./ Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (color, natural grain size and artificial component percentage estimates, manual test properties, structure, odors, moisture, other descriptions and observations GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Tests Dilatancy	Toughness	Plasticity	Strength
0			SW- SM	Gray-brown, well-graded SAND with silt and gravel (SW-SM), mps 8 in., no structure, no odor, dry, bricks, concrete, wood throughout, railroad ties and steel tracks in north side of test pit at ~1.5 ft -FILL-	10	15	15	35	15	10				
2		2.0	SP	Black, poorly graded SAND with silt (SP), mps 4.75 mm, no structure, no odor, dry, some coal/ash fragments, trace organics -FILL-			5	50	30	15				
4		3.5	SP	Tan to yellow-brown, poorly graded SAND (SP), mps 4.75 mm, no structure, no odor, moist to wet with depth -FILL-			10	60	20	10				
6														
8		8.0		-BOTTOM OF EXCAVATION-										

Obstructions: None. Miscellaneous debris (bricks, wood, granite pavers), rail timbers, tracks present throughout.

Remarks: Water observed seeping into test pit excavation at approximately 8 ft below existing ground surface.

Field Tests

Dilatancy	R - Rapid S - Slow N - None
Toughness	L - Low M - Medium H - High
Plasticity	N - Nonplastic L - Low M - Medium H - High
Dry Strength	N - None L - Low M - Medium H - High V - Very High

Standing Water in Completed Pit

at depth 6.5 ft
measured after 31 min. hours elapsed

Boulders

Diameter (in.)	Number	Approx. Vol. (cu.ft)
12 to 24	NA	= NA
over 24	NA	= NA

Test Pit Dimensions (ft)

Pit Length x Width (ft) 6 x 3
Pit Depth (ft) 8.0

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

HA TESTPIT-07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TP07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611 TP201-203.GPJ 4 Dec 08

HALEY & ALDRICH

TEST PIT LOG

Test Pit No. TP-202

Project	Maine Health / United Way Development	**File No.**	35611-000
Location	Somerset & Chestnut Streets, Portland, Maine	**H&A Rep**	B. Steinert
Client	Maine Medical Center	**Date**	20 October 2008
Contractor	Environmental Projects, Inc.	**Weather**	Sunny, 50°
Equipment Used	Komatsu PC 35 MR		

Ground El.: 12 +/-
El. Datum: Portland City Datum
Location: See Plan
Groundwater depths/entry rates (in./min.): 3.7 gal/min

Depth (ft)	Sample ID	Stratum Change Elev./ Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (color, natural grain size and artificial component percentage estimates, manual test properties, structure, odors, moisture, other descriptions and observations GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Tests Dilatancy	Toughness	Plasticity	Strength
0			SC	Dark brown, clayey SAND (SC), mps 2 in., no structure, slight creosote-like odor, moist, brick and porcelain fragments present, trace organics (rootlets) -FILL-		5	10	30	40	15				
2														
		3.5	SP- SM	Black, poorly graded SAND with silt (SP-SM), mps 2 mm, no structure, organic odor, moist, rootlets throughout, probable former topsoil				10	70	20				
4		4.0	SW	Light brown, well-graded SAND with gravel (SW), mps 3 in., no structure, no odor, moist	5	15	30	25	15	10				
		4.5	SM	Black, silty SAND with gravel (SM), mps 2 in., no structure, no odor, moist to wet, trace organics, brick bragments, clinker-like material -FILL-		15	15	35	15	20				
6														
		6.5	SP	Tan to yellow-brown, poorly graded SAND (SP), mps 4.75 mm, no structure, no odor, moist to wet -FILL-			10	60	15	5				
8														
10														
		11.0		-BOTTOM OF EXCAVATION-										

Obstructions: NA

Remarks: Water observed seeping into test pit excavation at approximately 11 ft below existing ground surface.

Field Tests

Dilatancy	R - Rapid S - Slow N - None
Toughness	L - Low M - Medium H - High
Plasticity	N - Nonplastic L - Low M - Medium H - High
Dry Strength	N - None L - Low M - Medium H - High V - Very High

Standing Water in Completed Pit

at depth 8.0 ft
measured after 18 min. hours elapsed

Boulders

Diameter (in.)	Number	Approx. Vol. (cu.ft)
12 to 24	NA	= NA
over 24	NA	= NA

Test Pit Dimensions (ft)

Pit Length x Width (ft) 6 x 3
Pit Depth (ft) 11.0

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

HA TESTPIT-07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TP07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611 TP201-203.GPJ 4 Dec 08

HALEY & ALDRICH

TEST PIT LOG

Test Pit No. TP-203

Project	Maine Health / United Way Development	**File No.**	35611-000
Location	Somerset & Chestnut Streets, Portland, Maine	**H&A Rep**	B. Steinert
Client	Maine Medical Center	**Date**	20 October 2008
Contractor	Environmental Projects, Inc.	**Weather**	Sunny, 50°
Equipment Used	Komatsu PC 35 MR		

Ground El.: 9 +/-
El. Datum: Portland City Datum
Location: See Plan
Groundwater depths/entry rates (in./min.): 4.6 gal/min

Depth (ft)	Sample ID	Stratum Change Elev./ Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (color, natural grain size and artificial component percentage estimates, manual test properties, structure, odors, moisture, other descriptions and observations GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Tests Dilatancy	Toughness	Plasticity	Strength
0			SW- SM	Gray-brown, well-graded SAND with silt (SW-SM), mps 0.75 in., no structure, no odor, moist, trace brick fragments -FILL-		5	25	45	15	10				
2		2.0	SP	Tan to yellow-brown, poorly graded SAND (SP), mps 4.75 mm, no structure, no odor, moist			10	60	20	10				
		2.7	SW	Dark brown to black, well-graded SAND with gravel (SW), mps 3 in., no structure, no odor, moist to wet	15	10	25	35	10	5				
4		3.5	SW- SM	Brown, well-graded SAND with silt (SW-SM), mps 4 in., no structure, no odor, moist, cinders, ash, bricks, concrete fragments present -FILL- Note: Gray, lean CLAY with bricks and little fine to medium sand observed in western third of test pit.			35	20	30	15				
6														
8														
10														
		11.0		-BOTTOM OF EXCAVATION-										

Obstructions: NA

Remarks: Water observed seeping into test pit excavation at approximately 11 ft below existing ground surface.

Field Tests

Dilatancy	R - Rapid S - Slow N - None
Toughness	L - Low M - Medium H - High
Plasticity	N - Nonplastic L - Low M - Medium H - High
Dry Strength	N - None L - Low M - Medium H - High V - Very High

Standing Water In Completed Pit

at depth 10.5 ft
measured after 17 min. hours elapsed

Boulders

Diameter (in.)	Number	Approx. Vol. (cu.ft)
12 to 24	NA	= NA
over 24	NA	= NA

Test Pit Dimensions (ft)

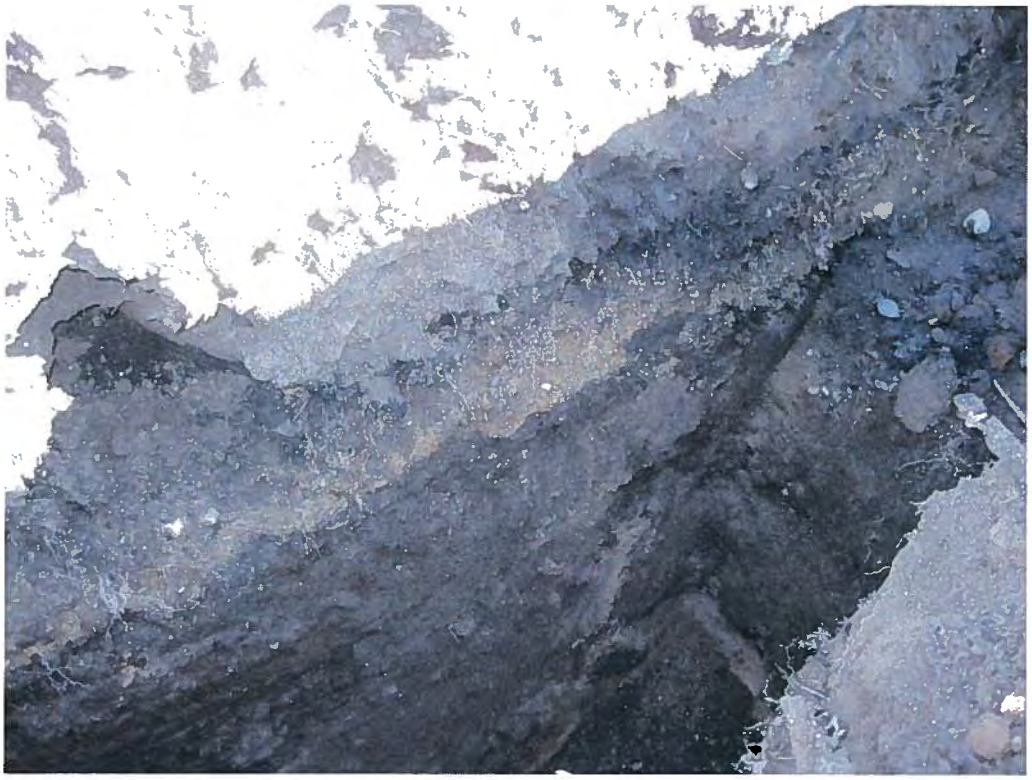
Pit Length x Width (ft) 7 x 3
Pit Depth (ft) 11.0

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

HA TESTPIT-07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TP07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611 TP201-203.GPJ 4 Dec 08

Photograph 1. In-situ fill soils encountered in TP-201, looking northwest (10/20/08).

Photograph 2. In-situ fill soils and groundwater encountered in TP-201, looking northwest (10/20/08).



Photograph 3. In-situ fill soils encountered in TP-202, looking north (10/20/08).

Photograph 4. In-situ fill soils and groundwater encountered in TP-202, looking southeast (10/20/08).

Halev & Aldrich, Inc.

2013 Test Boring Logs for
Proposed Somerset Street Improvements
(see Reference 6)

HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA13-1

Project	Proposed Improvements to Somerset Street, Portland, Maine
Client	City of Portland
Contractor	Northern Test Boring

File No.	39537-000
Sheet No.	1 of 1
Start	January 31, 2013
Finish	January 31, 2013
Driller	M. Nadeau
H&A Rep.	M. Snow
Elevation	7.5 (approx.)
Datum	Portland City Datum
Location	See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	--	Rig Make & Model: Diedrich D50
Inside Diameter (in.)	2.5	1.375	--	Bit Type: Cutting Head Drill Mud: None
Hammer Weight (lb)	--	140	-	Casing: HSA Spun to 18.0 ft
Hammer Fall (in.)	--	30	-	Hoist/Hammer: / Automatic Hammer PID Make & Model: N/A

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				0.2	SP	-BITUMINOUS CONCRETE-										
	9 10 12 5	S1 12	0.5 2.5			Medium dense, brown, poorly-graded SAND with gravel (SP), plastic and brick fragments, mps 2 in., no odor, dry to moist	15	20	5	30	25	5				
	2 3 8 4	S2 6	2.5 4.5		SM	Medium dense, brown to gray with occasional rust-brown, silty SAND (SM) with coal fragments, mps 1.5 in., no odor, moist -FILL-		5	10	40	30	15				
5	2 4 4 3	S3 10	4.5 6.5		SM	Loose, brown to gray-brown, silty SAND with gravel (SM), trace ash, coal, mps 2.0 in., no odor, wet	5	25	20	15	20	15				
	2 4 4 5	S4 16	6.5 8.5		SM	Loose, gray-brown, silty SAND with gravel (SM), mps 1.5 in., slight petroleum-like odor, wet		25		30	30	15				
	1 1 1	S5 12	8.5 10.0	8.5	ML	Very soft, dark brown-gray, sandy SILT with organics (ML), trace shells, mps 0.42 mm, no odor, wet					30	70				
10	1 1 1 1	S6 22	10.0 12.0		ML	Very soft, dark brown-gray, sandy SILT (ML) with organics, shells, mps 0.42 mm, no odor, wet					30	70				
	1 1 2 2	S7 24	12.0 14.0		ML	Soft, dark brown-gray, SILT to sandy SILT (ML) with organics, shells, mps 0.42 mm, no odor, wet -HARBOR BOTTOM DEPOSIT-					30	70				
15	1 2 2 3	S8 24	14.0 16.0	14.0	CL	Soft, gray, lean CLAY (CL), trace organics (black streaks), shells, mps 0.075 mm						100				
	1 1 1 1	S9 24	16.0 18.0		CL	Very soft, gray, lean CLAY (CL), mps 0.075 mm, no odor, wet -MARINE DEPOSIT-						100				
	1 1 WOH 1	S10 24	18.0 20.0		CL	Very soft, gray, lean CLAY (CL), black organics, mps 0.075 mm, no odor, wet						100				
20				20.0		Bottom of Exploration 20.0 ft - No Refusal										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water
1/31/13	09:30	0	Caved	2.0	--

Sample ID

O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample
C - Rock Core Sample

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (ft)	20.0
Rock Cored (ft)	0.0
Samples	10S

Boring No. HA13-1

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None **Toughness**: L - Low M - Medium H - High **Plasticity**: N - Nonplastic L - Low M - Medium H - High **Dry Strength**: N - None L - Low M - Medium H - High V - Very High

***Note: Maximum particle size is determined by direct observation within the limitations of sampler size.**

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TB+CORE+WELL-07-1.GDT G:\PROJECTS\39537 - SOMERSET ST\FIELD EXPLORATIONS\2013_0131_TEST BORINGS HA13-1_6.GPJ Apr 24, 13

TEST BORING REPORT

HALEY & ALDRICH

Boring No. HA13-2

Project	Proposed Improvements to Somerset Street, Portland, Maine
Client	City of Portland
Contractor	Northern Test Boring

File No.	39537-000
Sheet No.	1 of 1
Start	January 31, 2013
Finish	January 31, 2013
Driller	M. Nadeau
H&A Rep.	M. Snow
Elevation	8.0 (approx.)
Datum	Portland City Datum
Location	See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	--	Rig Make & Model: Diedrich D50
Inside Diameter (in.)	2.5	1.375	--	Bit Type: Cutting Head Drill Mud: None
Hammer Weight (lb)	--	140	-	Casing: HSA Spun to 18.0 ft
Hammer Fall (in.)	--	30	-	Hoist/Hammer: / Automatic Hammer PID Make & Model: N/A

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				0.3		-BITUMINOUS CONCRETE-										
	21 60 51 30	S1 18	0.4 2.4	0.2	SW/GW	Very dense (frozen), brown, well-graded SAND and GRAVEL (SW/GW), mps 2.0 mm, no odor, moist	20	20	20	20	20					
	6 8 8 11	S2 12	2.4 4.4		SM	Medium dense, brown and gray, silty SAND with gravel (SM), brick and coal fragments, mps 1.0 in., no odor, wet -FILL-	10	25	15	20	15					
5	5 8 6 7	S3 12	4.4 6.4		GM	Medium dense, orange, BRICK with silty gravel (GM), mps 2.0 mm, no odor, wet		10	5	35	35	15				
	3 4 5 7	S4 3	6.4 8.4	6.4	SM	WOOD with gray silty sand (SM), brick pieces, mps 0.5 in., no odor, wet -FILL-					30	70				
	1 1 1	S5 19	8.4 10.0	8.4	ML	Very soft, dark gray-brown, sandy SILT (ML) with organics, shells, mps 0.42 mm, no odor, wet -HARBOR BOTTOM DEPOSIT-						100				
10	1 WOH 2 2	S6 22	10.0 12.0	11.0	CL	Soft, brown-gray, mottled lean CLAY (CL), mps 0.075 mm, no odor, wet						100				
	2 2 2 2	S7 24	12.0 14.0		CL	Soft, brown-gray, mottled lean CLAY (CL), mps 0.075 mm, no odor, wet -MARINE DEPOSIT-						100				
15	1 1 1 2	S8 24	14.0 16.0		CL	Soft, brown-gray, mottled lean CLAY (CL), mps 0.075 mm, no odor, wet						100				
				15.5	CL	Note: Auger plug stuck at 16.0 ft. Advance to 18.0 ft. -MARINE DEPOSIT-										
	WOH WOH 1 1	S9 24	18.0 20.0		CL	Very soft, gray, lean CLAY (CL), black organics, mps 0.075 mm, no odor, wet						100				
20				20.0		Bottom of Exploration 20.0 ft - No Refusal										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water
1/31/13	10:40	0	Caved	1.9	--

Sample ID

O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample
C - Rock Core Sample

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (ft)	20.0
Rock Cored (ft)	0.0
Samples	9S

Boring No. HA13-2

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None **Toughness**: L - Low M - Medium H - High **Plasticity**: N - Nonplastic L - Low M - Medium H - High **Dry Strength**: N - None L - Low M - Medium H - High V - Very High

***Note: Maximum particle size is determined by direct observation within the limitations of sampler size.**

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TB+CORE+WELL-07-1.GDT G:\PROJECTS\39537 - SOMERSET ST\FIELD EXPLORATIONS\2013_0131_TEST BORINGS HA13-1_6.GPJ Apr 24, 13

TEST BORING REPORT

HALEY & ALDRICH

Boring No. HA13-3

Project	Proposed Improvements to Somerset Street, Portland, Maine
Client	City of Portland
Contractor	Northern Test Boring

File No.	39537-000
Sheet No.	1 of 1
Start	January 31, 2013
Finish	January 31, 2013
Driller	M. Nadeau
H&A Rep.	M. Snow
Elevation	7.5 (approx.)
Datum	Portland City Datum
Location	See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	--	Rig Make & Model: Diedrich D50
Inside Diameter (in.)	2.5	1.375	--	Bit Type: Cutting Head Drill Mud: None
Hammer Weight (lb)	--	140	-	Casing: HSA Spun to 18.0 ft
Hammer Fall (in.)	--	30	-	Hoist/Hammer: / Automatic Hammer PID Make & Model: N/A

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0						-BITUMINOUS CONCRETE-										
	25 49 36 15	S1 20	0.4 2.4	0.3	SW	Very dense (frozen), brown, well-graded SAND with gravel (SW), mps 1.0 in., no odor, moist	5	15	25	25	25	5				
	4 4 3 3	S2 18	2.4 4.4		SM	Loose, brown, silty SAND (SM), brick fragments, mps 1.0 in., no odor, moist to wet -FILL-	5	10	10	30	30	15				
5	2 2 3 3	S3 8	4.4 6.4		ML	Medium stiff, dark gray-brown SILT with sand (ML), with wood pieces, organics, mps 1.0 in., no odor, wet		10		15	15	60				
	2 1 2 1	S4 10	6.4 8.4	8.0	ML	Medium stiff, dark gray-brown, SILT with sand (ML), with wood pieces, organics, mps 1.0 in., no odor, wet		10		15	15	60				
	1 1 WOH	S5 18	8.4 10.0		ML	Soft, dark gray-brown, sandy SILT (ML) with organics, trace shells, mps 2.0 mm, no odor, wet -HARBOR BOTTOM DEPOSIT-					30	70				
10	1 WOH 2 2	S6 24	10.0 12.0	11.0	ML	Soft, dark gray-brown, sandy SILT (ML) with organics, trace shells, mps 2.0 mm, no odor, wet					30	70				
	1 1 2 1	S7 24	12.0 14.0	13.5	CL	Soft, brown-gray, mottled lean CLAY (CL) with frequent gray fine sand layers -MARINE DEPOSIT-					15	85				
15	1 WOH 1 1	S8 24	14.0 16.0		CL	Very soft, dark gray, lean CLAY (CL) with frequent gray fine sand layers, mps 0.42 mm, no odor, wet -MARINE DEPOSIT-					15	85				
	WOH 1 1 1	S9 24	16.0 18.0		CL	Very soft, dark gray, lean CLAY (CL) with occasional fine sand layers, black organics, trace shells, mps 0.42 mm, no odor					10	90				
	1 WOH 1 WOH	S10 24	18.0 20.0		CL	Very soft, dark gray, lean CLAY (CL) with black organics, trace shells, mps 0.075 mm, no odor, wet						100				
20				20.0		Bottom of Exploration 20.0 ft - No Refusal										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water
1/31/13	11:45	0	Caved	1.5	--

Sample ID

O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample
C - Rock Core Sample

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (ft)	20.0
Rock Cored (ft)	0.0
Samples	10S

Boring No. HA13-3

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None **Toughness**: L - Low M - Medium H - High **Plasticity**: N - Nonplastic L - Low M - Medium H - High **Dry Strength**: N - None L - Low M - Medium H - High V - Very High

***Note: Maximum particle size is determined by direct observation within the limitations of sampler size.**

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TB+CORE+WELL-07-1.GDT G:\PROJECTS\39537 - SOMERSET ST\FIELD EXPLORATIONS\2013_0131_TEST BORINGS HA13-1_6.GPJ Apr 24, 13

HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA13-4

Project	Proposed Improvements to Somerset Street, Portland, Maine
Client	City of Portland
Contractor	Northern Test Boring

File No.	39537-000
Sheet No.	1 of 1
Start	January 31, 2013
Finish	January 31, 2013
Driller	M. Nadeau
H&A Rep.	M. Snow
Elevation	9.0 (approx.)
Datum	Portland City Datum
Location	See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	--	Rig Make & Model: Diedrich D50
Inside Diameter (in.)	2.5	1.375	--	Bit Type: Cutting Head Drill Mud: None
Hammer Weight (lb)	--	140	-	Casing: HSA Spun to 18.0 ft
Hammer Fall (in.)	--	30	-	Hoist/Hammer: / Automatic Hammer PID Make & Model: N/A

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				0.3	SW	-BITUMINOUS CONCRETE-										
	31 66 68 26	S1 20	0.5 2.5			Very dense (frozen), brown, well-graded SAND with gravel (SW), mps 1.0 in., no odor, moist	5	10	15	35	30	5				
	11 10 9 6	S2 12	2.5 4.5		SW-SM	Medium dense, brown, well-graded SAND with gravel (SW-SM), mps 2.0 in., no odor, moist	10	20	20	20	20	10				
						-FILL-										
5	5 5 3 3	S3 16	4.5 6.5		SM	Loose, dark brown to brown, silty SAND with gravel (SM), mps 2.0 in., no odor, moist	15	15	10	25	20	15				
				6.0												
	4 5 3 5	S4 5	6.5 8.5		ML/SM	Loose, dark brown, sandy SILT (ML) to silty SAND (SM), mps 1.0 in., no odor, wet, 50% of sample is brick	5 5				40 55	55 40				
						-FILL-										
	2 3 2 2	S5 18	8.5 10.5		SM	Loose, dark brown, silty SAND with gravel (SM), mps 2.0 in., no odor, wet	10	5	10	30	30	15				
10				9.5	ML	Medium stiff, dark gray-brown, SILT (ML) with organics, trace shells, wood pieces, mps 0.25 in., no odor, wet					15	85				
	1 1 1 1	S6 16	10.5 12.0		ML	Very soft, dark brown, sandy SILT to SILT (ML) with organics, shells, mps 0.42 mm, no odor, wet					30 10	70 90				
	1 1 1 2	S7 24	12.0 14.0		ML	Very soft, dark gray-brown, SILT (ML) with organics, shells, mps 0.42 mm, no odor, wet					5	90				
						-HARBOR BOTTOM DEPOSIT-										
				13.3	CL	Very soft, brown-gray, mottled lean CLAY (CL), mps 0.075 mm, no odor, wet						100				
						-MARINE DEPOSIT-										
15	1 2 1 2	S8 24	14.0 16.0													
				15.5	CL	Soft, dark gray, lean CLAY (CL) with black organics, mps 0.075 mm, no odor, wet						100				
	WOH WOH WOH WOH	S9 24	16.0 18.0		CL	Very soft, dark gray, lean CLAY (CL) with black organics, mps 0.075 mm, no odor, wet						100				
						-MARINE DEPOSIT-										
	WOH WOH WOH 1	S10 24	18.0 20.0		CL	Very soft, dark gray, lean CLAY (CL) with black organics, mps 0.075 mm, no odor, wet						100				
20				20.0		Bottom of Exploration 20.0 ft - No Refusal										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water
1/31/13	12:55	0	Caved	3.5	--

Sample ID

O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample
C - Rock Core Sample

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (ft)	20.0
Rock Cored (ft)	0.0
Samples	10S

Boring No. HA13-4

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None **Toughness**: L - Low M - Medium H - High **Plasticity**: N - Nonplastic L - Low M - Medium H - High **Dry Strength**: N - None L - Low M - Medium H - High V - Very High

***Note: Maximum particle size is determined by direct observation within the limitations of sampler size.**

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TB+CORE+WELL-07-1.GDT G:\PROJECTS\39537 - SOMERSET ST\FIELD EXPLORATIONS\2013_0131_TEST BORINGS HA13-1_6.GPJ Apr 24, 13

HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA13-5

Project	Proposed Improvements to Somerset Street, Portland, Maine
Client	City of Portland
Contractor	Northern Test Boring

File No.	39537-000
Sheet No.	1 of 1
Start	January 31, 2013
Finish	January 31, 2013
Driller	M. Nadeau
H&A Rep.	M. Snow
Elevation	10.0 (approx.)
Datum	Portland City Datum
Location	See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	--	Rig Make & Model: Diedrich D50
Inside Diameter (in.)	2.5	1.375	--	Bit Type: Cutting Head Drill Mud: None
Hammer Weight (lb)	--	140	-	Casing: HSA Spun to 18.0 ft
Hammer Fall (in.)	--	30	-	Hoist/Hammer: / Automatic Hammer PID Make & Model: N/A

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				0.2	SP	-BITUMINOUS CONCRETE-	10	15	10	25	25	5				
	24 29 39 30	S1 20	0.5 2.5			Very dense, brown, well-graded SAND with gravel (SW), mps 1.0 in., no odor, dry										
	10 10 7 3	S2 12	2.5 4.5		SM	Medium dense, silty SAND with gravel (SM), with brick fragments, mps 1.0 in., no odor, moist -FILL-	10	10	20	25	20	15				
5	3 3 3 14	S3 12	4.5 6.5		SW-SM	Loose, brown to dark brown, well-graded SAND with gravel (SW-SM) with wood (2 in.), decomposed brick, ash, mps 1.0 in., no odor, moist to wet	10	10	20	30	20	10				
	3 3 5 5	S4 14	6.5 8.5		SW	Lose, dark brown-black, silty SAND with gravel (SW), decomposed brick, mps 0.5 in., no odor, wet		20	25	25	20	15				
	4 3 2 3	S5 18	8.5 10.5		SW	Loose, dark brown-black, silty SAND with gravel (SW), decomposed brick, mps 1.0 in., no odor, wet		20	25	25	20	15				
10				9.5	ML	Medium stiff, dark brown-black, SILT (ML) with organics, shell fragments, mps 0.075 mm, no odor, wet						100				
	2 1 2	S6 16	10.5 12.0		ML	Soft, black, sandy SILT (ML) with organics, shell fragments, mps 0.42 mm, no odor, wet -HARBOR BOTTOM DEPOSIT-					30	70				
	1 1 2 4	S7 24	12.0 14.0		ML	Soft, black to dark gray, sandy SILT (ML) with organics, shells, mps 0.42 mm, no odor, wet										
	2 2 2 2	S8 22	14.0 16.0	14.0	CL	Soft, gray, lean CLAY (CL), mps 0.075 mm, no odor, wet						100				
15	WOH 1 1 1	S9 24	16.0 18.0		CL	Very soft, gray, lean CLAY (CL), mps 0.42 mm, no odor, wet -MARINE DEPOSIT-					5	95				
	WOH WOH 1 1	S10 24	18.0 20.0		CL	Very soft, gray, lean CLAY (CL), mps 0.075 mm, no odor, wet						100				
20				20.0		Bottom of Exploration 20.0 ft - No Refusal										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water
1/31/13	14:00	0	Caved	2.0	--

Sample ID

O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample
C - Rock Core Sample

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (ft)	20.0
Rock Cored (ft)	0.0
Samples	10S

Boring No. HA13-5

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None **Toughness**: L - Low M - Medium H - High **Plasticity**: N - Nonplastic L - Low M - Medium H - High **Dry Strength**: N - None L - Low M - Medium H - High V - Very High

***Note: Maximum particle size is determined by direct observation within the limitations of sampler size.**

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TB+CORE+WELL-07-1.GDT G:\PROJECTS\39537 - SOMERSET ST\FIELD EXPLORATIONS\2013_0131_TEST BORINGS HA13-1_6.GPJ Apr 24, 13

HALEY & ALDRICH

TEST BORING REPORT

Boring No. HA13-6

Project	Proposed Improvements to Somerset Street, Portland, Maine
Client	City of Portland
Contractor	Northern Test Boring

File No.	39537-000
Sheet No.	1 of 1
Start	January 31, 2013
Finish	January 31, 2013
Driller	M. Nadeau
H&A Rep.	M. Snow
Elevation	10.0 (approx.)
Datum	Portland City Datum
Location	See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	--	Rig Make & Model: Diedrich D50
Inside Diameter (in.)	2.5	1.375	--	Bit Type: Cutting Head Drill Mud: None
Hammer Weight (lb)	--	140	-	Casing: HSA Spun to 18.0 ft
Hammer Fall (in.)	--	30	-	Hoist/Hammer: / Automatic Hammer PID Make & Model: N/A

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				0.2	SW	-BITUMINOUS CONCRETE-	10	10	20	30	25	5				
	16 30 48 21	S1 18	0.5 2.5			Very dense (frozen), brown, well-graded SAND with gravel (SW), mps 1.0 in., no odor, dry										
	12 15 15 12	S2 18	2.5 4.5		SW-SM	Dense, brown, well-graded SAND with gravel (SW-SM), mps 2.0 in., no odor, frozen to moist	10	15	20	25	20	10				
						-FILL-										
5	6 21 16 5	S3 14	4.5 6.5		SM	Dense, brown-gray, silty SAND (SM), mps 0.5 in., no odor, moist		5	10	35	35	15				15
	1 1 2 3	S4 12	6.5 8.5		SM	Loose, dark gray-brown, silty SAND with gravel (SM), mps 1.0 in., no odor, wet	5	15	5	30	30	15				
	1 2 2	S5 10	8.5 10.0	8.5	ML	Soft, dark gray-black, sandy SILT (ML) with organics, shells, mps 0.42 mm, slight organic odor, wet					30	70				
10	1 2 2 3	S6 14	10.0 12.0		ML	Soft, dark gray-black, sandy SILT (ML) with organics, shells, mps 1.5 in. (1 gravel piece), slight organic odor, wet					30	70				
						-HARBOR BOTTOM DEPOSIT-										
	2 1 2 3	S7 18	12.0 14.0		ML	Soft, dark gray-brown, SILT (ML), with shells, mps 0.42 mm, no odor, wet					30	70				
				13.5												
15	5 4 5 7	S8 14	14.0 16.0		CL	Medium stiff, brown-gray, mottled lean CLAY (CL), mps 0.075 mm, no odor, wet						100				
						-MARINE DEPOSIT-										
	1 2 1 2	S9 23	16.0 18.0	16.5	CL	Soft, dark gray, lean CLAY (CL), mps 0.075 mm, no odor, wet						100				
						-MARINE DEPOSIT-										
	WOH 1 1 1	S10 24	18.0 20.0		CL	Very soft, dark gray, lean CLAY (CL), mps 0.075 mm, no odor, wet						100				
20				20.0		Bottom of Exploration 20.0 ft - No Refusal										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water
1/31/13	15:15	0	Caved	1.25	--

Sample ID

O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample
C - Rock Core Sample

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (ft)	20.0
Rock Cored (ft)	0.0
Samples	10S

Boring No. HA13-6

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None **Toughness**: L - Low M - Medium H - High **Plasticity**: N - Nonplastic L - Low M - Medium H - High **Dry Strength**: N - None L - Low M - Medium H - High V - Very High

***Note: Maximum particle size is determined by direct observation within the limitations of sampler size.**

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TB+CORE+WELL-07-1.GDT G:\PROJECTS\39537 - SOMERSET ST\FIELD EXPLORATIONS\2013_0131_TEST BORINGS HA13-1_6.GPJ Apr 24, 13

APPENDIX B

Observation Well Installation and Groundwater Monitoring Reports

2006 Observation Well Installation and Groundwater Monitoring Reports for Proposed Bayside Parking Garage (see Reference 2)

HALEY & ALDRICH

OBSERVATION WELL INSTALLATION REPORT

Well No.

Boring No. HA06-2(OW)

PROJECT	Proposed Bayside Parking Garage & Master Planning	H&A FILE NO.	33538-000
LOCATION	Portland, Maine	PROJECT MGR.	W. Chadbourne
CLIENT	Scott Simons Architects	FIELD REP.	B. Steinert
CONTRACTOR	Maine Test Borings, Inc.	DATE INSTALLED	8/17/2006
DRILLER	P. Hatch	WATER LEVEL	

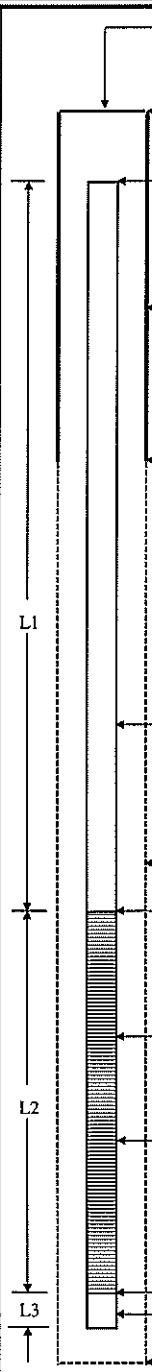
Ground El. 9.0 +/- ft
El. Datum Portland City

Location See Plan

☑ Guard Pipe
☐ Roadway Box

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
0.0	0.0
FILL	BENTONITE CHIPS
	3.0
11.3	
HARBOR BOTTOM DEPOSIT	
15.0	
MARINE CLAY	FILTER SAND
34.5	
MARINE SAND	15.0 BENTONITE CHIPS
	18.0
40.0	
WEATHERED BEDROCK	FILTER SAND
47.2	47.2

(Bottom of Exploration)
(Numbers refer to depth from ground surface in feet)



(Not to Scale)

Type of protective cover/lock	Steel Lock / Cap	
Height of top of guard pipe above ground surface.	3.6	ft
Height of top of riser pipe above ground surface	3.4	ft
Type of protective casing:	Steel Guardpipe	
Length	5.2	ft
Inside Diameter	3.25	in
Depth of bottom of guard pipe/roadway box	1.6	ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	-	-
Bentonite Seal	0.0	3.0

Type of riser pipe:	Schedule 40 PVC	
Inside diameter of riser pipe	2.0	in
Type of backfill around riser	Filter Sand / Bentonite Chips	
Diameter of borehole	4.0	in
Depth to top of well screen	5.0	ft
Type of screen	Slotted Schedule 40 PVC	
Screen gauge or size of openings	0.010	in
Diameter of screen	2.0	in
Type of backfill around screen	Filter Sand	
Depth of bottom of well screen	15.0	ft
Bottom of Silt trap	15.0	ft
Depth of bottom of borehole	47.2	ft

8.4 ft	+	10 ft	+	0 ft	=	18.4 ft
Riser Pay Length (L1)		Length of screen (L2)		Length of silt trap (L3)		Pay length

COMMENTS:

Form 2007

HALEY & ALDRICH

GROUNDWATER MONITORING REPORT

OW/PZ NUMBER
HAO6-2(OW)

PROJECT	Proposed Bayside Parking Garage & Master Planning	H&A FILE NO.	33538-000
LOCATION	Portland, Maine	PROJECT MGR.	W. Chadbourne
CLIENT	Scott Simons Architects	FIELD REP.	B. Steinert
CONTRACTOR	Maine Test Borings, Inc.	DATE	8/17/2006
ELEVATION SUBTRAHEND	9.0 (Portland City Datum)		

Date	Time	Elapsed Time (days)	Depth of Water from Ground Surface	Elevation of Water	Remarks	Read By
8/17/2006	12:30	0	-0.8	9.8	bailed out after reading (bailer)	bcs
8/17/2006	12:30	0	3.8	5.2		bcs
8/21/2006	14:10	4	2.7	6.3	bailed out after reading (wale pump)	bcs
8/21/2006	14:25	4	2.6	6.4		bcs
8/22/2006	16:45	5	2.7	6.3		bcs
8/23/2006	9:45	6	2.8	6.2		bcs
8/25/2006	9:20	8	2.9	6.1		bcs
8/28/2006	6:30	11	2.8	6.2		bcs
8/30/2006	7:00	13	2.7	6.3		bcs
8/31/2006	7:35	14	2.8	6.2		bcs
9/7/2006	7:40	21	2.7	6.3		bcs
9/8/2006	16:30	22	2.9	6.2	clear water surface in bailer	mls
9/18/2006	7:20	32	3.1	5.9		bcs

2008 Observation Well Installation and
Groundwater Monitoring Reports for
Proposed MaineHealth/United Way Development
(see Reference 4)

HALEY & ALDRICH

OBSERVATION WELL INSTALLATION REPORT

Well No. HA08-5(OW)

Boring No. HA08-5(OW)

PROJECT	Maine Health/United Way Development	H&A FILE NO.	35611-000
LOCATION	Portland, Maine	PROJECT MGR.	W. Chadbourne
CLIENT	Maine Medical Center	FIELD REP.	O. Lawlor
CONTRACTOR	Maine Test Borings, Inc.	DATE INSTALLED	8/1/2008
DRILLER	M. Porter	WATER LEVEL	-

Ground El. 9.0 +/- ft
El. Datum Portland City

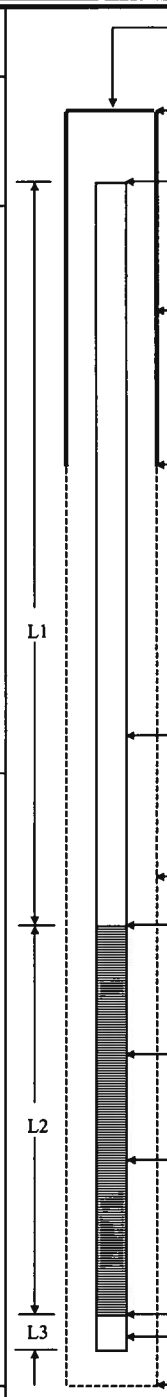
Location See Plan

☑ Guard Pipe
☐ Roadway Box

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
FILL	BENTONITE (0 – 3.0)
	FILTER SAND (3.0 – 15.0)
HARBOR BOTTOM DEPOSIT (10.5 – 13.0)	
GLACIOMARINE DEPOSITS	DRILL CUTTINGS (15.0 – 65.5)
GLACIAL TILL (53.0 – 63.8)	
BEDROCK	

65.5 (Bottom of Exploration)

(Numbers refer to depth from ground surface in feet)



(Not to Scale)

Type of protective cover/lock	Locked Cover	
Height of top of guard pipe above ground surface	3.0	ft
Height of top of riser pipe above ground surface	2.8	ft
Type of protective casing:	Steel Guard Pipe	
Length	5.0	ft
Inside Diameter	3.0	in
Depth of bottom of guard pipe/roadway box		ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	-	-
Bentonite Seal	0.0	3.0

Type of riser pipe:	Schedule 40 PVC	
Inside diameter of riser pipe	2.0	in
Type of backfill around riser	Filter Sand/Bentonite	
Diameter of borehole	3.0	in
Depth to top of well screen	5.0	ft
Type of screen	Mach. Slotted Sch. 40 PVC	
Screen gauge or size of openings	0.010	in
Diameter of screen	2.0	in
Type of backfill around screen	Filter Sand	
Depth of bottom of well screen	15.0	ft
Bottom of Silt trap	-	ft
Depth of bottom of borehole	65.5	ft

Riser Pay Length (L1)	+	Length of screen (L2)	+	Length of silt trap (L3)	=	Pay length
7.8 ft	+	10 ft	+	0 ft	=	17.8 ft

COMMENTS:

Form 2007

HALEY & ALDRICH

GROUNDWATER MONITORING REPORT

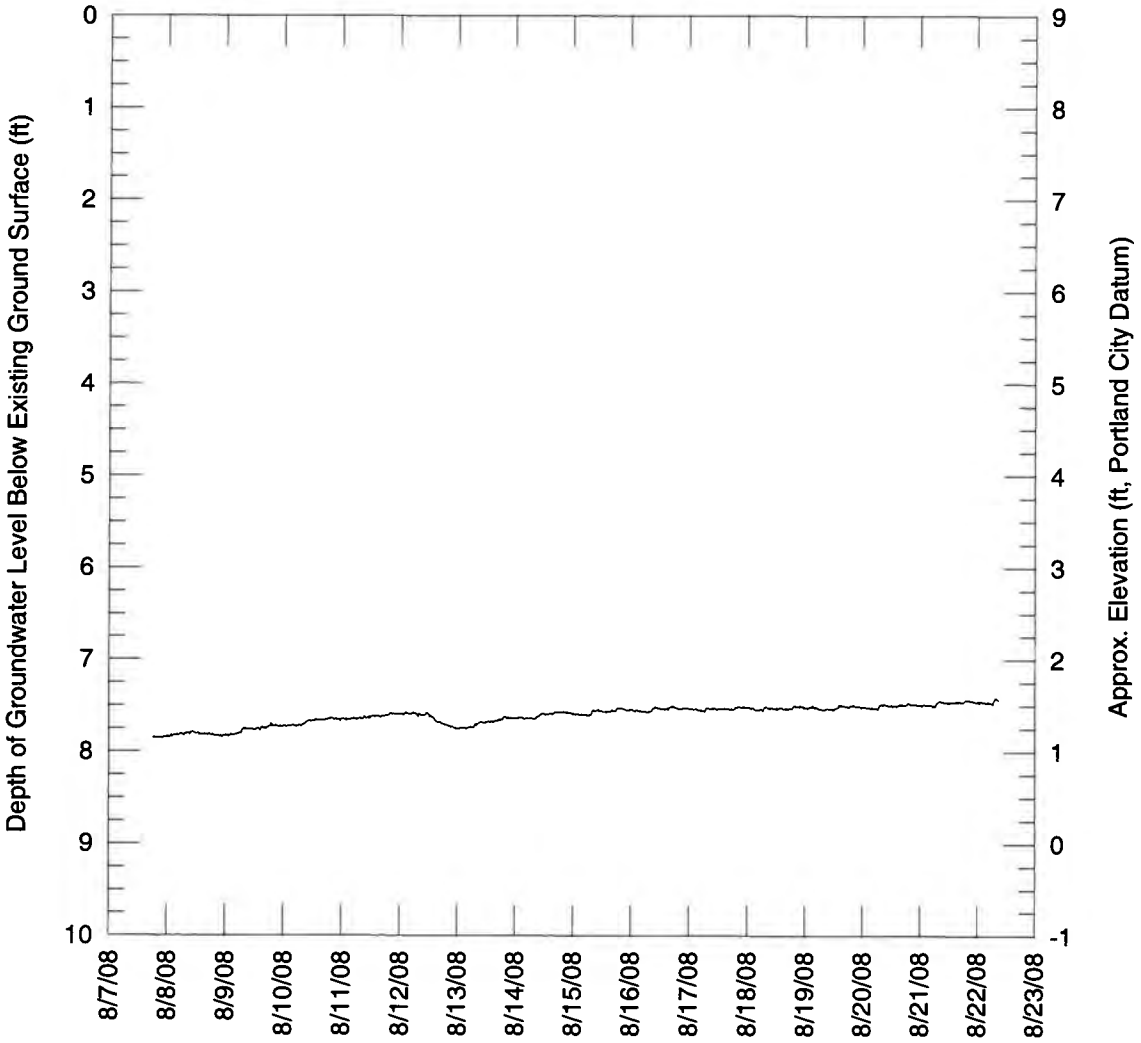
OW/PZ NUMBER
HA08-5(OW)

PROJECT	Maine Health/United Way Development	H&A FILE NO.	35611-000
LOCATION	Portland, Maine	PROJECT MGR.	W. Chadbourne
CLIENT	Maine Medical Center	FIELD REP.	O. Lawlor
CONTRACTOR	Maine Test Borings, Inc.	DATE	8/4/2008
ELEVATION SUBTRAHEND	9.0 (Approximate)		

Date	Time	Elapsed Time (days)	Depth of Water from Top of Riser Pipe	Elevation of Water	Remarks	Read By
8/4/2008	1200	0	7.3	4.5	GW level prior to well development	OEL
8/4/2008	1240	0	9.5	2.3	GW level after well development	OEL
8/7/2008	1805	3	7.9	3.9	GW level prior to level logger install.	CLH
8/22/2008	1000	18	8.3	3.5	GW level after level logger removal	CLH
10/20/2008	1200	77	10.9	0.9	GW level during TP-203 excavation	BCS
11/17/2008	1131	105	10.8	1.0		ECB
12/1/2008	1353	119	10.7	1.1		BCS

Results of Groundwater Monitoring
Observation Well HA08-5(OW)

MaineHealth/UnitedWay Development
Somerset and Chestnut Streets
Portland, Maine
Haley & Aldrich File No. 35611-000



HALEY & ALDRICH

OBSERVATION WELL INSTALLATION REPORT

Well No. HA08-7(OW)

Boring No. HA08-7(OW)

PROJECT	Maine Health/United Way Development	H&A FILE NO.	35611-000
LOCATION	Portland, Maine	PROJECT MGR.	W. Chadbourne
CLIENT	Maine Medical Center	FIELD REP.	O. Lawlor
CONTRACTOR	Maine Test Borings, Inc.	DATE INSTALLED	7/31/2008
DRILLER	M. Porter	WATER LEVEL	-

Ground El. 12.0 +/- ft
El. Datum Portland City

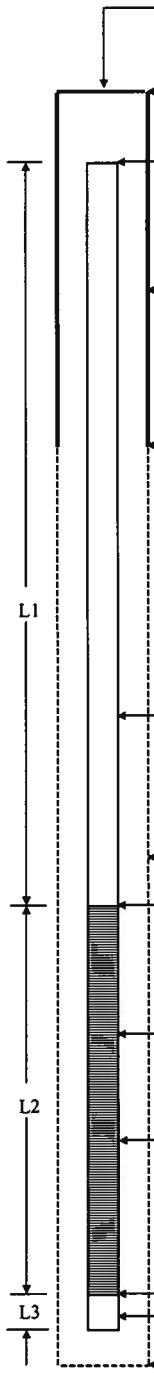
Location See Plan

☑ Guard Pipe
☐ Roadway Box

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
FILL (0 – 12.5)	BENTONITE (0 – 3.0)
GLACIOMARINE DEPOSIT (12.5 – 38.0)	FILTER SAND (3.0 – 15.0)
GLACIAL TILL (38.0 – 60.1)	DRILL CUTTINGS (15.0 – 72.0)
BEDROCK (60.1 – 72.0)	

72.0 (Bottom of Exploration)

(Numbers refer to depth from ground surface in feet)



(Not to Scale)

Type of protective cover/lock	Locked Cover	
Height of top of guard pipe box above ground surface	3.0	ft
Height of top of riser pipe above ground surface	2.8	ft
Type of protective casing:	Steel Guard Pipe	
Length	5.0	ft
Inside Diameter	3.0	in
Depth of bottom of guard pipe/roadway box	2.0	ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	-	-
Bentonite Seal	0.0	3.0

Type of riser pipe:	Schedule 40 PVC	
Inside diameter of riser pipe	2.0	in
Type of backfill around riser	Filter Sand/Bentonite	
Diameter of borehole	3.0	in
Depth to top of well screen	5.0	ft
Type of screen	Mach. Slotted Sch. 40 PVC	
Screen gauge or size of openings	0.010	in
Diameter of screen	2.0	in
Type of backfill around screen	Filter Sand	
Depth of bottom of well screen	15.0	ft
Bottom of Silt trap	15.0	ft
Depth of bottom of borehole	72.0	ft

Riser Pay Length (L1)	+	Length of screen (L2)	+	Length of silt trap (L3)	=	Pay length
7.8 ft	+	10 ft	+	0 ft	=	17.8 ft

COMMENTS:

Form 2007

HALEY & ALDRICH

GROUNDWATER MONITORING REPORT

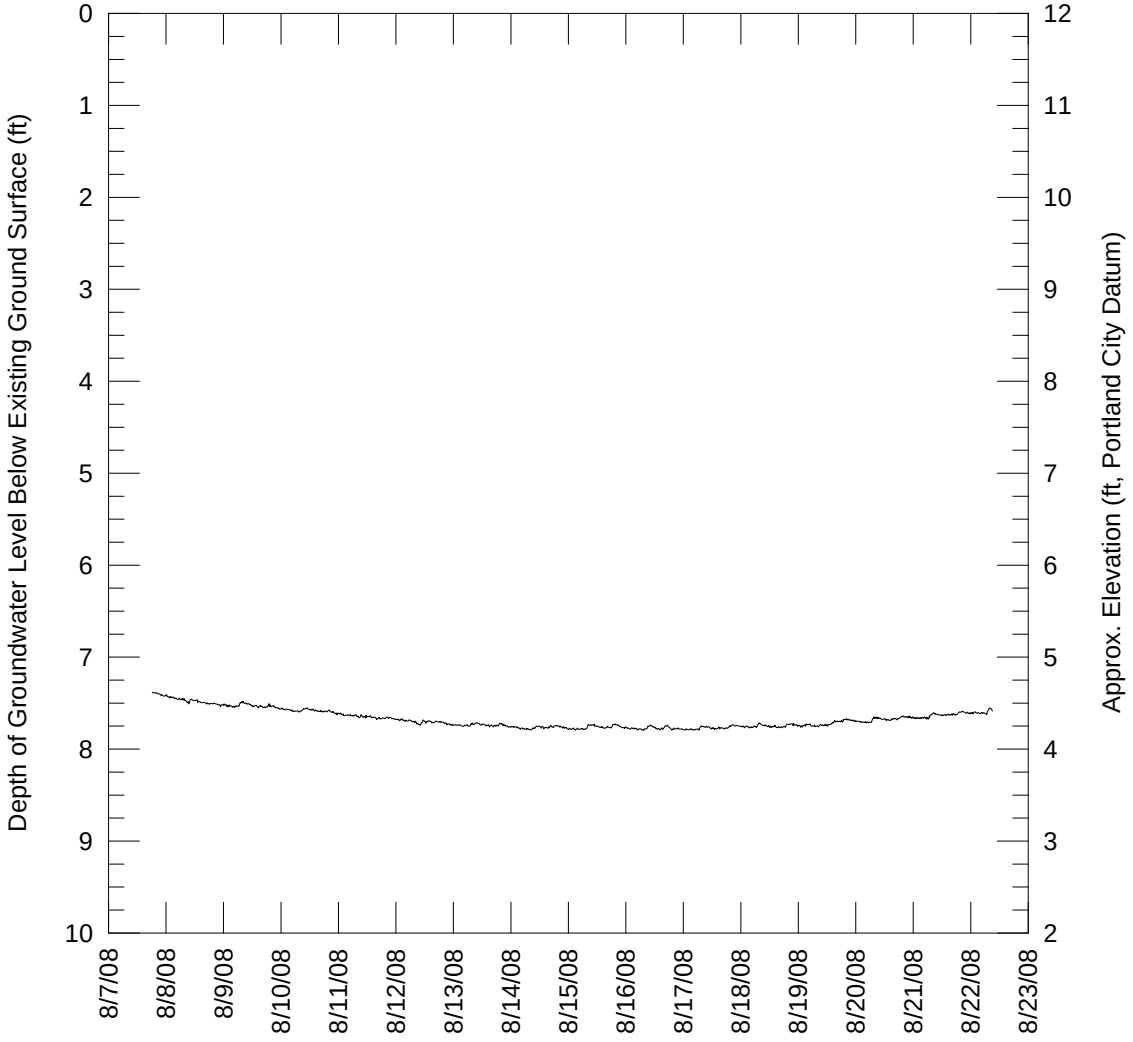
OW/PZ NUMBER
HA08-7(OW)

PROJECT	Maine Health/United Way Development	H&A FILE NO.	35611-000
LOCATION	Portland, Maine	PROJECT MGR.	W. Chadbourne
CLIENT	Maine Medical Center	FIELD REP.	O. Lawlor
CONTRACTOR	Maine Test Borings, Inc.	DATE	8/4/2008
ELEVATION SUBTRAHEND	12.0 (Approximate)		

Date	Time	Elapsed Time (days)	Depth of Water from Top of Riser Pipe	Elevation of Water	Remarks	Read By
8/4/2008	1115	0	10.3	4.5	GW level prior to well development	OEL
8/4/2008	1140	0	12.3	2.5	GW level after well development	OEL
8/7/2008	1800	3	10.2	4.6	GW level prior to level logger install.	CLH
8/22/2008	950	18	10.1	4.7	GW level after level logger removal	CLH
10/20/2008	1200	77	10.2	4.6	GW level during TP-202 excavation	BCS
11/17/2008	1134	105	10.2	4.6		ECB
12/1/2008	1354	119	9.8	5.0		BCS

Results of Groundwater Monitoring
Observation Well HA08-7(OW)

MaineHealth/UnitedWay Development
Somerset and Chestnut Streets
Portland, Maine
Haley & Aldrich File No. 35611-000



HALEY & ALDRICH

OBSERVATION WELL INSTALLATION REPORT

Well No. HA08-12(OW)

Boring No. HA08-12(OW)

PROJECT	Maine Health/United Way Development	H&A FILE NO.	35611-000
LOCATION	Portland, Maine	PROJECT MGR.	W. Chadbourne
CLIENT	Maine Medical Center	FIELD REP.	O. Lawlor
CONTRACTOR	Maine Test Borings, Inc.	DATE INSTALLED	7/24/2008
DRILLER	M. Porter	WATER LEVEL	-

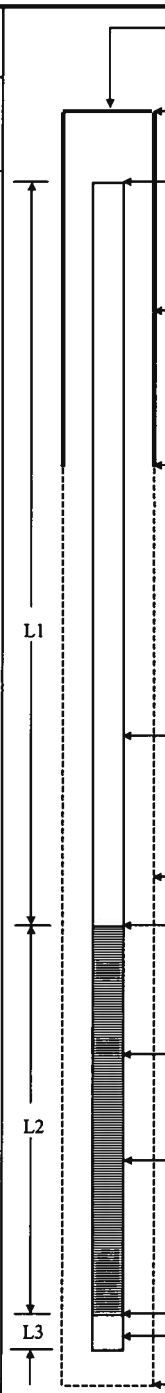
Ground El. 11.0 +/- ft
El. Datum Portland City

Location See Plan

☑ Guard Pipe
☐ Roadway Box

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
	BENTONITE
3.0	
FILL	
11.6	
HARBOR BOTTOM DEPOSIT	FILTER SAND
14.0	
GLACIOMARINE DEPOSIT	
16.0	16.0

(Bottom of Exploration)
(Numbers refer to depth from ground surface in feet)



(Not to Scale)

Type of protective cover/lock	Locked Cover	
Height of top of guard pipe above ground surface	3.0	ft
Height of top of riser pipe above ground surface	2.75	ft
Type of protective casing:	Steel Guard Pipe	
Length	5.0	ft
Inside Diameter	3.0	in
Depth of bottom of guard pipe/roadway box	2.0	ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	-	-
Bentonite Seal	0.0	3.0

Type of riser pipe:	Schedule 40 PVC	
Inside diameter of riser pipe	2.0	in
Type of backfill around riser	Filter Sand/Bentonite	
Diameter of borehole	3.0	in
Depth to top of well screen	4.0	ft
Type of screen	Mach. Slotted Sch. 40 PVC	
Screen gauge or size of openings	0.010	in
Diameter of screen	2.0	in
Type of backfill around screen	Filter Sand	
Depth of bottom of well screen	14.0	ft
Bottom of Silt trap	14.0	ft
Depth of bottom of borehole	16.0	ft

6.75 ft (Riser Pay Length (L1)) + 10 ft (Length of screen (L2)) + 0 ft (Length of silt trap (L3)) = 16.75 ft (Pay length)

COMMENTS:

Form 2007

HALEY & ALDRICH

GROUNDWATER MONITORING REPORT

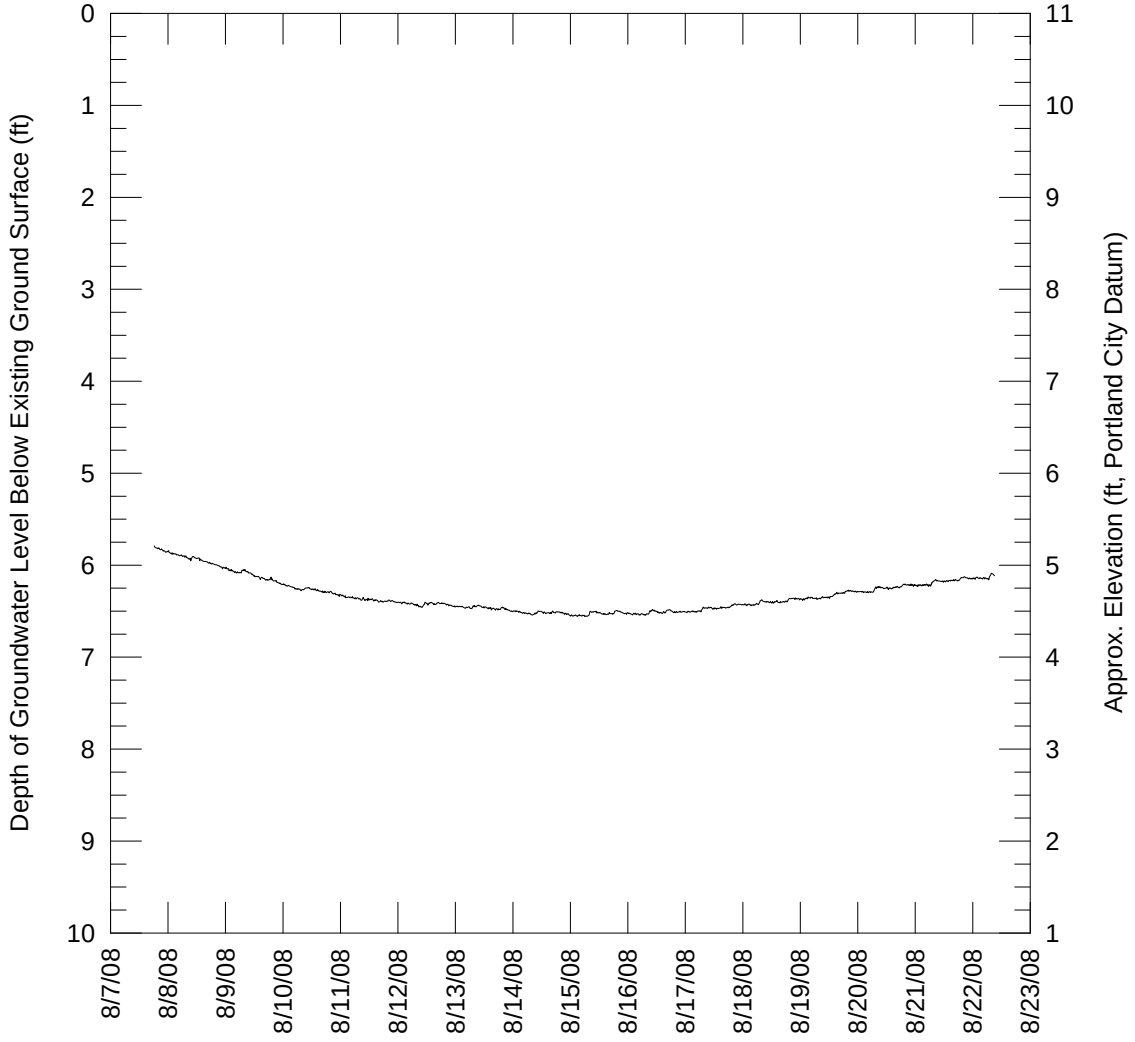
OW/PZ NUMBER
HA08-12(OW)

PROJECT	Maine Health/United Way Development	H&A FILE NO.	35611-000
LOCATION	Portland, Maine	PROJECT MGR.	W. Chadbourne
CLIENT	Maine Medical Center	FIELD REP.	O. Lawlor
CONTRACTOR	Maine Test Borings, Inc.	DATE	8/4/2008
ELEVATION SUBTRAHEND	11.0 (Approximate)		

Date	Time	Elapsed Time (days)	Depth of Water from Top of Riser Pipe	Elevation of Water	Remarks	Read By
8/4/2008	1030	0	8.9	4.9	GW level prior to well development	OEL
8/4/2008	1100	0	9.0	4.8	GW level after well development	OEL
8/7/2008	1745	3	8.6	5.2	GW level prior to level logger install.	CLH
8/22/2008	945	18	8.4	5.4	GW level after level logger removal	CLH
10/20/2008	1200	77	8.7	5.1	GW level during TP-201 excavation	BCS
11/17/2008	1137	105	8.5	5.3		ECB
12/1/2008	1358	119	8.0	5.8		BCS

Results of Groundwater Monitoring
Observation Well HA08-12(OW)

MaineHealth/UnitedWay Development
Somerset and Chestnut Streets
Portland, Maine
Haley & Aldrich File No. 35611-000



APPENDIX C

2008 Soil Screening Headspace Reports for Proposed MaineHealth/United Way Development (see Reference 4)

HALEY & ALDRICH

HEADSPACE SCREENING REPORT

PROJECT	MaineHealth / UnitedWay Development	**H&A FILE NO.**	35611-000
LOCATION	Portland, Maine	**PROJECT MGR.**	W. Chadbourne
CLIENT	Maine Medical Center	**FIELD REP**	O. Lawlor
INSTRUMENT	Thermo 580B	**DATE SAMPLED**	7/23/2008 - 7/24/2008
DATE CALIBRATED (1)	7/28/2008	**LAMP (eV)**	10.6
DATE SCREENED	7/28/2008		
AMBIENT TEMPERATURE	RT	**CALIBRATED BY**	DAD
SCREENING LOC.	H&A Portland Lab		

Exploration	Sample Number	Depth (ft)	Sample Description	Sample Reading (ppm)(2)	Back-Ground Reading (ppm)(2)	Remarks	GC(3)	Containers			
								Drill Jar			
HA08-3	S1	1.0-3.0	well graded gravel with sand	0.9	0.0			X			
HA08-3	S2	3.0-5.0	silty sand with ash & cinders	1.2	0.0			X			
HA08-3	S3	5.0-7.0	cinders, ash, brick, and coal	2.8	0.0			X			
HA08-3	S4	7.0-9.0	poorly-graded gravel, cinders	1.5	0.0			X			
HA08-3	S5	10.0-12.0	silty sand, cinders and ash	14.9	0.0			X			
HA08-3	S6	12.0-14.0	silt with sand, shells, organics	0.0	0.0			X			
HA08-3	S7	14.0-16.0	silt with sand, shells, H2S odor	0.0	0.0			X			
HA08-6	S1	0.0-2.0	silty sand	0.0	0.0			X			
HA08-6	S2	2.0-4.0	silty sand, brick, cinders, wood	0.0	0.0	Tinfoil cover torn		X			
HA08-6	S3	4.0-6.0	silty to well graded sand	0.0	0.0			X			
HA08-6	S4	6.0-8.0	poorly graded sand	0.0	0.0			X			
HA08-6	S5	8.0-10.0	silty sand with gravel	0.0	0.0			X			
HA08-6	S6	10.0-12.0	silty sand w/ gravel, brick, shell	0.0	0.0			X			
HA08-6	S7	12.0-14.0	sandy silt, shell fragments	0.0	0.0			X			
HA08-9	S1	0.0-2.0	silty gravel with sand, org odor	0.0	0.0			X			
HA08-9	S2	2.0-4.0	cinders and ash to silty sand	0.0	0.0			X			
HA08-9	S3	4.0-6.0	silty sand	0.0	0.0			X			
HA08-9	S4	6.0-8.0	silty sand with gravel	0.0	0.0			X			
HA08-9	S5	8.0-10.0	silty sand with gravel	0.0	0.0			X			
HA08-9	S6	10.0-12.0	silty sand, wood and glass	0.0	0.0			X			
HA08-9	S7	12.0-14.0	silt, wood fragments, org odor	0.0	0.0	Poor sample recovery		X			
HA08-9	S8	14.0-16.0	lean clay	0.0	0.0			X			
HA08-12	S1	0.0-2.0	silty sand with gravel, cinders	0.0	0.0			X			
HA08-12	S2	2.0-4.0	silty sand with gravel, cinders	0.0	0.0			X			
HA08-12	S3	4.0-6.0	silty sand - poorly graded sand	0.0	0.0			X			

1. Instrument calibrated to the manufacturer standard.
2. ppm represents concentration of detectable volatile gaseous compounds in parts per million of air.
3. Sample assigned for gas chromatograph screening.

Sampled and relinquished by:	Received by:	Relinquished by:	Received by:
Sign: NA	**Sign:** NA	**Sign:** NA	**Sign:** NA
Print: NA	**Print:** NA	**Print:** NA	**Print:** NA
Firm: NA	**Firm:** NA	**Firm:** NA	**Firm:** NA
Date: NA **Time:** NA	**Date:** NA **Time:** NA	**Date:** NA **Time:** NA	**Date:** NA **Time:** NA

HALEY & ALDRICH

HEADSPACE SCREENING REPORT

PROJECT	MaineHealth / UnitedWay Development	**H&A FILE NO.**	35611-000
LOCATION	Portland, Maine	**PROJECT MGR.**	W. Chadbourne
CLIENT	Maine Medical Center	**FIELD REP**	O. Lawlor
INSTRUMENT	Thermo 580B	**DATE SAMPLED**	7/23/2008 - 7/24/2008
DATE CALIBRATED (1)	7/28/2008	**LAMP (eV)**	10.6
DATE SCREENED	7/28/2008		
AMBIENT TEMPERATURE	RT	**CALIBRATED BY**	DAD
SCREENING LOC.	H&A Portland Lab		

Exploration	Sample Number	Depth (ft)	Sample Description	Sample Reading (ppm)(2)	Back-Ground Reading (ppm)(2)	Remarks	GC(3)	Containers			
								Drill Jar			
HA08-12	S4	6.0-8.0	poorly graded sand	0.0	0.0			X			
HA08-12	S5	8.0-10.0	well graded sand	0.0	0.0			X			
HA08-12	S6	10.0-12.0	well graded sand	0.0	0.0			X			
HA08-12	S7	12.0-14.0	no recovery, shells in wash	0.0	0.0			X			

1. Instrument calibrated to the manufacturer standard.
2. ppm represents concentration of detectable volatile gaseous compounds in parts per million of air.
3. Sample assigned for gas chromatograph screening.

Sampled and relinquished by:	Received by:	Relinquished by:	Received by:
Sign: NA	**Sign:** NA	**Sign:** NA	**Sign:** NA
Print: NA	**Print:** NA	**Print:** NA	**Print:** NA
Firm: NA	**Firm:** NA	**Firm:** NA	**Firm:** NA
Date: NA **Time:** NA	**Date:** NA **Time:** NA	**Date:** NA **Time:** NA	**Date:** NA **Time:** NA

HALEY & ALDRICH

HEADSPACE SCREENING REPORT

PROJECT	MaineHealth / UnitedWay Development	**H&A FILE NO.**	35611-000
LOCATION	Portland, Maine	**PROJECT MGR.**	W. Chadbourne
CLIENT	Maine Medical Center	**FIELD REP**	O. Lawlor
INSTRUMENT	Thermo 580B	**DATE SAMPLED**	7/28/2008 - 7/29/2008
DATE CALIBRATED (1)	7/30/2008 **LAMP (eV)** 10.6	**DATE SCREENED**	7/30/2008
AMBIENT TEMPERATURE	RT **CALIBRATED BY** DAD	**SCREENING LOC.**	H&A Portland Lab

Exploration	Sample Number	Depth (ft)	Sample Description	Sample Reading (ppm)(2)	Back-Ground Reading (ppm)(2)	Remarks	GC(3)	Containers			
								Drill Jar			
HA08-11	S1	0.0-2.0	sand w/ brick, cinders & plastic	0.0	0.0			X			
HA08-11	S2	2.0-4.0	sand w/ brick, cinders & plastic	5.0	0.0			X			
HA08-11	S3	4.0-6.0	poorly graded sand	12.3	0.0			X			
HA08-11	S4	6.0-8.0	well graded sand	0.0	0.0			X			
HA08-11	S5	8.0-10.0	well graded sand	0.0	0.0			X			
HA08-11	S6	10.0-12.0	well graded sand	0.0	0.0			X			
HA08-13	S1	0.0-2.0	poorly graded sand, cinders	0.0	0.0			X			
HA08-13	S2	2.0-4.0	poorly graded sand,cinder&ash	0.0	0.0			X			
HA08-13	S3	4.0-6.0	poorly graded sand,cinder&ash	0.0	0.0			X			
HA08-13	S4	6.0-8.0	well graded gravel, wood&glass	0.0	0.0			X			
HA08-13	S5	8.0-10.0	gravel, wood and glass	0.0	0.0			X			
HA08-13	S6	10.0-12.0	sandy silt, wood, glass & shells	0.0	0.0			X			

1. Instrument calibrated to the manufacturer standard.
2. ppm represents concentration of detectable volatile gaseous compounds in parts per million of air.
3. Sample assigned for gas chromatograph screening.

Sampled and relinquished by:	Received by:	Relinquished by:	Received by:
Sign: NA	**Sign:** NA	**Sign:** NA	**Sign:** NA
Print: NA	**Print:** NA	**Print:** NA	**Print:** NA
Firm: NA	**Firm:** NA	**Firm:** NA	**Firm:** NA
Date: NA **Time:** NA	**Date:** NA **Time:** NA	**Date:** NA **Time:** NA	**Date:** NA **Time:** NA

HALEY & ALDRICH

HEADSPACE SCREENING REPORT

PROJECT	MaineHealth / UnitedWay Development	**H&A FILE NO.**	35611-000
LOCATION	Portland, Maine	**PROJECT MGR.**	W. Chadbourne
CLIENT	Maine Medical Center	**FIELD REP**	O. Lawlor
INSTRUMENT	Thermo 580B	**DATE SAMPLED**	7/30/2008 - 8/4/2008
DATE CALIBRATED (1)	7/30/2008 **LAMP (eV)** 10.6	**DATE SCREENED**	8/6/2008
AMBIENT TEMPERATURE	RT **CALIBRATED BY** DAD	**SCREENING LOC.**	H&A Portland Lab

Exploration	Sample Number	Depth (ft)	Sample Description	Sample Reading (ppm)(2)	Back-Ground Reading (ppm)(2)	Remarks	GC(3)	Containers			
								Drill Jar			
HA08-4	S1	0.5-2.5	sand with silt, cinder and ash	69.0	0.0			X			
HA08-4	S2	2.5-4.5	sand with silt, cinder and ash	55.0	0.0			X			
HA08-4	S3	5.0-7.0	silty sand, cinder and ash	0.0	0.0			X			
HA08-4	S4	7.0-9.0	poorly graded sand with wood	40.0	0.0			X			
HA08-4	S5	9.0-11.0	sand w/ silt, wood, glass, shells	0.0	0.0			X			
HA08-5	S1	0.0-2.0	poorly graded sand, cinder, ash	123.0	0.0			X			
HA08-5	S2	2.0-4.0	poorly graded sand, cinder, ash	114.0	0.0			X			
HA08-5	S3	4.0-6.0	poorly graded sand, cinder, ash	6.0	0.0			X			
HA08-5	S4	6.0-8.0	poorly graded sand, cinder, ash	4.2	0.0			X			
HA08-5	S5	8.0-10.0	silty sand, shell and brick	2.5	0.0			X			
HA08-7	S1	0.0-2.0	sand with silt, ash, brick, wood	9.4	0.0			X			
HA08-7	S2	2.0-4.0	sand with silt, ash, brick	4.2	0.0			X			
HA08-7	S3	4.0-6.0	silty sand, cinder and ash	0.8	0.0			X			
HA08-7	S4	6.0-8.0	silty sand, cinder and ash	0.8	0.0			X			
HA08-7	S5	8.0-10.0	well graded sand	0.0	0.0			X			
HA08-7	S6	10.0-12.0	silty sand, trace clay	0.0	0.0			X			

1. Instrument calibrated to the manufacturer standard.
2. ppm represents concentration of detectable volatile gaseous compounds in parts per million of air.
3. Sample assigned for gas chromatograph screening.

Sampled and relinquished by:	Received by:	Relinquished by:	Received by:
Sign: NA	**Sign:** NA	**Sign:** NA	**Sign:** NA
Print: NA	**Print:** NA	**Print:** NA	**Print:** NA
Firm: NA	**Firm:** NA	**Firm:** NA	**Firm:** NA
Date: NA **Time:** NA	**Date:** NA **Time:** NA	**Date:** NA **Time:** NA	**Date:** NA **Time:** NA

HALEY & ALDRICH

HEADSPACE SCREENING REPORT

PROJECT	MaineHealth / UnitedWay Development	**H&A FILE NO.**	35611-000
LOCATION	Portland, Maine	**PROJECT MGR.**	W. Chadbourne
CLIENT	Maine Medical Center	**FIELD REP**	O. Lawlor
INSTRUMENT	Thermo 580B	**DATE SAMPLED**	8/6/2008 - 8/13/2008
DATE CALIBRATED (1)		**LAMP (eV)** 10.6	**DATE SCREENED** 8/13/2008
AMBIENT TEMPERATURE	RT	**CALIBRATED BY** DAD	**SCREENING LOC.** H&A Portland Lab

Exploration	Sample Number	Depth (ft)	Sample Description	Sample Reading (ppm)(2)	Back-Ground Reading (ppm)(2)	Remarks	GC(3)	Containers: Drill Jar			
HA08-8	S1	0.0-2.0	poorly graded sand with gravel	0.0	0.0			X			
HA08-8	S2	2.0-4.0	silty sand with gravel	0.0	0.0			X			
HA08-8	S3	5.0-7.0	silty sand with gravel	5.9	0.0			X			
HA08-8	S4	7.0-9.0	silty sand with gravel	14.5	0.0			X			
HA08-1	S1	1.0-3.0	well graded gravel, concrete	0.0	0.0			X			
HA08-1	S2	3.0-5.0	silty sand, concrete, ash	0.0	0.0			X			
HA08-1	S3	5.0-7.0	silty sand	0.0	0.0	Tinfoil cover torn		X			
HA08-1	S4	7.0-9.0	silty sand	0.0	0.0			X			
HA08-1	S5	10.0-12.0	sandy organic soil, with shells	0.0	0.0			X			
HA08-1	S6	12.0-14.0	sandy organic soil, with shells	0.0	0.0	Tinfoil cover torn		X			
HA08-10	S1	0.0-2.0	sandy silt, brick	0.0	0.0			X			
HA08-10	S2	2.0-4.0	silty sand	0.0	0.0			X			
HA08-10	S3	4.0-6.0	silty sand	0.0	0.0			X			
HA08-10	S4	6.0-8.0	silty sand, wood w/ creosote	0.0	0.0			X			
HA08-10	S5	8.0-10.0	sandy organic silt, brick, metal	0.0	0.0			X			
HA08-2	S1	0.0-2.0	silty sand, wood and ash	0.0	0.0			X			
HA08-2	S2	4.0-6.0	poorly graded sand	0.0	0.0			X			
HA08-2	S3	6.0-8.0	poorly graded sand	0.0	0.0			X			
HA08-2	S4	8.0-10.0	silty gravel, shells and wood	0.0	0.0			X			
HA08-2	S5	10.0-12.0	poorly graded gravel	0.0	0.0			X			

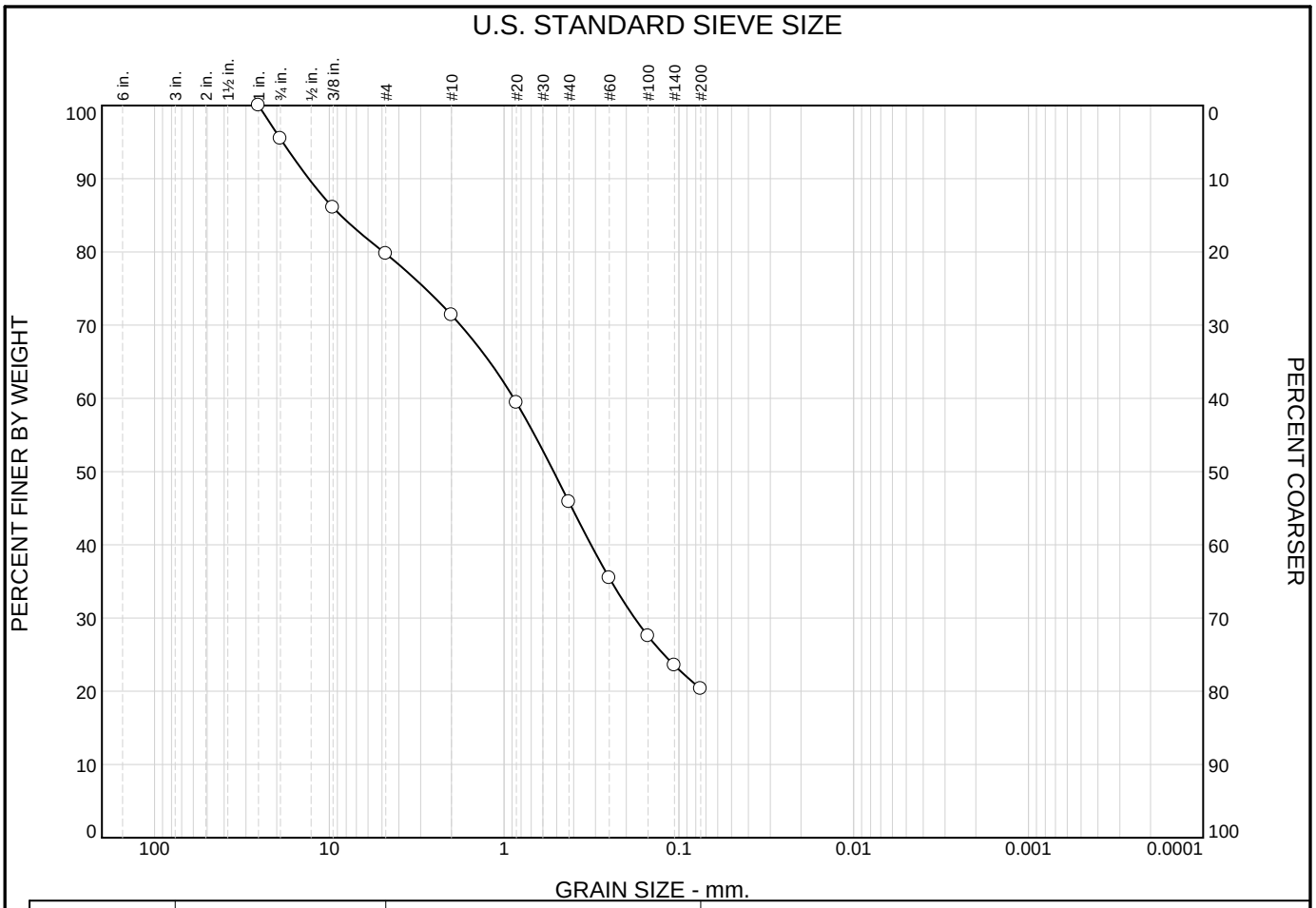
1. Instrument calibrated to the manufacturer standard.
2. ppm represents concentration of detectable volatile gaseous compounds in parts per million of air.
3. Sample assigned for gas chromatograph screening.

Sampled and relinquished by:	Received by:	Relinquished by:	Received by:
Sign: NA	**Sign:** NA	**Sign:** NA	**Sign:** NA
Print: NA	**Print:** NA	**Print:** NA	**Print:** NA
Firm: NA	**Firm:** NA	**Firm:** NA	**Firm:** NA
Date: NA **Time:** NA	**Date:** NA **Time:** NA	**Date:** NA **Time:** NA	**Date:** NA **Time:** NA

APPENDIX D

2008 Laboratory Test Results for Proposed MaineHealth/United Way Development (see Reference 4)

Grain Size Distribution Reports



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	4.5	15.8	8.3	25.6	25.5	20.3	

	Expl. No.	Sample No.	Depth (ft)	Atterberg Limits %			Water Content (%)	C_u	C_c	USCS
				w_L	w_P	I_P				
○	HA08-4	C01	0.5-4.5				9.9			SM

	Sample Description
○	Dark brown silty sand with gravel

Remarks:

○Composite Sample: S01 & S02

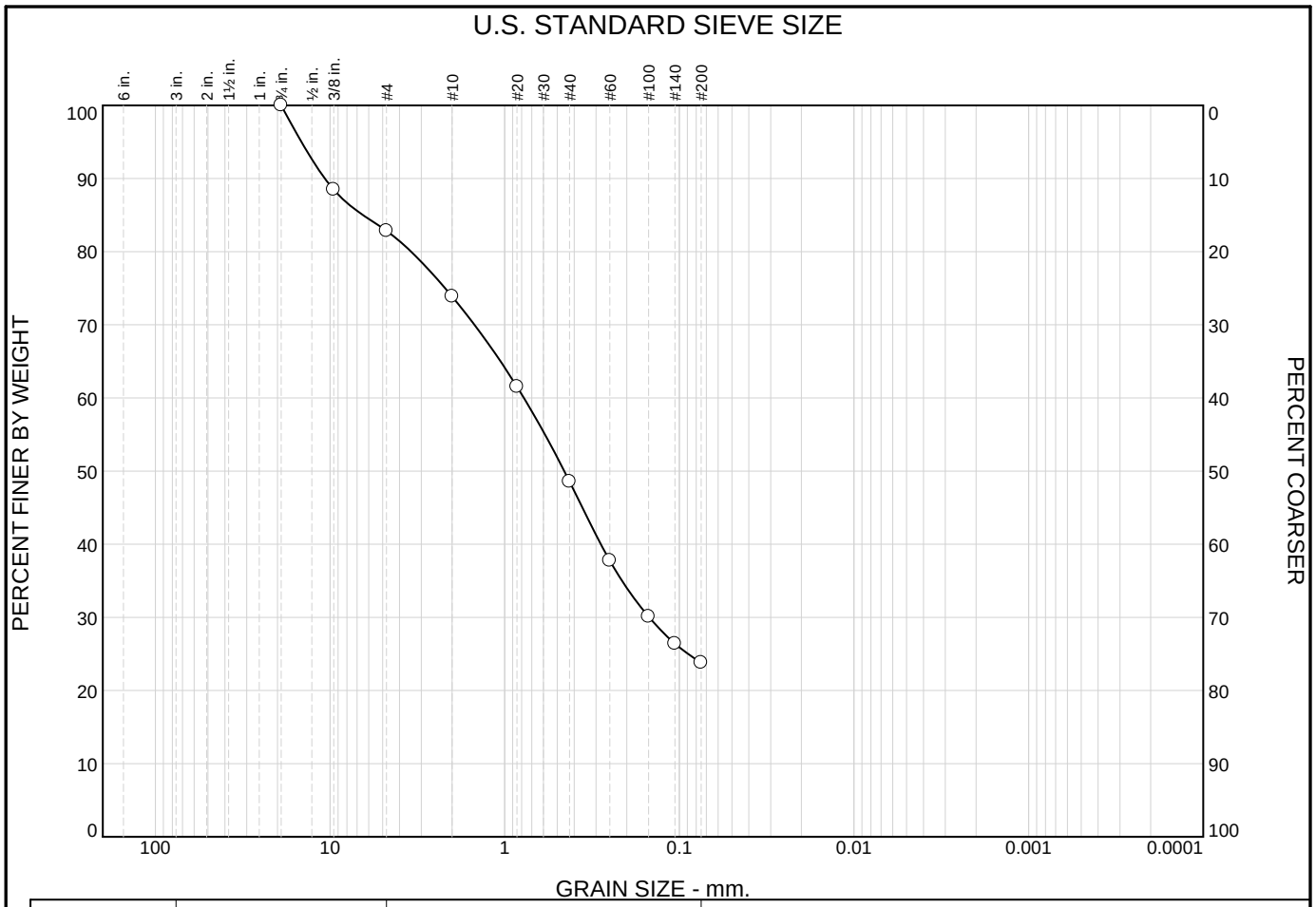
HALEY & ALDRICH

Maine Health/United Way Development
Portland, Maine

GRAIN SIZE DISTRIBUTION

DATE: 8/29/2008

FILE NO: 35611-000



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	17.2	8.9	25.3	24.8	23.8	

	Expl. No.	Sample No.	Depth (ft)	Atterberg Limits %			Water Content (%)	C_u	C_c	USCS
				w_L	w_P	I_P				
○	HA08-6	S02	2.0-4.0				16.8			SM

	Sample Description
○	Dark brown silty sand with gravel

Remarks:

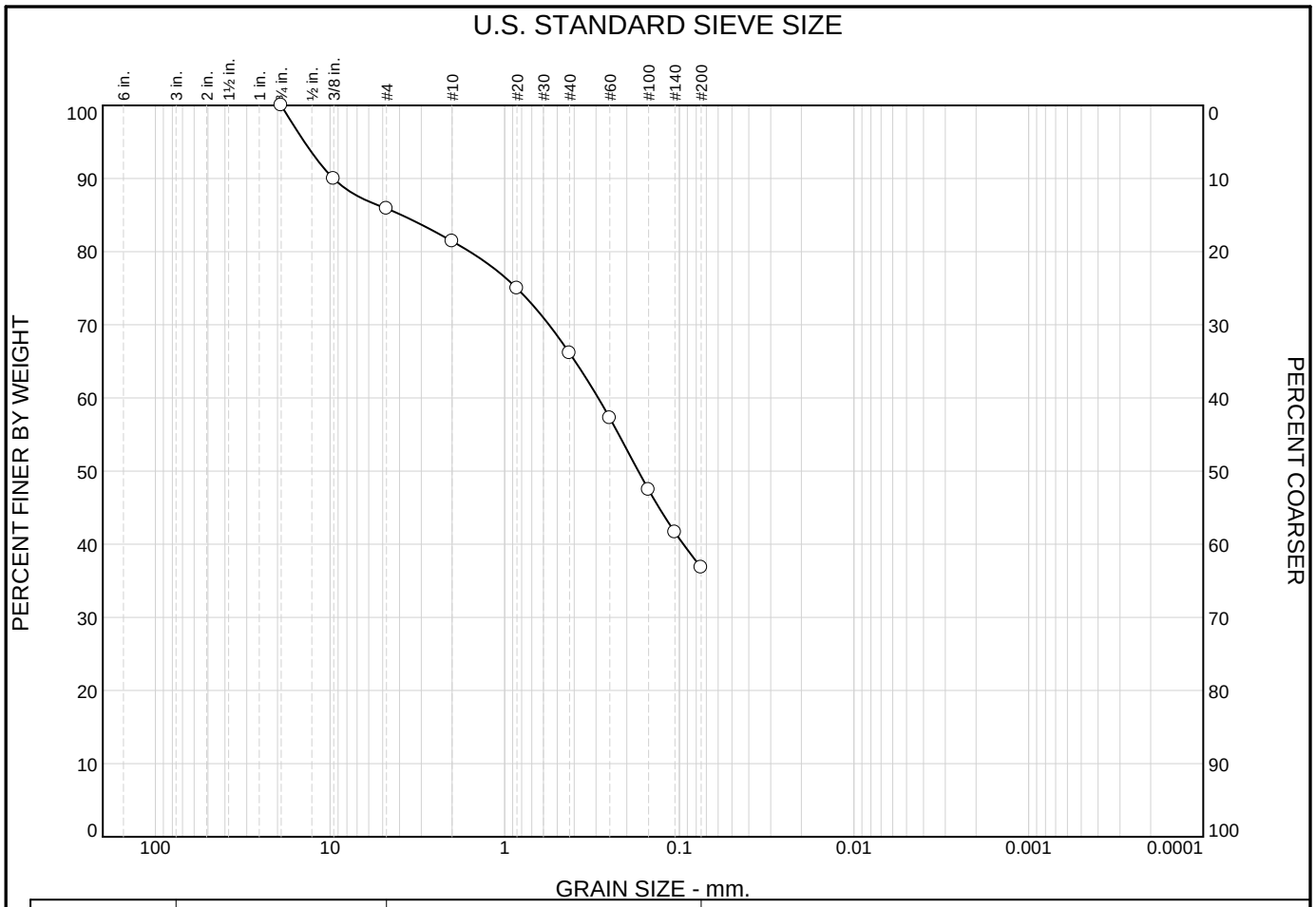
HALEY & ALDRICH

Maine Health/United Way Development
Portland, Maine

GRAIN SIZE DISTRIBUTION

DATE: 8/29/2008

FILE NO: 35611-000



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	14.1	4.5	15.3	29.3	36.8	

	Expl. No.	Sample No.	Depth (ft)	Atterberg Limits %			Water Content (%)	C_u	C_c	USCS
				W_L	W_P	I_P				
○	HA08-10	C01	0.0-4.0				9.1			SM

	Sample Description
○	Brown silty sand

Remarks:

○Composite Sample: S01 & S02

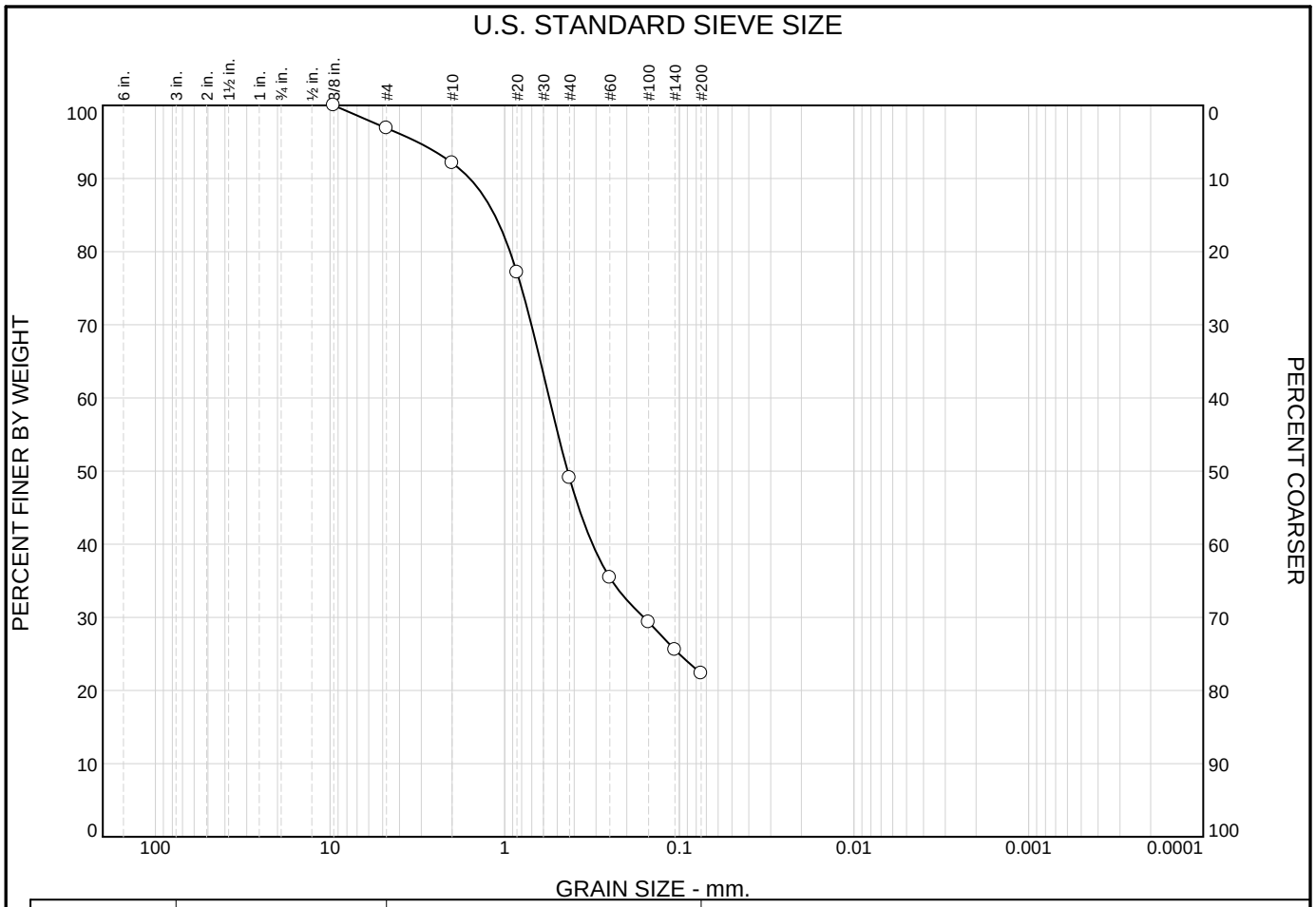
HALEY & ALDRICH

Maine Health/United Way Development
Portland, Maine

GRAIN SIZE DISTRIBUTION

DATE: 8/29/2008

FILE NO: 35611-000



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	3.1	4.8	43.0	26.8	22.3	

	Expl. No.	Sample No.	Depth (ft)	Atterberg Limits %			Water Content (%)	C_u	C_c	USCS
				W_L	W_P	I_P				
○	HA08-12	S03	4.0-6.0				9.7			SM

	Sample Description
○	Brown silty sand

Remarks:

HALEY & ALDRICH

Maine Health/United Way Development
Portland, Maine

GRAIN SIZE DISTRIBUTION

DATE: 8/29/2008

FILE NO: 35611-000

Atterberg Limits and
Natural Water Content Reports

GeoTesting express
a subsidiary of Geocomp Corporation

Client:	Haley & Aldrich, Inc.		
Project:	Maine Health / United Way Development		
Location:	Portland, ME	Project No:	GTX-8427
Boring ID: ---	Sample Type: ---	Tested By:	ap
Sample ID:---	Test Date: 08/15/08	Checked By:	jdt
Depth : ---	Sample Id: ---		

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content,%
HA08-4	S-12	30-32 ft	Moist, olive gray clay	38.3
HA08-4	S-13	40-42 ft	Moist, olive gray clay	41.8
HA08-8	S-10	30-32 ft	Moist, olive gray clay	42.7
HA08-8	S-11	35-37 ft	Moist, olive gray clay	30.8

Notes: Temperature of Drying : 110° Celsius

GeoTesting express
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Client:	Haley & Aldrich, Inc.				
Project:	Maine Health / United Way Development				
Location:	Portland, ME			Project No:	GTX-8427
Boring ID: ---		Sample Type: ---		Tested By:	ap
Sample ID:---		Test Date:	09/03/08	Checked By:	jdt
Depth : ---		Sample Id: ---			

Moisture Content of Soil - ASTM D 2216-05

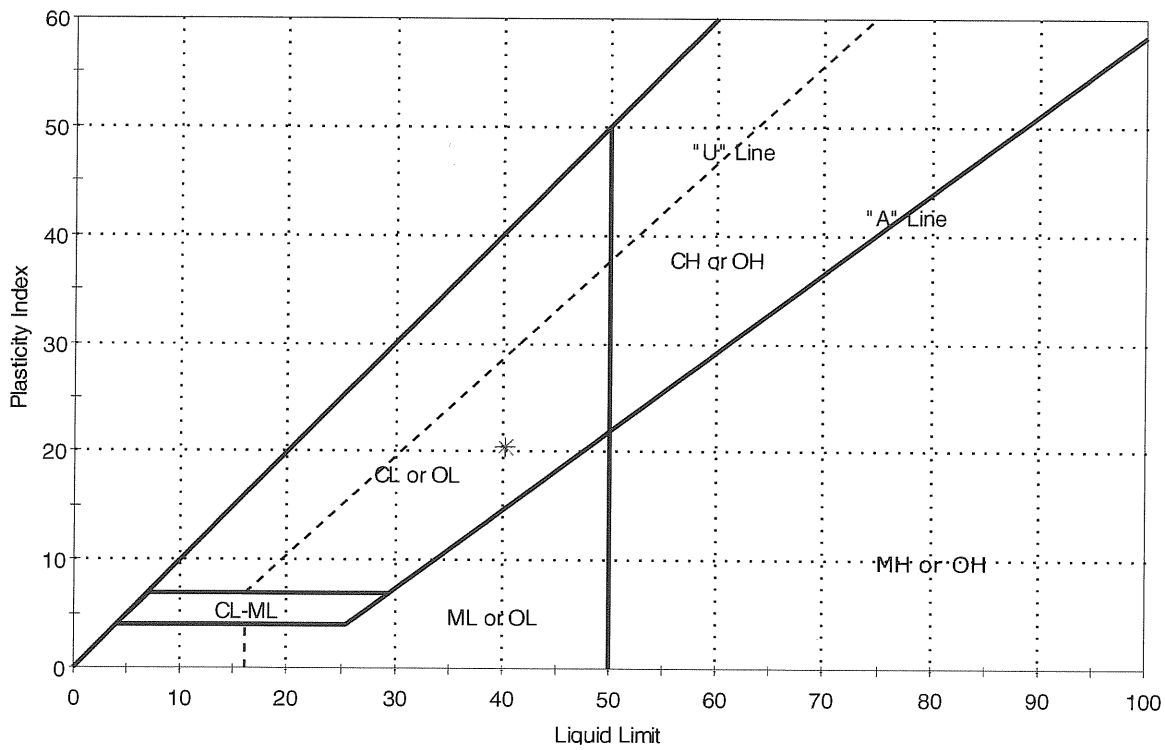
Boring ID	Sample ID	Depth	Description	Moisture Content,%
HA08-4	U-2	33-35 ft	Moist, dark greenish gray clay	31.4
HA08-10	U-1	25-27 ft	Moist, gray clay	37.9

Notes: Temperature of Drying : 110º Celsius

GeoTesting express
a subsidiary of Geocomp Corporation

Client:	Haley & Aldrich, Inc.		
Project:	Maine Health / United Way Development		
Location:	Portland, ME	Project No:	GTX-8427
Boring ID: HA08-4	Sample Type: jar	Tested By:	ap
Sample ID:S-12	Test Date: 08/12/08	Checked By:	jdt
Depth : 30-32 ft	Test Id: 136560		
Test Comment:	---		
Sample Description:	Moist, olive gray clay		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
✳	S-12	HA08-4	30-32 ft	38	40	20	20	1	

Sample Prepared using the WET method

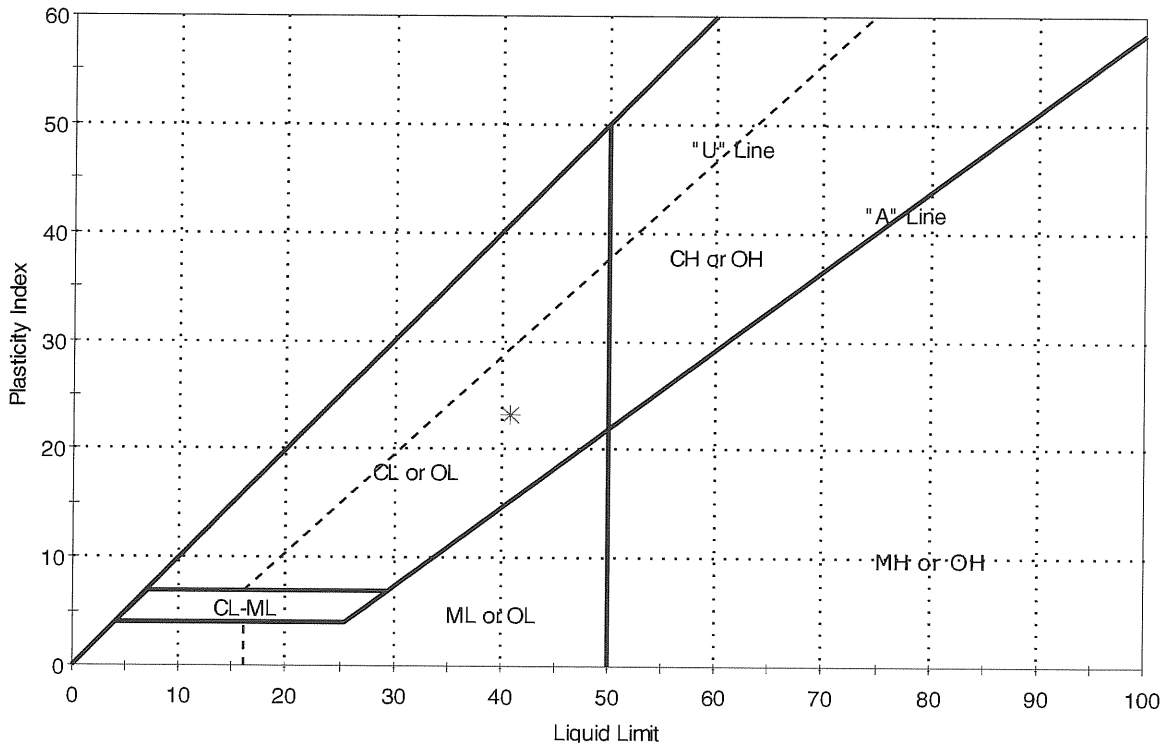
Dry Strength: VERY HIGH
Dilentancy: SLOW
Toughness: LOW

printed 8/15/2008 11:54:40 AM

GeoTesting express
a subsidiary of Geocomp Corporation

Client:	Haley & Aldrich, Inc.		
Project:	Maine Health / United Way Development		
Location:	Portland, ME	Project No:	GTX-8427
Boring ID: HA08-4	Sample Type: tube	Tested By:	ap
Sample ID: U-2	Test Date: 08/26/08	Checked By:	jdt
Depth : 33-35 ft	Test Id: 136851		
Test Comment:	---		
Sample Description:	Moist, dark greenish gray clay		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	U-2	HA08-4	33-35 ft	31	41	17	24	1	

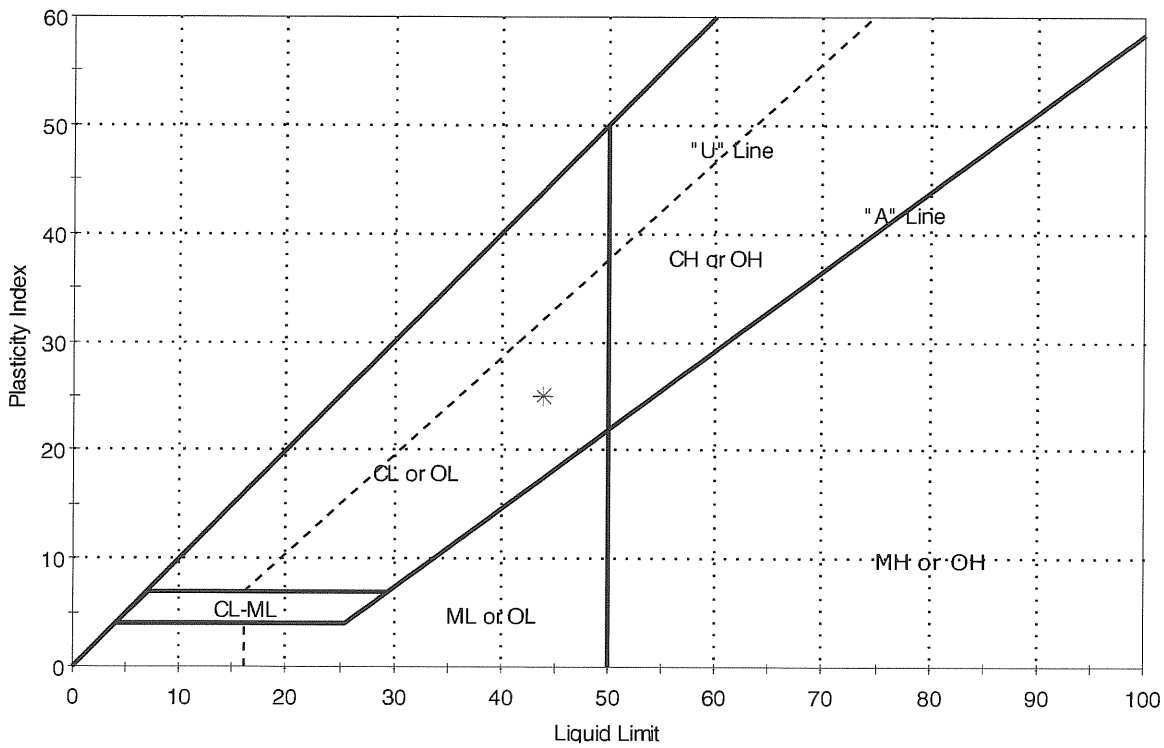
Sample Prepared using the WET method

Dry Strength: VERY HIGH
Dilentancy: SLOW
Toughness: LOW

GeoTesting express
a subsidiary of Geocomp Corporation

Client:	Haley & Aldrich, Inc.		
Project:	Maine Health / United Way Development		
Location:	Portland, ME	Project No:	GTX-8427
Boring ID: HA08-4	Sample Type: jar	Tested By:	ap
Sample ID:S-13	Test Date: 08/13/08	Checked By:	jdt
Depth : 40-42 ft	Test Id: 136561		
Test Comment:	---		
Sample Description:	Moist, olive gray clay		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
✳	S-13	HA08-4	40-42 ft	42	44	19	25	1	

Sample Prepared using the WET method

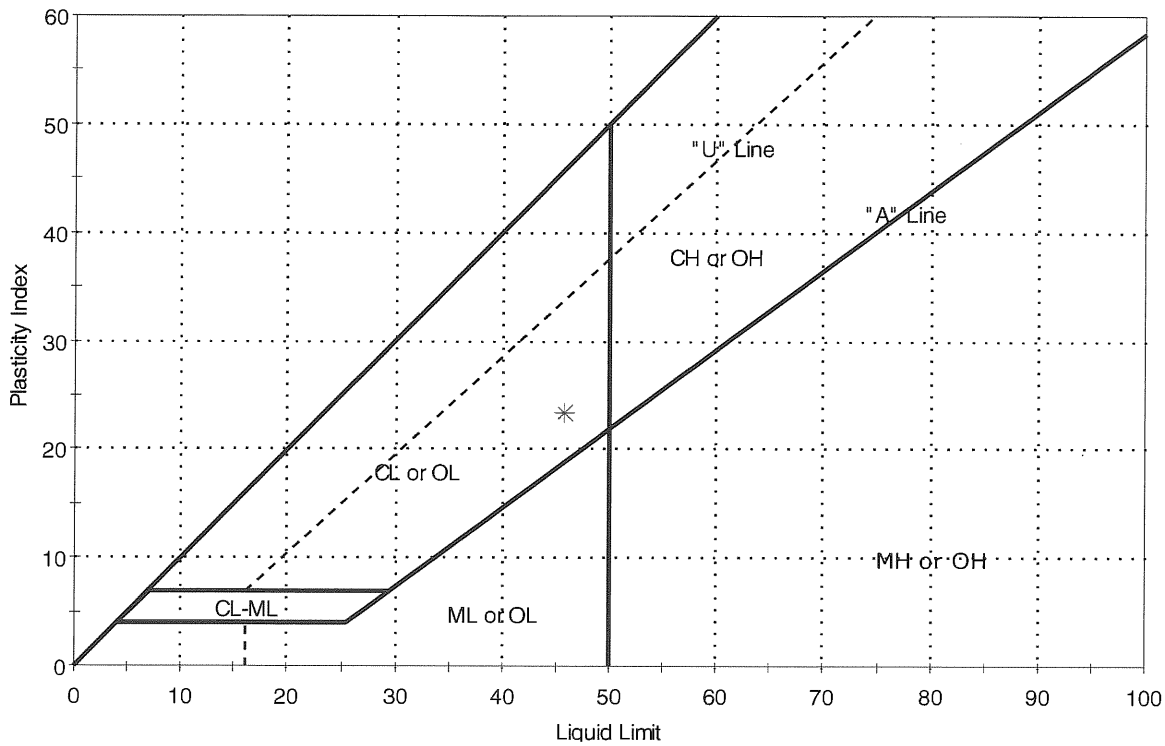
Dry Strength: VERY HIGH
Dilentancy: SLOW
Toughness: LOW

printed 8/15/2008 11:54:46 AM

GeoTesting express
a subsidiary of Geocomp Corporation

Client:	Haley & Aldrich, Inc.		
Project:	Maine Health / United Way Development		
Location:	Portland, ME	Project No:	GTX-8427
Boring ID: HA08-8	Sample Type: jar	Tested By:	ap
Sample ID:S-10	Test Date: 08/12/08	Checked By:	jdt
Depth : 30-32 ft	Test Id: 136562		
Test Comment:	---		
Sample Description:	Moist, olive gray clay		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
✳	S-10	HA08-8	30-32 ft	43	46	23	23	1	

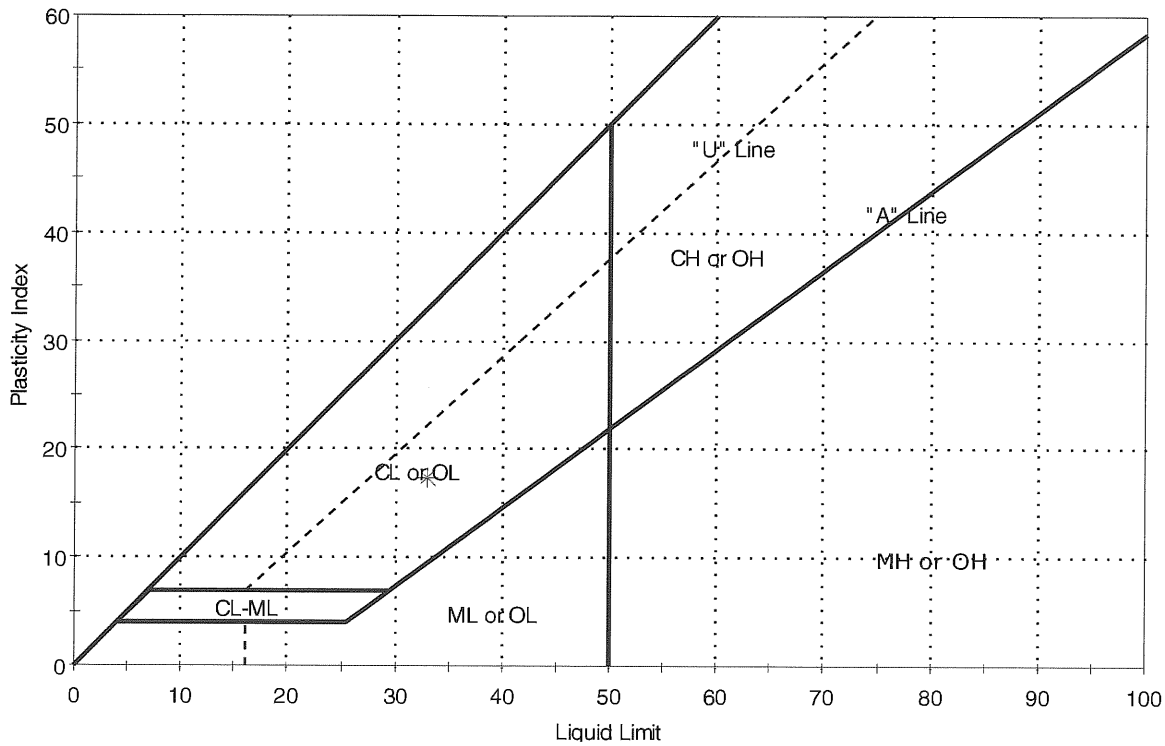
Sample Prepared using the WET method

Dry Strength: VERY HIGH
Dilentancy: SLOW
Toughness: LOW

GeoTesting express
a subsidiary of Geocomp Corporation

Client:	Haley & Aldrich, Inc.		
Project:	Maine Health / United Way Development		
Location:	Portland, ME	Project No:	GTX-8427
Boring ID: HA08-8	Sample Type: jar	Tested By:	ap
Sample ID:S-11	Test Date: 08/13/08	Checked By:	jdt
Depth : 35-37 ft	Test Id: 136563		
Test Comment:	---		
Sample Description:	Moist, olive gray clay		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
✳	S-11	HA08-8	35-37 ft	31	33	16	17	1	

Sample Prepared using the WET method

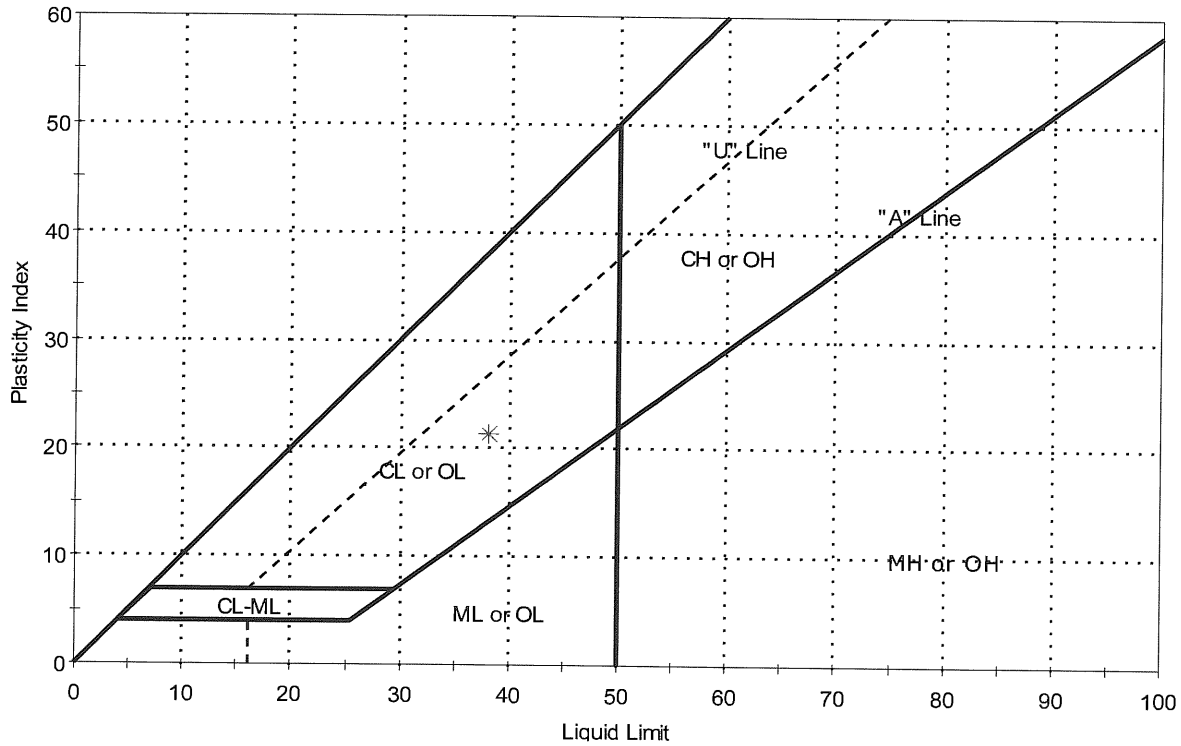
Dry Strength: VERY HIGH
Dilentancy: SLOW
Toughness: LOW

printed 8/15/2008 11:54:57 AM

GeoTesting express
a subsidiary of Geocomp Corporation

Client:	Haley & Aldrich, Inc.		
Project:	Maine Health / United Way Development		
Location:	Portland, ME	Project No:	GTX-8427
Boring ID: HA08-10	Sample Type: tube	Tested By:	ap
Sample ID: U-1	Test Date: 08/26/08	Checked By:	jdt
Depth : 25-27 ft	Test Id: 136852		
Test Comment:	---		
Sample Description:	Moist, gray clay		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
✳	U-1	HA08-10	25-27 ft	38	38	17	21	1	

Sample Prepared using the WET method

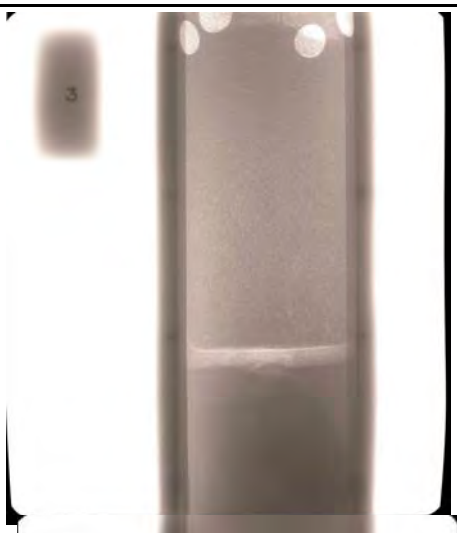
Dry Strength: VERY HIGH
Dilentancy: SLOW
Toughness: LOW

printed 8/27/2008 8:34:43 AM

Shelby Tube X-Ray Reports and Consolidation Test Results

GeoTesting express
a subsidiary of Geocomp Corporation

Client:	Haley & Aldrich, Inc.
Project Name:	Maine Health/United Way Development
Project Location:	Portland, ME
GTX #:	8427
Test Date:	08/11/08
Tested By:	edd/md
Checked By:	jdt
Boring ID:	HA08-4
Sample ID:	U-1
Depth, ft:	25-27



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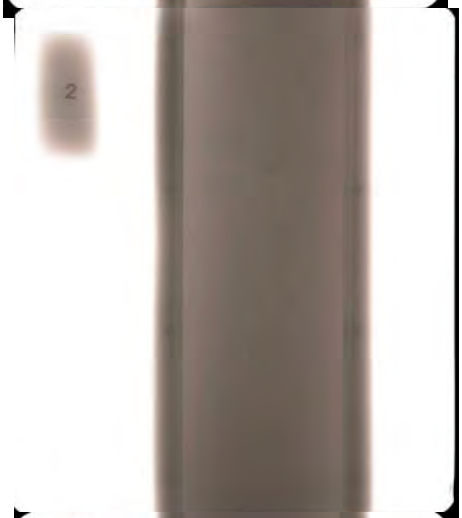
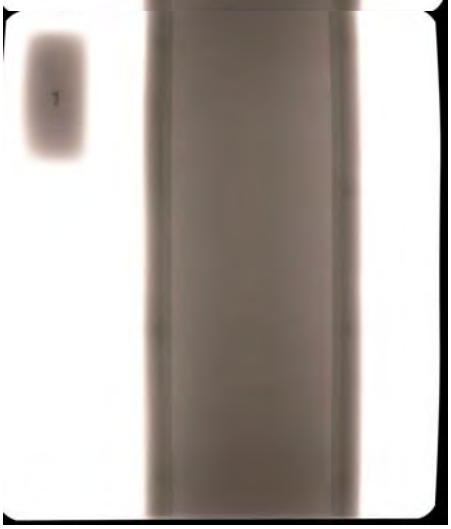


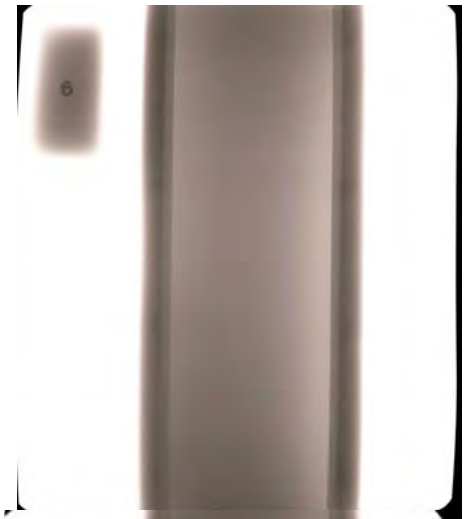
Middle of Tube



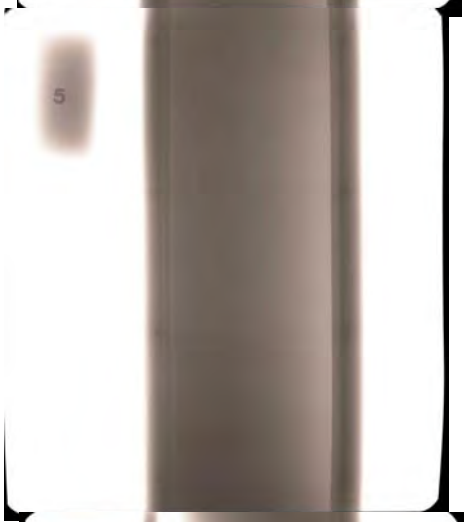
Bottom of Tube

GeoTesting express
a subsidiary of Geocomp Corporation

Client:	Haley & Aldrich, Inc.
Project Name:	Maine Health/United Way Development
Project Location:	Portland, ME
GTX #:	8427
Test Date:	08/11/08
Tested By:	edd/md
Checked By:	jdt
Boring ID:	HA08-4
Sample ID:	U-2
Depth, ft:	33-35



Top of Tube



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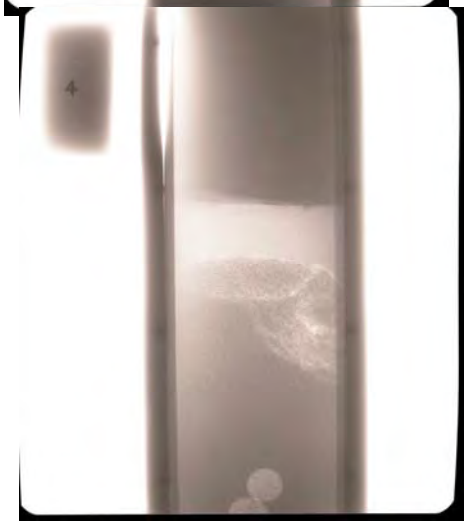
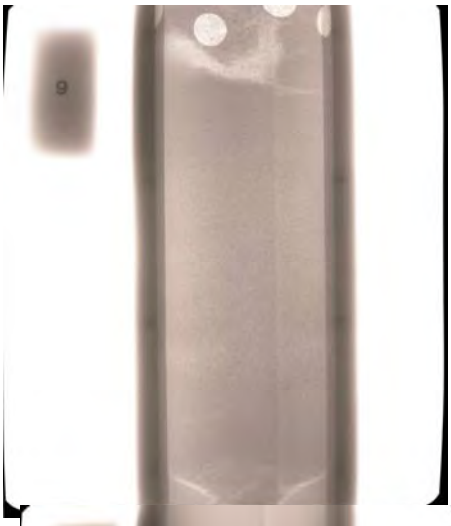


Bottom of Tube

GeoTesting express
a subsidiary of Geocomp Corporation

Client:	Haley & Aldrich, Inc.
Project Name:	Maine Health/United Way Development
Project Location:	Portland, ME
GTX #:	8427
Test Date:	08/11/08
Tested By:	edd/md
Checked By:	jdt
Boring ID:	HA08-8
Sample ID:	U-1
Depth, ft:	20-22



Top of Tube

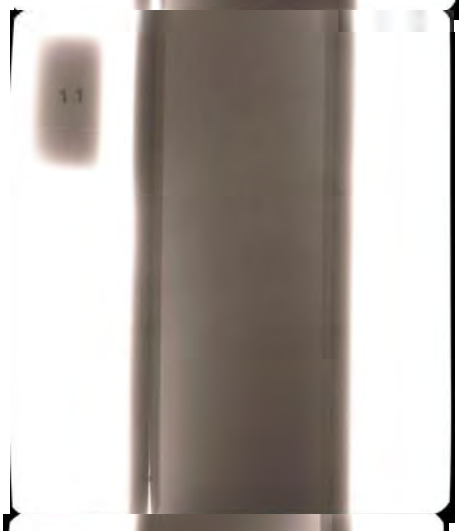
Middle of Tube

Bottom of Tube

GeoTesting express
a subsidiary of Geocomp Corporation

Client:	Haley & Aldrich, Inc.
Project Name:	Maine Health/United Way Development
Project Location:	Portland, ME
GTX #:	8427
Test Date:	08/11/08
Tested By:	edd/md
Checked By:	jdt
Boring ID:	HA08-8
Sample ID:	U-2
Depth, ft:	41-43

Top of Tube

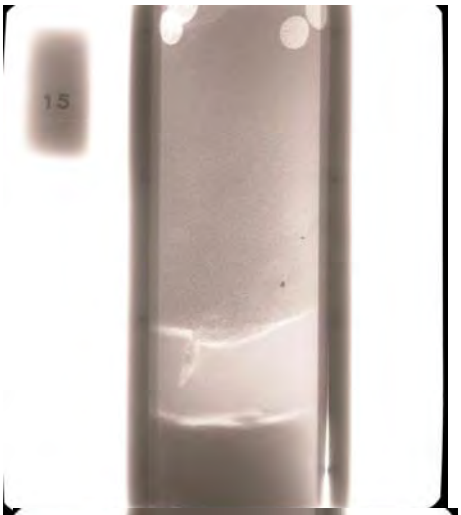


Middle of Tube

Bottom of Tube

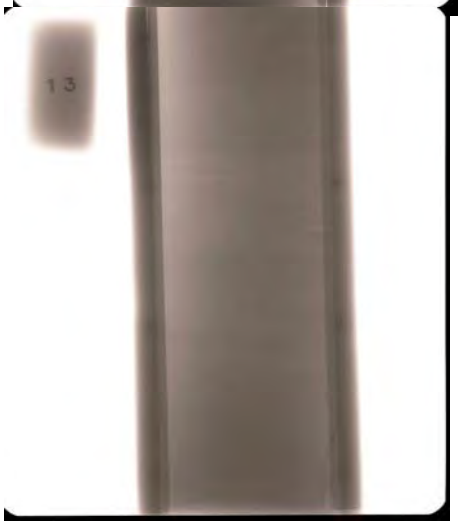
GeoTesting express
a subsidiary of Geocomp Corporation

Client:	Haley & Aldrich, Inc.
Project Name:	Maine Health/United Way Development
Project Location:	Portland, ME
GTX #:	8427
Test Date:	08/11/08
Tested By:	edd/md
Checked By:	jdt
Boring ID:	HA08-10
Sample ID:	U-1
Depth, ft:	25-27



Top of Tube

Middle of Tube

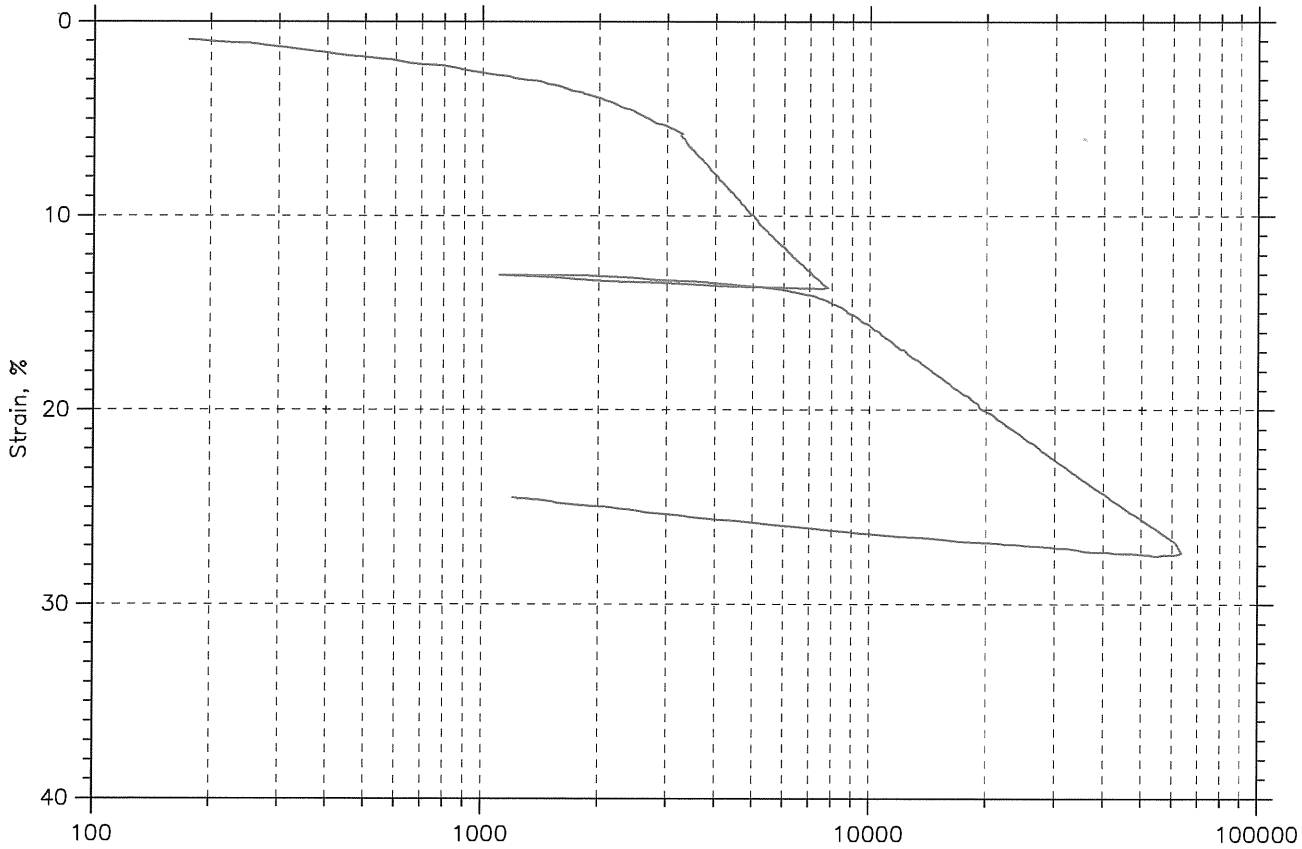


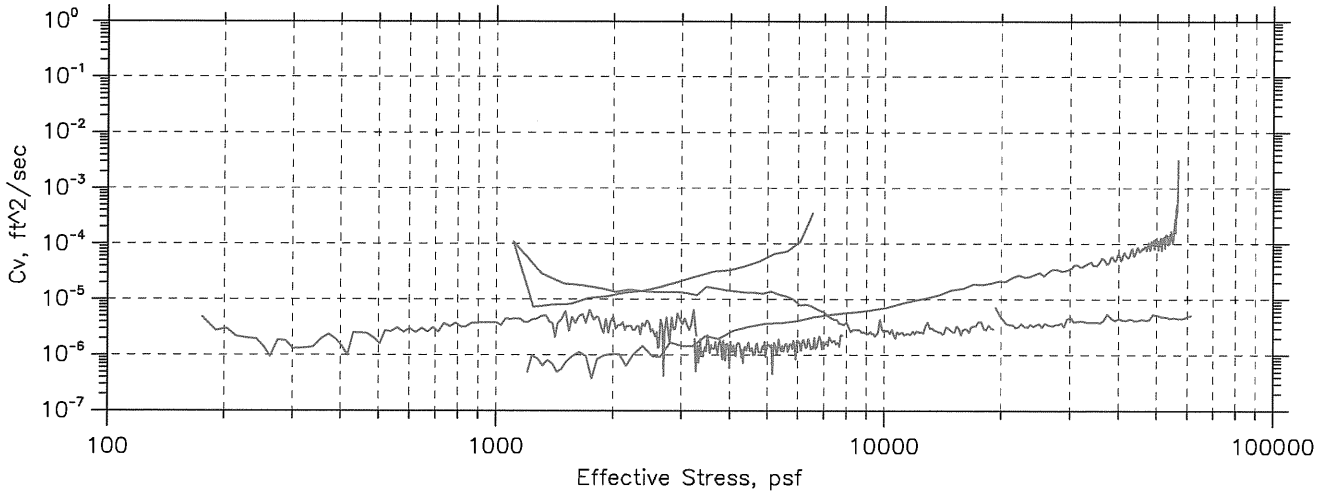
Bottom of Tube

Constant Rate of Consolidation

Constant Strain Rate by ASTM D4186

Summary Report





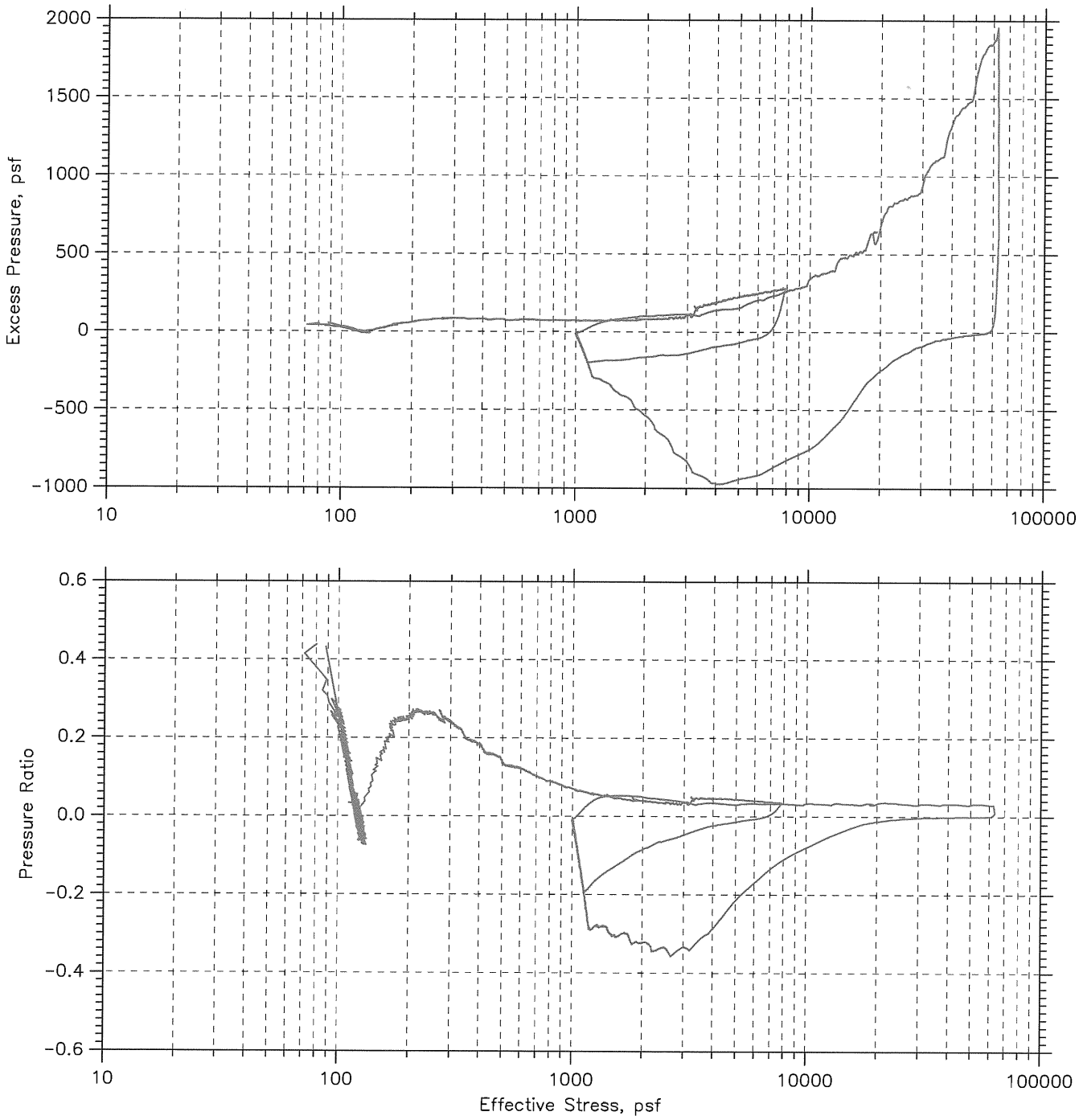
Project: Maine Health	Location: Portland, ME	Project No.: GTX-8427
Boring No.: HA-08-4	Tested By: md	Checked By: jdt
Sample No.: U-2	Test Date: 08/27/08	Depth: 33-35
Test No.: CRC-1A	Sample Type: tube	Elevation: ---
Description: Moist, dark greenish gray clay		
Remarks: System S		

Wed, 03-SEP-2008 11:15:15

Constant Rate of Consolidation

Constant Strain Rate by ASTM D4186

Pressure Curves



Project: Maine Health	Location: Portland, ME	Project No.: GTX-8427
Boring No.: HA-08-4	Tested By: md	Checked By: jdt
Sample No.: U-2	Test Date: 08/27/08	Depth: 33-35
Test No.: CRC-1A	Sample Type: tube	Elevation: ---
Description: Moist, dark greenish gray clay		
Remarks: System S		

Wed, 03-SEP-2008 11:15:16

CRC TEST DATA

Project: Maine Health
Boring No.: HA-08-4
Sample No.: U-2
Test No.: CRC-1A

Location: Portland, ME
Tested By: md
Test Date: 08/27/08
Sample Type: tube

Project No.: GTX-8427
Checked By: jdt
Depth: 33-35
Elevation: ---

Soil Description: Moist, dark greenish gray clay
Remarks: System S

Estimated Specific Gravity: 2.80
Initial Void Ratio: 0.98
Final Void Ratio: 0.50

Liquid Limit: 41
Plastic Limit: 17
Plasticity Index: 24

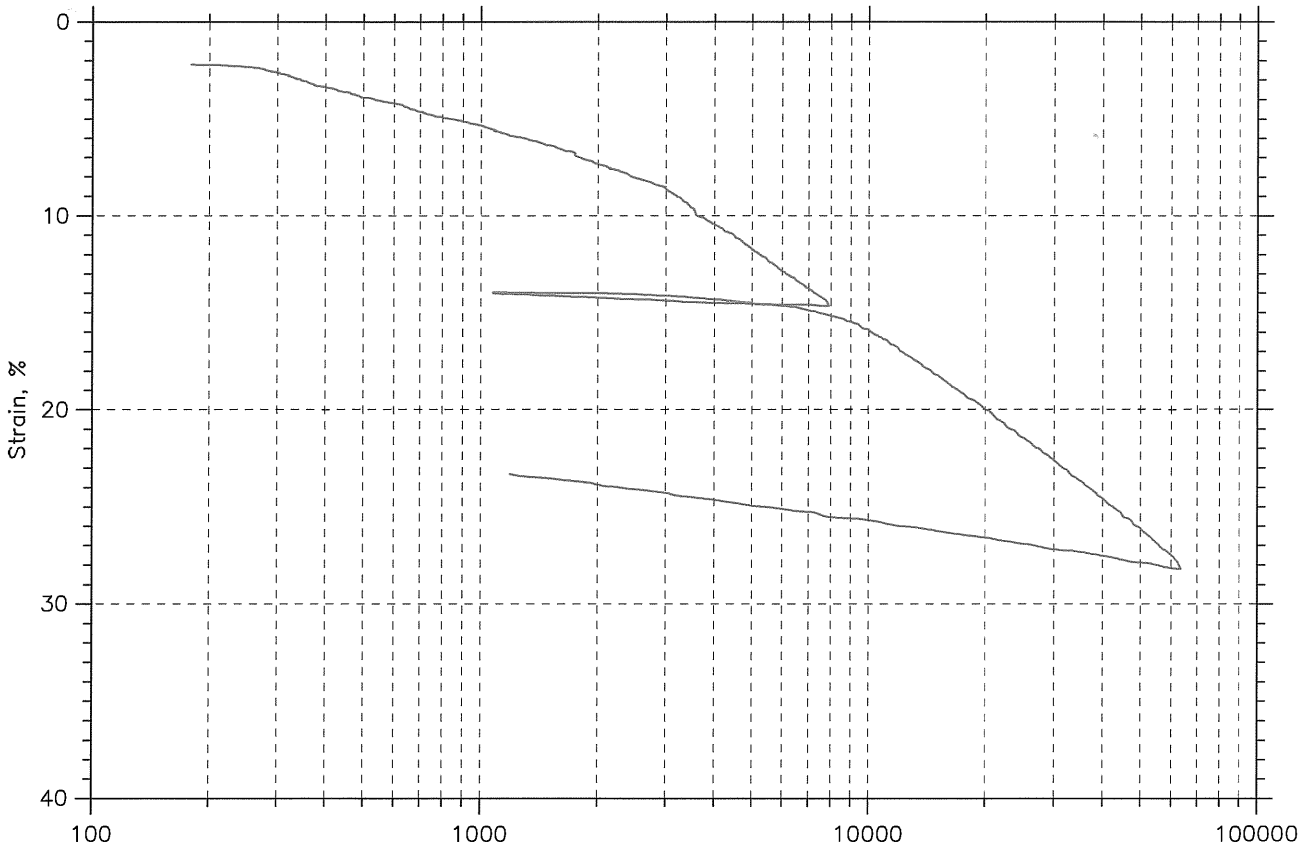
Initial Height: 1.00 in
Specimen Diameter: 2.50 in

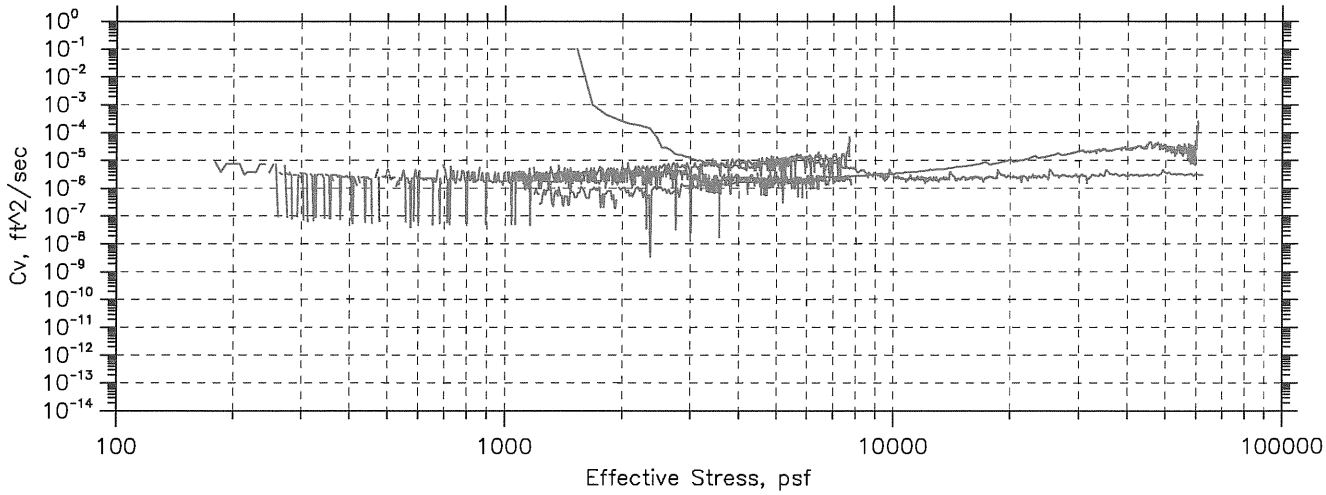
	Before Consolidation		After Consolidation	
	Trimmings	Specimen+Ring	Specimen+Ring	Trimmings
Container ID	3217	RING		vrayum
Wt. Container + Wet Soil, gm	211.83	353.9	336.26	140.32
Wt. Container + Dry Soil, gm	163.17	318.01	318.01	122.08
Wt. Container, gm	8.29	204.15	204.15	8.27
Wt. Dry Soil, gm	154.88	113.86	113.86	113.81
Water Content, %	31.42	31.52	16.03	16.03
Void Ratio	---	0.98	0.50	---
Degree of Saturation, %	---	90.23	90.62	---
Dry Unit Weight, pcf	---	88.366	116.9	---

Constant Rate of Consolidation

Constant Strain Rate by ASTM D4186

Summary Report





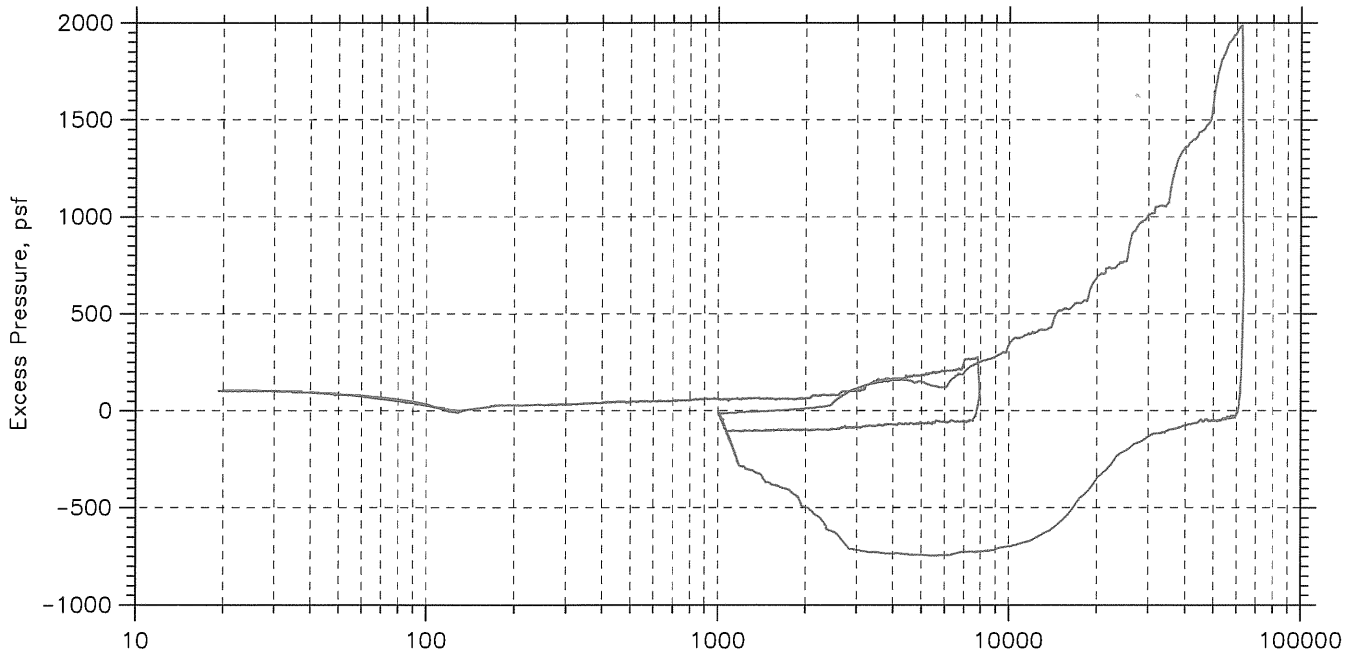
Project: Maine Health	Location: Portland, ME	Project No.: GTX-8427
Boring No.: HA-08-10	Tested By: md	Checked By: jdt
Sample No.: U-1	Test Date: 08/25/08	Depth: 25-27
Test No.: CRC-2	Sample Type: tube	Elevation: ---
Description: Moist, gray clay		
Remarks: System 0		

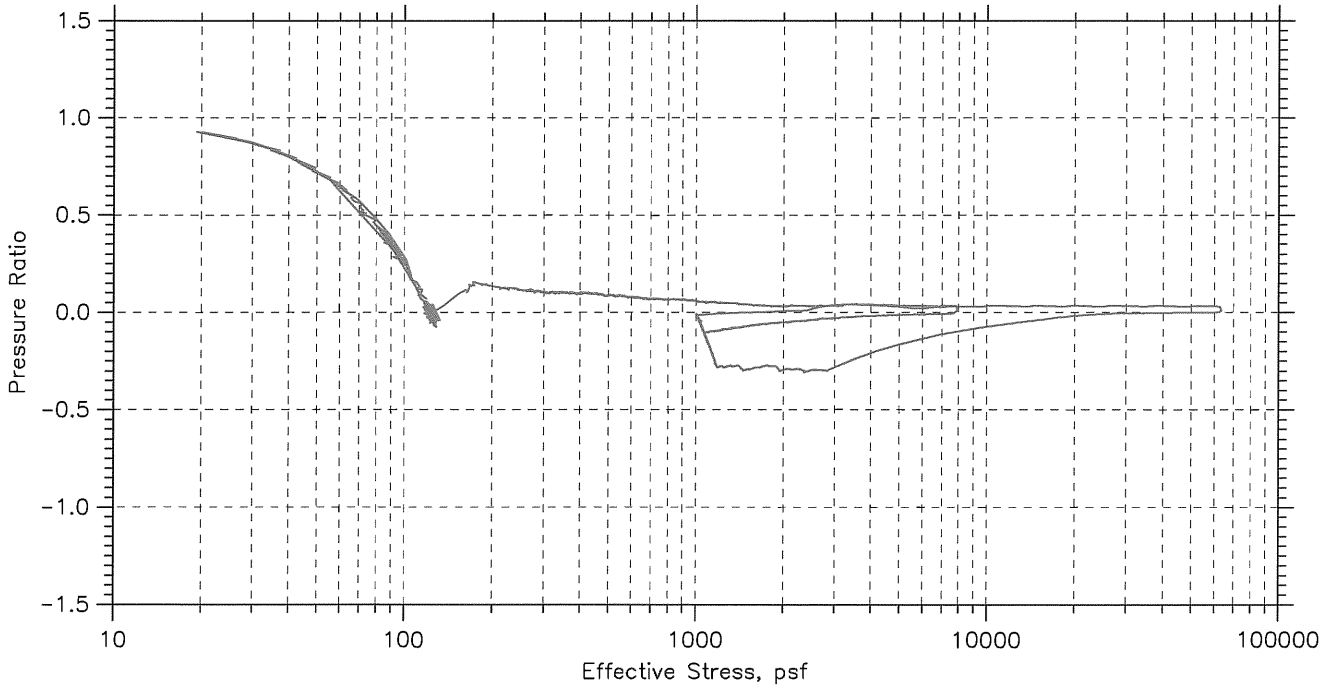
Fri, 05-SEP-2008 11:12:28

Constant Rate of Consolidation

Constant Strain Rate by ASTM D4186

Pressure Curves





Project: Maine Health	Location: Portland, ME	Project No.: GTX-8427
Boring No.: HA-08-10	Tested By: md	Checked By: jdt
Sample No.: U-1	Test Date: 08/25/08	Depth: 25-27
Test No.: CRC-2	Sample Type: tube	Elevation: ---
Description: Moist, gray clay		
Remarks: System 0		

Fri, 05-SEP-2008 11:12:37

CRC TEST DATA

Project: Maine Health
Boring No.: HA-08-10
Sample No.: U-1
Test No.: CRC-2

Location: Portland, ME
Tested By: md
Test Date: 08/25/08
Sample Type: tube

Project No.: GTX-8427
Checked By: jdt
Depth: 25-27
Elevation: ---

Soil Description: Moist, gray clay
Remarks: System O

Estimated Specific Gravity: 2.90
Initial Void Ratio: 1.13
Final Void Ratio: 0.64

Liquid Limit: 38
Plastic Limit: 17
Plasticity Index: 21

Initial Height: 1.00 in
Specimen Diameter: 2.50 in

	Before Consolidation		After Consolidation	
	Trimmings	Specimen+Ring	Specimen+Ring	Trimmings
Container ID	organic	RING		3171
Wt. Container + Wet Soil, gm	118.23	368.58	349.88	26.19
Wt. Container + Dry Soil, gm	88.77	325.88	325.88	22.93
Wt. Container, gm	8.07	216.55	216.55	8.08
Wt. Dry Soil, gm	80.7	109.33	109.33	14.85
Water Content, %	36.51	39.06	21.95	21.95
Void Ratio	---	1.13	0.64	---
Degree of Saturation, %	---	99.91	99.29	---
Dry Unit Weight, pcf	---	84.848	110.31	---

APPENDIX E

Historic Sanborn Maps

North of Chestnut Street
(midtown 1 and midtown 2)

PORTLAND

MAINE

PUBLISHED BY THE

Sanborn Map and Publishing Co.

LIMITED

117 BROADWAY NEW YORK

SCALE 50 FT. TO AN INCH

OCT. 1886

Copyright 1886 by the Sanborn Map & Publishing Co. Limited

19 1886

INDEX.

* Indicates only one side of Street shown.

STREETS.

SHEET

A
Adams, 9
" Court, 8
Alder, 1-22 33
" 25-79 13
Anderson, 1-54 30
Arsenal, 1-26 23
Ashland Ave., 5
Atlantic, 81-104 33

B
Beach, 31
Beckett, 81-103 32
Bond, 1-12 25
Boyd, 1-46 30
Brackett, 1-45 20
" 61-127 *31
" 55-144 *23
" 129-147 *25
" 145-181 25
" 183-209 *25
" 184-233 *5
Bradford, 1-23 *8
Brattle, 13
Briggs, 25
Brown, 1-71 *10
" 2-72 *12
Burnham's Lane, 5

C
Canton, 13
Cary Lane, 2
Casco, 13
Cedar, 15
Center, 1-39 5
" 41-104 23
" 106-134 10
Central, 9
Chapel, 10
Chatham, 5
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Back Bay.
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KENNEBEC
LINCOLN
OXFORD
CUMBERLAND
PREBLE
ELM
CEDAR
CHESTNUT
STONE ST.
HALL LANE
HERRILL CT.
ELMWOOD PL.
FOREST AVE.
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
W. H. STONE Sawing, Planing & Moulding Mill.
E. D. PETTENGILL & CO. PICKLE MF'G.
PORTLAND & ROCHESTER R.R. FREIGHT HO.
PART OF PORTLAND STOVE FOUNDRY CO. WORKS.
C.E. WHITNEY CARRIAGE MF'G.
CASCO CANDLIZED & CEMENT PIPE CO.
Scale of Feet
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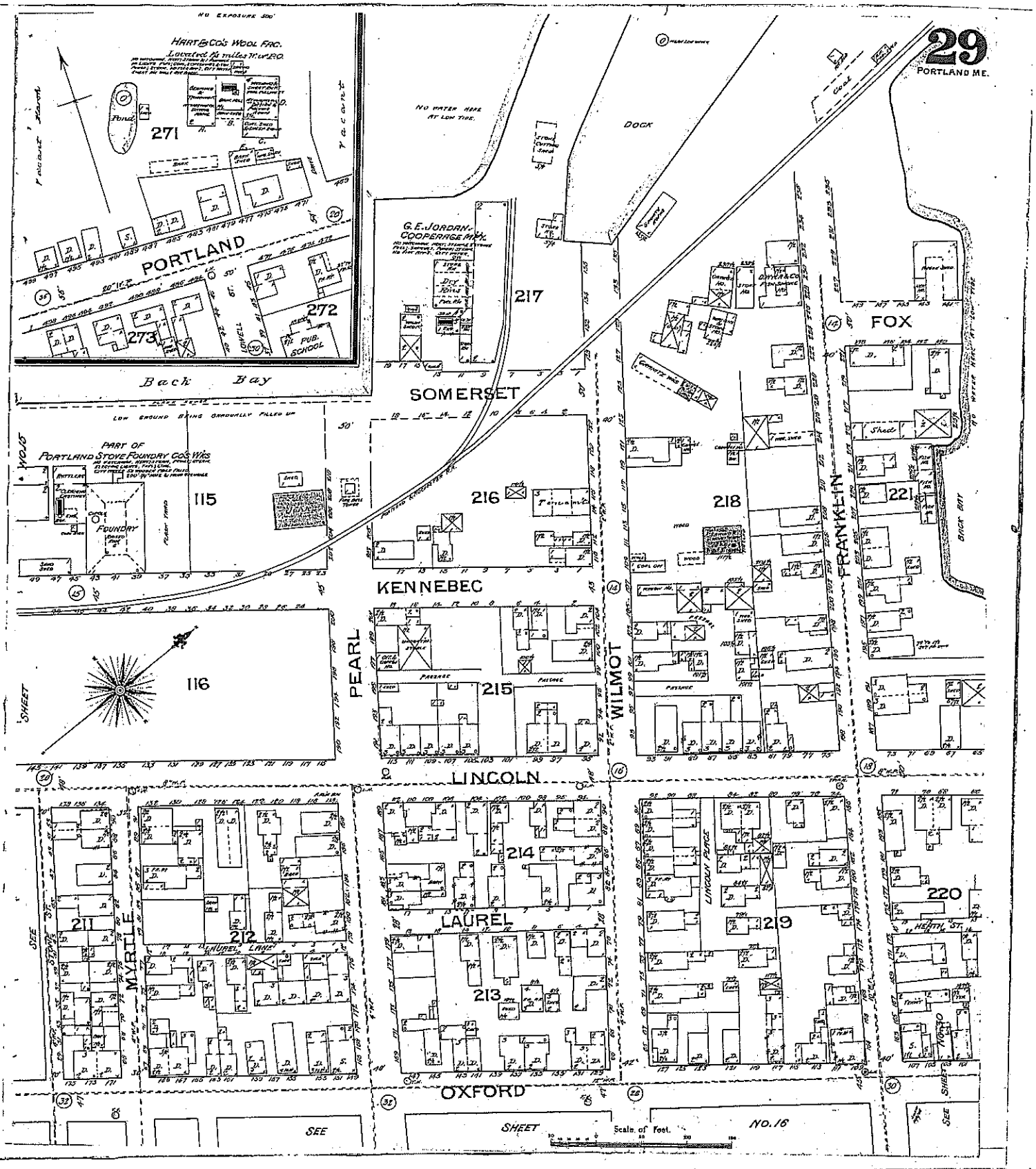
29
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HART & CO'S WOOL FAC.
271
272
273
PORTLAND
PUB. SCHOOL
Back Bay
NO WATER HERE AT LOW TIDE.
DOCK
G. E. JORDAN - COOPERAGE MFG.
217
SOMERSET
FOX
PART OF PORTLAND STOVE FOUNDRY CO'S WKS
FOUNDRY
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216
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215
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OXFORD
SEE SHEET NO. 16
Scale of Feet

INSURANCE MAPS OF PORTLAND MAINE

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1896

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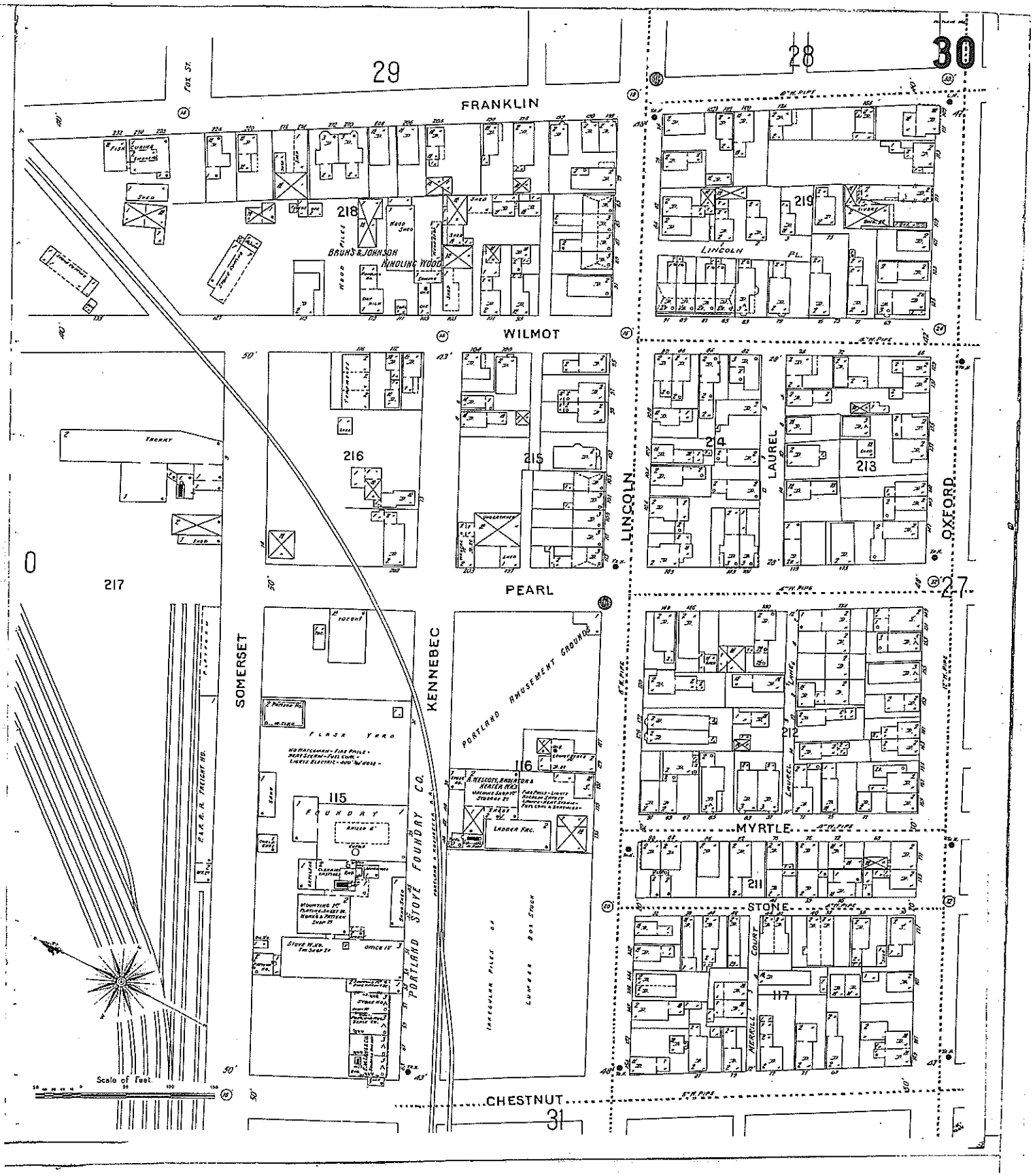
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ME....003

INSURANCE MAPS

Portland

MAINE

VOLUME ONE

PUBLISHED BY THE
SANBORN MAP COMPANY
11 BROADWAY, NEW YORK
1904

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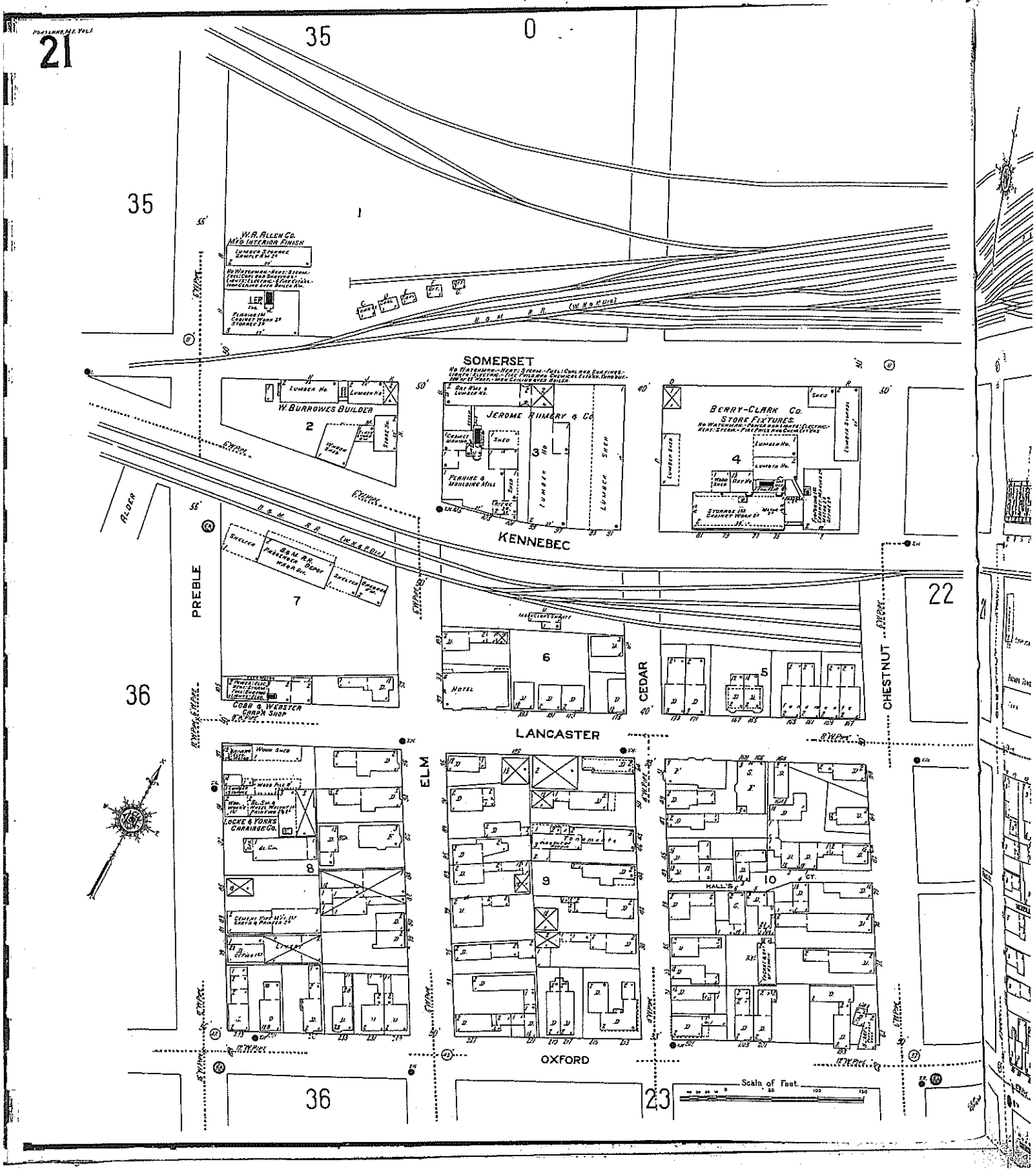
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Store Fixtures
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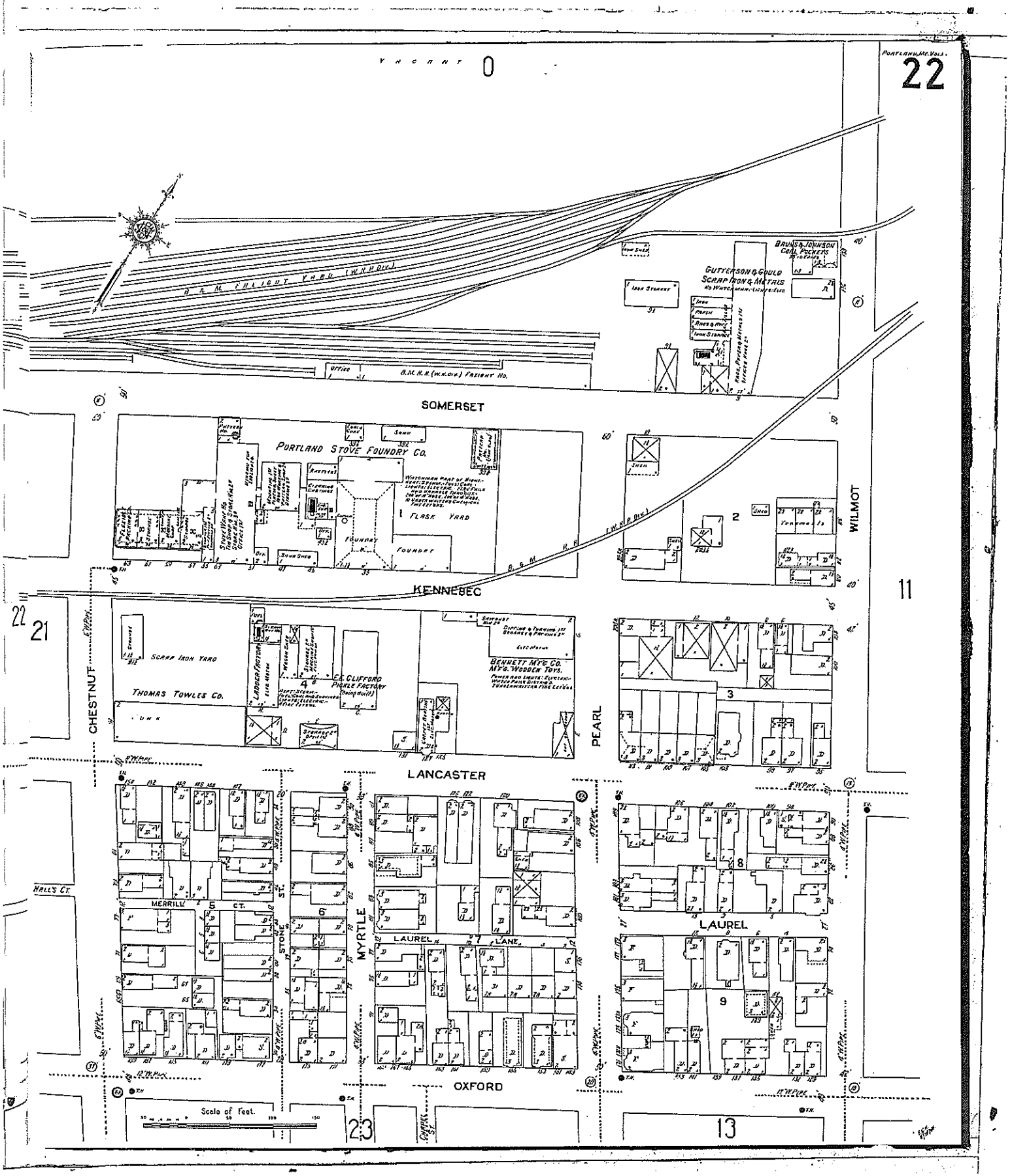
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ME....003

INSURANCE MAPS OF

Portland

MAINE

VOLUME ONE

PUBLISHED BY THE
SANBORN MAP COMPANY
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1909

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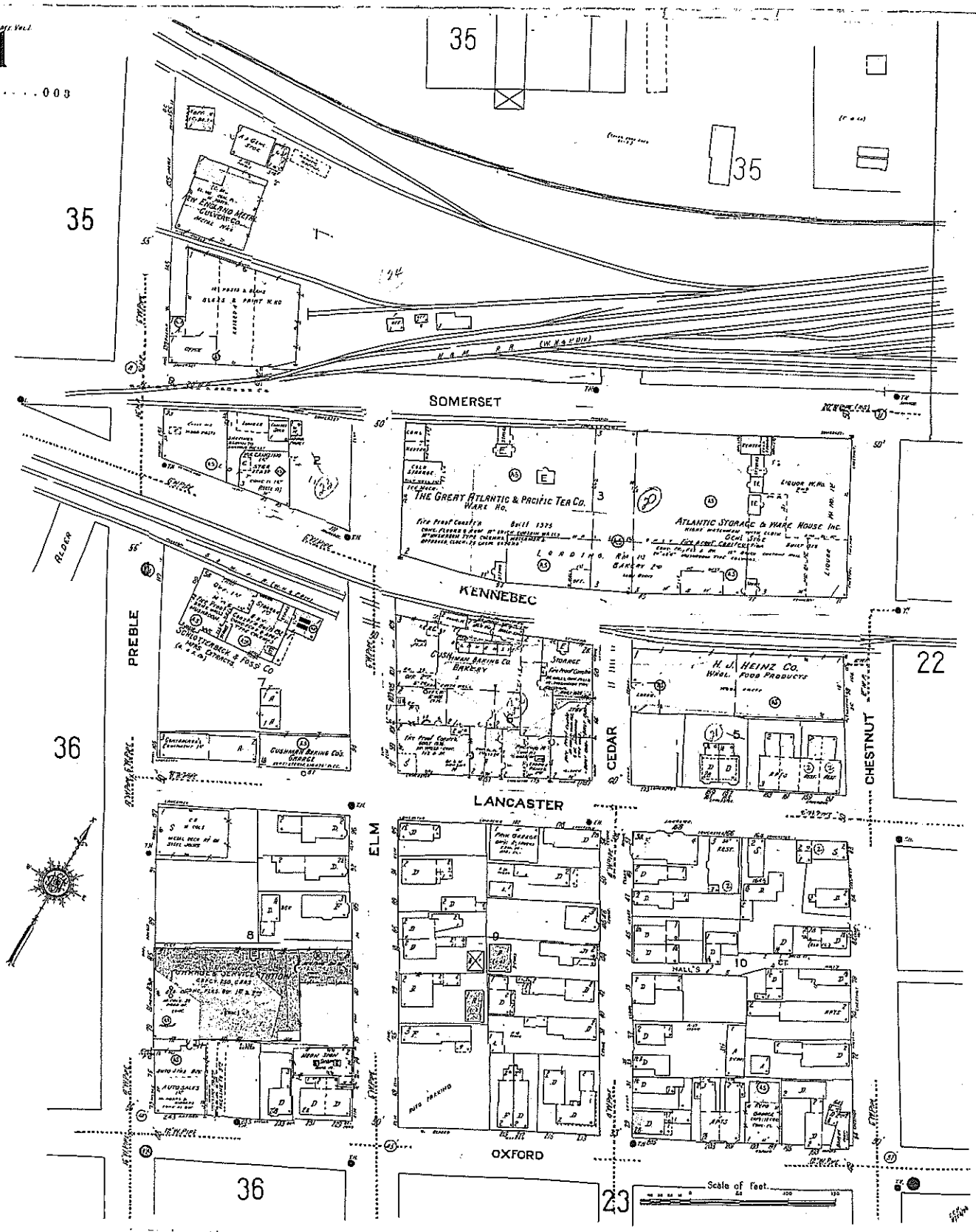
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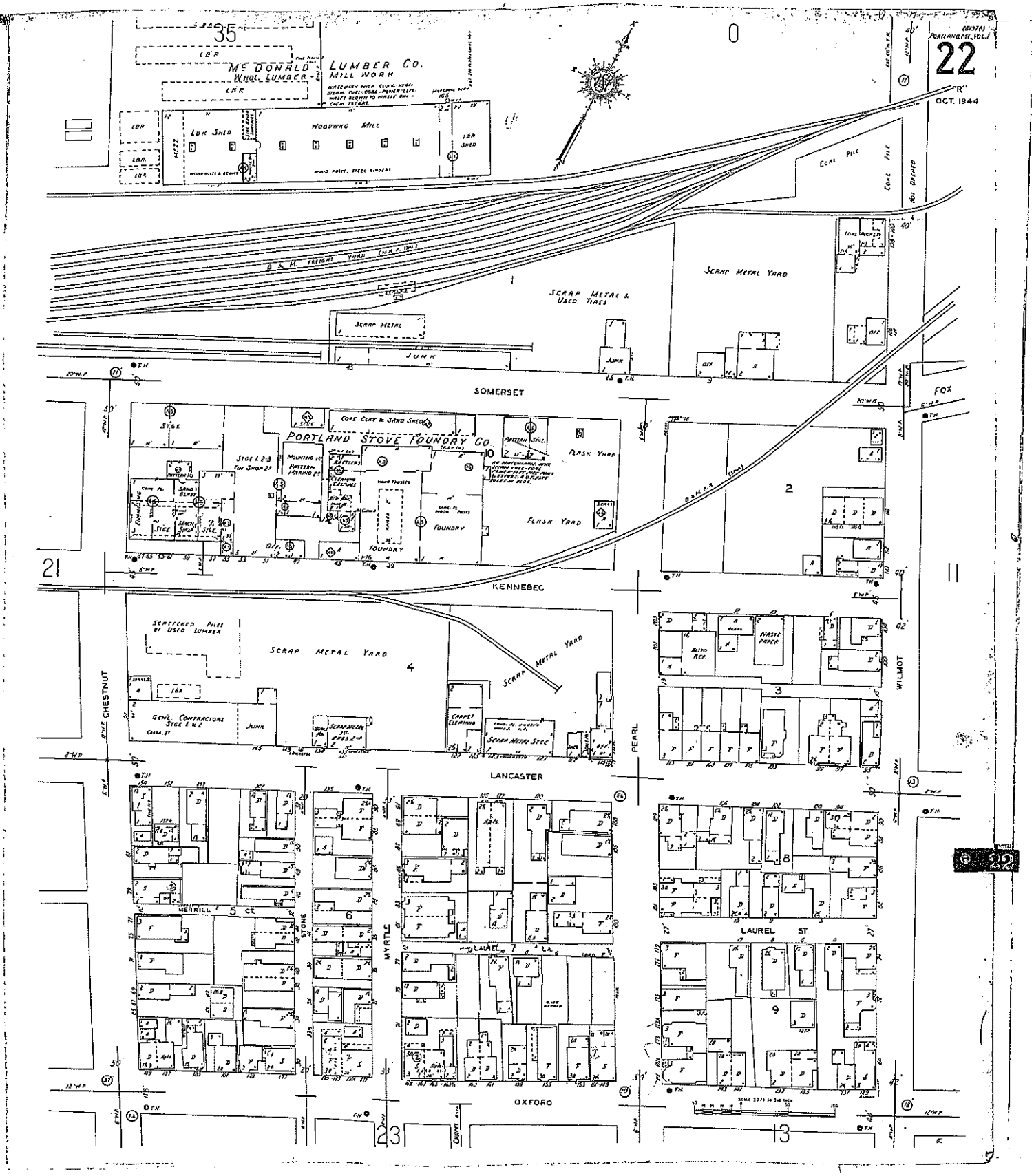
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LBR
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WOODWKG MILL
B & M FREIGHT YARD
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SCRAP METAL & USED TIRES
SCRAP METAL
JUNK
SOMERSET
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GEN'L CONTRACTORS STOCK
CHESTNUT
PEARL
WILMOT
LANCASTER
MERRILL CT.
STONE
MYRTLE
LAUREL ST.
OXFORD

South of Chestnut Street
(midtown 3 and midtown 4)

PORTLAND

MAINE

PUBLISHED BY THE

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117 BROADWAY NEW YORK

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" 36-70 13
Anderson, 1-64 36
Arsenal, 1-36 33
Ashland Ave., 7
Atlantic, 87-184 20

B

Beach, 31
Bedford, 81-105 33
Bond, 1-19 30
Boyd, 1-40 30
Brackett, 1-40 30
" 41-127 *37
" 83-144 *38
" 129-147 *33
" 143-161 36
" 163-200 *33
" 184-220 *4
Bradford, 1-35 *3
Brattle, 13
Briggs, 33
Brown, 1-71 *16
" 3-73 *15
Burnham's Lane, 6

C

Canton, 13
Cary Lane, 2
Casco, 13
Cedar, 16
Center, 1-36 8
" 41-104 25
" 100-130 16
Central, 9
Chapel, 16
Chatham, 6
Chestnut, 1-69 *16
" 2-32 *16
" 39-60 *15
" 62-139 15
Church, 11
Clark, 1-49 *33
" 2-30 *31
" 61-144 33
" 178-185 *8
Cleeves, 1-33 *31
" 2-24 *30
Cobb Court, 33
Commercial, 1-43 4
" 44-103 *6
" 18-171 *6
" 184-196 *7
" 176-202 *9
" 203-266 8
" 207-271 *8
" 236-282 *16
" 239-419 *20
" 384-425 *19
" 420-464 19
" 466-547 20
" 441-603 21
" W., 1-64 21
" 66-124 14
Congress, 1-125 25
" 126-220 33
" 221-303 *30
" 258-319 *17
" 327-400 *10
" 396-434 *11
" 415-457 *16
" 436-490 16
" 459-591 13
" 509-620 14
" 596-677 20
" 675-721 23
" Place, 16
Cotton, 1-31 *9
" 2-45 *20
" St. Court, 6
Cross, 1-35 *8
" 2-28 *8
" 37-110 9
Cumberland, 1-29 23
" 31-116 31
" 129-205 30
" 202-274 16
" 275-327 *16
" 276-363 *15
" 329-413 *33
" 384-414 *13
" 416-484 19
Custom-house St., 6

D

Danforth, 1-41 8
" 42-113 28
" 114-123 27
" 128-281 33
Deer, 8
Deering, 30-75 *13
" Place, 6-12 34
Dyer Lane, 30

E

Ellsworth, 43-59 33
Elm, 1-43 16
" 45-196 15
Elmwood Place, 16
Emerson, 33
Exchange, 1-61 *6
" 2-64 *9
" 65-130 11

F

Farrington Place, 16
Federal, 1-25 24
" 34-131 17
" 138-213 11
" 212-367 10
Fore, 2-89 *2
" 76-131 *3
" 106-133 *2
" 139-161 *24
" 154-196 *4
" 199-261 4
" 263-370 5
" 284-471 9
" 473-502 *9
" 478-616 *8
" 505-617 *33
Forest Ave., at Deering, 34
" " " Woodford's Corner, 15 & 34
Fourth, at Cape Elizabeth, 33
Fox, 30
" Court, 8
Franklin, 1-40 *4
" 2-44 *6
" 45-86 17
" 100-183 *18
" 101-187 *30
" 184-237 19
Free, 1-71 *10
" 3-34 *9
" 44-114 *33
" 72-150 *15
" 116-188 *24
Freeman's Lane, 3
Fremont Place, 1-13 *17
" " 2-14 *11

G

Garden, 11
Gilbert Lane, 3
Gray, 1-77 27
" 78-165 33
Green, 1-49 19
" 62-107 *33
" 108-136 *14
" 109-196 *13
Grove, at Woodford's Corner, 34
Gulliford's Court, 10

H

Hall Lane, 10
Hampshire, 1-19 4
" 13-74 17
Hancock, 1-81 *34
" 2-16 *4
" 18-88 *17
Hanover, 1-33 33
" 35-80 10
Heath, 12-50 30
Henry, 30
High, 1-82 20
" 83-129 34
" 126-150 *24
" 137-185 *13
" 346-357 14
" St. Court, 30
Howard, 33

I

India, 1-46 4
" 47-118 17
Ingraham's Court, 31

K

Kennebec, 1-49 28
" 48-135 18
" 128-150 18

L

Lafayette, 29
Lewis, 31
Locust, 30
" Lane, 30
Lincoln, 66-141 28
" 140-256 15
" at Cape Elizabeth, 33
" Place, 30
Lowell, 30
Laurel, 27-65 30

M

Maine, at Cape Elizabeth, 33
Maple, 1-61 *8
" 2-43 *30
Market, 1-74 6
" 69-130 11
" Square, 10
Martyn, 13
May, 30
Mayo, 1-40 30
Mechanic, 32
" at Woodford's Corner, 34
Melbourne, *33
Merrill, 1-65 33
" Court, 16
Middle, 1-150 *17
" 3-89 *4
" 90-174 *6
" 111-307 *11
" 178-346 *9
" 313-250 *16
" 256-379 16
Milk, 6
Montgomery, 30
Monument, 1-49 33
" 44-150 *3
" 81-131 *31
Moulton, 1-31 *5
" 3-36 *9
Mountfort, 1-63 *3
" 2-74 *34
" 87-77 *34
Munjoy, 85-109 33
Myrtle, 1-64 16
" 66-91 30

N

New, at Cape Elizabeth, 33
Newbury, 1-63 3
" 83-99 34
" 89-189 17
" 190-297 11
North, 1-49 *27
" 3-49 *31
" 61-79 33

O

Oak, 1-47 *23
" 2-49 *34
" 48-116 13
Old Wharf St., 6
Oxford, 1-30 31
" 33-107 20
" 106-159 *16
" 169-172 *30
" 177-183 *10
" 181-344 16
" 345-367 *12
" 346-385 *20

P

Park, 1-63 *28
" 3-30 *19
" 66-124 *31
" 85-167 *34
" 110-180 *33
" Place, 37
Parris, 1-38 33
" 37-86 13
Pearl, 1-64 6
" 61-86 11
" 93-107 16
" 166-216 20
Pine, 1-64 25
" 46-70 8
Pleasant, 1-81 *32
" 2-64 *6
" 65-118 *30
" 83-118 *36
" 114-147 36
Plum, 6
Poplar, 21
Portland, 1-29 33
" 33-107 *13
" 34-194 *33
" 100-145 11
" 469-506 29
Potter's Lane, 13
Preble, 1-40 16
" 45-133 *15
" 48-88 *33
" 74-129 *13
Prospect, 13

Q

Quebec, 30-81 25
Quincy Lane, 16

S

St. Lawrence, 1-84 3
" 86-184 25
" " Place, 3
Salem, 1-61 *36
" 63-85 35
School, 30
Sherbrooke, 3
Sheridan, 1-44 3
" 48-134 31
Silver, 1-45 6
Smith, 1-70 20
Somerset, 1-44 30
" 48-130 16
" 127-169 13
South, 23
Spring, 1-71 13
" 73-136 14
" 137-209 *16
" 228-286 *27
" 316-301 38
" at Woodford's Corner, 34
Spruce, 2-63 *30
State, 1-23 *19
" 2-43 *30
" 47-118 27
" 119-266 36
" 184-220 *33
Stetson's Lane, 6
Stevens Place, 30
Stone, 1-35 16
" 20-62 *25
" 36-64 *16
Sumner, 1-30 30
" 23-60 *31

T

Tate, 1-39 30
" 37-48 37
Taylor, 1-16 30
Temple, 1-68 *11
" 2-36 *10
Tolman Place, 13
Turner, 31-63 33
Tyng, 1-45 30
" 60-70 27

U

Union, 8

V

Vernon, 1-16 32
Vine, 6

W

Walker's Court, 8
Warren, 1-64 3
" 65-73 31
Washington, 1-70 31
Waterville, 1-63 30
West, 1-16 *5
Wilmot, 1-64 16
" 66-128 30
" Place, 16
Winter, 1-66 37
" 66-127 30

Y

York, 1-48 5
" 61-129 36
" 143-174 16
" 183-265 20
" 271-290 21

SPECIALS.

A

Abyssinian Church, 34
Army & Navy Block, 13
Atkinson, E. A., & Co., Furn. W. Rooms, 6
Atlantic Hotel, 4
" Wharf, 4
Atwood Lead Co., 33
Ayer, Houston & Co., Hat Factory, 31

B

Bailey & Noyes Block, 9
Beaver Block, 10
Bolleman, C. W., & Son, Tallow Works, 24
Berlin Mills Co.'s Warehouse, 13
Best, J. L., Beef Warehouse, 20
B. & M. R. R. Freight Depot, 20
" " " East. Div. Depot, 20
" " " Wharf, 18
Boyd Block, 9
Brackett, J. L., Buildings, 13
" " Saw Mill, 13
Brown's Block, 13
" Wharf, 19
Buckman, C. H., Furniture M'f'y, 16
Burgess, Forbes & Co., Wh. Lead Wks, 13
Burnham & Morrill, Canning Factory, 4
" Wharf, 8
Burrowes, E. T., & Co., Screen Factory, 33

C

Canadian Hotel, 4
Casco Bank Block, 11
" Carbon & Cement Pipe Co., 16
" Tanning Co., 14
Cathedral of the Immac. Conception, 20
Centennial Block, 11
Central Wharf, 7
Chas. B. Merrill Factory, 34
Chadwick Block, 9
Chase Block, 9
Chestnut St. Methodist Church, 18
City & County Buildings, 18
" Hotel, 13
Clapp Block, 16
Clark & Chaplin Ice Co., 33
Cook, Everett & Pennell, Wholes. Drugs, 5
Commercial Block, 5
" Wharf, 8
Congress St. Meth. Episc. Church, 31 & 33
Conley, J., & Son, Oils, 6
Corey, W., & Co., Furniture, 9
Cox, L. F., & Son, Hose Factory, 9
Cumberland Club House, 36
" Hotel, 14
Cummings, L. C., & Co., Land Plaster M'f'y, 14
Curtis, J. B., Spruce Gum M'f'y, 8
Custom House Wharf, 8

D

Davis Block, 11
Drake Wharf, 18
Deering Block, 14
Deering, Milliken & Co., Dry Goods, 8
Dolano & Winslow, Planing Mill, 6
Diamond Wrench Co., 11
Dole & Stuart, Lumber Warehouse, 18
Donnell Block, 6
Dolan's Planing Mill, 8
Dow Block, 13
Dunnell Hotel & Block, 13
Dyer, C. A., Machinist Casting, 6
" S. C., & Co., Lumber Warehouse, 15
" Wharf, 18

E

Eagle Hotel, 4
" Sugar Refinery, 36
Eastern Argus Printing, 11
" Forge Co., 34
Electric Light Station, 9
Emery Block, 15
" Waterhouse & Co., Hardware, 11
Evans Building, 10
Evening Express Printing, 11

F

Falmouth Hotel, 9
Farmer, E., Carriage Factory, 33
Farrington Block, 19
Female Orphan Asylum, 37
Fernald & Sawyer, Livery, 33
First Baptist Church, 18
" Free Baptist Church, 34
" National Bank Building, 6
" Parish Unitarian Church, 10
" Universalist Church, 34
Forest City Steamboat Co.'s Landing, 4
" " Sugar Refinery, 14
Foster, A., & Son, Dye House, 18
Franklin Block, 13
" Wharf, 4
Free Street Baptist Church, 34
" " Church, 9
Frye, J. J., Plow Works, 13
Fuller, A. F., & Co., Varnish Factory, 33

G

Galt Block, 4
" Wharf, 4
Gas Co.'s Wharf, 31
Goody & Kent, Bakery, 6
Grand Trunk Elevator, 4
" " Ry. Depots and Shops, 3 & 4

H

Hamblen, E. E., & Co., Cooperage, 8
" " " " Block, 18
" J. H., & Son, Cooperage, 16
Hart & Co., Sheep-skin Tannery, 33
" " Wool Factory, 30
Haskell & Jones, Clothing M'f'y, 13
" L. & Co., Wholes. Shoes, 11
High School, 16
" Street Congreg. Church, 34
Hill, M. E., Table M'f'y, 5
Hinkley, J., Livery, 13
Hobson's Wharf, 18
Holyoke " 13
Home for Aged Men, 37
Hooper, Son & Leighton, Furniture, &c., 11
Hopkins Block, 10
Houghton, F. M., Tannery, 31

I

Ingalls Bro. Soda Water M'f'y, 16
International Hotel, 4
" Steamship Co.'s Fr't Ho., 20

J

Jordan, G. E. Cooperage, 28
Jose, C. E., & Co., Crockery, 10

K

Kelley, D. T., Agric. Impl. Warehouse, 13
" " Foundry, 9
Kilborn Block, 8
Kimball Block, 10
Knight & Co., Bung, &c., M'f'y, 8

L

Lancaster Block, 10
Lang, B. M., & Co., Die Works, 15
Leppie, J. J., & Co., Hay, Flour, &c., 6
Lorraine, S. W., & Son, Lumber Yard, 7
Legrow Bros., Lumber Yard, 10
Lewis Block, 11
" E. & Co., Lumber W. H., 13
Libby, J. F., Livery, 10
Lidback, J. A., Machine Shop, 4
Little, A., & Co., Wholesale Dry Goods, 6
Long Wharf, 7
Loring, Short & Harmon, Publishers, 10
Lovell, J., & Co., Fish Store House, 6
Lord, F. H., & Co., Soap Factory, 31

M

McDonald, C. J., & Co., Planing Mill, 26
McGilvery Block, 33
" F., Brewery, 3
McLaughlin, D., & Co., Wholes. Grocers, 6
Maine Cent. R. R. Freight House, 29 & 31
" " " Pass. Depot, 30
" " " " Shops, 14 & 31
" General Hospital, 33
" Steamship Co.'s Freight Ho., 6
" Wharf, 6
Mechanics' Library & Hall, 33
Merchants' Exchange Hotel, 11
" Wharf, 18
Merrill, J. F., Refrigerator M'f'y, 16
" Wharf, 7
Milton Mining Co.'s Smelting Works, 18
Miller & Woodman, Sanding & Box Fac., 18
Mitchell, W. W., Sheep-skin Tannery, 11
Morrill, C. B., Leather Binding Factory, 34
Morton Block, 16
Motley " 13
Mussey's Row, 16

N

New Jerusalem Church, 13
" Portland Theatre, 19

O

Oberton, O. U., Coal Sheds, 16
Odell Block, 9
Old Berlin Mills Wharf, 18
" City Hall, 18
Owen, Moore & Co., Fancy Goods, 13
Oxford Building, 11

P

Pennell, M., & Co., Carriage Fact., 16
Perkins, J. W., & Co., Wholes. Drugs, 9
Perry's Hotel, 16
Pettengill, R. D., & Co., Pickle M'f'y, 16
Pine State Oil Works, 31
" Street Meth. Episc. Church, 33
Plummer, U. M. & H. T., Machine Shop, 9
P. & O. R. R. Freight Depot, 14
" " Shops, 33
P. & R. R. R. Depots, 13
" " " Shops, 13
P. S. Mt. D. & M. Steamboat Co.'s W. H., 20
Portland Advertiser Printing, 11
" Beef Co., 4 & 8
" Cement Pipe & Stone Co., 9
" Company's Works & Wharf, 2
" Gas Light Co., 31
" Horse Ry Stables, &c., 13
" " " " at Deering, 11
" Hotel, 13
" Kerosene Oil Co., 25
" Packing Co., 4
" Pier, 4
" Press Printing, 11
" Rolling Mill, 25
" Savings Bank Building, 11
" Society of Nat. History, 10
" Star Match Co., 14
" Steam Packet Co.'s Freight Ho., 4
" Stone Ware Co., 34
" Stove Foundry Co., 16 & 30
" Theatre, new, 16
Preble Hotel, 10
Printers' Exchange, 11

Q

Quinn & Co., Machine Shop, 8

R

Rackleff Building, 11
Randall & McAllister, Coal Sheds, 6
Richardson's Wharf, 3
Rines Bros., Dry Goods, 13
Round, E., Coal & Wood, 5

S

St. Dominic's Cath. Church & School, 27
" Elizabeth Convent, 30
" Julian Hotel, 3
" Lawrence Street Congreg. Church, 3
" Luke's Episc. Church, 30
" Paul's " " 20
" Stephen's Episc. Church, 25
Sargent, Dennison & Co., Coal Sheds, 7
Sawyer, J. W., & Co., Fish Packing, 6
" W. E., Co., Shoe Factory, 6
Seamen's Bethel, 6
Second Parish Congreg. Church, 16
" Unitarian Church, 34
Shaw, Goding & Co., Shoe M'f'y, 6
Silver Street Market, 6
Simonton, W. H., & Son, Spar Yard, 16
Smith, A. M., & Co., Fish Packing, 6
" " " Ship Stores, 6
Soule, G. M., Planing Mill, &c., 16
Stanton Block, 6
Stanwood, C. M., & Co., Ship Smiths, 6
State Street Congreg. Church, 29
Stewart Block, 13
Stone, W. H., Saw & Planing Mill, 15
Storer Bros. Building, 8
Sturdivant Block, 11
" Wharf, 13
Swasey, Lamson & Co., Factory, 13

T

Taylor, H., Livery, 23
Thaxter Block, 9
" S. W., Co., Grist Mill & W. H., 4
Thomas Blocks, 4 & 5
" J. P., & Co., Wholes. Shoes, 11
Thompson Block, 11
" Fowler & Co., Pork Packing, 14
" " " Slaughter Ho., 33
" E., Jr., Carriage Fact., 9
Thurston Hotel, 19
Twitchell, Champlin & Co., Oil Works, 21
" " " Whol. Gro., 7

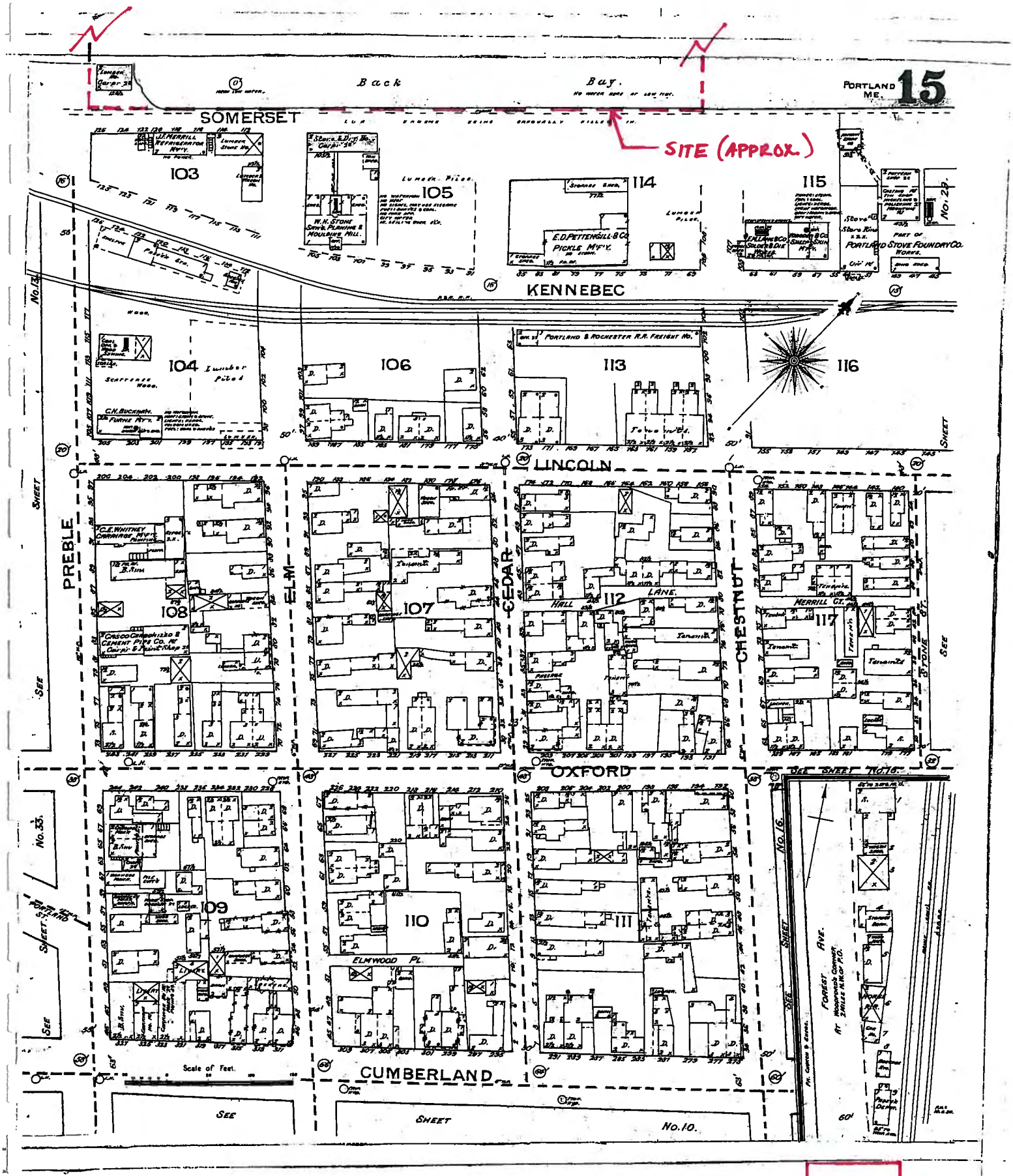
U

Union Mut. Life Ins. Co.'s Building, 11
" Wharf, 7
U. S. Custom House, 8
" Post Office & Court House, 11
United States Hotel, 16
Universalist Church of the Messiah, 17

W

Waldron, F. A., & Son, Flour, &c., 7
Walker, C. J., & Co., Wholes. Shoes, 11
Webb & Cushing, Shoe Fact., 6
Westbrook Seminary, 3
Whidden & Co., Sheep-skin M'f'y, 10
Whitney, C. E., Carriage Fact., 16
Widgery Block, 6
" Wharf, 7
Willis Block, 9
Winslow, D., & Son, Mach. Shop, 9
Woodman Block, 11
" True & Co., Dry Goods, &c., 11

* Indicates only one side of Street shown.


PORTLAND ME. 15
Back Bay.
SOMERSET
SITE (APPROX.)
103
105
114
115
KENNEBEC
104
106
113
116
LINCOLN
PREBLE
ELM
CEDAR
CHESTNUT
108
107
112
117
OXFORD
109
110
111
ELMWOOD PL.
CUMBERLAND
Scale of Feet.
SEE SHEET No. 10.
1886

ME....003

INSURANCE MAPS

Portland

MAINE

VOLUME ONE

PUBLISHED BY THE

SANBORN MAP COMPANY

11 BROADWAY, NEW YORK

1909

CENSUS
GEOGRAPHY FILES
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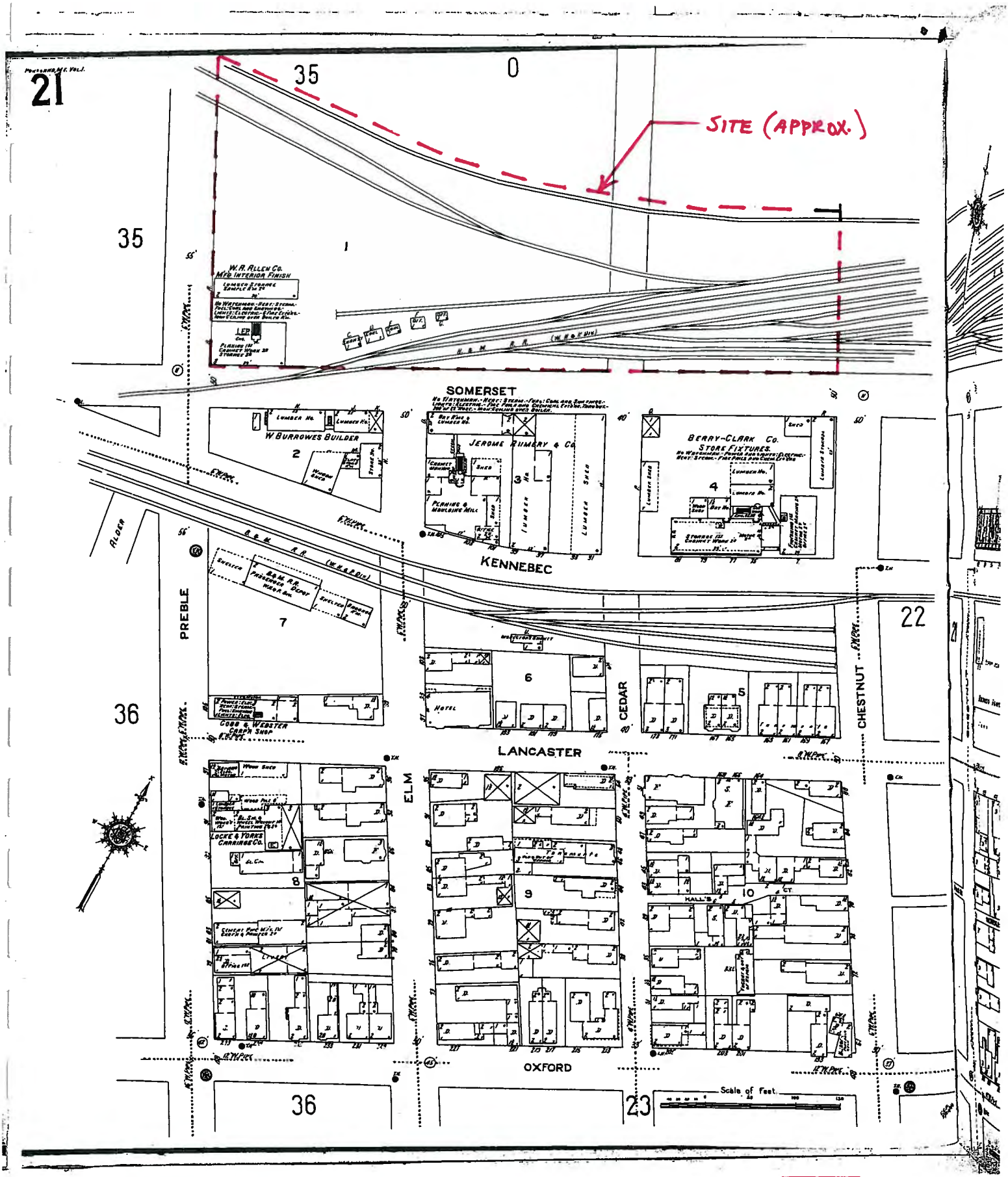
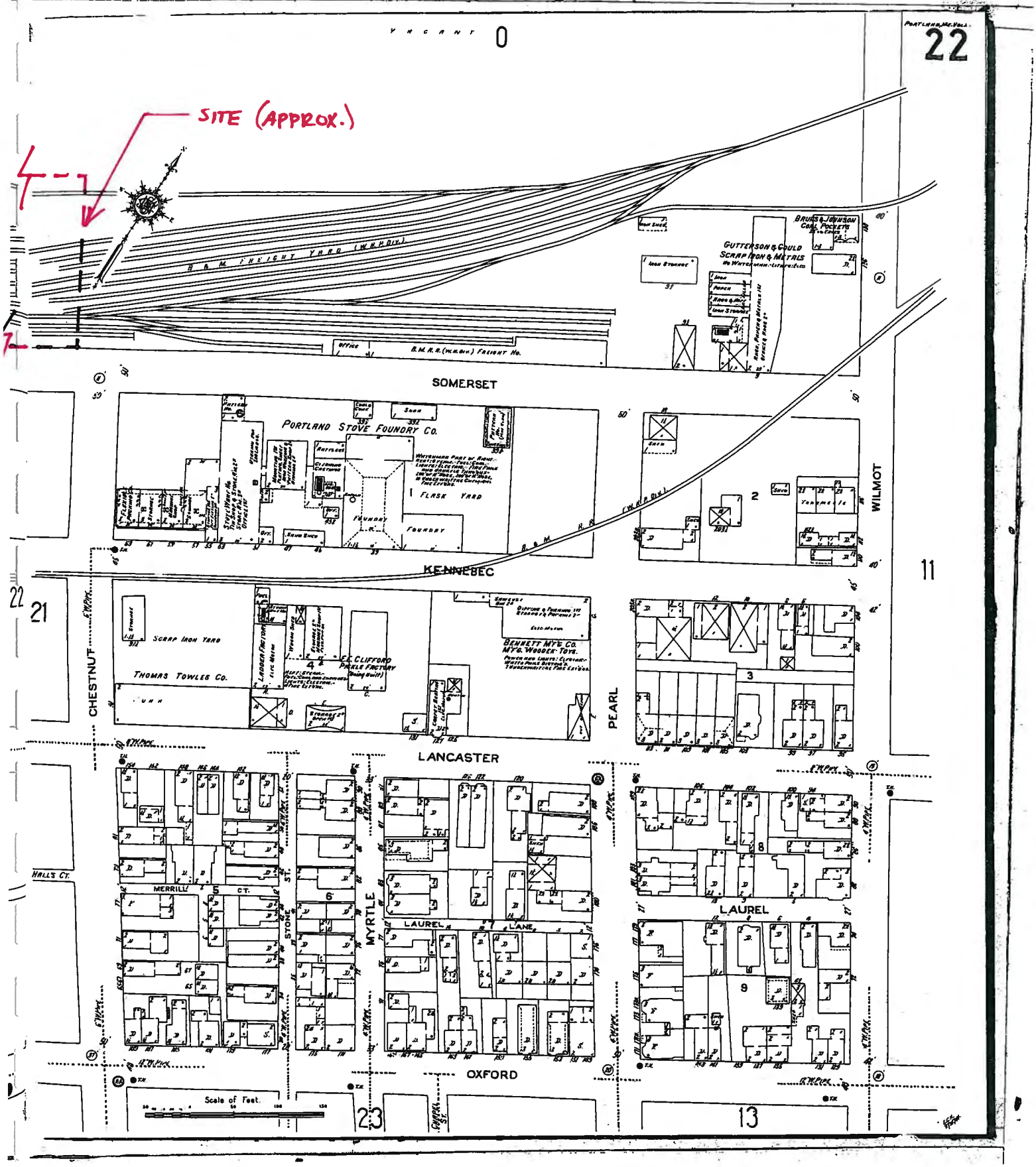

21
35
0
SITE (APPROX.)
35
1
W. A. ALLEN CO.
MFG INTERIOR FINISH
SOMERSET
W BURROWES BUILDER
2
JEROME RUMERY & CO
3
LUMBER SHED
PLANING & MOULDING MILL
BERRY-CLARK CO.
STORE FIXTURES.
4
KENNEBEC
ALDER
PREBLE
7
COBB & WEBSTER
CARR'N SHOP
36
6
HOTEL
CEDAR
5
CHESTNUT
22
LANCASTER
ELM
LOCKE & YORK
CARRIAGE CO.
8
9
10
HALL'S CT
OXFORD
36
23
Scale of Feet

1909


PORTLAND, ME. VOL. 1
22
VACANT
0
SITE (APPROX.)
B. & M. FREIGHT YARD (W.R.R. DIV.)
B. & M. R.R. (W.R.R. DIV.) FREIGHT HO.
GUTTERSON & GOULD
SCRAP IRON & METALS
BRIGGS & JOHNSON
COAL POCKETS
SOMERSET
PORTLAND STOVE FOUNDRY CO.
FLASK YARD
FOUNDRY
KENNEBEC
WILMOT
11
21
22
CHESTNUT
SCRAP IRON YARD
THOMAS TOWLES CO.
E.C. CLIFFORD
PICKLE FACTORY
BENNETT MFG. CO.
MFG. WOODEN TOYS
PEARL
LANCASTER
HALL'S CT.
MERRILL CT.
STONE ST.
MYRTLE
LAUREL LANE
LAUREL
OXFORD
Scale of Feet.
23
13

1909

ME....003

INSURANCE MAPS

Portland

MAINE

VOLUME ONE

PUBLISHED BY THE
SANBORN MAP COMPANY
11 BROADWAY, NEW YORK
1909

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GEOGRAPHY FILES
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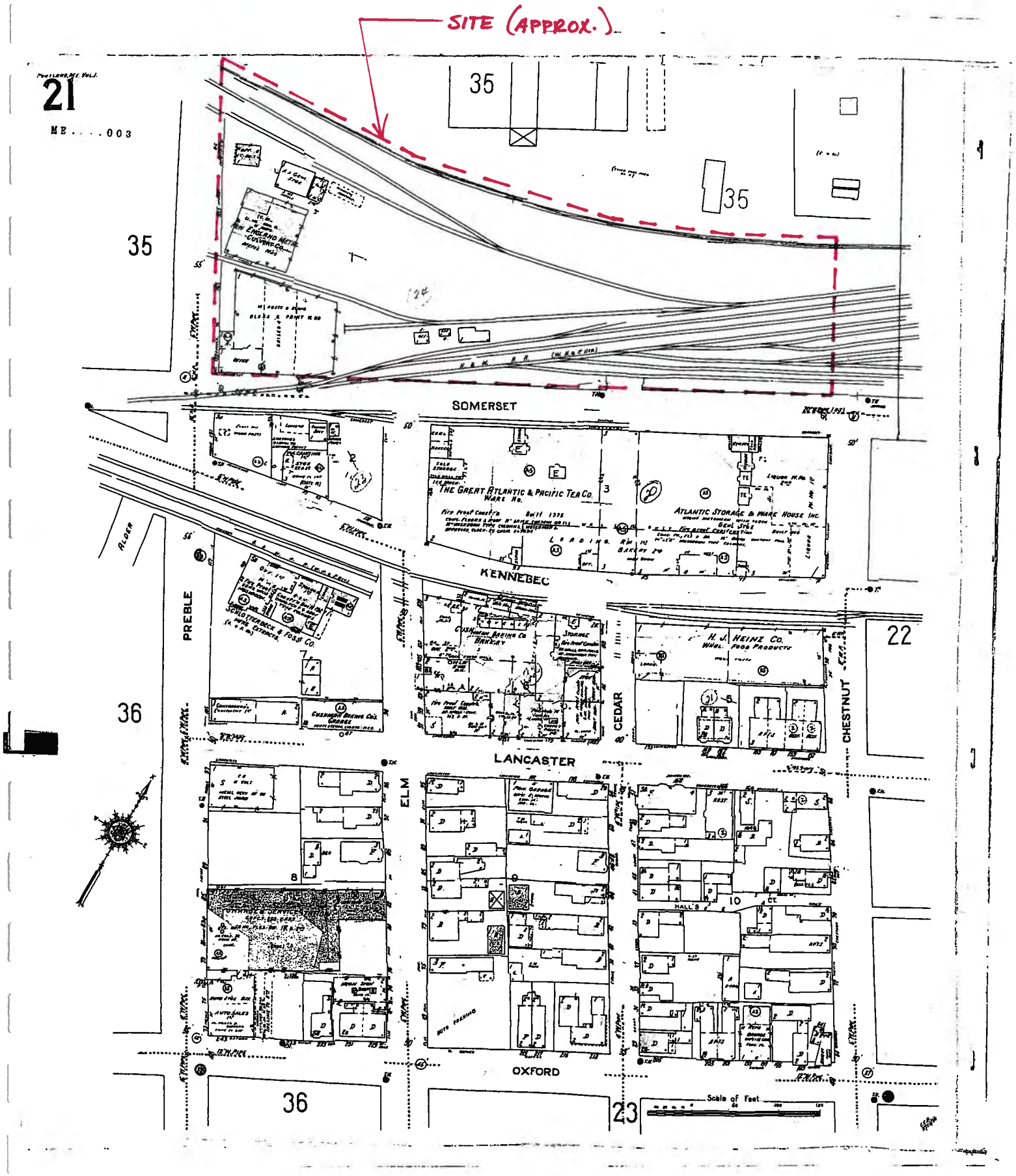
SITE (APPROX.)
21
ME....003
35
35
35
SOMERSET
KENNEBEC
LANCASTER
OXFORD
PREBLE
ELM
CEDAR
CHESTNUT
ALDER
36
36
22
23
THE GREAT ATLANTIC & PACIFIC TEA CO.
ATLANTIC STORAGE & WARE HOUSE INC.
H. J. HEINZ CO.
SCHLITTERBECK & FOSS CO.
CUSHMAN BAKING CO. BAKERY
CUSHMAN BAKING CO. GARAGE
HALL'S
Scale of Feet

1909-1950

EXHIBIT 16

ENVIRONMENTAL & HISTORICAL CONSIDERATIONS

ENVIRONMENTAL & HISTORIC CONSIDERATIONS

A. WILDLIFE AND FISHERIES

DeLuca-Hoffman Associates, Inc.* contacted the Maine Department of Inland Fisheries & Wildlife and the U.S. Department of the Interior on October 29, 2012 to obtain information on the potential impacts to wildlife and fisheries habitat within the project area. On November 1, 2012, Maine Department of Inland Fisheries & Wildlife responded that the site had no known significant wildlife habitats on this site.

The U.S. Department of the Interior responded that no federally listed or proposed threatened and endangered species under the jurisdiction of the U.S. Fish and Wildlife Service are known to occur in the project area, with the exception of occasional, transient bald eagles.

Request letters from DeLuca-Hoffman Associates, Inc. and the responses from the Maine Department of Inland Fisheries and Wildlife and the U.S. Department of the Interior are included at the end of this section.

B. HISTORIC SITES

DeLuca-Hoffman Associates, Inc. contacted the Maine Historic Preservation Commission on October 29, 2012 to obtain information any potential historic, architectural, or archaeological significance on the project site. The Maine Historic Preservation Commission responded on December 3, 2012 that there will be no historic properties affected by the proposed undertaking, as defined by Section 106 of the National Historic Preservation Act.

C. UNUSUAL NATURAL AREAS

The Maine Department of Conservation was contacted on October 29, 2012 and informed of the proposed development. DeLuca-Hoffman Associates, Inc., sought to obtain information on locations of rare, endangered or registered critical areas, which the project may impact. The Maine Department of Conservation database indicated that there are no rare botanical features documented specifically within the project area. The Department provided a list of rare and unique botanical features documented for assistance to any biologist conducting inventory of the site.

No unusual areas are known to exist on the project site.

D. ATTACHMENTS

- Correspondence to/from Department of Inland Fisheries & Wildlife
- Correspondence to Maine Historic Preservation Commission
- Correspondence to/from Maine Natural Areas Program

**DeLuca Hoffman Associates, Inc. was acquired by Fay, Spofford & Thorndike. The two names are used interchangeably in portions of the midtown documents.*

ATTACHMENTS

Correspondence To/From
Department of Inland Fisheries & Wildlife
Maine Historic Preservation Commission
Maine Natural Areas Program

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TEL. 207 775 1121
FAX 207 879 0896

- SITE PLANNING AND DESIGN
- ROADWAY DESIGN
- ENVIRONMENTAL ENGINEERING
- PERMITTING
- AIRPORT ENGINEERING
- CONSTRUCTION ADMINISTRATION

October 29, 2012

Mr. Steve Timpano
Maine Department of Inland Fisheries & Wildlife
State House Station 41
Augusta, ME 04333

Subject: Proposed Maritime Landing Project
Somerset Street, Portland, Maine

Dear Steve:

Our office has been retained by The Federated Companies to assist in the preparation of permit applications for a proposed mixed use development comprised of a parking garage, multistory multi-family housing, and some limited retail space. The project site is depicted on the enclosed aerial photograph and includes Lots 1 to 3 and 5 to 8 on the attached survey plan. The actual project will impact portions of Somerset and Elm Street and a recently constructed public trail system that is located on the survey as lots 4 and 9. The land area is about 3.5 acres in total size. The City of Portland conducted demolition and environmental cleanups on the premises over the past several years. Consequently, the site is currently an unimproved lot with some limited weeds around the perimeters. Photographs of the parcel are enclosed.

If you have any questions with regards to this letter, please contact our office.

Sincerely,

DeLUCA-HOFFMAN ASSOCIATES, INC.

William G. Hoffman, P.E.
President

WGH/cmd

Enclosure

c: Matt Jefferies
Greg Shinberg

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STATE OF MAINE
DEPARTMENT OF
INLAND FISHERIES & WILDLIFE
284 STATE STREET
41 STATE HOUSE STATION
AUGUSTA, MAINE
04333-0041

PAUL R. LEPAGE
GOVERNOR

CHANDLER E. WOODCOCK
COMMISSIONER

November 1, 2012

NOV - 5 2012

William G. Hoffman, P.E.
DeLuca-Hoffman Associates, Inc.
778 Main Street
Suite 8
South Portland, ME 04106

RE: Information Request, Maritime Landing Project, Somerset Street, Portland

Dear William:

Per your request received October 30 we have searched current Department records for known occurrences of Rare, Threatened, and Endangered species, designated Essential and Significant Wildlife Habitats, and fisheries habitat concerns within the vicinity of the proposed Maritime Landing Project on Somerset Street in Portland.

Our records indicate no occurrences of rare, threatened, or endangered animal species within the project area. Additionally, our department has not mapped any Essential or Significant Wildlife Habitats or Fisheries Habitats that would be directly impacted by your project.

This consultation review has been conducted specifically for known MDIF&W jurisdictional features and should not be interpreted as a comprehensive review for the presence of all regulated features that may occur on site. Prior to the start of any future site disturbance we recommend additional consultation with the municipality, and other state resource agencies including the Maine Natural Areas Program and Maine Department of Environmental Protection in order to avoid unintended protected resource disturbance.

Please feel free to contact my office if you have any questions regarding this information, or if I can be of any further assistance.

Best regards,

Steve Walker
Acting Environmental Review Coordinator

Environmental Review of Fish and Wildlife Observations and Priority Habitats

Project Name: Maritime Landing (Version 1)

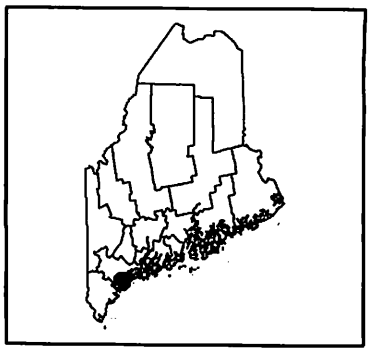
Maine Department of Inland Fisheries and Wildlife

0 0.125 0.25 0.5 0.75 1 Miles

Projection: UTM, NAD83, Zone 19N

Date: 11/1/2012

- ProjectPoints
- ProjectLines
- ProjectPolys
- ProjectSearchAreas
- Deer Winter Area
- LURC p-fw
- Cooperative DWAs
- Seabird Nesting Islands
- Shorebird Areas
- Inland Waterfowl/Wading Bird
- Shoreland Zoning_lwwh
- Tidal Waterfowl/Wading Bird
- Significant Vernal Pools
- Environmental Review Polygons
- Roseate Tern
- Piping Plover/Least Tern
- Aquatic ETSc (2.5 mi review)
- Rare Mussels (5 mi review)
- A and B List Ponds
- Arctic Charr Habitat
- E. Brook Trout Joint Venture Subwatershed Classification
- Redfin Pickerel/Swamp Darter Habitats (buffer100ft)
- Special Concern-occupied habitats(100ft buffer)
- Wild Lake Trout Habitats



DeLUCA-HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS

778 MAIN STREET
SUITE 8
SOUTH PORTLAND, MAINE 04106
TEL. 207 775 1121
FAX 207 879 0896

- SITE PLANNING AND DESIGN
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- AIRPORT ENGINEERING
- CONSTRUCTION ADMINISTRATION

October 30, 2012

Mr. Mark McCullough
Endangered Species Specialist
U. S. Fish and Wildlife Service
1168 Main Street
Old Town, Maine 04468

Subject: Proposed Maritime Landing Project
Somerset Street, Portland, Maine

Dear Mark:

Our office has been retained by The Federated Companies to assist in the preparation of permit applications for a proposed mixed use development comprised of a parking garage, multistory multi-family housing, and some limited retail space. The project site is depicted on the enclosed aerial photograph and includes Lots 1 to 3 and 5 to 8 on the attached survey plan. The actual project will impact portions of Somerset and Elm Street and a recently constructed public trail system that is located on the survey as lots 4 and 9. The land area is about 3.5 acres in total size. The City of Portland conducted demolition and environmental cleanups on the premises over the past several years. Consequently, the site is currently an unimproved lot with some limited weeds around the perimeters. Photographs of the parcel are enclosed.

If you have any questions with regards to this letter, please contact our office.

Sincerely,

DeLUCA-HOFFMAN ASSOCIATES, INC.

William G. Hoffman, P.E.
President

WGH/cmd

Enclosure

c: Matt Jefferies
Greg Shinberg

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U.S. Fish and Wildlife Service

Natural Resources of Concern

This resource list is to be used for planning purposes only — it is not an official species list.

Endangered Species Act species list information for your project is available online and listed below for the following FWS Field Offices:

MAINE ECOLOGICAL SERVICES FIELD OFFICE
17 GODFREY DRIVE, SUITE 2
ORONO, ME 04473
(207) 866-3344
http://www.fws.gov/mainefieldoffice/index.html

Project Name:

Maritime Landing

U.S. Fish and Wildlife Service

Natural Resources of Concern

Project Location Map:

Project Counties:

Cumberland, ME

Geographic coordinates (Open Geospatial Consortium Well-Known Text, NAD83):

MULTIPOLYGON (((-70.26325535 43.66018566, -70.2631886 43.6601257, -70.2633817 43.6601102, -70.26325535 43.66018566)), ((-70.26325535 43.66018566, -70.2651412 43.6618798, -70.2601201 43.6650309, -70.2578456 43.6634166, -70.26325535 43.66018566)))

Project Type:

Development

U.S. Fish and Wildlife Service

Natural Resources of Concern

Endangered Species Act Species List (USFWS Endangered Species Program).

There are a total of **1** threatened, endangered, or candidate species, and/or designated critical habitat on your species list. Species on this list are the species that may be affected by your project and could include species that exist in another geographic area. For example, certain fishes may appear on the species list because a project could cause downstream effects on the species. Please contact the designated FWS office if you have questions.

Species that may be affected by your project:

Mammals	Status	Species Profile	Contact
New England Cottontail rabbit (*Sylvilagus transitionalis*)	Candidate	species info	Maine Ecological Services Field Office

FWS National Wildlife Refuges (USFWS National Wildlife Refuges Program).

There are no refuges found within the vicinity of your project.

FWS Migratory Birds (USFWS Migratory Bird Program).

Most species of birds, including eagles and other raptors, are protected under the Migratory Bird Treaty Act (16 U.S.C. 703). Bald eagles and golden eagles receive additional protection under the Bald and Golden Eagle Protection Act (16 U.S.C. 668). The Service's Birds of Conservation Concern (2008) report identifies species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become listed under the Endangered Species Act as amended (16 U.S.C 1531 et seq.).

NWI Wetlands (USFWS National Wetlands Inventory).

The U.S. Fish and Wildlife Service is the principal Federal agency that provides information on the extent and status of wetlands in the U.S., via the National Wetlands Inventory Program (NWI). In addition to impacts to wetlands within your immediate project area, wetlands outside of your project area may need to be considered in any evaluation of project impacts, due to the hydrologic nature of wetlands (for example, project activities may affect local hydrology within, and outside of, your immediate project area). It may be helpful to refer to the USFWS National Wetland Inventory website. The designated FWS office can also assist you. Impacts to wetlands and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes. Project Proponents should discuss the relationship of these

requirements to their project with the Regulatory Program of the appropriate U.S. Army Corps of Engineers District.

DeLUCA-HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS

778 MAIN STREET
SUITE 8
SOUTH PORTLAND, MAINE 04106
TEL. 207 775 1121
FAX 207 879 0896

- SITE PLANNING AND DESIGN
- ROADWAY DESIGN
- ENVIRONMENTAL ENGINEERING
- PERMITTING
- AIRPORT ENGINEERING
- CONSTRUCTION ADMINISTRATION

October 29, 2012

Mr. Earle Shettleworth
Maine Historic Preservation Commission
55 Capitol Street
State House Station 65
Augusta, ME 04333

Subject: Proposed Maritime Landing Project
Somerset Street, Portland, Maine

Dear Earle:

Our office has been retained by The Federated Companies to assist in the preparation of permit applications for a proposed mixed-use development comprised of a parking garage, multistory multi-family housing, and some limited retail space. The project site is depicted on the enclosed aerial photograph and includes Lots 1 to 3 and 5 to 8 on the attached survey plan. The actual project will impact portions of Somerset and Elm Street and a recently constructed public trail system that is located on the survey as lots 4 and 9. The land area is about 3.5 acres in total size. The City of Portland conducted demolition and environmental cleanups on the premises over the past several years. Consequently, the site is currently an unimproved lot with some limited weeds around the perimeters. Photographs of the parcel are enclosed.

This project will be an urban infill of recent redevelopment in the area as shown on the key map and photographs which accompany this letter.

If you have any questions with regards to this letter, please contact our office.

Sincerely,

DeLUCA-HOFFMAN ASSOCIATES, INC.

William G. Hoffman, P.E.
President

WGH/cmd

Enclosure

c: Greg Shinberg
Matt Jefferies

R:\3062-Maritime Landing\Admin\Permitting\State Agency\3062 2012.10.24 MHPO.doc

PHOTOGRAPH KEY MAP
MARITIME LANDING PROJECT
PORTLAND, MAINE
PREPARED BY DELUCA-HOFFMAN ASSOCIATES, INC.
Preble Street Extension
I-295
Marginal Way
Forest Avenue
Hanover Street
Elm Street
Preble Street
Chestnut Street
Franklin Street
Somerset Street
Pearl Street
Kennebec Street
BUILT 1920
BUILT 1900
BUILT 1925
BUILT 1940
#1
#2
#3
#4
#5
#6
#7
#8
#9
#10
#11
#12
#13
#14
#15
#16
#17
#18
#19
#20
#21
#22
#23
#24
#25
#26

PHOTO 1 – Trader Joe's & Eastern Mountain Sports Building
(Year Built 2001)

PHOTO 2 – Trader Joe's & Eastern Mountain Sports Building
(Year Built 2001)

DeLUCA-HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS
778 MAIN STREET, SUITE 8
SOUTH PORTLAND, MAINE 04106
TEL. 207-775-1121
FAX: 207-879-0896
E-MAIL: dhai@delucahoffman.com

Maritime Landing – Portland, Maine
Building Onsite and Buildings in Vicinity of Proposed Project
Photos Taken 10-25-12

PHOTO 3 – Three Story Concrete Masonry Building (currently storage)
(Year Built 1925)

PHOTO 4 – Three Story Concrete Masonry Building (currently storage)
(Year Built 1925)

DeLUCA-HOFFMAN ASSOCIATES, INC.
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778 MAIN STREET, SUITE 8
SOUTH PORTLAND, MAINE 04106
TEL. 207-775-1121
FAX: 207-879-0896
E-MAIL: dhai@delucahoffman.com

Maritime Landing – Portland, Maine
Building Onsite and Buildings in Vicinity of Proposed Project
Photos Taken 10-25-12

PHOTO 5 – Three Story Concrete Masonry Building (currently storage)
(Year Built 1925)

PHOTO 6 – Three Story Concrete Masonry Building (currently storage)
(Year Built 1925)

DH

DeLUCA-HOFFMAN ASSOCIATES, INC.
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FAX: 207-879-0896
E-MAIL: dhai@delucahoffman.com

Maritime Landing – Portland, Maine
Building Onsite and Buildings in Vicinity of Proposed Project
Photos Taken 10-25-12

PHOTO 7 – New Housing
(Year Built 2008)

PHOTO 8 – Walgreen Pharmacy & Salon Centric Building
(Year Built 2010)

DeLUCA-HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS
778 MAIN STREET, SUITE 8
SOUTH PORTLAND, MAINE 04106
TEL. 207-775-1121
FAX: 207-879-0896
E-MAIL: dhai@delucahoffman.com

Maritime Landing – Portland, Maine
Building Onsite and Buildings in Vicinity of Proposed Project
Photos Taken 10-25-12

PHOTO 9 – Walgreen Pharmacy & Salon Centric Building
(Year Built 2010)

PHOTO 10 – Walgreen Pharmacy & Salon Centric Building
(Year Built 2010)

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Maritime Landing – Portland, Maine
Building Onsite and Buildings in Vicinity of Proposed Project
Photos Taken 10-25-12

PHOTO 11 – Planet Fitness Building
(Year Built 2005)

PHOTO 12 – Three Story Concrete Masonry Building (currently storage)
(Year Built 1925)

DeLUCA-HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS
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TEL. 207-775-1121
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E-MAIL: dhai@delucahoffman.com

Maritime Landing – Portland, Maine
Building Onsite and Buildings in Vicinity of Proposed Project
Photos Taken 10-25-12

PHOTO 13 – Three Story Concrete Masonry Building (currently storage)
(Year Built 1925)

PHOTO 14 – Building to be Razed
(Owned by City of Portland)

DeLUCA-HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS
778 MAIN STREET, SUITE 8
SOUTH PORTLAND, MAINE 04106
TEL. 207-775-1121
FAX: 207-879-0896
E-MAIL: dhai@delucahoffman.com

Maritime Landing – Portland, Maine
Building Onsite and Buildings in Vicinity of Proposed Project
Photos Taken 10-25-12

PHOTO 15 – Department of Health & Human Services Building
(Year Built 1999)

PHOTO 16 – Service & Car Care Center
(Year Built 1969)

DeLUCA-HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS
778 MAIN STREET, SUITE 8
SOUTH PORTLAND, MAINE 04106
TEL. 207-775-1121
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E-MAIL: dhai@delucahoffman.com

Maritime Landing – Portland, Maine
Building Onsite and Buildings in Vicinity of Proposed Project
Photos Taken 10-25-12

PHOTO 17 – Warehouse Construction Yard Area
(Year Built 1940)

PHOTO 18 – Warehouse Construction Yard Area
(Year Built 1940)

DeLUCA-HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS
778 MAIN STREET, SUITE 8
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E-MAIL: dhai@delucahoffman.com

Maritime Landing – Portland, Maine
Building Onsite and Buildings in Vicinity of Proposed Project
Photos Taken 10-25-12

PHOTO 19 – Warehouse Construction Yard Area
(Year Built 1940)

PHOTO 20 – Service & Car Care Center
(Year Built 1969)

DeLUCA-HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS
778 MAIN STREET, SUITE 8
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TEL. 207-775-1121
FAX: 207-879-0896
E-MAIL: dhai@delucahoffman.com

Maritime Landing – Portland, Maine
Building Onsite and Buildings in Vicinity of Proposed Project
Photos Taken 10-25-12

PHOTO 21 – AT&T Store & Planet Dog Building
(Year Built 1981)

PHOTO 22 – AT&T Store & Planet Dog Building
(Year Built 1981)

DeLUCA-HOFFMAN ASSOCIATES, INC.
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778 MAIN STREET, SUITE 8
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Maritime Landing – Portland, Maine
Building Onsite and Buildings in Vicinity of Proposed Project
Photos Taken 10-25-12

PHOTO 23 – Whole Foods Building
(Year Built 2006)

PHOTO 24 – MULTI-USE INDUSTRIAL
(Year Built 1920)

DH

DeLUCA-HOFFMAN ASSOCIATES, INC.
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Maritime Landing – Portland, Maine
Building Onsite and Buildings in Vicinity of Proposed Project
Photos Taken 10-25-12

PHOTO 25 – Multi-Use Industrial
(Year Built 1920)

PHOTO 26 – Portland Architectural Salvage
(Year Built 1900)

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DeLUCA-HOFFMAN ASSOCIATES, INC.
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TEL. 207-775-1121
FAX: 207-879-0896
E-MAIL: dhai@delucahoffman.com

Maritime Landing – Portland, Maine
Building Onsite and Buildings in Vicinity of Proposed Project
Photos Taken 10-25-12

Reed, Robin K

From: Sandi Keef <skeef@DelucaHoffman.com>
Sent: Friday, November 09, 2012 9:39 AM
To: Reed, Robin K
Cc: WHoffman@DelucaHoffman.com; CDaniell@DelucaHoffman.com
Subject: Maritime Landing ; Somerset Street, Portland lots 1 to 3, 5 to 8
Attachments: Locus Map.pdf

Robin,

Enclosed is the Locus Map for the Maritime Landing project in Portland, Maine. This shows the adjacent tax map and lot numbers and is being sent to follow-up our conversation of Wednesday, 11/7/12 and our original request dated 10/29/12.

Thank you,

Bill Hoffman

DeLuca-Hoffman Associates, Inc.
778 Main Street, Suite 8
South Portland, ME 04106
207.775.1121
207.879.0896 fax
skeef@delucahoffman.com

This message and any attachments are intended for the individual or entity named above and may contain privileged or confidential information. If you are not the intended recipient, please do not forward, copy, print, use or disclose this communication to others; please notify the sender by replying to this message and then delete it from your system.

Based on the information submitted, I have concluded that there will be no historic properties affected by the proposed undertaking, as defined by Section 106 of the National Historic Preservation Act. Consequently, pursuant to 36 CFR 800.4(d)(1), no further Section 106 consultation is required unless additional resources are discovered during project implementation pursuant to 36 CFR 800.13.

Kirk F. Mohney

Kirk F. Mohney,
Deputy State Historic Preservation Officer
Maine Historic Preservation Commission

12/3/12
Date

DeLUCA-HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS

778 MAIN STREET
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- SITE PLANNING AND DESIGN
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- CONSTRUCTION ADMINISTRATION

October 29, 2012

Ms. Lisa St. Hilaire, Assistant Ecologist
Maine Natural Areas Program
17 Elkins Lane
93 State House Station
Augusta, Maine 04333

Subject: Proposed Maritime Landing Project
Somerset Street, Portland, Maine

Dear Lisa:

Our office has been retained by The Federated Companies to assist in the preparation of permit applications for a proposed mixed use development comprised of a parking garage, multistory multi-family housing, and some limited retail space. The project site is depicted on the enclosed aerial photograph and includes Lots 1 to 3 and 5 to 8 on the attached survey plan. The actual project will impact portions of Somerset and Elm Street and a recently constructed public trail system that is located on the survey as lots 4 and 9. The land area is about 3.5 acres in total size. The City of Portland conducted demolition and environmental cleanups on the premises over the past several years. Consequently, the site is currently an unimproved lot with some limited weeds around the perimeters. Photographs of the parcel are enclosed.

If you have any questions with regards to this letter, please contact our office.

Sincerely,

DeLUCA-HOFFMAN ASSOCIATES, INC.

William G. Hoffman, P.E.
President

WGH/cmd

Enclosure

c: Matt Jefferies
Greg Shinberg

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STATE OF MAINE
DEPARTMENT OF CONSERVATION
93 STATE HOUSE STATION
AUGUSTA, MAINE
04333-0093

PAUL R. LEPAGE
GOVERNOR

WILLIAM H. BEARDSLEY
COMMISSIONER

NOV 16 2012

October 31, 2012

William Hoffman
DeLuca-Hoffman Associates, Inc.
778 Main Street, Suite 8
South Portland, ME 04106

Re: Rare and exemplary botanical features in proximity to: Maritime Landing Development Project, Somerset Street, Portland, Maine

Dear Mr. Hoffman:

I have searched the Natural Areas Program's Biological and Conservation Data System files in response to your request received October 31, 2012 for information on the presence of rare or unique botanical features documented from the vicinity of the project site in Portland, Maine. Rare and unique botanical features include the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. Our review involves examining maps, manual and computerized records, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.

Our official response covers only botanical features. For authoritative information and official response for zoological features you must make a similar request to the Maine Department of Inland Fisheries and Wildlife, 284 State Street, Augusta, Maine 04333.

According to the information currently in our Biological and Conservation Data System files, there are no rare botanical features documented specifically within the project area. Based on the information in our files and the landscape context of this project, there is a low probability that rare or significant botanical features occur at this project location.

This finding is available and appropriate for preparation and review of environmental assessments, but it is not a substitute for on-site surveys. Comprehensive field surveys do not exist for all natural areas in Maine, and in the absence of a specific field investigation, the Maine Natural Areas Program cannot provide a definitive statement on the presence or absence of unusual natural features at this site.

The Natural Areas Program is continuously working to achieve a more comprehensive database of exemplary natural features in Maine. We would appreciate the contribution of any information obtained should you decide to do field work. The Natural Areas Program welcomes coordination with individuals or organizations proposing environmental alteration, or conducting environmental assessments. If, however, data provided by the Natural Areas Program are to be published in any form, the Program should be informed at the outset and credited as the source.

MAINE NATURAL AREAS PROGRAM
MOLLY DOCHERTY, DIRECTOR

PHONE: (207) 287-8044
FAX: (207) 287-8040
TTY: (207) 287-2213

EXHIBIT 17

COMPLIANCE WITH APPLICABLE ZONING AND B-7 LAND USE REQUIREMENTS

ZONING REVIEW FOR FINAL LEVEL III SITE PLAN REVIEW

(by Article, Division, Section, sub-section, as applicable)

Division 17 B-7 Mixed Use Development District Zone

Section 14-295 Permitted Uses:	
(a) Commercial Uses	All contemplated commercial uses are allowed as included in the first 23 use items on the list in this subsection. No surface parking use is proposed on any of the land comprising the **midtown** development.
(b) Residential Uses	**midtown** will include multi-family dwellings allowed under use item 1.
(c) Public Infrastructure	Pad-mounted outdoor switchgear and transformers will be provided by CMP to service **midtown** as allowed under use item 1. Landscaped (planted and paved) pedestrian plaza areas will be provided between **midtownOne** and **Two** (courtyard and mews) and at the west end of **midtownFour** (terrace) as allowed under use item 3.
(d) Institutional	No institutional uses are proposed
(e) Other	No drive-up retail or repair facilities, no transportation facilities, and no wind energy facilities are proposed on the land comprising the **midtown** development.

Section 14-296 Conditional Uses:	
(a) uses conditioned by Planning Board	
1. Commercial Uses	No conditional commercial uses are proposed.
2. Industrial Uses	No industrial uses are proposed.
3. Structured Parking	**midtownTwo** contains structured parking.
a.1. Ground Floor Use	The entire ground floor of the parking structure, other than the area required for access to and egress from the parking decks above, will be devoted to retail use under items 1 to 23 of section 14-295 (a).
a.ii. 35 ft. Setback from primary street right-of-way	Due to the reduced dimension of the property between Somerset St. and the Bayside Trail, the Somerset façade is set back to 10 feet. Applicant seeks conditional use permit to allow parking garage and a waiver to allow the façade set back less than 35 ft. from primary street right-of-way.

a.iii. Façade design	The entirety of all four facades of the structure which are visible from public ways and will be architecturally composed, designed, and detailed in accordance with the B-7 Design Standards; the facades will feature green screens composed of living plant material.
4. Utility Substations	No enclosed buildings or built structures as described in this sub-section are proposed.
5. Buildings greater than 125 ft. high	No buildings of height greater than 125 feet are proposed for the **midtown** development
(b) Uses conditioned under Section 14-474	None of the listed uses are proposed

Section 14-297 Prohibited Uses:	No Prohibited uses are proposed at **midtown**

Section 14-298 Dimensional Requirements	
(c) 2.a. 10 ft. Maximum Street Setback	All facades including the garage are setback no more than 10 feet from Somerset, Pearl, Chestnut, and Elm Streets. The Pearl Street façade of **midtownOne** is setback to allow future widening of Pearl Street right of way. The façade of **midtownFour** is straight, while the street line is curved. Because of the change in grade from Elm St. to the finished floor of the building, additional sidewalk is provided and the façade is setback an average of ten ft.
(g) Maximum Building Height per Overlay Map	Buildings are in A and B zones with respective maximum heights of 125 and 105 ft. **midtownOne** in the A zone is 72 ft. high; **midtownTwo** in the B zone is 92 ft. high; **midtownThree** and **Four** in the A zone are 72 ft. high. All buildings comply.
(h) Minimum Building Height	The "A" zone minimum height is 4 floors; B zone minimum height is 3 floors. All buildings are six or more floors, therefore in compliance.

Section 14-299 Performance Standards	
(a) Enclosed dumpsters	All proposed refuse and recycling containers will be held within the **midtown** buildings awaiting pick-up. Service rooms for this purpose are shown on the ground floor plans of each building.

(b) Noise	No processes within the **midtown** buildings are expected to generate noise greater than 60 dBA daytime/50dBA nighttime. Roof-mounted mechanical equipment will not generate noise greater than this standard at 4'0" above grade at the **midtown** property line or at the nearest nearby residential property line.
(c) Vibrations	No proposed activities within the **midtown** buildings are expected to produce vibration perceptible at the property line without instruments.
(d) Environmental Emissions	With the exception of commercial restaurant kitchen equipment, no permanently installed combustion equipment or appliances are contemplated at **midtown**; therefore, emissions will be only general residential ventilation. Emissions from autos using the garage are otherwise regulated (as mobile sources of emission not through building standards).
(e) Outdoor Storage of Vehicles	No vehicles will be stored outside at **midtown**.
(f) Off Street Parking and Loading	**midtownTwo** is a structured garage to provide off street parking for all uses in the development. The requirements of Division 21 Off-street Loading do not apply to developments in the B-7 district per this sub-section.
(g) Flood Plain Management	The **midtown** buildings do not have basements or cellars; the ground floor of all buildings will be constructed at an elevation above the FEMA 100 yr. predicted flood elevation.
(h) Glare, Radiation, Fumes	None of these will be emitted by the **midtown** buildings.
(i) Enclosure	Residential uses will be enclosed but for potential balconies, terraces, and/or French windows; retail uses will be enclosed but for possible food service use at courtyard and mews at **midtownOne** and **Two** and terrace facing the street or trail at Elm St. at **midtownFour**.
(j) Outdoor Storage	No outdoor storage by tenants of the **midtown** development will be permitted
(k) Odor	No obnoxious odors will be generated.
(l) Smoke	No smoke will be emitted

(m) Discharge into Sewers	Discharge to the sanitary sewer will consist only of ordinary domestic waste. No process waste of any sort is expected from **midtown**.
(n) Lighting	Retail display lighting is expected to partially wash the sidewalks and trail but not to shine on adjacent properties. A partial waiver is sought from Technical Manual to allow higher lighting levels typical of retail areas.
(o) Building Entrances	All **midtown** buildings will have pedestrian entrances facing street frontages.

Division 14 B-7 Signage

Section 14-366.5 Applicability	See review of division 22 below and the signage plan included with the drawings. Individual retail tenant signs are the responsibility of those future tenants.

Division 20 Off-street Parking

Section 14-331 Definition	Off-street parking provided at **midtown** will be in a garage structure designed to meet the standards set forth in the Technical Manual
Section 14-332 Parking Requirements by Use	
(a) 3.a. Residential	One space per dwelling unit to be provided. *Does not apply: see Exception 14-332.2 (c)*
(a) 3.b. Shared Use Vehicles	Shared use vehicles may be provided within the garage: one such vehicle will satisfy the requirement for eight residential spaces. *Does not apply: see Exception 14-332.2 (c)*
(h) Retail Stores	One space required per 200 sq. ft. of floor area in excess of 2000 sq. ft. not ground used for storage. *Does not apply: see Exception 14-332.2 (c)*
(l) Restaurants	One space per 150 sq. ft. of area not used for storage or food preparation. *Does not apply: see Exception 14-332.2 (c)*
Section 14-332.1 Zone Specific Exceptions	
(i) Parking in B-7 Mixed Use Zone	Parking in B-7 projects shall be governed by Section 14-332.2 (c)
Section 14-332.2 Categorical Exceptions	
(c) Parking Requirement in B-7 Zone	Parking for projects in B-7 zone shall be established by the Planning Board based on a parking analysis submitted by Applicant and upon recommendation of the City Transportation Engineer.

Section 14-332.3 Bicycle Parking	Bicycle parking will be provided by a combination of on-street hitches, and off street spaces in garage per 14-526(a)(2)
Section 14-334 Parking on same lot with use in Non-Residential zones.	
(a) Distance from Principal Building	Applicant will seek exception from Planning Board for parking in **midtownTwo** to serve uses in all other buildings and to allow parking more than 100 ft., but not more than 1500 ft., from principal entrances of the residential buildings. (note that the entrances to **midtownOne** and **midtownThree** are within 100 ft. of the garage entrances)
(b) Same Ownership	All four **midtown** buildings will not be held in common ownership following development.
Section 14-341 Aisle Widths	Aisles in parking garage will be in conformance with Technical Manual.

Division 21 Off-street Loading

Does Not Apply	Per Section 14-299 as noted above, Off-street loading is not required in the B-7 zone.

Division 22 signs

Section 14-368 Regulations	
(a) Signs allowed, allowed with permit, not allowed.	Signs will be mounted on the proposed buildings to identify: the project (vertical face-mounted signs on garage); each residential building at its primary entry; and commercial/retail tenants at their street entries. Street numbers and public parking entry signage will also be provided.
(b) Permits	Building Identity and residential entry signs will be designed and permitted with building design; retail signage will be designed and permitted by tenants along with tenant improvement permitting.
(c) Design, Construction, Maintenance	Signs will be designed, mounted and maintained in accordance with this division of the code.
(d) Signage Plan	A draft signage plan for all form buildings in the project is included with this application. It shows the locations on the buildings where signs may be located but does not detail the messages, mounting, or sign fabrication details.

Section 14-369 Computations	
(a) Area of Individual Signs	The aggregate area of all signs on each façade is shown on the Signage Plan.
Section 14-369.5 Tables	
(a) Table 1, signs by type	Only allowed, permitted and conditional signs as listed in table 1 will be proposed.
(b) Table 2, regulations by zone – table 2.8 regulations in B-7 Mixed Use Urban Zone	
Freestanding Signs	Does not apply as freestanding signs are only allowed where buildings are set back 20 ft. or more from street. All setbacks at midtown are ten feet or less.
Building Signs	Ground Floor Retail Tenants will be allowed one sign not greater than 2 sq ft. of signage for each linear foot of lease frontage, where a lease faces two or more streets the tenant will be allowed a sign on each façade. Each building will have one Building ID sign not greater than 5% of the wall area on which the sign is placed. The project will have two Project ID signs mounted on the garage facades as shown. The total of building ID signage areas plus the Project ID signage areas will not exceed 5% of the sum of the areas of the facades on which these signs are mounted.
Window Signs	Tenants will be allowed to have window signs and permitted awning signs within the total area allotted by lease frontage.
Roof Signs not allowed	No roof signs are proposed.

Article V. Site Plan

Section 14-526 Environmental Standards	
(c) 2.1. (i) Natural Surveillance	Having full time residents overlooking public spaces has been shown to be the best form of natural surveillance. Midtown will bring the eyes of the tenants of more than three hundred new apartments with direct view of the Bayside Trail Somerset, Pearl, Chestnut and Elm streets, and the Mews and Courtyard.

(d) 1.a. No reduction in natural ventilation to abutting structures; no unsafe wind conditions for users of public spaces.	The nearest structure to the buildings of midtown is *Trader Joes* on Elm Street near midtown Four. This is a windowless façade and therefore ventilation of Trader Joes will be unchanged. We understand that a wind study was undertaken for a previous development on the site featuring buildings substantially greater than two times as high. That study found no unsafe conditions; reduced height brings wind speed decreases – it is therefore concluded that the currently proposed structures will not create unsafe wind conditions at any adjacent publicly accessible open spaces.
(d) 1. b. No diminution in value or utility of neighboring parcels.	By replacing vacant land with active retail street frontage and medium density residential development, the proposed project will likely increase the value of neighboring parcels.
(d) 1.c. HVAC venting	Heating and cooling will be via electric heat pumps, hence there will be no products of combustion.
(d) 2. Shadows	The B-7 district shadow requirements are regulated under the B-7 design guidelines. See review of these standards in a separate attachment, along with the required shadow study provided as Exhibit.
(d) 3. Snow and Ice Shedding	The buildings will be designed without wide flat ledges, out sloping cornices or sills which might accumulate and potentially shed snow and/or ice onto the public way.
(d) 4. View Corridors	The low-rise buildings protect designated downtown view corridors.
(d) 5. Historic Resources	does not apply
(d) 6.b. Architectural Lighting	Exterior lighting will be located only at entrances for safety, security and a sense of welcome, and at egress and service doors as required by code. These lights will be shielded or cut-off fixtures that will emit no direct light upwards nor into adjacent residential properties.
(d) 7.a (i) HVAC equipment noise	Compressor/condenser (outdoor) units for the heating cooling systems will be located on the roofs and screened from view from the public way by parapets. As shown by the cut sheets provide in exhibit #20b they emit 55 dBA sound pressure at the roof, and likely less than 50dBA at street level seventy feet below

(d) 7.a. (ii) Emergency Generator	Does not apply – generator not required for low-rise buildings or naturally ventilated garage.
(d) 8.a. Signage	See separate review of commercial signage as regulated by Division 22 of the code.
(d) 9.a(i) Zoning related Design Standards	See separate review of B-7 Design Standards
(d) 9.a. (viii) Extra Height in district A	Does not apply – proposed building heights of 75 and 92 feet are well below the allowed heights of 105 and 125 feet.

Prepared by CBT/Childs Bertman Tseckares Inc, Architects, for The Federated Companies

November 14, 2014

SUMMARY OF B-7 DESIGN STANDARDS

Summary of B-7 Design Standards - *Prepared by CBT Architects*

Principle A, Urban Design			Plan **for midtown** Development	**midtown Final** Level III Design
Standard A-1	Sense of Place	■	*The identity and "sense of place" of Bayside is based on design elements that contribute to the character of the district.* The Plan for **midtown** Development responds to listed characteristics as follows: · Forms strong street edge as existing pattern development; · Extends the street grid at Pearl, Chestnut, and Elm streets; · Raises Somerset St. in response to flood concerns (topography); · Maintains view corridors to and between Downtown, Back Cove, Deering Oaks and the East End; · Buildings are arranged to allow access to light and air; · Street extensions and Mews provide public connection to the pedestrian and bicycle network and other public spaces; · Access to the regional transportation system is provided via Somerset St. to Franklin to I-295; and · Providing an opportunity for innovative architectural and landscape design. The Plan for **midtown** Development has characteristics which strengthen the identity of the Bayside district by: · Enhancing the artistic personality of Bayside in the future;	**midtown** building designs respond as follows: · Forms street edges at Somerset, Pearl, Chestnut and Elm Streets; · Mediates the grade change between the new elevation of Somerset Street and the Bayside Trail with gentle steps and ramps; · Public Mews between Garage midtownTwo and Apartment midtownOne provides pedestrian and visual continuity of Myrtle St.; · The buildings have been designed in a modern or contemporary aesthetic using a muted range of warm natural neutral colors with vibrant accents **midtown** building designs support the intent of the Plan for Development by:

			· Respecting the industrial vernacular of existing buildings; · Encouraging innovative architectural design that expresses the aesthetic of the time in which it is being built; · Strengthening the connections to adjacent neighborhoods of Bayside, Downtown, Back Cove, Deering Oaks, and the East End by providing one side of a dense pedestrian-oriented commercial spine along Somerset Street; · preserving views; · Mitigating traffic/pedestrian concerns across major streets through design of ADA access ramps and painted crosswalks; · Creating mixed retail and residential uses that have a neighborhood main street scale; · Creating neighborhood green spaces as places to gather; and · Utilizing native plant materials in landscaping. Characteristics in *The Vision for Bayside* that are not applicable to the Plan for **midtown** Development: · Encouraging adaptive reuse; · Respecting the "patina" of age and maintaining historic materials; · Mitigating the widths of the major arterials such as Marginal Way and Franklin Arterial which border the neighborhood because these arterials are not within the Development Plan area; and, · Highlighting Portland and Cumberland Streets as "Main Streets" to the traditional residential portions of the neighborhood, as these streets are not within the Development Plan area.	· Design in modern industrial style; · Innovative and contemporary use of materials and color; · Provides continuous retail frontage on Somerset and Elm Streets; · Buildings are lower than allowed heights; · Provides mixed use of residential over retail; · Provides Mews and Courtyard; enhances the Bayside Trail; and · Design will utilize drought-tolerant native and non-invasive species · No buildings exist on site; · No historic materials exist on site; · Site does not border these streets; · Site does not border these streets

Standard A-2	Edges and Transitions	■	*Transitions between larger scale mixed use buildings and smaller scale residential uses shall be designed so that there is a seamless connection.* The area planned for **midtown** Development does not directly abut smaller scale residential areas of Bayside. Its immediate neighbors are unbuilt land, an unredeveloped factory/warehouse across Somerset Street and commercial open parking lots with low-rise commercial development on the opposite side of the trail. The Plan for **midtown** Development therefore does not delineate transitions between the larger scale and the smaller scale elements of the Bayside zone. The Plan for **midtown** Development provides several open spaces that provide elegant transitions from the taller to the lower scale elements of the design (The Courtyard, The Mews, Chestnut Square, The Bayside Trail).	**midtown** buildings One, Two, Three, and Four are designed so as not to have a "back". Blank walls are avoided and service areas are internal to the buildings and utility transformers will be screened from view. The same materials are used on all sides of each building and composed to provide an inviting contemporary appearance. **midtown** design includes The Mews and The Courtyard
Standard A-3	Gateways		*Gateways serve as landmarks signal arrival and promote district identity.* As a landmark, the buildings of **midtown** Development will be visible and identifiable to vehicular traffic. This visibility and identity of place is tempered by addressing the pedestrian scale along the trail and Somerset Street. The Plan for **midtown** Development is unique as the first extensive intervention to create a walkable main street; it will create an identifiable landmark within surrounding neighborhoods and district. This landmark status will be emphasized by distinctive paving patterns, landscaping, accent lighting and way finding at the pedestrian scale.	The **midtown** apartment buildings have been designed in a unique contemporary industrial aesthetic to mark the beginning of this important development in Bayside. No less important at street level, the Garage building will feature a maximum retail frontage on Somerset Street, Chestnut Street and the Bayside Trail, enhancing the pedestrian experience. Upper levels of the garage will be clad in architecturally detailed industrial materials in context with the Apartment buildings.

Standard A-4	Views and Landmarks	□	*New development shall be designed with consideration of views and view corridors shown on Downtown Height Study and Bayside Height Overlay Map and other important views.* The Plan for **midtown** Development includes important characteristics: · Massing articulation responds to view corridors with heights substantially less than allowed · Myrtle Street and Cedar Street are not through streets to Somerset Street and are presently partially obstructed by existing buildings. · New development does not block view corridors · Roof top appurtenances will be screened from view corridors, and will not obscure important landmarks;	**midtown building** designs respond to the intentions of the Plan for Development by: · Emphasizing in its materiality and techtonic articulation at the corners while de-emphasizing the other façades; · Pearl St. Extension is designed with potential to extend street grid through to Marginal Street · While the Myrtle St. view corridor will be partially blocked at lower levels, The Mews provides a continuity of the pedestrian realm which will be easily visible from the lower blocks of the street; · Mechanical equipment and elevator penthouses will be screened · Buildings meet the agreed 10' setback distance from street line at ground; portions of the upper levels of **midtownThree** project two feet into this setback (that is portions of the upper levels are set back eight feet). A request for a partial waiver of Standard A-4 that requires that new development be sited so that it does not block existing view corridors, is required to allow the garage **midtownTwo** to partially obstruct the Myrtle Street view corridor.

Standard A-5	Pedestrian Environment	■	*Development shall be human scale on public streets and enhance the pedestrian experience through details of design.* The Plan for **midtown** Development's public streets and public spaces will achieve a human scale at the pedestrian level through the use of: · Ground floor retail throughout; · Articulated retail façades; · High quality building materials; · Retail entries primarily oriented to the street; · Active windows and storefronts; · Awnings and weather protection; · Outdoor seating; · 'Bump outs' traffic calming; · Adequately sized sidewalks; · Appropriately scaled streetlights; · New public spaces and connection to trail; · New urban streetscape, furniture, landscaping and trees; and, · Provision for public art, by others. · Development Plan is seeking a waiver of the future extension of Cedar and Myrtle Streets.	**midtown building designs** respond to the Plan for Development intentions by providing: · Continuous retail frontage along Somerset St. interrupted only by garage and service entries, and along Chestnut St. and for more than half the length of the garage along the trail, and along Elm Street; · Retail façades which will be a majority clear vision glass with column and mullion articulation; · Entries will be from streets exclusively and will be protected with awnings; · Outdoor seating will be provided where space and tenant requirements allow; · Sidewalks are adequately sized and provide bump-outs at pedestrian crossings at Pearl and Chestnut streets; · Streetlights will be standard for the zone; · Connections to the trail are made at Pearl St., the Mews, Elm Street and Chestnut St.; and · New paving, street furniture, landscape planting, and provision for public art will be provided; · Applicant is exploring public art in the form of large scale murals – the building elevations show potential location

Standard A-6	Mix of Uses	■	*New development in Bayside shall incorporate a mix of residential, retail, commercial, and open space uses of various types and scales.* The Plan for **midtown** Development incorporates a mix of residential, ground floor retail and open space uses of various types and scales. The plan is designed to allow adaptability and flexibility of use over time.	The **midtown** buildings incorporate a mix of residential, ground floor retail, and open space uses.
Standard A-7	Building Orientation	■	*Buildings shall be located at the property street line to provide definition and character to the streets.* The **midtown** Development buildings have been located near the property street line in order to provide very clear definition and character to the street. The primary façades and entrances of buildings are oriented to streets, major pedestrian routes, or open spaces in order to enhance the pedestrian-oriented environment.	**midtownOne** apartment building is oriented with continuous retail frontage on Somerset St. and The Mews; the primary apartment entrance is on Pearl St. near the trail and there are secondary entrances on Pearl St. nearer Somerset St. and from the Courtyard; service is confined to a narrow entrance on Pearl St.; tenant amenities and the residential lobby have active windows facing the trail. **midtownTwo** garage building is built out to the street line and features continuous retail development along both Somerset and Chestnut streets. **midtownThree** apartment building is oriented with continuous retail frontage on Somerset St., clerestory windows along the trail, and at the corner of Somerset and Chestnut Streets, the apartment entrance faces Chestnut Street. **midtownFour** apartment building has retail frontage on Elm Street and facing the trail, with the apartment resident and service entries from Elm St. at the southeast corner All buildings thus front on streets at property line and form a strong and active street edge.

Principle B, Access and Circulation			**midtown** Development Plan	**midtown Level III** Design Review
Standard B-1	Streets and Alleys	■	*Streets and alleys shall be scaled for expected vehicle, pedestrian, bicycle and transit activity to support mixed use development.* The Plan for **midtown** Development provides streets scaled for expected vehicle, pedestrian, bicycle, and transit activity; they support mixed use development and will be well landscaped and promote traffic calming. Somerset Street will allow for on-street parking and loading. The proposed street grid of the Plan for **midtown** Development will follow the existing scale and pattern of Portland's street grid and blocks. The plan incorporates provisions for the future extension of Pearl Street to Marginal Street.	**midtownOne, Two, Three, and Four** will include the development of streetscape to meet these standards along Somerset, Elm and Chestnut Streets. The full build-out of Pearl Street will require future property acquisition; the temporary construction of this first phase will provide a turn-around at the trail sufficient for passenger and delivery vehicles The immediate implementation will involve raising the grade of Somerset St. (a B street on the *Bayside Street Hierarchy Map)*, Chestnut St., and Pearl St. (both C streets in the hierarchy). Temporary transition grades will be provided at the corner of Somerset and Pearl, and at the west end of Somerset St. at Elm St.
Standard B-2	Street Connectivity	■	*The prevailing street grid of Portland (and Bayside particularly) should be extended to provide opportunities for sun and airflow.* The Plan for **midtown** Development incorporates provisions for the future extension of Pearl Street. Small block size would make the provision of an efficient parking garage impractical (as the length of ramp is determined by slope limited by code), so the Development Plan is seeking a waiver for the future extension of Cedar and Myrtle Streets.	**midtownOne** apartment and garage building projects are designed to allow a public mews space to provide a pedestrian connection from a future Myrtle St. extension to the Bayside Trail and to allow airflow and sunshine.

				Near Elm Street, the **midtownThree** building is held back from property line to provide a wide and clear public trail connection to future redevelopment of the land to the north (currently fenced parking lots) Sunlight and air are well-provided to all façades of all buildings.
Standard B-3	Mid-Block Permeability	■	*Development should incorporate mid-block permeability perpendicular (and where feasible, parallel) to Marginal Way through provision of alleys, pedestrian corridors, trail access, plazas, and pocket parks.* The Plan for **midtown** Development incorporates provisions for a new public open space connecting Somerset Street to the Bayside Trail between the first apartment and garage buildings.	**midtownOne** apartment buildings and **midtownTwo** Garage building are sized to the smaller block sizes of the Bayside neighborhood. **midtownThree** provides retail space fronting on Somerset St. It is noted that the building opposite this building on Somerset St. has no mid-block connector and the trail adjacent to the building's north façade is defined by a berm containing stabilized contaminated soil which rises 6 feet above the floor level of the retail space. In addition, there is a fenced parking lot on the north side of the trail. A mid-block connector in this instance would serve no real purpose as there would be no matching connector on the other side of Somerset St. and no pedestrian connection to the trail or properties to the north – that is a connector by itself (even if it could overcome the topographic problem of the berm) would generate no foot traffic as it would not be part of a larger pattern of pedestrian movement. The **midtownThree** building design does, however, hold back from the property line at its west end allowing an expanded trail connection to Somerset and Elm Streets with easy and inviting access from Somerset Street.

Standard B-4	Sidewalks and Crosswalks	■	*All sidewalks and crosswalks shall conform to the intent of the City's Technical and Design Standards and Guidelines providing sidewalks of 12 - 15 ft. width on A and B streets with bump-outs at pedestrian crossings.* The Plan for **midtown** Development incorporates new sidewalks which will be bifurcated by a grade change at Pearl and Somerset Streets as shown in the plans. However, with the planned change in roadway elevation the majority of the Somerset frontage will be one continuous sidewalk without grade change. Somerset and Elm are designated 'B Streets' – the plan includes bump-outs and amenities such as tree wells, landscaping, café seating and provision for public art by others.	The **midtown** Apartment and Garage buildings will include development of detailed landscape areas on Pearl, Somerset, Chestnut, and Elm Streets, with new pavement, street furnishing and lighting.
Standard B-5	Green Streets	na		
Standard B-6	Multi-modality	■	*New development shall accommodate a full range of multi-modal transportation options including pedestrian, bicycle, private auto, delivery and pick-up vehicles, and transit users.* **midtown** Development incorporates plans for re-construction of Somerset, Pearl, and Chestnut, streets to meet the City's standards and allow multi-modal use.	
Standard B-7	Continuity of Street Level Uses	■	*Development shall provide for the continuity of pedestrian-oriented uses along Somerset Street frontage.* Unavoidable entrances to the garage of the **midtown** Development are located on Somerset street; pedestrians will be given priority by requiring cars to enter the garage at sidewalk level via a short ramp at curb edge. Service	A service entrance for the **midtownOne** apartment building and its ground floor retail use is provided on Pearl Street; service entrance for **midtownTwo** retail space is provided adjacent to the garage entrance;

			entries to residential buildings **midtownOne** and **midtownFour** are planned at the cross streets to assure maximum retail frontage on Somerset St.; the service entry for **midtownThree** retail and residences will be along Somerset St., and the service entry for **midtownFour** will be near Elm St. A partial waiver is requested	service entrance for **midtownThree** retail and residences is provided on Somerset Street, and the service entrance for **midtownFour** is provided on Elm Street. These service entrance doors will be about seven feet wide, will be designed as an integral part of the modern industrial aesthetic of the buildings, and will be opened only to remove trash and recycling to vehicles parked in designated service spaces. Service for the ground floor retail use in the Garage building will be provided through the front door(s) of the retail spaces from loading zones along Somerset St. Loading dock or service vehicle facilities are not planned for these retail spaces; tenants will provide for trash and recycling facilities within their leased premises. Retail and apartment lobbies will form more than 90% of street frontages thus assuring the maximum frontage along Somerset Street.
Standard B-8	Traffic Calming	■	*New development shall provide traffic calming on Chestnut Street where the Bayside Trail crosses and shall provide neck-downs, trees and landscaping, and crosswalks as wide as the sidewalks they serve.* The Plan for **midtown** Development provides landscape treatment and sidewalk bump-outs (traffic neck-downs) along Somerset street at crosswalks, as well as traffic calming in the form of a central island in Chestnut street where the Bayside Trail crosses.	The intersections of Pearl, Elm and Chestnut Streets with Somerset St. will be constructed to city standards as part of the **midtown** construction work.

Standard B-9	Streetscape Design	■	*New Development shall utilize the City's streetscape standards for Bayside to create a unified image for the neighborhood.* The new privately owned and developed open spaces provided by the Plan for **midtown** Development will be designed to coordinate with the City's standards for streetscape design elements.	The Mews and The Courtyard at **midtownOne and Two** have been designed with paving materials, lighting, street furniture, and plant species that have been coordinated to harmonize with the streetscape standards for Somerset Chestnut and Pearl Streets. The garage green screen is intended to bring the trail landscaping into the garage building façade. Similar materials and details will be employed at the public terraces and plazas associated with **midtownThree** and **Four**
Standard B-10	Encroachments	■	*Encroachments on the public sidewalk shall be sited and designed to encourage pedestrian activity.* No encroachments are planned in the Plan for **midtown** Development.	**midtownOne, Two, Three, and Four** do not include any encroachments in the public sidewalk.
Standard B-11	Lighting	□	*Street lights along public streets shall comply with the City's Technical and Design Standards and Guidelines and shall be scaled to the size and use typical for each street.* The Plan for **midtown** Development will utilize the standard type fixture for Somerset Street, Elm, Chestnut Street and Pearl Extension. Location and spacing may need a waiver. As well, higher intensity lighting is appropriate for the retail locations especially along Somerset St. and to create a uniform appearance along the ground floor retail areas of the development which may require a waiver of some requirements.	As **midtown** is constructed Holophane street light model for Bayside at 19' – 3" height will be used in Silver Metallic Aluminum on Somerset St. and in Tribo color on Pearl, Elm and Chestnut Streets.

			Pedestrian lighting will be provided by the streetscape lighting noted above together with 'spill' lighting from retail store fronts. Lighting for the mews and new public opens spaces will be designed to compliment these standards. A waiver is requested for higher intensity lighting to support retail activity.	A waiver is requested of the lighting intensity and spacing requirements for **midtown** in that all ground floor uses on Somerset St., the Mews, the Courtyard, much of the Bayside Trail, Chestnut and Elm Streets will be retail. Higher intensity lighting is appropriate for such retail locations and the design seeks to create a bright and uniform appearance along the ground floor retail areas of the development.
Principle C, Parking, Loading and Services Areas			**midtown** Development Plan	**midtown** Level III Design Review
Standard C-1	Parking Structures	■	*Parking structures shall be compatible with adjacent uses and architecture in form, bulk, massing, articulation, and materials.* The Plan for **midtown** Development will incorporate architectural design elements that provide visual interest on all sides of its two garages that are visible from public rights of way. The visual impact of parking garages along Somerset, Chestnut, the Mews and Bayside Trail will be mitigated through façade articulation and use of materials in harmony with the residential buildings. Internal lighting and the glare of headlights will be screened from view. Pedestrian level lighting will be provided on all public sides of the garages.	The **midtownTwo** Parking Garage will express a horizontal bay spacing of 12 ft. similar to the proposed residential façades, and it will utilize a floor-to-floor dimension of 10 ft. similar to the residential floors. Additionally, all buildings will take the form of predominant retail ground floor use with other uses on the upper floors. Materials for the garage will include architectural precast concrete, metal and colored accent features, all as illustrated in elevation drawings submitted. The Garage's internal lighting will be carefully designed to avoid spill and glare visible from public spaces, and pedestrian light levels along Somerset and Chestnut Streets, and along the Bayside Trail and the Mews, will be bright as detailed elsewhere.

			Garages will provide facilities for Electric Vehicle recharging The Garages will provide space for public commercial car share services.	The Garage will provide 14 premium EV-ready spaces near the elevators. These spaces will include an outlet, pay station, and appropriate signage – they will be available on both short term and monthly lease basis. Space will be provided for public car sharing programs like ZipCar, Enterprise, or u-car. These vehicles are provided with access key-cards to operate the garage access and egress gates, so can be parked near the public elevator on Somerset St. and available to all neighbors at any time.
Standard C-2	Parking Entrances	□	*Parking garage automobile entrances shall respect the pedestrian realm; Pedestrian entry/exit points shall be enhanced; Visual impact shall be minimized through design elements* In the Plan for **midtown** Development, garages will be designed to respect the pedestrian realm and minimize the visual impact of the garage entrance and exit by collocating the garage entrance and exit. These consolidated entry/exits will provide greater uninterrupted active retail use on the ground floor and will require a waiver from the requirement for separate entry/exit. Entry/egress gates will be located interior to the garages to allow entrance queuing internal to the structure minimizing back up onto Somerset St. A waiver is requested of the requirement that entrances and exits be physically separated.	The **midtownTwo** Parking Garage will require entering vehicles to rise onto the sidewalk via a curb ramp, and thus the entering driver will know that the vehicle is being driven in a pedestrian realm. The exit ramp will be clearly signed and well lighted to alert the exiting driver that s/he will be crossing a sidewalk where pedestrians have the right of way. Entry and exit revenue control gates are located well inside the garage. Three lanes are provided with the center lane being reversible so that two entry gates can be utilized during busiest ingress times and two exit gates during the busiest egress times. In this way, the queue of entering vehicles can be maintained within the garage structure.

				By its nature, the queue of exiting vehicles will be within the structure; but important to the pedestrian realm, the exiting driver will have a clear view of the sidewalk and traffic in both directions along Somerset Street, and will remain stopped without blocking the sidewalk until it is safe to exit. Pedestrian access/egress towers at the corners of Somerset and Chestnut, and the Mews at the Bayside Trail will provide a lighted accent at these corners, and provide for public view of patrons in the staircases and waiting for the elevator
Standard C-3	Active Uses	■	*Parking Structures shall incorporate liner buildings, or enclosed active uses on the first floor of A and B streets with a min clear ceiling height of 10 ft. and a minimum depth from street front of 25 ft.* The garages of the Plan for **midtown** Development will exceed this standard substantially by providing active retail uses on the ground floor with a minimum of 14 foot floor to ceiling clearance height and a column spacing that allows deep commercial uses to be developed in the structures.	The **midtownTwo** Parking Garage will feature retail frontage on Somerset and Chestnut Streets and along a substantial length of the Bayside Trail. This retail accommodation is the full 120 ft. depth of the building, accessible on all sides, and built with a clear height from floor to underside of structure of not less than 14 ft. (for more than two thirds of the space – lower ceilings will be necessary under the access ramp)
Standard C-4	Back of Parking Structures	□	*Parking Structures that have a rear or side elevation along a public right of way or … trail… must incorporate standard E-9.* The garages of the Plan for **midtown** Development will incorporate design considerations of Standard E-9	The **midtownTwo** Parking Garage will not have a "back side" in the traditional sense of a building which utilizes a better material in a more articulated way for a primary façade and lesser materials with no articulation for

				others. Since the parking structure will form a façade on the Bayside Trail, and a street front on both the Mews and Chestnut St., these façades will be as articulated and be built of the same materials as the principle Somerset façade. The design for the parking garage retail façade facing the trail will provide for operable building entrances. The base building will provide clear glass at the retail frontage on the trail.
Standard C-5	Decks and Ramps	□	*Parking structures shall have horizontal decks on all levels where decks are visible from public rights of way. Sloped ramps shall be screened from visibility from public ways.* The garage decks of the Plan for **midtown** Development will be level on the Chestnut and Somerset St. and the Mews façades, and will incorporate a parking ramp between parking levels along the Bayside Trail façade. The Plan seeks a waiver to allow these ramps to be expressed to the Trail and visible tangentially from streets and public rights of way.	The **midtownTwo** Parking Garage has been designed with ramps at the Bayside Trail façade supported on sloping structure between horizontal end bays. The end bays will be clad in architectural precast concrete with openings similar in size and spacing to the apartment building windows. The sloped structure between these will be minimized, cable rails will provide for pedestrian and auto safety, and the interior structure will be a dark color, all to minimize visibility of the sloping ramps. The façade will be screened on much of its facades above the retail ground floor with a green screen.
Standard C-6	Surface Lots	na	The Plan for **midtown** Development does not incorporate surface parking	

Standard C-7	Bike Racks	■	*Bike Racks shall be provided in a convenient location and in compliance with the City's parking standards at Chapter 14-332.1 et seq.* The Plan for **midtown** Development will incorporate bike racks conveniently located in the parking garages in compliance with the City's Off-street bicycle parking standards, that is 2 bicycle spaces for each 5 dwelling units, and 10 bicycle spaces for the first 100 non-residential car parking spaces and 1 bicycle parking space for each 20 additional car parking spaces.	Assuming 1.0 car parking spaces per dwelling unit and 445 dwelling units provided in the **midtown** apartment buildings, 445 of the Garage's 828 car spaces may be dedicated to residential uses and 383 spaces will be available to non-residential uses. The development will therefor provide the following bike spaces: · Residential use: (445/5)x2 = 178 spaces · Non-residential use: 10 + (142/20) = 29 spaces · Total: 207 bicycle spaces Bicycle spaces are planned at ground level beside and beneath the access ramp accessible from the Courtyard via the pedestrian lobby. Signage will indicate this location from Somerset St. Additional spaces are provided in the ground floor of **midtownFour**. Some of these spaces will be provided and designated for Bicycle Sharing programs such as Zagster, Decobike, or Alta Bicycle Share. These will be located on the Bayside Trail , and will be appropriately signed from Somerset Street.
Standard C-8	Service, Utility and Mechanical Infrastructure	■	*Service, Utility, and Mechanical Infrastructure (when installed at ground level) shall be located at the rear or side of buildings or interior to parking garages, and all such infrastructure shall not result in adverse visual, audible, or noxious impacts.* The Plan for **midtown** Development incorporates screening for infrastructure as follows:	

			· service, utility and mechanical infrastructure will be located at the rear or sides of buildings, with underground connections; · all service, utility, and mechanical infrastructure will be visually screened; · roof equipment will be screened from street level visibility from public rights of way and from designated view corridors by parapets, roof screens or equipment wells; · roof equipment will be clustered to the extent practical; · residential building loading areas will be through overhead doors, in colors and finish consistent with the exterior elevations of the overall building; · no exposed to view loading docks or ramps are anticipated; and, · no outdoor storage and trash collection or compaction is anticipated that would require screening. · As the buildings have no “sides” or “backs” a waiver is sought of requirement to have service access at side or back and to allow entrance from the public way	Gas meters for commercial restaurant and café tenants will be mounted in inconspicuous places away from view from streets Utility transformers to serve the **midtownOne and Two** buildings will be located in a corner of the land dedicated to the Bayside Trail; transformers to serve **midtownThree** and **Four** will be located on the proponent’s land north of the **midtownFour** building, all as shown on site plan. Transformers will be appropriately fenced for safety and screened with plant materials. No other service equipment is planned at grade level The design of the **midtownOne** and **Three** buildings will provide roof top screening of condensing units, ventilation fans and other rooftop equipment by extending parapets on street and trail facades above the flat roofs. A penthouse will be provided which will house elevator equipment and stair to roof. Trash and recycling handling and storage at the **midtown** buildings will be entirely inside the buildings.

Principle D, Open Spaces and the Public Realm			**midtown** Development Plan	**midtown** Level III Design Review
Standard D-1	Open Space Design	■	*New publicly-accessible open spaces shall be designed to allow views from the sidewalk, street, and surrounding buildings and shall provide views into the open space as well as outward from within the space.* New public open space meeting these criteria will be provided in the Plan for **midtown** Development	The Mews and the Courtyard of **midtownTwo** and **Three** are visible from Somerset St. and the Bayside Trail and provide views outward to these public rights of way. The open spaces provided adjacent to **midtownThree** and **Four** buildings widen and enhance the trailhead at Elm Street. Importantly, the development of continuous low-rise residential frontage along both Somerset Street and the Bayside Trail provide "eyes-on-the-street" a component of making public spaces feel safe and welcoming at all hours of day and night. All open spaces have been designed with a view to enhance pedestrian comfort while providing a variety of sunny and shaded areas.
Standard D-2	Bayside Trail	□	*Buildings adjacent to the Bayside Trail shall be designed so that the façades along the trail incorporate design elements that enhance the trail use such as active doors into the building, plazas, outdoor seating, and food service.* The Plan for **midtown** Development incorporates provisions to enhance the Trail by incorporating design elements that include: · new/enhanced lighting, hardscape and landscaping;	All the **midtown** buildings are designed façade elements adjacent to the Bayside Trail that enhance the trail experience. As noted above, these façades are not designed as "backs", and they provide the important

			· active uses/doors into the buildings, · new public spaces; · opportunities for outdoor active uses and seating; and, · new public accesses to the trail from Somerset Street via Pearl Street, the Mews, enhanced Chestnut St., and Elm St. · A partial waiver is sought on the requirement of having "active building ingress and egress" on the portion of **midtownThree** facing the trail due to changes in grade at the berm.	element of residential windows overlooking the trail. Food service establishments are the planned as part of the retail leasing program for the ground floors of the all buildings. This may provide some entrances and egresses facing the trail.
Standard D-3	Landscaping and Street Furniture	□	· *The design shall incorporate provisions for Landscaping and Street Furniture for public and private property that is compatible with the provisions set-forth in the City's Technical and Design Standards and Guidelines. Submissions shall be reviewed by the City Arborist.*	
			· The Plan for **midtown** Development will incorporate landscape improvements that will enhance the visual quality of the street presence and pedestrian activity zones including enhancement of the Bayside Trail that include urban compatible canopy trees, low maintenance shrub, perennials, grasses and ground cover plantings.	The **midtown** buildings and their site development will be designed to meet all the commitments of the approved Site Plan
			· Plant selection will include native material where practical and appropriate and will include hardy urban material in response to the environmental conditions prevalent to the Bayside area, that include zone hardiness, soil conditions, potential tidal ground water influence, road salt conditions, low maintenance and drought tolerance	Plant selection includes native species where feasible and zone hardy, drought tolerant species. Proposed site grading and planting methods have been incorporated to address environmental constraints as best as possible

			· Currently there is no plant palate for urban street trees in the project area, placement of street trees follow the recommendations of the Technical and Design Standards and Guidelines; planters will be incorporated where grading requirements have provided the opportunity to enhance the public activity zone and incorporate trees typical of other city streets; the new planting will establish a palate for subsequent street improvements by others.	Selection of street tree species has been coordinated with the City Arborist.
			· Street planting will incorporate the city standard tree grate within the public sidewalk and along portions of the trail; this enhancement will provide for extended pedestrian circulation; planters will be raised to address the grade changes that occur in response to street improvements and will be detailed to provide visual enhancement; planted areas, including street tree plantings, will incorporate methods to provide for adequate water and air to support a healthy growing condition, and will include alternative soil mixture and or structural units to enhance root zone development; plant material will be selected in response to urban conditions that include drought tolerance	Street trees are proposed to be planted in oversized raised-curbed planting beds per request of the City Arborist.
			· No irrigation system is proposed: however, during the period of establishment watering will be incorporated as part of the required maintenance plan. Drainage is not anticipated to be an issue with the proposed plantings	
			· No accent lighting is being proposed for plantings in the public space or private space.	

			· A maintenance plan will be provided that will establish a program for feeding, watering, pruning, damage repair, pest and weed control, and replacement of declining plant material.	
Standard D-4	Pedestrian Amenities	□	*Pedestrian amenities shall comply with the City's Technical and Design Standards and Guidelines at a minimum, and also with the streetscape standards selected for Bayside.* · Seating will be provided where appropriate in response to the provisions requiring one linear foot of seating for each 30 feet of street frontage; · Space has been allocated for a bus shelter within the Plan for **midtown** Development; · Trash receptacles and bicycle hitches will be located to maintain an unobstructed pedestrian route; at this time there are no plans to provide for mail boxes or newspaper boxes; · Following completion of the City's *Way finding Study* directional signage in compliance with the study's recommendations will be incorporated into the Plan for **midtown** Development, however pending completion of the study, the proponent requests a waiver of this provision; other signage shall conform with guidelines set-forth in Standard E-16,	Permanent seating will be provided along Somerset St., Chestnut Street, Elm Street and the Pearl Street extension; Additional loose seating will be provided controlled by the retailer at the Courtyard. Bicycle hitches will be provided along Somerset street, Chestnut Street, Elm Street and the Pearl Street extension; for patrons of the retail merchants and undercover at the **midtown Two** garage for visitors to the apartment tenants. Secure bicycle storage for employees of retailers and apartment tenants is provided in the garage (see Standard C-7 above) At a minimum **midtown** will provide street name signs at all intersections, and Bayside Neighborhood maps will be located at the Courtyard, at Chestnut Street, and along the Bayside Trail opposite the Garage building.

Standard D-5	Public Art and other special features	■	*Public Art shall be designed and implemented in accordance with the Guidelines for the City of Portland Public Art Program, shall complement the character of surrounding buildings, streets, and open spaces, and shall not obstruct pedestrian circulation.* The Plan for **midtown** Development will incorporate this requirement and identify locations for public art by others.	The **midtown** development incorporates locations for provision of public art in several locations: sculpture space in the courtyard, potential for Mural development on the Garage façades facing the Mews and the Bayside Trail, in the Chestnut Street Island and at the space to the west of **midtownThree** along Elm St. It is anticipated that the public art will be designed and implemented by others in a manner that will complement the character of the buildings, streets and open space. The proponent will actively solicit appropriate public art as the project nears completion.
Principle E, Architectural Design			**midtown** Development Plan	**midtown** Level III Design Review
Standard E-1	Architectural Design	■	*New development shall create a mixed-use, pedestrian-friendly setting that contributes to the neighborhood context of the surrounding urban fabric, contributes positively to a new identity for Bayside, and provides a sensitive transition to the adjacent residential community.* As noted above the Plan for **midtown** Development incorporates mixed residential and retail uses forming one side of what will eventually become a pedestrian oriented retail street linking Trader Joe's to Whole Foods. The residential density associated with this plan will assure success of the retail development, bring active life to the streets evenings and weekends, and provide added variety to residential offerings by providing for a contemporary urban lifestyle.	

			Architectural design of all buildings will be "modern industrial" incorporating twentieth and twenty-first century materials and sensibilities derived from industrialized production and building techniques. The building designs are intended to be both of their time and timeless – to bridge the century from the neighborhood's railroad/industrial past to its mixed residential future.	The buildings of **midtown** are unambiguously modern buildings with an economy of expressive means using unadorned industrial materials to achieve great effect through judicious use of accent colors. These buildings, while be designed with a modern architectural vocabulary, and reflect their obligation to be 'citizens of their own time and place.' They are designed to be good neighbors, deferring to local vernacular architecture and, where appropriate, borrowing and taking fundamental design lessons in form, proportion, and fenestration rhythms.
Standard E-2	Height	■	*Building heights shall meet those approved in the Bayside Height Overlay Map as amended by any later regulations. Street wall heights shall be stepped back 15 feet above 4 stories. Roofline shall create visual interest on the skyline.* The buildings of **midtown** Development Plan will conform to the heights noted on the Bayside Height Overlay Map of 4/09/2006 (105 and 125 feet). The street wall on Somerset Street will be characterized by façades creating visual interest at the skyline. *"Average Grade at Building Façade"* is less critical to establishing the heights of these buildings because they are substantially lower than the heights allowed by the Height Overlay map. The intention of the development is to allow entrance at virtually any point along the perimeter (that is, along Somerset St., the Mews, the Courtyard, Pearl St., the Bayside Trail, Chestnut St., and Elm St.) the majority of these street and trail frontages will be reconstructed to meet the first floor elevation.	The buildings of **midtown** follow the development plan intentions directly. Both the apartment buildings and the garage will be articulated with vertical elements which will terminate at the roofline to provide interest at the skyline. The low-rise buildings (**midtownOne, Three, and Four**) will not have upper level façade setbacks, however the façade of **midtownThree** will be varied through bays set two feet proud of the main façade, and upper level setbacks and varied parapet heights to create a visually interesting skyline. The **midtownTwo** garage building will not feature setbacks.

			The first floor will be constructed at a finished elevation (called 0'-0" on the elevations, and equal to 12.0 ft. Portland City Base-NGVD 29) which will be above the predicted FEMA flood elevation at 10.0 ft. At two points, however, due to the slope down from new grades of Pearl Street, and Somerset Street south of Pearl, to the existing grades of Somerset Street north of Pearl and the Bayside Trail, and similar conditions at the intersection of Somerset and Elm Streets, sloped grades have been introduced at the building face. This would cause the average grade as defined above to be a few inches lower than 12'-0" for buildings One and Four – but as noted, the buildings are substantially lower than the allowed height and this minor variation is of no consequence. And at some time in the future as all of lower Bayside is lifted above flood levels, the two intersections noted above will be brought up to match the raised portion of Somerset St. and the average grade at the buildings will be approximately 12.0 ft.	
Standard E-3	Massing	□	*The composition of proposed building façades shall be defined by horizontal and vertical articulation with the vertical predominating; large expanses of undifferentiated uniform cladding are not allowed along public rights of way.*	

			The residential buildings within the Plan for **midtown** Development along Somerset Street will feature a prominent, transparent, brightly lit retail use at ground level and cornice and parapet articulation at the roof line. Collectively these use differentiations, setbacks, and roofline articulations will support a reading of the massing as to having a base, middle and top.	The **midtown** buildings are characterized by not having "backs" – that is they will be seen equally from all directions. As such, careful attention has been paid to the composition of each façade to minimize or eliminate undifferentiated expanses of façade and to provide a degree of articulation in all façades. The organization of residential scale windows is presented in multiple ways. The garage design supports a reading of the massing as to having a base (retail development) and top (through articulation of cornice elements). A waiver is sought for the garage to accept this definition. At the pedestrian level, the garage is characterized as not having a back. The rhythm of retail use and its storefront will create a sense of vitality facing the Bayside Trail. The garage upper levels will be minimally articulated, including green screening, but using the logic of its structural system to express its quiet honesty in the use of architectural precast concrete.
Standard E-4	Articulation	□	*Façades visible from public rights of way shall incorporate design elements that break the façades into components scaled to the pedestrian, and shall not be blank, flat, unadorned, or repetitive.* Per Standards E-2 and E-3 above the building massing of the **midtown** Development will break down the scale into base, middle, and top by articulation of window detailing, wall color and material, and changes in pattern and texture. Reveals, expansion joints, trim and permanent artwork by others will contribute as well.	As designed, none of the façades of the **midtown** buildings can be characterized as "blank, flat, unadorned, or repetitive."

			The base of the buildings will be commercial retail use and will exhibit materials durable in nature and of high quality. Storefronts and weather protection for pedestrians will further accentuate these façades and reinforce the pedestrian scale. Transparent display windows will be used at the retail façades at the pedestrian level. Effort will be made to encourage retailers to maintain transparency inside the glass.	
Standard E-5	Flexibility of Interior Layout	■	*The first 40 feet of depth of floor area along street frontages shall be laid out to accommodate retail uses. Placement of permanent building elements at the ground level shall be designed to accommodate the broadest possible variety of layouts.* The Plan for **midtown** Development anticipates buildings that will have tall largely open retail spaces facing all public streets and the Bayside Trail. Access to upper levels (residential service, elevator, and lobby spaces, and garage entrance/exit gates and ramps) will be concentrated or clustered to provide the maximum of open leasable space within. Egress stairs from upper levels will be driven to non-storefront façades to the extent feasible.	**midtown** offers commercial interior layouts that are flexible and oriented to the sidewalk, mews courtyard, and trail. The residential buildings provide a retail storefront rhythm allowing retailers a flexible module to merchandise their frontage. The garage has a structural bay spacing of 24 feet by 60 feet making it a unique high quality offering for commercial tenants. The vertical floor to floor dimension of the first floor of all buildings will 18 feet, a dimension matching and exceeding commercial market expectations.

Standard E-6	Entrances	■	*Buildings along public streets shall have their primary entrances oriented to the street.* Primary public entrances to the buildings proposed in the Plan for **midtown** Development will be on Somerset, Pearl, Chestnut, and Elm Streets. A second entrance to the garage will be located nearer the Bayside Trail open spaces.	The primary resident entrance to the **midtownOne** apartment building will be along the extension of Pearl Street, undercover, near the intersection of the Bayside Trail. A secondary key access entry will be located nearer to Somerset St. for resident convenience. The primary resident entrance to the **midtownThree** apartment building will be along Chestnut Street and the resident entry to the **midtownFour** apartment building will be along Elm Street. The primary public egress from and access back to the parking levels of the **midtownTwo** parking garage will be at the corner of Chestnut and Somerset Streets. A secondary entrance to the garage will be located at the Courtyard along the trail.
Standard E-7	Windows	■	*Windows appropriate to the overall building style and scaled to overall massing shall be located on all façades visible from public rights of way. First floor visible light transmittance shall not be less than 0.7 and vision glass shall occupy at least 50% of the street frontage from 2 to 9 feet above the sidewalk. Upper floor windows shall likewise transmit at least 0.7 of visible light, and shall constitute 15 to 40 percent of façade surface area.* The retail frontage of all buildings in the **midtown** Development will comply with this requirement. The upper levels of the residential buildings will similarly comply. The garages will not have windows, but will be articulated with a window-like pattern of openings and screening designed to compliment the adjacent residential buildings.	The **midtown** apartment buildings have windows located on all façades with a ratio of 35% vision glass area. The retail frontage of the buildings between 2 and 9 feet above the floor is 80% vision glass. All vision glass facing public ways and the trail will be clear un-tinted non-reflective low-e coated insulating glass units with a visible light transmittance of over 70%

Standard E-8	Storefronts	■	*Storefronts shall be designed to accommodate doors at regular intervals to allow for flexibility over time.* The retail storefronts of the buildings in the **midtown** Development will have regularly spaced access door panels at each side of the columns along public streets.	As discussed in a previous application for this building site the **midtownOne** building may have overhead glass doors along Somerset Street, the Mews, and the Courtyard to allow the space to open up when feasible in good weather. Regular side hinged doors will be provided beside each overhead door to allow access and egress when the larger doors are closed. As the leasing plan is finalized, some bays of the storefront may need to be either fixed glass, or opaque material to suit the needs of the retailers. The applicant must retain the greatest practical flexibility to assure successful leasing of the retail space. Therefore, final details of storefronts in all four buildings are subject to the needs of retailers. Certain areas may be fixed glass others may feature roll-up doors, some areas may need to be opaque -- but the street fronts will feature wide clear storefront glazing and regularly spaced doorways to the greatest extent allowed by practical leasing considerations. Those areas of fixed glass and opaque areas will exhibit the same layout pattern as the mullions of the of the other storefronts.
Standard E-9	Back Sides of Buildings	□	*The back sides of buildings … along the trail shall incorporate high quality materials, transparency, operable building entrances, and other design features consistent with the primary façades.* As noted elsewhere, the buildings constituting the **midtown** Development do not have "back sides" in the traditional sense; all sides of all buildings will be formed of the same palette of high quality materials incorporating a similar range of details and style.	**midtown** is characterized as a design without a back. Elevations not facing the street or other public ways or trail are designed to the same high quality standards as those facing streets. Utility meters, exhaust vents and other mechanical appurtenances will be screened from view to the extent practical within the constraints imposed by utility companies.

			A partial waiver is sought on the requirement of having "operable building entrances" on the back portion of the **midtownThree** due to natural changes in grade and safety concerns.	
Standard E-10	Rooftop Appurtenances	■	*Rooftop appurtenances shall not be visible along or block view corridors or views to specific landmarks.* Mechanical and other equipment on the residential building roofs in the **midtown** Development will be screened from view. Screens will be formed of the same palette of materials forming the primary façades of the buildings. Garage rooftop decks will be used for parking and will generally have no roof top appurtenances.	The roof top screen material for the three **midtown** apartment buildings follows the design logic of each building as a whole with the goal of presenting the "top" of the building as a unified design. The exterior appearance, scale, shape and material choice conforms and is consistent with the rest of the building.
Standard E-11	Fences and Walls	■	*Fences and walls along public ways shall be designed of high quality materials appropriate for the locations in which they are shown. Chain-link fences, plastic fences or fences rural in character are not allowed.* No fences are planned in the **midtown** Development area. Walls at changes of grade at the public areas will be of durable masonry materials. The required fence at the north side of the raised trail will not be chain link	Walls at changes of grade at the public areas of **midtown** will be of durable masonry materials.
Standard E-12	Materials	□	*Façades visible from public rights of way shall consist of natural and authentic building materials that are expected to last 50 years.* The buildings in the **midtown** Development will be clad in precast concrete, EFIS, vinyl or other siding materials, corrugated metal siding, with vinyl residential windows and enameled aluminum and glass storefront window and louver systems. All materials will be chosen for durability and long service life.	The four buildings of **midtown** are decidedly modern, expressive of the aspirations and ambitions of today's urban citizen. The material choices are important, and sustain a cohesive, integrated image of the buildings while providing intrinsic differences between each.

			A waiver is being sought of Standard E-12 for the use of EFIS and vinyl or cement composite siding panels. Building material technology has evolved in recent years with offerings of higher strengths, color and pattern choices, and the ability to vary forms within a façade composition. These materials can have a handsome, elegant appearance when assembled in architecturally considered designs. Additionally the performance of these materials is very well understood and their use rivals the age and performance of heavier exterior materials like masonry or concrete.	The **midtown** apartment buildings have been designed using high quality, durable materials that age and perform well and that are appropriate for buildings of this low-rise scale. The **midtownTwo** garage building has been designed to be built of precast concrete structural and architectural cladding elements with detailing and accents in architectural metals consistent with the materials used elsewhere in the development and in the district.
Standard E-13	Transparency	■	*Windows shall use untinted or lightly tinted glass.* The buildings in the **midtown** Development will use clear vision glass with high visible light transmittance for windows facing the street, trail, and other public ways.	As noted in standard E-7, the **midtown** apartment buildings will comply in that all windows facing public ways will be clear glass. The **midtownTwo** garage building has windows only in the retail storefront. These will also be clear glass. However, there are areas of storefront, particularly where the garage ramp rises along the Bayside Trail façade, in which opaque spandrel glass will be employed to hide the sloped structure behind while maintaining the orthogonal fenestration pattern.
Standard E-14	Illumination	■	*Prominent façades shall be lit by carefully designed downwash systems consistent with the City's Revised Lighting Standards for Architectural Up-lighting and Standard B-12* The Plan for **midtown** Development may incorporate carefully designed façade lighting of appropriate color and intensity consistent with garage and residential buildings.	Architectural façade lighting at **midtown** will be confined to the garage façades, the retail façades, and the public art offerings.

Standard E-15	Weather Protection	■	*Pedestrian sidewalks and walkways shall include weather protection at entrances appropriate for retail environment use.* The Plan for **midtown** Development will provide awnings along retail frontages and entrances on Somerset, Chestnut, Pearl, and Elm Streets.	The Somerset Street frontage of the **midtownOne, Two and Three** buildings will have awnings at the storefronts to provide weather protection. The apartment entrances on Pearl, Chestnut, and Elm Streets will be provided with modest glass and aluminum canopies for protection. As there will be no doors to the open stairways, the garage auto entries will have small glass and aluminum canopies more to mark the entry point on the façade and support signage than to provide weather protection.
Standard E-16	Signage	■	*Signage should be related to and an integral part of the design of a building, composed of new materials; lighting techniques, and graphic images shall be allowed where it will not have a detrimental effect on the pedestrian environment and character of surrounding buildings.* The Final Level III Site Plan for the **midtown** Development contains a signage plan submitted with the site plan approval package. Signage on buildings will be related to and be an integral part of the design they are part of.	The apartment Buildings and the garage of **midtown** will have building-integrated sign features incorporating graphics, color, and subtle lighting. A Sign Plan is being submitted showing and describing the location of building identity and address signs, and tenant signage. Limits on number and size of individual signs and total area per façade will be noted.
Standard E-17	Historic Buildings	na		

Standard E-18	Sustainable Design	■	*Property that is conveyed by the City shall be developed in a manner that is certifiable according to the current relevant standards for building and neighborhood development of the USGBC's LEED program.* The **midtown** Development will consist of buildings designed to meet LEED-NC or LEED-C&S requirements. These buildings, if registered, supervised, inspected, and administered correctly, and if built according to design, would be able to achieve certification.	A LEED checklist is provided for each **midtown** apartment building and the shell retail space of the parking garage showing how each would be able to earn the necessary prerequisites and credits to achieve Certification. See Exhibit 25.
Standard E-19	Shadows	□	*New development shall not increase the area of the Bayside trail in shadow by more than ten percent during the period from March 21 to September 21* The B-7 Zone is exempt from the requirements of Section 11 of the city's technical manual.	An analysis showing the shadows at 9:00, 12:00 and 3:00 on the solstices and equinoxes has been prepared for **midtown** to show the extent and duration of shadows on the Bayside Trail and indicate the shadow in each instance which is in excess of a building 65 ft. tall built at the property line. This analysis provides commentary on any change to the usefulness of the Trail as a result of the new shade. As noon on the solstices appears to be the time at which the greatest added shadow falls on the trail, this time was chosen to analyze the numerical extent of that added shadow. Area measurements for this time period show less than 5% increase of shadow on the trail and other public spaces beyond the shadow of 65 ft. tall buildings will result from the construction of the **midtown** buildings.

Standard E-20	Wind	■	*Consideration of wind impact relating to new construction shall establish and maintain a comfortable pedestrian environment.* As the buildings are all substantially lower than the limits of height prescribed for the project area, and are consistent with the height of other recent developments in the district that have not experienced uncomfortable winds, the proponent seeks clarification that a detailed professional wind study will not be required for Final Level III Site Plan review	Initial assessment of wind roses and anecdotal reports suggest that winter winds from the North and Northwest might cause probable discomfort for sitting activities in the Courtyard if **midtownOne** were built to 165 feet tall. The building is proposed at 72 feet however, and accordingly any effects of wind would be attenuated substantially Summer winds from the South will be tempered by topography and existing construction south of the project site. The tendency for the south wind to concentrate in the Mews will be mitigated by the openness of the garage. Other uncomfortable winds previously predicted for walking at the Elm St. end of the trail, predicated on a pair of 165 ft. high buildings, would be similarly attenuated in the proponent's current proposal to build **midtownThree** and **midtownFour** as substantially lower 72 ft. high buildings. It is highly improbable that pedestrians on the trail, Elm St., or Somerset St. in this vicinity would experience any discomfort due to wind while sitting, walking, or jogging. As no dangerous wind conditions were found for any spaces with the taller buildings, so no dangerous wind conditions will result from the substantially shorter buildings.

SHADOW STUDY

Shadow Study

for

Midtown I Phase One

14 November 2014

Methodology

The shadow regulations do not require a study for buildings 65 ft or less in height. For taller buildings, the regulations require illustration of shadows at 9:00 am 12:00 noon and 3:00 pm local time on the solstices and the equinoxes. We obtained solar azimuth and elevation for these times and dates for the exact location of the site and used these angles to project shadows of the building masses proposed. Buildings had rooftop penthouses and parapet screening included.

We projected shadows first for 65 ft tall masses built to the property line on all sites. We then projected shadows for the proposed buildings and superimposed these. The darker shade is that caused by the 65 ft building height and the lighter shade is the additional shade caused by the proposed buildings.

The proposed buildings will be 78 and 92 feet in height. The shadows cast by these buildings have been compared to the shadows that would be cast by 65ft tall buildings built to the property lines.

Shadow on the trail and other public spaces added by this additional height changes throughout the day and with the seasons, but is generally minimal. We have taken the case of noon on the equinoxes which appears to represent a more extreme example of added shadow on the Bayside Trail – during the winter all shadows are long, and the increment of new shadow is beyond the public spaces; during the summer, shadows are very short and the increment is substantially diminished..

For this example we have measured the area of net new shadow on the trail and other public spaces from the proposed buildings and compared it to the area of shadow cast by buildings 65 ft. tall. The net new shadow is less than 1%, well within the standard's 10% limit.

Shadow description

On the March morning (1) the trail will be in the shadow of the 65 ft building. Additional shadow will project onto the parking lots of the existing buildings on Marginal Way. At noon (2) much of the trail will still be in shade, but the taller building shadows are much reduced in scope. By afternoon (3) the trail will be mostly in sunlight.

On the June morning (4) some of the west end of the trail will be in sunlight, and shadows are substantially smaller than spring or fall. At noon (5) shadows are minimal and much of the trail is in sunlight. At 3:00 and through the evening (6) the trail will be in sunlight except for a small part at the west end shaded by midtownFour until about 4:30.

On the September equinox, the shadows are essentially the same as in the spring since both days are daylight savings time (7, 8, 9)

On the December day, Winter Solstice, at 9:00 am the shadow (10) of even the 65 ft building at midtownFour will reach to Marginal Way, and the other lower shadows will

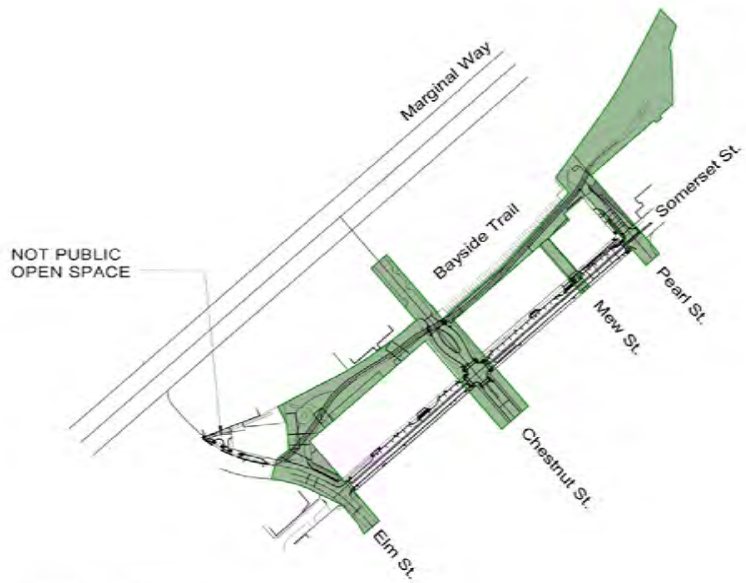
reach well across the parking lots. The increment of additional shadow for the proposed buildings is contained within the parking areas. At noon (11) with the sun to the south, even the 65 ft buildings would completely shade the trail except for the open slot at the east end near Elm St. At 3:00 pm (12) the trail would be partially shaded by the 65 ft buildings, and there would be so little incremental shadow from the proposed buildings that it is hard to spot on the diagram. As the sun moves west to sundown, this shadow will grow to shade the entire trail in the project site.

Conclusions

There would be morning shade on the trail caused by 65 ft high buildings virtually any day of the year. During the late fall and winter months the proposed buildings do not add significantly to shade on the trail. During the summer, all shadows are substantially shorter and the trail will receive direct sunlight from mid-morning onward. These shadows on the trail do not require a waiver from the city's requirements.

Additionally, the trail will always be well-lighted because it is open to virtually the entire northwestern sky which provides a great deal of very bright light, even to the ground shaded from direct sunlight.

Also please note that for all twelve times illustrated Somerset St is in virtually full sunlight.



Calculation Example at Noon on Equinox

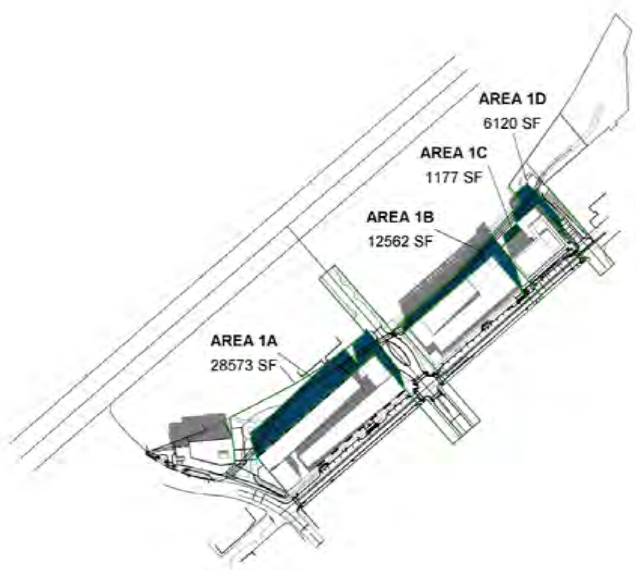
SUM OF AREAS 1A, 1B, 1C, 1D = 48,432 SF

SUM OF AREAS 2A, 2B, 2C = 48,369 SF

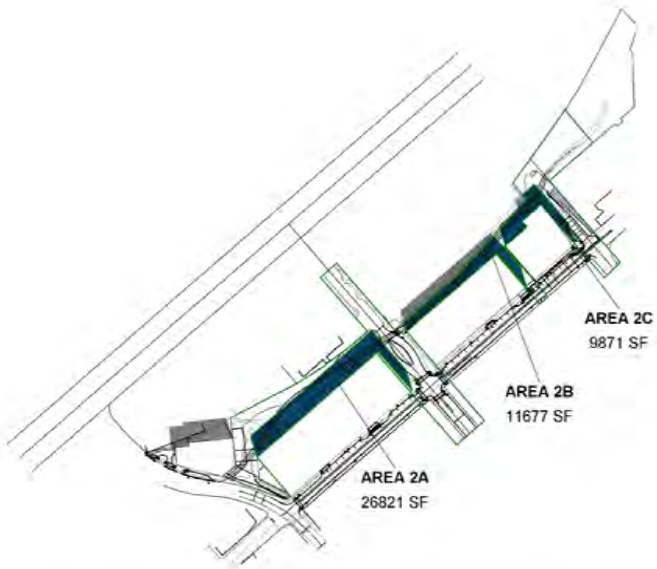
48,432 SF - 48, 369 SF = 63 SF

63 SF = **.13%** of 48,369 SF

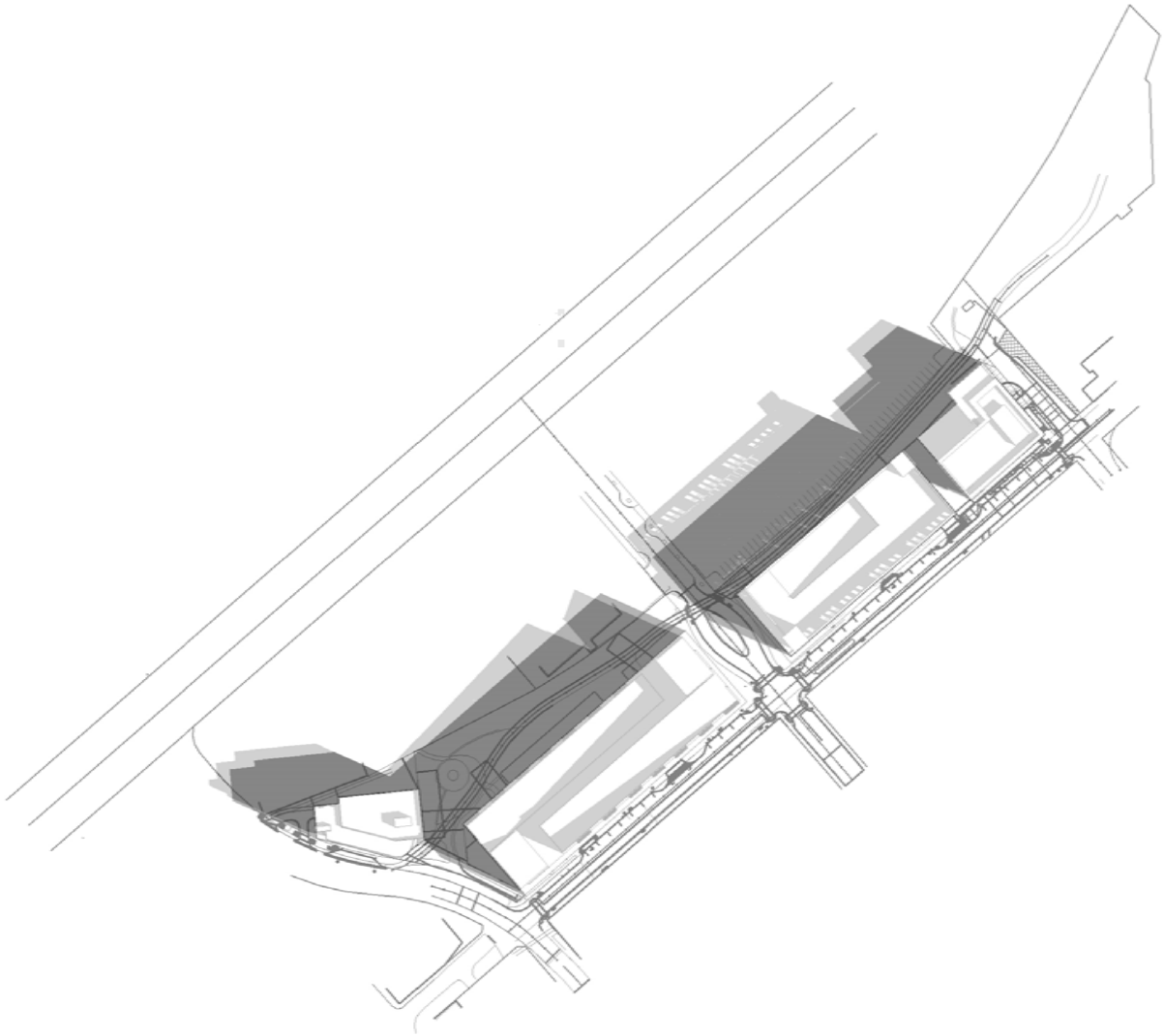
SIGNIFICANTLY LESS THAN A 10% INCREASE



STUDY OF AREAS IN SHADOW IN PUBLICLY ACCESSIBLE OPEN SPACE
FOR BUILDINGS WITH 72' - 92' BUILDING HEIGHTS



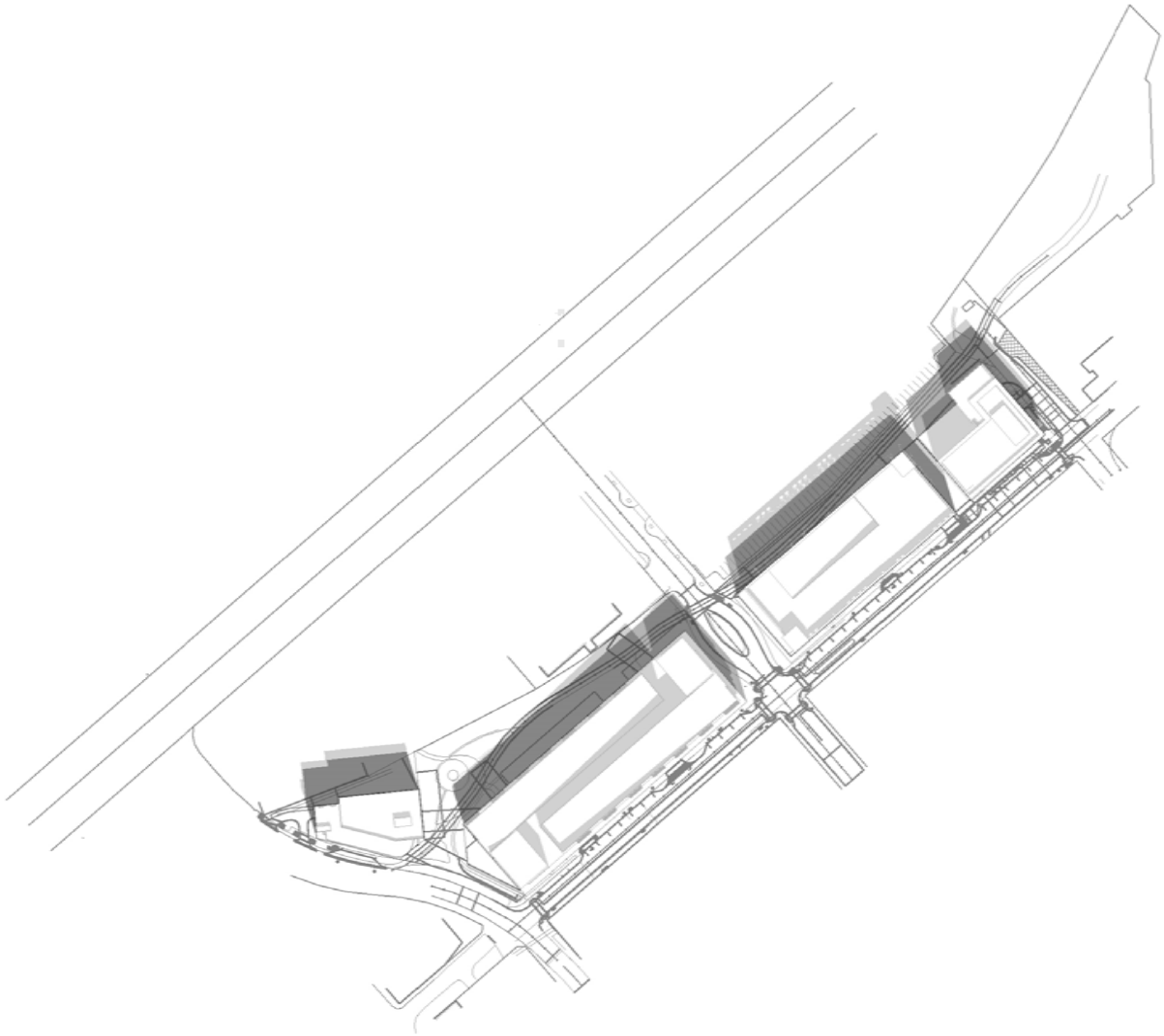
STUDY OF AREAS IN SHADOW IN PUBLICLY ACCESSIBLE OPEN SPACE
FOR BUILDINGS WITH 65' BUILDING HEIGHTS



1 NET NEW SHADOW - 21 MAR 9 AM

1 : 3000

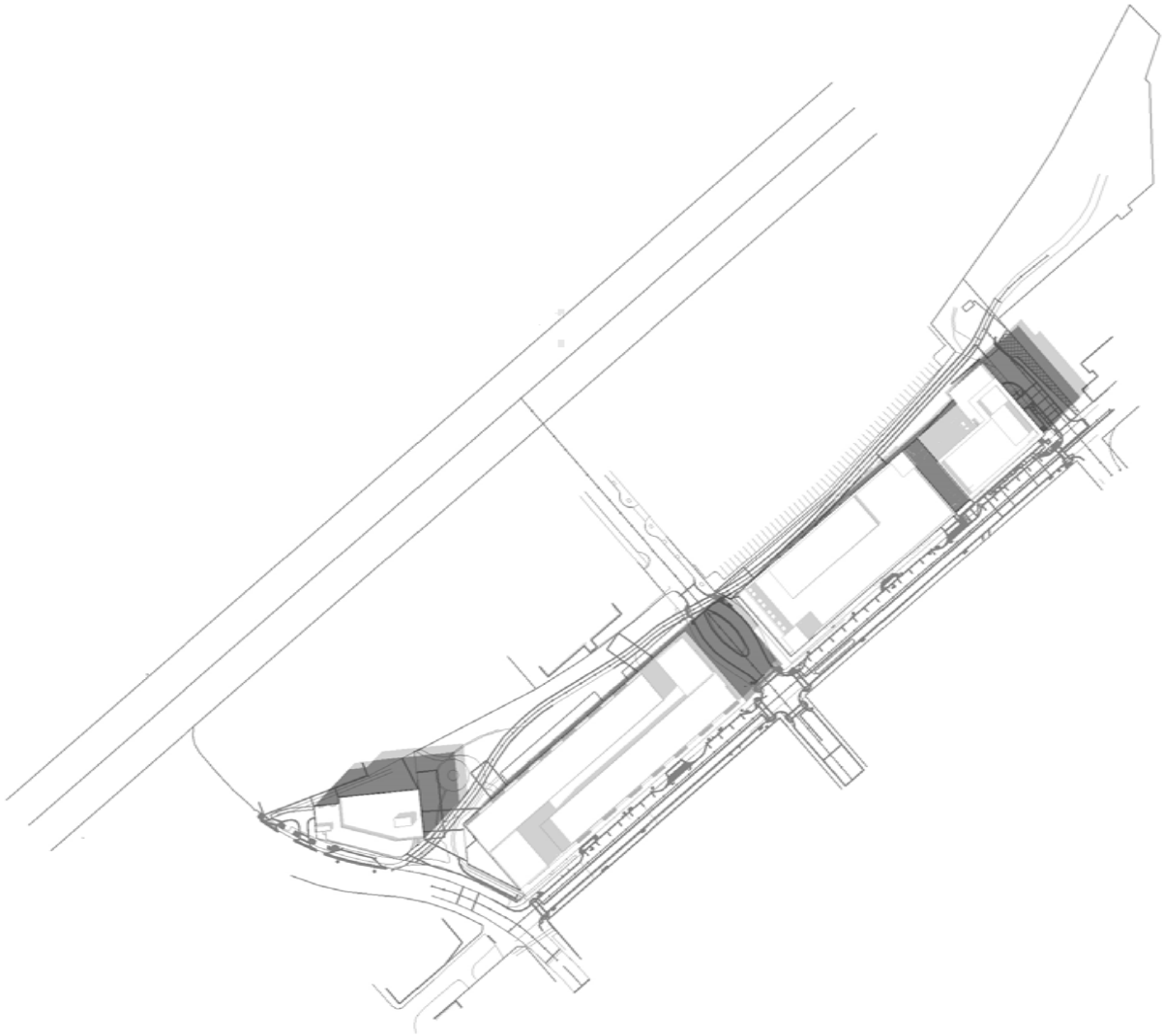
VERNAL EQUINOX



2 NET NEW SHADOW - 21 MAR 12 PM

1 : 3000

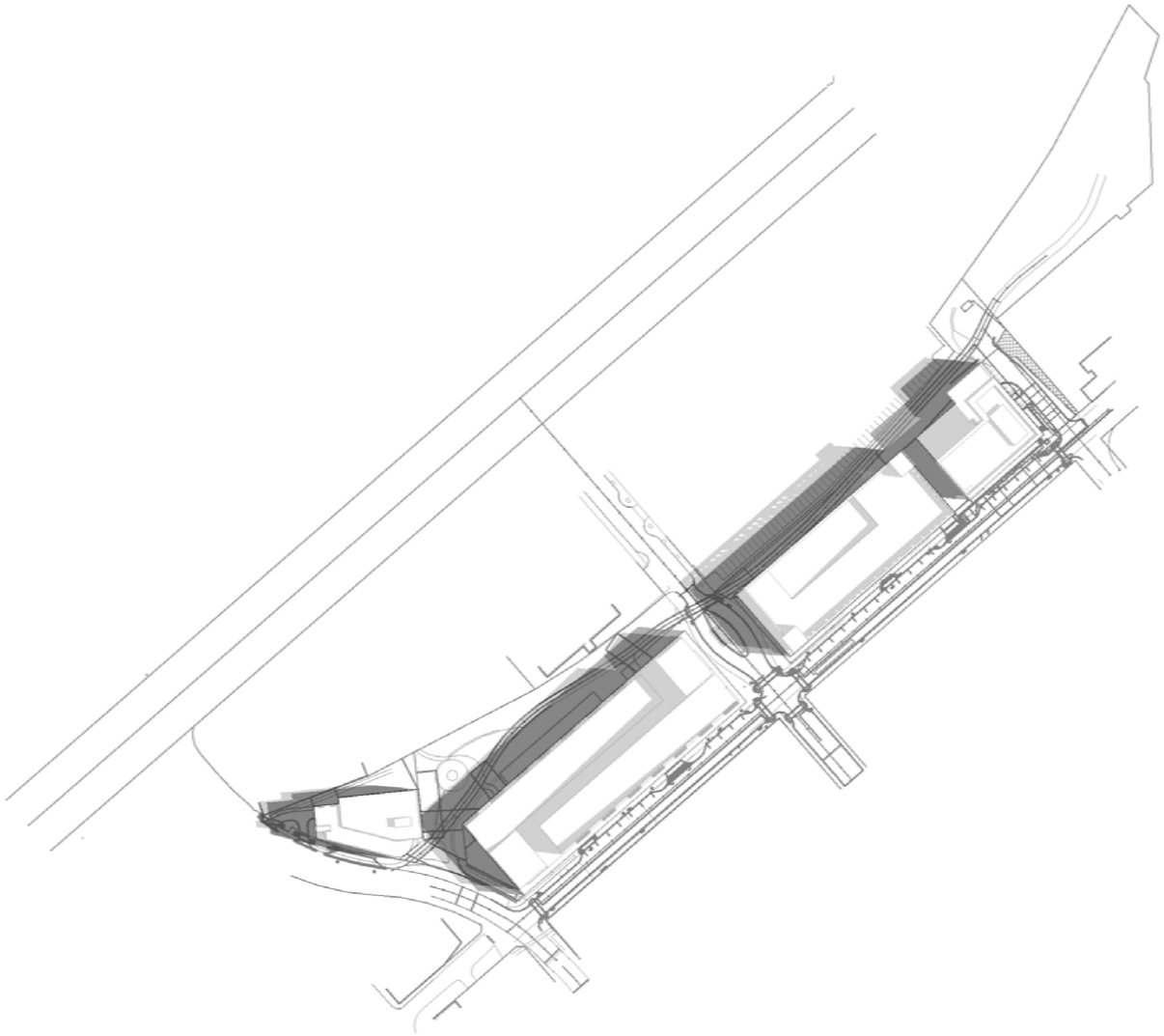
VERNAL EQUINOX



3 NET NEW SHADOW - 21 MAR 3 PM

1 : 3000

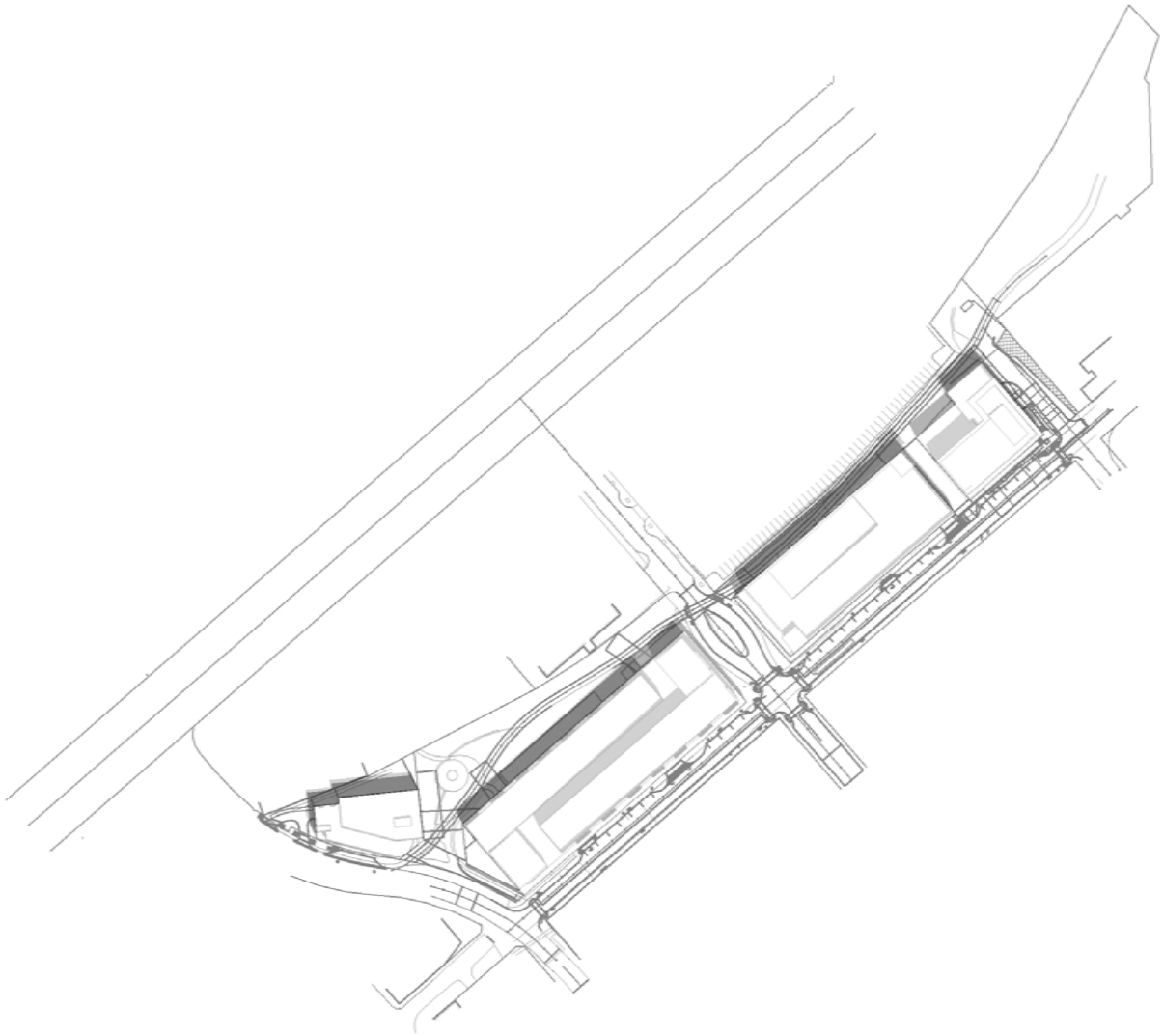
VERNAL EQUINOX



4 NET NEW SHADOW - 21 JUN 9 AM

1 : 3000

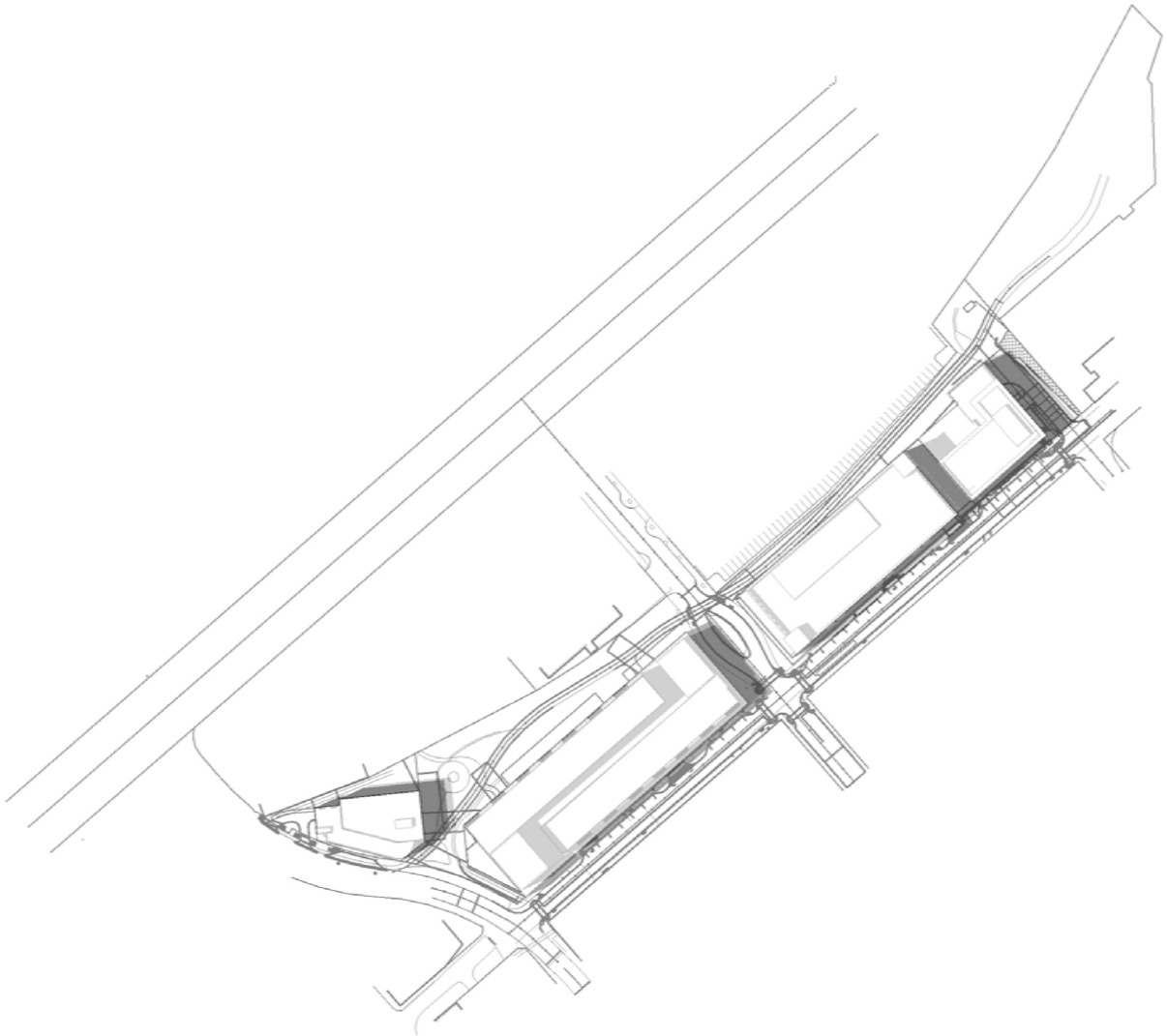
SUMMER SOLSTICE



5 NET NEW SHADOW - 21 JUN 12 PM

1 : 3000

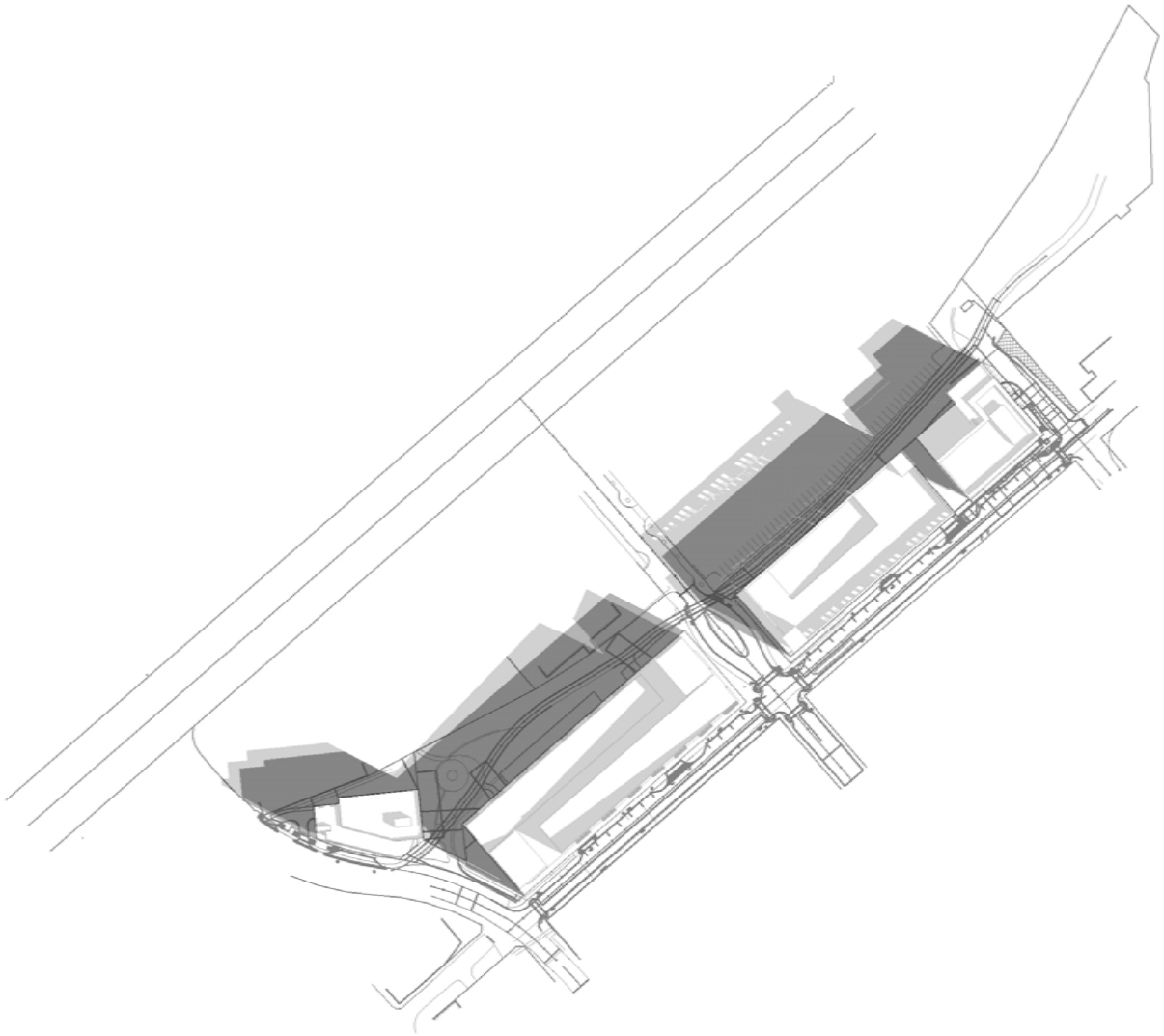
SUMMER SOLSTICE



6 NET NEW SHADOW - 21 JUN 3 PM

1 : 3000

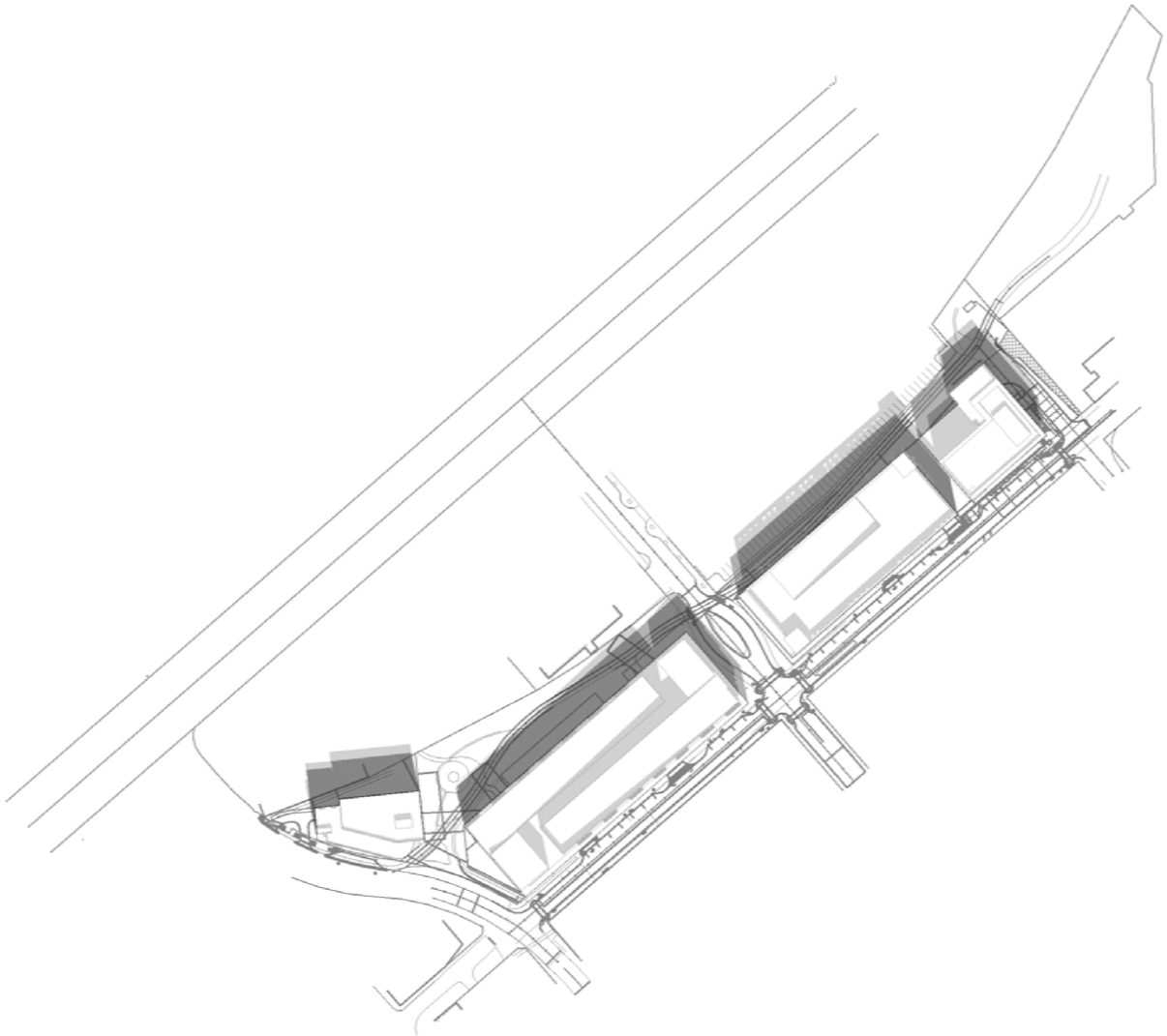
SUMMER SOLSTICE



7 NET NEW SHADOW - 21 SEP 9 AM

1 : 3000

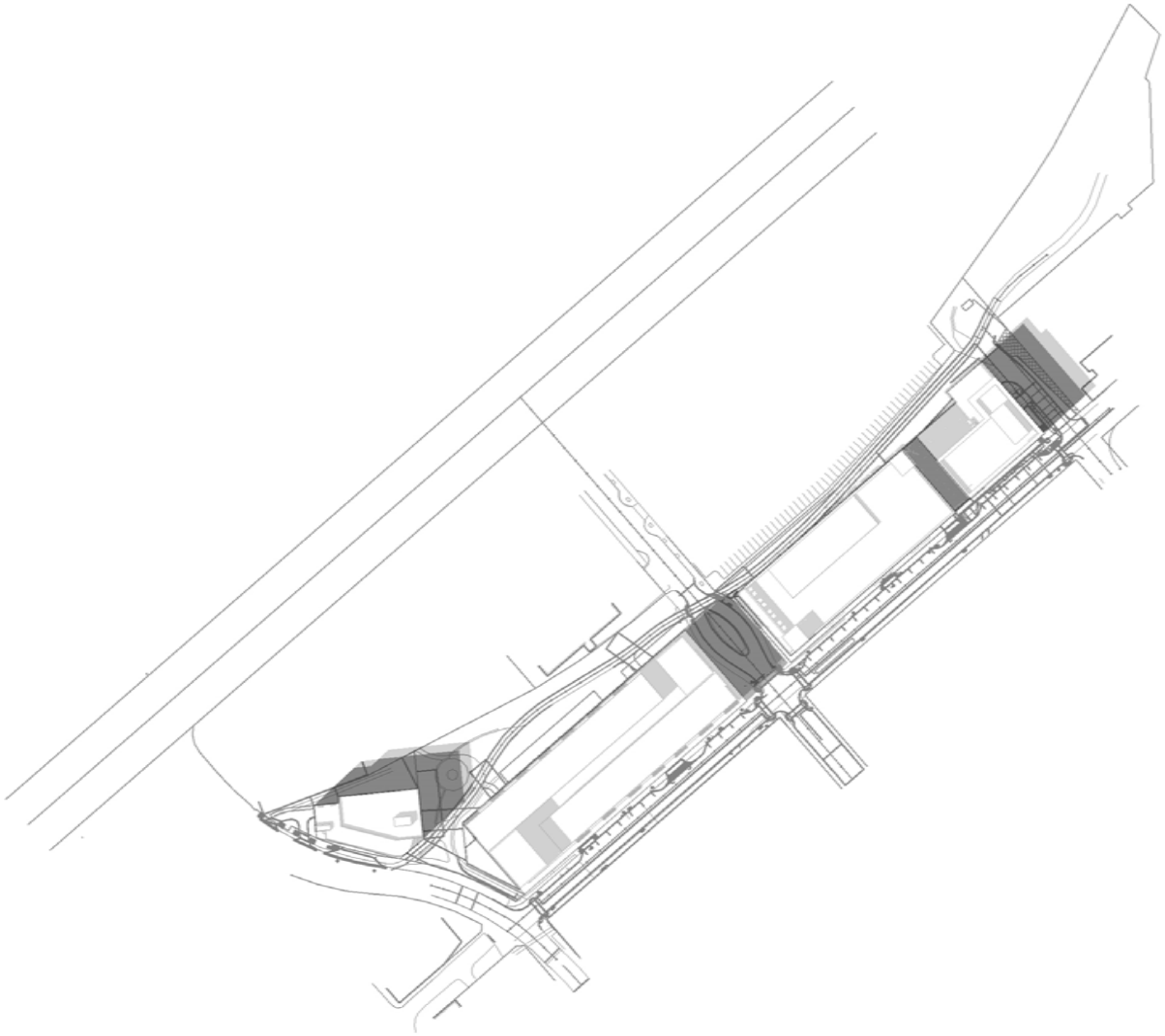
AUTUMNAL EQUINOX



8 NET NEW SHADOW - 21 SEP 12 PM

1 : 3000

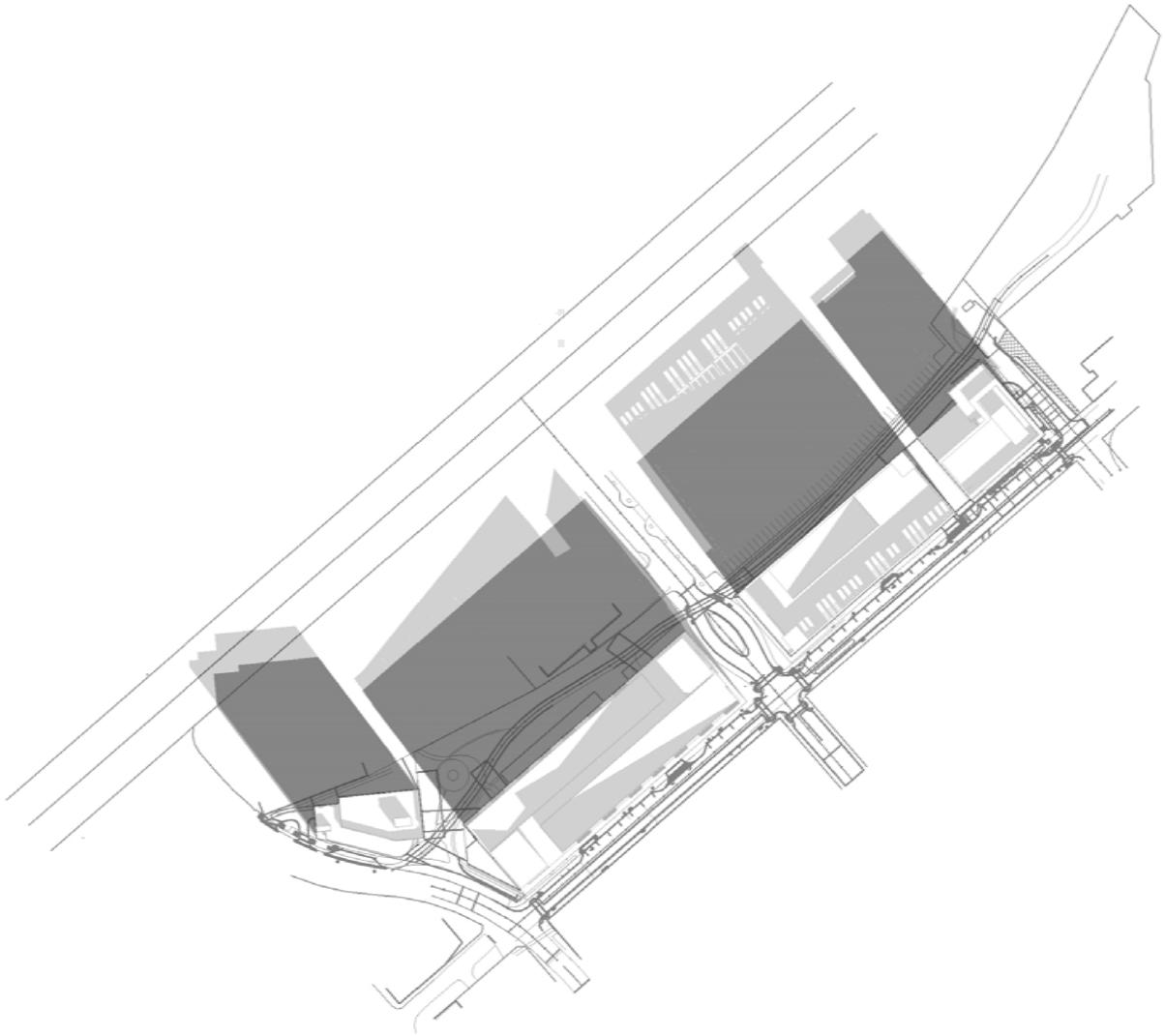
AUTUMNAL EQUINOX



9 NET NEW SHADOW - 21 SEP 3 PM

1 : 3000

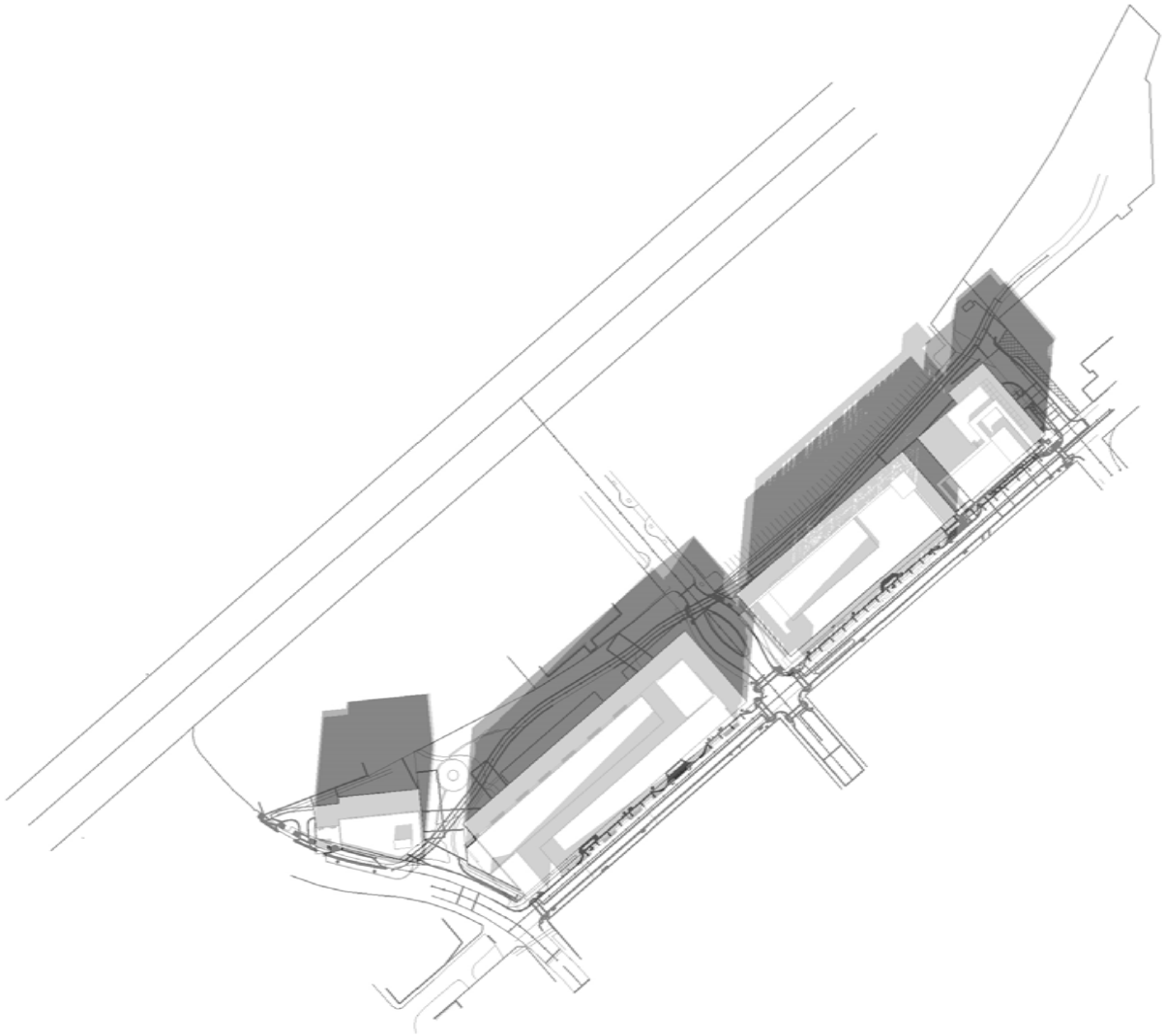
AUTUMNAL EQUINOX



10 NET NEW SHADOW - 21 DEC 9 AM

1 : 3000

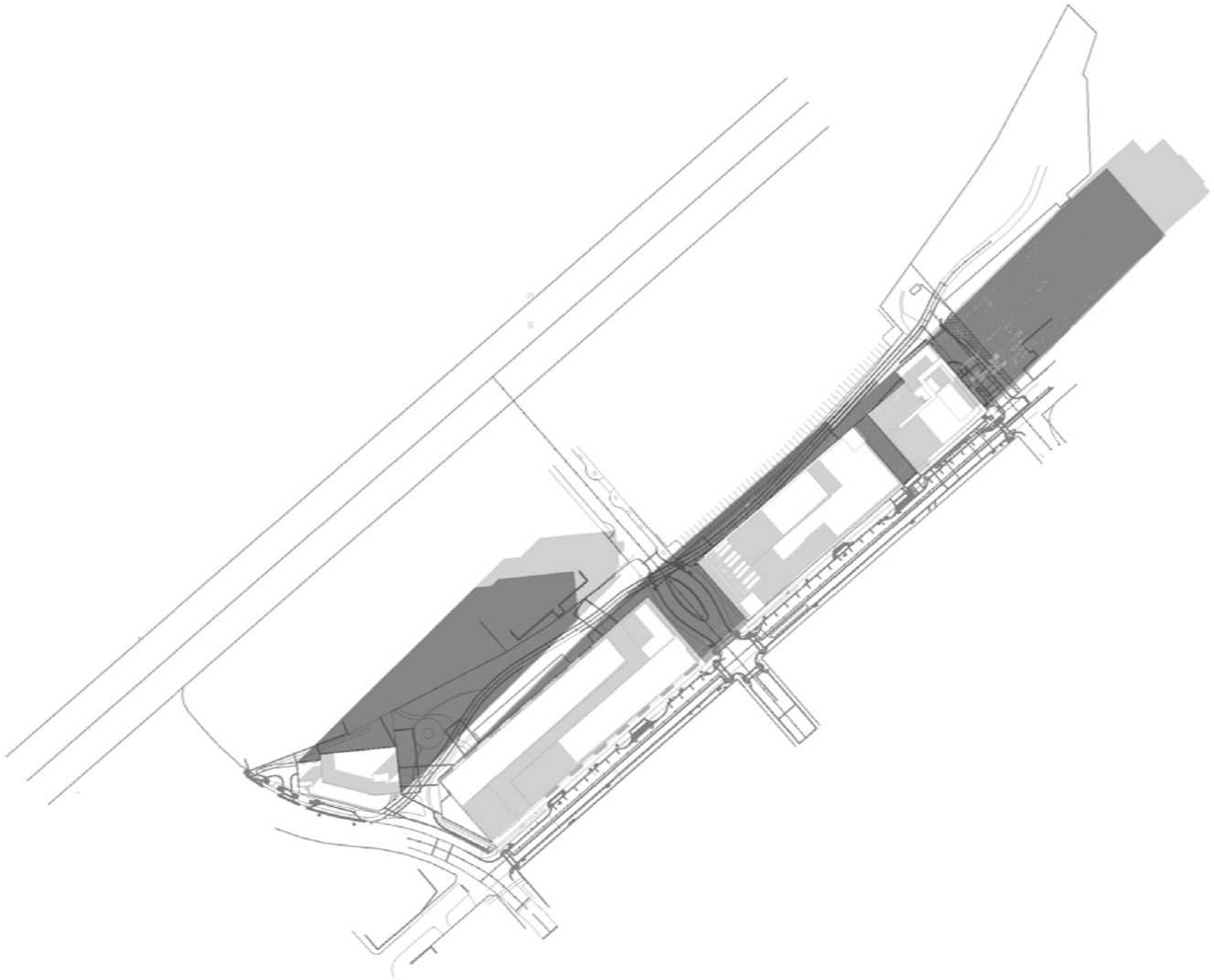
WINTER SOLSTICE



11 NET NEW SHADOW - 21 DEC 12 PM

1 : 3000

WINTER SOLSTICE



12 NET NEW SHADOW - 21 DEC 3 PM

1 : 3000

WINTER SOLSTICE

MEMORANDUM #1

In an effort to address questions and/or concerns raised at the November 12, 2014 Planning Board meeting, and to provide some background information regarding specific details of the Level III Site Plan & Subdivision submission, we have prepared the following memorandum.

Regarding the required mid-block permeability between Chestnut Street and Elm Street, we are requesting a waiver due to issues related to the design, functionality, and efficiency of the structure. Furthermore, it is our belief that the access point would not in any way provide any functional benefit. When contemplating various ways to provide this pass through, we considered the following:

- A physical separation, creating two separate structures- We felt that this was the obvious first choice as it was aesthetically the most attractive option. After review, we came to the conclusion that, due to the unusually narrow lot width and a host of other site limitations, we were unable to design two buildings that made economic sense to construct. Both buildings would require their own building core, service area, and entry lobby. The physical separation would also result in the loss of 20 apartments and approximately six thousand feet of leasable retail space. Additionally, it would "break" the continuous retail activity along Somerset Street that we believe is essential to creating the experience necessary to drive people to an area that today is best described as an urban wasteland.

- An access corridor within the retail space of the currently proposed structure- We feel very strongly that this is not a viable option. Our concerns are economic (the loss of square footage would have an adverse financial impact) and functional (the resulting separation would further limit the flexible subdivision of the retail space), but our primary concern is security related. We believe that this enclosed space will become a haven from inclement weather and a p lace that people will go to escape the public eye. We have concerns related to loitering and illegal activity, and although we will have personnel on site we will not be equipped to monitor or police activity within this confined space. We believe that the possibility for this type of behavior, in and of itself, will deter usage of this access point by ordinary citizens.

In addition to the specific concerns raised above, the mid-block pass through is further complicated by the fact that when the trail was built, a berm was created along the length of this lot preventing a simple "pass through" and necessitating the deconstruction of this berm and the remediation of the site and disposal of the contaminated material that the berm is currently comprised of. Given that the City of Portland created this condition when the trail was constructed and that the condition lies on city property, we feel that the burden of remediating and re-grading this area would be unfairly placed on the developer in the event that this permeation were required.

Finally, we believe that the proposed pass through has no functional benefit due to existing conditions. The proposed pedestrian connection provides no north/south connectivity as the blocks between Cumberland Avenue and Congress Street, Lancaster Street and Kennebec Street, Kennebec Street and Somerset Street, and Somerset Street and Marginal Way lack any connectivity and the presence of multiple structures limits the likelihood that this condition will change anytime soon. It is this lack of connectivity that would make it highly unlikely that a pedestrian would arrive at the point of the proposed access to begin with. The connectivity to the trail, which we view as the sole benefit of this action, is not improved in any way as an individual accessing the trail can do so at the trailhead that merges with the sidewalk immediately west of the building or at the Chestnut Street crossing to the east. In an effort to improve this access and to improve visibility at the trailhead, the developer has voluntarily removed over three thousand feet of retail space, effectively shortening the length of the building and the distance between trail connections. We believe that the proposed pass through provides no benefit because, in the unlikely event that a pedestrian were to arrive at the point of the proposed access, and due to the fact that the sidewalk runs parallel to the trail, the distance traveled in either direction would be exactly the same.

Prepared by Jonathan Cox

FEDERATEDEQUITIES 3301 NE 1st Ave, Suite M302, Miami, FL 33137

MEMORANDUM #2

In an effort to address questions and/or concerns raised at the November 12, 2014 Planning Board meeting, and to provide some background information regarding the details of the Level III Site Plan & Subdivision submission, we have prepared the following memorandum.

Regarding the use of certain exterior finish materials not otherwise allowed, we are requesting a waiver due to the compatibility of these systems with the intended construction type and the various functional and economic benefits of utilizing these materials in the construction of the building façade. In determining that these materials were the most appropriate application, we considered the following:

- PLEASE NOTE THAT WE ARE NOT REQUESTING A WAIVER FOR THE USE OF VINYL SIDING. WE HAVE NO INTENTION OF UTILIZING THIS MATERIAL IN THE CONSRUCTION OF THIS PROJECT. A WAIVER IS BEING REQUESTED FOR THE USE OF EIFS, A FROM OF SYNTHETIC STUCCO AND A MATERIAL WHOSE APPEARANCE IS VIRTUALLY INDISTINGUISHABLE FROM MATERIALS CURRENTLY APPROVED FOR USE IN THIS ZONE.

- While reviewing the possibility of reducing the height of the proposed structures, we came to the conclusion that the project became economically constrained when maintaining the previously proposed steel frame construction type. We analyzed the benefits and drawbacks of wood frame construction, in this case over a concrete podium, and decided that this framing material was better suited to construct the reduced height buildings. Timber frame construction results in a more environmentally sustainable building structure, has a smaller carbon footprint, and is far more energy efficient to construct and to operate.

  The wood frame structure interacts better with a lighter weight façade material. EIFS, or synthetic stucco, the surface material for which we are requesting a waiver to utilize, is a lighter weight application than a comparable fiber-cement panel. THE INSTALLED LOOK OF BOTH PRODUCTS IS VIRTUALLY IDENTICAL. EIFS is a superior product and has emerged as the preferred option, and is far more widely used than it's fiber-cement alternative. EIFS is an applied siding, whereas the fiber-cement panel is an installed siding. The fiber-cement panel is installed using mechanical fasteners, which are unsightly, maintenance intensive, and are subject to failure. The fiber-cement siding is panelized, creating gaps in the building envelope that contribute to energy loss. EAFS is troweled on, eliminating the use of mechanical fasteners, and creating a sealed application that actually increases the insulation value of the structure. EIFS acts as a " blanket", wrapping the exterior of the structure, reducing air infiltration and energy consumption. It eliminates "thermal breaks" associated with installed siding.

  Virtually indistinguishable from the fiber-cement panel, both are designed to resemble stucco. EIFS, however, expands the architect's design palate as it is available in a virtually limitless amount of colors and textures, whereas fiber-cement siding is fairly limited. It also allows for the construction of architectural detailing that would be cost prohibitive using conventional construction methods, such as cornices, arches, columns, and keystones. These details are computer-generated and laser cut out of insulation board, and the finish material is directly applied to the base insulation.

The lower operating costs and limited maintenance of this product allow for efficient operation of the structure on an ongoing basis. Additionally, it is our opinion that the expanded range of options that this material provides allows us to deliver a superior product at an economical price. In tandem with the other specified façade materials, we believe that we have presented a project that is reflective of the modern-industrial design aesthetic, paying homage to the neighborhoods industrial past while looking forward to its modern future.

Prepared by Jonathan Cox

FEDERATEDEQUITIES 3301 NE 1st Ave, Suite M302, Miami, FL 33137

EXHIBIT 18

PROPOSED EASEMENT, COVENANTS, PUBLIC/PRIVATE RIGHT OF WAY OR OTHER BURDENS OF THE SITE

SUMMARY OF PROPOSED EASEMENTS, COVENANTS, PUBLIC OR PRIVATE RIGHTS OF WAY, OR OTHER BURDENS ON THE SITE

The project site is bisected by the Portland Bayside Trail and Chestnut Street. There are numerous easements required for the project. These are depicted graphically on Drawing C-1.2 which is included in the plan set with this Level III Site Plan Application. The applicant has the benefit of having recently examined the necessary easements required for a mixed-use project at this site. The City and the applicant are aware of the easements necessary to integrate this project into the fabric of the trail and the public streets in this portion of the Bayside area of Portland. In 2013, these encumbrances were identifies as follows:

1. Grading, drainage & utility easement benefiting all parcels of Lots 1 & 3
2. Grading, drainage & utility easement benefiting all parcels of Lots 1 & 3
3. Area to be conveyed to Chestnut Street ROW (46 S.F., 0.001 AC.)
4. Grading, drainage & utility easement benefiting all parcels of Lots 6 & 7
5. Grading, drainage & utility easement benefiting all parcels of Lots 6 & 7
6. Area to be conveyed to Chestnut Street ROW (81 S.F., 0.002 AC.)
7. Limited open space use easement on Lot 7 benefiting the City of Portland
8. Area to be conveyed to Chestnut Street ROW (369 S.F., 0.008 AC.)
9. ROW and property line adjustment
10. Area to be conveyed to Chestnut Street ROW (513 S.F., 0.012 AC.)
11. Limited open space use easement benefiting the City of Portland – 10' wide
12. 6' wide limited open space use easements on Lots 3 and 6 benefiting the City of Portland
13. MEWS-30' access easement benefiting the City of Portland, excepting the reservation for storefront "bays" of midtown to extend up to 2'-0" into either side of the MEWS for up to 30% of the linear footage of the MEWS and common boundary of Lot 6 and Lot 7
14. Limited open space use easement benefiting the City of Portland – 10' wide
15. Existing 50' ROW to be expanded to 54', four foot strip of land to be retained by the City of Portland and added to the Somerset Street ROW
16. 15' wide temporary grading & construction easement to be granted to City of Portland by Noyes
17. Existing 50' ROW to be expanded to 54', four foot strip of land to be retained by the City of Portland to be added to the Somerset Street ROW

EXHIBIT 19

REVIEW OF SECTION 14-526 DESIGN STANDARDS

CONFORMITY WITH APPLICABLE DESIGN STANDARDS

The following statement is made in accordance with the City of Portland Code of Ordinances, Chapter 14 Land Use, Section 14-526.

OVERVIEW

This project conforms with all the applicable design standards of Section 14-526 as demonstrated in the following narrative.

(a) Transportation Standards

1. *Impact on Surrounding Street Systems:*

   A Traffic Impact Study will be prepared which addresses impacts on surrounding street systems and is included in Exhibit 9 of this application. The project will provide improvements and/or partial funding for collaborative improvements with the City of Portland to maintain an acceptable level of service.

2. *Access and Circulation:*

   a. *Site Access and Circulation.*

      AutoTURN templates for vehicle movements have been prepared and are included in Exhibit 11. Pedestrian access and connectivity to existing City pedestrian routes are provided by the design of new sidewalks and connectivity to the Bayside Trail.

   b. *Loading and Servicing.*

      AutoTURN templates have been prepared and are included in Exhibit 11. Loading areas are provided for each of the midtown structures to service the retail and residential building programs.

   c. *Sidewalks.*

   (i) Sidewalks have been provided throughout the site and connect to offsite pedestrian access. All sidewalks shall conform to the City of Portland Technical Manual as shown on the project design drawings.

   (ii) The Plan for midtown Development incorporates new sidewalks which will be bifurcated by a grade change at Pearl and Somerset Streets as shown in the plans. However, with the planned change in roadway elevation the majority of the Somerset frontage will be one continuous sidewalk without grade change.

   Somerset and Elm are designated 'B Streets' – the plan includes bump-outs and amenities such as tree wells, landscaping, café seating and provisions for public art by others.

   (iii) The development provides pedestrian access to the Bayside Trail, public transit stop, and abutting land uses (commercial and residential). The proposed design is consistent with the City's goals for pedestrian connectivity.

3. *Public Transit Access:*

   a. *For any residential development consisting of twenty (20) or more dwelling units or commercial or institutional development of at least 20,000 square feet gross floor area, a transit facility shall be construed where the following criteria are met:*

      The applicant has contacted the Greater Portland Transit District to request a bus stop location near the northerly side of Somerset Street. Please see Exhibit 12 of this application for more detailed information. The applicant will continue to work with Greater Portland Transit District officials on measures to accommodate their programs. The site currently is within the Metro #8 bus circuit route therefore affording excellent access to public transit.

4. *Parking:*

   a. *Location and Required Number of Vehicle Parking Spaces.*

      (i) The development provides enough parking spaces to meet the demand of the project based on Section 14-332(a)(3)a. which requires one (1) space per unit and Section 14-332(h) requiring 1 space/800 sq. ft. However, per Section 14-332.2(c) the Planning Board shall be responsible to establish the project's parking requirements.

      (ii) The applicant has prepared a TDM strategy which included in Exhibit 10 of this Site Plan Application.

      (iii) The applicant proposes the amount of parking which is appropriate for the anticipated uses of this site. The midtownTwo parking garage will contain 828 parking spaces.

      (iv) Parking spaces and aisles have been designed to meet the dimensional requirements of the Technical Manual and/or are considered acceptable within guidelines commonly used for similar projects.

      (v) Parking Garage – Specific information regarding the B-7 Land Use Standards is included in Exhibit 17 of this application.

   b. *Location and Required Number of Bicycle Parking Spaces.*

      (i)(b) The project has provided bicycle parking at each building facility in accordance with the Technical Manual. The bicycle parking spaces are shown on the landscaping plans and are further explained in Exhibit 17 of this application.

   c. *Motorcycles and Scooter Parking.*

      (i) The project provides designated motorcycle/scooter parking in the parking structure facility.

   d. *Snow Storage.*

      The applicant intends to contract with a local snow removal/grounds maintenance operator who will be responsible to conduct snow removal in accordance with typical protocols in the City of Portland.

5. *Transportation Demand Management (TDM):*

   a. The applicant has developed a TDM Plan pursuant to the City of Portland's Code of Ordinances.

b. The TDM Plan incorporates the City goals by integrating elements described in the Technical Manual.

(b) Environmental Quality Standards:

1. *Preservation of Significant Natural Features:*

   a. None of these natural features are applicable to the project site.

   b. Where areas set aside for preservation are part of a larger existing habitat block extending beyond the boundaries of the site, the contiguity of these features shall be preserved, where possible.

      The Applicant has contacted Federal and State environmental agencies for review of endangered species and found that there are no known significant wildlife or unusual areas exist on the project site. Please see Exhibit 16 all correspondence to these agencies.

   c. The applicant is not requesting a waiver from this standard are the preservation of natural features does not apply.

2. *Landscaping and Landscaping Preservation:*

   a. Landscape Preservation.

      (i) There are no existing trees located on the respective parcels.

      (ii) See response above.

      (iii) There are several trees located within the Bayside Trail that will require relocation. The applicant will coordinate with the City Arborist to select appropriate siting of trees.

      (iv) Waiver: There are no existing trees located on the respective parcels, no waiver is required.

         a. NA

         b. NA

         c. NA

      (v) Shoreland Zoning: NA

   b. Site Landscaping.

      (i) Landscaped Buffers:

         a. Screening. There are no external loading areas, dumpsters, or storage areas proposed. Proposed transformers located to the rear of "midtownFour" have been provided with a dense screening of evergreen trees and shrub massing. All transformers will be provided with an ornamental fence and limited landscape to soften appearance. Due to concern for public safety, no dense plantings are proposed.

         b. Understory Plantings. The proposed buildings fronting along Somerset Street, Chestnut Street, Elm Street and the future Pearl Street extension are located at or within 10 feet of the right of way with sidewalk extending to face of buildings. Landscaping within these areas is limited to street trees and raised planter beds where sidewalk grade changes required a ramp and stair configuration.

c. *Industrial and Commercial Zones.* N/A

d. *Industrial and Commercial Zones. N/A*

e. *Buffer from Surrounding Development.* The proposed improvements along the Bayside Trail behind the proposed "midtown" structures provides for an integrated hardscape and landscape as part of the public space. The landscape along the northerly edge of the trail behind "midtownOne" and the Parking Garage includes additional trees and understory vegetation to enhance the trail edge.

(ii) Parking Lot Landscaping:

There are no surface parking areas proposed. Remaining items are not applicable.

(iii) Street Trees:

a. Street trees are proposed along all street frontages. Selection of tree species has been coordinated with the City Arborist. There are 445 total apartments proposed that require 1 street tree per unit or 445 trees. There is not adequate street frontage or along the Bayside Trail to locate the required number of trees. See waiver request below.

b. Waiver: The applicant is requesting a waiver of the requirement for providing one street tree per residential unit. The maximum number of units proposed for the "midtown" project is 445 units. A total of 97 trees, not including replaced street trees along Elm Street, are being provided along Chestnut Street, Somerset Street, Pearl Street, and along the Bayside Trail. The request is based upon the enhanced planting method that includes 4 FT x 8 FT raised (granite curb) planting beds and a structural planting system below grade that provides for an expanded root zone that is approximately 60 % larger than typical street tree planting area. There are 29 raised planters located along the street frontages and the cost to install improvements for these trees well exceeds the fee in lieu for the additional 349 trees.

3. Water Quality, Stormwater Management and Erosion Control:

a. Stormwater:

(i) All stormwater draining onto the site from adjacent properties has been accounted for in the pipe sizing and been redirected to a new discharge location.

(ii) All stormwater runoff is proposed to discharge directly to existing City systems. The project will not adversely impact adjacent lots.

(iii) All stormwater runoff is proposed to discharge directly to existing City systems. The project will not adversely impact adjacent lots.

(iv) All stormwater runoff is proposed to discharge directly to existing City systems. The project will not adversely impact adjacent lots

b. The Stormwater Management Plan meets the requirements and goals stated in Section 5 of the Technical Manual. A Stormwater Management Report and Operation & Maintenance Manual are included in Exhibit 13 of this application.

c. The project is not located in a watershed of an urban impaired stream as listed by the MaineDEP.

d. N/A

e. The project is serviced by a public wastewater system. The project will not pose a risk of further groundwater contamination beyond current background conditions.

f. The project will be connected to the public sanitary sewer system which is adequately sized for the project flows.

(c) Public Infrastructure and Community Safety Standards.

1. *Consistency with City Master Plans:*

   This information is provided in Exhibit 20 of the application.

2. *Public Safety and Fire Prevention:*

   a. *Crime Prevention (CPTED):*

      Having full time residents overlooking public spaces has been shown to be the best form of natural surveillance. Midtown will bring the eyes of the tenants of more than four hundred new apartments with direct view of the Bayside Trail Somerset, Pearl, Chestnut and Elm streets, and the Mews and Courtyard.

   b. *Emergency Vehicle Access:*

      The site has been designed to allow for emergency response vehicles to move around all areas of the site.

   c. *Adequate Water Supply and Hydrant Location:*

      The project provides several new fire hydrants to meet the requirements of Section 5 of the Technical Manual.

3. *Availability and Adequate Capacity of Public Utilities:*

   a. The applicant has secured or will secure letters from all applicable utilities stating their ability to serve this project. The project will require all new utility infrastructure throughout the site. This information is provided in Exhibit 5 of the application.

   b. All on site electrical lines will be underground.

   c. All new utility infrastructure will meet the provisions of the Technical Manual.

   d. The project will require service connections to the existing sanitary sewer facilities in the adjacent streets.

   e. The sanitary sewer collection system is designed to meet all applicable sections of the Technical Manual. The stormwater management system is designed to meet the requirements of the Technical Manual and Chapter 500 of the MeDEP Stormwater Management Standards.

   f. The project will use an internal trash room or trash compactors to store trash and recyclables temporarily until a contracted waste management company can pick up and dispose of the solid waste.

(d) Site Design Standards:

1. *Massing, Ventilation and Wind Impact:*

   a. *Wind Conditions:* The nearest structure to the buildings of midtown is *Trader Joes* on Elm Street near midtown Four. This is a windowless façade and therefore ventilation of Trader Joes will be unchanged. We understand that a wind study was undertaken for a previous development on the site featuring buildings substantially greater than two times as high. That study found no unsafe conditions; reduced height brings wind speed decreases – it is therefore concluded that the currently proposed structures will not create unsafe wind conditions at any adjacent publicly accessible open spaces.

   b. *No diminution in value or utility of neighboring parcels:* By replacing vacant land with active retail street frontage and medium density residential development, the proposed project will likely increase the value of neighboring parcels.

   c. *HVAC Venting:* Heating and cooling will be via electric heat pumps, hence there will be no products of combustion.

2. *Shadows:*

   a. The B-7 district shadow requirements are regulated under the B-7 design guidelines. See review of these standards in Exhibit 17, along with the required shadow study provided as an attachment to Exhibit 17.

3. *Snow and Ice Loading:*

   a. The buildings will be designed without wide flat ledges, out sloping cornices or sills which might accumulate and potentially shed snow and/or ice onto the public way.

4. *View Corridors:*

   a. The low-rise buildings protect designated downtown view corridors.

5. *Historic Resources:*

   a. Not applicable to this project. The development is not located in a historic district, historic landscape district or City designated landmark. A copy of the correspondence to the Maine Historic Preservation Office is included in Exhibit 16 of the application.

6. *Exterior Lighting:*

   a. Site Lighting: Exterior lighting will be designed to meet the requirements of Section 12 of the Technical Manual.

   b. Architectural and Specialty Lighting: Exterior lighting will be located only at entrances for safety, security and a sense of welcome, and at egress and service doors as required by code. These lights will be shielded or cut-off fixtures that will emit no direct light upwards nor into adjacent residential properties.

   c. Street Lighting: Exterior lighting will be designed to meet the requirements of Section 12 of the Technical Manual. For further explanation, please see review of B-7 Land Use Requirements in Exhibit 17.

7. *Noise and Vibration:*

   a. HVAC and Mechanical Equipment

      (i) HVAC Noise

Compressor/condenser (outdoor) units for the heating cooling systems will be located on the roofs and screened from view from the public way by parapets. As shown by the cut sheets provide at the end of this section they emit 55 dBA sound pressure at the roof, and likely less than 50dBA at street level seventy feet below.

As it will be naturally ventilated, the garage within midtownTwo will not have any roof mounted mechanical equipment.

midtownOne and midtownThree will be heated and cooled by "split system" heat pumps. Each apartment will have a dedicated rooftop outdoor unit with compressor and fan, and indoor units as required by space layouts. The attached data sheets describe this equipment. The roof plans provided in the drawing set indicate the location of the outdoor units clustered in groups near the center of the roof.

These outdoor units will be visually screened from the street by the buildings' parapet walls which will also aid in sound attenuation. As noted, the sound from these units will be well below 50 dBA at street level.

The studio apartments of midtownFour will be heated and cooled by packaged unit heat pumps mounted in the façade below the windows. These units are very quiet and will project sound at less than 50 dBA. The placement of the exterior louvers for these units has been carefully integrated into the design of the facades.

Kitchen exhaust fans indicated on the drawings will not be part of the base building construction. Choice of fan, and placement on the roof will be dependent on tenant requirements. At the time of tenant improvement permitting the tenant will provide cut sheets showing that the sound power of the fans will be below 58 dBA at the roof, and therefore attenuated to below 50dBA at street level

(ii) Emergency Generator

Does not apply – generator not required for low-rise buildings or naturally ventilated garage.

8. *Signage and Way finding:*

   a. *Signage:* All standard signage is included in the Site Layout Drawing C-2.0 as regulated by Division 22 of the code. Future tenant related signage associated with the proposed retail spaces will be the responsibility of individual tenants who shall obtain the necessary sign permits from the City's Code Office.

9. *Zoning Related Design Standards*

   a. See separate review of B-7 Design Standards in Exhibit 17 of the application.

   b. The extra height in District A does not apply. The proposed building heights of 75 and 92 feet are well below the allowed heights of 105 and 125 feet.

EXHIBIT 20

COMPLIANCE WITH COMPREHENSIVE PLAN

COMPLIANCE WITH PORTLAND COMPREHENSIVE PLAN
(review of *A New Vision for Bayside* for Final Level III Site Plan)

(*A New Vision for Bayside* was adopted as part of Portland's Comprehensive Plan by city council December 20th 1999)

The plan embodied in the above captioned document presents a description of an extension of the neighborhood to create an Urban Gateway along I-295. Over the 15 years since its adoption, the plan has guided many important accomplishments:

- Railway property has been converted to Bayside Trail
- Soil has been remediated
- Scrapyards have been converted to development sites
- Commercial businesses and office properties have been developed on Marginal Way fulfilling the vision of Bayside Avenue.
- A natural foods market has been established.

The proposed development is consistent with this plan and directly supports three of its visions.

A Walkable District

The development provides continuous street level retail frontage along the north side of Somerset St. from Pearl to Elm Streets. The new buildings' ground levels must be constructed at elevation 12.0 to be above FEMA projected 100 yrs. storm surge or flood levels. To assure easy pedestrian interaction with the retail both Somerset Street and a portion of the Bayside Trail will be reconstructed to this elevation and provided with new storm drainage infrastructure.

Critical Mass of Dwellings

The plan called for 800 new units of housing in the district. Bringing new permanent households and residents to the district was rightly viewed as a key component to creating a vibrant and active 7 day per week, 18 hour per day neighborhood environment. The plan further established the immediate goal of 300 units in five years (which has been met through infill and a few mid-sized developments) and the extended goal of 500 additional units in twenty five years. The proposed development of 440 dwelling units will go a long way to meeting this extended goal within the time period envisioned.

Multi-Level Parking Structures

The plan called for well-designed multi-level parking structures to replace surface parking and thus encourage a compact, walkable, street-oriented form of development. Concentrated parking was also seen as a key component and complement to transit oriented development – recognizing that new residents would embrace walking, biking, and public transit for regular commuter trips, but nonetheless would own cares for evening, weekend, and other off-peak trips, and those cars would require off-street garaging.

The project is therefore both in compliance with the vision and directly supports the action items of the plan.

Prepared by CBT Architects
November 14, 2014

Indoor Units

MSZ-FH09, 12, 15NA
New sleek design offers many new features including new multi-functional wireless remote controller.

- Triple-action filtration including anti-allergen enzyme filter.
- Double-vane air delivery for enhanced circulation.
- i-see Sensor™ 3D senses human heat signatures.

MFZ-KA09, 12, 18NA
Floor-mounted indoor units are perfect for difficult areas that may be smaller or don't have usable wall space.

- Top and bottom discharge vanes.
- Wireless remote control with smart set feature.
- Front panel filter access for ease of cleaning.

SLZ-KA09, 12, 15NA
Ceiling-recessed indoor units offer a wide airflow pattern for better air distribution in a less obtrusive style.

- Ventilation air knockouts available.
- Offers a 2, 3, or 4 way airflow pattern.
- Built-in condensate lift mechanism (up to 20").

MSZ-GE09, 12, 15, 18, 24NA
Slim, wall-mounted units provide individual room control in a variety of applications.

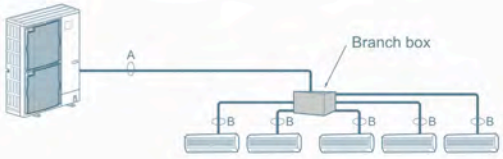
- Offers wide angle of airflow, 150 degrees from left to right.
- Quiet operation as low as 19 dB(A).
- Provides cooling and heating in a wide range of capacities.

SEZ-KD09, 12, 15, 18NA
Horizontal-ducted indoor units provide comfort and efficiency while staying hidden in ceiling or beneath the floor.

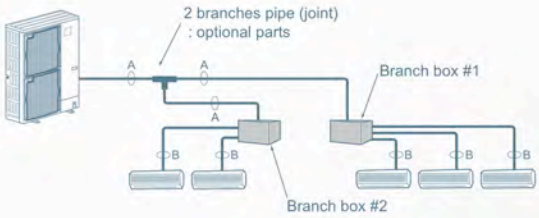
- Build-in condensate lift mechanism (up to 22").
- Static capability up to 0.20" WG.
- Optional filter box with MERV-8 filters.

BRANCH BOX CONNECTIONS

When Using One Branch Box
Flare Connection - Max. 5 indoor units



When Using Two Branch Boxes
- Max. 8 indoor units



MXZ H2i Outdoor Units | Heat Pump

Model Name			MXZ-2C20NAHZ	MXZ-3C24NAHZ	MXZ-3C30NAHZ	MXZ-4C36NAHZ
Cooling * Non-Ducted/ Ducted	Rated Capacity	Btu/h	18,000 / 20,000	22,000 / 23,600	28,400 / 27,400	36,000 / 36,000
	Capacity Range	Btu/h	6,000- 20,000	6,000- 23,600	6,000- 28,400	6,000- 36,000
	Rated Total Input	W	1,334 / 1,819	1,630 / 2,360	2,272 / 2,661	2,570 / 3,180
Heating at 47F* (Non-Ducted/ Ducted)	Rated Capacity	Btu/h	22,000 / 22,000	25,000 / 24,600	28,600 / 27,600	45,000 / 45,000
	Capacity Range	Btu/h	7,400- 25,500	7,200- 30,600	7,200- 36,000	7,200- 45,000
	Rated Total Input	W	1,612 / 1,748	1,725 / 1,871	2,096 / 2,187	3,340 / 4,250
Heating at 17F* (Non-Ducted/ Ducted)	Rated Capacity	Btu/h	13,700 / 13,700	14,000 / 14,000	18,000 / 16,500	34,000 / 36,000
	Maximum Capacity	Btu/h	22,000 / 22,000	25,000 / 24,600	28,600 / 27,600	45,000 / 45,000
	Rated Total Input	W	1,450 / 1,588	1,622 / 1,635	1,991 / 1,993	3,500 / 4,590
Heating at 5F*	Maximum Capacity	Btu/h	22,000	25,000	28,600	45,000
Efficiency	SEER (Non-Ducted/Ducted)		17.0 / 15.0	19.0 / 15.5	18.0 / 16.0	19.1 / 15.8
	EER (Non-Ducted/Ducted)		13.5 / 11.0	13.5 / 10.0	12.5 / 10.3	14.0 / 11.3
	HSPF (Non-Ducted/Ducted)		9.8 / 9.5	10.0 / 9.0	11.0 / 9.8	11.3 / 10.1
Electrical Requirements	Power Supply	V, Ph, Hz	208 / 230V,1-Phase, 60 Hz			
	Recommended Fuse/Breaker Size	A	40	40	40	50
	MCA	A	29	30	30	42
Voltage	Indoor - Outdoor S1-S2	V	AC 208 / 230			
	Indoor - Outdoor S2-S3	V	DC ± 24			
Compressor			DC INVERTER - driven Twin Rotary			
Fan Motor (ECM)		FLA	1.9	1.9	1.9	0.4 + 0.4
Sound Pressure Level	Cooling	dB(A)	54	54	54	49
	Heating		58	58	58	53
External Dimensions (H x W x D)		In / mm	41-9/32 x 37-13/32 x 13			52-11/16 x 41-11/32 x 13(+1)
Net Weight		Lbs / kg	187 / 85	189 / 86	189 / 86	276 / 125
External Finish			Munsell No. 3Y 7.8/11			
Refrigerant Pipe Size O.D.	Liquid (High Pressure)	In / mm	1/4 / 6.35			3/8 / 9.52
	Gas (Low Pressure)		A,B: 3/8 / 9.52	A: 1/2 / 12.7; B,C: 3/8 / 9.52		5/8 / 15.88
Max. Piping Length for Each Indoor Unit		Ft / m	164 / 50	230 / 70		492 / 150
Max. Refrigerant line Length			82 / 25	82 / 25		262 / 80
Max. Refrigerant Pipe Height Difference	If IDU is Above ODU	Ft / m	49 / 15	49 / 15		164 / 50
	If IDU is Below ODU	Ft / m	49 / 15	49 / 15		131 / 40
Connection Method			Flared / Flared			
Refrigerant			R410A			

Specifications are subject to change without notice.

Kühl® Series
Room Air Conditioners

PURCHASER	P.O. #	DATE
PROJECT	LOCATION	
ENGINEER	ARCHITECT	
SUBMITTED BY	FOR APPROVAL	FOR REFERENCE

ITEM	PLAN DESIGNATION	QUANTITY	COOLING BTU/H	VOLTAGE	FRIEDRICH MODEL

Comfort & Convenience

- Convenient control from your smartphone or computer via FriedrichLink® (required accessory sold separately)
- 24-hour timer
- Up to 4 cooling and 4 fan-only speeds on select models†
- Automatic fan speed adjustment
- Auto-changeover from cool to heat; heat to cool to maintain set temperature (Kühl+ models except EQ08)
- 8-way air flow control
- Temperature readout can display set temperature and room temperature
- LCD panel auto dims if not in use
- LCD settings lockout option (ON/OFF)
- Premium remote control allows user to activate schedule, adjust temperature, adjust fan speed or select auto-fan; can also switch from cool to heat and heat to cool (Kühl + models)

Sound Reduction Technology

- Steel inner wall and extra dense insulation materials block outdoor noise
- Vibration isolating design and components diminish traditional operating sound levels
- Precision engineering maximizes air flow while delivering ultra quiet operation

Maintenance & Installation

- Check filter reminder and error code storage
- Same sleeve dimensions for 30+ years for easy replacement
- Slideout chassis for more permanent installation and easier access for maintenance
- Installs in a window or in-wall
- Includes heavy-duty window installation hardware (optional accessory on Kühl+ models)
- Rugged hardboard side panels or (heavy duty side curtains on SQ and EQ models) for a more permanent installation
- Power cord can run left or right
- Defrost control protects coil against freeze up
- Firm grip handles for easier chassis installation and removal

Energy Management & Compliance

- Convenient control from your smartphone or computer via FriedrichLink™ (optional accessory sold separately)
- 2 ready-to-go 7-day energy management programs
- Autofan mode saves money by conserving energy
- ENERGY STAR® qualified models, including heat pumps
- Environmentally-friendly R-410A refrigerant used in all models
- Recyclable packaging
- RoHS compliant

Safety & Security

- EntryGard™ anti-intrusion protection - secures chassis to the sleeve with a steel retaining wire to deter 'kick-in' intrusion
- Power cord current leakage protected
- Aluminum outside grille
- Insect barrier*

Health & IAQ

- Superior fresh air intake and stale air exhaust vent*
- Washable, antimicrobial air filter
- Premium carbon filter provides superior air filtration with ratings as high as MERV 6, while also adsorbing odors, and reducing ozone and VOCs when used in conjuction with standard filter
- Hinged door for easy filter access

* Feature not available on SQ and EQ models.
**Nut driver not required for Kühl SQ and EQ models.

Specifications

★ ENERGY STAR® models

	Model	Cooling Btu	Heating Btu	Volts Rated	Cooling Amps	Cooling Watts	Heating Amps	Heating Watts	Energy Efficiency Ratio EER	Estimated Yearly Operating Cost	COP	Moisture Removal-Pints/HR	CFM	Sleeve	Net Wt. lbs.	Ship Wt. lbs.
	Kühl®															
★	SQ05N10B	5200	-	115	4.7	464	-	-	11.2	$42	-	0.5	190	Q	72	85
★	SQ06N10B	5700	-	115	4.7	509	-	-	11.2	$46	-	0.5	190	Q	72	85
★	SQ08N10B	7900	-	115	6.4	705	-	-	11.2	$63	-	1.2	200	Q	71	84
	SQ10N10	9600	-	115	9.2	980	-	-	9.8	$88	-	2.1	240	Q	71	84
★	SS08N10B	8000	-	115	6.1	696	-	-	11.5	$63	-	1.9	255	S	99	121
★	SS10N10B	9700	-	115	7.8	858	-	-	11.3	$77	-	2.5	300	S	106	128
★	SS12N10B	12000	-	115	9.7	1062	-	-	11.3	$96	-	3.0	300	S	112	134
★	SS14N10A	13500	-	115	12.0	1250	-	-	10.8	$113	-	4.0	275	S	116	133
★	SS12N30B	12000/12000	-	230/208	4.9/5.2	1062/1062	-	-	11.3/11.3	$96	-	3.4	325	S	112	134
★	SS16N30	15500/15200	-	230/208	6.5/7.1	1449/1421	-	-	10.7/10.7	$130	-	4.8	350	S	116	136
★	SM15N10B	15000	-	115	12.0	1339	-	-	11.2	$121	-	3.5	360	M	141	154
★	SM18N30	17500/17200	-	230/208	7.4/8.0	1635/1607	-	-	10.7/10.7	$147	-	4.6	350	M	140	161
★	SM21N30B	20500/20000	-	230/208	9.3/10.2	2092/2062	-	-	9.8/9.7	$188	-	6.0	425	M	132	153
	SM24N30A	23500/23200	-	230/208	12.7/13.6	2765/2730	-	-	8.5/8.5	$249	-	7.1	430	M	152	173
★	SL24N30B	24000/23800	-	230/208	10.8/11.4	2449/2429	-	-	9.8/9.8	$220	-	7.0	640	L	191	212
★	SL28N30B	28000/27600	-	230/208	13.0/14.0	2857/2875	-	-	9.8/9.6	$257	-	8.5	640	L	193	214
	SL36N30B	36000/35500	-	230/208	17.5/19.2	4000/3944	-	-	9.0/9.0	$360	-	12.0	725	L	212	248
	Kühl+® (Heat Pump)															
★	YS10N10B*	9500	8000	115	8.2	913	7.3	870	10.4	$82	2.7	2.0	300	S	109	131
★	YS12N33B	11500/11300	9400/9000	230/208	5.0/5.4	1106/1087	4.6/5.0	1132/1139	10.4/10.4	$100	2.4/2.3	3.0	375	S	115	136
★	YM18N34B	17500/17200	15500/15000	230/208	7.5/8.1	1683/1654	7.8/8.4	1824/1765	10.4/10.4	$151	2.5/2.5	5.4	370	M	141	154
★	YL24N35B	24000/24000	22000/22000	230/208	10.8/11.6	2449/2449	10.7/11.4	2391/2391	9.8/9.8	$220	2.6/2.6	7.0	600	L	197	211
	Kühl+® (Electric Heat)															
	EQ08N11B	7900	4000	115	6.4	705	11.2	1290	11.2	$61	-	1.2	200	Q	72	84
	ES12N33B	12000/12000	10700/8900	230/208	4.9/5.2	1062/1062	16.0/14.7	3500/2900	11.3/11.3	$96	-	3.4	325	S	113	128
	ES16N33	15500/15200	10700/8900	230/208	6.5/7.1	1449/1421	16.0/14.7	3500/2900	10.7/10.7	$130	-	4.8	350	S	117	133
	EM18N34	17500/17200	13000/10600	230/208	7.4/8.0	1635/1607	19.5/17.0	4200/3500	10.7/10.7	$147	-	4.6	350	M	141	154
	EM24N34A	23500/23200	13000/10600	230/208	12.7/13.6	2765/2730	19.5/17.0	4200/3500	8.5/8.5	$249	-	7.1	430	M	153	166
	EL36N35B	36000/35500	17300/14300	230/208	17.5/19.2	4000/3944	24.0/22.4	5500/4650	9.0/9.0	$360	-	12.0	725	L	213	246

* Operates on 115 volt and is not equipped with supplemental heat. Will not provide heat at temperatures below 40°F.
Friedrich room air conditioners are designed to operate in outdoor temperatures from 60° F to 115° F.

Kühl+ Heat Pump heating information indicates heat pump performance. Kühl+ and Chill+ Electric Heat heating information indicates electric heat strip performance. For Kühl+ Heat Pump electric heating performance refer to corresponding Kühl+ Electric Heat model.

As an ENERGY STAR® partner, Friedrich Air Conditioning Co. has determined that the selected ENERGY STAR® models meet the ENERGY STAR® guidelines for energy efficiency.

The consumer- through the AHAM Room Air Conditioner Certification Program- can be certain that the AHAM Certification Seal accurately states the unit's cooling and heating capacity rating, the amperes and the energy efficiency ratio.

Your operating costs will depend on your utility rates and use. The estimated operating cost is based on a electricity cost of $ .12 per kWh. For more information, visit www.ftc.gov/energy.Due to continuing research in new energy-saving technology, specifications are subject to change without notice.

ENERGY STAR

AHAM VERIFIDE

c UL us LISTED

Installation

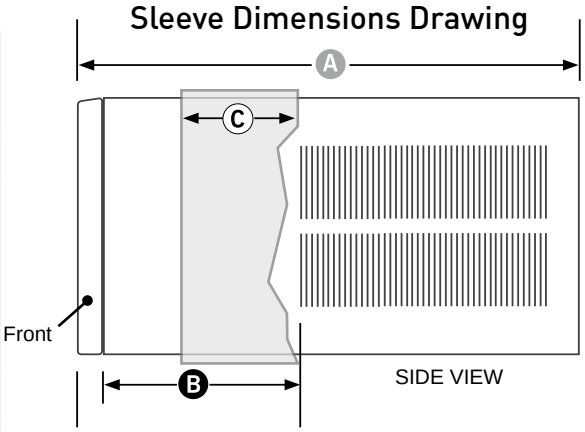
Sleeve	Height INCHES	Width INCHES	Depth with Front INCHES (A)	Shell Depth to Louvers INCHES (B)	Minimum Extension Into Room* INCHES	Minimum Extension Outside * INCHES	Window Width INCHES Minimum**	Window Width INCHES Maximum	In-wall Installation Finished Hole INCHES Height	In-wall Installation Finished Hole INCHES Width	In-wall Installation Finished Hole INCHES Max. Depth (C)	Carton Dimensions INCHES Height	Carton Dimensions INCHES Width	Carton Dimensions INCHES Depth
Q	14"	19 ¾"	21 3/8"	8 ½"	5 ½"	10 ¾"	22"	42"	14 ¼"	20"	8 ½"	18 3/4"	25 1/2"	22 3/4"
S	15 15/16"	25 15/16"	29"	8 ¾"	5 ¾"	16 15/16"	27 3/8"	42"	16 3/16"	26 3/16"	7 3/8"	19"	34 1/2"	29"
M	17 15/16"	25 15/16"	29"	8 ¾"	5 ¾"	16 15/16"	27 3/8"	42"	18 3/16"	26 3/16"	7 3/8"	21"	34 1/2"	29"
L	20 3/16"	28"	35 ½"	16 ½"	5 3/8"	18 15/16"	29 7/8"	42"	20 3/8"	28 ¼"	15 1/8"	24 1/2"	38 7/8"	31 5/8"

* Minimum extensions when mounted in a window.
** Minimum widths achieved using one side curtain assembly as opposed to both in a standard installation.
† Sleeve P1 does not have In-wall hole dimensions, as these units are fixed chassis and should not be installed In-wall.
NOTE: S,M and L sleeves may be installed in window with no side kits if properly installed.

Circuit Rating/ Breaker

Model	Circuit Rating Breaker or T-D Fuse	Plug Face (NEMA#)	Power Cord Length (ft.)	Wall Outlet Appearance
CP05G10A	125V-15A	5 -15P	6 1/2	
CP06G10A, CP08G10A, CP10G10A, CP12G10A and CP15G10A. EP08G11A. All SQ MODELS. EQ08N11B. SS08N10B, SS10N10B, SS12N10B and SS14N10A. YS10N10B. SM15N10B.	125V - 15A	5- 5P	6	
CP18G30A	250V - 15A	6 - 15P	4 1/2	
SS12N30B and SS16N30, SM18N30 and SM21N30B. SL24N30B.			6	
CP24G30A. EP12G33A, EP18G33A and EP24G33A.	250V - 20A	6 - 20P	4	
SM24N30A. SL28N30B. ES12N33B and ES16N33. YS12N33B.	250V - 20A	6 - 20P	6	
SL36N30B. EM18N34, EM24N34A and EL36N35B. YM18N34B and YL24N35B.	250V - 30A	6 - 30P	6	

Sleeve Dimensions Drawing



Room Air Conditioner Model Identification Guide

S L 28 N 3 0 A

FUNCTION
S–Straight Cool **C**–Straight Cool
X–Straight Cool **Y**–Heat Pump
E–Electric Heat

CHASSIS
Q–Portable **P**–Programmable
S–Small Chassis **M**–Medium Chassis
L–Large Chassis

MODEL SERIES

APPROXIMATE Btu (000) Cooling

Letter at end of model number indicates a modification to an existing model.

0 – Straight Cool and 115V Heat Pump Models
1 – 1 KW heat strip, Nominal
3 – 3 KW heat strip, Nominal
4 – 4 KW heat strip, Nominal
5 – 5 KW heat strip, Nominal

VOLTAGE
1–115 Volts **3**–230/208 Volts

FRIEDRICH

EXHIBIT 21

AREAS TO BE DISTURBED BY CONSTRUCTION

midtown project

Summary of Disturbances

Lot # or area	Area of Disturbance		Comment
	acres	square feet	
1	0.46	19,992	Entire Lot
2	0.45	19,623	Entire Lot
3	0.59	25,760	Entire Lot
4	0.34	14,905	Portion only
5	0.42	18,201	Entire Lot
6	1.07	46,803	Entire Lot
7	0.50	21,917	Entire Lot
9	0.37	16,000	Portion only
Somerset Street	1.19	51,891	
Chestnut Street	0.50	21,872	
Pearl Street Extension	0.23	10,124	
Elm Street	0.14	6,108	
Total	**6.27**	**273,196**	

Note:

The disturbances to the trail exclude damage and disturbance beyond the grading limit that may occur as a result of construction access, operation of equipment and or construction access

EXHIBIT 22

SAMPLE OF EXTERIOR MATERIALS

Physical Samples will be Hand Delivered to Rick Knowland for Review

EXHIBIT 23

WRITTEN WAIVERS FROM SITE PLAN OR TECHNICAL STANDARDS

WRITTEN REQUESTS FOR WAIVERS FROM SITE PLAN OR TECHNICAL STANDARDS

PART 1 –THE FOLLOWING WAIVER REQUEST FOR BUILDING AND B-7 STANDARDS HAS BEEN PREPARED BY CBT ARCHITECTS

1. Applicant requests waiver from Standard B-3 requirement to provide mid-block permeability through **midtownThree** block between Chestnut and Elm Streets, connecting Somerset Street to the Bayside Trail.

   MidtownThree provides retail space fronting on Somerset Street which is designed as "through space", that is, allowing a visual connection through to the Bayside Trail beyond. It is noted that the building opposite this building on Somerset Street has no mid-block connector and the trail adjacent to the building's north facade is defined by a berm containing stabilized contaminated soil which rises 6 feet above the floor level of the retail space. In addition, there is a fenced parking lot on the north side of the trail. A mid-block connector in this instance would serve no real purpose as there would be no matching connector on the other side of Somerset Street and no pedestrian connection to the trail or properties to the north – that is a connector by itself (even if it could overcome the topographic problem of the berm, would generate no foot traffic as it would not be part of a larger pattern of pedestrian movement.

   The building design does, however, hold back from the property line at its west end allowing an expanded trail connection to Somerset and Elm Streets with easy and inviting access from Somerset Street.

2. Applicant requests waiver from the Standard B-7 requirement to provide continuity of street level uses along Somerset, Chestnut, and Pearl Streets.

   A service entrance for the **midtownOne** apartment building and its ground floor retail use is provided on Pearl Street; service entrance for **midtownTwo** retail space is provided adjacent to the garage entrance; service entrance for **midtownThree** retail and residences is provided on Somerset Street, and the service entrance for **midtownFour** is provided on Elm Street.

   These service entrance doors will be from seven feet to eleven feet wide, will be designed as an integral part of the modern industrial aesthetic of the buildings, and will be opened only to remove trash and recycling to vehicles parked in designated service spaces.

   Service for the ground floor retail use in the Garage building will be provided through the front door(s) of the retail spaces from loading zones along Somerset Street.

   Loading dock facilities are planned only at buildings one and three; for retail spaces tenants will provide for trash and recycling facilities within their leased premises.

Retail and apartment lobbies will form more than 90% of street frontages thus assuring the maximum frontage along Somerset, Chestnut, and Pearl Streets. Elm Street is planned to have continuous retail frontage.

3. Applicant requests waiver from Standard B-11 requirement to comply with City's Technical and Design standards for street lighting along Elm, Somerset, Chestnut, and Pearl Streets.

   The Plan for **midtown** Development will utilize the standard type fixture for Somerset Street, Elm, Chestnut Street, and Pearl Extension. Location and spacing may need a waiver. As well, higher intensity lighting is appropriate for the retail locations especially along Somerset Street and to create a uniform appearance along the ground floor retail areas of the development which may require a waiver of some requirements.

   Pedestrian lighting will be provided by the streetscape lighting noted above together with 'spill' lighting from retail store fronts.

   Lighting for the mews and new public opens spaces will be designed to complement these standards.

4. Applicant requests waiver from Standard C-2 requirement to separate vehicular entrance and exit from parking garage.

   In the Plan for **midtown** Development, garages will be designed to respect the pedestrian realm and minimize the visual impact of the garage entrance and exit by collocating the garage entrance and exit. These consolidated entry/exits will provide greater uninterrupted active retail use on the ground floor and will require a waiver from the requirement for separate entry/exit.

   Entry/egress gates will be located interior to the garages to allow entrance queuing internal to the structure minimizing back up onto Somerset Street.

5. Applicant requests waiver from Standard C-5 requirement that garage decks shall be horizontal where visible from public ways.

   The garage decks of the Plan for midtown Development will be level on the Chestnut and Somerset Street and the Mews facades, and will incorporate a parking ramp between parking levels along the Bayside Trail façade. The Plan seeks a waiver to allow these ramps to be expressed to the Trail and visible tangentially from streets and public rights of way.

   The **midtownTwo** Parking Garage has been designed with ramps at the Bayside Trail façade supported on sloping structure between horizontal end bays. The end bays will be clad in architectural precast concrete with openings similar in size and spacing to the apartment building windows. The sloped structure between these will be minimized, cable rails will provide for pedestrian and auto safety, and the interior structure will be a dark color, all to minimize visibility of the sloping ramps. The façade will be screened above the retail ground floor with green or other appropriate screening materials.

6. Applicant requests a partial waiver from Standard D-2 requirement that buildings adjacent to the trail have active doors into the building on facades facing the trail.

   All the **midtown** buildings are designed with façade elements adjacent to the Bayside Trail that enhance the trail experience. As noted above, these facades are not designed as "backs", and they provide the important element of residential windows overlooking the trail. Food service establishments are the planned as part of the retail leasing program for the ground floors of the all buildings. This may provide some entrances and egresses facing the trail.

   The partial waiver is sought on the requirement of having "active building ingress and egress" on the portion of **midtownThree** facing the trail because of natural changes in grade. The trail adjacent to the building's north facade is defined by a berm containing stabilized contaminated soil which rises 6 feet above the floor level of the retail space. It would be impractical to create entrances form the berm, and a hardship to remove it.

7. Applicant requests a waiver from Standard E-12 requirement that building facades visible from the public rights of way shall consist of natural building materials

   The buildings in the **midtown** Development will be clad in precast concrete, EFIS, aluminum, vinyl, or other siding materials, corrugated metal siding, with vinyl residential windows and enameled aluminum and glass storefront window and louver systems. All materials will be chosen for durability and long service life. These materials are manufactured for durability and long life, and will be detailed to stand up to all the rigors that the New England coastal climate offers.

   A waiver is being sought of Standard E-12 for the use of EFIS and vinyl metal or cement composite siding panels. Building material technology has evolved in recent years with offerings of higher strengths, color and pattern choices, and the ability to vary forms within a façade composition. These materials can have a handsome, elegant appearance when assembled in architecturally considered designs. Additionally the performance of these materials is very well understood and their use rivals the age and performance of heavier exterior materials like masonry stone or concrete.

8. Applicant requests clarification that a wind study will not be required under Standard E-20, or if required a waiver from such study.

   As the buildings are all substantially lower than the limits of height prescribed for the project area, and are consistent with the height of other recent developments in the district that have not experienced uncomfortable winds, the Applicant seeks clarification that a detailed professional wind study will not be required for Final Level III Site Plan review

   Initial assessment of wind roses and anecdotal reports suggest that winter winds from the North and Northwest might cause probable discomfort for sitting activities in the Courtyard if midtownOne were built to 165 feet tall. The building is proposed at 72 feet however, and the effects of wind would be attenuated substantially. It is therefore highly probable that users seated in the courtyard would find these winter winds uncomfortable.

Summer winds from the South will be tempered by topography and existing construction south of the project site. The tendency for the south wind to concentrate in the Mews will be mitigated by the openness of the garage.

Other uncomfortable winds previously predicted for walking at the Elm Street end of the trail, predicated on a pair of 165 ft. high buildings, would be similarly attenuated in the Applicant's current proposal to build midtownThree and midtownFour as substantially lower 72 ft. high buildings. It is highly improbable that pedestrians on the trail, Elm Street, or Somerset Street in this vicinity would experience any discomfort due to wind while sitting, standing still, walking, or jogging.

9. Applicant requests a waiver from Section 14-296 a.ii. requirement that parking garage façade be set back a minimum of 35 ft. from the street right of way.

   Due to the shallow nature of the lot and the city's desire to create active retail street frontage on Somerset Street the façade of the building is set back ten ft. and continuous retail frontage is provided at ground level.

10. Applicant requests an exception from Section 14-334 (a) and (b) to allow parking serving midtownFour to be located in midtownTwo, and to allow ownership of the parking separate from ownership of the residential and retail buildings.

    The entrances to the garage and the midtownFour buildings are more than 100 ft. but less than 1500 ft. apart. The four buildings are being developed as a single project but the applicant wishes to reserve the right to finance or sell each building separately at any time in the future. As the garage will always be a resource to the neighborhood, residents of the other three buildings will always be able to park their vehicles in it.

PART 2 – WAIVER REQUEST FOR CIVIL DESIGN PREPARED BY FST ENGINEERS

11. 1.4 Street Grades (reference page 3 of Technical Standards)

- *The cross slope for local streets shall be 0.03. The cross slope for other street classifications shall be 0.02.*

The project will require the reconstruction of Somerset Street. The building will be set at elevation 12.0 to be 2 feet above the higher flood hazards anticipated to increase over time. There are existing buildings with finish floors, entrances, and exits at lower elevations. The Federated plan for the midtown project has extensive ground floor retail which requires flush accessible entrances. On the other hand, there are existing buildings across the street (most notably the "Noyes" property with existing floors and entrance elevations which will not be changed. Because the buildings on either side of the street are near or on the right of way, some variation from transverse slopes and location of the street crown from the City's typical cross section within the street right of way will be required.

12. 1.5 Vertical Alignment: Parabolas at grade changes (K values) (Reference Pages 3 & 4 of the Technical Standards)

The profiles for the reconstruction of Chestnut, Somerset, Elm, and Pearl Streets are included in the Plan Documents. Minor variations from the City Standards for the "K" values (30 and 40 for crests and sags) will be requested.

It is anticipated, the variation of the K value for the sags on Chestnut Street is expected to have a "K" value of 33.56 and Elm Street is expected to have a value of 39.89.

13. Section 2 – Sanitary Sewer and Storm Drain Design Standards

2.7.8. No storm drain lines, with the exception of field inlets and underdrains, shall be connected into a catch basin structure (Reference Page 82 of the Technical Standards)

Representatives from the City of Portland have indicated the technical standards are being revised and will remove this restriction. If the standards have been revised, this waiver will not be required. The waiver is very important to avoid excessive piping and appurtenances in the public streets.

14. Section 5

Portland Stormwater Management Standards and MaineDEP Chapter 500 Stormwater Management (Reference Page 149; Section E. 2 6 of this Chapter of the Technical Standards)

The requirements include stormwater detention for flood control. The applicant is requesting a waiver to the requirement for detention as part of the Stormwater Management Plan. The location of the site within the watershed results in a condition where passing flow from this area as soon as possible allows capacity to free up to receive and convey flows from upstream areas.

15. Section 7

Soil Survey Standards (Reference Page 209 of the Technical Standards)

The applicant is requesting a waiver from the City of Portland's requirement to provide a high intensity soil survey. This request is made after considering that the site is on fill land, the site has been heavily disturbed as part of environmental cleanup measures over the past several years, the site will be nearly impervious after development such that hydrologic soils rating is not a significant issue.

PART 3 – WAIVER REQUEST FOR LANDSCAPING AND LANDSCAPE PRESERVATION PREPARED BY MITCHELL & ASSOCIATES

16. 4.6 Street Trees:

Waiver: The applicant is requesting a waiver of the requirement for providing one street tree per residential unit. The maximum number of units proposed for the "midtown" project is 445 units. A total of 97 trees, not including replaced street trees along Elm Street, are being provided along Chestnut Street, Somerset Street, Pearl Street, and along the Bayside Trail. The request is based upon the enhanced planting method that includes 4 FT x 8 FT raised (granite curb) planting beds and a structural planting system below grade that provides for

an expanded root zone that is approximately 60 % larger than typical street tree planting area. There are 29 raised planters located along the street frontages and the cost to install improvements for these trees well exceeds the fee in lieu for the additional 349 trees.

B-7 MIXED USE URBAN DISTRICT DESIGN PRINCIPALS AND STANDARDS

PRINCIPAL D OPEN SPACE AND PUBLIC REALM

17. Standard D-3 Landscaping and Street Furniture:

Planters, wells and tree grates: *The applicant is requesting a waiver for raised planting beds associated with the ramp system located within the right of way that occur along the Somerset Street sidewalk adjacent to Pearl Street extension and Elm Street as designed.*

Irrigation and Drainage: *The applicant is requesting a waiver of the requirement for an irrigation system. All plant material selected shall conform the city standards, be selected for drought tolerance in addition, will be located in larger raised planting areas.*

MEMORANDUM #1

In an effort to address questions and/or concerns raised at the November 12, 2014 Planning Board meeting, and to provide some background information regarding specific details of the Level III Site Plan & Subdivision submission, we have prepared the following memorandum.

Regarding the required mid-block permeability between Chestnut Street and Elm Street, we are requesting a waiver due to issues related to the design, functionality, and efficiency of the structure. Furthermore, it is our belief that the access point would not in any way provide any functional benefit. When contemplating various ways to provide this pass through, we considered the following:

- A physical separation, creating two separate structures- We felt that this was the obvious first choice as it was aesthetically the most attractive option. After review, we came to the conclusion that, due to the unusually narrow lot width and a host of other site limitations, we were unable to design two buildings that made economic sense to construct. Both buildings would require their own building core, service area, and entry lobby. The physical separation would also result in the loss of 20 apartments and approximately six thousand feet of leasable retail space. Additionally, it would "break" the continuous retail activity along Somerset Street that we believe is essential to creating the experience necessary to drive people to an area that today is best described as an urban wasteland.

- An access corridor within the retail space of the currently proposed structure- We feel very strongly that this is not a viable option. Our concerns are economic (the loss of square footage would have an adverse financial impact) and functional (the resulting separation would further limit the flexible subdivision of the retail space), but our primary concern is security related. We believe that this enclosed space will become a haven from inclement weather and a p lace that people will go to escape the public eye. We have concerns related to loitering and illegal activity, and although we will have personnel on site we will not be equipped to monitor or police activity within this confined space. We believe that the possibility for this type of behavior, in and of itself, will deter usage of this access point by ordinary citizens.

In addition to the specific concerns raised above, the mid-block pass through is further complicated by the fact that when the trail was built, a berm was created along the length of this lot preventing a simple "pass through" and necessitating the deconstruction of this berm and the remediation of the site and disposal of the contaminated material that the berm is currently comprised of. Given that the City of Portland created this condition when the trail was constructed and that the condition lies on city property, we feel that the burden of remediating and re-grading this area would be unfairly placed on the developer in the event that this permeation were required.

Finally, we believe that the proposed pass through has no functional benefit due to existing conditions. The proposed pedestrian connection provides no north/south connectivity as the blocks between Cumberland Avenue and Congress Street, Lancaster Street and Kennebec Street, Kennebec Street and Somerset Street, and Somerset Street and Marginal Way lack any connectivity and the presence of multiple structures limits the likelihood that this condition will change anytime soon. It is this lack of connectivity that would make it highly unlikely that a pedestrian would arrive at the point of the proposed access to begin with. The connectivity to the trail, which we view as the sole benefit of this action, is not improved in any way as an individual accessing the trail can do so at the trailhead that merges with the sidewalk immediately west of the building or at the Chestnut Street crossing to the east. In an effort to improve this access and to improve visibility at the trailhead, the developer has voluntarily removed over three thousand feet of retail space, effectively shortening the length of the building and the distance between trail connections. We believe that the proposed pass through provides no benefit because, in the unlikely event that a pedestrian were to arrive at the point of the proposed access, and due to the fact that the sidewalk runs parallel to the trail, the distance traveled in either direction would be exactly the same.

Prepared by Jonathan Cox

FEDERATEDEQUITIES 3301 NE 1st Ave, Suite M302, Miami, FL 33137

MEMORANDUM #2

In an effort to address questions and/or concerns raised at the November 12, 2014 Planning Board meeting, and to provide some background information regarding the details of the Level III Site Plan & Subdivision submission, we have prepared the following memorandum.

Regarding the use of certain exterior finish materials not otherwise allowed, we are requesting a waiver due to the compatibility of these systems with the intended construction type and the various functional and economic benefits of utilizing these materials in the construction of the building façade. In determining that these materials were the most appropriate application, we considered the following:

- PLEASE NOTE THAT WE ARE NOT REQUESTING A WAIVER FOR THE USE OF VINYL SIDING. WE HAVE NO INTENTION OF UTILIZING THIS MATERIAL IN THE CONSRUCTION OF THIS PROJECT. A WAIVER IS BEING REQUESTED FOR THE USE OF EIFS, A FROM OF SYNTHETIC STUCCO AND A MATERIAL WHOSE APPEARANCE IS VIRTUALLY INDISTINGUISHABLE FROM MATERIALS CURRENTLY APPROVED FOR USE IN THIS ZONE.

- While reviewing the possibility of reducing the height of the proposed structures, we came to the conclusion that the project became economically constrained when maintaining the previously proposed steel frame construction type. We analyzed the benefits and drawbacks of wood frame construction, in this case over a concrete podium, and decided that this framing material was better suited to construct the reduced height buildings. Timber frame construction results in a more environmentally sustainable building structure, has a smaller carbon footprint, and is far more energy efficient to construct and to operate.

  The wood frame structure interacts better with a lighter weight façade material. EIFS, or synthetic stucco, the surface material for which we are requesting a waiver to utilize, is a lighter weight application than a comparable fiber-cement panel. THE INSTALLED LOOK OF BOTH PRODUCTS IS VIRTUALLY IDENTICAL. EIFS is a superior product and has emerged as the preferred option, and is far more widely used than it's fiber-cement alternative. EIFS is an applied siding, whereas the fiber-cement panel is an installed siding. The fiber-cement panel is installed using mechanical fasteners, which are unsightly, maintenance intensive, and are subject to failure. The fiber-cement siding is panelized, creating gaps in the building envelope that contribute to energy loss. EAFS is troweled on, eliminating the use of mechanical fasteners, and creating a sealed application that actually increases the insulation value of the structure. EIFS acts as a " blanket", wrapping the exterior of the structure, reducing air infiltration and energy consumption. It eliminates "thermal breaks" associated with installed siding.

  Virtually indistinguishable from the fiber-cement panel, both are designed to resemble stucco. EIFS, however, expands the architect's design palate as it is available in a virtually limitless amount of colors and textures, whereas fiber-cement siding is fairly limited. It also allows for the construction of architectural detailing that would be cost prohibitive using conventional construction methods, such as cornices, arches, columns, and keystones. These details are computer-generated and laser cut out of insulation board, and the finish material is directly applied to the base insulation.

The lower operating costs and limited maintenance of this product allow for efficient operation of the structure on an ongoing basis. Additionally, it is our opinion that the expanded range of options that this material provides allows us to deliver a superior product at an economical price. In tandem with the other specified façade materials, we believe that we have presented a project that is reflective of the modern-industrial design aesthetic, paying homage to the neighborhoods industrial past while looking forward to its modern future.

Prepared by Jonathan Cox

FEDERATEDEQUITIES 3301 NE 1st Ave, Suite M302, Miami, FL 33137

EXHIBIT 24

LEED INFORMATION

The buildings at midtown if designed and constructed to comply and registered with USGBC are capable of achieving LEED certification.

The attached checklists show the prerequisites and credits that can be accomplished within the proposed designs.

LEED does not have a separate program for structured parking garages, so this building is treated as a core and shell project to provide space for the ground floor retail tenant and the parking is assumed to serve all four buildings. The retail space at the base of the three residential buildings is assumed to be an incidental core and shell use within the residential mixed-use buildings.

The checklists show that each building is capable of achieving LEED certification.

Prepared by CBT Architects

November 14, 2014

LEED v4 for BD+C: New Construction and Major Renovation

Project Checklist

Project Name: midtownOne, Somerset St., Portland Maine
Date: 14-Nov-14

Y	?	N			
1			Credit	Integrative Process	1

13	11	9	Location and Transportation		16
	10	6	Credit	LEED for Neighborhood Development Location	16
2			Credit	Sensitive Land Protection	1
2			Credit	High Priority Site	2
5			Credit	Surrounding Density and Diverse Uses	5
1	1	3	Credit	Access to Quality Transit	5
1			Credit	Bicycle Facilities	1
1			Credit	Reduced Parking Footprint	1
1			Credit	Green Vehicles	1

5	3	2	Sustainable Sites		10
Y			Prereq	Construction Activity Pollution Prevention	Required
1			Credit	Site Assessment	1
	2		Credit	Site Development - Protect or Restore Habitat	2
1			Credit	Open Space	1
2	1		Credit	Rainwater Management	3
		2	Credit	Heat Island Reduction	2
1			Credit	Light Pollution Reduction	1

2	2	7	Water Efficiency		11
Y			Prereq	Outdoor Water Use Reduction	Required
Y			Prereq	Indoor Water Use Reduction	Required
Y			Prereq	Building-Level Water Metering	Required
	1	1	Credit	Outdoor Water Use Reduction	2
1	1	4	Credit	Indoor Water Use Reduction	6
		2	Credit	Cooling Tower Water Use	2
1			Credit	Water Metering	1

8	11	15	Energy and Atmosphere		33
Y			Prereq	Fundamental Commissioning and Verification	Required
Y			Prereq	Minimum Energy Performance	Required
Y			Prereq	Building-Level Energy Metering	Required
Y			Prereq	Fundamental Refrigerant Management	Required
	6		Credit	Enhanced Commissioning	6
8	2	8	Credit	Optimize Energy Performance	18
		1	Credit	Advanced Energy Metering	1
		2	Credit	Demand Response	2
	1	2	Credit	Renewable Energy Production	3
	1	1	Credit	Enhanced Refrigerant Management	1
	1	1	Credit	Green Power and Carbon Offsets	2

5	3	5	Materials and Resources		13
Y			Prereq	Storage and Collection of Recyclables	Required
Y			Prereq	Construction and Demolition Waste Management Planning	Required
		5	Credit	Building Life-Cycle Impact Reduction	5
1	1		Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2
1	1		Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
1	1		Credit	Building Product Disclosure and Optimization - Material Ingredients	2
2			Credit	Construction and Demolition Waste Management	2

10	3	3	Indoor Environmental Quality		16
Y			Prereq	Minimum Indoor Air Quality Performance	Required
Y			Prereq	Environmental Tobacco Smoke Control	Required
2			Credit	Enhanced Indoor Air Quality Strategies	2
3			Credit	Low-Emitting Materials	3
	1		Credit	Construction Indoor Air Quality Management Plan	1
	1	1	Credit	Indoor Air Quality Assessment	2
1			Credit	Thermal Comfort	1
1	1		Credit	Interior Lighting	2
1		2	Credit	Daylight	3
1			Credit	Quality Views	1
1			Credit	Acoustic Performance	1

1	0	0	Innovation		6
			Credit	Innovation	5
1			Credit	LEED Accredited Professional	1

0	0	0	Regional Priority		4
			Credit	Regional Priority: Specific Credit	1
			Credit	Regional Priority: Specific Credit	1
			Credit	Regional Priority: Specific Credit	1
			Credit	Regional Priority: Specific Credit	1

45	33	41	TOTALS	Possible Points:	110

Certified: 40 to 49 points, **Silver:** 50 to 59 points, **Gold:** 60 to 79 points, **Platinum:** 80 to 110

LEED 2009 for Core and Shell Development

Project Checklist

midtownTwo retail

14 Nov 2014

Sustainable Sites — Possible Points: 28

Y	?	N			
24		4			
Y			Prereq 1	Construction Activity Pollution Prevention	
1			Credit 1	Site Selection	1
5			Credit 2	Development Density and Community Connectivity	5
1			Credit 3	Brownfield Redevelopment	1
6			Credit 4.1	Alternative Transportation—Public Transportation Access	6
2			Credit 4.2	Alternative Transportation—Bicycle Storage and Changing Rooms	2
3			Credit 4.3	Alternative Transportation—Low-Emitting and Fuel-Efficient Vehicles	3
2			Credit 4.4	Alternative Transportation—Parking Capacity	2
		1	Credit 5.1	Site Development—Protect or Restore Habitat	1
		1	Credit 5.2	Site Development—Maximize Open Space	1
1			Credit 6.1	Stormwater Design—Quantity Control	1
1			Credit 6.2	Stormwater Design—Quality Control	1
		1	Credit 7.1	Heat Island Effect—Non-roof	1
		1	Credit 7.2	Heat Island Effect—Roof	1
1			Credit 8	Light Pollution Reduction	1
1			Credit 9	Tenant Design and Construction Guidelines	1

Water Efficiency — Possible Points: 10

Y	?	N			
2	2	6			
Y			Prereq 1	Water Use Reduction—20% Reduction	
2		2	Credit 1	Water Efficient Landscaping	2 to 4
		2	Credit 2	Innovative Wastewater Technologies	2
	2	2	Credit 3	Water Use Reduction	2 to 4

Energy and Atmosphere — Possible Points: 37

Y	?	N			
9	11	17			
Y			Prereq 1	Fundamental Commissioning of Building Energy Systems	
Y			Prereq 2	Minimum Energy Performance	
Y			Prereq 3	Fundamental Refrigerant Management	
5	5	11	Credit 1	Optimize Energy Performance	3 to 21
		4	Credit 2	On-Site Renewable Energy	4
	2		Credit 3	Enhanced Commissioning	2
		2	Credit 4	Enhanced Refrigerant Management	2
1	2		Credit 5.1	Measurement and Verification—Base Building	3
3			Credit 5.2	Measurement and Verification—Tenant Submetering	3
	2		Credit 6	Green Power	2

Materials and Resources — Possible Points: 13

Y	?	N			
4	3	6			
Y			Prereq 1	Storage and Collection of Recyclables	
		5	Credit 1	Building Reuse—Maintain Existing Walls, Floors, and Roof	1 to 5
2			Credit 2	Construction Waste Management	1 to 2
		1	Credit 3	Materials Reuse	1
1	1		Credit 4	Recycled Content	1 to 2
1	1		Credit 5	Regional Materials	1 to 2
	1		Credit 6	Certified Wood	1

Indoor Environmental Quality — Possible Points: 12

Y	?	N			
6	4	2			
Y			Prereq 1	Minimum Indoor Air Quality Performance	
Y			Prereq 2	Environmental Tobacco Smoke (ETS) Control	
	1		Credit 1	Outdoor Air Delivery Monitoring	1
	1		Credit 2	Increased Ventilation	1
	1		Credit 3	Construction IAQ Management Plan—During Construction	1
1			Credit 4.1	Low-Emitting Materials—Adhesives and Sealants	1
1			Credit 4.2	Low-Emitting Materials—Paints and Coatings	1
1			Credit 4.3	Low-Emitting Materials—Flooring Systems	1
1			Credit 4.4	Low-Emitting Materials—Composite Wood and Agrifiber Products	1
1			Credit 5	Indoor Chemical and Pollutant Source Control	1
		1	Credit 6	Controllability of Systems—Thermal Comfort	1
		1	Credit 7	Thermal Comfort—Design	1
	1		Credit 8.1	Daylight and Views—Daylight	1
1			Credit 8.2	Daylight and Views—Views	1

Innovation and Design Process — Possible Points: 6

			Credit 1.1	Innovation in Design: Specific Title	1
			Credit 1.2	Innovation in Design: Specific Title	1
			Credit 1.3	Innovation in Design: Specific Title	1
			Credit 1.4	Innovation in Design: Specific Title	1
			Credit 1.5	Innovation in Design: Specific Title	1
			Credit 2	LEED Accredited Professional	1

Regional Priority Credits — Possible Points: 4

			Credit 1.1	Regional Priority: Specific Credit	1
			Credit 1.2	Regional Priority: Specific Credit	1
			Credit 1.3	Regional Priority: Specific Credit	1
			Credit 1.4	Regional Priority: Specific Credit	1

Total — Possible Points: 110

Y	?	N	
45	20	35	Total

Certified 40 to 49 points Silver 50 to 59 points Gold 60 to 79 points Platinum 80 to 110

LEED v4 for BD+C: New Construction and Major Renovation

Project Checklist

Project Name: midtownThree, Somerset St., Portland Maine
Date: 14-Nov-14

Y	?	N			
1			Credit	Integrative Process	1

13	11	9	Location and Transportation		16
	10	6	Credit	LEED for Neighborhood Development Location	16
2			Credit	Sensitive Land Protection	1
2			Credit	High Priority Site	2
5			Credit	Surrounding Density and Diverse Uses	5
1	1	3	Credit	Access to Quality Transit	5
1			Credit	Bicycle Facilities	1
1			Credit	Reduced Parking Footprint	1
1			Credit	Green Vehicles	1

5	3	2	Sustainable Sites		10
Y			Prereq	Construction Activity Pollution Prevention	Required
1			Credit	Site Assessment	1
	2		Credit	Site Development - Protect or Restore Habitat	2
1			Credit	Open Space	1
2	1		Credit	Rainwater Management	3
		2	Credit	Heat Island Reduction	2
1			Credit	Light Pollution Reduction	1

2	2	7	Water Efficiency		11
Y			Prereq	Outdoor Water Use Reduction	Required
Y			Prereq	Indoor Water Use Reduction	Required
Y			Prereq	Building-Level Water Metering	Required
	1	1	Credit	Outdoor Water Use Reduction	2
1	1	4	Credit	Indoor Water Use Reduction	6
		2	Credit	Cooling Tower Water Use	2
1			Credit	Water Metering	1

8	11	15	Energy and Atmosphere		33
Y			Prereq	Fundamental Commissioning and Verification	Required
Y			Prereq	Minimum Energy Performance	Required
Y			Prereq	Building-Level Energy Metering	Required
Y			Prereq	Fundamental Refrigerant Management	Required
	6		Credit	Enhanced Commissioning	6
8	2	8	Credit	Optimize Energy Performance	18
		1	Credit	Advanced Energy Metering	1
		2	Credit	Demand Response	2
	1	2	Credit	Renewable Energy Production	3
	1	1	Credit	Enhanced Refrigerant Management	1
	1	1	Credit	Green Power and Carbon Offsets	2

5	3	5	Materials and Resources		13
Y			Prereq	Storage and Collection of Recyclables	Required
Y			Prereq	Construction and Demolition Waste Management Planning	Required
		5	Credit	Building Life-Cycle Impact Reduction	5
1	1		Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2
1	1		Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
1	1		Credit	Building Product Disclosure and Optimization - Material Ingredients	2
2			Credit	Construction and Demolition Waste Management	2

10	3	3	Indoor Environmental Quality		16
Y			Prereq	Minimum Indoor Air Quality Performance	Required
Y			Prereq	Environmental Tobacco Smoke Control	Required
2			Credit	Enhanced Indoor Air Quality Strategies	2
3			Credit	Low-Emitting Materials	3
	1		Credit	Construction Indoor Air Quality Management Plan	1
	1	1	Credit	Indoor Air Quality Assessment	2
1			Credit	Thermal Comfort	1
1	1		Credit	Interior Lighting	2
1		2	Credit	Daylight	3
1			Credit	Quality Views	1
1			Credit	Acoustic Performance	1

1	0	0	Innovation		6
			Credit	Innovation	5
1			Credit	LEED Accredited Professional	1

0	0	0	Regional Priority		4
			Credit	Regional Priority: Specific Credit	1
			Credit	Regional Priority: Specific Credit	1
			Credit	Regional Priority: Specific Credit	1
			Credit	Regional Priority: Specific Credit	1

45	33	41	TOTALS	Possible Points:	110

Certified: 40 to 49 points, **Silver:** 50 to 59 points, **Gold:** 60 to 79 points, **Platinum:** 80 to 110

LEED v4 for BD+C: New Construction and Major Renovation

Project Checklist

Project Name: midtownFour, Somerset St., Portland Maine

Date: 14-Nov-14

Y	?	N			
1			Credit	Integrative Process	1

13	11	9	Location and Transportation		16
	10	6	Credit	LEED for Neighborhood Development Location	16
2			Credit	Sensitive Land Protection	1
2			Credit	High Priority Site	2
5			Credit	Surrounding Density and Diverse Uses	5
1	1	3	Credit	Access to Quality Transit	5
1			Credit	Bicycle Facilities	1
1			Credit	Reduced Parking Footprint	1
1			Credit	Green Vehicles	1

5	3	2	Sustainable Sites		10
Y			Prereq	Construction Activity Pollution Prevention	Required
1			Credit	Site Assessment	1
	2		Credit	Site Development - Protect or Restore Habitat	2
1			Credit	Open Space	1
2	1		Credit	Rainwater Management	3
		2	Credit	Heat Island Reduction	2
1			Credit	Light Pollution Reduction	1

2	2	7	Water Efficiency		11
Y			Prereq	Outdoor Water Use Reduction	Required
Y			Prereq	Indoor Water Use Reduction	Required
Y			Prereq	Building-Level Water Metering	Required
	1	1	Credit	Outdoor Water Use Reduction	2
1	1	4	Credit	Indoor Water Use Reduction	6
		2	Credit	Cooling Tower Water Use	2
1			Credit	Water Metering	1

8	11	15	Energy and Atmosphere		33
Y			Prereq	Fundamental Commissioning and Verification	Required
Y			Prereq	Minimum Energy Performance	Required
Y			Prereq	Building-Level Energy Metering	Required
Y			Prereq	Fundamental Refrigerant Management	Required
	6		Credit	Enhanced Commissioning	6
8	2	8	Credit	Optimize Energy Performance	18
		1	Credit	Advanced Energy Metering	1
		2	Credit	Demand Response	2
	1	2	Credit	Renewable Energy Production	3
	1	1	Credit	Enhanced Refrigerant Management	1
	1	1	Credit	Green Power and Carbon Offsets	2

5	3	5	Materials and Resources		13
Y			Prereq	Storage and Collection of Recyclables	Required
Y			Prereq	Construction and Demolition Waste Management Planning	Required
		5	Credit	Building Life-Cycle Impact Reduction	5
1	1		Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2
1	1		Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
1	1		Credit	Building Product Disclosure and Optimization - Material Ingredients	2
2			Credit	Construction and Demolition Waste Management	2

10	3	3	Indoor Environmental Quality		16
Y			Prereq	Minimum Indoor Air Quality Performance	Required
Y			Prereq	Environmental Tobacco Smoke Control	Required
2			Credit	Enhanced Indoor Air Quality Strategies	2
3			Credit	Low-Emitting Materials	3
	1		Credit	Construction Indoor Air Quality Management Plan	1
	1	1	Credit	Indoor Air Quality Assessment	2
1			Credit	Thermal Comfort	1
1	1		Credit	Interior Lighting	2
1		2	Credit	Daylight	3
1			Credit	Quality Views	1
1			Credit	Acoustic Performance	1

1	0	0	Innovation		6
			Credit	Innovation	5
1			Credit	LEED Accredited Professional	1

0	0	0	Regional Priority		4
			Credit	Regional Priority: Specific Credit	1
			Credit	Regional Priority: Specific Credit	1
			Credit	Regional Priority: Specific Credit	1
			Credit	Regional Priority: Specific Credit	1

45	33	41	TOTALS	Possible Points:	110

Certified: 40 to 49 points, **Silver:** 50 to 59 points, **Gold:** 60 to 79 points, **Platinum:** 80 to 110

Exhibit 25

FST
100 YEARS

November 25, 2014

Ms. Barbara Barhydt
City of Portland
389 Congress Street
Portland, ME 04101

Subject: Scoping Meeting Request
Proposed midtown Mixed Use Development Project

Dear Barbara:

FST is pleased to submit this Traffic Movement Permit Application and request for a Scoping Meeting on behalf of The Federated Companies for the proposed midtown development. Based on the proposed break out of floor space as:

- Parking Garage (midtownTwo) – 6 levels, minimum of 828 parking spaces
- Retail on 1st floor of all Buildings (including parking garage) – 87,200 SF*
- Residential Units (mixed type) – 3 buildings with 440 units*

It is anticipated that 203 and 276 trip ends will be generated during the AM and PM peak hours respectively.

As the City of Portland has Delegated Review Authority for the proposed development, a copy of this Traffic Movement Application and supporting materials is being sent to the City of Portland's Transportation systems engineer Jeremiah Bartlett, P.E. as well as Tim Soucie at the Maine Department of Transportation's Region 1 office in Scarborough.

We have attached the following information for the Scoping Meeting Application:

- Traffic Movement Permit Application and Supporting Materials
- Notice of Intent to File
- Abutting Property List and Citizen's Mailing List

**The building program was slightly revised during the completion of the Traffic Study. The Traffic Study accompanying this submission is based upon a retail area of 87,200 SF and 440 residential units. The Level III Site Plan Submission is currently based on a retail area of 91,500 SF and 445 residential units. The Traffic Study will be updated and submitted for review within one week of the date of this submission.*

778 Main Street, Suite 8
South Portland, ME 04106
T: 207.775.1121
F: 207.879.0896
www.fstinc.com

FAY, SPOFFORD & THORNDIKE
Offices in: Massachusetts, New Hampshire, Maine, Connecticut and New York

If you have any questions with regards to this submission, please contact our office.

Sincerely,

FAY, SPOFFORD & THORNDIKE

Stephen R. Bushey, P.E.
Senior Project Engineer

SRB/cmd

Enclosure

c: Jeremiah Bartlett, City of Portland
Tom Errico, P.E. T.Y. Lin
Tim Soucie, MaineDOT
Nick Wexler, The Federated Companies (e-mail copy)
David Hancock, CBT Architects (e-mail copy)
Alan Cloutier, FST (e-mail copy)

R:\3062B - midtown Amended - Portland, ME\Admin\Permitting\Local\Traffic Movement Permit Application\3062B 2014.11.25 Barhydt (TMP).docx

Department of Transportation
Traffic Engineering Division
16 State House Station
Augusta, Maine 04333
Telephone: 207-287-3775

FOR MDOT USE
ID #

Total Fees:
Date: Received

1/2000

****

PERMIT APPLICATION - TRAFFIC
TRAFFIC MOVEMENT PERMIT, 23 M.R.S.A. § 704 - A

Please type or print:

This application is for: Traffic 100-200 PCE's ____
Traffic 200+ PCE's X

Name of Applicant: The Federated Companies - Attn: Jonathan Cox

Address: P.O. Box 370008 - Miami, FL 33137-4100 Telephone: 305-974-1454

Name of local contact or agent: Stephen R. Bushey, P.E. - Fay, Spofford & Thorndike

Address: 778 Main Street, Suite 8 - So. Portland, ME 04106 Telephone: 207-775-1121

Name and type of development: midtown Project. Mixed use development with parking garage, residential units and retail space.

Location of development including road, street, or nearest route number: Located on Somerset Street between Elm and Pearl Street (northwesterly side) and on Elm Street

City/Town/Plantation: Portland, County: Cumberland, Tax Map # see below*, Lot # *

Do you want a consolidated review with DEP pursuant to 23 M.R.S.A. § 704-A (7)? Yes ____ No X

Was this development started prior to obtaining a traffic permit? No

Is the project located in an area designated as a growth area (as defined in M.R.S.A. title 30 - A, chapter 187)? Yes ____ No X

Is this project located within a compact area of an urban compact municipality? Yes X No ____

Is this development or any portion of the site currently subject to state or municipal enforcement action? No

Existing DEP or MDOT permit number (if applicable): City of Portland Planning Department Delegated Review Authority

Name(s) of DOT staff person(s) contacted concerning this application:

Delegated Review Authority - Attn: Tom Errico, P.E.

Name(s) of DOT staff person(s) present at the scoping meeting for 200+ applications: ____

*Map 25, Block B, Lot 2
Map 25, Block B, Lot 3
Map 25, Block B, Lot 4
Map 25, Block B, Lot 5
Map 25, Block A, Lot 22
Map 34, Block D, Lot 3
Map 34, Block D, Lot 9
Map 34, Block D, Lot 10

1/2000

CERTIFICATION

The traffic engineer responsible for preparing this application and/or attaching pertinent site and traffic information hereto, by signing below, certifies that the application for traffic approval is complete and accurate to the best of his/her knowledge.

Signature: _____ Re/Cert/Lic No.: 13572

Name (print): Waltson Woo

Date: November 25, 2014

STATE OF MAINE
WALTSON
WOO
No. 13572
LICENSED
PROFESSIONAL ENGINEER

If the signature below is not the applicant's signature, attach letter of agent authorization signed by applicant.

"I certify under penalty of law that I have personally examined the information submitted in this document and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I authorize the Department to enter the property that is the subject of this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

_____ November 25, 2014

Signature of applicant — Date

Stephen R. Bushey, P.E.

THE
FEDERATED
COMPANIES

Date: 11/19/14

Subject: **Midtown Project**
Agent Authorization Letter

To Whom It May Concern:

The Federated Companies have retained Fay, Spofford & Thorndike, LLC to prepare requisite Local, State and Federal Permit Applications for the above referenced project. FST is authorized to act as an agent for The Federated Companies in matters related to these permits.

Sincerely,

JONATHAN COX

MANAGER
Title

NOTICE OF INTENT TO FILE

Please take notice that:

The Federated Companies
P.O. Box 370008
Miami, FL 33137-4110

Is intending to file a Traffic Movement Permit Application with the Maine Department of Transportation pursuant to the provisions of 23 M.R.S.A. § 704 – A on or about November 24, 2014.

The application is for:

A proposed 3.50 acre mixed use development located on Somerset Street between Elm and Pearl (northwesterly side) and on Elm Street in the City of Portland. The four buildings will consist of three multi-story residential buildings with retail on the ground floor and one parking garage with retail on the ground floor. The proposed project is forecasted to generate 203 and 276 trip ends during the AM and PM peak hours respectively. The project is scheduled to begin in the summer of 2015 with completion by the year 2017.

At the following location:

The proposed midtown project site is located on Somerset Street in Portland. The project site is bound on the north by the Bayside Trail, on the East by Pearl Street, on the South by Somerset Street, and on the West by Elm Street. Chestnut Street bisects the site. The site is identified on the Portland Tax Maps as a collaboration of the following lots:

- **Map 25, Block B, Lot 2**
- **Map 25, Block B, Lot 3**
- **Map 25, Block B, Lot 4**
- **Map 25, Block B, Lot 5**
- **Map 25, Block A, Lot 22**
- **Map 34, Block D, Lot 3**
- **Map 34, Block D, Lot 9**
- **Map 34, Block D, Lot 10**

A request for a public hearing must be received by the City of Portland, in writing, no later than 20 days after the application is found by the City of Portland to be complete and is accepted for processing. Public comment on the application will be accepted throughout the processing of the application.

The application will be filed for public inspection at the municipal offices at the City of Portland during normal working hours. A copy of the application may also be seen at the Maine Department of Transportation – Region 1 office in Scarborough, Maine.

Written public comments may be sent to the City of Portland, City Planning Department 389 Congress Street – Portland, ME 04101; Attn: Rick Knowland.

midtown Project - Abutting Property Owners

CBL	Owner	Mailing Address	City	State	Zip
024 C001001	Marginal Way Properties Inc.	984 Memorial Drive # 504	Cambridge	MA	02138
024 C004001	Carbo Company	1 Canal Plaza	Portland	ME	04101
024 C006001	Somerset Development LLC	One Canal Plaza	Portland	ME	04101
024 C021001	Earl W Noyes & Sons	PO Box 938	Portland	ME	04104
024 C023001	Somerset Development LLC	One Canal Plaza	Portland	ME	04101
024 C024001	Perry E Iron & Metal Co	115 Lancaster Street	Portland	ME	04101
024 D001001	Franklin & Somerset Portland ME; LLC	550 Bowie Street	Austin	TX	78703
025 A014001	Back Cove Company	PO Box 7525 5 Milk Street	Portland	ME	04112
025 B001001	161 Marginal Way LLC	Box 7525	Portland	ME	04112
025 B021001	Five Liver Company	5 Milk Street	Portland	ME	04101
025 C003001	Howles Corporation	PO Box 938	Portland	ME	04104
025 D002001	Lerman Alan	3 Van Carll Cirle	Scarborough	ME	04074
025 E001001	Howles Corporation	PO Box 938	Portland	ME	04104
026 A001001	Bayside II LLC	One Canal Plaza	Portland	ME	04101
026 E002001	Avesta Pearl Street Two LP	307 Cumberland Ave	Portland	ME	04101
026 E010001	Chestnut Parking Inc.	120 Exchange Street	Portland	ME	04101
026 E010002	A & M Partners Inc.	120 Exchange Street	Portland	ME	04101
026 E010003	Chestnut Parking Inc.	120 Exchange Street	Portland	ME	04101
033 E001001	J B Brown J B & Sons	PO Box 207	Portland	ME	04112
033 O001001	114 Preble Block LLC	65 Town Farm Road	Buxton	ME	04093
033 O003001	State of Maine	16 State House Station	Augusta	ME	04330
034 C001001	Bayside Ventures LLC	50 Portland Pier Ste. 400	Portland	ME	04101
034 C010001	Atlantic Bayside Holdings LLC	50 Portland Pier	Portland	ME	04101
034 D004001	Hard Sales LLC	PO Box 2	Portland	ME	04112
034 D007001	87 Marginal Way LLC	PO Box 7525	Portland	ME	04112
034 G005001	State Of Maine	16 State House Station	Augusta	ME	04330
034 H002001	BOPO LLC	58 Alder Street	Portland	ME	04101
034 I001001	Portland Arcitectural	125 Kennebec Street	Portland	ME	04101
034 I001002	Kennebec Street Properties LLC	PO Box 169	Portland	ME	04112
034 K001001	160 Preble LLC	65 Town Farm Road	Buxton	ME	04093
034 K002001	71 Marginal Way LLC	65 Town Farm Road	Buxton	ME	04093
034 K004001	Kennebec Krossing LLC	65 Town Farm Road	Buxton	ME	04093
034A A002001	Atlantic Bayside Square LLC	340 Fore Street	Portland	ME	04101
034A B001001	Atlantic Bayside Trust LLC	50 Portland Pier Ste. 400	Portland	ME	04101
442 A001001	Blue Atlantic Portland LLC	111 South Wacker Dr. Ste. 3300	Chicago	IL	60606
442 A006001	Tomaks LLC	49 Eastman Road	Cape Elizabeth	ME	04107

December 1, 2014

Mr. Rick Knowland
Planning Department
City of Portland
389 Congress Street
Portland, ME 04101

Subject: midtown Project
Applicant's Response to Planning Staff Comments Dated November 24, 2014

Dear Rick

The Federated Companies have received and reviewed the Planning Staff's November 24, 2014 comments regarding the Level III Site Plan & Subdivision Application Submission. The comments are listed *(italicized)* followed by our responses.

1. *A subdivision recording plat/plan needs to submitted meeting ordinance requirements including labeling of each building with the proposed number of dwelling units. Make sure easement footprints line up with utility locations. David Senus at Friday's meeting indicated the stormwater treatment units within the street r-o-w to be privately maintained should be properly reference on the subdivision plan.*

   Response:

   The subdivision recording plat/plan (Sheet C-1.2) is currently being revised and a draft plan will be submitted in the next round of plans for review.

2. *All building entrances should be shown on the plans including service entrances.*

   Response:

   The building entrances and service doors are identified on Sheets C-2.1, C-2.2, and C-2.3.

3. *Based on our discussion on Friday, I am assuming the transformer shown in front of MidtownThree is a drafting oversight and that the transformer across the street in front of the Noyes building is underground. The site plan should confirm that the transformer is underground.*

778 Main Street, Suite 8
South Portland, ME 04106
T: 207.775.1121
F: 207.879.0896
www.fstinc.com

FAY, SPOFFORD & THORNDIKE
Offices in: Massachusetts, New Hampshire, Maine, Connecticut and New York

Response:

That is accurate. The Noyes building transformer will be a below grade vault type structure. The latest layout includes no transformers in front of midtownThree; however, CMP continues to weigh options so no final location has been ruled out.

4. *As discussed the sidewalk adjacent to the curb by Midtown Four should be widened. There appears to be surplus pavement in Elm Street that could allow a widened sidewalk and eliminate the Trader Joes pinch point by shifting the existing curb line along Elm Street.*

Response:

The development team will review these conditions and remains committed to working out an acceptable solution with the City as it relates to the Elm Street vertical and horizontal improvements. The next round of plan submission will include additional information related to this comment.

5. *The note regarding the Quesada fence (sheet C-2.0A) should be thoroughly vetted with the Quesada's soon.*

Response:

The applicant continues to communicate with Quesada representatives regarding the fence and drainage concerns they have. We will report back to the City a summary of their discussions in a separate correspondence.

6. *On MidtownFour, how will the CMP trucks be able to service the transformers in the rear? As designed, it appears a truck would end up driving over the landscaped island by MidtownFour and the trail. Show us a diagram on how this will work. We are not enthusiastic about a service route involving heavy trucks using the trail from Chestnut Street. Also if the route is from Elm Street will the trail/sidewalk need to be reinforced for heavy trucks?*

Response:

The intent is for CMP vehicles to cross over the curb line onto the reinforced sidewalk area in front of midtownFour and proceed along the east side of the building to the transformers. A geoblock surface has been provided to accommodate these movements.

7. *Sheet C-2.0. Snow storage shown within trail on Pearl St. Snow needs to be stored somewhere else.*

Response:

The latest drawing will be revised to eliminate snow storage on the trail.

8. *Sheet C-2.0A... The overhead canopy will require an easement. Will also need an easement over the trail for service deliveries for Midtown Four. Easement should also include provisions for repair if trail damaged or worn down.*

   Response:

   An easement for the canopy will be included in the next round of plan documents. Will an easement be necessary for service deliveries that use the trail for access since the trail is basically a public right of way similar to a City street?

9. *Sheet C-2.1...I thought the transformers were not going to be enclosed by a "6 foot high chain link enclosure". I thought we were talking about an ornamental fence. Confirm and label width of Bayside Trail which should be a minimum 16 feet. Are the planters along the parking garage edge (trailside) in the way?*

   Response:

   The site plan will be revised to include an ornamental fence around the transformers and the trail width will be identified. As shown on the plans, the trail width north of midtownOne will be 16' until it matches the existing trail.

10. *Sheet C-2.2...Bayside Trail/Elm Street sidewalk should be a minimum 16 feet wide. Show dimension on the plan. If we need an easement from Midtown Three for this to work, then we will need an easement. As discussed previously the circulation by the corner of Elm and Somerset Street is not ideal what with the stairs and retaining wall/ramp system. The raising of Elm Street would provide a smoother circulation flow and eliminate for these extraordinary measures within the sidewalk.*

    What is the modular retaining wall height for this location as well as other locations? Also, we should have a product spec and material sample for the retaining wall.

    Easement Notes: Easement "snow removal activities in a location over lot 3". Please explain?

    Response:

    The applicant continues to consider what actions to take on the realignment of Elm Street. Within the next round of plan submissions, the Elm Street improvements and wider sidewalk will be provided for the retaining wall(s) which will be cast in place concrete, as detailed in the landscape plans.

11. *Sheet C-2.3...Again widen sidewalk in front of MidtownFour. The hope is by extending the curb alignment out to widen the sidewalk this can also facilitate fixing the Trader Joe sidewalk pinch point. Main entry to MidtownFour is shown at an angle to the street. Sec 14-299(o) states "all buildings shall have a minimum of one public pedestrian entrance facing the street frontage of the lot. Such building entrances shall also be reviewed under the B-7 bayside design standards". I am assuming it meets this zoning provision for the moment but will get back to you otherwise.*

Response:

The building will have main retail entry doors from Elm Street and thus comply with standards. The main entrance identified on the plan is for access to the residential units on the upper floors.

12. *Sheet C-2.4...I believe previously there was a note about the turn-out being eliminated when Pearl Street is extended in the future.*

Response:

This note is included in the lower right corner of the drawing.

13. *Sheet C-3.0...A note states: Proposed 24' access drainage & utility easement benefitting all parcels of midtown one and midtown two". I thought we had settled this before. We were unwilling to give such a broad easement to midtown over the trail.*

Response:

The development team is open to discuss how access, drainage, and utilities for the project can be accommodated within the trail corridor as it is necessary for these project elements to be provided for in this area.

14. *Sheet C-3.1...References 30 foot wide drainage easement. Easement seems overly wide. Also, plan doesn't show the extent of the easement.*

Response:

The easements are actually 15' wide. The next set of drawings to be submitted will contain this correction.

15. *C-3.2...Again why is a 30 foot wide easement needed? I'm assuming the rectangle with an "E" is underground?*

Response:

The easement is actually 15' wide. The rectangle with an "E" is an underground CMP manhole structure.

16. *Sheet C-7.12...Two options are shown for the retaining wall adjacent to Quesada property. Which one are you choosing?*

Response:

The applicant will review these options with Quesada representatives and advise City staff regarding their opinions on the two options.

17. *Sidewalk "bricks" within the public right of way should be bricks meeting city standards.*

    Response:

    As shown on Detail 4-A, Sheet L-2.0, all brick within the public right of way shall be the City Standard Pine Hall Pathway Paver Brick.

18. *A construction easement is needed from the abutter (Quesada) in Midtown Two.*

    Response:

    The applicant is currently pursuing the construction easement from the abutting landowner.

19. *Technical capacity...A list of recent developments projects undertaken by the applicant needs to be submitted.*

    Response:

    The applicant will provide a list of recent developments undertaken under separate cover to City staff.

20. *The depiction of an undetermined public art on building facades is not desirable. Facade elevations should stand on their own merits.*

    Response:

    The west wall of midtownOne shown as art will be revised for the public hearing to show windows as previously shown in the preliminary application.

21. *Updated utility letters not received to date need to be submitted.*

    Response:

    Utility letters that have been submitted to your attention include responses from the Portland Water District, Unitil, and Central Maine Power (responses attached). We continue to pursue sign-off with Public Services regarding wastewater capacity, and Fairpoint and Time Warner Cable regarding communications.

22. *An updated Traffic Movement Permit application needs to be submitted.*

    Response:

    The Traffic Movement Permit was submitted on November 26, 2014.

23. *A new water line is going to be installed in Elm Street. Applicant will be constructing Midtown Four with a large building, new utility connections, a new sidewalk and new indented on-street parking along Elm Street. The sidewalk in front of Midtown Four needs to be widened for appropriate pedestrian access which can be accomplished by shifting the existing Elm Street curb alignment which can help solve the Trader Joes sidewalk pinch point. Installation of an upgraded storm drain to connect to an existing 24 inch storm drain in Elm Street could help resolve the Noyes issue. Raising Elm Street in the vicinity of Somerset Street would solve the very awkward trail/pedestrian circulation at the corner of Somerset and Elm while saving the developer funds that would otherwise be invested in ramps, stairs and retaining walls. With all the various construction activities anticipated in the vicinity of Elm Street there are significant opportunities for a win-win if all of these projects were planned and coordinated together.*

    Response:

    The applicant is currently reviewing improvement activities within Elm Street to include a water main upgrade from Marginal Way, a storm drain upgrade, and curb realignment to provide a wider sidewalk. The development team is also reviewing the effects of raising a portion of Elm Street in the vicinity of the Somerset intersection. The next round of plan submissions will reflect these improvements.

24. *Comments received from John Peverada (Parking Manager).*

    - *On-street parking including metered and time limits to be discussed further such as metered, time zone and vehicle loading zone, etc. Ideally, on-street parking metered parking should be clustered in groups of 8 to 10.*

      Response:

      Currently the plans include 15 minute parking for most of Somerset Street. The applicant will continue to work with the City's Parking Division for the layout of parking meters or related parking controls.

    - *Deliveries: How to prevent double parking and traffic being blocked?*

      Response:

      We will continue to work with City staff regarding signage and other related controls for deliveries. This is likely to include time of day restrictions for certain deliveries. Other routine deliveries such as Fedex/UPS are likely to operate as they do throughout the City within similar street conditions.

    - *Parking Garage: # of entrances and exiting including queuing; steep slope concerns about tires spinning with snow and tail pipe hitting floor; snow on roof.*

Response:

The parking ramps on the upper levels will have a 5% percent slope and will cause neither wheel spin or nose/tail scrapes. The entry ramp will slope about 10% with 5% transition slopes top and bottom to avoid scrapes (most cars and light trucks have 10 to 12 degree front and rear clearances so 5% slope [about five degrees] is adequate.) The entrance ramp will be constructed with a permanent grit finish and will be shoveled and maintained with salt to prevent slipping.

Accompanying this letter, is correspondence from CBT regarding supplemental information for the B-7 Zoning Waivers requested by the applicant. This letter also contains a revised view of the Somerset Street façade of the midtownThree building and letter from the project wind consultant.

If you have any questions or require further additional information, please contact our office.

Sincerely,

FAY, SPOFFORD & THORNDIKE

Stephen R. Bushey, P.E.
Senior Principal Engineer

SRB/cmd/smk

Enc: Attachment A – Utility Responses
Attachment B – Correspondence from CBT

c: Barbara Barhydt, City of Portland (e-mail copy)
David Margolis-Pineo, City of Portland (e-mail copy)
Alex Jaegerman, City of Portland (e-mail copy)
Bruce Hyman, City of Portland (e-mail copy)
Ann Machado, City of Portland (e-mail copy)
Tom Errico, P.E., T.Y. Lin (e-mail copy)
David Senus, P.E., Woodard & Curran (e-mail copy)
Jonathan Cox, The Federated Companies (e-mail copy)
Nick Wexler, The Federated Companies (e-mail copy)
David Hancock, CBT (e-mail copy)
Bob Metcalf, Mitchell Associates (e-mail copy)
Bo Kennedy, FST (e-mail copy)
Ben Walter, CWS Architects

ATTACHMENT A

RESPONSES FROM
PORTLAND WATER DISTRICT, UNITIL & CMP

Portland Water District
FROM SEBAGO LAKE TO CASCO BAY

November12, 2014

Fay, Spofford & Thorndike
778 Main Street, Suite 8
South Portland, ME 04106

Attn: Bo Kennedy, P.E.
Re: Midtown Project Somerset Street, Portland
Ability to Serve with PWD Water

Dear Mr. Kennedy:

The Portland Water District has received your request for an Ability to Serve determination for the noted site submitted on November 3, 2014. Based on the information provided, we can confirm that the District will be able to serve the proposed project as further described in this letter.

Please note that this letter does not constitute approval of this project from the District. Please review this letter for any special conditions specified by the District and to determine the appropriate next steps to take to move your project through the submittal and approval process.

Existing Site Service

According to District records, the project site does currently have existing water service. A 1-inch diameter copper water service line at 25 Somerset Street, a ¾-inch diameter plastic water service line at 3 Somerset Street and a ¾-inch diameter copper water service line at 107 Somerset Street, located as shown on the attached water service cards, provide water service to this site. Please refer to the "Conditions of Service" section of this letter for requirements related to the use of these services.

Water System Characteristics

According to District records, there is a 16-inch diameter ductile iron water main on the north side of Somerset Street west of the Chestnut Street intersection and a 16-inch diameter ductile iron water main on the south side of Somerset Street east of the Chestnut Street intersection and a public fire hydrant located adjacent to the site.

The current data from the nearest hydrant with flow test information is as follows:

Hydrant Location:	Somerset Street opposite Pearl Street
Hydrant Number:	POD-HYD01864
Last Tested:	6/22/2006
Static Pressure:	112 psi
Residual Pressure:	108
Flow:	2,846 GPM

RECEIVED
NOV 21 '14
F.S.&T.

225 DOUGLASS STREET P.O. BOX 3553 PORTLAND, MAINE 04104-3553
PHONE: 207.774.5961 FAX: 207.761.8307 WEB: WWW.PWD.ORG

Public Fire Protection

You have indicated that this project will include the installation of new public hydrants to be accepted into the District water system. The decision to require new hydrants and to determine their locations is solely that of the local fire department. It is your responsibility to contact the Portland Fire Department to ensure that this project is adequately served by existing and/or proposed hydrants.

Domestic Water Needs

The ability to serve requested noted that the average daily consumptive flows are expected to be approximately: 105,000 gallons per day (GPD), an average of 73 gallons per minute (GPM), and a peak flow of 353 GPM. The data noted above indicates there should be adequate pressure and volume of water to serve the domestic water needs of your proposed project. Based on the high water pressure in this area, we recommend that you consider the installation of pressure reducing devices that comply with state plumbing codes.

Private Fire Protection Water Needs

You have indicated that this project will require water service to provide private fire protection to the site. Please note that the District does not guarantee any quantity of water or pressure through a fire protection service. Please share these results with your sprinkler system designer so that they can design the fire protection system to best fit the noted conditions. If the data is out of date or insufficient for their needs, please contact the MEANS Division to request a hydrant flow test and we will work with you to get more complete data.

Conditions of Service

The District can confirm that the existing water system has the capacity to serve the proposed mixed use development on Somerset Street in Portland. If any of the existing services will no longer be used as a result of the development then they must be retired per PWD standards. This includes shutting the corporation valve and cutting the pipe from the water main (for 2-inch and smaller services) or removing the gate valve and capping the tapping sleeve (for 4-inch and larger services). Due to the impact of fill added to the streets within the project existing hydrants, services and valve boxes will require adjustment. In lieu of serving the Midtownfour building with an 8" main extension from Somerset St., the District will require that 350' of existing 6" main be replaced with 8" in Preble/Elm St. from Marginal Way. New services may be installed from the water main in Somerset Street or Preble Street along the frontage of each respective parcel. Please note that only one meter and one bill will be associated to each domestic service line. This meter must be located in a common space that all tenants could gain access to if necessary. Multiple fire and domestic services may be installed to a single site if desired.

If the District can be of further assistance in this matter, please let us know.

Sincerely,
Portland Water District

Gordon Johnson, P.E.
Engineering Services Manager

Unitil
ME GAS OPERATIONS

November 12, 2014

Mr. Bo Kennedy, P.E.
Project Engineer
Fay, Spofford &Thorndike
778 Main Street, Suite 8
South Portland,ME 04106

Re: midtown Project, Somerset Street, Portland, ME

Dear Mr. Kennedy:

Thank you for your interest in using natural gas for the above referenced project.

Unitil has natural gas in the vicinity of this project to provide service. The evaluation to complete the design, costs and determining what the customer contribution is, can be completed once Unitil receives the completed design and load information. Unitil welcomes the opportunity for further discussions regarding this project.

If you have any further questions or require additional information, please contact me directly at (207) 541-2505 or at fowler@unitil.com.

Sincerely,

Kelly Fowler
Sr. Business Development Representative
Unitil Corporation
(o) 207-541-2505 (f) 207-541-2565

11/20/2014

William Hoffman
778 Main Street
Suite 8
South Portland, ME 04106
Email: WHoffman@fstinc.com

RE: Ability to Serve Letter for Midtown Project, Somerset Street, Portland, ME

Dear Mr. Hoffman:

CMP has the ability to serve your proposed project located along Somerset Street in Portland, Maine, in accordance with our CMP Handbook (web link below). We can provide you the desired pad, submersible or pole mounted transformers per your request and city approval, in accordance with our CMP Standards Handbook. If you have any questions on the process, or need help in completion of the documents, please feel free to contact our Portland Service Center.

New Service Milestones

- Call 1-800-565-3181 to establish a new account and an SAP work order.
- Submit any electronic drawings (PDF (preferred) or DWG files) of the site layout and proposed electrical connections if you have them.
- Preliminary meetings with CMP to determine the details of job
- Field planner design appointment to cost out job and develop CMP Invoice.
- Submit invoice for payment.
- Easements signed and payment received. Please note that the customer is responsible for obtaining all easements necessary to complete the work.
- Job scheduled for completion after the electrical inspection has been received.

This process can take several months, depending upon several factors including transformer delivery, potential substation upgrades, return of completed paperwork, and other jobs in the system that may be ahead of yours. In addition, contact with the other utilities, including telephone and cable, should be commenced as soon as practical. They may have additional work or charges in addition to the CMP work required to bring your project on line.

For your convenience, here is a link to the CMP Website which contains our Handbook with details on most service requirements:

162 Canco Road Portland, ME 04103
Tel (800) 750-4000
207-842-2367 office
207-458-0382 cell
207-626-4082 fax

www.cmpco.com

An equal opportunity employer

CMP Handbook of Standard Requirements
(http://www.cmpco.com/MediaLibrary/3/6/Content%20Management/YourAccount/PDFs%20and%20Docs/handbook.pdf)

If you have any questions, please contact CMP at 1-800-565-3181.

Regards,

Jamie Cough
Energy Services Advisor
Central Maine Power Company
162 Canco Road
Portland, ME 04103
207-842-2367 office
207-458-0382 cell
207-626-4082 fax

ATTACHMENT B

CORRESPONDENCE FROM CBT

November 26, 2014

Mr. Rick Knowland
Planning Department
City of Portland
389 Congress Street
Portland, ME

Reference: midtown Project
Applicant's Supplemental Information regarding B-7 Waivers

Dear Rick:

The Federated Companies respectfully provide the following supplemental information to the Level III Final Site Plan application submitted 17 November 2014 and discussed with city staff on 21 November 2014. The attached documents provide basis for the waivers requested and supplement information contained in the application.

1. A-4 Views and Landmarks
2. B-2 Street Connectivity
3. B-3 Mid-Block Permeability
4. B-7 Continuity of Street Level Uses
5. B-11 Lighting
6. C-2 Parking Entrances
7. C-5 Decks and Ramps
8. C-8 Service Utility and Mechanical
9. E-12 Materials

In addition we include a revised view of the Somerset St façade of the midtownThree building and a letter from our wind consultant indicating that post development winds are likely to suitable for the activities expected in the public areas on and around the site, and that no adverse wind conditions are likely to be created.

We look forward to discussing the project at the Planning board Workshop scheduled for 9 December 2014.

Thank you,

David Hancock, AIA, LEED-AP

architecture
interior design
urban design

cbt

110 canal street
boston, ma 02114
617 262 4354
cbtarchitects.com

Standard A-4 Views and Landmarks

The applicant requests a limited variance of the requirements to provide open view corridors along north-south streets for the reasons stated below. As noted, the project as a whole complies with the intent to keep street views open.

The existing blockage of the Cedar Street and partial blockage of Myrtle Street view corridors, which are constraints relating to building design and lot configuration, as well as other factors are *extraordinary conditions* of the midtown site. The topmost story of the proposed buildings may intrude slightly into these view corridors. if the applicant were required to lower these buildings *undue hardship* might result from such strict compliance. *Substantial justice* will be done and the *public interest will be secured* with the variation in that the open sky and distant views will be preserved. This variation will allow the garage building, midtownTwo, and the residential building, midtownThree, to minimally obstruct the Myrtle and Cedar Street view corridors without compromising the quality of the distant views.

Standard B-2 Street Connectivity

The applicant requests a waiver from the extension of street grid pattern that the public interest may be secured with this variance.

That Cedar and Myrtle streets do not abut the subject property is an *extraordinary condition* of these sites not applicable to sites where these streets do abut. The applicant's proposed mews provides an alternate access between Somerset Street and the trail; the applicant has designed the project to extend Pearl Street; and the applicant proposes enhanced open access to the trail at Elm and Somerset streets.

Undue hardship would result from strict compliance, *substantial justice* will be done, *the public interest will be secured* with this variation, and the variation is *consistent with the intent to the ordinance* in that the existing street grid of Bayside has been preserved and will be substantially enhanced.

Standard B-3 Mid-Block Permeability

The applicant requests a very limited variance of the requirements to incorporate mid-block permeability perpendicular to Marginal Way*, only in the block between Chestnut and Elm Streets*, for the reasons stated below. As noted in both the detailed response to individual B-3 requirements, and the applicant's memo, both of which are attached, the project as a whole complies with all requirements except for a limited instance where continuity of street pattern is blocked by existing buildings and current development patterns.

We note that the Board recognized, in a finding concerning a previous project proposed for the site that, in relevant part, a street extension of Myrtle Street would not be required between Somerset St and the Bayside Trail because*: "… Myrtle street [does] not abut the subject property, … [and therefore] the Planning Board finds that extraordinary conditions exist or undue hardship may result from strict compliance, substantial justice and the public interest are secured with the variation, and the variation is consistent with the intent of the ordinance, and therefore … [the board granted] a waiver of the requirement that the development be required to extend … Myrtle Street through the project."*

The same *extraordinary circumstances* pertain with respect to this waiver request for variance of the requirement for mid-block permeability: the continuity of a path or pedestrian desire line north-south from the Bayside neighborhood to Marginal way is blocked by the A&P warehouse (Noyes storage building forming a continuous frontage along the south side of Somerset St from Chestnut to Elm Streets), a contaminated soil berm along the trail that directly abuts the property, a chain link fence, and parking lots on the north side of the trail. With no natural desire line for pedestrians, *a connection of Somerset St to the trail perpendicular to Marginal Way* would serve little if any pedestrian traffic, and the unused passage could become a security nuisance.

In other sites surrounded or abutted by open land or cross-streets, the creation of street extensions or mid-block connections would serve the useful purpose of encouraging further extension as adjacent blocks are developed – this is simply not the case with the midtownThree block.

Hardship form strict compliance with this requirement would result from two issues: the need to secure a seldom used passage, and the inflexibility of leasing program resulting from creating a passage separating the leasable floor area into two distinct and unconnected areas of floor space.

Granting of a waiver from the requirements for a street extension, service alley, or pedestrian corridor through the midtownThree block is the minimum condition to relieve the applicant's hardship in this extraordinary circumstance.

Substantial justice would be done by this variance in relieving the applicant of undue hardship in this extraordinary circumstance.

The public interest would be secured in that new continuous retail frontage will be developed on Somerset Street and doors to access this retail will be provided on the trail side; not having a designated

and dedicated passage will allow flexibility in retail leasing that will allow the diverse mix of first-class tenants that will make this a successful, pedestrian-friendly environment.

The applicant also proposes to create a broader open space and protected view corridor on it's private land at Elm Street between midtownThree and Four which will additionally facilitate passage from Somerset St to the trail.

The requested limited waiver *does not nullify intent or purpose of the Ordinance* which is to develop a pedestrian friendly retail "Main Street" for Bayside.

There will be no adverse effect on section 14-536 regulated issues of a) transportation, b) environmental quality, c) public infrastructure and community safety standards, d) site design standards (massing, ventilation, wind, shadow, snow and ice loading, view corridors, historic resources, exterior lighting, noise and vibrations, signage and way finding); or of zoning-related design standards (except for B-7 Standard B-3 from which this limited variance is sought)

The lack of a through block passage *will not have any effect on the value or utility of nearby private property*; in fact the development of midtown is expected to have a positive impact on the value of all neighboring properties through raising the streets and trail above flood level and by bringing 500 or more new residents to the district.

The variance of standard B-3 in the particular instance of midtownThree is the *minimum non-compliance necessary* to overcome the hardship of this extraordinary circumstance.

There are *no adverse environmental effects* associated with this variance.

The following table lists for the development as a whole the design response to each of the individual requirements of Standard B-3 Mid-Block Permeability

Requirements	Response
"… shall incorporate … permeability … perpendicular to Marginal Way."	1. Pearl Street is extended to the Trail and allowance has been made for its future extension to Marginal Way. 2. Chestnut Street has been extended across the trail to Marginal Way with a traffic calming island at the trail intersection. 3. A courtyard and mews have been created marking a second entrance/egress from the garage and the access point for bicycle storage. The land south of this mews across Somerset St is currently vacant, and the existence of this permeability between Pearl and Chestnut Streets will encourage continuation of mid-block access to Kennebec and possibly Lancaster Streets as those properties are developed. 4. The midtownThree building is deliberately

	held back from the west property line and aligned with the building face of Elm Street to preserve the view corridor down Elm Street. 5. No Somerset Street to Bayside Trail connector between Chestnut Street and Elm Street is proposed because continuity is blocked by the existing storage building the berm along the trail and the chain-link property fence and grade change.
"… shall incorporate … permeability … parallel to Marginal Way."	Unnecessary and infeasible as the Bayside Trail and Somerset Street are only 120 feet apart.
"… corridors shall be developed as street extensions, service alleys, pedestrian corridors, trail access, plazas, and pocket parks …"	1. Pearl Street is extended as a *street* which one day may be continuous from the top of the peninsula to Marginal Way. 2. The mews and courtyard form a *pedestrian corridor* and *plaza*. 3. The added public open space at Elm Street enhances the *park-like setting* of the intersection of the Bayside Trail with the Elm/Somerset Street intersection.
"Corridors shall not be designed solely as access to parking or loading areas."	1. The mews is pedestrian and cyclist only. 2. Elm Street park is pedestrian and cyclist only.
"… handicap accessible …"	Compliant
… paved in brick, stone, or concrete … landscaped … asphalt … not allowed …"	Compliant
… primary circulation shall be developed through streets, alleys, sidewalks, and trails."	Compliant through extension of Pearl Street and the Elm Street sidewalk and adjacency of Bayside Trail.
"… secondary circulation… shall be provided internally ... unless … building program precludes such design due to security reasons …"	Not provided due to security reasons.
" … potential assembly of more than one block or parcel through the discontinuance of interviewing streets shall carefully consider … pedestrian circulation	Does not apply – no discontinuance contemplated. In fact applicant is dedicating private property to public use at Pearl Street, the mews, and Elm Street, and substantially enhancing the pedestrian experience on Somerset Street.

MEMORANDUM w/r/t/ B-3 Mid-Block Permeability

In an effort to address questions and/or concerns raised at the November 12th, 2014 Planning Board workshop, and to provide some background information regarding specific details of the Level III Site Plan submission, we have prepared the following memorandum.

Regarding the required mid-block permeability between Chestnut Street and Elm St, we are requesting a waiver due to issues related to the design, functionality, and efficiency of the structure. Furthermore, it is our belief that the access point would not in any way provide any functional benefit. When contemplating various ways to provide this pass through, we considered the following:

A physical separation, creating two separate structures- We felt that this was the obvious first choice as it was aesthetically the most attractive option. After review, we came to the conclusion that, due to the unusually narrow lot width and a host of other site limitations, we were unable to design two buildings that made economic sense to construct. Both buildings would require their own building core, service area, and entry lobby. The physical separation would also result in the loss of twenty apartments and approximately six thousand feet of leasable retail space. Additionally, it would "break" the continuous retail activity along Somerset Street that we believe is essential to creating the experience necessary to drive people to an area that today is best described as an urban wasteland.

An access corridor within the retail space of the currently proposed structure- We feel very strongly that this is not a viable option. Our concerns are economic (the loss of square footage would have an adverse financial impact) and functional (the resulting separation would further limit the flexible subdivision of the retail space), but our primary concern is security related. We believe that this enclosed space will become a haven from inclement weather and a place that people will go to escape the public eye. We have concerns related to loitering and illegal activity, and although we will have personnel on site we will not be equipped to monitor or police activity within this confined space. We believe that the possibility for this type of behavior, in and of itself, will deter usage of this access point by ordinary citizens.

In addition to the specific concerns raised above, the mid-block pass through is further complicated by the fact that when the trail was built, a berm was created along the length of this lot preventing a simple "pass through" and necessitating the deconstruction of this berm and the remediation of the site and disposal of the contaminated material that the berm is currently comprised of. Given that the City of Portland created this condition when the trail was constructed and that the condition lies on city property, we feel that the burden of remediating and re-grading this area would be unfairly placed on the developer in the event that this permeation were required.

Finally, we believe that the proposed pass through has no functional benefit due to existing conditions. The proposed pedestrian connection provides no north/south connectivity as the blocks between Cumberland Avenue and Congress Street, Lancaster Street and Kennebec Street, Kennebeck Street and Somerset Street, and Somerset Street and Marginal Way lack any connectivity and the presence of multiple structures limits the likelihood that this condition will change anytime soon. It is this lack of connectivity that would make it highly unlikely that a pedestrian would arrive at the point of the proposed access to begin with. The connectivity to the trail, which we view as the sole benefit of this action, is not improved in any way as an individual accessing the trail can do so at the trailhead that merges with the sidewalk immediately west of the building or at the Chestnut Street crossing to the east. In an effort to improve this access and to improve visibility at the trailhead, the developer has voluntarily removed over three thousand feet of retail space, effectively shortening the length of the building and the distance between trail connections. We believe that the proposed pass through provides no benefit because, in the unlikely event that a pedestrian were to arrive at the point of the proposed access, and due to the fact that the sidewalk runs parallel to the trail, the distance traveled in either direction would be exactly the same.

FEDERATEDEQUITIES 3301 NE 1st Ave, Suite M302, Miami, FL 33137

Standard B-7 Continuity of Street Level Uses

The applicant requests a waiver from the prohibition of service and vehicular entrances to the buildings of midtown along Somerset and Elm streets on the basis that *extraordinary conditions* exist at these sites which have led to this choice and that *hardship* for the applicant would result from strict compliance with standard B-11.

The sites are relatively narrow and located between the Bayside Trail and Somerset Street. While access to the midtownOne has been successfully located on a raised portion of Pearl Street, midtownTwo and Three are prevented access from Chestnut Street by the center island and slope. MidtownFour has street frontage only on Elm Street.

The location of such entrances on Somerset and Elm streets is *unavoidable* due to block configuration. *Undue hardship* would result from strict compliance but *substantial justice* may be done, the *public interest will be secured* with the variation. The variation is *consistent with the intent of the ordinance*, in that the applicant will take care to assure that the pedestrian environment will remain attractive and safe, and required interruptions are minimized in number and length to allow a maximum of retail frontage.

Standard B-11 Lighting

The applicant requests a waiver from strict compliance with the lighting requirements of the Technical and Design Standards and Guidelines for the street light spacing along Somerset street on the basis that *extraordinary conditions* exist at this site which have led to the spacing shown on the site plan.

The street lighting has been co-ordinated with tree placement, existing and proposed utility structures, required service and vehicular entrances, steps and ramps, bus stop, and accessible crosswalks. The result is non-standard spacing.

The proposed lighting plan will enable and enhance retail and pedestrian sidewalk lighting conditions on Somerset Street and *undue hardship* might result from strict compliance. *Substantial justice* will be done, the *public interest will be secured* with the variation, and the variation is *consistent with the intent of the ordinance*, in that the lighting will be scaled to the size, use, and traffic volumes of the streets and trail in order to provide an efficiently-lit, attractive, pedestrian-friendly urban street.

Standard C-2 Parking Entrances

The applicant requests a waiver from the requirement to separate entrance from exit at the midtownTwo parking garage.

A single wide common curb-cut is proposed for both entry and exit from the garage. Access and exit gates are located well inside the garage to provide sufficient off-street queuing space. There will be three gates allowing double inward or outward flow at peak times. The exit will be designed to inform the exiting driver of the sidewalk pedestrian realm. *Undue hardship* would be caused if substantially separate ingress and exit ramps were required.

The shallow lots and constrained garage layout constitute an *extraordinary condition* of this site and undue hardship would result from strict compliance. *Substantial justice* may be done the *public interest will be secured*, and the variation is consistent with the *intent of the ordinance*, in that the pedestrian realm is favored by minimizing the number of interruptions to the retail frontage and all other requirements of the standard will be met.

Standard C-5 Decks and Ramps

The applicant requests a waiver from the requirement to have horizontal parking decks on all facades of the midtownTwo garage visible from public rights of way on the basis that *extraordinary conditions* exist at this site, and that *undue hardship* for the applicant would result from strict compliance with standard C-5.

The garage is the most efficient possible layout with five percent sloped parking ramps on the trail side and level decks on the Somerset Street side. The garage exactly fits the available site. The sloped ramps are screened with durable materials to give the façade an orthogonal appearance consisting of screens mounted in horizontal and vertical framework.

The shallow lot and constrained garage layout are the only feasible layout and *undue hardship* would result strict compliance by requiring substantially less efficient layouts. *Substantial justice* will be done, the *public interest will be secured*, and the variation is *consistent with the intent of the ordinance*, in that the unavoidable sloped ramps will be screened with façade materials with horizontal and vertical members.

Standard C-8 Service Utility and Mechanical Infrastructure

The applicant requests a waiver from the requirement that service equipment and infrastructure be located at the side or back of the buildings. The sites exhibit the *extraordinary condition* that there are no sides or backs – all facades are visible from the public right of way.

Except for midtownFour, which shares a common property line with Trader Joes, all facades of the buildings of midtown face public rights of way -- Pearl, Chestnut, Elm, and Somerset Streets, the Mews, and the Bayside Trail. Where feasible, utility infrastructure will be placed interior to the buildings, where it must be located outside it will be screened from view or unobtrusively integrated with the design of the buildings.

Because these buildings have no side or rear elevations, *an extraordinary condition* exists *and undue hardship* would result from strict compliance with these requirements. *Substantial justice* will be done, the *public interest will be secured*, and the variation is *consistent with the intent of the ordinance*, in that utility and mechanical Infrastructure, loading docks, delivery areas, will be internal or screened as required.

E-12 Materials

The applicant requests a waiver from the prohibition of EIFS and single gauge metal siding as primary façade materials for the buildings of midtown on the basis that extraordinary conditions exist at this site which have led to this choice of materials, and that hardship for the applicant would result from strict compliance with standard E-12.

An *extraordinary condition* present at the midtown parcels, but not generally applicable to other parcels in Bayside, is the building code requirement to establish first floor level above the FEMA 100-yr flood elevation. This requires filling the sites and building at elevation 12.0. Coupled with the Bayside Vision intent to create pedestrian-friendly active streets, Somerset St must be raised as well, so that sidewalks will be at this higher level (and therefore protected from flooding also) and pedestrians, including the movement challenged, will be able to freely and easily access the retail spaces. In order to make the retail space accessible from the Bayside Trail, a major part of the trail adjacent to the project will be raised to allow direct access.

Hardship exists as a result of this extraordinary condition in that the costs of this civil site work is distributed across only 400 dwelling units (although commitments to the work were made on the basis of nearly twice that number of dwellings, and the applicant is honoring the commitment). This in turn requires economies in all systems of building construction including structure and exterior materials.

Standard E-12 requires heavy façade materials like brick, stone, or pre-cast concrete and states "… thin gauge metal panels [and] exterior insulation finish systems (EIFS) … shall not be used on facades visible from public rights of way." The chosen wood framing system cannot support the heavier materials and requires the lighter weight of siding materials; while fiber-cement clapboard and shingles are allowed, we don't believe these are appropriate materials for the contemporary industrially-based expression of these 6 story flat roofed residential buildings in this district

Strict complacence with the requirements of E-12 would in this instance would create undue hardship for the applicant by requiring a steel and concrete structure which is unnecessary for the buildings proposed.

The minor variance sought, to waive strict compliance and allow EIFS and light weight corrugated metal siding as primary façade materials visible from the public right of way, will provide substantial justice in recognition of the hardship caused by the expense of meeting the extraordinary condition of raising Somerset St and the Bayside Trail.

These materials have proven long term durability, can certainly last 50 years on longer, and can be used to produce buildings which contribute positively to a new identity for the neighborhood in an architectural style expressive of the time when built. The design of the buildings will be completed with functional and aesthetic architectural details, with massing and fenestration reflecting the evolving industrial context, and exploiting the important features of these materials.

EIFS particularly provides a layer of continuous insulation which meets a sustainable goal of energy efficiency by counteracting the effects of thermal bridging commonly associated with stud construction. The wood frame structures similarly support sustainability goals by sequestering carbon from the atmosphere, and by embodying far less carbon per sq ft of supported structure than a steel and concrete structure.

The public interest will be secured in that the project in total will bring an active friendly pedestrian setting and excellent streetscape to more than 1000 ft. of currently unused Somerset street frontage and an equal length of trail side which will, by construction of the project, gain 24/7 "eyes on the park."

This waiver will *not nullify the intent and purpose of the Land Development Plan* in that the project fully supports the intention to "recast Bayside as a productive and connected urban neighborhood" and "[provides] … entrances to apartments, shops and stores, all within walking distance." The project as a whole (except where minor variance for waiver of specific conditions is requested) is in compliance with the requirements of, and *will not nullify the intent of the Ordinance*.

The *impact* of the midtown development *on other nearby private property* is certainly positive, not adverse. Bringing more than 500 new residents to the neighborhood will certainly enhance property values, and the raising of the Bayside Trail and Somerset street above flood level will enhance utility of these properties. The variance to waive strict compliance with the exterior material requirements will not have an adverse effect on the value or utility adjacent properties.

Other than the strict compliance with exterior materials listed in E-12, *the building design and aesthetics will be fully in compliance* with all the other Section E Architectural Design requirements of the B-7 standards, with the Land Development Plan, and with the regulations of Article IV of the Ordinance.

These proposed façade materials have no *adverse environmental effects*.

The applicant respectfully requests waiver of strict compliance with the requirements of B-7 Standard E-12 and offers further justification in a memo attached hereto.

MEMORANDUM w/r/t Standard E-12 Waiver

In an effort to address questions and/or concerns raised at the November 12th, 2014 Planning Board workshop, and to provide some background information regarding the details of the Level III Site Plan submission, we have prepared the following memorandum.

Regarding the use of certain exterior finish materials not otherwise allowed, we are requesting a waiver due to the compatibility of these systems with the intended construction type and the various functional and economic benefits of utilizing these materials in the construction of the building façade. In determining that these materials were the most appropriate application, we considered the following:

PLEASE NOTE THAT WE ARE NOT REQUESTING A WAIVER FOR THE USE OF VINYL SIDING. WE HAVE NO INTENTION OF UTILIZING THIS MATERIAL IN THE CONSRUCTION OF THIS PROJECT. A WAIVER IS BEING REQUESTED FOR THE USE OF EIFS, A FROM OF SYNTHETIC STUCCO AND A MATERIAL WHOSE APPEARANCE IS VIRTUALLY INDISTINGUISHABLE FROM MATERIALS CURRENTLY APPROVED FOR USE IN THIS ZONE.

While reviewing the possibility of reducing the height of the proposed structures, we came to the conclusion that the project became economically constrained when maintaining the previously proposed steel frame construction type. We analyzed the benefits and drawbacks of wood frame construction, in this case over a concrete podium, and decided that this framing material was better suited to construct the reduced height buildings. Timber frame construction results in a more environmentally sustainable building structure, has a smaller carbon footprint*, and is far more energy efficient to construct and to operate.

The wood frame structure interacts better with a lighter weight façade material. EIFS, or synthetic stucco, the surface material for which we are requesting a waiver to utilize, is a lighter weight application than a comparable fiber-cement panel. THE INSTALLED LOOK OF BOTH PRODUCTS IS VIRTUALLY IDENTICAL. EIFS is a superior product and has emerged as the preferred option, and is far more widely used than it's fiber-cement alternative. EIFS is an applied siding, whereas the fiber-cement panel is an installed siding. The fiber-cement panel is installed using mechanical fasteners, which are unsightly, maintenance intensive, and are subject to failure. The fiber-cement siding is panelized, creating gaps in the building envelope that contribute to energy loss. EAFS is troweled on, eliminating the use of mechanical fasteners, and creating a sealed application that actually increases the insulation value of the structure.

EIFS acts as a "blanket", wrapping the exterior of the structure, reducing air infiltration and energy consumption. It eliminates "thermal breaks" associated with installed siding.

Virtually indistinguishable from the fiber-cement panel, both are designed to resemble stucco. EIFS, however, expands the architect's design palate as it is available in a virtually limitless range of colors and textures, whereas fiber-cement siding is fairly limited. It also allows for the construction of architectural detailing that would be cost prohibitive using conventional construction methods, such as cornices, arches, columns, and keystones. These details are computer-generated and laser cut out of insulation board, and the finish material is directly applied to the base insulation.

The lower operating costs and limited maintenance of this product allow for efficient operation of the structure on an ongoing basis. Additionally, it is our opinion that the expanded range of options that this material provides allows us to deliver a superior product at an economical price. In tandem with the other specified façade materials, we believe that we have presented a project that is reflective of the modern-industrial design aesthetic, paying homage to the neighborhoods industrial past while looking forward to its modern future.

---

* compared to steel and concrete, both the products of extractive industries and high temperature energy-intensive processes which add carbon to the atmosphere. Wood on the other hand has less than one tenth of the embodied process energy per square foot of supported floor area and additionally represents "sequestered carbon" removed from the atmosphere.

FEDERATEDEQUITIES 3301 NE 1st Ave, Suite M302, Miami, FL 33137

Exhibit 17 Errata

Minor revisions to "Exhibit 17 - Compliance with B-7 Standards:"

1. Regarding compliance with Standard C-1, in the penultimate paragraph, please delete reference to "pay station"

2. A clarification is required with regard to the compliance statement for Standard C-4. The applicant's hope is to lease space to tenants who will appreciate the opportunity to exhibit wares in windows facing the trail, and/or to provide access from the trail. Indeed the project includes raising the trail to make access feasible. However, until there are tenants, nothing can be guaranteed. The applicant must reserve the right to allow tenants to block these windows in support of their leasing plans, or even to provide a façade partially composed of opaque façade materials patterned to compliment the store front mullion system.

2. Due to an oversight in editing, there is a reference, in the compliance statement for Standard E-6, to the primary entrance for midtownThree as being on Chestnut Street. This is incorrect: the primary entrance will be on Somerset Street as depicted in the ground floor plan. Similarly, the residential entrance to midtownFour, although both easily accessible and clearly visible from Elm St, is technically across a property line abutting the Bayside Trail. Retail entrances will face directly onto Elm St. It is the intent that all tenants of midtownFour have an Elm St address.

Tel: 519.823.1311
Fax: 519.823.1316

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West
Guelph, Ontario, Canada
N1K 1B8

November 27, 2014

David Hancock, AIA, LEED AP, ASLA, amASCE
Principal
CBT Architects
110 Canal Street
Boston, MA 02114
Hancock@cbtarchitects.com

Re: **Pedestrian Wind Conditions**
Midtown
Portland, ME
RWDI Project #1500905

Dear David,

Rowan Williams Davies & Irwin Inc. (RWDI) has prepared this letter to comment on the potential wind effects of the proposed reduction in building height for the Midtown development in Portland, Maine. Updated design renderings were received by RWDI on November 25, 2014. This assessment is based on our extensive experience of wind tunnel tests for similar building projects and our assessment of wind conditions around the previous design of the Midtown development.

A pedestrian wind assessment was conducted by RWDI for the proposed Midtown development in 2013. Our findings were summarized in the following report:

> "Pedestrian Wind Assessment, Midtown – Portland, ME", RWDI Project # 1400237, October 1, 2013, by Hanqing Wu and Gregory Thompson.

As indicated in this previous report, the overall wind conditions were expected to meet the effective gust criterion and no dangerous wind speeds (as defined by the Melbourne mean wind speed criteria) were predicted at any pedestrian areas.

The previously proposed residential buildings would be 165 ft in height (Image 1a on the next page) and fully exposed to the prevailing winds from all directions. Suitable wind conditions were predicted at the building main entrances, sidewalks and Bayside Trail throughout the year. However, wind speeds at most outdoor amenity spaces on and around Building A were expected to be higher than desired for passive activities such as sitting. High wind activity was also predicted in the gaps between Buildings A and B and between Buildings E and F. Conceptual wind control measures and general design guidelines were provided and described in the report.

The most updated renderings received by RWDI on November 25, 2014 indicate that the general plan of the proposed buildings remains similar to the previous design (see Images 1a and 1b for comparison). However, building heights have been changed. In particular:

- The height of the residential buildings (A, C, E and F) has been reduced significantly from 165 ft to 75 ft; and

- The garage (B in Image 1a) will be 92 ft tall, slightly taller than the previous height of approximately 75 ft.

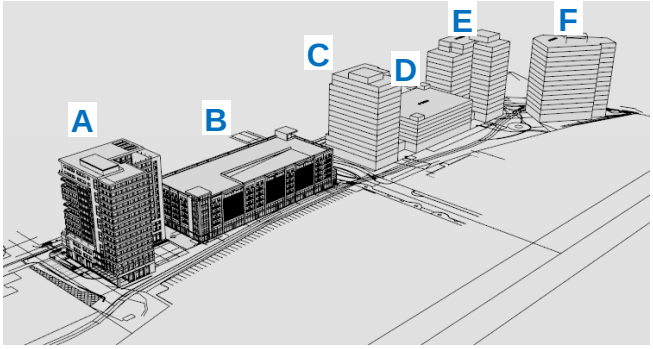


Image 1a – Previous design in 2013

Image 1b – Revised design in November 2014

Considering the significant reduction in tower height, it is our opinion that, the potential wind conditions around the currently proposed development will be better than those predicted in our 2013 assessment. Wind conditions are expected to meet the effective gust criterion in all pedestrian areas and no dangerous wind conditions are predicted at any locations. These include all sidewalks along the development, Bayside Trial and other public areas.

In addition, several architectural and landscaping details have been included in the design and they are positive features for wind control. In Image 2, for instance, the proposed canopies/awnings and façade setbacks will reduce the winds downwashing off building surfaces. Screens and umbrellas will provide local wind protection for outdoor patios. Boulevard trees will further reduce the wind activity along streets throughout the year if coniferous or marcescent trees are planted.

Image 2 – Architectural and landscaping details

Overall, the pedestrian wind conditions for the current design are predicted to be better than those predicted by our previous assessment. Wind conditions are expected to meet the effective gust criterion and no dangerous wind conditions are predicted at any locations, including public sidewalks and Bayside Trial. Suitable wind conditions can be achieved through architectural and landscaping design for outdoor amenity spaces in the summer when these areas will typically be in use.

Should you have any questions or require additional information, please do not hesitate to call.

Yours very truly,

ROWAN WILLIAMS DAVIES & IRWIN Inc.

Hanqing Wu, Ph.D., P.Eng.
Technical Director / Principal

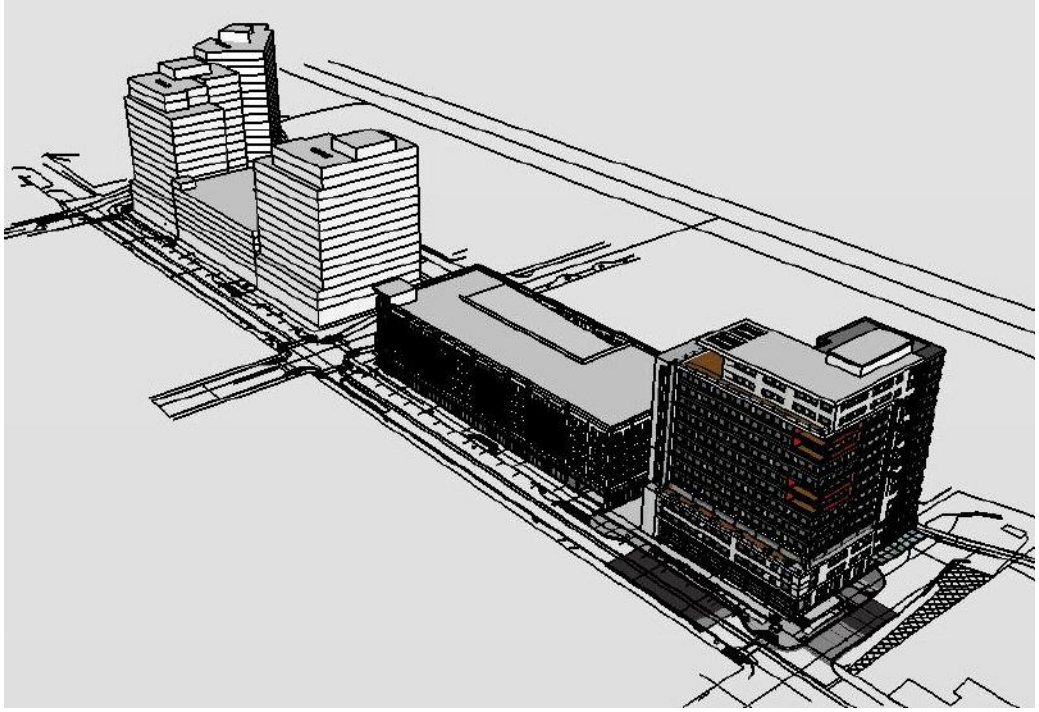
Greg Thompson, M.A.Sc.
Senior Project Manager / Associate

Midtown

Portland, ME

Pedestrian Wind Assessment

RWDI # 1400237
October 1, 2013



SUBMITTED TO

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SUBMITTED BY

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1. Introduction

Rowan Williams Davies & Irwin Inc. (RWDI) was retained by CBT Architects in Boston to assess the potential wind conditions for the proposed Midtown development in Portland, ME. The objective of this assessment was to provide a qualitative evaluation of wind comfort conditions on and around the development and recommend mitigation measures, if necessary.

This qualitative assessment is based on the following:

- a review of regional long-term meteorological data;
- our previous wind-tunnel tests on similar building projects;
- design drawings received by RWDI on September 9, 2013;
- a meeting with the project architects at CBT's office in Boston on September 12, 2013;
- our engineering judgment and expert knowledge of wind flows around buildings[1,3]; and,
- use of software developed by RWDI (*Windestimator*[2]) for estimating the potential wind comfort conditions around generalized building forms.

This qualitative approach provides a screening-level estimation of potential wind conditions. To quantify these conditions or refine any conceptual mitigation measures, physical scale model tests would typically be required.

Note that other wind issues, such as those relating to cladding and structural loads, door pressures, air quality, snowdrifts, etc. are not considered in the scope of this assessment.

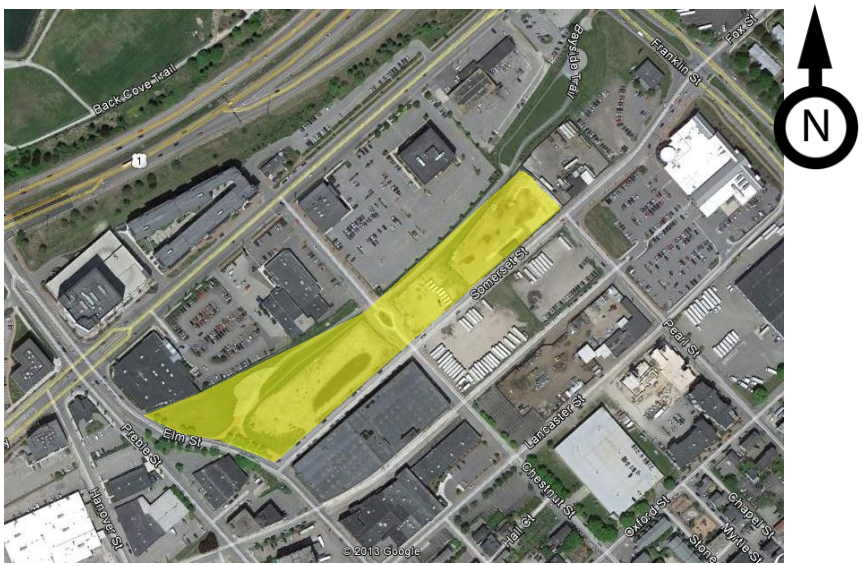


Image 1 - Aerial Photograph of Existing Site and Surroundings (Courtesy of Google Earth™)

1. C.J. Williams, H. Wu, W.F. Waechter and H.A. Baker (1999), "Experience with Remedial Solutions to Control Pedestrian Wind Problems", *10th International Conference on Wind Engineering*, Copenhagen, Denmark.
2. H. Wu, C.J. Williams, H.A. Baker and W.F. Waechter (2004), "Knowledge-based Desk-Top Analysis of Pedestrian Wind Conditions", *ASCE Structure Congress 2004,* Nashville, Tennessee.
3. H. Wu and F. Kriksic (2012). "Designing for Pedestrian Comfort in Response to Local Climate", *Journal of Wind Engineering and Industrial Aerodynamics*, vol.104-106, pp.397-407.

2. Building and Site Information

The proposed development consists of six buildings (A to F) as shown in Images 2a and 2b. It will be constructed in three phases:

- Phase 1 – Tower A and Parking Garage B;
- Phase 2 – Towers C and E, and Parking Garage D; and
- Phase 3 – Tower F.

These towers are 15 stories in height, and the parking garages are 6 and 7 stories for B and D, respectively. They are located on the northwest side of Somerset Street between Elm Street and Pear Street (Image 1). Pedestrian areas on and around the development include the building entrances, sidewalks, Bayside Trail, as well as amenity spaces at ground, podium and rooftop levels.

The design for Phase 1 is more advanced and therefore, detailed wind assessments and mitigation measures will be provided in this report for the Phase 1 buildings, while more general comments and guidelines will be provided for the remaining buildings of Phases 2 and 3.

The site is currently an open land, surrounded by low buildings and parking lots in all directions. The Back Cove is located to the northwest through north. To the northeast through southeast are low-rise buildings and the ocean. Downtown Portland is to the south with dense and mid-rise buildings on a slightly elevated terrain. Portland International Jetport is located approximately 2.5 miles to the southwest of the development

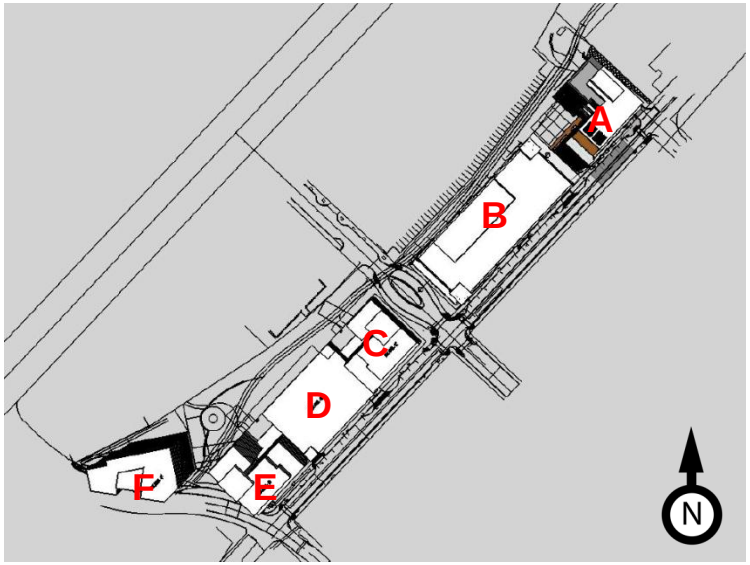


Image 2a - Top View of the Proposed Development

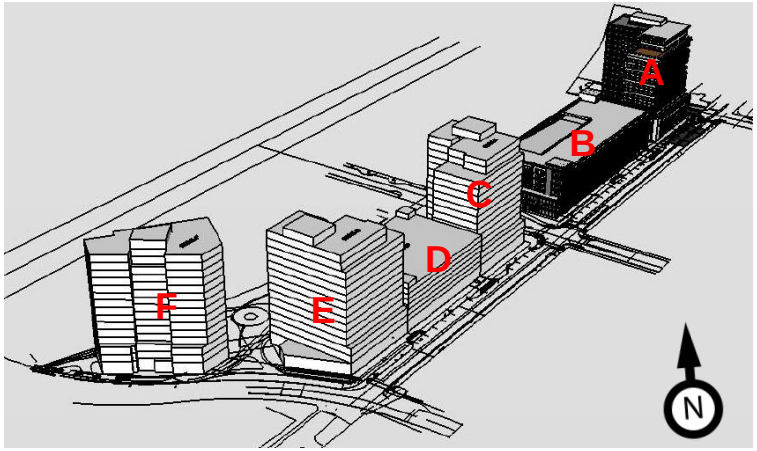


Image 2b - South View of the Proposed Development

3. Meteorological Data

Meteorological data from Portland International Jetport for the period of 1973 to 2013 were used as reference for wind conditions in the region.

The distributions of wind frequency and directionality for summer (May through October) and winter (November through April) seasons are shown in the wind roses at right. Winds from the southerly directions and the northwest quadrant are predominant in the summer, as indicated by Image 3a. Image 3b shows the winter data, indicating the predominance of northwesterly winds.

Strong winds of a mean speed greater than 20 mph measured at the airport occur for 1.6% and 4.7% of the time (red bands) during the summer and winter seasons, respectively. The northwesterly and southerly winds frequent in both seasons.

Instead of standard four seasons, two periods of summer (May to October) and winter (November to April) are adopted in the wind analysis, because in a moderate or cold climate such as that found in Portland, there are distinct differences in pedestrian outdoor behaviors between these two time periods.

Note that the winter winds in Portland are generally faster than summer winds (as evidenced by the higher frequency of the faster wind speeds in the table to the right). Note also that the summer winds are both more predictable (substantially higher frequency from the south than from other directions) and generally quite benign (approximately 90% of the time less than 15 mph, and about 70% of the time less than 10 mph). This means in the analysis that follows, that although a space may be classified in a certain Melbourne category based on the predicted 1% wind speed, there will be frequent times when the wind is dominated by lower wind speeds.

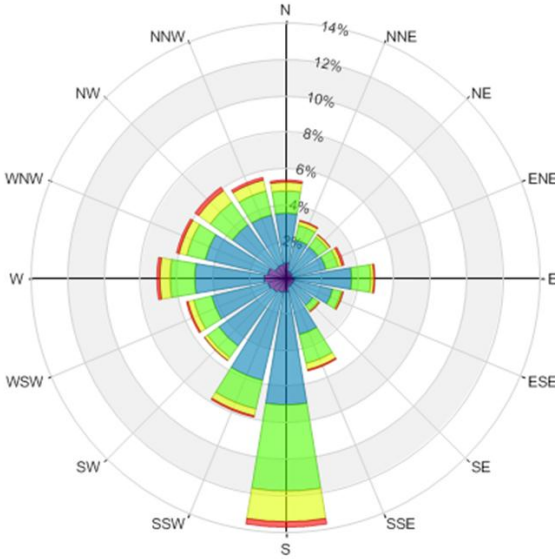


Image 3a - Summer Winds (May to October)

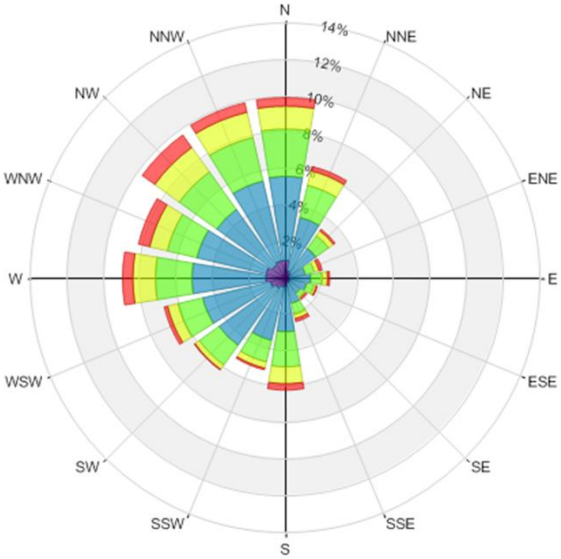


Image 3b - Winter Winds (November to April)

Wind Speed (mph)	Probability (%) Summer	Probability (%) Winter
Calm	11.6	9.0
1-5	11.1	9.5
6-10	48.6	43.7
11-15	20.3	22.2
16-20	6.8	10.9
>20	1.6	4.7

Directional Distribution (%) of Winds (Blowing From)
Portland International Jetport (1973 to 2013)

4. Explanation of Wind Criteria

It is our understanding that City of Portland has adopted the wind criteria based on the work of Melbourne[4].

This set of criteria is used to determine the relative level of pedestrian wind comfort for activities such as sitting, standing, or walking. The criteria are expressed in terms of benchmarks for the 1-hour mean wind speed exceeded 1% of the time (i.e., the 99-percentile mean wind speed). They are as follows:

Table 1: Melbourne Mean Wind Criteria *

Dangerous	*> 27 mph*
Uncomfortable for Walking	*> 19 and ≤ 27 mph*
Comfortable for Walking	*> 15 and ≤ 19 mph*
Comfortable for Standing	*> 12 and ≤ 15 mph*
Comfortable for Sitting	*< 12 mph*

* Applicable to the hourly mean wind speed exceeded one percent of the time.

An additional standard for assessing the relative wind comfort of pedestrians is a wind design guidance criterion which states that an effective gust velocity (hourly mean wind speed plus 1.5 times the root mean square wind speed) of 31 mph should not be exceeded more than one percent of the time.

Pedestrians on walkways will be active and wind speeds comfortable for walking are appropriate. Lower wind speeds comfortable for standing are desired for building entrances where people are apt to linger. For outdoor terraces, low wind speeds comfortable for sitting are desired during the summer. In the winter, wind conditions in these areas may not be of a serious concern due to limited usage.

Given the height of the proposed buildings and local wind climate, it is unlikely that the effective gust criterion will be exceeded at any pedestrian area at grade. Dangerous wind conditions (as defined by the Melbourne Mean Wind Criteria) are not predicted on and around the development. The following discussions focus on the wind comfort conditions and their suitability for the intended usage.

An important point to note is that a space which is judged by the Melbourne criteria to be “comfortable for standing” and therefore presumably too windy to be “comfortable for sitting” is not uncomfortable all the time for seated conversation of a cup of coffee while you read your e-mail. We all have different thresholds of comfort, so on those occasions, Melbourne’s studies showed, the majority of us would find the space uncomfortable, while the hardier minority might remain longer.

4. Melbourne, W.H., 1978, "Criteria for Environmental Wind Conditions", *Journal of Industrial Aerodynamics*, 3 (1978) 241 - 249.

5. PEDESTRIAN WIND CONDITIONS

5.1 Background

Predicting wind speeds and occurrence frequencies is complicated. It involves building geometry, orientation, position and height of surrounding buildings, upstream terrain and the local wind climate. Over the years, RWDI has conducted more than 2,000 wind-tunnel model studies on pedestrian wind conditions around buildings, yielding a broad knowledge base. This knowledge has been incorporated into RWDI's proprietary software that allows, in many situations, for a qualitative, screening-level numerical estimation of pedestrian wind conditions without wind tunnel testing.

Given the open nature of the site and its low surroundings (Image 1), the existing wind conditions on and around the development site are relatively windy, with the summer winds generally comfortable for standing, and the winter winds generally comfortable for walking.

The proposed buildings are significantly taller than their immediate surroundings in all directions. The large façade of the proposed development will intercept the prevailing winds and deflect them down to the ground level, causing wind flow accelerations around building corners (see Image 4a). In addition, wind may accelerate through the gap between the proposed buildings, where increased wind activity is anticipated due the channeling effect (see Image 4b).

The predicted flow patterns are shown on the next page for the southerly (Image 5a) and northwesterly (Image 5b) winds around Buildings A and B in Phase 1. Relatively speaking, summer winds from the southerly directions are of a lesser concern, due to their lower wind speed and denser upwind surroundings.

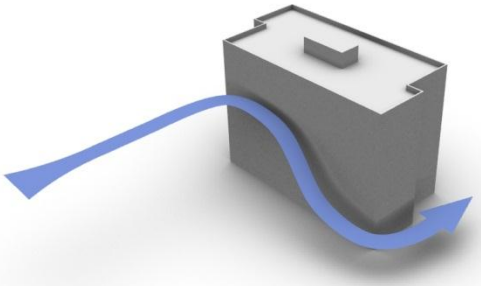


Image 4a - Corner Acceleration

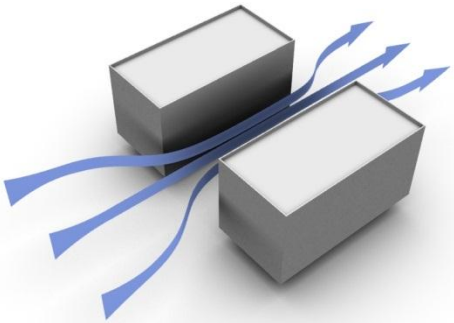


Image 4b - Channeling Effect

5.1 Background (continued)

Image 5a - Flow Pattern of Southerly Winds

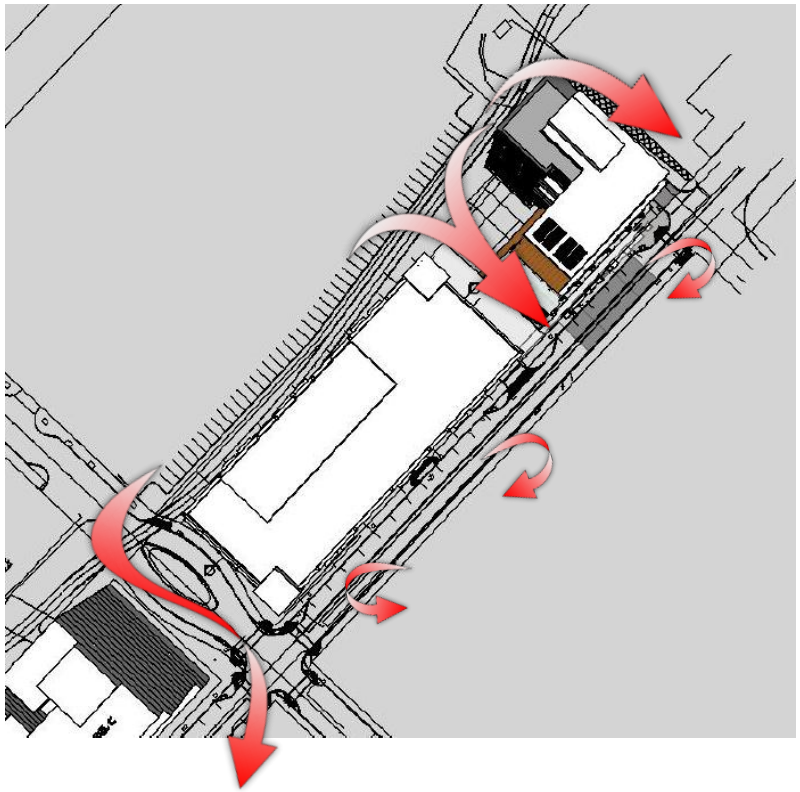


Image 5b - Flow Pattern of Northwesterly Winds

5.2 Building A

Wind conditions on and around Building A are assessed in details in this section. Discussions and recommendations presented here are also applicable for other towers (Buildings C, E and F).

From the viewpoint of wind control, the proposed Building A includes several positive design features. For instance, the main entrance is located in a recessed area (A1), where low wind activity can be achieved. The setback (A3) and overhang along Somerset Street and the open balconies at the east building corner (A5) will reduce the acceleration of southerly winds along the street and around the building corner.

A1. Main Entrance

As shown in Image 6 below, the main entrance to Building A is located at a recessed area. The building mass will protect the area from the prevailing southerly and westerly winds. The large canopy will shelter the area from rain, which is often accompanied by the northeasterly winds in the region. If feasible, a screen wall may be considered along the north edge of the entrance area for additional protection for winds from north and northwest. It should be at least 8 ft tall, approximately 80% solid with a small gap at the bottom (4 to 6 inches to reduce the potential snow accumulation). Alternatively, a row of coniferous landscaping can be considered.

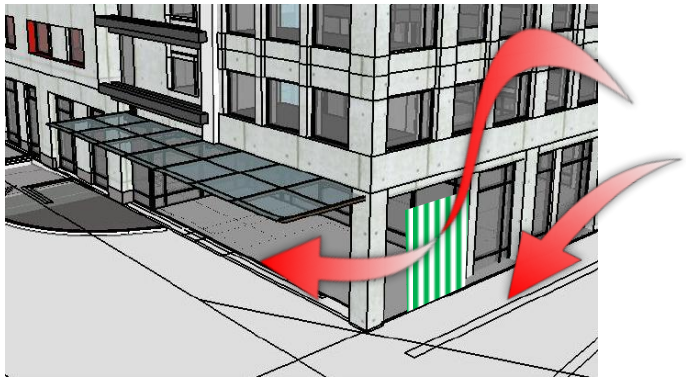
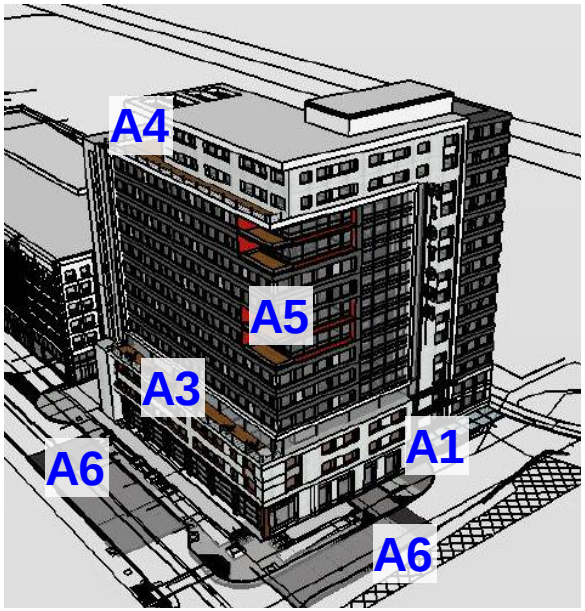


Image 6 - Wind Screens/Landscaping for Additional Protection



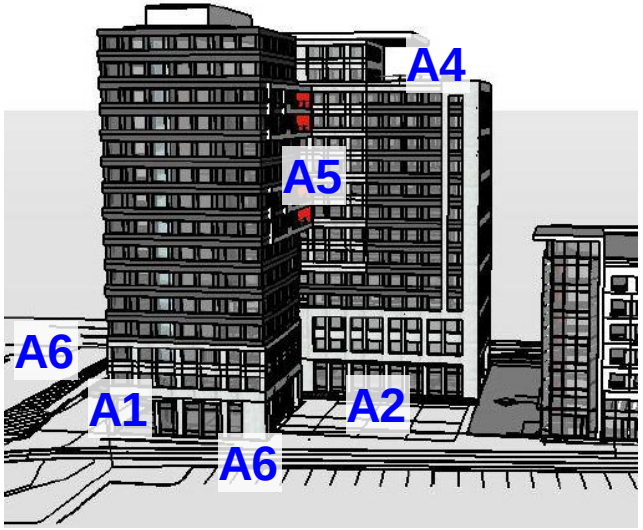


Image 7 - Key pedestrian Areas around Building A

A2. Courtyard

The courtyard is partially enclosed by the proposed buildings. However, it may be affected by both the southerly winds, which will be channeled between the proposed Buildings A and B (to be discussed in the next section), and the northwesterly winds, which will be intercepted by Building A and deflected down to the courtyard area. The resultant wind conditions will not be suitable for passive pedestrian activities such as sitting in the summer. Potential wind mitigation measures may consist of screens/trees along the courtyard perimeter and trellises above seating areas, as shown in Image 9 below. Photo examples of wind mitigation for this and other sections are provided in Image 10 on the next page.

A3. Podium Terrace

The area will be fully sheltered from the strong northwesterly winds, but exposed to the frequent southerly winds in the summer, when the terrace will be in use. The design team may consider using screens or landscaping as movable partitions to slow down the wind flow along the building façade, as shown in Image 9 at right. Trellises and umbrellas may also be beneficial for wind control.

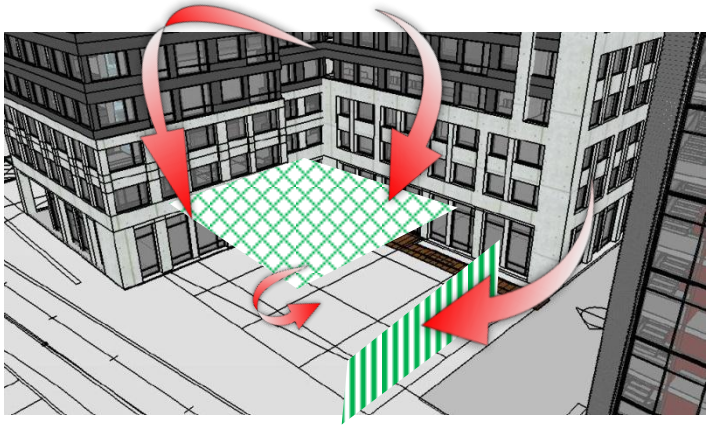


Image 8 - Wind Mitigation around the Courtyard

Image 9 - Podium Terrace

A4. Rooftop Terrace

The rooftop terrace will be fully exposed and the resultant wind speeds will be higher than desired for sitting or standing. Wind flows in this area will be mainly horizontal and, therefore, vertical elements, such as tall parapets and screen walls should be considered, if feasible (see Image 10 on the next page).

Wind speeds will be higher in the winter, but limited usage is expected due to local climate.

A5. Corner Balconies

While the balconies at the east corner are considered to be a positive design feature for reducing winds downwashing to the grade, wind speeds at these exposed balconies will be higher than desired for sitting or standing. Tall railings (6 ft or taller) should be installed on one side of the balconies for wind mitigation.

The balconies at the inner corner above the courtyard (A5 in Image 7) will be sheltered and suitable wind conditions are expected.

A6. Sidewalks

Sidewalks around the proposed Building A are sheltered by the building from the prevailing winds from one or more directions. As a result, suitable wind conditions are generally expected throughout the year.

If desired, trees and street art can be considered for space between the sidewalk and the building for wind reduction.

Image 10 - Wind Mitigation Examples

5.3 Building B

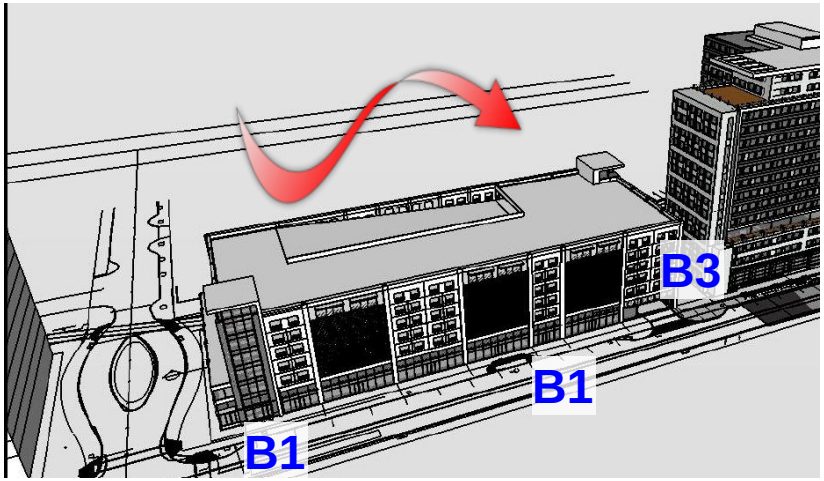
Building B is a 6-story parking garage. It will shelter the sidewalk along Somerset Street (B1) from the northwesterly winds and shelter Bayside Trial (B2) from the southerly winds. Due to its low status and perforated nature, Building B will not negatively affect the wind conditions on and the sidewalk or trail.

The only concern for wind comfort around Building B is the gap between Buildings A and B (Location B3), where wind speeds may be uncomfortable from time to time in the winter, due to the channeling effect.

If the gap is designed primarily as a pedestrian passageway, staggered wind screens can be installed in the gap (see examples in Image 11 below). Wind conditions would be of a lesser concern if the gap is a driveway.

Another measure to reduce the channeling flow through the gap is to increase the porosity (or openness) of the parking garage, which will allow more air flow through the building and reduce the flow into the gap.

Image 11 - Staggered Screens in the Gap



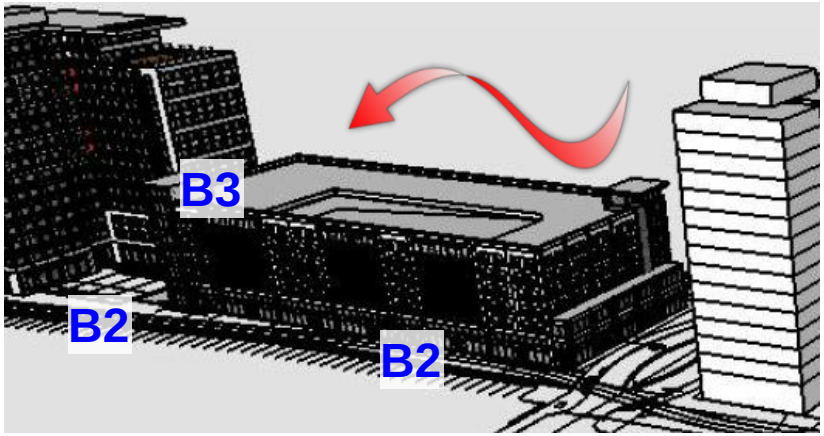


Image 12 - Pedestrian Areas around Building B

5.4 Phases 2 and 3 – General Wind Conditions

Besides the building massing, there is no other detailed information available for the future buildings in Phases 2 and 3 (C,D,E and F).

In general, wind conditions around these buildings are expected to be similar to our predictions for Buildings A and B, due to their similar heights and arrangement. More specifically,

- Wind conditions are expected to meet the effective gust criterion at all pedestrian areas at grade and no dangerous wind conditions (as defined by the Melbourne mean wind criteria) are predicted at any locations (see Section 4 for details about the criteria);
- Suitable wind conditions are expected along sidewalks and Bayside Trial; and,
- Higher-than-desired wind activity is predicted during the summer in outdoor amenity areas at and above grade.

Wind speeds in the gap between Buildings E and F (see Image 13) will be higher than those predicted between Buildings A and B, due to the different gap orientation and increased building dimensions. Without changes to the building massing or any wind mitigation, the resultant wind conditions are predicted to be uncomfortable in the winter.

Wind tunnel tests are recommended to quantify these wind conditions and, if necessary, to develop wind control solutions.

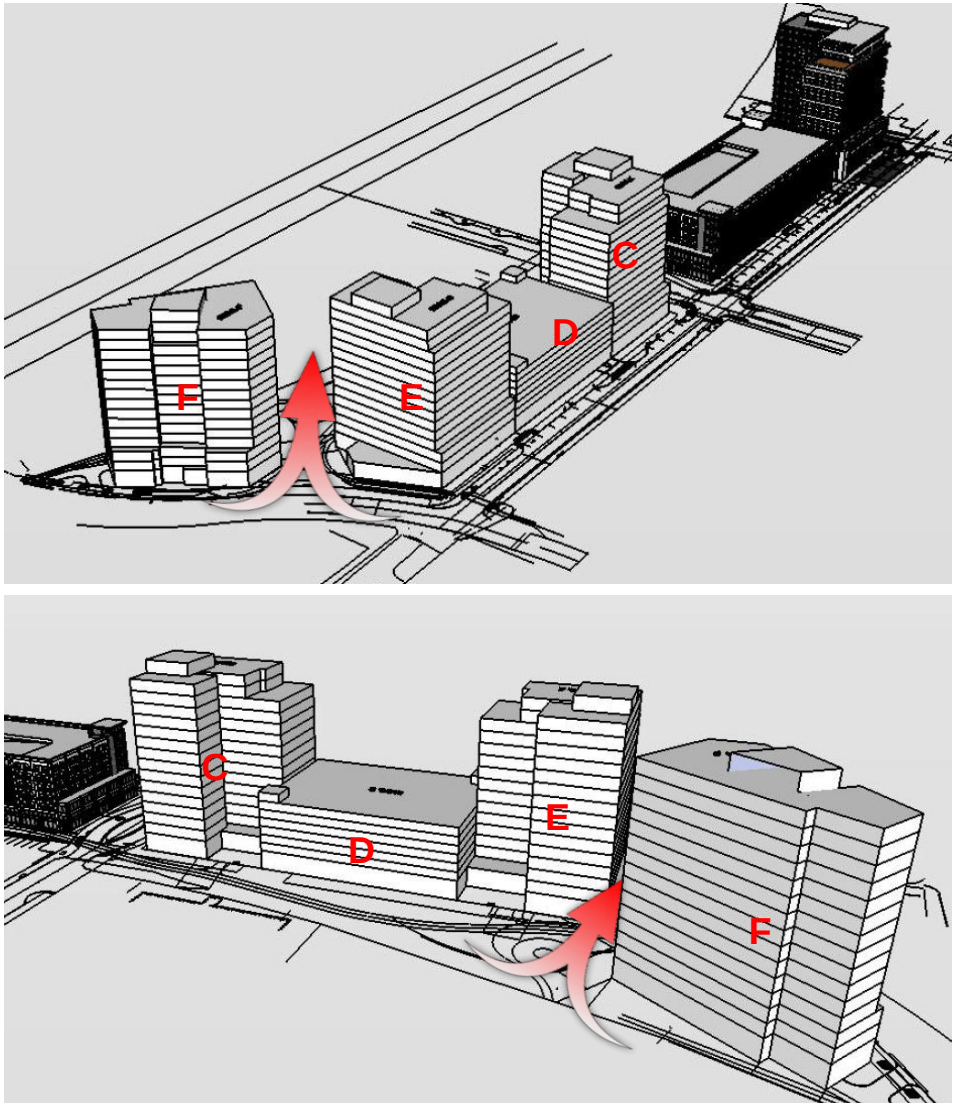


Image 13 - Buildings in Phases 2 and 3

5.5 Phases 2 and 3 – Design Recommendations

Based on the local wind climate and general massing of the site we have provided the following general design recommendations for improving the pedestrian wind conditions around the future buildings.

- Consider massing changes for Buildings E and F (e.g., podium, notch, chamfered corner, etc.) to reduce the wind flows into the gap, or significant wind control measures has to be developed for the gap;
- No passive pedestrian activities (e.g., sitting or standing) should be planed in the gap;
- Tower setback, such as the one proposed for Building E, is a positive design feature. If feasible, it should be applied to other buildings. A setback on the south and northwest sides of the towers will be most effective for wind control;
- Building entrances should be located away from building corners. If possible, they should be recessed from the main façade and/or protected by entrance canopies, wind screens and landscaping;
- The semi-enclosed areas on the northwest side of Buildings C and E (Image 15) are ideal for outdoor use in the summer due to the sheltering effect offered by the proposed development from the prevailing southerly winds in the summer. Additional wind control measures in the form of perimeter landscaping and overhead trellises will further reduce the impact of northwesterly winds;
- Due to their proximity to the parking garage (Building D), air quality may become an issue, depending upon the wind direction and garage design; and,
- Wind mitigation should be included for any above ground amenity areas.

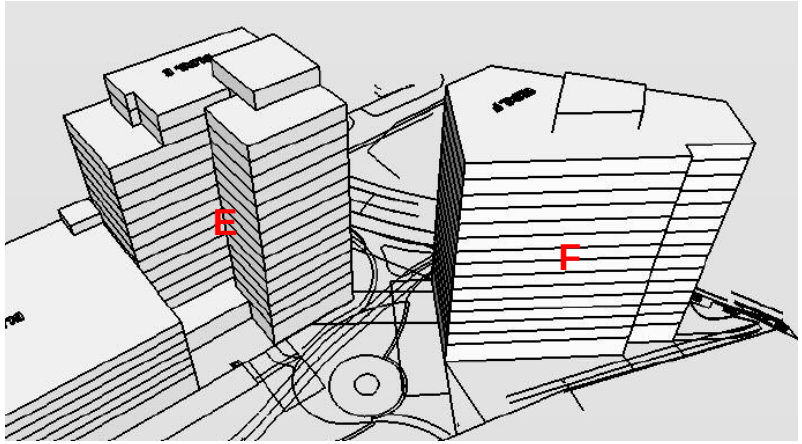


Image 14 - Windy Gap between Buildings E and F

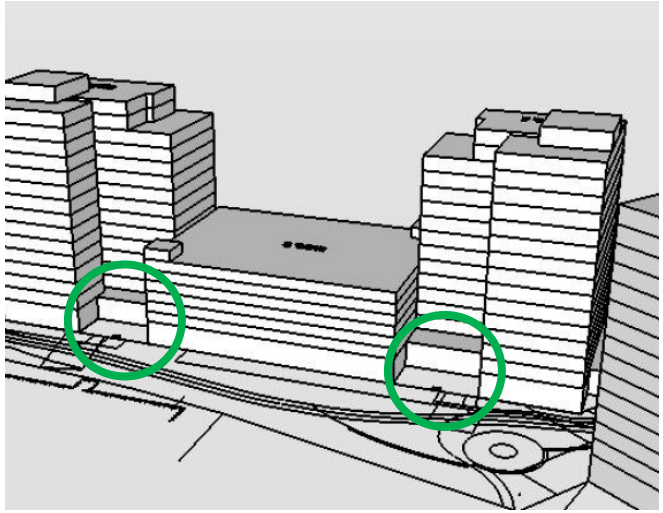


Image 15 - Potential Outdoor Amenity Areas

6. SUMMARY

Detailed wind assessments are provided for Buildings A and B. In general, the wind conditions are expected to meet the effective gust criterion and no dangerous wind speeds (as defined by the Melbourne mean wind speed criteria) are predicted at any pedestrian areas.

Suitable wind conditions are predicted at the building main entrance, sidewalks and Bayside Trail throughout the year. Wind speeds at most outdoor amenity spaces, either at grade or above grade, are predicted to be higher than desired for passive activities such as sitting. High wind activity is also predicted in the gap between Buildings A and B. Conceptual wind control measures have been provided and described.

Similar wind conditions are predicted on and around the future buildings in Phases 2 and 3. Uncomfortable wind conditions are predicted in the gap between Buildings E and F. General design recommendations are provided for consideration to improve the pedestrian comfort on and around the site.

Wind tunnel tests are recommended to quantify the wind conditions and to develop wind control solutions.

7. APPLICABILITY OF RESULTS

In the event of any significant changes to the design, construction or operation of the building or addition of surroundings in the future, RWDI could provide an assessment of their impact on the design considered in this report. It is the responsibility of others to contact RWDI to initiate this process.

midtown
Portland, ME

Midtown Three, Somerset St. Elevation

1 December 2014 cbt

THE FEDERATED COMPANIES

January 21, 2015

Mr. Rick Knowland
Planning Department
City of Portland
389 Congress Street
Portland, ME 04101

Subject: midtown Project
Applicant's Response to Planning Staff Comments

Dear Rick:

The Federated Companies has received and reviewed the Planning Staff's January 13, 2015 comments regarding the Level III Site Plan & Subdivision Application Submission. The comments are listed *(italicized)* followed by our responses. Our responses have been grouped by each planning staff member. We are only responding to comments that require action from our office. Also appended to this letter as Attachment A are the non-technical responses prepared directly by the Federated Companies; Attachment B which includes the updated B-7 Design Guidelines and waiver request information prepared by CBT Architects.

Tom Errico – December 4, 2014 Review

The applicant shall provide a detailed Construction Management Plan. The information provided by the applicant is insufficient. I would note that significant construction activity will be occurring along Marginal Way in 2016 and this project must account for this activity in the Plan.

Response:

This plan will be developed as part of the construction documents and recommend this item become a condition of approval. It is currently understood PC Construction may be involved with the project and we will request their participation to address this comment.

The compact parking spaces located on the entry level are located near the gate/ticket area and use of these spaces by larger vehicles may complicate traffic flow into and out of the garage.

Response:

The latest plans include six (6) motorcycle spaces thus avoiding an issue with larger vehicles near the gate area.

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FAY, SPOFFORD & THORNDIKE
Offices in: Massachusetts, New Hampshire, Maine, Connecticut and New York

The applicant should investigate the provision of a single-unit truck loading area on the north side of the Midtown Building Four that could be used for trash removal and other appropriate small truck deliveries. It should be noted that the design should only consider a single-unit truck and the driveway should be as narrow as possible (Given that truck activity should be light, I envision trucks backing into the driveway). The provision of short- term parking spaces in front of the building seems appropriate, but the number of spaces should be minimized and the design should be cognizant of Elm Street multi-modal functions (both existing and future) and any re-design of Elm Street.

Response:

The applicant has relocated the trash services within the midtownFour building to the southerly side. The trash room will be serviced by a 15' wide driveway adjacent to the building as shown on Sheet C-2.3. The drop off zone on Elm Street has been shortened to accommodate approximately two passenger vehicles.

11/6/2014 Comment: The sidewalk system along Elm Street near the Midtown Four building will need to be closely reviewed for ADA compliance and general pedestrian needs given the ramping, steps, and retaining walls proposed.

12/4/2014 Comment: It is my understanding that the applicant is investigating potential changes to the Elm Street/Somerset Street intersection and these changes my impact this area and accordingly I will review this in the future.

Response:

The midtown plans now include modifications to the intersection of Elm/Somerset Street to improve pedestrian movements and sidewalk access. The project will also rely on curb line improvements along Elm Street by the City that will benefit the overall sidewalk conditions along midtownFour.

It appears that pedestrian use easements would be required on the sidewalk in front of Midtown Four.

Response:

The applicant is amenable to the granting of easements for users of the Bayside Trail who may otherwise pass through the midtown development areas.

11/6/2014 Comment: It would seem important that a formalized pedestrian crossing of Elm Street at Somerset Street be provided following the completion of this project.

12/4/2014 Comment: The plans have been revised to include two crosswalks on Elm Street at Somerset Street. The applicant should provide details on how the sidewalk ramp will be constructed given the existing driveway apron to the Noyes Building. As proposed the landing areas on the west side of Elm Street do not connect with any facility. Further review of this condition is required.

Response:

The latest plans include modifications to the corner of Elm/Somerset Street next to midtownThree. Final street conditions along Somerset Street adjacent the Noyes property will be subject to the City's final decision about how Somerset Street will be raised and cooperation with abutting landowners.

12/4/2014 Comment: The curb extension on the north side of Somerset Street near the Mews should be extended to the beginning of the nearest on-street parking space.

Response:

At this time, the applicant would like to reserve a response to any of the comments regarding Somerset Street until the City determines the preferred design strategy.

12/4/2014 Comment: The sidewalk ramp on the southeast corner of Chestnut Street does not appear to have an ADA compliant maneuver/turning spaces at the interface with the sidewalk. It is also unclear how the sidewalk will be constructed in this area.

Response:

It is the intent that an ADA compliant ramp be provided at this location, as evidenced on Sheet L2.

12/4/2014 Comment: The ramps at the Bayside Trail on Chestnut Street should consider pedestrian routings along Chestnut Street and that the path of accessibility should not include the ramp features.

Response:

The ramp conditions at the Bayside Trail crossing on Chestnut Street should be reconfigured to avoid non-compliant conditions for the Chestnut Street sidewalk. This will require some minor changes on the plan which we would like to coordinate with City staff. These can be addressed on final plans prior to the release of a building permit.

12/4/2014 Comment: Two rectangle symbols are illustrated on the Landscape Plan in the sidewalk at the garage entrance on Somerset Street. The applicant should note what is being proposed.

Response:

These symbols were originally intended as ADA detectable surfaces which have now been removed from the plans.

The plans are not clear as to the construction of the sidewalk on the south side of Somerset Street. The sidewalk is an important part of overall pedestrian accommodations and should be part of the design and construction of the project.

Response:

The applicant reserves to continue further discussion on the Somerset Street design until the City determines the preferred design approach. Originally, it was intended there would be brick sidewalk between Elm and Chestnut Street and bituminous asphalt between Chestnut and Pearl Street. This may change as the Somerset Street design evolves.

The applicant has provided a graphic illustrating the routings and I find the general routings to be acceptable. Specific design detail comments for the pedestrian facility infrastructure are noted elsewhere. The applicant should provide information that specifies for all routings, compliant cross slopes are provided, including driveway aprons.

Response:

Ultimately, we are amenable to providing this information as a condition of approval.

The Bus Shelter location shall be adjusted to be closer to the street and in conjunction with this the curb extension should be extended to the vehicle delivery driveway.

Response:

These changes are reflected on the latest drawings.
The applicant should provide a parking demand and supply analysis that demonstrates the adequacy of the proposed parking garage for the entire project.

Response:

This information will be provided by others separately.

John Peverada – January 5, 2015

How will off street loading and delivery for both the retail businesses and the apartments be dealt with? The applicant has shown one delivery bay in each of the two buildings on Somerset St., but they are only 30-35' deep, and there is absolutely no off street delivery space for the building on Elm St.

How will large delivery vehicles such as moving vans and tractor trailers such as those now being used by Coke Cola etc. be accommodated without blocking traffic. Unlike some other streets in the City, Somerset St has two way traffic and is relatively narrow. If given no alternative the large trucks will double park blocking traffic causing traffic flow and safety issues, for vehicles, pedestrians and emergency vehicles.

Response:

The applicant will continue to work with City Staff on an acceptable pattern with loading and delivery associated with the retails spaces including time restrictions and related measures.

With the entrance gate to the garage being located on the ramp leading from the ground level to the first supported deck, what measures will be taken to prevent vehicles from being stuck (tires spinning on wet slush covered incline after stopping to pull a ticket), a 6% slope seems to be steep especially if vehicles stop to pull a ticket or swipe their card, then try to start up again, this too could cause traffic to back up in the garage and onto Somerset St.

Response:

This comment has been provided to the garage designers who have indicated no concern regarding the design conditions. We will continue to seek further assurance and evidence from the designers to address these concerns in advance of the public hearing.

With only one entry and one exit lane what happens if a vehicle is "stuck" blocking the lane, and how would maintenance be performed without closing the garage? Additionally, with only one entry lane will vehicles be queued up onto Somerset St blocking traffic and the sidewalk while waiting to enter the garage at peak times?

Response:

The garage design includes three gate positions to allow alternating traffic flow in the middle gate area, thus minimizing the queue stack, certainly for entering conditions.

Bruce Hyman – January 7, 2015

The proposed bus stop location does not (per drawing C-2.0B) provide the required ADA-compliant bus stop landing area (5'x8') nor does the bus stop directly connect to the ADA-compliant pedestrian access route at this location.

Response:

These changes will be shown on Drawing Sheet C-2.2.

Section 14-526 Site Plan Standards

- *The exterior bike rack locations are not designed with adequate spacing between the racks or with adequate spacing from the street or other structures.*

Response:

The site plans have been revised as necessary and will conform to the spacing requirements set forth in the Technical Design Manual.

David Senus – January 7, 2015 Review

4. *The Applicant has noted that the project may require a MaineDEP Air Emissions Permit, but that the Owner's mechanical engineers have not yet developed BTU demand estimates for the project. The Applicant should provide a status of this evaluation. If determined that an Air Emissions Permit is required, this could be stated as a condition of the Approval.*

   Response:

   The applicant has determined a MaineDEP Air Emissions Permit is not required.

5. *The Applicant has received ability-to-serve utility responses from the Portland Water District, Unitil, and Central Maine Power. The Applicant awaits correspondence from Public Services regarding wastewater capacity, and Fairpoint and Time Warner Cable regarding communications. In all cases, the Applicant will need to continue to coordinate their design with these utility providers to ensure that the design meets applicable standards and to meet specific conditions and requests made by each utility.*

   Response:

   The applicant has received an Ability to Serve letter from Public Works regarding wastewater capacity. The letter is enclosed for the City's records.

6. *Sheet C-7.0A - The detail entitled Modified Cross Section of Somerset Street From STA 3+25 to STA 7+20 (Somerset Street between Elm & Chestnut) will need to be modified along with the associated grading plans to reflect the requirements outlined in an email entitled "RE: Midtown - Somerset Street Design, Variations from City Standards" from Rick Knowland to the Applicant, sent on 11/9/2014.*

   Response:

   The applicant's team continues to work with the City to decide on the preferred design strategy whereby City goals are achieved while also satisfying concerns of abutting landowners. We will continue to strive to meet these objectives prior to the public hearing.

7. *Sheet C-1.2 - The Subdivision Recording Plat should identify the location and type of stormwater management systems that are required to be maintained by the Applicant, both on the project property and on adjacent City property. The Applicant has noted that the subdivision recording plat/plan is currently being revised and a draft plan will be submitted in the next round of plans for review.*

   Response:

   The subdivision recording plat has been updated and the modified plan accompanies this submission.

8. *The easement areas depicted on certain plan sheets are not consistent with the easements identified on Sheet C-1.2 (Amended Subdivision/Recording Plat); for example, sheet C-3.1 depicts an old easement alignment that does not correspond to the underground electrical infrastructure behind midtown 3.*

   Response:

   We have attempted to update these easements lines as much as possible. We acknowledge that there remains inconsistencies which we will continue to address in the period up to the public hearing.

9. *The following comments are specific to the proposed grading and drainage concept for the areas behind midtown One and midtown Two, from Bayside Trail STA 6+50 to STA 12+50; refer to sheets C-3.0 and C-7.12:*

   b. *The face of the retaining wall and fence are proposed primarily on the property line between City of Portland (Bayside Trail) property and the parcels located north of the Bayside Trail. Temporary construction agreements will be required from the adjacent property owner to complete the work as proposed, as construction activity will be required on adjacent property to install the retaining wall and drainage systems.*

      Response:

      We understand these requirements and currently believe that temporary access rights will be available from the abutting landowner. Evidence of these agreements can be provided prior to the issuance of a building permit.

<u>David Margolis-Pineo – January 7, 2015</u>

<u>Survey Related Comments</u>

a. *Comments on the submitted Amended Subdivision/Recording Plat Dated April 10, 2013 have not been address by the applicant and the plan has not been stamped by a registered land surveyor. This issue may need to be a condition of approval.*

   <u>Response</u>:

   We respectfully request that completion of a final stamped recording plat be a condition of approval.

b. *Easements notes on drawings C-3.1, C-3.4 etc. need to be reviewed and shown on the plat.*

   <u>Response:</u>

   These notes have been added to the latest subdivision/recording plat.

c. *A deed is required for the proposed four foot widening of Somerset Street plus this widening needs to be shown on the Plat.*

   <u>Response:</u>

   The applicant's team will coordinate with City Staff, the project surveyor, and Corporation Counsel to prepare the necessary deed and supporting exhibits for the land that will be used to widen the Somerset Street right of way.

d. *Plans are referenced but appear not to be recorded. This needs to be addressed.*

   <u>Response:</u>

   Ultimately, it is the goal to record the plans as necessary. We reserve the right to complete the recording at a time subsequent to Planning Board approval but in advance of the issuance of a building permit.

e. *All property corners have not been shown.*

   <u>Response:</u>

   FST will work with the project surveyors at Owen Haskell, Inc. to assure that all property corners are set in accordance with City standards. As of this date, we are not aware of the setting of pins for the project. Further information on this may be provided prior to the public hearing.

<u>Waiver Request</u>

a. *The Department of Public Services is supportive of waiver request #3 for brighter illumination with the following conditions: All lighting fixtures shall be LED and shielded for down lighting with the light pole spacing per Code requirements." The applicant is encouraged to consider supplemental lighting on the applicant's property. All proposed lighting within the street right of way will be owned and maintained by the City of Portland and shall be on a separately metered circuit. 150 watt is the largest LED, I believe.*

Response:

All proposed fixtures; Bayside fixture and Bayside Trail fixture, are proposed as LED per Technical Design Standards.

All Bayside and building mounted fixtures will be shielded for downward lighting. Spacing of the Bayside fixtures are closer than the city standards, as addressed in the waiver request. The spacing of the fixtures along Somerset Street vary due to location of street trees, curb cuts and ramp situations. The result of the closer spacing is that one additional fixture will occur on each block between Pearl Street and Elm Street. The spacing along Elm Street and Pearl Street extension meet the standards. Given the objective of creating a vibrant, active urban environment, higher lighting levels provide sense of security and will enhance after hour patronage of businesses, restaurants etc. The portion of Chestnut Street between "midtown" Two and "midtown" Three have three fixtures balanced on each side of the street, resulting in three additional fixtures using the minimum spacing standards. This portion of Chestnut Street has been identified as a gateway to the Bayside neighborhood and such is a prominent location. The increased level of lighting in addition to the enhanced landscape and street improvements call attention to this significant location.

In response to supplemental lighting, building mounted lighting had been included to supplement light levels.

All of the Bayside street lighting within the public right of way will be on a circuit connected to the control cabinet located on the southerly side of Chestnut Street within the Bayside Trail area. We previously coordinated the circuiting requirement with Kevin Thomas, DPS.

The Planning Staff suggest that a condition of approval be considered with this waiver that would require a final lighting plan and photometrics be submitted for review and approval by the Department of Public Services and the Planning Authority.

Response:

Photometric plans were inadvertently omitted with the initial submission in November 2014. Plans have been included in the revised plan set.

b. With the Midtown Two drive now consolidated to a 24' width, waiver request #4 can be removed.

Response:

The waiver request will allow this site plan to be approved as submitted. The requirement for separated entrance and exit drives in a parking garage will not be met. We understand the City is supportive to this waiver request because of its acceptance as part of the previous Level III Site Plan Approval for this configuration.

e. All proposed stormwater treatment and storage devices as a result of this project within or outside the road right of way shall be owned and maintained by the applicant and noted on the Plat.

Response:

The stormwater management treatment and storage devices have been shown on the enclosed subdivision plat and maintenance identified as the responsibility of the owner.

Sewer and Drainage Issues

a. *Where all sewers are scheduled to be abandoned within the street right of way, the pipes shall be filled with grout.*

Response:

A note to the grading sheet C-3.3 will be added and submitted under separate cover.

b. *The plans show a 12" catch basin lead from E-9 on drawing C-3.3 connecting to a 24" sewer without a manhole at the intersection of Pearl and Somerset Streets. This is not allowed by City Code which states: All connecting pipes eight inches and larger require manholes. Please provide a manhole at this junction point.*

Response:

E-9 will be redirected to catch basin E-6B as shown on the enclosed Sheet C-3.0.

c. *Please indicate for Elm Street that the 12" drainage line will be increased to 24". It is the City's intent to pay for this drain extension which will be bid with the applicant's work. Plans will need to be submitted for review.*

Response:

This has been indicated on the enclosed Sheet C-3.2.

d. *A catch basin is proposed in the sidewalk, approximate station 2+90, drawing C-3.3, at the Noyes building near the corner of Elm Street. Catch basins in sidewalks are not allowed.*

Response:

We propose that the structure in question is to be removed. This should be reflected in the final Somerset Street plans that will be prepared by others.

e. *All the proposed underdrain along the face of the Noyes building does not appear to be shown. Drawing C-3.4 approximate station 5+25. Please verify.*

Response:

The final street design is still being negotiated by the City and the Noyes family. Final underdrain locations (if required) shall be notated on the plans that will ultimately be prepared once a design strategy acceptable to the City and abutting landowners is determined.

f. Please correct 6" SD location from structure S-0. Drawing C-3.4

Response:

It has been determined that the 6" storm drain shown on Sheet C-3.4 serves no function and has been removed from the plans.

Road Right of Way Issues

a. Further discussions are necessary on how does applicant propose to access for maintenance the electrical transformer behind Midtown 4. The City is not receptive to traveling over the trail unless something can be mutually agreed upon to reinforce the trail.

Response:

The transformers behind midtownFour have been eliminated and vehicular access will not be anticipated in this area. The transformers have been changed to underground submersible transformers located in vaults adjacent to Elm Street and Chestnut Street.

b. Any lite bollards to be located within the street right of way shall be Holophane.

Response:

The two bollards located on either side of the parking garage entrance are the City specified Holophane fixtures, which is shown as Detail 4 on Sheet L4.2.

c. A license for the proposed canopy for Midtown Three extending over the street right of way will be required.

Response:

The designers of record for the midtownThree building will coordinate with the applicant for the granting of a license from the City prior to the release of the building permit.

d. As a result on proposed Midtown 4 curb cut, new 24" storm drain and the replacement of the water main on Elm St., this opportunity should be used to re-align the curbing on the North side of Elm Street between the Trader Joes and Somerset Street to remove the three-foot sidewalk pinch point at the Trader Joes building. Again it is the City's intent to pay for a portion of the curb realignment. Construction plans should be developed as part of the Midtown project showing these changes.

Response:

The applicant does not oppose a curb line realignment. The final Elm Street design will be prepared by others.

e. There are three issues at the intersection of Elm and Somerset Streets which need to be addressed. It is felt that a meeting with the applicant's engineer and a representative of the City's engineering staff could quickly resolve these three issues.

i. The proposed alignment of Somerset Street Extension and Somerset Street at Elm Street,

ii. *The proposed crosswalk alignment across Elm Street at the Somerset Street intersection, and*

iii. *The proposed layout of the crosswalk across Somerset Street at the Elm Street intersection to open pedestrian clearance on the Midtown side of Somerset Street.*

Response:

FST met with the City staff to discuss these items and the following represents our understanding:

i. The proposed alignment of Somerset Street center line is offset and should be revised to include a horizontal curve or centerline deflection at approximately Station 3+25. This should be reflected in the final street design.

ii. This crosswalk alignment has been revised as shown on the enclosed Sheet C-2.2.

iii. The stairs, ramp, and crosswalk locations have been revised to address this concern as shown on Sheet C-2.2.

f. The sidewalk along the face of the Noyes building shall be constructed of brick. The sidewalk along the Noyes parking lot shall be constructed of asphalt as proposed.

Response:

The final sidewalk materials shall be determined by the City as the Somerset Street design is determined and incorporated into the final plans.

g. Currently parallel parking is proposed in front of the drive cut to the Noyes parking lot. This is the only drive cut to access that lot. Alternatives to the proposed design will need to be resolved.

Response:

We concur that this driveway was inadvertently omitted. A driveway curb cut has been added as shown on Sheet C-2.1.

h. The right turn radius from both Elm and Chestnut Streets on to Somerset St will force certain vehicles into the on-coming traffic. The City staff will work with the applicant's engineers to address this issue for the final design submittal.

Response:

At this time, the applicant would like to reserve a response to any of the comments regarding Somerset Street until the City determines the preferred design approach.

i. Several of the proposed tree box filters are located in the sidewalk area. Assurance is needed that all locations will be ADA compliant.

Response:

The sidewalks have been checked to confirm a minimum of 36" clearance (ref. 2010 ADA Standards for Accessible Design; Section 403.5.1 walking surfaces) will be provided around all tree box filters.

j. The minimum lane travel width for all potions of Somerset St shall be 13 feet. This impacts only the curb bump out areas.

Response:

The revised layout plans C-2.1 and C-2.2 are attached to this letter to reflect this requirement.

k. Due to the existence of the Noyes Storage Building and the desire to raise the level of Somerset Street between Chestnut and Elm Street, City staff is requesting to meet with the applicant's engineers to discuss and resolve possible street and sidewalk design variances to accommodate this goal and to assure positive drainage away from the Noyes building.

Response:

At this time, the applicant would like to reserve a response to any of the comments regarding Somerset Street until the City determines the preferred design approach.

Jeff Tarling

(b) Understory planting standards appear to have been met. Earlier review comment mentions that plants should meet or exceed minimum sizes. Example – a minimum size for ornamental grasses, perennials would be 3 gallons pot size.

Response:

The plant schedule has been updated to respond to minimum size requirements for plant material.

The proposed street appears to meet the street tree standard. Trees must be from the approved street tree list, no Callery Pear or Lindens.

Response:

Selected street trees are found on the approved street tree list with exception of the Pagoda Dogwood proposed along the Bayside Trail. The use of the Pagoda Dogwood was at the request of the planning staff to continue the same theme along the trail that extends from Franklin Arterial to Chestnut Street.

In addition to these responses, our submission includes updated building elevations and floor plans, select civil drawings, and select landscape and photometric plans. We will provide a red line annotated set of drawings to you on Thursday to allow some ease of review for the plan revisions.

If you have any questions or require further additional information, please contact our office.

Sincerely,

FAY, SPOFFORD & THORNDIKE

Stephen R. Bushey, P.E.
Associate

SRB/cmd

Enc: Attachment A – Letter from The Federated Companies Addressing Non-Technical Issues
Attachment B – Letter of Response Regarding Waiver Requests & B-7 Design Guidelines
Attachment C – Capacity Availability Letter – Wastewater
Attachment D – Updated Transportation Demand (TDM) Plan
Attachment E – Plan Sheet Index Updated to Reflect Changes Dated 1/21/15
Select Civil Drawings
Architectural Drawings
Select Landscaping & Photometrics Plans

c: Barbara Barhydt, City of Portland (e-mail copy)
Greg Mitchell, City of Portland (e-mail copy)
David Margolis-Pineo, City of Portland (e-mail copy)
Alex Jaegerman, City of Portland (e-mail copy)
Bruce Hyman, City of Portland (e-mail copy)
Ann Machado, City of Portland (e-mail copy)
Tom Errico, P.E., T.Y. Lin (e-mail copy)
David Senus, P.E., Woodard & Curran (e-mail copy)
Jonathan Cox, The Federated Companies (e-mail copy)
Nick Wexler, The Federated Companies (e-mail copy)
David Hancock, CBT (e-mail copy)
Bob Metcalf, Mitchell Associates (e-mail copy)
Bo Kennedy, FST (e-mail copy)
Ben Walter, CWS Architects
Natalie Burns, P.A. (e-mail copy)
Patrick Venne, The Federated Companies (e-mail copy)

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ATTACHMENT A

January 21, 2015

THE FEDERATED COMPANIES

Portland Planning Board
C/O City of Portland
Department of Planning & Urban Development
Portland City Hall
389 Congress Street
Portland, ME 04101

RE: *Supplemental Applicant Submission in Response to Board and Staff Comments Pertaining to 'midtown' Project (Somerset, Elm, Chestnut and Pearl Streets)*

Dear Chairman O'Brien and Honorable Members of the Portland Planning Board:

The intent of this correspondence is twofold.

First, it is intended to thank you for accommodating our request to meet in a less formal roundtable format at the third workshop held on January 13, 2015 for the above-referenced project ("Project"). We believe a benefit was derived from the fluid dialogue that meeting format permitted, in the sense that it allowed greater insight into your important thoughts and comments on the outstanding issues of importance in this context; however, we also understand and respect the Board's position on this format as expressed at the meeting.

Based on our notes and follow up guidance from City staff, we understand the outstanding issues from your perspective may relate to or include the following broad categories:

1. Use of External Insulation & Finish System (EIFS);
2. Mid-Block Permeability;
3. Architecture & Urban Design; and
4. Somerset Street Abutter Concerns

Accordingly, the second purpose of this correspondence is to respond to and address each area above as much as possible to permit a more meaningful review at the Public Hearing. Following the workshop on January 13th, we met and held several discussions with City staff and others to work through these topics cooperatively. We now set forth our detailed responses to the questions and comments the Board made in reference to the Project on the 13th on the basis of our interactive discussions and further work.

I. <u>Use of External Insulation & Finish System (EIFS)</u>

As a preliminary point, while we cannot speak for the City it is our understanding on the basis of an in-person meeting following the January 13th workshop that City staff supports use of EIFS as presently proposed. To the extent earlier questions existed about the product related to

functionality and/or appearance, this comment section and its related image examples are intended to address remaining items of interest for the Board.

By way of introduction, EIFS is a non-load bearing, exterior wall cladding system. The product has been in use for decades, and as with most things has dramatically improved with time. Today's EIFS takes into account the flaws associated with earlier systems by incorporating drainage mechanisms amongst other technological improvements that now make it ***one of the best cladding systems available*** from a thermal and moisture control perspective.

Therefore to reemphasize by reiterating a comment provided verbally at the January 13th workshop, use of EIFS in the present application materials is not dictated by materials cost; rather, it reflects the product's undeniably superior quality from both energy conservation and versatility perspectives.

EIFS provides continuous insulation and is frequently used in contexts and climates similar to Bayside—comparatively colder, urban environments. Moreover, it has been independently verified by the Department of Energy (DOE) to outperform brick in new construction across a variety of indicators and in a number of climates including those comparable to Portland.[1]

The images provided on the following pages are provided in an effort to demonstrate tasteful use of EIFS in urban contexts as well successful application in colder climates. Moreover, they also show the ability of EIFS to mimic more traditional building materials, including brick. EIFS therefore presents a superior technical product without jeopardizing the ability to have flexibility in the appearance of publicly visible portions of a structure.

[1] Independent study conducted between 2005-2007 by Oak Ridge National Laboratory (ORNL), the largest U.S. Department of Energy (DOE) science and energy laboratory, conducting basic and applied research to deliver solutions to compelling problems in energy and security including development of advanced materials for energy applications.

EIFS APPLIED IN THE URBAN CONTEXT

Oakland, CA “Uptown” Redevelopment

EIFS APPLIED IN A COLDER URBAN CONTEXT

Urban Canada – Multi-story Residential (source: http://eifscouncil.org/)

EIFS APPLIED TO MIMIC TRADITIONAL BRICK EXTERIOR

EIFS AS TRADITIONAL EXTERIOR IN COLDER URBAN CLIMATE

Brown Street Condominium Project, Forrest Park, Illinois

II. Mid-Block Permeability – Vicinity of midtownThree

At the close of the January 13th workshop, it was evident individual members of the Board remained interested in better understanding how the Project as proposed satisfies requirements in the B-7 zone for mid-block permeability.

The precise standard for mid-block permeability in the B-7 zone appears to stem from the City's Design Manual, relative to B-7 Design guidelines, under principles and standards, Principle B, Access and Circulation, Standard B3, which seems to require two things:

- Incorporation of mid-block permeability; that is
- Perpendicular to Marginal Way.

The standard is remarkably simple when distilled to its basic elements.

The standard goes on to itemize the sorts of connections which satisfy its spirit and intent as follows:

- Street extensions;
- Service alleys with public access;
- Pedestrian corridors;
- **Trail access**;
- **Plazas**; and
- **Pocket parks**

The Design Manual speaks about permeability being achieved in a number of alternative ways inclusive of exterior and interior options. The examples given for primary circulation methods (including streets and sidewalks) support a reading that this language refers to public spaces, whereas secondary circulation (examples of which include internal lobbies and/or corridors through the ground floor) are contemplated as enclosed within private spaces. Prior staff comments support this reading, as they expressly note that the standard contemplates mid-block permeability accomplished as access ways between buildings <u>or as pass throughs within the interior of buildings.</u>[2] Moreover, and importantly, the secondary means of permeability is conditioned on an ability to provide it in a safe manner.[3]

<u>Satisfaction of Standard</u>:

As satisfaction of this design standard, we submit to the Board that the Bayside Trailhead accessed from the corner of Somerset and Elm Streets satisfies the letter and intent of the ordinance exactly.

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[2] The comment at the bottom of p. 3 of the January 9, 2015 Board memo from the Department of Planning and Urban Development as part of the January 13, 2015 workshop backup materials reads "*This standard also anticipates mid-block permeability accomplished. . . .as pass throughs within the interior of buildings*."

[3] The standard notes in pertinent part that it applies "*unless the building program precludes such design and cannot be modified to meet this requirement due to. . . .security reasons*."

Coupled with the publicly accessible space directly to the west of midtownThree, the permeation in the vicinity of the trailhead is perpendicular to Marginal way.

Moreover, while it may not be mid-*building* with respect to midtownThree, this permeation of the site is in fact mid-*block*, which is what the standard appears to require. The block itself is large and awkward and, likely because of this, the City had the foresight to establish in conjunction with other partners a means of breaking up the size by addition of a pedestrian trail even before a development proposal came forward.

As noted above in bold, trail access areas, plazas, and pocket parks all satisfy the 'type' of mid-block permeability spoken of under the standard, and the western face of midtownThree creates the perpendicularity required for these types of permeation. With respect to this point's location in the "middle" of the block, staff's comments from the November 12th workshop backup material are instructive: ""*the Bayside Trail enters the Elm Street walkway* ***midblock*** *between midtown three and midtown four*."

Therefore, we submit to you that the trailhead coupled with the publicly accessible area to the west of midtownThree satisfies the elements of location (midblock), direction (perpendicular to Marginal Way), and type (trail access/plaza/pocket park) spoken to by the standard.

While reliance is placed on the trailhead and adjacent publicly accessible space as substantial evidence that this standard is satisfied, however, an additional effort is also being made to incorporate a reasonable approach to secondary permeation through the interior of midtownThree. A note on the revised plans will read as follows:

AS SECONDARY MEANS OF PROVIDING MID-BLOCK PERMEABILITY, APPLICANT IS AGREEABLE TO LOCATING STOREFRONTS ON THE FRONT AND BACK PORTION OF THE BUILDING, PRECISE SIZE, NUMBER AND LOCATION TO BE DETERMINED, SOMEWHERE WITHIN THE MIDDLE 50% OF THE STRUCTURE, ALLOWING FOR PHYSICAL AND VISUAL PERMEABILITY.

This approach, as noted in the Design Manual itself, is common throughout Downtown Portland. One and Two Monument Square, the buildings connecting Monument Way with Free Street, Reny's Department Store, Starbucks on Congress Street in the Hay Building, the building at 37 Exchange Street (former home of the JavaNet coffee house and most recently home to the Thirsty Pig), the Time and Temperature Building, and One City Center, likely amongst others, all successfully use this approach to enable the high-quality urbanism we expect to create with this development. Therefore, while we believe the basic standard is satisfied in a very straightforward manner by the trailhead alone, we are amenable to fostering further permeation as described above.

To summarize and conclude, the position advanced is that, upon further consideration, as an alternative to the previous waiver request we believe the standard for mid-block permeability is in fact satisfied perfectly and directly already by existing conditions, which the plan note described above will only serve to amplify as opposed to being necessary in its own right to satisfy.

III. Architecture & Urban Design – midtownThree

Following the January 13th workshop, a meeting took place with the City's Urban Designer to better understand the City's position on outstanding issues with the pre-existing submission in an objective manner. At that meeting, it was learned that a preference exists for:

- Greater articulation and emphasis of the entrances, and a differentiation between commercial space and residential space, with the Lord & Taylor department store on Boylston Street in Boston cited as an example of what is desirable to indicate to passersby what space is public and what space is not.

A response to this desire is presented in the revised architectural illustrations for your review.

The City also conveyed that the pedestrian realm at street level is important to understand better. As such, a computerized contextual model is being worked on for submission in conjunction with the public hearing.

We also submit to you that the preservation of a view corridor from Elm Street to the Bayside trailhead, coupled with the dynamic architecture of midtownFour, presents a gateway to this part of the City.

IV. Somerset Street Abutter Concerns

We appreciate the Board's interest in satisfying the legitimate concerns of abutters. To that end, we have maintained an active dialogue with the Noyes family pertaining to various proposed solutions to their concerns, based upon the input from our engineers, and will continue to be open to further discussions.

That being said, upon consideration of an excellent point made by Planning Division Director Jeff Levine at the January 13th Workshop, related to the City's executive authority to raise and/or improve any street it wants without Planning Board approval, it became apparent that while the improvements to Somerset Street are indeed related to this review process, they are not in fact directly part of it. That is, while considering the relevant contemplated improvements in the context of the Project certainly makes sense, those improvements are not—technically speaking—required to be 'approved' because the City already has the authority to make them at the present time. As such, we have held discussions with City staff about uncoupling this matter

from the list of things for which an “approval” is being sought, and instead continue to view it as a related but distinct matter. Also, on the basis of input from our engineers, we are satisfied that the concerns expressed are not justifiable and/or not related to the proposed improvements contemplated.

Concluding note

A remark was made that we should work with Portland Trails in advance of the next meeting, similar to the discussions which have taken place regarding Somerset Street, to discuss any potentially remaining issues ahead of the meeting. For the Board’s information, a tentative plan to do just that was reached on the night of the last workshop. Further information, if any, will be available at the time of the public hearing.

Thank you all, again, for your dedication to reviewing this project and for your constructive feedback at the last meeting. We look forward to the public hearing in February.

On behalf of The Federated Companies,

Patrick Venne

ATTACHMENT B

January 13 2014

Mr. Rick Knowland
Planning Department
City of Portland
389 Congress Street
Portland, ME

Reference: midtown Project
Applicant's Supplemental Information regarding B-7 Waivers

Dear Rick:

The Federated Companies respectfully provide the following supplemental information to the Level III Final Site Plan application submitted 17 November 2014 and discussed with city staff on 21 November 2014. The attached documents provide basis for the waivers requested and supplement information contained in the application.

Please note that we have deleted the request for waiver from B-3 Mid-Block Permeability previously requested, and we have modified the request for partial waiver from C-8 Service Utility and Mechanical Infrastructure previously submitted.

1. A-4 Views and Landmarks
2. B-2 Street Connectivity
3. B-7 Continuity of Street Level Uses
4. B-11 Lighting
5. C-2 Parking Entrances
6. C-5 Decks and Ramps
7. C-8 Service Utility and Mechanical
8. E-12 Materials

We look forward to discussing the project at an upcoming Planning Board Workshop.

Thank you,

David Hancock, AIA, LEED-AP

Summary of B-7 Design Standards -- 14 November 2014, revised 9 January 2015

Principle A, Urban Design			Plan for midtown Development	midtown Preliminary Level III Design
Standard A-1	Sense of Place	■	*The identity and "sense of place" of Bayside is based on design elements that contribute to the character of the district.* The Plan for **midtown** Development responds to listed characteristics as follows: • Forms strong street edge as existing pattern development; • Extends the street grid at Pearl, Chestnut, and Elm streets; • Raises Somerset St in response to flood concerns (topography); • Maintains view corridors to and between Downtown, Back Cove, Deering Oaks and the East End; • Buildings are arranged to allow access to light and air; • Street extensions and Mews provide public connection to the pedestrian and bicycle network and other public spaces; • Access to the regional transportation system is provided via Somerset St to Franklin to I-295; and • Providing an opportunity for innovative architectural and landscape design. The Plan for **midtown** Development has characteristics which strengthen the identity of the Bayside district by: • Enhancing the artistic personality of Bayside in the future;	**midtown** building designs respond as follows: • Forms street edges at Somerset, Pearl, Chestnut and Elm Streets; • Mediates the grade change between the new elevation of Somerset Street and the Bayside Trail with gentle steps and ramps; • Public Mews between Garage midtownTwo and Apartment midtownOne provides pedestrian and visual continuity of Myrtle St; • The buildings have been designed in a modern or contemporary aesthetic using a muted range of warm natural neutral colors with vibrant accents **midtown** building designs support the intent of the Plan for Development by:

			• Respecting the industrial vernacular of existing buildings; • Encouraging innovative architectural design that expresses the aesthetic of the time in which it is being built; • Strengthening the connections to adjacent neighborhoods of Bayside, Downtown, Back Cove, Deering Oaks, and the East End by providing one side of a dense pedestrian-oriented commercial spine along Somerset Street; • preserving views; • Mitigating traffic/pedestrian concerns across major streets through design of ADA access ramps and painted crosswalks; • Creating mixed retail and residential uses that have a neighborhood main street scale; • Creating neighborhood green spaces as places to gather; and • Utilizing native plant materials in landscaping. Characteristics in *The Vision for Bayside* that are not applicable to the Plan for **midtown** Development: • Encouraging adaptive reuse; • Respecting the "patina" of age and maintaining historic materials; • Mitigating the widths of the major arterials such as Marginal Way and Franklin Arterial which border the neighborhood because these arterials are not within the Development Plan area; and, • Highlighting Portland and Cumberland Streets as "Main Streets" to the traditional residential portions of the neighborhood, as these streets are not within the Development Plan area.	• Design in modern industrial style; • Innovative and contemporary use of materials and color; • Provides continuous retail frontage on Somerset and Elm Streets; • Buildings are lower than allowed heights; • Provides mixed use of residential over retail; • Provides Mews and Courtyard; enhances the Bayside Trail; and • Design will utilize drought-tolerant native and non-invasive species • No buildings exist on site; • No historic materials exist on site; • Site does not border these streets; • Site does not border these streets

Standard A-2	Edges and Transitions	■	*Transitions between larger scale mixed use buildings and smaller scale residential uses shall be designed so that there is a seamless connection.* The area planned for **midtown** Development does not directly abut smaller scale residential areas of Bayside. Its immediate neighbors are unbuilt land, an unredeveloped factory/warehouse across Somerset Street and commercial open parking lots with low-rise commercial development on the opposite side of the trail. The Plan for **midtown** Development therefore does not delineate transitions between the larger scale and the smaller scale elements of the Bayside zone. The Plan for **midtown** Development provides several open spaces that provide elegant transitions from the taller to the lower scale elements of the design (The Courtyard, The Mews, Chestnut Square, The Bayside Trail).	**midtown** buildings One, Two, Three, and Four are designed so as not to have a "back". Blank walls are avoided and service areas are internal to the buildings and utility transformers will be screened from view. The same materials are used on all sides of each building and composed to provide an inviting contemporary appearance. **midtown** design includes The Mews and The Courtyard
Standard A-3	Gateways		*Gateways serve as landmarks signal arrival and promote district identity.* As a landmark, the buildings of **midtown** Development will be visible and identifiable to vehicular traffic. This visibility and identity of place is tempered by addressing the pedestrian scale along the trail and Somerset Street. The Plan for **midtown** Development is unique as the first extensive intervention to create a walkable main street; it will create an identifiable landmark within surrounding neighborhoods and district. This landmark status will be emphasized by distinctive paving patterns, landscaping, accent lighting and way finding at the pedestrian scale.	The **midtown** apartment buildings have been designed in a unique contemporary industrial aesthetic to mark the beginning of this important development in Bayside. No less important at street level, the Garage building will feature a maximum retail frontage on Somerset Street, Chestnut Street and the Bayside Trail, enhancing the pedestrian experience. Upper levels of the garage will be clad in architecturally detailed industrial materials in context with the Apartment buildings.

Standard A-4	Views and Landmarks	□	*New development shall be designed with consideration of views and view corridors shown on Downtown Height Study and Bayside Height Overlay Map and other important views*. The Plan for **midtown** Development includes important characteristics: • Massing articulation responds to view corridors with heights substantially less than allowed • Myrtle Street and Cedar Street are not through streets to Somerset Street and are presently partially obstructed by existing buildings. • New development does not block view corridors • Roof top appurtenances will be screened from view corridors, and will not obscure important landmarks;	**midtown building** designs respond to the intentions of the Plan for Development by: • Emphasizing in its materiality and techtonic articulation at the corners while de-emphasizing the other façades; • Pearl St Extension is designed with potential to extend street grid through to Marginal Street • While the Myrtle St view corridor will be partially blocked at lower levels, The Mews provides a continuity of the pedestrian realm which will be easily visible from the lower blocks of the street; • Mechanical equipment and elevator penthouses will be screened • Buildings meet the agreed 10' setback distance from street line at ground; portions of the upper levels of **midtownThree** project two feet into this setback (that is portions of the upper levels are set back eight feet). A request for a partial waiver of Standard A-4 that requires that new development be sited so that it does not block existing view corridors, is required to allow the garage **midtownTwo** to partially obstruct the Myrtle Street view corridor and for **midtownThree** to partially obstruct the Cedar Street view corridor.

Standard A-5	Pedestrian Environment	■	*Development shall be human scale on public streets and enhance the pedestrian experience through details of design.* The Plan for **midtown** Development's public streets and public spaces will achieve a human scale at the pedestrian level through the use of: • Ground floor retail throughout; • Articulated retail façades; • High quality building materials; • Retail entries primarily oriented to the street; • Active windows and storefronts; • Awnings and weather protection; • Outdoor seating; • 'Bump outs' traffic calming; • Adequately sized sidewalks; • Appropriately scaled streetlights; • New public spaces and connection to trail; • New urban streetscape, furniture, landscaping and trees; and, • Provision for public art, by others. • Development Plan is seeking a waiver of the future extension of Cedar and Myrtle Streets.	**midtown building designs** respond to the Plan for Development intentions by providing: • Continuous retail frontage along Somerset St interrupted only by garage and service entries, and along Chestnut St and for more than half the length of the garage along the trail, and along Elm Street; • Retail façades which will be a majority clear vision glass with column and mullion articulation; • Entries will be from streets exclusively and will be protected with awnings; • Outdoor seating will be provided where space and tenant requirements allow; • Sidewalks are adequately sized and provide bump-outs at pedestrian crossings at Pearl and Chestnut streets; • Streetlights will be standard for the zone; • Connections to the trail are made at Pearl St, the Mews, Elm Street and Chestnut St; and • New paving, street furniture, landscape planting, and provision for public art will be provided; • Applicant is exploring public art in the form of large scale murals – the building elevations show potential location
Standard A-6	Mix of Uses	■	*New development in Bayside shall incorporate a mix of residential, retail, commercial, and open space uses of various types and scales.*	

			The Plan for **midtown** Development incorporates a mix of residential, ground floor retail and open space uses of various types and scales. The plan is designed to allow adaptability and flexibility of use over time.	The **midtown** buildings incorporate a mix of residential, ground floor retail, and open space uses.
Standard A-7	Building Orientation	■	*Buildings shall be located at the property street line to provide definition and character to the streets.* The **midtown** Development buildings have been located near the property street line in order to provide very clear definition and character to the street. The primary façades and entrances of buildings are oriented to streets, major pedestrian routes, or open spaces in order to enhance the pedestrian-oriented environment.	**midtownOne** apartment building is oriented with continuous retail frontage on Somerset St and The Mews; the primary apartment entrance is on Pearl St near the trail and there are secondary entrances on Pearl St nearer Somerset St and from the Courtyard; service is confined to a narrow entrance on Pearl St; tenant amenities and the residential lobby have active windows facing the trail. **midtownTwo** garage building is built out to the street line and features continuous retail development along both Somerset and Chestnut streets. **midtownThree** apartment building is oriented with continuous retail frontage on Somerset St, clerestory windows along the trail, and at the corner of Somerset and Chestnut Streets, the apartment entrance faces Chestnut Street. **midtownFour** apartment building has retail frontage on Elm Street and facing the trail, with the apartment resident and service entries from Elm St. at the southeast corner All buildings thus front on streets at property line and form a strong and active street edge.

Principle B, Access and Circulation			**midtown** Development Plan	**midtown Level III** Design Review
Standard B-1	Streets and Alleys	■	*Streets and alleys shall be scaled for expected vehicle, pedestrian, bicycle and transit activity to support mixed use development.* The Plan for **midtown** Development provides streets scaled for expected vehicle, pedestrian, bicycle, and transit activity; they support mixed use development and will be well landscaped and promote traffic calming. Somerset Street will allow for on-street parking and loading. The proposed street grid of the Plan for **midtown** Development will follow the existing scale and pattern of Portland's street grid and blocks. The plan incorporates provisions for the future extension of Pearl Street to Marginal Street.	**midtownOne, Two, Three, and Four** will include the development of streetscape to meet these standards along Somerset, Elm and Chestnut Streets. The full build-out of Pearl Street will require future property acquisition; the temporary construction of this first phase will provide a turn-around at the trail sufficient for passenger and delivery vehicles The immediate implementation will involve raising the grade of Somerset St (a B street on the *Bayside Street Hierarchy Map)*, Chestnut St, and Pearl St (both C streets in the hierarchy). Temporary transition grades will be provided at the corner of Somerset and Pearl, and at the west end of Somerset St. at Elm St.
Standard B-2	Street Connectivity	■	*The prevailing street grid of Portland (and Bayside particularly) should be extended to provide opportunities for sun and airflow.* The Plan for **midtown** Development incorporates provisions for the future extension of Pearl Street. Small block size would make the provision of an efficient parking garage impractical (as the length of ramp is determined by slope limited by code), so the Development Plan is seeking a waiver for the future extension of Cedar and Myrtle Streets.	**midtownOne** apartment and garage building projects are designed to allow a public mews space to provide a pedestrian connection from a future Myrtle St extension to the Bayside Trail and to allow airflow and sunshine. Near Elm Street, the **midtownThrree** building is held back from property line to provide a wide and clear public trail connection to future redevelopment of the

				land to the north (currently fenced parking lots) Sunlight and air are well-provided to all façades of all buildings.
Standard B-3	Mid-Block Permeability	■	*Development should incorporate mid-block permeability perpendicular (and where feasible, parallel) to Marginal Way through provision of alleys, pedestrian corridors, trail access, plazas, and pocket parks.Secondary circulation should be provided internally in larger buildings.* The Plan for **midtown** Development incorporates provisions for a new public open space connecting Somerset Street to the Bayside Trail between the first apartment and garage buildings. As with many of the larger buildings in downtown Portland, the Plan also provides permeability through the larger retail floor plates of the larger buildings between Somerset St and the Bayside Trail.	**midtownOne** apartment buildings and **midtownTwo** Garage building are sized to the smaller block sizes of the Bayside neighborhood. **midtownThree** provides retail space fronting on Somerset St and the Bayside Trail. ~~It is noted that the building opposite this building on Somerset St. has no mid-block connector and the trail adjacent to the building's north façade is defined by a berm containing stabilized contaminated soil which rises 6 feet above the floor level of the retail space. In addition there is a fenced parking lot on the north side of the trail. A mid-block connector in this instance would serve no real purpose as there would be no matching connector on the other side of Somerset St and no pedestrian connection to the trail or properties to the north – that is a connector by itself (even if it could overcome the topographic problem of the berm) would generate no foot traffic as it would not be part of a larger pattern of pedestrian movement.~~ ~~The **midtownThree** building design does, however, hold back from the property line at its west end allowing an expanded trail connection to Somerset and Elm Streets with easy and inviting access from Somerset Street~~A

				secondary circulation system will thus be provided internally in this building through the provision of glass retail facades with doors facing both Somerset St and the Bayside Trail, to allow opportunities to pass through the street level retail as incorporated in many larger buildings in downtown Portland.
Standard B-4	Sidewalks and Crosswalks	■	*All sidewalks and crosswalks shall conform to the intent of the City's Technical and Design Standards and Guidelines providing sidewalks of 12 - 15 ft width on A and B streets with bump-outs at pedestrian crossings.* The Plan for **midtown** Development incorporates new sidewalks which will be bifurcated by a grade change at Pearl and Somerset Streets as shown in the plans. However with the planned change in roadway elevation the majority of the Somerset frontage will be one continuous sidewalk without grade change. Somerset and Elm are designated 'B Streets' – the plan includes bump-outs and amenities such as tree wells, landscaping, café seating and provision for public art by others.	The **midtown** Apartment and Garage buildings will include development of detailed landscape areas on Pearl, Somerset, Chestnut, and Elm Streets, with new pavement, street furnishing and lighting.
Standard B-5	Green Streets	na		

Standard B-6	Multi-modality	■	*New development shall accommodate a full range of multi-modal transportation options including pedestrian, bicycle, private auto, delivery and pick-up vehicles, and transit users.* **midtown** Development incorporates plans for re-construction of Somerset, Pearl, and Chestnut, streets to meet the City's standards and allow multi-modal use.	
Standard B-7	Continuity of Street Level Uses	■	*Development shall provide for the continuity of pedestrian-oriented uses along Somerset Street frontage.* Unavoidable entrances to the garage of the **midtown** Development are located on Somerset street; pedestrians will be given priority by requiring cars to enter the garage at sidewalk level via a short ramp at curb edge. Service entries to residential buildings **midtownOne** and **midtownFour** are planned at the cross streets to assure maximum retail frontage on Somerset St; the service entry for **midtownThree** retail and residences will be along Somerset St, and the service entry for **midtownFour** will be near Elm St. A partial waiver is requested	A service entrance for the **midtownOne** apartment building and its ground floor retail use is provided on Pearl Street; service entrance for **midtownTwo** retail space is provided adjacent to the garage entrance; service entrance for **midtownThree** retail and residences is provided on Somerset Street, and the service entrance for **midtownFour** is provided ~~on~~ at the west end of the building, accessible from Elm Street. These service entrance doors will be about seven feet wide, will be designed as an integral part of the modern industrial aesthetic of the buildings, and will be opened only to remove trash and recycling to vehicles parked in designated service spaces. Service for the ground floor retail use in the Garage building will be provided through the front door(s) of the retail spaces from loading zones along Somerset St. Loading dock or service vehicle facilities are not planned for these retail spaces; tenants will provide for trash and recycling facilities within their leased premises.

				Retail and apartment lobbies will form more than 90% of street frontages thus assuring the maximum frontage along Somerset Street.
Standard B-8	Traffic Calming	■	*New development shall provide traffic calming on Chestnut Street where the Bayside Trail crosses and shall provide neck-downs, trees and landscaping, and crosswalks as wide as the sidewalks they serve.* The Plan for **midtown** Development provides landscape treatment and sidewalk bump-outs (traffic neck-downs) along Somerset street at crosswalks, as well as traffic calming in the form of a central island in Chestnut street where the Bayside Trail crosses.	The intersections of Pearl, Elm and Chestnut Streets with Somerset St will be constructed to city standards as part of the **midtown** construction work.
Standard B-9	Streetscape Design	■	*New Development shall utilize the City's streetscape standards for Bayside to create a unified image for the neighborhood.* The new privately owned and developed open spaces provided by the Plan for **midtown** Development will be designed to coordinate with the City's standards for streetscape design elements.	The Mews and The Courtyard at **midtownOne and Two** have been designed with paving materials, lighting, street furniture, and plant species that have been coordinated to harmonize with the streetscape standards for Somerset Chestnut and Pearl Streets. The garage green screen is intended to bring the trail landscaping into the garage building façade. Similar materials and details will be employed at the public terraces and plazas associated with **midtownThree** and **Four**

Standard B-10	Encroachments	■	*Encroachments on the public sidewalk shall be sited and designed to encourage pedestrian activity.* No encroachments are planned in the Plan for **midtown** Development.	**midtownOne, Two, Three, and Four** do not include any encroachments in the public sidewalk.

Standard B-11	Lighting	□	*Street lights along public streets shall comply with the City's Technical and Design Standards and Guidelines and shall be scaled to the size and use typical for each street.* The Plan for **midtown** Development will utilize the standard type fixture for Somerset Street, Elm, Chestnut Street and Pearl Extension. Location and spacing may need a waiver. As well, higher intensity lighting is appropriate for the retail locations especially along Somerset St and to create a uniform appearance along the ground floor retail areas of the development which may require a waiver of some requirements. Pedestrian lighting will be provided by the streetscape lighting noted above together with 'spill' lighting from retail store fronts. Lighting for the mews and new public opens spaces will be designed to compliment these standards. A waiver is requested for higher intensity lighting to support retail activity.	As **midtown** is constructed Holophane street light model for Bayside at 19' – 3" height will be used in Silver Metallic Aluminum on Somerset St and in Tribo color on Pearl, Elm and Chestnut Streets. A waiver is requested of the lighting intensity and spacing requirements for **midtown** in that all ground floor uses on Somerset St, the Mews, the Courtyard, much of the Bayside Trail, Chestnut and Elm Streets will be retail. Higher intensity lighting is appropriate for such retail locations and the design seeks to create a bright and uniform appearance along the ground floor retail areas of the development.

Principle C, Parking, Loading and Services Areas			**midtown** Development Plan	**midtown** Level III Design Review
Standard C-1	Parking Structures	■	*Parking structures shall be compatible with adjacent uses and architecture in form, bulk, massing, articulation, and materials.*	
			The Plan for **midtown** Development will incorporate architectural design elements that provide visual interest on all sides of its two garages that are visible from public rights of way. The visual impact of parking garages along Somerset, Chestnut, the Mews and Bayside Trail will be mitigated through façade articulation and use of materials in harmony with the residential buildings.	The **midtownTwo** Parking Garage will express a horizontal bay spacing of 12 ft similar to the proposed residential façades, and it will utilize a floor-to-floor dimension of 10 ft similar to the residential floors. Additionally, all buildings will take the form of predominant retail ground floor use with other uses on the upper floors. Materials for the garage will include architectural precast concrete, metal and colored accent features, all as illustrated in elevation drawings submitted.
			Internal lighting and the glare of headlights will be screened from view. Pedestrian level lighting will be provided on all public sides of the garages.	The Garage's internal lighting will be carefully designed to avoid spill and glare visible from public spaces, and pedestrian light levels along Somerset and Chestnut Streets, and along the Bayside Trail and the Mews, will be bright as detailed elsewhere.
			Garages will provide facilities for Electric Vehicle recharging	The Garage will provide 14 premium EV-ready spaces near the elevators. These spaces will include an outlet~~, pay station,~~ and appropriate signage – they will be available on both short term and monthly lease basis.
			The Garages will provide space for public commercial car share services.	Space will be provided for public car sharing programs like ZipCar ,Enterprise, or u-car. These vehicles are provided with access key-cards to operate the garage

				access and egress gates, so can be parked near the public elevator on Somerset St and available to all neighbors at any time.
Standard C-2	Parking Entrances	□	*Parking garage automobile entrances shall respect the pedestrian realm; Pedestrian entry/exit points shall be enhanced; Visual impact shall be minimized through design elements* In the Plan for **midtown** Development garages will be designed to respect the pedestrian realm and minimize the visual impact of the garage entrance and exit by collocating the garage entrance and exit. These consolidated entry/exits will provide greater uninterrupted active retail use on the ground floor and will require a waiver from the requirement for separate entry/exit. Entry/egress gates will be located interior to the garages to allow entrance queuing internal to the structure minimizing back up onto Somerset St. A waiver is requested of the requirement that entrances and exits be physically separated.	The **midtownTwo** Parking Garage will require entering vehicles to rise onto the sidewalk via a curb ramp, and thus the entering driver will know that the vehicle is being driven in a pedestrian realm. The exit ramp will be clearly signed and well lighted to alert the exiting driver that s/he will be crossing a sidewalk where pedestrians have the right of way. Entry and exit revenue control gates are located well inside the garage. Three lanes are provided with the center lane being reversible so that two entry gates can be utilized during busiest ingress times and two exit gates during the busiest egress times. In this way the queue of entering vehicles can be maintained within the garage structure. By its nature, the queue of exiting vehicles will be within the structure; but important to the pedestrian realm, the exiting driver will have a clear view of the sidewalk and traffic in both directions along Somerset Street, and will remain stopped without blocking the sidewalk until it is safe to exit. Pedestrian access/egress towers at the corners of Somerset and Chestnut, and the Mews at the Bayside Trail will provide a lighted accent at these corners, and

				provide for public view of patrons in the staircases and waiting for the elevator
Standard C-3	Active Uses	■	*Parking Structures shall incorporate liner buildings, or enclosed active uses on the first floor of A and B streets with a min clear ceiling height of 10 ft and a minimum depth from street front of 25 ft.* The garages of the Plan for **midtown** Development will exceed this standard substantially by providing active retail uses on the ground floor with a minimum of 14 foot floor to ceiling clearance height and a column spacing that allows deep commercial uses to be developed in the structures.	The **midtownTwo** Parking Garage will feature retail frontage on Somerset and Chestnut Streets and along a substantial length of the Bayside Trail. This retail accommodation is the full 120 ft depth of the building, accessible on all sides, and built with a clear height from floor to underside of structure of not less than 14 ft (for more than two thirds of the space – lower ceilings will be necessary under the access ramp)
Standard C-4	Back of Parking Structures	□	*Parking Structures that have a rear or side elevation along a public right of way or … trail… must incorporate standard E-9.* The garage~~s of~~ included in the Plan for **midtown** Development will incorporate design considerations of Standard E-9	The **midtownTwo** Parking Garage will not have a "back side" in the traditional sense of a building which utilizes a better material in a more articulated way for a primary façade and lesser materials with no articulation for others. Since the parking structure will form a façade on the Bayside Trail, and a street front on both the Mews and Chestnut St, these façades will be as articulated and be built of the same materials as the principle Somerset façade. The design for the parking garage retail façade facing the trail will provide for operable building entrances. The base building will provide clear glass at the retail frontage on the trail. However, the applicant reserves

				the right to allow tenants freedom in location of doors and windows to create attractive and efficient retail space layouts.
Standard C-5	Decks and Ramps	□	*Parking structures shall have horizontal decks on all levels where decks are visible from public rights of way. Sloped ramps shall be screened from visibility from public ways.* The garage decks of the Plan for **midtown** Development will be level on the Chestnut and Somerset St and the Mews façades, and will incorporate a parking ramp between parking levels along the Bayside Trail façade. The Plan seeks a waiver to allow these ramps to be ~~expressed~~ visible ~~to~~ from the Trail and visible tangentially from streets and public rights of way.	The **midtownTwo** Parking Garage has been designed with ramps at the Bayside Trail façade supported on sloping structure between horizontal end bays. The end bays will be clad in architectural precast concrete with openings similar in size and spacing to the apartment building windows. The sloped structure between these will be minimized, cable rails will provide for pedestrian and auto safety, and the interior structure will be a dark color, all to minimize visibility of the sloping ramps. The façade will be screened on much of it's facades above the retail ground floor with a green screen.
Standard C-6	Surface Lots	na	The Plan for **midtown** Development does not incorporate surface parking	
Standard C-7	Bike Racks	■	*Bike Racks shall be provided in a convenient location and in compliance with the City's parking standards at Chapter 14-332.1 et seq.* The Plan for **midtown** Development will incorporate bike racks conveniently located in the parking garages in compliance with the City's Off-street bicycle parking standards, that is 2 bicycle spaces for each 5 dwelling units, and 10 bicycle spaces for the first 100 non-residential car parking spaces and 1 bicycle parking space for each 20 additional car parking spaces.	Assuming 1.0 car parking spaces per dwelling unit and 445 dwelling units provided in the **midtown** apartment buildings, 445 of the Garage's 828 car spaces may be dedicated to residential uses and 383 spaces will be available to non-residential uses. The development will therefor provide the following bike spaces: • Residential use: (445/5)x2 = 178 spaces

				• Non-residential use: 10 + (142/20) = 29 spaces • Total: 207 bicycle spaces Bicycle spaces are planned at ground level beside and beneath the access ramp accessible from the Courtyard via the pedestrian lobby. Signage will indicate this location from Somerset St. Additional spaces are provided in the ground floor of **midtownFour**. Some of these spaces will be provided and designated for Bicycle Sharing programs such as Zagster, Decobike, or Alta Bicycle Share. These will be located on the Bayside Trail , and will be appropriately signed from Somerset Street.
Standard C-8	Service, Utility and Mechanical Infrastructure	■	*Service, Utility, and Mechanical Infrastructure (when installed at ground level) shall be located at the rear or side of buildings or interior to parking garages, and all such infrastructure shall not result in adverse visual, audible, or noxious impacts.* The Plan for **midtown** Development incorporates screening for infrastructure as follows: • service, utility and mechanical infrastructure will be located at the rear or sides of buildings, with underground connections; • all service, utility, and mechanical infrastructure will be visually screened;	Gas meters for commercial restaurant and café tenats will be mounted in inconspicuous places away from view from streets Utility transformers to serve the **midtownOne and Two** buildings will be located in a corner of the land dedicated to the Bayside Trail; transformers to serve **midtownThree** and **Four** will be located on the proponent's land north of the **midtownFour** building, all as shown on site plan. Transformers will be appropriately fenced for safety and screened with plant

			• roof equipment will be screened from street level visibility from public rights of way and from designated view corridors by parapets, roof screens or equipment wells; • roof equipment will be clustered to the extent practical; • residential building loading areas will be through overhead doors, in colors and finish consistent with the exterior elevations of the overall building; • no exposed to view loading docks or ramps are anticipated; and, • no outdoor storage and trash collection or compaction is anticipated that would require screening. • As the buildings have no “sides” or “backs” a waiver is sought of requirement to have service access at side or back and to allow entrance from the public way	materials.No other service equipment is planned at grade level The design of the **midtownOne** and **Three** buildings will provide roof top screening of condensing units, ventilation fans and other rooftop equipment by extending parapets on street and trail facades above the flat roofs. A penthouse will be provided which will house elevator equipment and stair to roof. Trash and recycling handling and storage at the **midtown** buildings will be entirely inside the buildings.

Principle D, Open Spaces and the Public Realm			**midtown** Development Plan	**midtown** Level III Design Review
Standard D-1	Open Space Design	■	*New publicly-accessible open spaces shall be designed to allow views from the sidewalk, street, and surrounding buildings and shall provide views into the open space as well as outward from within the space.* New public open space meeting these criteria will be provided in the Plan for **midtown** Development	The Mews and the Courtyard of **midtownTwo** and **Three** are visible from Somerset St and the Bayside Trail and provide views outward to these public rights of way. The open spaces provided adjacent to **midtownThree** and **Four** buildings widen and enhance the trailhead at Elm Street. Importantly, the development of continuous low-rise residential frontage along both Somerset Street and the Bayside Trail provide "eyes-on-the-street" a component of making public spaces feel safe and welcoming at all hours of day and night. All open spaces have been designed with a view to enhance pedestrian comfort while providing a variety of sunny and shaded areas.
Standard D-2	Bayside Trail	□	*Buildings adjacent to the Bayside Trail shall be designed so that the façades along the trail incorporate design elements that enhance the trail use such as active doors into the building, plazas, outdoor seating, and food service.* The Plan for **midtown** Development incorporates provisions to enhance the Trail by incorporating design elements that include: • new/enhanced lighting, hardscape and landscaping;	All the **midtown** buildings are designed with façade elements adjacent to the Bayside Trail that enhance the trail experience. As noted above, these façades are not designed as "backs", and they provide the important

			• active uses/doors into the buildings, • new public spaces; • opportunities for outdoor active uses and seating; and, • new public accesses to the trail from Somerset Street via Pearl Street, the Mews, enhanced Chestnut St, and Elm St. • ~~A partial waiver is sought on the requirement of having "active building ingress and egress" on the portion of **midtownThree** facing the trail due to changes in grade at the berm.~~	element of residential windows overlooking the trail. -Food service establishments are the planned as part of the retail leasing program for the ground floors of the all buildings. This may provide some entrances and egresses facing the trail.
Standard D-3	Landscaping and Street Furniture	□	• *The design shall incorporate provisions for Landscaping and Street Furniture for public and private property that is compatible with the provisions set-forth in the City's Technical and Design Standards and Guidelines. Submissions shall be reviewed by the City Arborist.* • The Plan for **midtown** Development will incorporate landscape improvements that will enhance the visual quality of the street presence and pedestrian activity zones including enhancement of the Bayside Trail that include urban compatible canopy trees, low maintenance shrub, perennials, grasses and ground cover plantings. • Plant selection will include native material where practical and appropriate and will include hardy urban material in response to the environmental conditions prevalent to the Bayside area, that include zone hardiness, soil conditions, potential tidal ground water influence, road salt conditions, low maintenance and drought tolerance	The **midtown** buildings and their site development will be designed to meet all the commitments of the approved Preliminary Site Plan

			• Currently there is no plant palate for urban street trees in the project area, placement of street trees follow the recommendations of the Technical and Design Standards and Guidelines; planters will be incorporated where grading requirements have provided the opportunity to enhance the public activity zone and incorporate trees typical of other city streets; the new planting will establish a palate for subsequent street improvements by others. • Street planting will incorporate the city standard tree grate within the public sidewalk and along portions of the trail; this enhancement will provide for extended pedestrian circulation; planters will be raised to address the grade changes that occur in response to street improvements and will be detailed to provide visual enhancement; planted areas, including street tree plantings, will incorporate methods to provide for adequate water and air to support a healthy growing condition, and will include alternative soil mixture and or structural units to enhance root zone development; plant material will be selected in response to urban conditions that include drought tolerance • No irrigation system is proposed: however, during the period of establishment watering will be incorporated as part of the required maintenance plan. Drainage is not anticipated to be an issue with the proposed plantings • No accent lighting is being proposed for plantings in the public space or private space.	

			• A maintenance plan will be provided that will establish a program for feeding, watering, pruning, damage repair, pest and weed control, and replacement of declining plant material.	
Standard D-4	Pedestrian Amenities	□	*Pedestrian amenities shall comply with the City's Technical and Design Standards and Guidelines at a minimum, and also with the streetscape standards selected for Bayside.* • Seating will be provided where appropriate in response to the provisions requiring one linear foot of seating for each 30 feet of street frontage; • Space has been allocated for a bus shelter within the Plan for **midtown** Development; • Trash receptacles and bicycle hitches will be located to maintain an unobstructed pedestrian route; at this time there are no plans to provide for mail boxes or newspaper boxes; • Following completion of the City's *Way finding Study* directional signage in compliance with the study's recommendations will be incorporated into the Plan for **midtown** Development, however pending completion of the study, the proponent requests a waiver of this provision; other signage shall conform with guidelines set-forth in Standard E-16,	Permanent seating will be provided along Somerset St; Additional loose seating will be provided controlled by the retailer at the Courtyard. Bicycle hitches will be provided along Somerset street for patrons of the retail merchants and undercover at the **midtownTwo** garage for visitors to the apartment tenants. Secure bicycle storage for employees of retailers and apartment tenants is provided in the garage (see Standard C-7 above) At a minimum **midtown** will provide street name signs at all intersections, and Bayside Neighborhood maps will be located at the Courtyard, at Chestnut Street, and along the Bayside Trail opposite the Garage building.

Standard D-5	Public Art and other special features	■	*Public Art shall be designed and implemented in accordance with the Guidelines for the City of Portland Public Art Program, shall complement the character of surrounding buildings, streets, and open spaces, and shall not obstruct pedestrian circulation.* The Plan for **midtown** Development will incorporate this requirement and identify locations for public art by others.	The **midtown** development incorporates locations for provision of public art in several locations: sculpture space in the courtyard, potential for Mural development on the Garage façades facing the Mews and the Bayside Trail, in the Chestnut Street Island and at the space to the west of **midtownThree** along Elm St. It is anticipated that the public art will be designed and implemented by others in a manner that will complement the character of the buildings, streets and open space. The proponent will actively solicit appropriate public art as the project nears completion.

Principle E, Architectural Design			**midtown** Development Plan	**midtown** Level III Design Review
Standard E-1	Architectural Design	■	*New development shall create a mixed-use, pedestrian-friendly setting that contributes to the neighborhood context of the surrounding urban fabric, contributes positively to a new identity for Bayside, and provides a sensitive transition to the adjacent residential community.* As noted above the Plan for **midtown** Development incorporates mixed residential and retail uses forming one side of what will eventually become a pedestrian oriented retail street linking Trader Joe's to Whole Foods. The residential density associated with this plan will assure success of the retail development, bring active life to the streets evenings and weekends, and provide added variety to residential offerings by providing for a contemporary urban lifestyle. Architectural design of all buildings will be "modern industrial" incorporating twentieth and twenty-first century materials and sensibilities derived from industrialized production and building techniques. The building designs are intended to be both of their time and timeless – to bridge the century from the neighborhood's railroad/industrial past to its mixed residential future.	The buildings of **midtown** are unambiguously modern buildings with an economy of expressive means using unadorned industrial materials to achieve great effect through judicious use of accent colors. These buildings, while be designed with a modern architectural vocabulary, and reflect their obligation to be 'citizens of their own time and place.' They are designed to be good neighbors, deferring to local vernacular architecture and, where appropriate, borrowing and taking fundamental design lessons in form, proportion, and fenestration rhythms.
Standard E-2	Height	■	*Building heights shall meet those approved in the Bayside Height Overlay Map as amended by any later regulations. Street wall heights shall be stepped back 15 feet above 4 stories. Roofline shall create visual interest on the skyline.*	

			The buildings of **midtown** Development Plan will conform to the heights noted on the Bayside Height Overlay Map of 4/09/2006 (105 and 125 feet). The street wall on Somerset Street will be characterized by façades creating visual interest at the skyline.	The buildings of **midtown** follow the development plan intentions directly. Both the apartment buildings and the garage will be articulated with vertical elements which will terminate at the roofline to provide interest at the skyline. The low-rise buildings (**midtownOne, Three, and Four**) will not have upper level façade setbacks, however the façade of **midtownThree** will be varied through bays set two feet proud of the main façade, and upper level setbacks and varied parapet heights to create a visually interesting skyline. The **midtownTwo** garage building will not feature setbacks.
Standard E-3	Massing	□	*The composition of proposed building façades shall be defined by horizontal and vertical articulation with the vertical predominating; large expanses of undifferentiated uniform cladding are not allowed along public rights of way.* The residential buildings within the Plan for **midtown** Development along Somerset Street will feature a prominent, transparent, brightly lit retail use at ground level and cornice and parapet articulation at the roof line. Collectively these use differentiations, setbacks, and roofline articulations will support a reading of the massing as to having a base, middle and top.	The **midtown** buildings are characterized by not having "backs" – that is they will be seen equally from all directions. As such, careful attention has been paid to the composition of each façade to minimize or eliminate undifferentiated expanses of façade and to provide a degree of articulation in all façades. The organization of residential scale windows is presented in multiple ways. The garage design supports a reading of the massing as to having a base (retail development) and top (through articulation of cornice elements). A waiver is sought for the garage to accept this definition. At the pedestrian level the garage is characterized as not

				having a back. The rhythm of retail use and its storefront will create a sense of vitality facing the Bayside Trail. The garage upper levels will be minimally articulated, including green screening, but using the logic of its structural system to express its quiet honesty in the use of architectural precast concrete.
Standard E-4	Articulation	□	*Façades visible from public rights of way shall incorporate design elements that break the façades into components scaled to the pedestrian, and shall not be blank, flat, unadorned, or repetitive.* Per Standards E-2 and E-3 above the building massing of the **midtown** Development will break down the scale into base, middle, and top by articulation of window detailing, wall color and material, and changes in pattern and texture. Reveals, expansion joints, trim and permanent artwork by others will contribute as well. The base of the buildings will be commercial retail use and will exhibit materials durable in nature and of high quality. Storefronts and weather protection for pedestrians will further accentuate these façades and reinforce the pedestrian scale. Transparent display windows will be used at the retail façades at the pedestrian level. Effort will be made to encourage retailers to maintain transparency inside the glass.	As designed, none of the façades of the **midtown** buildings can be characterized as "blank, flat, unadorned, or repetitive."
Standard E-5	Flexibility of Interior Layout	■	*The first 40 feet of depth of floor area along street frontages shall be laid out to accommodate retail uses. Placement of permanent building elements at the ground level shall be designed to accommodate the broadest*	

			possible variety of layouts. The Plan for **midtown** Development anticipates buildings that will have tall largely open retail spaces facing all public streets and the Bayside Trail. Access to upper levels (residential service, elevator, and lobby spaces, and garage entrance/exit gates and ramps) will be concentrated or clustered to provide the maximum of open leasable space within. Egress stairs from upper levels will be driven to non-storefront façades to the extent feasible.	**midtown** offers commercial interior layouts that are flexible and oriented to the sidewalk, mews courtyard, and trail. The residential buildings provide a retail storefront rhythm allowing retailers a flexible module to merchandise their frontage. The garage has a structural bay spacing of 24 feet by 60 feet making it a unique high quality offering for commercial tenants. The vertical floor to floor dimension of the first floor of all buildings will 18 feet, a dimension matching and exceeding commercial market expectations.
Standard E-6	Entrances	■	*Buildings along public streets shall have their primary entrances oriented to the street.* Primary public entrances to the buildings proposed in the Plan for **midtown** Development will be on Somerset, Pearl, Chestnut, and Elm Streets. A second entrance to the garage will be located nearer the Bayside Trail open spaces.	The primary resident entrance to the **midtownOne** apartment building will be along the extension of Pearl Street, undercover, near the intersection of the Bayside Trail. A secondary key access entry will be located nearer to Somerset St for resident convenience. The primary resident entrance to the **midtownThree** apartment building will be along ~~Chestnut~~ Somerset Street and the resident entry to the **midtownFour** apartment building will be along Elm Street. The primary public egress from and access back to the parking levels of the **midtownTwo** parking garage will be at the corner of Chestnut and Somerset Streets. A secondary entrance to the garage will be located at the Courtyard along the trail.

Standard E-7	Windows	■	*Windows appropriate to the overall building style and scaled to overall massing shall be located on all façades visible from public rights of way. First floor visible light transmittance shall not be less than 0.7 and vision glass shall occupy at least 50% of the street frontage from 2 to 9 feet above the sidewalk. Upper floor windows shall likewise transmit at least 0.7 of visible light, and shall constitute 15 to 40 percent of façade surface area.* The retail frontage of all buildings in the **midtown** Development will comply with this requirement. The upper levels of the residential buildings will similarly comply. The garages will not have windows, but will be articulated with a window-like pattern of openings and screening designed to compliment the adjacent residential buildings.	The **midtown** apartment buildings have windows located on all façades with a ratio of 35% vision glass area. The retail frontage of the buildings between 2 and 9 feet above the floor is 80% vision glass. All vision glass facing public ways and the trail will be clear un-tinted non-reflective low-e coated insulating glass units with a visible light transmittance of over 70%
Standard E-8	Storefronts	■	*Storefronts shall be designed to accommodate doors at regular intervals to allow for flexibility over time.* The retail storefronts of the buildings in the **midtown** Development will have regularly spaced access door panels at each side of the columns along public streets.	As discussed in a previous application for this building site the **midtownOne** building may have overhead glass doors along Somerset Street, the Mews, and the Courtyard to allow the space to open up when feasible in good weather. Regular side hinged doors will be provided beside each overhead door to allow access and egress when the larger doors are closed. As the leasing plan is finalized, some bays of the storefront may need to be either fixed glass, or opaque material to suit the needs of the retailers. The applicant must retain the greatest practical flexibility to assure successful leasing of the retail space. Therefore final details of storefronts in all four buildings are subject to the needs of retailers. Certain areas may

				be fixed glass others may feature roll-up doors, some areas may need to be opaque -- but the street fronts will feature wide clear storefront glazing and regularly spaced doorways to the greatest extent allowed by practical leasing considerations. Those areas of fixed glass and opaque areas will exhibit the same layout pattern as the mullions of the of the other storefronts.
Standard E-9	Back Sides of Buildings	□	*The back sides of buildings … along the trail shall incorporate high quality materials, transparency, operable building entrances, and other design features consistent with the primary façades.* As noted elsewhere, the buildings constituting the **midtown** Development do not have "back sides" in the traditional sense; all sides of all buildings will be formed of the same palette of high quality materials incorporating a similar range of details and style. A partial waiver is sought on the requirement of having "operable building entrances" on the back portion of the **midtownThree** due to natural changes in grade and safety concerns.	**midtown** is characterized as a design without a back. Elevations not facing the street or other public ways or trail are designed to the same high quality standards as those facing streets. Utility meters, exhaust vents and other mechanical appurtenances will be screened from view to the extent practical within the constraints imposed by utility companies.
Standard E-10	Rooftop Appurtenances	■	*Rooftop appurtenances shall not be visible along or block view corridors or views to specific landmarks.* Mechanical and other equipment on the residential building roofs in the **midtown** Development will be screened from view. Screens will be formed of the same palette of materials forming the primary façades of the buildings. Garage rooftop decks will be used for parking and will generally have no roof top appurtenances.	The roof top screen material for the three **midtown** apartment buildings follows the design logic of each building as a whole with the goal of presenting the "top" of the building as a unified design. The exterior appearance, scale, shape and material choice conforms and is consistent with the rest of the building.
Standard E-11	Fences and	■	*Fences and walls along public ways shall be designed of*	

	Walls		*high quality materials appropriate for the locations in which they are shown. Chain-link fences, plastic fences or fences rural in character are not allowed.* No fences are planned in the **midtown** Development area. Walls at changes of grade at the public areas will be of durable masonry materials. The required fence at the north side of the raised trail will not be chain link	Walls at changes of grade at the public areas of **midtown** will be of durable masonry materials.
Standard E-12	Materials	□	*Façades visible from public rights of way shall consist of natural and authentic building materials that are expected to last 50 years.* The buildings in the **midtown** Development will be clad in precast concrete, EFIS~~, vinyl~~ -or other siding materials, corrugated metal siding, with vinyl residential windows and enameled aluminum and glass storefront window and louver systems. All materials will be chosen for durability and long service life. A waiver is being sought of Standard E-12 for the use of EFIS ~~and vinyl~~ or cement composite siding panels. Building material technology has evolved in recent years with offerings of higher strengths, a broader range of color ~~and~~ pattern and surface texture choices, and the ability to vary forms within a façade composition. These materials can have a handsome, elegant appearance when assembled in architecturally considered designs. Additionally the performance of these materials is very well understood and their use rivals the age and performance of heavier exterior materials like masonry or concrete.	The four buildings of **midtown** are decidedly modern, expressive of the aspirations and ambitions of today's urban citizen. The material choices are important, and sustain a cohesive, integrated image of the buildings while providing intrinsic differences between each. The **midtown** apartment buildings have been designed using high quality, durable materials that age and perform well and that are appropriate for buildings of this low-rise scale. The **midtownTwo** garage building has been designed to be built of precast concrete structural and architectural cladding elements with detailing and accents in architectural metals consistent with the materials used elsewhere in the development and in the district.
Standard E-13	Transparency	■	*Windows shall use untinted or lightly tinted glass.* The buildings in the **midtown** Development will use clear	As noted in standard E-7, the **midtown** apartment

			vision glass with high visible light transmittance for windows facing the street, trail, and other public ways.	buildings will comply in that all windows facing public ways will be clear glass. The **midtownTwo** garage building has windows only in the retail storefront. These will also be clear glass. However, there are areas of storefront, particularly where the garage ramp rises along the Bayside Trail façade, in which opaque spandrel glass will be employed to hide the sloped structure behind while maintaining the orthogonal fenestration pattern.
Standard E-14	Illumination	■	*Prominent façades shall be lit by carefully designed downwash systems consistent with the City's Revised Lighting Standards for Architectural Up-lighting and Standard B-12* The Plan for **midtown** Development may incorporate carefully designed façade lighting of appropriate color and intensity consistent with garage and residential buildings.	Architectural façade lighting at **midtown** will be confined to the garage façades, the retail façades, and the public art offerings.
Standard E-15	Weather Protection	■	*Pedestrian sidewalks and walkways shall include weather protection at entrances appropriate for retail environment use.* The Plan for **midtown** Development will provide awnings along retail frontages and entrances on Somerset, Chestnut, Pearl, and Elm Streets.	The Somerset Street frontage of the **midtownOne, Two and Three** buildings will have awnings at the storefronts to provide weather protection. The apartment entrances on Pearl, Chestnut, and Elm Streets will be provided with modest glass and aluminum canopies for protection. As there will be no doors to the open stairways, the garage auto entries will have small glass and aluminum canopies more to mark the entry point on the façade and support signage than to provide weather

				protection.
Standard E-16	Signage	■	*Signage should be related to and an integral part of the design of a building, composed of new materials; lighting techniques, and graphic images shall be allowed where it will not have a detrimental effect on the pedestrian environment and character of surrounding buildings.* The Final Level III Site Plan for the **midtown** Development contains a signage plan submitted with the site plan approval package. Signage on buildings will be related to and be an integral part of the design they are part of.	The apartment Buildings and the garage of **midtown** will have building-integrated sign features incorporating graphics, color, and subtle lighting. A Sign Plan is being submitted showing and describing the location of building identity and address signs, and tenant signage. Limits on number and size of individual signs and total area per façade will be noted.
Standard E-17	Historic Buildings	na		
Standard E-18	Sustainable Design	■	*Property that is conveyed by the City shall be developed in a manner that is certifiable according to the current relevant standards for building and neighborhood development of the USGBC's LEED program.* The **midtown** Development will consist of buildings designed to meet LEED-NC or LEED-C&S requirements. These buildings, if registered, supervised, inspected, and administered correctly, and if built according to design, would be able to achieve certification.	A LEED checklist is provided for each **midtown** apartment building and the shell retail space of the parking garage showing how each would be able to earn the necessary prerequisites and credits to achieve Certification. See Exhibit 25.
Standard E-19	Shadows	□	*New development shall not increase the area of the Bayside trail in shadow by more than ten percent during the period from March 21 to September 21* The B-7 Zone is exempt from the requirements of Section	An analysis showing the shadows at 9:00, 12:00 and

			11 of the city's technical manual.	3:00 on the solstices and equinoxes has been prepared for **midtown** to show the extent and duration of shadows on the Bayside Trail and indicate the shadow in each instance which is in excess of a building 65 ft tall built at the property line. This analysis (Exhibit #20a) provides commentary on any change to the usefulness of the Trail as a result of the new shade. As noon on the solstices appears to be the time at which the greatest added shadow falls on the trail, this time was chosen to analyze the numerical extent of that added shadow. Area measurements for this time period show less than 5% increase of shadow on the trail and other public spaces beyond the shadow of 65 ft tall buildings will result from the construction of the **midtown** buildings.
Standard E-20	Wind	■	*Consideration of wind impact relating to new construction shall establish and maintain a comfortable pedestrian environment.* As the buildings are all substantially lower than the limits of height prescribed for the project area, and are consistent with the height of other recent developments in the district that have not experienced uncomfortable winds, the proponent seeks clarification that a detailed professional wind study will not be required for Final Level III Site Plan review	Initial assessment of wind roses and anecdotal reports suggest that winter winds from the North and Northwest might cause probable discomfort for sitting activities in the Courtyard if **midtownOne** were built to 165 feet tall. The building is proposed at 72 feet however, and accordingly any effects of wind would be attenuated substantially Summer winds from the South will be tempered by topography and existing construction south of the project site. The tendency for the south wind to concentrate in the Mews will be mitigated by the

				openness of the garage. Other uncomfortable winds previously predicted for walking at the Elm St end of the trail, predicated on a pair of 165 ft high buildings, would be similarly attenuated in the proponent's current proposal to build **midtownThree** and **midtownFour** as substantially lower 72 ft high buildings. It is highly improbable that pedestrians on the trail, Elm St, or Somerset St in this vicinity would experience any discomfort due to wind while sitting, walking, or jogging. As no dangerous wind conditions were found for any spaces with the taller buildings, so no dangerous wind conditions will result from the substantially shorter buildings.

Standard A-4 Views and Landmarks

The applicant requests a limited variance of the requirements to provide open view corridors along north-south streets for the reasons stated below. As noted, the project as a whole complies with the intent to keep street views open.

The existing blockage of the Cedar Street and partial blockage of Myrtle Street view corridors, which are constraints relating to building design and lot configuration, as well as other factors are *extraordinary conditions* of the midtown site. The topmost story of the proposed buildings may intrude slightly into these view corridors. if the applicant were required to lower these buildings *undue hardship* might result from such strict compliance. *Substantial justice* will be done and the *public interest will be secured* with the variation in that the open sky and distant views will be preserved. This variation will allow the garage building, midtownTwo, and the residential building, midtownThree, to minimally obstruct the Myrtle and Cedar Street view corridors without compromising the quality of the distant views.

Standard B-2 Street Connectivity

The applicant requests a waiver from the extension of street grid pattern that the public interest may be secured with this variance.

That Cedar and Myrtle streets do not abut the subject property is an *extraordinary condition* of these sites not applicable to sites where these streets do abut. The applicant's proposed mews provides an alternate access between Somerset Street and the trail; the applicant has designed the project to extend Pearl Street; and the applicant proposes enhanced open access to the trail at Elm and Somerset streets.

Undue hardship would result from strict compliance, *substantial justice* will be done, *the public interest will be secured* with this variation, and the variation is *consistent with the intent to the ordinance* in that the existing street grid of Bayside has been preserved and will be substantially enhanced.

Standard B-7 Continuity of Street Level Uses

The applicant requests a waiver from the prohibition of service and vehicular entrances to the buildings of midtown along Somerset and Elm streets on the basis that *extraordinary conditions* exist at these sites which have led to this choice and that *hardship* for the applicant would result from strict compliance with standard B-11.

The sites are relatively narrow and located between the Bayside Trail and Somerset Street. While access to the midtownOne has been successfully located on a raised portion of Pearl Street, midtownTwo and Three are prevented access from Chestnut Street by the center island and slope. MidtownFour has street frontage only on Elm Street.

The location of such entrances on Somerset and Elm streets is *unavoidable* due to block configuration. *Undue hardship* would result from strict compliance but *substantial justice* may be done, the *public interest will be secured* with the variation. The variation is *consistent with the intent of the ordinance*, in that the applicant will take care to assure that the pedestrian environment will remain attractive and safe, and required interruptions are minimized in number and length to allow a maximum of retail frontage.

Standard B-11 Lighting

The applicant requests a waiver from strict compliance with the lighting requirements of the Technical and Design Standards and Guidelines for the street light spacing along Somerset street on the basis that *extraordinary conditions* exist at this site which have led to the spacing shown on the site plan.

The street lighting has been co-ordinated with tree placement, existing and proposed utility structures, required service and vehicular entrances, steps and ramps, bus stop, and accessible crosswalks. The result is non-standard spacing.

The proposed lighting plan will enable and enhance retail and pedestrian sidewalk lighting conditions on Somerset Street and *undue hardship* might result from strict compliance. *Substantial justice* will be done, the *public interest will be secured* with the variation, and the variation is *consistent with the intent of the ordinance*, in that the lighting will be scaled to the size, use, and traffic volumes of the streets and trail in order to provide an efficiently-lit, attractive, pedestrian-friendly urban street.

Standard C-2 Parking Entrances

The applicant requests a waiver from the requirement to separate entrance from exit at the midtownTwo parking garage.

A single wide common curb-cut is proposed for both entry and exit from the garage. Access and exit gates are located well inside the garage to provide sufficient off-street queuing space. There will be three gates allowing double inward or outward flow at peak times. The exit will be designed to inform the exiting driver of the sidewalk pedestrian realm. *Undue hardship* would be caused if substantially separate ingress and exit ramps were required.

The shallow lots and constrained garage layout constitute an *extraordinary condition* of this site and undue hardship would result from strict compliance. *Substantial justice* may be done the *public interest will be secured*, and the variation is consistent with the *intent of the ordinance*, in that the pedestrian realm is favored by minimizing the number of interruptions to the retail frontage and all other requirements of the standard will be met.

Standard C-5 Decks and Ramps

The applicant requests a waiver from the requirement to have horizontal parking decks on all facades of the midtownTwo garage visible from public rights of way on the basis that *extraordinary conditions* exist at this site, and that *undue hardship* for the applicant would result from strict compliance with standard C-5.

The garage is the most efficient possible layout with five percent sloped parking ramps on the trail side and level decks on the Somerset Street side. The garage exactly fits the available site. The sloped ramps are screened with durable materials to give the façade an orthogonal appearance consisting of screens mounted in horizontal and vertical framework.

The shallow lot and constrained garage layout are the only feasible layout and *undue hardship* would result strict compliance by requiring substantially less efficient layouts. *Substantial justice* will be done, the *public interest will be secured*, and the variation is *consistent with the intent of the ordinance*, in that the unavoidable sloped ramps will be screened with façade materials with horizontal and vertical members.

Standard C-8 Service Utility and Mechanical Infrastructure

The applicant requests a waiver from the requirement that service equipment and infrastructure be located at the side or back of the buildings. The sites exhibit the *extraordinary condition* that there are no sides or backs – all facades are visible from the public right of way.

Except for midtownFour, which shares a common property line with Trader Joes, all facades of the buildings of midtown face public rights of way -- Pearl, Chestnut, Elm, and Somerset Streets, the Mews, and the Bayside Trail. Where feasible, utility infrastructure will be placed interior to the buildings, or in the case of utility transformers, placed underground; where utility equipment must be located outside, it will be screened from view or unobtrusively integrated with the design of the buildings.

Because these buildings have no side or rear elevations, *an extraordinary condition* exists *and undue hardship* would result from strict compliance with these requirements. *Substantial justice* will be done, the *public interest will be secured*, and the variation is *consistent with the intent of the ordinance*, in that utility and mechanical Infrastructure, loading docks, delivery areas, will be internal or screened as required.

WRITTEN REQUESTS FOR WAIVERS FROM SITE PLAN OR TECHNICAL STANDARDS

PART 1 –WAIVER REQUEST FOR BUILDING AND B-7 STANDARDS PREPARED BY CBT ARCHITECTS

~~1. Applicant requests waiver from Standard B-3 requirement to provide mid-block permeability through **midtownThree** block between Chestnut and Elm Streets, connecting Somerset Street to the Bayside Trail.~~

~~**midtownThree** provides retail space fronting on Somerset Street which is designed as "through space", that is, allowing a visual connection through to the Bayside Trail beyond. It is noted that the building opposite this building on Somerset Street has no mid-block connector and the trail adjacent to the building's north facade is defined by a berm containing stabilized contaminated soil which rises 6 feet above the floor level of the retail space. In addition, there is a fenced parking lot on the north side of the trail. A mid-block connector in this instance would serve no real purpose as there would be no matching connector on the other side of Somerset Street and no pedestrian connection to the trail or properties to the north – that is a connector by itself (even if it could overcome the topographic problem of the berm, would generate no foot traffic as it would not be part of a larger pattern of pedestrian movement.~~

~~The building design does, however, hold back from the property line at its west end allowing an expanded trail connection to Somerset and Elm Streets with easy and inviting access from Somerset Street.~~

~~2.~~1. Applicant requests waiver from Standard B-7 requirement to provide continuity of street level uses along Somerset, Chestnut, and Pearl Streets.

A service entrance for the **midtownOne** apartment building and its ground floor retail use is provided on Pearl Street; service entrance for **midtownTwo** retail space is provided adjacent to the garage entrance; and the service entrance for **midtownThree** retail and residences is provided on Somerset Street.~~, and the~~ The service entrance for **midtownFour** ~~is provided~~will; be located on the west end of the building and accessed from a driveway off ~~on~~ Elm Street.

These service entrance doors will be from seven feet to eleven feet wide, will be designed as an integral part of the modern industrial aesthetic of the buildings, and will be opened only to remove trash and recycling to vehicles parked in designated service spaces.

Service for the ground floor retail use in the Garage building will be provided through the front door(s) of the retail spaces from loading zones along Somerset Street.

Loading dock facilities are planned only at buildings one and three; for retail spaces tenants will provide for trash and recycling facilities within their leased premises.

Retail and apartment lobbies will form more than 90% of street frontages thus assuring the maximum frontage along Somerset, Chestnut, and Pearl Streets. Elm Street is planned to have continuous retail frontage.

~~3.~~2. Applicant requests waiver from Standard B-11 requirement to comply with City's Technical and Design standards for street lighting along Elm, Somerset, Chestnut, and Pearl Streets.

The Plan for **midtown** Development will utilize the standard type fixture for Somerset Street, Elm, Chestnut Street, and Pearl Extension. Location and spacing may need a waiver. As well, higher intensity lighting is appropriate for the retail locations especially along Somerset Street and to create a uniform appearance along the ground floor retail areas of the development which may require a waiver of some requirements.

Pedestrian lighting will be provided by the streetscape lighting noted above together with 'spill' lighting from retail store fronts.

Lighting for the mews and new public opens spaces will be designed to complement these standards.

~~4.~~3. Applicant requests waiver from Standard C-2 requirement to separate vehicular entrance and exit from parking garage.

In the Plan for **midtown** Development, garages will be designed to respect the pedestrian realm and minimize the visual impact of the garage entrance and exit by collocating the garage entrance and exit. These consolidated entry/exits will provide greater uninterrupted active retail use on the ground floor and will require a waiver from the requirement for separate entry/exit.

Entry/egress gates will be located interior to the garages to allow entrance queuing internal to the structure minimizing back up onto Somerset Street. The in-bound queue length from garage façade to gates is about 180 feet, allowing space for 9 cars at 20 feet. The peak queue for this 800 car garage is expected to be no more than 8 cars, thus the in-bound queue will not extend across the sidewalk.

~~5.~~4. Applicant requests waiver from Standard C-5 requirement that garage decks shall be horizontal where visible from public ways.

The garage decks of the Plan for midtown Development will be level on the Chestnut and Somerset Street and the Mews facades, and will incorporate a parking ramp between parking levels along the Bayside Trail façade. The Plan seeks a waiver to allow these ramps to be expressed to the Trail and visible tangentially from streets and public rights of way.

The **midtownTwo** Parking Garage has been designed with ramps at the Bayside Trail façade supported on sloping structure between horizontal end bays. The end bays will be clad in architectural precast concrete with openings similar in size and spacing to the apartment building

windows. The sloped structure between these will be minimized, cable rails will provide for pedestrian and auto safety, and the interior structure will be a dark color, all to minimize visibility of the sloping ramps. The façade will be screened above the retail ground floor with green or other appropriate screening materials.

~~6. Applicant requests a partial waiver from Standard D-2 requirement that buildings adjacent to the trail have active doors into the building on facades facing the trail.~~

~~All the **midtown** buildings are designed with façade elements adjacent to the Bayside Trail that enhance the trail experience. As noted above, these facades are not designed as "backs", and they provide the important element of residential windows overlooking the trail. Food service establishments are the planned as part of the retail leasing program for the ground floors of the all buildings. This may provide some entrances and egresses facing the trail.~~

~~The partial waiver is sought on the requirement of having "active building ingress and egress" on the portion of **midtownThree** facing the trail because of natural changes in grade. The trail adjacent to the building's north facade is defined by a berm containing stabilized contaminated soil which rises 6 feet above the floor level of the retail space. It would be impractical to create entrances form the berm, and a hardship to remove it.~~

~~7.~~5. Applicant requests a waiver from Standard E-12 requirement that building facades visible from the public rights of way shall consist of natural building materials

The buildings in the **midtown** Development will be clad in precast concrete, EFIS, aluminum, vinyl, or other siding materials, corrugated metal siding, with vinyl residential windows and enameled aluminum and glass storefront window and louver systems. All materials will be chosen for durability and long service life. These materials are manufactured for durability and long life, and will be detailed to stand up to all the rigors that the New England coastal climate offers.

A waiver is being sought of Standard E-12 for the use of EFIS and ~~vinyl~~ metal or cement composite siding panels. Building material technology has evolved in recent years with offerings of higher strengths, a broader range of color ~~and~~ pattern and surface texture choices, and the ability to vary forms within a façade composition. These materials can have a handsome, elegant appearance when assembled in architecturally considered designs. Additionally the performance of these materials is very well understood and their ~~use~~ lifetime performance rivals the ~~age and~~ performance of heavier exterior materials like masonry stone or concrete.

~~8.~~6. Applicant requests clarification that a wind study will not be required under Standard E-20, or if required a waiver from such study.

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As the buildings are all substantially lower than the limits of height prescribed for the project area, and are consistent with the height of other recent developments in the district that have not experienced uncomfortable winds, the Applicant seeks clarification that a detailed professional wind study will not be required for Final Level III Site Plan review

Initial assessment of wind roses and anecdotal reports suggest that winter winds from the North and Northwest might cause probable discomfort for sitting activities in the Courtyard if midtownOne were built to 165 feet tall. The building is proposed at 72 feet however, and the effects of wind would be attenuated substantially. It is therefore highly probable that users seated in the courtyard would find these winter winds uncomfortable.

Summer winds from the South will be tempered by topography and existing construction south of the project site. The tendency for the south wind to concentrate in the Mews will be mitigated by the openness of the garage.

Other uncomfortable winds previously predicted for walking at the Elm Street end of the trail, predicated on a pair of 165 ft. high buildings, would be similarly attenuated in the Applicant's current proposal to build midtownThree and midtownFour as substantially lower 72 ft. high buildings. It is highly improbable that pedestrians on the trail, Elm Street, or Somerset Street in this vicinity would experience any discomfort due to wind while sitting, standing still, walking, or jogging. concrete.

~~9.~~7. Applicant requests ~~requests~~ a waiver from Section 14-296 a.ii. requirement that parking garage façade be set back a minimum of 35 ft from the street right of way.

Due to the shallow nature of the lot and the city's desire to create active retail street frontage on Somerset Street the façade of the building is set back ten ft. and continuous retail frontage is provided at ground level.

~~**10.**~~ Applicant requests an exception from Section 14-334 (a) and (b) to allow parking serving midtownFour to be located in midtownTwo, and to allow ownership of the parking separate from ownership of the residential and retail buildings.

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The entrances to the garage and the midtownFour buildings are more than 100 ft but less than 1500 ft apart. The four buildings are being developed as a single project but the applicant wishes to reserve the right to finance or sell each building separately at any time in the future. As the garage will always be a resource to the neighborhood, residents of the other three buildings will always be able to park their vehicles in it.

PART 2 – WAIVER REQUEST FOR CIVIL DESIGN PREPARED BY FST ENGINEERS

~~11.~~8. 1.4 Street Grades (reference page 3 of Technical Standards)

- *The cross slope for local streets shall be 0.03. The cross slope for other street classifications shall be 0.02.*

The project will require the reconstruction of Somerset Street. The building will be set at elevation 12.0 to be 2 feet above the higher flood hazards anticipated to increase over time. There are existing buildings with finish floors ,entrances, and exits at lower elevations. The Federated plan for the midtown project has extensive r ground floor retail which requires flush accessible entrances. On the other hand, there are existing buildings across the street (most notably the "Noyes" property with existing floors and entrance elevations which will not be change. Because the buildings on either side of the street are near or on the right of way, some variation from transverse slopes and location of the street crown from the City's typical cross section within the street right of way will be required.

~~12.~~9. 1.5 Vertical Alignment: Parabolas at grade changes (K values) (Reference Pages 3 & 4 of the Technical Standards)

The profiles for the reconstruction of Chestnut, Somerset, Elm and Pearl Streets will be provided with the final application. Minor variations from the City Standards for the "K" values (30 and 40 for crests and sags) will be requested.

It is anticipated, the variation of the K value for the sags on Chestnut Street is expected to have a "K" value of 37.50 and Elm Street is expected to have a value of 39.89.

~~13.~~10. Section 2 – Sanitary Sewer and Storm Drain Design Standards

2.7.8. No storm drain lines, with the exception of field inlets and underdrains, shall be connected into a catch basin structure (Reference Page 82 of the Technical Standards)

Representatives from the City of Portland have indicated the technical standards are being revised and will remove this restriction. If the standards are revised soon, this waiver will not be required. The waiver is very important to avoid excessive piping and appurtenances in the public streets.

~~14.~~11. Section 5

Portland Stormwater Management Standards and MaineDEP Chapter 500 Stormwater Management (Reference Page 149; Section E. 2 6 of this Chapter of the Technical Standards)

The requirements include stormwater detention for flood control. The applicant is requesting a waiver to the requirement for detention as part of the Stormwater Management Plan. The location of the site within the watershed results in a condition where passing flow from this area as soon as possible allows capacity to free up to receive and convey flows from upstream areas.

~~15.~~12. Section 7

Soil Survey Standards (Reference Page 209 of the Technical Standards)

The applicant is requesting a waiver from the City of Portland's requirement to provide a high intensity soil survey. This request is made after considering that the site is on fill land, the site has been heavily disturbed as part of environmental cleanup measures over the past several years, the site will be nearly impervious after development such that hydrologic soils rating is not a significant issue.

PART 3 – WAIVER REQUEST FOR LANDSCAPING AND LANDSCAPE PRESERVATION PREPARED BY MITCHELL & ASSOCIATES

~~16.~~13. 4.6 Street Trees:

The applicant is requesting a waiver of the requirement for providing one street tree per residential unit. The maximum number of units proposed for "midtown One" three and four is 440 units. A total of 100 trees are being provided along Elm Street, Chestnut Street, Somerset Street, Pearl Street and along the Bayside Trail. The request is based upon the enhanced planting method that includes 4 FT x 8 FT raised (granite curb) planting beds and a structural planting system below grade that provides for an expanded root zone that is approximately 60 % larger than typical street tree planting area. There will be 30 locations where this condition occurs.

B-7 MIXED USE URBAN DISTRICT DESIGN PRINCIPALS AND STANDARDS

PRINCIPAL D OPEN SPACE AND PUBLIC REALM

~~17.~~14. Standard D-3 Landscaping and Street Furniture:

Planters, wells and tree grates: *The applicant is requesting a waiver for raised planting beds associated with the ramp system located within the right of way that occur along the Somerset Street sidewalk adjacent to Pearl Street extension and Elm Street as designed.*

Irrigation and Drainage: *The applicant is requesting a waiver of the requirement for an irrigation system. All plant material selected shall conform the city standards, be selected for drought tolerance in addition, will be located in larger raised planting areas.*

ATTACHMENT C

Portland, Maine Yes. Life's good here.

Michael J. Bobinsky
Director of Public Services

REVISED COPY
13 January 2015

Mr. Bo E. Kennedy, P.E.,
Project Engineer,
Fay, Spofford & Thorndike,
778 Main Street, Suite 8,
South Portland, Maine 04106

RE: The Capacity to Handle Wastewater Flows, from "midtown," the Mixed Use (Residential, Retail, Parking Garage) Development Towers Proposed by Federated Companies, along The Northern Side of Somerset Street (23-63 Somerset), between Pearl Street Extension and Chestnut Street, and Continuing along The Northern Side of Somerset Street (69-105 Somerset), from Chestnut to Elm Street, including (127-161 Elm Street) also.

Dear Mr. Kennedy,

The existing thirty-six inch, fifty-four inch, and sixty-six inch reinforced concrete sewer pipes, located in Somerset Street, have adequate **capacity to transport,** while The Portland Water District sewage treatment facility, located off Marginal Way, has adequate **capacity to treat,** the total anticipated increase in wastewater flows of **102,194 GPD**, from the proposed mixed use development towers.

In order to offset any increase in sanitary flows, the City combined sewer overflow (C.S.O.) abatement consent agreement (with the U.S.E.P.A., and with the Maine D.E.P.) requires C.S.O. abatement, as well as storm water mitigation, from all projects.

If the City can be of further assistance, please call 874-8832.

Sincerely,
CITY OF PORTLAND

Frank Brancely

Frank J Brancely, B.A., M.A.
Senior Engineering Technician

O:\ Engshare\FJB\Capacity Letters\Somerset Street 23-105 & Elm Street 127-161

Anticipated Increase in Wastewater Flows from the Proposed Residential, Retail, Restaurant and Parking Garage Units

The Proposed Residential Units:		
440 Proposed Units @ 180 GPD/Unit	=	79,200 GPD
The Proposed Retail Outlets:		
77 Proposed Employees @ 12 GPD/Employee	=	924 GPD
10 Proposed Toilets @ 325 GPD/Toilet	=	3,250 GPD
The Proposed Restaurants:		
901 Proposed Seats @ 20 GPD/Seat	=	18,020 GPD
The Proposed Parking Garages:		
800 Proposed Spaces @ 1GPD/Space	=	800 GPD
Total Wastewater Design Flow, for this Project:	=	102,194 GPD
Total Anticipated Increase in Wastewater Flows		**= 102,194 GPD**

FJB

CC: Jeffrey Levine, Director, Department of Planning, and Urban Development, City of Portland
Barbara Barhydt, Development Review Services Mgr., Dep't. of Planning and Urban Development, City of Portland
Rick Knowland, City Planner, Department of Planning, and Urban Development, City of Portland
David Margolis-Pineo, Deputy City Engineer, City of Portland
Nancy E. Gallinaro, Water Resources Manager, Department of Public Services
Michael Farmer, P.E., Project Engineer, City of Portland
Bradley A. Roland, P.E., Environmental Projects Engineer, City of Portland
Benjamin N. Pearson, E.I., Industrial Pretreatment Coordinator, City of Portland
John Emerson, Wastewater Coordinator, City of Portland
Rhonda Zazzara, Field Inspection Coordinator, City of Portland
Harold Downs, Senior Wastewater Technician, City of Portland
Jane Ward, Administrative Assistant, City of Portland

ATTACHMENT D

MIDTOWN
TRANSPORTATION DEMAND MANAGEMENT (TDM) PLAN
JANUARY 2015

Project Description – DRAFT – will be revised

The **midtown** development seeks to fulfill the Portland planning vision by constructing an urban mixed-use development adjacent to the downtown of Portland. A transformative project, **midtown** seeks to realize and redevelop former industrial sites into a vibrant and urban residential community. The overall project is anticipated to provide about 445 units of residential housing, 91,500 s.f. of retail space, and parking garages to park as many as 828 vehicles. The design proposes a new neighborhood from Pearl to Elm Streets, and maintains and enhances the adjacent Bayside Trail with stores and pocket parklets along the length.

The **midtown** project consists of four buildings and will be constructed in one phase. **midtownOne** is comprised of a six story residential tower containing 7,500 s.f. of retail space on the ground level and about 80 residential units located at the corner of Somerset and extended on Pearl Street. **midtownTwo** is a seven story 828 space parking garage with over 32,000 s.f. of retail space on the ground floor. The ground floor retail will wrap the buildings. **midtownThree** is located fronting Somerset Street from Chestnut to Elm Streets and includes two six story residential towers for about 260 residential units containing about 41,000 s.f. of retail space. **midtownFour** is a six story stand-alone 105 unit residential building above 8,000 s.f. of retail space located between Elm Street and the trail.

The Federated Companies (dba FEDEQ DV002 LLC) development team has worked with the City's planning staff and Planning Board to develop the concept for **midtown**. The proposal concentrates development into buildings designed to enhance the City's existing skyline and to preserve prominent views and view corridors to and from City Hall and Portland's Downtown. Similarly, locations of building setbacks and step-backs have been carefully considered to both respect existing zoning ordinances and maintain a vibrant public streetscape, full of natural light and street-level activity. **Midtown's** streetscape has been planned to accommodate new stores and cafés, pedestrian circulation, street trees and parallel parking along Somerset Street. Most importantly, the plan proposes pedestrian walkways that connect Somerset Street to the Bayside Trail. These include a mews located between **midtownOne** and **midtownTwo**, and enhancements to Chestnut Street.

In total, midtown will be a catalyst for the Bayside neighborhood, bringing approximately 91,500 s.f. of retail, and new residents to the heart of the Bayside district.

As part of **midtown's** approvals, the City of Portland will require the creation and issuance of a Transportation Demand Management (TDM) Plan. What follows is a Transportation Demand Management Plan that addresses the City's sustainability goals by outlining and committing to a series of measures that encourage and promote bicycling, walking, carpooling, and use of public transit.

Given both the scope of this mixed-use project, and the necessity of having buy-in from prospective tenants, the proposal that follows contemplates a two-tiered approach to the TDM, consisting of:

First Tier – Macro TDM: Consists of an overall approach to TDM for **midtown** including:

- TDM Goals and Methodologies
- Implementation
- Staffing
- Monitoring and Assessment
- Tenant Specifics Plan

Second Tier – Micro TDM(s): Consists of tenant-specific plans, the "framework" of which is articulated in the Macro TDM but which are to be more fully elaborated in dialogue with **midtown's** respective tenants (namely, residents, retailers, and parking garage operators). Each of these tenants will have different constituencies with varying travel patterns and habits and will thus require different approaches, which must be well orchestrated. Although it is not practicable to outline these plans in substantive detail until more formal agreements with tenants are in place, it is important to stress that tenants are expected to be active participants in the overall TDM goals and measures elaborated here, and to take active roles in defining their own mechanisms for participating in these goals; this expectation will be outlined in lease arrangements with tenants.

In its utilization of this tiered approach ("macro" and "micro"), the proposed framework effectively functions as a project-wide Transportation Management Association, linking the various residents, retailers, and neighborhood in general, in a set of shared strategies, to be coordinated by the TDM Coordinator, of which is described more below.

The **midtown** development will be a major multi use project that will allow tenants to live, work, and/or shop onsite, eliminating the need for daily vehicle travel. In addition, the development's approach to TDM represents a significant opportunity to reduce the number of Single Occupant Vehicles (SOVs) in the area.

Proximity to Transit

The Bayside area is currently served by the following transit services:

- Metro Route #8: Portland METRO provides the Portland Peninsula loop service that includes the #8 route that has two bus stops on Marginal Way (northbound) and two bus tops on Somerset Street (southbound). This service route passes by the Forest Avenue Hannaford, Congress Street, the Casco Bay Ferry Terminal, Maine Medical Center, Mercy Hospital, and Portland's West End neighborhood. Additional connections to additional locations throughout the City can be made using other Metro routes including the Portland Transportation Center, Maine Mall, Forest Avenue, North Deering, Westbrook, and Falmouth.

In addition to Metro service, Bayside is 2 miles from the Portland Transportation Center that hosts the following services:

- Downeaster (AMTRAK): This intercity passenger rail service provides connections from Portland to Saco, Old Orchard Beach, and other southerly stops including Boston's North Station. The service also connects northerly to Freeport and Brunswick, providing a direct link to the Maine Eastern Railroad, which provides seasonal service as far as Rockland in 2012. The service currently runs five round trips to and from North Station and three trips to/from Brunswick.

- Concord Coach (Formerly Concord Trailways): This intercity bus service provides non-stop service to South Station in Boston, and northerly both to Augusta and Bangor, Maine, as well as the mid coast region. During the day, buses arrive and depart about once per hour. This service allows for connections to various intercity buses, Amtrak and MBTA commuter rail services at South Station, as well as direct connections to all terminals at Boston's Logan International Airport. In addition, the Bangor bus allows for a connection to the Cyr Bus service, providing a once-daily connection to several destinations in Aroostook County.

Given its adjacency to these amenities, **midtown** is uniquely suited to take advantage of non-motorized vehicle trips, especially transit trips.

Purpose of Plan

The City of Portland requires the creation of a Transportation Demand Management Plan for all projects in excess of 50,000 square feet, or with 100 or more employees or students. The **midtown** development meets both of these criteria. A TDM Plan is key to maximizing the synergies between the project and the transit modes (existing and not yet existing) adjacent to it.

To this end, the objectives of the **midtown** TDM Plan are:

- Make maximum use of existing transit infrastructure adjacent to the project

- Propose partnerships with the City, Metro, MDOT, and others aimed at increasing transit opportunities and, in the words of MDOT, contribute to providing "a safe, efficient and reliable transportation system that supports economic opportunity and quality of life".

- Reduce peak hour trip impacts to, and the effects of traffic congestion upon, adjacent roadway infrastructure

- Reduce the amount of needed parking on-site

- Encourage healthy activities such as biking, kayaking, and walking among **midtown** residents and visitors

It is important to note that this Plan should not be viewed as a series of fixed strategies. Rather it is a living document intended to be reviewed and updated on a regular basis as the midtown

operators work with tenants to address changes in local transportation patterns, preferences, and prices; by means of effective coordination, goal-setting, and goal-monitoring measures **midtown** will endeavor to reach the goals articulated in this Plan in a way that is not financially or operationally burdensome to the tenants who ultimately must support the Plan. Ultimately, the goal will be to make significant reductions in peak hour single-occupancy vehicle (SOV) activity on the local street network as well as the need for on-site parking in a way that is financially and operationally sustainable for all concerned.

Employee Transportation Coordinator (TDM Coordinator)

The **midtown** developer will employ a TDM Coordinator, charged with coordinating the TDM plan. The TDM coordinator will liaise with resident representatives as well as the retailer/shop owners in order to create an effective overall approach to the following goals:

- Coordinate and promote rideshare opportunities
- Coordinate and promote the use of the following alternatives to SOV travel:
  - METRO
  - AMTRAK
  - Concord Coach and other bus lines as may be applicable
  - U Car Share
  - Car rental companies
  - Bicycle rentals
- Monitoring parking usage in conjunction with parking facility management
- Encouraging the greater use of bicycling, walking, and bus-based transit
- Overseeing ongoing monitoring and updating of the plan
- Convening a committee, ideally comprised of decision-makers representing each of the tenants/users in **midtown,** who will assist the coordinator in TDM planning and assessment
- Filing annual reports with the City

The TDM Coordinator will work with tenants at the MICRO TDM level to explore how to create effective partnerships and incentive packages with AMTRAK, Concord Coach, and METRO; the Coordinator will liaise with tenants and help them identify strategies such as incentives (free or subsidized bus passes for tenants and employees, gift coupons or periodic prize drawings to foster use of alternative modes)and how to establish subsidies and payroll deductions for employee transit passes where this is appropriate for a retail tenant.

Surveys – Employees

Six months after initial occupancy of the **midtown** facilities, and annually thereafter, **midtown** residents and retail employees will be surveyed regarding their transportation choices such as automobile/bicycle/ motorcycle-scooter ownership, parking demand, and the frequency of trips using bicycling, walking, U Car Share, carpool/vanpool, and the bus. The survey will follow the format of the "TDM2go Employee Survey", a copy of which is attached hereto, but may be

expanded from time to time by the TDM Coordinator. The surveys will be conducted to determine:

- Mode of travel to and from work (car/carpool/biking/walking/bus)
- Preferences or concerns with mode of travel
- The flexibility and receptivity of employees and residents to utilize various travel modes to access **midtown** (and, crucially, to ascertain whether individuals make use of multiple modes during the course of a given year, or a given season)

Various questions will be created in the survey to determine which measures will encourage increased use of transit, for example, either via costs for parking or stronger subsidies of METRO passes, etc. The TDM Coordinator may seek to partner with the academic and/or the public sector, and public funding, to increase the efficacy of these surveys and mine the information contained therein.

Surveys – Visitors

For visitors to **midtown**, surveys will also be included. These will be provided in the following manner:

- With ticket receipt for parking garage users and retail visitors

The surveys will be conducted to determine:

- Mode of travel to and from midtown (car/carpool/biking/walking/bus)
- Preferences or concerns with mode of travel
- The flexibility and receptivity of visitors to utilizing various travel modes to access **midtown** and the Bayside area in general

Surveys will need to be simple and convenient; they could be filled out in-store, or completed with a link on-line (such as Survey Monkey) to do it afterward. Various questions will be created in the survey to determine measures to encourage increased use of transit, for example, either via costs for parking or greater promotion of transit uses. The TDM Coordinator will work with the residents and retail tenants at the MICRO TDM level to determine what kinds of incentives could elicit consistent and engaged participation in these surveys.

Car Pooling and Sharing

Through various promotional strategies (flyers, email blasts, web updates, social media, and occasional gatherings), the midtown TDM Coordinator will make visitors, workers and guests aware of and encourage use of these services.

U Car Share/Rental Cars

Portland is one of 38 cities in the United States served by U Car Share. In Portland, the service currently provides four vehicles. These vehicles are available on an hourly or daily basis. It is recommended that the **midtown** team negotiate the use of two additional vehicles with U Car Share for visitors to use on an as-needed basis, as well as traditional rental cars. This will allow for the use of a car for certain trips, which can aid in a traveler to or from the **midtown** to choose transit for a mode. Information will be provided to residents, retail workers, and parking garage users. Following the first survey, additions to U Car Share may be made if residents or retail employees desire their use in significant numbers; U-Car share may be an attractive option for local residents who are employed by one of the various tenants at **midtown**.

- Primary User: Residents and Employees
- Responsibility: **midtown**

Education for Residents and Visitors

As discussed, **midtown's** TDM coordinator will provide transit route maps, schedules, and ticket information in packets for residents and visitors. There will also be a travel kiosk(s) in the residence towers offering interactive Google-based travel planning with various vehicular modes; in addition, maps, routes, and ticket information will be posted clearly in the entry areas in each residence tower and the retail spaces. The TDM coordinator will be available, in person and/or virtually, to assist residents, visitors and employees who have questions about travel tips and ideas.

- Primary User: Residents and Employees
- Responsibility: **midtown**

Submission of Monitoring Information/Updated TDM Plan

Based upon the results of the monitoring, the **midtown** team will update the TDM Plan and submit a draft plan to the City's TDM Manager for review and comments.

The primary goal would be to reduce residents, retail, employee and visitor SOV trips by at least 7 percent, which is the level identified in the project's Traffic Impact Study. This level is considered conservative and a greater reduction in SOV trips may be realized. An ultimate goal of greater than 10 percent will be established.

The secondary goal for the initial year will be to reduce the parking demand from the calculated demand, with additional annual reductions targeted, until parking demand is reduced by a minimum of seven percent. This aggregate targeted reduction shall also include individual targets, shared equally, for the following alternative modes: increase use of transit by residents, retail, employees and visitors; increase carpooling and vanpooling by residents, retail, employees and visitors; and increase bicycle and pedestrian trips by residents and visitors until the overall goal of a 7-10% reduction is reached. The goal will be to achieve this overall 10% reduction by the end of the fifth operating year. At this point, it would be appropriate to reassess the ways in which the TDM plan should be recast in order to set additional goals for the sixth operating year

and beyond. Each monitoring period will be accompanied by a parking count of **midtown's** facilities, in accordance with the methodology discussed in the parking count section.

An important responsibility for the TDM Coordinator will be to discuss future options as they become available with the City of Portland and GO MAINE, an organization charged with finding transportation options for the state.

Additional Transit Opportunities

The **midtown** development will generate substantial tax revenue that will be used by the City for transit funding and future opportunities. The **midtown** team looks forward to exploring and benefiting from these opportunities.

- Primary User: Residents and Retail Employees
- Responsibility: **midtown**

Scooter/Motorcycle Parking

Twenty spaces are recommended within the garages for this use, with the potential for more in the future. Those using scooters or motorcycles will also obtain a ticket to be matched with a specific space in the garages. These spaces may be subject to random compliance checks.

- Primary User: Residents and Retail Employees
- Responsibility: **midtown**

Bus Shelter

The **midtown** team is willing to locate a bus shelter on site, for those coming on and off the #8 Bus (discussed above), which will further encourage use of buses by residents, visitors and employees alike. Metro and the City need to establish the final Metro stop locations along Somerset Street.

Monitoring

Parking Counts

As part of its TDM Plan monitoring program, the **midtown** TDM Coordinator will oversee assessment of the use of its various operational components, starting one month after the opening of the first residential tower and annually thereafter. As one critical component of the TDM program will be to reduce parking demand, the first part of each monitoring effort will include an hourly parking count of the facility from 11:00 AM to 11:00 PM on a weekday and a Saturday.

Timetable for Action Items

Action Item	Timeframe for Implementation
Provide update to City regarding progress on TDM plan implementation and status of TMA ("macro TDM")	Fall 2016
Appoint/Confirm TDM Coordinator	6 months prior to opening of the first residential tower
Assemble "Micro TDM" plans with tenants and create TDM Packets; share complete TDM plan, including Micro-TDM targets and proposed monitoring, with City	Early 2020
TDM Plan Implementation/On-site Parking Monitoring	Assuming final occupancy
Assess success of first six months of TDM Program and Report to City on initial effectiveness	Spring 2017
Submit Year Two TDM Program with needed modifications (and annually thereafter)	End of 2019

Prepared by FST
January 2015

ATTACHMENT E

Sheet	Description	Last Revised Date	Comments
C-1.0	COVER SHEET	11/14/2014	Not revised for this submission; Submission date not reflected
C-1.1	GENERAL NOTES AND LEGEND	11/14/2014	Not revised for this submission; Good as submitted
C-1.2	DRAFT AMENDED SUBDIVISION/RECORDING PLAT	01/21/2015	Revised as part of this submission
C-1.2A	2006 EXISTING CONDITIONS SURVEY PREPARED BY SGC FOR THE CITY OF PORTLAND (REFERENCE DRAWING ONLY)	11/14/2014	Not revised for this submission; Good as submitted
C-1.3	ALTA/ASCM LAND TITLE SURVEY (BY CITY OF PORTLAND)	11/14/2014	Not revised for this submission; Good as submitted
C-1.4	2012 BOUNDARY AND TOPOGRAPHIC SURVEY (BY OWEN HASKELL)	11/14/2014	Not revised for this submission; Good as submitted
C-1.5	RESIDENTIAL SUBDIVISION OF LOT 7	11/14/2014	Not revised for this submission; Site Plan revisions not reflected
C-1.8	EXISTING CONDITIONS AND REMOVALS PLAN	11/14/2014	Not revised for this submission; Good as submitted
C-2.0	OVERALL SITE PLAN	11/14/2014	Not revised for this submission; Good as submitted
C-2.0A	OVERALL SITE PLAN WITH DIMENSIONS	11/14/2014	Not revised for this submission; Site Plan revisions not reflected
C-2.0B	ACCESSIBLE ROUTE PLAN	11/14/2014	Not revised for this submission; Site Plan revisions not reflected
C-2.1	SITE LAYOUT PLAN - MIDTOWNONE AND MIDTOWNTWO	01/21/2015	Revised as part of this submission; Somerset Street Design Pending
C-2.2	SITE LAYOUT PLAN - MIDTOWNTHREE	01/21/2015	Revised as part of this submission; Somerset Street Design Pending
C-2.3	SITE LAYOUT PLAN - MIDTOWNFOUR	01/21/2015	Revised as part of this submission; Somerset Street Design Pending
C-2.4	MIDTOWNONE AND MIDTOWNTWO BUILDING ENVELOPE AND OPEN SPACE COMPUTATIONS	11/14/2014	Not revised for this submission; Site Plan revisions not reflected
C-2.5	MIDTOWNTHREE BUILDING ENVELOPE AND OPEN SPACE COMPUTATIONS	11/14/2014	Not revised for this submission; Site Plan revisions not reflected
C-2.6	MIDTOWNFOUR BUILDING ENVELOPE AND OPEN SPACE COMPUTATIONS	11/14/2014	Not revised for this submission; Site Plan revisions not reflected
C-3.0	GRADING PLAN - MIDTOWNONE AND MIDTOWNTWO	11/14/2014	Not revised for this submission; Plan to be submitted under separate cover; Somerset Design Pending
C-3.1	GRADING PLAN - MIDTOWNTHREE	11/14/2014	Not revised for this submission; Plan to be submitted under separate cover; Somerset Design Pending
C-3.2	GRADING PLAN - MIDTOWNFOUR	11/14/2014	Not revised for this submission; Plan to be submitted under separate cover; Somerset Design Pending
C-3.3	PROPOSED SPOT GRADES FOR EAST SIDE OF SOMERSET STREET	11/14/2014	Not revised for this submission; Somerset Design Pending

Sheet	Description	Last Revised Date	Comments
C-3.4	PROPOSED SPOT GRADES FOR WEST SIDE OF SOMERSET STREET	11/14/2014	Not revised for this submission; Somerset Design Pending
C-3.5	PROPOSED SPOT GRADES FOR CHESTNUT STREET NORTH	11/14/2014	Not revised for this submission; Somerset Design Pending
C-3.6	PROPOSED SPOT GRADES FOR CHESTNUT STREET SOUTH	11/14/2014	Not revised for this submission; Somerset Design Pending
C-3.7	PROPOSED SPOT GRADES FOR PEARL STREET EXTENSION	11/14/2014	Not revised for this submission; Somerset Design Pending
C-3.8	PROPOSED SPOT GRADES FOR ELM STREET	11/14/2014	Not revised for this submission; Somerset Design Pending
C-3.9	DATA SUMMARY SHEET FOR SOMERSET AND CHESTNUT STREET	11/14/2014	Not revised for this submission; Somerset Design Pending
C-3.10	PROPOSED STORM DRAIN SCHEDULES FOR STORMTREAT™ UNITS	11/14/2014	Not revised for this submission; Final Design Under Review
C-3.11	PROPOSED STORM DRAIN SCHEDULES FOR TREE BOX FILTER SYSTEMS SHEET 1 OF 3	11/14/2014	Not revised for this submission; Somerset Design Pending
C-3.12	PROPOSED STORM DRAIN SCHEDULES FOR TREE BOX FILTER SYSTEMS SHEET 2 OF 3	11/14/2014	Not revised for this submission; Somerset Design Pending
C-3.13	PROPOSED STORM DRAIN SCHEDULES FOR TREE BOX FILTER SYSTEMS SHEET 3 OF 3	11/14/2014	Not revised for this submission; Somerset Design Pending
C-3.14	MIDTOWNONE AND MIDTOWNTWO COURTYARD CROSS SECTIONS (INCLUDES INFORMATION ON LIGHTWEIGHT CONCRETE FILL)	11/14/2014	Not revised for this submission; Update to Sections Required to represent current grading plans
C-3.15	COURTYARD AND MUSE: SPOT GRADES AND WATER QUALITY SYSTEM	11/14/2014	Not revised for this submission; Good as submitted
C-4.0	OVERALL UTILITY PLAN	01/21/2015	Revised as part of this submission; Somerset Street Design Pending
C-4.1	UTILITY PLAN - MIDTOWNONE AND MIDTOWNTWO	01/21/2015	Revised as part of this submission; Somerset Street Design Pending
C-4.2	UTILITY PLAN - MIDTOWNTHREE	01/21/2015	Revised as part of this submission; Somerset Street Design Pending
C-4.3	UTILITY PLAN - MIDTOWNFOUR	01/21/2015	Revised as part of this submission; Somerset Street Design Pending
C-4.4A	ELECTRICAL DISTRIBUTION PLAN PREPARED BY FST	11/14/2014	Not revised for this submission; Needs to be reproduced to reflect updated utility plans
C-4.4B	ELECTRICAL DISTRIBUTION PLAN PREPARED BY CMP	11/14/2014	Not revised for this submission; Needs to be reproduced to reflect updated utility plans
C-6.0	EROSION CONTROL PLAN	11/14/2014	Not revised for this submission; Needs revisions to reflect current plans

Sheet	Description	Last Revised Date	Comments
C-6.1	EROSION AND SEDIMENT CONTROL DETAILS	11/14/2014	Not revised for this submission; Good as submitted
C-6.2	EROSION AND SEDIMENT CONTROL DETAILS	11/14/2014	Not revised for this submission; Good as submitted
C-7.0	STREET AND DRIVEWAY CROSS SECTIONS	11/14/2014	Not revised for this submission; Somerset Design Pending
C-7.0A	MISCELLANEOUS SECTIONS AND DETAILS	11/14/2014	Not revised for this submission; Somerset Design Pending
C-7.1	TRANSPORTATION SYSTEMS AND STREET DESIGN	11/14/2014	Not revised for this submission; Good as submitted
C-7.2	TRANSPORTATION SYSTEMS AND STREET DESIGN	11/14/2014	Not revised for this submission; Good as submitted
C-7.3	SAN SEWER AND STORM DRAIN DETAILS	11/14/2014	Not revised for this submission; Good as submitted
C-7.4	SAN SEWER AND STORM DRAIN DETAILS	11/14/2014	Not revised for this submission; Good as submitted
C-7.5	WATER DETAILS	11/14/2014	Not revised for this submission; Good as submitted
C-7.6	WATER DETAILS	11/14/2014	Not revised for this submission; Good as submitted
C-7.7	STORMWATER DETAILS STORMTREAT™ SYSTEMS	11/14/2014	Not revised for this submission; Good as submitted
C-7.8	TREEBOX FILTER WITH ALTERNATE UNDERGROUND STORAGE DETAILS	11/14/2014	Not revised for this submission; Somerset Design Pending
C-7.9	STORMTREAT™ AND BRENTWOOD™ UNDERGROUND STORAGE DETAILS	11/14/2014	Not revised for this submission; Good as submitted
C-7.10	TREEBOX FILTER WITH UNDERGROUND STORAGE DETAILS	11/14/2014	Not revised for this submission; Good as submitted
C-7.11	BOXLESS TREE FILTER FOR SYSTEM A	11/14/2014	Not revised for this submission; Good as submitted
C-7.12	BAYSIDE TRAIL RETAINING WALL DETAILS AND ABUTTER OPTIONS	01/21/2015	Revised as part of this submission
C-7.13	RETAINING WALL DETAILS	11/14/2014	Not revised for this submission; Good as submitted
C-8.0	SOMERSET STREET PROFILE	11/14/2014	Not revised for this submission; Somerset Design Pending
C-8.0A	SOMERSET STREET PROFILE FACING NOYES BUILDING	11/14/2014	Not revised for this submission; Somerset Design Pending
C-8.1	ELM STREET, CHESTNUT STREET AND PEARL STREET EXTENSION PROFILES	11/14/2014	Not revised for this submission; Somerset Design Pending
C-8.2	BAYSIDE TRAIL PROFILE	01/21/2015	Revised as part of this submission
C-10.0	SOMERSET STREET CROSS SECTIONS	11/14/2014	Not revised for this submission; Somerset Design Pending
C-10.1	SOMERSET STREET CROSS SECTIONS	11/14/2014	Not revised for this submission; Somerset Design Pending
C-14.0	PREDEVELOPMENT WATERSHED MAP	11/14/2014	Not revised for this submission; Good as submitted
C-14.1	POSTDEVELOPMENT WATERSHED MAP	11/14/2014	Not revised for this submission; Good as submitted

February 20, 2015

THE FEDERATED COMPANIES

Mr. Rick Knowland, Senior Planner
Department of Planning & Urban Development
Portland City Hall
389 Congress Street
Portland, ME 04101

RE: *Itemization of Changes to Architectural Plans and Other Relevant Information for Staff Review Pertaining to 'midtown' Project (Somerset, Elm, Chestnut, and Pearl Streets)*

Rick:

The intent of this correspondence is to respond to your request stemming from our conference call on February 17th that changes in architectural drawings submitted for your review on February 20, 2015 be itemized. Hopefully, this brief description of the changes, coupled with the resubmitted combined set of architectural plans, will enable you to isolate the new components of our submission from those you have already had an opportunity to review. It is our hope that this guidance will avoid any and all confusion and assist in efficient review of materials; however, if further clarity is desired at any time, please feel free to call me directly to discuss.

As a preliminary matter please note that, as discussed during our conference call, our architectural team has changed and now includes Tom House, principal of THA Architects in Stratham, NH. Accordingly, we are enclosing an updated Level III Site Plan Application which indicates the change and we are also enclosing an updated FST Cover Sheet C-1.0 which indicates architectural, structural, and MEP changes.

That being said, the following changes have been made to the previously submitted plans, most of which stem from an attempt to address staff concerns in advance of, rather than at or after, the public hearing.

Aside from the noted changes, the architectural plans remain as previously submitted.

<u>Building 1 – (midtownOne)</u>

Sheet 1-A101: Windows have been added to the West Elevation to match what was already shown in the pre-existing floor plans.

Sheet 1-A201: Addition of Elevation 2A.

Building 2 – (midtownTwo)

Sheet 2-A101: The queuing area where cars entering the facility's garage gate has been extended by one additional car length (inbound side is to the north), approximately a distance of 18 FT. This change was made at staff's suggestion and has reduced parking by two spaces (resulting in garage capacity of 799 spaces). We examined provision of parallel parking along the wall but this would require the loss of 6 spaces as each parallel spot must be 22'-0" long.

Contrary to our discussions, upon further research we are not proposing use of a trench drain or textured material for the 6% slope at the entrance to the facility (street level), for the following reasons:

As a preliminary point, traffic will already be traveling very slowly upon exiting due to the turn preceding the exit. Also, standard signage will reinforce the already cautious nature of drivers at this point.

Texture – it is believed if textured material is used at this location it would only serve a purpose for a very short period of time, until the crevices of the material were filled with water or snow, froze, and became flush with the surrounding material in a manner which would negate their benefit.

Trench Drain – while we explored the idea of a trench drain, we also conducted further research and found that installation of one is not likely to be necessary for the simple reason that this slope cannot possibly pose any sort of a safety hazard. We looked at the entry ramp to the garage behind the Time & Temperature Building (on Cumberland Avenue) and upon measuring its slope found it to be 10%. Cars used that space regularly and easily, without traction problems, despite the fact that it is covered in snow and slush. Moreover, streets with much steeper slopes than 6% abound throughout the City, without any perceptible safety problems—and they are needless to say exposed to the elements directly whereas this short stretch is covered and away from any opening that would blow precipitation inward.

General Thoughts – the slope of 6% is allowed by code and standard and is so minor that it almost appears flat to the naked eye. It is also used successfully in an urban context, like Portland, in the same climate, where it interfaces with a sidewalk. I am referring to the below pictures of a parking garage in downtown Portsmouth, NH. As you can see from the pictures, even a slope which is 1% steeper than that we have proposed, and more importantly is used in a denser pedestrian centered urban context, where it is exposed perpetually to the elements, is both nearly flat in appearance and is presumed safe due to its long use and existence.

7% ENTRY SLOPE OF HIGH AND HANOVER STREET PARKING GARAGE – PORTSMOUTH, NH

Building 3 – (midtownThree)

Sheet 3-A101: Midblock permeability note has been changed to reflect removal of the berm on City property by others.

A note has been added to reflect fire separation of trash holding area from rest of building, per previous condition and per applicable code.

Sheet 3-A201: Revised siding to reduce use of EIFS visible from public realm, above first floor and excluding windows to a total of 39%. The previous submission approximated 60%. Exact calculation is as follows:

Windows	11,256 sf (18%)
Metal siding	27,456 sf (43%)
EIFS	25,096 sf (39%)
Total	63,808 sf (100%)

Sheet 3-A201 & 202: The renderings have not been revised to reflect the reduction in EIFS. The elevations and not the renderings represent our present submission.

Building 4 – (midtownFour)

Sheet 4-A201: An architectural hood element has been emphasized over the entrance through use of LED lighting components, in an effort to respond to staff and Board member comments related to gateway features of this prominent corner.

A direct view of the entrance has been provided where previously it was an angled view. This is in response to staff's request for a more direct view of the elevation.

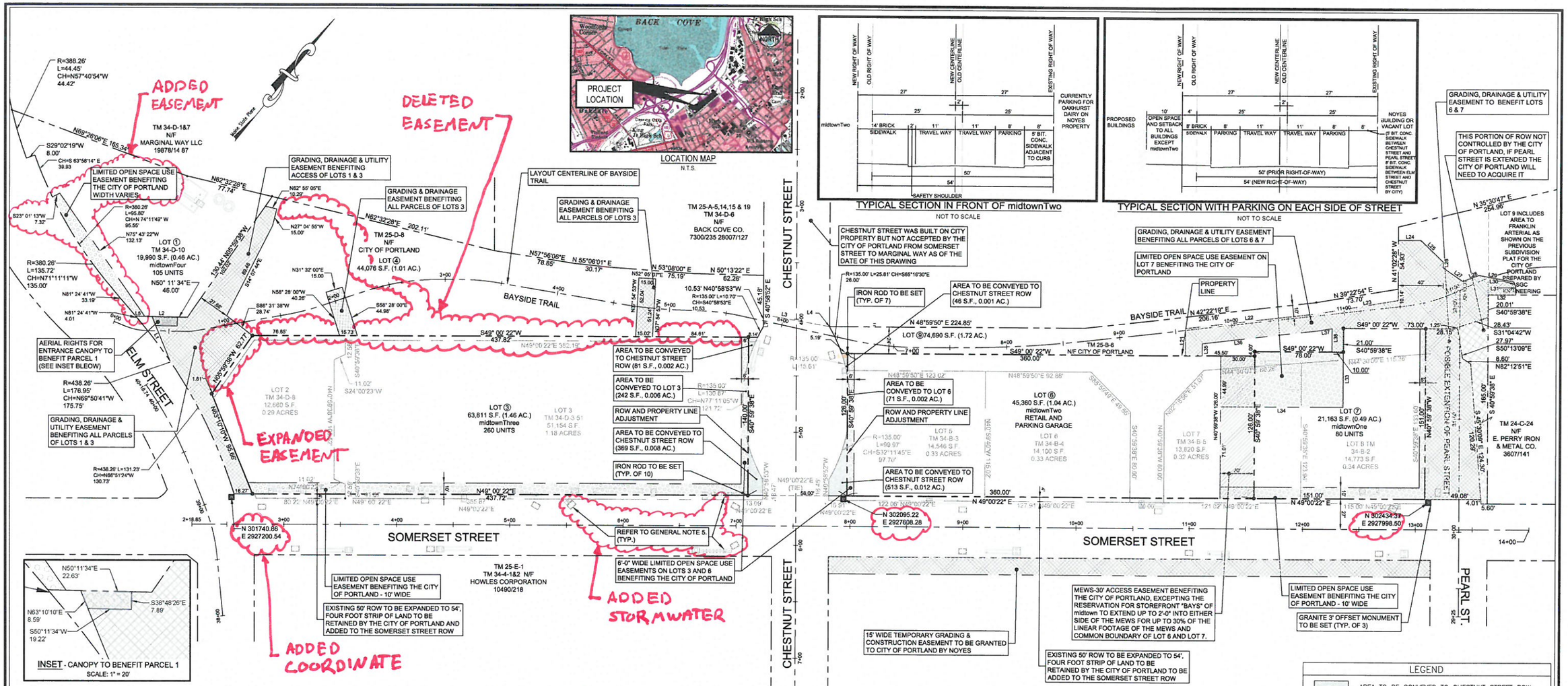
Thank you all, again, for your dedication to reviewing this project and for your constructive feedback along the way. We look forward to the public hearing.

On behalf of FEDEQ DV001, LLC,

Patrick Venne

Enc: Revised Level III Site Plan Application Form
Revised C-1.0 – Cover Sheet
Revised Architectural Drawings

c: Project Team



EASEMENT NOTES

1. THE EASEMENTS SHOWN ON THIS AMENDED SUBDIVISION PLAN LOCATED UPON LOT 4 ARE PRELIMINARY AND MAY BE RELOCATED AT THE TIME OF LEVEL III SITE PLAN APPROVAL OF THE DEVELOPMENT OF LOTS 1 & 3 AS SHOWN ON THE PLAN, AND ANY APPROVED SITE PLAN CONTAINING ANY SUCH REVISED EASEMENT AREAS SHALL BE DEEMED TO AMEND THE EASEMENTS SHOWN ON THIS AMENDED SUBDIVISION PLAN. IF THE EASEMENT CHANGES ARE MADE, A NEW PLAN AND IF NECESSARY, DEED SHALL BE SUBMITTED FOR REVIEW AND APPROVAL.

2. THE FOLLOWING EASEMENTS SET FORTH IN NOTES 2A, 2B, 2C, 2D, 2E, 2F AND 2G ARE NOT SHOWN ON THIS PLAN. THE LOCATION AND TERMS AND CONDITIONS OF SUCH EASEMENTS ARE TO BE FORMULATED AND APPROVED BY THE CITY CORPORATION COUNSEL AND COUNSEL TO THE PURCHASER, AND SHALL BE SET FORTH IN THE DEED CONVEYING THE LOTS FROM THE CITY OF PORTLAND TO THE PURCHASER, OR IN A SEPARATE EASEMENT DEED OR EASEMENT AGREEMENT. IF THE EASEMENT CHANGES ARE MADE, A NEW PLAN AND IF NECESSARY, DEED SHALL BE SUBMITTED FOR REVIEW AND APPROVAL.

2A. AN EASEMENT FOR SNOW REMOVAL ACTIVITIES IN A LOCATION OVER LOT 4 AND 9.

2B. AN EASEMENT FOR SUBSURFACE PILINGS, PILE CAPS AND BUILDING FOUNDATIONS GENERALLY ALONG THE NORTHERLY, EASTERLY AND SOUTHERLY PROPERTY LINE OF LOT 3 AND BURDENING LOT 4 AND THE CHESTNUT STREET AND SOMERSET STREET RIGHTS OF WAY.

2C. AN EASEMENT FOR SUBSURFACE PILINGS, PILE CAPS, AND BUILDING FOUNDATIONS GENERALLY ALONG THE NORTHWESTERLY AND SOUTHEASTERLY PROPERTY LINES OF THE SOMERSET RIGHT OF WAY AND LOT 6 AND 7 AND BURDENING THE SOMERSET STREET AND LOT 9.

2D. LOTS 4 AND 9 ARE SUBJECT TO EASEMENTS FOR CONSTRUCTION, STAGING, REPAIR AND MAINTENANCE BENEFITING THE OTHER LOTS OF THE SUBDIVISION. THIS EASEMENT REQUIRES THE REPAIR OR REPLACEMENT OF ANY FEATURES IN LOT 4 OR 9 THAT MAY BE DAMAGED BY THE ACTIVITIES ALLOWED AS PART OF THESE EASEMENTS.

2E. AN EASEMENT TO THE OWNERS OF LOT 1, 3 & 7 PROVIDING THE RIGHT TO CONSTRUCT STEPS, RAMPS, AND LANDINGS IN THE AREAS OF THE ELM STREET, PEARL STREET EXTENSION, AND SOMERSET STREET RIGHTS OF WAY DEPICTED ON THE SITE PLANS FOR THE MIDTOWN PROJECT PREPARED BY FAY, SPOFFORD & THORNDIKE, INC. AND IDENTIFIED AS SITE PLANS C-2.1, C2.2 AND C2.3 DATED OCTOBER 2014, LAST REVISED (PENDING).

2F. LICENSES FOR FEDERATED COMPANY, LLC ("FEDERATED") OR ITS DESIGNATED ASSIGNEES TO MAINTAIN STEPS, RAMPS AND THE RELATED ACCESSIBLE LANDINGS AND TO MAINTAIN PLANTERS WITHIN PORTIONS OF THE ELM STREET, CHESTNUT STREET AND SOMERSET STREET RIGHTS OF WAY, AND UPON THE AREA DESIGNATED AS THE POTENTIAL EXTENSION OF PEARL STREET, AS WELL AS THE RIGHTS TO CONSTRUCT AND MAINTAIN PHYSICAL IMPROVEMENTS TO BE ADDED TO THE TRAIL SYSTEM UPON LOTS 4 AND 9.

2G. AN EASEMENT BENEFITING LOTS 1, 3, 6 AND 7 TO CONSTRUCT, OPERATE AND MAINTAIN WATER QUALITY TREATMENT SYSTEMS UPON PORTIONS OF LOTS 4 AND 9.

3. ALL EASEMENTS CREATED BY AND SHOWN ON THE PRIOR APPROVED SUBDIVISION PLAN THAT ARE NOT EXPRESSLY SHOWN OR REFERENCED ON THIS PLAN ARE EXTINGUISHED, INCLUDING, WITHOUT LIMITATION, THE UNDERPASS EASEMENT ON LOT 1 AND 3, GEOTHERMAL EASEMENTS, FORMER LOCATION OF THE TRAIL CORRIDOR EASEMENT AND ALL OTHER EASEMENTS ON LOTS 1, 6, AND 7 CREATED BY AND SHOWN ON THE PRIOR AMENDED SUBDIVISION PLAN.

GENERAL NOTES

1. THIS AMENDED SUBDIVISION PLAN AMENDS AND REPLACES THE SUBDIVISION RECORDING PLAT ENTITLED "SUBDIVISION RECORDING PLAT OF PROPERTY LOCATED ON BAYSIDE RAILYARD, PORTLAND, MAINE PREPARED FOR DOWNTOWN PORTLAND CORPORATION BY SGC ENGINEERING, LLC. DATED DATED OCTOBER 30, 2008 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 209, PAGE 36 (THE "PRIOR APPROVED SUBDIVISION PLAN") IN ALL RESPECTS AND SUCH PRIOR SUBDIVISION IS HEREBY EXTINGUISHED.

2. THE CITY OF PORTLAND SHALL RETAIN A FOUR FOOT WIDE STRIP OF LAND ALONG THE NORTHERLY SIDELINE OF SOMERSET STREET TO BE ADDED TO THE SOMERSET STREET RIGHT OF WAY, IN ORDER TO INCREASE THE WIDTH OF SOMERSET STREET ADJOINING LOTS 3, 6 & 7 FROM 50 FEET TO 54 FEET.

3. THIS AMENDED SUBDIVISION PLAN AMENDS LOTS 1 THROUGH 8 FROM THE PRIOR APPROVED SUBDIVISION PLAN. THE EASTERLY SIDE OF LOT 9 REMAINS UNCHANGED FROM THE PRIOR APPROVED SUBDIVISION PLAN AND IS SHOWN ON THE PRIOR APPROVED SUBDIVISION PLAN. THERE IS NO LONGER A LOT 2, 5 & 8 IN THE SUBDIVISION.

4. THE CITY WILL ISSUE TO FEDERATED SUCH EASEMENTS AS NEEDED FOR CONSTRUCTION, MAINTENANCE OR REPAIR OF FACILITY WITHIN OR ACCESSIBLE ONLY FROM THE BAYSIDE TRAIL.

5. ALL WATER QUALITY TREATMENT DEVICES ASSOCIATED WITH THE midtown PROJECT AND LOCATED IN THE PUBLIC R.O.W. SHALL BE PRIVATELY MAINTAINED BY THE DEVELOPER, ITS HEIRS OR ASSIGNS.

GRAPHIC SCALE
0 20' 40' 80'

EASEMENT LINE TABLE

LINE	BEARING	DISTANCE (FEET)
L1	N63°10'10"W	42.17'
L2	N50°11'34"E	31.53'
L3	N59°04'41"E	58.90'
L4	S40°58'55"E	0.26'
L5	N 50D11'34" E	8.01'
L6	DELETED	
L7	S40°58'55"E	5.53'
L14	DELETED	
L15	DELETED	
L16	DELETED	
L17	N40°59'24"W	20.63'
L18	DELETED	
L19	DELETED	
L20	DELETED	
L21	N41°00'32"W	24.06'
L22	N42°22'19"E	117.46'
L23	N39°22'54"E	72.27'
L23	DELETED	
L24	N49°00'22"E	20.02'
L25	S87°16'35"E	27.70'
L26	S40°59'38"E	5.00'
L27	N84°05'10"E	20.69'
L28	N28°31'08"E	15.21'
L29	N59°22'54"E	31.41'
L30	S61°28'51"E	5.00'
L31	S40°59'38"E	6.82'
L32	S49°00'22"W	24.24'
L33	N40°59'38"W	48.99'
L34	S49°00'22"W	108.00'
L35	S41°00'32"E	10.72'
L36	S42°22'19"W	104.49'
L37	S39°22'54"W	10.86'
L38	N40°59'38"W	20.61'

SURVEYOR WILL STAMP DRAWING UPON APPROVAL OF THE CITY

APPROVAL - CITY OF PORTLAND PLANNING BOARD

DATE

CHAIRPERSON

CERTIFICATE:

OWEN HASKELL, INC. CERTIFIES THAT THIS PLAN IS BASED ON, AND THE RESULT OF, AN ON THE GROUND FIELD SURVEY AND THAT TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, IT CONFORMS TO THE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS CURRENT STANDARDS OF PRACTICE.

DATE

JOHN W. SWAN, PLS NO. 1038

LEGEND

- AREA TO BE CONVEYED TO CHESTNUT STREET ROW
- MEWS – ACCESS EASEMENT BENEFITING THE CITY OF PORTLAND
- PORTION OF ROW NOT CONTROLLED BY CITY OF PORTLAND
- ACCESS, GRADING, DRAINAGE AND UTILITY EASEMENT FOR LOTS 1, 3, 6 & 7
- LIMITED OPEN SPACE USE EASEMENT BENEFITING THE CITY OF PORTLAND
- PROPOSED 3" O/S MONUMENT

OWNER OF RECORD:
CITY OF PORTLAND C.C.R.D. BOOK 27870 PAGE 299

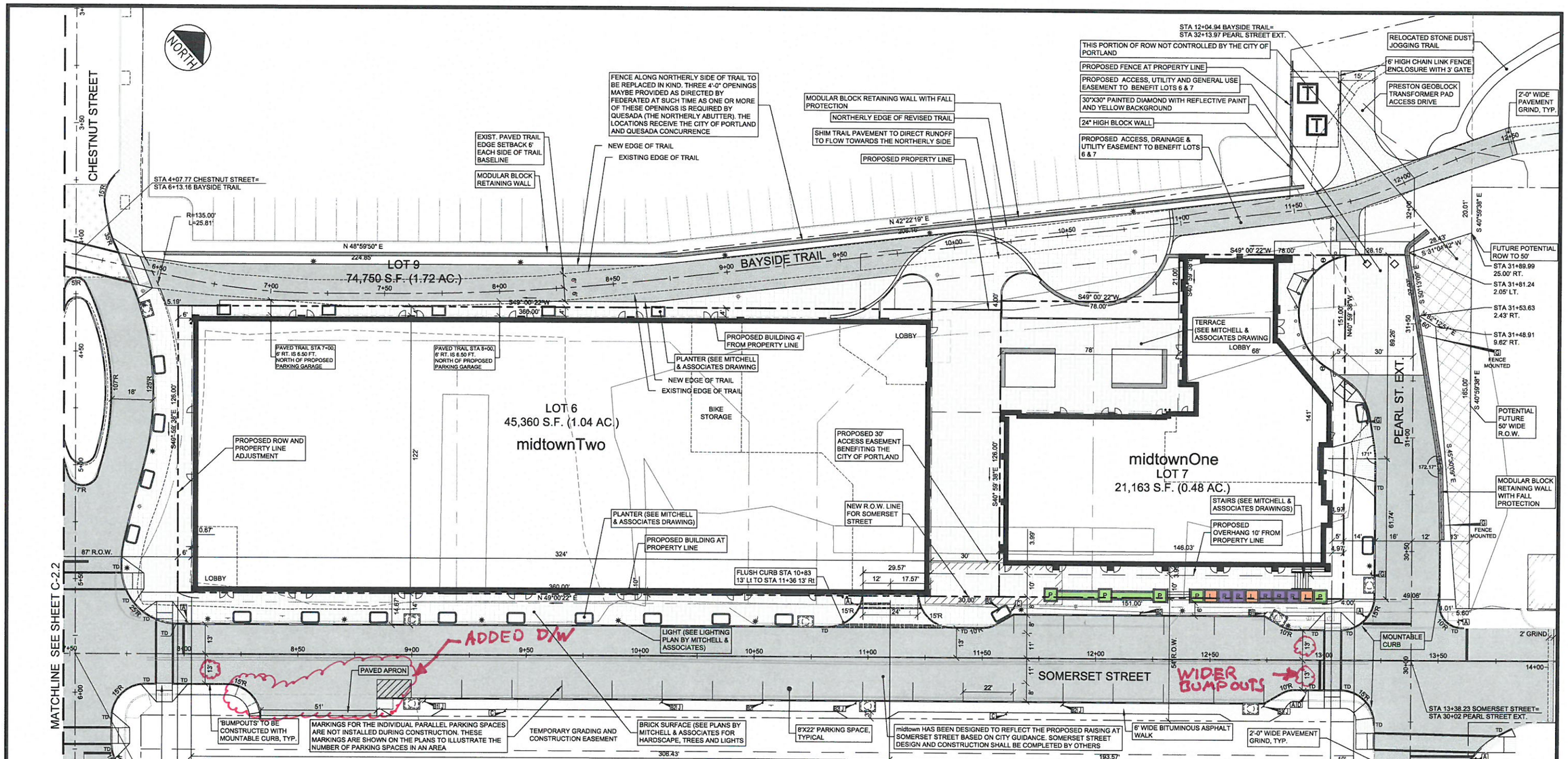
01.21.15	REVISED PER CITY COMMENTS AND RESUBMITTED FOR CITY REVIEW
12.01.14	REVISED FOR LEVEL III SUBMISSION AND RESUBMITTED FOR CITY REVIEW
11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND
10.17.14	PRELIMINARY LEVEL III SUBMISSION

AMENDED SUBDIVISION/RECORDING PLAT
ON
SOMERSET STREET, PORTLAND, MAINE
MADE FOR
FAY, SPOFFORD &THORNDIKE
778 MAIN STREET, SOUTH PORTLAND, MAINE

OWEN HASKELL, INC.
390 U.S. ROUTE ONE, FALMOUTH, ME 04105 (207) 774-0424
PROFESSIONAL LAND SURVEYORS

Drwn By	EB	Date	Job No.
Trace By	JLW	APRIL 10, 2013	12012-180 P
Check By	JWS	Scale	Drwg. No.
Book No.	FILE	1" = 40'	C-1.2

R:\30928 - Midtown Amended - Portland, ME\Cadd\Permit Set\dwg\30928-SUBDIVISION Midtown DHI.dwg file_p 1/21/2015 3:37 PM



LEGEND

- PROPOSED PROPERTY BOUNDARY
- ABUTTING BUILDING
- FEDERATED BUILDINGS
- HARDSCAPE/LANDSCAPE
- PROPOSED PAVEMENT
- GREEN SPACE/PLANTERS (BY MITCHELL ASSOCIATES)
- L P R — PROPOSED LANDING, PLANTER AND RAMP
- SNOW STORAGE AREA
- EXISTING BRICK TRAIL
- EXISTING HARDSCAPED TRAIL
- EXISTING PAVED TRAIL
- EXISTING GRAVEL PATH
- VERTICAL GRANITE CURB
- FLUSH GRANITE CURB
- MOUNTABLE CURB (TYPE 5 GRANITE)
- TD — TIPDOWN

EASEMENT NOTES

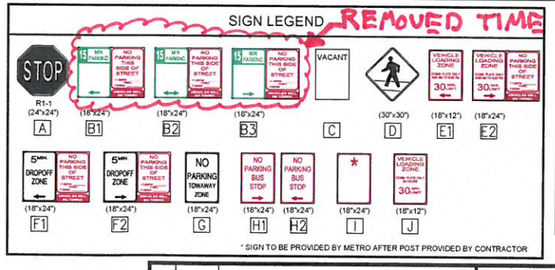
1. AN EASEMENT FOR SNOW REMOVAL ACTIVITIES IN A LOCATION OVER LOT 3. THE LANGUAGE IS TO BE FORMULATED AND APPROVED BY THE CITY'S CORPORATION COUNSEL OFFICE.
2. AN EASEMENT FOR SUBSURFACE PILINGS, PILE CAPS AND BUILDING FOUNDATIONS GENERALLY ALONG THE NORTHERLY, EASTERLY AND SOUTHERLY PROPERTY LINES OF LOT 1, 3, 6 & 7 AND BURDENING LOT 4, 9 AND THE CHESTNUT STREET AND SOMERSET STREET RIGHTS OF WAY. THE LANGUAGE IS TO BE FORMULATED AND APPROVED BY THE CITY'S CORPORATION COUNSEL OFFICE.
3. THE GEOTHERMAL EASEMENT SHALL BE EXTINGUISHED PRIOR TO SALE OF ANY PROPERTY TO FEDERATED COMPANIES.
4. THE AMENDED SUBDIVISION PLAT ASSUMES THE MIDTOWN PROJECT PROPOSED BY THE FEDERATED COMPANIES WILL INCLUDE LOTS 1,3,6 AND 7. LOTS 4 AND 9 REMAIN THE CITY OF PORTLAND LOTS.

GENERAL NOTES

1. FEDERATED ANTICIPATES ACQUISITION OF THE PARCELS NECESSARY TO CONSTRUCT THE PROJECT AS DEPICTED ON THE SITE PLAN APPLICATIONS (LATEST REVISION).
2. EXTINGUISHMENT OF EASEMENTS SHALL COVER ALL LAND ENCUMBRANCES WHETHER OR NOT THESE ARE SPECIFICALLY NOTED ON THE DRAWINGS.

SIGN LEGEND

REMOVED TIME



* SIGN TO BE PROVIDED BY METRO AFTER POST PROVIDED BY CONTRACTOR

NOTE:

THE LOCATION FOR A METRO BUS STOP ALONG SOMERSET STREET IS UNDER REVIEW. RESOLUTION IS ANTICIPATED PRIOR TO COMPLETING LEVEL III SITE PLANS

REFERENCE NOTES:

1. EXISTING PROPERTY BOUNDARIES, EXISTING CONDITIONS, EXISTING EASEMENTS, AND ELM ST. CHESTNUT ST., SOMERSET ST. AND PEARL STREET BASE LINE DATA ARE BASED ON OWEN HASKELL BOUNDARY AND TOPOGRAPHIC SURVEY PLAN DATED NOVEMBER 2012.
2. PROPOSED PROPERTY LINES BASED ON PROPOSED BUILDING DIMENSIONS AND SETBACK DIMENSIONS PROVIDED TO FAY, SPOFFORD & THORNDIKE BY FEDERATED COMPANIES IN NOVEMBER 2014.

IF PEARL STREET IS CONNECTED TO MARGINAL WAY IN THE FUTURE, THE TURN-OUT WILL NEED TO BE ELIMINATED AND REPLACED WITH STANDARD CURBSIDE DROP-OFF AREA.

GRAPHIC SCALE

20 0 10 20 40

(IN FEET)
1 inch = 20 ft.

PRELIMINARY - NOT FOR CONSTRUCTION

REV.	DATE	DESCRIPTION
2	01.21.15	REVISED PER CMP/CITY STAFF COMMENTS; SUBMITTED TO CITY
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE STEPHEN R. BUSHEY No. 7429 LICENSED PROFESSIONAL ENGINEER 12.17.15

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

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
SITE LAYOUT PLAN - midtownOne AND midtownTwo

CLIENT
FEDQ DV001, LLC

FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW/LA	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	1" = 20'
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-SITE		
SHEET	C-2.1		

R:\3062B - Midtown Amended - Portland, ME\Cadd\Permit Set\dwg\3062-SITE.dwg setton_j 1/21/2015 4:17 PM

REFERENCE NOTES:

1. EXISTING PROPERTY BOUNDARIES, EXISTING CONDITIONS, EXISTING EASEMENTS, AND ELM ST. CHESTNUT ST., SOMERSET ST. AND PEARL STREET BASE LINE DATA ARE BASED ON OWEN HASKELL BOUNDARY AND TOPOGRAPHIC SURVEY PLAN DATED NOVEMBER 2012.
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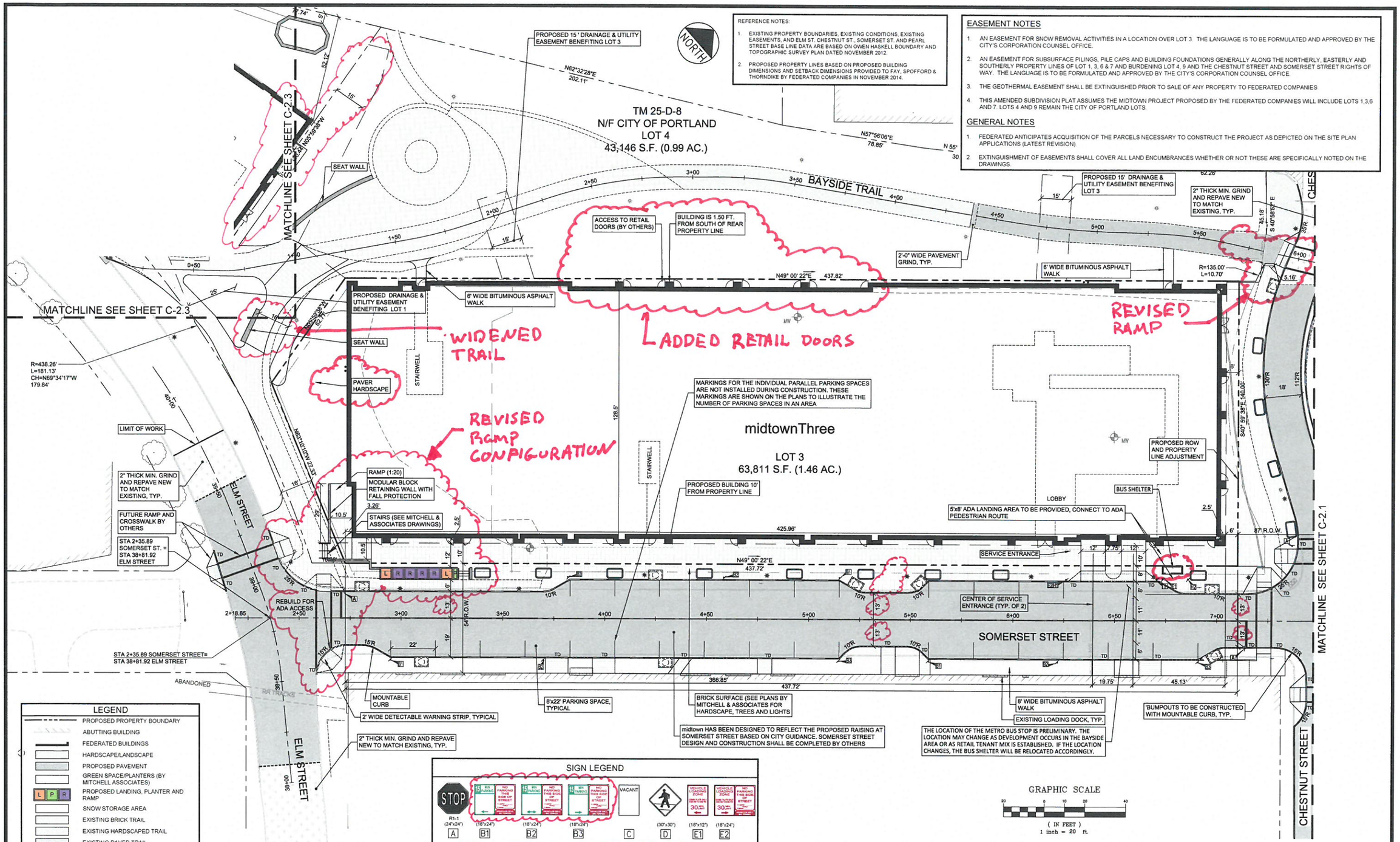
GENERAL NOTES

1. FEDERATED ANTICIPATES ACQUISITION OF THE PARCELS NECESSARY TO CONSTRUCT THE PROJECT AS DEPICTED ON THE SITE PLAN APPLICATIONS (LATEST REVISION).
2. EXTINGUISHMENT OF EASEMENTS SHALL COVER ALL LAND ENCUMBRANCES WHETHER OR NOT THESE ARE SPECIFICALLY NOTED ON THE DRAWINGS.



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REV	DATE	DESCRIPTION
2	01.21.15	REVISED PER PWD/CMP COMMENTS; SUBMITTED TO CITY
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE — STEPHEN R. BUSHEY — LICENSED — PROFESSIONAL ENGINEER

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

PROJECT: midtown
PORTLAND, MAINE

SHEET TITLE: SITE LAYOUT PLAN - midtownThree

CLIENT: FEDQ DV001, LLC

FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW/LA	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	1" = 20'
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-SITE		
SHEET	C-2.2		

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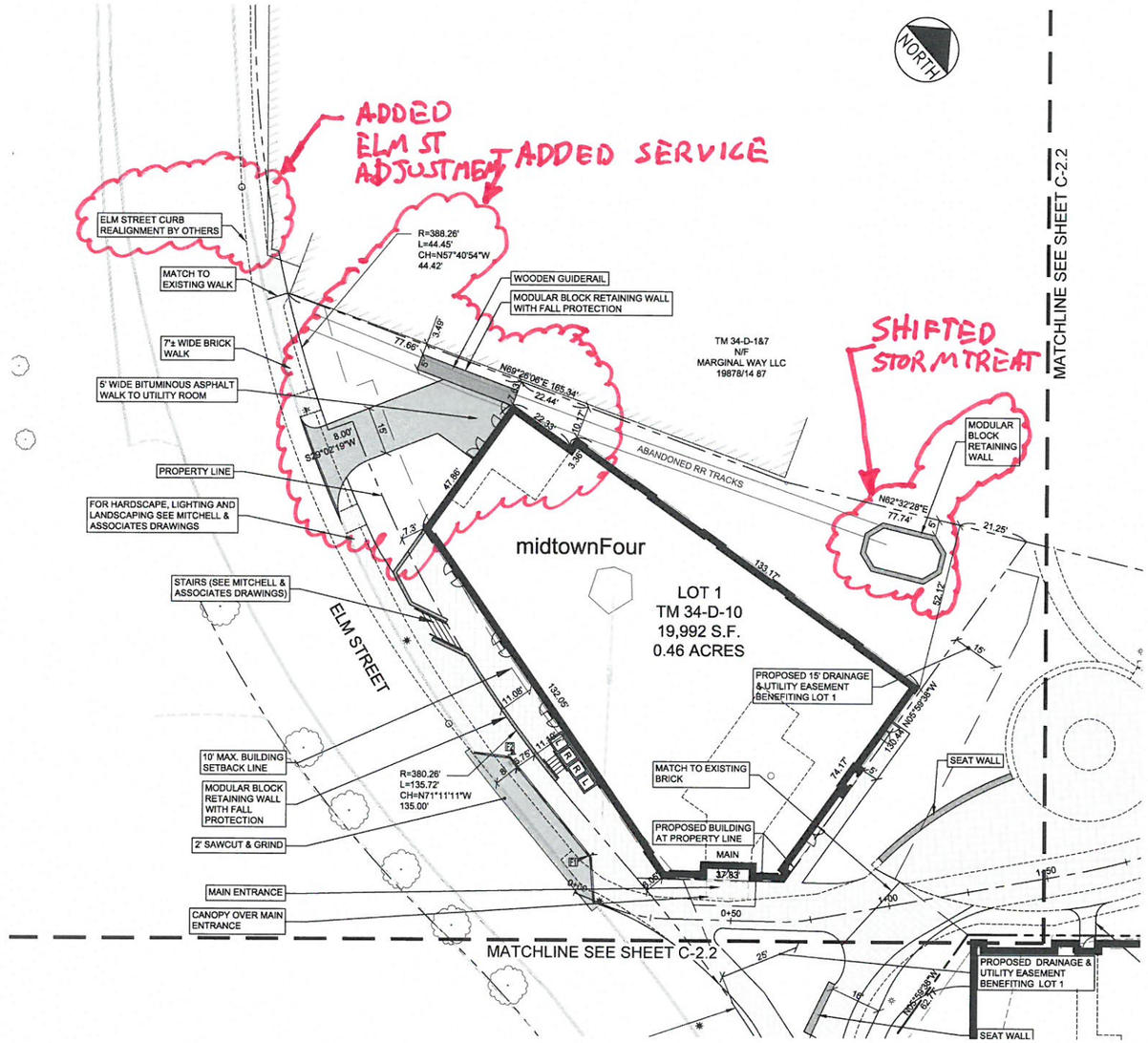

LEGEND

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- FEDERATED BUILDINGS
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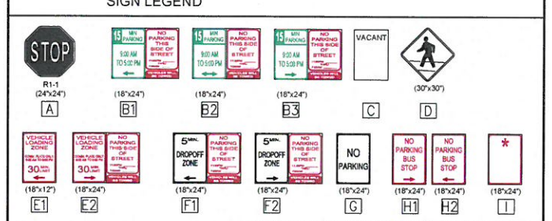
SIGN LEGEND



GRAPHIC SCALE

30 0 10 20 40

(IN FEET)
1 inch = 20 ft.

PRELIMINARY - NOT FOR CONSTRUCTION

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REVISIONS

STATE OF MAINE STEPHEN R. BUSHEY No. 7429 LICENSED PROFESSIONAL ENGINEER

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

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
SITE LAYOUT PLAN - midtownFour

CLIENT
FEDQ DV001, LLC

FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW/LA	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	1" = 20'
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-SITE		
SHEET	C-2.3		

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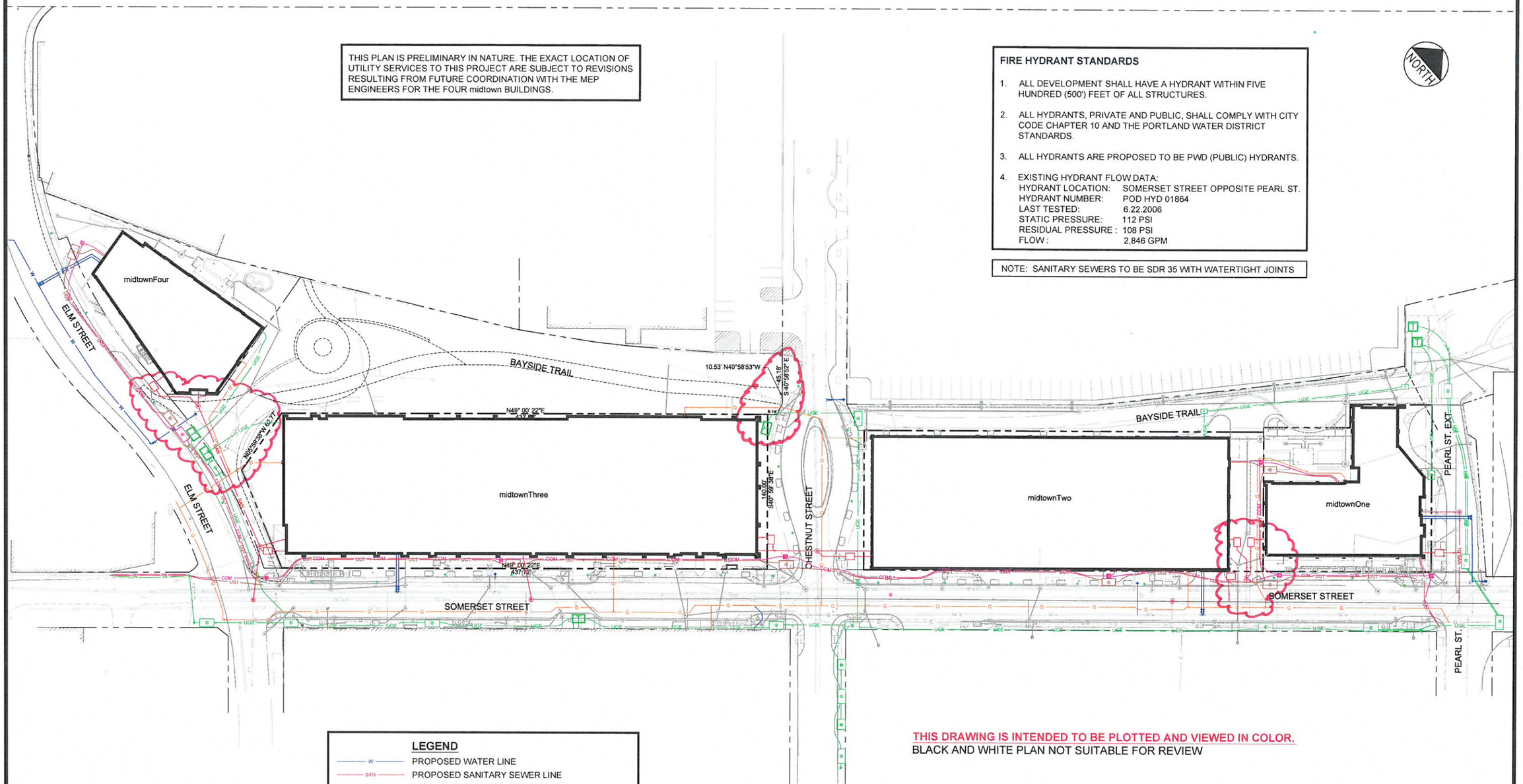
THIS PLAN IS PRELIMINARY IN NATURE. THE EXACT LOCATION OF UTILITY SERVICES TO THIS PROJECT ARE SUBJECT TO REVISIONS RESULTING FROM FUTURE COORDINATION WITH THE MEP ENGINEERS FOR THE FOUR midtown BUILDINGS.

FIRE HYDRANT STANDARDS

1. ALL DEVELOPMENT SHALL HAVE A HYDRANT WITHIN FIVE HUNDRED (500') FEET OF ALL STRUCTURES.
2. ALL HYDRANTS, PRIVATE AND PUBLIC, SHALL COMPLY WITH CITY CODE CHAPTER 10 AND THE PORTLAND WATER DISTRICT STANDARDS.
3. ALL HYDRANTS ARE PROPOSED TO BE PWD (PUBLIC) HYDRANTS.
4. EXISTING HYDRANT FLOW DATA:
   HYDRANT LOCATION: SOMERSET STREET OPPOSITE PEARL ST.
   HYDRANT NUMBER: POD HYD 01864
   LAST TESTED: 6.22.2006
   STATIC PRESSURE: 112 PSI
   RESIDUAL PRESSURE : 108 PSI
   FLOW : 2,846 GPM

NOTE: SANITARY SEWERS TO BE SDR 35 WITH WATERTIGHT JOINTS



THIS DRAWING IS INTENDED TO BE PLOTTED AND VIEWED IN COLOR.
BLACK AND WHITE PLAN NOT SUITABLE FOR REVIEW

LEGEND

- W — PROPOSED WATER LINE
- SAN — PROPOSED SANITARY SEWER LINE
- G — PROPOSED NATURAL GAS LINE
- UGE — PROPOSED UNDERGROUND ELECTRIC LINE
- UGT — PROPOSED UNDERGROUND TELEPHONE LINE
- COM — PROPOSED UNDERGROUND COMMUNICATION LINE
- OHE — PROPOSED OVERHEAD ELECTRIC LINE
- T — PROPOSED TRANSFORMER PAD
- T — PROPOSED UNDERGROUND VAULT WITH SUBMERSIBLE TRANSFORMER
- E — PROPOSED UNDERGROUND ELECTRICAL MANHOLE

GRAPHIC SCALE
40 0 20 40 80
(IN FEET)
1 inch = 40 ft.

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
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1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE — STEPHEN R. BUSHEY — No. 7429 — LICENSED PROFESSIONAL ENGINEER — 1/21/15
P.E. STEPHEN R. BUSHEY
LIC. # 7429

PROJECT: midtown, PORTLAND, MAINE

SHEET TITLE: OVERALL UTILITY PLAN

CLIENT: FEDQ DV001, LLC

FST — FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW/DED	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	1" = 40'
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-UTIL		
SHEET	C-4.0		

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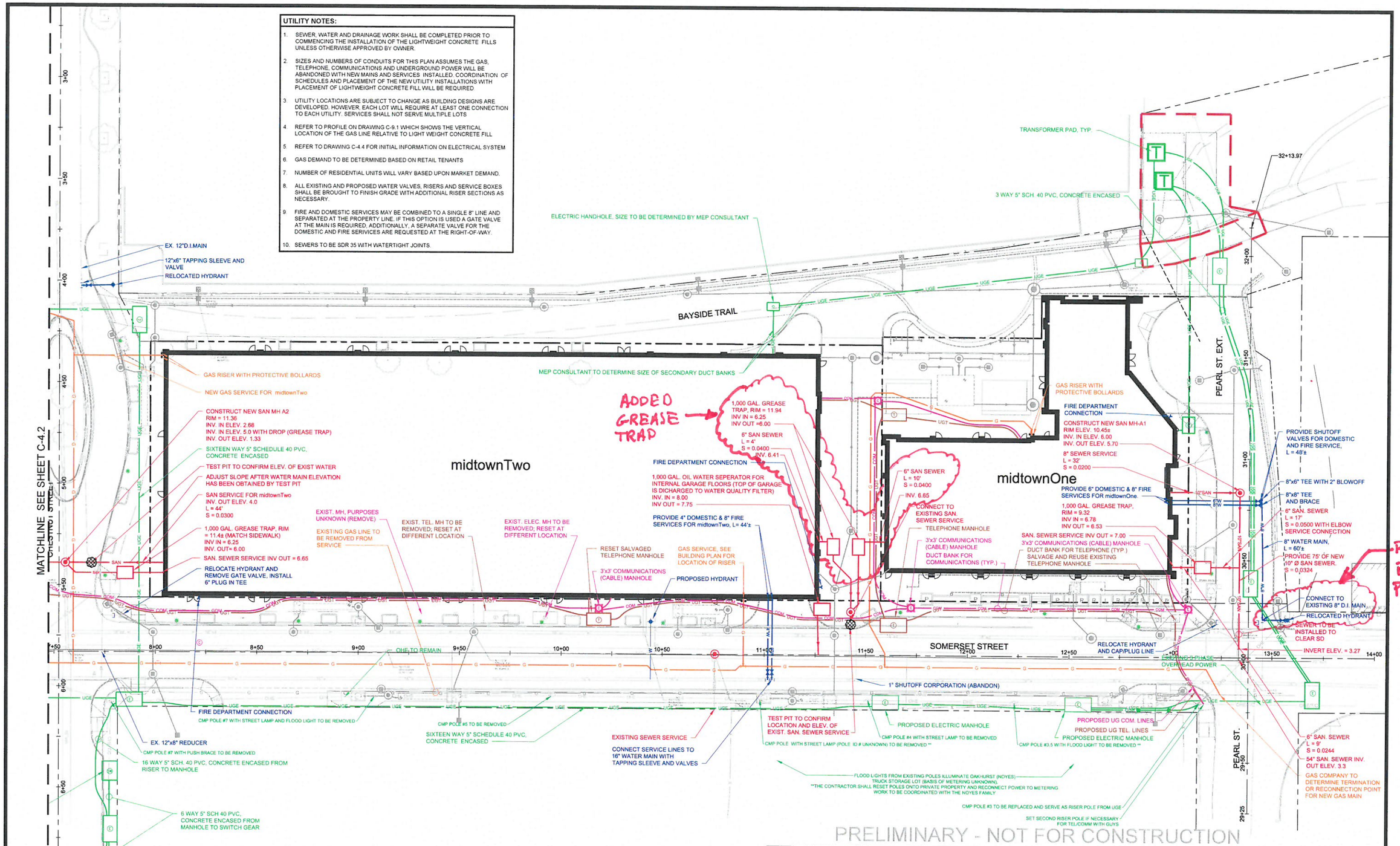
UTILITY NOTES:

1. SEWER, WATER AND DRAINAGE WORK SHALL BE COMPLETED PRIOR TO COMMENCING THE INSTALLATION OF THE LIGHTWEIGHT CONCRETE FILLS UNLESS OTHERWISE APPROVED BY OWNER.
2. SIZES AND NUMBERS OF CONDUITS FOR THIS PLAN ASSUMES THE GAS, TELEPHONE, COMMUNICATIONS AND UNDERGROUND POWER WILL BE ABANDONED WITH NEW MAINS AND SERVICES INSTALLED. COORDINATION OF SCHEDULES AND PLACEMENT OF THE NEW UTILITY INSTALLATIONS WITH PLACEMENT OF LIGHTWEIGHT CONCRETE FILL WILL BE REQUIRED
3. UTILITY LOCATIONS ARE SUBJECT TO CHANGE AS BUILDING DESIGNS ARE DEVELOPED. HOWEVER, EACH LOT WILL REQUIRE AT LEAST ONE CONNECTION TO EACH UTILITY. SERVICES SHALL NOT SERVE MULTIPLE LOTS
4. REFER TO PROFILE ON DRAWING C-9.1 WHICH SHOWS THE VERTICAL LOCATION OF THE GAS LINE RELATIVE TO LIGHT WEIGHT CONCRETE FILL
5. REFER TO DRAWING C-4.4 FOR INITIAL INFORMATION ON ELECTRICAL SYSTEM
6. GAS DEMAND TO BE DETERMINED BASED ON RETAIL TENANTS
7. NUMBER OF RESIDENTIAL UNITS WILL VARY BASED UPON MARKET DEMAND.
8. ALL EXISTING AND PROPOSED WATER VALVES, RISERS AND SERVICE BOXES SHALL BE BROUGHT TO FINISH GRADE WITH ADDITIONAL RISER SECTIONS AS NECESSARY.
9. FIRE AND DOMESTIC SERVICES MAY BE COMBINED TO A SINGLE 8" LINE AND SEPARATED AT THE PROPERTY LINE. IF THIS OPTION IS USED A GATE VALVE AT THE MAIN IS REQUIRED, ADDITIONALLY, A SEPARATE VALVE FOR THE DOMESTIC AND FIRE SERIVICES ARE REQUESTED AT THE RIGHT-OF-WAY.
10. SEWERS TO BE SDR 35 WITH WATERTIGHT JOINTS.



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BLACK AND WHITE PLAN NOT SUITABLE FOR REVIEW

GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 inch = 20 ft.

REV	DATE	DESCRIPTION
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REVISIONS

STATE OF MAINE — STEPHEN R. BUSHEY — LICENSED PROFESSIONAL ENGINEER — 7429

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

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
UTILITY PLAN - midtownOne and midtownTwo

CLIENT
FEDQ DV001, LLC

FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW/DED	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	1" = 20'
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-UTIL		
SHEET	C-4.1		

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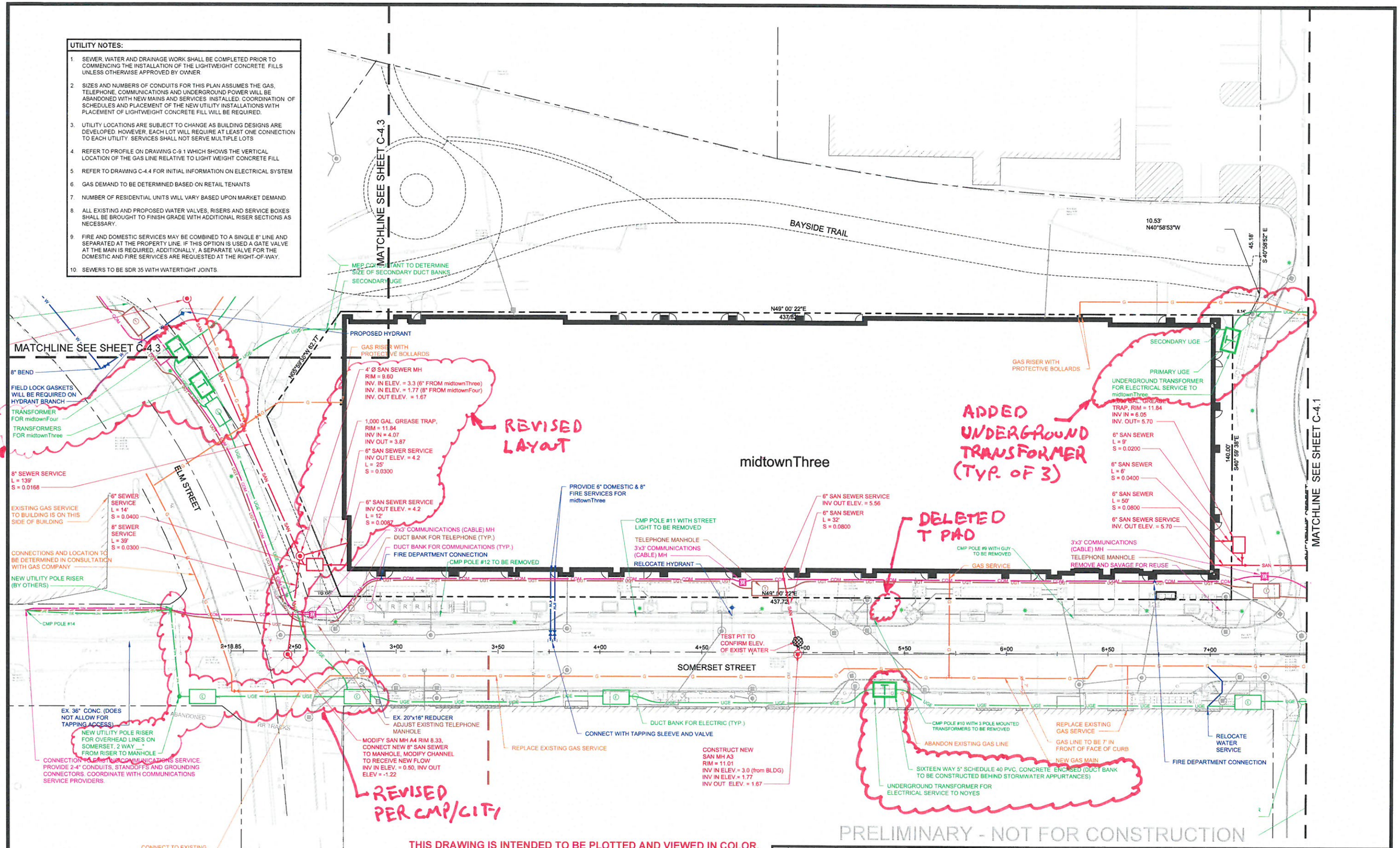
UTILITY NOTES:

1. SEWER, WATER AND DRAINAGE WORK SHALL BE COMPLETED PRIOR TO COMMENCING THE INSTALLATION OF THE LIGHTWEIGHT CONCRETE FILLS UNLESS OTHERWISE APPROVED BY OWNER.
2. SIZES AND NUMBERS OF CONDUITS FOR THIS PLAN ASSUMES THE GAS, TELEPHONE, COMMUNICATIONS AND UNDERGROUND POWER WILL BE ABANDONED WITH NEW MAINS AND SERVICES INSTALLED. COORDINATION OF SCHEDULES AND PLACEMENT OF THE NEW UTILITY INSTALLATIONS WITH PLACEMENT OF LIGHTWEIGHT CONCRETE FILL WILL BE REQUIRED.
3. UTILITY LOCATIONS ARE SUBJECT TO CHANGE AS BUILDING DESIGNS ARE DEVELOPED. HOWEVER, EACH LOT WILL REQUIRE AT LEAST ONE CONNECTION TO EACH UTILITY. SERVICES SHALL NOT SERVE MULTIPLE LOTS.
4. REFER TO PROFILE ON DRAWING C-9.1 WHICH SHOWS THE VERTICAL LOCATION OF THE GAS LINE RELATIVE TO LIGHT WEIGHT CONCRETE FILL.
5. REFER TO DRAWING C-4.4 FOR INITIAL INFORMATION ON ELECTRICAL SYSTEM.
6. GAS DEMAND TO BE DETERMINED BASED ON RETAIL TENANTS.
7. NUMBER OF RESIDENTIAL UNITS WILL VARY BASED UPON MARKET DEMAND.
8. ALL EXISTING AND PROPOSED WATER VALVES, RISERS AND SERVICE BOXES SHALL BE BROUGHT TO FINISH GRADE WITH ADDITIONAL RISER SECTIONS AS NECESSARY.
9. FIRE AND DOMESTIC SERVICES MAY BE COMBINED TO A SINGLE 8" LINE AND SEPARATED AT THE PROPERTY LINE. IF THIS OPTION IS USED A GATE VALVE AT THE MAIN IS REQUIRED, ADDITIONALLY, A SEPARATE VALVE FOR THE DOMESTIC AND FIRE SERIVICES ARE REQUESTED AT THE RIGHT-OF-WAY.
10. SEWERS TO BE SDR 35 WITH WATERTIGHT JOINTS.



THIS DRAWING IS INTENDED TO BE PLOTTED AND VIEWED IN COLOR.
BLACK AND WHITE PLAN NOT SUITABLE FOR REVIEW

GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 inch = 20 ft.

REV	DATE	DESCRIPTION
2	01.21.15	REVISED PER PWD/CMP COMMENTS; SUBMITTED TO CITY
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE — STEPHEN R. BUSHEY — No. 7429 — LICENSED — PROFESSIONAL ENGINEER — 1/21/15
P.E. STEPHEN R. BUSHEY
LIC. # 7429

PROJECT: midtown, PORTLAND, MAINE
SHEET TITLE: UTILITY PLAN - midtownThree
CLIENT: FEDQ DV001, LLC

FST — FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

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FILE NAME:	3062-UTIL		
SHEET	C-4.2		

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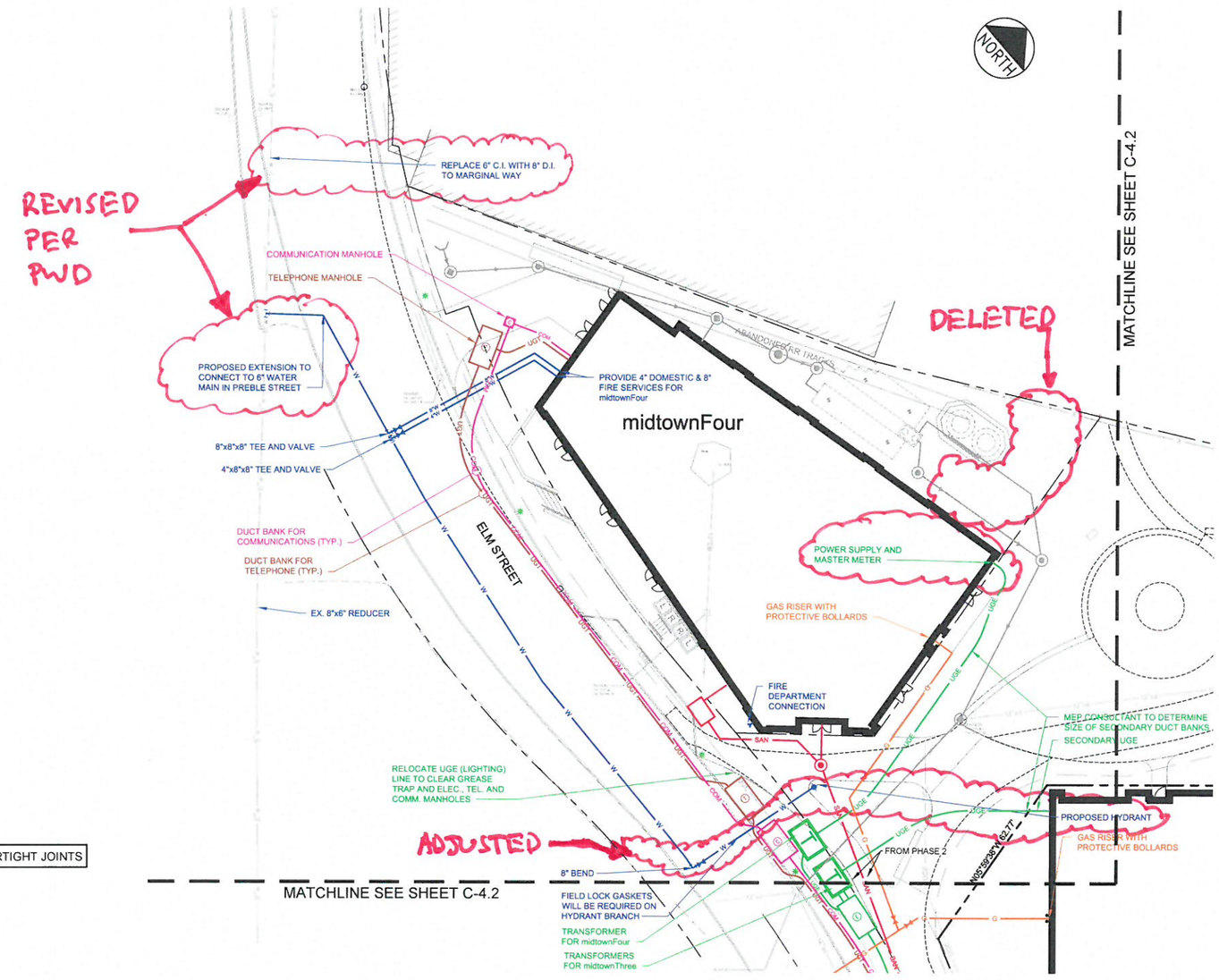

NOTE: SEWERS TO BE SDR 35 WITH WATERTIGHT JOINTS

THIS DRAWING IS INTENDED TO BE PLOTTED AND VIEWED IN COLOR.
BLACK AND WHITE PLAN NOT SUITABLE FOR REVIEW

PRELIMINARY - NOT FOR CONSTRUCTION

GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 inch = 20 ft.

REV	DATE	DESCRIPTION
2	01.21.15	REVISED PER PWD/CMP COMMENTS; SUBMITTED TO CITY
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE WILLIAM R. MOORE 13547 LICENSED PROFESSIONAL ENGINEER 11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT: midtown
PORTLAND, MAINE

SHEET TITLE: UTILITY PLAN - midtownFour

CLIENT: FEDQ DV001, LLC

FST 140 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE B, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW/DED	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	1" = 20'
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-UTIL		
SHEET	C-4.3		

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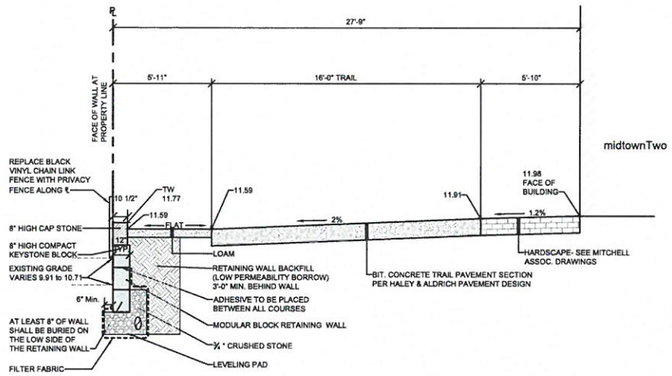
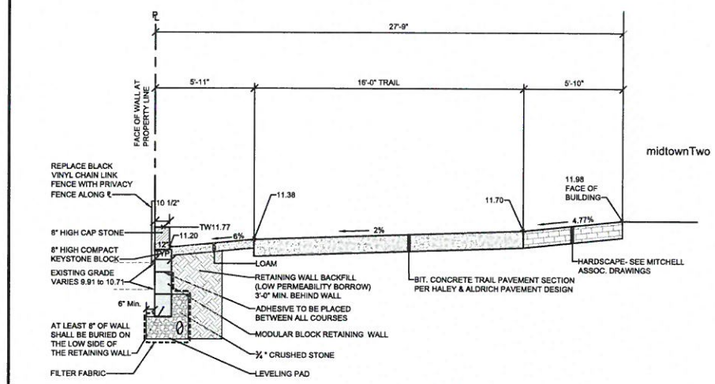
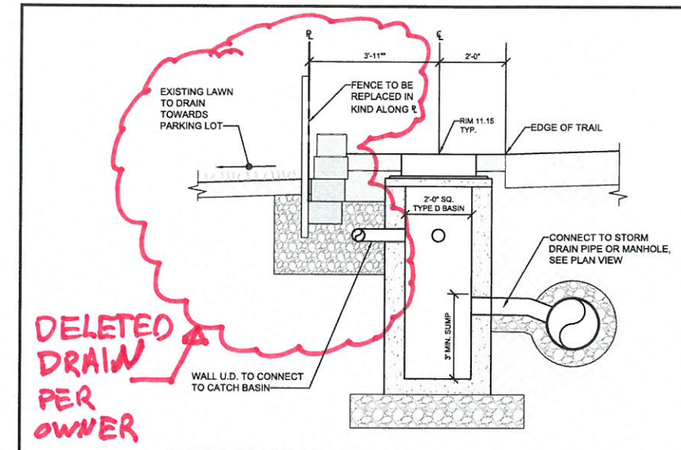


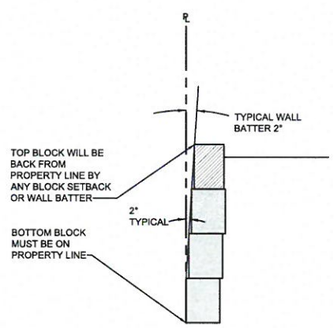
TYPICAL CROSS SECTION
ALONG "PINCH POINT" BEHIND midtownTwo (High)
SCALE: 1" = 4' Horiz., 1" = 8' Vert.



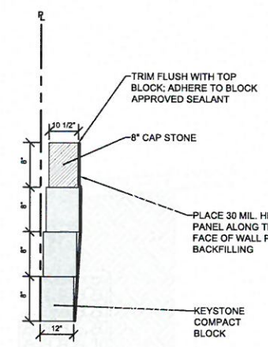
TYPICAL CROSS SECTION
ALONG "PINCH POINT" BEHIND midtownTwo (Low)
SCALE: 1" = 4' Horiz., 1" = 8' Vert.



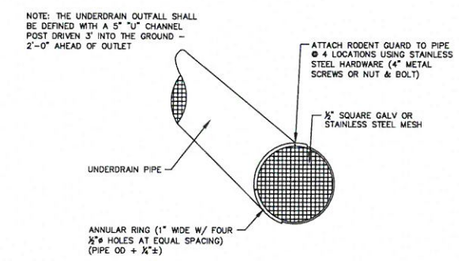
TYPE D DRAINAGE INLET DETAIL ALONG RETAINING WALL
SCALE: 1" = 2'



PLACEMENT OF BOTTOM BLOCK
SCALE: 1" = 2' Horiz., 1" = 4' Vert.



DETAIL FOR WATERPROOF MEMBRANE
ALONG THE BACK FACE OF THE WALL
SCALE: 1" = 2' Horiz., 1" = 4' Vert.



UNDERDRAIN OUTFALLS AND
RODENT GUARD FOR EXPOSED PIPE OUTLETS
(C) N.T.S.

BASIS OF DESIGN FOR THE BAYSIDE TRAIL RECONSTRUCTION BEHIND midtownTwo

AASHTO Standards Which Must Be Met:

The minimum width of the shoulder adjacent to a multiuse path must be 5 feet before a vertical drop or rise is permitted (5'-1/2" provided).

Railings and other obstructions need to have a 2 foot setback from the edge of the trail (no obstructions).

The trail cross slope is 2% (see detail sections).

The grade from the edge of the trail should not exceed 6% for a distance of 5'-0" (slope varies from 0% to 6%).

New Cross Sections:

Two cross sections are shown. One is at the sags along the trail; the other is at the crests (i.e. 41 feet apart).

Inlets are required along the top of the wall to intercept drainage.

Temporary Construction Easement to be granted by Abutter.

Option 1 or 2 shall be selected by abutting property owner.

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
2	01.21.15	REVISED PER PWD/CMP COMMENTS; SUBMITTED TO CITY
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE STEPHEN R. BUSHEY No. 7429 LICENSED PROFESSIONAL ENGINEER 11/21/15

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

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
BAYSIDE TRAIL RETAINING WALL DETAILS AND ABUTTER OPTIONS

CLIENT
FEDQ DV001, LLC

FST
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106

DRAWN:	KEW	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	AS NOTED
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-RET WALL OPTIONS		
SHEET	C-7.12		

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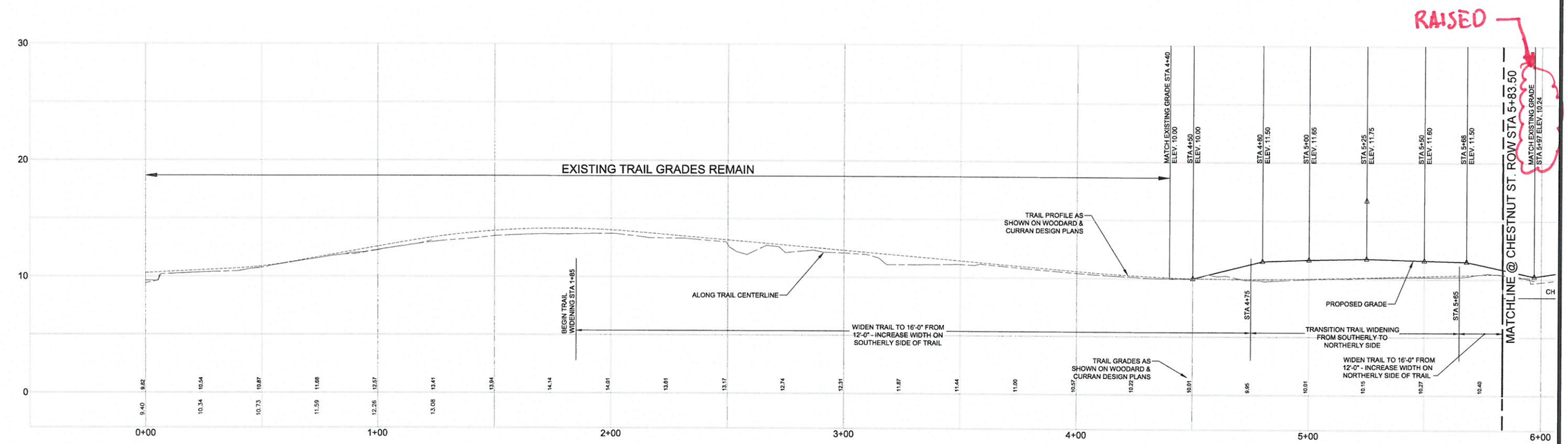
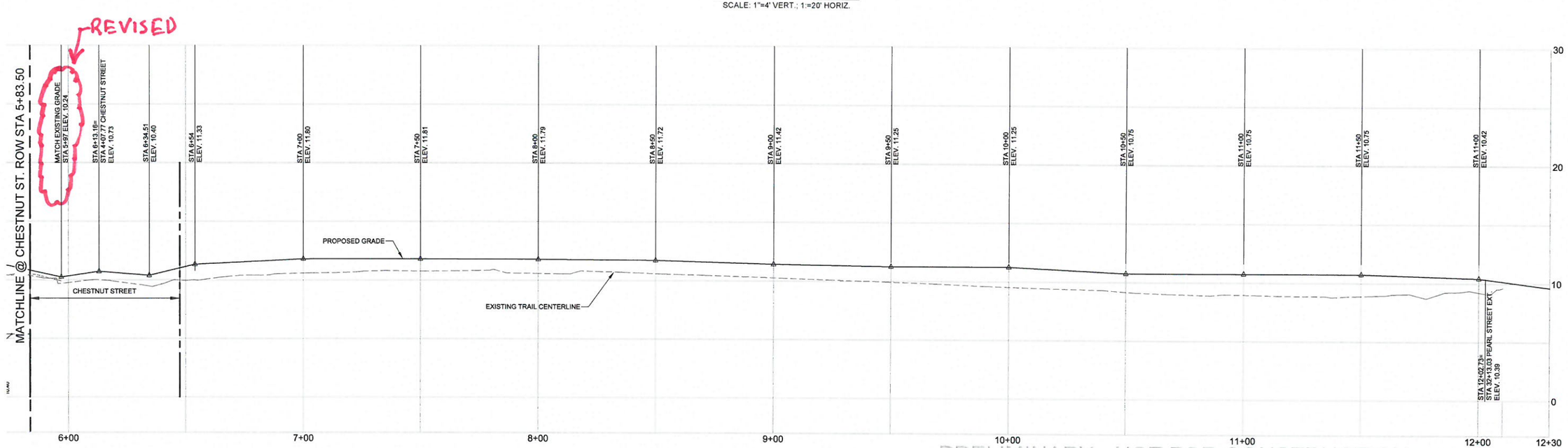


BAYSIDE TRAIL PROFILE

SCALE: 1"=4' VERT.; 1:=20' HORIZ.



BAYSIDE TRAIL PROFILE

SCALE: 1"=4' VERT.; 1:=20' HORIZ.

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
2	01.21.2015	REVISED PROFILE ON CHESTNUT ST. & SUBMITTED TO CITY FOR REVIEW
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE — STEPHEN R. BUSHEY — No. 7429 — LICENSED PROFESSIONAL ENGINEER — 1/21/15

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

PROJECT: midtown
PORTLAND, MAINE

SHEET TITLE: BAYSIDE TRAIL PROFILE

CLIENT: FEDQ DV001, LLC

FST — 100 YEARS

FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

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DESIGNED:	WGH/BEK	SCALE:	AS NOTED
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-PROFILE_TRAIL		
SHEET	C-8.2		

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SITE DEVELOPMENT PLANS

FOR

midtown

PORTLAND, MAINE

SUBDIVISION AND LEVEL III SITE PLAN SUBMISSION

CITY OF PORTLAND: NOVEMBER 14, 2014

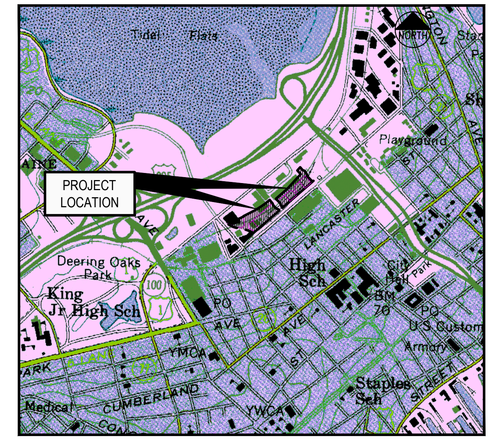
C-1.0

PROJECT PARCEL SITE

ZONING: B-7 URBAN COMMERCIAL BUSINESS

PORTLAND TAX ASSESSOR'S MAP & LOT NUMBERS:

MAP	BLOCK	LOT
025	A	22
025	B	2
025	B	3
025	B	4
025	B	5
034	D	3
034	D	9
034	D	10



LOCATION MAP
N.T.S.

FST CIVIL DRAWING LIST:

C-1.0 COVER SHEET
C-1.1 GENERAL NOTES AND LEGEND
C-1.2 DRAFT AMENDED SUBDIVISION/RECORDING PLAT
C-1.2A 2006 EXISTING CONDITIONS SURVEY PREPARED BY SGC FOR THE CITY OF PORTLAND (REFERENCE DRAWING ONLY)
C-1.3 ALTA/ACSM LAND TITLE SURVEY (BY CITY OF PORTLAND)
C-1.4 2012 BOUNDARY AND TOPOGRAPHIC SURVEY (BY OWEN HASKELL)
C-1.5 RESIDENTIAL SUBDIVISION OF LOT 7
C-1.8 EXISTING CONDITIONS AND REMOVALS PLAN
C-2.0 OVERALL SITE PLAN
C-2.0A OVERALL SITE PLAN WITH DIMENSIONS
C-2.0B ACCESSIBLE ROUTE PLAN
C-2.1 SITE LAYOUT PLAN - midtownOne and midtownTwo
C-2.2 SITE LAYOUT PLAN - midtownThree
C-2.3 SITE LAYOUT PLAN - midtownFour
C-2.4 midtownOne AND midtownTwo BUILDING ENVELOPE AND OPEN SPACE COMPUTATIONS
C-2.5 midtownThree BUILDING ENVELOPE AND OPEN SPACE COMPUTATIONS
C-2.6 midtownFour BUILDING ENVELOPE AND OPEN SPACE COMPUTATIONS
C-3.0 GRADING PLAN - midtownOne and midtownTwo
C-3.1 GRADING PLAN - midtownThree
C-3.2 GRADING PLAN - midtownFour
C-3.3 PROPOSED SPOT GRADES FOR EAST SIDE OF SOMERSET STREET
C-3.4 PROPOSED SPOT GRADES FOR WEST SIDE OF SOMERSET STREET
C-3.5 PROPOSED SPOT GRADES FOR CHESTNUT STREET NORTH
C-3.6 PROPOSED SPOT GRADES FOR CHESTNUT STREET SOUTH
C-3.7 PROPOSED SPOT GRADES FOR PEARL STREET EXTENSION
C-3.8 PROPOSED SPOT GRADES FOR ELM STREET
C-3.9 DATA SUMMARY SHEET FOR SOMERSET AND CHESTNUT STREET
C-3.10 PROPOSED STORM DRAIN SCHEDULES FOR STORMTREAT ™ UNITS
C-3.11 PROPOSED STORM DRAIN SCHEDULES FOR TREE BOX FILTER SYSTEMS SHEET 1 OF 3
C-3.12 PROPOSED STORM DRAIN SCHEDULES FOR TREE BOX FILTER SYSTEMS SHEET 2 OF 3
C-3.13 PROPOSED STORM DRAIN SCHEDULES FOR TREE BOX FILTER SYSTEMS SHEET 3 OF 3
C-3.14 midtownOne and midtownTwo COURTYARD CROSS SECTIONS (INCLUDES INFORMATION ON LIGHTWEIGHT CONCRETE FILL)
C-3.15 COURTYARD AND MUSE: SPOT GRADES AND WATER QUALITY SYSTEM
C-4.0 OVERALL UTILITY PLAN
C-4.1 UTILITY PLAN - midtownOne and midtownTwo
C-4.2 UTILITY PLAN - midtownThree
C-4.3 UTILITY PLAN - midtownFour
C-4.4A ELECTRICAL DISTRIBUTION PLAN PREPARED BY FST
C-4.4B ELECTRICAL DISTRIBUTION PLAN PREPARED BY CMP
C-6.0 EROSION CONTROL PLAN
C-6.1 EROSION AND SEDIMENT CONTROL DETAILS
C-6.2 EROSION AND SEDIMENT CONTROL DETAILS
C-7.0 STREET AND DRIVEWAY CROSS SECTIONS
C-7.0A MISCELLANEOUS SECTIONS AND DETAILS
C-7.1 TRANSPORTATION SYSTEMS AND STREET DESIGN
C-7.2 TRANSPORTATION SYSTEMS AND STREET DESIGN
C-7.3 SAN SEWER AND STORM DRAIN DETAILS
C-7.4 SAN SEWER AND STORM DRAIN DETAILS
C-7.5 WATER DETAILS
C-7.6 WATER DETAILS
C-7.7 STORMWATER DETAILS STORMTREAT ™ SYSTEMS
C-7.8 TREEBOX FILTER WITH ALTERNATE UNDERGROUND STORAGE DETAILS
C-7.9 STORMTREAT ™ AND BRENTWOOD ™ UNDERGROUND STORAGE DETAILS
C-7.10 TREEBOX FILTER WITH UNDERGROUND STORAGE DETAILS
C-7.11 BOXLESS TREE FILTER FOR SYSTEM A
C-7.12 BAYSIDE TRAIL RETAINING WALL DETAILS AND ABUTTER OPTIONS
C-7.13 RETAINING WALL DETAILS
C-8.0 SOMERSET STREET PROFILE
C-8.0A SOMERSET STREET PROFILE FACING NOYES BUILDING
C-8.1 ELM STREET, CHESTNUT STREET AND PEARL STREET EXTENSION PROFILES
C-8.2 BAYSIDE TRAIL PROFILE
C-10.0 SOMERSET STREET CROSS SECTIONS
C-10.1 SOMERSET STREET CROSS SECTIONS
C-14.0 PREDEVELOPMENT WATERSHED MAP
C-14.1 POSTDEVELOPMENT WATERSHED MAP

THA ARCHITECTURAL DRAWING LIST:

1-A101 GROUND AND ROOF PLAN - midtownOne
1-A102 TYPICAL PLAN- midtownOne
1-A201 ELEVATIONS - midtownOne
2-A101 GROUND AND ENTRY PLAN - midtownTwo
2-A102 TYPICAL AND ROOF PLAN - midtownTwo
2-A201 ELEVATIONS - midtownTwo
3-A101 GROUND PLAN - midtownThree
3-A102 TYPICAL PLAN- midtownThree
3-A103 ROOF PLAN - midtownThree
3-A201 ELEVATIONS - midtownThree
3-A202 ELEVATIONS - midtownThree
4-A101 GROUND AND ROOF PLAN - midtownFour
4-A102 TYPICAL PLAN- midtownFour
4-A201 ELEVATIONS - midtownFour
A800 SIGNAGE ELEVATIONS

MITCHELL & ASSOCIATES DRAWING LIST:

L1 LANDSCAPE AND LIGHTING PLAN
L2 LANDSCAPE AND LIGHTING PLAN
L3 LANDSCAPE AND LIGHTING PLAN
L2.0 LANDSCAPE DETAILS
L2.1 LANDSCAPE DETAILS
L2.2 LIGHTING DETAILS
L3.0 LIGHTING PHOTOMETRICS PLAN (TO BE SUBMITTED)

PERMITS / APPROVALS *

LOCAL	GOVERNING BODY	STATUS
ZONING TEXT AMENDMENT APPLICANT: CITY OF PORTLAND	CITY OF PORTLAND PLANNING AUTHORITY CITY HALL 389 CONGRESS STREET PORTLAND, MAINE 04101 207.874.8722 CONTACT: RICK KNOWLAND, AICP	ADOPTED
LEVEL III SITE PLANS APPLICANT : FEDERATED COMPANIES	CITY OF PORTLAND PLANNING AUTHORITY CITY HALL 389 CONGRESS STREET PORTLAND, MAINE 04101 207.874.8722 CONTACT: RICK KNOWLAND, AICP	PRELIMINARY SUBMISSION ON OCT. 17, 2014 FINAL SUBMISSION NOV. 14, 2014
AMENDED SUBDIVISION PLAN APPLICANT: CITY OF PORTLAND	CITY OF PORTLAND PLANNING AUTHORITY CITY HALL 389 CONGRESS STREET PORTLAND, MAINE 04101 207.874.8722 CONTACT: RICK KNOWLAND, ALCP	TO BE SUBMITTED ON NOV. 14, 2014
LOT 1, 3 AND 7 SUBDIVISION (INDIVIDUAL RESIDENTIAL UNITS APPLICANT: CITY OF PORTLAND	CITY OF PORTLAND PLANNING AUTHORITY CITY HALL 389 CONGRESS STREET PORTLAND, MAINE 04101 207.874.8722 CONTACT: RICK KNOWLAND, ALCP	TO BE INCLUDED WITH NOV. 14, 2014 SUBMISSION
BUILDING AND DEMOLITION PERMITS	CITY OF PORTLAND CODE ENFORCEMENT OFFICE CITY HALL 389 CONGRESS STREET PORTLAND, MAINE 04101 207.874.8703	TO BE FILED BY CONTRACTOR PRIOR TO CONSTRUCTION
STREET OPENING PERMIT	CITY OF PORTLAND PUBLIC SERVICES DIVISION 55 PORTLAND STREET PORTLAND, MAINE 04101 207.874.8801	TO BE FILED BY CONTRACTOR PRIOR TO CONSTRUCTION
WASTEWATER DISCHARGE	CITY OF PORTLAND PUBLIC SERVICES DIVISION 55 PORTLAND STREET PORTLAND, MAINE 04101 207.874.8801	ORIGINAL APPLICATION FILED IN NOV 2014 ABILITY TO SERVE AND WASTEWATER DISCHARGE PENDING
SEALED DRAIN PERMIT	CITY OF PORTLAND PUBLIC SERVICES DIVISION 55 PORTLAND STREET PORTLAND, MAINE 04101 207.874.8801	TO BE FILED BY CONTRACTOR PRIOR TO CONSTRUCTION

STATE	GOVERNING BODY	STATUS
SITE LOCATION OF DEVELOPMENT	CITY OF PORTLAND PLANNING AUTHORITY DELEGATED AUTHORITY CITY HALL, 389 CONGRESS STREET 207.874.8722 CONTACT: RICK KNOWLAND, AICP	LEVEL III APPLICATION REVIEWED BY THE CITY OF PORTLAND DELEGATED REVIEW AUTHORITY
MAINE DOT TRAFFIC MOVEMENT PERMIT	ADMINISTERED BY THE CITY OF PORTLAND CONTACT: JEREMIAH BARTLETT	ORIGINAL APPROVAL JAN. 14, 2014 AMENDED TRAFFIC MOVEMENT PERMIT NOV. 14, 2014
MAINE VOLUNTARY RESPONSE ACTION PLAN (VRAP), APPLICANT IS THE CITY OF PORTLAND	MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION 312 CANCO ROAD PORTLAND, MAINE 04103 207.623.8367 CONTACT: NICK HODGKINS	CITY IS PREPARING A VRAP PLAN THROUGH TEWHEY ASSOCIATES. RESTRICTIVE COVENANTS ON ANY OF THE SUBDIVISION LOTS SHALL BE PROVIDED TO THE APPLICANT BY THE CITY OF PORTLAND
MAINE CONSTRUCTION GENERAL PERMIT	MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION 312 CANCO ROAD PORTLAND, MAINE 04103 207.623.8367 CONTACT: ALISON MOODY	TO BE FILED BY CONTRACTOR PRIOR TO CONSTRUCTION

UTILITIES

WATER
ATTN: GLISSEN HAVU
PORTLAND WATER DISTRICT
22 DOUGLAS STREET
P.O. BOX 3533
PORTLAND, MAINE 04104
207.761.8310

SEWER
ATTN: DAVID-MARGOLIS-PINEO, P.E.
CITY OF PORTLAND
PUBLIC SERVICES ENGINEERING DEPT.
55 PORTLAND STREET
PORTLAND, MAINE 04102
207.874.8840

POWER
ATTN: JAMIE COUGH
CENTRAL MAINE POWER
162 CANCO ROAD
PORTLAND, MAINE 04103
207.791.1023

TELEPHONE
ATTN: JOHN CAPRIO
FAIRPOINT COMMUNICATIONS
5 DAVIS FARM ROAD
PORTLAND, MAINE 04103
207.797.1842

CABLE
ATTN: ANDREW TROTTIER
TIME WARNER CABLE
118 JOHNSON ROAD
PORTLAND, MAINE 04102
877.546.0962

NATURAL GAS
ATTN: JOE RENDER, KELLY FOWLER
UNITIL / FORMERLY NORTHERN UTILITIES
1075 FOREST AVENUE
PORTLAND, MAINE 04103
207.541.2505

CALL BEFORE YOU DIG:
1.888.DIGSAFE (1.888.344.7233)
DIG SAFE MAINE

CONSULTANT LIST

CIVIL ENGINEER:
Fay, Spofford & Thorndike
formerly known as DeLuca-Hoffman Associates, Inc.
778 MAIN STREET, SUITE 8
SOUTH PORTLAND, MAINE 04106
207.775.1121
ATTN: WILLIAM MOORE, P.E.
www.fstinc.com

ARCHITECT:
THA Architects, LLC
105 WILLOW BROOK AVENUE
STRATHAM, NH 03885
603.770.2491
ATTN: THOMAS A. HOUSE, AIA
www.thaarc.com

LANDSCAPE ARCHITECT:
Mitchell & Associates
THE STAPLES SCHOOL
70 CENTER STREET
PORTLAND, MAINE 04101
207.774.4427
ATTN: ROBERT METCALF, RLA
www.mitchellassociates.biz

SURVEYOR:
Owen Haskell, Inc.
390 US ROUTE 1, UNIT 10
FALMOUTH, MAINE 04105
207.774.0424
ATTN: JOHN SWAN
www.owenhaskell.com

GEOTECHNICAL ENGINEER:
Haley & Aldrich, Inc.
75 WASHINGTON AVENUE, #203
PORTLAND, MAINE 04101
207.482.4609
ATTN: WAYNE CHADBOURNE, P.E.
www.haleyaldrich.com

ENVIRONMENTAL ENGINEER:
Tewhey Associates
500 SOUTHBOROUGH DRIVE, #4
SOUTH PORTLAND, MAINE 04106
207.772.2242
ATTN: JOHN TEWHEY
www.tewhey.com

MECHANICAL ENGINEER/FIRE PROTECTION:
McCabe Associates Consulting Engineers
75 GOODHUE ROAD
DERRY, NH 03038
603.437.2002
ATTN: STEVEN HOULE, PE
www.mccabe-associates.com

STRUCTURAL ENGINEERING:
Summit Engineering, PLLC
111 MAPLEWOOD AVENUE
PORTSMOUTH, NH 03801
603.319.1817
ATTN: PETER GRIEM, PE.
www.summitengineeringinc.com

ELECTRICAL ENGINEER:
McCabe Associates Consulting Engineers
75 GOODHUE ROAD
DERRY, NH 03038
603.437.2002
ATTN: STEVEN HOULE, PE
www.mccabe-associates.com

PARKING CONSULTANT:
Walker Parking Consultants
20 PARK PLAZA SUITE 102
BOSTON, MA. 02116
617.350.5048
ATTN. AUTHUR G. STANDIG
www.art.standig@walkerparking.com

OWNER:
THE CITY OF PORTLAND
389 CONGRESS STREET
PORTLAND, MAINE 04101
ATTN: GREG MITCHELL

APPLICANT:
FEDQ DV001, LLC
3301 NE 1ST AVENUE
MIAMI, FLORIDA 33137-4110
ATTN: NICK WEXLER

I HEREBY ACKNOWLEDGE THAT THESE SITE/CIVIL PLANS 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.

NOTE: THESE PLANS ARE INTENDED TO STAND ALONE AND REPRESENT THE MIDTOWN DEVELOPMENT PROGRAM PROPOSED AS OF OCTOBER 2014. THESE PLANS DO NOT SUPPLANT PLANS AND DOCUMENTS APPROVED ON JANUARY 14, 2014.

ALL PERMITS ARE ANTICIPATED TO HAVE CONDITIONS ATTENDANT WITH THEIR APPROVAL. THE CONTRACTOR SHALL REVIEW ALL PERMITS AND THE CONDITIONS ATTENDANT WITH APPROVALS PRIOR TO THE START OF THE WORK. UNLESS OTHERWISE STIPULATED BY THE CONTRACT DOCUMENTS, THE CONTRACTOR/OWNER IS REQUIRED TO COMPLY AND FULFILL ALL CONDITIONS OF PERMIT APPROVALS.

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
2	02.19.15	REVISED CONSULTANT LIST SUBMITTED TO CITY OF PORTLAND
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE
STEPHEN R. BUSHEY
No. 7429
LICENSED
PROFESSIONAL ENGINEER
11/14/14

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

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
COVER SHEET

CLIENT
FEDQ DV001, LLC

FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	LA	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	NONE
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-COV-GEN		
SHEET	C-1.0		

R:\3062B - Midtown Amended - Portland, ME\Cadd\Permit Set\dwg\3062-COV-GEN.dwg peller, j 2/20/2015 8:43 AM

GENERAL NOTES

1. IN ADDITION TO THESE PLANS AND NOTES, 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 THE MAINE DEPARTMENT OF TRANSPORTATION, THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, 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. THE MASTER PLAN AND PRELIMINARY SITE PLANS DO NOT REFLECT FINAL BUILDING DESIGN. THEREFORE, CONNECTION LOCATIONS WILL CHANGE TO REFLECT SUBSEQUENT DESIGN STEPS.

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, AT ITS SOLE COST. UTILITY ELEVATION INFORMATION INCLUDED DATA FROM THE 2012 OWEN HASKELL EXISTING CONDITIONS PLAN, THE 2008 SGC PLAN, AND THE CITY OF PORTLAND RECORD DRAWINGS FOR SOMERSET STREET. THE ELEVATION AT SIMILAR LOCATIONS VARIES BY 4" CONSEQUENTLY, ALL CONNECTIONS TO GRAVITY SYSTEMS AND UTILITY CROSSINGS REQUIRE TEST PITS TO CONFIRM ELEVATIONS.

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. WHERE THESE REQUIREMENTS CONFLICT, THE MOST STRINGENT SHALL APPLY AT NO EXTRA COST TO THE OWNER, UNLESS OTHERWISE APPROVED IN WRITING BY THE OWNER OR HIS AUTHORIZED REPRESENTATIVE.

9. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RECORD DRAWINGS THROUGHOUT THE PROJECT AND PROVIDING THE OWNER AND THE CITY OF PORTLAND WITH A SET OF ELECTRONIC FINAL RECORD DRAWINGS AS EACH SEQUENCE OF THE PROJECT IS COMPLETED.

10. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ACCESS TO PROPERTIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY MARKINGS, SIGNAGE AND INCIDENTALS TO MAINTAIN SAFE VEHICLE AND PEDESTRIAN ACCESS THROUGHOUT THE LIFE OF THE PROJECT INCLUDING DETOURS FOR THE PUBLIC TRAIL. THE CONTRACTOR SHALL NOTIFY THE PORTLAND PUBLIC SAFETY DIVISION ROUTINELY REGARDING TEMPORARY IMPACT OR CHANGES TO EMERGENCY SITE ACCESS CONDITIONS.

11. THIS PROJECT REQUIRES THE USE OF LIGHT WEIGHT CONCRETE FILL FOR ALL AREAS OUTSIDE OF THE BUILDING OR GARAGE FOOTPRINTS WHERE THE PROPOSED GRADE EXCEEDS EXISTING GRADES BY MORE THAN 6". THE AREA WHERE LIGHT WEIGHT FILL IS REQUIRED SHALL BE EXCAVATED TO THE FOLLOWING DEPTH [(PROPOSED GRADE - EXISTING GRADE) - 6"] * 1.5 FOR EXAMPLE A 3' FILL WOULD REQUIRE 3.75' OF LIGHT WEIGHT CONCRETE PLACED BELOW EXISTING GRADE.

(3.0' - 0.5') = 2.5

2.5 * 1.5= 3.75'.

12. ALL MARKINGS WITHIN THE PUBLIC RIGHT OF WAY SHALL CONFORM TO THE CITY OF PORTLAND STANDARDS. AN ONSITE "PRE-MARKING" MEETING SHALL BE CONDUCTED WITH THE OWNER AND THE CITY OF PORTLAND DPW BEFORE ANY MARKINGS ARE INSTALLED.

13. CONSULT WITH THE CITY OF PORTLAND PARKING DIVISION TO COORDINATE THE INSTALLATION OF PARKING METERS.

14. THE PROPOSED WORK SCHEDULE INCLUDES TEMPORARY CLOSURE OF SOMERSET ST BETWEEN CHESTNUT ST AND PEARL ST, AND BETWEEN CHESTNUT ST AND ELM ST. REFER TO CONSTRUCTION SEQUENCING PLAN.

15. ALL WORK IN PUBLIC RIGHT OF WAYS AND CITY OF PORTLAND PROPERTY SHALL CONFORM TO THE TECHNICAL STANDARDS AND SPECIFICATIONS OF THE CITY OF PORTLAND.

SITE LAYOUT NOTES

1. ALL HANDICAP PARKING SPACES ARE TO RECEIVE HANDICAP SIGNS AND PAVEMENT MARKINGS AS ILLUSTRATED ON THE DETAIL SHEETS.

2. SLIPFORM CONCRETE CURB AND GRANITE CURB SHALL MEET THE REQUIREMENTS OF MDOT 702.001, 703.07 AND 609.04.

3. ALL DIMENSIONING, UNLESS NOTED OTHERWISE, IS TO THE FACE OF CURB OR THE FACE OF THE BUILDING.

4. ALL TRAFFIC CONTROL SIGNS INDICATED ON THE SITE LAYOUT PLAN ARE TO MEET ALL REQUIREMENTS & STANDARDS OF THE MAINE DEPARTMENT OF TRANSPORTATION, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITIONS AND THE AMERICANS WITH DISABILITIES ACT REQUIREMENTS.

5. 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.

6. SEE DETAILS FOR PARKING STALL DIMENSIONS, HANDICAP SYMBOLS, SIGNS AND SIGN POSTS.

7. STOP BARS SHALL BE 12" WIDE.

8. 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 = 0.012 OR LESS.

2. UNDERGROUND STORAGE CONFIGURATIONS WILL VARY BY VENDOR. HOWEVER, THE FOOTPRINT SHALL NOT BE CHANGED BY MORE THAN 15% AND ANY FOOTPRINT CHANGE REQUIRES APPROVAL OF THE CITY OF PORTLAND AND THE OWNER.

3. AS "AS-BUILT" CERTIFICATION AND PLANS OF THE STORMWATER DRAINAGE SYSTEM IS REQUIRED PRIOR TO THE OWNER ACCEPTING ANY BUILDINGS AND PROPERTY. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT ANY DEVIATION FROM THE PLANS MAY DELAY THE ACCEPTANCE OF THE PROJECT, WITH CONTRACTOR RESPONSIBLE FOR ANY ASSOCIATED COSTS.

4. A DETAILED O&M MANUAL FOR STORMWATER MANAGEMENT SYSTEMS HAS BEEN FILED WITH THE CITY OF PORTLAND DURING THE PERMIT REVIEW PROCESS.

5. SEE THE EXISTING CONDITIONS PLAN PREPARED BY OWEN HASKELL FOR BENCHMARK INFORMATION.

6. SEE GRADING, DRAINAGE AND EROSION/SEDIMENT CONTROL FOR PROPOSED GRADING AND EROSION CONTROL MEASURES.

7. COMPACTION REQUIREMENTS:

LOCATION	MINIMUM COMPACTION* (TO BE CONFIRMED WITH HALEY AND ALDRICH)
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%
FILL WITHIN PROPOSED BUILDING AREA	85%
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.

8. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE. GRADES PROVIDED ON THE DRAWING SHALL BE REVIEWED WITH THE OWNER'S REPRESENTATIVE. MINOR GRADE CHANGES MAY BE MADE AT NO COST TO THE OWNER.

9. 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 GUTTER AREAS.

10. PROVIDE STABILIZATION OR SEPARATION GEOTEXTILE FABRIC OVER UNSTABLE SOILS AS DIRECTED BY THE OWNER'S REPRESENTATIVE AND IN ACCORDANCE WITH THE FINAL GEOTECHNICAL RECOMMENDATIONS.

11. NATIVE SOILS RANGE FROM GRANULAR TO CLAYEY AND SILTY. CARE MUST BE EXERCISED TO LIMIT DISTURBANCE OF THE BEARING SOILS. THE NATIVE CLAYEY OR SILTY SOILS SHOULD NOT BE PROOF-ROLLED. 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. ALL SUBGRADE PREPARATION IS SUBJECT TO THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL ENGINEER (HALEY AND ALDRICH)

12. PROFILE GRADES ARE VERY FLAT. THEREFORE, A SURVEY OF ALL GUTTER GRADES IS REQUIRED AFTER BINDER PAVEMENT IS PLACED. GRINDING AND/OR SHIMS TO ELIMINATE SURFACE PONDING SHALL BE COMPLETED PRIOR TO PLACEMENT OF FINISH PAVEMENT.

13. ELEVATIONS, LOCATIONS, AND SIZES OF PROPOSED DRAINAGE SYSTEMS WHICH INCLUDE WATER QUALITY TREATMENT MEASURE ARE PROVIDED IN THE SCHEDULE AT THE END OF THE "C-3" SERIES DRAWINGS.

LOCAL APPROVALS, WAIVERS AND VARIANCES

THE LEVEL III APPLICATIONS INCLUDE REQUESTED WAIVERS FOR THE PROJECT. PLEASE REFER TO THE FST TECHNICAL APPENDICES PROVIDED WITH THE APPLICATIONS.

UTILITY NOTES

1. ALL REQUIRED UTILITIES SERVING THE PROJECT SHALL BE COORDINATED AND CONSTRUCTED BY THE CONTRACTOR TO WITHIN 5 FEET OF THE BUILDINGS, AT A LOCATION COORDINATED WITH THE MEP CONTRACTOR(S) 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 FAIRPOINT 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 SERVICES DIVISION.

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, WHICHEVER IS MORE STRINGENT.

6. THE LOCATIONS OF THE NEW UTILITY SERVICES AND CONNECTIONS SHALL BE COORDINATED WITH THE SERVING UTILITY COMPANY, PROJECT ARCHITECTS AND MEP DESIGNERS.

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 OR 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 SEQUENCE UTILITY CONSTRUCTION AND PROVIDE TEMPORARY SERVICES AS REQUIRED TO PROVIDE CONTINUOUS SERVICE TO THE JOB SITE, TEMPORARY SERVICES SHALL COMPLY WITH ALL FEDERAL, STATE, LOCAL AND UTILITY COMPANY STANDARDS. COORDINATE ALL TEMPORARY SERVICES WITH UTILITY COMPANY, OWNER AND AFFECTED BUSINESSES.

14. THE LIGHT WEIGHT CONCRETE CONSTRUCTION WILL REQUIRE CAREFUL SEQUENCING AND SCHEDULING OF THE WORK. CERTAIN UTILITY LINES WILL REQUIRE SPECIAL PROVISIONS TO RESIST BUOYANT UPLIFT OF THE CONCRETE.

LANDSCAPE NOTES

(SUBJECT TO COORDINATION WITH LANDSCAPE DOCUMENTS. IN CASE OF CONFLICT BETWEEN THESE NOTES AND THE LANDSCAPE DOCUMENTS, THE LANDSCAPING DOCUMENTS SHALL GOVERN)

1. LANDSCAPE, HARDSCAPE, AND RELATED DETAILS ARE SHOWN ON THE PLANS PREPARED BY MITCHELL ASSOCIATES AND ARE NOT IN CIVIL SERIES DRAWING SET. REFER TO SEPARATE DRAWINGS BY MITCHELL ASSOCIATES.

2. 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.

3. 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.

4. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM AND SEED.

5. 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 TIP INSIDE EDGE OF THE CURB. ALL OTHER AREAS SHALL RECEIVE 4" LOAM AND SEED.

6. THE CONTRACTOR SHALL SUPPLY ALL PLANT MATERIALS IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTING AS SHOWN.

7. REMOVE ALL CONSTRUCTION DEBRIS BEFORE TOPSOILING. TOPSOIL SHALL BE PLACED TO TOP OF CURB.

8. ALL PLANT MATERIAL SHALL BE APPROVED BY THE OWNER OR THE OWNERS REPRESENTATIVE PRIOR TO ARRIVAL ON THE SITE.

9. PLANT MATERIAL SHALL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE AS TO THE ORIGINAL PLANTING GRADE PRIOR TO DIGGING.

10. 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.

11. NO SUBSTITUTION OF PLANT MATERIALS SHALL BE ALLOWED WITHOUT THE PRIOR WRITTEN APPROVAL OF THE OWNER.

12. 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.

13. SEE PLANTING DETAILS FOR WEED BARRIER INFORMATION.

14. ALL PLANTINGS LOCATED AT INTERSECTIONS WILL BE MAINTAINED AND SHALL NOT EXCEED 3 FEET IN HEIGHT WITHIN A TRIANGLE WITH 25' FEET ON EACH INTERSECTING LEG OR TO 6' BEHIND THE STOP BAR, WHICHEVER IS GREATER.

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, SEDIMENT BARRIERS 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 BY FST.

3. PRIOR TO PAVING, THE CONTRACTOR SHALL REMOVE SILT FROM ALL STORM LINES AND APPURTANCES.

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 ON AN AS NEEDED BASIS, BUT AT A MINIMUM ONCE A WEEK AT NO EXTRA EXPENSE TO THE OWNER.

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 DIV 312513 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 INCHES OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE EFFICIENCY FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 OF 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 AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION: BEST MANAGEMENT PRACTICES, CUMBERLAND COUNTY SOIL AND WATER CONSERVATION DISTRICT AND MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, MARCH 2003".

15. PERFORMANCE STANDARDS FOR EROSION CONTROL ARE SET FORTH IN THE EROSION CONTROL PLAN FOR THIS PROJECT.

LEGEND

C-1.1

EXISTING

- BOUNDARY LINE/R.O.W.
- ABUTTER LINE/R.O.W.
- DEED LINE/ROW
- TIE LINE
- EASEMENT
- FLOODPLAIN
- CENTERLINE
- IRON PIPE/ROD
- BENCHMARK
- BUILDING
- WETLANDS
- EDGE WETLAND
- ROCK OUTCROP
- SIGN
- EDGE PAVEMENT
- GRAVEL ROAD
- EDGE WATER
- CONTOURS (10.5, 10)
- SPOT GRADE (×30.20)
- CHAIN LINK FENCE
- DECIDUOUS TREE
- CONIFEROUS TREE
- CURB
- GUARDRAIL
- WATER GATE VALVE
- HYDRANT
- SEWER MH
- CATCH BASIN
- DRAINAGE MH
- UNIDENTIFIED MH
- OHU — OVERHEAD UTILITY
- EM — ELECTRIC METER BOX
- LIGHT POLE
- UTILITY POLE
- GUY
- RIPRAP
- BOULDER
- 15 — SCHEDULE B – SECTION 2 EXCEPTIONS

PROPOSED

- BARRIER FREE SYMBOL
- SIGN
- SIGN LABEL
- GUIDERAIL - METAL
- GUIDERAIL - TIMBER
- FENCE - CHAINLINK
- FENCE - WOOD
- BUILDING / BUILDING ACCESS
- PROPERTY LINE
- RETAINING WALL
- PEDESTRIAN CROSSWALK
- TRAFFIC ARROWS
- BOLLARD
- VERTICAL GRANITE CURB
- SLOPED GRANITE CURB
- CATCH BASIN
- 100 — CONTOUR LABEL
- DRAIN MANHOLE
- RIPRAP INLET APRON
- RIPRAP OUTLET APRON
- 2 1 2:1 — SLOPE DESIGNATION
- ×76.00 — SPOT GRADE
- TC 73.54 BC 72.96 — SPOT GRADE AT CURB (TC = TOP / BC = BOTTOM)
- WATER MARK
- UD — UNDERDRAIN
- SD9 — STORM DRAIN
- TREE LINE OR LIMIT OF CLEARING
- CURB STOP
- HYDRANT
- LIGHT POLE WITH FIXTURE(S)
- LIGHT POLE
- WALL MOUNT LIGHT
- SANITARY SEWER MANHOLE
- TEST PIT
- T — TRANSFORMER PAD
- UTILITY POLE
- VALVE
- SAN9 — SANITARY SEWER
- 6"W — WATER MAIN
- 2"G — GAS MAIN
- UGE — UNDERGROUND ELECTRIC
- OHE — OVERHEAD ELECTRIC
- PEDESTRIAN FLASHER

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE — WILLIAM R. MOORE — 13547 — 11/14/14 — LICENSED PROFESSIONAL ENGINEER

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT: midtown — PORTLAND, MAINE

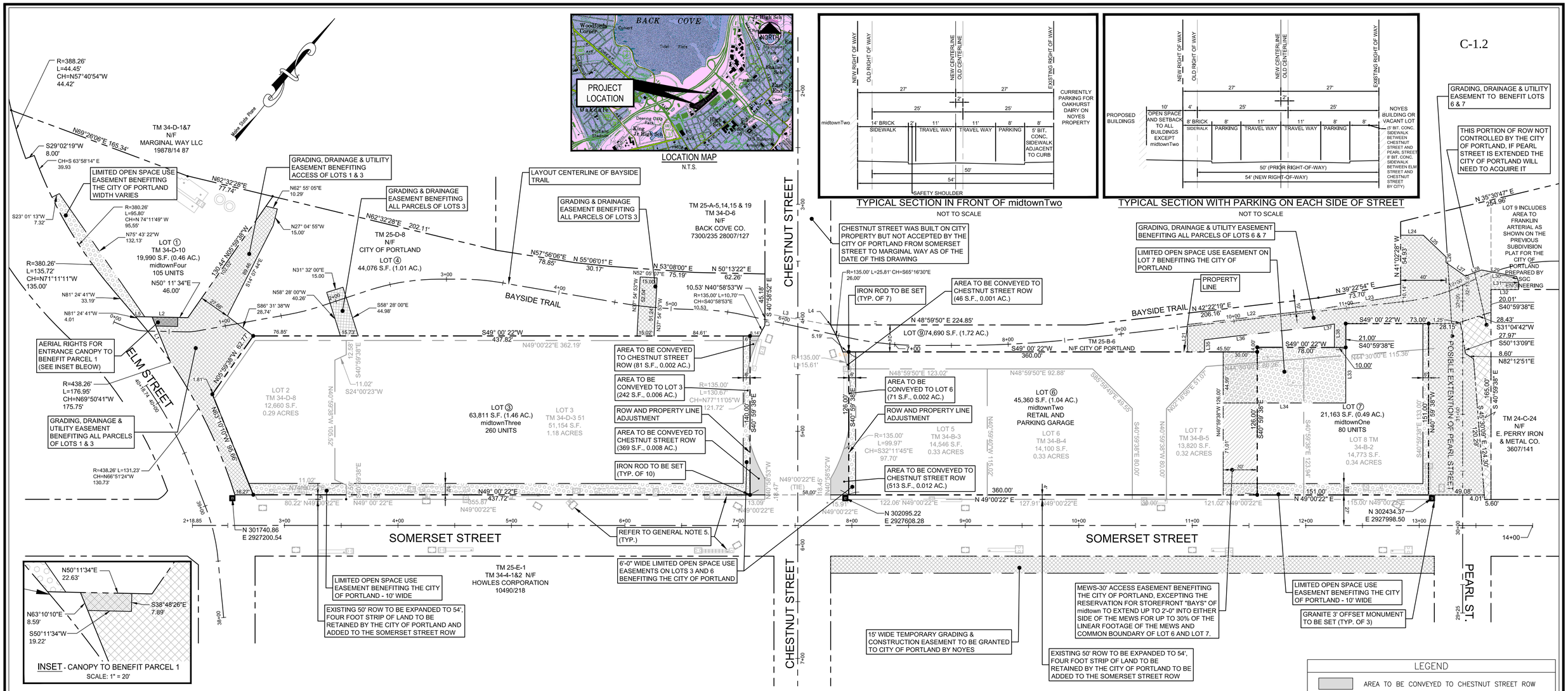
SHEET TITLE: GENERAL NOTES AND LEGEND

CLIENT: THE FEDERATED COMPANIES

FST 100 YEARS — FAY, SPOFFORD & THORNDIKE — ENGINEERS · PLANNERS · SCIENTISTS — 778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106 — FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	LA	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	NONE
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-COV-GEN		
SHEET	C-1.1		

R:\3062B - Midtown Amended - Portland, ME\Cadd\Permit Set\dwg\3062-COV-GEN.dwg davis_d 11/14/2014 9:25 AM



SURVEYOR WILL STAMP DRAWING UPON APPROVAL OF THE CITY

OWNER OF RECORD:
CITY OF PORTLAND C.C.R.D. BOOK 27870 PAGE 299

EASEMENT NOTES

1. THE EASEMENTS SHOWN ON THIS AMENDED SUBDIVISION PLAN LOCATED UPON LOT 4 ARE PRELIMINARY AND MAY BE RELOCATED AT THE TIME OF LEVEL III SITE PLAN APPROVAL OF THE DEVELOPMENT OF LOTS 1 & 3 AS SHOWN ON THE PLAN, AND ANY APPROVED SITE PLAN CONTAINING ANY SUCH REVISED EASEMENT AREAS SHALL BE DEEMED TO AMEND THE EASEMENTS SHOWN ON THIS AMENDED SUBDIVISION PLAN. IF THE EASEMENT CHANGES ARE MADE, A NEW PLAN AND IF NECESSARY, DEED SHALL BE SUBMITTED FOR REVIEW AND APPROVAL.

2. THE FOLLOWING EASEMENTS SET FORTH IN NOTES 2A, 2B, 2C, 2D, 2E, 2F AND 2G ARE NOT SHOWN ON THIS PLAN. THE LOCATION AND TERMS AND CONDITIONS OF SUCH EASEMENTS ARE TO BE FORMULATED AND APPROVED BY THE CITY CORPORATION COUNSEL AND COUNSEL TO THE PURCHASER, AND SHALL BE SET FORTH IN THE DEED CONVEYING THE LOTS FROM THE CITY OF PORTLAND TO THE PURCHASER, OR IN A SEPARATE EASEMENT DEED OR EASEMENT AGREEMENT. IF THE EASEMENT CHANGES ARE MADE, A NEW PLAN AND IF NECESSARY, DEED SHALL BE SUBMITTED FOR REVIEW AND APPROVAL.

2A. AN EASEMENT FOR SNOW REMOVAL ACTIVITIES IN A LOCATION OVER LOT 4 AND 9.

2B. AN EASEMENT FOR SUBSURFACE PILINGS, PILE CAPS AND BUILDING FOUNDATIONS GENERALLY ALONG THE NORTHERLY, EASTERLY AND SOUTHERLY PROPERTY LINE OF LOT 3 AND BURDENING LOT 4 AND THE CHESTNUT STREET AND SOMERSET STREET RIGHTS OF WAY.

2C. AN EASEMENT FOR SUBSURFACE PILINGS, PILE CAPS, AND BUILDING FOUNDATIONS GENERALLY ALONG THE NORTHWESTERLY AND SOUTHEASTERLY PROPERTY LINES OF THE SOMERSET RIGHT OF WAY AND LOT 6 AND 7 AND BURDENING THE SOMERSET STREET AND LOT 9.

2D. LOTS 4 AND 9 ARE SUBJECT TO EASEMENTS FOR CONSTRUCTION, STAGING, REPAIR AND MAINTENANCE BENEFITING THE OTHER LOTS OF THE SUBDIVISION. THIS EASEMENT REQUIRES THE REPAIR OR REPLACEMENT OF ANY FEATURES IN LOT 4 OR 9 THAT MAY BE DAMAGED BY THE ACTIVITIES ALLOWED AS PART OF THESE EASEMENTS.

2E. AN EASEMENT TO THE OWNERS OF LOT 1, 3 & 7 PROVIDING THE RIGHT TO CONSTRUCT STEPS, RAMPS, AND LANDINGS IN THE AREAS OF THE ELM STREET, PEARL STREET EXTENSION, AND SOMERSET STREET RIGHTS OF WAY DEPICTED ON THE SITE PLANS FOR THE MIDTOWN PROJECT PREPARED BY FAY, SPOFFORD & THORNDIKE, INC. AND IDENTIFIED AS SITE PLANS C–2.1, C2.2 AND C2.3 DATED OCTOBER 2014, LAST REVISED (PENDING).

2F. LICENSES FOR FEDERATED COMPANY, LLC ("FEDERATED") OR ITS DESIGNATED ASSIGNEES TO MAINTAIN STEPS, RAMPS AND THE RELATED ACCESSIBLE LANDINGS AND TO MAINTAIN PLANTERS WITHIN PORTIONS OF THE ELM STREET, CHESTNUT STREET AND SOMERSET STREET RIGHTS OF WAY, AND UPON THE AREA DESIGNATED AS THE POTENTIAL EXTENSION OF PEARL STREET, AS WELL AS THE RIGHTS TO CONSTRUCT AND MAINTAIN PHYSICAL IMPROVEMENTS TO BE ADDED TO THE TRAIL SYSTEM UPON LOTS 4 AND 9.

2G. AN EASEMENT BENEFITING LOTS 1, 3, 6 AND 7 TO CONSTRUCT, OPERATE AND MAINTAIN WATER QUALITY TREATMENT SYSTEMS UPON PORTIONS OF LOTS 4 AND 9.

3. ALL EASEMENTS CREATED BY AND SHOWN ON THE PRIOR APPROVED SUBDIVISION PLAN THAT ARE NOT EXPRESSLY SHOWN OR REFERENCED ON THIS PLAN ARE EXTINGUISHED, INCLUDING, WITHOUT LIMITATION, THE UNDERPASS EASEMENT ON LOT 1 AND 3, GEOTHERMAL EASEMENTS, FORMER LOCATION OF THE TRAIL CORRIDOR EASEMENT AND ALL OTHER EASEMENTS ON LOTS 1, 6, AND 7 CREATED BY AND SHOWN ON THE PRIOR AMENDED SUBDIVISION PLAN.

GENERAL NOTES

1. THIS AMENDED SUBDIVISION PLAN AMENDS AND REPLACES THE SUBDIVISION RECORDING PLAT ENTITLED "SUBDIVISION RECORDING PLAT OF PROPERTY LOCATED ON BAYSIDE RAILYARD, PORTLAND, MAINE PREPARED FOR DOWNTOWN PORTLAND CORPORATION BY SGC ENGINEERING, LLC. DATED DATED OCTOBER 30, 2008 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 209, PAGE 36 (THE "PRIOR APPROVED SUBDIVISION PLAN") IN ALL RESPECTS AND SUCH PRIOR SUBDIVISION IS HEREBY EXTINGUISHED.

2. THE CITY OF PORTLAND SHALL RETAIN A FOUR FOOT WIDE STRIP OF LAND ALONG THE NORTHERLY SIDELINE OF SOMERSET STREET TO BE ADDED TO THE SOMERSET STREET RIGHT OF WAY, IN ORDER TO INCREASE THE WIDTH OF SOMERSET STREET ADJOINING LOTS 3, 6 & 7 FROM 50 FEET TO 54 FEET.

3. THIS AMENDED SUBDIVISION PLAN AMENDS LOTS 1 THROUGH 8 FROM THE PRIOR APPROVED SUBDIVISION PLAN. THE EASTERLY SIDE OF LOT 9 REMAINS UNCHANGED FROM THE PRIOR APPROVED SUBDIVISION PLAN AND IS SHOWN ON THE PRIOR APPROVED SUBDIVISION PLAN. THERE IS NO LONGER A LOT 2, 5 & 8 IN THE SUBDIVISION.

4. THE CITY WILL ISSUE TO FEDERATED SUCH EASEMENTS AS NEEDED FOR CONSTRUCTION, MAINTENANCE OR REPAIR OF FACILITY WITHIN OR ACCESSIBLE ONLY FROM THE BAYSIDE TRAIL.

5. ALL WATER QUALITY TREATMENT DEVICES ASSOCIATED WITH THE midtown PROJECT AND LOCATED IN THE PUBLIC R.O.W. SHALL BE PRIVATELY MAINTAINED BY THE DEVELOPER, ITS HEIRS OR ASSIGNS.

EASEMENT LINE TABLE

LINE	BEARING	DISTANCE (FEET)
L1	N63°10'10"W	42.17'
L2	N50°11'34"E	31.53'
L3	N59°04'41"E	58.90'
L4	S40°58'55"E	0.25'
L5	N 50D11'34" E	8.01'
L6	DELETED	
L7	S40°58'55"E	5.53'
L14	DELETED	
L15	DELETED	
L16	DELETED	
L17	N40°59'24"W	20.63'
L18	DELETED	
L19	DELETED	
L20	DELETED	
L21	N41°00'32"W	24.08'
L22	N42°22'19"E	117.46'
L23	N39°22'54"E	72.27'
L23	DELETED	
L24	N49°00'22"E	20.02'
L25	S87°16'35"E	27.70'
L26	S40°59'38"E	5.00'
L27	N84°05'10"E	20.69'
L28	N28°31'08"E	15.21'
L29	N59°22'54"E	31.41'
L30	S61°28'51"E	5.00'
L31	S40°59'38"E	6.82'
L32	S49°00'22"W	24.24'
L33	N40°59'38"W	48.99'
L34	S49°00'22"W	108.00'
L35	S41°00'32"E	10.72'
L36	S42°22'19"W	104.49'
L37	S39°22'54"W	10.86'
L38	N40°59'38"W	20.61'

APPROVAL - CITY OF PORTLAND PLANNING BOARD

DATE

CHAIRPERSON

CERTIFICATE:

OWEN HASKELL, INC. CERTIFIES THAT THIS PLAN IS BASED ON, AND THE RESULT OF, AN ON THE GROUND FIELD SURVEY AND THAT TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, IT CONFORMS TO THE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS CURRENT STANDARDS OF PRACTICE.

DATE

JOHN W. SWAN, PLS NO. 1038

01.21.15	REVISED PER CITY COMMENTS AND RESUBMITTED FOR CITY REVIEW
12.01.14	REVISED FOR LEVEL III SUBMISSION AND RESUBMITTED FOR CITY REVIEW
11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND
10.17.14	PRELIMINARY LEVEL III SUBMISSION

AMENDED SUBDIVISION/RECORDING PLAT
ON
SOMERSET STREET, PORTLAND, MAINE
MADE FOR
FAY, SPOFFORD &THORNDIKE
778 MAIN STREET, SOUTH PORTLAND, MAINE

OWEN HASKELL, INC.
390 U.S. ROUTE ONE, FALMOUTH, ME 04105 (207) 774-0424
PROFESSIONAL LAND SURVEYORS

Drwn By	EB	Date	Job No.
Trace By	JLW	APRIL 10, 2013	12012–180 P
Check By	JWS	Scale	Drwg. No.
Book No.	FILE	1" = 40'	C–1.2

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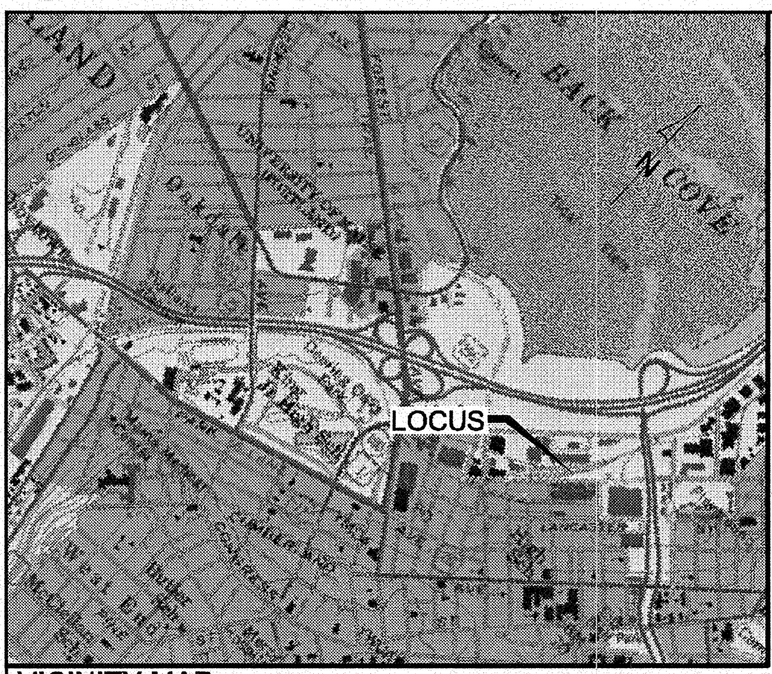


VICINITY MAP: (NOT TO SCALE)

GENERAL NOTES:

1) THIS PLAN AND ALL WORK ASSOCIATED WITH IT WAS PERFORMED BY SGC ENGINEERING, LLC PURSUANT TO A PROFESSIONAL SERVICES CONTRACT BETWEEN THE WOODARD & CURRAN AND SGC ENGINEERING LLC, AUTHORIZED SEPTEMBER 29, 2011.

2) REFERENCE DEEDS FOR THE LOCUS PARCEL ARE :

PARCELS A AND B - THE DOWNTOWN PORTLAND CORPORATION TO CITY OF PORTLAND DATED JUNE 15, 2010 AND RECORDED IN DEED BOOK 27870, PAGE 299 AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS.

PARCEL C - CORRECTIVE DEED OF H. FINKELMAN, INC. TO THE CITY OF PORTLAND EXECUTED AUGUST 17, 2011 TO BE RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS.

3) THE BEARINGS SHOWN HEREON AND COORDINATES REFER TO THE MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE (NAD83), ELEVATIONS ARE BASED ON NGVD 1929 DATUM, ALL ARE BASED ON THE CITY OF PORTLAND CONTROL NETWORK. CONTROL POINT LOCATIONS AND COORDINATE VALUES WERE SUPPLIED BY PORTLAND DEPARTMENT OF PUBLIC WORKS.

4) THE LOCUS PARCEL IS COMPRISED OF THE FOLLOWING MAPS BLOCKS AND LOTS: MAP 34-BLOCK 'D'-LOT 3, MAP 25-BLOCK 'A'-LOT 22 AND MAP 24-BLOCK 'C'-LOT 10. ABUTTING PROPERTY OWNER INFORMATION REFERENCED HEREON WAS TAKEN FROM THE CITY OF PORTLAND ASSESSOR'S DATA AS OF THE DATE OF THIS SURVEY.

5) THE SURVEYED PREMISES ARE LOCATED IN ZONE 'C,' "AREAS OF MINIMAL FLOODING," AS DEFINED ON FLOOD INSURANCE RATE MAP FOR THE CITY OF PORTLAND, COMMUNITY-PANEL NUMBER 230051 0013 B, WITH AN EFFECTIVE DATE OF JULY 17, 1986.

6) THE SURVEYED PREMISES ARE LOCATED IN THE B-7 URBAN COMMERCIAL BUSINESS DISTRICT AS SHOWN ON THE OFFICIAL ZONING MAP FOR THE CITY OF PORTLAND PREPARED JUNE 2008.

7) NO SUBSURFACE INVESTIGATION HAS BEEN PERFORMED BY SGC ENGINEERING, LLC. AT THE TIME OF THIS PLAN. SUB-SURFACE UTILITY INFORMATION WAS COMPILED FROM MAP REFERENCE 1 AND 3. DIG-SAFE SHOULD BE CONTACTED PRIOR TO COMMENCING ANY EXCAVATION. (888-344-7233).

8) THIS PLAN IS THE RESULT OF A COMPILATION OF MAP REFERENCES 1 THRU 3.

9) THE ADDITIONAL PROPOSED EASEMENTS FOR LOTS 3 AND 4 SHOWN HEREON HAVE NOT BEEN CONVEYED TO SEPARATE PARTIES AND ARE BASED ON A SUBDIVISION RECORDING PLAT OF PROPERTY LOCATED ON BAYSIDE RAILYARD, PORTLAND MAINE, PREPARED FOR DOWNTOWN PORTLAND CORPORATION BY SGC ENGINEERING, LLC, APPROVED BY THE CITY OF PORTLAND PLANNING BOARD AND RECORDED AT SAID REGISTRY IN PLAN BOOK 209, PAGE 36.

MAP REFERENCES:

1) A PLAN ENTITLED: "ALTA/ACSM LAND TITLE SURVEY, LOCATED ON SOMERSET STREET, PORTLAND, MAINE, PREPARED FOR DOWNTOWN PORTLAND COMPANY" BY SGC ENGINEERING, LLC, DATED 08-08-06. UNRECORDED.

2) A PLAN ENTITLED: "BOUNDARY RETRACEMENT SURVEY, LOCATED ON SOMERSET STREET, PORTLAND, MAINE, PREPARED FOR DOWNTOWN PORTLAND COMPANY" BY SGC ENGINEERING, LLC, DATED 09-17-06. UNRECORDED.

3) A PLAN ENTITLED: "BAYSIDE TRAIL, EXISTING CONDITIONS PLAN - PHASE 2, PREPARED FOR THE CITY OF PORTLAND PUBLIC WORKS" BY SGC ENGINEERING, LLC, DATED APRIL 2008, AND LAST REVISED R1 ON 05/08/08. UNRECORDED.

4) A PLAN ENTITLED "BAYSIDE SURVEY, FORMERLY PORTLAND TERMINAL CO. RAIL YARD, SOMERSET ST. PORTLAND, MAINE" DATED AUGUST 28, 2002, PREPARED BY OEST ASSOCIATES AND ON FILE AT THE CITY OF PORTLAND DEPARTMENT OF PUBLIC WORKS, DPW FILE 878/17.

5) A PLAN ENTITLED 161 MARGINAL WAY EXCHANGE PLAN OF CHESTNUT STREET EXT. AREA, CHESTNUT STREET, PORTLAND, MAINE," DATED JANUARY 20, 2004, PREPARED BY SEBAGO TECHNICS AND RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 205, PAGE 39.

6) A PLAN ENTITLED "ALTA/ACSM LAND TITLE SURVEY OF FOX STREET PROPERTY, FOX STREET, PORTLAND, MAINE," DATED JUNE 19, 2004, PREPARED BY SEBAGO TECHNICS AND RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 204, PAGE 507.

7) A PLAN ENTITLED "STANDARD BOUNDARY SURVEY, SITE PLAN, MARGINAL WAY, PORTLAND, MAINE, MADE FOR SATCO" DATED JUNE 4, 1990, PREPARED BY TITCOMB ASSOCIATES AND RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 192, PAGE 337.

8) A PLAN ENTITLED "STATE AID HIGHWAY NO. 15, PORTLAND (PREBLE-ELM STS.) CUMBERLAND COUNTY," DATED MARCH 1970, PREPARED BY STATE OF MAINE DEPARTMENT OF TRANSPORTATION AND RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 134, PAGES 18-20.

9) A PLAN ENTITLED "LAND OF PORTLAND TERMINAL CO., SOUTH SIDE OF MARGINAL WAY, PORTLAND, MAINE" DATED APRIL 18, 1938 AND RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 24, PAGE 48.

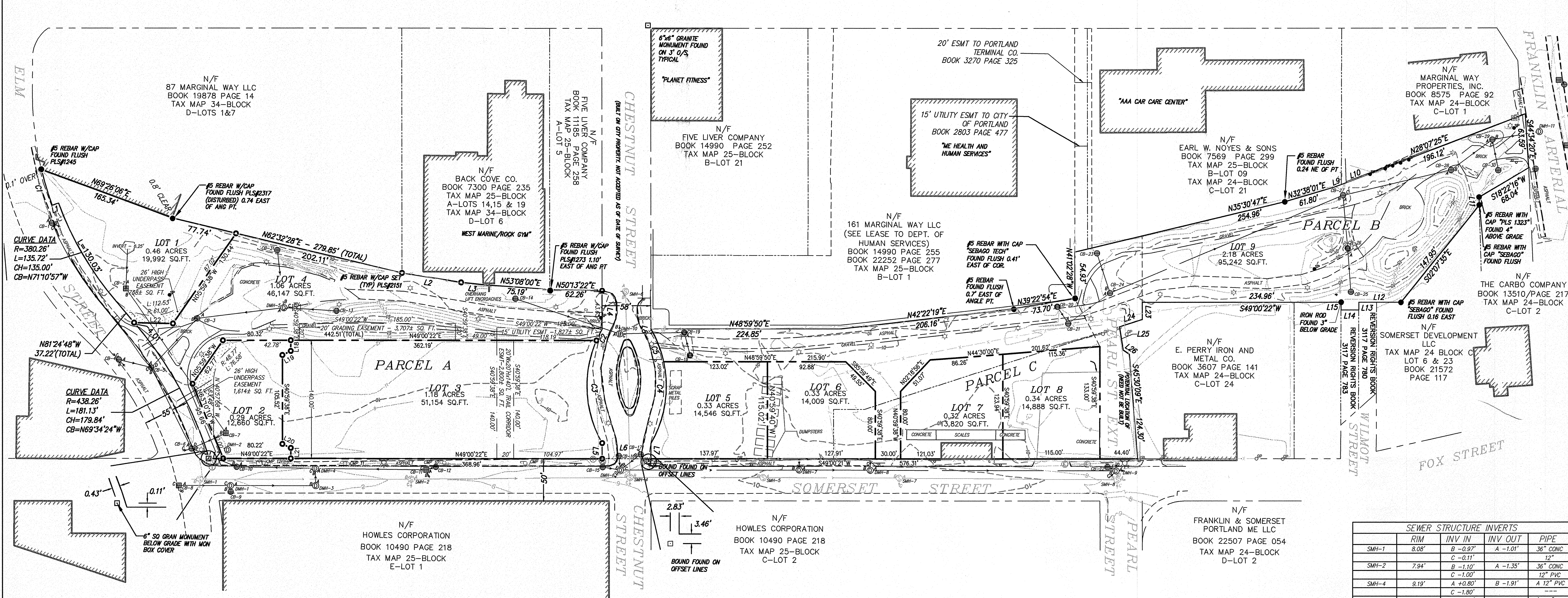
10) A PLAN ENTITLED "CHESTNUT STREET EXTENSION; STREET CONSTRUCTION, UTILITY INSTALLATION & LANDSCAPING PLAN AND PROFILE" DATED 9-16-04, PREPARED BY CITY OF PORTLAND, DEPARTMENT OF PUBLIC WORKS, DPW FILE 1004/50.

11) PLAN ENTITLED "SOMERSET STREET, FRANKLIN ARTERIAL AND MARGINAL WAY SEWER SEPARATION" DATED APRIL 2003, PREPARED BY THE CITY OF PORTLAND, DEPARTMENT OF PUBLIC WORKS, DPW FILE 970/15.

12) PLAN ENTITLED "PROPOSED 16" D.I. WATER MAIN REPLACEMENT" DATED SEPTEMBER 2002, PREPARED BY PORTLAND WATER DISTRICT, DPW FILE 970/15

13) CITY OF PORTLAND DEPARTMENT OF PUBLIC WORKS FILE 933/4

14) PLAN ENTITLED, "SOMERSET STREET OVERFLOW SEWER" DATED 6/15/1984. PREPARED BY CITY OF PORTLAND, DEPARTMENT OF PUBLIC WORKS, DPW FILE 647/4.



LEGEND:

Symbol		Symbol	
5/8" REBAR W/CAP SET IN 2008	○	LIGHT POST	☼
IRON PIPE OR ROD FOUND	●	SQUARE CATCH BASIN	▦
MONUMENT FOUND	⊡	ROUND CATCH BASIN	⊕
BOLLARD		DRAIN MANHOLE	Ⓓ
SINGLE POST SIGN		SEWER MANHOLE	Ⓢ
SIGN POST		ELECTRIC MANHOLE	Ⓔ
GATE POST		COMMUNICATIONS MANHOLE	Ⓣ
UTILITY POLE		HYDRANT	
GUY POLE		WATER VALVE	

MAJOR CONTOUR
MINOR CONTOUR
METAL FENCE
EXTERIOR BOUNDARY
SUBDIVISION LOT LINE
ADJACENT PROPERTY LINE
RECORD EASEMENT LINE
PROPOSED EASEMENT LINE

GRAPHIC SCALE: 1" =60'

60 30 0 60 120 180

LINE TABLE		
LINE	BEARING	DISTANCE (FEET)
L1	S29°02'11"W	8.00'
L2	N57°56'06"E	70.85'
L3	N55°06'01"E	30.17'
L4	S40°58'52"E	45.18'
L5	S40°58'52"E	18.47'
L6	S49°00'22"W	58.00'
L7	N40°58'52"W	18.45'
L8	N40°58'52"W	0.25'
L9	N28°16'27"E	8.71'
L10	N28°04'50"E	36.27'
L11	S41°47'12"E	9.33'
L12	S49°00'22"W	49.60'
L13	S40°47'24"E	9.07'
L14	S49°12'36"W	21.00'
L15	N40°47'24"W	9.00'
L16	N49°00'22"E	30.00'
L17	N49°00'22"E	16.68'
L18	S40°59'38"E	12.58'
L19	S24°00'23"W	11.02'
L20	N74°00'22"E	11.02'
L21	S40°59'38"E	12.58'
L22	S50°11'34"W	46.00'
L23	S40°59'38"E	20.00'
L24	S31°04'42"W	28.47'
L25	S50°13'09"E	27.97'
L26	N82°12'51"E	8.60'

CURVE TABLE (ALL DISTANCES IN FEET)				
CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING
C1	388.26'	44.46'	44.44'	N57°39'47"W
C2	135.00	15.10'	15.09'	S14°11'05"E
C3	135.00'	126.28'	121.72'	S44°11'05"E
C4	135.00'	99.97'	97.70'	N32°11'45"W
C5	135.00'	41.40'	41.24'	N62°11'44"W

ADDITIONAL PROPOSED EASEMENTS:

Easements Appurtenant to and Benefiting Lot 3:

- An easement for snow removal activities, in a location over Lot 4 as approved by the City, which shall contain terms and conditions drafted, reviewed, and approved by the City's Corporation Counsel Office .
- An easement for subsurface pilings, pile caps and building foundations generally along the northerly, easterly and southerly property lines of Lot 3 and burdening Lot 4 and the Chestnut Street and Somerset Street rights of way which easement shall contain terms and conditions drafted, reviewed, and approved by the City's Corporation Counsel Office.
- Geothermal easement, burdening Lot 4, for placement of subsurface geothermal wells and associated underground piping and equipment, with surface level manhole covers benefiting Lots 1, 2 and/or 3 which easement shall contain terms and conditions drafted, reviewed, and approved by the City's Corporation Counsel Office.

Easements Burdening Lot 3:

- Sidewalk easement for public in areas extending from the City right of way along Somerset Street and Chestnut Street to the edges of the sidewalks along the new Office Building and Garage as located once the buildings are constructed (post construction grant of easement) which easement shall contain terms and conditions drafted, reviewed, and approved by the City's Corporation Counsel Office.
- Public access, landscaping and walkway easement at the easterly and westerly ends of the Bayside Garage to permit incorporation of open areas into the Bayside trail for landscaping, walking, etc. (post construction grant of easement) which easement shall contain terms and conditions drafted, reviewed, and approved by the City's Corporation Counsel Office and as shown on the Approved Site Plan.
- Public Access Easement for a trail corridor 20' in width, 20' in height, and 140' in length extending from Lot 4 across Lot 3 to Somerset Street in the location shown on this Plat and to be granted to the City with terms and conditions satisfactory to and approved by the City's Corporation Counsel Office.

Easements Burdening Lot 4 and Lot 9:

- Public trail easement to be granted to Portland Trails within Lot 4 and Lot 9.

DRAIN STRUCTURE INVERTS				
	RIM	INV IN	INV OUT	PIPE
DMH-1	7.82'	B +4.39'	A +4.13'	A 12" CONC
		C +4.19'		B/C 10/12"HDPE
DMH-2	ELECTRICAL			
DMH-3	8.23'	B +3.70'	A +3.70'	---
DMH-4	8.13'	A +3.74'	C +3.63'	---
		B +3.63'		
DMH-5	13.98'	B +6.29'	A +6.18'	PVC
		C +5.71'		PVC
DMH-6	8.91'	A +4.94'	C +4.86'	A/B 10" PVC
		B +5.01'		C 18" PVC
		D +5.21'		D/E 10" HDPE
		E +5.04'		
DMH-7	10.20'	B +4.48'	A +4.48'	A/B 18" PVC
		C +4.62'		C 15" PVC
DMH-8	10.59'	B +4.26'	A +4.27'	---
		C +4.51'		
DMH-9	8.09'	B +3.37'	A +3.16'	---
		C +3.30'		
		D +3.59'		
DMH-10	10.01'	A +5.47'	B +5.61'	B 12" PVC
		C +5.33'		A/C 10" PVC

CATCH BASIN INVERTS				
	RIM	INV IN	INV OUT	PIPE
CB-1	9.10'	B 1.85'	A 1.40'	A 18" STL
		C 1.25'		B/C 12"/15"STL
CB-2	9.71'	A 4.37'	B 4.31'	12" HDPE
CB-3	12.43'	A 5.63'	B 5.59'	12" PVC
CB-4	9.63'	B 4.97'	A 4.34'	A 12" CONC
		C 4.83'		B/C 6" STL
CB-5	9.74'	B 2.39'	A 2.56'	15" STL
		C 4.19'		12" CONC
CB-6	8.39'	B 3.00'	A 2.79'	B 10" PVC
		C 2.83'		A/C 12"STL/CONC
		D 3.22'		10" HDPE
CB-7	9.64'	A 3.76'	B 3.52'	A/B 12" HDPE
CB-8	8.00'	B 4.11'	A 4.41'	A 12" CONC
		C 4.55'		B/C 6" PVC/DI
CB-9	8.00'	---	4.78'	10" HDPE
CB-10	7.63'	A 3.19'	B 2.90'	---
CB-11	7.52'	A 4.02'	C 3.93'	---
		B 4.05'		
CB-12	7.47'	A 4.63'	B 4.17'	10" HDPE
CB-13	11.45'	NA	NA	TRAP

SEWER STRUCTURE INVERTS				
	RIM	INV IN	INV OUT	PIPE
SMH-1	8.08'	B -0.97'	A -1.01'	36" CONC
		C -0.11'		12"
SMH-2	7.94'	B -1.10'	A -1.35'	36" CONC
		C -1.00'		12" PVC
SMH-4	9.19'	A +0.80'	B -1.91'	A 12" PVC
		C -1.80'		---
		D -1.80'		B/D 36" CONC
SMH-5	10.16'	B -2.09'	A -2.09'	---
SMH-6	10.24'	A +2.74'	B +2.24'	A 4" / B 12"
SMH-7	10.65'	B -2.25'	A -2.25'	---
		C -1.91'		---
SMH-8	8.09'	B -2.78'	A -3.29	---
		C -0.79'		---

CATCH BASIN INVERTS CONT'D				
	RIM	INV IN	INV OUT	PIPE
CB-14	8.86'	NA	NA	TRAP
CB-15	8.65'	---	5.26'	10" HDPE
CB-16	8.48'	---	4.59'	10" HDPE
CB-17	8.39'	A 5.47'	B 5.04'	A/B 10"/6"PVC
CB-18	8.51'	NA	NA	TRAP
CB-19	9.54'	A 6.15'	NA	A 10"PVC/TRAP
CB-20	8.90'	NA	NA	TRAP
CB-21	8.08'	A 5.81'	NA	A 10"PVC/TRAP
CB-22	7.90'	---	4.16'	---
CB-23	8.05'	NA	NA	TRAP
CB-24	9.34'	A 4.61'	C 4.53'	18" PVC
		B 5.21'		10" PVC
CB-25	---	---	---	---
CB-26	10.52'	A 4.57'	NA	A 12"PVC/TRAP
CB-27	8.53'	A 4.46'	C 3.92'	A 12" PVC
		B 3.99'		B/C 18" PVC
CB-28	10.30'	A 2.42'	B 2.30'	18" PVC
CB-29	8.04'	A 1.69'	B 1.66'	A/B 18" PVC
		C 2.23'		C 10" PVC
CB-30	7.84'	NA	NA	TRAP
CB-31	8.95'	---	---	---

CUMBERLAND, ss REGISTRY OF DEEDS
Received : at ____ h ____ m ____ M., and
Filed in Plan Book ____ Page ____
ATTEST: ____ Register

REVISIONS:

NO.	DATE	
1	10/20/11	APPROVED FOR SUBMITTAL

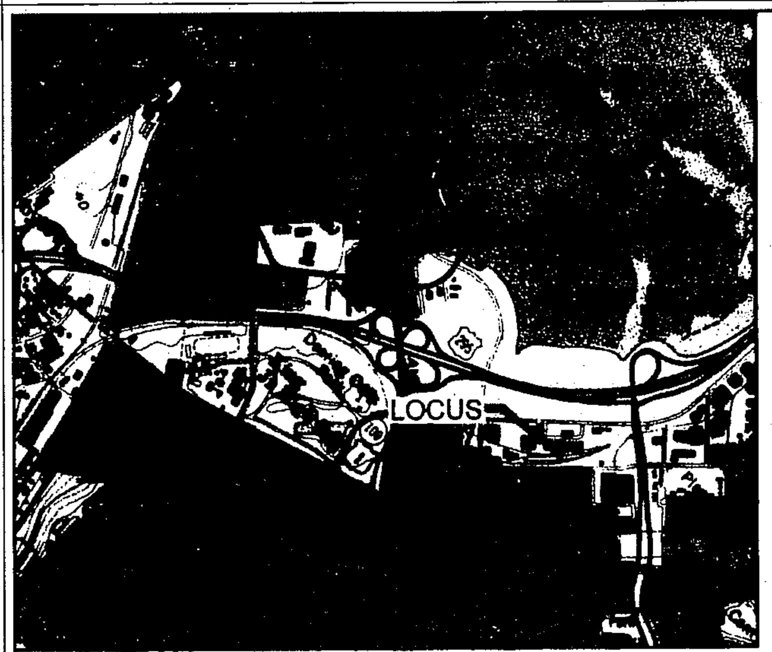
ONLY VALID WITH ORIGINAL STAMP

SGC ENGINEERING, LLC
• Civil Design & Survey Engineering
• Environmental & Regulatory Permitting
• Electrical Power Systems Engineering
SERVING OUR CLIENTS IN THE U.S.A. & CANADA
501 County Road, Westbrook, Maine 04092, Tel: 207-347-8100, Fax: 207-347-8101
Target Technology Center, 20 Godfrey Drive, Suite 200, Orono, Maine 04473, Tel: 207-866-6571, Fax: 207-866-6501

DATE: 10-30-08 | SCALE: 1" = 60' | CALC: DED | DRAWN: MRP | CHECK: SAM | PROJECT: 559004 | FILE: 559004ECUPDATE.DWG | SHEET 1 OF 1

EXISTING CONDITIONS SURVEY
OF PROPERTY LOCATED ON
SOMERSET STREET PORTLAND, MAINE

PREPARED FOR:
CITY OF PORTLAND
389 CONGRESS STREET, PORTLAND, MAINE 04101



VICINITY MAP: (NOT TO SCALE)

GENERAL NOTES:

1) THIS PLAN AND ALL WORK ASSOCIATED WITH IT WAS PERFORMED BY SGC ENGINEERING, LLC PURSUANT TO A PROFESSIONAL SERVICES CONTRACT BETWEEN THE WOODARD & CURRAN AND SGC ENGINEERING LLC.

2) REFERENCE DEED FOR THE LOCUS PARCEL IS THE CITY OF PORTLAND TO DOWNTOWN PORTLAND CORPORATION DATED MARCH 10, 2006 AND RECORDED IN DEED BOOK 23759, PAGE 305 AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS.

3) THE BEARINGS SHOWN HEREON REFER TO THE MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE (NAD83) AND ARE BASED ON THE CITY OF PORTLAND CONTROL NETWORK. CONTROL POINT LOCATIONS AND COORDINATE VALUES WERE SUPPLIED BY PORTLAND DEPARTMENT OF PUBLIC WORKS.

4) THE LOCUS PARCEL IS COMPRISED OF THE FOLLOWING MAPS BLOCKS AND LOTS: MAP 34-BLOCK 'D'-LOT 3, MAP 25-BLOCK 'A'-LOT 22 AND MAP 24-BLOCK 'C'-LOT 10. ABUTTING PROPERTY OWNER INFORMATION REFERENCED HEREON WAS TAKEN FROM THE CITY OF PORTLAND ASSESSOR'S DATA AS OF THE DATE OF THIS SURVEY.

5) THE SURVEYED PREMISES ARE LOCATED IN ZONE 'C,' "AREAS OF MINIMAL FLOODING," AS DEFINED ON FLOOD INSURANCE RATE MAP FOR THE CITY OF PORTLAND, COMMUNITY-PANEL NUMBER 230051 0013 B, WITH AN EFFECTIVE DATE OF JULY 17, 1986.

6) THE SURVEYED PREMISES ARE LOCATED IN THE B-7 URBAN COMMERCIAL BUSINESS DISTRICT AS SHOWN ON THE OFFICIAL ZONING MAP FOR THE CITY OF PORTLAND PREPARED JUNE 2008.

7) NO SUBSURFACE INVESTIGATION HAS BEEN PERFORMED BY SGC ENGINEERING, LLC. AT THE TIME OF THIS PLAN. SUB-SURFACE UTILITY INFORMATION WAS COMPILED FROM MAP REFERENCE 1 AND 3. DIG-SAFE SHOULD BE CONTACTED PRIOR TO COMMENCING ANY EXCAVATION. (888-344-7233).

8) THIS PLAN IS THE RESULT OF A COMPILATION OF MAP REFERENCES 1 THRU 3.

MAP REFERENCES:

1) A PLAN ENTITLED: "ALTA/ACSM LAND TITLE SURVEY, LOCATED ON SOMERSET STREET, PORTLAND, MAINE, PREPARED FOR DOWNTOWN PORTLAND COMPANY" BY SGC ENGINEERING, LLC, DATED 08-08-06. UNRECORDED.

2) A PLAN ENTITLED: "BOUNDARY RETRACEMENT SURVEY, LOCATED ON SOMERSET STREET, PORTLAND, MAINE, PREPARED FOR DOWNTOWN PORTLAND COMPANY" BY SGC ENGINEERING, LLC, DATED 09-17-06. UNRECORDED.

3) A PLAN ENTITLED: "BAYSIDE TRAIL, EXISTING CONDITIONS PLAN - PHASE 2, PREPARED FOR THE CITY OF PORTLAND PUBLIC WORKS" BY SGC ENGINEERING, LLC, DATED APRIL 2008, AND LAST REVISED R1 ON 05/08/08. UNRECORDED.

4) A PLAN ENTITLED "BAYSIDE SURVEY, FORMERLY PORTLAND TERMINAL CO. RAIL YARD, SOMERSET ST. PORTLAND, MAINE" DATED AUGUST 28, 2002, PREPARED BY OEST ASSOCIATES AND ON FILE AT THE CITY OF PORTLAND DEPARTMENT OF PUBLIC WORKS, DPW FILE 878/17.

5) A PLAN ENTITLED 161 MARGINAL WAY EXCHANGE PLAN OF CHESTNUT STREET EXT. AREA, CHESTNUT STREET, PORTLAND, MAINE," DATED JANUARY 20, 2004, PREPARED BY SEBAGO TECHNICS AND RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 205, PAGE 39.

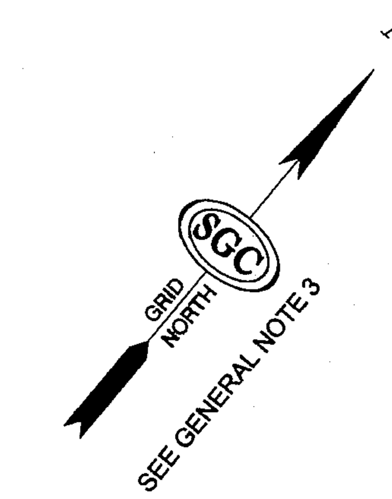
6) A PLAN ENTITLED "ALTA/ACSM LAND TITLE SURVEY OF FOX STREET PROPERTY, FOX STREET, PORTLAND, MAINE," DATED JUNE 19, 2004, PREPARED BY SEBAGO TECHNICS AND RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 204, PAGE 507.

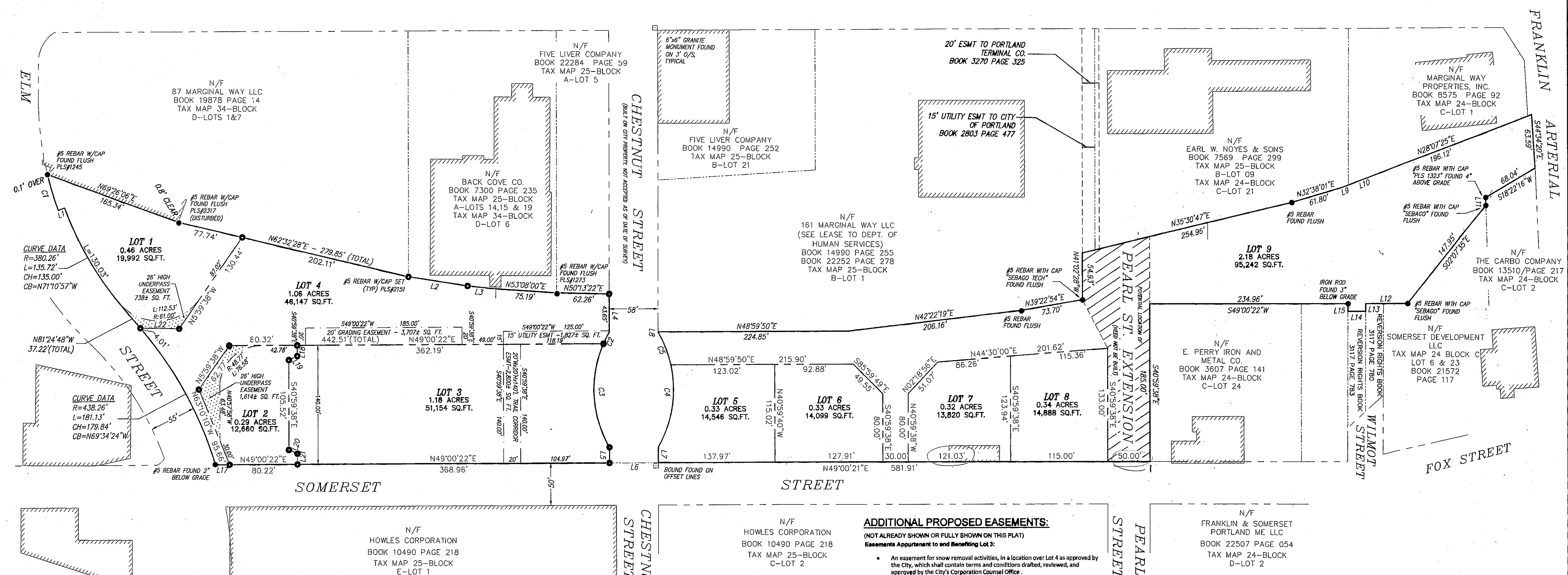
7) A PLAN ENTITLED "STANDARD BOUNDARY SURVEY, SITE PLAN, MARGINAL WAY, PORTLAND, MAINE, MADE FOR SATCO" DATED JUNE 4, 1990, PREPARED BY TITCOMB ASSOCIATES AND RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 192, PAGE 337.

8) A PLAN ENTITLED "STATE AID HIGHWAY NO. 15, PORTLAND (PREBLE-ELM STS.) CUMBERLAND COUNTY," DATED MARCH 1970, PREPARED BY STATE OF MAINE DEPARTMENT OF TRANSPORTATION AND RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 134, PAGES 18-20.

9) A PLAN ENTITLED "LAND OF PORTLAND TERMINAL CO., SOUTH SIDE OF MARGINAL WAY, PORTLAND, MAINE" DATED APRIL 18, 1938 AND RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 24, PAGE 48.

10) A PLAN ENTITLED "CHESTNUT STREET EXTENSION; STREET CONSTRUCTION, UTILITY INSTALLATION & LANDSCAPING PLAN AND PROFILE" DATED 9-16-04, PREPARED BY CITY OF PORTLAND, DEPARTMENT OF PUBLIC WORKS, DPW FILE 1004/50.





CURVE TABLE (ALL DISTANCES IN FEET)				
CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING
C1	388.26'	44.46'	44.44'	N57°39'47"W
C2	135.00	15.10'	15.09'	S14°11'05"E
C3	135.00'	126.28'	121.72'	S44°11'05"E
C4	135.00'	99.97'	97.70'	N32°11'45"W
C5	135.00'	41.40'	41.24'	N62°11'44"W

LINE TABLE		
LINE	BEARING	DISTANCE (FEET)
L1	S29°02'11"W	8.00'
L2	N57°56'06"E	70.85'
L3	N55°06'01"E	30.17'
L4	S40°58'52"E	45.18'
L5	S40°58'52"E	18.47'
L6	S49°00'22"W	58.00'
L7	N40°58'52"W	18.45'
L8	N40°58'52"W	0.25'
L9	N28°16'27"E	8.71'
L10	N28°04'50"E	36.27'
L11	S41°47'12"E	9.33'
L12	S49°00'22"W	49.60'
L13	S40°47'24"E	9.07'
L14	S49°12'36"W	21.00'
L15	N40°47'24"W	9.00'
L16	N49°00'22"E	30.00'
L17	N49°00'22"E	16.68'
L18	S40°59'38"E	12.58'
L19	S24°00'23"W	11.02'
L20	N74°00'22"E	11.02'
L21	S40°59'38"E	12.58'
L22	S50°11'34"W	46.00'

LEGEND:

- ⅝" REBAR W/CAP SET
- IRON PIPE OR ROD FOUND
- MONUMENT FOUND
- EXTERIOR BOUNDARY
- PROPOSED BOUNDARY LINE
- ADJACENT PROPERTY LINE
- EASEMENT LINE
- RIGHT-OF-WAY LINE

GRAPHIC SCALE: 1" =60'

60 30 0 60 120 180

Summary of Planning Board Subdivision Conditions of Approval as further detailed in December 9, 2008 Approval Letter:

I. Six (6) months after the Certificate of Occupancy for Lot 3 buildings has been issued, Lots 1 and 2 shall be hydroseeded by the Lot 3 owner unless there are active development plans for the lots.

II. Remediation requirements are referenced in Maine Department of Environmental Protection Voluntary Response Action Program (VRAP) No Action Assurance Letters dated November 21, 2008 and July 26, 2001.

III. City shall be responsible for constructing a bituminous sidewalk along Somerset Street, along Lots 5, 6, 7, and 8.

ADDITIONAL PROPOSED EASEMENTS:

(NOT ALREADY SHOWN OR FULLY SHOWN ON THIS PLAT)

Easements Appurtenant to and Benefiting Lot 3:

- An easement for snow removal activities, in a location over Lot 4 as approved by the City, which shall contain terms and conditions drafted, reviewed, and approved by the City's Corporation Counsel Office.
- An easement for subsurface pilings, pile caps and building foundations generally along the northerly, easterly and southerly property lines of Lot 3 and burdening Lot 4 and the Chestnut Street and Somerset Street rights of way which easement shall contain terms and conditions drafted, reviewed, and approved by the City's Corporation Counsel Office.
- Geothermal easement, burdening Lot 4, for placement of subsurface geothermal wells and associated underground piping and equipment, with surface level manhole covers benefiting Lots 1, 2 and/or 3 which easement shall contain terms and conditions drafted, reviewed, and approved by the City's Corporation Counsel Office.

Easements Burdening Lot 3:

- Sidewalk easement for public in areas extending from the City right of way along Somerset Street and Chestnut Street to the edges of the sidewalks along the new Office Building and Garage as located once the buildings are constructed (post construction grant of easement) which easement shall contain terms and conditions drafted, reviewed, and approved by the City's Corporation Counsel Office.
- Public access, landscaping and walkway easement at the easterly and westerly ends of the Bayside Garage to permit incorporation of open areas into the Bayside trail for landscaping, walking, etc. (post construction grant of easement) which easement shall contain terms and conditions drafted, reviewed, and approved by the City's Corporation Counsel Office and as shown on the Approved Site Plan.
- Public Access Easement for a trail corridor 20' in width, 20' in height, and 140' in length extending from Lot 4 across Lot 3 to Somerset Street in the location shown on this Plat and to be granted to the City with terms and conditions satisfactory to and approved by the City's Corporation Counsel Office.

Easements Burdening Lot 4 and Lot 9:

- Public trail easement to be granted to Portland Trails within Lot 4 and Lot 9.

APPROVED BY CITY OF PORTLAND PLANNING BOARD

CHAIR

[signatures]

DATE DEC. 9, 2008

CUMBERLAND, ss REGISTRY OF DEEDS
Received: January 27, 2009
at 1 h 14 m P M., and
Filed in Plan Book 209 Page 36
ATTEST: [signature] Register

REVISIONS:		
NO.	DATE	
1	10/31/08	APPROVED FOR SUBMITTAL
2	11/18/08	FINAL REVISIONS AND APPROVAL FOR SUBMITTAL
2	1/13/09	REVISIONS TO EASEMENT NOTES

SEAL [signature] Jan 13, 2009
ONLY VALID WITH ORIGINAL STAMP

SGC ENGINEERING, LLC
• Civil Design & Survey Engineering
• Environmental & Regulatory Permitting
• Electrical Power Systems Engineering
SERVING OUR CLIENTS IN THE U.S.A. & CANADA
501 County Road, Westbrook, Maine 04092, Tel: 207-347-8100, Fax: 207-347-8101
Target Technology Center, 20 Godfrey Drive, Suite 200, Orono, Maine 04473, Tel: 207-866-6571, Fax: 207-866-6501

DATE: 10-30-08 | SCALE: 1" = 60' | CALC: CRM | DRAWN: CRM | CHECK: SAM | PROJECT: 559003 | FILE: SUB_559003.DWG | SHEET 1 OF 1

SUBDIVISION RECORDING PLAT
OF PROPERTY LOCATED ON
BAYSIDE RAILYARD PORTLAND, MAINE

PREPARED FOR:
DOWNTOWN PORTLAND CORPORATION
389 CONGRESS STREET, PORTLAND, MAINE 04101

CCRD 209/36

LINE TABLE		
LINE	BEARING	DISTANCE (FEET)
L23	S40°59'38"E	20.00'
L24	S31°04'42"W	28.47'
L25	S50°13'09"E	27.97'
L26	N82°12'51"E	8.60'

UTILITY NOTE:

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEY FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. CALL 1-800-DIGSAFE AT LEAST THREE BUSINESS DAYS BEFORE PERFORMING ANY CONSTRUCTION. DUE TO OSHA CONFINED SPACE REQUIREMENTS, ALL INVERTS AND PIPE SIZES MUST BE VERIFIED PRIOR TO ANY CONSTRUCTION.

LEGEND

- MONUMENT FOUND
- IRON PIPE OR ROD FOUND
- HYDRANT
- WATER VALVE
- UTILITY POLE
- LIGHT POLE
- MANHOLE
- CATCH BASIN
- SIGN
- FENCE
- 1' CONTOUR
- OVERHEAD WIRES
- WATER LINE
- SEWER LINE
- DECIDUOUS TREE
- MONITORING WELL

GRAPHIC SCALE

0 20' 40' 80'

PLAN REFERENCES:

1. "SUBDIVISION RECORDING PLAT OF PROPERTY LOCATED ON BAYSIDE RAILWAY, PORTLAND, MAINE PREPARED FOR DOWNTOWN PORTLAND CORPORATION" DATED OCTOBER 30, 2008 REV. 3 1/13/09 BY SGC ENGINEERING, LLC RECORDED IN C.C.R.D. PLAN BOOK 209 PAGE 36.

2. "EXISTING CONDITIONS SURVEY OF PROPERTY LOCATED ON SOMERSET STREET, PORTLAND, MAINE PREPARED FOR CITY OF PORTLAND" DATED OCTOBER 30, 2008, REV. 1 10/20/11 BY SGC ENGINEERING, LLC.

3. "STANDARD BOUNDARY SURVEY FOR BAYSIDE TRAIL & PROPOSED SOMERSET STREET EXTENSION" DATED SEPTEMBER 2012 PREPARED BY CITY OF PORTLAND, MAINE PUBLIC SERVICES DEPARTMENT ENGINEERING DIVISION.

NOTES:

1. OWNER OF RECORD: CITY OF PORTLAND, C.C.R.D. BOOK 27870 PAGE 299.

2. BASIS OF BEARINGS: MAINE STATE PLANE COORDINATE SYSTEM WEST ZONE NAD83.

3. ELEVATIONS ARE BASED ON CITY DATUM. BENCH MARK: MDOT DISK "612-(1)-10 1983"

4. THIS PLAN IS THE RESULT OF A FIELD SURVEY CONDUCTED BY OWEN HASKELL, INC. NOVEMBER 2012 AND DATA TAKEN FROM PLAN REFERENCE 2 AS SHOWN ABOVE.

CERTIFICATE:

OWEN HASKELL, INC. CERTIFIES THAT THIS PLAN IS BASED ON, AND THE RESULT OF, AN ON THE GROUND FIELD SURVEY AND THAT TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, IT CONFORMS TO THE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS CURRENT STANDARDS OF PRACTICE.

11/09/12
DATE

JOHN W. SWAN, PLS NO. 1038

STATE OF MAINE
JOHN W. SWAN
NO. 1038
PROFESSIONAL LAND SURVEYOR

ALTERED PLAN

10.17.2014

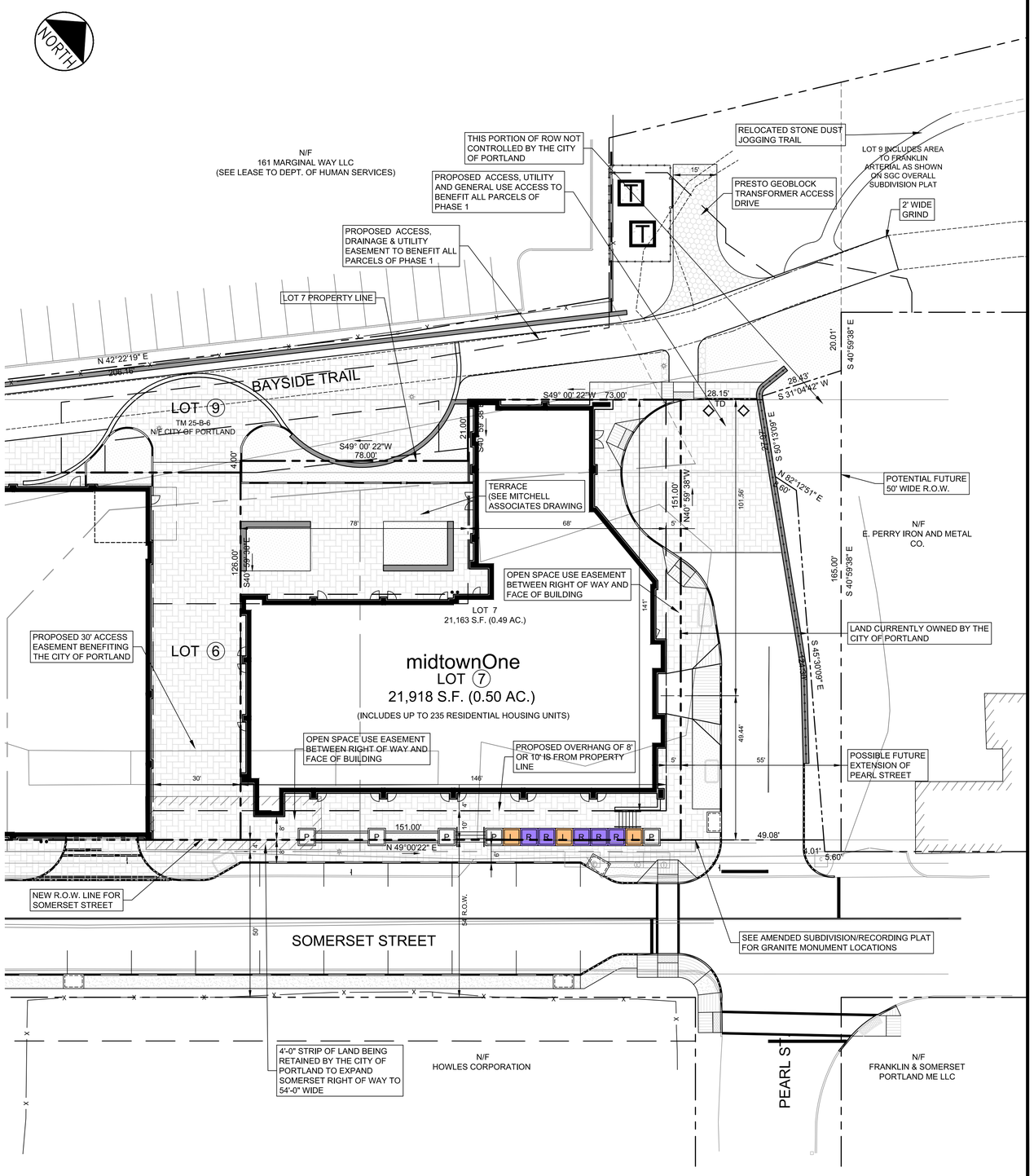
NOTE: THIS PLAN HAS BEEN ALTERED BY FAY, SPOFFORD & THORNDIKE. TO ADD THE PROPERTY LINE WITHIN THE PEARL STREET EXTENSION AREA AND TO PROVIDE DIMENSION TO EXISTING STRUCTURES

TOPOGRAPHIC SURVEY

ON PROPERTY IN THE VICINITY OF
SOMERSET STREET, PORTLAND, MAINE
MADE FOR
FAY, SPOFFORD & THORNDIKE
MAIN STREET, SOUTH PORTLAND, MAINE

OWEN HASKELL, INC.
390 U.S. ROUTE ONE, FALMOUTH, ME 04105 (207) 774-0424
PROFESSIONAL LAND SURVEYORS

Drwn By	RS	Date	Job No.
Trace By	JLW	NOVEMBER 9, 2012	12012-180 P
Check By	JWS	Scale	Drwg. No.
Book No.	FILE	1" = 40'	1.4



IF PEARL STREET IS CONNECTED TO MARGINAL WAY IN THE FUTURE, THE TURN-OUT WILL NEED TO BE ELIMINATED AND REPLACED WITH STANDARD CURBSIDE DROP-OFF AREA.

C-1.5

NOTES:

1. SUPPLEMENTAL INFORMATION FOR LOT 1 IS DEPICTED ON THE LEVEL III SITE PLANS FOR PHASE 1 OF THE midtown PROJECT.
2. THIS SUBDIVISION IS FOR RESIDENTIAL OCUPENCY ON LOT 7. REFER TO THE "AMENDED SUBDIVISION/RECORDING PLAT" FOR INFORMATION ON THE CITY OF PORTLAND AMENDED PLAN FOR LAND PARCELS WHICH INCLUDE LOT 7.

REFERENCE NOTES:

1. EXISTING PROPERTY BOUNDARIES, EXISTING CONDITIONS, EXISTING EASEMENTS, AND ELM ST. CHESTNUT ST., SOMERSET ST. AND PEARL STREET BASE LINE DATA ARE BASED ON OWEN HASKELL BOUNDARY AND TOPOGRAPHIC SURVEY PLAN DATED NOVEMBER 2012.

LEGEND

- PROPOSED PROPERTY BOUNDARY
- FEDERATED BUILDINGS
- BRICK AREAS
- GREEN SPACE/PLANTERS
- L P R — PROPOSED LANDING, PLANTER AND RAMP
- VERTICAL GRANITE CURB
- FLUSH GRANITE CURB
- MOUNTABLE CURB
- TD — TIPDOWN

APPROVAL - CITY OF PORTLAND
PLANNING BOARD

DATE

CHAIRPERSON

GRAPHIC SCALE

20 0 10 20 40

(IN FEET)
1 inch = 20 ft.

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE
WILLIAM R. MOORE
13547
LICENSED
PROFESSIONAL ENGINEER
11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT
midtown
PORTLAND, MAINE

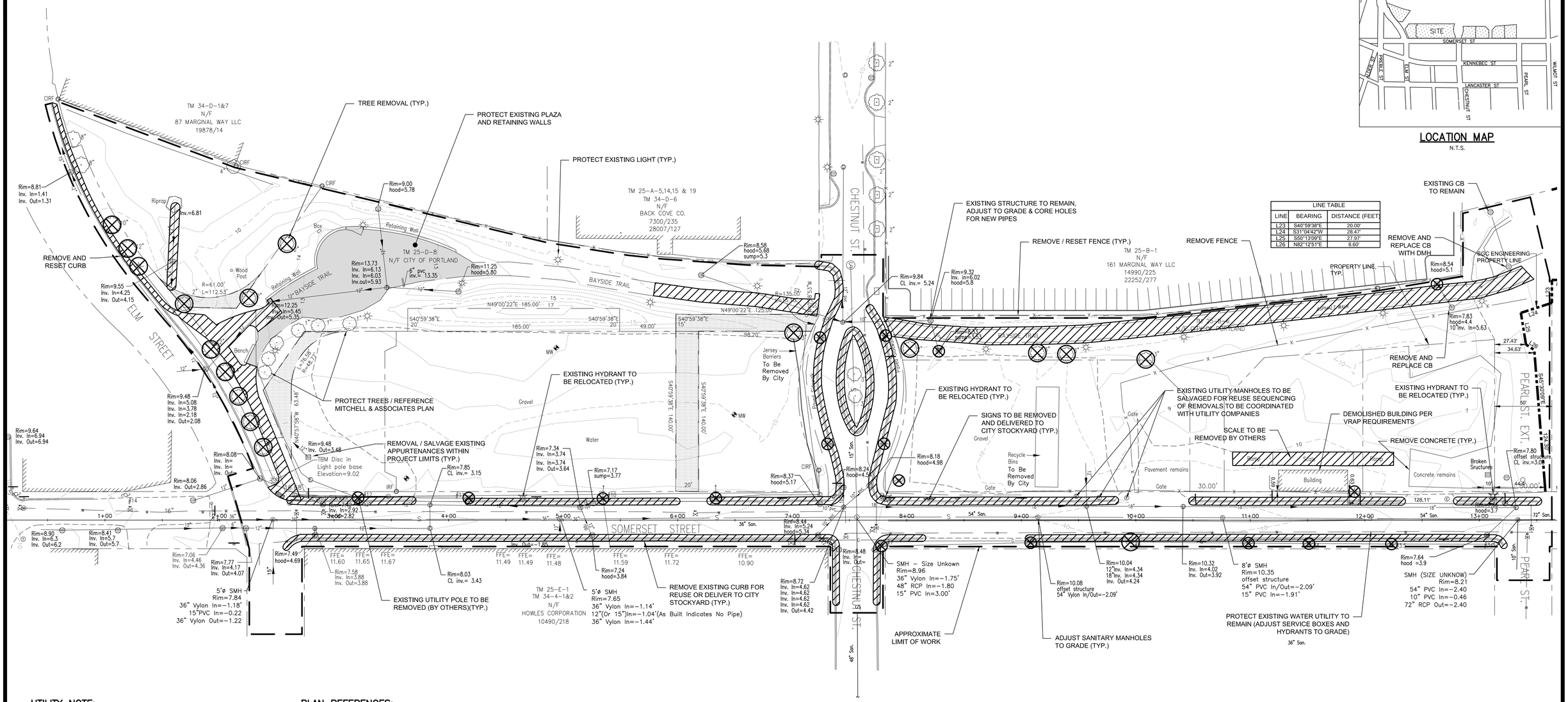
SHEET TITLE
RESIDENTIAL SUBDIVISION OF LOT 7

CLIENT
THE FEDERATED COMPANIES

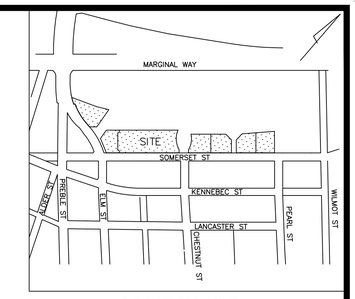
FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	1" = 20'
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-SUBDIVISION LOT 7		
SHEET	C-1.5		

R:\3062B - Midtown Amended - Portland, ME\Cadd\Permit Set\dwg\3062-SUBDIVISION LOT 7.dwg davis_d 11/14/2014 12:05 PM



LINE TABLE		
LINE	BEARING	DISTANCE (FEET)
L23	S40°59'38"E	20.00'
L24	S31°04'42"W	28.47'
L25	S50°13'09"E	27.97'
L26	N82°12'51"E	8.60'



LOCATION MAP

N.T.S.

UTILITY NOTE:

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEY FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. CALL 1-800-DIGSAFE AT LEAST THREE BUSINESS DAYS BEFORE PERFORMING ANY CONSTRUCTION. DUE TO OSHA CONFINED SPACE REQUIREMENTS, ALL INVERTS AND PIPE SIZES MUST BE VERIFIED PRIOR TO ANY CONSTRUCTION.

PLAN REFERENCES:

1. CONTRACT DRAWINGS - SEWER SEPARATION FRANKLIN ARTERIAL, MARGINAL WAY AND SOMERSET STREET - AS BUILTS BY CITY OF PORTLAND DEPATMENT OF PUBLIC WORKS.

LEGEND

- MONUMENT FOUND
- IRON PIPE OR ROD FOUND
- HYDRANT
- WATER VALVE
- UTILITY POLE
- LIGHT POLE
- MANHOLE
- CATCH BASIN
- SIGN
- FENCE
- 1' CONTOUR
- OVERHEAD WIRES
- WATER LINE
- SEWER LINE
- DECIDUOUS TREE
- MONITORING WELL

NOTES:

1. OWNER OF RECORD: CITY OF PORTLAND, C.C.R.D. BOOK 27870 PAGE 299.
2. BASIS OF BEARINGS: MAINE STATE PLANE COORDINATE SYSTEM WEST ZONE NAD83.
3. ELEVATIONS ARE BASED ON CITY DATUM. BENCH MARK: MDOT DISK "612-(1)-10 1983"
4. THIS PLAN IS THE RESULT OF A FIELD SURVEY CONDUCTED BY OWEN HASKELL, INC. NOVEMBER 2012 AND DATA TAKEN FROM PLAN REFERENCE 2 AS SHOWN ABOVE.
5. THIS PLAN MAY NOT INCLUDE ALL SURFACE CONDITIONS OR REFLECT ALL REMOVALS REQUIRED TO COMPLETE THE WORK. ANY UNFORESEEN CONDITIONS SHALL BE REPORTED TO THE OWNER'S REPRESENTATIVE PRIOR TO FURTHER ACTION.

NORTH

40 0 20 40 80

(IN FEET)
1 inch = 40 ft.

ALTERED PLAN

10.17.2014

NOTE: THIS PLAN HAS BEEN ALTERED BY FAY, SPOFFORD & THORNDIKE TO ADD THE PROPERTY LINE WITHIN THE PEARL STREET EXTENSION AREA AND TO PROVIDE DIMENSION TO EXISTING STRUCTURES

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE WILLIAM R. MOORE 13547 LICENSED PROFESSIONAL ENGINEER 11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT: midtown
PORTLAND, MAINE

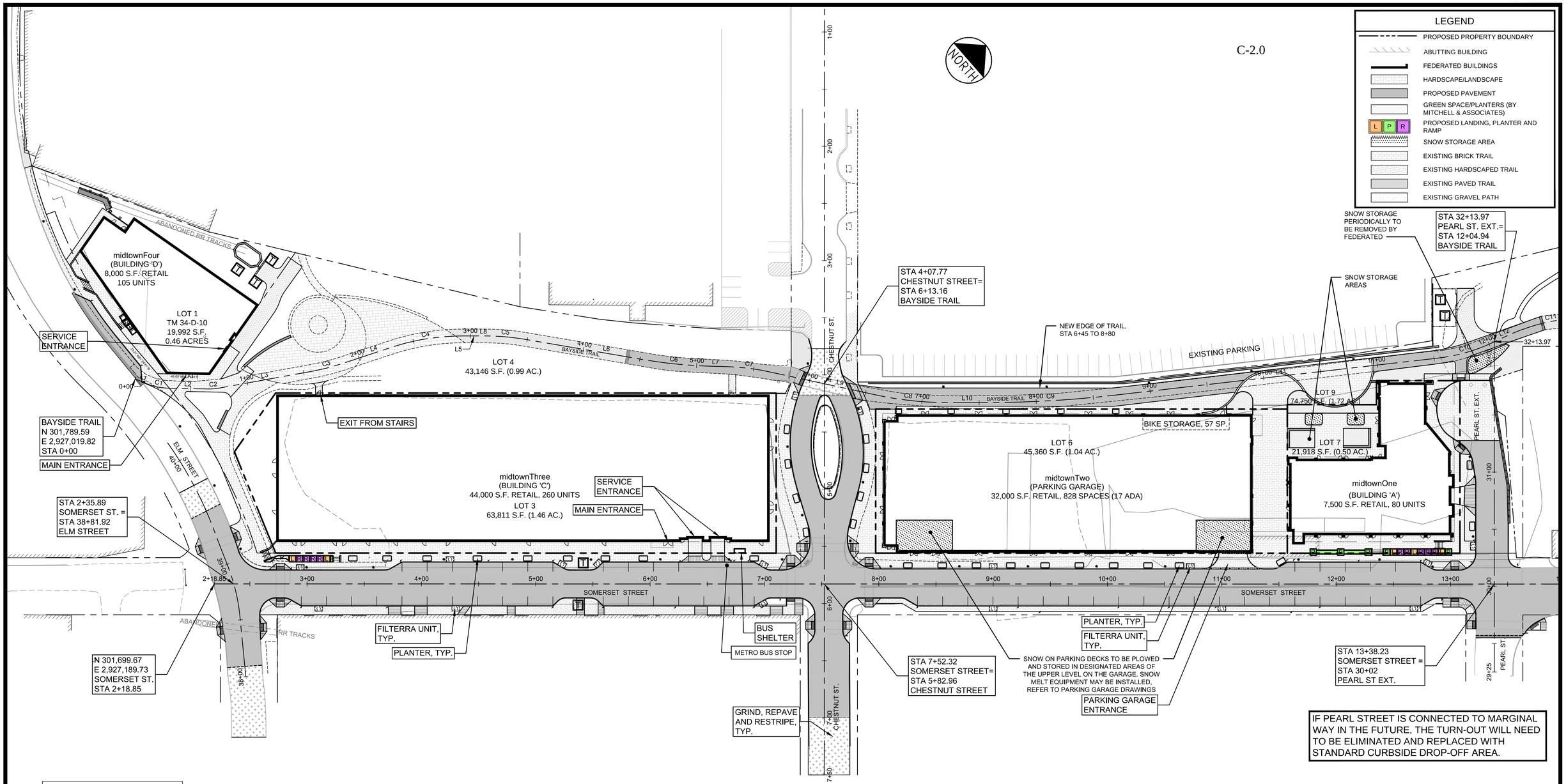
SHEET TITLE: EXISTING CONDITIONS AND REMOVALS PLAN

CLIENT: THE FEDERATED COMPANIES

FST 100 YEARS

FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	WBL	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	1" = 40'
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062B-EXIST REMOVAL		
SHEET	C-1.8		



LINE TABLE: ALIGNMENTS		
ID	LENGTH	DIRECTION
L1	11.70	N71° 04' 02.06"E
L2	34.95	N50° 11' 33.96"E
L3	82.21	N38° 43' 25.92"E
L4	44.18	N30° 40' 45.73"E
L5	20.19	N49° 00' 22.29"E
L6	106.00	N58° 43' 25.61"E
L7	21.70	N50° 49' 52.46"E
L8	20.19	N49° 00' 22.29"E
L9	95.15	N61° 14' 33.58"E
L10	32.69	N48° 56' 24.17"E
L11	284.79	N42° 26' 52.98"E
L12	13.41	N23° 46' 17.31"E
L13	50.38	N51° 49' 50.37"E

CURVE TABLE: ALIGNMENTS						
ID	RADIUS	ARC LENGTH	DELTA	TANGENT	PC STATION	PT STATION
C1	50.00	18.22	020° 52'	9.21	0+11.70	0+29.91
C2	50.00	10.01	011° 28'	5.02	0+64.86	0+74.87
C3	200.00	28.08	008° 03'	14.06	1+57.08	1+85.16
C4	200.00	63.97	018° 20'	32.26	2+29.34	2+93.31
C5	200.00	33.92	009° 43'	17.00	3+13.50	3+47.42
C6	400.00	52.25	007° 29'	26.16	4+53.42	5+05.66
C7	200.00	36.34	010° 25'	18.22	5+27.37	5+63.71
C8	300.00	64.42	012° 18'	32.33	6+58.86	7+23.28
C9	1000.00	113.31	006° 30'	56.71	7+55.97	8+69.28
C10	150.00	48.90	018° 41'	24.67	11+54.07	12+02.96
C11	170.00	83.25	028° 04'	42.48	12+16.37	12+99.62

GRAPHIC SCALE

40 0 20 40 80

(IN FEET)
1 inch = 40 ft.

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE
WILLIAM R. MOORE
13547
LICENSED
PROFESSIONAL ENGINEER
11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
OVERALL SITE PLAN

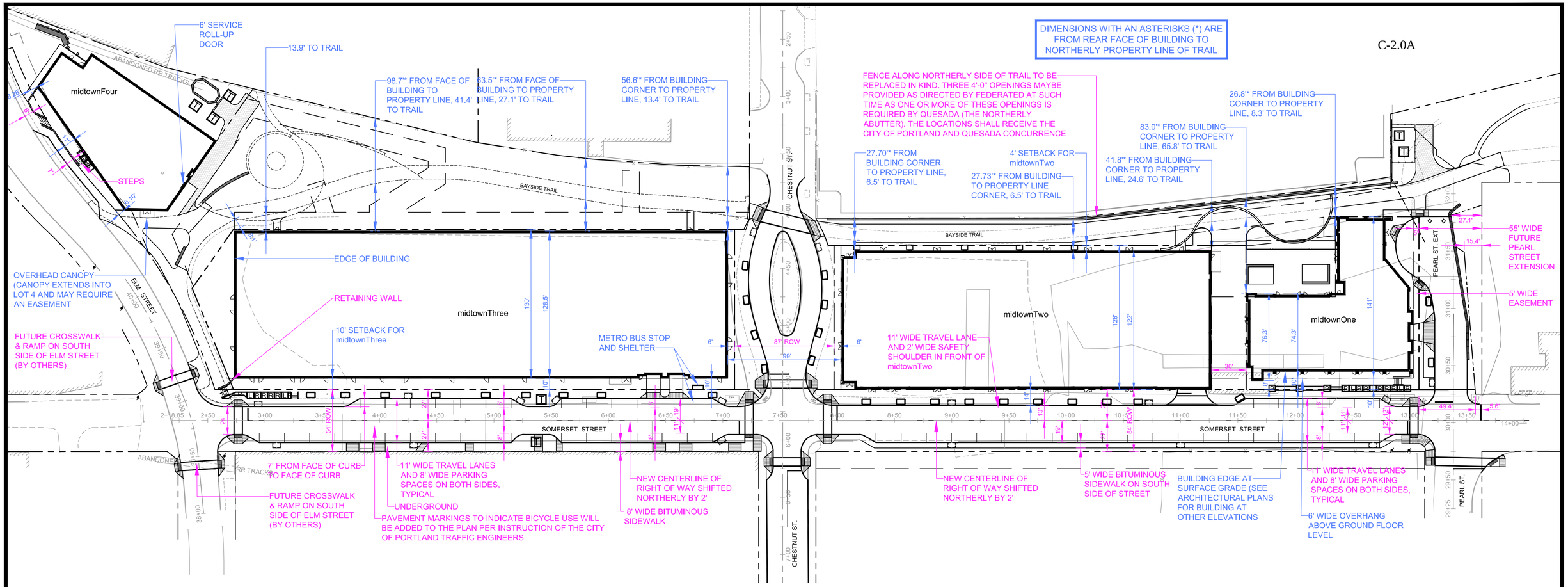
CLIENT
THE FEDERATED COMPANIES

FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW/LA	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	1" = 40'
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-SITE		
SHEET	C-2.0		

R:\3062B - Midtown Amended - Portland, ME\Cadd\Permit Set\dwg\3062-SITE.dwg anthon_j 11/14/2014 1:17 PM

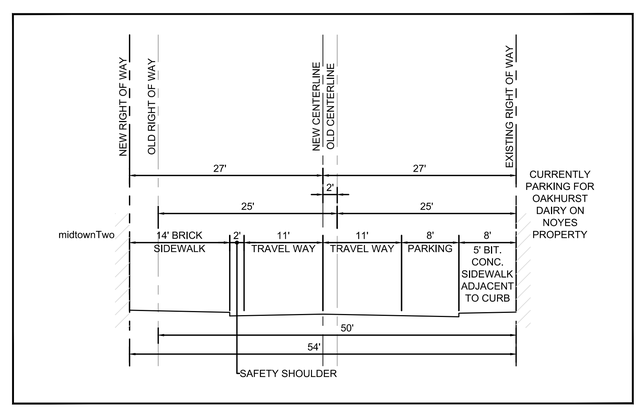
DIMENSIONS WITH AN ASTERISKS (*) ARE FROM REAR FACE OF BUILDING TO NORTHERLY PROPERTY LINE OF TRAIL



SOMERSET STREET PARKING COMPARISON		
DESCRIPTION	LOCATION	NO. OF SPACES
REVISED PLAN	SPACES TO NORTH OF CENTERLINE	13
	SPACES TO SOUTH OF CENTERLINE	36
	TOTAL SPACES	49

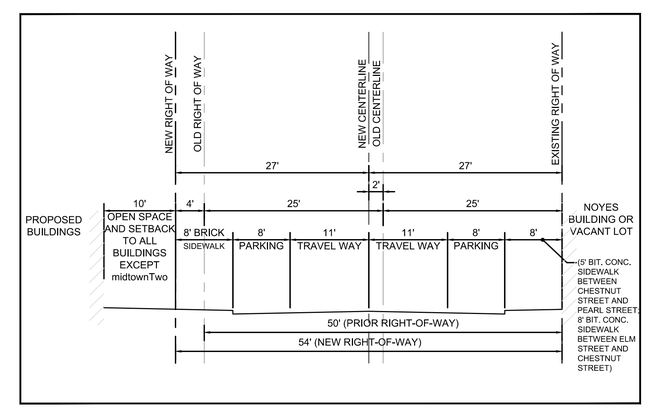
THE APPLICANT IS REQUESTING SOMERSET STREET PARKING BE 15 MINUTE SPACES TO BENEFIT GROUND FLOOR RETAIL PARKING. THIS WILL BE REVIEWED WITH THE CITY OF PORTLAND PARKING DIVISION.

PARKING SPACES ARE DELINEATED ON THIS DRAWING FOR PLANNING STAFF REVIEW. THE SPACES WILL NOT BE DELINEATED OR PAINTED ON THE PAVEMENT WHEN THE PROJECT IS CONSTRUCTED (PER CITY STANDARDS).



TYPICAL SECTION IN FRONT OF midtownTwo

NOT TO SCALE



TYPICAL SECTION WITH PARKING ON EACH SIDE OF STREET

NOT TO SCALE

PRELIMINARY - NOT FOR CONSTRUCTION

NORTH

GRAPHIC SCALE

40 0 20 40 80

(IN FEET)
1 inch = 40 ft.

THIS DRAWING IS INTENDED TO BE PLOTTED AND VIEWED IN COLOR.
BLACK AND WHITE PLAN IS NOT SUITABLE FOR REVIEW

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE WILLIAM R. MOORE 13547 LICENSED PROFESSIONAL ENGINEER 11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT: midtown
PORTLAND, MAINE

SHEET TITLE: OVERALL SITE PLAN WITH DIMENSIONS

CLIENT: THE FEDERATED COMPANIES

FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

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FILE NAME:	3062-Base		
SHEET	C-2.0A		

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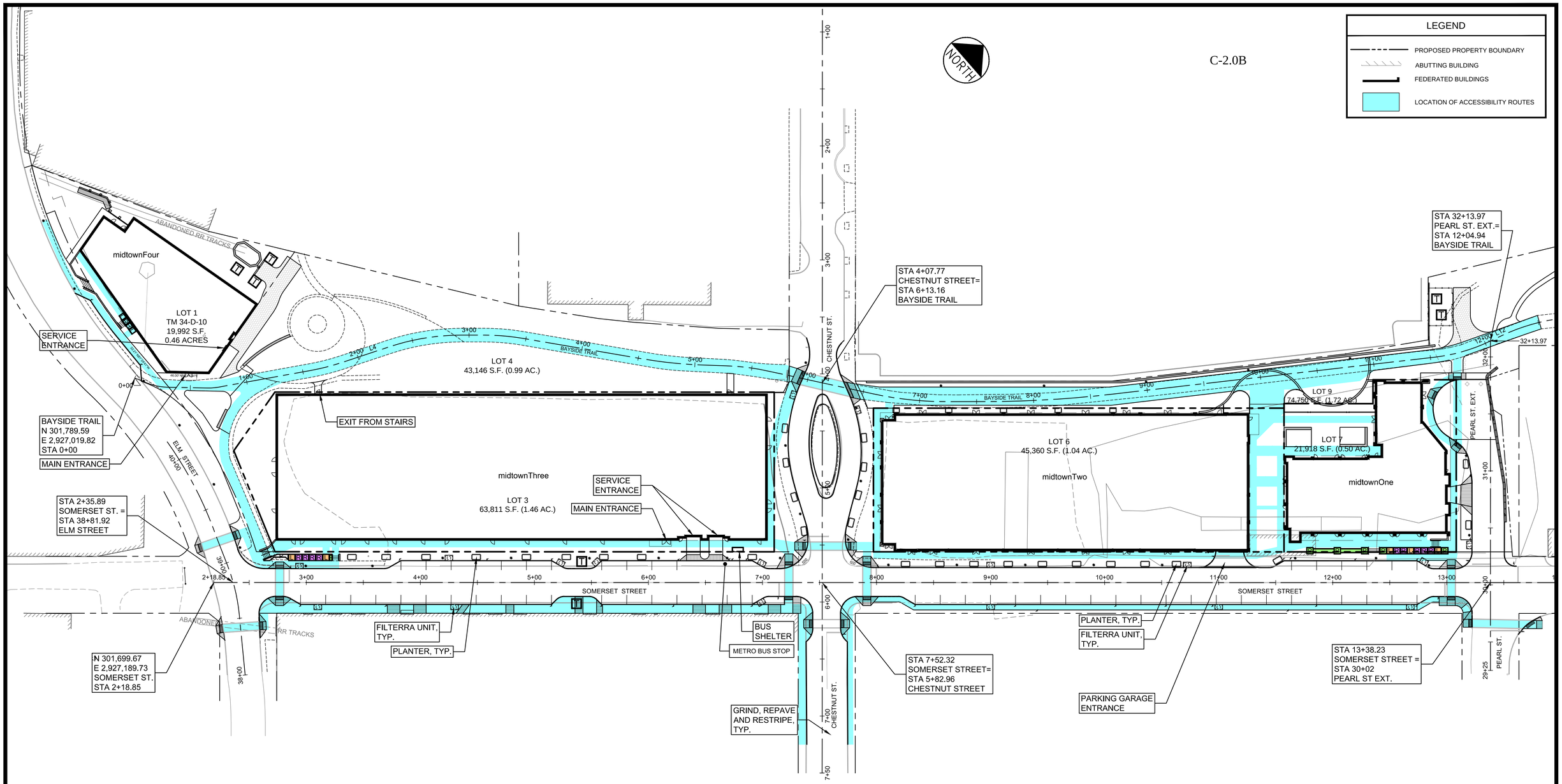
C-2.0B



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REVISIONS

STATE OF MAINE
WILLIAM R. MOORE
13547
LICENSED
PROFESSIONAL ENGINEER
11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
ACCESSIBLE ROUTE PLAN

CLIENT
THE FEDERATED COMPANIES

FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
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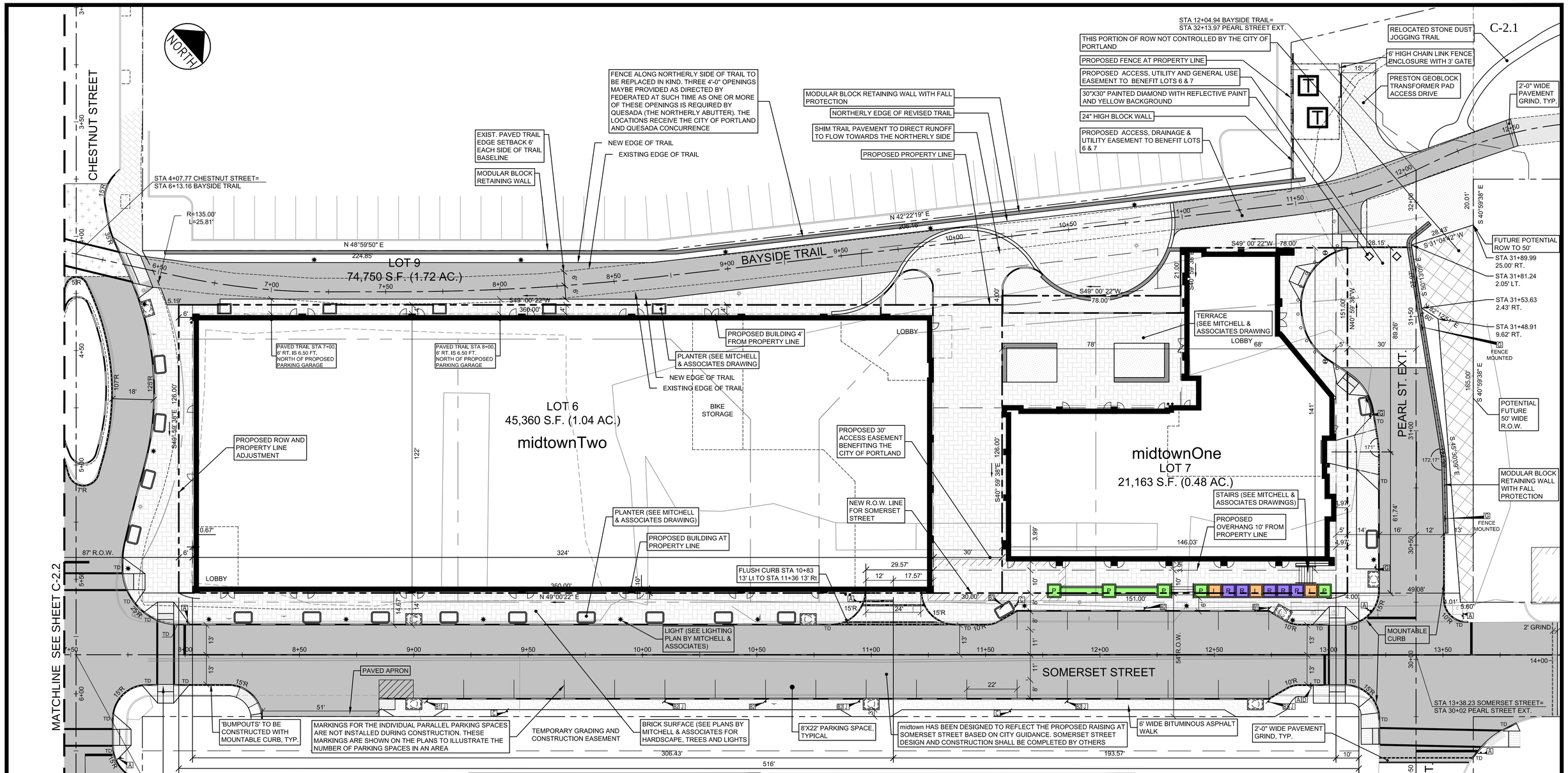

LEGEND

- PROPOSED PROPERTY BOUNDARY
- ABUTTING BUILDING
- FEDERATED BUILDINGS
- HARDSCAPE/LANDSCAPE
- PROPOSED PAVEMENT
- GREEN SPACE/PLANTERS (BY MITCHELL ASSOCIATES)
- L P R — PROPOSED LANDING, PLANTER AND RAMP
- SNOW STORAGE AREA
- EXISTING BRICK TRAIL
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- EXISTING GRAVEL PATH
- VERTICAL GRANITE CURB
- FLUSH GRANITE CURB
- MOUNTABLE CURB (TYPE 5 GRANITE)
- TD — TIPDOWN

EASEMENT NOTES

1. AN EASEMENT FOR SNOW REMOVAL ACTIVITIES IN A LOCATION OVER LOT 3. THE LANGUAGE IS TO BE FORMULATED AND APPROVED BY THE CITY'S CORPORATION COUNSEL OFFICE.
2. AN EASEMENT FOR SUBSURFACE PILINGS, PILE CAPS AND BUILDING FOUNDATIONS GENERALLY ALONG THE NORTHERLY, EASTERLY AND SOUTHERLY PROPERTY LINES OF LOT 1, 3, 6 & 7 AND BURDENING LOT 4, 9 AND THE CHESTNUT STREET AND SOMERSET STREET RIGHTS OF WAY. THE LANGUAGE IS TO BE FORMULATED AND APPROVED BY THE CITY'S CORPORATION COUNSEL OFFICE.
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GENERAL NOTES

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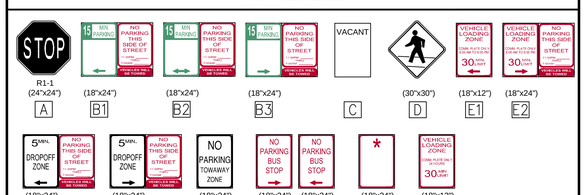

* SIGN TO BE PROVIDED BY METRO AFTER POST PROVIDED BY CONTRACTOR

NOTE:

THE LOCATION FOR A METRO BUS STOP ALONG SOMERSET STREET IS UNDER REVIEW. RESOLUTION IS ANTICIPATED PRIOR TO COMPLETING LEVEL III SITE PLANS

REFERENCE NOTES:

1. EXISTING PROPERTY BOUNDARIES, EXISTING CONDITIONS, EXISTING EASEMENTS, AND ELM ST. CHESTNUT ST., SOMERSET ST. AND PEARL STREET BASE LINE DATA ARE BASED ON OWEN HASKELL BOUNDARY AND TOPOGRAPHIC SURVEY PLAN DATED NOVEMBER 2012.
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(IN FEET)
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REVISIONS

STATE OF MAINE — STEPHEN R. BUSHEY — No. 7429 — LICENSED PROFESSIONAL ENGINEER — 1/21/15

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

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
SITE LAYOUT PLAN - midtownOne AND midtownTwo

CLIENT
FEDQ DV001, LLC

FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW/LA	DATE:	OCTOBER 2014
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SHEET	C-2.1		

R:\3062B - Midtown Amended - Portland, ME\Cadd\Permit Set\dwg\3062-SITE.dwg anthon_j 1/21/2015 4:17 PM

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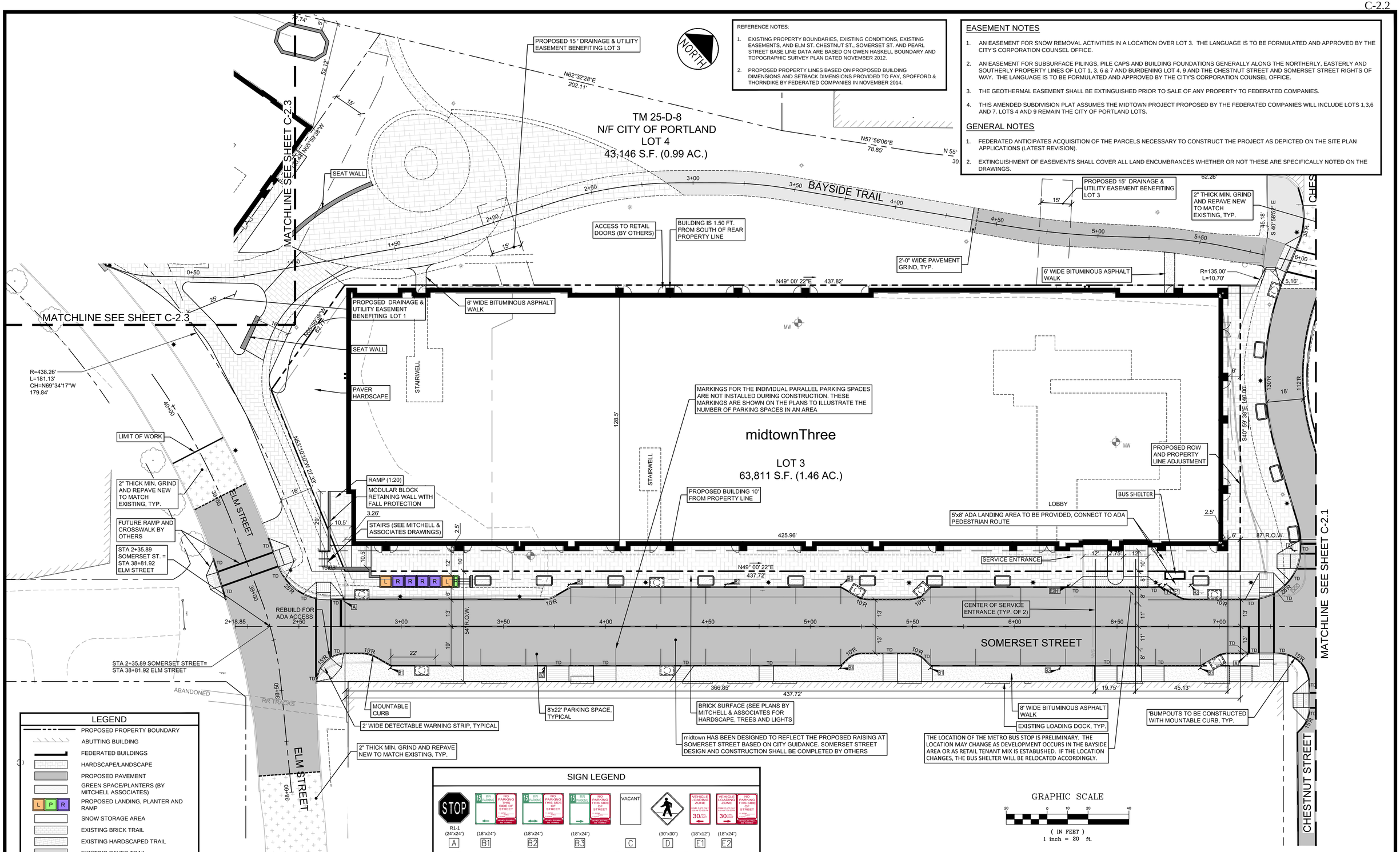

LEGEND

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- FEDERATED BUILDINGS
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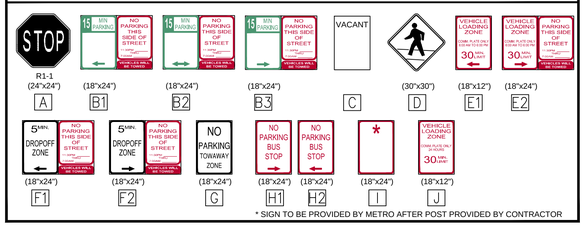

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PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
2	01.21.15	REVISED PER PWD/CMP COMMENTS; SUBMITTED TO CITY
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REVISIONS

STATE OF MAINE — STEPHEN R. BUSHEY — No. 7429 — LICENSED PROFESSIONAL ENGINEER — 1/21/15

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

PROJECT: midtown
PORTLAND, MAINE

SHEET TITLE: SITE LAYOUT PLAN - midtownThree

CLIENT: FEDQ DV001, LLC

FST 100 YEARS

FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

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SHEET	C-2.2		

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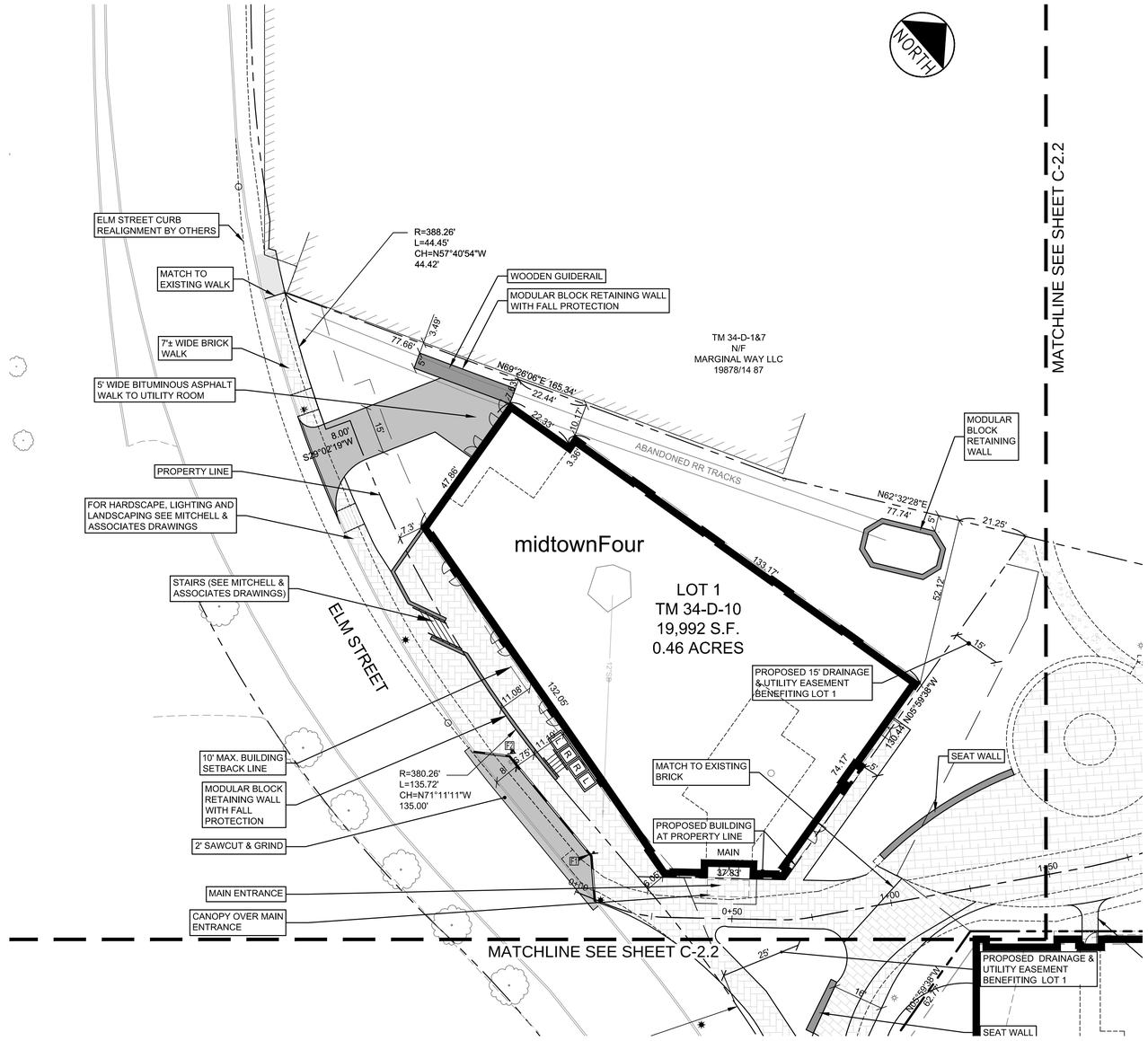

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GENERAL NOTES

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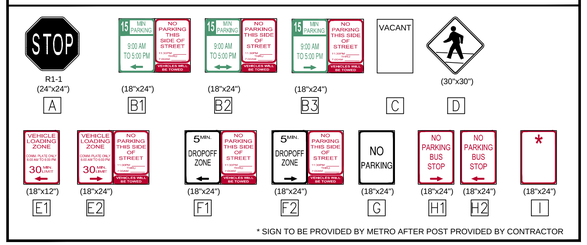

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20 0 10 20 40

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REVISIONS

STATE OF MAINE — STEPHEN R. BUSHEY — No. 7429 — LICENSED PROFESSIONAL ENGINEER — 11/21/15

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

PROJECT: midtown
PORTLAND, MAINE

SHEET TITLE: SITE LAYOUT PLAN - midtownFour

CLIENT: FEDQ DV001, LLC

FST 100 YEARS

FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

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SHEET	C-2.3		

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C-2.4

midtownTwo LOT AREA 1.04 ACRES
midtownTwo BUILDING ENVELOPE
40,824 S.F., 0.94 ACRES

OPEN SPACE AREAS:	
A. MEWS:	3,395 S.F.
B. STRIP ALONG SOMERSET ST.:	300 S.F.
C. 6' STRIP ALONG CHESTNUT STREET:	756 S.F.
D. REAR OF midtownTwo:	1,296 S.F.
TOTAL OPEN SPACE AREA:	5,747 S.F.
% OPEN SPACE FOR midtownTwo	25.70%

midtownOne LOT AREA 0.50 ACRES
midtownOne BUILDING ENVELOPE
18,620 S.F., 0.43 ACRES

OPEN SPACE AREAS:	
A. COURTYARD:	3,568 S.F.
B. 5' STRIP ALONG PEARL ST. EXT.:	751 S.F.
C. STRIP ALONG SOMERSET ST.:	1,429 S.F.
TOTAL OPEN SPACE AREA:	5,748 S.F.
% OPEN SPACE FOR midtownOne	26.22%

GEOBLOCK

9'x9' TRANSFORMER PAD (TYP. OF 2)

THIS PORTION OF ROW NOT CONTROLLED BY THE CITY OF PORTLAND

FUTURE POTENTIAL ROW TO 50' WIDE

NORTHERLY EDGE OF RELOCATED TRAIL

PROPOSED PROPERTY LINE

559 S.F. TO BE DEEDED BACK TO THE CITY OF PORTLAND

RELOCATE TRAIL IN THIS LOCATION

BAYSIDE TRAIL

CHESTNUT ST.

PROPOSED PROPERTY LINE

midtownTwo

LOT 6
45,360 S.F. (1.04 AC.)

midtownOne
21,918 S.F. (0.50 AC.)

PEARL ST. EXT.

N31° 04' 42"E
28.43'

N50° 13' 09"W
27.97'

S40° 59' 38"E

SOMERSET STREET

SOMERSET STREET R.O.W. BEING INCREASED IN WIDTH FROM 50' TO 54'

PEARL ST.

450 S.F. TO BE DEEDED BACK TO THE CITY OF PORTLAND

IF PEARL STREET IS CONNECTED TO MARGINAL WAY IN THE FUTURE, THE TURN-OUT WILL NEED TO BE ELIMINATED AND REPLACED WITH STANDARD CURBSIDE DROP-OFF AREA.

LEGEND

- PROPOSED PROPERTY BOUNDARY
- FEDERATED BUILDINGS
- LANDSCAPE/HARDSCAPE
- GREEN SPACE/PLANTERS BY MITCHELL & ASSOCIATES
- L P R — PROPOSED LANDING, PLANTER AND RAMP

NORTH

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STATE OF MAINE — WILLIAM R. MOORE — 13547 — LICENSED — PROFESSIONAL ENGINEER — 11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
midtownOne AND midtownTwo BUILDING ENVELOPE AND OPEN SPACE COMPUTATIONS

CLIENT
THE FEDERATED COMPANIES

FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
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FILE NAME:	3062-Base		
SHEET	C-2.4		

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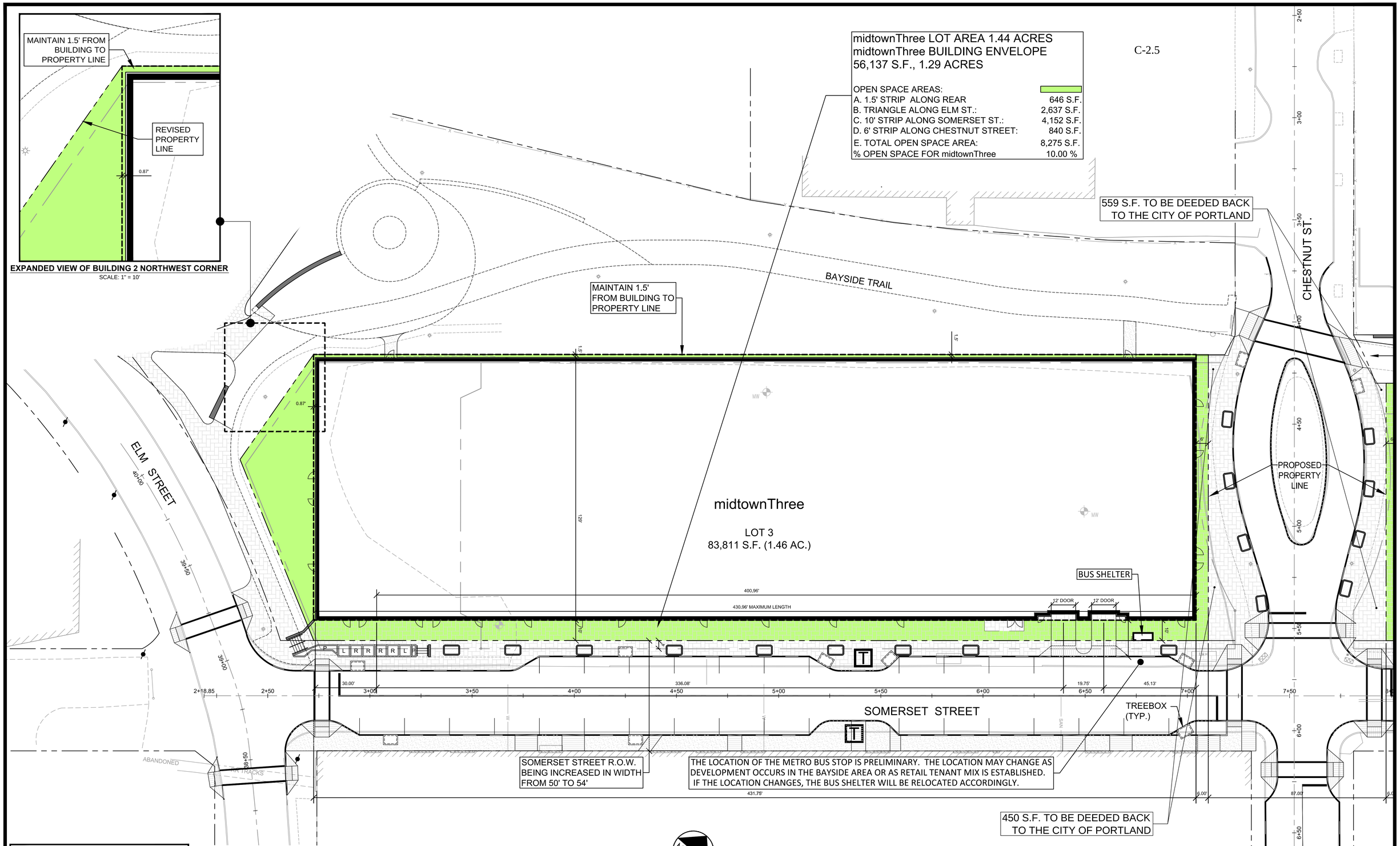

LEGEND

- PROPOSED PROPERTY BOUNDARY
- FEDERATED BUILDINGS
- LANDSCAPE/HARDSCAPE
- GREEN SPACE/PLANTERS BY MITCHELL & ASSOCIATES
- L P R — PROPOSED LANDING, PLANTER AND RAMP

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE — WILLIAM R. MOORE — 13547 — LICENSED PROFESSIONAL ENGINEER — 11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT: midtown
PORTLAND, MAINE

SHEET TITLE: midtownThree BUILDING ENVELOPE AND OPEN SPACE COMPUTATIONS

CLIENT: THE FEDERATED COMPANIES

FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW/LA	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	1"=20'
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-Base		
SHEET	C-2.5		

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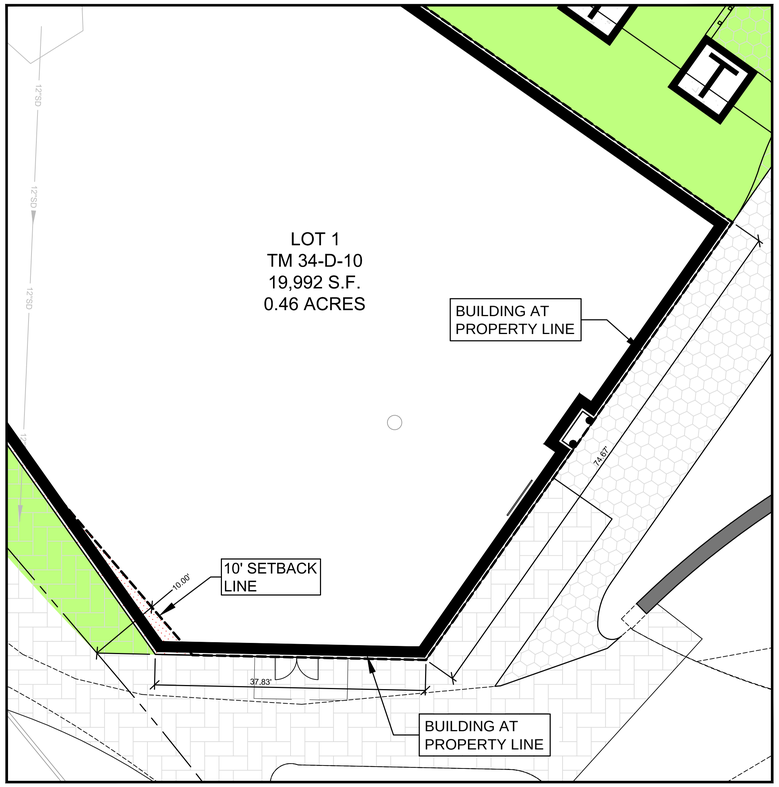

EXPANDED VIEW OF BUILDINGS ABUTTING BAYSIDE TRAIL

SCALE: 1" = 10'

C-2.6

BLANK WALL

midtownFour LOT AREA 0.46 ACRES
midtownFour BUILDING ENVELOPE
11,375 S.F., 0.26 ACRES

OPEN SPACE AREAS:	
TOTAL OPEN SPACE AREA:	8,305 S.F.
% OPEN SPACE FOR midtownFour	41.54%

ABANDONED RR TRACKS

9'x9' TRANSFORMER PAD (TYP. OF 3)

midtownFour

LOT 1
TM 34-D-10
19,992 S.F.
0.46 ACRES

LOT
43,146 S.F.

10' SETBACK LINE

ELM STREET

40+50

39+50

39+00

2+18.85

2+50

3+00

3+50

LEGEND

- PROPOSED PROPERTY BOUNDARY
- FEDERATED BUILDINGS
- LANDSCAPE/HARDSCAPE
- GREEN SPACE/PLANTERS BY MITCHELL & ASSOCIATES
- L P R — PROPOSED LANDING, PLANTER AND RAMP

NORTH

GRAPHIC SCALE

20 0 10 20 40

(IN FEET)
1 inch = 20 ft.

PRELIMINARY - NOT FOR CONSTRUCTION

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REVISIONS

STATE OF MAINE
WILLIAM R. MOORE
13547
11/14/14
LICENSED
PROFESSIONAL ENGINEER

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
midtownFour BUILDING ENVELOPE AND OPEN SPACE COMPUTATIONS

CLIENT
THE FEDERATED COMPANIES

FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
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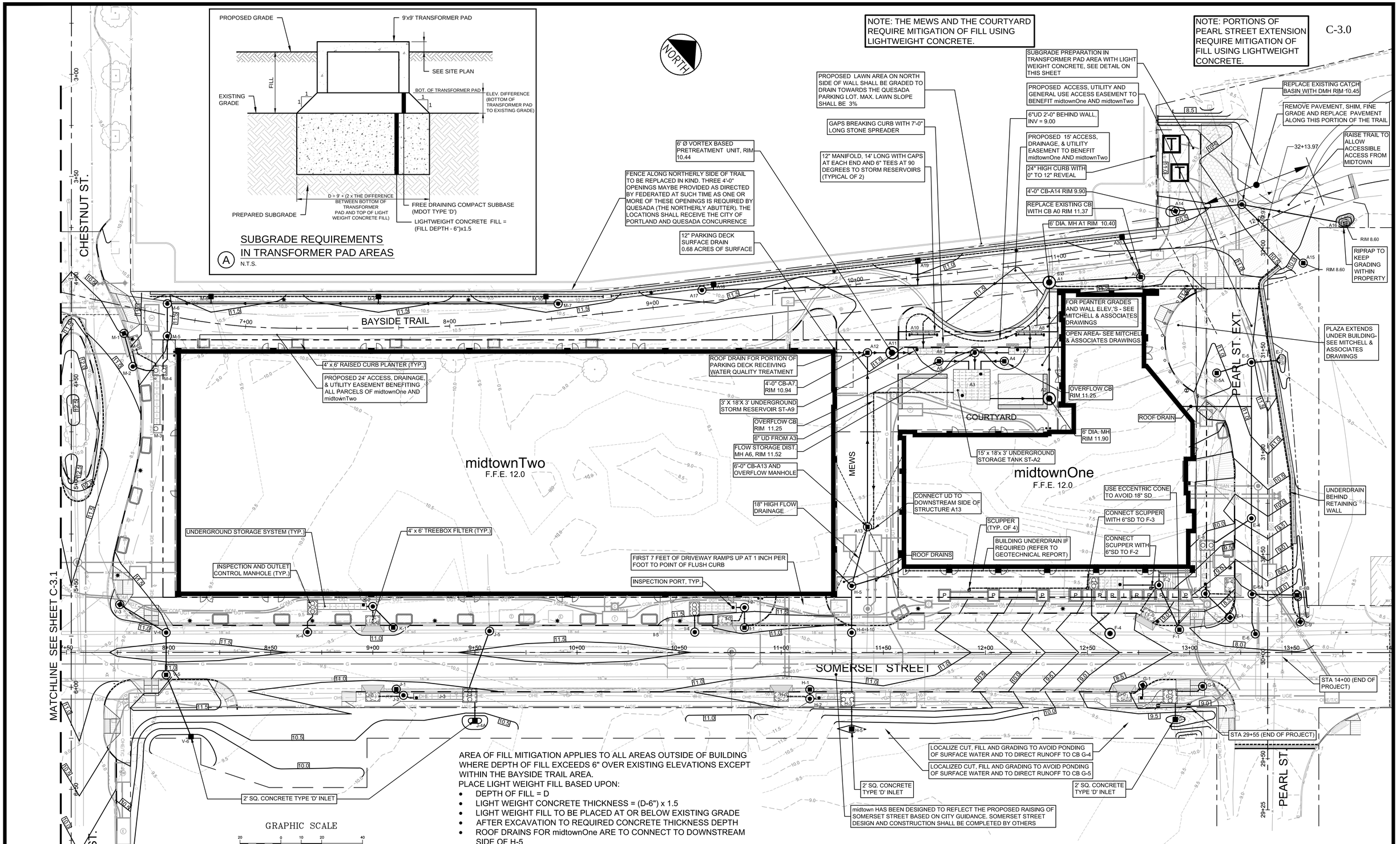

AREA OF FILL MITIGATION APPLIES TO ALL AREAS OUTSIDE OF BUILDING WHERE DEPTH OF FILL EXCEEDS 6" OVER EXISTING ELEVATIONS EXCEPT WITHIN THE BAYSIDE TRAIL AREA.

PLACE LIGHT WEIGHT FILL BASED UPON:

- DEPTH OF FILL = D
- LIGHT WEIGHT CONCRETE THICKNESS = (D-6") x 1.5
- LIGHT WEIGHT FILL TO BE PLACED AT OR BELOW EXISTING GRADE
- AFTER EXCAVATION TO REQUIRED CONCRETE THICKNESS DEPTH
- ROOF DRAINS FOR midtownOne ARE TO CONNECT TO DOWNSTREAM SIDE OF H-5

SEE PLANS C-3.3, C-3.4, C-3.5, C-3.6, C-3.7 AND C-3.15 FOR DETAILED GRADING AND DRAINAGE OF SOMERSET STREET, CHESTNUT STREET, PEARL STREET EXTENTION, MEWS AND COURTYARD

REV	DATE	DESCRIPTION
2	01.21.15	REVISED PER SITE PLAN CHANGES; SUBMITTED TO CITY
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE — STEPHEN R. BUSHEY — No. 7429 — LICENSED PROFESSIONAL ENGINEER — 1/21/15

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

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
GRADING & DRAINAGE PLAN
midtownOne and midtownTwo

CLIENT
FEDQ DV001, LLC

FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

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FILE NAME:	3062-GRADE		
SHEET	C-3.0		

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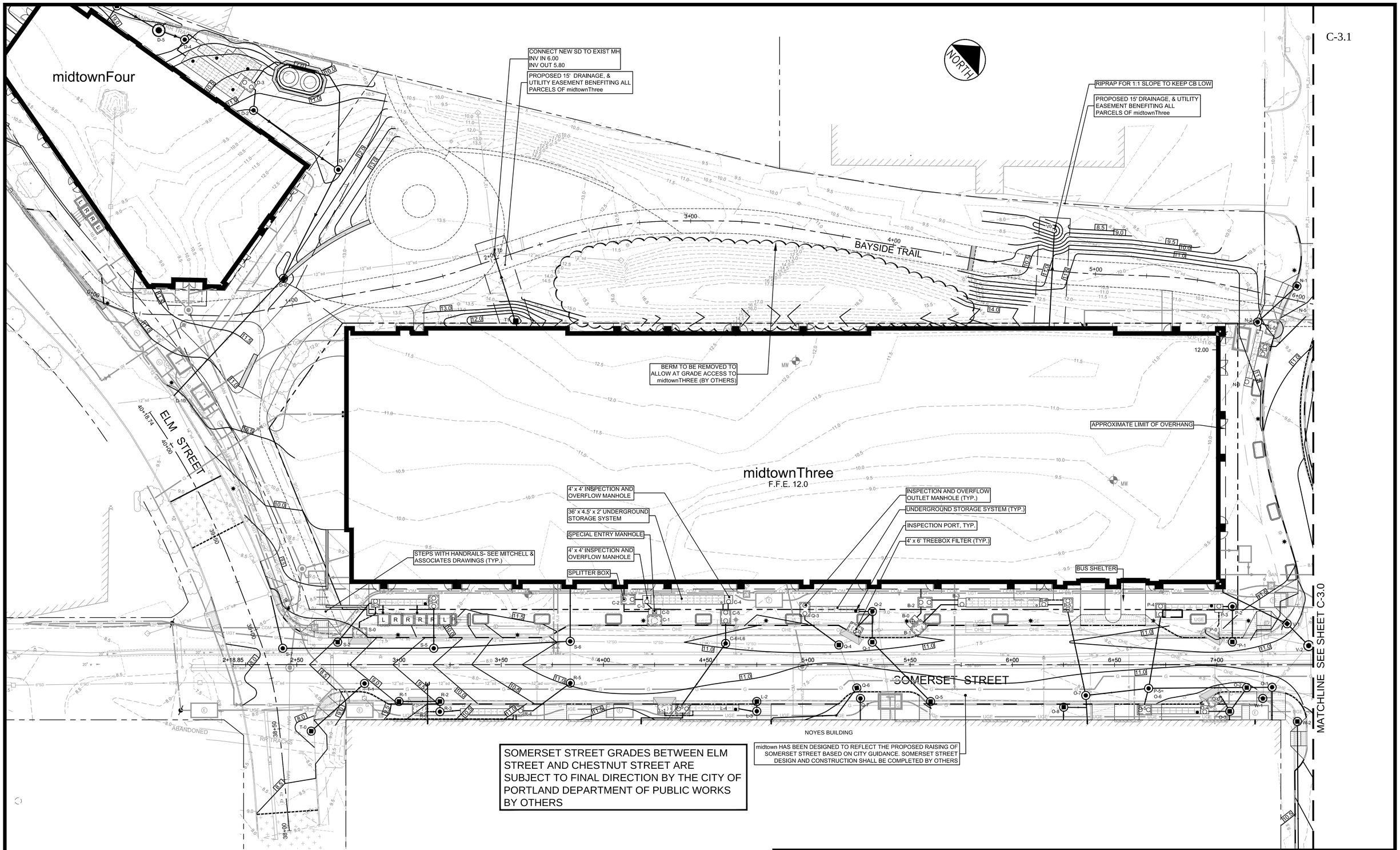

SOMERSET STREET GRADES BETWEEN ELM STREET AND CHESTNUT STREET ARE SUBJECT TO FINAL DIRECTION BY THE CITY OF PORTLAND DEPARTMENT OF PUBLIC WORKS BY OTHERS

midtown HAS BEEN DESIGNED TO REFLECT THE PROPOSED RAISING OF SOMERSET STREET BASED ON CITY GUIDANCE. SOMERSET STREET DESIGN AND CONSTRUCTION SHALL BE COMPLETED BY OTHERS

SEE PLANS C-3.3, C-3.4, C-3.5, C-3.6 AND C-3.8 FOR DETAILED GRADING AND DRAINAGE OF SOMERSET STREET, CHESTNUT STREET, AND ELM STREET BY OTHERS

GRAPHIC SCALE

20 0 10 20 40

(IN FEET)
1 inch = 20 ft.

REV	DATE	DESCRIPTION
2	01.21.15	REVISED PER SITE PLAN CHANGES; SUBMITTED TO CITY
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE
STEPHEN R. BUSHEY
No. 7429
LICENSED
PROFESSIONAL ENGINEER
11/24/15

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

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
GRADING & DRAINAGE PLAN
midtownThree

CLIENT
FEDQ DV001, LLC

FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

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FILE NAME:	3062-GRADE		
SHEET	C-3.1		

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C-3.2

REFER TO DRAINAGE SCHEDULE D FOR INFORMATION ON DRAINAGE SYSTEM

SEE PLAN C-3.8 FOR DETAILED GRADING AND DRAINAGE FOR ELM STREET

NORTH

4'-0" DIA. CATCH BASIN

AREAS OF FILL REQUIRE MITIGATION OF WEIGHT FILL BASED UPON:
- DEPTH OF FILL = D
- LIGHT WEIGHT CONCRETE THICKNESS = (D-6") x 1.5
- EXCAVATE FROM EXISTING GRADE TO REQUIRED CONCRETE THICKNESS DEPTH
- PLACE LIGHT WEIGHT CONCRETE
- PLACE AGGREGATES ABOVE THE CONCRETE AS REQUIRED BY DESIGN SECTION

4'-0" DIA. MANHOLE

RETAINING WALL AND GUIDERAIL BARRIER

TM 34-D-1&7
N/F
MARGINAL WAY LLC
19878/14 87

PROPOSED CURB LINE (BY OTHERS)

PROPOSED EXTENSION TO CONNECT TO 6" WATER MAIN IN PREBLE STREET

4'-0" DIA. CATCH BASIN D6
RIM = 8.10

CONNECT UD TO D5

7.50'x 33.00' BRENTWOOD STORAGE SYSTEM (1.5'x3.0'x3.0' DEEP UNITS)
MIN. GRADE OVER UNITS = 9.10

INSPECTION PORT, TYP.

AREAS OF FILL REQUIRE MITIGATION OF WEIGHT - PLACE LIGHT WEIGHT FILL BASED UPON:
- DEPTH OF FILL = D
- LIGHT WEIGHT CONCRETE THICKNESS = (D-6") x 1.5
- EXCAVATE FROM EXISTING GRADE TO REQUIRED CONCRETE THICKNESS DEPTH
- PLACE LIGHT WEIGHT CONCRETE

LIGHTWEIGHT CONCRETE NOT REQUIRED WHERE CHANGE IN GRADE IS 6" OR LESS

LIGHTWEIGHT CONCRETE NOT REQUIRED BELOW STORMTREAT™ UNITS (i.e. NO NET FILL)

CONNECT WALL UD WITH STONE AND 4" PIPE UD

USE AN IMPERMEABLE LINER TO AVOID STORED WATER FROM ENTERING UNDERDRAINS

TOP OF WALL ELEV. = 0" - 8" ABOVE ADJACENT GRADE (= ELEV. 9.0 ON THIS SIDE) 9.30

4" INLET HEADER

4" DISCHARGE HEADER

INSTALL CRUSHED STONE WITH UNDERDRAIN TRENCH TO KEEP RUNOFF ON THIS PROPERTY: CONNECT TO D5

BANK OF 2 STORMTREAT™ UNITS WITH RETAINING WALL, FENCE AND LANDSCAPED PERIMETER
BOTTOM OF STORMTREAT™ TANKS ELEV. = 2.98

PROPOSED 15' DRAINAGE, & UTILITY EASEMENT BENEFITING midtownFour

ROOF DRAIN DISCHARGE
SEE PLUMBING PLANS FOR ROOF DRAIN INVERT ELEVATIONS

VORTEX BASED PRETREATMENT MANHOLE, RIM = 8.60

5'-0" Ø SPLITTER MANHOLE
RIM = 8.70

midtownFour

F.F.E. 12.0

BOTTOM OF BRENTWOOD
ELEV.= 3.90

REPLACE EXISTING 12" SD WITH 24" SD (BY OTHERS)

STEPS
4 RISERS @ 4 ¾"
TREADS @ 14"

4'x6' SQ. INSPECTION/OBSERVATION MANHOLE

OUTLET CONTROL MANHOLE WITH HYDRAULIC CONTROL WEIR SET @ 6.90 TO CONTAIN WATER QUALITY VOLUME

REMOVE STORM DRAIN

TOP OF WALL ELEV. = 11.00

INSTALL FLAP VALVE ON 18" INLET AND 4"x2" REDUCER AND 2" DIA. DISCHARGE WITH BALL VALVE AND BACKFLOW PREVENTION

SEAT WALL

6'-0" DIA. MANHOLE
RIM = 11.48

18" DISCHARGE LINE

SEAT WALL

LANDING

REMOVE CATCH BASIN

LANDING

REMOVE STORM DRAIN

MAIN ENTRY

REPLACE 4' DMH WITH 4' CB

REPLACE EXISTING 12" SD WITH NEW 18" SD

ELM STREET

GRAPHIC SCALE
10 0 5 10 20
(IN FEET)
1 inch = 10 ft.

PRELIMINARY - NOT FOR CONSTRUCTION

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REVISIONS

STATE OF MAINE
STEPHEN R. BUSHEY
No. 7429
LICENSED
PROFESSIONAL ENGINEER
11/21/15

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

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
GRADING & DRAINAGE PLAN
midtownFour

CLIENT
FEDQ DV001, LLC

FST 100 YEARS

FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
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SHEET	C-3.2		

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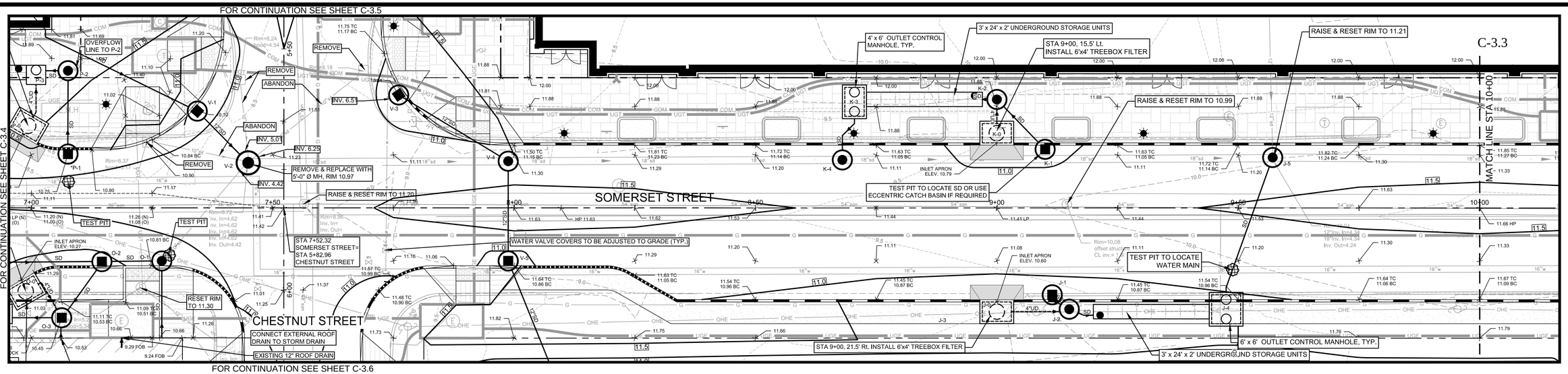
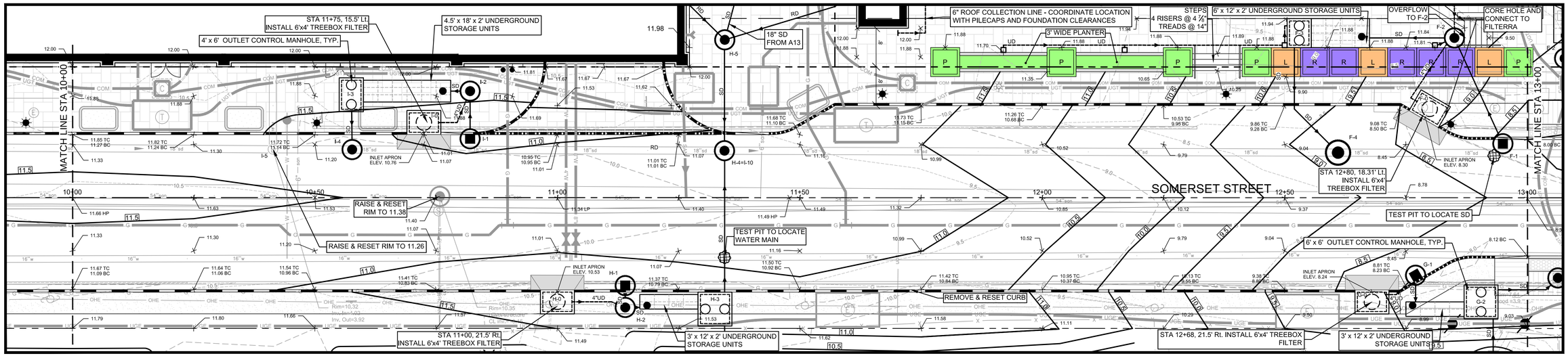
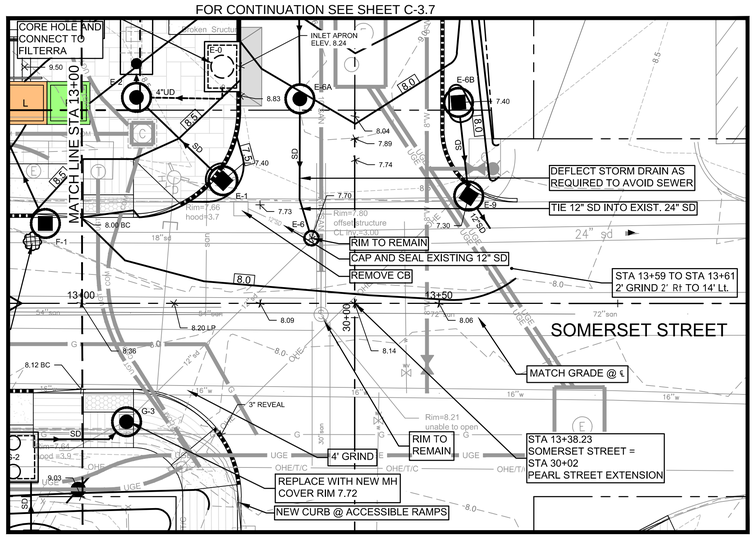


FOR CONTINUATION SEE SHEET C-3.6



FOR CONTINUATION SEE SHEET C-3.7



SCHEDULE OF SCUPPERS BEHIND RAMPS AND PLANTERS

LOCATION	RIM	INVERT OUT	CONNECT TO
11+92, 30' LT	11.70	7.70	F-3
12+17, 30' LT	11.70	7.45	F-3
12+50, 31' LT	11.81	7.70	F-2
12+81, 31' LT	11.81	7.70	F-2

LEGEND

- PROPOSED PROPERTY BOUNDARY
- FEDERATED BUILDINGS
- BRICK AREAS
- GREEN SPACE/PLANTERS (BY MITCHELL & ASSOCIATES)
- L P R S — PROPOSED LANDING, PLANTER, RAMP AND STEPS
- VERTICAL GRANITE CURB
- FLUSH GRANITE CURB
- MOUNTABLE CURB (TYPE 5 GRANITE)
- TD — TIPDOWN

NOTES:

1. THE GAS LINE WILL BE UPGRADED AND REPLACED BY UNITIL. CONTRACTOR RESPONSIBLE FOR COORDINATION OF THE WORK AND ALL TRENCHING, BACKFILL & SURFACE RESTORATION.
2. THE FILTERRA TREE BOX FILTERS REQUIRE CONNECTIONS TO UNDERGROUND STORAGE AND CONNECTION TO STORM DRAIN IN SOMERSET STREET. REFER TO SCHEDULES ON SHEETS C-3.10 THROUGH C-3.13.
3. EXISTING MANHOLES AND CATCH BASINS TO BE EXAMINED IN THE FIELD TO DETERMINE THE SCOPE OF WORK TO RAISE THEM TO PROPOSED GRADES AND/OR CONNECT TO NEW STORM DRAIN LINES.
4. THE SURFACE TREATMENT AND LIGHTING FOR THE AREA TO THE NORTH OF THE CURB LINE ARE SHOWN ON PLANS PREPARED BY MITCHELL & ASSOCIATES.
5. THE SURFACE TREATMENT SOUTH OF THE SOUTHERLY CURB LINE ON SOMERSET STREET WILL BE UNIMPROVED AND STABILIZED WITH EROSION CONTROL SEED MIXES.
6. TEL, ELEC & COMM TO BE PLACED (UNDERGROUND AND TO BE LOCATED ON THE NORTHERLY SIDE OF SOMERSET STREET.
7. ELEVATIONS AND INVERTS FOR WATER QUALITY SYSTEMS ARE PROVIDED IN THE DRAINAGE SCHEDULES OF SHEET C-3.10, C-3.11, C-3.12, AND C-3.13.
8. UNDERGROUND STORAGE FOR 'ISOLATOR ROW' ARE BASED UPON THE BRENTWOOD STORAGE SYSTEM. STORMTECH® SC 740 CHAMBERS ARE AN ACCEPTABLE ALTERNATIVE. IF THE STORMTECH® SC 740 CHAMBERS ARE USED, THE WEIR IN THE OVERFLOW CONTROL MANHOLE SHALL BE RAISED 6" ABOVE THE ELEVATION LISTED IN THE DRAINAGE SCHEDULES ON SHEETS C-3.10 THROUGH C-3.13.
9. ALL BUILDING FOUNDATION DRAINS SHALL BE PIPED TO THE WQ UNIT "ISOLATOR" ROWS. (MAY NOT BE SHOWN ON PLAN VIEW).

NORTH

GRAPHIC SCALE

10 0 5 10 20

(IN FEET)
1 inch = 10 ft.

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE — WILLIAM R. MOORE — 13547 — 11/14/14 — LICENSED PROFESSIONAL ENGINEER

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
PROPOSED SPOT GRADES FOR EAST SIDE SOMERSET STREET

CLIENT
THE FEDERATED COMPANIES

FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

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SHEET	C-3.3		

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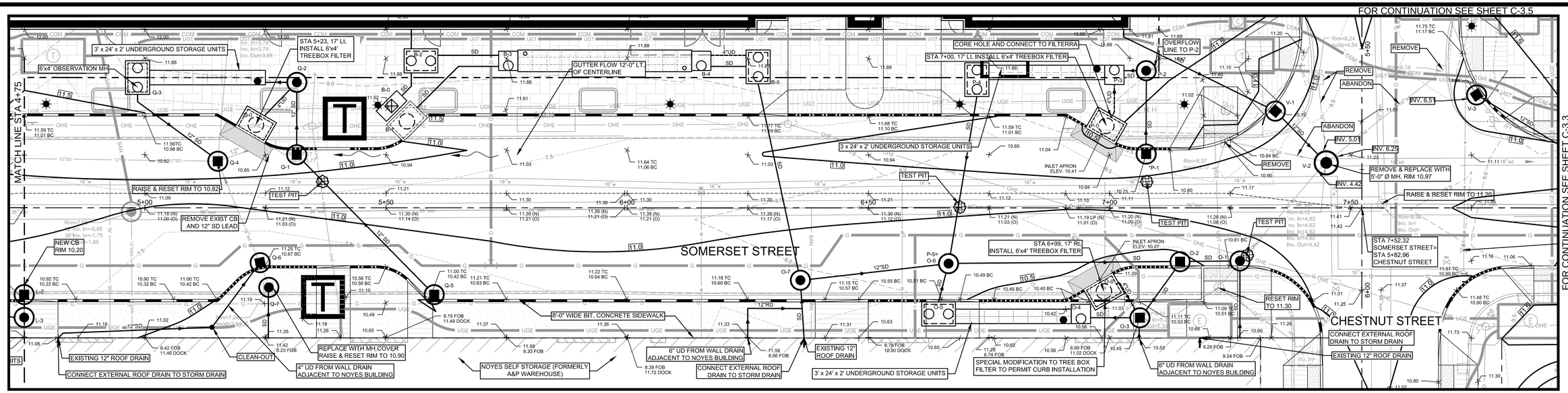

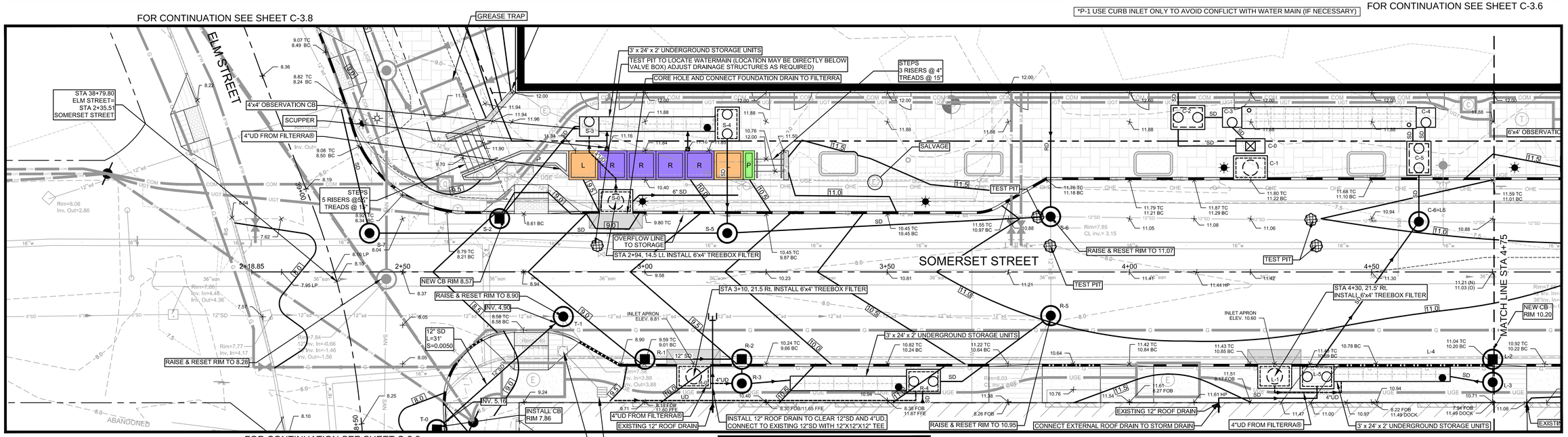

FOR CONTINUATION SEE SHEET C-3.8

NOTES:

1. THE GAS LINE WILL BE UPGRADED AND REPLACED BY UNITIL. CONTRACTOR RESPONSIBLE FOR COORDINATION OF THE WORK AND ALL TRENCHING, BACKFILL & SURFACE RESTORATION.
2. THE FILTERRA TREE BOX FILTERS REQUIRE CONNECTIONS TO UNDERGROUND STORAGE AND CONNECTION TO STORM DRAIN IN SOMERSET STREET. REFER TO SCHEDULES ON SHEETS C-3.10 THROUGH C-3.13.
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9. ALL BUILDING FOUNDATION DRAINS SHALL BE PIPED TO THE WQ UNIT "ISOLATOR" ROWS. (MAY NOT BE SHOWN ON PLAN VIEW).

SCHEDULE OF LOADING AREA LOCATIONS ALONG NOYES BUILDING

DESCRIPTION	LOCATION	DOCK ELEV	PROPOSED GRADE	DIFFERENCE (INCHES)
DOCK 1	STATION 2+97.5 - 3+05.4	11.60	9.60-10.10	18 - 24
DOCK 2	STATION 3+19.4 - 3+31.3	11.65	10.30-10.60	13 - 16
DOCK 3	STATION 3+39.3 - 3+51.3	11.65	10.40 - 11.02	8 - 15
DOCK 4	STATION 3+82.7 - 3+94.1	11.61	10.70 - 10.80	10 - 11
DOCK 5	STATION 4+37.5 - 4+52.2	11.49	10.9 - 10.93	7 - 8
DOCK 6	STATION 4+59.5 - 4+71.6	11.49	10.71-10.78	8 - 9
DOCK 7	STATION 4+81.5 - 4+93.3	11.46	11.02-11.08	4 - 5
DOCK 8	STATION 5+42.6 - 5+54.5	11.49	10.65	10
DOCK 9	STATION 5+85.5 - 5+97.6	11.72	11.36	4
DOCK 10	STATION 6+04.9 - 6+08.0	11.72	11.34	5
DOCK 11	STATION 6+50.0 - 6+62.1	10.90	10.56	3½±
DOCK 12	STATION 6+92.9 - 7+05.0	11.02	10.5	6

LEGEND

- PROPOSED PROPERTY BOUNDARY
- FEDERATED BUILDINGS
- BRICK AREAS
- GREEN SPACE/PLANTERS (BY MITCHELL & ASSOCIATES)
- L P R S — PROPOSED LANDING, PLANTER, RAMP AND STEPS
- VERTICAL GRANITE CURB
- FLUSH GRANITE CURB
- MOUNTABLE CURB (TYPE 5 GRANITE)
- TD — TIPDOWN

NOTE:

N = NORMAL CENTER LINE GRADE WITHOUT OFFSET CROWN

11.30 (N)
11.14 (O)

O = ACTUAL CENTERLINE GRADE IN AREAS WITH OFFSET CROWN

NORTH

GRAPHIC SCALE

10 0 5 10 20

(IN FEET)
1 inch = 10 ft.

SCHEDULE OF SCUPPERS BEHIND RAMPS AND PLANTERS

LOCATION	RIM	INVERT OUT	CONNECT TO
2+92, 26' LT	11.16		S-3
3+09, 26' LT	11.16	9.5000	S-3

SCHEDULE OF UNDERDRAIN CONNECTION FROM FACE OF EXISTING NOYES BUILDING

STATION	INV. @ BUILDING	CONNECTS TO
3+25	5.05	R-4
4+42	5.78	J-5
5+25	4.08	EX. CB
6+25	7.70	O-7
7+06	6.42	O-3

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE — WILLIAM R. MOORE — 13547 — LICENSED — PROFESSIONAL ENGINEER — 11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT: midtown, PORTLAND, MAINE

SHEET TITLE: PROPOSED SPOT GRADES FOR WEST SIDE SOMERSET STREET

CLIENT: THE FEDERATED COMPANIES

FST 100 YEARS — FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW/LA	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	1" = 10'
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-GRADE		
SHEET	C-3.4		

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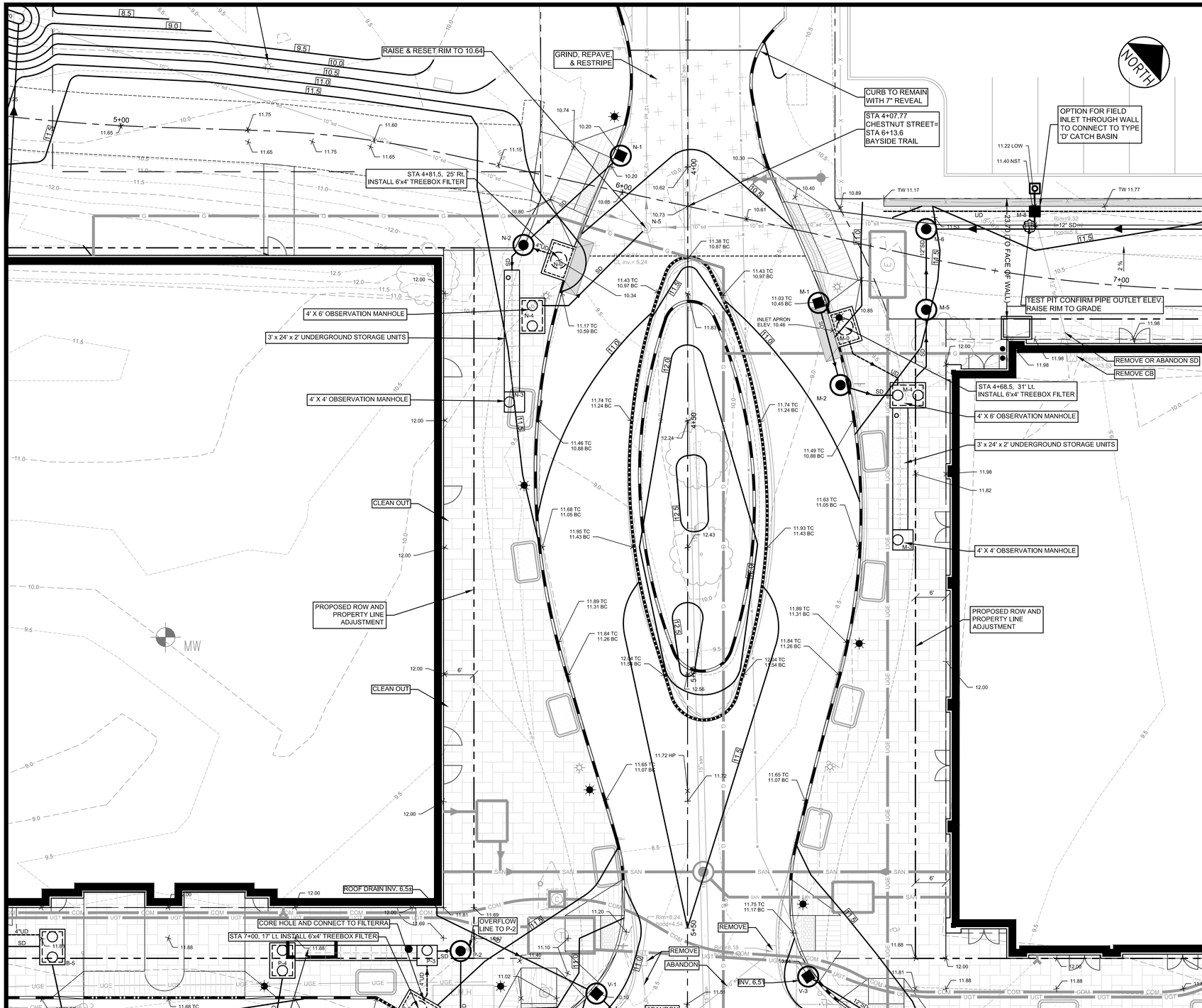

FOR CONTINUATION SEE SHEET C-3.6

LEGEND

- PROPOSED PROPERTY BOUNDARY
- FEDERATED BUILDINGS
- BRICK AREAS
- GREEN SPACE/PLANTERS (BY MITCHELL & ASSOCIATES)
- L P R S — PROPOSED LANDING, PLANTER, RAMP AND STEPS
- VERTICAL GRANITE CURB
- FLUSH GRANITE CURB
- MOUNTABLE CURB (TYPE 5 GRANITE)
- TD — TIPDOWN

NOTES:

1. THE GAS LINE WILL BE UPGRADED AND REPLACED BY UNITIL. CONTRACTOR RESPONSIBLE FOR COORDINATION OF THE WORK AND ALL TRENCHING, BACKFILL & SURFACE RESTORATION.
2. THE FILTERRA TREE BOX FILTERS REQUIRE CONNECTIONS TO UNDERGROUND STORAGE AND CONNECTION TO STORM DRAIN IN SOMERSET STREET. REFER TO SCHEDULES ON SHEETS C-3.10 THROUGH C-3.13.
3. EXISTING MANHOLES AND CATCH BASINS TO BE EXAMINED IN THE FIELD TO DETERMINE THE SCOPE OF WORK TO RAISE THEM TO PROPOSED GRADES AND/OR CONNECT TO NEW STORM DRAIN LINES.
4. THE SURFACE TREATMENT AND LIGHTING FOR THE AREA TO THE NORTH OF THE CURB LINE ARE SHOWN ON PLANS PREPARED BY MITCHELL & ASSOCIATES.
5. THE SURFACE TREATMENT SOUTH OF THE SOUTHERLY CURB LINE ON SOMERSET STREET WILL BE UNIMPROVED AND STABILIZED WITH EROSION CONTROL SEED MIXES.
6. TEL, ELEC & COMM TO BE PLACED (UNDERGROUND AND TO BE LOCATED ON THE NORTHERLY SIDE OF SOMERSET STREET.
7. ELEVATIONS AND INVERTS FOR WATER QUALITY SYSTEMS ARE PROVIDED IN THE DRAINAGE SCHEDULES OF SHEET C-3.10, C-3.11, C-3.12, AND C-3.13.
8. UNDERGROUND STORAGE FOR 'ISOLATOR ROW' ARE BASED UPON THE BRENTWOOD STORAGE SYSTEM. STORMTECH® SC 740 CHAMBERS ARE AN ACCEPTABLE ALTERNATIVE. IF THE STORMTECH® SC 740 CHAMBERS ARE USED, THE WEIR IN THE OVERFLOW CONTROL MANHOLE SHALL BE RAISED 6" ABOVE THE ELEVATION LISTED IN THE DRAINAGE SCHEDULES ON SHEETS C-3.10 THROUGH C-3.13.
9. ALL BUILDING FOUNDATION DRAINS SHALL BE PIPED TO THE WQ UNIT "ISOLATOR" ROWS. (MAY NOT BE SHOWN ON PLAN VIEW).

PRELIMINARY - NOT FOR CONSTRUCTION

GRAPHIC SCALE

10 0 5 10 20

(IN FEET)
1 inch = 10 ft.

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE — WILLIAM R. MOORE — 13547 — LICENSED — PROFESSIONAL ENGINEER — 11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT: midtown
PORTLAND, MAINE

SHEET TITLE: PROPOSED SPOT GRADES FOR CHESTNUT STREET NORTH

CLIENT: THE FEDERATED COMPANIES

FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

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FILE NAME:	3062-GRADE		
SHEET	C-3.5		

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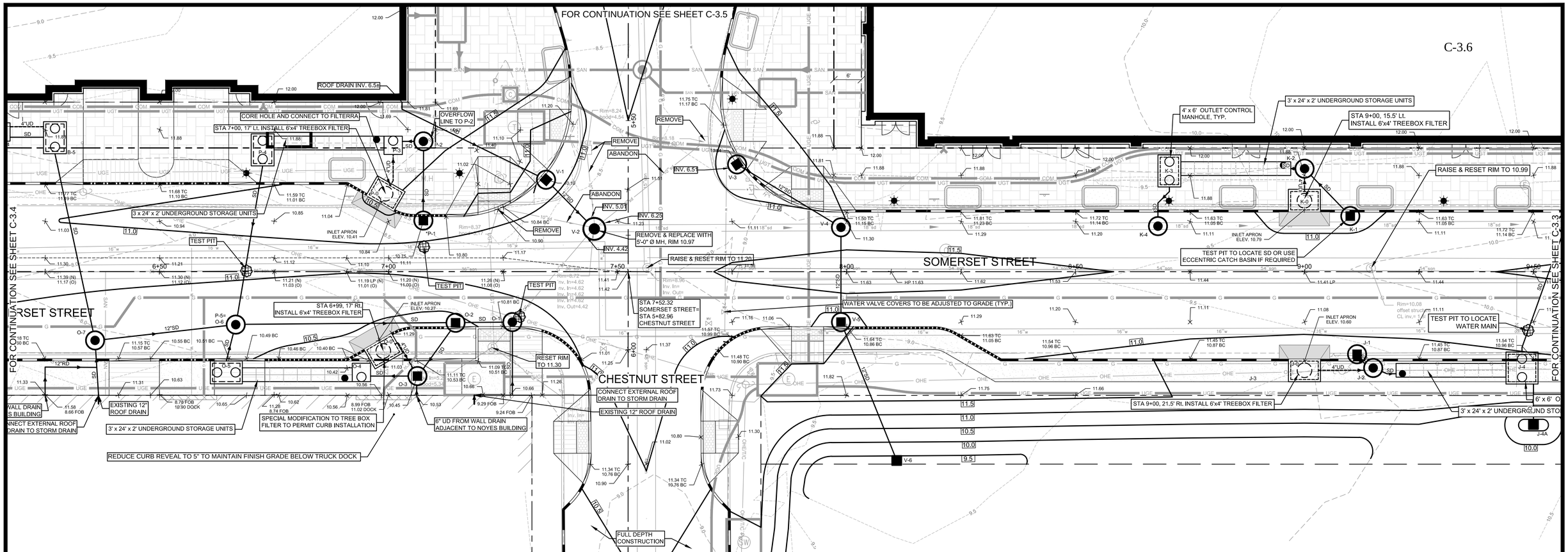

LEGEND

- PROPOSED PROPERTY BOUNDARY
- FEDERATED BUILDINGS
- BRICK AREAS
- GREEN SPACE/PLANTERS (BY MITCHELL & ASSOCIATES)
- L P R S — PROPOSED LANDING, PLANTER, RAMP AND STEPS
- VERTICAL GRANITE CURB
- FLUSH GRANITE CURB
- MOUNTABLE CURB (TYPE 5 GRANITE)
- TD — TIPDOWN

NOTES:

1. THE GAS LINE WILL BE UPGRADED AND REPLACED BY UNITIL. CONTRACTOR RESPONSIBLE FOR COORDINATION OF THE WORK AND ALL TRENCHING, BACKFILL & SURFACE RESTORATION.
2. THE FILTERRA TREE BOX FILTERS REQUIRE CONNECTIONS TO UNDERGROUND STORAGE AND CONNECTION TO STORM DRAIN IN SOMERSET STREET. REFER TO SCHEDULES ON SHEETS C-3.10 THROUGH C-3.13.
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NORTH

PRELIMINARY - NOT FOR CONSTRUCTION

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REVISIONS

STATE OF MAINE WILLIAM R. MOORE 13547 LICENSED PROFESSIONAL ENGINEER 11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
PROPOSED SPOT GRADES FOR CHESTNUT STREET SOUTH

CLIENT
THE FEDERATED COMPANIES

FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW/LA	DATE:	OCTOBER 2014
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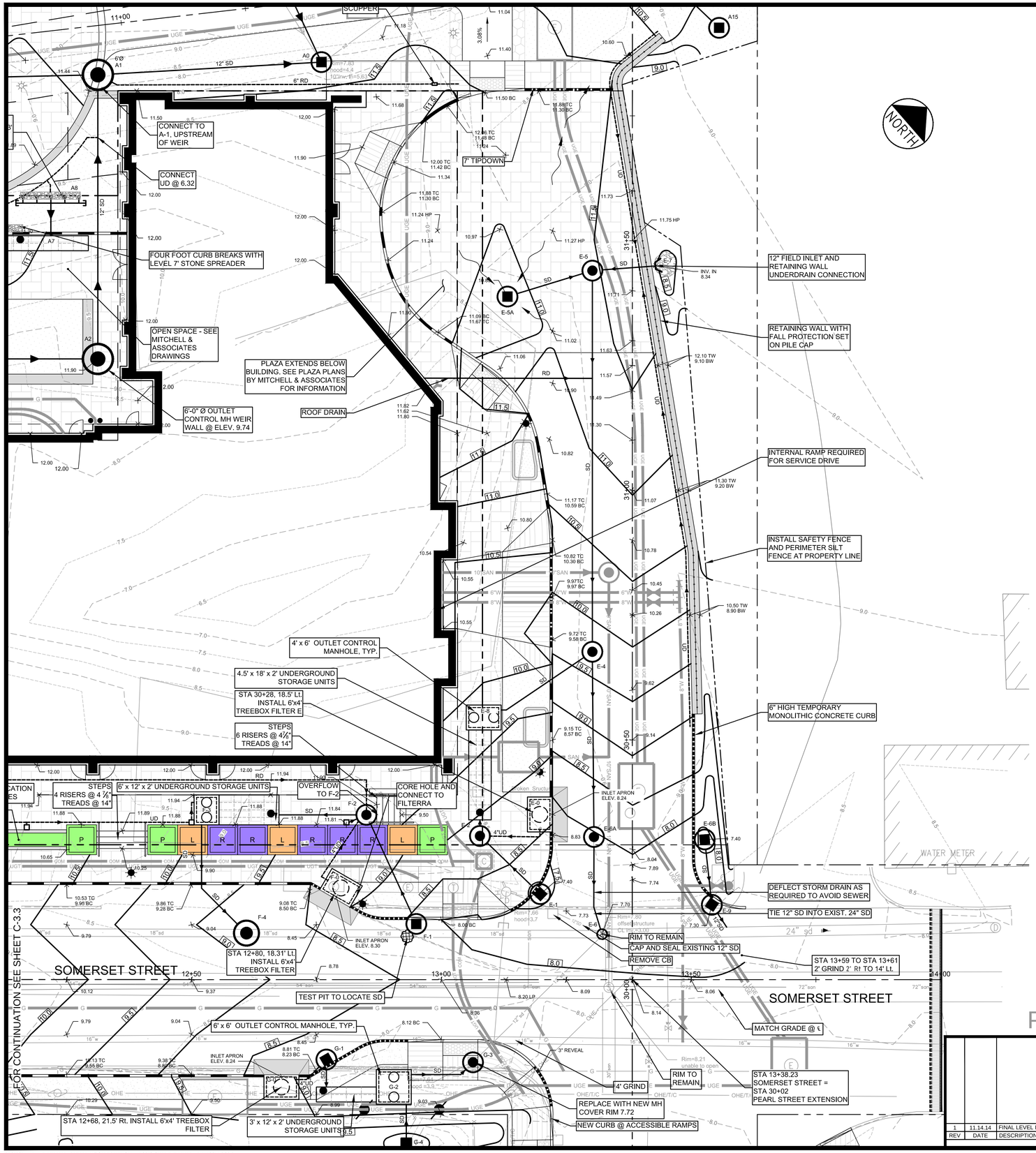
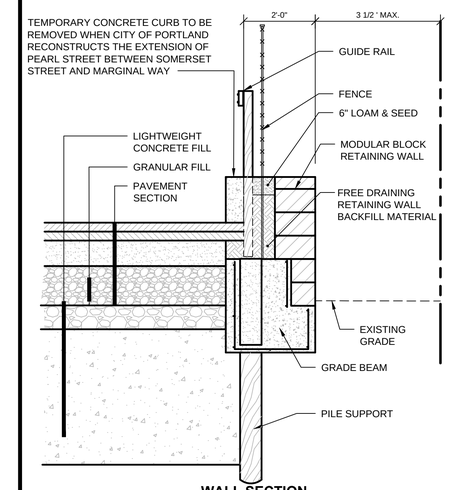


NOTE: THIS WALL SECTION IS SCHEMATIC, REFER TO WALL DESIGN BY HALEY & ALDRICH



WALL SECTION
N.T.S.

LEGEND

- PROPOSED PROPERTY BOUNDARY
- FEDERATED BUILDINGS
- BRICK AREAS
- GREEN SPACE/PLANTERS (BY MITCHELL & ASSOCIATES)
- L P R S — PROPOSED LANDING, PLANTER, RAMP AND STEPS
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- MOUNTABLE CURB (TYPE 5 GRANITE)
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NOTES:

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(IN FEET)
1 inch = 10 ft.

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE WILLIAM R. MOORE 13547 LICENSED PROFESSIONAL ENGINEER 11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
PROPOSED SPOT GRADES FOR INTERSECTION OF SOMERSET STREET AND PEARL STREET EXT.

CLIENT
THE FEDERATED COMPANIES

FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW/LA	DATE:	OCTOBER 2014
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FILE NAME:	3062-GRADE		
SHEET	C-3.7		

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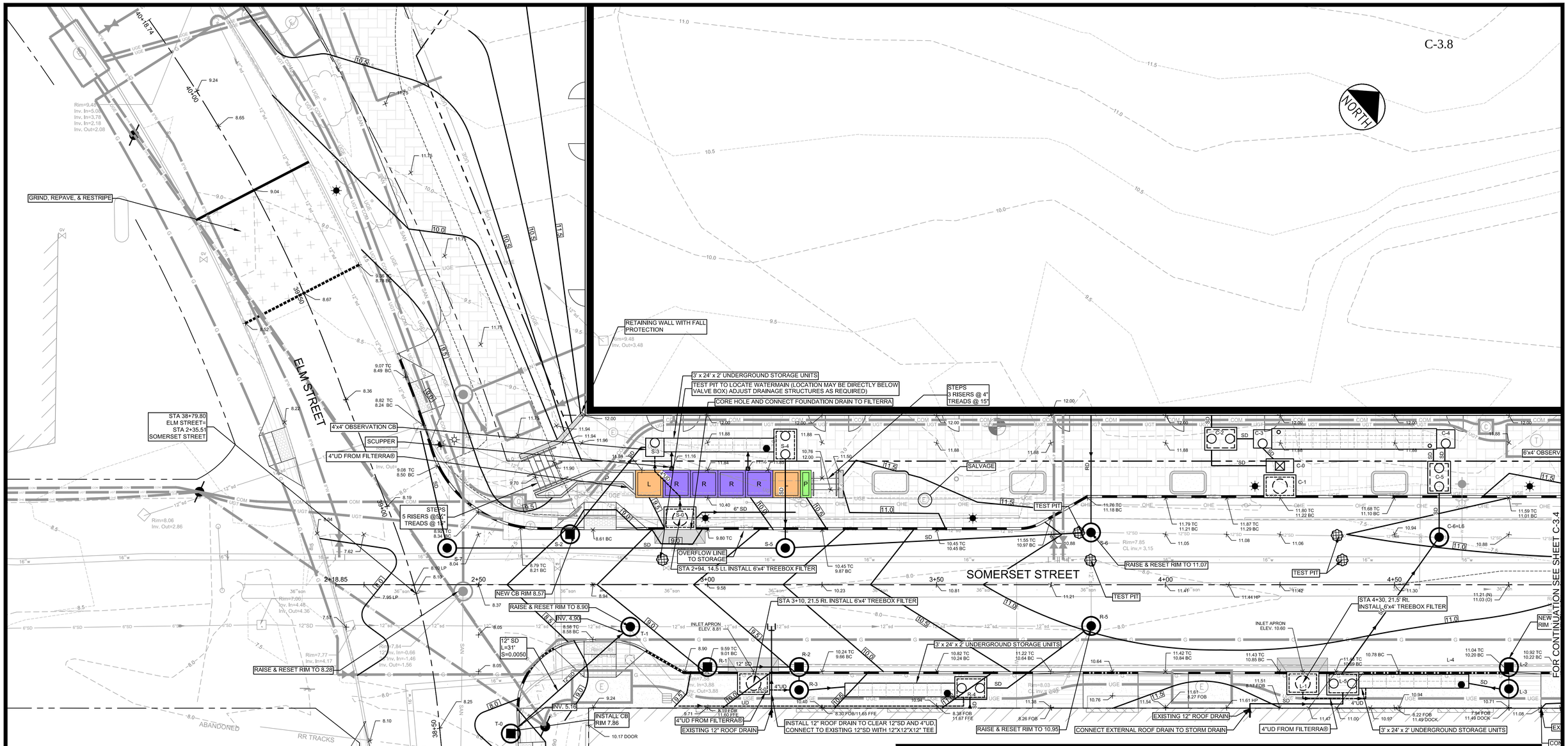

NOTE: RECLAIM ELM STREET
STA 38+05 to 39+50,
END @ SOMERSET STREET STA 2+50
GRIND AND RESURFACE ELM STREET
STA 37+65 to 38.05 AND 38+50 to 38+75

LEGEND

- PROPOSED PROPERTY BOUNDARY
- FEDERATED BUILDINGS
- BRICK AREAS
- GREEN SPACE/PLANTERS (BY MITCHELL & ASSOCIATES)
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REVISIONS

STATE OF MAINE — WILLIAM R. MOORE — 13547 — LICENSED — PROFESSIONAL ENGINEER — 11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT: midtown
PORTLAND, MAINE

SHEET TITLE: PROPOSED SPOT GRADES FOR INTERSECTION OF SOMERSET STREET AND ELM STREET

CLIENT: THE FEDERATED COMPANIES

FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW/LA	DATE:	OCTOBER 2014
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SHEET	C-3.8		

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Proposed Somerset Street Elevations and Mass Earthwork

Lightweight Concrete is Used After New Dead Load Exceeds 60 lbs./s.f.

Station	Existing Elevation	Design Centerline Elevation	Offset Crown Left of Centerline	Slope from Crown to Edge of Travel Way Left	Elevation at 11' Left	Is there No Parking? If so Add 0.58	Elevation to 12' Left (.04 Higher Than 11' Left Plus .58 for the Curb)	Average Slope Between Curb and Accessible Route (0 to 6' Off Building)	Elevation 6' in Front of the Building Face (This permits a 2% cross I=slope on a 6'=0" sidewalk area in front of the building per discussions with City staff on 10/23/13)	Slope From 11' Left to 19' Left When Parking is Adjacent to Curb	Is Curb located at 19' left? (Yes=.58; No=0)	Elevation at 19.01' Left	Elevation at 11' Right	Slope from Centerline to 11' Right	Slope From 11' Right to 19' Right	Elevation at 19' Right	Elevation at Back of Sidewalk When There is No Flush Curb at the Gutter (Sidewalk Cross Slope is 1-2 % Up from the Curb - See Dwg. C-7.0A)	Station	Elevation at Gutter Left	Elevation at Edge of Parking Left	Elevation at Top of Curb	Slope from Curb to Building (if no ramps)	Elevation Difference at Centerline	Thickness of Lightweight Concrete Required	Required After Adjustment for Leveling	Excavation Volume	Elevation at BOE at Centerline of Right of Way	Added Concrete Due to Warp of parking	Added Concrete in Ramp Area	Added Excavation in Ramp Area	Concrete for 25 Foot Section	Amount of Federated Side
2+25	7.86	7.94		-3.00%	7.61	0.58	8.23	24.13%	11.86	3.00%	0.00	8.97	7.61	-3.00%	-3.00%	7.33	8.07																
2+50	7.84	8.34		-3.00%	8.01	0.58	8.63	20.79%	11.86	3.00%	0.00	9.37	8.01	-3.00%	-3.00%	7.73	8.47	2+50	8.01	8.17	8.75	18.06%	0.50	0.00	0.85	50.37	**6.99**	0.00	0.00	0.00	0.00	**0.00**
2+75	7.76	8.83		-3.00%	8.50	0.58	9.12	16.71%	11.86	3.00%	0.00	9.86	8.50	-3.00%	-3.00%	8.22	8.96	2+75	8.50	8.66	9.24	15.33%	1.07	0.86	0.99	58.67	**6.77**	0.00	0.00	0.00	0.00	**0.00**
3+00	7.92	9.36		-3.00%	9.03	0.58	9.65	12.29%	11.86	3.00%	0.00	10.39	9.03	-3.00%	-3.00%	8.75	9.33	3+00	9.03	9.19	9.61	13.28%	1.44	1.41	1.55	91.56	**6.38**	0.01	1.99	49.79	201.96	**31.56**
3+25	8.05	9.90	0.28	-1.50%	9.74	0.58	10.35	5.38%	11.86	3.50%	0.00	11.22	9.29	-3.00%	-3.50%	9.01	9.51	3+25	9.57	9.85	10.27	9.61%	1.85	2.03	2.16	128.00	**5.89**	0.28	1.44	36.04	222.02	**34.69**
3+50	8.12	10.38	0.28	-1.50%	10.22	0.00	10.25	6.21%	11.86	3.50%	0.58	11.12	9.77	-3.00%	-3.50%	9.49	9.99	3+50	10.05	10.33	10.75	6.94%	2.26	2.64	2.78	164.44	**5.35**	0.28	1.04	26.04	234.77	**36.68**
3+75	8.19	10.71	0.28	-1.50%	10.55	0.00	10.58	3.46%	11.86	3.50%	0.58	11.45	10.10	-3.00%	-3.50%	9.82	10.32	3+75	10.38	10.66	11.08	5.11%	2.52	3.03	3.17	187.56	**5.03**	0.28	0.77	19.17	241.58	**37.75**
4+00	8.13	10.88	0.33	-1.50%	10.72	0.00	10.75	2.04%	11.86	3.50%	0.58	11.62	10.22	-3.00%	-3.50%	9.94	10.44	4+00	10.55	10.83	11.25	4.17%	2.75	3.38	3.51	208.00	**4.62**	0.28	0.63	15.63	253.63	**39.63**
4+25	7.99	10.88	0.33	-1.50%	10.72	0.00	10.75	2.04%	11.86	3.50%	0.58	11.62	10.22	-3.00%	-3.50%	9.94	10.44	4+25	10.55	10.83	11.25	4.17%	2.89	3.59	3.72	220.44	**4.27**	0.28	0.63	15.63	266.07	**41.57**
4+50	7.79	10.77	0.33	-1.50%	10.61	0.00	10.64	2.96%	11.86	3.50%	0.58	11.51	10.11	-3.00%	-3.50%	9.83	10.33	4+50	10.44	10.72	11.14	4.78%	2.98	3.72	3.86	228.44	**3.94**	0.28	0.00	0.00	237.04	**37.04**
4+75	7.62	10.69	0.33	-1.50%	10.53	0.00	10.56	3.63%	11.86	3.50%	0.58	11.43	10.03	-3.00%	-3.50%	9.75	10.25	4+75	10.36	10.64	11.06	5.22%	3.07	3.86	3.99	236.44	**3.63**	0.28	0.00	0.00	245.04	**38.29**
5+00	7.58	10.67	0.28	-1.50%	10.51	0.00	10.54	3.79%	11.86	3.50%	0.58	11.41	10.06	-3.00%	-3.50%	9.78	10.28	5+00	10.34	10.62	11.04	5.33%	3.09	3.89	4.02	238.22	**3.56**	0.28	0.00	0.00	246.81	**38.56**
5+25	7.57	10.70	0.28	-1.50%	10.54	0.00	10.57	3.54%	11.86	3.50%	0.58	11.44	10.09	-3.00%	-3.50%	9.81	10.31	5+25	10.37	10.65	11.07	5.17%	3.13	3.95	4.08	241.78	**3.49**	0.28	0.00	0.00	250.37	**39.12**
5+50	7.67	10.80	0.28	-1.50%	10.73	0.00	10.76	1.96%	11.86	3.50%	0.58	11.63	10.19	-3.00%	-3.50%	9.91	10.41	5+50	10.47	10.75	11.17	4.61%	3.13	3.95	4.08	241.78	**3.59**	0.28	0.00	0.00	250.37	**39.12**
5+75	7.76	10.89	0.28	-1.50%	10.82	0.00	10.85	1.21%	11.86	3.50%	0.58	11.72	10.28	-3.00%	-3.50%	10.00	10.50	5+75	10.56	10.84	11.26	4.11%	3.13	3.95	4.08	241.78	**3.68**	0.28	0.00	0.00	250.37	**39.12**
6+00	7.89	10.92	0.28	-1.50%	10.85	0.00	10.88	0.96%	11.86	3.50%	0.58	11.75	10.31	-3.00%	-3.50%	10.03	10.53	6+00	10.59	10.87	11.29	3.94%	3.03	3.80	3.93	232.89	**3.96**	0.28	0.00	0.00	241.48	**37.73**
6+25	8.07	10.89	0.28	-1.50%	10.82	0.00	10.85	1.21%	11.86	3.50%	0.58	11.72	10.28	-3.00%	-3.50%	10.00	10.50	6+25	10.56	10.84	11.26	4.11%	2.82	3.48	3.62	214.22	**4.46**	0.28	0.00	0.00	222.81	**34.81**
6+50	8.25	10.79	0.28	-1.50%	10.72	0.00	10.75	2.04%	11.86	3.50%	0.58	11.62	10.18	-3.00%	-3.50%	9.90	10.40	6+50	10.46	10.74	11.16	4.67%	2.54	3.06	3.20	189.33	**5.06**	0.28	0.00	0.00	197.93	**30.93**
6+75	8.44	10.72	0.28	-1.50%	10.65	0.00	10.68	2.63%	11.86	3.50%	0.58	11.55	10.11	-3.00%	-3.50%	9.83	10.33	6+75	10.39	10.67	11.09	5.06%	2.28	2.67	2.81	166.22	**5.64**	0.28	0.00	0.00	174.81	**27.31**
7+00	8.58	10.76	0.28	-1.50%	10.69	0.00	10.72	2.29%	11.86	3.50%	0.58	11.59	10.15	-3.00%	-3.50%	9.87	10.37	7+00	10.43	10.71	11.13	4.83%	2.18	2.52	2.66	157.33	**5.93**	0.28	0.00	0.00	165.93	**25.93**
7+25	8.70	10.90		-3.00%	10.57	0.00	10.61	4.29%	11.86	3.00%	0.58	11.35	10.57	-3.00%	-3.00%	10.29	11.03	7+25	10.57	10.73	11.31	3.83%	2.20	2.55	2.69	159.11	**6.02**	0.13	0.00	0.00	158.66	**24.79**
7+50	8.84	11.16		-3.00%	10.83	0.00	10.87	2.12%	11.86	3.00%	0.58	11.61	10.83	-3.00%	-3.00%	10.55	11.29	7+50	10.83	10.99	11.57	2.39%	2.32	2.73	2.87	169.78	**5.98**	0.13	0.00	0.00	169.32	**26.46**
In front of Parking Garage #1						If no enter 0.58	Gutter at 13' Left	Computed Side Walk Slope	Elevation Face of Garage																								
7+75	8.97	11.42		-3.00%	11.09	0.58	11.61	1.79%	11.86	3.00%	0.00	11.77	11.09	-3.00%	-3.00%	10.81	11.49	7+75	11.09	11.25	11.83	1.2%	2.45	2.93	3.06	153.00	**5.91**	0.15	0.00	0.00	153.79	**0.00**
8+00	9.29	11.56		-3.00%	11.23	0.58	11.75	0.79%	11.86	3.00%	0.00	11.91	11.23	-3.00%	-3.00%	10.95	11.63	8+00	11.23	11.39	11.97	0.2%	2.27	2.66	2.79	139.50	**6.50**	0.15	0.00	0.00	140.26	**0.00**
8+25	9.36	11.60		-3.00%	11.27	0.58	11.79	0.50%	11.86	3.00%	0.00	11.95	11.27	-3.00%	-3.00%	10.99	11.67	8+25	11.27	11.43	12.01	-0.1%	2.24	2.61	2.75	137.25	**6.62**	0.15	0.00	0.00	138.04	**0.00**
8+50	9.46	11.53		-3.00%	11.20	0.58	11.72	1.00%	11.86	3.00%	0.00	11.88	11.20	-3.00%	-3.00%	10.92	11.60	8+50	11.20	11.36	11.94	0.4%	2.07	2.36	2.49	124.50	**6.97**	0.15	0.00	0.00	125.29	**0.00**
8+75	9.65	11.44		-3.00%	11.11	0.58	11.63	1.64%	11.86	3.00%	0.00	11.79	11.11	-3.00%	-3.00%	10.83	11.51	8+75	11.11	11.27	11.85	1.1%	1.79	1.94	2.07	103.50	**7.58**	0.15	0.00	0.00	104.29	**0.00**
9+00	9.86	11.40		-3.00%	11.07	0.58	11.59	1.93%	11.86	3.00%	0.00	11.75	11.07	-3.00%	-3.00%	10.79	11.47	9+00	11.07	11.23	11.81	1.4%	1.54	1.56	1.70	84.75	**8.17**	0.15	0.00	0.00	85.54	**0.00**
9+25	10.06	11.44		-3.00%	11.11	0.58	11.63	1.64%	11.86	3.00%	0.00	11.79	11.11	-3.00%	-3.00%	10.83	11.51	9+25	11.11	11.27	11.85	1.1%	1.38	1.32	1.46	72.75	**8.61**	0.15	0.00	0.00	73.54	**0.00**
9+50	10.27	11.53		-3.00%	11.20	0.58	11.72	1.00%	11.86	3.00%	0.00	11.88	11.20	-3.00%	-3.00%	10.92	11.60	9+50	11.20	11.36	11.94	0.4%	1.26	1.14	1.28	63.75	**9.00**	0.15	0.00	0.00	64.54	**0.00**
9+75	10.46	11.62		-3.00%	11.29	0.58	11.81	0.36%	11.86	3.00%	0.00	11.97	11.29	-3.00%	-3.00%	11.01	11.69	9+75	11.29	11.45	12.03	-0.2%	1.16	0.99	1.13	56.25	**9.34**	0.15	0.00	0.00	57.04	**0.00**
10+00	10.62	11.66		-3.00%	11.33	0.58	11.85	0.07%	11.86	3.00%	0.00	12.01	11.33	-3.00%	-3.00%	11.05	11.73	10+00	11.33	11.49	12.07	-0.5%	1.04	0.81	0.95	47.25	**9.68**	0.15	0.00	0.00	48.04	**0.00**
10+25	10.60	11.62		-3.00%	11.29	0.58	11.81	0.36%	11.86	3.00%	0.00	11.97	11.29	-3.00%	-3.00%	11.01	11.69	10+25	11.29	11.45	12.03	-0.2%	1.02	0.78	0.91	45.75	**9.69**	0.15	0.00	0.00	46.54	**0.00**
10+50	10.53	11.53		-3.00%	11.20	0.58	11.72	1.00%	11.86	3.00%	0.00	11.88	11.20	-3.00%	-3.00%	10.92	11.60	10+50	11.20	11.36	11.94	0.4%	1.00	0.75	0.89	44.25	**9.65**	0.15	0.00	0.00	45.04	**0.00**
10+75	10.37	11.41		-3.00%	11.08	0.58	11.60	1.86%	11.86	3.00%	0.00	11.76	11.08	-3.00%	-3.00%	10.80	11.48	10+75	11.08	11.24	11.82	1.3%	1.04	0.81	0.95	47.25	**9.43**	0.15	0.00	0.00	48.04	**0.00**
11+00	10.22	11.34		-3.00%	11.01	0.58	11.53	2.36%	11.86	3.00%	0.00	11.69	11.01	-3.00%	-3.00%	10.73	11.41	11+00	11.01	11.17	11.75	1.8%	1.12	0.93	1.07	53.25	**9.16**	0.15	0.00	0.00	54.04	**0.00**
11+25	10.07	11.40		-3.00%	11.07	0.58	11.59	1.93%	11.86	3.00%	0.00	11.75	11.07	-3.00%	-3.00%	10.79	11.47	11+25	11.07	11.23	11.81	1.4%	1.33	1.25	1.38	69.00	**8.69**	0.15	0.00	0.00	69.79	**0.00**
11+50	9.92	11.49		-3.00%	11.16	0.58	11.68	1.29%	11.86	3.00%	0.00	11.84	11.16	-3.00%	-3.00%	10.88	11.56	11+50	11.16	11.32	11.90	0.7%	1.57	1.61	1.74	87.00	**8.18**	0.15	0.00	0.00	87.79	**0.00**
In Parking Near Muse							Gutter at 12' Left		Elev at 31 feet left																0.14								
11+75	9.79	11.32		-3.00%	10.99	0.58	11.61	1.34%	11.86	3.00%	0.00	11.77	10.99	-3.00%	-3.00%	10.71	11.39	11+75	10.99	11.15	11.73	1.9%	1.53	1.55	1.68	99.56	**8.11**	0.13	0.00	0.00	99.10	**15.48**
																									0.14								
Separation by Steps,							Elevation at	19 to 31%																	0.14								
Landings, Ramps or Planters							13 feet left																		0.14								
12+00	9.40	10.85		-3.00%	10.52	0.58	11.14	6.04%	11.86	3.00%	0.00	11.30	10.52	-3.00%	-3.00%	10.24	10.92	12+00	10.52	10.68	11.26	5.3%	1.45	1.43	1.56	92.44	**7.84**	0.13	0.62	15.42	128.53	**20.08**
12+25	8.98	10.12		-3.00%	9.79	0.00	9.83	16.96%	11.86	3.00%	0.58	10.57	9.79	-3.00%	-3.00%	9.51	10.19	12+25	9.79	9.95	10.53	10.5%	1.14	0.96	1.10	64.89	**7.89**	0.13	1.23	30.63	137.03	**21.41**
12+50	8.68	9.37		-3.00%	9.04	0.00	9.08	23.21%	11.86	3.00%	0.58	9.82	9.04	-3.00%	-3.00%	8.76	9.44	12+50	9.04	9.20	9.78	15.9%	0.69	0.28	0.42	39.00	**8.26**	0.13	1.85	46.25	39.00	**6.09**
12+75	8.39	8.80		-3.00%	8.47	0.00	8.51	27.96%	11.86	3.00%	0.58	9.25	8.47	-3.00%	-3.00%	8.19	8.87	12+75	8.47	8.63	9.21	19.9%	0.41	0.00	0.14	40.00	**8.26**	0.13	2.33	58.13	40.00	**6.25**
Near Pearl Street Intersection																																	
13+00	8.19	8.42		-3.00%	8.09	0.58	8.71	17.53%	11.86	3.00%	0.58	9.45	8.09	-3.00%	-3.00%	7.81	8.49	13+00	8.09	8.25	8.83	22.6%	0.23	0.00	0.85	40.00	**7.34**	0.13	2.64	66.04	40.00	**6.25**
13+25	8.09	8.21		-3.00%	7.88	0.58	8.50	18.69%	11.86	3.00%	0.58	9.24	7.88	-3.00%	-3.00%	7.60	8.28	13+25	7.88	8.04	8.62	24.1%	0.12	0.00	0.85	0.00	**7.24**	0.13	2.82	70.42	0.00	**0.00**
13+50	8.06	8.06		-3.00%	7.73	0.00	7.77	22.75%	11.86	3.00%	0.00	7.93	7.73	-3.00%	-3.00%	7.45	8.13	13+50	7.73	7.89	8.47	25.2%	0.00	0.00	0.85	0.00	**7.21**	0.13	2.94	73.54	0.00	**0.00**

Elms Street Adjustments (not computed by spreadsheet)

Ramps	2
Steps	2 risers (1 set)
Planter Area	480 square feet
Planter Retaining Wall	80
Excavation	75 cubic yards
Lightweight Fill	75 cubic yards
Base	41 cubic yards

Quantities to the Right are from Somerset Street Only (excludes Elm and Chestnut Street)

6,056.34	Lightweight Concrete (cy)
6,364.16	Excavation (cy)
719.95	Binder (tons)
359.98	Surface Pavement (tons)
977.78	Reclaim (cy)
977.78	Salvaged Subbase Below Reclaim
2,500.48	Required Subbase or Granular Above Waste
978.00	Deduction for Salvaged Subbase
1,522.48	Net Subbase

PROPOSED CHESTNUT STREET ELEVATIONS AND MASS EARTHWORK

LIGHTWEIGHT CONCRETE IS USED FOR MITIGATION WHEN NET NEW DEAD LOAD EXCEEDS 60 POUNDS PER CUBIC FOOT.

Station	Existing Elevation	Proposed Elevation at Centerline or Edge of "Eye"	Slope from Centerline or Edge of "Eye" to Gutter	Elevation at Gutter	Curb	Elevation at Top of Curb	Width of Pavement Each Side of Eye	Distance from Centerline to Curb	Elevation 6' from Face of Building	Excavation (CY)	Lightweight Concrete (CY)	Grade Change	Concrete Thickness	Base Concrete Volume (CY)
3+75	9.92	10.27	-3.00%	9.91	0.58	10.49	12	15.00	11.88	0	0	0.35		0.0
4+00	10.00	10.62	-2.00%	10.30	0.58	10.88	16	14.00	11.88	0	0	0.62	0.18	15.8
4+25	10.27	10.97	-2.00%	10.59	0.58	11.17	19	23.50	11.88	0	0	0.70	0.30	26.4
4+50	10.42	11.30	-2.00%	10.94	0.58	11.52	18	29.00	11.88	11	11	0.88	0.57	50.1
4+75	10.19	11.54	-2.00%	11.18	0.58	11.76	18	31.50	11.88	116	116	1.35	1.28	112.2
5+00	9.43	11.68	-2.00%	11.30	0.58	11.88	19	23.50	11.88	319	319	2.25	2.63	230.9
5+25	8.60	11.72	-2.50%	11.25	0.58	11.83	19	19.00	11.88	515	515	3.12	3.93	345.7
5+50	8.56	11.66	-3.00%	11.27	0.58	11.85	13	16.00	11.88	510	510	3.10	3.90	343.1
6+25	8.89	10.90	-3.00%	10.66	0.58	11.24		17.00	11.88	265	265	2.01	2.27	104.9
6+50	9.16	10.44	-3.00%	10.20	0.58	10.78		17.00	11.88	101	101	1.28	1.17	54.2
6+75	9.26	9.98	-3.00%	9.74	0.58	10.32		17.00	11.88			0.72	0.33	15.3
7+00	9.40	9.70	-3.00%	9.46	0.58	10.04		17.00	11.88			0.30		0.0
										1,835	**1,835**			**1,298**

	Elm Street	Somerset Street	Chestnut Street	Total
Excavation (CY)	75	6,364	1,835	**8,274**
Lightweight Concrete (CY)	75	6,056	1,835	**7,966**
Reclaim (CY)	0	978	185	**1,163**
Salvage Subbase (CY)	0	978	185	**1,163**
Binder Pavement (tons)	0	720	96	**816**
Surface Pavement (tons)	0	360	57	**417**
Subbase (CY)	0	1,522	1,455	**2,977**
Grind or Reshap Surface (SY)	974		630	**1,604**
Shim and Overlay (tons)	190		120	**310**

The quantities shown on this drawing are for the use of FST only.
Do Not Use for Contract Pricing

SUBMITTED NOVEMBER 14, 2014 AS PART OF LEVEL III SUBMISSION. THIS PLAN REFLECTS INFORMATION PRESENTED ON DECEMBER 20, 2013 AS PART OF THE ORIGINAL MIDTOWN SUBMISSION.

SHEET C-3.9
DATA SUMMARY SHEET FOR
SOMERSET AND CHESTNUT STREETS

C-3.10

DRAINAGE SCHEDULE FOR "A"

	Description	Rim or Surface	Invert In Elev.	Invert Out Elev.	Special Notes
A-0	Replace Existing Catch Basin	11.37	5.70 (Proposed 12" A-1) 6.70 (A-20)	3.05 (A-21)	
A-1	6'-0" Dia. Manhole	11.45	6.28 (12" A-2) 6.00 (12" A-17)	5.90 (18" A-0)	Midtown Roof Drains Connect at Elevation 6.28.
A-2	6'-0" Dia. Manhole	11.90	6.60 (12" A-3)	6.55 (12" A-1)	This manhole will have a weir wall. The top of the wall shall be set at 9.94. The discharge from the underground storage units will connect downstream of the weir.
A-3	Underground Storage	11.74 to 11.86	6.74 (Bottom Elev.) 9.74 (Top Elev.)	6.74 (A-2)	Pipes from A-4, A-5, A-6 all come in at bottom of chamber elevation 6.74; Must have 24" cover for structural reasons
A-4	Overflow Catch Basin	11.25		7.14 (12")	
A-5	Overflow Catch Basin	11.25		7.18 (12")	
A-6	5'-0" Dia. Outlet Control Manhole	11.52	8.26 (18")	7.09 (to A-3) (18")	Weir wall set at 9.32
A-7	Surge Storage (not included as part of WQ storage)	11.32 to 11.60	8.26 (18") 8.32 (Bottom Elev.) 9.32 (Top Elev.)	8.32 (18" A-6)	Must have 24" cover for structural reasons
A-8	Flow Distribution Manifold	10.40	8.82	8.82 (12 "A-7)	
A-9	Surge Storage (not included as part of WQ storage)	11.20 to 11.50	8.32 (Bottom Elev.) 9.32 (Top Elev.)	8.32 (18" A-6)	Must have 24" cover for structural reasons
A-10	Flow Distribution Manifold	10.50	8.82	8.82 (12" A-9)	
A-11	Vortex Based Pretreatment	11.40	8.98 (A-12)	8.93 (A-9)	
A-12	Catch Basin	10.94	9.15 (roof)	9.05 (A-11)	Garage deck drainage receiving water quality treatment connects to this manhole.
A-13	Catch Basin and Overflow Manhole	11.60	6.58 (6") (A-3)	9.55 (A12) 6.48 (H-5)	Under drain from A-3 connects to down stream side of weir. Overflow Weir at 9.74. connects to H5
A-14	Catch Basin	9.34		4.53 (12" A-21)	
A-15	Catch Basin	8.60		4.76 (12" A-21)	
A-16	Catch Basin	8.60		4.80 (12" A-21)	
A-17	4' dia. Manhole Along Trail (See Dwg. 8.2A)	11.33		6.77 (12" A-1)	
A-18	2' Square Catch Basin Along Trail (See Dwg. 8.2A)	11.12	7.0 (6" UD)	6.80 (12" TEE)	
A-19	2' Square Catch Basin Along Trail (See Dwg. 8.2A)	10.66	7.0 (6" UD)	6.60 (12" TEE)	
A-20	2' Square Catch Basin Along Trail (See Dwg. 8.2A)	10.71	7.0 (6" UD)	6.79 (12" A-0)	
A-21	Replace Existing Catch Basin	10.50	2.92 (18")(A-0) 4.63 (12")(A-15) 4.38 (12")(A-14) 4.57 (12")(A-16)	2.82 (18" City System)	

New Storm Drain	Pipe Diameter (in.)	Length (ft)	Slope (ft/ft)	Grade Difference (ft)
A-0 from Existing Catch Basin to A-1 to A-0	12	40	0.0050	0.20
A-2 to A-1	12	53	0.0050	0.27
A-3 to A-2	12	27	0.0050	0.14
A-4 to A-3	12	14	0.0240	0.40
A-5 to A-3	12	18	0.0240	0.44
A-6 to A-3	18	6	0.0580	0.35
A-7 to A-6	18	14	0.0000	0.00
A-8 to A-7	6	Varies	0.0000	0.00
A-9 to A-6	18	12	0.0000	0.00
A-10 to A-9	6	Varies	0.0000	0.00
A-11 to A-9	18	5	0.0100	0.05
A-12 to A-11	18	7	0.0100	0.07
A-13 to A-12	12	81	0.0050	0.41
H-5 to A-13	18	26	0.0150	0.38
A-15 to A-21	12	39	0.0033	0.13
A-16 to A-21	12	47	0.0050	0.24
A-17 to A-1	12	164	0.0030	0.49
A-20 to A-0	12	18	0.0050	0.09
A-14 to A-21	12	30	0.0050	0.15

1	A test pit on the outlet pipes of all new connections to verify the invert is lower than the proposed elevation of the new incoming line.
2	Invert Elevations of existing storm drains are based upon a plan prepared for the City of Portland by SGC survey dated 10/30/08.
3	The underground storage tanks will have a top of prepared subgrade Elev. of 6.74 and a top of storage Elev. of 9.74.
4	Refer to Details on Drawing C-7.8 for boxless treatment filter.
5	The 18" pipe discharge line from the Federated Phase 1 area will require a backflow preventer installed inside of the manhole to avoid tidal backwater into the system.
6	The storm drain for A-16 may be teed into drainage downstream of A-10 to avoid the adverse angle for pipes entering A-14.
7	The bottom 6" of the 12" high surge storage is filled with crushed stone. Normal water level elevation is 8.82 (i.e. stone is below pool).
8	Drainage system requires scupper inlets or field inlets from abutting property line at A-18, A-19, and A-20. Abutting property owner to select inlet type from Options on Dwg. C-7.12.

SYSTEM B DRAINAGE SCHEDULE

	Description	Rim or Surface	Invert In Elev.	Invert Out Elev.	Special Notes
Building	Roof Drain	12.00		9.38 (12" B-2)	
B-0	Special Inlet for Depressed Filterra®	11.25	9.15 (12" B-2)	9.15 (12" B-1)	
B-1	4'-0" x 6'-0" Filterra® Tree Box Filter	9.50	9.15 (12" B-0)	6.00 (4" B-3)	This is a depressed unit; the grating set at Elev. 11.50 (see special details).
B-2	Roof Drain Control Manhole	11.88	9.28 (12" Roof)	9.18 (12" B-0) 6.00 (12"-B-3)	Flow to be diverted to Filterra® Unit using a weir set at Elevation 9.5. At elevation 9.5 flow will overtop weir and be diverted to storage tanks.
B-3	4'-0" sq. Inspection/Maintenance Manhole	11.88	5.90 (12" B-2) 5.90 (4" B-1)	5.90 (12" Storage)	To Isolator Row Storage Tanks set at Elev. 5.90
B-4	4'-0" sq. Inspection/Maintenance Manhole	11.88	5.90 (12" Storage)	5.90 (12" B-5)	From Storage
B-5	4' x 6' sq. Overflow Manhole	11.70	5.90 (12" B-4) 5.60 (6" UD Storage)	5.60 (12" O-7)	Overlow weir shall be set at Elev. 7.90; underdrain inverts shall be set at Elev. 5.60; Install 4" PVC backwater valve on 4" underdrain discharge from Filterra®.

New Storm Drain	Pipe Diameter (in.)	Length (ft)	Slope (ft/ft)	Grade Difference (ft)
Building to B-2	12	4	0.0250	0.10
B-2 to B-0	12	6	0.0050	0.03
B-2 to B-3	12	13	0.0080	0.10
B-0 to B-1	12	2	0.0000	0.00
B-1 to B-3	4	20	0.0050	0.10
B-3 to Storage	12	2	0.0000	0.10 (connect to underground storage; pipe is installed level)
Storage to B-4	12	2	0.0000	0.00
B-4 to B-5	12	7	0.0000	0.00
Storage to B-5	6	7	0.0000	0.00 (6" underdrain set 0.5' below bottom of chamber elevation 5.40)
B-5 to Q-7	12	40	0.0050	0.20

Notes:

1	A 6" underdrain shall be installed below the underground storage and connected to OCS B-1 on the downstream side of the wier at Elev. 5.60.
2	The prepared subgrade at the bottom of the underground storage unit is set at Elev. 5.90; the top is set at Elev. 7.90.
3	The Filterra® underdrain connects directly to the underground storage system.

SYSTEM C DRAINAGE SCHEDULE

	Description	Rim or Surface	Invert In Elev.	Invert Out Elev.	Special Notes
Building	Roof Drain	12.00	-	9.38 (12" C-2)	
C-0	Special Inlet for Depressed Filterra®	11.55	8.97 (12" C-2)	8.97 (12" C-1)	
C-1	4'-0" x 6'-0" Filterra® Tree Box Filter	9.80	8.97 (12" C-0)	6.30 (4" C-3)	This is a depressed unit; the grating set at Elev. 11.80 (see special details).
C-2	Roof Drain Control Manhole	11.88	9.28 (12" Roof Drain)	9.18 (12" C-0) 6.40 (12" C-3)	Flow to be diverted to Filterra® Unit using a weir set at Elevation 9.5. At elevation 9.5 flow will overtop weir and be diverted to storage tanks.
C-3	4'-0" sq. Inspection/Maintenance Manhole	11.88	6.30 (12" C-2) 6.30 (4" C-1)	6.30 (12" Storage)	To Isolator Row Storage Tanks set at Elev. 6.30.
C-4	4'-0" sq. Overflow Manhole	11.88	6.30 (12" Storage)	6.30 (12" C-5)	
C-5	4' x 6' sq. Overflow Manhole	11.70	6.30 (12" C-4) 5.80 (6" Storage)	5.70 (12" L6=C6)	Overflow weir shall be set at Elev. 8.30; underdrain inverts shall be set at Elev. 5.80; Install 4" PVC backwater valve on 4" underdrain discharge from Filterra®.

New Storm Drain	Pipe Diameter (in.)	Length (ft)	Slope (ft/ft)	Grade Difference (ft)
Building to C-2	12	5	0.0200	0.10
C-2 to C-0	12	30	0.0070	0.21
C-2 to C-3	12	7	0.0140	0.10
C-0 to C-1	12	2	0.0000	0.00
C-1 to C-3	4	7	0.0000	0.00
C-3 to Storage	12	2	0.0000	0.0 (connect to underground storage; pipe is installed level)
Storage to C-4	12	0	0.0000	0.00
C-4 to C-5	12	6	0.0000	0.00
Storage to C-5	6	6	0.0000	0.00 (6" underdrain set 0.5' below bottom of chamber elevation 5.80)
C-5 to L-6	12	15	0.0050	0.08

Notes:

1	A 6" underdrain shall be installed below the underground storage and connected to OCS C-5 on the downstream side of the wier at Elev. 5.80.
2	The 4" Filterra® underdrain is to be installed level.
3	The prepare subgrade at the bottom of the underground storage unit is set at Elev. 6.30; the top is set at Elev. 8.30.

STORM TREAT LOCATION D

	Description	Rim	Inlet Apron at Gutter	Invert In Elev.	Invert Out Elev.
Elm Street - Existing Catch Basin				2.61 (18" D-0)	2.56 (18" City System)
D-0	Replace Existing 4'-0" Dia. Catch Basin	11.40		2.90 (18" D-1)	2.85 (18" Elm Street Catch Basin)
D-1	6'-0" Dia. Manhole	11.48		3.21 (4" Storm Treats) 3.21 (18" D-2)	3.11 (18" D-0)
D-2	4'-0" Outlet Control Manhole	11.50		3.90 (18")	3.80 (18" D-1)
D-3	4' x 6' Overflow Manhole (twin pipes)	10.05 to 10.55		3.90 (18" Storage)	3.90 (4")(Storm Treats) 4.19 (18") 3.90 (D-2)
D-4	5'-0" Splitter Manhole	8.07		4.55 (18" D-5)	4.45 (18" Storage)
D-5	Vortex Based Pretreatment	8.60		4.69	4.59
D-6	4'-0" Dia. Catch Basin	8.10		5.36 (12" D-7)	5.26 (18" D-5)
D-7	4'-0" Dia. Manhole	10.90		5.75 (12" D-9)	5.65 (D-6)
D-9	4'-0" Dia. Catch Basin	9.25		6.1 (12" Field Inlet)	6.0 (12" D-7)

New Storm Drain	Pipe Diameter (in.)	Length (ft)	Slope (ft/ft)	Grade Difference (ft)
Elm Street - Existing Catch Basin	18	76	0.0032	0.243
D-1 to D-0	18	55	0.0038	0.209
D-2 to D-1	18	47	0.0120	0.564
D-3 to D-2	18	10	0.0000	0.000
D-4 to D-3	18	6	0.0100	0.060
D-5 to D-4	18	8	0.0067	0.054
D-6 to D-5	18	19	0.0300	0.570
D-7 to D-6	12	57	0.0050	0.285
Roof to D-6	15	11	0.0100	0.110
D-9 to D-7	12	25	0.0100	0.250
Field Inlet to D-9	12	5	0.4800	2.400

NOTES:

1	A test pit on the outlet pipe for the existing catch basin is required to verify the invert is lower than the proposed elevation of the new line.
2	Invert elevations of existing storm drains are based upon a plan prepared for the City of Portland by SGC survey dated 10/30/08.
3	The underground storage tanks will have a top of prepared subgrade elevation of 3.90, a top of storage elevation of 6.90 and a minimum surface elevation above the storage units of 9.10 (to provide 24 inches of cover).
4	The bottom of the StormTreat units is to be set at 2.98 with a top of lip elevation of 6.98 at the surface. The incoming pipe will be set at elevation 3.90 with the outlet elevation of 3.48.
5	The 15 inch pipe from the Federated Phase 3 area will require a backflow preventer installed inside of the manhole to avoid tidal backwater into the system.
6	Plants for the StormTreat™ units should have moderate tolerance for saline water.
7	Proposed sewer for Midtown 4 crosses the storm drain between the existing catch basin and catch basin D-0. Sewer invert 4.80+/-.

THE PROPOSED STORM DRAIN SYSTEM SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF PORTLAND TECHNICAL STANDARDS USING ONE OF THE FOLLOWING PIPE MATERIALS:

- **REINFORCED CONCRETE PIPE (RCP) WITH A MINIMUM STRENGTH OF CLASS III**
- **PVC RING TYPE SEWER PIPE (SDR 35 OR EQUIVALENT, MINIMUM PS-46 RATING**
- **P.V.C. RING TYPE SEWER PIPE MEETING ASTM F 789 OR EQUAL TO SDR 35**
- **DUCTILE IRON PIPE (DIP)**
- **ADS N-12 HP TRIPLE-WALL PIPE MEETING A MINIMUM PS-46**
- **ADS SANITITE HP MEETING A MINIMUM PS-46**

ALL JOINTS SHALL BE WATERTIGHT (SILT TIGHT JOINTS ARE NOT PERMITTED. CONTRACTORS SHALL REFER TO THE TECHNICAL SPECIFICATIONS FOR THE PROJECT FOR ADDITIONAL INFORMATION INCLUDING ANY SPECIAL PIPE CLASSES.

ANY PIPELINE WITH LESS THAN 2 FEET OF COVER SHALL BE DUCTILE IRON PIPE

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE WILLIAM R. MOORE 13547 LICENSED PROFESSIONAL ENGINEER 11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT: midtown, PORTLAND, MAINE

SHEET TITLE: PROPOSED STORM DRAIN SCHEDULES FOR SYSTEMS WITHIN OR NEAR THE FEDERATED PROPERTY

CLIENT: THE FEDERATED COMPANIES

FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106

DRAWN:	LA	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	N.T.S.
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-GRADE SCHED		
SHEET	C-3.10		

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TREE BOX FILTER LOCATION E

	Description	Rim	Inlet Apron at Gutter	Invert In Elev.	Invert Out Elev.	Top of Storage Elev.	Bottom of Storage Elev.	Ground Surface (Range in Elevation	Overflow Weir Elevation
E-0	4' x 6' Tree Box Filter Pearl Street Extension (Driveway) Sta. 30+35; 18.5' Left.	8.53	7.70		5.09 (4" E-2)				
E-1	4'-0" dia. Overflow Catch Basin Sta. 30+18; 18.50' Left	7.40			4.44 (E-2)				
E-2	4'-0" dia. Junction Manhole Sta. 30+30; 31.0' Left	8.90		5.00 (4" E-0) 4.31 (12" E-1)	4.21 (E-3)				
E-4	4' dia. Manhole Sta. 30+67; 8.00' Left	9.7		3.68 (E-8) 4.44 (E-5)	3.69 (12")(E-6A)				
E-5	4' dia. Manhole Sta. 31+44, 8.00' Left	11.45		8.27 (12")(E-7) 8.14 (12")(E-5A)	8.04 (E-4)				
E-5A	4' dia. Manhole Sta. 31+37, 18.00' Left	10.88			8.21 (12")(E-5)				
E-6	Existing Manhole Sta. 30+11; 6.00' Left	7.80		3.56 (12" E-9) 3.09 (12" E-6A) 12" Existing Invert TBD (G-3)	3.00 (City System)				
E-6A	4'-0" Diameter Manhole Sta. 0+30.16; 8.5' Left	7.95		4.44 (E-6B) 3.36 (12")(E-4)	3.24 (12")(E-6)				
E-6B	4'-0" Diameter Catch Basin Sta. 30+30; 16.0' Right	7.85			4.64 (12" E-6A)				
E-7	Field Inlet Sta. 31+61; 5.00' Right	8.34			8.34 (12")(E-5)				
E-8	4'-0" x 6'-0" Outlet Control Manhole Sta. 30+54.50; 29.75' Left	10.00 10.06		3.94 (E-3) 3.98 (UD)(E-3)	3.78 (12")(E-4)				5.94
E-9	4'-0" dia. Catch Basin Sta. 30+17; 16.01' Right	7.66			3.66 (12")(E-6)				
Underground Storage Sta. 30+34 to 30+52; 28.23' to 32.75' Left						5.94	3.94		

New Storm Drain	Pipe Diameter (in.)	Length (ft)	Slope (ft/ft)	Grade Difference (ft)	Notes
E-0 to E-2	4	11.5	0.0078	0.09	
E-1 to E-2	12	13	0.0100	0.13	
E-2 to E-3	12	2	0.0100	0.02	
E-8 to E-4	12	19	0.0050	0.10	
E-5 to E-4	12	72	0.0500	3.60	
E-6A to E-6	12	15	0.0100	0.15	
E-6B to E-6A	12	20	0.0100	0.20	
E-4 to E-6A	12	33	0.0100	0.33	
E-7 to E-5	12	11	0.0060	0.07	
E-5A to E-5	12	14	0.0050	0.07	
E-9 to E-6	12	19.5	0.0050	0.10	

NOTES:

1. E-5 to E-4 is to be installed parallel to the new proposed sewer along the Pearl Street Extension Driveway.
2. Underdrains from underground storage to connect to downstream side of E-8.
3. Construct prior to lightweight concrete fill installation.
4. Install PVC Backwater Valve in E-2 on discharge from Filterra® underdrains.
5. Storm drain line crosses sewer with invert of 4.47 (sewer is at Elevation 6.00).
6. 6B to 6A Storm drain line crosses water with invert of 4.57 (grade is 7.80 less 5.5 = 3.30+/- top of main).

TREE BOX FILTER LOCATION F

	Description	Rim	Inlet Apron at Gutter	Invert In Elev.	Invert Out Elev.	Top of Storage Elev.	Bottom of Storage Elev.	Ground Surface (Range in Elevation)	Overflow Weir Elevation
F-0	4' x 6' Tree Box Filter Sta. 12+80.2; 16.2' Left	9.14	8.30		5.64 (4" F-2)				
F-1	4'-0" dia. Overflow Catch Basin Sta. 12+95; 11.16' Left	8.11			4.4 (12" F-2)				
F-2	4'-0" dia. Junction Manhole Sta. 12+85; 33' Left	11.84		5.44 (4" F-0) 4.30 (12" F-1)	4.20 (12" Storage)				
F-3	5' x 4' Outlet Control Manhole Sta. 12+53; 34' Left	11.83 11.90		3.56 (4" UD)	3.44 (12" F-4)				6.18
F-4	New 5' Manhole on Existing 18" Storm Drain Sta. 12+61; 9.5' Left	8.88		3.32 (12" F-4) (18"H4)	3.22 (18" E-6)				
Underground Storage Sta. 12+55.50 to 12+73.50; 31.00' to 37.00' Left				4.1 (12" F-2)		6.10	4.10	11.84 to 12.00+/-	

New Storm Drain	Pipe Diameter (in.)	Length (ft)	Slope (ft/ft)	Grade Difference (ft)
F-0 to F-2	4	10	0.0201	0.20
F-1 to F-2	12	20	0.0050	0.10
F-2 to Underground Storage	12	15	0.0067	0.10
F-3 to F-4	12	23	0.0050	0.12

NOTES:

1. Set Tree Box Filter to clear existing 18" storm drain (test pit required).
2. Use eccentric catch basin for F-1 to clear 18" storm drain. Test pit the 18" storm drain near F-1 (if necessary, move curb and F-1 northerly to clear 18" storm drain).
3. Underdrain from below storage unit is to connect to downstream side of outlet control manhole F-3.
4. Construct prior to lightweight concrete fill installation.
5. Install PVC Backwater Valves in F-2 to F-3 on discharge from underdrains.
6. Footing of ramp to be installed to clear F-2. Use eccentric cone for F-2 to aid in clearance.
7. The size of control manhole F-3 has been reduced to 5' x 4' to clear footings.
8. Centerline grade at bottom of excavation for concrete Sta. 12+50 = Elev. 7.92; Sta. 12+75 = Elev. 7.93.
9. Underdrain from Filterra® is converted to F-2.

TREE BOX FILTER LOCATION G

	Description	Rim	Inlet Apron at Gutter	Invert In Elev.	Invert Out Elev.	Top of Storage Elev.	Bottom of Storage Elev.	Ground Surface (Range in Elevation)	Overflow Weir Elevation
G-0	4' x 6' Tree Box Filter Sta. 12+68; 21.5' Right	9.10	8.26		5.6 (4" G-1)				
G-1	4'-0" dia. Overflow Catch Basin Sta. 12+77; 16.01' Right	8.20		5.53 (4" UD G-0)	4.64 (12" Storage)				
G-2	6' x 6' Outlet Control Manhole Station 12+90.5; 22.00' Right	8.59 8.65		4.11 (4" UD Storage) 4.61 (12" Storage) 4.92 (12" G-4)	4.02 (12" G-3)				6.61
G-3	Existing Catch Basin Sta. 13+06+; 16.50' Right	7.72		3.95 (12" G-2))	3.90 (12" E-6)				
G-4 to G-3	Type D Catch Basin Sta. 12+85; 32' Right	9.00			5.00 (12" G-2)				
Underground Storage Sta. 12+75 to 12+87; 21.50' to 24.50' Right				4.61		6.61	4.61	8.9	

New Storm Drain	Pipe Diameter (in.)	Length (ft)	Slope (ft/ft)	Grade Difference (ft)
G-0 to G-1	4	6	0.0120	0.07
Catch Basin G-1 to Storage	12	3	0.0100	0.03
G-2 to G-3	12	14	0.0050	0.07
G-4 to G-2	12	7	0.0110	0.08

NOTES:

1. Underdrain from below storage unit and tree box filter is to connect to downstream side of G-2 and G-1 respectively.
2. Construct prior to lightweight concrete fill installation (top of storage tanks are below underside of lightweight concrete).
3. Install PVC Backwater Valves in G-2 on discharge from underdrains below stage and G-1 for underdrain from Filterra®.
4. 4" Tree box filter under drain unit is to connect to G-1.
5. Centerline grade at bottom of excavation for concrete Sta. 12.75 = Elev. 7.54+/-; Sta. 13+00 = Elev. 7.34+/-.

TREE BOX FILTER LOCATION J

	Description	Rim	Inlet Apron at Gutter	Invert In Elev.	Invert Out Elev.	Top of Storage Elev.	Bottom of Storage Elev.	Ground Surface (Range in Elevation)	Overflow Weir Elevation
J-0	4' x 6' Tree Box Filter Sta. 9+00; 21.5' Right	11.44	10.60		7.94 (4" J-2)				
J-1	4'-0" dia. Overflow Catch Basin Sta. 9+10; 18.16' Right	10.82			6.40 (12" J-2)				
J-2	4'-0" dia. Junction Manhole Sta. 9+15; 22.5' Right	11.49		7.44 (4" J-0) 6.36 (12" J-1)	6.26 (12" Storage)				
J-4	6' x 6' Outlet Control Manhole Sta. 9+47.50; 21' Right	11.56 11.60		5.70 (6" UD) 6.20 (12" Storage) 5.62 (12" from J4A)	5.29 (12" J-5)				8.20
J-4A to J-4	2'-0" x 2'-0" Square Type D or Nyloplast Inlet	9.50			5.8 (12" J-4)				
J-5	Exist 4'-0" Manhole Over 18" Storm Drain Sta. 9+57; 10.50' Left	11.21		5.00(12" J-4) (18" K-4)	4.24 (18" 1-4)				
Underground Storage Sta. 9+20 to 9+44; 22' to 25' Right					6.20	8.20	6.20	11.50 to 11.70	

New Storm Drain	Pipe Diameter (in.)	Length (ft)	Slope (ft/ft)	Grade Difference (ft)	
J-0 to J-2	4	10	0.0497	0.50	
J-1 to J-2	12	2	0.0200	0.04	
J-2 to Storage	12	3	0.0200	0.06	
J-4 to J-5	12	29	0.0100	0.29	Test Pit on Water Main may require slope alignment.
J-4A to J-4	12	9	0.0200	0.18	

NOTES:

1. From J-4 to J-5 requires test pit over existing water main.
2. Connect underdrains below storage unit to downstream side of J-4.
3. Underground storage will project through the bottom of lightweight fill. Special provisions required.
4. Install PVC Backwater Valves in J-2 and J-4 on discharge from underdrains.
5. Connect underdrain from Filterra® to J-2.
6. Test pit existing water line. Adjust slope of storm drain between J-4 to J-5 if required to clear water main.
7. Construct prior to lightweight concrete fill installation (top of storage units are below underside of concrete).
8. The grade at bottom of excavation for lightweight concrete Sta. 9+00 = Elev. 7.81; Sta. 9+50 = Elev. 8.65.

TREE BOX FILTER LOCATION H

	Description	Rim	Inlet Apron at Gutter	Invert In Elev.	Invert Out Elev.	Top of Storage Elev.	Bottom of Storage Elev.	Ground Surface (Range in Elevation)	Overflow Weir Elevation
H-0	4' x 6' Tree Box Filter Sta. 11+00; 21.5' Right	11.37	10.53		7.87 (4")(H-2)				
H-1	4'-0" dia. Overflow Catch Basin Sta. 11+14; 18.16' Right	10.70			6.38 (12")(H-2)				
H-2	4'-0" dia. Manhole Sta. 11+14; 24.17' Right	11.43		6.34 (12")(H-1) 7.65 (4")(H-0)	6.24 (Storage)				
H-3	4' x 6' Outlet Control Manhole Sta. 11+31.50; 21' Right	11.46 to 11.52		6.24 (12")(Storage) 5.70 (4" UD)	5.60 (12")(H-4)				8.20
H-4	New Manhole on Existing Storm Drain 11+31.50; 10' Right	11.13		5.18 (12")(H-3) 5.74 (18")(H-5)	4.20 (18")(F-4)				
H-5	4'-0" dia. Catch Basin and Overflow Manhole Sta 11+35; 33' left	11.84		6.10 (18" A-13) 2x 7.00 (roof) drains	6.00 (18")(H-4)				
H-6	2' sq. Concrete Type 'D' Inlet Catch Basin 11+35; 38' Right								
Storage Sta. 11+17 to 11+29; 21' to 24' Right		11.50 11.42				8.20	6.20	10.70 to 11.40	

New Storm Drain	Pipe Diameter (in.)	Length (ft)	Slope (ft/ft)	Grade Difference (ft)
H-0 to H-2	4	9	0.0240	0.22
H2 to H-3	12	2	0.0200	0.04
H-1 to H-2	12	2	0.0200	0.04
H-3 to H-4	12	26	0.0160	0.42
H-5 to H-4	18	18	0.0140	0.25
A-13 to H-5	18	26	0.0145	0.38

NOTES:

1. Underdrains from storage underground system and tree box filter to enter downstream side of H-3 and H-2 respectively.
2. Test pit to locate water main between H-3 to H-4 Manhole.
3. Construct prior to lightweight fill installation (top of storage units are below bottom of concrete).
4. Install PVC Backwater Valves in H-2 and H-3 on the discharges from underdrains.
5. Centerline grade at bottom of excavation for concrete Sta. 11+00 = Elev. 8.81+/-; Sta. 11+25 = Elev. 8.35+/-

TREE BOX FILTER LOCATION I

	Description	Rim	Inlet Apron at Gutter	Invert In Elev.	Invert Out Elev.	Top of Storage Elev.	Bottom of Storage Elev.	Ground Surface (Range in Elevation)	Overflow Weir Elevation
I-0	4' x 6' Tree Box Filter Sta. 10+75; 15.50' Left	11.58	10.76		8.08 (4" I-2)				
I-1	4'-0" dia. Overflow Catch Basin Sta. 10+82; 12.16' Left	10.74	--		6.6 (12" I-2)				
I-2	4'-0" dia. Junction Manhole Sta. 10+82; 22.00' Left	11.62	--	7.82 (4" L-0) 6.46 (12" L-1)	6.36 (12" Storage)				
I-3	4' x 6' Outlet Control Manhole Sta. 10+57.50; 22' Left	11.86 11.92	--	5.50 (6" UD Storage) 6.00 (12" Storage)	5.40 (12" I-4)				8.00
I-4	4'-dia. Manhole Sta. 10.79; 10.00' Left	11.22	--	4.44 (12" I-3) Existing (18")	4.39 (18" H-4)				
Underground Storage Sta. 10+61 to 10+78; 19.75' to 24.25' Left			--	6.34		8.00	6.00	11.84 to 11.99	

New Storm Drain	Pipe Diameter (in.)	Length (ft)	Slope (ft/ft)	Grade Difference (ft)
I-0 to I-2	6	5	0.0517	0.26
I-1 to I-2	12	7	0.0200	0.14
I-2 to Storage	12	2	0.0100	0.02
I-3 to I-4	12	6	0.1500	0.90
I-4 to H-4 (I-5)	12	19	0.0100	0.19

NOTES:

1. Underdrains from underground storage and tree box filter to connect to downstream side of I-3 and I-2 respectively.
2. Construct prior to lightweight concrete fill installation (top of storage units are below underside of concrete).
3. Install PVC Backwater Valves in I-2 and E-3 on discharge from underdrains.
4. Manhole I-4 is existing. Core new opening for 12" pipe from I-3.
5. The grade at bottom of excavation for lightweight concrete Sta. 10+50 = Elev. 9.68; Sta. 10.75 = Elev. 9.52.

NOTES: USE ECCENTRIC CATCH BASIN INSTALLED TO MAXIMIZE THE SEPARATION BETWEEN THE CATCH BASIN AND THE EXISTING WATER MAIN IN THE NOTES ON DRAWING C-3.11 FOR BASINS G-1, G-3, I-1 AND J-1.

THE PROPOSED STORM DRAIN SYSTEM SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF PORTLAND TECHNICAL STANDARDS USING ONE OF THE FOLLOWING PIPE MATERIALS:

- **REINFORCED CONCRETE PIPE (RCP) WITH A MINIMUM STRENGTH OF CLASS III**
- **PVC RING TYPE SEWER PIPE (SDR 35 OR EQUIVALENT, MINIMUM PS-46 RATING**
- **P.V.C. RING TYPE SEWER PIPE MEETING ASTM F 789 OR EQUAL TO SDR 35**
- **DUCTILE IRON PIPE (DIP)**
- **ADS N-12 HP TRIPLE-WALL PIPE MEETING A MINIMUM PS-46**
- **ADS SANITITE HP MEETING A MINIMUM PS-46**

ALL JOINTS SHALL BE WATERTIGHT (SILT TIGHT JOINTS ARE NOT PERMITTED), CONTRACTORS SHALL REFER TO THE TECHNICAL SPECIFICATIONS FOR THE PROJECT FOR ADDITIONAL INFORMATION INCLUDING ANY SPECIAL PIPE CLASSES.

ANY PIPELINE WITH LESS THAN 2 FEET OF COVER SHALL BE DUCTILE IRON PIPE

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE — WILLIAM R. MOORE — 13547 — LICENSED — PROFESSIONAL ENGINEER — 11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT: midtown
PORTLAND, MAINE

SHEET TITLE: PROPOSED STORM DRAIN SCHEDULES FOR TREE BOX FILTER SYSTEMS SHEET 1 OF 3

CLIENT: THE FEDERATED COMPANIES

FST 100 YEARS

FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106

DRAWN:	LA	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	N.T.S.
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-GRADE SCHED		
SHEET	C-3.11		

TREE BOX FILTER LOCATION K

	Description	Rim	Inlet Apron at Gutter	Invert In Elev.	Invert Out Elev.	Top of Storage Elev.	Bottom of Storage Elev.	Ground Surface (Range in Elevation)	Overflow Weir Elevation
K-0	4' x 6' Tree Box Filter Sta. 9+00; 15.50' Left	11.63	10.79		8.13				
K-1	4'-0" dia. Overflow Catch Basin Sta. 9+10; 12.16' Left	10.78			6.60				
K-2	4'-0" dia. Junction Manhole Sta. 9+00; 22.50' Left	11.88		7.84 (4") 6.50 (12")	6.20				
K-3	4' x 6' Control Structure Sta. 8+70.50; 22' Left	11.87 11.91		5.70 (4") 6.20 (12")	5.70				8.20
K-4	4'-0" dia. Manhole Sta. 8+68; 10' Left	11.22		5.62 (K-3) 4.51 (18")	4.40 +/-				
Underground Storage Sta. 8+73 to 8+97; 21' to 24' Left						8.20	6.20	11.82 to 11.90	

New Storm Drain	Pipe Diameter (in.)	Length (ft)	Slope (ft/ft)	Grade Difference (ft)	Notes
K-0 to K-2	4	3	0.0967	0.29	
K-1 to K-2	12	10	0.0100	0.10	
K-2 to K-3	12	2	0.0100	0.02	
K-3 to K-4	12	8	0.0100	0.08	
K-4 to K-5	12	1	0.0100	0.01	

NOTES:

1. Underdrains from underground storage and tree box filter to connect to downstream side of K-4 and K-2 respectively.
2. Underground storage will project through the bottom of lightweight fill by up to 1 foot. Special provisions required.
3. Install PVC Backwater Valves in K-4 on discharge from underdrains.
4. Requires construction of new manhole on existing 18" storm drain.
5. Centerline grade at bottom of excavation for concrete Sta. 8+75 = Elev. 7.24+; Sta. 9+00 = Elev. 7.81+

TREE BOX FILTER LOCATION M

	Description	Rim	Inlet Apron at Gutter	Invert In Elev.	Invert Out Elev.	Top of Storage Elev.	Bottom of Storage Elev.	Ground Surface (Range)	Overflow Weir Elevation
M-0	4' x 6' Tree Box Filter Sta. 4+26; 31.5+/-' Left	11.29	10.46		7.79 (M-4)				
M-1	4'-0" Overflow Catch Basin 4+26; 27+/-' Left	10.45			6.91 (M-2)				
M-2	4'-0" dia. Junction Manhole Sta. 4+43; 30' Left	11.40		6.82 (M-1)	6.72 (M-4)				
M-3	4' x 4' Inspection Manhole Sta. 4+74.67; 41' Left	11.84			6.60				
M-4	4' x 6' Inlet Manhole Sta. 4+46; 43.00' Left	11.80 11.86		6.67 (M-2) 6.99 (M-0) 6.00 (4" UD from storage)	6.0 (M-5)				8.50
M-5	6-0" dia. Outlet Control Manhole Sta. 4+39; 48' Left	11.52		5.86 (12" from M-4)	5.76 (M-6)				
M-6	Existing Catch Basin Sta. 4+11; 68' Left	11.22		6.20 (M-7) 5.64 (M-5) 6.8 (M-8)	Existing 10" Inv. TBD				
M-7	4'-0" Dia. Manhole along Trail (See Dwg. 8.2A)	11.22			7.03 (M-6)				
M-8	2'-0" Square Type D Catch Basin (See Dwg. 8.2A)	11.17		7.0 (6") 7.0 (6")	6.90 (12")				
M-9	2'-0" Square Type D Catch Basin (See Dwg. 8.2A)	11.17		7.0 (6") 7.0 (6")	6.90 (12")				
M-10	2'-0" Square Type D Catch Basin (See Dwg. 8.2A)	11.17		7.0 (6") 7.0 (6")	6.90 (12")				
Underground Storage Sta. 4+24.33 to 4+72.33; 39.5' to 42.5' Left				6.5 (M-4)	6.5 (M-4)	8.50	6.50	11.70 to 11.80	

New Storm Drain	Pipe Diameter (in.)	Length (ft)	Slope (ft/ft)	Grade Difference (ft)	Notes
M-0 to M-4	4	14	0.0570	0.80	
M-1 to M-2	12	13	0.0070	0.09	
M-2 to M-4	12	9	0.0060	0.05	
M-4 to M-5	12	14	0.0100	0.14	
M-5 to M-6	12	24	0.0050	0.12	
M-6 to M-7	12	166	0.0050	0.83	

NOTES:

1. Underdrains from underground storage to connect to downstream side of M-5; Underdrain from Filterra® to connect to M-4.
2. Form area of underground storage prior to pouring lightweight concrete.
3. Install 4" PVC Backwater Valve in M-4 on discharge from 4" storage underdrain.
4. Centerline grade at bottom of excavation for concrete Station 4+00 = Elev. 3.50; Station 4+75 = Elev. 2.50.
5. Drainage system requires scupper inlets or field inlets from abutting property line at M-8, M-9, and M-10. Abutting property owner to select inlet type from Options on Dwg. C-7.12.

TREE BOX FILTER LOCATION L

	Description	Rim	Inlet Apron at Gutter	Invert In Elev.	Invert Out Elev.	Top of Storage Elev.	Bottom of Storage Elev.	Ground Surface (Range in Elevation)	Overflow Weir Elevation
L-1	4' x 6' Tree Box Filter Somerset Street Sta. 4+30; 21.5' Right	11.44	10.60		7.94 (L-4)				
L-2	4'-0" dia. Overflow Catch Basin Sta. 4+75; 18.16' Right	10.20			6.49 (L-3)				
L-3	4'-0" Junction Manhole Sta. 4+75; 22.75' Right	10.60		6.39 (L-2)	6.27 (L-4)				
L-4	Underground Storage Sta. 4+42 to Sta. 4+66; 20' to 23' Right			7.31 (L-1) 6.20 (L-3) 6.20 (L-5)		8.20	6.20	10.55 to 10.70	8.20
L-5	4' x 6' Outlet Control Structure Sta. 4+38.5; 22.00' Right	10.78 11.10		6.20 (L-4) 5.70 (4" UD)(L-4) 5.50 (4" from wall drain)	5.24 (L-6)				
L-6	New 4'-0" dia. Manhole on Existing Storm Drain Sta. 4+60; 11.00' Left (See Schedule Q)	11.05		5.10 (L-5) 5.62 (C-5) 3.10+ (ex)	3.10+ (ex)				
Building Wall to 6" Invert Out from Building = 5.74.									

New Storm Drain	Pipe Diameter (in.)	Length (ft)	Slope (ft/ft)	Grade Difference (ft)
L-1 to L-4	4	17	0.0368	0.626
L-2 to L-3	12	1	0.0100	0.010
L-3 to L-4	12	6	0.0200	0.120
L-5 to L-6	12	28	0.0050	0.140
6" Underdrain from wall drain adjacent to Noyes Building at invert 5.25	6	24	0.0100	0.240

NOTES:

1. From L-5 to L-6 requires test pit over existing water main.
2. Connect 4" underdrain below storage unit to downstream side of L-5. Connect 4" underdrain below Filterra® to L-4.
3. Underground storage will project through lightweight fill. Special provisions required.
4. Install 4" PVC Backwater Valves in J-4 on discharge from underdrains (from underground storage and Filterra®).
5. Centerline grade at bottom of excavation for concrete Sta. 4+50 = Elev. 2.51+; Sta. 4+75 = Elev. 2.45+

TREE BOX FILTER LOCATION N

	Description	Rim	Inlet Apron at Gutter	Invert In Elev.	Invert Out Elev.	Top of Storage Elev.	Bottom of Storage Elev.	Ground Surface (Range in Elevation)	Overflow Weir Elevation
N-0	4' x 6' Tree Box Filter Sta. 4+19; 25' Right	11.17	10.34		7.67				
N-1	4'-0" Overflow Catch Basin 3+98; 13' Right	10.20			6.71				
N-2	4'-0" dia. Junction Manhole Sta. 4+17+; 32.5' Right	11.30		7.50 (4")(N-0) 6.6 (N-1)	6.50 (storage)				
N-3	4' x 4' Inspection Manhole 4+46.5; 24' Right	11.58		6.48	6.27				
N-4	4' x 6' Control Manhole Sta. 4+29; 31.75' Right	11.25 11.27		5.77 (4") 6.27 (12")	5.67 (N-5)				8.27
N-5	Existing Catch Basin Sta. 4+12+; 8' Right	10.68		5.54 (N-4)	5.24 (12")				
Underground Storage Sta. 4+20 to 4+41; 23.00' to 26.00' Right						8.27	6.27	11.30 to 11.70	

New Storm Drain	Pipe Diameter (in.)	Length (ft)	Slope (ft/ft)	Grade Difference (ft)	Notes
N-0 to N-2	6	3.5	0.0480	0.17	
N-1 to N-2	12	21	0.0050	0.11	
N-2 to N-3	12	4	0.0050	0.02	
N-4 to N-5	12	26	0.0050	0.13	

NOTES:

1. 4" underdrain from underground storage is to connect to the downstream face of N-4.
2. Form area of underground storage prior to pouring lightweight concrete (storage is below underside of concrete).
3. Install 4" PVC Backwater Valve in N-2 and N-4 on discharges from 4" underdrains.
4. Frame Cover N-5 is to be raised from Elev. 9.84 to 10.64.
5. Centerline grade at bottom of excavation for concrete Sta. 4+00 = Elev. 9.33+; Sta. 4+50 = Elev. 9.75+
6. Existing 10" storm drain invert in and invert out of existing catch basin N-5 are unknown.

THE PROPOSED STORM DRAIN SYSTEM SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF PORTLAND TECHNICAL STANDARDS USING ONE OF THE FOLLOWING PIPE MATERIALS:

- **REINFORCED CONCRETE PIPE (RCP) WITH A MINIMUM STRENGTH OF CLASS III**
- **PVC RING TYPE SEWER PIPE (SDR 35 OR EQUIVALENT, MINIMUM PS-46 RATING**
- **P.V.C. RING TYPE SEWER PIPE MEETING ASTM F 789 OR EQUAL TO SDR 35**
- **DUCTILE IRON PIPE (DIP)**
- **ADS N-12 HP TRIPLE-WALL PIPE MEETING A MINIMUM PS-46**
- **ADS SANITITE HP MEETING A MINIMUM PS-46**

ALL JOINTS SHALL BE WATERTIGHT (SILT TIGHT JOINTS ARE NOT PERMITTED. CONTRACTORS SHALL REFER TO THE TECHNICAL SPECIFICATIONS FOR THE PROJECT FOR ADDITIONAL INFORMATION INCLUDING ANY SPECIAL PIPE CLASSES.

ANY PIPELINE WITH LESS THAN 2 FEET OF COVER SHALL BE DUCTILE IRON PIPE

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE
WILLIAM R. MOORE
13547
11/14/14
LICENSED PROFESSIONAL ENGINEER

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
PROPOSED STORM DRAIN SCHEDULES FOR TREE BOX FILTER SYSTEMS SHEET 2 OF 3

CLIENT
THE FEDERATED COMPANIES

FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106

DRAWN:	LA	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	N.T.S.
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-GRADE SCHED		
SHEET	C-3.12		

TREE BOX FILTER LOCATION O

	Description	Rim	Inlet Apron at Gutter	Invert In Elev.	Invert Out Elev.	Top of Storage Elev.	Bottom of Storage Elev.	Ground Surface (Range in Elevation)	Overflow Weir Elevation
O-0	4' x 6' sq. Tree Box Filter Sta. 6+99; 17.32+' Right	11.1	10.27		7.60				
O-1	4'-0" Connector Manhole Station 7+27; 11.00' Right	10.78		4.88 (O-2) 7.37 (6" RD)	4.75+				
O-2	6'-0" Overflow Catch Basin with Overflow Weir set Elev. 8.20 Sta. 7+15; 11.00' Right	10.48		5.00 (O-6)	4.96 (discharge after weir) 6.40 (12")				
O-3	4'-0" dia. Junction Manhole Sta. 7+06.31; 22.79' Right	10.80		7.35 (O-0) 6.50 (4" from wall drain adjacent to Noyes Building) 6.30 (O-2)	6.30				
O-4	4' x 6' Outlet Control Manhole Sta. 6+67; 22.00 Right	11.12 11.18		6.25 (O-2)	6.20				8.20
O-5	4' x 6' Outlet Control Manhole Station 6+65; 20' right	11.21 to 11.25		6.2 (12") 5.7 (4" UD)	5.60				
O-6	New 4'-0" dia. Manhole Sta. 6+67; 12' Right	10.88		5.27 (O-7) 5.54 (O-5)	5.22				
O-7	4'-0" Diameter Manhole Sta. 6+36; 15' Right	10.87		5.45 (B-5)	5.40 (O-6)				
Underground storage Sta. 6+94 to 7.18; 20' to 23' Right						8.20	6.20	11.40 to 11.20	

New Storm Drain	Pipe Diameter (in.)	Length (ft)	Slope (ft/ft)	Grade Difference (ft)	Notes
O-0 to O-3	4	7	0.0362	0.25	
O-2 to O-1	12	8	0.0100	0.08	
Roof Drain TO o-1	12	16			Set slope in field.
O-2 to O-3	12	10	0.0100	0.10	
O-6 TO O-2	12	44	0.0050	0.22	
O-3 to O-4	12	10	0.0050	0.05	

TREE BOX FILTER LOCATION R

	Description	Rim	Inlet Apron at Gutter	Invert In Elev.	Invert Out Elev.	Top of Storage Elev.	Bottom of Storage Elev.	Ground Surface (Range in Elevation)	Overflow Weir Elevation
R-0	4' x 6' Filterra® Sta. 3+10; 21.5' Right	9.75	8.91	--	6.25 (R-3)				
R-1	4'-0" Overflow Catch Basin Sta. 3+00; 18.16' Right	8.77		--	5.83 (R-2)				
R-2	Replace Catch Basin with Manhole Sta. 3+20; 18.16' Right	9.49		5.67	4.74 (R-3)				
R-3	New Manhole Sta. 3+20; 23' Right	10.18		5.66 (R-0) 4.70 (R-2)	4.58				
R-4	4' x 6' Outlet Control Structure Sta. 3+57.50; 22.50' Right	10.21 10.13		4.0 (4") 5.02 (4" UD)* 4.5 (12")	3.97 (R-5)				6.50
R-5	New 4'-0" dia. Manhole Sta. 3+21; 9' Right	9.94		3.80 (R-4) 3.88 (12")	3.70				
Underground Storage Sta. 3+30 to 3+54; 20' to 23' Right						6.50	4.50	9.70 to 10.40	

New Storm Drain	Pipe Diameter (in.)	Length (ft)	Slope (ft/ft)	Grade Difference (ft)	Notes
R-0 to R-3	4	5	0.1176	0.59	
R-1 to R-2	12	16	0.0100	0.16	
R-2 to R-3	12	2	0.0200	0.04	
R-3 to Storage	12	8	0.0100	0.08	
R-4 to R-5	12	34	0.0050	0.17	
Building Wall to R-4	6	3	0.0100	0.03	

*4" Underdrain from sheet drain adjacent to wall of Noyes Building.

NOTES:

1. Underdrain from underground storage to connect to downstream side of R-4.
2. Underground storage will project through the bottom of lightweight fill. Special provisions required.
3. Install PVC Backwater Valves in R-4 on discharge from underdrains.
4. Install the 4" underdrain from the tree box filter to R-3.
5. Centerline grade at bottom of excavation for concrete Station 3+25 = Elev. 5.70+; Station 2+75 = 4.36+.
6. R-5 will be installed on existing 12" storm drain; test pit required to verify invert elevation.

TREE BOX FILTER LOCATION P

	Description	Rim	Inlet Apron at Gutter	Invert In Elev.	Invert Out Elev.	Top of Storage Elev.	Bottom of Storage Elev.	Ground Surface (Range in Elevation)	Overflow Weir Elevation
P-0	4' x 6' Tree Box Filter Sta. 7+00.5+; 17.50' Left	11.25	10.41		7.75				
P-1	4'-0" Overflow Catch Basin Sta. 7+09.5; 11.16' Left	10.65			6.50				
P-2	4'-0" dia. Junction Manhole Sta. 7.09; 28' Left	11.43		7.53 (P-0) 6.42 (P-1)	6.32				
P-3	4'-0" Square Manhole Sta. 7+07; 27.5' Left	11.40		6.28	6.17				
P-4 to P-5	4' x 6' Outlet Control Manhole Sta. 6+72.5; 26.5' Left	11.46 11.40		5.50 (4" UD) 5.9 (12")	5.44				8.00
P-5	New 4'-0" dia. Manhole (P-5 =0-6) Sta. 6+66; 11' Right	10.88		5.26	5.16				
Underground Storage Sta. 6+75 to 6+99; 26.5' to 29.5' Left						8.00	6.00	11.84 to 11.90	

New Storm Drain	Pipe Diameter (in.)	Length (ft)	Slope (ft/ft)	Grade Difference (ft)	Notes
P-0 to P-2	4	15	0.009	0.13	
P-1 to P-2	12	17	0.005	0.08	
P-2 to P-3	12	4	0.01	0.04	
P-4 to P-5	12	34	0.005	0.17	

NOTES:

1. 4" underdrain from underground storage to connect to downstream side of P-4.
2. Form area of underground storage prior to pouring lightweight concrete.
3. Install 4" PVC Backwater Valve in P-4 on discharge from 4" underdrain.

TREE BOX FILTER LOCATION S

	Description	Rim	Inlet Apron at Gutter	Invert In Elev.	Invert Out Elev.	Top of Storage Elev.	Bottom of Storage Elev.	Ground Surface (Range in Elevation)	Overflow Weir Elevation
S-0	4' x 6' Filterra® Sta. 2+94; 14.5' Left	9.53	8.69	--	6.03				
S-2	4'-0" dia. Overflow Catch Basin Sta. 2+70; 11.16' Left	8.57		--	5.07				
S-3	4'-0" square Junction Manhole Sta. 2+88; 29.5' Left	11.85		4.9 (12") 5.93 (4")	4.53				
S-4	4' x 6' Control Manhole Sta. 3+17; 30.50' Left	11.86 11.92		4.47 (12") 3.97 (4")	3.97				6.47
S-5	=R5 Sta. 3+24; 9' Right	9.91		3.80	3.70				
Underground Storage 2+90.5 to 3+14.5; 29' to 32' Left						6.47	4.47	12.00 to 11.80	

New Storm Drain	Pipe Diameter (in.)	Length (ft)	Slope (ft/ft)	Grade Difference (ft)	Notes
S-0 to S-3	6	12	0.0080	0.10	
S-2 to S-3	12	35	0.0050	0.175	
S-4 to S-5	12	33	0.0050	0.17	

NOTES:

1. 4" underdrain from below storage is to connect to the downstream face of S-4.
2. Underground storage will project through the lightweight fill. Special provisions are required.
3. Install PVC Backwater Valves in S-4 on discharge from underdrains.
4. Centerline grade at bottom of excavation for concrete Sta. 2+75 = Elev. 5.70+; Sta. 3+25 = Elev. 4.36+.
5. 4" underdrain from Filterra® to connect to S-3.

TREE BOX FILTER LOCATION Q

	Description	Rim	Inlet Apron at Gutter	Invert In Elev.	Invert Out Elev.	Top of Storage Elev.	Bottom of Storage Elev.	Ground Surface (Range in Elevation)	Overflow Weir Elevation
Q-0	Filterra® Sta. 5+23; 17' Left	11.29	10.45		7.79				
Q-1	4'-0" Overflow Catch Basin Sta. 5+31.5; 11.16' Left	10.66		6.63	6.53				
Q-2	4'-0" dia. Junction Manhole Sta. 5+31.5; 26' Left	11.87		6.42 (12") 7.66 (4")	6.32				
Q-3	4' x 6' Outlet Control Manhole Sta. 4+98.5; 27' Left	11.82 to 11.88		6.20 (12") 5.70 (4")	5.70				8.20
Q-4	Existing Catch Basin Convert to Manhole Sta. 5+16; 10 Left	10.90		5.49 (Q-3) 5.56 (Q-6)	3.45 +/-				
Q-5	4'-0" Dia. Catch Basin Sta. 5+60; 18.16 Right	11.10			6.90				
Q-6	4'-0" Dia. Catch Basin Sta. 5+26; 10' Right	10.60		5.76 (4" RD) 5.80 (Q-7)	5.66 (Q-4)				
Q-7	4'-0" Dia. Manhole Sta. 5+29; 16' Right	10.90		5.96 (4" RD)	5.86 (Q-6)				
Underground Storage Sta. 5+25 to 5+01; 25.5' to 28.5' Right				5.67		8.20	6.20	11.92 to 11.86	

New Storm Drain	Pipe Diameter (in.)	Length (ft)	Slope (ft/ft)	Grade Difference (ft)	Notes
Q-0 to Q-2	4	8	0.0163	0.130	
Q-1 to Q-2	12	11	0.0100	0.110	
Q-2 to Storage	12	4	0.0100	0.040	
Q-3 to Q-4	12	21	0.0100	0.210	
Q5 to Q1	12	37	0.0073	0.270	
Q-7 to Q-6	12	2	0.0300	0.060	
Q-6 to Q-4	12	20	0.0050	0.100	

NOTES:

1. 4" underdrain from underground storage to connect to downstream side of Q-3.
2. Underground storage is within lightweight concrete. Special provisions apply.
3. Install PVC backwater valves in discharge from underdrains.
4. Centerline grade at bottom of excavation for concrete Sta. 5+00 = Elev. 2.50+; Sta. 5+50 = Elev. 2.87+.
5. 4" Underdrain from Filterra® to connect to Q-2.

Roof Drain Connections from the Noyes Building

Station	Offset	Invert at Elbow	Size (in.)	Length (ft>	Slope (ft./ft.)	Connection Location	Invert at Connection	Notes
3+13+/-	24 ft.+/- right	6.80	12	17	0.0200	Manhole R-5	6.44	Use rigid insulation above the pipe, and install using induced trench through the lightweight fill.
4+19+/-	24 ft.+/- right	6.26	12	13	0.0200	Manhole L-5 (downstream side)	6	Use 45 degree elbow at connection to L-5; use induced trench.
4+86+/-	24 ft.+/- right	3.91	12	42	0.0050	Existing CB	3.8	Install before lightweight concrete is placed.
6+37+/-	24 ft.+/- right	5.96	12	8	0.0200	New Manhole O-7	5.88	New manhole O-7 at 6+35.5; 13 feet right, install using induced trench. Test pit water service to make sure the storm line will clear the existing water service.
7+28+/-	24 ft.+/- right	5.28	12	14	0.0200	Manhole O-1	5	Install using induced trench; may need field adjustment to clear other utilities.

Note New Manhole O-7: Invert in is 5.88; invert out is 5.78, run 28 feet of 12 inch pipe and connect to manhole O-6 at invert 5.50.

THE PROPOSED STORM DRAIN SYSTEM SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF PORTLAND TECHNICAL STANDARDS USING ONE OF THE FOLLOWING PIPE MATERIALS:

- **REINFORCED CONCRETE PIPE (RCP) WITH A MINIMUM STRENGTH OF CLASS III**
- **PVC RING TYPE SEWER PIPE (SDR 35 OR EQUIVALENT, MINIMUM PS-46 RATING**
- **P.V.C. RING TYPE SEWER PIPE MEETING ASTM F 789 OR EQUAL TO SDR 35**
- **DUCTILE IRON PIPE (DIP)**
- **ADS N-12 HP TRIPLE-WALL PIPE MEETING A MINIMUM PS-46**
- **ADS SANITITE HP MEETING A MINIMUM PS-46**

ALL JOINTS SHALL BE WATERTIGHT (SILT TIGHT JOINTS ARE NOT PERMITTED. CONTRACTORS SHALL REFER TO THE TECHNICAL SPECIFICATIONS FOR THE PROJECT FOR ADDITIONAL INFORMATION INCLUDING ANY SPECIAL PIPE CLASSES.

ANY PIPELINE WITH LESS THAN 2 FEET OF COVER SHALL BE DUCTILE IRON PIPE

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE WILLIAM R. MOORE 13547 LICENSED PROFESSIONAL ENGINEER 11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

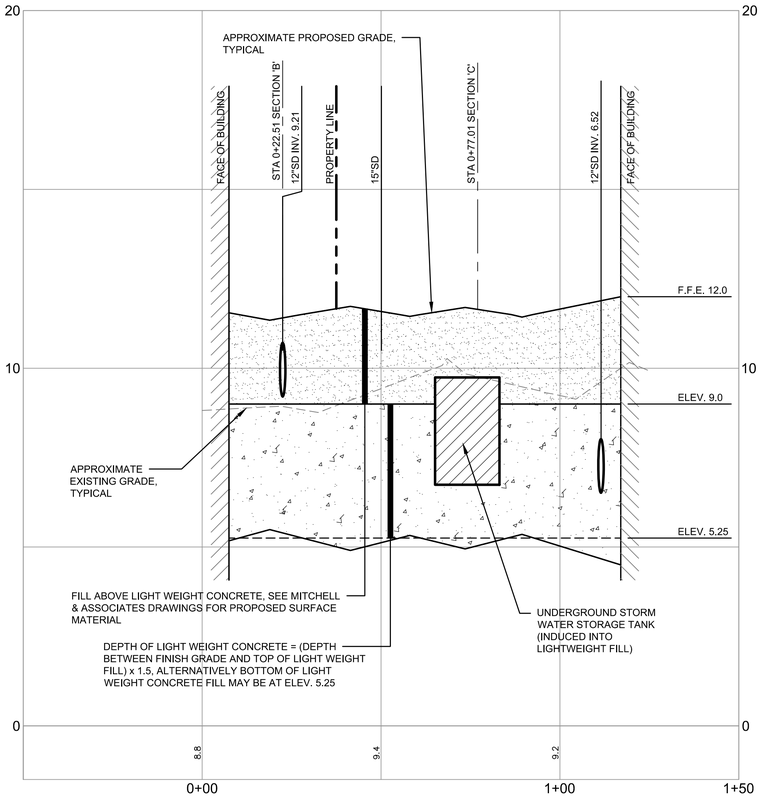
PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
PROPOSED STORM DRAIN SCHEDULES FOR TREE BOX FILTER SYSTEMS SHEET 3 OF 3

CLIENT
THE FEDERATED COMPANIES

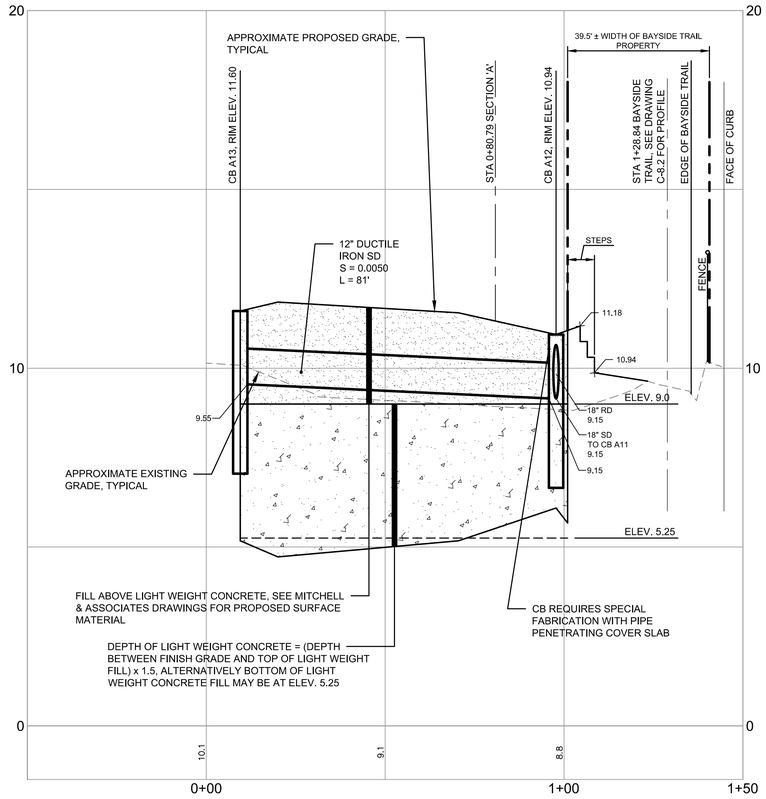
FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106

DRAWN:	LA	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	N.T.S.
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-GRADE SCHED		
SHEET	C-3.13		



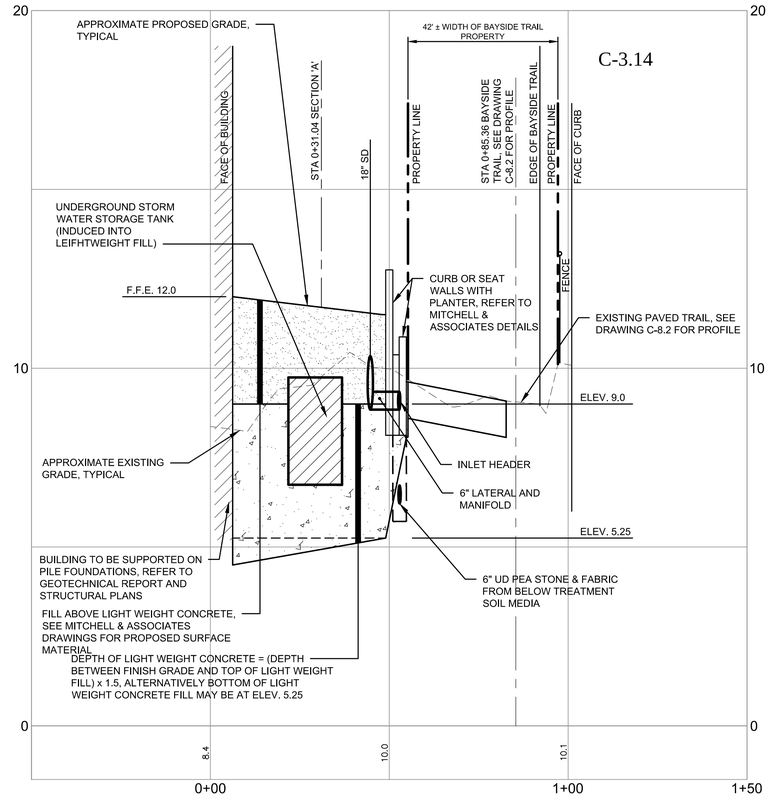
midtownOne COURTYARD SECTION 'A'

SCALE: 1" = 20' H, 1" = 2' V



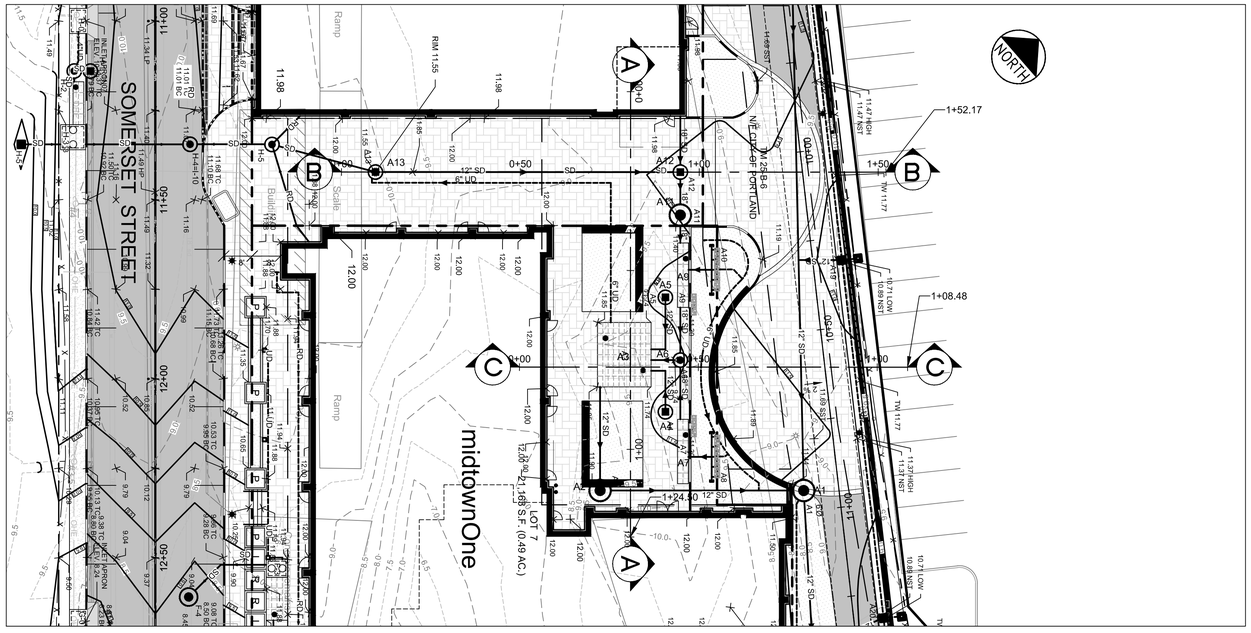
midtownOne COURTYARD SECTION 'B'

SCALE: 1" = 20' H, 1" = 2' V



midtownOne COURTYARD SECTION 'C'

SCALE: 1" = 20' H, 1" = 2' V



GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.

SEE DRAWING C-3.10 FOR SYSTEM A PIPING, RIMS, STORAGE AND TREATMENT SCHEDULES

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE — WILLIAM R. MOORE — 13547 — LICENSED PROFESSIONAL ENGINEER — 11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
midtownOne MEWS AND COURTYARD CROSS SECTIONS
(Includes information on lightweight concrete fill)

CLIENT
THE FEDERATED COMPANIES

FST 100 YEARS

FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	LA	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	AS NOTED
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-SECTIONS-COURTYARD		
SHEET	C-3.14		

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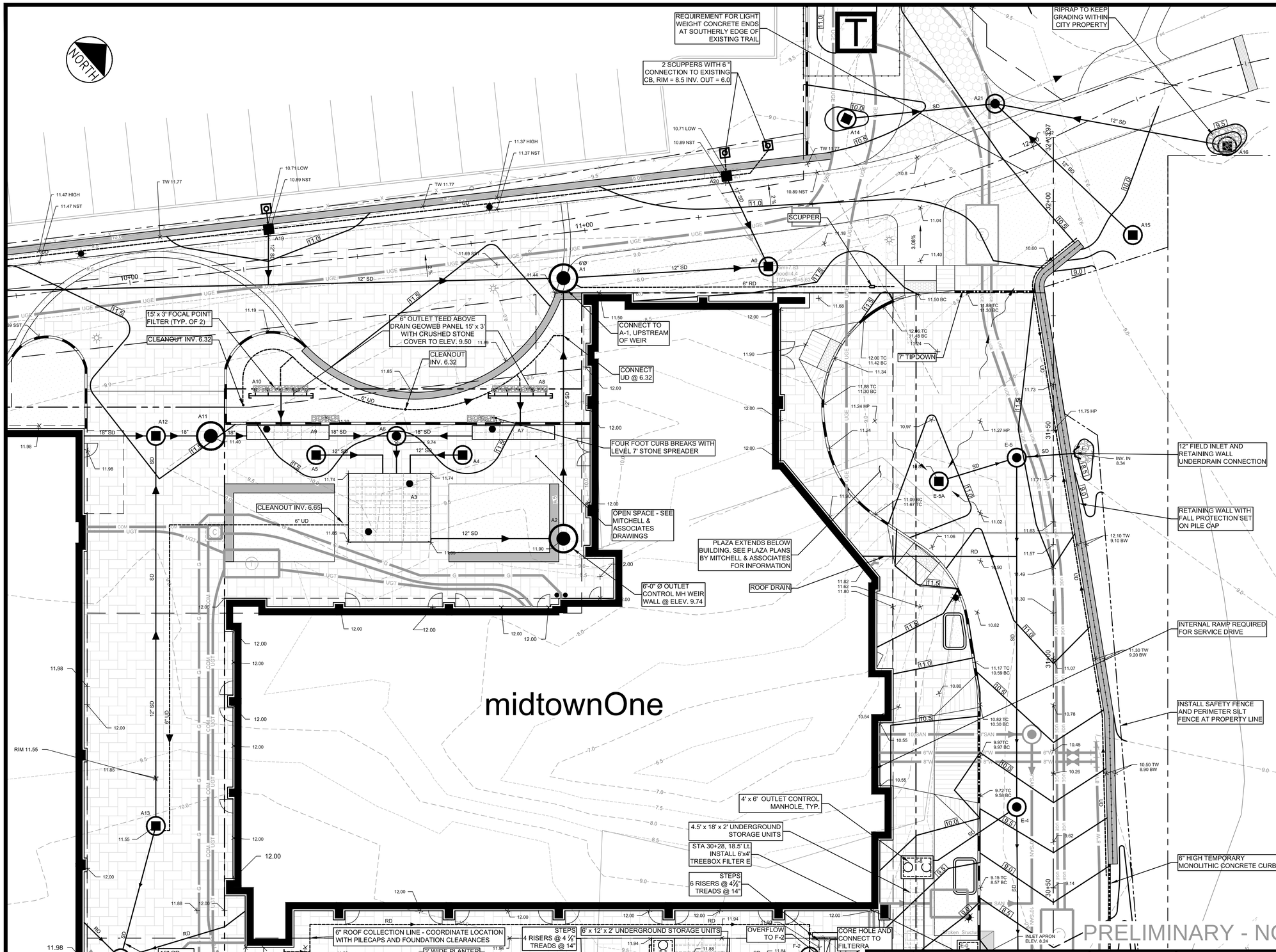
C-3.15



LEGEND

- PROPOSED PROPERTY BOUNDARY
- FEDERATED BUILDINGS
- BRICK AREAS
- GREEN SPACE/PLANTERS (BY MITCHELL & ASSOCIATES)
- L P R S — PROPOSED LANDING, PLANTER, RAMP AND STEPS
- VERTICAL GRANITE CURB
- FLUSH GRANITE CURB
- MOUNTABLE CURB (TYPE 5 GRANITE)
- TD — TIPDOWN

NOTES:

1. THE GAS LINE WILL BE UPGRADED AND REPLACED BY UNITIL. CONTRACTOR RESPONSIBLE FOR COORDINATION OF THE WORK AND ALL TRENCHING, BACKFILL & SURFACE RESTORATION.
2. THE FILTERRA TREE BOX FILTERS REQUIRE CONNECTIONS TO UNDERGROUND STORAGE AND CONNECTION TO STORM DRAIN IN SOMERSET STREET. REFER TO SCHEDULES ON SHEETS C-3.10 THROUGH C-3.13.
3. EXISTING MANHOLES AND CATCH BASINS TO BE EXAMINED IN THE FIELD TO DETERMINE THE SCOPE OF WORK TO RAISE THEM TO PROPOSED GRADES AND/OR CONNECT TO NEW STORM DRAIN LINES.
4. THE SURFACE TREATMENT AND LIGHTING FOR THE AREA TO THE NORTH OF THE CURB LINE ARE SHOWN ON PLANS PREPARED BY MITCHELL & ASSOCIATES.
5. THE SURFACE TREATMENT SOUTH OF THE SOUTHERLY CURB LINE ON SOMERSET STREET WILL BE UNIMPROVED AND STABILIZED WITH EROSION CONTROL SEED MIXES.
6. TEL, ELEC & COMM TO BE PLACED (UNDERGROUND AND TO BE LOCATED ON THE NORTHERLY SIDE OF SOMERSET STREET.
7. ELEVATIONS AND INVERTS FOR WATER QUALITY SYSTEMS ARE PROVIDED IN THE DRAINAGE SCHEDULES OF SHEET C-10, C-3.11, C-3.12, AND C-3.13.
8. UNDERGROUND STORAGE FOR 'ISOLATOR ROW' ARE BASED UPON THE BRENTWOOD STORAGE SYSTEM. STORMTECH® SC 740 CHAMBERS ARE AN ACCEPTABLE ALTERNATIVE. IF THE STORMTECH® SC 740 CHAMBERS ARE USED, THE WEIR IN THE OVERFLOW CONTROL MANHOLE SHALL BE RAISED 6" ABOVE THE ELEVATION LISTED IN THE DRAINAGE SCHEDULES ON SHEETS C-3.10 THROUGH C-3.13.
9. ALL BUILDING FOUNDATION DRAIN SHALL BE PIPED TO THE WQ UNIT "ISOLATOR" ROWS. (MAY NOT BE SHOWN ON PLAN VIEW).

GRAPHIC SCALE

10 0 5 10 20

(IN FEET)
1 inch = 10 ft.

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE — WILLIAM R. MOORE — 13547 — LICENSED — PROFESSIONAL ENGINEER — 11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
COURTYARD AND MEWS SPOT GRADES AND WATER QUALITY SYSTEM

CLIENT
THE FEDERATED COMPANIES

FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW/LA	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	1" = 10'
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-GRADE		
SHEET	C-3.15		

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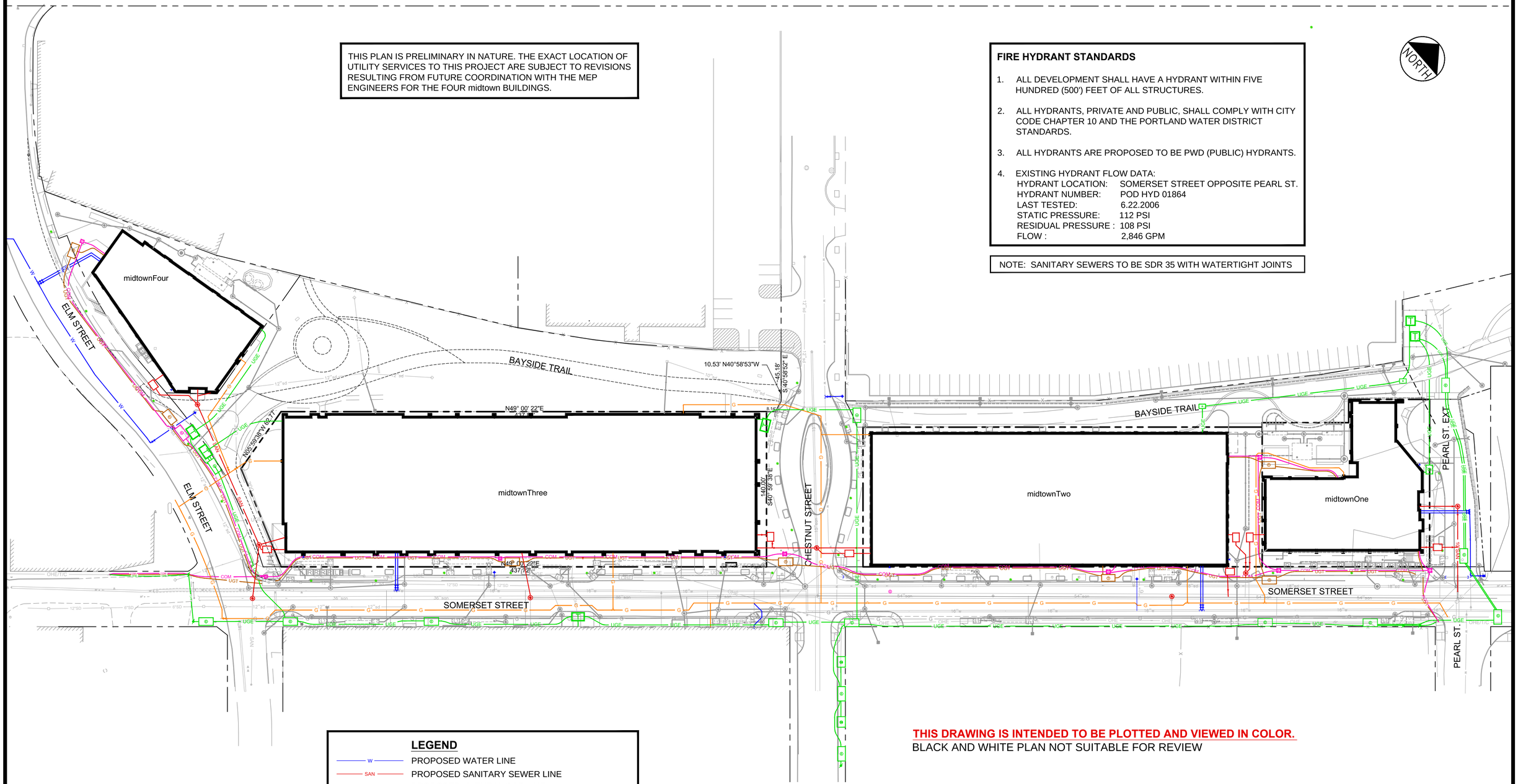
THIS PLAN IS PRELIMINARY IN NATURE. THE EXACT LOCATION OF UTILITY SERVICES TO THIS PROJECT ARE SUBJECT TO REVISIONS RESULTING FROM FUTURE COORDINATION WITH THE MEP ENGINEERS FOR THE FOUR midtown BUILDINGS.

FIRE HYDRANT STANDARDS

1. ALL DEVELOPMENT SHALL HAVE A HYDRANT WITHIN FIVE HUNDRED (500') FEET OF ALL STRUCTURES.
2. ALL HYDRANTS, PRIVATE AND PUBLIC, SHALL COMPLY WITH CITY CODE CHAPTER 10 AND THE PORTLAND WATER DISTRICT STANDARDS.
3. ALL HYDRANTS ARE PROPOSED TO BE PWD (PUBLIC) HYDRANTS.
4. EXISTING HYDRANT FLOW DATA:

HYDRANT LOCATION:	SOMERSET STREET OPPOSITE PEARL ST.
HYDRANT NUMBER:	POD HYD 01864
LAST TESTED:	6.22.2006
STATIC PRESSURE:	112 PSI
RESIDUAL PRESSURE :	108 PSI
FLOW :	2,846 GPM

NOTE: SANITARY SEWERS TO BE SDR 35 WITH WATERTIGHT JOINTS



THIS DRAWING IS INTENDED TO BE PLOTTED AND VIEWED IN COLOR.
BLACK AND WHITE PLAN NOT SUITABLE FOR REVIEW

LEGEND

W	PROPOSED WATER LINE
SAN	PROPOSED SANITARY SEWER LINE
G	PROPOSED NATURAL GAS LINE
UGE	PROPOSED UNDERGROUND ELECTRIC LINE
UGT	PROPOSED UNDERGROUND TELEPHONE LINE
COM	PROPOSED UNDERGROUND COMMUNICATION LINE
OHE	PROPOSED OVERHEAD ELECTRIC LINE
T	PROPOSED TRANSFORMER PAD
T	PROPOSED UNDERGROUND VAULT WITH SUBMERSIBLE TRANSFORMER
E	PROPOSED UNDERGROUND ELECTRICAL MANHOLE

GRAPHIC SCALE
40 0 20 40 80
(IN FEET)
1 inch = 40 ft.

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
2	01.21.15	REVISED PER PWD/CMP COMMENTS; SUBMITTED TO CITY
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE STEPHEN R. BUSHEY No. 7429 LICENSED PROFESSIONAL ENGINEER 1/21/15
P.E. STEPHEN R. BUSHEY
LIC. # 7429

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
OVERALL UTILITY PLAN

CLIENT
FEDQ DV001, LLC

FST 150 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW/DED	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	1" = 40'
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-UTIL		
SHEET	C-4.0		

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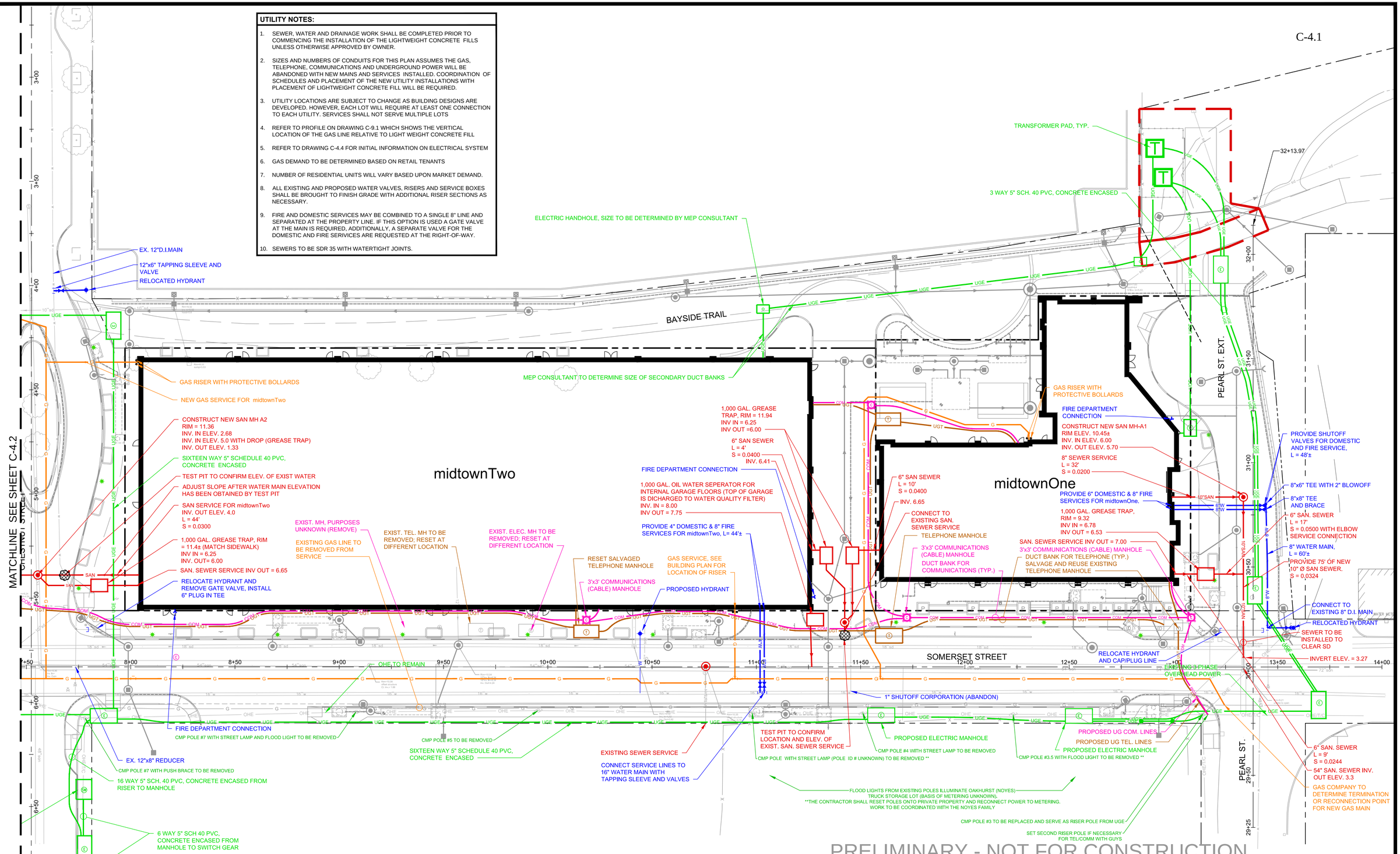
C-4.1

UTILITY NOTES:

1. SEWER, WATER AND DRAINAGE WORK SHALL BE COMPLETED PRIOR TO COMMENCING THE INSTALLATION OF THE LIGHTWEIGHT CONCRETE FILLS UNLESS OTHERWISE APPROVED BY OWNER.
2. SIZES AND NUMBERS OF CONDUITS FOR THIS PLAN ASSUMES THE GAS, TELEPHONE, COMMUNICATIONS AND UNDERGROUND POWER WILL BE ABANDONED WITH NEW MAINS AND SERVICES INSTALLED. COORDINATION OF SCHEDULES AND PLACEMENT OF THE NEW UTILITY INSTALLATIONS WITH PLACEMENT OF LIGHTWEIGHT CONCRETE FILL WILL BE REQUIRED.
3. UTILITY LOCATIONS ARE SUBJECT TO CHANGE AS BUILDING DESIGNS ARE DEVELOPED. HOWEVER, EACH LOT WILL REQUIRE AT LEAST ONE CONNECTION TO EACH UTILITY. SERVICES SHALL NOT SERVE MULTIPLE LOTS
4. REFER TO PROFILE ON DRAWING C-9.1 WHICH SHOWS THE VERTICAL LOCATION OF THE GAS LINE RELATIVE TO LIGHT WEIGHT CONCRETE FILL
5. REFER TO DRAWING C-4.4 FOR INITIAL INFORMATION ON ELECTRICAL SYSTEM
6. GAS DEMAND TO BE DETERMINED BASED ON RETAIL TENANTS
7. NUMBER OF RESIDENTIAL UNITS WILL VARY BASED UPON MARKET DEMAND.
8. ALL EXISTING AND PROPOSED WATER VALVES, RISERS AND SERVICE BOXES SHALL BE BROUGHT TO FINISH GRADE WITH ADDITIONAL RISER SECTIONS AS NECESSARY.
9. FIRE AND DOMESTIC SERVICES MAY BE COMBINED TO A SINGLE 8" LINE AND SEPARATED AT THE PROPERTY LINE. IF THIS OPTION IS USED A GATE VALVE AT THE MAIN IS REQUIRED, ADDITIONALLY, A SEPARATE VALVE FOR THE DOMESTIC AND FIRE SERIVICES ARE REQUESTED AT THE RIGHT-OF-WAY.
10. SEWERS TO BE SDR 35 WITH WATERTIGHT JOINTS.



PRELIMINARY - NOT FOR CONSTRUCTION

THIS DRAWING IS INTENDED TO BE PLOTTED AND VIEWED IN COLOR.
BLACK AND WHITE PLAN NOT SUITABLE FOR REVIEW

GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 inch = 20 ft.

REV	DATE	DESCRIPTION
2	01.21.15	REVISED PER PWD/CMP COMMENTS; SUBMITTED TO CITY
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE STEPHEN R. BUSHEY No. 7429 LICENSED PROFESSIONAL ENGINEER 1/21/15
P.E. STEPHEN R. BUSHEY
LIC. # 7429

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
UTILITY PLAN - midtownOne and midtownTwo

CLIENT
FEDQ DV001, LLC

FST 150 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW/DED	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	1" = 20'
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-UTIL		
SHEET	C-4.1		

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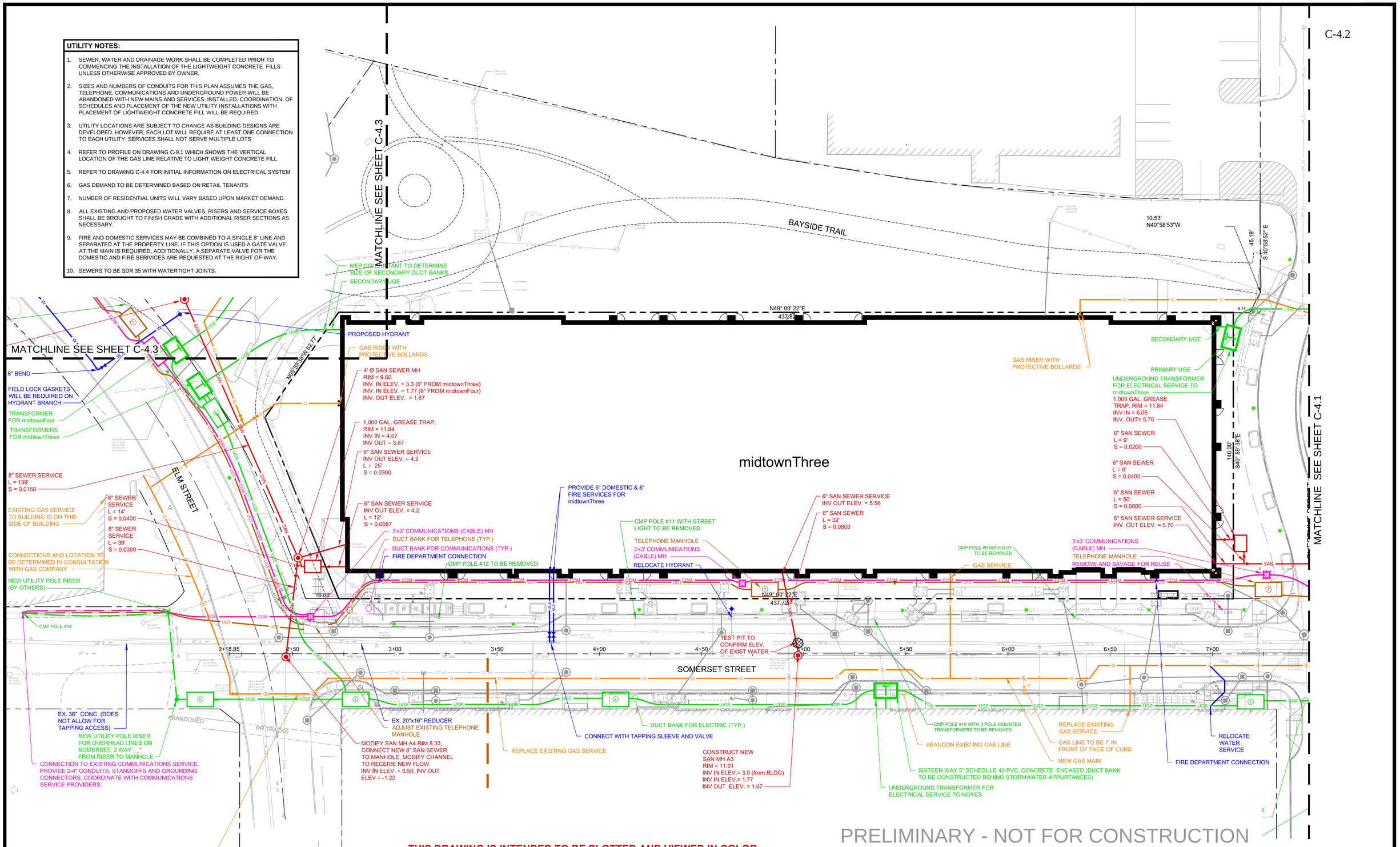
C-4.2

UTILITY NOTES:

1. SEWER, WATER AND DRAINAGE WORK SHALL BE COMPLETED PRIOR TO COMMENCING THE INSTALLATION OF THE LIGHTWEIGHT CONCRETE FILLS UNLESS OTHERWISE APPROVED BY OWNER.
2. SIZES AND NUMBERS OF CONDUITS FOR THIS PLAN ASSUMES THE GAS, TELEPHONE, COMMUNICATIONS AND UNDERGROUND POWER WILL BE ABANDONED WITH NEW MAINS AND SERVICES INSTALLED. COORDINATION OF SCHEDULES AND PLACEMENT OF THE NEW UTILITY INSTALLATIONS WITH PLACEMENT OF LIGHTWEIGHT CONCRETE FILL WILL BE REQUIRED.
3. UTILITY LOCATIONS ARE SUBJECT TO CHANGE AS BUILDING DESIGNS ARE DEVELOPED. HOWEVER, EACH LOT WILL REQUIRE AT LEAST ONE CONNECTION TO EACH UTILITY. SERVICES SHALL NOT SERVE MULTIPLE LOTS
4. REFER TO PROFILE ON DRAWING C-9.1 WHICH SHOWS THE VERTICAL LOCATION OF THE GAS LINE RELATIVE TO LIGHT WEIGHT CONCRETE FILL
5. REFER TO DRAWING C-4.4 FOR INITIAL INFORMATION ON ELECTRICAL SYSTEM
6. GAS DEMAND TO BE DETERMINED BASED ON RETAIL TENANTS
7. NUMBER OF RESIDENTIAL UNITS WILL VARY BASED UPON MARKET DEMAND.
8. ALL EXISTING AND PROPOSED WATER VALVES, RISERS AND SERVICE BOXES SHALL BE BROUGHT TO FINISH GRADE WITH ADDITIONAL RISER SECTIONS AS NECESSARY.
9. FIRE AND DOMESTIC SERVICES MAY BE COMBINED TO A SINGLE 8" LINE AND SEPARATED AT THE PROPERTY LINE. IF THIS OPTION IS USED A GATE VALVE AT THE MAIN IS REQUIRED, ADDITIONALLY, A SEPARATE VALVE FOR THE DOMESTIC AND FIRE SERIVICES ARE REQUESTED AT THE RIGHT-OF-WAY.
10. SEWERS TO BE SDR 35 WITH WATERTIGHT JOINTS.



PRELIMINARY - NOT FOR CONSTRUCTION

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BLACK AND WHITE PLAN NOT SUITABLE FOR REVIEW

GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 inch = 20 ft.

REV	DATE	DESCRIPTION
2	01.21.15	REVISED PER PWD/CMP COMMENTS; SUBMITTED TO CITY
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE — STEPHEN R. BUSHEY — No. 7429 — LICENSED PROFESSIONAL ENGINEER — 1/21/15

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

PROJECT: midtown
PORTLAND, MAINE

SHEET TITLE: UTILITY PLAN - midtownThree

CLIENT: FEDQ DV001, LLC

FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

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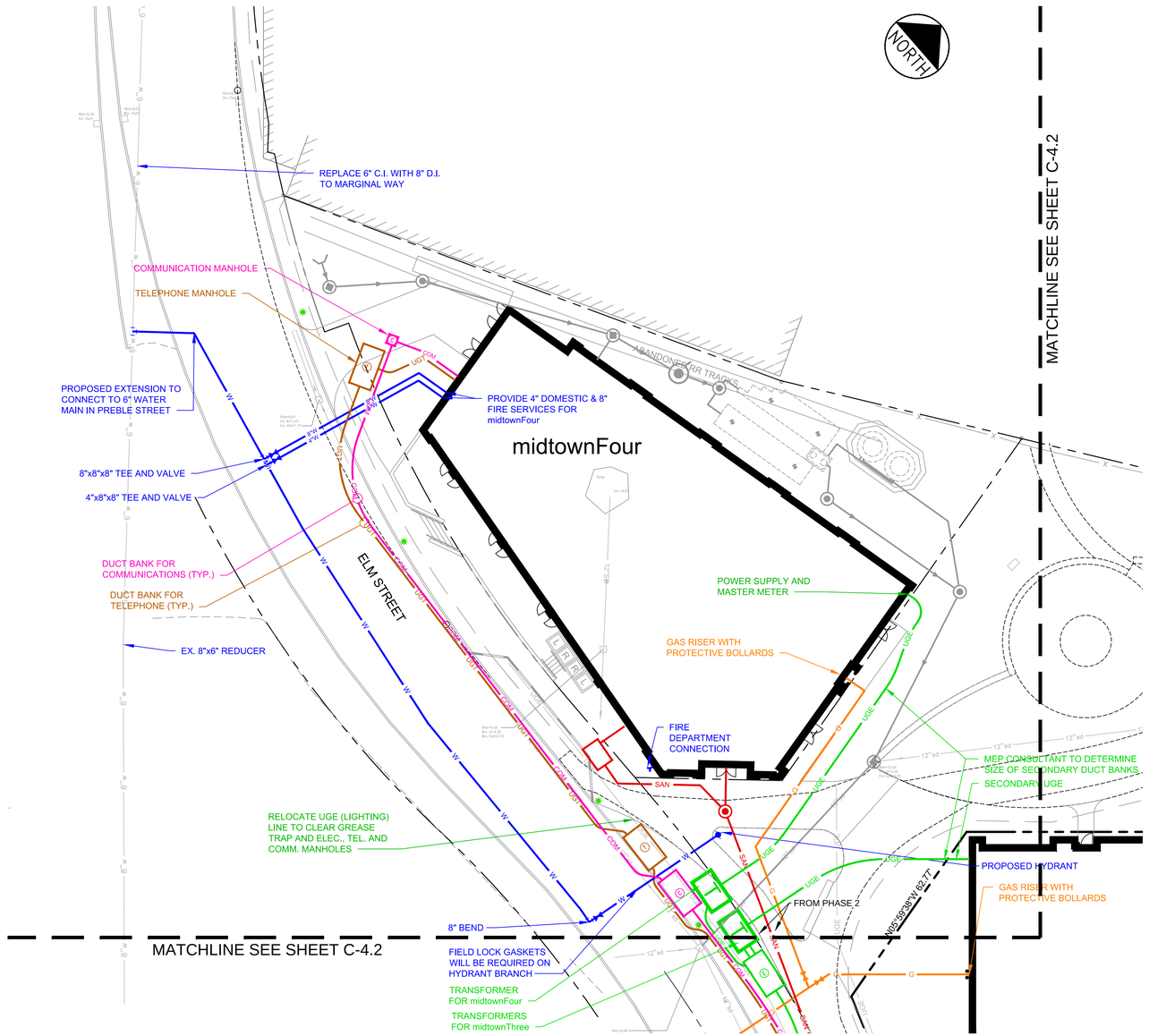

NOTE: SEWERS TO BE SDR 35 WITH WATERTIGHT JOINTS

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PRELIMINARY - NOT FOR CONSTRUCTION

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(IN FEET)
1 inch = 20 ft.

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1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE WILLIAM R. MOORE 13547 LICENSED PROFESSIONAL ENGINEER 11/14/14
P.E. WILLIAM R. MOORE
LIC. #13547

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
UTILITY PLAN - midtownFour

CLIENT
FEDQ DV001, LLC

FST 150 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

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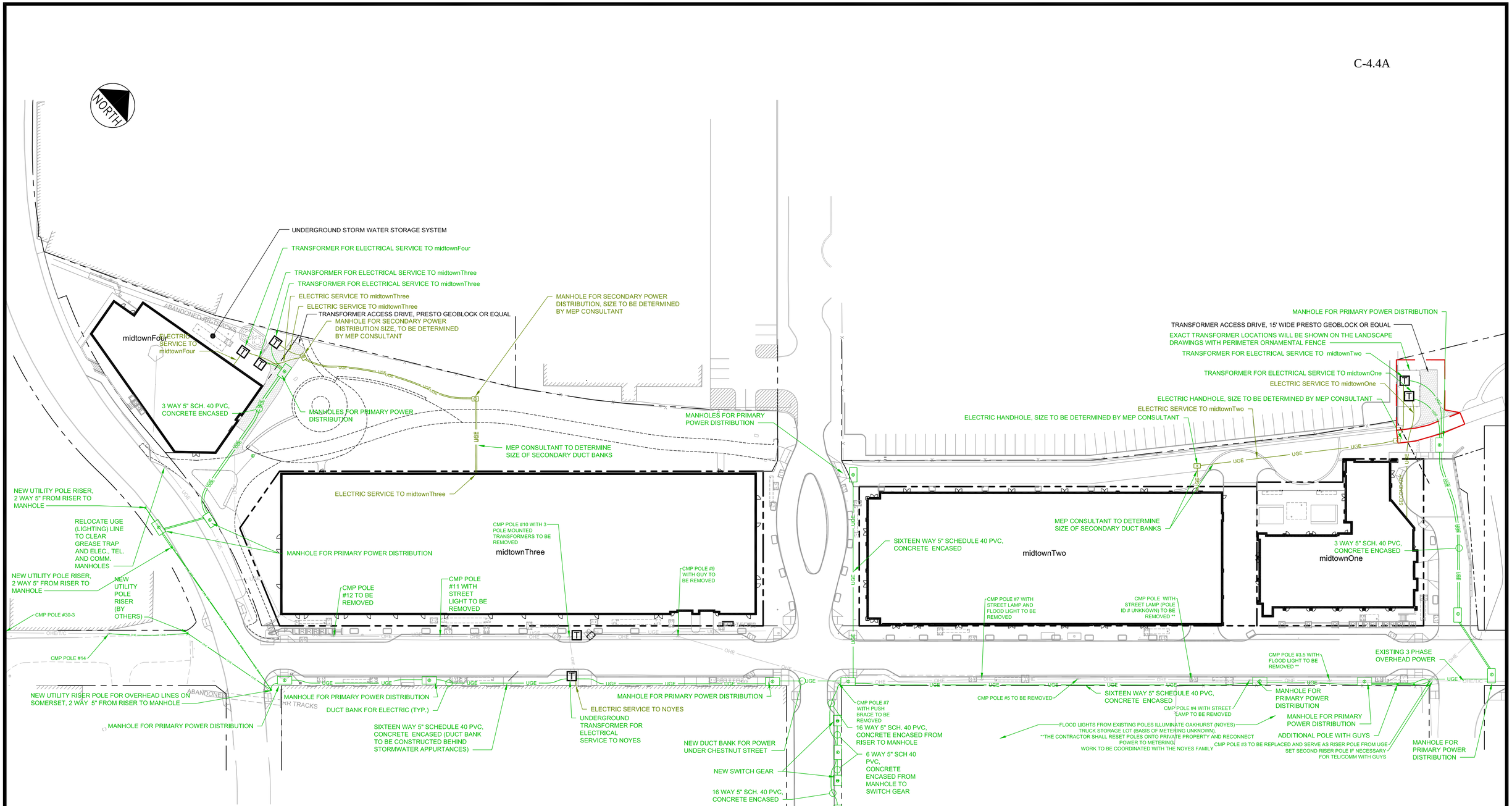

LEGEND

T	TRANSFORMER PAD
	ELECTRIC MANHOLE - PRIMARY
	ELECTRIC MANHOLE - SECONDARY
	SWITCH GEAR
	HANDHOLD - SECONDARY
UGE	DUCT BANK - PRIMARY
UGE	DUCT BANK - SECONDARY

SERVICE ENTRANCE LOCATIONS INTO BUILDINGS ARE ILLUSTRATIVE ONLY AND MAY BE REVISED BY THE ELECTRICAL ENGINEER AND ARCHITECT.

STREET AND PUBLIC SPACE LIGHTING IS NOT SHOWN ON THIS PLAN

THE NUMBER OF TRANSFORMERS BEHIND midtownFour IS SUBJECT TO CONFIRMATION THAT AN ADEQUATE NUMBER OF CONDUCTORS CAN BE PROVIDED. CONDUCTOR REQUIREMENTS ARE BEING COMPLETED BY CBT'S MEP ENGINEERS.

CENTRAL MAINE POWER WILL PROVIDE A DRAWING FOR DUCT BANK REQUIREMENTS AS PART OF THE FINAL SUBMISSION. SECONDARY CONDUITS AND CABLES TO BE SIZED BY CBT ELECTRICAL ENGINEERS

THIS DRAWING HAS BEEN GENERATED FROM AN ELECTRICAL DISTRIBUTION PLAN PREPARED BY CENTRAL MAINE POWER CO. IN OCTOBER 2013 AND REVISED AFTER THE MEETING OF OCTOBER 29, 2013.

GRAPHIC SCALE

40 0 20 40 80

(IN FEET)
1 inch = 40 ft.

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BLACK AND WHITE PLAN NOT SUITABLE FOR REVIEW

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
ELECTRICAL DISTRIBUTION PLAN

CLIENT
THE FEDERATED COMPANIES

FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

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SHEET	C-4.4A		

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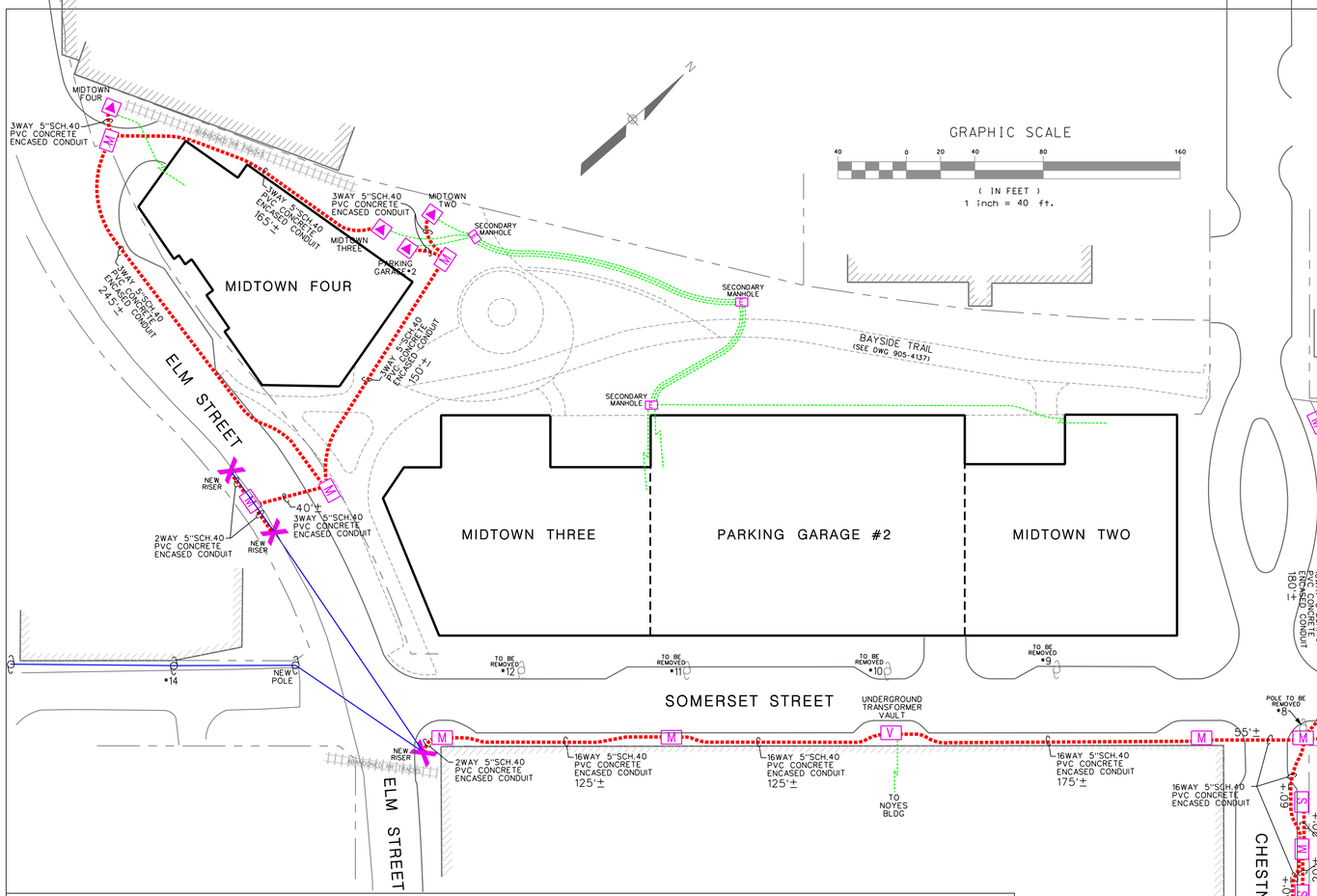
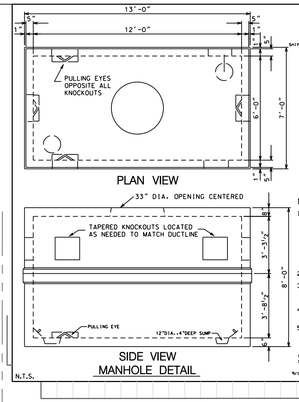
This document and any attachments are considered:
BUSINESS CONFIDENTIAL
PROTECTED CRITICAL INFRASTRUCTURE INFORMATION

THIS DRAWING SHALL BE REVISED ON THE CADD SYSTEM ONLY





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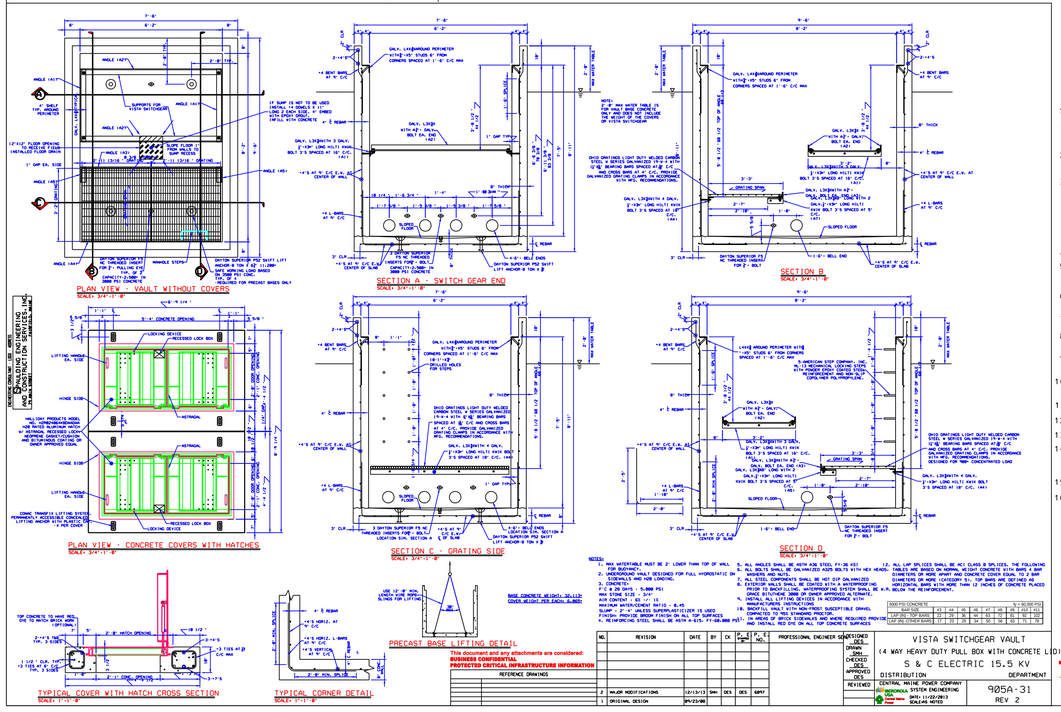


STANDARD NOTES:

1) Electrical installations to conform to Central Maine Power Company's Handbook of Requirements for Electric Service and Meter Installations.

2) Conduit is required under all roads, driveways, and paved areas for both primary and secondary cables.

3) At each transformer location a level 10-foot by 10-foot area will be provided as shown on Illustration #21 in the Handbook of Requirements. The elevation of this area shall be sufficiently high to always be above the highest expected water level and at or above the top of any nearby ditch slope. The transformer foundation shall be installed so the top of the foundation is 6 inches above this elevation. The transformer foundation shall be installed no more than 20 feet from a road surface.

4) Primary voltage cable to be 15kV 500CU and 15kV 4/0 CU.

5) Feed Thru bushings, elbows and pad covers will be required for any location where a pad mount transformer is not initially installed. Transformer installations should be coordinated with the service center.

6) All construction to be in compliance with CMP's Construction Standards and the latest edition of the National Electrical Safety Code.

7) Conduit shall be a minimum of 5" Schedule 40 PVC or equivalent.

8) Padmount transformer locations shall be graded for proper drainage and maintained by the customer to be readily accessible by truck at all times without causing site damage.

9) See CMP's Handbook of Requirements, Section IX, Paragraphs 910, 911 and 912 for specifications on back-fill materials, depth, etc.

10) All 90 degree bends shall be galvanized long sweep bends. Conduit bell ends required at splice boxes, transformer bases and switch cabinets.

11) Primary cable to be color-coded in all transformer foundations and on riser poles.

12) Primary riser - see Illustration #28 in the Handbook of Requirements.

13) Transformer foundation - see Illustration #25 in the Handbook of Requirements.

14) Conduits shall be properly pitched to drain into transformer foundations, manholes or splice boxes. Three inches per 100 feet minimum slope. If conduits slope toward the riser pole, a company approved drainage box at the riser base shall be installed.

15) Install pulling line in each conduit.

16) The Contractor is required to notify CMP by calling the Line Supervisor at telephone number 791-1020 at least 72 hours before trench excavation begins.

X Primary Riser
Transformer Foundation (See Figure 1)
V Transformer Valut (See Figure 2)
M Manhole Primary Type 38Y (See Figure 3)
S Switchgear Valut (See 905A-31)
E Manhole Secondary services
Primary UG
Secondary UG

Customer: THE FEDERATED COMPANIES

Site Plan Produced By: FAY, SPOFFORD & THORNDIKE, INC.
Address / Phone / Email: 778 MAIN ST-SUITE 8
SOUTH PORTLAND, ME 04106
(FORMERLY DELUCA-HOFFMAN)

Sheet Title: MIDTOWN
ELECTRICAL DISTRIBUTION PLAN
SOMERSET STREET
PORTLAND, MAINE

Revision #: 6 Date:12-04-13 Drawn By:KEW

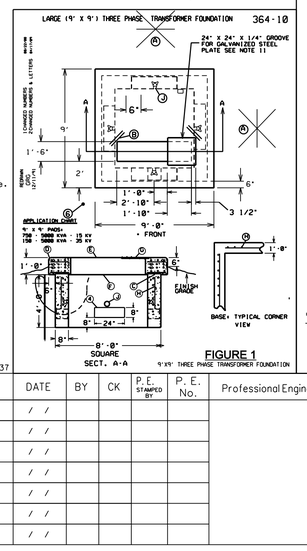
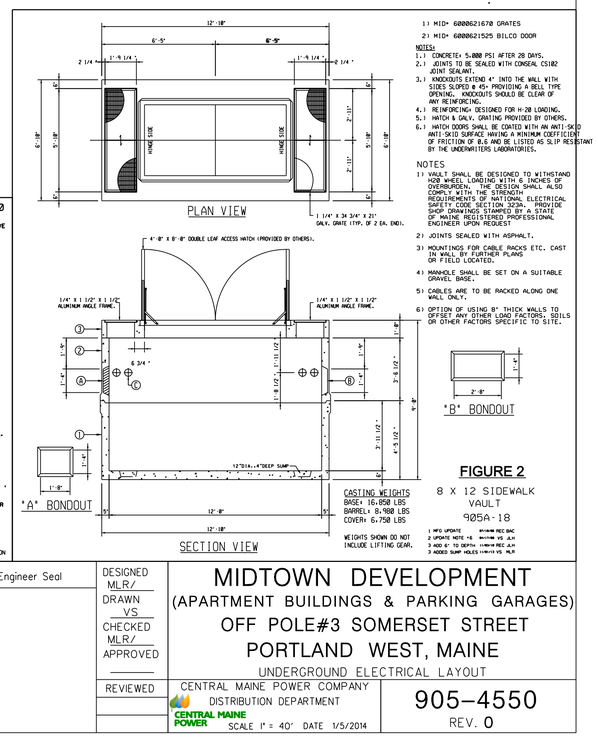


FIGURE 1
9'X9' THREE PHASE TRANSFORMER FOUNDATION



1) MID# 6000621670 GRATES
2) MID# 6000621525 BILCO DOOR

NOTES
1.) CONCRETE= 5,000 PSI AFTER 28 DAYS.
2.) JOINTS TO BE SEALED WITH CONSEAL CS102 JOINT SEALANT.
3.) KNOCKOUTS EXTEND 4" INTO THE WALL WITH SIDES SLOPED @ 45- PROVIDING A BELL TYPE OPENING. KNOCKOUTS SHOULD BE CLEAR OF ANY REINFORCING.
4.) REINFORCING= DESIGNED FOR H-20 LOADING.
5.) HATCH & GALV. GRATING PROVIDED BY OTHERS.
6.) HATCH DOORS SHALL BE COATED WITH AN ANTI-SKID ANTI-SKID SURFACE HAVING A MINIMUM COEFFICIENT OF FRICTION OF 0.6 AND BE LISTED AS SLIP RESISTANT BY THE UNDERWRITERS LABORATORIES.

NOTES
1) VAULT SHALL BE DESIGNED TO WITHSTAND H20 WHEEL LOADING WITH 6 INCHES OF OVERBURDEN. THE DESIGN SHALL ALSO COMPLY WITH THE STRENGTH REQUIREMENTS OF NATIONAL ELECTRICAL SAFETY CODE SECTION 323A. PROVIDE SHOP DRAWINGS STAMPED BY A STATE OF MAINE REGISTERED PROFESSIONAL ENGINEER UPON REQUEST
2) JOINTS SEALED WITH ASPHALT.
3) MOUNTINGS FOR CABLE RACKS ETC. CAST IN WALL BY FURTHER PLANS OR FIELD LOCATED.
4) MANHOLE SHALL BE SET ON A SUITABLE GRAVEL BASE.
5) CABLES ARE TO BE RACKED ALONG ONE WALL ONLY.
6) OPTION OF USING 8" THICK WALLS TO OFFSET ANY OTHER LOAD FACTORS, SOILS OR OTHER FACTORS SPECIFIC TO SITE.

FIGURE 2
8 X 12 SIDEWALK VAULT
905A-18

NO.	REVISION	DATE	BY	CK	P.E. STAMPED BY	P.E. No.	Professional Engineer Seal
		/ /					
		/ /					
		/ /					
		/ /					
		/ /					
		/ /					
		/ /					

DESIGNED MLR/
DRAWN VS
CHECKED MLR/
APPROVED
REVIEWED

MIDTOWN DEVELOPMENT
(APARTMENT BUILDINGS & PARKING GARAGES)
OFF POLE#3 SOMERSET STREET
PORTLAND WEST, MAINE
UNDERGROUND ELECTRICAL LAYOUT

CENTRAL MAINE POWER COMPANY
DISTRIBUTION DEPARTMENT
CENTRAL MAINE POWER
SCALE 1" = 40' DATE 1/5/2014

905-4550
REV. 0

FILE NAME: 905-4550.dgn

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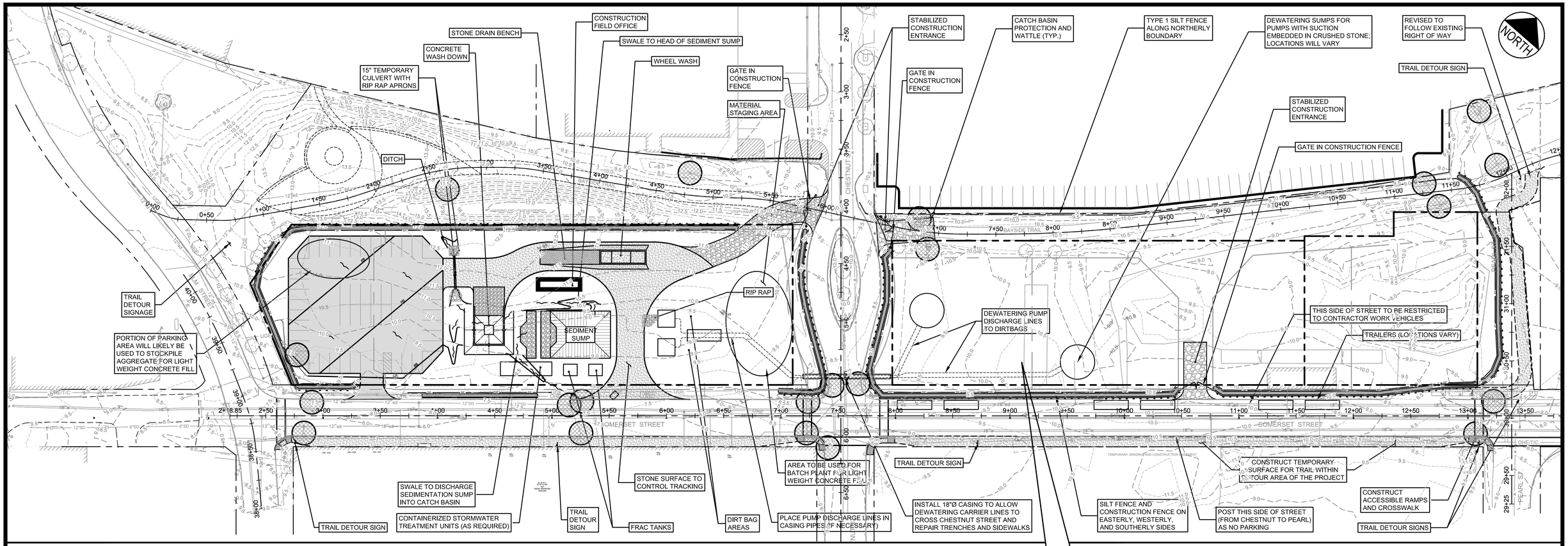
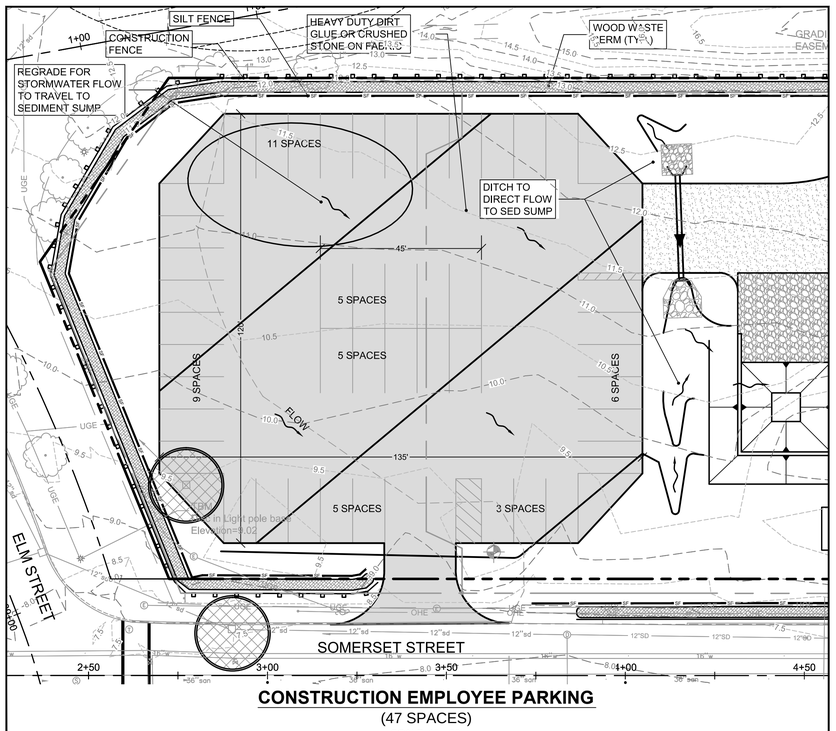




CONSTRUCTION EMPLOYEE PARKING
(47 SPACES)
SCALE: 1" = 20'

THIS PLAN DEPICTS EROSION CONTROL MEASURES ANTICIPATED TO BE REQUIRED BETWEEN START OF CONSTRUCTION AND COMPLETION OF THE FOUNDATION SYSTEMS FOR midtownOne and midtownTwo OF THE PROJECT

THE ENTIRE AREA OF PROJECT EAST OF CHESTNUT STREET IS CONSIDERED AN ACTIVE WORK AREA WITH TEMPORARY EROSION CONTROL MEASURES

GRAPHIC SCALE
40 0 20 40 80
(IN FEET)
1 inch = 40 ft.

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE
WILLIAM R. MOORE
13547
11/14/14
LICENSED PROFESSIONAL ENGINEER

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT
midtown
PORTLAND, MAINE

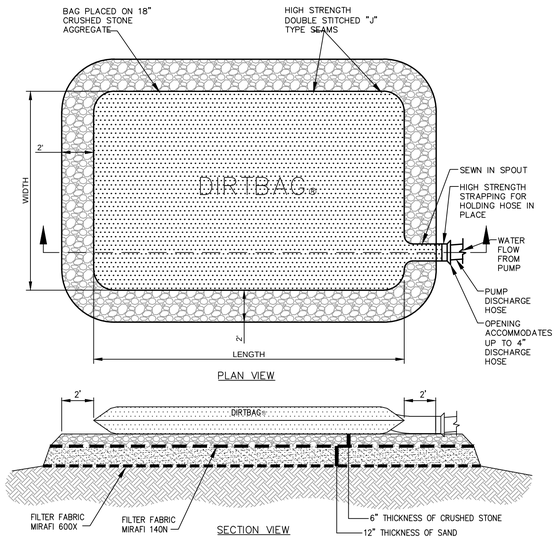
SHEET TITLE
EROSION CONTROL PLAN

CLIENT
THE FEDERATED COMPANIES

FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	1"=40'
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-PH1-EROS		
SHEET	C-6.0		

R:\3062B - Midtown Amended - Portland, ME\Cadd\Permit Set\dwg\3062-PH1-EROS.dwg davis_d 11/14/2014 3:16 PM



SPECIFICATIONS AND REQUIREMENTS FOR DEWATERING

THIS PROJECT WILL REQUIRE THE DISCHARGE OF CONSTRUCTION DEWATERING AND TURBID LADEN RUNOFF FROM THE SITE TO BE DIRECTED AND DISCHARGED THROUGH A DIRTBAG. THIS DESCRIPTION ALSO CONTAINS APPENDED MATERIALS DESCRIBING THE DIRTBAGS REFERRED TO IN THIS NARRATIVE.

OVERVIEW:

THE PROJECT WILL BENEFIT FROM SEDIMENT SUMP TREATMENT TANKS. HOWEVER, IT IS RECOGNIZED THAT WEATHER CONDITIONS ARE NOT ALWAYS PREDICTABLE; THERE MAY BE EXCEPTIONAL PERIODS WHEN CONSTRUCTION ACTIVITY RESULTS IN HIGHLY TURBID WATER WHICH IS NOT CONSIDERED DESIRABLE TO DISCHARGE TO THETANKS, OR LIMITED ACTIVITY IS REQUIRED THAT MAY NOT BE EASILY ACCOMMODATED BY THE SEDIMENT SUMP TREATMENT TANKS.

THE APPLICANT SHALL TAKE ALL NECESSARY ACTIONS TO ENSURE THAT ITS ACTIVITIES OR THOSE OF ITS AGENTS DO NOT RESULT IN NOTICEABLE EROSION OF SOILS OR FUGITIVE DUST EMISSIONS ON THE SITE DURING THE CONSTRUCTION AND OPERATION OF THE PROJECT COVERED BY THIS APPROVAL. IN THESE CASES THE TREATMENT TANKS SHALL BE USED.

THESE SPECIFICATIONS HAVE BEEN DEVELOPED FOR THE PURPOSE OF ADDRESSING CONSTRUCTION-DEWATERING ACTIVITIES WITH THE CONTINGENCY THAT UNPREDICTABLE WEATHER CAN CREATE. THE SPECIFICATION IS INTENDED TO "SHARE THE RISK" BETWEEN THE CONTRACTOR AND OWNER. IT IS ANTICIPATED THAT THIS METHOD WILL ALLOW THE BASE BID FOR THE PROJECT TO HAVE A REDUCED BUILT-IN CONTINGENCY COST FOR CERTAIN WEATHER-RELATED FACTORS.

ACCEPTABLE METHODS OF DISCHARGING CONSTRUCTION SITE RUNOFF:

DEWATERING OF THE CONSTRUCTION SITE SHALL BE ACCOMPLISHED USING ONE OF THE FOLLOWING MEASURES:

- THE DIRECTION OF THE RUNOFF TO THE SEDIMENTATION BASIN BY GRAVITY FLOW,FOLLOWED BY TREATMENT TANKS IF NECESSARY.
- THE PUMPING OF **DIRTBAGS** WITH A DISCHARGE TO THE TREATMENT TANKS IF NECESSARY OR THE CITY OF PORTLAND STORM DRAIN SYSTEM.
- THE PUMPING OF CONSTRUCTION SITE WATER AND COLLECTED RUNOFF TO A DIRTBAG (PATENTED PRODUCT BY ACF ENVIRONMENTAL PRODUCTS) WITH RELEASE TO THE POTENTIAL ROAD IF THE CONTRACTOR RECEIVED PORTPLAN WATER DISTRICT APPROVAL

REQUIREMENTS FOR DIRTBAGS:

THE SITE CONTRACTOR SHALL INCLUDE THE PRICE OF INSTALLING, OPERATING, AND REMOVAL AND DISPOSAL OF FOUR **DIRTBAG 55'S** AS PART OF THE BASE BID. A UNIT PRICE SHALL BE PROVIDED FOR ADDITIONAL **DIRTBAGS.**

AT ALL TIMES THERE MUST BE AN UNUSED DIRTBAG AVAILABLE FOR EMERGENCY USE.

AT ALL TIMES (AFTER INITIAL SITE PREPARATION), THE CONTRACTOR SHALL HAVE ONE **DIRTBAG** ACTIVE OR READY FOR USE. THE **DIRTBAGS** SHALL BE FIELD LOCATED BY THE CONTRACTOR BUT ARE NOT TO BE INSTALLED IN ANY "**CRITICAL**" AREA. (THE SITE CRITICAL AREAS ARE SHOWN ON THE EROSION-SEDIMENT CONTROL PLAN.) THE **DIRTBAG** SHALL BE INSTALLED ON A PREPARED SUBGRADE. THIS SUBGRADE SHALL CONSIST OF THE INSTALLATION OF A LAYER OF MIRAFI 600X, AND 12 INCHES OF CLEAN SAND AND 6 INCHES OF ½ INCH CRUSHED STONE. THE PLAN DIMENSION OF THE CRUSHED STONE PAD SHALL EXCEED THE PLAN AREA OF THE **DIRTBAG** BY AT LEAST TWO FEET IN ALL DIRECTIONS. THE **DIRTBAG** SHALL NOT BE INSTALLED ON AN UNDERLYING SLOPE OF GREATER THAN 15 PERCENT.

CONSTRUCTION DEWATERING OPERATIONS:

ALL CONSTRUCTION-DEWATERING OPERATIONS ARE THE RESPONSIBILITY OF THE SITE CONTRACTOR. IT SHALL BE THE SITE CONTRACTOR WHO IS RESPONSIBLE FOR SELECTING THE SITE FOR THE **DIRTBAG**, THE SELECTION OF THE USE OF THE **DIRTBAG** OR THE SEDIMENTATION BASIN FOR DIRECTING DEWATERING, EXCEPT THAT THE OWNER MAY DIRECT THE SITE CONTRACTOR TO ALTER THE SELECTED OPERATION IF TURBID DISCHARGE ARE OBSERVED.

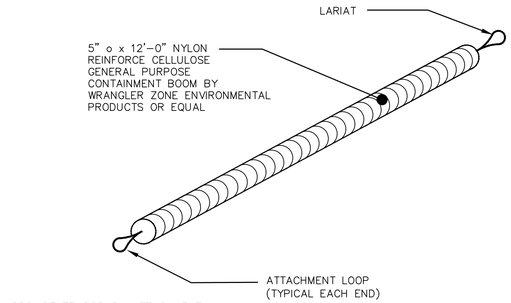
WINTER OPERATIONS:

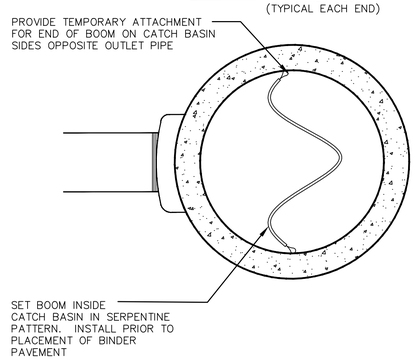
IN THE EVENT THAT WINTER OPERATIONS ARE REQUIRED, THE CONTRACTOR SHALL "POLY", ENCLOSE, AND PROVIDE TEMPORARY HEAT TO PREVENT THE **DIRTBAG** FROM SUBSTANTIAL FREEZING.

RECORD KEEPING:

THE WEEKLY EROSION-SEDIMENT CONTROL REPORTS PREPARED IN ACCORDANCE WITH THE NPDES PERMIT SHALL MAINTAIN A LOG OF THE LOCATION, USE, AND REMOVAL OF **DIRTBAGS.** IN THE EVENT THAT THE STONE UNDER THE **DIRTBAG** BECOMES HIGHLY CONTAMINATED WITH FINES, THE NEXT **DIRTBAG** SHALL BE INSTALLED IN A DIFFERENT LOCATION.

(A) DIRTBAG AND SPECIFICATIONS FOR DEWATERING DETAIL
N.T.S.

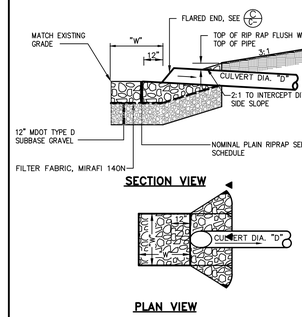




PLAN VIEW LOOKING INTO CATCH BASIN

NOTES:
1. REQUIRED FOR ALL CATCH BASINS WHICH RECEIVE RUNOFF FROM PAVED AREAS.
2. REFER TO EROSION CONTROL REPORT FOR ADDITIONAL INFORMATION.
3. CONTRACTOR MAY SELECT OTHER TYPE OF EQUIVALENT OIL ABSORBENT PRODUCTS.
4. SUBMITTALS ARE REQUIRED FOR THESE ITEMS.

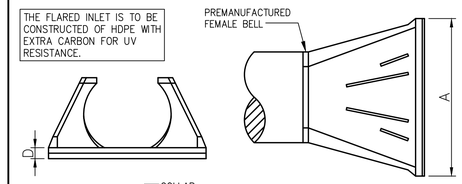
(B) TEMPORARY WATER QUALITY MEASURE INSIDE OF CATCH BASINS
N.T.S.

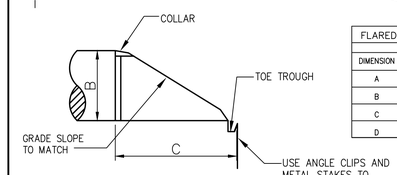


SCHEDULE			
CULVERT DIAMETER (D)	WIDTH (W)	STONE d_{50}	RIPRAP THICKNESS
12"	2'	6"	14"
15"	4'	6"	14"
18"	4'	6"	14"
24"	6'	6"	14"
30"	8'	12"	27"
36"	8'	12"	27"
42"	10'	12"	27"
48"	12'	12"	27"

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.

(C) PIPE/CULVERT INLET APRON
N.T.S.

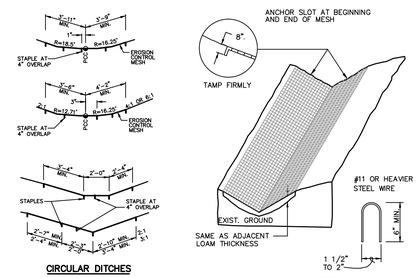




FLARED PIPE DIMENSION SCHEDULE			
	PIPE DIAMETER		
DIMENSION	10"/12"	15"	18"
A	24" MIN.*	24" MIN.*	24" MIN.*
B	14.5"	19"	22"
C	33"	34"	43"
D	6"	6"	6"

*SUBMITTALS REQUIRED

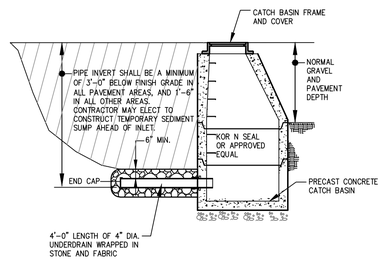
(D) FLARED INLETS FOR 10" TO 18" PIPES
N.T.S.



STAPLES AT EDGES, AT QUARTER POINTS, AT 4" OVERLAP

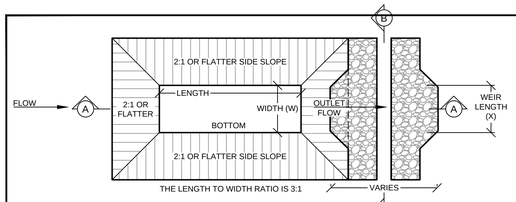
NOTE:
STAPLE SPACING AT 3' C/C ALONG MESH EXCEPT AT 4" OVERLAP WHICH SHALL BE AT 1 1/2' C/C

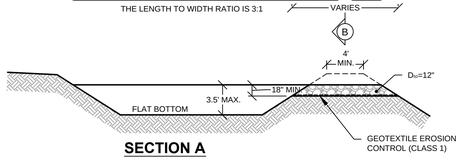
(E) EROSION CONTROL MESH
N.T.S.

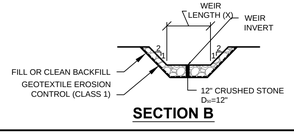


NOTE:
1. THE SUBGRADE DRAINAGE INLET SHALL BE USED TO PROVIDE SITE DRAINAGE UNTIL SUBBASE GRAVEL OR LOAM IS PLACED.
2. THIS INLET DRAIN IS REQUIRED FOR ALL CATCH BASINS OF 4'-0" DIA. OR GREATER ON THE PROJECT UNLESS CONNECTED TO PERFORATED STORM DRAIN.
3. THE CITY OF PORTLAND DPS SHALL APPROVE USE OF THE INLET DRAIN FOR ANY STRUCTURES IN THE CITY R.O.W.

(F) INLET SUBGRADE DRAINAGE DETAIL
N.T.S. FOR ONSITE CATCH BASINS ONLY





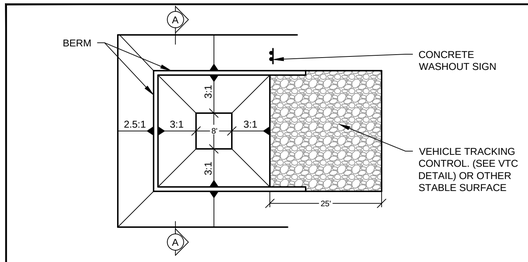


SEDIMENT TRAP NOTES

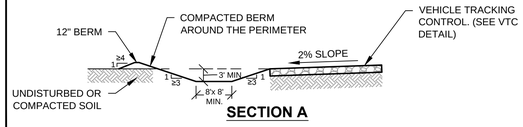
1. THE MAXIMUM STRUCTURE LIFE IS 2 YEARS.
2. THE STORAGE AREA IS 3500 CUBIC FT. PER ACRE.
3. THE MAXIMUM EMBANKMENT HEIGHT (8 FT.) SHALL BE MEASURED ON THE DOWNSTREAM SIDE.
4. THE LENGTH/WIDTH RATIO MAY BE ADJUSTED BECAUSE OF SITE CONDITIONS WHEN APPROVED BY THE ENGINEER.
5. WIDTH (W) OF THE SEDIMENT TRAP IS APPROXIMATELY EQUAL TO THE WEIR LENGTH (X).
6. SEDIMENT TRAP DESIGN SHALL BE APPROVED BY THE ENGINEER.

WEIR LENGTH TABLE	
DRAINAGE AREA (ACRES)	WEIR LENGTH (FEET)
1	41
2	6
3	8
4	10
5	12

(G) SEDIMENT TRAP
N.T.S.



CONCRETE WASHOUT AREA PLAN



CWA INSTALLATION NOTES

1. SEE PLAN VIEW FOR CWA INSTALLATION LOCATION.
2. THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON THE PROJECT.
3. CWA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8 FT. x 8 FT. SLOPES LEADING OUT OF THE SUBSURFACE PIT SHALL BE 3:1 OR FLATTER. THE PIT SHALL BE AT LEAST 3 FT. DEEP. THE CONTRACTOR MAY WANT TO INCREASE THIS SIZE.
4. BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 1 FT.
5. VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.
6. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CWA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
7. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

CWA MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. THE CWA SHALL BE REPAIRED, CLEANED OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS ACCUMULATED IN PIT SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2 FT.
5. CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB IN A WATER-TIGHT CONTAINER AND DISPOSED OF PROPERLY.
6. THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
7. WHEN THE CWA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, SEED AND MULCH OR OTHERWISE STABILIZED IN A MATTER APPROVED BY THE LOCAL JURISDICTION.

(I) CONCRETE WASHOUT AREA
N.T.S.

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE WILLIAM R. MOORE 13547 LICENSED PROFESSIONAL ENGINEER 11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT: midtown, PORTLAND, MAINE

SHEET TITLE: EROSION AND SEDIMENT CONTROL DETAILS

CLIENT: THE FEDERATED COMPANIES

FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	N.T.S.
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-DET EROS		
SHEET	C-6.1		

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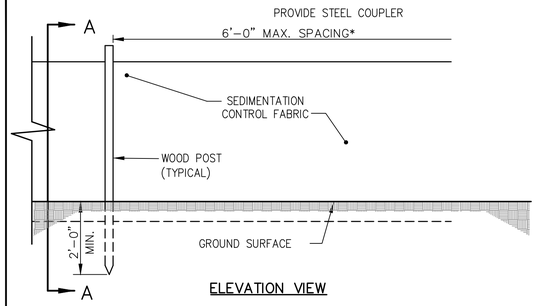
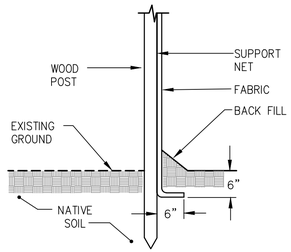


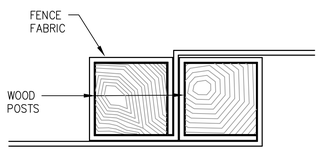
ELEVATION VIEW

*NOTE:
THE SILT FENCE SHOULD HAVE A MAXIMUM STAKING DISTANCE OF 6' UNLESS THE FENCE IS SUPPORTED BY WIRE FENCE REINFORCEMENT A MAXIMUM 14 GAUGE AND WITH A MINIMUM MESH SPACING OF 6".



SECTION A–A

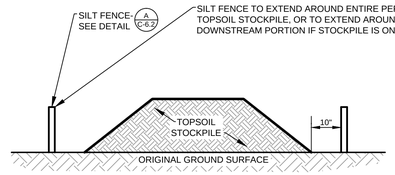
NOTE:
BOTTOM OF SILT FENCE MUST BE TOED INTO GROUND OR NO PAYMENT SHALL BE MADE. SEE EROSION / SEDIMENT CONTROL PLAN DRAWINGS FOR SILT FENCE INSTALLATION SCHEDULE.



SECTION B–B

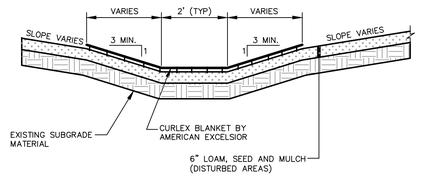
NOTE:
TYPE 1, TYPE 2 OR TYPE 3 APPLIES TO INSTALLATION PERIOD ONLY – REFER TO EROSION CONTROL PLANS.

(A) SILT FENCE DETAIL
N.T.S.



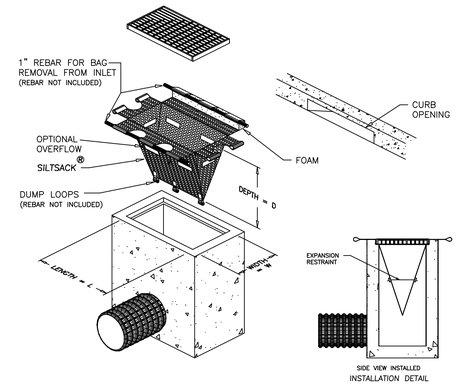
NOTES:
1. AN ON-SITE DRAINAGE SWALE SHALL BE LOCATED BETWEEN THE TOPSOIL STOCKPILE AND OFF-SITE PROPERTY.
2. REFERENCE IS MADE TO THE SILT FENCE DETAIL (A) FOR MATERIALS AND INSTALLATION METHODS.
3. IF THE STOCKPILE IS TO REMAIN FOR MORE THAN 14 DAYS, IT SHALL BE STABILIZED WITH STRAW BLANKET OR SEEDED TO MINIMIZE EROSION.
4. INSPECTION OF SILT FENCES SHALL BE AT LEAST ONCE PER WEEK AND AFTER RAIN EVENTS IN EXCESS OF HALF INCH (½") PER DAY OR EQUAL SNOW MELT. REPAIR OR REPLACEMENT OF SILT FENCE SHALL BE MADE PROMPTLY AS REQUIRED.
5. SEDIMENT TRAPPED BY THE SILT FENCES SHALL BE REMOVED AND PROPERLY DISPOSED OF WHENEVER SEDIMENT ACCUMULATION DEPTH AT THE SILT FENCE IS APPROXIMATELY EQUAL TO 12 (12) INCHES (ONE HALF OF SILT FENCE HEIGHT).
6. SILT FENCES SHALL BE MAINTAINED IN PLACE UNTIL TOPSOIL STOCKPILE HAS BEEN ELIMINATED AND SHALL BE REMOVED ONLY WHEN DIRECTED BY VILLAGE ENGINEERING.

(C) TEMPORARY TOPSOIL STOCKPILE DETAIL
N.T.S.



REFER TO GRADING PLAN FOR DITCH WIDTH AND SIDE SLOPES.

(D) VEGETATIVE DRAINAGE SWALE
N.T.S.



NOTE: REQUIRED FOR ALL INLETS

SILTSACK®
SPECIFICATIONS

NOTE: THE SILTSACK® WILL BE MANUFACTURED FROM A WOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS.

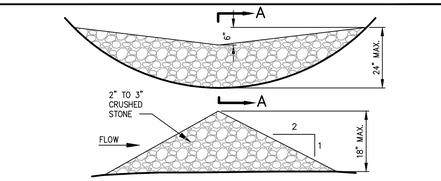
REGULAR FLOW SILTSACK ®
(FOR INLET LOCATED INTERMEDIATE ALONG DOWNHILL GRADE)
(FOR AREAS OF LOW TO MODERATE PRECIPITATION AND RUN-OFF)

PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	120 LBS
MULLEN BURST	ASTM D-3786	800 PSI
TRAPEZOID TEAR	ASTM D-4533	120 LBS
UV RESISTANCE	ASTM D-4355	80 %
APPARENT OPENING SIZE	ASTM D-4751	40 US SIEVE
FLOW RATE	ASTM D-4491	40 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	0.55 SEC -1

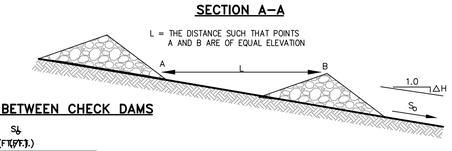
HI-FLOW SILTSACK ®
(FOR USE IN LOW POINTS/SAGS)
(FOR AREAS OF MODERATE TO HEAVY PRECIPITATION AND RUN-OFF)

PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	135 LBS
MULLEN BURST	ASTM D-3786	420 PSI
TRAPEZOID TEAR	ASTM D-4533	45 LBS
UV RESISTANCE	ASTM D-4355	90 %
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	200 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	1.5 SEC -1

(E) SILT SACK® DETAIL AND SPECIFICATIONS
N.T.S.



SECTION A–A

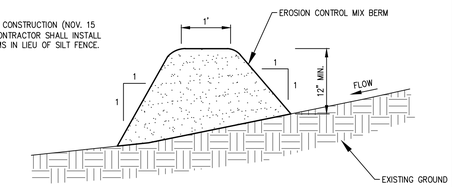


SPACING BETWEEN CHECK DAMS

S_b (FT/FT.)	
0.020	75
0.030	50
0.040	40
0.050	30
0.080	20
0.100	10

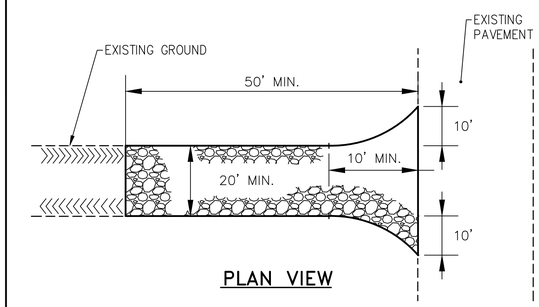
(G) STONE CHECK DAM
N.T.S.

NOTE:
DURING PERIODS OF WINTER CONSTRUCTION (NOV. 15 THROUGH APRIL 15), THE CONTRACTOR SHALL INSTALL EROSION CONTROL MIX BERMS IN LIEU OF SILT FENCE.



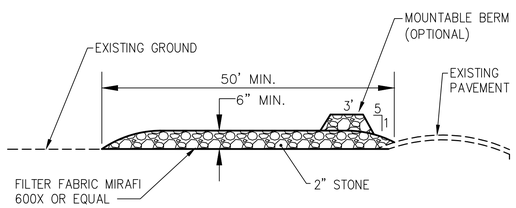
EROSION CONTROL MIX:
EROSION CONTROL MIX SHALL CONTAIN A WELL-GRADED MIXTURE OF PARTICLE SIZES & MAY CONTAIN ROCKS LESS THAN 4" IN DIAMETER. EROSION CONTROL MIX MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH. THE MIX COMPOSITION SHALL MEET THE FOLLOWING STANDARDS:
- 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.

(H) EROSION CONTROL MIX BERM DETAIL
N.T.S.



PLAN VIEW

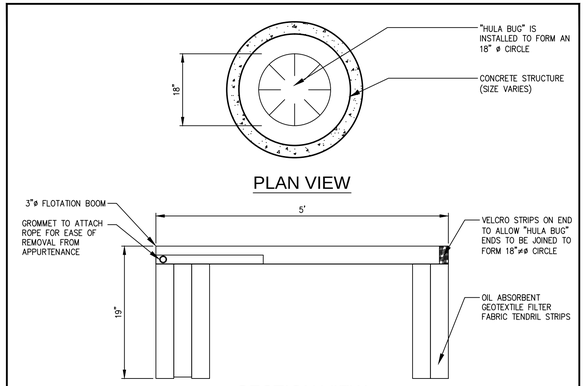
NOTE:
CONTRACTOR SHALL ADD STONE TO OR REMOVE AND RECONSTRUCT THE STABILIZED CONSTRUCTION ENTRANCE AS MUD/SILT MATERIAL ACCUMULATES



SECTION VIEW

NOTE:
LOCATIONS SHOWN ON PLAN 6.0. SEE PROJECT PHASING FOR TIMING OF IMPLEMENTATION OF EACH ENTRANCE

(B) STABILIZED CONSTRUCTION ENTRANCE
N.T.S.

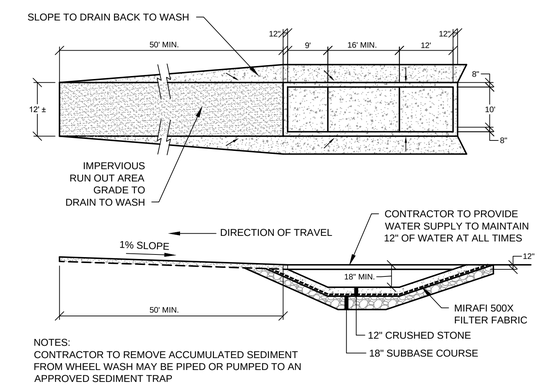


PLAN VIEW

SECTION VIEW

NOTE:
THIS DETAIL ILLUSTRATES THE "HULA BUG" BY ECO-TEC, INC. OR EQUIVALENT PRODUCTS ARE ACCEPTABLE.

(F) OIL SORBANT BOOM
N.T.S. (TO BE SET IN ALL CATCH BASINS PRIOR TO PAVING)



NOTES:
CONTRACTOR TO REMOVE ACCUMULATED SEDIMENT FROM WHEEL WASH MAY BE PIPED OR PUMPED TO AN APPROVED SEDIMENT TRAP

(I) WHEEL WASH
N.T.S.

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE — WILLIAM R. MOORE — 13547 — 11/14/14 — LICENSED — PROFESSIONAL ENGINEER

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT: midtown
PORTLAND, MAINE

SHEET TITLE: EROSION AND SEDIMENT CONTROL DETAILS

CLIENT: THE FEDERATED COMPANIES

FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	N.T.S.
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-DET EROS		
SHEET	C-6.2		

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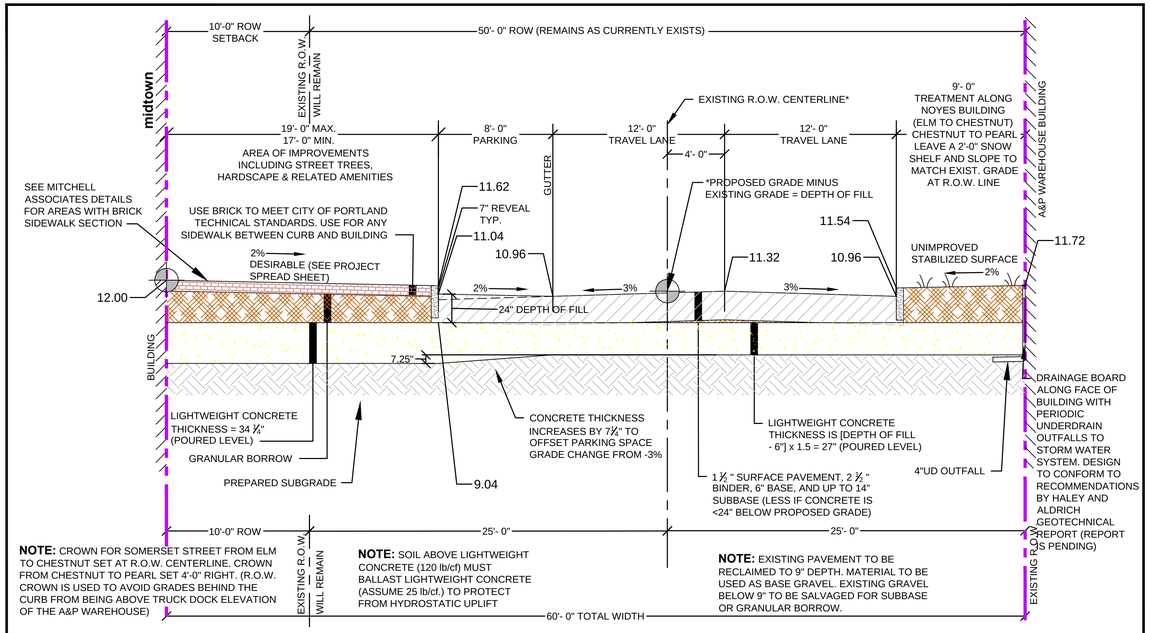


NOTE: CROWN FOR SOMERSET STREET FROM ELM TO CHESTNUT SET AT R.O.W. CENTERLINE. CROWN FROM CHESTNUT TO PEARL SET 4'-0" RIGHT. (R.O.W. CROWN IS USED TO AVOID GRADES BEHIND THE CURB FROM BEING ABOVE TRUCK DOCK ELEVATION OF THE A&P WAREHOUSE)

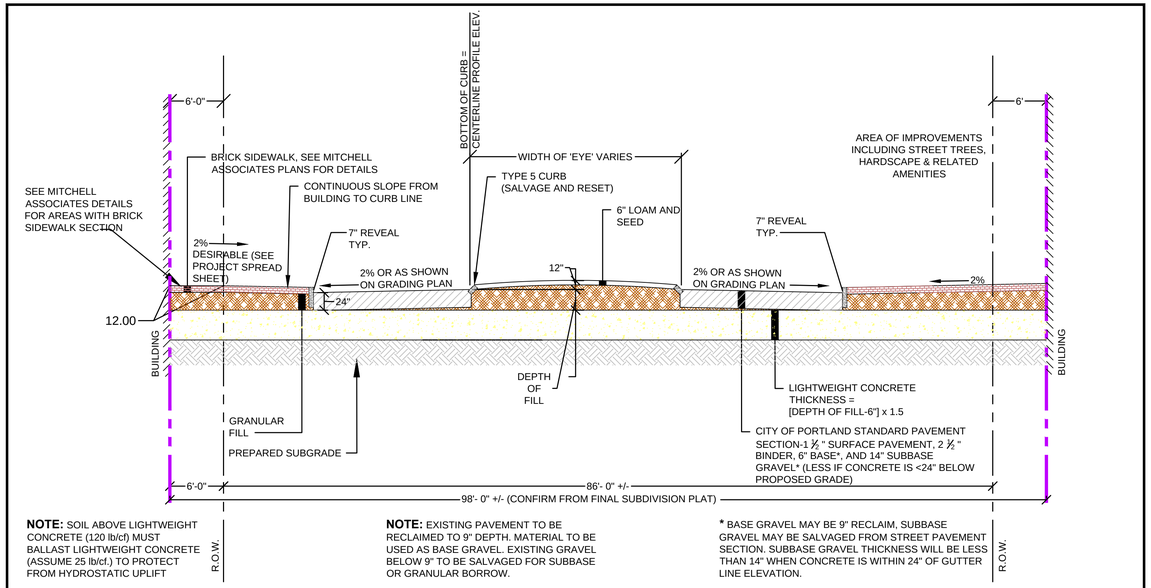
NOTE: SOIL ABOVE LIGHTWEIGHT CONCRETE (120 lb/cf) MUST BALLAST LIGHTWEIGHT CONCRETE (ASSUME 25 lb/cf.) TO PROTECT FROM HYDROSTATIC UPLIFT

NOTE: EXISTING PAVEMENT TO BE RECLAIMED TO 9" DEPTH. MATERIAL TO BE USED AS BASE GRAVEL. EXISTING GRAVEL BELOW 9" TO BE SALVAGED FOR SUBBASE OR GRANULAR BORROW.

SOMERSET STREET CROSS SECTION ILLUSTRATING RAISING GRADE BY 24"

NOT TO SCALE

03.26.13	REVISED TO ALLOW 6" OF FILL BEFORE LIGHT WEIGHT CONCRETE IS REQUIRED PER DISCUSSION OF 03.13.13 WITH WAYNE CHADBORNE OF HALEY & ALDRICH



NOTE: SOIL ABOVE LIGHTWEIGHT CONCRETE (120 lb/cf) MUST BALLAST LIGHTWEIGHT CONCRETE (ASSUME 25 lb/cf.) TO PROTECT FROM HYDROSTATIC UPLIFT

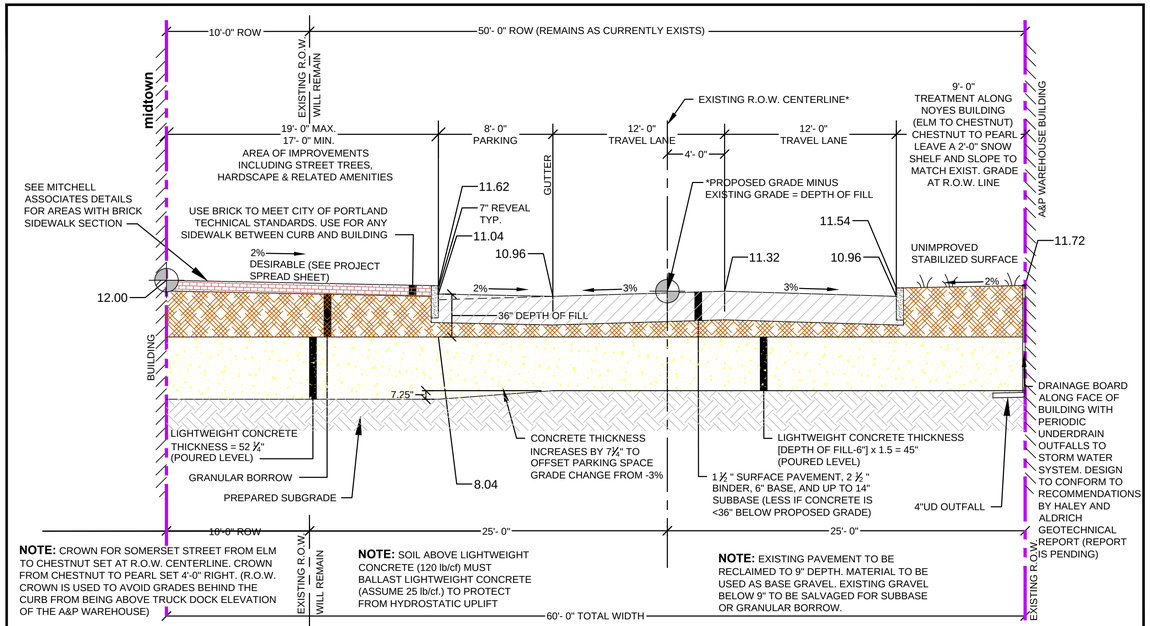
NOTE: EXISTING PAVEMENT TO BE RECLAIMED TO 9" DEPTH. MATERIAL TO BE USED AS BASE GRAVEL. EXISTING GRAVEL BELOW 9" TO BE SALVAGED FOR SUBBASE OR GRANULAR BORROW.

* BASE GRAVEL MAY BE 9" RECLAIM, SUBBASE GRAVEL MAY BE SALVAGED FROM STREET PAVEMENT SECTION. SUBBASE GRAVEL THICKNESS WILL BE LESS THAN 14" WHEN CONCRETE IS WITHIN 24" OF GUTTER LINE ELEVATION.

CHESTNUT STREET

TYPICAL SECTION NORTHWESTERLY OF SOMERSET STREET

NOT TO SCALE



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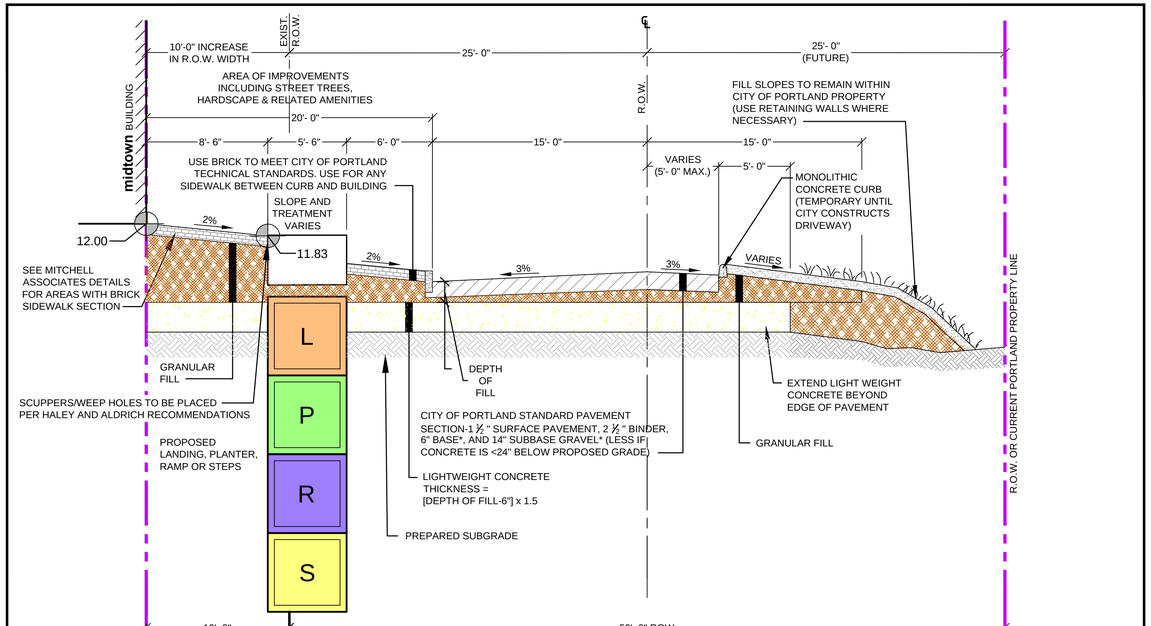
NOTE: SOIL ABOVE LIGHTWEIGHT CONCRETE (120 lb/cf) MUST BALLAST LIGHTWEIGHT CONCRETE (ASSUME 25 lb/cf.) TO PROTECT FROM HYDROSTATIC UPLIFT

NOTE: EXISTING PAVEMENT TO BE RECLAIMED TO 9" DEPTH. MATERIAL TO BE USED AS BASE GRAVEL. EXISTING GRAVEL BELOW 9" TO BE SALVAGED FOR SUBBASE OR GRANULAR BORROW.

SOMERSET STREET CROSS SECTION ILLUSTRATING RAISING GRADE BY 36"

NOT TO SCALE

03.26.13	REVISED TO ALLOW 6" OF FILL BEFORE LIGHT WEIGHT CONCRETE IS REQUIRED PER DISCUSSION OF 03.13.13 WITH WAYNE CHADBORNE OF HALEY & ALDRICH



CROSS SECTION OF DRIVEWAY ON FUTURE **midtown** PEARL STREET EXTENSION

NOT TO SCALE

03.27.13	REVISED TO SHOW LIGHT WEIGHT CONCRETE

NOTE: SECTIONS ARE SUBJECT TO RECEIPT AND FINAL REVIEW OF THE GEOTECHNICAL REPORT FOR THE FEDERATED COMPANIES

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE WILLIAM R. MOORE 13547 LICENSED PROFESSIONAL ENGINEER 11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT: midtown
PORTLAND, MAINE

SHEET TITLE: STREET AND DRIVEWAY CROSS SECTIONS

CLIENT: THE FEDERATED COMPANIES

FST 100 YEARS

FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	LA	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	N.T.S.
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-DETAIL SHEETS		
SHEET	C-7.0		

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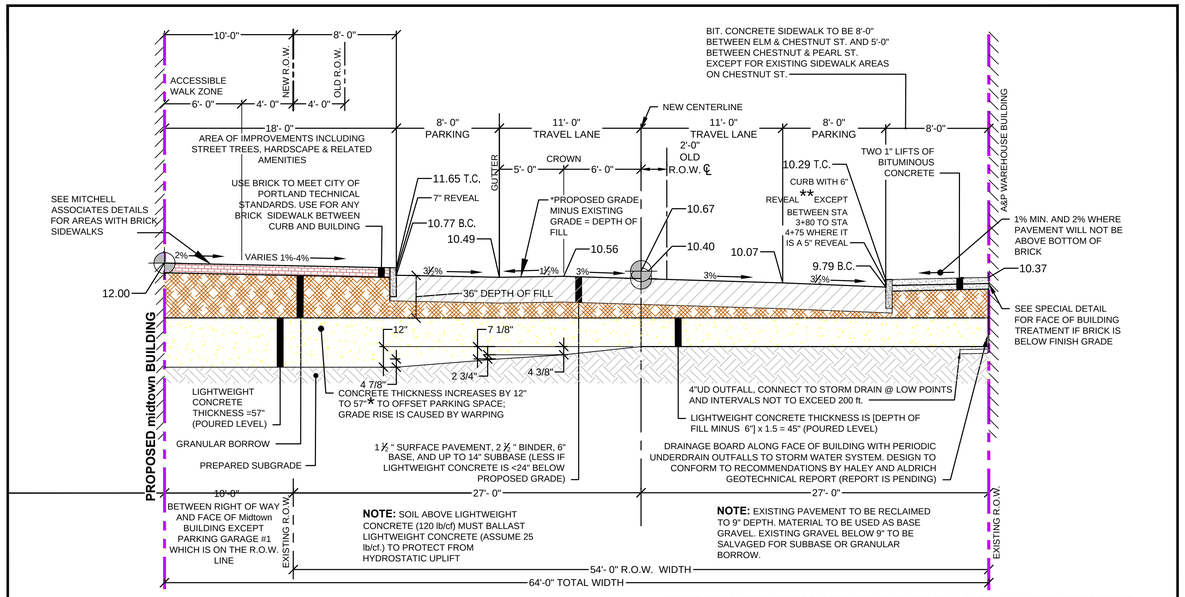


OFFSET CROWN INCREASES TO 7'-0" BETWEEN STA 3+80 TO STA 4+60, SIDEWALK ON SOMERSET STREET CROSS SLOPE TO BE 2% IN AREAS WHERE BACK OF SIDEWALK ON THE NOYES SIDE OF THE STREET WILL NOT GO ABOVE THE BOTTOM OF THE BRICK ON THE NOYES BUILDING

* THESE DIMENSIONS ARE 1.5 x (THE CHANGE FROM NORMAL 3% GRADE i.e. .05 x 8= .60 ft.)

** THERE ARE THREE AREAS WHERE CURB IS FLUSH IN FRONT OF LOADING DOCKS, SEE SCHEDULE

MODIFIED CROSS SECTION OF SOMERSET STREET FROM STA 3+25 TO STA 7+20

NOT TO SCALE

SCHEDULE OF SPECIAL CURB TIPDOWNS AND FLUSH CURB (EXCLUDES NORMAL SIDEWALK RAMPS) ALONG THE SOUTHERLY SIDE OF THE SIDEWALK IN FRONT OF THE NOYES BUILDING

STATION TO STATION		CURB TYPE
3+71	3+82	TIPDOWN
3+82	3+94	FLUSH CURB IN FRONT OF LOADING DOCK 4
3+94	4+05	TIPDOWN
6+39	6+50	TIPDOWN
6+50	6+62	FLUSH CURB IN FRONT OF LOADING DOCK 11
6+62	6+73	TIPDOWN
6+82	6+93	TIPDOWN
6+93	7+05	FLUSH CURB IN FRONT OF LOADING DOCK 12
7+05	7+16	TIPDOWN

GRADES ON THE LEFT SIDE OF SOMERSET STREET IN FRONT OF MIDTOWN

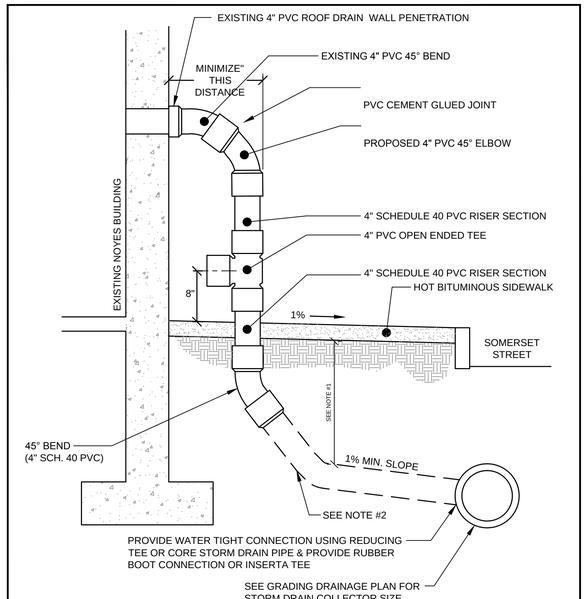
Station	Normal Centerline Grade	11' Left	19' Left	31' Left	Average Grade 19' to 31' Left	Grade 31' Left to Building (37' Left)	Condition
3+50	10.38	10.22	11.18	11.88	5.83%	2.00%	Mountable Curb at Service Entrance
3+75	10.70	10.54	11.44	11.88	3.71%	2.00%	Parking
4+00	10.86	10.70	11.02	11.88	2.38%	2.00%	Landscape
4+25	10.85	10.69	11.01	11.88	2.46%	2.00%	Parking
4+50	10.73	10.57	10.89	11.88	3.46%	2.00%	Parking
4+75	10.63	10.47	10.79	11.88	4.29%	2.00%	Parking
5+00	10.61	10.45	10.77	11.88	4.46%	2.00%	Parking
5+25	10.65	10.49	10.81	11.88	4.12%	2.00%	Landscape
5+50	10.76	10.60	11.50	11.88	3.21%	2.00%	Landscape
5+75	10.87	10.71	11.61	11.88	2.29%	2.00%	Landscape
6+00	10.91	10.75	11.72	11.88	1.33%	2.00%	Mountable Curb at Service Entrance
6+25	10.89	10.73	11.05	11.88	2.12%	2.00%	Parking
6+50	10.80	10.64	10.96	11.88	2.87%	2.00%	Landscape
6+75	10.72	10.56	10.88	11.88	3.54%	2.00%	Parking
7+00	10.76	10.60	11.50	11.88	3.21%	2.00%	Landscape
7+25	10.90	10.74	11.06	11.88	6.83%	2.00%	ADA Ramp

PROPOSED ELEVATIONS AT NOYES PROVIDED AT 25' STATIONS

Somerset Street Station	Old Centerline (Nov. 2013)	New Centerline (Normal)	6' Offset Crown	Grade at 11' Right	Gutter at 19' Right	Top of Curb Right	Bottom of Brick	Grade at Face of the Noyes Building	Distance from Bottom of Brick to Sidewalk Grade (in.)	Centerline Elevation with Offset Crown	Curb at Gutter
3+50	10.81	10.38	0.27	9.78	9.50	10.00	10.65	10.08	6.84	10.11	Flush
3+75	11.21	10.70	0.27	10.10	9.82	10.32	10.57	10.40	2.04	10.43	6"
4+00	11.41	10.86	0.32	10.21	9.93	10.35	10.52	10.43	1.08	10.54	5"
4+25	11.42	10.85	0.32	10.20	9.92	10.34	10.51	10.42	1.08	10.53	5"
4+50	11.30	10.73	0.32	10.08	9.80	10.22	10.49	10.30	2.28	10.41	5"
4+75	11.21	10.63	0.32	9.98	9.70	10.12	10.63	10.20	5.16	10.31	5"
5+00	11.18	10.61	0.27	10.01	9.73	10.23	10.64	10.31	3.96	10.34	6"
5+25	11.21	10.65	0.27	10.05	9.77	10.27	10.68	10.35	3.96	10.38	6"
5+50	11.30	10.76	0.27	10.16	9.88	10.38	10.74	10.46	3.36	10.49	6"
5+75	11.39	10.87	0.27	10.27	9.99	10.49	10.86	10.57	3.48	10.60	6"
6+00	11.42	10.91	0.27	10.31	10.03	10.53	10.86	10.61	3.00	10.64	6"
6+25	11.39	10.89	0.27	10.29	10.01	10.51	10.85	10.59	3.12	10.62	6"
6+50	11.30	10.80	0.27	10.20	9.92	9.92	10.90	10.00	10.80	10.53	Flush
6+75	11.21	10.72	0.27	10.12	9.84	10.34	10.96	10.42	6.48	10.45	6"
7+00	11.20	10.76	0.27	10.16	9.88	9.88	11.02	9.96	12.72	10.49	Flush
7+25	11.26	10.90	0.00	10.57	10.29	10.79	11.02	10.87	1.80	10.90	6"

1. The profile in the drawing set shows the design centerline.
2. Refer to Drawing C-7.0A for cross section between Station 3+25 and 7+20.

FAY, SPOFFORD AND THORNDIKE
778 MAIN STREET, SUITE 8
SOUTH PORTLAND, ME 04106

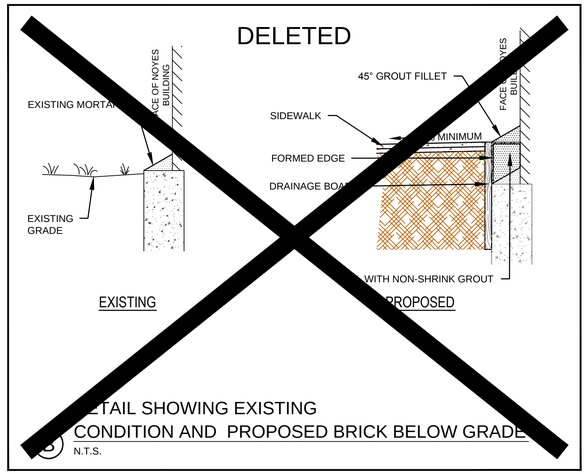


NOTES:

1. FOR ALL DEPTHS OF COVER LESS THAN TWO (2) FEET, PIPE MUST BE SCHEDULE 40 PVC. FOR DEPTHS OF COVER GREATER THAN TWO (2) FEET, FLEXIBLE PIPE MAY BE USED. REFER TO SPECIFICATIONS FOR ALLOWABLE PIPE TYPES.
2. A WATERTIGHT CONNECTION SHALL BE MAINTAINED WITH ANY TRANSITION FROM SCHEDULE 40 PVC PIPE TO ANY OTHER PIPE TYPE.
3. OPEN TEE TO BE INSTALLED JUST ABOVE GRADE

NOYES BUILDING ROOF DRAIN OUTFALL HARDPIPE DETAIL

(A) N.T.S.



DETAIL SHOWING EXISTING CONDITION AND PROPOSED BRICK BELOW GRADE

(B) N.T.S.

SUMMARY OF GRADES ALONG NOYES LOADING DOCKS

DESCRIPTION	LOCATION	DOCK ELEVATION	PROPOSED ELEVATION	DIFFERENCE BETWEEN DOCK AND FINISH GRADE (INCHES)	MEASURED DOCK TO BOTTOM OF BRICK (INCHES)	ELEVATION OF BOTTOM OF BRICK	IS PROPOSED GRADE HIGHER THAN BOTTOM OF BRICK?	CONDITION	DISTANCE BETWEEN BRICK AND PROPOSED GRADE (INCHES)
DOCK 1	STATION 2+97.5 - 3+05.4	11.60	10.11	17.88	11	10.68	No	6" Curb	6.9
DOCK 2	STATION 3+19.4 - 3+31.3	11.65	10.31	16.08	12	10.65	No	6" Curb	4.1
DOCK 3	STATION 3+43.3 - 3+51.3	11.65	10.27	16.56	12	10.65	No	6" Curb	4.6
DOCK 4	STATION 3+82.7 - 3+94.1	11.61	10.13	17.76	13	10.53	No	Flush Curb	4.8
DOCK 5	STATION 4+37.5 - 4+52.2	11.49	10.46	12.36	12	10.49	Yes	5" Curb	0.4
DOCK 6	STATION 4+59.5 - 4+71.6	11.49	10.42	12.84	12	10.49	Yes	5" Curb	0.8
DOCK 7	STATION 4+81.5 - 4+93.3	11.46	10.33	13.56	10	10.63	No	6" Curb	3.6
DOCK 8	STATION 5+42.6 - 5+54.5	11.63	10.45	14.16	9	10.88	No	6" Curb	5.2
DOCK 9	STATION 5+85.5 - 5+97.6	11.72	10.63	13.08	10	10.89	No	6" Curb	3.1
DOCK 10	STATION 6+04.9 - 6+08.0	11.72	10.63	13.08	11	10.80	No	6" Curb	2.1
DOCK 11	STATION 6+50.0 - 6+62.1	10.90	9.90	12.00	0	10.90	No	Flush Curb	12.0
DOCK 12	STATION 6+92.9 - 7+05.0	11.02	9.99	12.36	0	11.02	No	Flush Curb	12.4

FAY, SPOFFORD & THORNDIKE
778 Main Street, Suite 8
South Portland, ME 04106

NOTE: SECTIONS ARE SUBJECT TO RECEIPT AND FINAL REVIEW OF THE GEOTECHNICAL REPORT FOR THE FEDERATED COMPANIES

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE WILLIAM R. MOORE 13547 LICENSED PROFESSIONAL ENGINEER 11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT: midtown, PORTLAND, MAINE

SHEET TITLE: MISCELLANEOUS SECTIONS AND DETAILS

CLIENT: THE FEDERATED COMPANIES

FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	LA	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	N.T.S.
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-DETAIL SHEETS		
SHEET	C-7.0A		

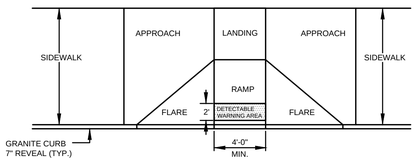
R:\3062B - Midtown Amended - Portland, ME\Cadd\Permit Set\dwg\3062-DETAIL SHEETS.dwg davis_d 11/14/2014 10:51 AM

NOTES:

ALL RAMPS SHALL COMPLY WITH ADA STANDARDS.

GRANITE CURB ADJACENT TO RAMP SHALL BE FLUSH WITH STREET.

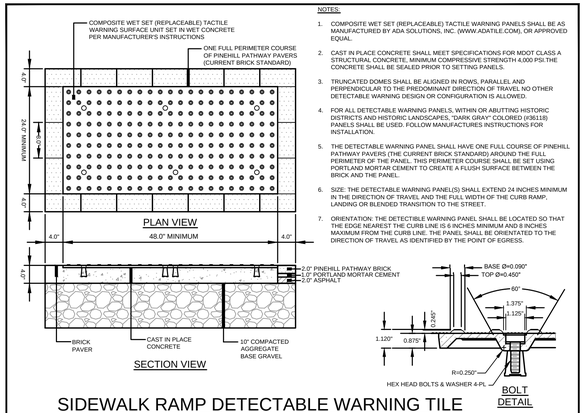
DESIGN ELEMENT	SLOPE IN DIRECTION OF TRAVEL	CROSS SLOPE
APPROACH	8.33% MAXIMUM	2%
LANDING	2%	2%
RAMP	8.33% MAXIMUM	MATCH STREET GRADE
FLARE	10% MAX. AT CURB FACE	-
SIDEWALK	MATCH STREET GRADE	2%



PLAN VIEW

PERPENDICULAR ADA RAMP LAYOUT FOR WIDE SIDEWALK WITH NO ESPLANADE

A N.T.S.



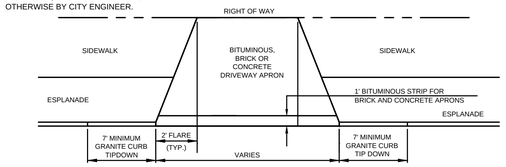
NOTES:

1. COMPOSITE WET SET (REPLACEABLE) TACTILE WARNING PANELS SHALL BE AS MANUFACTURED BY ADA SOLUTIONS, INC. (WWW.ADATILE.COM), OR APPROVED EQUAL.
2. CAST IN PLACE CONCRETE SHALL MEET SPECIFICATIONS FOR MDOT CLASS A STRUCTURAL CONCRETE, MINIMUM COMPRESSIVE STRENGTH 4,000 PSI.THE CONCRETE SHALL BE SEALED PRIOR TO SETTING PANELS.
3. TRUNCATED DOMES SHALL BE ALIGNED IN ROWS, PARALLEL AND PERPENDICULAR TO THE PREDOMINANT DIRECTION OF TRAVEL NO OTHER DETECTABLE WARNING DESIGN OR CONFIGURATION IS ALLOWED.
4. FOR ALL DETECTABLE WARNING PANELS, WITHIN OR ABUTTING HISTORIC DISTRICTS AND HISTORIC LANDSCAPES, "DARK GRAY" COLORED (#36118) PANELS SHALL BE USED. FOLLOW MANUFACTURES INSTRUCTIONS FOR INSTALLATION.
5. THE DETECTABLE WARNING PANEL SHALL HAVE ONE FULL COURSE OF PINEHILL PATHWAY PAVERS (THE CURRENT BRICK STANDARD) AROUND THE FULL PERIMETER OF THE PANEL. THIS PERIMETER COURSE SHALL BE SET USING PORTLAND MORTAR CEMENT TO CREATE A FLUSH SURFACE BETWEEN THE BRICK AND THE PANEL.
6. SIZE: THE DETECTABLE WARNING PANEL(S) SHALL EXTEND 24 INCHES MINIMUM IN THE DIRECTION OF TRAVEL AND THE FULL WIDTH OF THE CURB RAMP. LANDING OR BLENDED TRANSITION TO THE STREET.
7. ORIENTATION: THE DETECTIBLE WARNING PANEL SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS 6 INCHES MINIMUM AND 8 INCHES MAXIMUM FROM THE CURB LINE. THE PANEL SHALL BE ORIENTATED TO THE DIRECTION OF TRAVEL AS IDENTIFIED BY THE POINT OF EGRESS.

SIDEWALK RAMP DETECTABLE WARNING TILE (HISTORIC DISTRICTS AND LANDSCAPES)

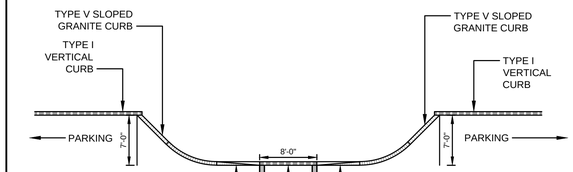
D N.T.S.

NOTE
MATCH GRADE OF EXISTING DRIVEWAY AT R.O.W. LINE, EXCEPT WHEN DIRECTED OTHERWISE BY CITY ENGINEER.



DRIVEWAY APRON LAYOUT

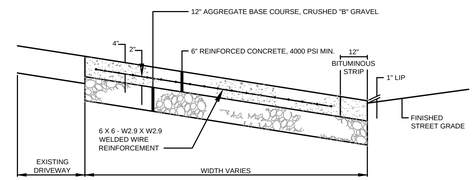
F N.T.S.



NOTE: SEE SITE PLAN FOR SIZES OF "BUMPOUTS"

TYPICAL "BUMPOUT" ALONG SOMERSET STREET

J N.T.S.



REINFORCED CONCRETE DRIVEWAY APRON

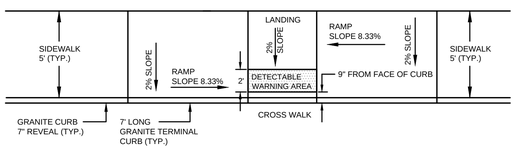
G N.T.S.

NOTES:

ALL RAMPS SHALL COMPLY WITH ADA STANDARDS.

GRANITE CURB ADJACENT TO LANDING SHALL BE FLUSH WITH STREET.

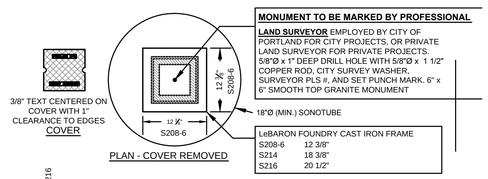
SIDEWALK MATERIAL PER CITY SIDEWALK MATERIAL POLICY.

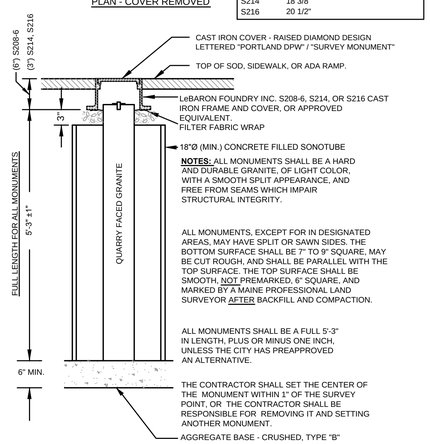


PLAN VIEW

PARALLEL ADA RAMP LAYOUT FOR NARROW SIDEWALK WITH NO ESPLANADE

B N.T.S.





NOTES: ALL MONUMENTS SHALL BE A HARD AND DURABLE GRANITE, OF LIGHT COLOR, WITH A SMOOTH SPLIT APPEARANCE, AND FREE FROM SEAMS WHICH IMPAIR STRUCTURAL INTEGRITY.

ALL MONUMENTS, EXCEPT FOR IN DESIGNATED AREAS, MAY HAVE SPLIT OR SAWN SIDES. THE BOTTOM SURFACE SHALL BE 7" TO 9" SQUARE, MAY BE CUT ROUGH, AND SHALL BE PARALLEL WITH THE TOP SURFACE. THE TOP SURFACE SHALL BE SMOOTH, NOT PREMARKED, 6" SQUARE, AND MARKED BY A MAINE PROFESSIONAL LAND SURVEYOR AFTER BACKFILL AND COMPACTION.

ALL MONUMENTS SHALL BE A FULL 5'-3" IN LENGTH, PLUS OR MINUS ONE INCH, UNLESS THE CITY HAS PREAPPROVED AN ALTERNATIVE.

THE CONTRACTOR SHALL SET THE CENTER OF THE MONUMENT WITHIN 1" OF THE SURVEY POINT, OR THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING IT AND SETTING ANOTHER MONUMENT.

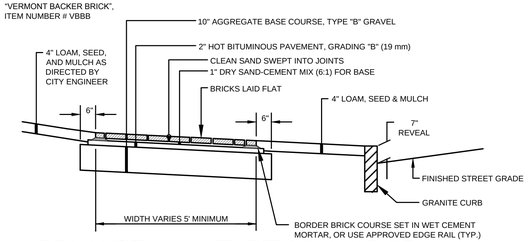
GRANITE STREET MONUMENT

E N.T.S.

BRICKS TO BE USED:

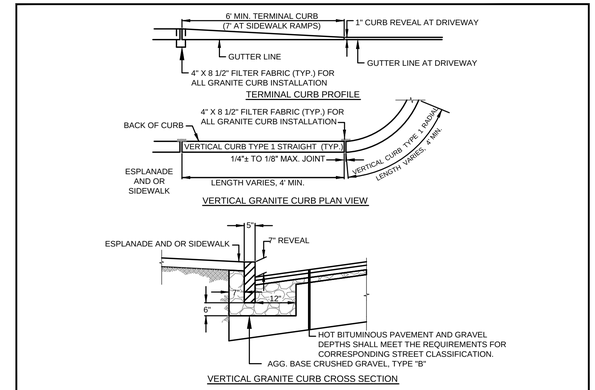
NEW CONSTRUCTION:
4"x8" PINE HALL PATHWAY PAVER BRICK; MFG. BY PINE HALL BRICK CO., MADISON, NORTH CAROLINA.
LACHANCE ITEM # 193623, PINE HALL PATHWAY PAVER BRICK.

REPAIR /MAINTENANCE TO EXISTING BRICK SIDEWALKS: VERMONT PAVER; SUPPLIED BY GAGNE AND SONS.
SPECIFICATION NUMBER:
"VERMONT BACKER BRICK",
ITEM NUMBER # VBBB



BRICK SIDEWALK WITH BITUMINOUS BASE

H N.T.S.



VERTICAL GRANITE CURB FULL DEPTH STREET CONSTRUCTION

K N.T.S.

NOTES:

ALL RAMPS SHALL COMPLY WITH ADA STANDARDS.

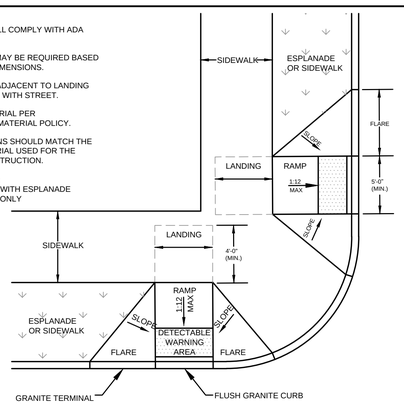
LANDING AREA MAY BE REQUIRED BASED ON SIDEWALK DIMENSIONS.

GRANITE CURB ADJACENT TO LANDING SHALL BE FLUSH WITH STREET.

SIDEWALK MATERIAL PER CITY SIDEWALK MATERIAL POLICY.

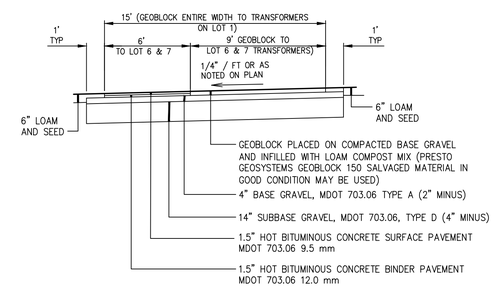
FLARED SECTIONS SHOULD MATCH THE SURFACE MATERIAL USED FOR THE SIDEWALK CONSTRUCTION.

FLARE MINIMUM:
4'-0" - SIDEWALK WITH ESPLANADE
7'-0" - SIDEWALK ONLY



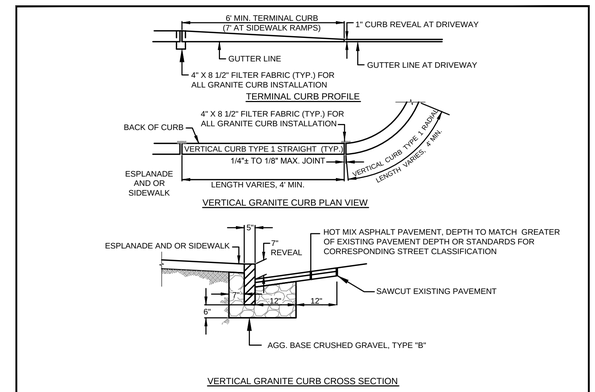
PREFERRED SIDEWALK ADA RAMP AT INTERSECTION

C N.T.S.



GEOBLOCK DRIVE SECTION

I N.T.S.



VERTICAL GRANITE CURB INSTALLATION IN EXISTING STREETS

L N.T.S.

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE WILLIAM R. MOORE 13547 LICENSED PROFESSIONAL ENGINEER 11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT: midtown
PORTLAND, MAINE

SHEET TITLE: TRANSPORTATION SYSTEMS AND STREET DESIGN

CLIENT: THE FEDERATED COMPANIES

FST 150 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	NTS
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-DETAIL SHEETS		
SHEET	C-7.1		

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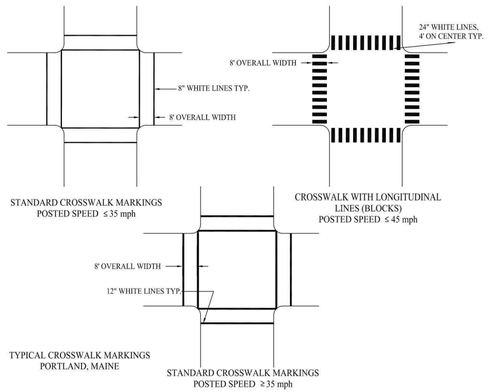
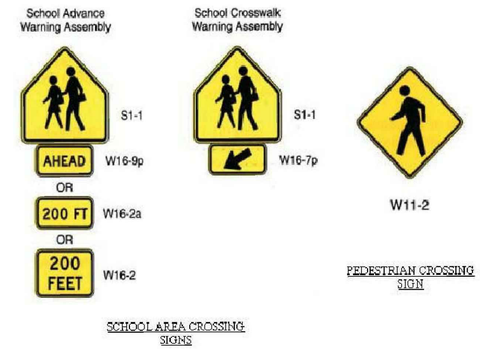


A TYPICAL CROSSWALK MARKINGS
N.T.S.

B UNSIGNALIZED PEDESTRIAN CROSSWALK SIGNAGE
N.T.S.



C TYPICAL CROSSWALK SIGNAGE
N.T.S.

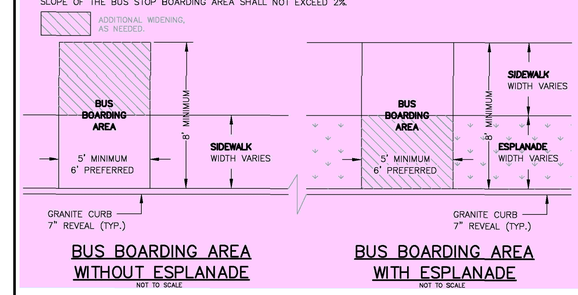
NOTES:

1. SURFACE. BUS STOP BOARDING AREAS SHALL HAVE A FIRM, STABLE SURFACE.

2. DIMENSIONS. BUS STOP BOARDING AREAS SHALL PROVIDE A CLEAR LENGTH OF 8' MINIMUM, MEASURED PERPENDICULAR TO THE CURB OR VEHICLE ROADWAY EDGE, AND A CLEAR WIDTH OF 5' MINIMUM, MEASURED PARALLEL TO THE VEHICLE ROADWAY. THIS AREA SHALL BE CLEAR OF ANY OBSTRUCTIONS, INCLUDING BUT NOT LIMITED TO: BICYCLE RACKS, LIGHT POLES, UTILITY POLES, FIRE HYDRANTS, STREET SIGNS, STREET FURNITURE, NEWSPAPER BOXES OR SIMILAR OBSTACLES.

3. CONNECTION. BUS STOP BOARDING AREAS SHALL BE CONNECTED TO STREETS, SIDEWALKS OR PEDESTRIAN PATHS BY AN ADA ACCESSIBLE ROUTE.

4. SLOPE. PARALLEL TO THE ROADWAY, THE SLOPE OF THE BUS STOP BOARDING AREA SHALL BE THE SAME AS THE ROADWAY, TO THE MAXIMUM EXTENT PRACTICABLE. PERPENDICULAR TO THE ROADWAY, THE SLOPE OF THE BUS STOP BOARDING AREA SHALL NOT EXCEED 2%.



D BUS STOP BOARDING AREA LAYOUT
N.T.S.

B1

B2

B3

C1

C2

E1

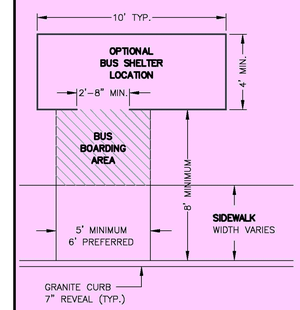
E2

F1

F2

G1

G2



NOTES:

1. DIMENSIONS. MINIMUM CLEAR FLOOR INTERIOR AREA ENTIRELY WITHIN THE PERIMETER OF THE SHELTER IS 2'-6" WIDE BY 4' DEEP TO PERMIT WHEELCHAIR OR MOBILITY AID USER ACCESS. THE MINIMUM SHELTER OPENING FOR WHEELCHAIR ACCESS IS 2'-8".

2. CONNECTION. BUS SHELTER OPENINGS WILL BE CONNECTED TO THE BUS BOARDING AREA BY AN ADA ACCESSIBLE ROUTE.

3. SLOPE. PARALLEL TO THE ROADWAY, THE SLOPE OF THE BUS BOARDING AREA SHALL BE THE SAME AS THE ROADWAY, TO THE MAXIMUM EXTENT PRACTICABLE. PERPENDICULAR TO THE ROADWAY, THE SLOPE OF THE BUS BOARDING AREA SHALL NOT EXCEED 2%.

ADDITIONAL WIDENING, AS NEEDED.

E BUS SHELTER AND SHELTER SITING LAYOUT
N.T.S.

PRELIMINARY - NOT FOR CONSTRUCTION

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FILE NAME:	3062-DETAIL SHEETS		
SHEET	C-7.2		

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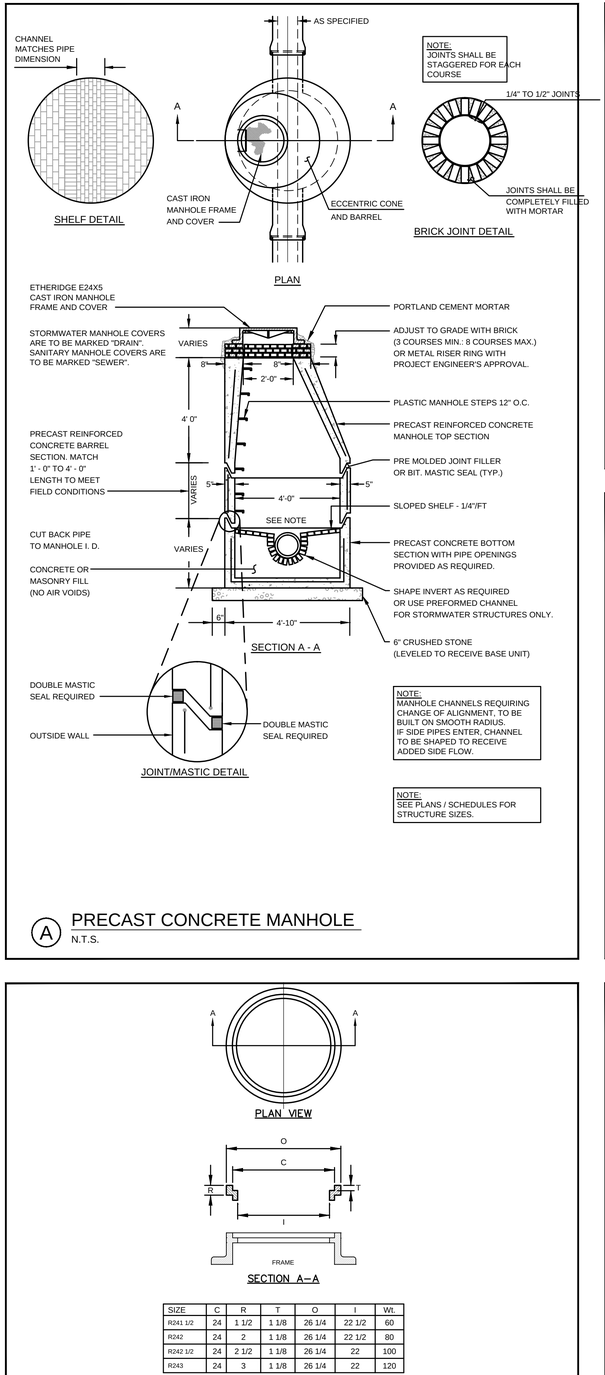
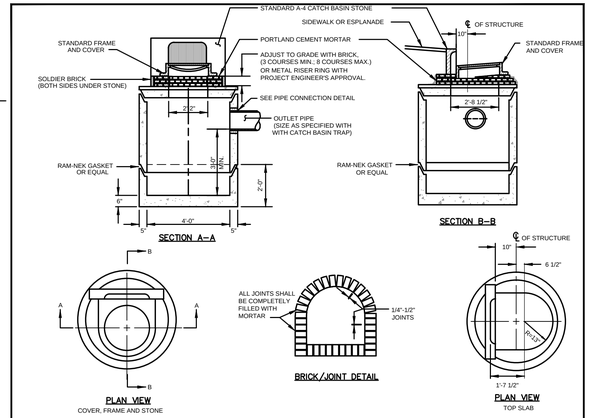
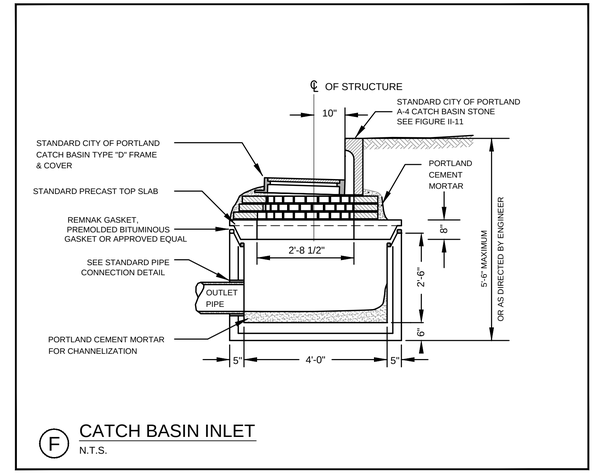


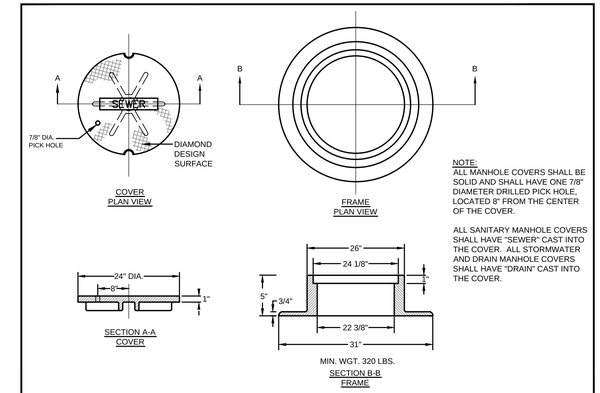
(A) PRECAST CONCRETE MANHOLE
N.T.S.



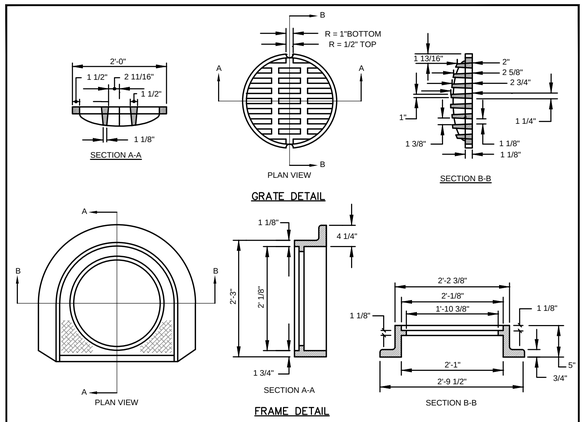
(C) PRECAST CONCRETE CATCH BASIN - TYPE "E"
N.T.S.



(F) CATCH BASIN INLET
N.T.S.



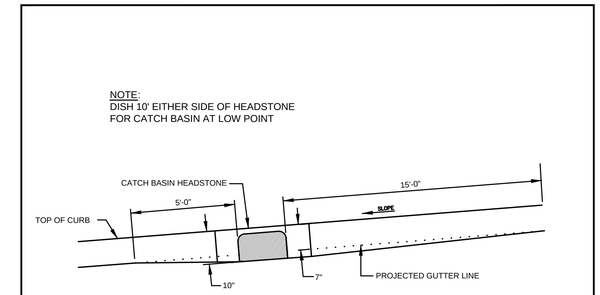
(I) CAST IRON MANHOLE COVER AND FRAME
N.T.S.



(D) CATCH BASIN FRAME AND GRATE
N.T.S.

1. ALL CONCRETE SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 4000 lbs. PER SQ. INCH AT THE END OF 28 DAYS, UNLESS OTHERWISE NOTED.
2. MANHOLES MAY BE CONSTRUCTED OF PRECAST REINFORCED CONCRETE, OR CAST IN PLACE.
3. PRECAST REINFORCED CONE BARREL MANUFACTURED PER ASTM SPEC. C-478.
4. ALL STORM AND SEWER MANHOLE COVERS SHALL BE SOLID AND SHALL HAVE ONE 7/8" DIAMETER DRILLED PICK HOLE LOCATED 8" FROM THE CENTER OF THE COVER.
5. ALL SANITARY MANHOLE COVERS SHALL HAVE "SEWER" CAST INTO THE COVER. ALL STORMWATER/DRAIN MANHOLE COVERS SHALL HAVE "DRAIN" CAST INTO THE COVER.
6. ALL MANHOLE RISERS SHALL BE ETHERIDGE 24" OR APPROVED EQUAL.
7. SEWER BRICK SHALL CONFORM TO ASTM SPEC. DESIGNATE ON C-32-63, GRADE MA AND SA.
8. ALL SANITARY MANHOLES SHALL HAVE A WATERPROOFING COATING APPLIED TO THE EXTERIOR SURFACE.
9. CATCH BASIN FRAMES FOR TYPE A4 CATCH BASIN CURB INLETS SHALL BE ETHERIDGE DR5A OR APPROVED EQUAL.
10. CASTINGS SHALL CONFORM TO ASTM DESIGNATION A48-CLASS 35.
11. EXISTING MANHOLES, CATCH BASINS, FRAMES, AND COVERS SHALL BE SALVAGED BY THE CONTRACTOR, AND SHALL REMAIN THE PROPERTY OF THE CITY OF PORTLAND.
12. ALL CATCH BASIN OUTLETS SHALL BE INSTALLED WITH A CASCO TRAP, SEE DETAIL H.

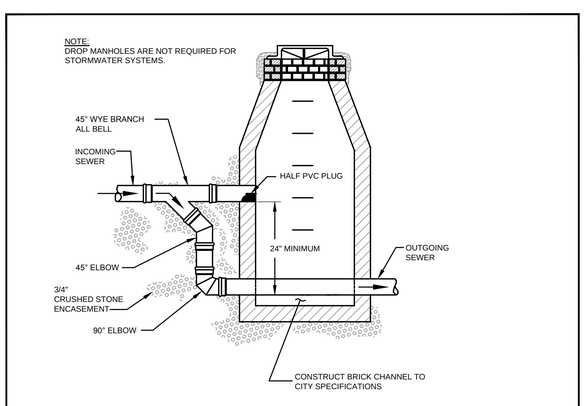
(G) GENERAL NOTES FOR MANHOLES AND CATCH BASINS
N.T.S.



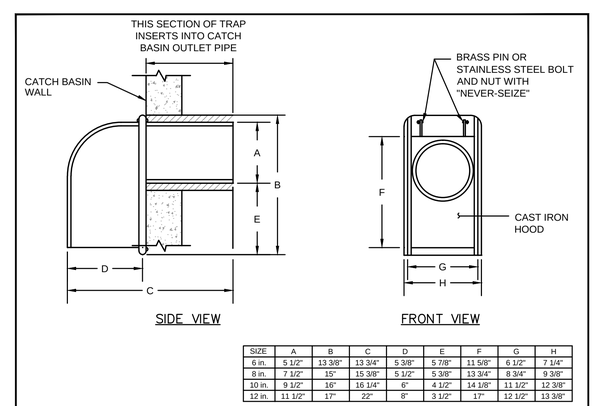
(J) TYPICAL PAVEMENT GRADING ON SLOPES FOR CATCH BASIN AND INLET
N.T.S.

SIZE	C	R	T	O	I	Wt.
R241 1/2	24	1 1/2	1 1/8	26 1/4	22 1/2	60
R242	24	2	1 1/8	26 1/4	22 1/2	80
R242 1/2	24	2 1/2	1 1/8	26 1/4	22	100
R243	24	3	1 1/8	26 1/4	22	120

(B) MANHOLE RISER RING
N.T.S.



(E) TYPICAL OUTSIDE DROP MANHOLE
N.T.S.

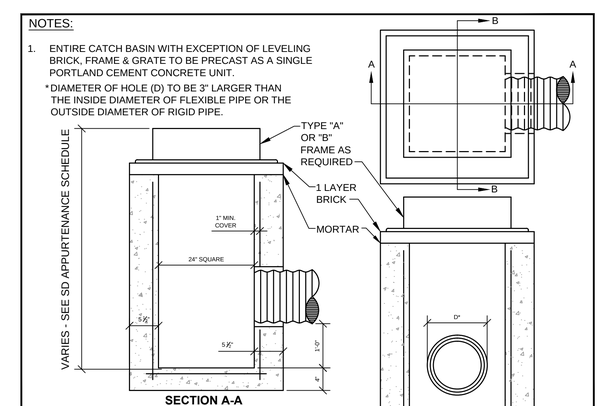


SIZE	A	B	C	D	E	F	G	H
6 in.	5 1/2"	13 3/8"	13 3/4"	5 3/8"	5 7/8"	11 5/8"	6 1/2"	7 1/4"
8 in.	7 1/2"	15"	15 3/8"	5 1/2"	5 3/8"	13 3/4"	8 3/4"	9 3/8"
10 in.	9 1/2"	16"	16 1/4"	6"	4 1/2"	14 1/8"	11 1/2"	12 3/8"
12 in.	11 1/2"	17"	22"	8"	3 1/2"	17"	12 1/2"	13 3/8"

(AS MANUFACTURED BY THE ETHERIDGE FOUNDRY IN PORTLAND, ME.)

NOTE: CONTRACTOR SHALL UTILIZE THE "CASCO TRAP" AS MANUFACTURED BY THE ETHERIDGE FOUNDRY, OR AN APPROVED EQUIVALENT.

(H) CASCO TRAP
N.T.S.



(K) 2' SQUARE TYPE D CATCH BASIN DETAIL
N.T.S.

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE — WILLIAM R. MOORE — 13547 — LICENSED — PROFESSIONAL ENGINEER — 11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT: midtown — PORTLAND, MAINE

SHEET TITLE: SAN SEWER AND STORM DRAIN DETAILS

CLIENT: THE FEDERATED COMPANIES

FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	NTS
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-DETAIL SHEETS		
SHEET	C-7.3		

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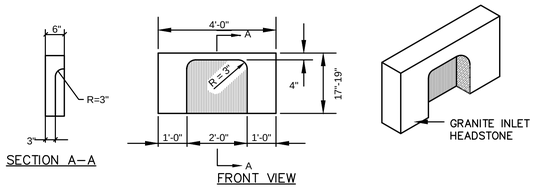
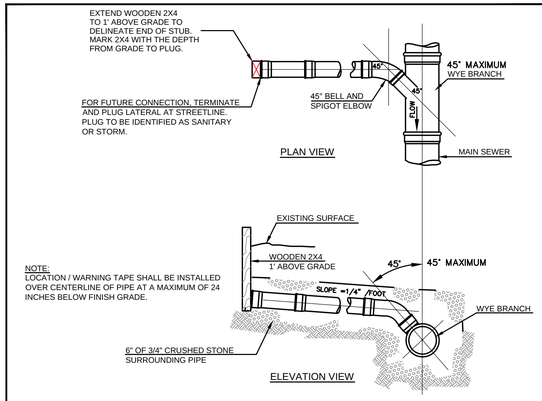


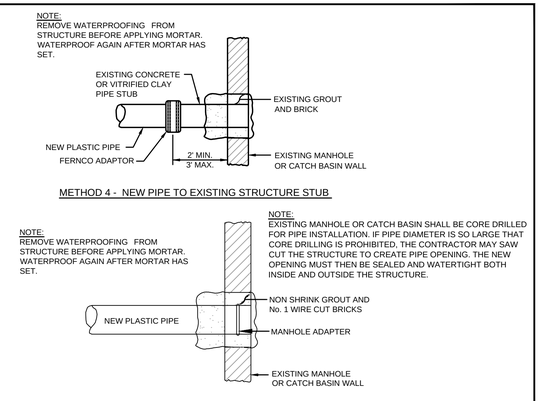
(A) 4' GRANITE HEADSTONE FOR CATCH BASIN INLET

N.T.S.



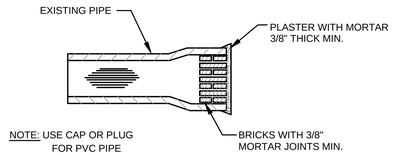
(D) TYPICAL LATERAL TEE/WYE CONNECTION

N.T.S.



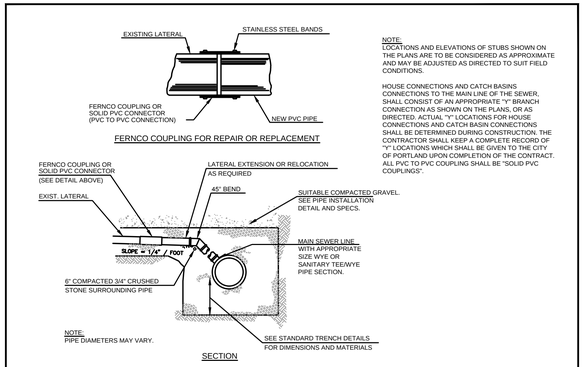
(G) PLASTIC PIPE CONNECTION METHODS 3 & 4

N.T.S.



(I) MASONRY PLUG

N.T.S.

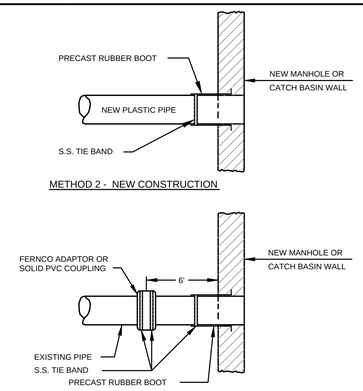


NOTE:
LOCATIONS AND ELEVATIONS OF STUBS SHOWN ON THE PLANS ARE TO BE CONSIDERED AS APPROXIMATE AND MAY BE ADJUSTED AS DIRECTED TO SUIT FIELD CONDITIONS.

HOUSE CONNECTIONS AND CATCH BASINS CONNECTIONS TO THE MAIN LINE OF THE SEWER, SHALL CONSIST OF AN APPROPRIATE "Y" BRANCH CONNECTION AS SHOWN ON THE PLANS, OR AS DIRECTED. ACTUAL "Y" LOCATIONS FOR HOUSE CONNECTIONS AND CATCH BASIN CONNECTIONS SHALL BE DETERMINED DURING CONSTRUCTION. THE CONTRACTOR SHALL KEEP A COMPLETE RECORD OF "Y" LOCATIONS WHICH SHALL BE GIVEN TO THE CITY OF PORTLAND UPON COMPLETION OF THE CONTRACT. ALL PVC TO PVC COUPLING SHALL BE "SOLID PVC COUPLINGS".

(B) TYPICAL EXISTING LATERAL CONNECTION

N.T.S.



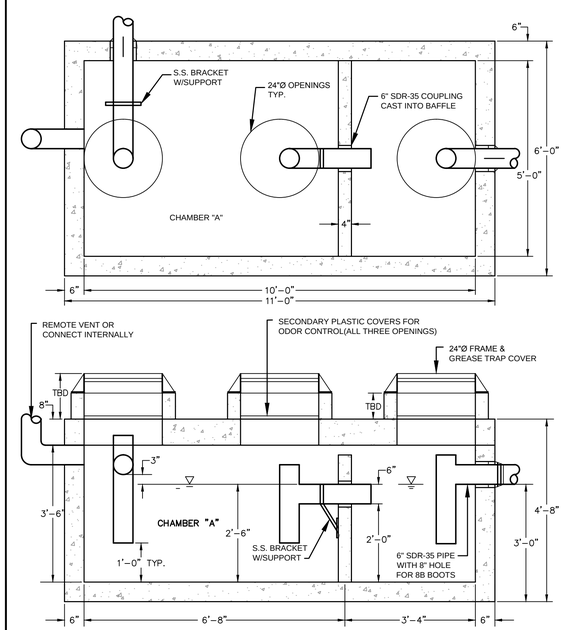
(E) PLASTIC PIPE CONNECTION METHODS 1 & 2

N.T.S.

DESIGN NOTES:
1. CONCRETE 5000 PSI AT 28 DAYS.
2. H–20 LOADING
3. JOINTS SEALED WITH BUTYL RUBBER JOINT SEALANT (ASSHTO M–19)
4. ALL TEES/BAFFLES PROVIDED BY PRECAST.

THIS STRUCTURE MUST DISCHARGE TO A CITY OF PORTLAND STANDARD MANHOLE WITH CHANNEL (CONTROL/SAMPLING MANHOLE).

FORMULA FOR SIZING THE TRAP: CHAMBER "A" (2/3 OF TANK VOLUME) MUST BE EQUIVALENT TO THE AVERAGE DAILY PROCESS FLOW FROM THE FACILITY WITH NO SANITARY OR OTHER EXTRANEOUS WASTES FLOWING THROUGH IT.

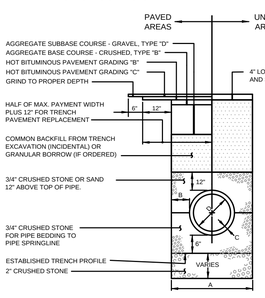


(H) EXTERNAL GREASE TRAP DESIGN

N.T.S.

NOTES:
DEPTH OF BITUMINOUS PAVEMENT AND AGGREGATE COURSES SHALL BE DETERMINED BY STREET CLASSIFICATION.

ANY ALTERNATE TRENCHING OR PAYMENT METHODS SHALL BE APPROVED IN ADVANCE BY THE CITY OF PORTLAND, DEPARTMENT OF PUBLIC SERVICES.



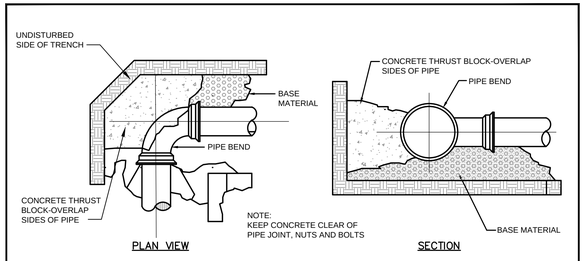
NOTES

1. ALTERNATIVE CONSTRUCTION METHODS OR PAYMENT METHODS SHALL BE APPROVED IN ADVANCE BY THE CITY.
2. IN PAVED AREAS, DEPTHS OF GRAVEL AND HOT MIX ASPHALT PAVEMENT SHALL MATCH THE GREATER OF EXISTING CONDITIONS OR THE REQUIREMENTS FOR THE CORRESPONDING STREET CLASSIFICATION.
3. DIMENSION B SHALL BE SUFFICIENT TO ALLOW CRUSHED STONE BEDDING TO BE PLACED AND COMPACTED UNDER THE HAUNCHES OF THE PIPE; BUT IN ALL CASES
   DIMENSION B SHALL BE AT LEAST 9".
4. DIMENSION A IS THE MAXIMUM WIDTH ALLOWED FOR CALCULATING PAY QUANTITIES UNDER GRANULAR BORROW, CRUSHED STONE, STRUCTURAL EARTH EXCAVATION, AND STRUCTURAL ROCK EXCAVATION. DIMENSION A
   SHALL BE BASED ON PIPE DIAMETER D, AS SET FORTH IN THE FOLLOWING TABLE.

PIPE DIAMETER, D (INCHES)	MAX. TRENCH WIDTH, A (FEET)
4	4.0
6	4.0
8	4.0
10	4.0
12	5.0
15	5.0
18	5.0
21	5.0
24	6.0
27	6.0
30	6.0
36	6.0
42	7.0
48	7.0

(C) TYPICAL PIPE TRENCH INSTALLATION AND NOTES

N.T.S.



THRUST/RETAINER SCHEDULE		
1/4 BEND	(90°)	USE POURED-IN-PLACE THRUST BLOCK w/RETAINERS
1/8 BEND	(45°)	THRUST BLOCK w/RETAINERS
1/16 BEND	(22 1/2°)	THRUST BLOCK
1/32 BEND	(11 1/4°")	THRUST BLOCK

(F) FORCE MAIN CONCRETE THRUST BLOCK PLACEMENT ON VERTICAL & HORIZONTAL BENDS

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DRAWN:	KEW	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	NTS
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-DETAIL SHEETS		
SHEET	C-7.4		

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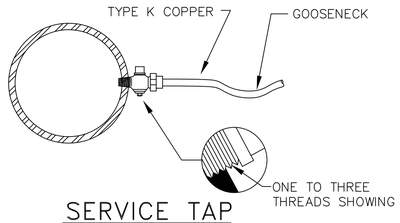
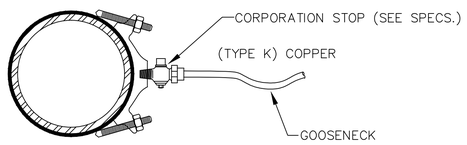
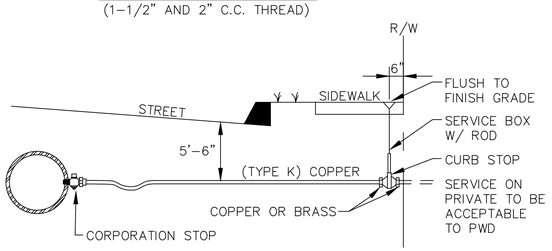


SERVICE TAP
(3/4" AND 1" C.C. THREAD)

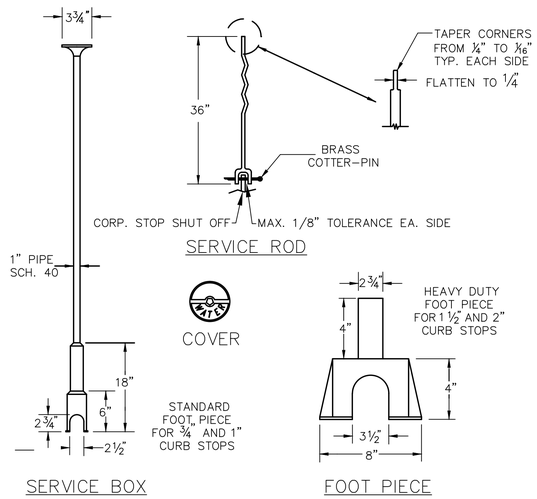


SERVICE SADDLE
(1-1/2" AND 2" C.C. THREAD)



TYPICAL SERVICE CONNECTION

(A) TYPICAL SADDLE AND SERVICE CONNECTION
N.T.S.

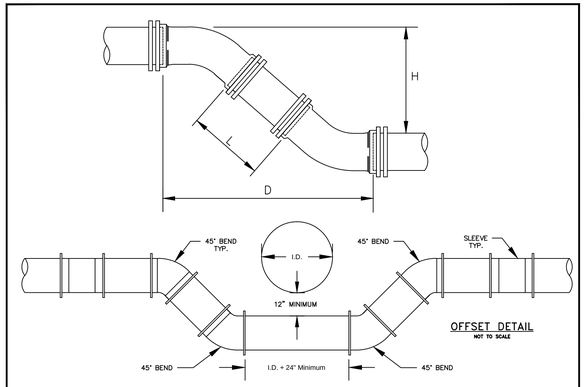


NOTE : ANY EXTENSION OF SERVICE BOX REQUIRES:

1) 1" FEMALE IRON PIPE COUPLING
2) 1" THREADED PIPE

(THIS IS TO BE A NON-WELDED, TWO PIECE ARRANGEMENT. SLIP ON ADAPTERS ARE NOT PERMISSIBLE.)

(C) VALVE BOX AND COVER DETAILS
N.T.S.



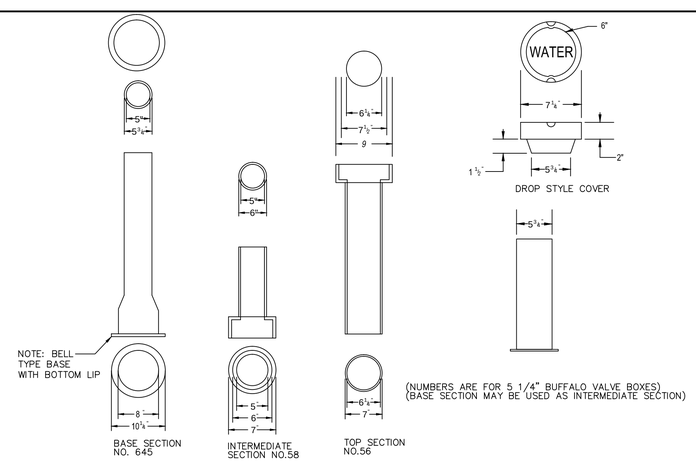
OFFSET DETAIL
NOT TO SCALE

	6" PIPE		8" PIPE		12" PIPE	
H	D	L	D	L	D	L
12"	1' 6-1/2"	0' 10-1/2"	1' 7-1/2"	0' 9-1/2"	1' 11-1/2"	0' 5-1/2"
13"	1' 7-1/2"	0' 11-7/8"	1' 8-1/2"	0' 10-7/8"	2' 0-1/2"	0' 6-7/8"
14"	1' 8-1/2"	1' 1-5/16"	1' 9-1/2"	1' 0-5/16"	2' 1-1/2"	0' 8-5/16"
15"	1' 9-1/2"	1' 2-11/16"	1' 10-1/2"	1' 1-11/16"	2' 2-1/2"	0' 9-11/16"
16"	1' 10-1/2"	1' 4-1/8"	1' 11-1/2"	1' 3-1/8"	2' 3-1/2"	0' 11-1/8"
17"	1' 11-1/2"	1' 5-9/16"	2' 0-1/2"	1' 4-9/16"	2' 4-1/2"	1' 0-9/16"
18"	2' 0-1/2"	1' 6-15/16"	2' 1-1/2"	1' 5-15/16"	2' 5-1/2"	1' 1-15/16"
19"	2' 1-1/2"	1' 8-3/8"	2' 2-1/2"	1' 7-3/8"	2' 6-1/2"	1' 3-3/8"
20"	2' 2-1/2"	1' 9-13/16"	2' 3-1/2"	1' 8-13/16"	2' 7-1/2"	1' 4-13/16"
21"	2' 3-1/2"	1' 11-3/16"	2' 4-1/2"	1' 10-3/16"	2' 8-1/2"	1' 6-3/16"
22"	2' 4-1/2"	2' 0-5/8"	2' 5-1/2"	1' 11-5/8"	2' 9-1/2"	1' 7-5/8"
23"	2' 5-1/2"	2' 2"	2' 6-1/2"	2' 1"	2' 10-1/2"	1' 9"
24"	2' 6-1/2"	2' 3-7/16"	2' 7-1/2"	2' 2-7/16"	2' 11-1/2"	1' 10-7/16"
25"	2' 7-1/2"	2' 4-7/8"	2' 8-1/2"	2' 3-7/8"	3' 0-1/2"	1' 11-7/8"
26"	2' 8-1/2"	2' 6-1/4"	2' 9-1/2"	2' 5-1/4"	3' 1-1/2"	2' 1-1/4"
27"	2' 9-1/2"	2' 7-11/16"	2' 10-1/2"	2' 6-11/16"	3' 2-1/2"	2' 2-11/16"
28"	2' 10-1/2"	2' 9-1/8"	2' 11-1/2"	2' 8-1/8"	3' 3-1/2"	2' 4-1/8"
29"	2' 11-1/2"	2' 10-1/2"	3' 0-1/2"	2' 9-1/2"	3' 4-1/2"	2' 5-1/2"
30"	3' 0-1/2"	2' 11-15/16"	3' 1-1/2"	2' 10-15/16"	3' 5-1/2"	2' 6-15/16"
31"	3' 1-1/2"	3' 1-5/16"	3' 2-1/2"	3' 0-5/16"	3' 6-1/2"	2' 8-5/16"
32"	3' 2-1/2"	3' 2-3/4"	3' 3-1/2"	3' 1-3/4"	3' 7-1/2"	2' 9-3/4"
33"	3' 3-1/2"	3' 4-3/16"	3' 4-1/2"	3' 3-3/16"	3' 8-1/2"	2' 11-3/16"
34"	3' 4-1/2"	3' 5-9/16"	3' 5-1/2"	3' 4-9/16"	3' 9-1/2"	3' 0-9/16"
35"	3' 5-1/2"	3' 7"	3' 6-1/2"	3' 6"	3' 10-1/2"	3' 2"
36"	3' 6-1/2"	3' 8-7/16"	3' 7-1/2"	3' 7-7/16"	3' 11-1/2"	3' 3-7/16"
37"	3' 7-1/2"	3' 9-13/16"	3' 8-1/2"	3' 8-13/16"	4' 0-1/2"	3' 4-13/16"
38"	3' 8-1/2"	3' 11-1/4"	3' 9-1/2"	3' 10-1/4"	4' 1-1/2"	3' 6-1/4"
39"	3' 9-1/2"	4' 0-11/16"	3' 10-1/2"	3' 11-11/16"	4' 2-1/2"	3' 7-11/16"
40"	3' 10-1/2"	4' 2-1/16"	3' 11-1/2"	4' 1-1/16"	4' 3-1/2"	3' 9-1/16"
41"	3' 11-1/2"	4' 3-1/2"	4' 0-1/2"	4' 2-1/2"	4' 4-1/2"	3' 10-1/2"
42"	4' 0-1/2"	4' 4-7/8"	4' 1-1/2"	4' 3-7/8"	4' 5-1/2"	3' 11-7/8"
43"	4' 1-1/2"	4' 6-5/16"	4' 2-1/2"	4' 5-5/16"	4' 6-1/2"	4' 1-5/16"
44"	4' 2-1/2"	4' 7-3/4"	4' 3-1/2"	4' 6-3/4"	4' 7-1/2"	4' 2-3/4"
45"	4' 3-1/2"	4' 9-1/8"	4' 4-1/2"	4' 8-1/8"	4' 8-1/2"	4' 4-1/8"
46"	4' 4-1/2"	4' 10-9/16"	4' 5-1/2"	4' 9-9/16"	4' 9-1/2"	4' 5-9/16"
47"	4' 5-1/2"	4' 11-15/16"	4' 6-1/2"	4' 10-15/16"	4' 10-1/2"	4' 6-15/16"
48"	4' 6-1/2"	5' 1-3/8"	4' 7-1/2"	5' 0-3/8"	4' 11-1/2"	4' 8-3/8"
49"	4' 7-1/2"	5' 2-13/16"	4' 8-1/2"	5' 1-13/16"	5' 0-1/2"	4' 9-13/16"
50"	4' 8-1/2"	5' 4-3/16"	4' 9-1/2"	5' 3-3/16"	5' 1-1/2"	4' 11-3/16"
51"	4' 9-1/2"	5' 5-5/8"	4' 10-1/2"	5' 4-5/8"	5' 2-1/2"	5' 0-5/8"
52"	4' 10-1/2"	5' 7-1/16"	4' 11-1/2"	5' 6-1/16"	5' 3-1/2"	5' 2-1/16"
53"	4' 11-1/2"	5' 8-7/16"	5' 0-1/2"	5' 7-7/16"	5' 4-1/2"	5' 3-7/16"
54"	5' 0-1/2"	5' 9-7/8"	5' 1-1/2"	5' 8-7/8"	5' 5-1/2"	5' 4-7/8"
55"	5' 1-1/2"	5' 11-5/16"	5' 2-1/2"	5' 10-5/16"	5' 6-1/2"	5' 6-5/16"

NOTE: DIMENSIONS APPLICABLE FOR SIGMA COMPACT BENDS. FOR TYLER COMPACT BENDS, ADD ½" TO "D" DIMENSION AND SUBTRACT ½" FROM "L" DIMENSION. FOR OTHER FITTINGS REFER TO MANUFACTURER'S RECOMMENDATIONS.

(D) TYPICAL MAIN OFFSET
N.T.S.

C-7.5



(B) VALVE BOX AND COVER
N.T.S.

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE — WILLIAM R. MOORE — 13547 — LICENSED — PROFESSIONAL ENGINEER — 11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT: midtown
PORTLAND, MAINE

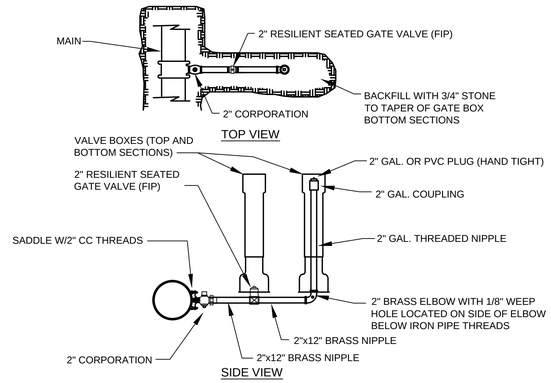
SHEET TITLE: WATER DETAILS

CLIENT: THE FEDERATED COMPANIES

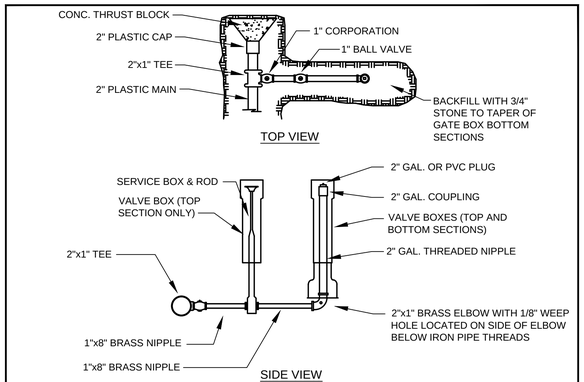
FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	NTS
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-DETAIL SHEETS		
SHEET	C-7.5		

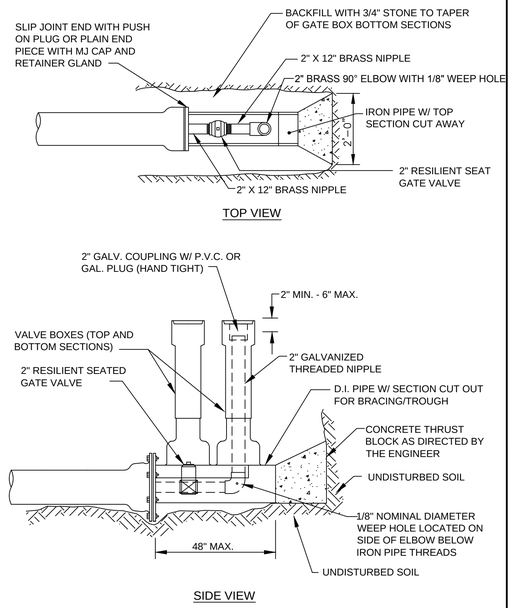
R:\3062B - Midtown Amended - Portland, ME\Cadd\Permit Set\dwg\3062-DETAIL SHEETS.dwg davis_d 11/14/2014 10:46 AM



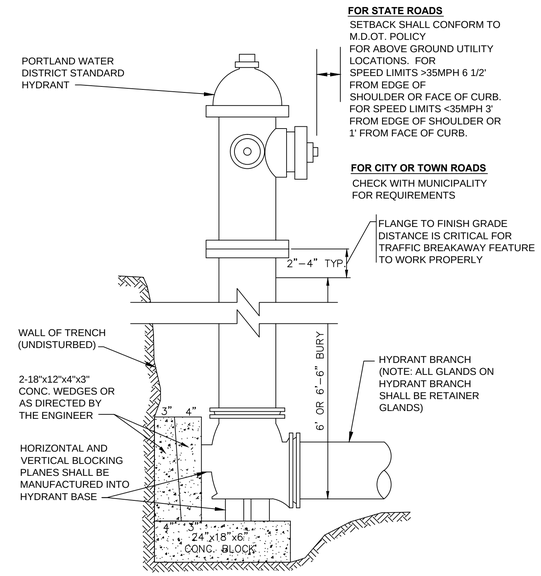
SIDE ARM BLOW-OFF
4" AND LARGER MAINS
(A) N.T.S.



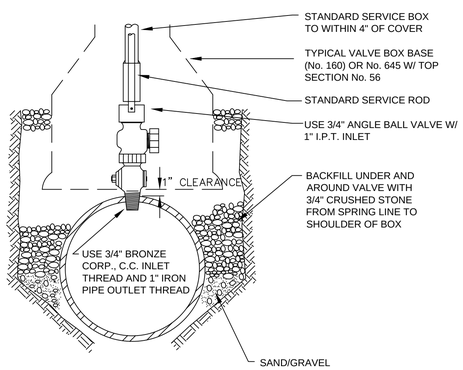
SIDE ARM BLOW-OFF
2" MAINS
(B) N.T.S.



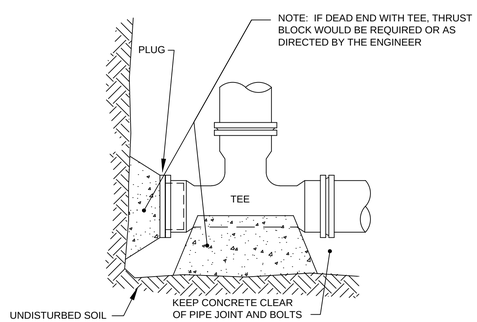
(D) STANDARD 2" BLOW OFF
N.T.S.



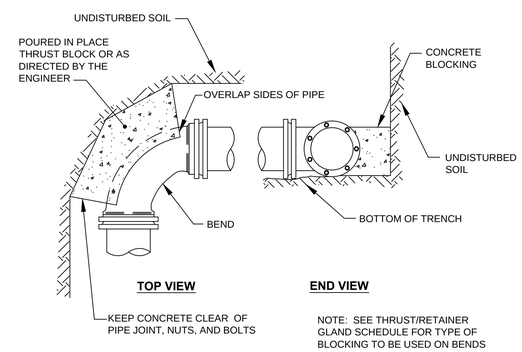
(F) TYPICAL HYDRANT INSTALLATION DETAIL
N.T.S.



(C) TYPICAL AIR VALVE (1")
N.T.S.



(E) STANDARD TEE BLOCKING
N.T.S.



(D) STANDARD BEND BLOCKING
N.T.S.

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE — WILLIAM R. MOORE — 13547 — LICENSED PROFESSIONAL ENGINEER — 11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

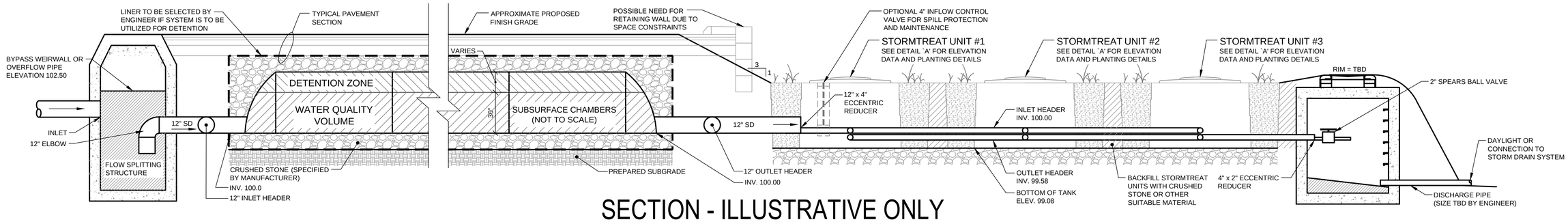
PROJECT: midtown
PORTLAND, MAINE

SHEET TITLE: WATER DETAILS

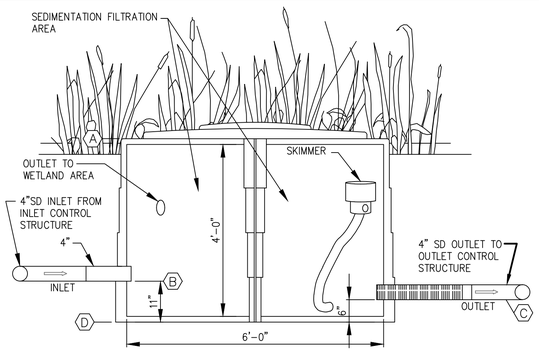
CLIENT: THE FEDERATED COMPANIES

FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	NTS
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-DETAIL SHEETS		
SHEET	C-7.6		



SECTION - ILLUSTRATIVE ONLY



A STORMTREAT™ TANK SECTION
N.T.S.

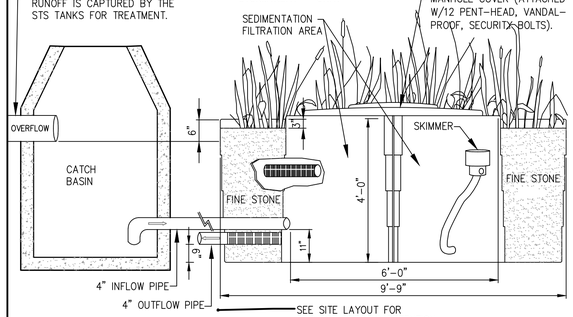
SEE DETAIL B THIS SHEET FOR SCHEDULE 'A'

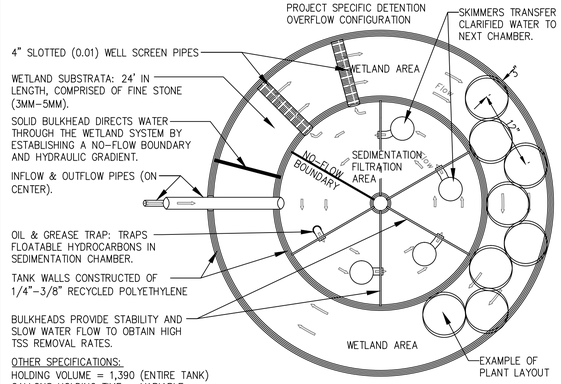
B VACANT
N.T.S.

NOTE SET TOP OF STORMTREAT TANK 6" ABOVE INVERT ELEVATION OF OVERFLOW PIPE.

OVERFLOW PIPE DISCHARGES STORMWATER AFTER THE "FIRST FLUSH". THE INITIAL 1.0" OF RUNOFF IS CAPTURED BY THE STS TANKS FOR TREATMENT.

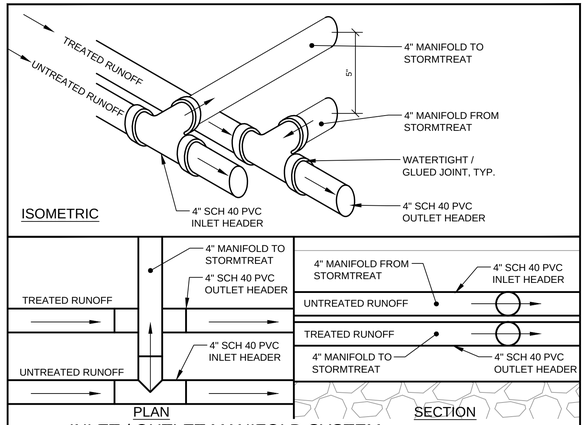
A COMBINATION 12 SOFT RUSH (JUNCUS EFFUSUS) AND 12 BULRUSH (SCIRPUS ALTROVIRENS) SPACED 12" APART IN 2 RINGS. BULRUSH SHALL BE PLANTED INSIDE THE SOFT RUSH. PLANTS ARE MAINTAINED BETWEEN STORMS BY A MINIMUM OF SIX INCHES OF WATER IN THE BOTTOM OF THE WETLAND BASIN. THE STANDING WATER PROVIDES FOR SOIL MOISTURE THROUGH CAPILLARY ACTION. PLANT 24 PLANTS IN 4" POTS PER STORMTREAT™ UNIT.



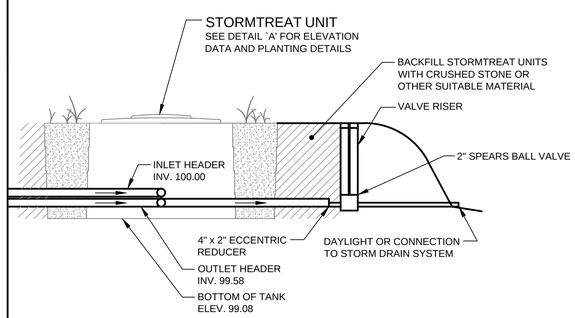


OTHER SPECIFICATIONS:
HOLDING VOLUME = 1,390 (ENTIRE TANK) GALLONS HOLDING TIME = VARIABLE
OUTLET CONTROL VALVE USED TO SET DISCHARGE RATE AT 2 GALLONS PER MINUTE PER UNIT. THE CONTROL VALVE CAN BE CLOSED IN THE EVENT OF A HAZARDOUS WASTE SPILL FOR CONTAINMENT PURPOSES.

C STORMTREAT™ SYSTEM TANK
N.T.S.



D INLET / OUTLET MANIFOLD SYSTEM
N.T.S.



E OUTLET CONTROL OPTION WITHOUT ACCESS STRUCTURE
N.T.S.

NOTES:

PROJECT NOTES:

THIS DRAWING DEPICTS "TYPICAL" DETAILS FOR THE STORMTREAT™ UNITS DEVELOPED BY Fay, Spofford & Thorndike UNDER CONTRACT THE STORMTREAT™ SYSTEMS. THE midtown PROJECT REQUIRES 2 STORMTREAT™ UNITS (TWO FOR midtownFour). REFER TO GRADING AND DRAINAGE PLANS FOR ELEVATIONS. ARCHED DETENTION IS AN ALTERNATE TO THE BRENTWOOD CHAMBERS. SUBJECT TO OTHER PORTIONS OF THE PROJECT MANUAL.

DESIGN PARAMETERS:

1. CONTRIBUTING AREA = REFER TO STORMWATER MANAGEMENT PLAN FOR THIS PROJECT.
2. DESIGN STORM = ONE INCH.
3. TOTAL WATER QUALITY VOLUME (WQV) = REFER TO STORMWATER MANAGEMENT REPORT FOR THIS PROJECT.
4. RELEASE RATE = 2 GPM PER STORMTREAT TANK.

GENERAL NOTES:

1. ENTIRE SYSTEM FROM INLET STRUCTURE TO OUTLET STRUCTURE SHOULD BE WATERTIGHT, UNLESS DETENTION SYSTEM IS CONFIGURED FOR INFILTRATION.
2. CONFIGURATION SHOWN DOES PROVIDE SOME EXTENDED DETENTION FOR FLOW CONTROL FOR MAJOR STORM EVENTS.
3. PRETREATMENT MEASURES SHOULD BE UTILIZED PRIOR TO ENTERING DETENTION CHAMBERS.
4. UTILIZATION OF DIFFERENT PLANT SPECIES SHOULD BE VERIFIED WITH STORMTREAT SYSTEMS FOR REMOVAL EFFICIENCIES.
5. SEE STORMTREAT SPECIFICATIONS FOR INSTALLATION GUIDELINES AND REQUIREMENTS.
6. STORMTREAT UNITS SHOULD BE PROTECTED FROM TURBID RUNOFF DURING CONSTRUCTION.
7. "FINE STONE" TO MEET THE REQUIREMENTS OF THE STORMTREAT SPECIFICATION.
8. ALL ECCENTRIC REDUCERS TO BE WATERTIGHT.
9. ALL SCH 40 PVC TO BE WATERTIGHT, ALL JOINTS SHALL BE GLUED.
10. SEE SPECIFICATION FOR MAINTENANCE REQUIREMENTS.
11. ENGINEER TO SELECT APPROPRIATE SYSTEM LINER IF CHAMBERS ARE TO BE UTILIZED FOR DETENTION.

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE — WILLIAM R. MOORE — 13547 — LICENSED — PROFESSIONAL ENGINEER — 11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

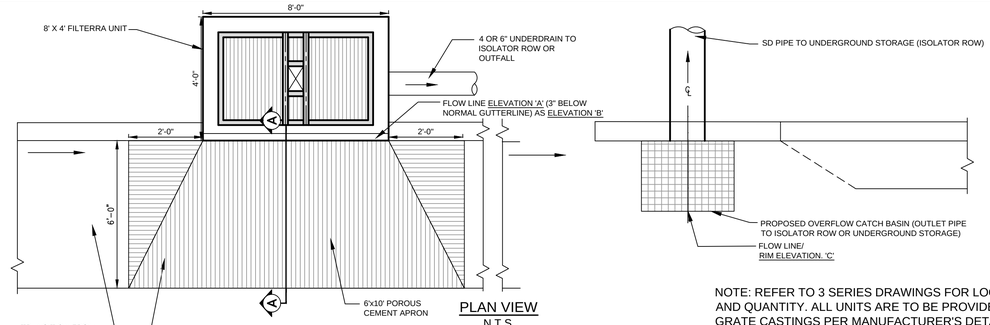
PROJECT: midtown
PORTLAND, MAINE

SHEET TITLE: STORMWATER DETAILS STORMTREAT™ SYSTEMS

CLIENT: THE FEDERATED COMPANIES

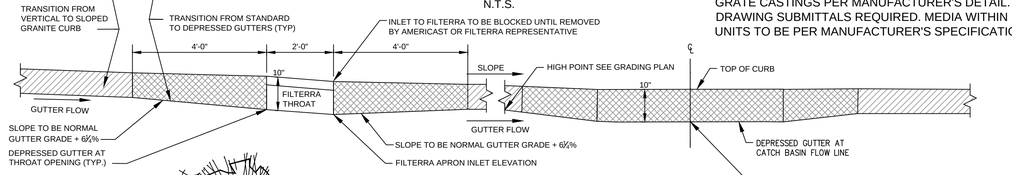
FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	CMW	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	AS NOTED
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-DETAIL SHEETS		
SHEET	C-7.7		

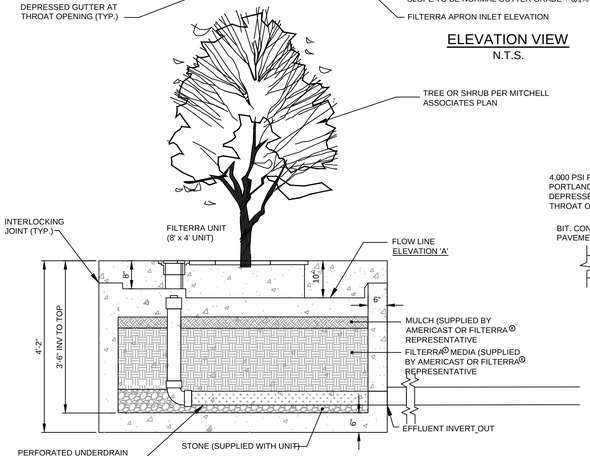


PLAN VIEW
N.T.S.

NOTE: REFER TO 3 SERIES DRAWINGS FOR LOCATION, SIZE, AND QUANTITY. ALL UNITS ARE TO BE PROVIDED WITH TREE GRATE CASTINGS PER MANUFACTURER'S DETAIL. SHOP DRAWING SUBMITTALS REQUIRED. MEDIA WITHIN FILTERRA ® UNITS TO BE PER MANUFACTURER'S SPECIFICATIONS.

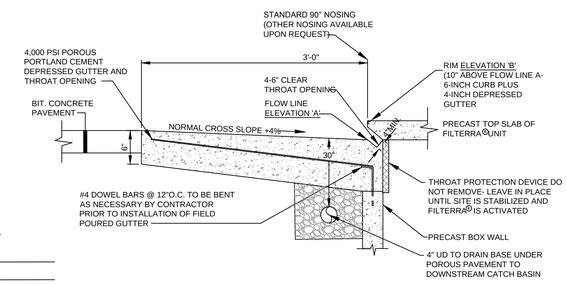


ELEVATION VIEW
N.T.S.



CROSS SECTION
N.T.S.

A FILTERRA® UNIT
N.T.S.

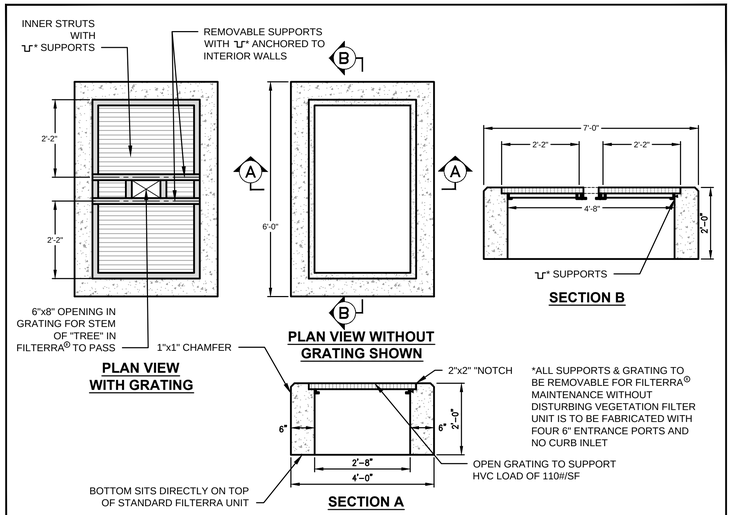


STANDARD FILTERRA® THROAT OPENING
SECTION A-A
N.T.S.

A FILTERRA FLOW LINE ELEVATION
B FILTERRA RIM ELEVATION
C BYPASS CATCH BASIN RIM ELEVATION
D FILTERRA INVERT ELEVATION
E INVERT ELEVATION IN
F UNDERDRAIN INVERT

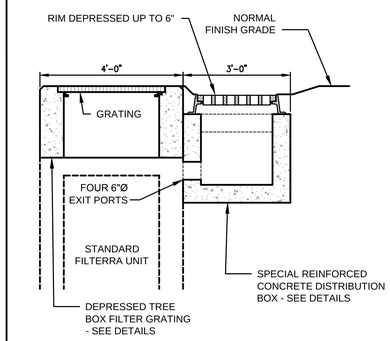
FOR ELEVATIONS REFER TO SCHEDULES ON DRAWINGS C-3.10 THRU C-3.13

A FILTERRA® UNIT
N.T.S.

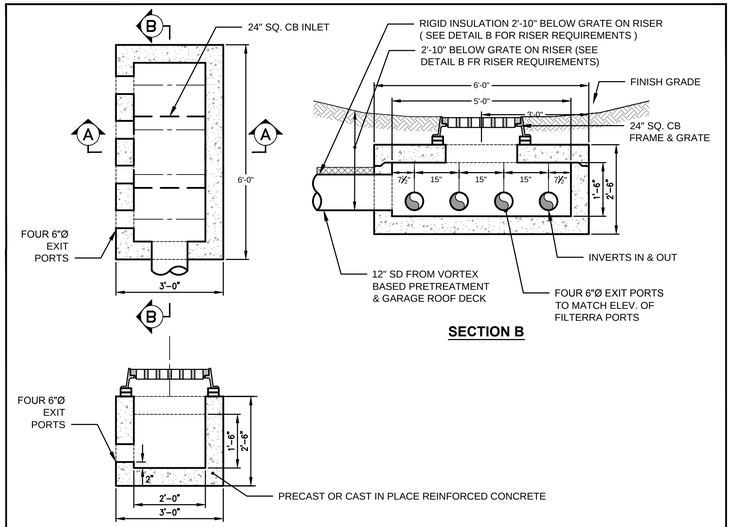


C DETAILS: RISER FOR "DEPRESSED" TREE BOX FILTERS
N.T.S.

C-7.8



E DETAIL SHOWING THE RELATIONSHIP
N.T.S.

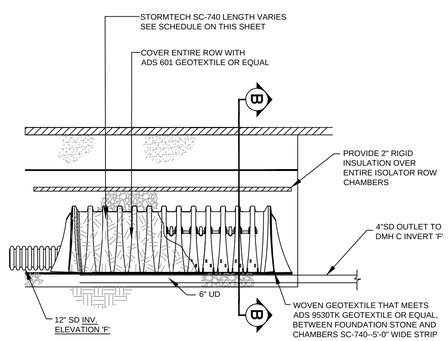


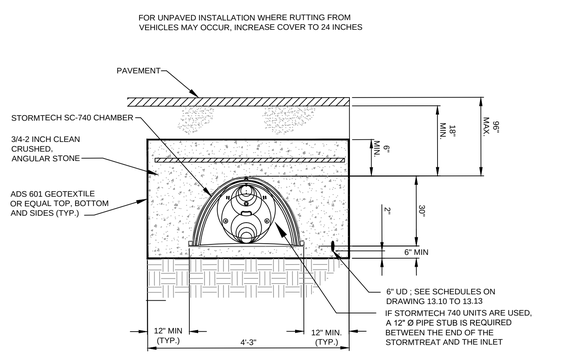
D DETAILS FOR SPECIAL INLET TO "DEPRESSED" FILTERRA®
N.T.S. OR USE BRENTWOOD STORM STORAGE TANKS AS SHOWN ON PLAN

FILTERRA/STORMTREAT LOCATIONS

UNIT #	STATION	OFFSET
A-1, A-2	COURTYARD A, TWO BOXLESS TREATMENT UNITS WITH FILTERRA MEDIA	
N/A	midtownFour, TWO STORMTREAT UNITS	
E-0	30+28	18.5' Lt.
F-0	12+80	16.2' Lt.
G-0	12+68	21.5' Rt.
H-0	11+00	21.5' Rt.
I-0	10.75	15.5' Lt.
J-0	9+00	21.5' Rt.
K-0	9+00	15.5' Lt.
L-0	4+68	19.5' Rt.
M-0	4+36	39' Lt.
N-0	4+19	25' Rt.
O-0	7+00	18.5' Rt.
P-0	7+00	16.5' Rt.
Q-0	4+75	18.5' Lt.
R-0	2+92	21.5' Rt.
S-0	2+92	14.5' Lt.

FILTER UNITS





B STORMTECH® ISOLATOR ROW
N.T.S.

THIS MAY BE USED AS AN ALTERNATE TO THE BRENTWOOD TANKS FOR STORAGE

ISOLATOR ROW SECTION B-B
N.T.S.

IF THESE TANKS ARE USED, THE ISOLATOR ROW OUTLET SHOULD BE A 24" STUB AND CENTERED ON THE 2'-0" x 1'-8" OPENING IN THE OUTLET CONTROL MANHOLE.

PRELIMINARY - NOT FOR CONSTRUCTION

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REVISIONS

STATE OF MAINE WILLIAM R. MOORE 13547 LICENSED PROFESSIONAL ENGINEER 11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
TREEBOX FILTER WITH ALTERNATE UNDERGROUND STORAGE DETAILS

CLIENT
THE FEDERATED COMPANIES

FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS • PLANNERS • SCIENTISTS
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FILE NAME:	3062-DETAIL SHEETS		
SHEET	C-7.8		

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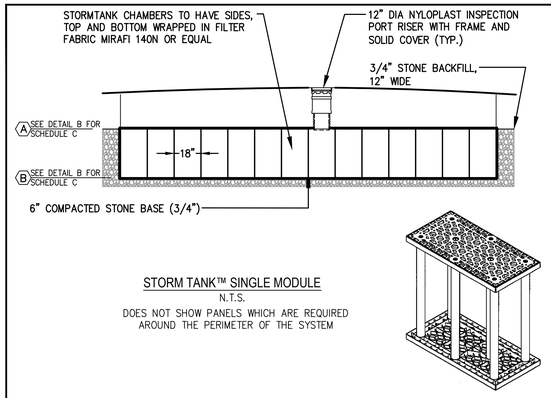


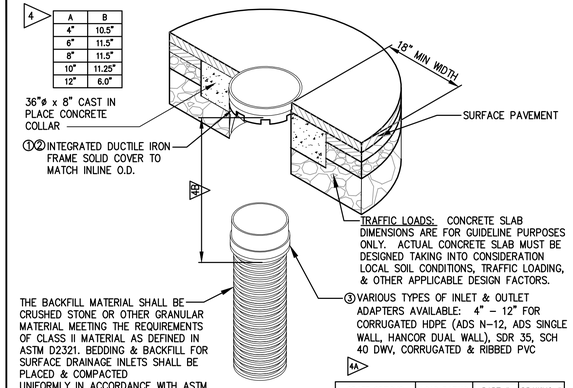
STORM TANK™ SINGLE MODULE
N.T.S.
DOES NOT SHOW PANELS WHICH ARE REQUIRED AROUND THE PERIMETER OF THE SYSTEM

A TYPICAL SECTION FOR SUBSURFACE CHAMBER SYSTEM
N.T.S.

SEE DRAWING C-3.11 TO C-3.13 FOR SIZES & LOCATIONS

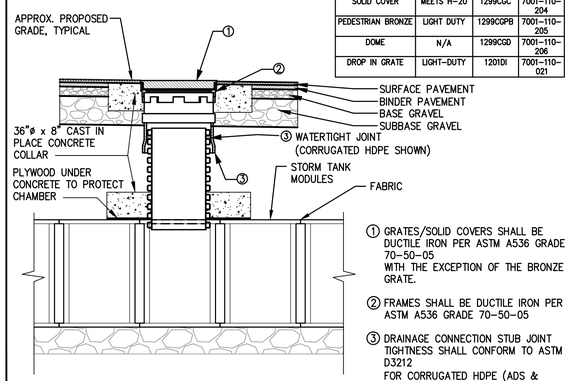
4

A	B
4"	10.5"
6"	11.5"
8"	11.5"
10"	11.25"
12"	6.0"



4A

GRATE OPTIONS	LOAD RATING	PART #	DRAWING #
PEDESTRIAN	MEETS H-10	1299CGP	7001-110-202
STANDARD	MEETS H-20	1299CGS	7001-110-203
SOLID COVER	MEETS H-20	1299CGC	7001-110-204
PEDESTRIAN BRONZE	LIGHT DUTY	1299CGPB	7001-110-205
DOME	N/A	1299CGD	7001-110-206
DROP IN GRATE	LIGHT-DUTY	1201DI	7001-110-021



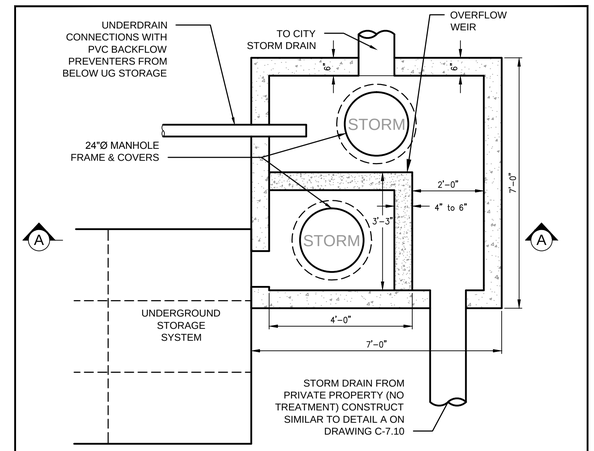
① GRATES/SOLID COVERS SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05 WITH THE EXCEPTION OF THE BRONZE GRATE.

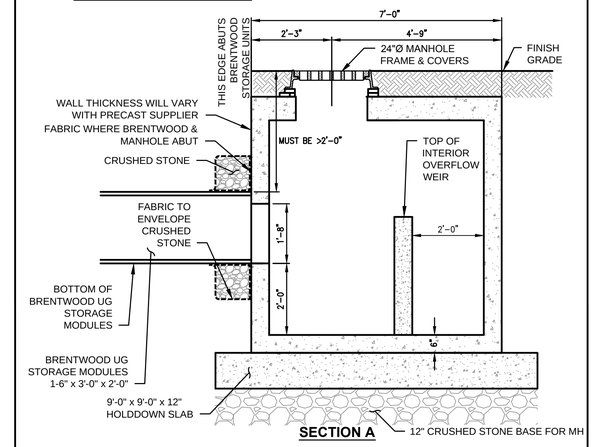
② FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05

③ DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS & HANCOR DUAL WALL) & SDR 35 PVC

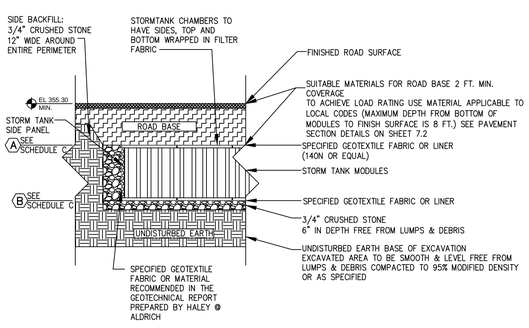
E NYLOPLAST RISER DETAIL
N.T.S.

C-7.9

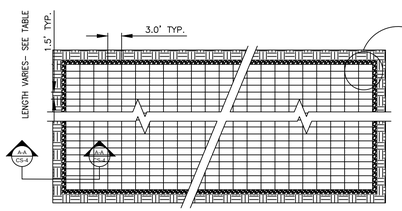




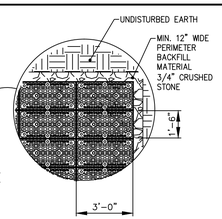
F 6' x 6' OUTLET CONTROL MANHOLE WITH DRAINAGE ENTERING MH FROM PRIVATE PROPERTY WHICH DOES NOT RECEIVE TREATMENT
N.T.S.



CROSS SECTION A-A
VEHICULAR TRAFFIC AREAS
N.T.S.



PLAN VIEW
N.T.S.

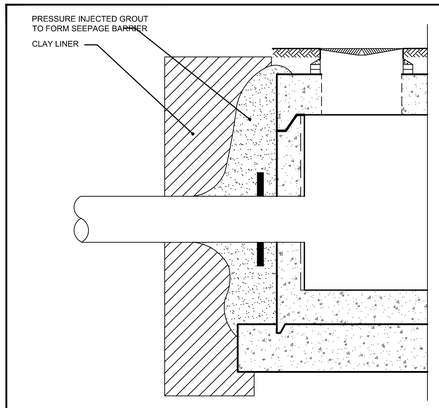


MODULE ORIENTATION DETAIL
N.T.S.

NOTE: PROVIDE CONCRETE SPLASH PAD (2'-0" x 2'-0") BELOW PIPE ENTRY POINTS TO CONTROL SPLASH

C BRENTWOOD STORM TANK™
N.T.S.

REFER TO GRADING PLANS AND SCHEDULES ON DRAWING C-3.10 TO C-3.12



F PIPE INLET/OUTLET TO SECTION
N.T.S.

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE WILLIAM R. MOORE 13547 LICENSED PROFESSIONAL ENGINEER 11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT
midtown
PORTLAND, MAINE

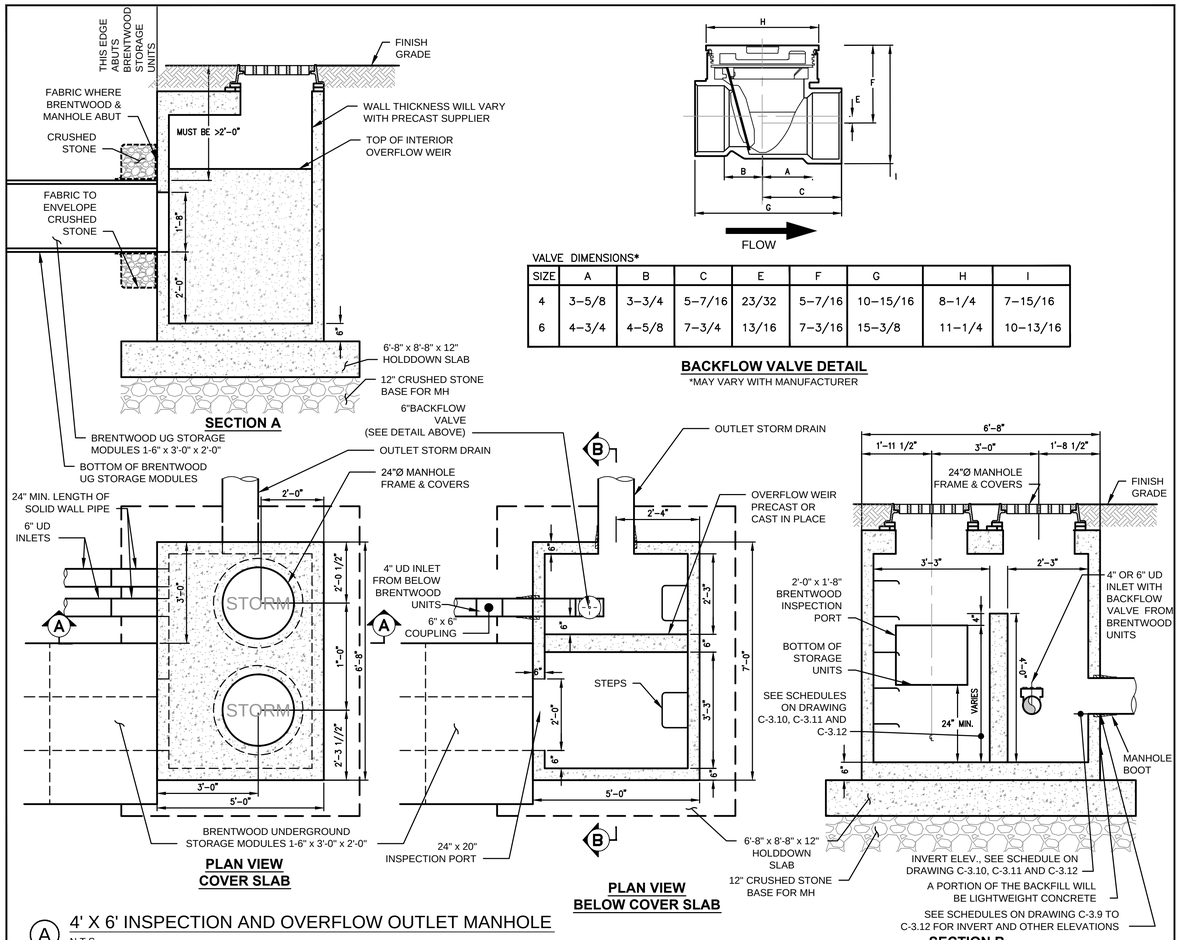
SHEET TITLE
STORMTREAT™ AND BRENTWOOD™ UNDERGROUND STORAGE DETAILS

CLIENT
THE FEDERATED COMPANIES

FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	NTS
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-DETAIL SHEETS		
SHEET	C-7.9		

R:\3062B - Midtown Amended - Portland, ME\Cadd\Permit Set\dwg\3062-DETAIL SHEETS.dwg davis_d 11/14/2014 10:53 AM



VALVE DIMENSIONS*

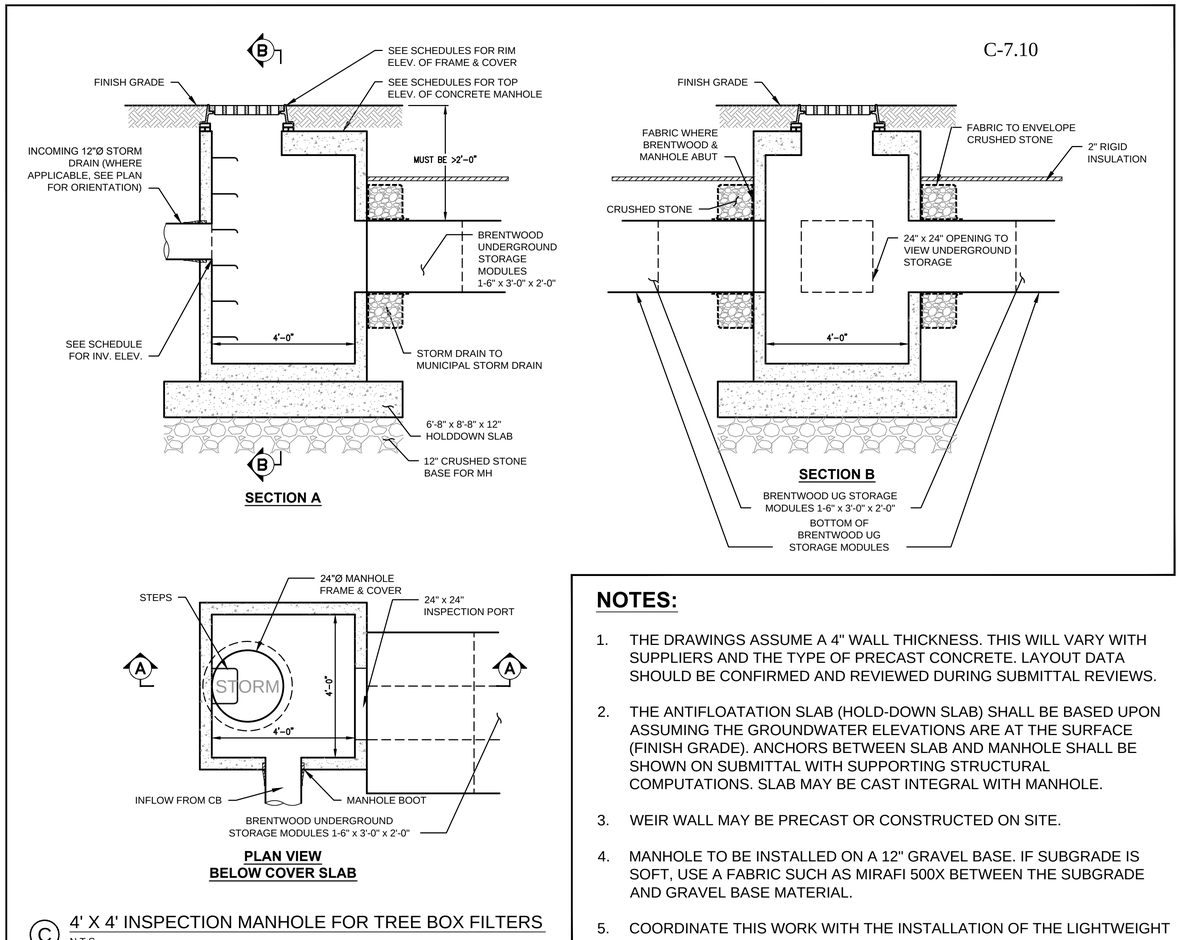
SIZE	A	B	C	E	F	G	H	I
4	3–5/8	3–3/4	5–7/16	23/32	5–7/16	10–15/16	8–1/4	7–15/16
6	4–3/4	4–5/8	7–3/4	13/16	7–3/16	15–3/8	11–1/4	10–13/16

BACKFLOW VALVE DETAIL

*MAY VARY WITH MANUFACTURER

(A) 4' X 6' INSPECTION AND OVERFLOW OUTLET MANHOLE

N.T.S.

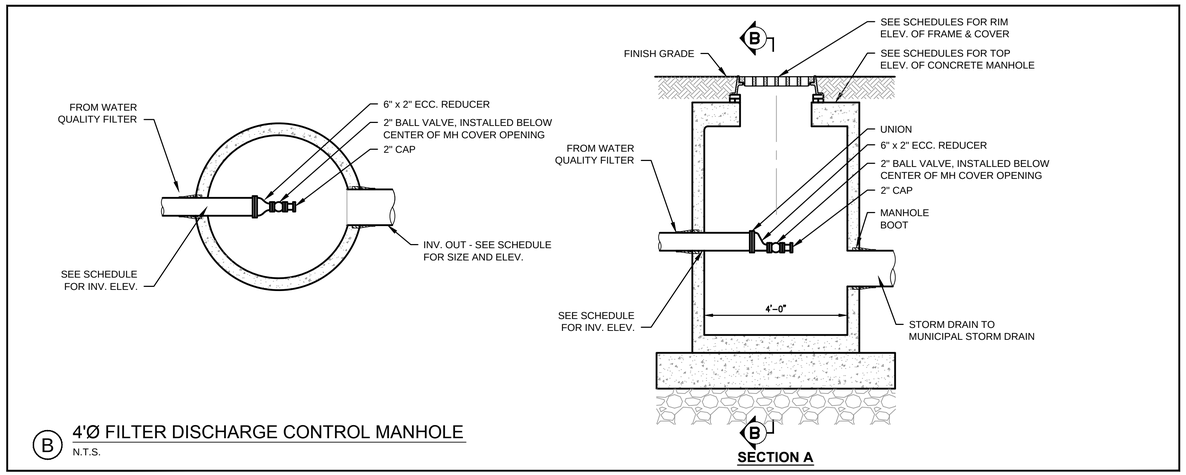


(C) 4' X 4' INSPECTION MANHOLE FOR TREE BOX FILTERS

N.T.S.

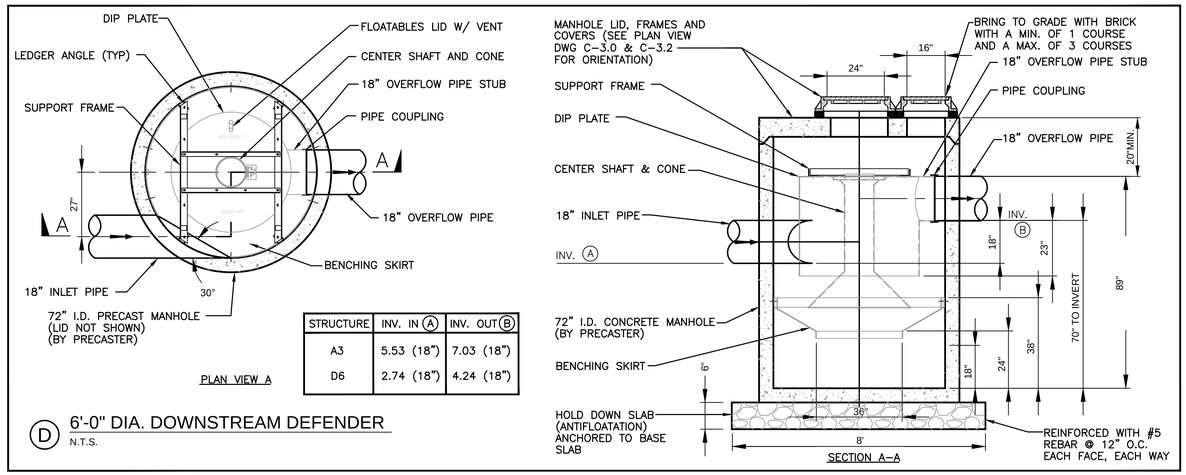
NOTES:

1. THE DRAWINGS ASSUME A 4" WALL THICKNESS. THIS WILL VARY WITH SUPPLIERS AND THE TYPE OF PRECAST CONCRETE. LAYOUT DATA SHOULD BE CONFIRMED AND REVIEWED DURING SUBMITTAL REVIEWS.
2. THE ANTIFLOATATION SLAB (HOLD-DOWN SLAB) SHALL BE BASED UPON ASSUMING THE GROUNDWATER ELEVATIONS ARE AT THE SURFACE (FINISH GRADE). ANCHORS BETWEEN SLAB AND MANHOLE SHALL BE SHOWN ON SUBMITTAL WITH SUPPORTING STRUCTURAL COMPUTATIONS. SLAB MAY BE CAST INTEGRAL WITH MANHOLE.
3. WEIR WALL MAY BE PRECAST OR CONSTRUCTED ON SITE.
4. MANHOLE TO BE INSTALLED ON A 12" GRAVEL BASE. IF SUBGRADE IS SOFT, USE A FABRIC SUCH AS MIRAFI 500X BETWEEN THE SUBGRADE AND GRAVEL BASE MATERIAL.
5. COORDINATE THIS WORK WITH THE INSTALLATION OF THE LIGHTWEIGHT CONCRETE FILL.



(B) 4'Ø FILTER DISCHARGE CONTROL MANHOLE

N.T.S.



STRUCTURE	INV. IN (A)	INV. OUT (B)
A3	5.53 (18")	7.03 (18")
D6	2.74 (18")	4.24 (18")

(D) 6'-0" DIA. DOWNSTREAM DEFENDER

N.T.S.

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE — WILLIAM R. MOORE — 13547 — LICENSED — PROFESSIONAL ENGINEER — 11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT: midtown, PORTLAND, MAINE

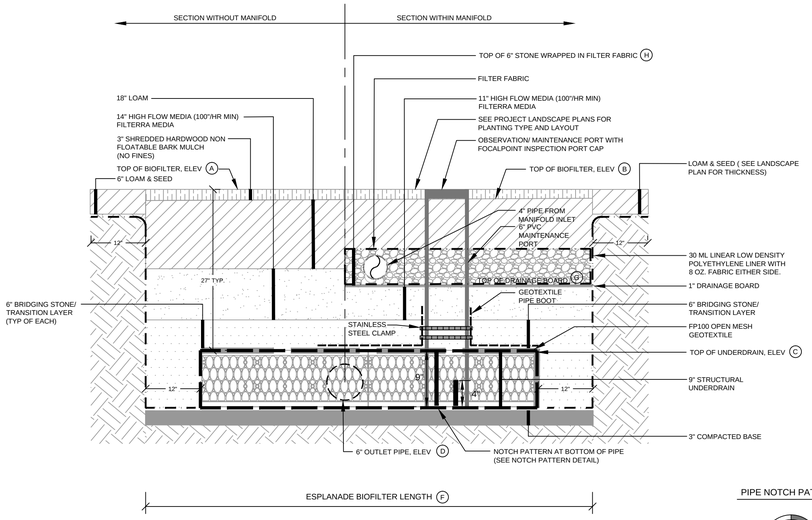
SHEET TITLE: TREEBOX FILTER WITH UNDERGROUND STORAGE DETAILS

CLIENT: THE FEDERATED COMPANIES

FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

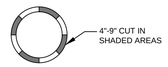
DRAWN:	KEW	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	NTS
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-DETAIL SHEETS		
SHEET	C-7.10		

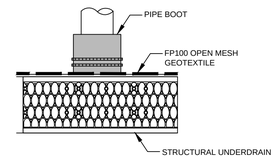
R:\3062B - Midtown Amended - Portland, ME\Cadd\Permit Set\dwg\3062-DETAIL SHEETS.dwg davis_d 11/14/2014 10:54 AM



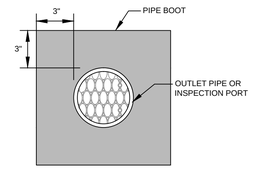
BOXLESS TREE FILTER CROSS SECTION
N.T.S.

PIPE NOTCH PATTERN DETAIL

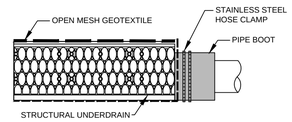




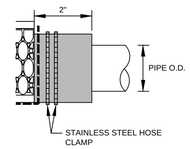
OBSERVATION PORT CONNECTION



FRONT OR TOP VIEW

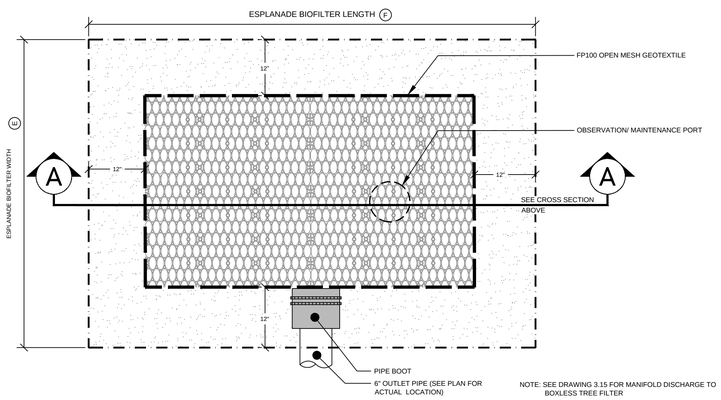


OUTLET/ INLET PIPE CONNECTION



SIDE VIEW

PIPE BOOT DETAIL



BOXLESS TREE FILTER PLAN VIEW
N.T.S.

BOXLESS TREE FILTER ELEVATION AND DIMENSIONAL DATA		
A	TOP OF FILTER ELEVATION	10.5 +/-
B	TOP OF MEDIA	7.20
C	TOP OF UNDERDRAIN ELEVATION	6.70
D	6" OUTLET PIPE INVERT	5.95
E	TREE MINIMUM FILTER WIDTH	3' (2 UNITS)
F	TREE MINIMUM FILTER LENGTH	15' (2 UNITS)
G	TOP OF 1" DRAINAGE BOARD	7.66
H	TOP OF CRUSHED STONE & FABRIC OVER MANIFOLD	8.16

* - ALTERNATE IS AN IRREGULAR SHAPE - 90 SF TOTAL (45 SF EACH)

A BOXLESS TREE FILTER FOR SYSTEMS A, B, AND C
N.T.S.

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE WILLIAM R. MOORE 13547 LICENSED PROFESSIONAL ENGINEER 11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
BOXLESS TREE FILTER FOR SYSTEM A

CLIENT
THE FEDERATED COMPANIES

FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	NTS
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-DETAIL SHEETS		
SHEET	C-7.11		

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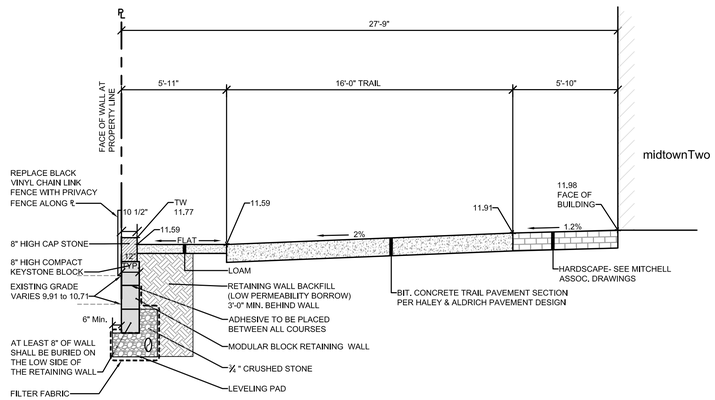
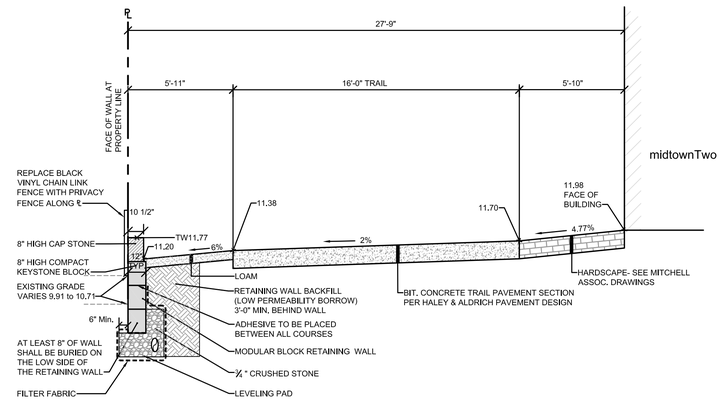


TYPICAL CROSS SECTION
ALONG "PINCH POINT" BEHIND midtownTwo (High)
SCALE: 1" = 4' Horiz., 1" = 8' Vert.



TYPICAL CROSS SECTION
ALONG "PINCH POINT" BEHIND midtownTwo (Low)
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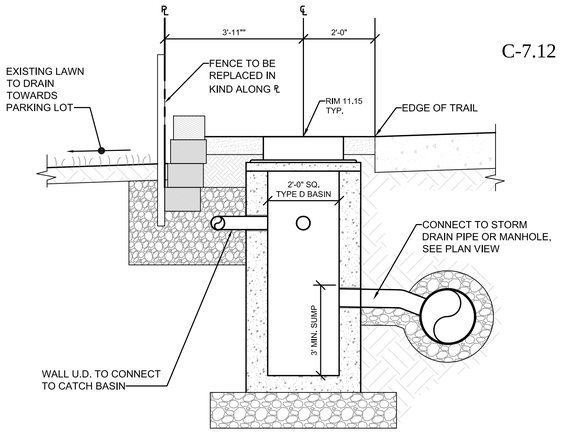
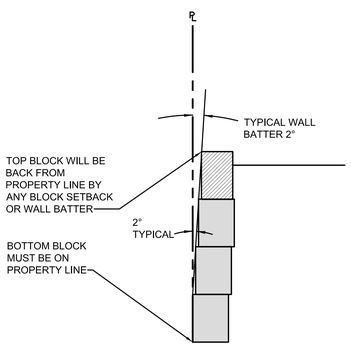
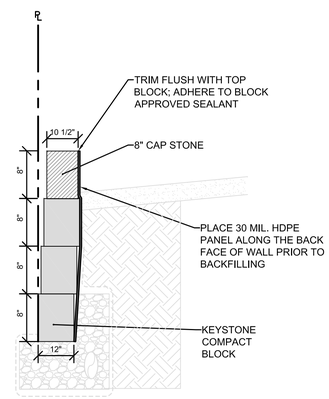


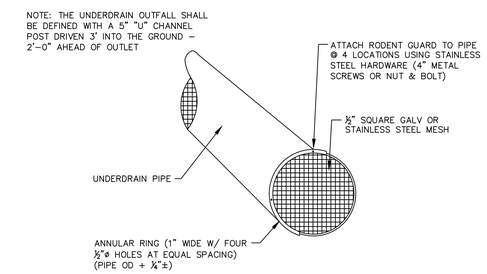
TYPE D DRAINAGE INLET DETAIL ALONG RETAINING WALL
SCALE: 1" = 2'



PLACEMENT OF BOTTOM BLOCK
SCALE: 1" = 2' Horiz., 1" = 4' Vert.



DETAIL FOR WATERPROOF MEMBRANE
ALONG THE BACK FACE OF THE WALL
SCALE: 1" = 2' Horiz., 1" = 4' Vert.



UNDERDRAIN OUTFALLS AND
RODENT GUARD FOR EXPOSED PIPE OUTLETS
(C) N.T.S.

BASIS OF DESIGN FOR THE BAYSIDE TRAIL RECONSTRUCTION BEHIND midtownTwo

AASHTO Standards Which Must Be Met:

The minimum width of the shoulder adjacent to a multiuse path must be 5 feet before a vertical drop or rise is permitted (5'-1/2" provided).

Railings and other obstructions need to have a 2 foot setback from the edge of the trail (no obstructions).

The trail cross slope is 2% (see detail sections).

The grade from the edge of the trail should not exceed 6% for a distance of 5'-0" (slope varies from 0% to 6%).

New Cross Sections:

Two cross sections are shown. One is at the sags along the trail; the other is at the crests (i.e. 41 feet apart).

Inlets are required along the top of the wall to intercept drainage.

Temporary Construction Easement to be granted by Abutter.

Option 1 or 2 shall be selected by abutting property owner.

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
2	01.21.15	REVISED PER PWD/CMP COMMENTS: SUBMITTED TO CITY
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE
STEPHEN R. BUSHEY
No. 7429
LICENSED
PROFESSIONAL ENGINEER
11/21/15

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

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
BAYSIDE TRAIL RETAINING WALL DETAILS AND ABUTTER OPTIONS

CLIENT
FEDQ DV001, LLC

FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106

DRAWN:	KEW	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	AS NOTED
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-RET WALL OPTIONS		
SHEET	C-7.12		

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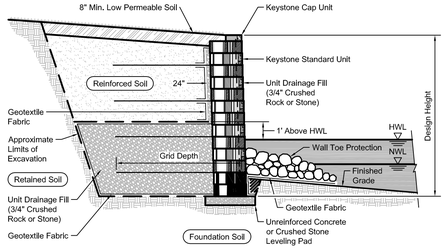
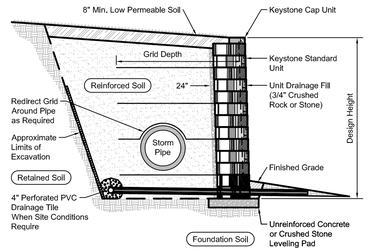
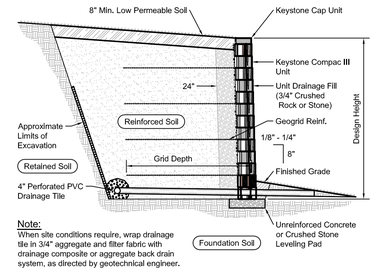


A TYPICAL REINFORCED WATER WALL SECTION
N.T.S.

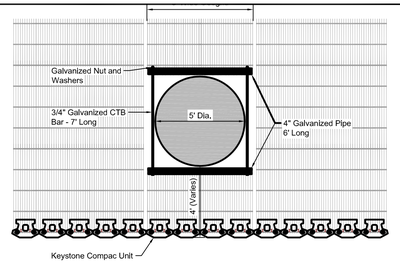


D WALL SECTION WITH PIPE IN REINFORCED ZONE
N.T.S.

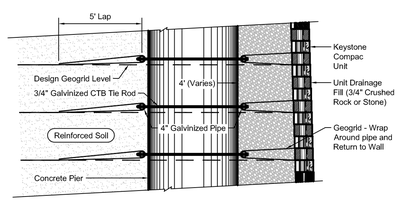


Note:
When site conditions require, wrap drainage tile in 3/4" aggregate and filter fabric with drainage composite or aggregate back drain system, as directed by geotechnical engineer.

H TYPICAL REINFORCED WALL SECTION
N.T.S.

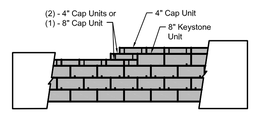


Wall Plan at Pier / Manhole
Compac Unit



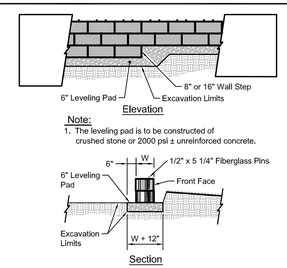
Wall Section at Pier / Manhole
Compac Unit - Near Vertical Setback

B WALL AT PIER / MANHOLE
N.T.S.



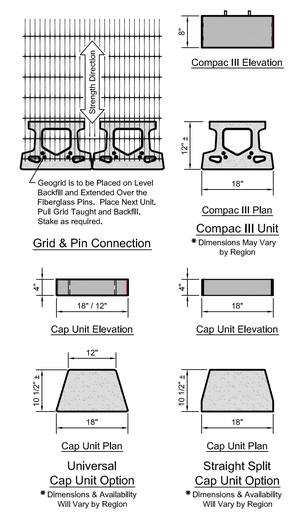
Note:
1. Secure all cap units with Keystone Kapseal or equal.

E TOP OF WALL STEPS
N.T.S.

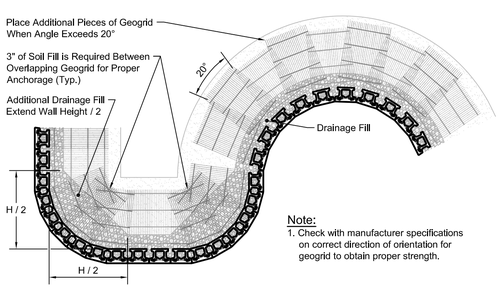


Note:
1. The leveling pad is to be constructed of crushed stone or 2000 psi ± unreinforced concrete.

F LEVELING PAD DETAIL
N.T.S.

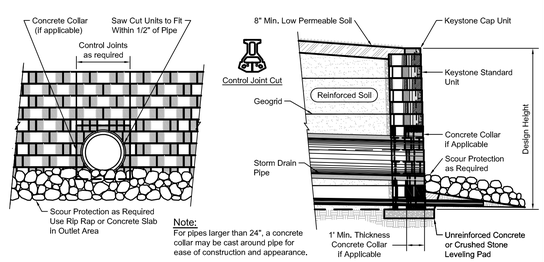


I WALL CAPS, BLOCK UNITS & GEOGRID INSTALLATION
N.T.S.



Note:
1. Check with manufacturer specifications on correct direction of orientation for geogrid to obtain proper strength.

C GEOGRID INSTALLATION ON CURVES
N.T.S.



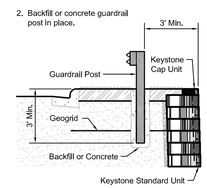
Note:
For pipes larger than 24", a concrete collar may be cast around pipe for ease of construction and appearance.

Typical Pipe Outlet Detail

Typical Pipe Outlet Section
Standard Unit - Near Vertical Setback

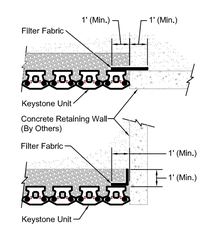
G TYPICAL PIPE OUTLET
N.T.S.

Note:
1. Auger through geogrid layers.
2. Backfill or concrete guardrail post in place.



Typical Guardrail Detail
Standard Unit - Near Vertical Setback Shown

J TYPICAL GUARDRAIL DETAIL
N.T.S.



Connection Details
Compac Unit - Shown

K CONNECTION DETAILS
N.T.S.

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE
WILLIAM R. MOORE
13547
11/14/14
LICENSED PROFESSIONAL ENGINEER

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
RETAINING WALL DETAILS

CLIENT
THE FEDERATED COMPANIES

FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106

DRAWN:	KEW	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	AS NOTED
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-RET WALL OPTIONS		
SHEET	C-7.13		

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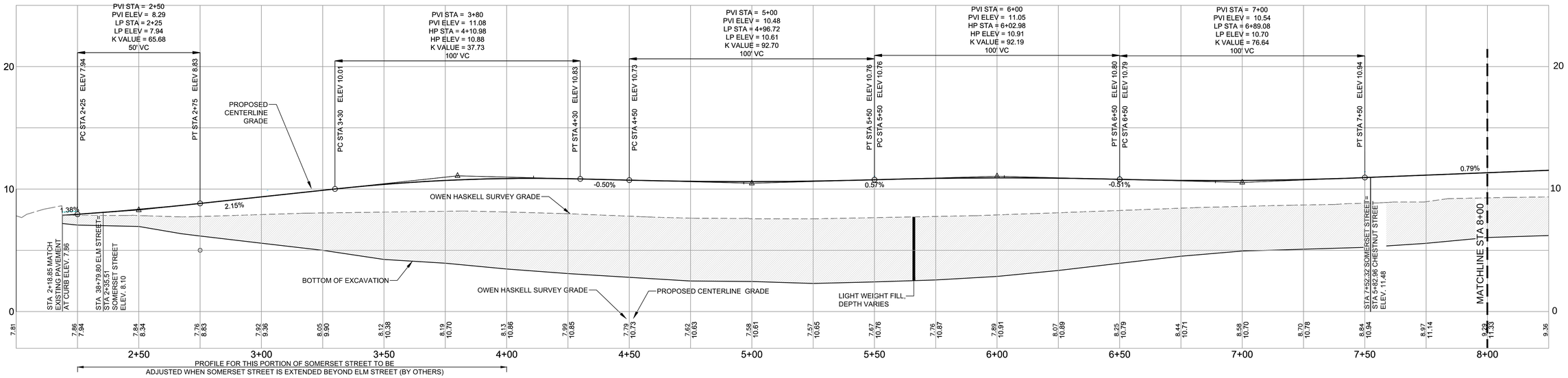
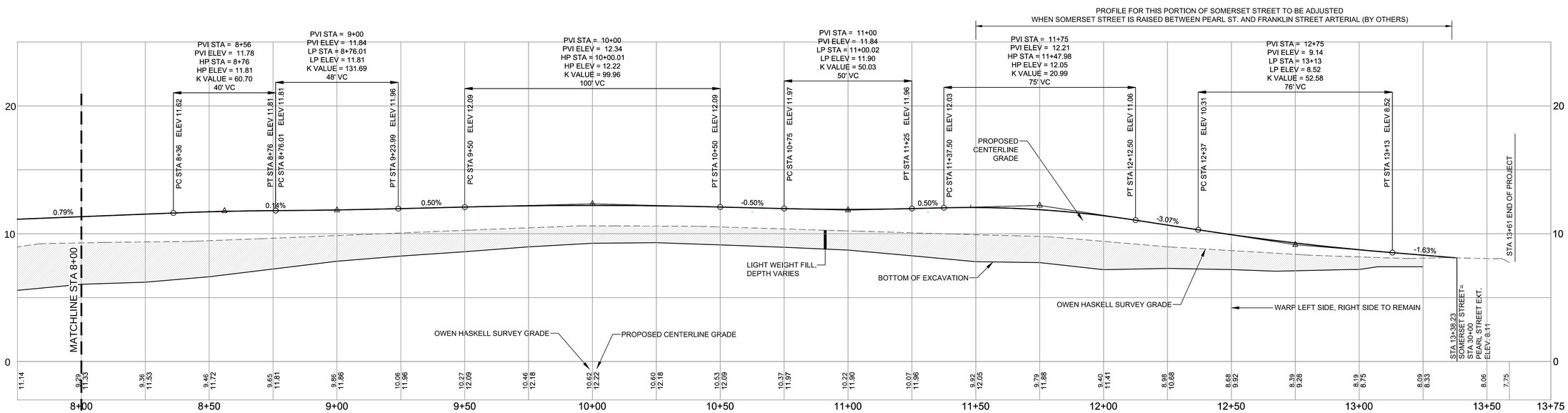


SOMERSET STREET PROFILE (FACING midtown)

SCALE: 1"=4' VERT.; 1:=20' HORIZ.



SOMERSET STREET PROFILE (FACING midtown)

SCALE: 1"=4' VERT.; 1:=20' HORIZ.

REFER TO DRAWING C-7.0 AND C-7.0A FOR TYPICAL CROSS SECTIONS

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE — WILLIAM R. MOORE — 13547 — LICENSED — PROFESSIONAL ENGINEER — 11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

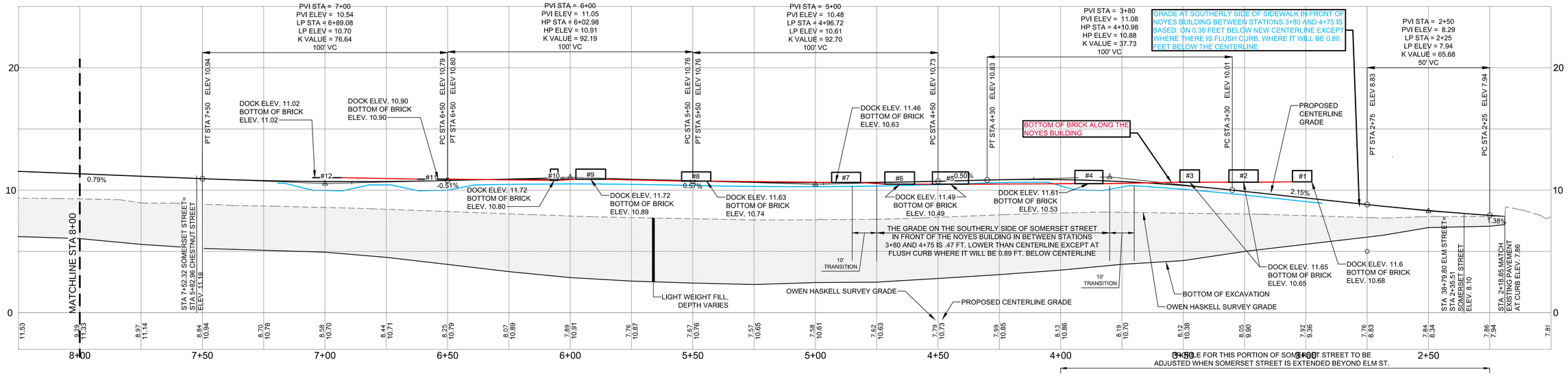
PROJECT: midtown
PORTLAND, MAINE

SHEET TITLE: SOMERSET STREET PROFILE

CLIENT: THE FEDERATED COMPANIES

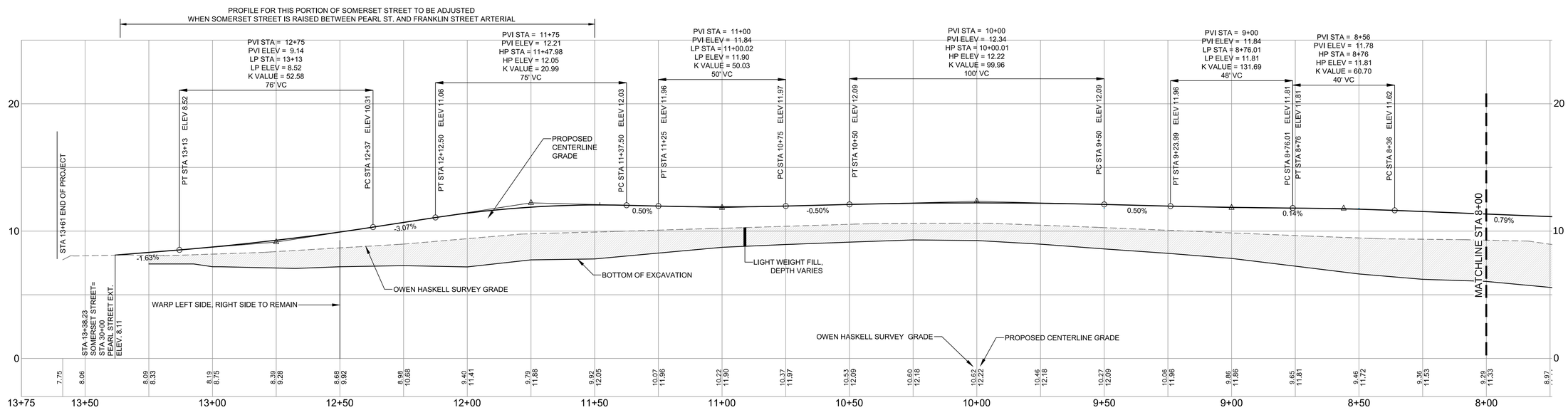
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	AS NOTED
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-PROFILE-ROADWAY		
SHEET	C-8.0		



SOMERSET STREET PROFILE FACING NOYES

SCALE: 1"=4' VERT.; 1:=20' HORIZ.



SOMERSET STREET PROFILE FACING NOYES

SCALE: 1"=4' VERT.; 1:=20' HORIZ.

NOTE:
THE SIDEWALK SLOPE ON THE SOUTHERLY SIDE OF SOMERSET STREET BETWEEN STATIONS 3+75 AND 7+20 WILL BE INCREASED BY 2% IN AREAS WHERE IT WILL NOT BE ABOVE THE BRICK ON THE NOYES BUILDING

REFER TO DRAWING C-7.0 AND C-7.0A FOR TYPICAL CROSS SECTIONS

THIS DRAWING IS INTENDED TO BE PLOTTED AND VIEWED IN COLOR.
BLACK AND WHITE PLAN NOT SUITABLE FOR REVIEW

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE — WILLIAM R. MOORE — 13547 — LICENSED — PROFESSIONAL ENGINEER — 11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT: midtown
PORTLAND, MAINE

SHEET TITLE: SOMERSET STREET PROFILE FACING NOYES BUILDING

CLIENT: THE FEDERATED COMPANIES

FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	AS NOTED
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-PROFILE-ROADWAY		
SHEET	C-8.0A		

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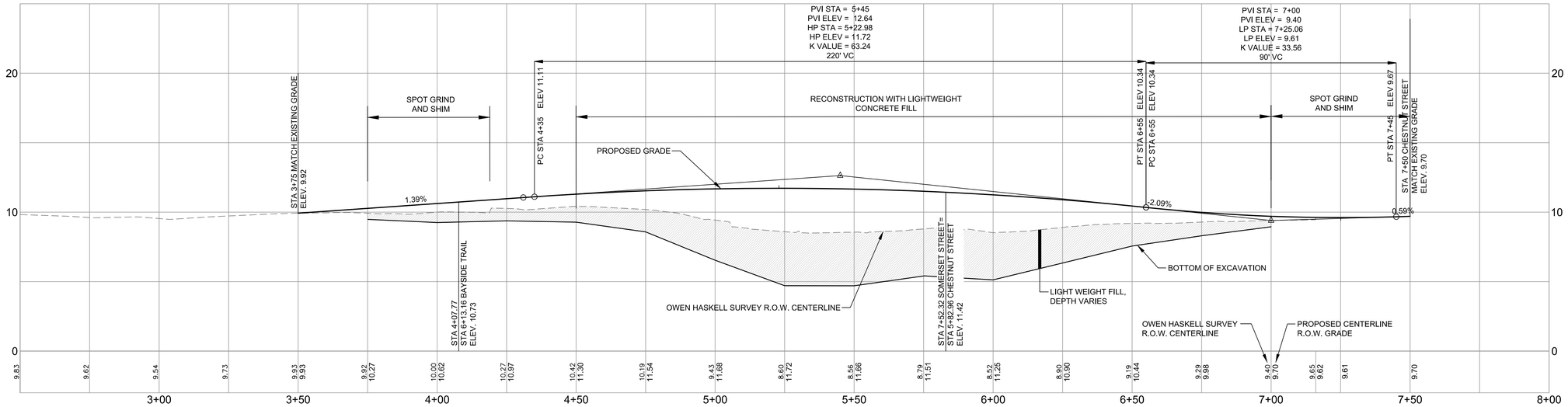
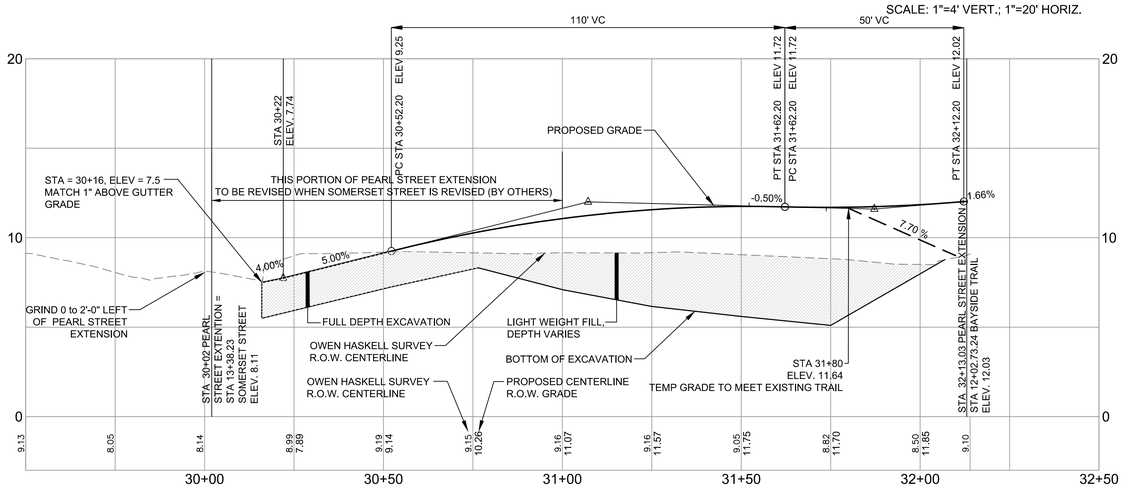


SCALE: 1"=4' VERT.; 1"=20' HORIZ.



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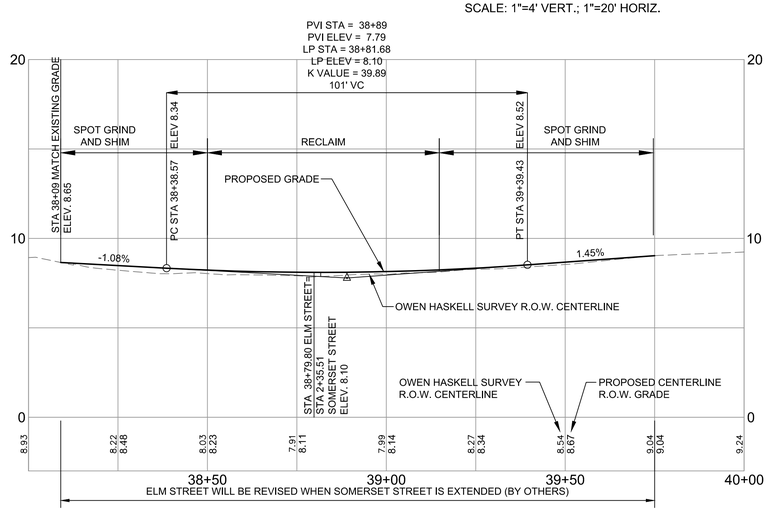

SCALE: 1"=4' VERT.; 1"=20' HORIZ.

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE — WILLIAM R. MOORE — 13547 — LICENSED PROFESSIONAL ENGINEER — 11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
ELM STREET, CHESTNUT STREET, & PEARL STREET EXTENTION PROFILES

CLIENT
THE FEDERATED COMPANIES

FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	AS NOTED
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-PROFILE-ROADWAY		
SHEET	C-8.1		

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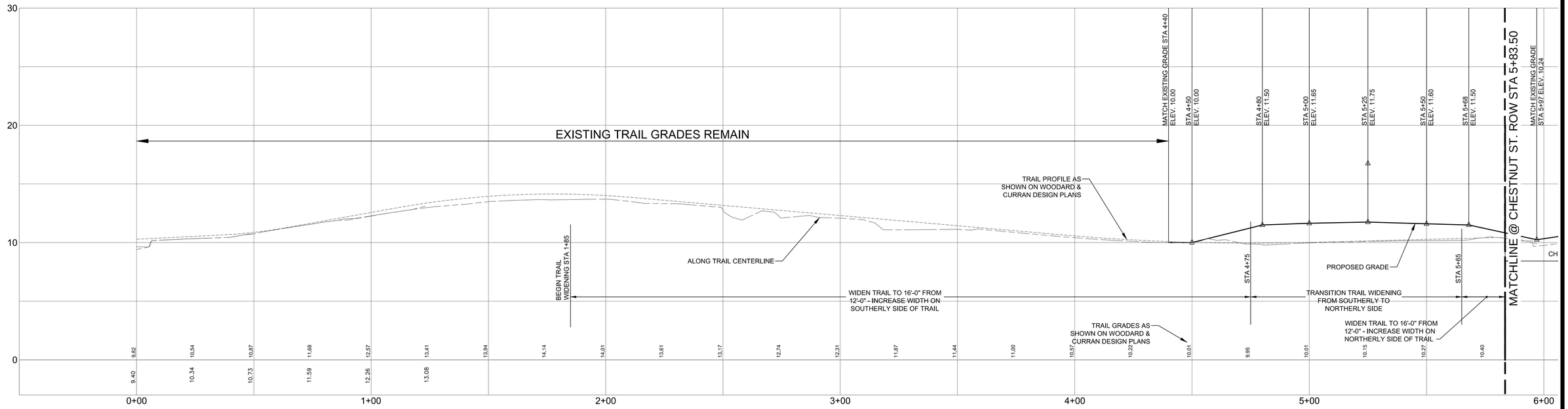
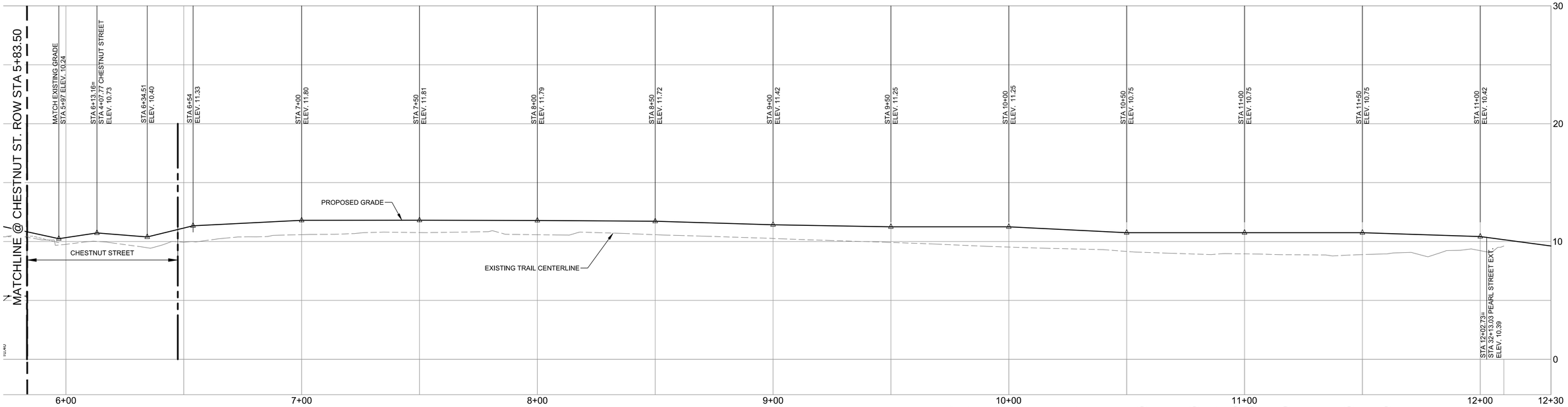


BAYSIDE TRAIL PROFILE

SCALE: 1"=4' VERT.; 1:=20' HORIZ.



BAYSIDE TRAIL PROFILE

SCALE: 1"=4' VERT.; 1:=20' HORIZ.

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
2	01.21.2015	REVISED PROFILE ON CHESTNUT ST. & SUBMITTED TO CITY FOR REVIEW
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE — STEPHEN R. BUSHEY — No. 7429 — LICENSED PROFESSIONAL ENGINEER — 1/21/15

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

PROJECT: midtown
PORTLAND, MAINE

SHEET TITLE: BAYSIDE TRAIL PROFILE

CLIENT: FEDQ DV001, LLC

FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	AS NOTED
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-PROFILE_TRAIL		
SHEET	C-8.2		

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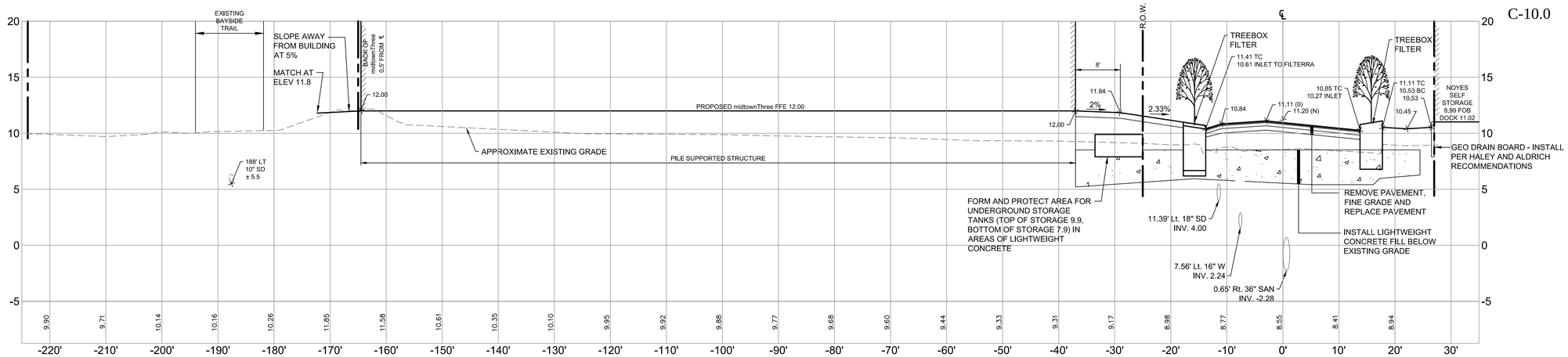
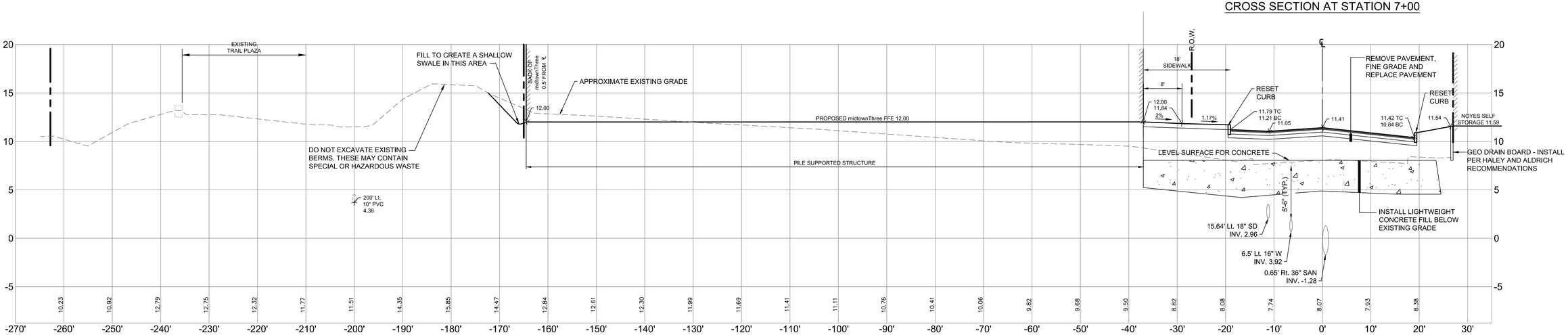


CROSS SECTION AT STATION 7+00



CROSS SECTION AT STATION 4+00

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE — WILLIAM R. MOORE — 13547 — LICENSED — PROFESSIONAL ENGINEER — 11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT: midtown
PORTLAND, MAINE

SHEET TITLE: SOMERSET STREET CROSS SECTIONS

CLIENT: THE FEDERATED COMPANIES

FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	1"=10' H,1"=5' V
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-SECTIONS		
SHEET	C-10.0		

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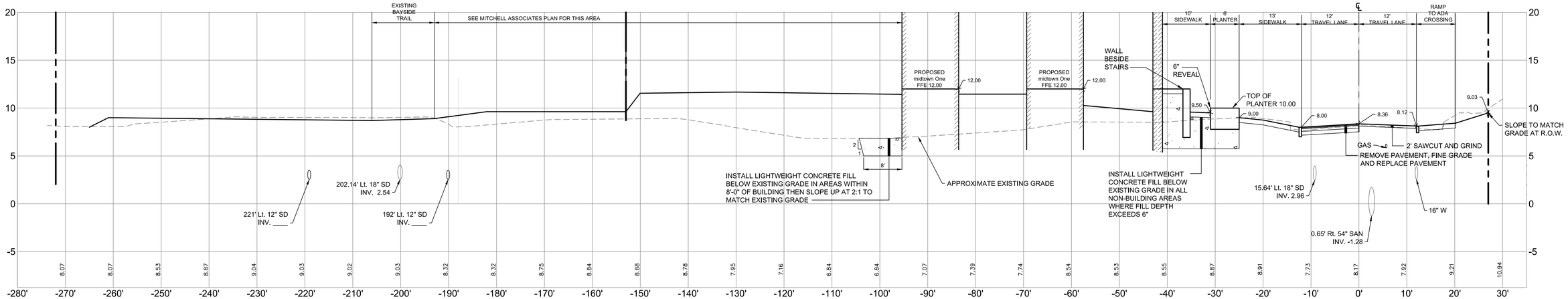
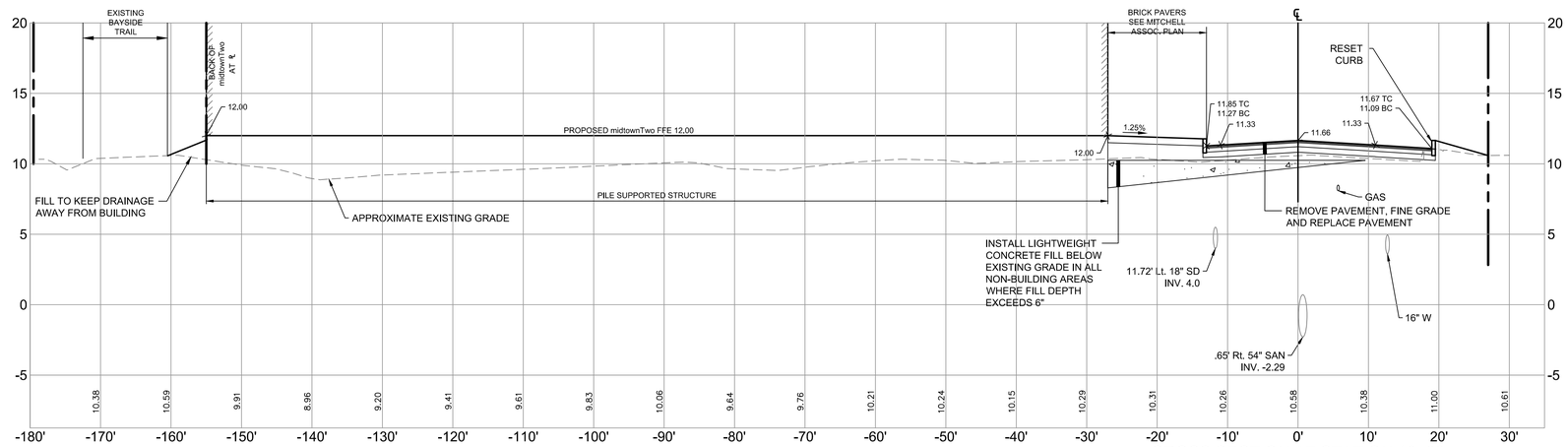


CROSS SECTION AT STATION 13+00



CROSS SECTION AT STATION 10+00

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE WILLIAM R. MOORE 13547 LICENSED PROFESSIONAL ENGINEER 11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT: midtown
PORTLAND, MAINE

SHEET TITLE: SOMERSET STREET CROSS SECTIONS

CLIENT: THE FEDERATED COMPANIES

FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	1"=10' H,1"=5' V
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-SECTIONS		
SHEET	C-10.1		

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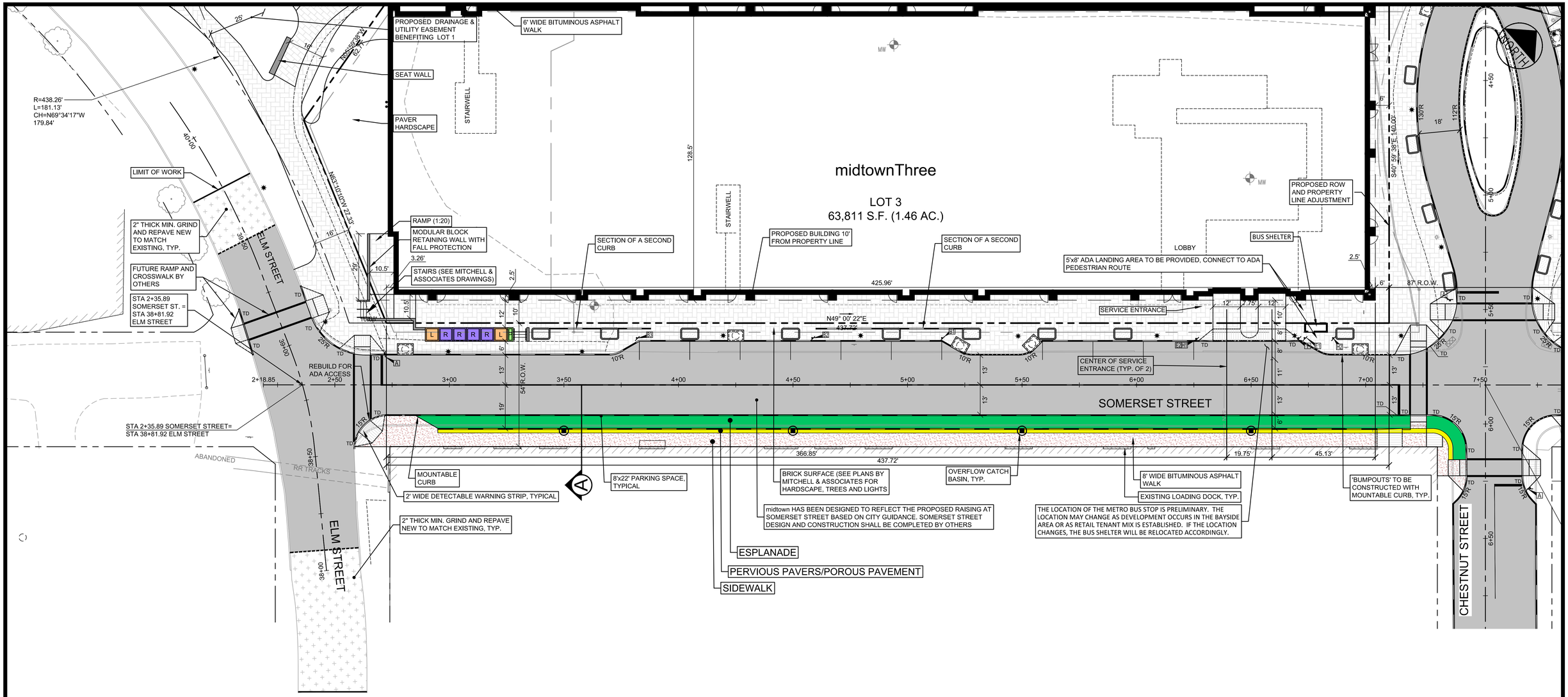

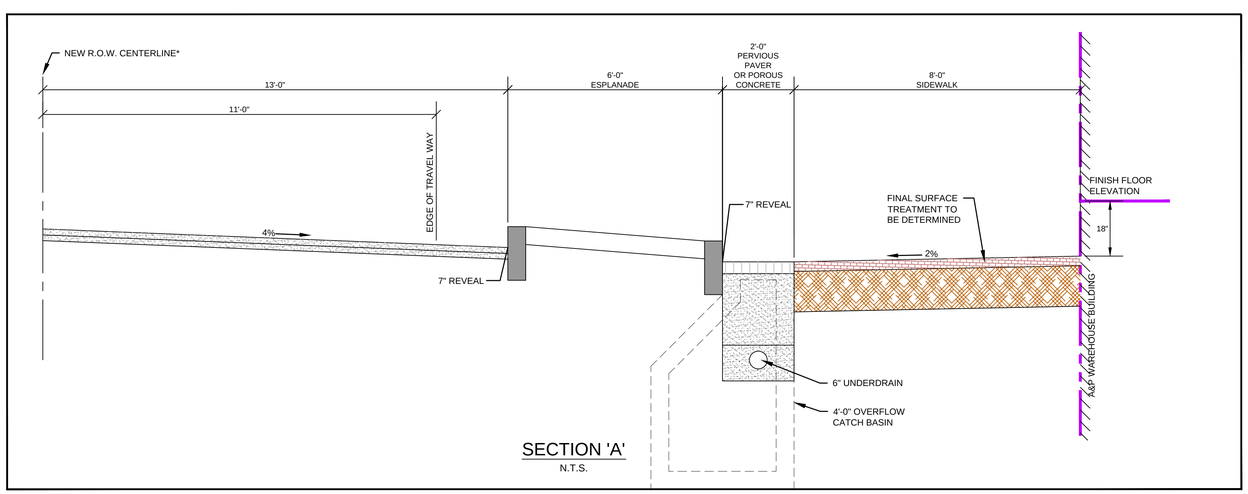

SECTION 'A'
N.T.S.

THIS DRAWING IS INTENDED TO BE PLOTTED AND VIEWED IN COLOR
BLACK AND WHITE PLAN IS NOT SUITABLE FOR REVIEW

GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 inch = 20 ft.

LEGEND
- PROPOSED PROPERTY BOUNDARY
- ABUTTING BUILDING
- FEDERATED BUILDINGS
- HARDSCAPE/LANDSCAPE
- PROPOSED PAVEMENT
- GREEN SPACE/PLANTERS (BY MITCHELL ASSOCIATES)
- PROPOSED LANDING, PLANTER AND RAMP
- SNOW STORAGE AREA
- EXISTING BRICK TRAIL
- EXISTING HARDSCAPED TRAIL
- EXISTING PAVED TRAIL
- EXISTING GRAVEL PATH
- VERTICAL GRANITE CURB
- FLUSH GRANITE CURB
- MOUNTABLE CURB (TYPE 5 GRANITE)
- TIPDOWN

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
2	01.22.15	SUBMITTED TO CITY FOR REVIEW

REVISIONS

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

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
SOMERSET STREET SCHEMATIC
MAINTAIN 18" OF FREEBOARD ADJACENT TO NOYES BUILDING

CLIENT
FEDQ DV001, LLC

FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW/LA	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	1" = 20'
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-SOMERSET ST. OPTION		
SHEET	FIGURE 1		

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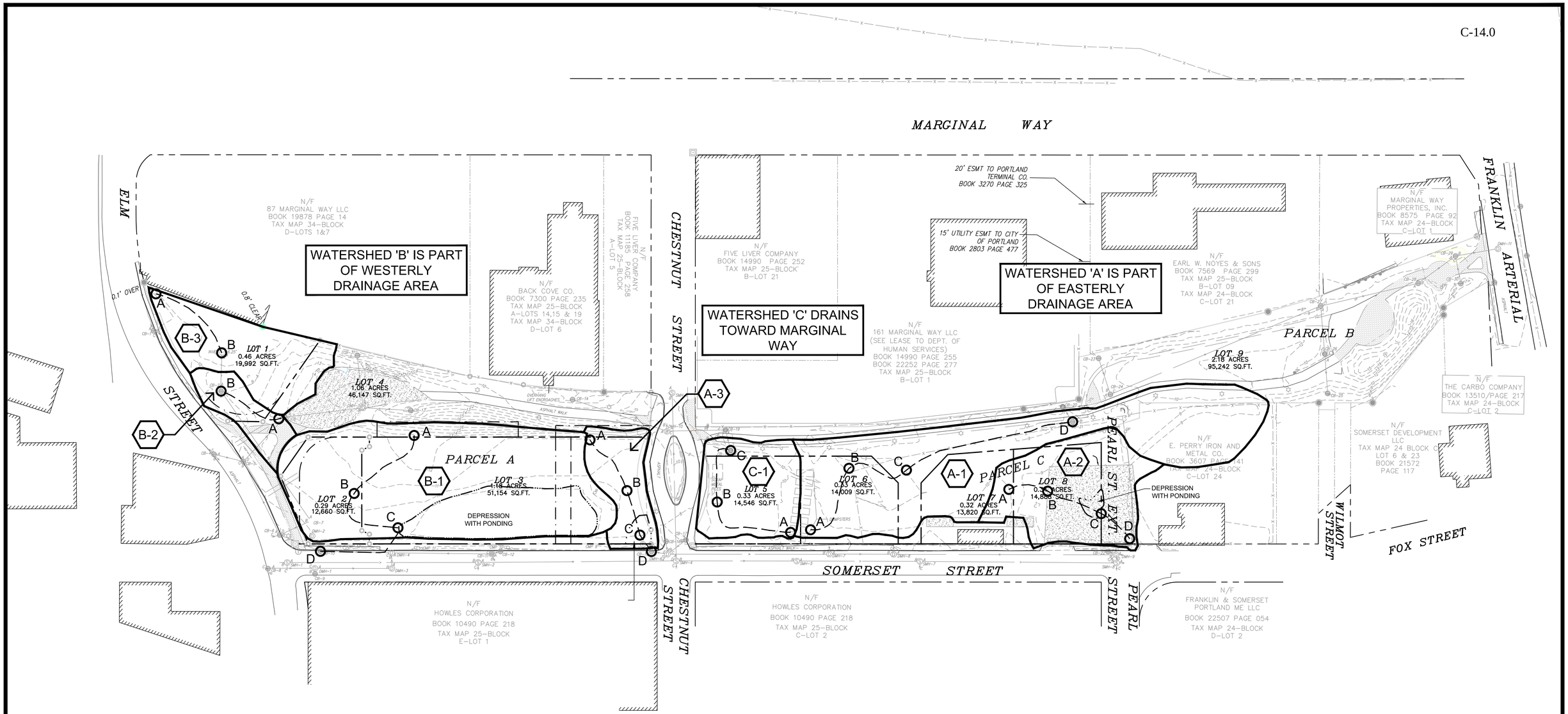


WATERSHED LEGEND

- WATERSHED BOUNDARY
- A — B: WATERSHED FLOW PATH
- 999: SUBCATCHMENT

MARITIME LANDING PREDEVELOPMENT CONDITIONS

SYSTEM	TD	AREA (ACRES)	ELEVATION A	ELEVATION B	ELEVATION C	ELEVATION D	DISTANCE (FT) AB	DISTANCE (FT) BC	DISTANCE (FT) CD
EAST SIDE DRAINAGE	A-1	1.30	10.80	9.20	9	8.10	105	86	225
	A-2	0.56	10.10	9.80	8.50	8.30	54	76	50
	A-3	0.24	10.90	9.30	9	7.63	85	61	23
WEST SIDE DRAINAGE	B-1	1.37	12.50	10.40	9.20	5.90	114	99	116
	B-2	0.16	12	9.65			86		
	B-3	0.43	9	7.50			121		
CHESTNUT	C-1	0.38	10.40	9.10	8.50		121	82	

NORTH

GRAPHIC SCALE
60 0 30 60 120
(IN FEET)
1 inch = 60 ft.

FOR NOVEMBER 14, 2014 SUBMISSION - SUBJECT TO ONGOING FAY, SPOFFORD & THORNDIKE REVIEW

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE WILLIAM R. MOORE 13547 LICENSED PROFESSIONAL ENGINEER 11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT: midtown, PORTLAND, MAINE

SHEET TITLE: PREDEVELOPMENT WATERSHED MAP

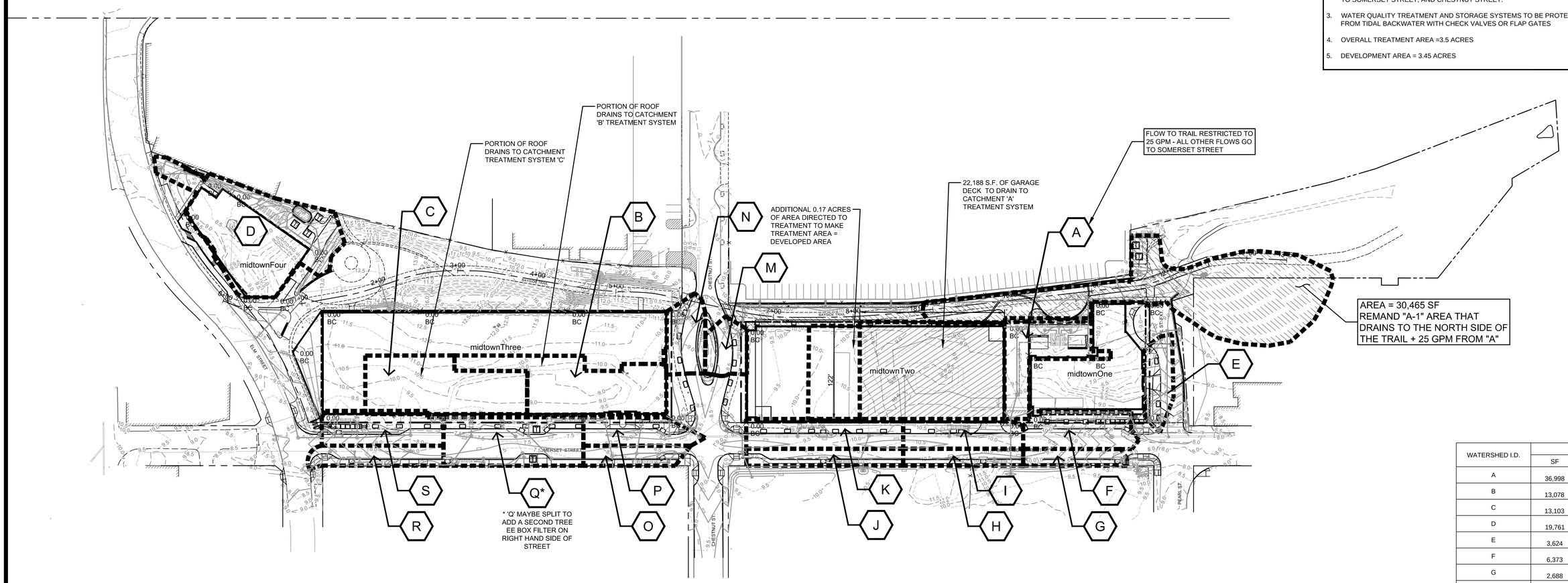
CLIENT: THE FEDERATED COMPANIES

FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	LA	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	1"=60'
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-WSHED		
SHEET	C-14.0		

R:\30628 - Midtown Amended - Portland, ME\Cadd\Permit Set\dwg\3062-WSHED-PRE.dwg davis_d 11/14/2014 3:05 PM

NOTE:
1. RUNOFF FROM AREA 'D' RECEIVES TREATMENT VIA STORMTREAT ™ UNITS. THE REMAINDER OF THE AREAS IDENTIFIED ON THIS PLAN ARE TREATED BY A TREEBOX FILTER.
2. THE AREAS SHOWN ARE DRAINAGE AREAS THAT RECEIVE WATER QUALITY TREATMENT. NON TREATED AREAS (ROOFTOPS) WILL CONNECT TO SOMERSET STREET, AND CHESTNUT STREET.
3. WATER QUALITY TREATMENT AND STORAGE SYSTEMS TO BE PROTECTED FROM TIDAL BACKWATER WITH CHECK VALVES OR FLAP GATES
4. OVERALL TREATMENT AREA =3.5 ACRES
5. DEVELOPMENT AREA = 3.45 ACRES



WATERSHED I.D.	AREA	
	SF	AC.
A	36,998	0.85
B	13,078	0.30
C	13,103	0.30
D	19,761	0.45
E	3,624	0.08
F	6,373	0.15
G	2,688	0.06
H	3,184	0.07
I	5,497	0.13
J	4,160	0.10
K	7,318	0.17
L	5,295	0.12
M	3,292	0.08
N	4,426	0.10
O	3,115	0.07
P	4,700	0.11
Q	5,295	0.12
R	4,173	0.10
S	6,447	0.15
TOTAL	152,527	3.50

Midtown Water Quality Summary, Isolator Row Sizing and Summary of Peak Discharges

System	Tributary Area (SF)	Tributary Area (acres)	Treatment Approach	Required Filterra Sizing (sf)/Number of Storm Treats (ea)	Filterra Size (sf)/Storm Treats Provided (ea)	Water Quality Volume (CF)	1 Yr. Peak Flow (CFS)	# Chambers (SC740) Required	Storage Volume Required (CF)*	"Brentwood Tanks Required (See Plan for Dimension)"	"Brentwood Tanks Provided (1.5' x 3' x 2)"	"Peak Flow 2 Year Storm (CFS)"	"Peak Flow 25 Year Storm (CFS)"
A	36,988	0.85	Subsurface Filterra Media	12'x8'	12'x15'	3,082	2	10	682	76	84	2.32	4.50
B	13,078	0.30	Boxless Filterra	4'x'6'	4'x'6	1,090	0.71	4	273	31	30*	0.82	1.59
C	13,103	0.30	Boxless Filterra	4'x'6'	4'x'6	1,092	0.71	4	273	31	30*	0.82	1.59
D	19,761	0.45	StormTreat Units	2.00	2.00	1,647	1.07	6	409	126	126	1.24	2.40
E	3,624	0.08	Filterra	4'x'6'	4'x'6	302	0.2	1	68	8	16	0.23	0.44
F	6,373	0.15	Filterra	4'x'6'	4'x'6	531	0.34	2	136	16	16	0.40	0.78
G	2,688	0.06	Filterra	4'x'6'	4'x'6	224	0.15	1	68	8	8	0.17	0.33
H	3,184	0.07	Filterra	4'x'6'	4'x'6	265	0.17	1	68	8	8	0.20	0.39
I	5,497	0.13	Filterra	4'x'6'	4'x'6	458	0.3	2	136	16	16	0.34	0.67
J	4,160	0.10	Filterra	4'x'6'	4'x'6	347	0.22	2	136	16	16	0.26	0.51
K	7,318	0.17	Filterra	4'x'6'	4'x'6	610	0.4	2	136	16	16	0.46	0.89
L	5,295	0.12	Filterra	4'x'6'	4'x'6	441	0.29	2	136	16	16	0.33	0.64
M	3,292	0.08	Filterra	4'x'6'	4'x'6	274	0.18	1	68	8	16	0.21	0.40
N	4426	0.10	Filterra	4'x'6'	4'x'6	369	0.24	2	136	16	16	0.28	0.54
O	3,115	0.07	Filterra	4'x'6'	4'x'6	260	0.22	2	136	16	16	0.20	0.38
P	4,700	0.11	Filterra	4'x'6'	4'x'6	392	0.25	2	136	16	16	0.29	0.57
Q	5,295	0.12	Filterra	4'x'6'	4'x'6	441	0.29	2	136	16	16	0.33	0.64
R	4,173	0.10	Filterra	4'x'6'	4'x'6	348	0.23	2	136	16	16	0.26	0.51
S	6,447	0.15	Filterra	4'x'6'	4'x'6	537	0.35	2	136	16	16	0.40	0.78

*Based on StormTech 740 chambers storage capacity of 68.2 CF per chamber

*Additional Storage is provided in inspection manholes.

Systems A & D have 18" storm drain downstream of roof drain connection.

Notes:

The configuration of the post development drainage results in the following:

- The runoff tributary to the Elm Street System is decreased slightly. (The tributary area from the site decreases from 1.96 to 1.80 acres.) This is favorable since this system has much lower capacity that the Somerset Street system;

- The runoff tributary to the Chestnut Street System is decreased slightly. (The tributary area from the site decreases from 0.30 acres to 0.29 acres.) This is favorable since this system has much lower capacity that the Somerset Street system;

- The runoff tributary to the Somerset Storm Drain (constructed in 2003 to include service to the Federated land) increases by about 0.27 acres; and

- Refer to the Stormwater Management Report for an explanation of why the peak 2 yr. flow (cfs) is always 2.73 times the area (acres) and the 25 year flow (cfs) is 5.30 times the area.

- midtownOne and MidtownTwo roof area which will be untreated and discharged to the Somerset Street drainage system is 0.74 acres generating peak flows of 2.03 and 3.96 cfs for the 2 and 25 year storm events.

- midtownThree roof area which will be untreated and discharged to the Somerset Street drainage system is 0.60 acres generating peak flows of 1.64 and 3.18 cfs for the 2 and 25 year storm events.

- Review of the flows tabulated above show the conveyance pipe requirements will not exceed 12 inches except if the roof drains from the building are combined to a single outlet. In this case, the roof drain stub would need to be increased to 15 to 18 inch in size. Roof drain sizes will be confirmed after the mechanical drawings have been prepared. "

- High flows from 'A' overflow to 'I8' storm drain in Somerset Street (only low flows drain to trail).

WATERSHED LEGEND

WATERSHED BOUNDARY

AA SUBCATCHMENT

FOR NOVEMBER 14, 2014 SUBMISSION - SUBJECT TO ONGOING FAY, SPOFFORD & THORNDIKE REVIEW

NORTH

GRAPHIC SCALE

60 0 30 60 120

(IN FEET)
1 inch = 60 ft.

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE WILLIAM R. MOORE 13547 LICENSED PROFESSIONAL ENGINEER 11/14/14

P.E. WILLIAM R. MOORE
LIC. # 13547

PROJECT: midtown
PORTLAND, MAINE

SHEET TITLE: POSTDEVELOPMENT WATERSHED MAP

CLIENT: THE FEDERATED COMPANIES

FST 100 YEARS

FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	LA	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	1"=60'
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-WSHED-POST		
SHEET	C-14.1		

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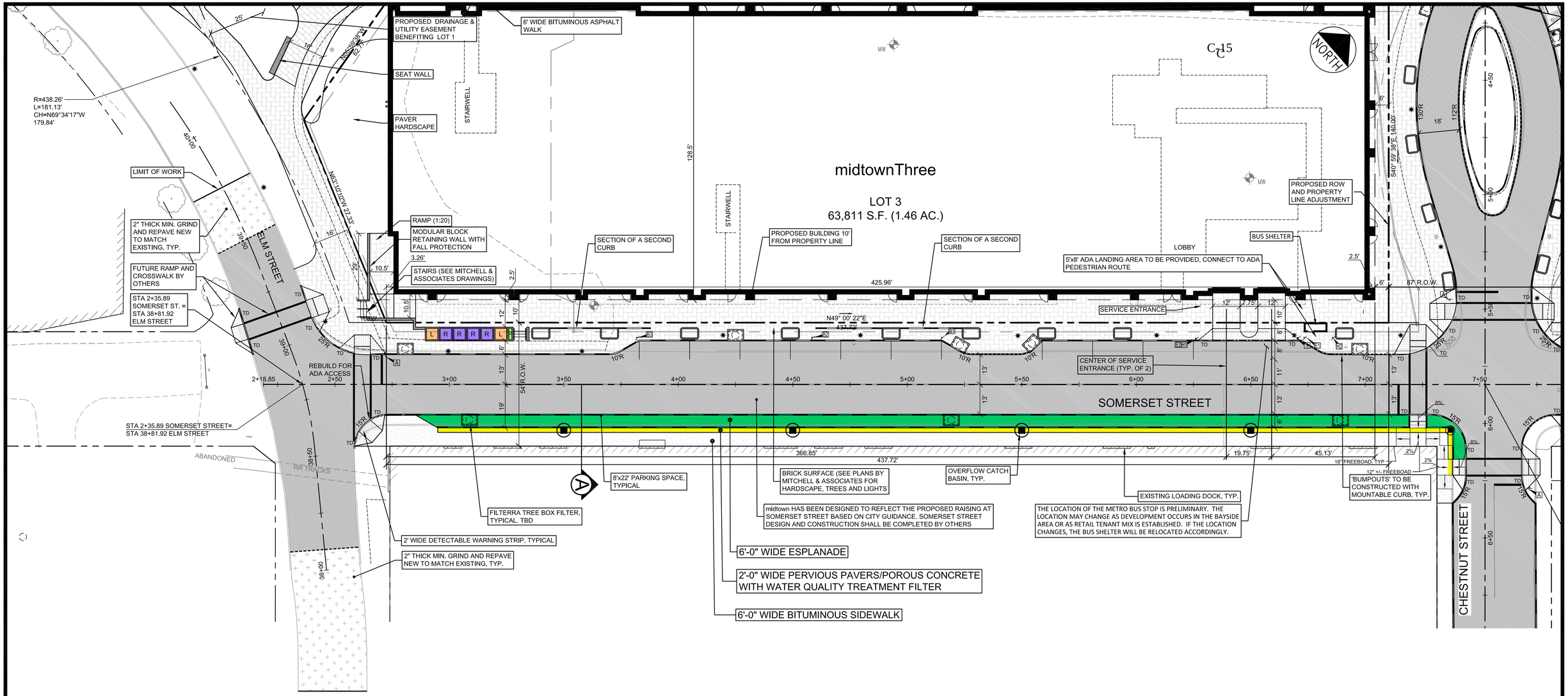
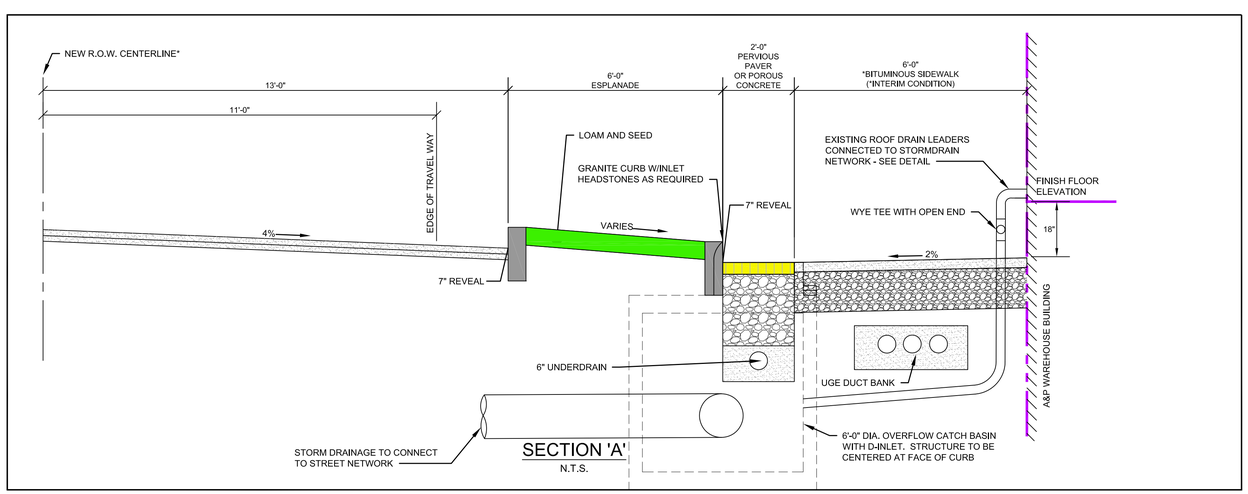




SECTION 'A'
N.T.S.

THIS DRAWING IS INTENDED TO BE PLOTTED AND VIEWED IN COLOR
BLACK AND WHITE PLAN IS NOT SUITABLE FOR REVIEW

GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 inch = 20 ft.

LEGEND
- PROPOSED PROPERTY BOUNDARY
- ABUTTING BUILDING
- FEDERATED BUILDINGS
- HARDSCAPE/LANDSCAPE
- PROPOSED PAVEMENT
- GREEN SPACE/PLANTERS (BY MITCHELL ASSOCIATES)
- PROPOSED LANDING, PLANTER AND RAMP
- SNOW STORAGE AREA
- EXISTING BRICK TRAIL
- EXISTING HARDSCAPED TRAIL
- EXISTING PAVED TRAIL
- EXISTING GRAVEL PATH
- VERTICAL GRANITE CURB
- FLUSH GRANITE CURB
- MOUNTABLE CURB (TYPE 5 GRANITE)
- TD TIPDOWN

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
2	01.26.15	REVISED PER VERBAL CITY COMMENTS; SUBMITTED TO CITY AND NOYES FOR REVIEW
1	01.22.15	SUBMITTED TO CITY FOR REVIEW

REVISIONS

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

PROJECT
midtown
PORTLAND, MAINE

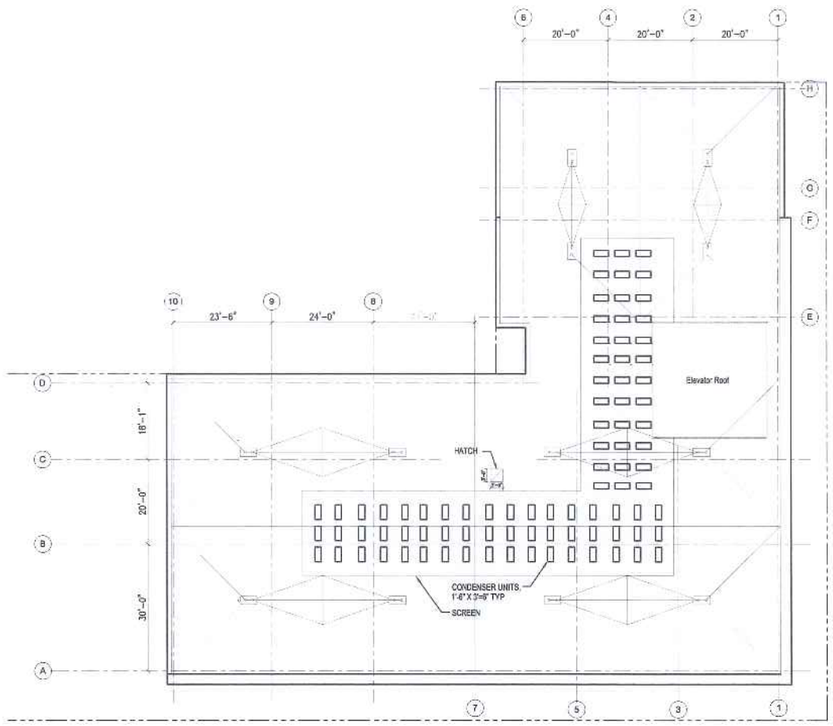
SHEET TITLE
SOMERSET STREET SCHEMATIC
MAINTAIN 18" OF FREEBOARD ADJACENT TO NOYES BUILDING

CLIENT
FEDQ DV001, LLC

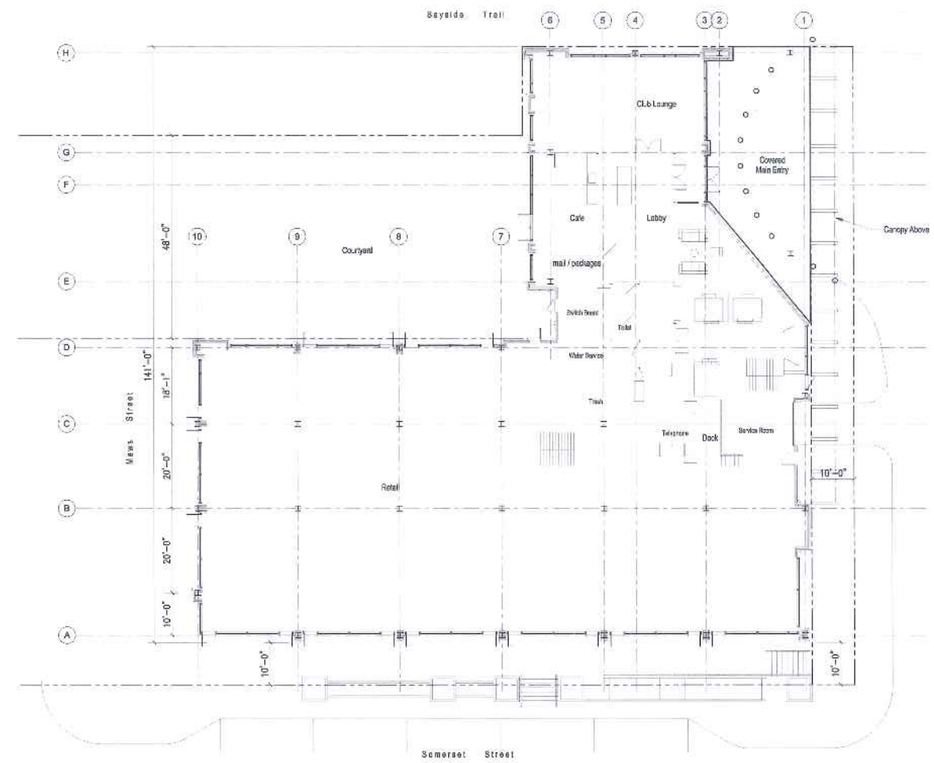
FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106
FORMERLY DELUCA-HOFFMAN ASSOCIATES

DRAWN:	KEW/LA	DATE:	OCTOBER 2014
DESIGNED:	WGH/BEK	SCALE:	1" = 20'
CHECKED:	WGH/SRB	JOB NO.	SP-M037B
FILE NAME:	3062-SOMERSET ST. OPTION		
SHEET	FIGURE 1		

R:\3062B - Midtown Amended - Portland, ME\Cadd\Permit Set\dwg\CONCEPTS\3062-SOMERSET ST. OPTION.dwg kenned_b 1/26/2015 5:18 PM



2 ROOF FLOOR PLAN



1 GROUND FLOOR PLAN

Acoustics
- Estimated sound level at sidewalk:
  A. General Operating Sound Level 65 dBA

THE FEDERATED COMPANIES

Midtown Portland Building One

Portland, Maine

19 February 2015

1-A101

THA ARCHITECTS, LLC
ARCHITECTURE ▪ PLANNING ▪ CONSULTING ▪ INTERIOR DESIGN
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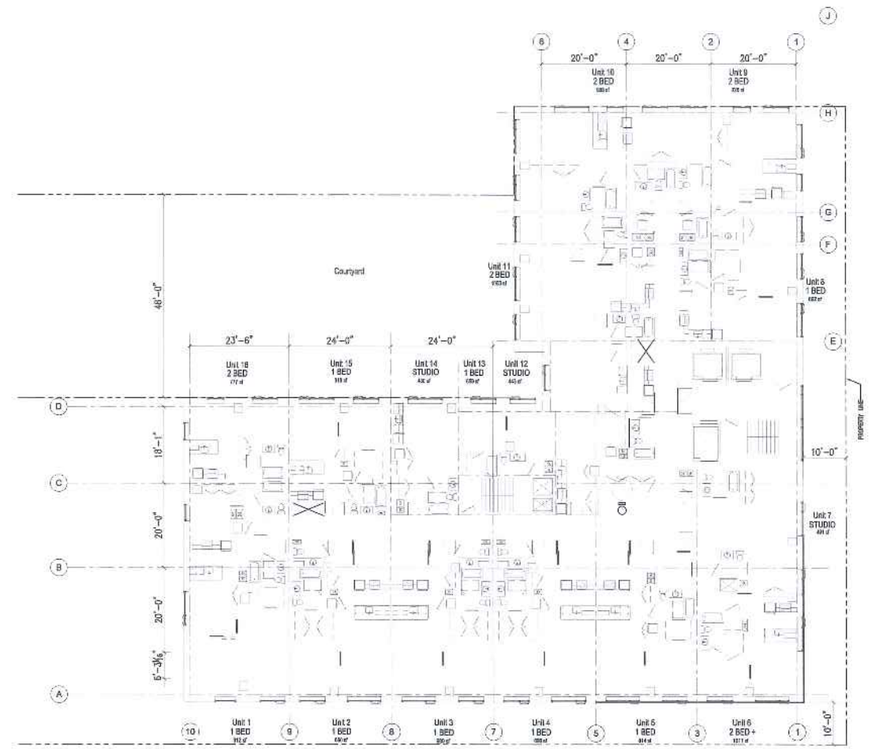

1 TYPICAL FLOOR PLAN

THE FEDERATED COMPANIES

Midtown Portland Building One

Portland, Maine

19 February 2015

1-A102

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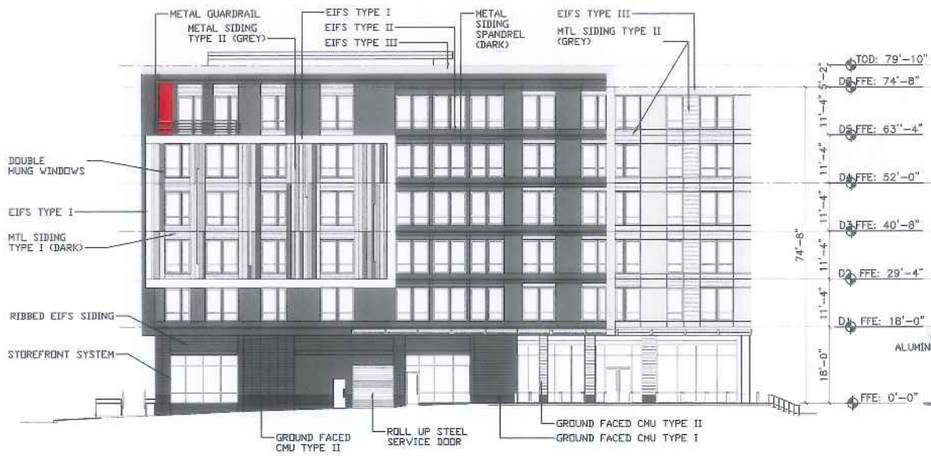
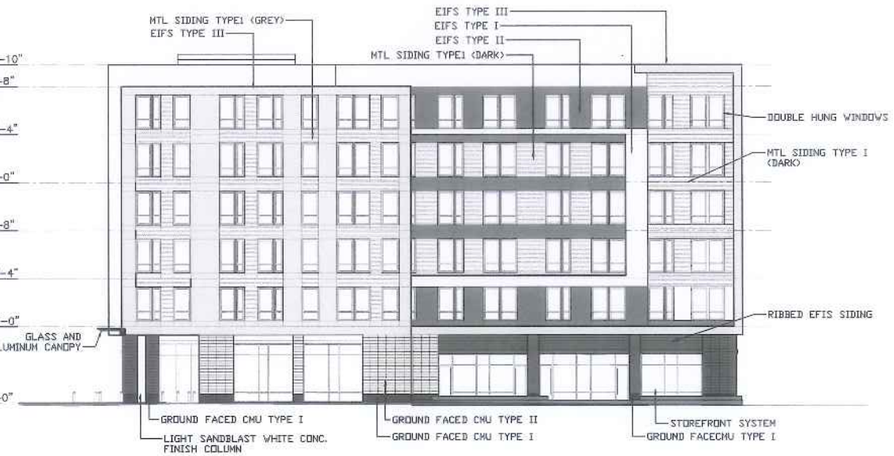
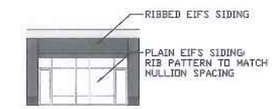


1 EAST ELEVATION

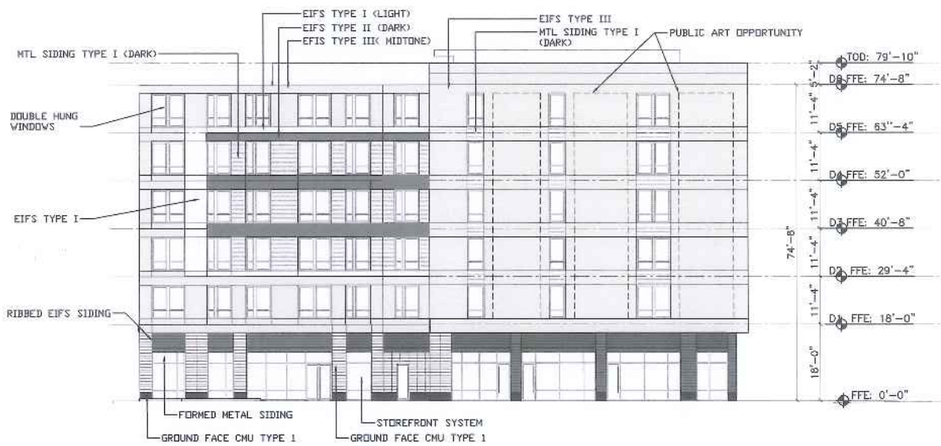


2 NORTH ELEVATION



2A ALTERNATE STOREFRONT

APPLICANT RESERVES RIGHT TO SUBSTITUTE ALT STOREFRONT WHERE LEASING PLANS LIMIT USE OF GLASS STOREFRONT.



3 WEST ELEVATION

4 SOUTH ELEVATION

THE FEDERATED COMPANIES

Midtown Portland
Building One
Portland, Maine

19 February 2015

1-A201

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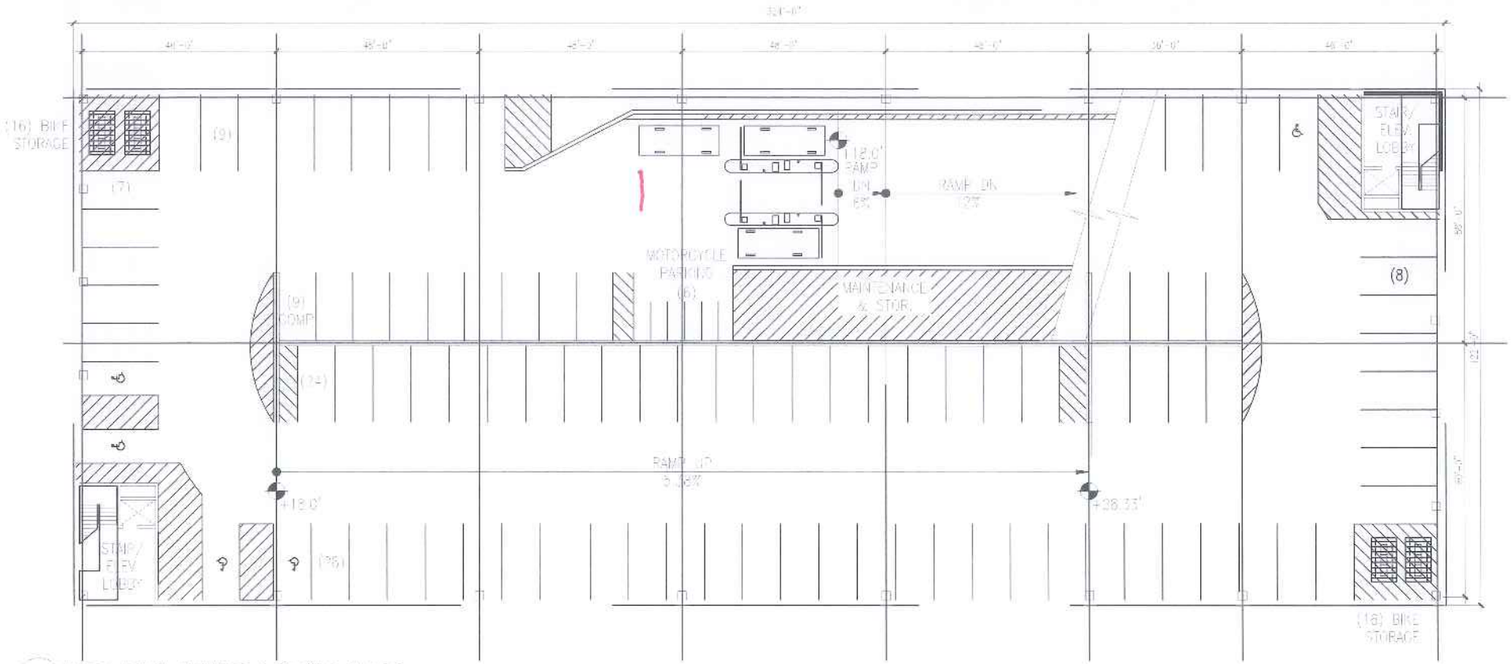
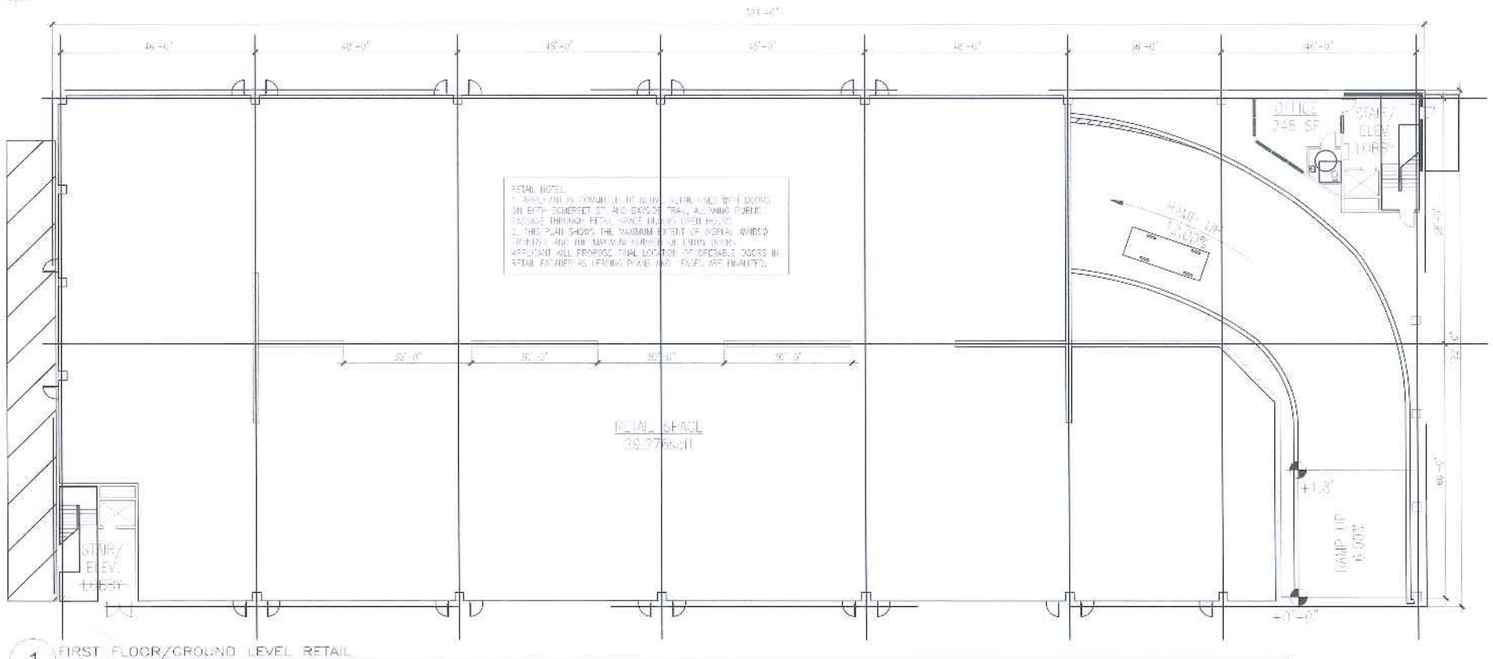


2 ENTRY LEVEL PARKING / SECOND FLOOR
SCALE: 1/16" = 1'-0"



1 FIRST FLOOR/GROUND LEVEL RETAIL
SCALE: 1/16" = 1'-0"

PARKING SPACE TABULATION

TIER	STANDARD 9' X 18'	COMP 9' X 16'	VAN ACCESSIBLE 8'-0"+ 8'-0"+8' AISLE	STANDARD ACCESSIBLE 8'-0"+8'-0"+5' AISLE	MOTOR-CYCLE 4' X 9'	BICYCLE STORAGE
1ST	–	–	–	–	–	0
2ND	54	9	4	0	6	32
3RD	105	19	2	0	–	32
4TH	105	19	2	0		32
5TH	105	19	2	0	–	32
6TH	105	19	2	0	–	32
7TH	105	19	2	0		32
TOP	96	5	1	0		0
SUBTOTAL	675	109	15	0	6	192
TOTAL	799 VEHICLE SPACES				MOTOR-CYCLE SPACES	BICYCLE SPACES

THE FEDERATED COMPANIES

Midtown Portland Building Two

Portland, Maine

19 February 2015

2-A101

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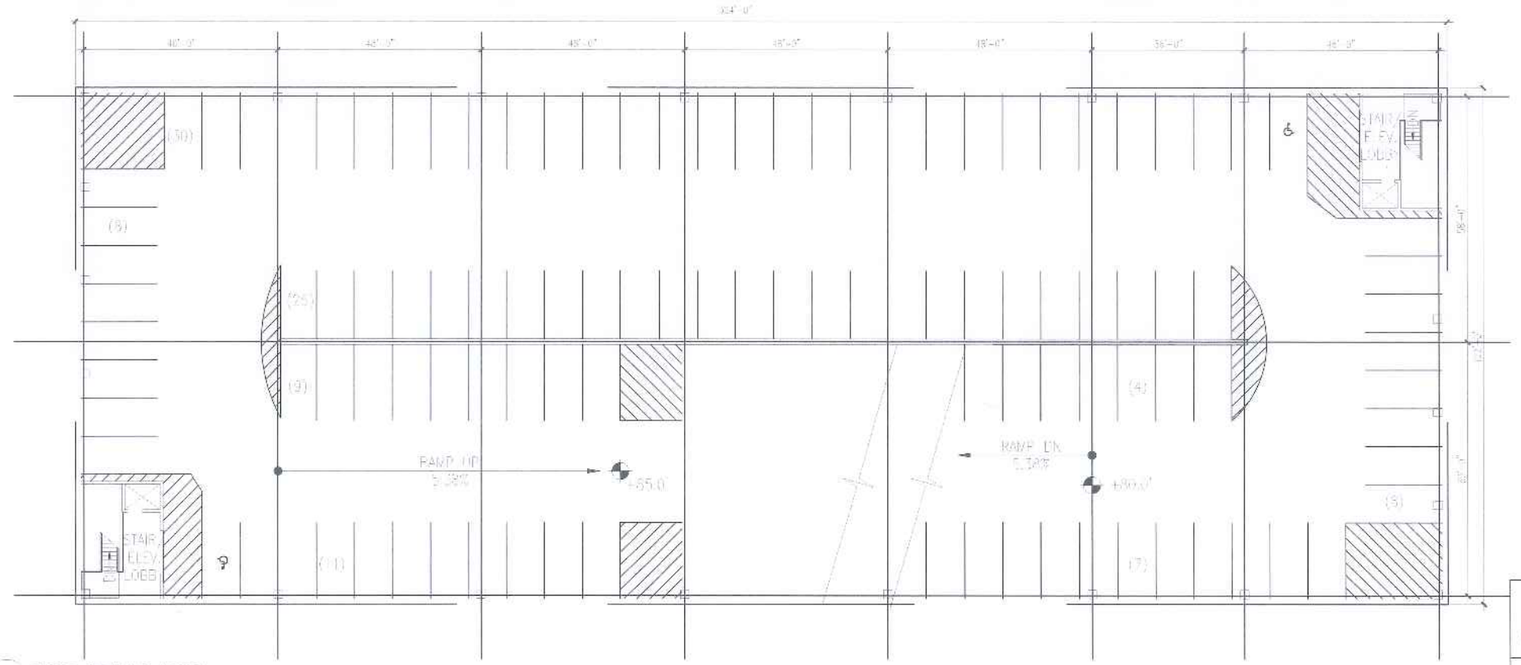
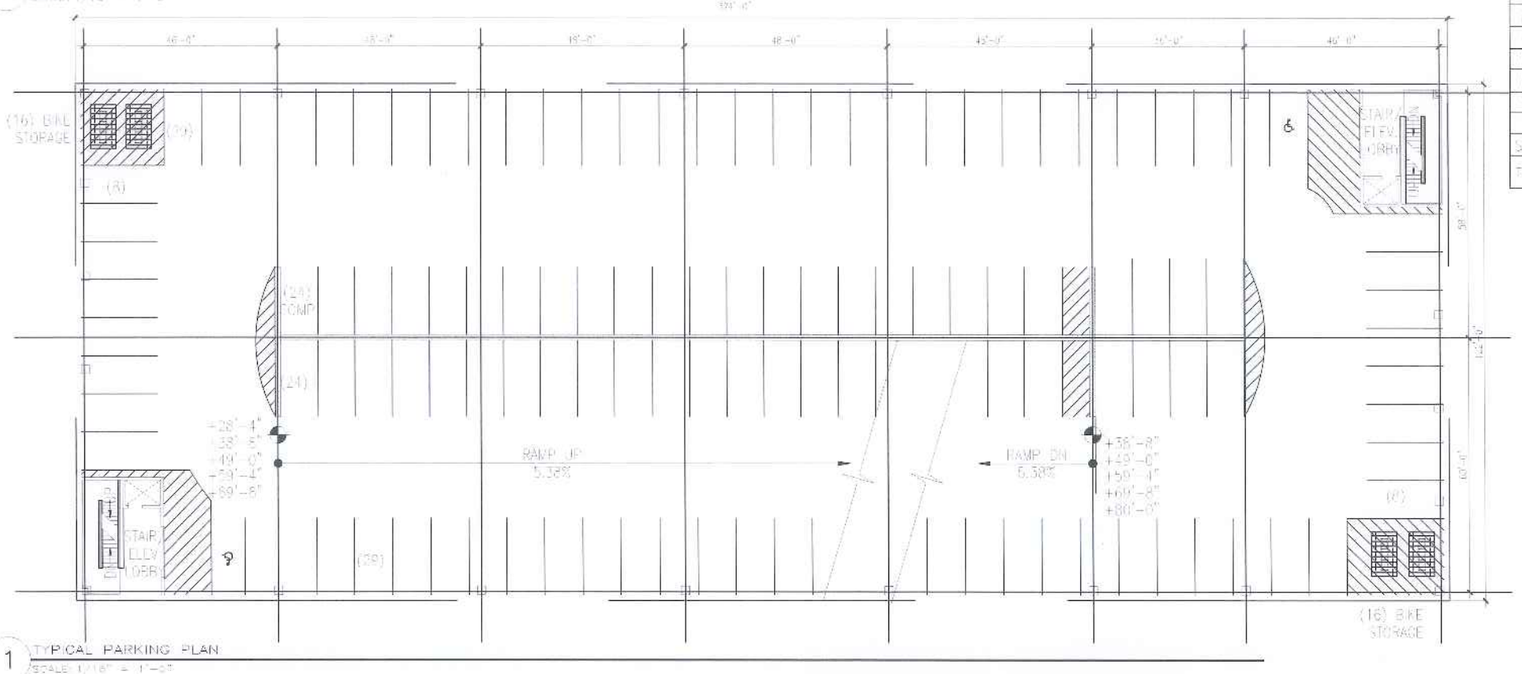


2 ROOF PARKING LEVEL
SCALE: 1/16" = 1'-0"



1 TYPICAL PARKING PLAN
SCALE: 1/16" = 1'-0"

PARKING SPACE TABULATION

LEVEL	STANDARD 9' X 18'	COMP 8' X 16'	VAN ACCESSIBLE 8'-0"+18'-0"+8' AISLE	STANDARD ACCESSIBLE 8'-0"+18'-0"+5' AISLE	MOTOR-CYCLE 7' X 9'	BICYCLE STORAGE
1ST	–	–	–	–	–	0
2ND	54	8	4	0	6	32
3RD	105	19	2	0	–	32
4TH	105	19	2	0		32
5TH	105	19	2	0		32
6TH	105	19	2	0	–	32
7TH	105	19	2	0		32
TOP	96	8	1	0	–	0
SUBTOTAL	675	100	15	0	6 MOTOR-CYCLE SPACES	192 BICYCLE SPACES
TOTAL	790 VEHICLE SPACES					

THE FEDERATED COMPANIES

Midtown Portland Building Two

Portland, Maine

19 February 2015

2-A102

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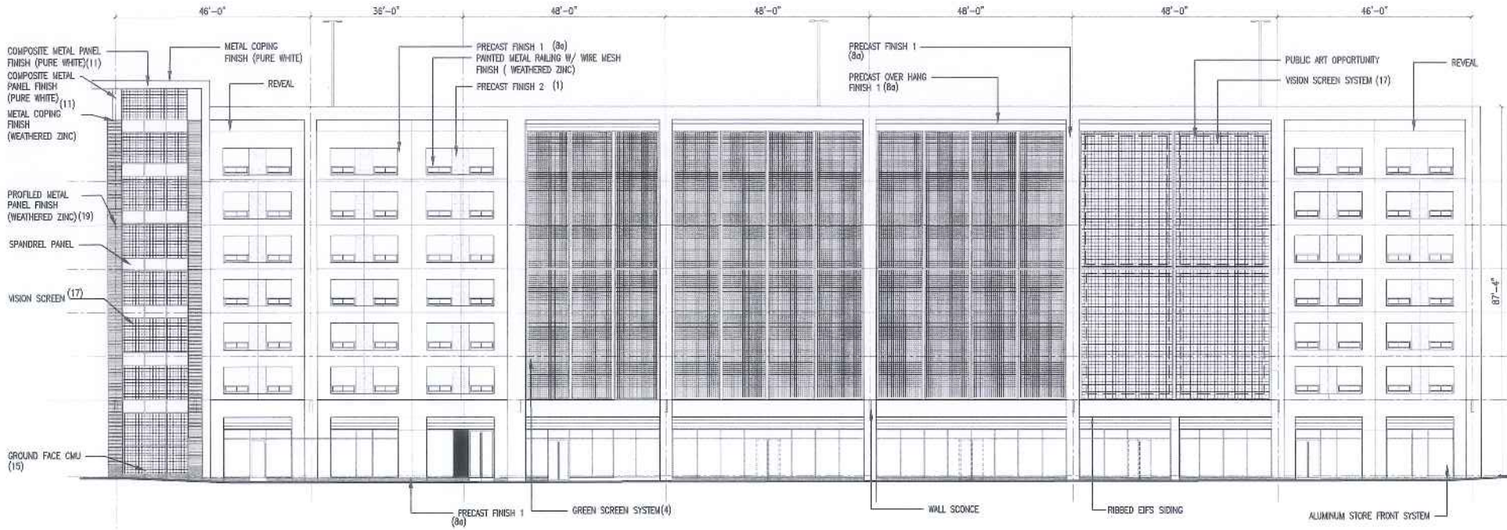
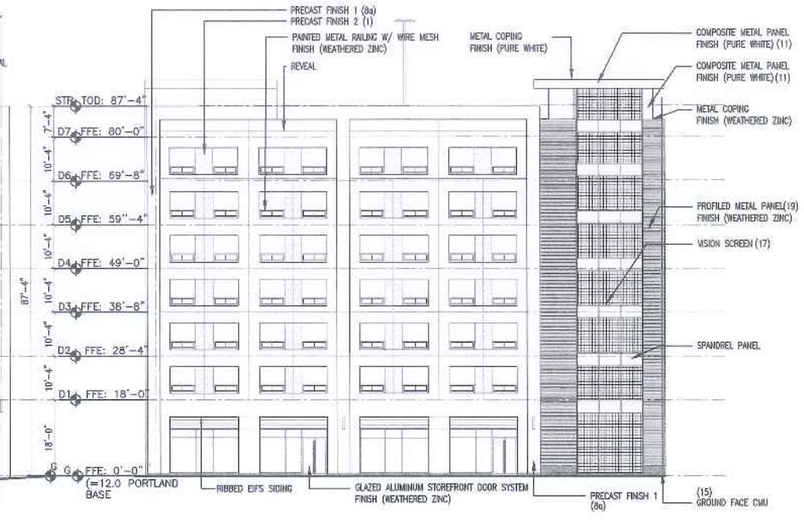
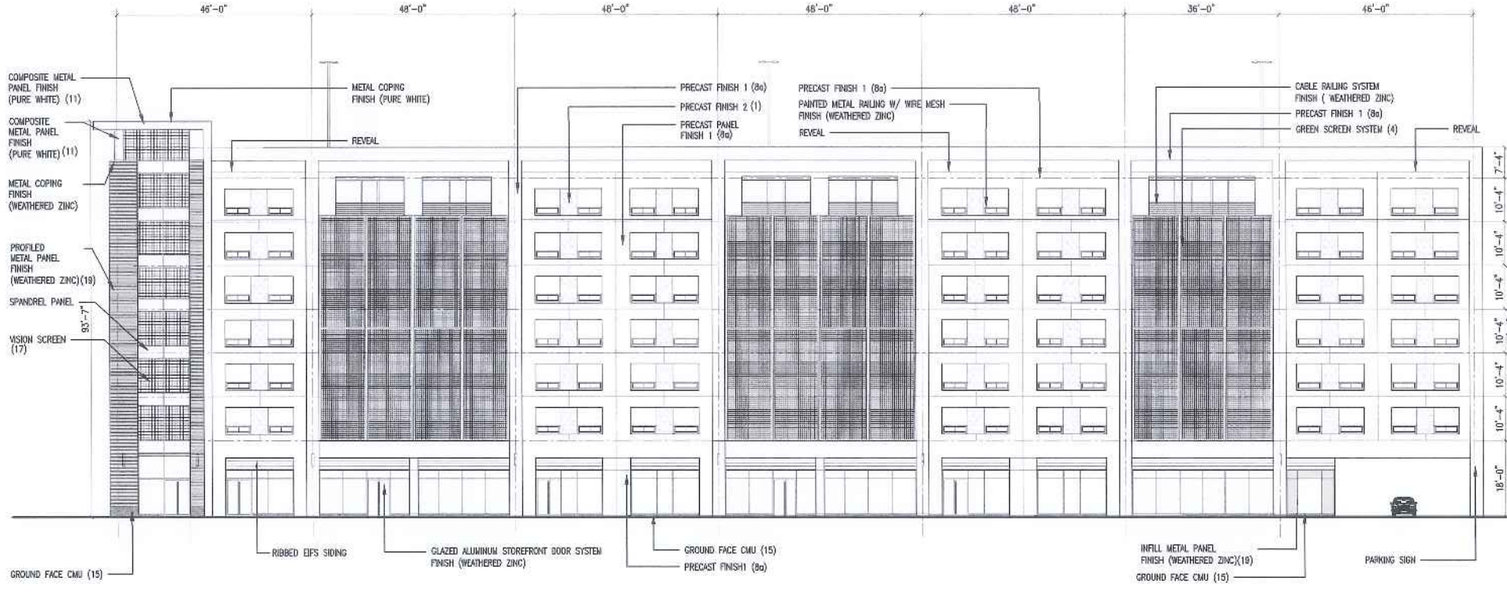


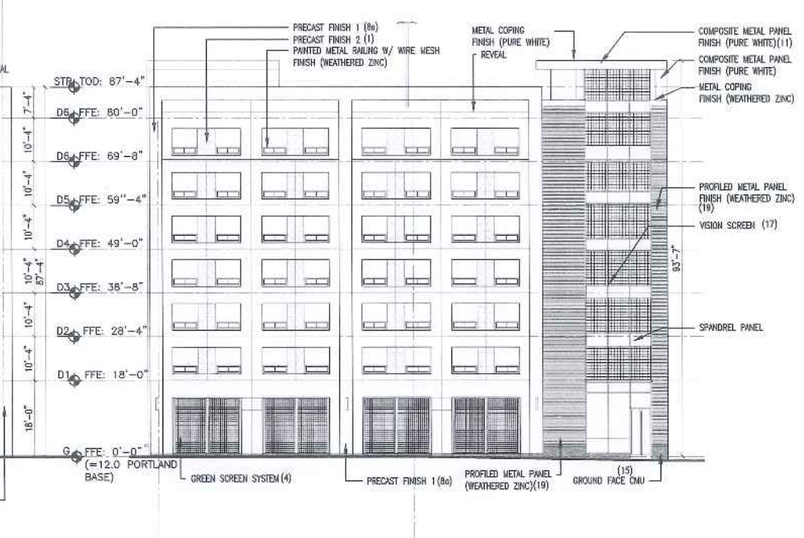
ELEVATION AT BAYSIDE TRAIL



ELEVATION AT CHESTNUT STREET



ELEVATION AT SOMERSET STREET



ELEVATION AT MEWS

THE FEDERATED COMPANIES

Midtown Portland Building Two

Portland, Maine

19 February 2015

2-A201

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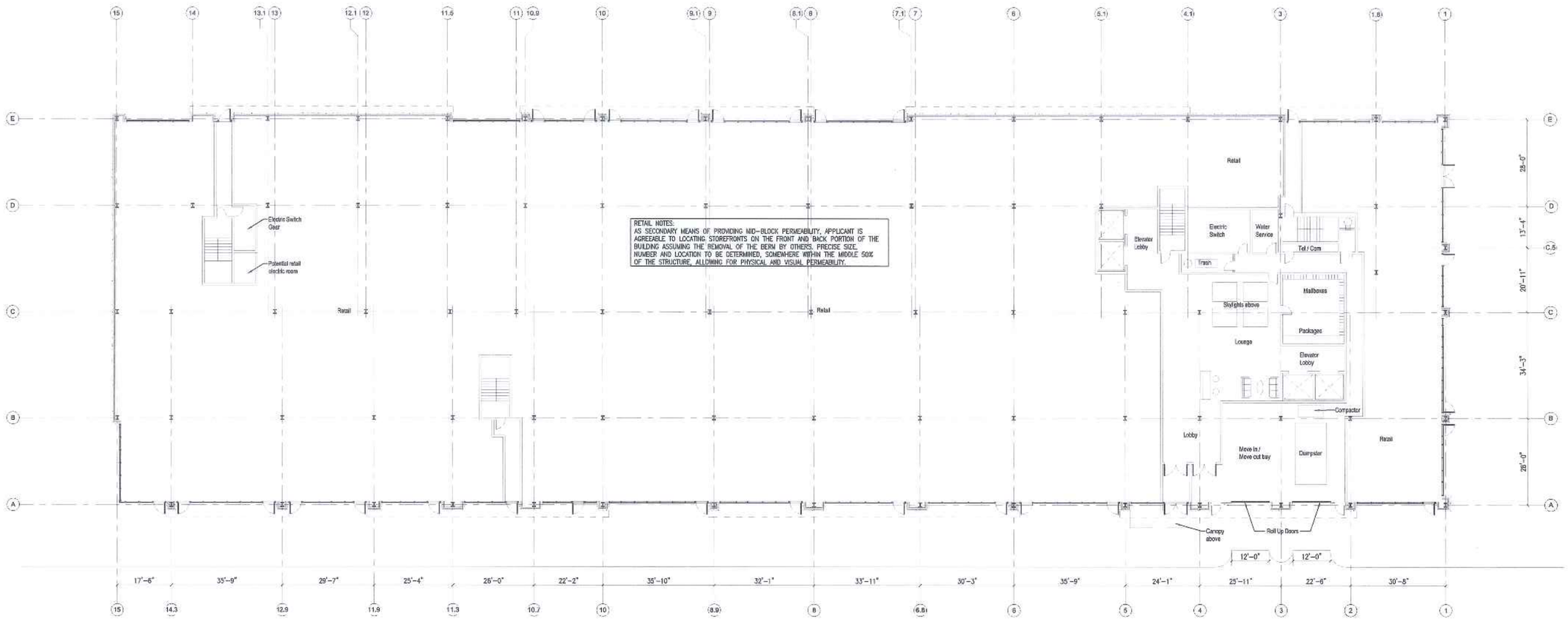

RETAIL NOTES:
AS SECONDARY MEANS OF PROVIDING MID-BLOCK PERMEABILITY, APPLICANT IS AGREEABLE TO LOCATING STOREFRONTS ON THE FRONT AND BACK PORTION OF THE BUILDING ASSUMING THE REMOVAL OF THE BERM BY OTHERS. PRECISE SIZE, NUMBER AND LOCATION TO BE DETERMINED, SOMEWHERE WITHIN THE MIDDLE 50% OF THE STRUCTURE, ALLOWING FOR PHYSICAL AND VISUAL PERMEABILITY.

DUMPSTER/TRASH NOTES:
A DUMPSTER IS PROPOSED TO BE PLACED INSIDE OF MIDTOWN THREE FOR THE TRASH HOLDING AREA. ALTHOUGH THIS BUILDING WILL BE PROVIDED WITH A FULL SPRINKLER SYSTEM, A TWO HOUR WALL AND TWO HOUR FLOOR/CEILING FIRE SEPARATION BETWEEN THIS SPACE AND THE REMAINDER OF THE BUILDING SHALL BE REQUIRED.

1 GROUND FLOOR PLAN

THE FEDERATED COMPANIES

Midtown Portland Building Three

Portland, Maine

19 February 2015

3-A101

THA ARCHITECTS, LLC
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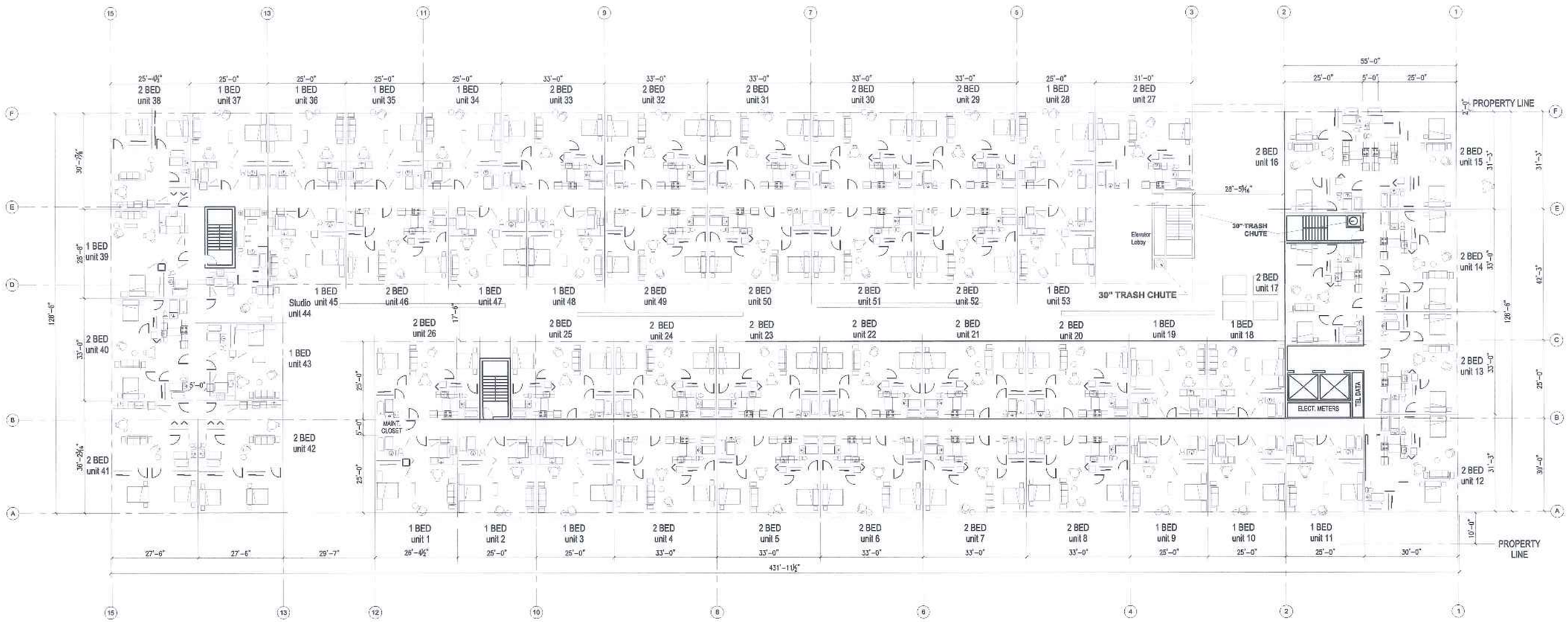

1 TYPICAL FLOOR PLAN

THE FEDERATED COMPANIES

Midtown Portland Building Three

Portland, Maine

19 February 2015

3-A102

THA ARCHITECTS, LLC
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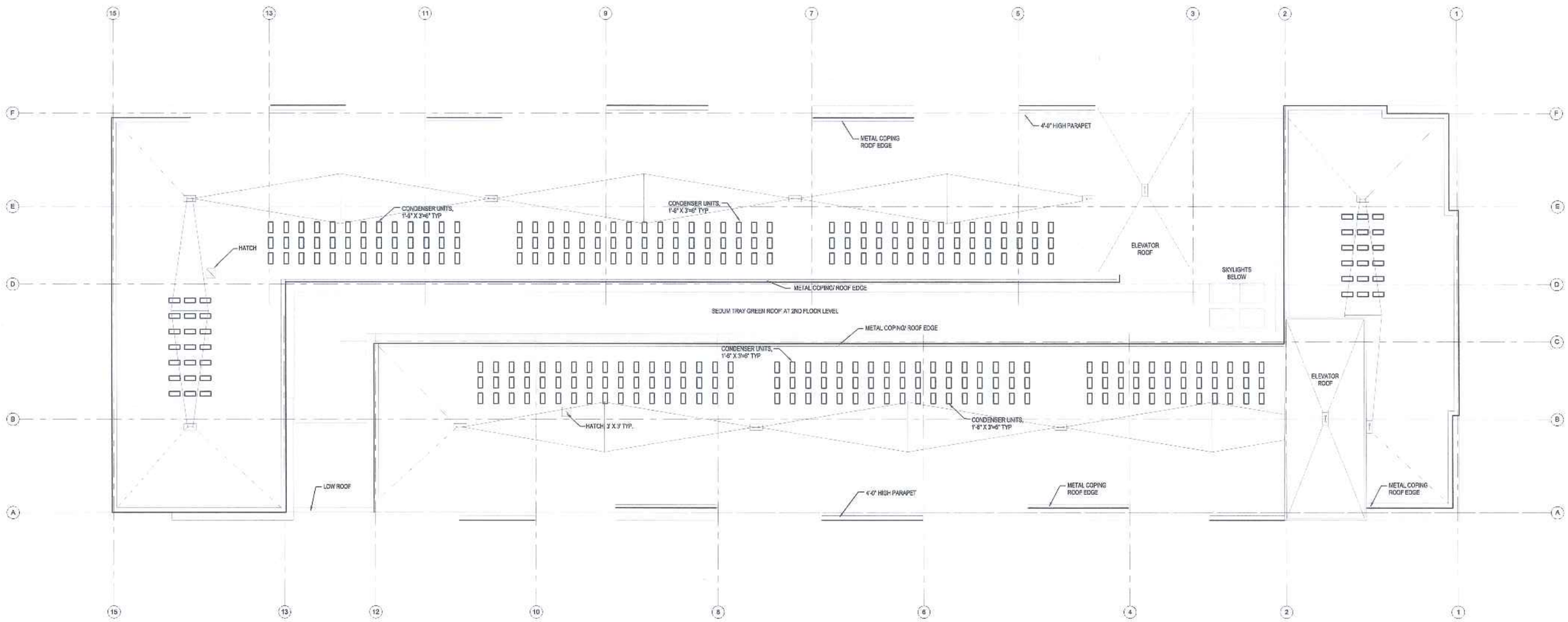

1 ROOF FLOOR PLAN
SCALE: 1/16" = 1'-0"

Acoustics
- Estimated sound level at sidewalk:
  A. General Operating Sound Level 65 dBA

THE FEDERATED COMPANIES

Midtown Portland Building Three

Portland, Maine

19 February 2015

3-A103

THA ARCHITECTS, LLC
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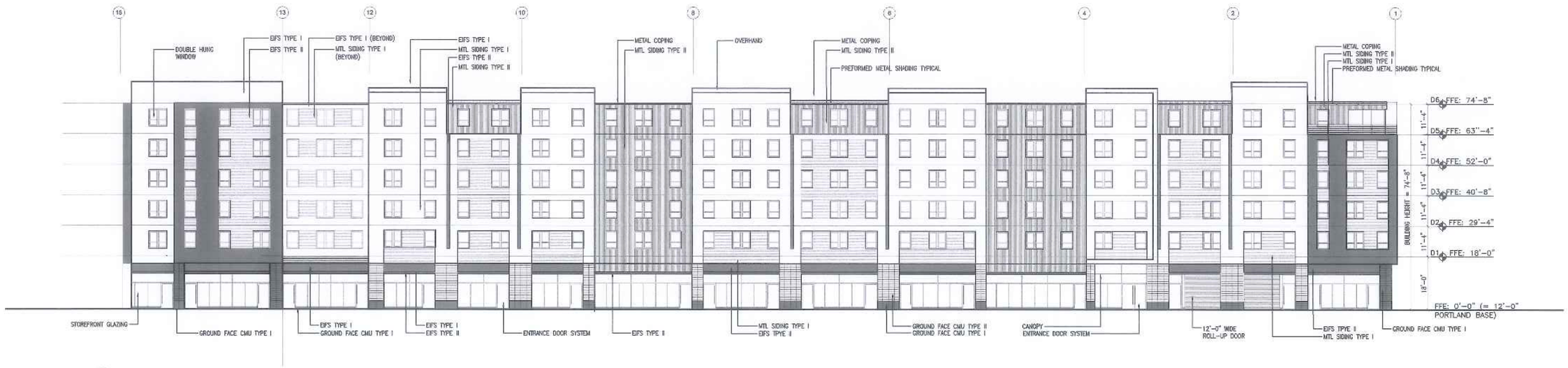
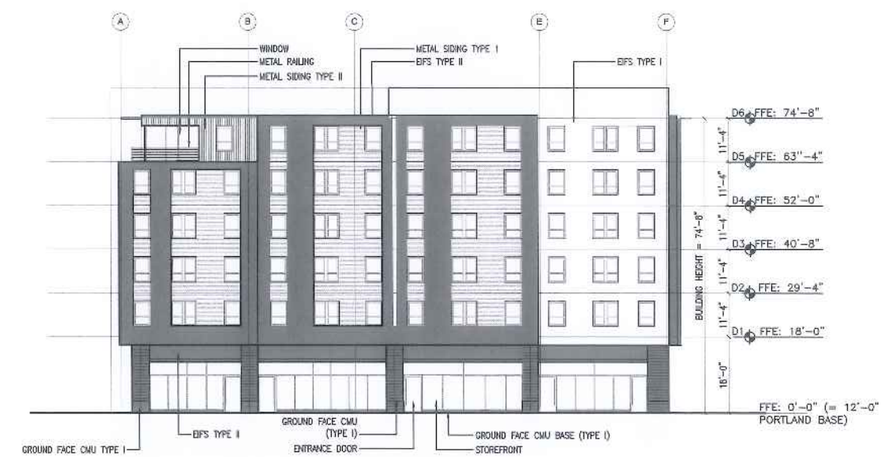


1 SOUTH ELEVATION



2 EAST ELEVATION

THE FEDERATED COMPANIES

Midtown Portland Building Three

Portland, Maine

19 February 2015

3-A201

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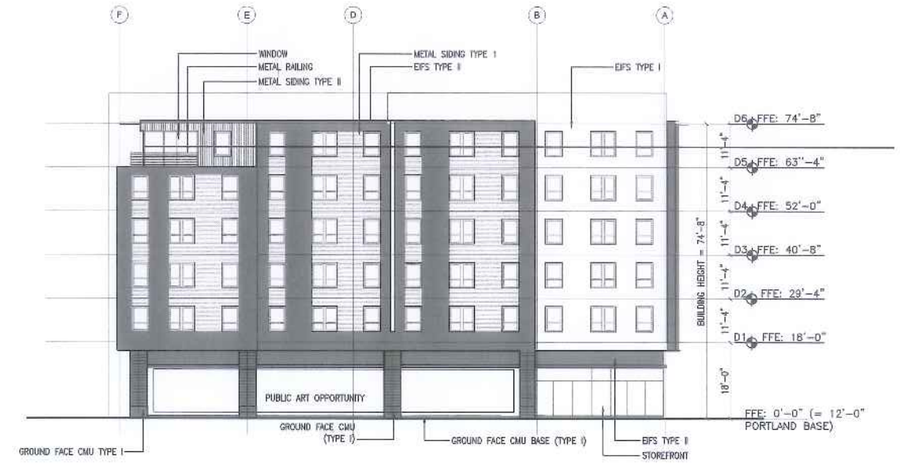
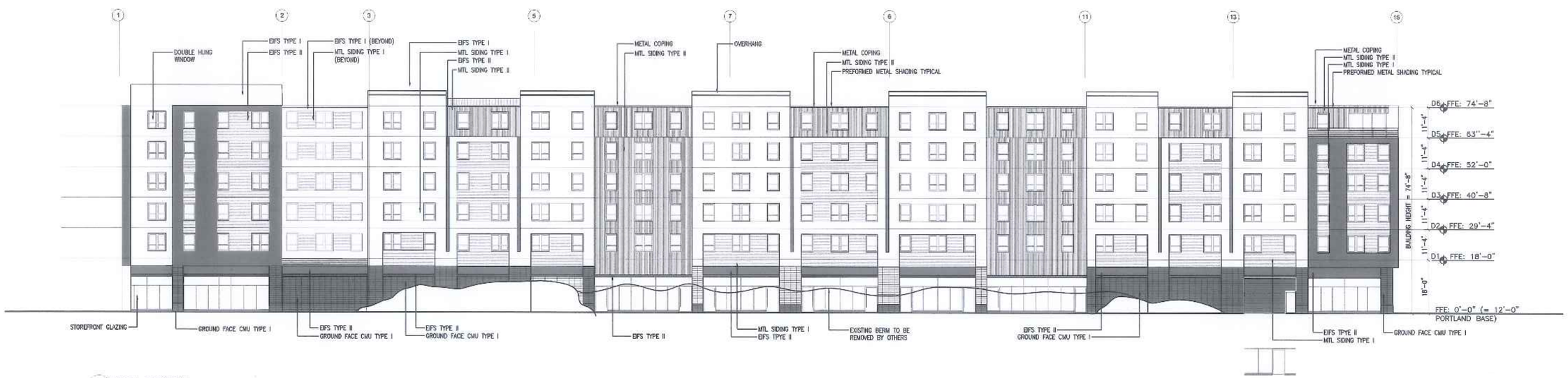


1 WEST ELEVATION



2 NORTH ELEVATION

THE FEDERATED COMPANIES

Midtown Portland
Building Three
Portland, Maine

19 February 2015

3-A202

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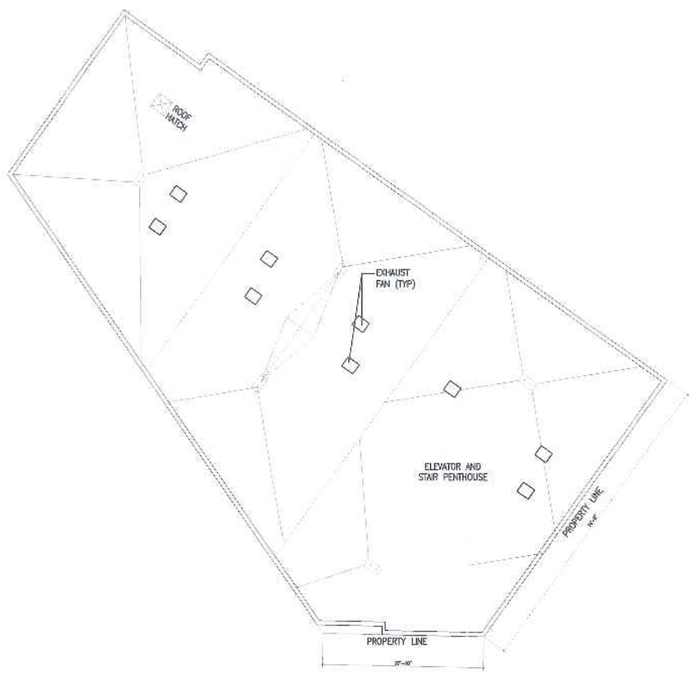

2 ROOF FLOOR PLAN

1 GROUND FLOOR PLAN

Acoustics
- Estimated sound level at sidewalk:
  A. General Operating Sound Level 65 dBA

midtown Three

THE FEDERATED COMPANIES

Midtown Portland Building Four

Portland, Maine

19 February 2015

4-A101

THA ARCHITECTS, LLC
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1 TYPICAL RESIDENTIAL FLOOR PLAN

THE FEDERATED COMPANIES

Midtown Portland
Building Four
Portland, Maine
19 February 2015

4-A102

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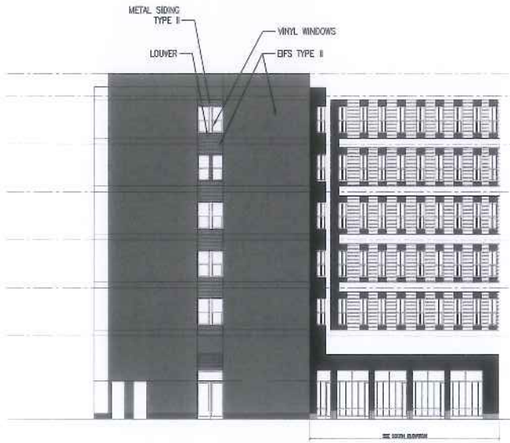
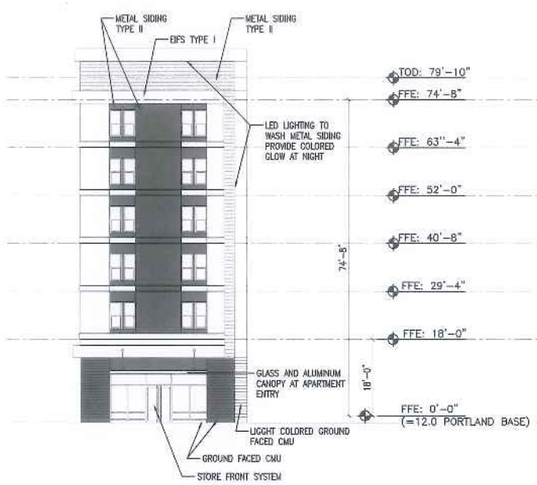
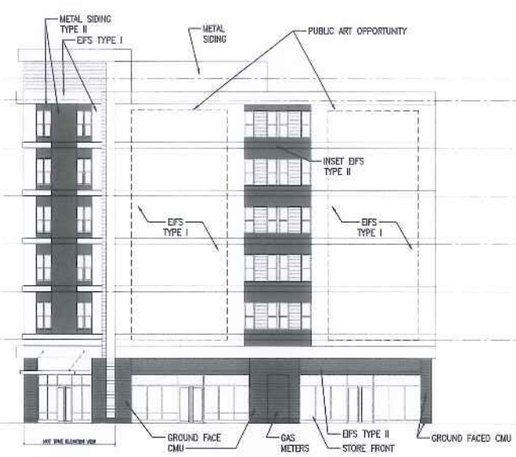


1 WEST ELEVATION

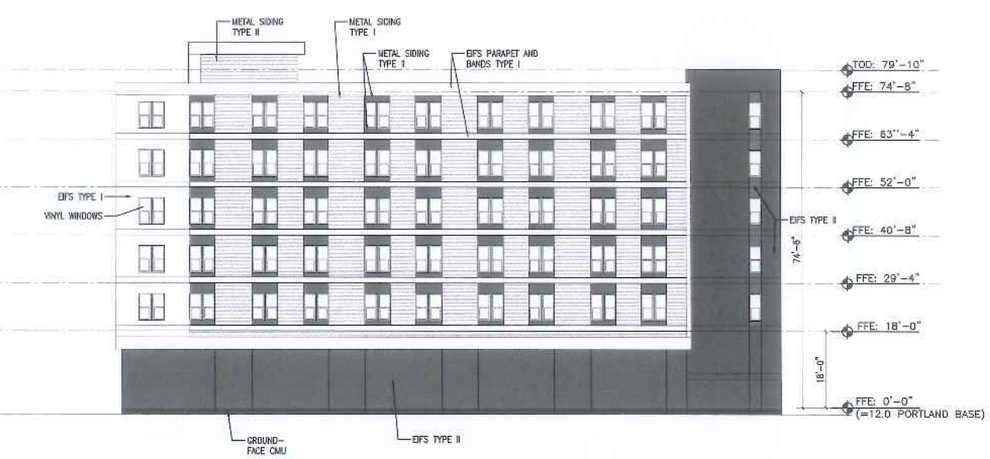
2 SOUTH ELEVATION



3 SOUTHEAST ELEVATION – ENTRY



4 EAST ELEVATION



5 NORTH ELEVATION

THE FEDERATED COMPANIES

Midtown Portland Building Four

Portland, Maine

19 February 2015

4-A201

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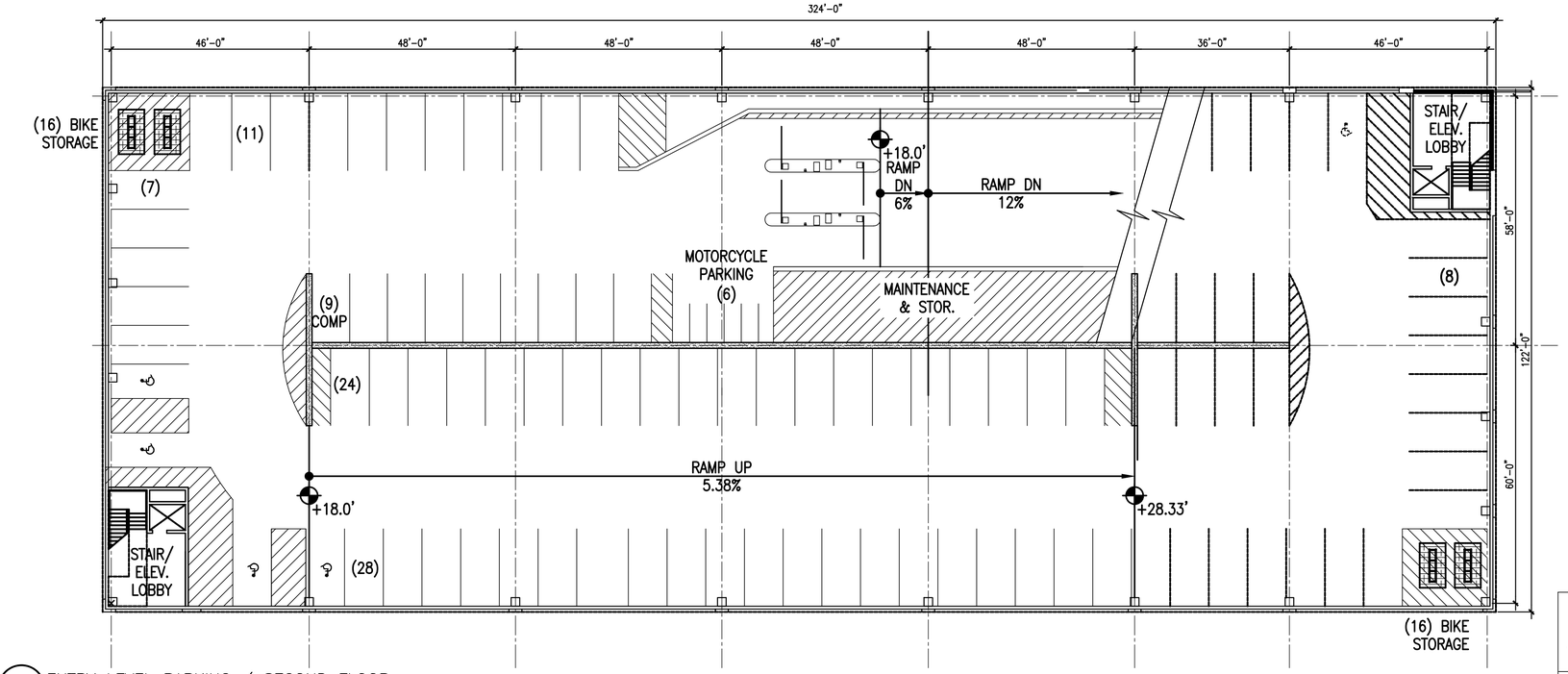
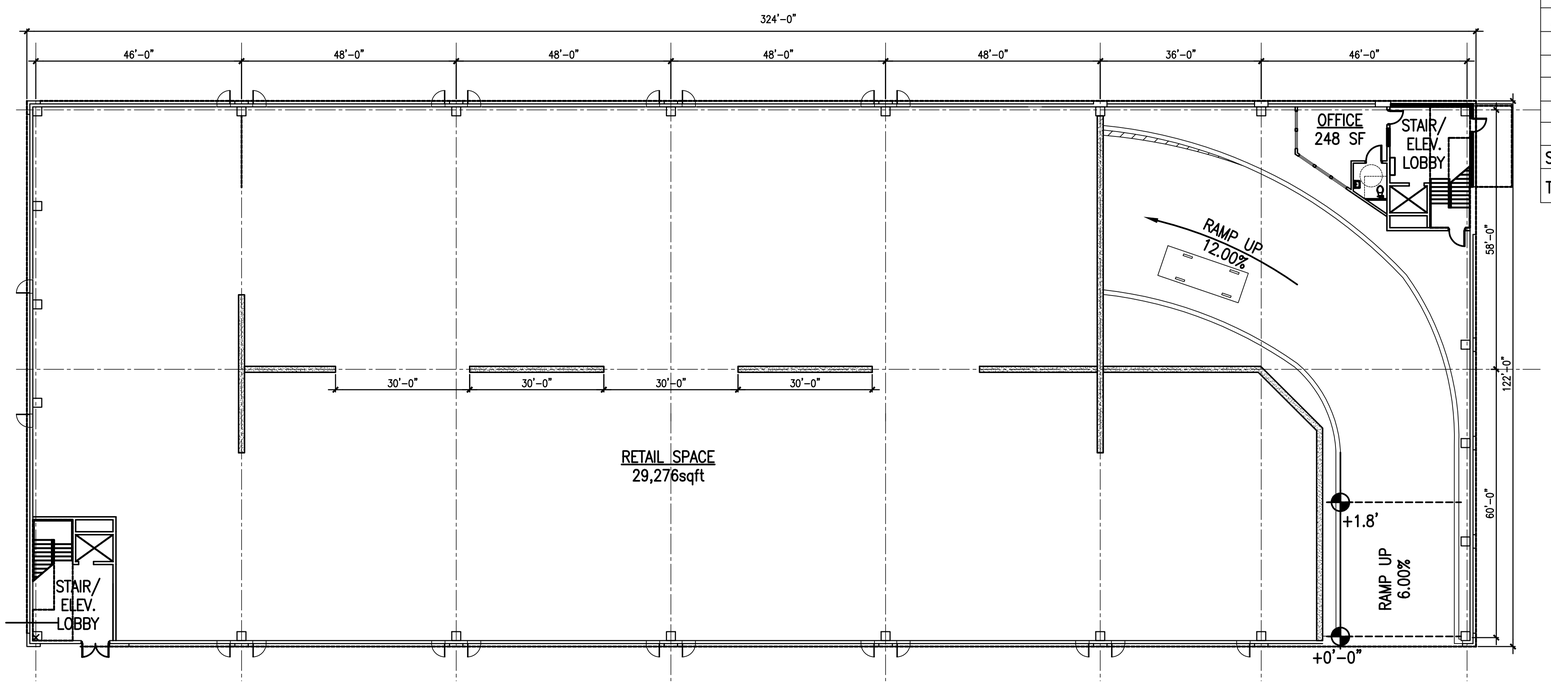
A101A



2 ENTRY LEVEL PARKING / SECOND FLOOR
SCALE: 1/16" = 1'-0"



1 FIRST FLOOR/GROUND LEVEL RETAIL
SCALE: 1/16" = 1'-0"

PARKING SPACE TABULATION

TIER	STANDARD 9' X 18'	COMP 9' X 16'	VAN ACCESSIBLE 8'-0"x18'-0"+8' AISLE	STANDARD ACCESSIBLE 8'-0"x18'-0"+5' AISLE	MOTOR-CYCLE 4' X 9'	BICYCLE STORAGE
1ST	–	–	–	–	–	0
2ND	56	9	4	0	6	32
3RD	105	19	2	0	–	32
4TH	105	19	2	0	–	32
5TH	105	19	2	0	–	32
6TH	105	19	2	0	–	32
7TH	105	19	2	0	–	32
TOP	96	5	1	0	–	0
SUBTOTAL	677	109	15	0	6 MOTOR-CYCLE SPACES	192 BICYCLE SPACES
TOTAL	801 VEHICLE SPACES					

REVISIONS

#	DATE	DESCRIPTION
#1	11/14/14	not for construction
#2	01/20/15	PROGRESS PRINT

midtown Two - Parking Garage

Portland, ME

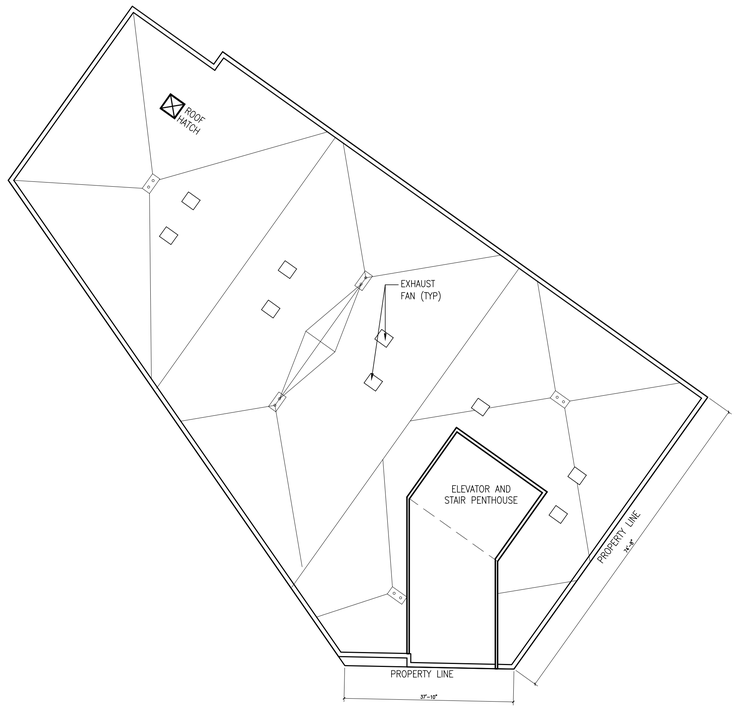
cbt 617 262 4354 cbtarchitects.com
110 canal street boston, ma 02114

CWS ARCHITECTS

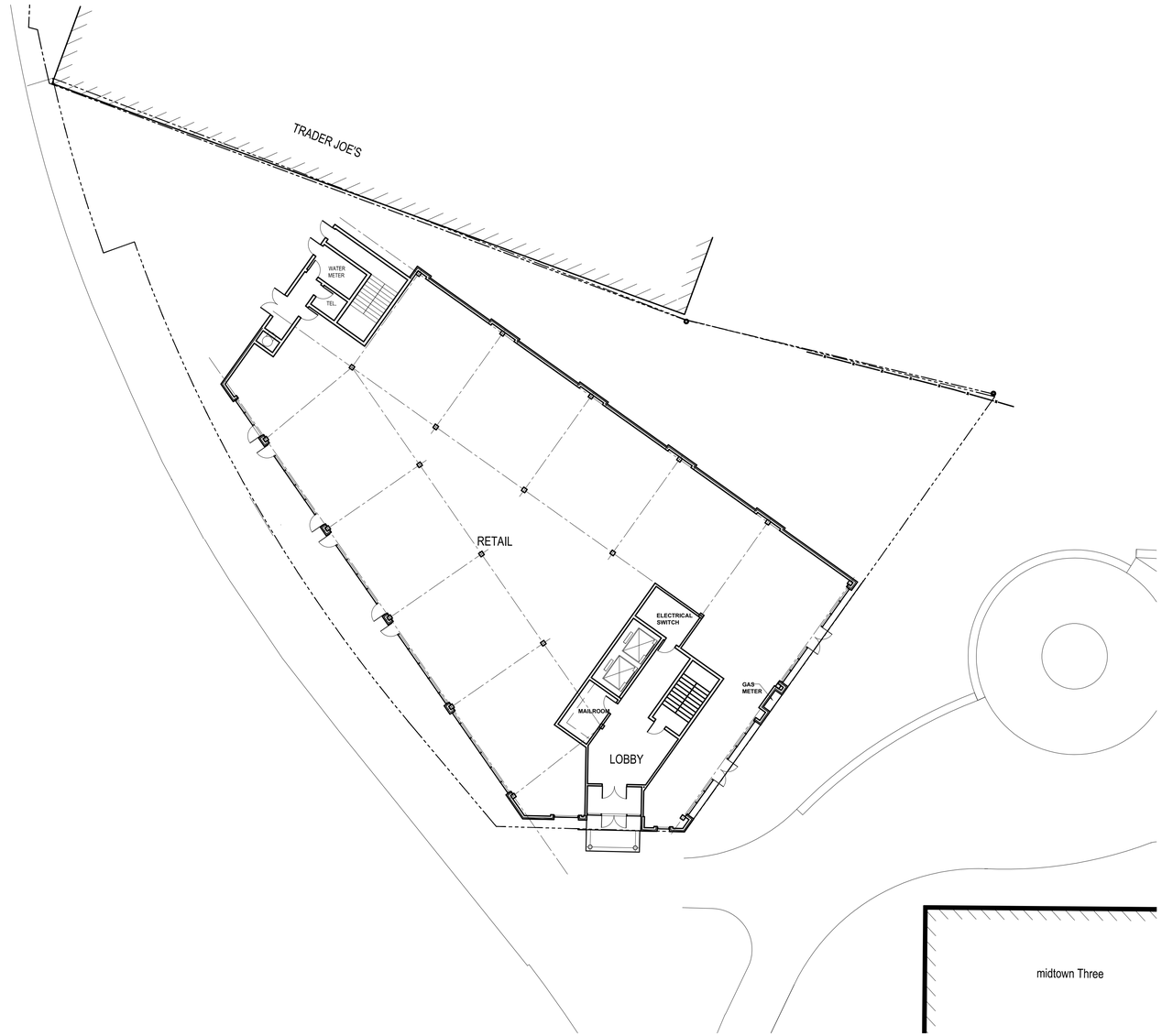
SCALE	PROJECT #	DATE ISSUED
1/16" = 1'-0"	136070.00	01/09/2015

2-A101

A101B



2 ROOF FLOOR PLAN
SCALE: 1/16" = 1'-0"



1 GROUND FLOOR PLAN
SCALE: 1/16" = 1'-0"

Acoustics
- Estimated sound level at sidewalk:
  A. General Operating Sound Level 65 dBA

REVISIONS

#	DATE	DESCRIPTION
#1	1.20.15	PROGRESS PRINT

midtown Four - Apartment Building

Portland, ME

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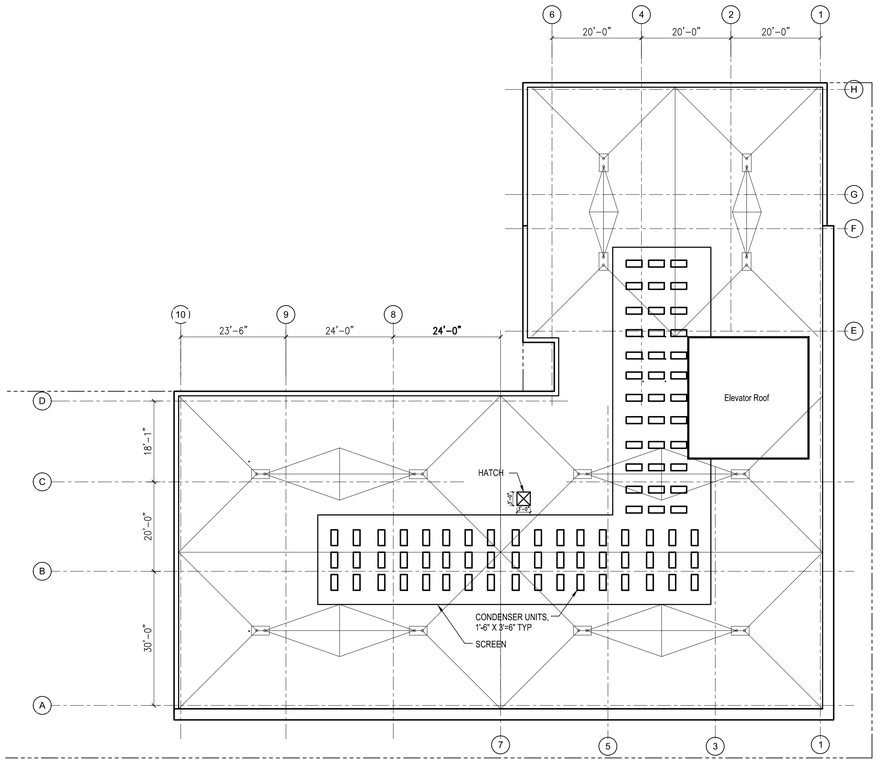
110 canal street boston, ma 02114

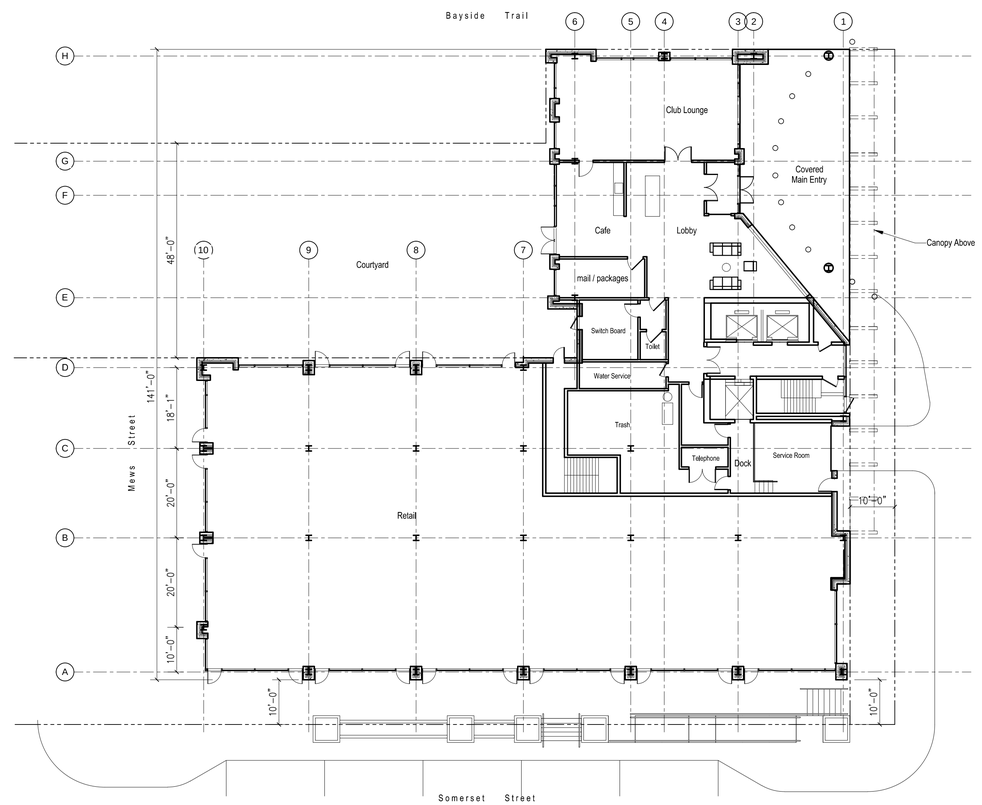
CWS ARCHITECTS
ARCHITECTURE | INTERIOR DESIGN

SCALE	PROJECT #	DATE ISSUED
1/16" = 1'-0"	136070.00	01.20.2015

4-A101



2 ROOF FLOOR PLAN
SCALE: 1/16" = 1'-0"



1 GROUND FLOOR PLAN
SCALE: 1/16" = 1'-0"

Acoustics
- Estimated sound level at sidewalk:
  A. General Operating Sound Level 65 dBA

REVISIONS

#	DATE	DESCRIPTION
#1	1.20.15	PROGRESS PRINT

midtown One - Apartment Building

Portland, ME

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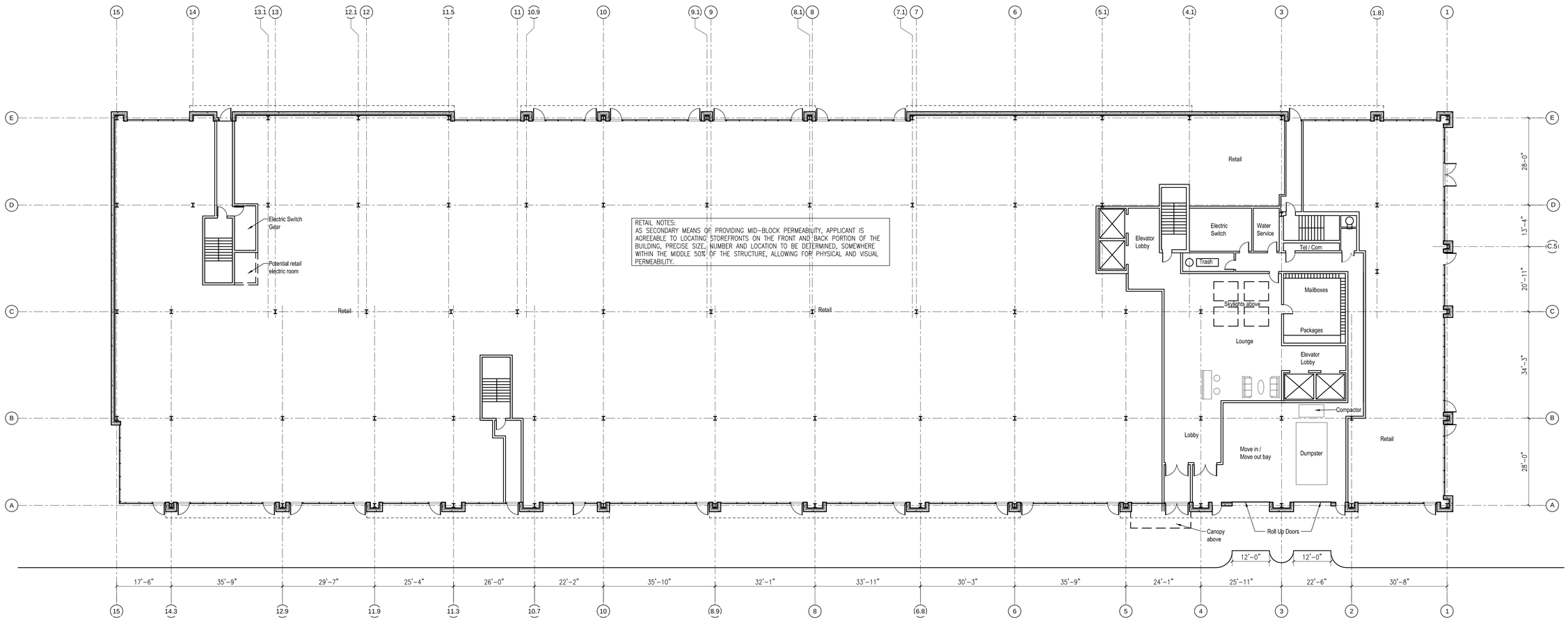
CWS ARCHITECTS
ARCHITECTURE | INTERIOR DESIGN

SCALE	PROJECT #	DATE ISSUED
1/16" = 1'-0"	136070.00	01.20.2015

1-A101

A101D



RETAIL NOTES:
AS SECONDARY MEANS OF PROVIDING MID-BLOCK PERMEABILITY, APPLICANT IS AGREEABLE TO LOCATING STOREFRONTS ON THE FRONT AND BACK PORTION OF THE BUILDING, PRECISE SIZE, NUMBER AND LOCATION TO BE DETERMINED, SOMEWHERE WITHIN THE MIDDLE 50% OF THE STRUCTURE, ALLOWING FOR PHYSICAL AND VISUAL PERMEABILITY.

1 GROUND FLOOR PLAN
SCALE: 1/16" = 1'-0"

REVISIONS

#	DATE	DESCRIPTION
#1	1.20.15	PROGRESS PRINT

midtown Three - Apartment Building

Portland, ME

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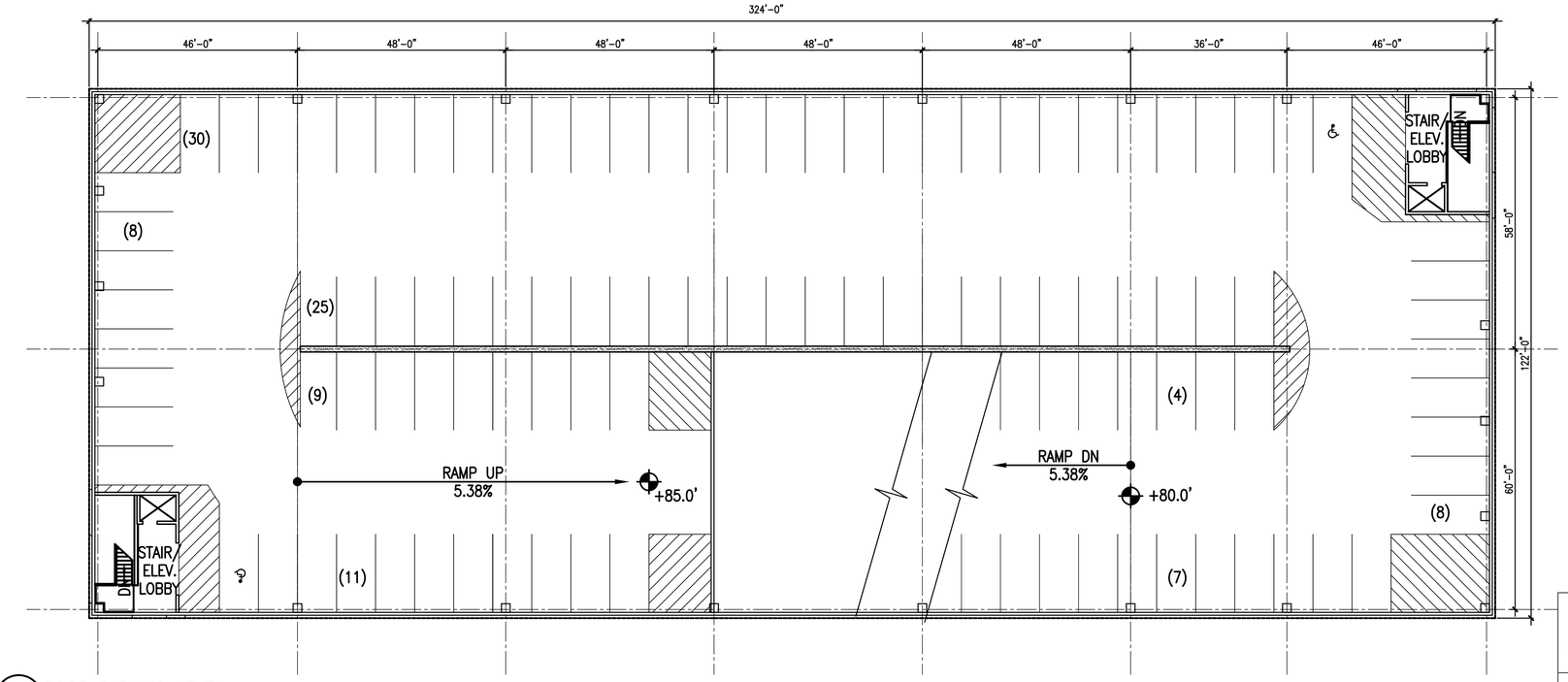
CWS ARCHITECTS
ARCHITECTURE | INTERIOR DESIGN

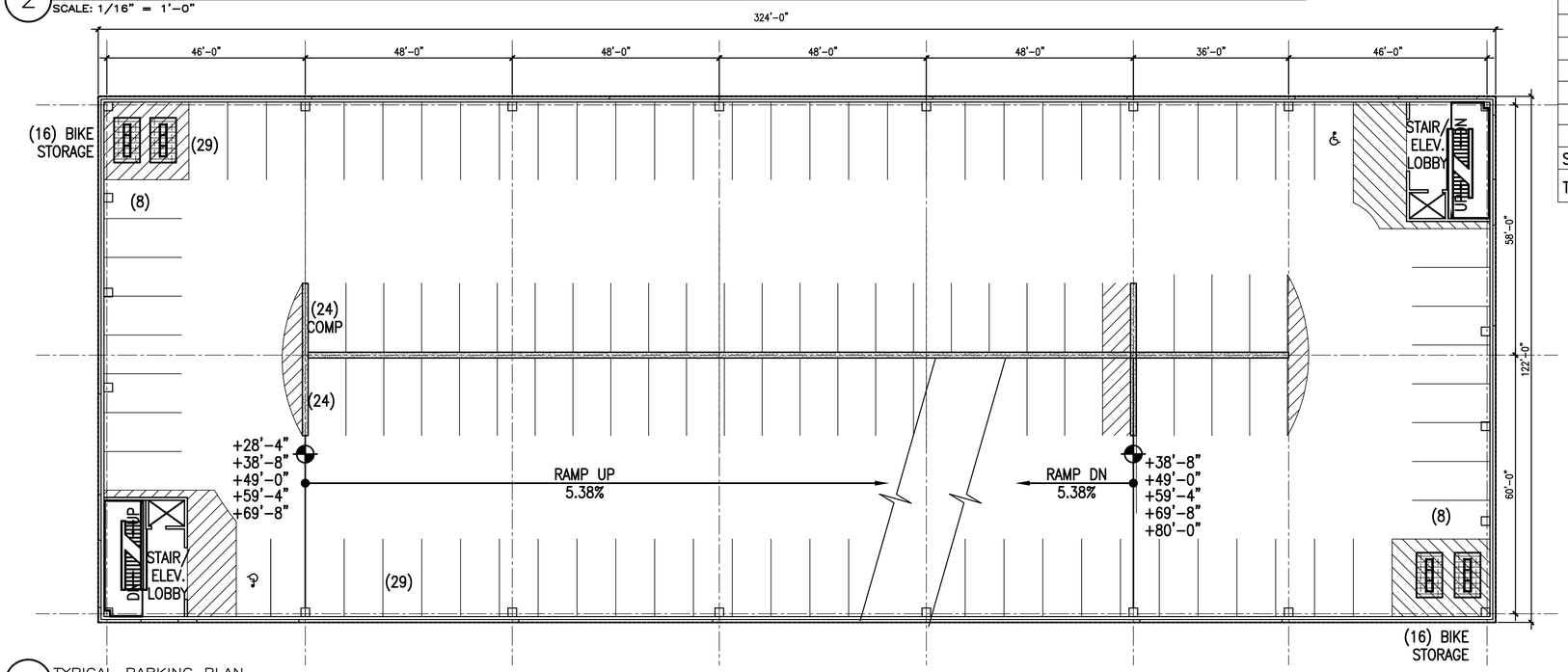
SCALE	PROJECT #	DATE ISSUED
1/16" = 1'-0"	136070.00	01.20.2015

3-A101

A102



2 ROOF PARKING LEVEL
SCALE: 1/16" = 1'-0"



1 TYPICAL PARKING PLAN
SCALE: 1/16" = 1'-0"

PARKING SPACE TABULATION

TIER	STANDARD 9' X 18'	COMP 9' X 16'	VAN ACCESSIBLE 8'-0"x18'-0"+8' AISLE	STANDARD ACCESSIBLE 8'-0"x18'-0"+5' AISLE	MOTOR-CYCLE 4' X 9'	BICYCLE STORAGE
1ST	–	–	–	–	–	0
2ND	56	9	4	0	6	32
3RD	105	19	2	0	–	32
4TH	105	19	2	0	–	32
5TH	105	19	2	0	–	32
6TH	105	19	2	0	–	32
7TH	105	19	2	0	–	32
TOP	96	5	1	0	–	0
SUBTOTAL	677	109	15	0	6 MOTOR-CYCLE SPACES	192 BICYCLE SPACES
TOTAL	801 VEHICLE SPACES					

REVISIONS

#	DATE	DESCRIPTION
#1	11/14/14	not for construction
#2	01/20/15	PROGRESS PRINT

midtown **Two - Parking Garage**

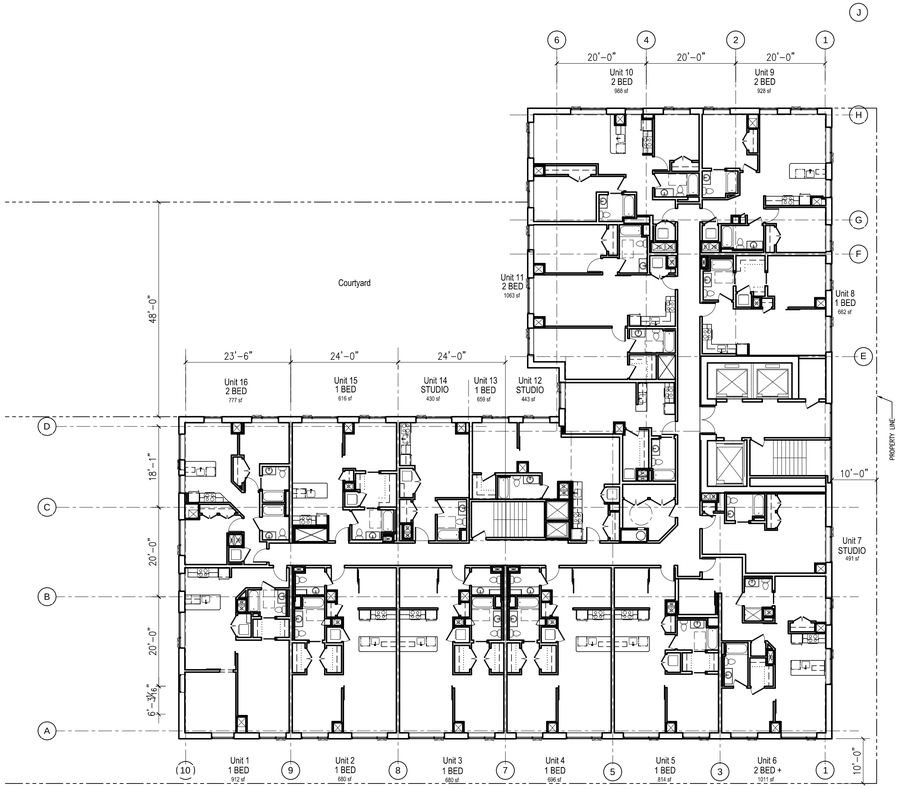
Portland, ME

cbt 617 262 4354 cbtarchitects.com
110 canal street boston, ma 02114

CWS ARCHITECTS

SCALE	PROJECT #	DATE ISSUED
1/16" = 1'-0"	136070.00	01/09/2015

2-A102



1 TYPICAL FLOOR PLAN
SCALE: 1/16" = 1'-0"

REVISIONS

#	DATE	DESCRIPTION
#1	1.20.15	PROGRESS PRINT

midtown One - Apartment Building

Portland, ME

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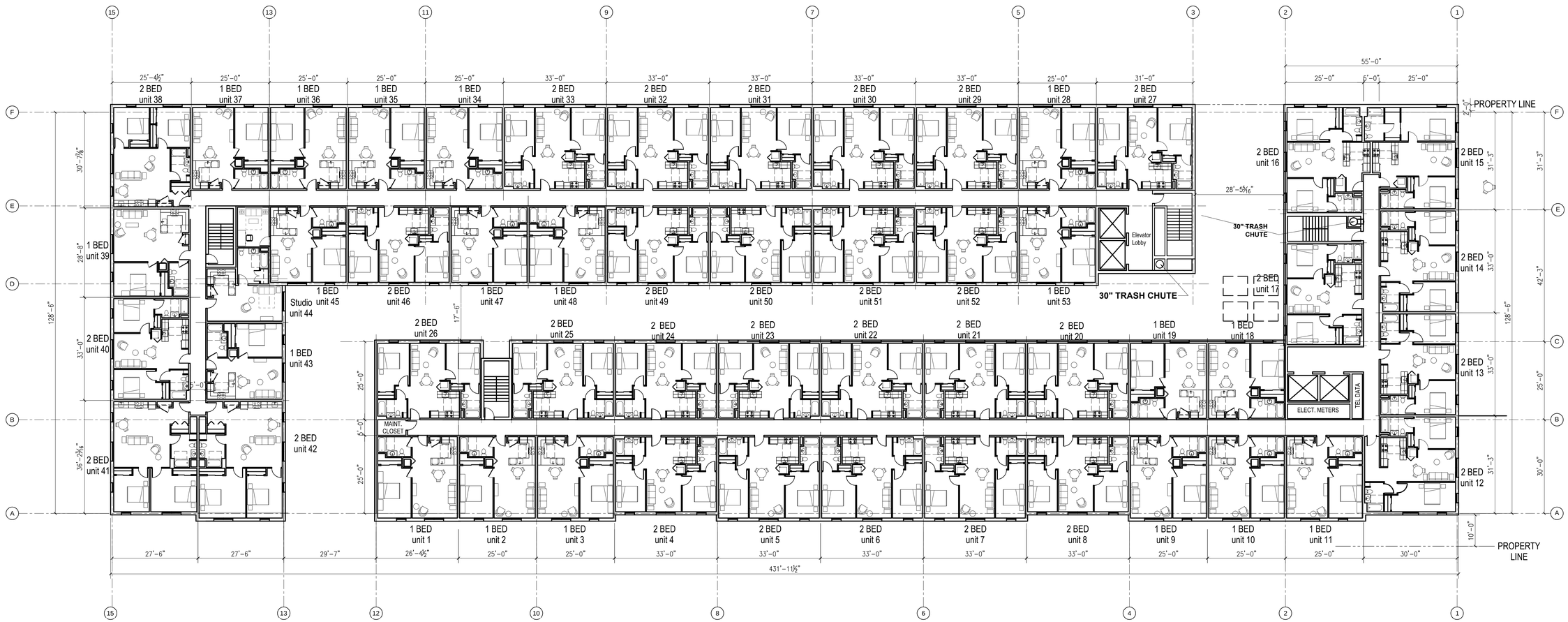
CWS ARCHITECTS
ARCHITECTURE | INTERIOR DESIGN

SCALE	PROJECT #	DATE ISSUED
1/16" = 1'-0"	136070.00	01.20.2015

1 - A102



1 TYPICAL FLOOR PLAN
SCALE: 1/16" = 1'-0"

REVISIONS

#	DATE	DESCRIPTION
#1	1.20.15	PROGRESS PRINT

midtown Three - Apartment Building

Portland, ME

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CWS ARCHITECTS
ARCHITECTURE | INTERIOR DESIGN

SCALE	PROJECT #	DATE ISSUED
1/16" = 1'-0"	136070.00	01.20.2015

3-A102

1 TYPICAL RESIDENTIAL FLOOR PLAN
SCALE: 1/16" = 1'-0"

REVISIONS

#	DATE	DESCRIPTION
#1	1.20.15	PROGRESS PRINT

midtown Four - Apartment Building

Portland, ME

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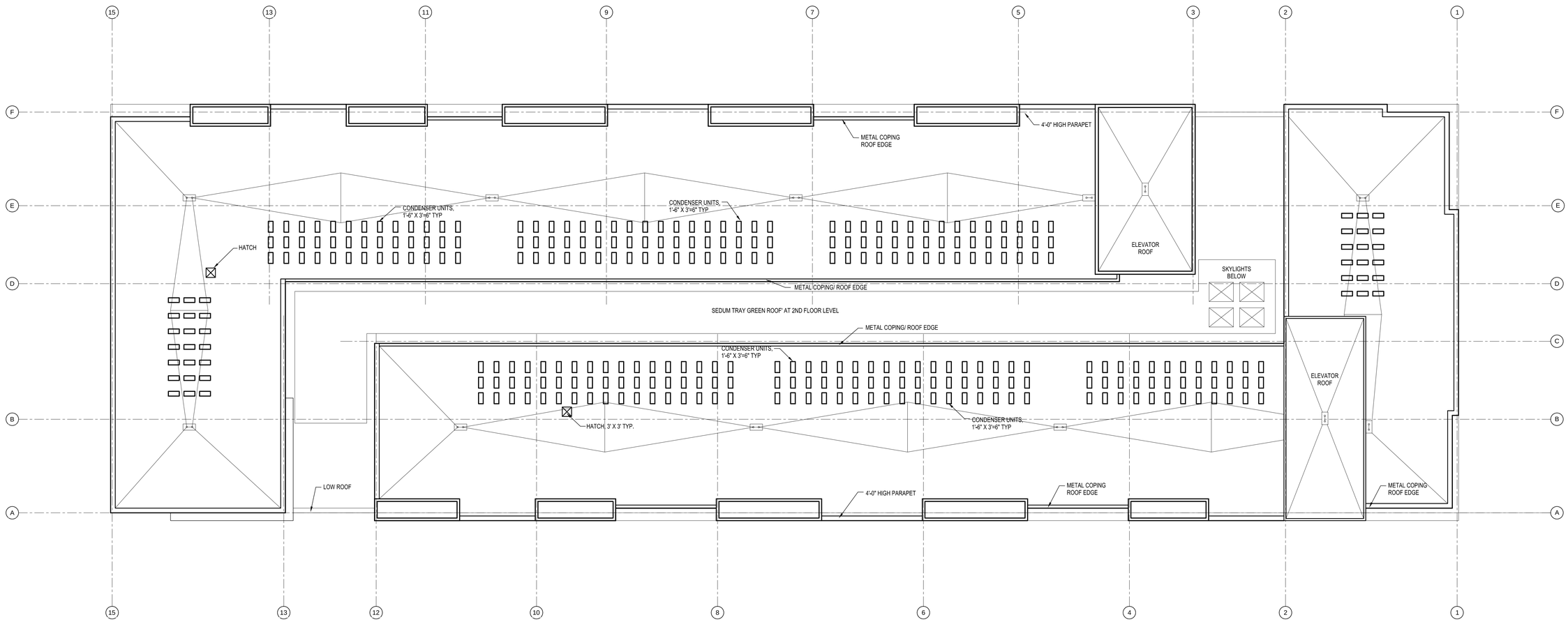
CWS ARCHITECTS
ARCHITECTURE | INTERIOR DESIGN

SCALE	PROJECT #	DATE ISSUED
1/16" = 1-0"	136070.00	01.20.2015

4-A102



1 ROOF FLOOR PLAN
SCALE: 1/16" = 1'-0"

Acoustics
- Estimated sound level at sidewalk:
  A. General Operating Sound Level 65 dBA

REVISIONS

#	DATE	DESCRIPTION
#1	1.20.15	PROGRESS PRINT

midtown Three - Apartment Building

Portland, ME

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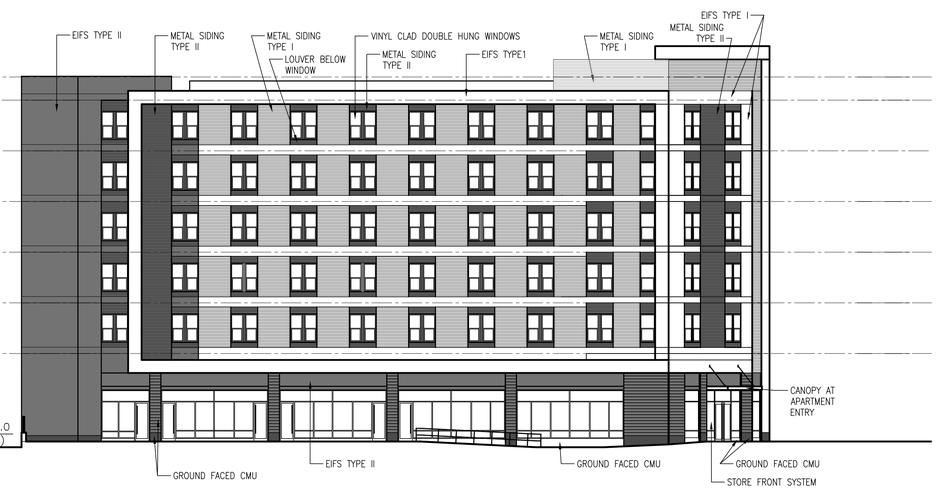
CWS ARCHITECTS
ARCHITECTURE | INTERIOR DESIGN

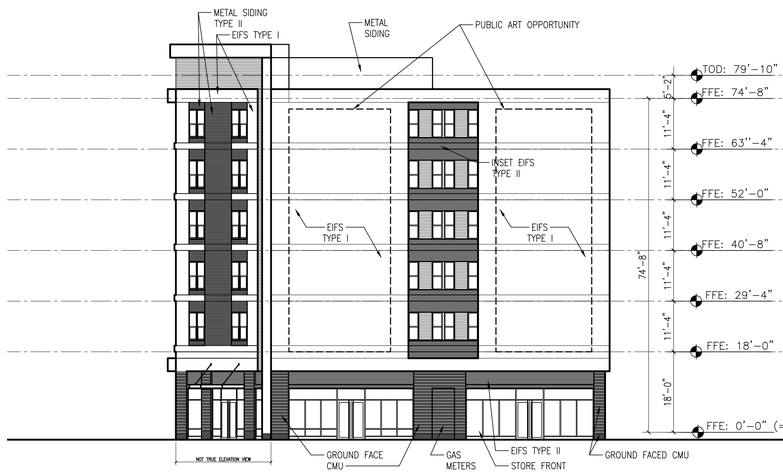
SCALE	PROJECT #	DATE ISSUED
1/16" = 1'-0"	136070.00	01.20.2015

3-A103

1 WEST ELEVATION
SCALE: 1/16" = 1'-0"



2 SOUTH ELEVATION
SCALE: 1/16" = 1'-0"



3 EAST ELEVATION
SCALE: 1/16" = 1'-0"

4 NORTH ELEVATION
SCALE: 1/16" = 1'-0"

REVISIONS

#	DATE	DESCRIPTION
#1	1.20.15	PROGRESS PRINT

midtown Four - Apartment Building

Portland, ME

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CWS ARCHITECTS
ARCHITECTURE | INTERIOR DESIGN

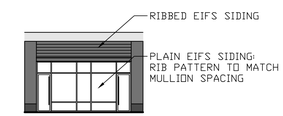
SCALE	PROJECT #	DATE ISSUED
1/16" = 1'-0"	136070.00	01.20.2015

4-A201

A201B

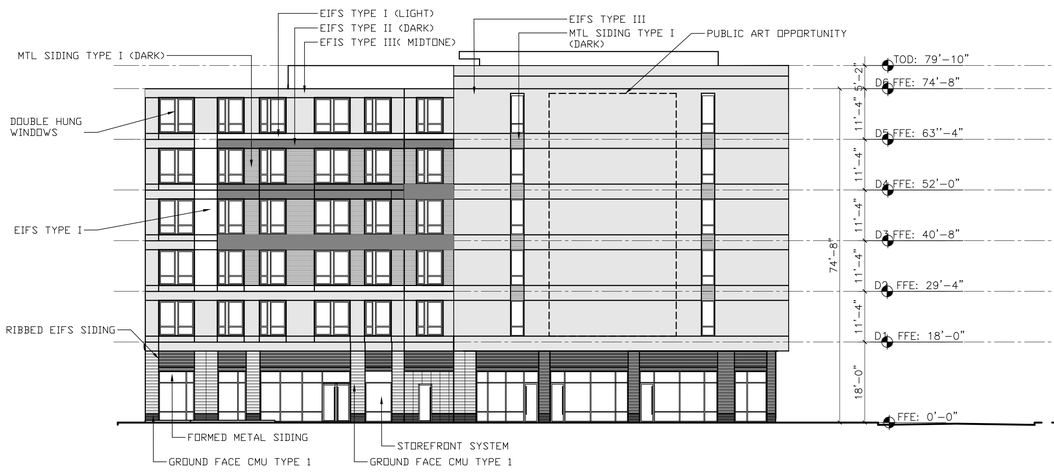
1 EAST ELEVATION
SCALE: 1/16" = 1'-0"

2 NORTH ELEVATION
SCALE: 1/16" = 1'-0"



2A ALTERNATE STOREFRONT
SCALE: 1/16" = 1'-0"

APPLICANT RESERVES RIGHT TO SUBSTITUTE ALT STOREFRONT WHERE LEASING PLANS LIMIT USE OF GLASS STOREFRONT.



3 WEST ELEVATION
SCALE: 1/16" = 1'-0"

4 SOUTH ELEVATION
SCALE: 1/16" = 1'-0"

REVISIONS

#	DATE	DESCRIPTION
#1	1.20.15	PROGRESS PRINT

midtown One - Apartment Building

Portland, ME

RESIDENTIAL ELEVATIONS

SCALE	PROJECT #	DATE ISSUI
1/16" = 1'-0"	136070.00	01.20.2015

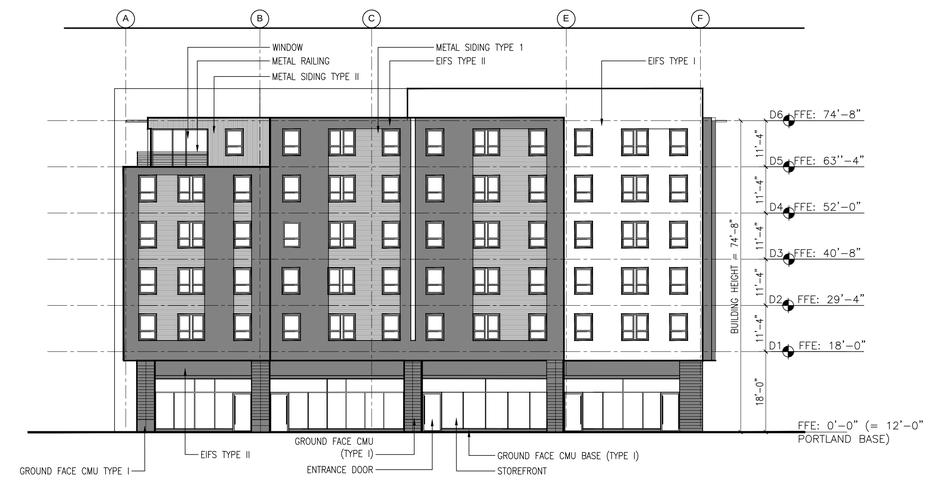
1-A201

cbt 617 262 4354 cbtarchitects.com
110 canal street boston, ma 02114

CWS ARCHITECTS
ARCHITECTURE | INTERIOR DESIGN

A201C

1 SOUTH ELEVATION
SCALE: 1/16" = 1'-0"



2 EAST ELEVATION
SCALE: 1/16" = 1'-0"

REVISIONS

#	DATE	DESCRIPTION
#1	1.20.15	PROGRESS PRINT

midtown Three - Apartment Building

Portland, ME

RESIDENTIAL ELEVATIONS

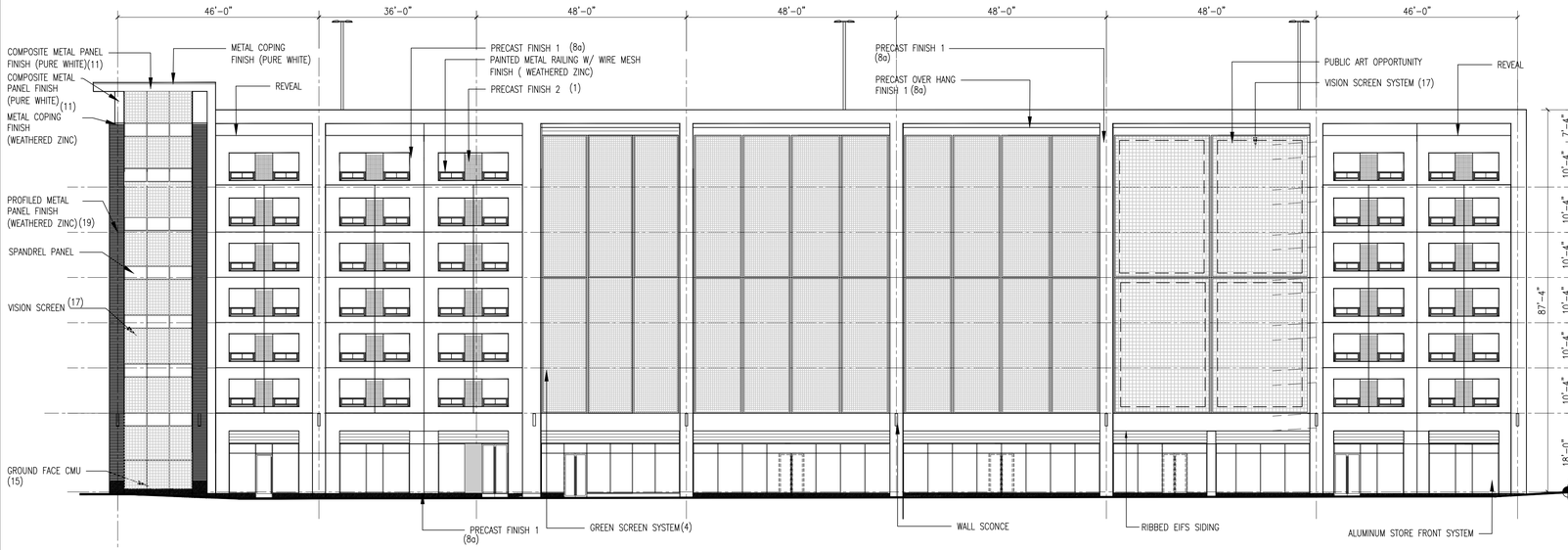
SCALE	PROJECT #	DATE ISSUED
1/16" = 1'-0"	136070.00	01.20.2015

3-A201

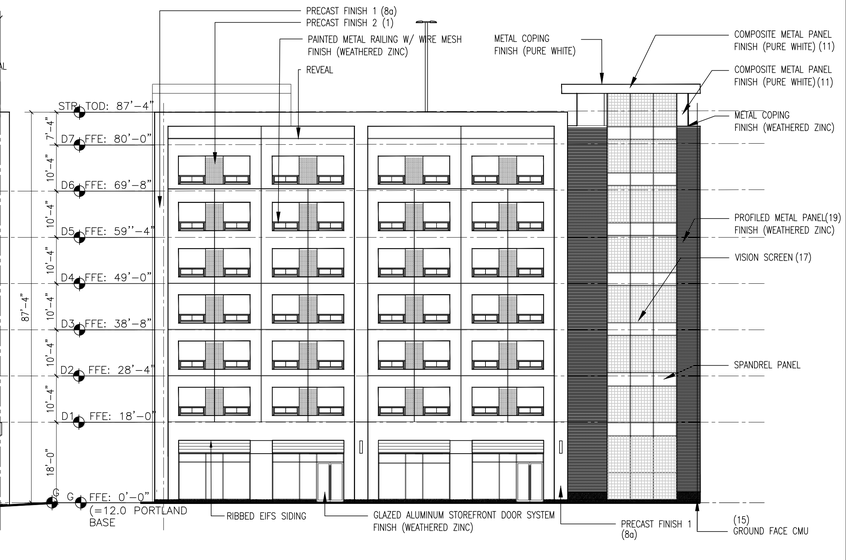
cbt 617 262 4354 cbtarchitects.com
110 canal street boston, ma 02114

CWS ARCHITECTS
ARCHITECTURE | INTERIOR DESIGN

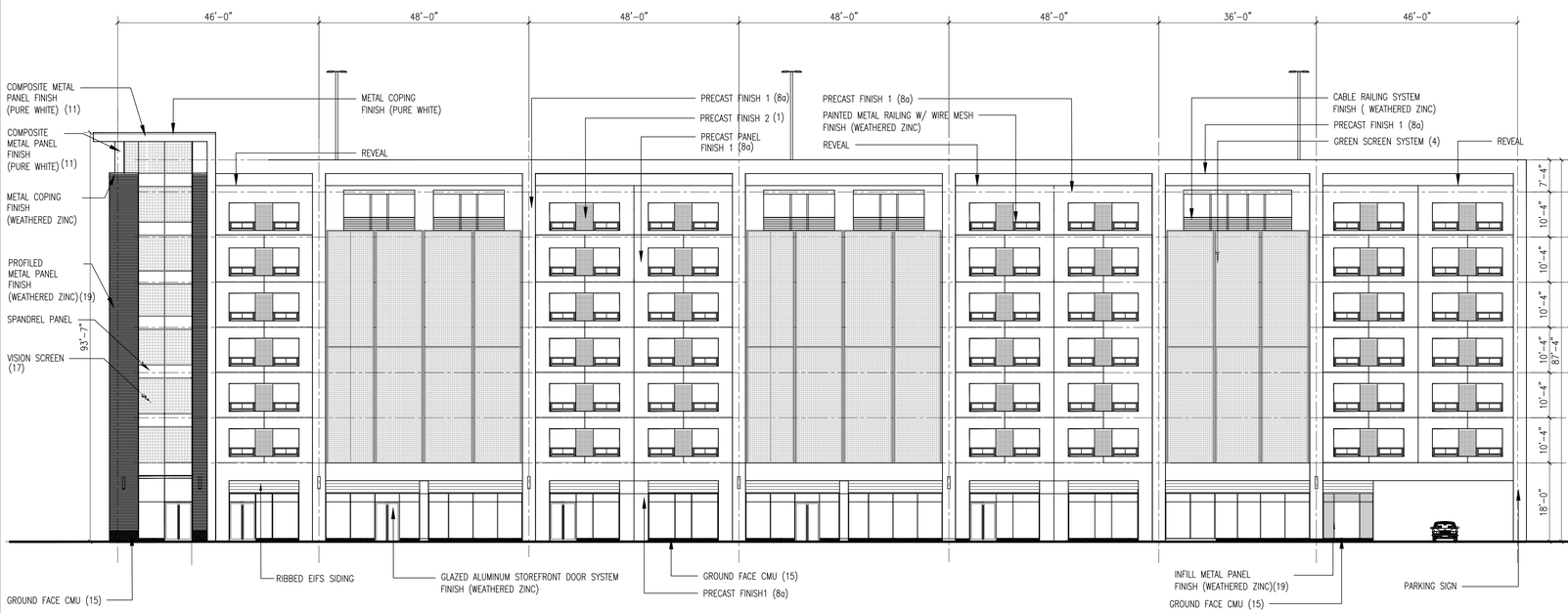
A201D



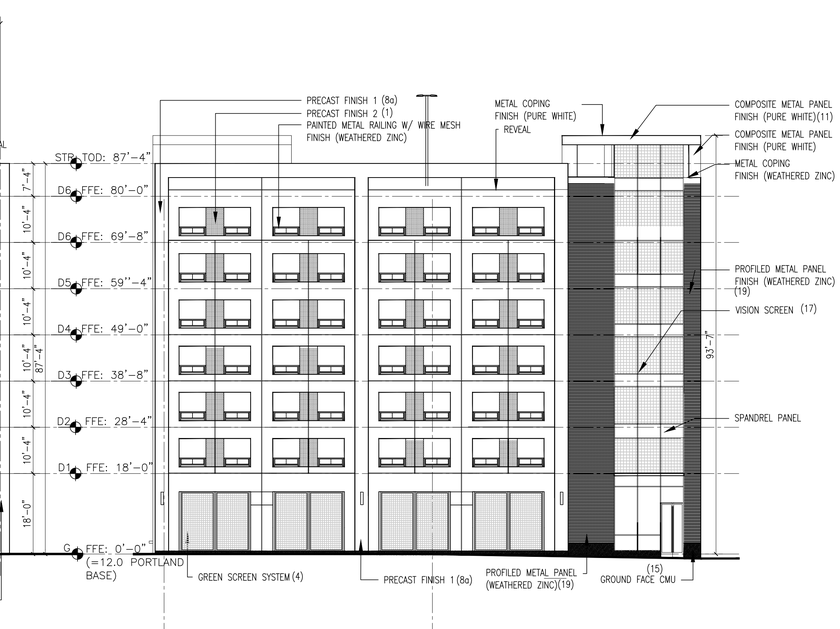
ELEVATION AT BAYSIDE TRAIL



ELEVATION AT CHESTNUT STREET



ELEVATION AT SOMERSET STREET



ELEVATION AT MEWS

REVISIONS

#	DATE	DESCRIPTION
	11/14/14	not for construction
	01/09/15	revision 1

midtown Two - Parking Garage

Portland, ME

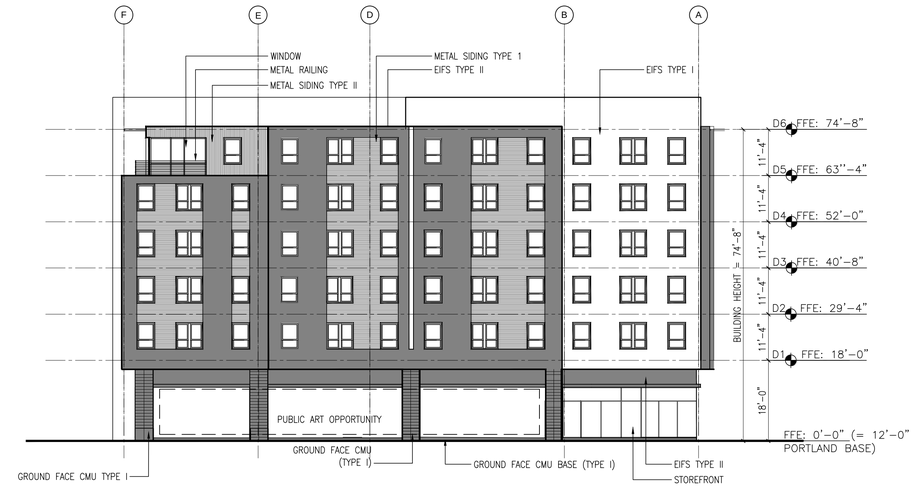
garage elevations

SCALE	PROJECT #	DATE ISSUED
1/16" = 1'-0"	136070.00	01/09/2015

2-A201

cbt 617 262 4354 cbtarchitects.com
110 canal street boston, ma 02114

CWS ARCHITECTS



1 WEST ELEVATION
SCALE: 1/16" = 1'-0"

2 NORTH ELEVATION
SCALE: 1/16" = 1'-0"

REVISIONS

#	DATE	DESCRIPTION
#1	1.20.15	PROGRESS PRINT

midtown Three - Apartment Building

Portland, ME

RESIDENTIAL ELEVATIONS

SCALE	PROJECT #	DATE ISSUED
1/16" = 1'-0"	136070.00	01.20.2015

3-A202

cbt 617 262 4354 cbtarchitects.com
110 canal street boston, ma 02114

CWS ARCHITECTS
ARCHITECTURE | INTERIOR DESIGN

RETAIL TENANT SIGN(S)
BUILDING MOUNTED
INTERNALLY ILLUMINATED
NOT TO EXCEED ONE SIGN / TENANT
ANY SINGLE SIGN NOT TO EXCEED 200 SQ FT
TOTAL RETAIL SIGN AREA NOT TO EXCEED 250 SQ FT

MIDTOWN FOUR – SOUTH

RETAIL TENANT SIGN(S)
BUILDING MOUNTED
INTERNALLY ILLUMINATED
NOT TO EXCEED ONE SIGN / TENANT
ANY SINGLE SIGN NOT TO EXCEED 200 SQ FT
TOTAL RETAIL SIGN AREA NOT TO EXCEED 860 SQ FT

BUILDING STREET NUMBER
BUILDING MOUNTED
HALO LIT
NOT TO EXCEED 4 SQ FT

RESIDENTIAL ID SIGN
MARQUEE MOUNTED
METAL LETTERS
LED LIGHTED FROM BELOW
NOT TO EXCEED 150 SQ FT

MIDTOWN THREE – SOUTH

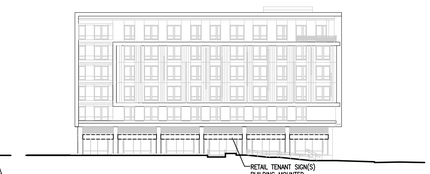
BUILDING IDENTITY SIGN NOT
TO EXCEED 200 SQ FT

BUILDING STREET NUMBER
BUILDING MOUNTED
INTERNALLY ILLUMINATED OR HALO LIT
NOT TO EXCEED 6 SQ FT

RETAIL TENANT SIGN(S)
BUILDING MOUNTED
INTERNALLY ILLUMINATED
NOT TO EXCEED ONE SIGN / TENANT
ANY SINGLE SIGN NOT TO EXCEED 200 SQ FT
TOTAL RETAIL SIGN AREA NOT TO EXCEED 620 SQ FT

PARKING IDENTITY
TOTAL SIGN AREA NOT TO EXCEED 50 SQ FT

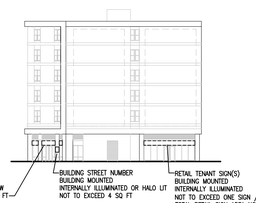
MIDTOWN TWO – SOUTH



RETAIL TENANT SIGN(S)
BUILDING MOUNTED
INTERNALLY ILLUMINATED
NOT TO EXCEED ONE SIGN / TENANT
ANY SINGLE SIGN NOT TO EXCEED 200 SQ FT
TOTAL RETAIL SIGN AREA NOT TO EXCEED 300 SQ FT

MIDTOWN ONE – SOUTH

SOMERSET STREET ELEVATIONS

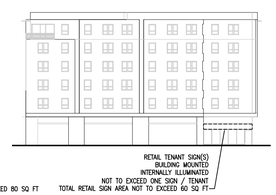


RESIDENTIAL ID SIGN
MARQUEE MOUNTED
METAL LETTERS
LED LIGHTED FROM BELOW
NOT TO EXCEED 150 SQ FT

BUILDING STREET NUMBER
BUILDING MOUNTED
INTERNALLY ILLUMINATED OR HALO LIT
NOT TO EXCEED 4 SQ FT

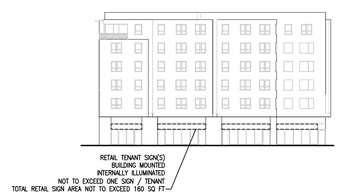
RETAIL TENANT SIGN(S)
BUILDING MOUNTED
INTERNALLY ILLUMINATED
NOT TO EXCEED ONE SIGN / TENANT
TOTAL RETAIL SIGN AREA NOT TO EXCEED 80 SQ FT

MIDTOWN FOUR – EAST



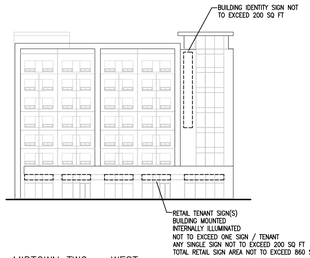
RETAIL TENANT SIGN(S)
BUILDING MOUNTED
INTERNALLY ILLUMINATED
NOT TO EXCEED ONE SIGN / TENANT
TOTAL RETAIL SIGN AREA NOT TO EXCEED 60 SQ FT

MIDTOWN THREE – WEST



RETAIL TENANT SIGN(S)
BUILDING MOUNTED
INTERNALLY ILLUMINATED
NOT TO EXCEED ONE SIGN / TENANT
TOTAL RETAIL SIGN AREA NOT TO EXCEED 160 SQ FT

MIDTOWN THREE – EAST



BUILDING IDENTITY SIGN NOT
TO EXCEED 200 SQ FT

RETAIL TENANT SIGN(S)
BUILDING MOUNTED
INTERNALLY ILLUMINATED
NOT TO EXCEED ONE SIGN / TENANT
ANY SINGLE SIGN NOT TO EXCEED 200 SQ FT
TOTAL RETAIL SIGN AREA NOT TO EXCEED 860 SQ FT

MIDTOWN TWO – WEST

TRAIL END AT ELM STREET ELEVATIONS

CHESTNUT STREET ELEVATIONS

MIDTOWN TWO – EAST

RETAIL TENANT SIGN(S)
BUILDING MOUNTED
INTERNALLY ILLUMINATED
NOT TO EXCEED ONE SIGN / TENANT
TOTAL RETAIL SIGN AREA NOT TO EXCEED 140 SQ FT

MIDTOWN ONE – WEST

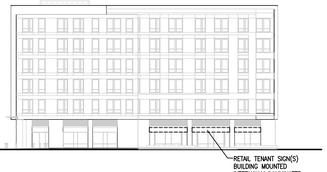
BUILDING STREET NUMBER
BUILDING MOUNTED
HALO LIT
NOT TO EXCEED 4 SQ FT

RESIDENTIAL ID SIGN
MARQUEE MOUNTED
METAL LETTERS
LED LIGHTED FROM BELOW
NOT TO EXCEED 150 SQ FT

MIDTOWN ONE – EAST

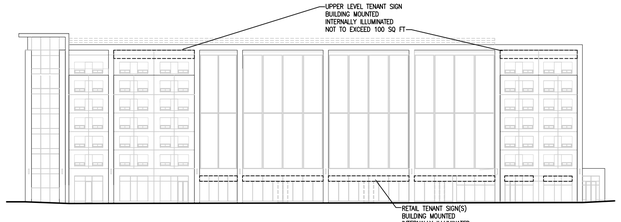
THE MEWS ELEVATIONS

PEARL STREET ELEVATION



RETAIL TENANT SIGN(S)
BUILDING MOUNTED
INTERNALLY ILLUMINATED
NOT TO EXCEED ONE SIGN / TENANT
ANY SINGLE SIGN NOT TO EXCEED 120 SQ FT
TOTAL RETAIL SIGN AREA NOT TO EXCEED 120 SQ FT

MIDTOWN ONE – NORTH



UPPER LEVEL TENANT SIGN
BUILDING MOUNTED
INTERNALLY ILLUMINATED
NOT TO EXCEED 100 SQ FT

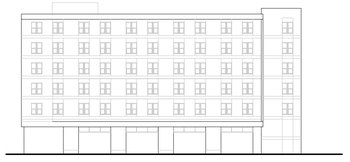
RETAIL TENANT SIGN(S)
BUILDING MOUNTED
INTERNALLY ILLUMINATED
NOT TO EXCEED ONE SIGN / TENANT
ANY SINGLE SIGN NOT TO EXCEED 200 SQ FT
TOTAL RETAIL SIGN AREA NOT TO EXCEED 620 SQ FT

MIDTOWN TWO – NORTH

RETAIL TENANT SIGN(S)
BUILDING MOUNTED
INTERNALLY ILLUMINATED
NOT TO EXCEED ONE SIGN / TENANT
TOTAL RETAIL SIGN AREA NOT TO EXCEED 100 SQ FT

RETAIL TENANT SIGN(S)
BUILDING MOUNTED
INTERNALLY ILLUMINATED
NOT TO EXCEED ONE SIGN / TENANT
TOTAL RETAIL SIGN AREA NOT TO EXCEED 60 SQ FT

MIDTOWN THREE – NORTH



MIDTOWN FOUR – NORTH

BAYSIDE TRAIL ELEVATIONS

midtown project

Portland, ME

SIGNAGE
ELEVATIONS

SCALE	PROJECT #	DATE ISSUED
1" = 40'-0"	136070.00	11.14.2014

A800

cbt 617 262 4354 cbtarchitects.com
110 canal street, boston, ma 02114

CWS ARCHITECTS
ARCHITECTURE | INTERIOR DESIGN

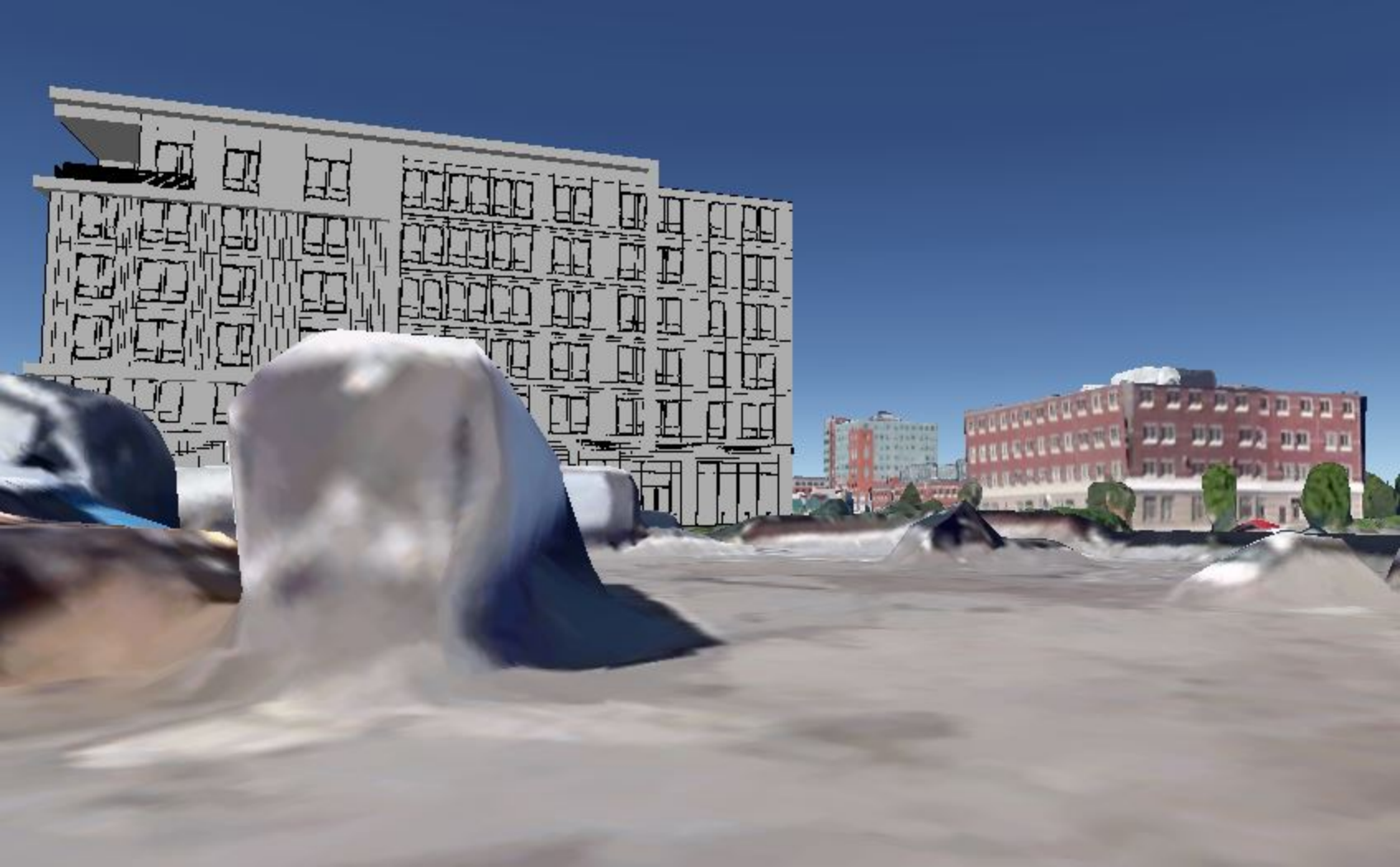


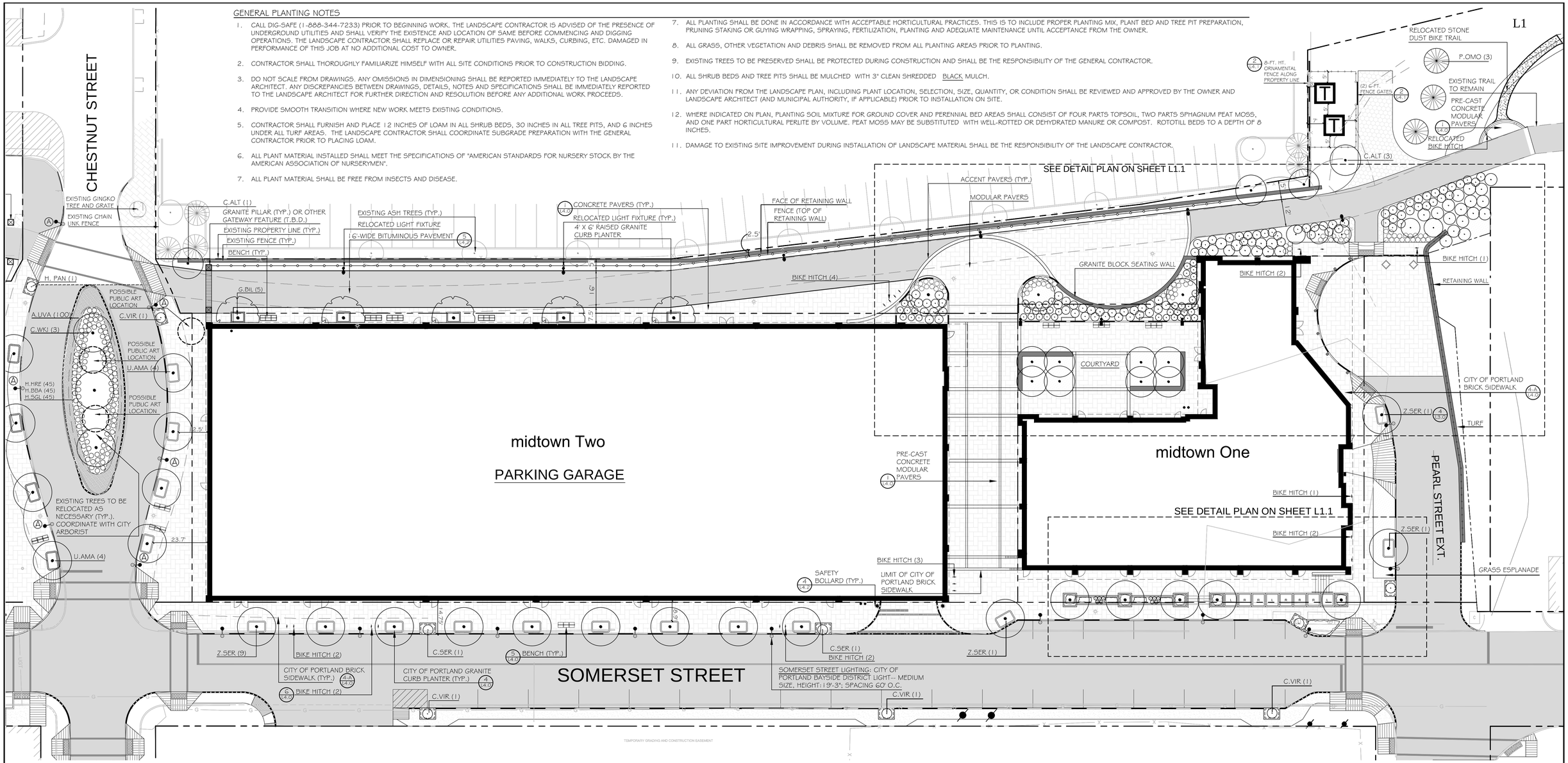
Image Landsat

Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image Landsat
Image U.S. Geological Survey

Image Landsat

GENERAL PLANTING NOTES

1. CALL DIG-SAFE (1-888-344-7233) PRIOR TO BEGINNING WORK. THE LANDSCAPE CONTRACTOR IS ADVISED OF THE PRESENCE OF UNDERGROUND UTILITIES AND SHALL VERIFY THE EXISTENCE AND LOCATION OF SAME BEFORE COMMENCING AND DIGGING OPERATIONS. THE LANDSCAPE CONTRACTOR SHALL REPLACE OR REPAIR UTILITIES PAVING, WALKS, CURBING, ETC. DAMAGED IN PERFORMANCE OF THIS JOB AT NO ADDITIONAL COST TO OWNER.
2. CONTRACTOR SHALL THOROUGHLY FAMILIARIZE HIMSELF WITH ALL SITE CONDITIONS PRIOR TO CONSTRUCTION BIDDING.
3. DO NOT SCALE FROM DRAWINGS. ANY OMISSIONS IN DIMENSIONING SHALL BE REPORTED IMMEDIATELY TO THE LANDSCAPE ARCHITECT. ANY DISCREPANCIES BETWEEN DRAWINGS, DETAILS, NOTES AND SPECIFICATIONS SHALL BE IMMEDIATELY REPORTED TO THE LANDSCAPE ARCHITECT FOR FURTHER DIRECTION AND RESOLUTION BEFORE ANY ADDITIONAL WORK PROCEEDS.
4. PROVIDE SMOOTH TRANSITION WHERE NEW WORK MEETS EXISTING CONDITIONS.
5. CONTRACTOR SHALL FURNISH AND PLACE 12 INCHES OF LOAM IN ALL SHRUB BEDS, 30 INCHES IN ALL TREE PITS, AND 6 INCHES UNDER ALL TURF AREAS. THE LANDSCAPE CONTRACTOR SHALL COORDINATE SUBGRADE PREPARATION WITH THE GENERAL CONTRACTOR PRIOR TO PLACING LOAM.
6. ALL PLANT MATERIAL INSTALLED SHALL MEET THE SPECIFICATIONS OF "AMERICAN STANDARDS FOR NURSERY STOCK BY THE AMERICAN ASSOCIATION OF NURSERYMEN".
7. ALL PLANT MATERIAL SHALL BE FREE FROM INSECTS AND DISEASE.
7. ALL PLANTING SHALL BE DONE IN ACCORDANCE WITH ACCEPTABLE HORTICULTURAL PRACTICES. THIS IS TO INCLUDE PROPER PLANTING MIX, PLANT BED AND TREE PIT PREPARATION, PRUNING STAKING OR GUYING WRAPPING, SPRAYING, FERTILIZATION, PLANTING AND ADEQUATE MAINTENANCE UNTIL ACCEPTANCE FROM THE OWNER.
8. ALL GRASS, OTHER VEGETATION AND DEBRIS SHALL BE REMOVED FROM ALL PLANTING AREAS PRIOR TO PLANTING.
9. EXISTING TREES TO BE PRESERVED SHALL BE PROTECTED DURING CONSTRUCTION AND SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
10. ALL SHRUB BEDS AND TREE PITS SHALL BE MULCHED WITH 3" CLEAN SHREDDED BLACK MULCH.
11. ANY DEVIATION FROM THE LANDSCAPE PLAN, INCLUDING PLANT LOCATION, SELECTION, SIZE, QUANTITY, OR CONDITION SHALL BE REVIEWED AND APPROVED BY THE OWNER AND LANDSCAPE ARCHITECT (AND MUNICIPAL AUTHORITY, IF APPLICABLE) PRIOR TO INSTALLATION ON SITE.
12. WHERE INDICATED ON PLAN, PLANTING SOIL MIXTURE FOR GROUND COVER AND PERENNIAL BED AREAS SHALL CONSIST OF FOUR PARTS TOPSOIL, TWO PARTS SPHAGNUM PEAT MOSS, AND ONE PART HORTICULTURAL PERLITE BY VOLUME. PEAT MOSS MAY BE SUBSTITUTED WITH WELL-ROTTED OR DEHYDRATED MANURE OR COMPOST. ROTOTILL BEDS TO A DEPTH OF 8 INCHES.
11. DAMAGE TO EXISTING SITE IMPROVEMENT DURING INSTALLATION OF LANDSCAPE MATERIAL SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR.



LEGEND

	EXISTING	PROPOSED
PROPERTY LINE		
MONUMENT FOUND	MON	
CATCHBASIN		
MANHOLE		
HYDRANT		
WATER VALVE		
UTILITY POLE		

	EXISTING	PROPOSED
PRECAST CONCRETE PAVERS		
RETAINING WALL		
STREET LIGHT FIXTURE		
TRAIL LIGHT FIXTURE		
SEATING		
CURB		
BIKE HITCH		
TRAIL BITUMINOUS PAVEMENT		
FILTERRA UNIT WITH TREE OR SHRUB PLANTING		
SAFETY BOLLARD (AT GARAGE)		
CONCRETE BOLLARD LIGHT		

PLANTING SCHEDULE -- PHASE I

KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	NOTES
TREES					
A.MAA	4	MAACKIA AMURENSIS	AMUR MAACKIA	2" CAL.	
C.ALT	11	CORNUS ALTERNIFOLIA	PAGODA DOGWOOD	10 GAL.	SINGLE STEM
C.VIR	5	CHIONANTHUS VIRGINICUS	FRINGETREE	6' - 7'	
C.WKI	3	CRATAEGUS VIRIDIS 'WINTER KING'	WINTER KING HAWTHORN	2 1/2" CAL.	
G.BIL	5	GINGKO BILOBA 'MAGYAR'	MAGYAR GINGKO	2" CAL.	
G.TH	8	GLEDITSI TRIANCANTHUS 'HALKA'	HALKA HONEY LOCUST	2 1/2" CAL.	
M.JAD	3	MALUS 'RED JADE'	RED JADE CRABAPPLE	2" CAL.	
M.SNO	5	MALUS 'SNOWDRIFT'	SNOWDRIFT CRABAPPLE	2" CAL.	
P.OMO	3	PICEA OMORIKA	SERBIAN SPRUCE	6' - 7'	
U.AMA	4	ULMUS AMERICANA 'VALLEY FORGE'	AMERICAN ELM 'VALLEY FORGE'	2.5" CAL.	
Z.SER	13	ZELKOVA SERRATA 'GREEN VASE'	ZELKOVA 'GREEN VASE'	3" CAL.	
SHRUBS					
A.MAM	10	ARONIA MELANOCARPA	AUTUMN MAGIC CHOKEBERRY	3 GAL.	
A.UVA	148	ARCTOSTAPHYLOS UVA-URSI	BEARBERRY	3 GAL.	
C.ACV	10	CLETHRA ALNIFOLIA 'CALEB'	VANILLA SPICE CLETHRA	3 GAL.	
C.SER	13	CORNUS SERICEA 'BAILEYI'	RED TWIG DOGWOOD	5 GAL.	
M.PEN	5	MYRICA PENNSYLVANICA	NORTHERN BAYBERRY	2.5' HT.	
R.ARO	53	RHUS AROMATICA 'GRO-LO'	'GRO-LO' SUMAC	3 GAL.	
R.WIL	10	RHODODENDRON WILSONII	WILSON RODODENDRON	5 GAL.	
V.CAS	10	VIBURNUM CASSINOIDES ' WITHEROD'	WITHEROD VIBURNUM	5 GAL.	
V.LEN	5	VIBURNUM LENTAGO	NANNYBERRY	5 GAL.	

KEY	QTY	BOTANICAL NAME	COMMON NAME		
PERENNIALS					
H.BBA	16	HEMEROCALLIS 'BETH BARTH'	DAYLILY 'BETH BARTH'	3 GAL.	
H.HRE	11	HEMEROCALLIS 'HAPPY RETURNS'	DAYLILY 'HAPPY RETURNS'	3 GAL.	
H.SGL	16	HEMEROCALLIS 'SUNDAY GLOVES'	DAYLILY 'SUNDAY GLOVES'	3 GAL.	
P.ALO	23	PENNISETUM ALOPEUROIDES	FOUNTAIN GRASS	3 GAL.	
S.SCO	15	SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM GRASS	3 GAL.	
GREEN WALL CLIMBING VINES					
C.PAN	T.B.D.	CLEMATIS PANICULATA	SWEET AUTUMN CLEMATIS	2 YR. POT	
P.QUI	T.B.D.	PARTHENOCISSUS QUINQUEFOLIA	VIRGINIA CREEPER	2 YR. POT	

NORTH

0 10' 20' 40' 80'

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
2	1.20.15	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

LICENSED LANDSCAPE ARCHITECT ROBERT B. METCALF No. 1815 STATE OF MAINE

ROBERT METCALF, ME LA
LIC. # 1815

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
midtown One and Two:
LANDSCAPE AND LIGHTING PLAN

CLIENT
THE FEDERATED COMPANIES

Mitchell & Associates
LANDSCAPE ARCHITECTS
70 Center Street
Portland, Maine 04101
P: 207.774.4427
F: 207.874.2460

DRAWN:	SM/MK	DATE:	11.14.14
DESIGNED:	SM/MK	SCALE:	1" = 20'
CHECKED:	RM	JOB NO.	
FILE NAME:			
SHEET	L1.0		

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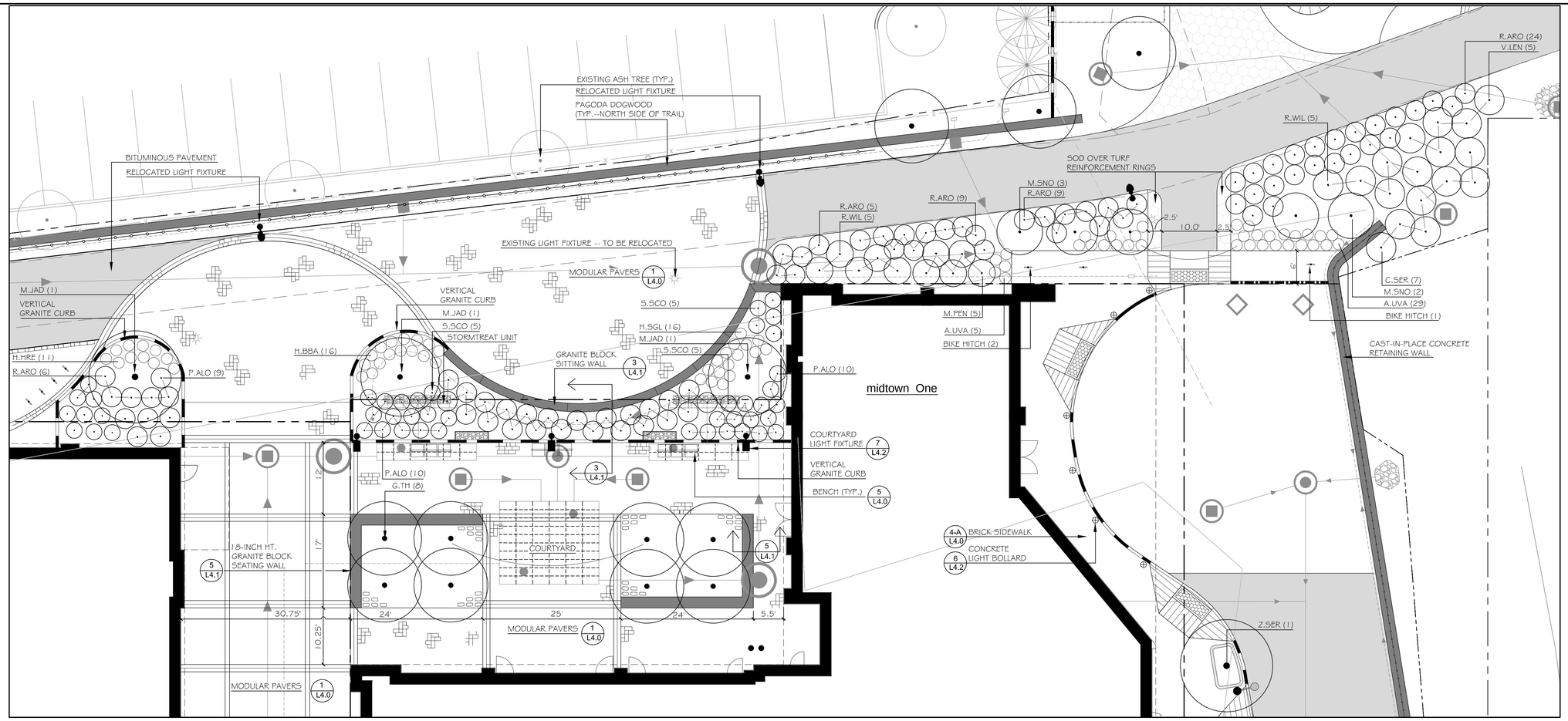
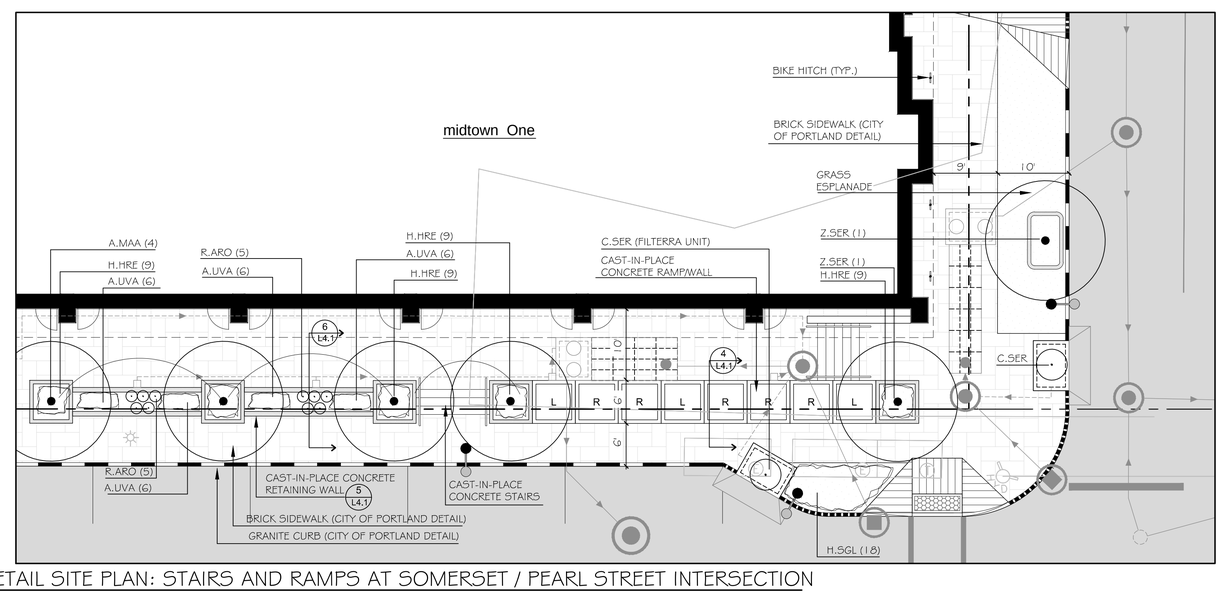
L1.1



1 L1.1 DETAIL SITE PLAN: COURTYARD AND BUILDING ENTRANCE

SCALE = 1" = 10'



2 L1.1 DETAIL SITE PLAN: STAIRS AND RAMPS AT SOMERSET / PEARL STREET INTERSECTION

SCALE = 1" = 10'

LEGEND

	EXISTING	PROPOSED
PROPERTY LINE		
MONUMENT FOUND	MON	
CATCHBASIN		
MANHOLE		
HYDRANT		
WATER VALVE		
UTILITY POLE		

	EXISTING	PROPOSED
PRECAST CONCRETE PAVERS		
RETAINING WALL		
STREET LIGHT FIXTURE		
TRAIL LIGHT FIXTURE		
SEATING		
CURB		
BIKE HITCH		
TRAIL BITUMINOUS PAVEMENT		
FILTERRA UNIT WITH TREE OR SHRUB PLANTING		
SAFETY BOLLARD (AT GARAGE)		
CONCRETE BOLLARD LIGHT		

NORTH

0 10' 20' 40'

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
2	1.20.15	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

LICENSED LANDSCAPE ARCHITECT ROBERT B. METCALF No. 1815

ROBERT METCALF, ME LA
LIC. # 1815

PROJECT: midtown
PORTLAND, MAINE

SHEET TITLE: midtown One: DETAIL LANDSCAPE AND LIGHTING PLAN

CLIENT: THE FEDERATED COMPANIES

Mitchell & Associates
LANDSCAPE ARCHITECTS
70 Center Street
Portland, Maine 04101
P: 207.774.4427
F: 207.874.2460

DRAWN:	SM/MK	DATE:	11.14.14
DESIGNED:	SM/MK	SCALE:	1" = 10'
CHECKED:	RM	JOB NO.	
FILE NAME:			
SHEET	L1.1		

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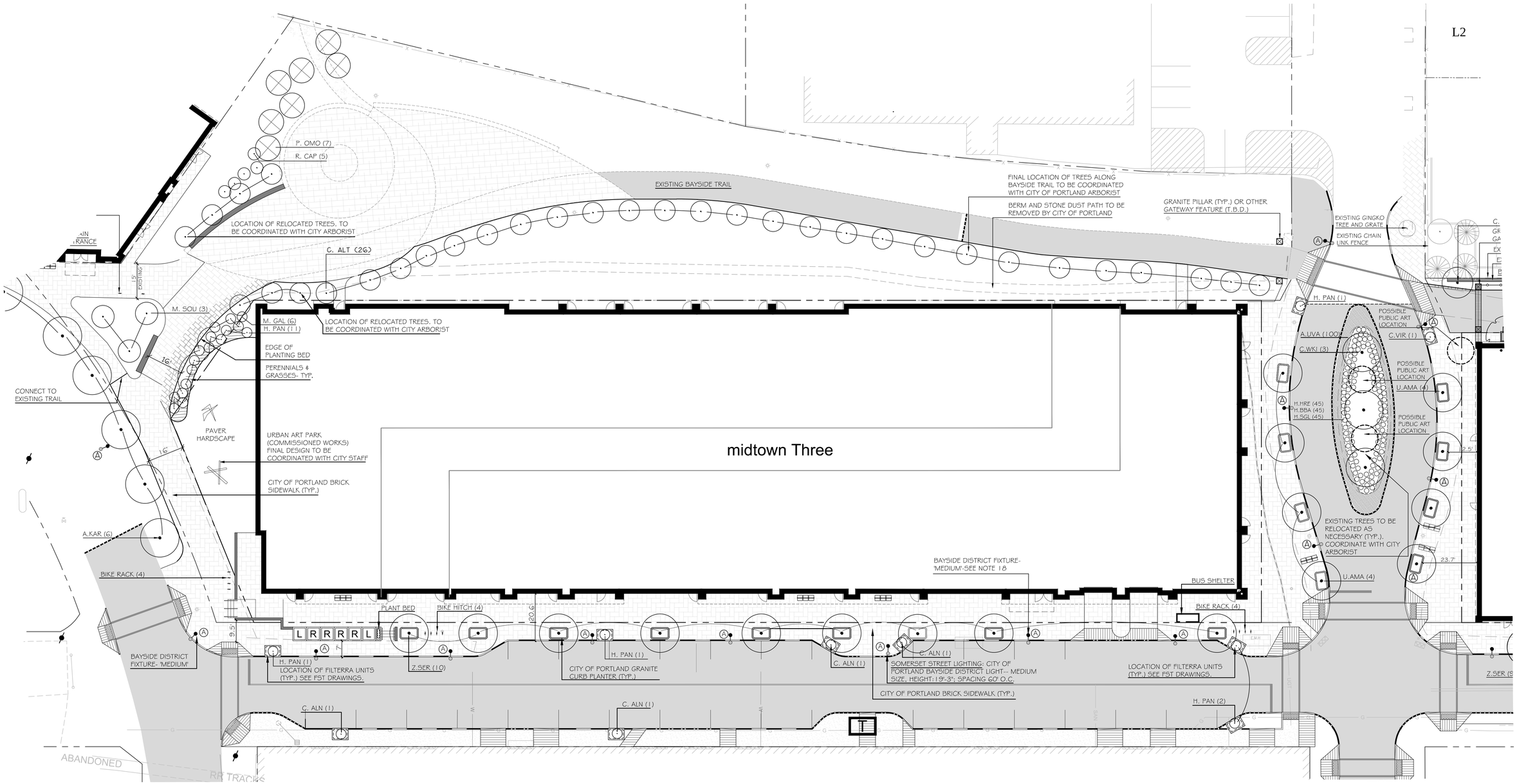

LEGEND

	EXISTING	PROPOSED
PROPERTY LINE		
MONUMENT FOUND	■ MON	
CATCHBASIN		
MANHOLE		
HYDRANT		
WATER VALVE		
UTILITY POLE		

	EXISTING	PROPOSED
RETAINING WALL		
STREET LIGHT FIXTURE		
TRAIL LIGHT FIXTURE		
SEATING		
CURB		
BIKE HITCH		
FILTERRA UNIT WITH TREE OR SHRUB PLANTING		
SAFETY BOLLARD (AT GARAGE)		

PLANTING SCHEDULE -- PHASE II AND III ONLY

KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	NOTES
TREES					
A. KAR	6	ACER RUBRUM 'KARPICK'	KARPICK RED MAPLE	2.5" CAL.	
A. SAC	3	ACER SACCHARUM 'GREEN MOUNTAIN'	GREEN MT. SUGAR MAPLE	2.5" CAL.	
B. NIG	1	BETULA NIGRA	RIVER BIRCH	2" CAL. CLUMP	
C. ALT	26	CORNUS ALTERNIFOLIA	PAGODA DOGWOOD	5'-6' HT.	
M SOU	3	MAGNOLIA SOULANGIANA 'ALEXANDRIA'	SAUCER MAGNOLIA	5'-6' HT. CLUMP	
P. OMO	7	PICEA OMORIKA	SERBIAN SPRUCE	5'-6' HT.	
U. AMA	4	ULMUS AMERICANA 'VALLEY FORGE'	AMERICAN ELM 'VALLEY FORGE'	2.5" CAL.	
Z. SER	10	ZELKOVA SERRATA 'GREEN VASE'	ZELKOVA 'GREEN VASE'	3" CAL.	
SHRUBS					
C. ALN	4	CLETHRA ALNIFOLIA 'SIXTEEN CANDLES'	SIXTEEN CANDLES SUMMERSWEET	#3	FILTERRA UNITS
H. PAN	17	HYDRANGEA PANICULATA 'LITTLE QUICKFIRE'	QUICKFIRE HYDRANGEA	#3	FILTERRA UNITS
M. GAL	7	MYRICA GALE	SWEETGALE	#3	
P. JAP	3	PIERIS JAPONICA 'MT. FIRE'	MT FIRE ANDROMEDA	#3	
R. CAP	8	RHODODENDRON 'CAPISTRANO'	CAPISTRANO RHODODENDRON	#3	
S. PAT	3	SYRINGA PATULA 'MISS KIM'	MISS KIM LILAC	#3	
T. OCC	4	THUGA OCCIDENTALIS 'PYRAMIDAL'	PYRAMIDAL ARBORVITAE	#5	

NORTH

0 10' 20' 40' 80'

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
2	1.20.15	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

LICENSED LANDSCAPE ARCHITECT ROBERT B. METCALF No. 1815

ROBERT METCALF, ME LA
LIC. # 1815

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
midtown Three:
LANDSCAPE AND LIGHTING PLAN

CLIENT
THE FEDERATED COMPANIES

Mitchell & Associates
LANDSCAPE ARCHITECTS
70 Center Street
Portland, Maine 04101
P: 207.774.4427
F: 207.874.2460

DRAWN:	SM/MK	DATE:	11.14.14
DESIGNED:	SM/MK	SCALE:	1" = 20'
CHECKED:	RM	JOB NO.	
FILE NAME:			
SHEET	L2.0		

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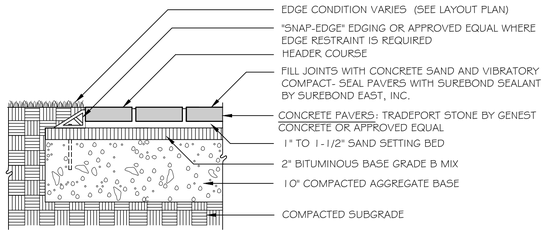


NOTE: CONCRETE PAVERS SHALL BE SEALED WITH SUREBOND SB-1370 JOINT STABILIZING SEALER OR APPROVED EQUAL

Tradeport Stone™

Genest Tradeport Stone offers you two distinct textures that can easily enhance any landscape design. Available in an antiqued texture that offers the look of quarried stone or a smooth traditional surface with a crisp non-antiqued edge. The larger stone sizes add appeal and distinction for residential or commercial driveways, walkways, patios, downtown plazas and city sidewalks.
The Tradeport comes in four blended colors that can easily match the colors in your landscape.

Packaging

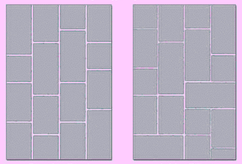
- 93.6 sq. ft. per pallet
- 3,520 lbs per pallet
- 10.4 sq. ft. per layer
- 9 layers per pallet

Three Stone Sizes

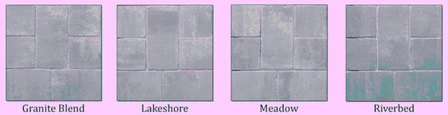
- 200mm x 200mm (7 7/8" x 7 7/8")
- 200mm x 300mm (7 7/8" x 11 13/16")
- 200mm x 400mm (7 7/8" x 15 3/4")

All Stones are 80mm (3 1/8") Thick

Laying Styles*



Running Bond — Ashlar Effect



Granite Blend — Lakeshore — Meadow — Riverbed

General specifications meet or exceed ASTM C-936
Compressive strength: 8,000 PSI minimum
Maximum water absorption: 5%
Equals or exceeds freeze-thaw resistance
*Laying Styles do not reflect the number of stones within the pallet. In some cases you may have extra or less stones in your design.

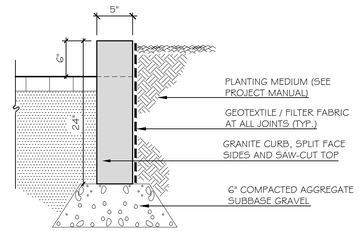
Made in USA

Genest
1-800-649-4773
GenestConcrete.com

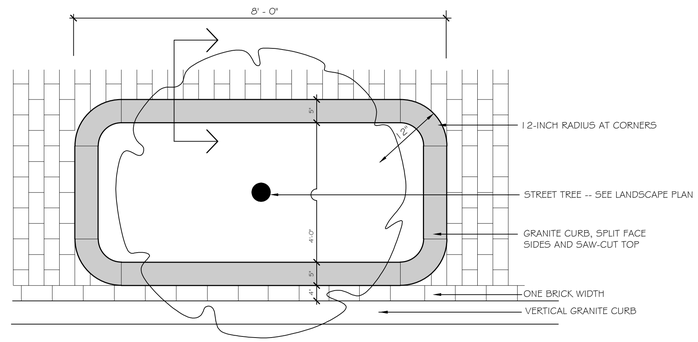
1 / L4.0 PRE-CAST CONCRETE MODULAR PAVERS
NOT TO SCALE

2 / L4.0 DETAIL NOT USED
NOT TO SCALE

3 / L4.0 DETAIL NOT USED
NOT TO SCALE

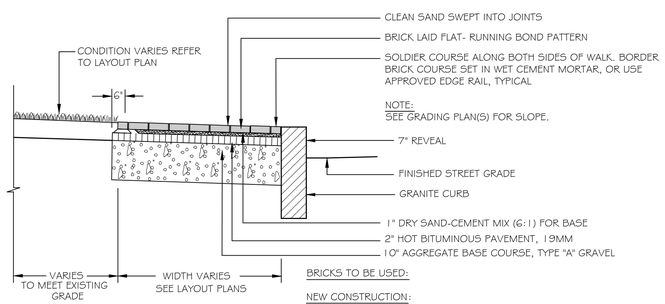


SECTION



PLAN

4 / L4.0 STREET TREE RAISED PLANTING BED
NOT TO SCALE



BRICKS TO BE USED:

NEW CONSTRUCTION:
4"X8" PINE HALL PATHWAY PAVER BRICK; MFG. BY PINE HALL BRICK CO., MADISON, NORTH CAROLINA. LACHANCE ITEM #193623, PINE HALL PATHWAY PAVER BRICK.

4-A / L4.0 CITY OF PORTLAND BRICK SIDEWALK DETAIL
NOT TO SCALE

ANOVA

211 North Lindbergh Blvd.
St. Louis, MO 63141
800.231.1327 tel | 314.754.0835 fax
specify@anovafurnishings.com
anovafurnishings.com

L2.0

RCPMF6— Madison Recycled Plastic Flat Bench

6' flat bench with recycled plastic seat planks steel legs

Material
The 6' flat bench is composed of .50" thick formed steel legs with 1.5" x 3.5" (2" x 4" nominal dimensions) recycled plastic planks for the seat. The bench is 72.25" long and will support 200 lbs per linear foot. The recycled plastic planks are impervious to moisture and corrosion, do not require the application of sealants or preservatives, and will never need painting or staining throughout the product's life.
The bench is designed to be portable for flexibility in placement or surface mounted using predrilled .5" diameter holes in feet to prevent movement. Mounting hardware is not included.

Finish
Fade-resistant, powder coated steel components feature a state-of-the art primer proven to prevent rusting. Treated components exceed the industry standard by 34% in testing by independent sources.

Color
See website or sales representative for color choices.

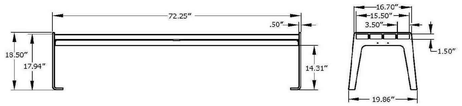
Assembly
Some assembly is required. Assembly hardware is included.

Maintenance
The product is virtually maintenance-free and requires only periodic cleaning with a sponge and a solution of mild detergent and water to remove surface dirt. Do not clean with solvent or petroleum base products.

Warranty
20-year limited structural warranty with 7-year finish warranty from the date of purchase.

Replacement Parts

Replacement Left Leg	R-S608
Replacement Right Leg	R-S609



SHIPPING INFORMATION

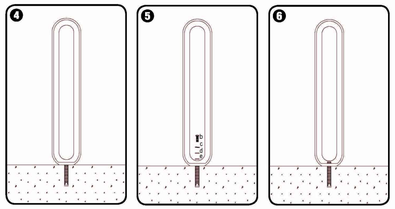
Unit Weight	Unit Shipping Wt. UPS	Unit Shipping Wt. Truck (1+ Units)	Unit Ship Size w/Pallet	Max Units Per Pallet	Pallet Size/Wt. (33" x 48")	Total No. Pkgs.	Shipping Class
123 lbs.	N/A	131 lbs./unit	15 cu. ft.	5	100 lbs.	2	70

3/10/2014-1 — Copyright 2014 ANOVA® — Made in U.S.A

5 / L4.0 BENCH SEATING DETAIL
NOT TO SCALE

OLYMPIA™ BIKE RACK
SURFACE MOUNT INSTALLATION INSTRUCTIONS

STEP BY STEP | FOR ALL OLYMPIA BIKE RACKS



Position bike rack
- Position bike rack so that mounting holes line up with anchors.

Attach bike rack
- Slide 1/2" stainless steel lock washer (s), then 1/2" stainless steel flat washer (d) and 1/2" nylon flat washer (e) onto each 1/2"-13 x 1-1/2" tamper-resistant button head cap screw (b).
- Insert screws into mounting holes in bike rack and thread into anchors using provided 5/16" hex bit for tamper-resistant screws.

Tighten screws
- Tighten screws until snug.

NOTE: Forms+Surfaces recommends applying Loctite® or similar thread-locking adhesive.

T 800.451.0410 | www.forms-surfaces.com — FORMS+SURFACES®

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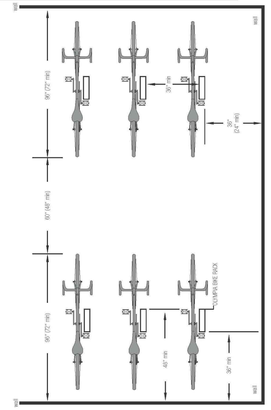
page 2 of 3 | Rev. 06-21-13

OLYMPIA™ BIKE RACK
SURFACE MOUNT INSTALLATION INSTRUCTIONS

RECOMMENDED BICYCLE RACK SPACING PER ASSOCIATION OF PEDESTRIAN AND BICYCLE PROFESSIONALS (APBP) GUIDELINES | FOR ALL OLYMPIA BIKE RACKS



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page 3 of 3 | Rev. 06-21-13

6 / L4.0 BIKE RACK DETAIL
NOT TO SCALE

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REVISIONS

LICENSED LANDSCAPE ARCHITECT — ROBERT B. METCALF No. 1815
ROBERT METCALF, ME LA
LIC. # 1815

PROJECT: midtown — PORTLAND, MAINE
SHEET TITLE: LANDSCAPE DETAILS
CLIENT: THE FEDERATED COMPANIES

Mitchell & Associates
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70 Center Street, Portland, Maine 04101
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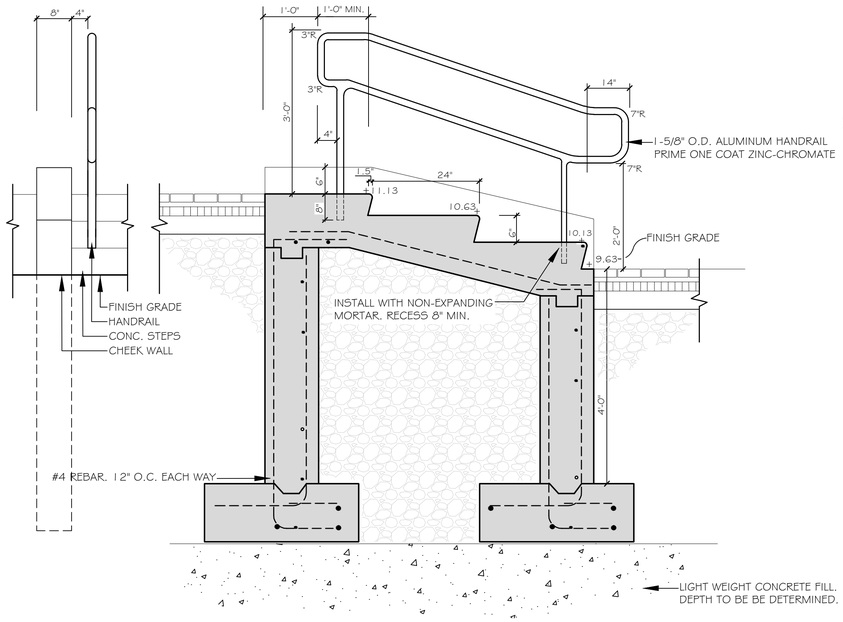
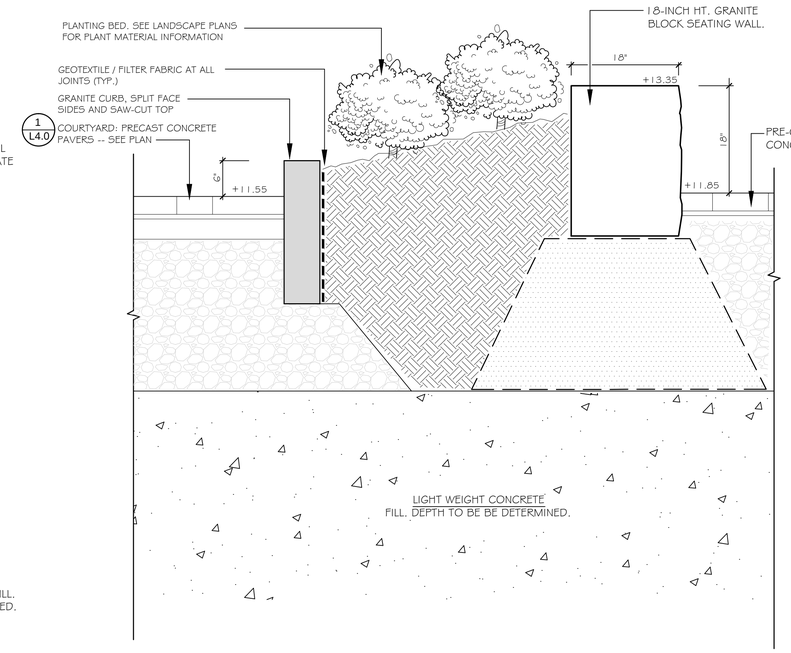


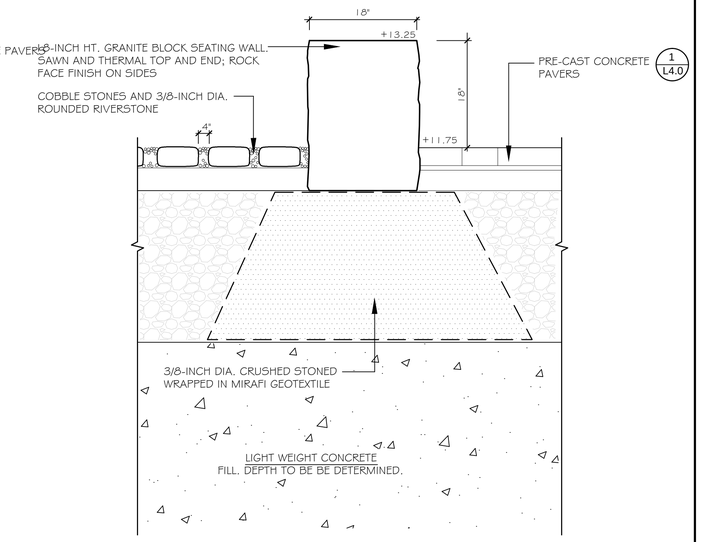
1 L4.1 C.I.P CONCRETE STAIR DETAIL -- MEWS AREA

SCALE: 3/4" = 1'-0"



3 L4.1 COURTYARD / TRAIL SITTING WALL SECTION

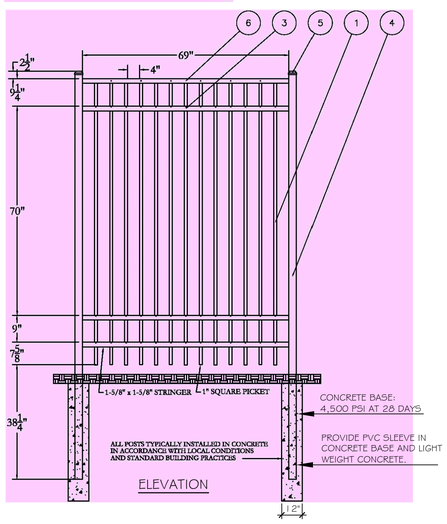
SCALE: 3/4" = 1'-0"

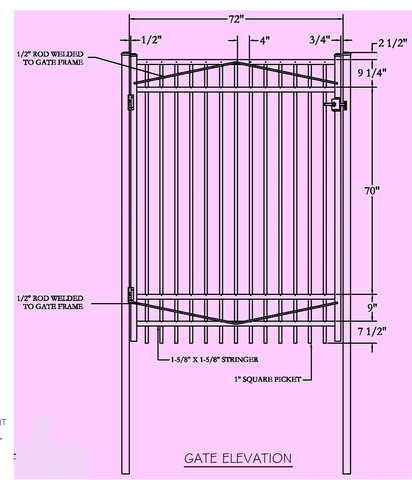


5 L4.1 COURTYARD: GRANITE BLOCK SITTING WALL

NOT TO SCALE

FENCE PARTS		
Name	Qty	Item
1202-96 PICKET	13	1
70-1/2" - 13 HOLE IND. STRINGER	3	3
2-1/2" POST	2	4
2-1/2" ALUMINUM POST CAP	2	5
70-1/2" - 13 HOLE IND. HEADER	1	6



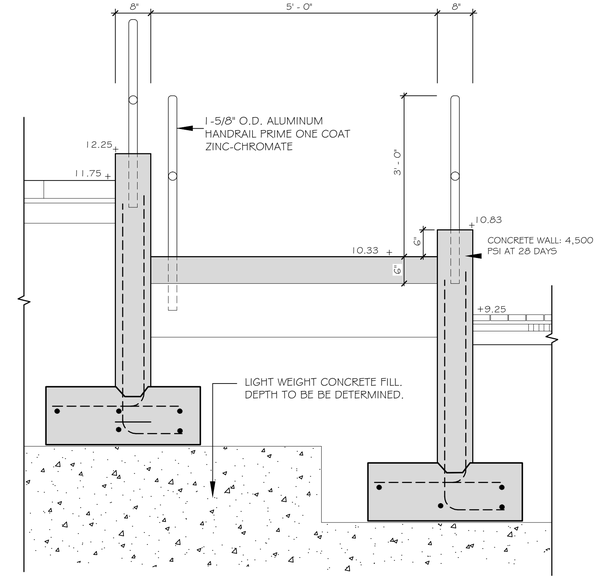


FENCE NOTES:

1. PRODUCT: INDUSTRIAL FENCE STYLE #202 (96" HEIGHT) SUPPLIED BY JERITH MANUFACTURING COMPANY, INC., PHILADELPHIA, PENNSYLVANIA, 1-800-344-2242, OR APPROVED EQUAL.
2. CONTRACTOR MUST SUBMIT SHOP DRAWINGS OF FENCE LAYOUT, CONNECTIONS AND GATE DETAILS FOR REVIEW BY LANDSCAPE ARCHITECT.

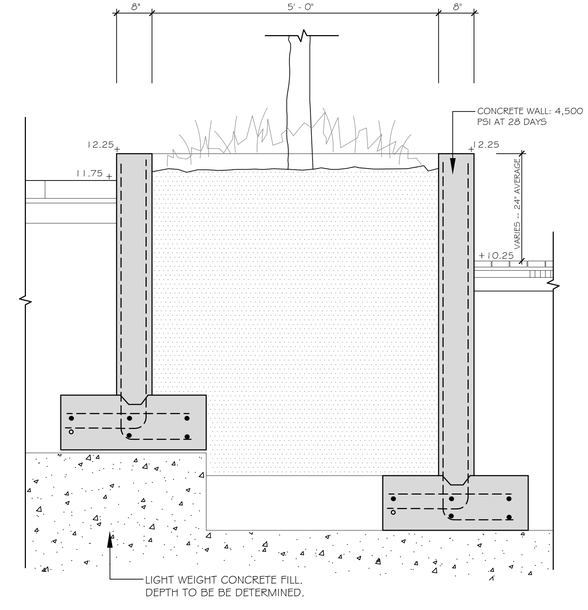
2 L4.1 ORNAMENTAL FENCE AT TRANSFORMERS

SCALE: NOT TO SCALE



4 L4.1 SECTION AT HANDICAP RAMP -- SOMERSET STREET

NOT TO SCALE



6 L4.1 C.I.P. CONCRETE RAISED PLANTER

NOT TO SCALE

PRELIMINARY - NOT FOR CONSTRUCTION

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ROBERT METCALF, ME LA
LIC. # 1815

PROJECT: midtown, PORTLAND, MAINE

SHEET TITLE: LANDSCAPE DETAILS

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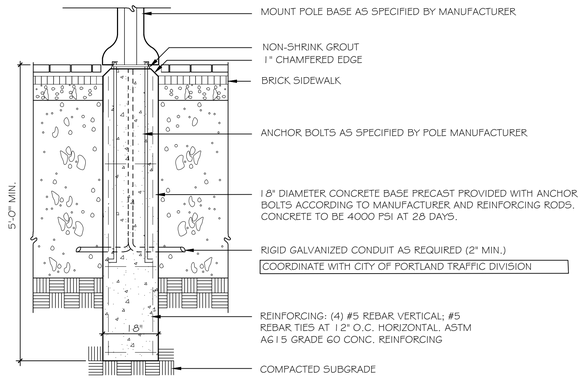


NOTE:
ALL POLE BASES LOCATED IN PAVED AREAS SHALL BE SET FLUSH WITH PAVEMENT TO ALLOW POLE BASE TO BE MOUNTED FLUSH WITH BRICK PAVEMENT.

NOTE:

CITY OF PORTLAND POLE MOUNTED STREET LIGHTING SHALL INCLUDE:

- BAYSIDE TRAIL LIGHT
- BAYSIDE DISTRICT MEDIUM SCALE RESIDENTIAL LIGHT

REFER TO UTILITIES PLAN AND SPECIFICATIONS FOR LIGHTING FIXTURE INFORMATION, QUANTITIES, COLORS AND LOCATIONS. COORDINATE INSTALLATION WITH CITY OF PORTLAND TRAFFIC DIVISION.

1 / L4.2 LIGHT POLE BASE
NOT TO SCALE

Reset Form

KIM LIGHTING

WP9SE
WARP9™- Small, electronic
revision 7/19/11 • kim_wp9se_spec.pdf

Type:
Job:
Catalog number:

/ / / /
Mtg. Fixture Electrical Module Finish Options
See page 2 See page 3 See pages 4-5

Approvals:

Date:
Page: 1 of 5

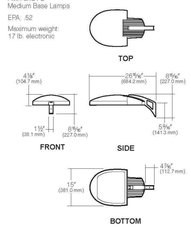
Select pole from Kim Pole Catalog. If pole is provided by others indicate O.D. for arm fitting.

Specifications

WP9SE
Small Electronic Ballast
42 to 150 watt
PMH and PL
Medium Base Lamps

EPA: .52

Maximum weight:
17 lb. electronic



Housing: One-piece die-cast, low copper (<0.6% Cu) aluminum alloy with integral cooling ribs over the electrical compartment. Solid barrier wall separates optical and electrical compartments. A single die-cast aluminum cam-latch provides positive locking and sealing of the optical chamber. A one-piece extruded and vulcanized silicone gasket seals the housing against the lens surface.

Electronic Ballast Module: One-piece die-cast, low copper (<0.6% Cu) aluminum alloy with integral cooling ribs over exposed bottom surface. Integral hinges and slide latch with stainless steel hardware provides no-tool mounting and removal from housing. All electronic components are UL and CSA recognized and mounted directly to the ballast tray for maximum heat dissipation.

Lens: Clear ⅜" thick tempered glass lens retained by a stainless steel piano hinge and a single die-cast aluminum cam-latch. The edges are camouflaged to conceal the outer portion of the housing.

Reflector Module: High specular optical segments are rigidly mounted within carrier plates to maintain form. No fasteners are placed on the reflective surface. The entire assembly is rotatable in 90° increments and fastened to the housing as a one-piece module. The appropriate socket is rigidly attached to the reflector module.

Support Arm: Heavy cast, low copper aluminum alloy with stainless steel mounting bolts. A pole reinforcing plate is provided with wire strain relief. Arm is circular cut for specified round pole.

Finish: Super TGIC thermoset polyester powder coat paint, 2.5 mil nominal thickness, applied over a titanated zirconium conversion coating. 2500 hour salt spray test endurance rating. Standard colors are Black, Dark Bronze, Stealth Gray™, Platinum Silver, or White. Custom colors are available.

CAUTION: Fixtures must be grounded in accordance with national, state and/or local electrical codes. Failure to do so may result in serious personal injury.

HUBBELL
HUBBELL LIGHTING, INC.

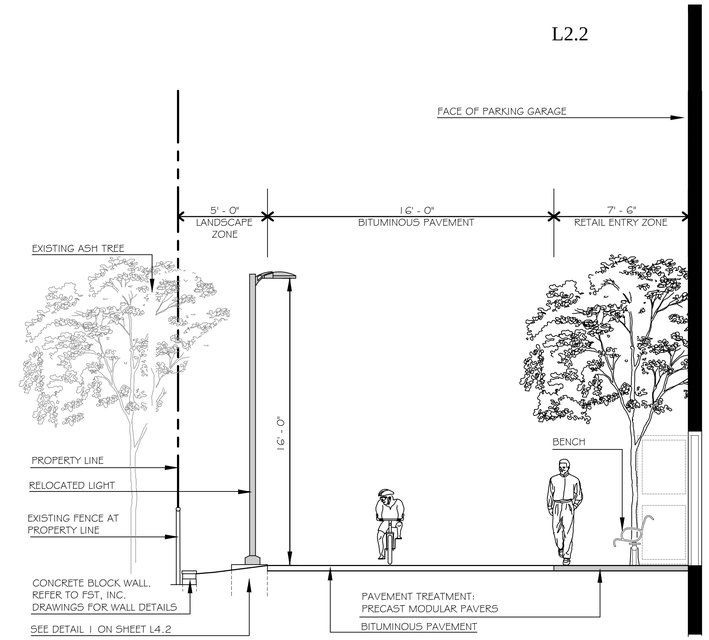
U.S. Patent D568,521

Listings and Ratings			
UL cUL 1598*	CE	IP66 Rated	25C Ambient

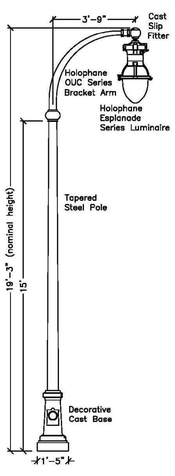
*Suitable for wet locations.
KIM LIGHTING RESERVES THE RIGHT TO CHANGE SPECIFICATIONS WITHOUT NOTICE.

© 2011 KIM LIGHTING INC. • P.O. BOX 60080, CITY OF INDUSTRY, CA 91716-0080 • TEL: 626/968-5866 • FAX: 626/369-2695

3 / L4.2 BAYSIDE TRAIL LIGHTING
NOT TO SCALE



5 / L4.2 BAYSIDE TRAIL: TYPICAL CROSS SECTION
SCALE: 1/4" = 1'-0"



LUMINAIRE
Holophane Lighting model ESU175MH12A4–PR
Cast Aluminum housing with stainless steel hardware. Dropped refractor shall be thermal resistent borosilicate glass. Internal reflector and prismatic diffuser shall provide an IES Type III distribution pattern according to the manufacturer's photometric test # 47384. Luminaire shall include an integral ballast with modular wiring connectors and multi–voltage taps (factory wired for 120VAC). Provide an internal receptacle type photocell control.

LAMP
Holophane Lighting model S–M175/U 64471
Vertical mounted, 175 watt mogul base clear metal halide lamp.

BRACKET ARM
Holophane Lighting model OUC 1" by 8" 6063–T6 aluminum crossarm with a post–top fitting for a 3–tenon.

SLIP FITTER
Holophane Lighting model BHLF200–SCA/AS (Boston Harbor Series)
2–⅜" O.D. with swivel cast fitter.

LIGHTING POLE
Tapered steel pole shaft rated for a 90 mph wind load with a 1.3 gust factor.
Pole shall be pre–galvanized.
Provide four hot–dipped galvanized steel L–type anchor bolts.

DECORATIVE POLE BASE
Holophane model Cambridge Series clamshell cast aluminum base. Hardware shall be stainless steel.

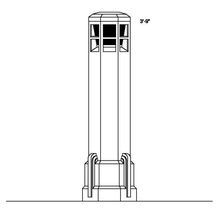
APPLICATION
Street/sidewalk lighting for two–way streets with parking on one side, or one–way streets.
Suggested layout guidelines:
80–100 feet on center (one side only)
or
150–200 feet on center (staggered pattern both sides).

FINISHES
Luminaire, bracket arm, slip fitter and lighting
Residential Areas:
Tiger Drylac 49/72830 RAL 7016 SM GL Tribo
Mixed Use Commercial Areas
Tiger Drylac Old Navy Silver Y003J

City of Portland, Maine
Street & Sidewalk Lighting
BAYSIDE DISTRICT
Medium Scale Lighting Pole
07/28/06

2 / L4.2 STREET LIGHTING
NOT TO SCALE

Freeport Series
Cast Iron Lighted Bollard



BOL/FP45/13/L-CI

Specifications

DESCRIPTION The bollard shall be cast iron construction with a classic octagonal design. The bollard shall be provided with an optical assembly including a glass refractor, and an octagonal top.

MATERIALS The bollard shall be ASTM-A48 Class 30 cast iron. The castings shall be formed true to the pattern with complete detail. The refractor shall be borosilicate glass. All exposed hardware shall be tamper resistant stainless steel. Anchor bolts to be completely hot dip galvanized.

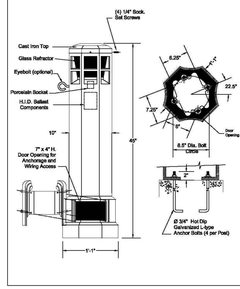
CONSTRUCTION The bollard shall be made from a one-piece casting. The top shall be attached to the bollard with four tamper resistant set screws.

DIMENSIONS The bollard shall be 3'- 9" in height with a 13" octaflute base, and a 10" octagonal top.

INSTALLATION The bollard shall be provided with four 3/4" diameter, hot dip galvanized, L-type anchor bolts to be installed on a 8.5" diameter bolt circle. An access door shall be provided in the base for anchorage and wiring access. The top shall be removable for access to the optical assembly.

LIGHT SOURCE The lighted bollard shall be furnished with an H.I.D. ballast and socket assembly. Sockets shall be glazed porcelain, mogul or medium base, with a copper alloy nickel plated screw shell and center contact. The ballast shall be a core and coil, high power factor, regulating type.

For finish specifications and color options, see " Finish" section in catalog.



ORDERING GUIDE

sample catalog number
BOL / FP45 / 13 / L-CI / BK-

Bollard (check appropriate boxes)
☐ **BOL/FP45/13/L**

Material/Finish
Catalog Suffix — Description
☐ -CVBK Cast Iron/Black (std.)
☐ -CVDG Cast Iron/Dark Green
☐ -CVDB Cast Iron/Dark Bronze
☐ -CVPP Cast Iron/Prime Painted
☐ -CVCC Cast Iron/Custom Color
(for complete finish and color options, see " Finish" section in catalog)

Light Source
H.I.D. ballast & socket
☐ -M50 50 watt Mercury Vapor
☐ -M75 75 watt Mercury Vapor
☐ -M100 100 watt Mercury Vapor
☐ -M50 50 watt Metal Halide
☐ -M70 70 watt Metal Halide
☐ -M100 100 watt Metal Halide
☐ -S35 35 watt High Pressure Sodium
☐ -S50 50 watt High Pressure Sodium
☐ -S70 70 watt High Pressure Sodium
☐ -S100 100 watt High Pressure Sodium

Voltage
☐ /12 ☐ /20 ☐ /24 ☐ /27
☐ /34 ☐ /46 ☐ /MT

Optional Equipment
☐ -EB Eyebolt mounted on bollard for use with chain by others
☐ -2 Weatherproof duplex Receptacle mounted inside base
☐ -DBB Direct Burial Base for mounting without a concrete footing
☐ -CLD Custom Logos cast into access door
☐ -V Borosilicate Glass Refractor with an I.E.S Type 2 Distribution
☐ -II Borosilicate Glass Refractor with an I.E.S Type 3 Distribution
☐ -II Borosilicate Glass Refractor with an I.E.S Type 5 Distribution
☐ -HSS House Side Shield
☐ -PEC Photo Electric Control (120 volt)
☐ -PEC2 Photo Electric Control (240 volt)

HOLOPHANE® An EquityBrandsCompany
LEADER IN LIGHTING SOLUTIONS 214 OAKWOOD AVENUE - NEWARK, OHIO 43055

US-1914 Rev. 4-7-05

4 / L4.2 BOLLARD LIGHT (AT GARAGE ENTRANCE)
NOT TO SCALE

CB9R – Contemporary Concrete Bollard – 9" Round | TYPE

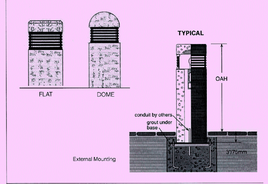
FINISH
Concrete surface finish is natural concrete with a medium sandblast etch or exposed aggregate. Medium sandblast finish includes a clear anti-vandal sealer.

Grit finish consists of a five stage pretreatment regimen with a polymer primer sealer; over dry off and two coated with a thermoset super TGIC polyester powder coat finish. The finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance.

CERTIFICATION
All bollards shall be listed with ETL for outdoor, wet location use, UL1598 and Canadian CSA Std. C22.2 no.250

WARRANTY
Fixtures is warranted for three years. Ballast components carry the ballast manufacturer's limited warranty. Any unauthorized return, repair, replacement or modification of the Product(s) shall void this warranty. This warranty applies only to the use of the Product(s) as intended by AAL and does not cover any misapplication or misuse of said Product(s), or installation in hazardous or corrosive environments. Contact AAL for complete warranty language, exceptions, and limitations.

DIMENSIONS



CB9R CO WATTAGE: 70 LUMEN OUTPUT: 266 EFFICACY: 22.5

B0 U0 G1

FORWARD LIGHT		LUMEN	
FL	30°	0.1%	2
FM	60°	4.2%	66
FH	80°	3.2%	50
FVH	90°	0.9%	15
BACK LIGHT			
BL	30°	0.1%	2
BM	60°	4.2%	66
BH	80°	3.2%	50
BVH	90°	0.9%	15
UPLIGHT			
UL	100°	0%	0
LH	180°	0%	0

UPLIGHT 0% DOWNLIGHT 100%

4' MOUNTING HEIGHT

CB9R CO 27LED WW WATTAGE: 32.5 LUMEN OUTPUT: 519 EFFICACY: 16

B0 U2 G1

FORWARD LIGHT		LUMEN	
FL	30°	0.6%	3
FM	60°	22.0%	114
FH	80°	19.3%	100
FVH	90°	5.6%	29
BACK LIGHT			
BL	30°	0.6%	3
BM	60°	22.0%	114
BH	80°	19.3%	100
BVH	90°	5.6%	29
UPLIGHT			
UL	100°	3.9%	20
LH	180°	1.2%	6

UPLIGHT 5.1% DOWNLIGHT 95%

4' MOUNTING HEIGHT

AAL reserves the right to change product specifications without notice

IES files can be found at www.aal.net

architectural area lighting
ARCHITECTURAL AREA LIGHTING
28555 East Dare Ave. | City of Industry | CA 91746
T 626.968.5666 | F 626.369.2695 | www.aal.net
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1 2 1

6 / L4.2 CONCRETE BOLLARD LIGHT AT PEARL ST. BUILDING ENTRANCE
NOT TO SCALE

Reset Form

KIM LIGHTING

WP9SE
WARP9™- Small, electronic
revision 7/19/11 • kim_wp9se_spec.pdf

Type:
Job:
Catalog number:

/ / / /
Mtg. Fixture Electrical Module Finish Options
See page 2 See page 3 See pages 4-5

Approvals:

Date:
Page: 1 of 5

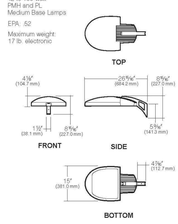
Select pole from Kim Pole Catalog. If pole is provided by others indicate O.D. for arm fitting.

Specifications

WP9SE
Small Electronic Ballast
42 to 150 watt
PMH and PL
Medium Base Lamps

EPA: .52

Maximum weight:
17 lb. electronic



Housing: One-piece die-cast, low copper (<0.6% Cu) aluminum alloy with integral cooling ribs over the electrical compartment. Solid barrier wall separates optical and electrical compartments. A single die-cast aluminum cam-latch provides positive locking and sealing of the optical chamber. A one-piece extruded and vulcanized silicone gasket seals the housing against the lens surface.

Electronic Ballast Module: One-piece die-cast, low copper (<0.6% Cu) aluminum alloy with integral cooling ribs over exposed bottom surface. Integral hinges and slide latch with stainless steel hardware provides no-tool mounting and removal from housing. All electronic components are UL and CSA recognized and mounted directly to the ballast tray for maximum heat dissipation.

Lens: Clear ⅜" thick tempered glass lens retained by a stainless steel piano hinge and a single die-cast aluminum cam-latch. The edges are camouflaged to conceal the outer portion of the housing.

Reflector Module: High specular optical segments are rigidly mounted within carrier plates to maintain form. No fasteners are placed on the reflective surface. The entire assembly is rotatable in 90° increments and fastened to the housing as a one-piece module. The appropriate socket is rigidly attached to the reflector module.

Support Arm: Heavy cast, low copper aluminum alloy with stainless steel mounting bolts. A pole reinforcing plate is provided with wire strain relief. Arm is circular cut for specified round pole.

Finish: Super TGIC thermoset polyester powder coat paint, 2.5 mil nominal thickness, applied over a titanated zirconium conversion coating. 2500 hour salt spray test endurance rating. Standard colors are Black, Dark Bronze, Stealth Gray™, Platinum Silver, or White. Custom colors are available.

CAUTION: Fixtures must be grounded in accordance with national, state and/or local electrical codes. Failure to do so may result in serious personal injury.

HUBBELL
HUBBELL LIGHTING, INC.

U.S. Patent D568,521

Listings and Ratings			
UL cUL 1598*	CE	IP66 Rated	25C Ambient

*Suitable for wet locations.
KIM LIGHTING RESERVES THE RIGHT TO CHANGE SPECIFICATIONS WITHOUT NOTICE.

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7 / L4.2 COURTYARD LIGHT FIXTURE
NOT TO SCALE

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
2	1.20.15	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

LICENSED LANDSCAPE ARCHITECT
ROBERT B. METCALF
No. 1815
ROBERT METCALF, ME LA
LIC. # 1815

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
LIGHTING DETAILS

CLIENT
THE FEDERATED COMPANIES

Mitchell & Associates
LANDSCAPE ARCHITECTS
70 Center Street
Portland, Maine 04101
P: 207.774.4427
F: 207.874.2460

DRAWN:	SM/MK	DATE:	11.14.14
DESIGNED:	SM/MK	SCALE:	N.T.S.
CHECKED:	RM	JOB NO.	
FILE NAME:			
SHEET	L4.2		

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L3

GENERAL PLANTING NOTES

1. CALL DIG-SAFE (1-888-344-7233) PRIOR TO BEGINNING WORK. THE LANDSCAPE CONTRACTOR IS ADVISED OF THE PRESENCE OF UNDERGROUND UTILITIES AND SHALL VERIFY THE EXISTENCE AND LOCATION OF SAME BEFORE COMMENCING AND DIGGING OPERATIONS. THE LANDSCAPE CONTRACTOR SHALL REPLACE OR REPAIR UTILITIES PAVING, WALKS, CURBING, ETC. DAMAGED IN PERFORMANCE OF THIS JOB AT NO ADDITIONAL COST TO OWNER.
2. CONTRACTOR SHALL THOROUGHLY FAMILIARIZE HIMSELF WITH ALL SITE CONDITIONS PRIOR TO CONSTRUCTION BIDDING.
3. DO NOT SCALE FROM DRAWINGS. ANY OMISSIONS IN DIMENSIONING SHALL BE REPORTED IMMEDIATELY TO THE LANDSCAPE ARCHITECT. ANY DISCREPANCIES BETWEEN DRAWINGS, DETAILS, NOTES AND SPECS SHALL BE IMMEDIATELY REPORTED TO THE LANDSCAPE ARCHITECT FOR FURTHER DIRECTION AND RESOLUTION BEFORE ANY ADDITIONAL WORK PROCEEDS.
4. PROVIDE SMOOTH TRANSITION WHERE NEW WORK MEETS EXISTING CONDITIONS.
5. CONTRACTOR SHALL FURNISH AND PLACE 12 INCHES OF LOAM IN ALL SHRUB BEDS, 30 INCHES IN ALL TREE PITS, AND 6 INCHES UNDER ALL TURF AREAS. THE LANDSCAPE CONTRACTOR SHALL COORDINATE SUBGRADE PREPARATION WITH THE GENERAL CONTRACTOR PRIOR TO PLACING LOAM.
6. ALL PLANT MATERIAL INSTALLED SHALL MEET THE SPECIFICATIONS OF "AMERICAN STANDARDS FOR NURSERY STOCK BY THE AMERICAN ASSOCIATION OF NURSERYMEN" LATEST EDITION.
7. ALL PLANT MATERIAL SHALL BE FREE FROM INSECTS AND DISEASE.
8. ALL PLANTING SHALL BE DONE IN ACCORDANCE WITH ACCEPTABLE HORTICULTURAL PRACTICES. THIS IS TO INCLUDE PROPER PLANTING MIX, PLANT BED AND TREE PIT PREPARATION, PRUNING, STAKING OR GUYING, WRAPPING, SPRAYING, FERTILIZATION, PLANTING AND ADEQUATE MAINTENANCE UNTIL ACCEPTANCE FROM THE OWNER.
9. ALL GRASS, OTHER VEGETATION AND DEBRIS SHALL BE REMOVED FROM ALL PLANTING AREAS PRIOR TO PLANTING.
10. EXISTING TREES TO BE PRESERVED SHALL BE PROTECTED DURING CONSTRUCTION AND SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
11. ALL SHRUB BEDS AND TREE PITS SHALL BE MULCHED WITH 3" CLEAN SHREDDED BLACK MULCH (DO NOT EXCEED 3" DEPTH).
12. ANY DEVIATION FROM THE LANDSCAPE PLAN, INCLUDING PLANT LOCATION, SELECTION, SIZE, QUANTITY, OR CONDITION SHALL BE REVIEWED AND APPROVED BY THE OWNER AND LANDSCAPE ARCHITECT (AND MUNICIPAL AUTHORITY, IF APPLICABLE) PRIOR TO INSTALLATION ON SITE.
13. WHERE INDICATED ON PLAN, PLANTING SOIL MIXTURE FOR GROUND COVER AND PERENNIAL BED AREAS SHALL CONSIST OF FOUR PARTS TOPSOIL, TWO PARTS SPHAGNUM PEAT MOSS, AND ONE PART HORTICULTURAL PERLITE BY VOLUME. PEAT MOSS MAY BE SUBSTITUTED WITH WELL-ROTTED OR DEHYDRATED MANURE OR COMPOST. ROTOTILL BEDS TO A DEPTH OF 8 INCHES.
14. DAMAGE TO EXISTING SITE IMPROVEMENTS DURING INSTALLATION OF LANDSCAPE MATERIAL SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR.
15. ALL WORK WITHIN THE ROAD RIGHT-OF-WAY AND ALL UTILITIES CONNECTING TO INFRASTRUCTURE WITHIN THE ROAD SHALL MEET CITY OF PORTLAND TECHNICAL MANUAL STANDARDS.
16. TREE LOCATIONS SHALL BE COORDINATED TO AVOID CONFLICTS WITH UNDERGROUND UTILITIES. CONSULT PROJECT LANDSCAPE ARCHITECT PRIOR TO DEVIATING FROM LANDSCAPE PLAN.
17. NUMEROUS TREES ALONG THE BAYSIDE TRAIL SHALL BE RELOCATED. CONTRACTOR SHALL CONTACT PROJECT LANDSCAPE ARCHITECT AND CITY OF PORTLAND ARBORIST, PRIOR TO REMOVAL OF EXISTING TREES.
18. CONTRACTOR SHALL PROVIDE STREET LIGHT POLE, BRACKET AND BASE AS SPECIFIED. COORDINATE WITH CENTRAL MAINE POWER AND THE CITY OF PORTLAND TRAFFIC DIVISION FOR FIXTURE AND REQUIRED CIRCUITING.

PLANT INSTALLATION NOTES:
DIG HOLE AT LEAST 2 TIMES THE WIDTH OF ROOT BALL AND AS DEEP AS THE ROOT BALL (NO DEEPER). SET ROOT BALL CENTERED, WITH TOP AT GROUND LEVEL OR SLIGHTLY HIGHER. CORRECT HOLE DEPTH AS NEEDED.

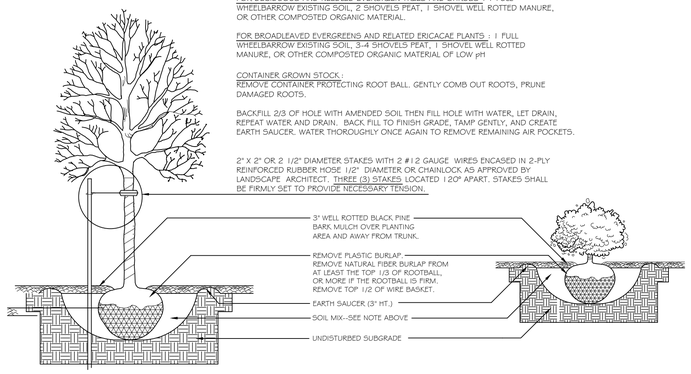
FOR DECIDUOUS AND NEEDLED EVERGREEN TREES AND SHRUBS: 1 FULL WHEELBARROW EXISTING SOIL, 2 SHOVELS PEAT, 1 SHOVEL WELL ROTTED MANURE, OR OTHER COMPOSTED ORGANIC MATERIAL.

FOR BROADLEAVED EVERGREENS AND RELATED ERICACAE PLANTS: 1 FULL WHEELBARROW EXISTING SOIL, 3-4 SHOVELS PEAT, 1 SHOVEL WELL ROTTED MANURE, OR OTHER COMPOSTED ORGANIC MATERIAL OF LOW pH

CONTAINER GROWN STOCK:
REMOVE CONTAINER PROTECTING ROOT BALL. GENTLY COMB OUT ROOTS, PRUNE DAMAGED ROOTS.

BACKFILL 2/3 OF HOLE WITH AMENDED SOIL THEN FILL HOLE WITH WATER. LET DRAIN, REPEAT WATER AND DRAIN. BACK FILL TO FINISH GRADE, TAMP GENTLY, AND CREATE EARTH SAUCER. WATER THOROUGHLY ONCE AGAIN TO REMOVE REMAINING AIR POCKETS.

2" X 2" OR 2 1/2" DIAMETER STAKES WITH 2 #12 GAUGE WIRES ENCASED IN 2-PLY REINFORCED RUBBER HOSE 1/2" DIAMETER OR CHAINLOCK AS APPROVED BY LANDSCAPE ARCHITECT. THREE (3) STAKES LOCATED 120° APART. STAKES SHALL BE FIRMLY SET TO PROVIDE NECESSARY TENSION.



13.0 TREE AND SHRUB INSTALLATION
NOT TO SCALE

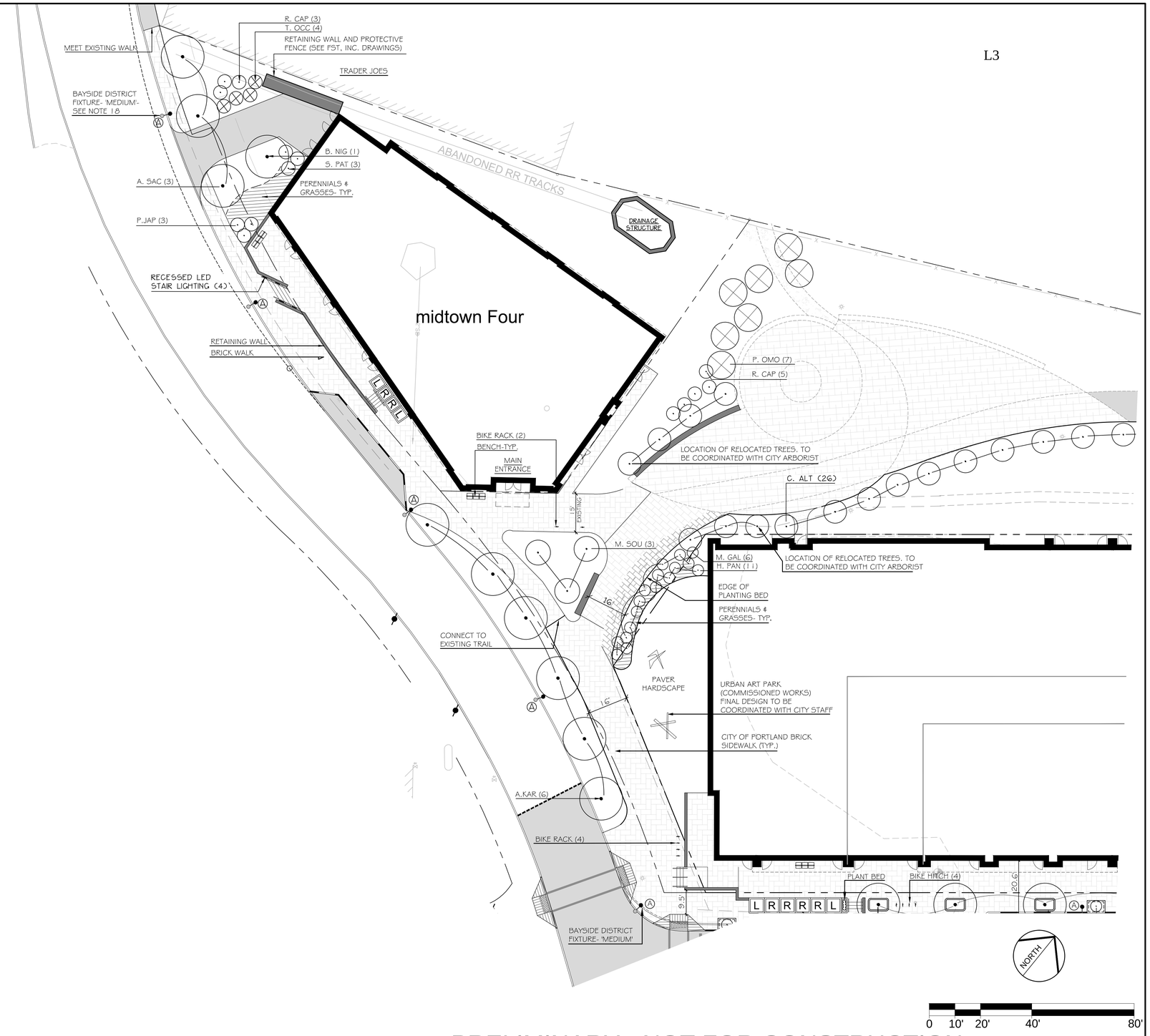
LEGEND

	EXISTING	PROPOSED
PROPERTY LINE		
MONUMENT FOUND	MON	
CATCHBASIN		
MANHOLE		
HYDRANT		
WATER VALVE		
UTILITY POLE		

	EXISTING	PROPOSED
RETAINING WALL		
STREET LIGHT FIXTURE		
TRAIL LIGHT FIXTURE		
SEATING		
CURB		
BIKE HITCH		
FILTERRA UNIT WITH TREE OR SHRUB PLANTING		
SAFETY BOLLARD (AT GARAGE)		
DECIDUOUS TREE		
EVERGREEN TREE		

LIGHTING SCHEDULE MIDTOWN 3 AND 4 ONLY

KEY	QTY	MANUFACTURER	CATALOG NUMBER	DESCRIPTION	LAMP
A	12	HOLOPHANE	ESL 110 4K AS X	BAYSIDE DISTRICT FIXTURE 'MEDIUM' LED TEARDROP	110W 100 LED ARRAY



PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
2	1.20.15	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

LICENSED LANDSCAPE ARCHITECT ROBERT B. METCALF No. 1815

ROBERT METCALF, ME LA
LIC. # 1815

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
midtown Four:
LANDSCAPE AND LIGHTING PLAN

CLIENT
THE FEDERATED COMPANIES

Mitchell & Associates
LANDSCAPE ARCHITECTS
70 Center Street
Portland, Maine 04101
P: 207.774.4427
F: 207.874.2460

DRAWN:	SM/MK	DATE:	11.14.14
DESIGNED:	SM/MK	SCALE:	1" = 20'
CHECKED:	RM	JOB NO.	
FILE NAME:			
SHEET	L2.1		

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LEGEND

S1 Halophone Bayside medium fixture mounting height: 19'3”

S2 Relocated existing Bayside Trail light fixture

S3 Kim Altitude mounting height: 10'

FX1 Wall Mounted Olympus MH: 9'-0”

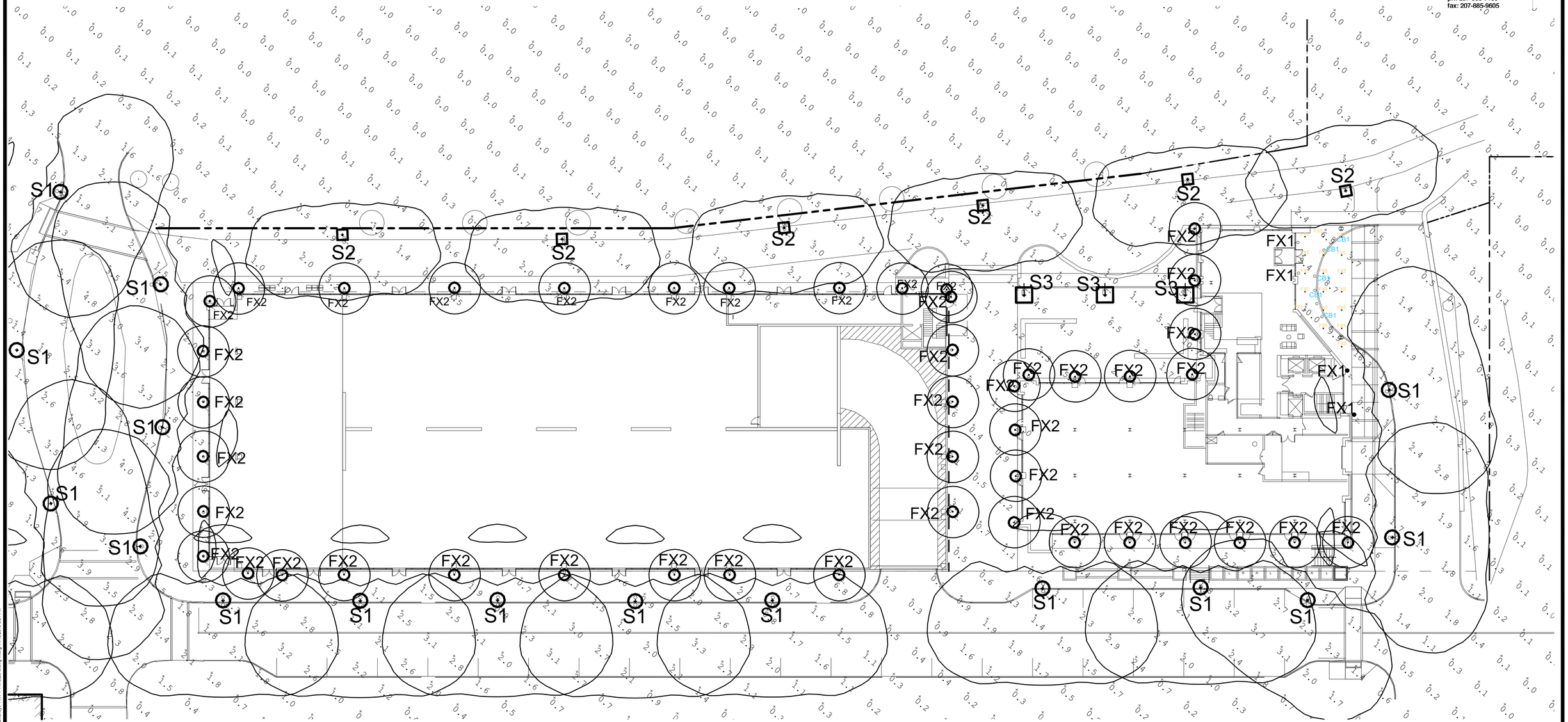
FX2 Wall Mounted Prescolite 6” LED LiteBox, MH 9'-0”

FX5 Canopy Light: Prescolite 4” LED Downlight D4LED3 MH: 16'

CB AAL CB9R Concrete Bollards 31 5/8” light center height

L3.0

SWANEY LIGHTING ASSOCIATES, INC.
15 Pleasant Hill Rd
P.O. Box 1597
Scarborough, Maine 04070
email: swaneylighting.com
ph: 207-883-7100
fax: 207-885-9605



NOT FOR CONSTRUCTION

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
PHOTOMETRIC PLAN:
PHASE 1

CLIENT
FEDERATED COMPANIES

DRAWN:	DC	DATE:	Nov. 18, 2013
DESIGNED:		SCALE: 1" = 20'	
CHECKED:			
FILE NAME:			
SHEET:	L3.0		

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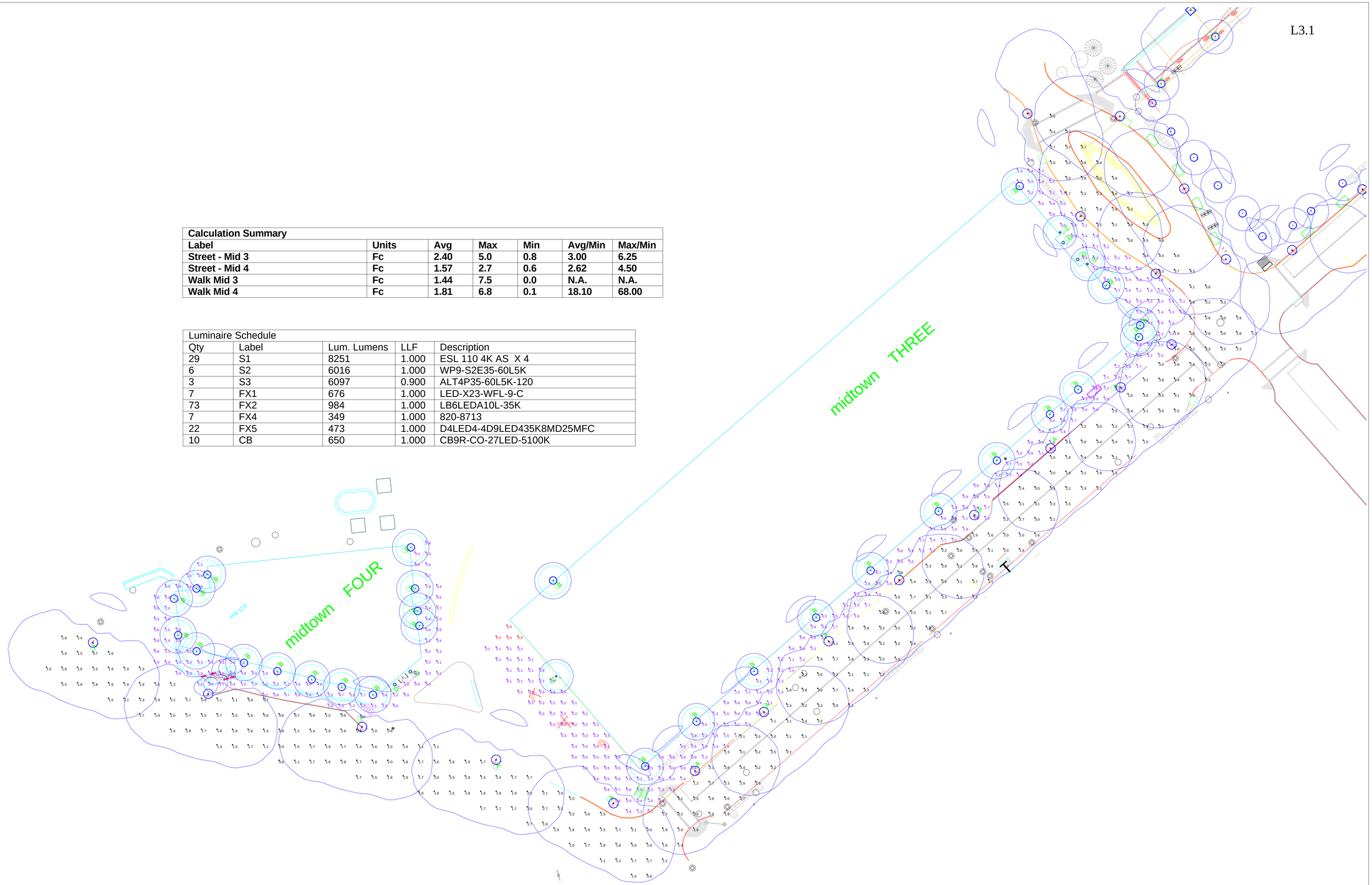
L3.1

Calculation Summary						
Label	**Units**	**Avg**	**Max**	**Min**	**Avg/Min**	**Max/Min**
Street - Mid 3	**Fc**	**2.40**	**5.0**	**0.8**	**3.00**	**6.25**
Street - Mid 4	**Fc**	**1.57**	**2.7**	**0.6**	**2.62**	**4.50**
Walk Mid 3	**Fc**	**1.44**	**7.5**	**0.0**	**N.A.**	**N.A.**
Walk Mid 4	**Fc**	**1.81**	**6.8**	**0.1**	**18.10**	**68.00**

Luminaire Schedule				
Qty	Label	Lum. Lumens	LLF	Description
29	S1	8251	1.000	ESL 110 4K AS X 4
6	S2	6016	1.000	WP9-S2E35-60L5K
3	S3	6097	0.900	ALT4P35-60L5K-120
7	FX1	676	1.000	LED-X23-WFL-9-C
73	FX2	984	1.000	LB6LEDA10L-35K
7	FX4	349	1.000	820-8713
22	FX5	473	1.000	D4LED4-4D9LED435K8MD25MFC
10	CB	650	1.000	CB9R-CO-27LED-5100K



L3.1 -- midtown Three and Four: Lighting Photometrics

SWANEY LIGHTING ASSOCIATES, INC.
15 Pleasant Hill Rd
P.O. Box 1597
Scarborough, Maine 04070
email: swaneylighting.com
ph: 207-883-7100
fax: 207-885-9605

#	Date	Comments
1	11/13/14	Preliminary

Revisions

Drawn By: Steve Weatherbie

Not to Scale

THE LIGHTING CALCULATION IS BASED ON LIMITED INFORMATION SUPPLIED BY OTHERS TOSWANEY LIGHTING ASSOCIATES AND STANDARDASSUMPTIONS OF THE SPACE OR SITE CHARACTERISTICS. FIELD DEVIATIONS MAY SIGNIFICANTLY AFFECT PRECISTED PERFORMANCE. THE ACCURACY OF THE LIGHTING INFORMATION (FIXTURE LOCATIONS, ORIENTATION, ETC) SHALL BE COORDINATED WITH CONTRACTOR AND/OR SPECIFIERO/WNER RESPONSIBLE FOR THE PRODUCT COORDINATION AND OTHER LOCAL REQUIREMENTS IS THE RESPONSIBILITY OFTHE OWNER AND/OR OWNER'S REPRESENTATIVE.

Mid Town - 3 and 4
Portland, Maine

Site Lighting

LEGEND

G1 Beacon Lighting Viper LED Pole Mounted Light Fixture (MH: 20')

G2 Hubbell Laredo Series Wall Mounted LED (MH: 8')

G3 Hubbell Sedona Series Ceiling Mounted LED

G4 New Star Victory 2-4 N LED Linear Luminaire (Stairwells)

SWANEY LIGHTING ASSOCIATES, INC.
15 Pleasant Hill Rd
P.O. Box 1597
Scarborough, Maine 04070
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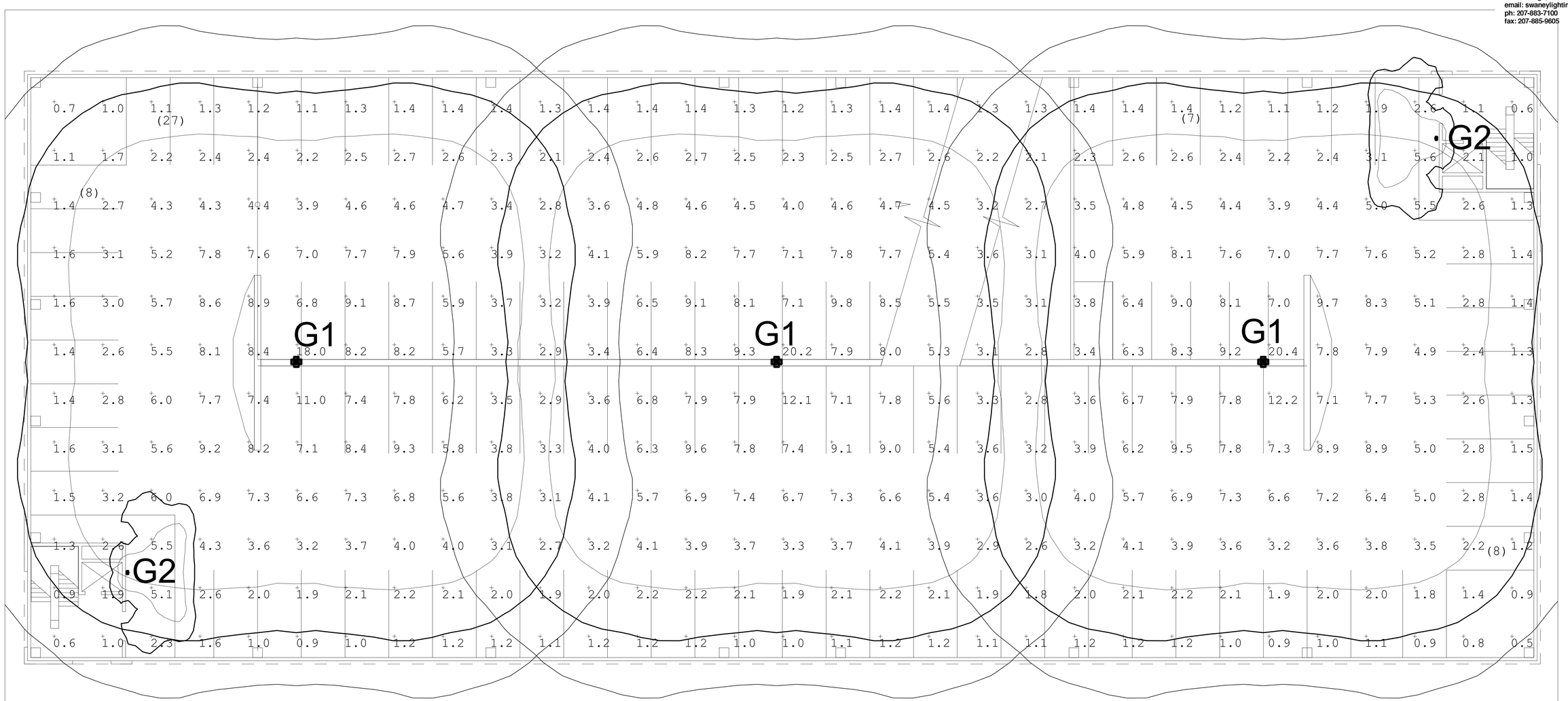
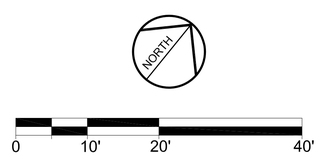
ph: 207-883-7100
fax: 207-885-9605



SEVENTH FLOOR PLAN

SCALE: 1" = 10'-0"



NOT FOR CONSTRUCTION

PROJECT	midtown PORTLAND, MAINE
SHEET TITLE	PHOTOMETRIC PLAN: PHASE I GARAGE: 7th Floor
CLIENT	FEDERATED COMPANIES

DRAWN:	DC	DATE:	Nov. 18, 2013
DESIGNED:		SCALE: 1" = 10'	
CHECKED:			
FILE NAME:			
SHEET:	L3.2		

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LEGEND

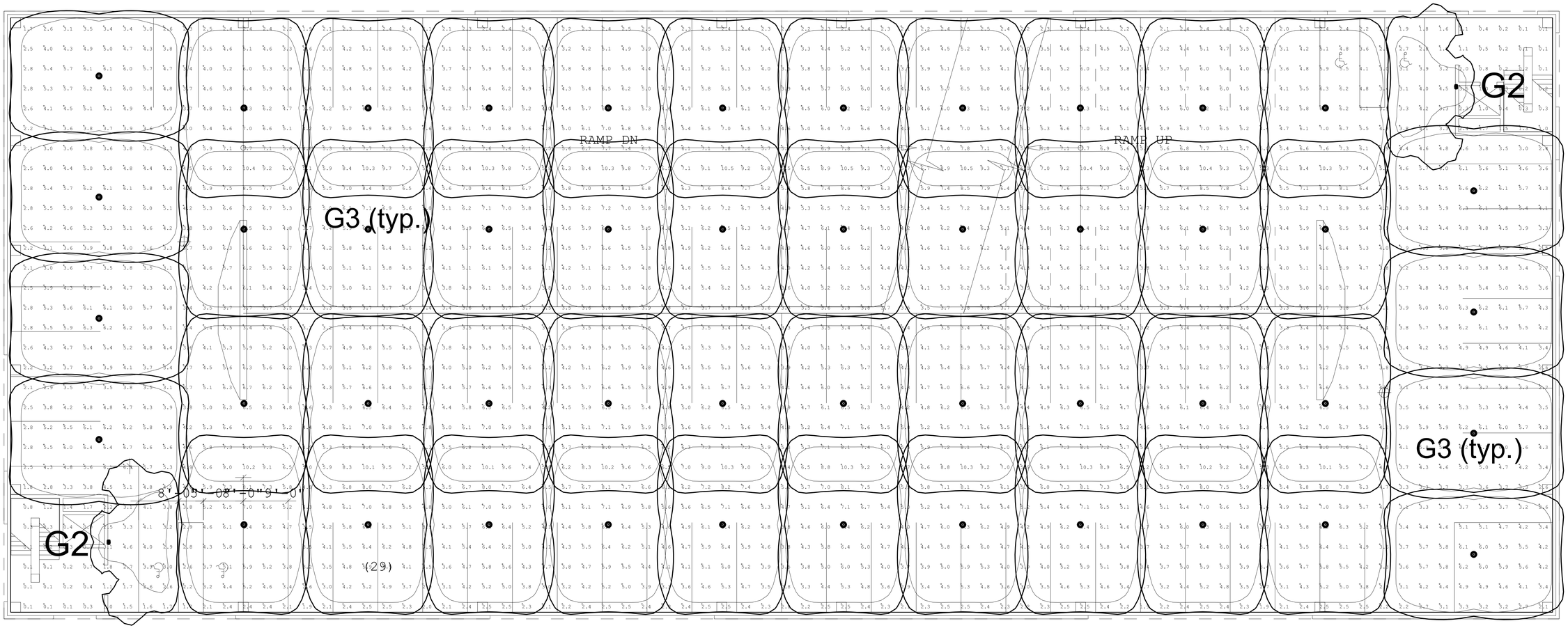
G1 Beacon Lighting Viper LED Pole Mounted Light Fixture (MH: 20')

G2 Hubbell Laredo Series Wall Mounted LED (MH: 8')

G3 Hubbell Sedona Series Ceiling Mounted LED

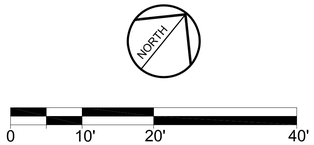
G4 New Star Victory 2-4 N LED Linear Luminaire (Stairwells)

SWANEY LIGHTING ASSOCIATES, INC.
15 Pleasant Hill Rd
P.O. Box 1597
Scarborough, Maine 04070
email: swaneylighting.com
ph: 207-883-7100
fax: 207-885-9605



THIRD THRU SIXTH FLOOR PLAN

SCALE: 1" = 10'-0"



NOT FOR CONSTRUCTION

PROJECT	midtown PORTLAND, MAINE
SHEET TITLE	PHOTOMETRIC PLAN: PHASE I GARAGE: Floors 3-6
CLIENT	FEDERATED COMPANIES

DRAWN:	DC	DATE:	Nov. 18, 2013
DESIGNED:		SCALE: 1" = 10'	
CHECKED:			
FILE NAME:			
SHEET:	L3.3		

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LEGEND

G1 Beacon Lighting Viper LED Pole Mounted Light Fixture (MH: 20')

G2 Hubbell Laredo Series Wall Mounted LED (MH: 8')

G3 Hubbell Sedona Series Ceiling Mounted LED

G4 New Star Victory 2-4 N LED Linear Luminaire (Stairwells)

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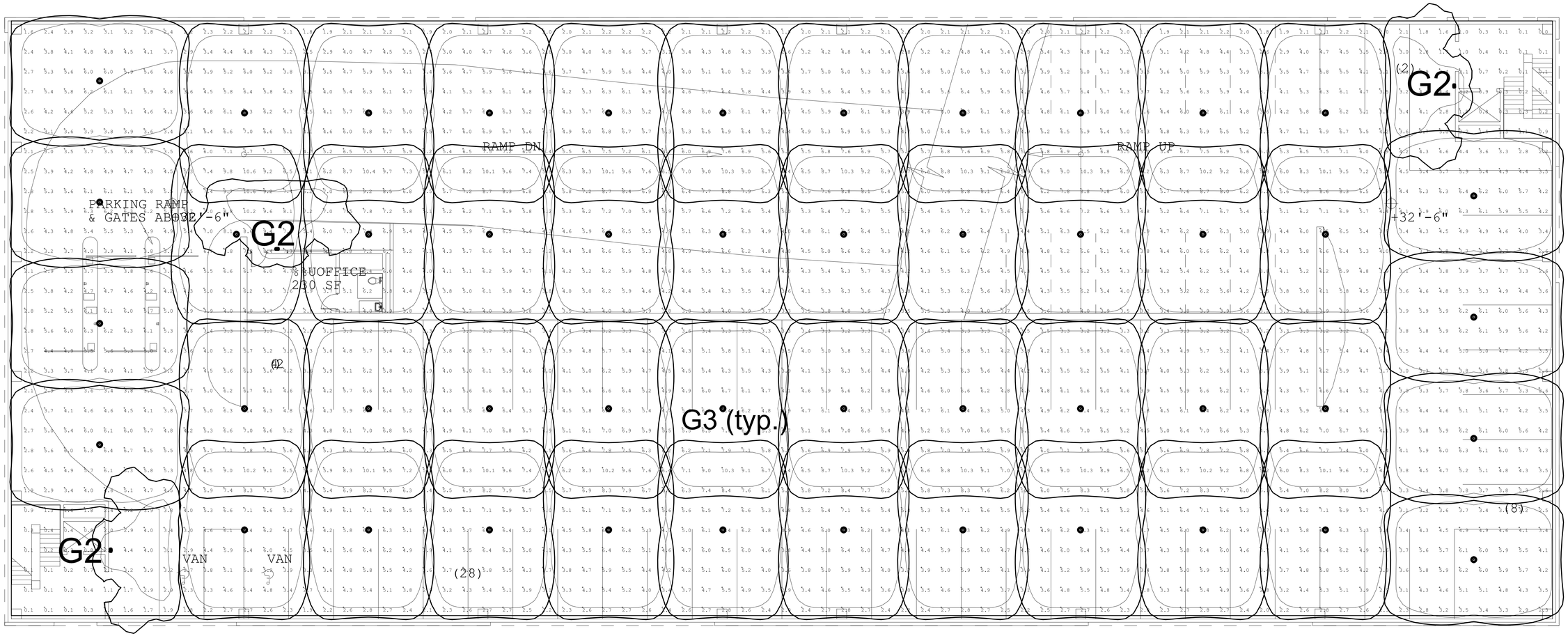

SECOND FLOOR PLAN

SCALE: 1" = 10'-0"

NORTH

0 10' 20' 40'

NOT FOR CONSTRUCTION

PROJECT	midtown PORTLAND, MAINE
SHEET TITLE	PHOTOMETRIC PLAN: PHASE I GARAGE: 2nd Floor
CLIENT	FEDERATED COMPANIES

DRAWN:	DC	DATE:	Nov. 18, 2013
DESIGNED:		SCALE: 1" = 10'	
CHECKED:			
FILE NAME:			
SHEET:	L3.4		

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LEGEND

G1 Beacon Lighting Viper LED Pole Mounted Light Fixture (MH: 20')

G2 Hubbell Laredo Series Wall Mounted LED (MH: 8')

G3 Hubbell Sedona Series Ceiling Mounted LED

G4 New Star Victory 2-4 N LED Linear Luminaire (Stairwells)

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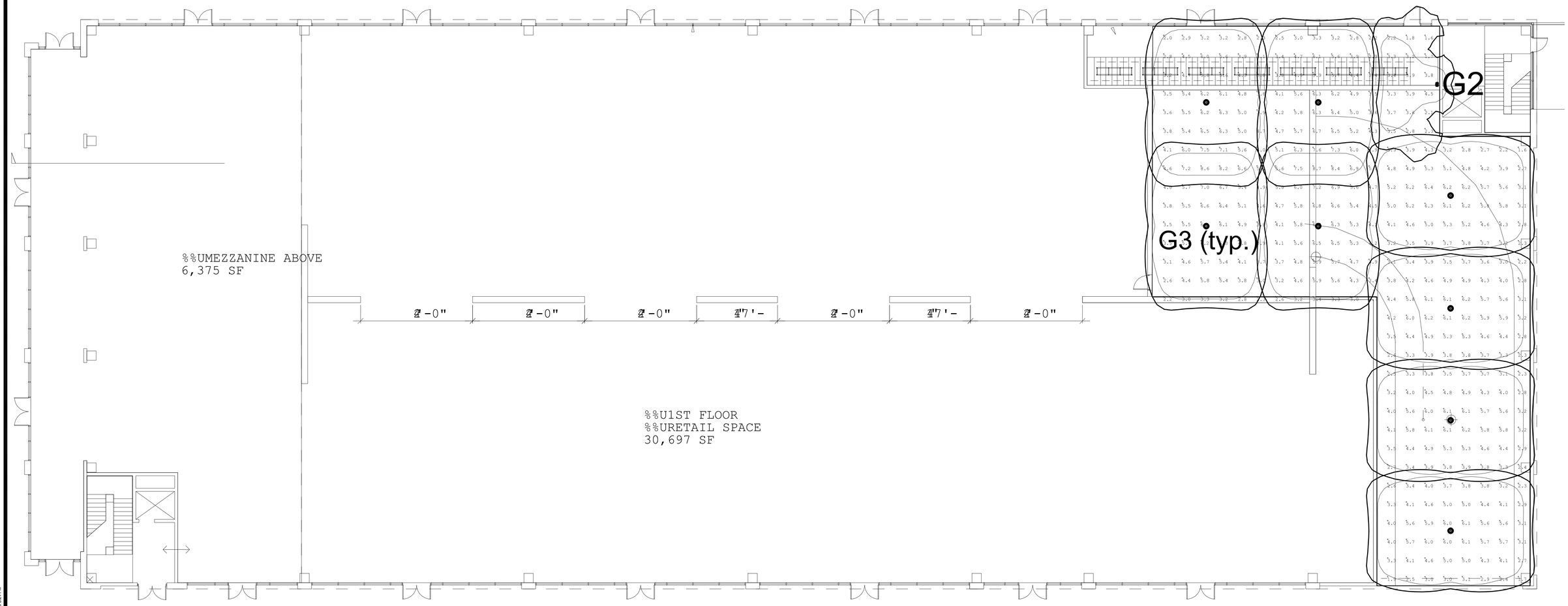
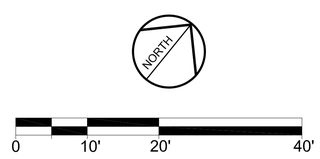


FIRST FLOOR PLAN

SCALE: 1" = 10'-0"



NOT FOR CONSTRUCTION

PROJECT
midtown
PORTLAND, MAINE

SHEET TITLE
PHOTOMETRIC PLAN:
PHASE I GARAGE: 1st Floor

CLIENT
FEDERATED COMPANIES

DRAWN: DC	DATE: Nov. 18, 2013
DESIGNED:	SCALE: 1" = 10'
CHECKED:	
FILE NAME:	
SHEET: L3.5	

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