

CITY OF PORTLAND, MAINE

PLANNING BOARD



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

AGENDA PORTLAND PLANNING BOARD MEETING

The Planning Board will hold a remote meeting on Tuesday, March 9, 2021, 4:30 p.m. This meeting will take place using Zoom.

Virtual meetings are allowed using emergency legislation approved by LD 2167; 1 M.R.S. §403-A, that authorizes cities and towns to conduct meetings online.

Allow your computer to install the free Zoom app to get the best meeting experience.

For public comment, you will need to use the "raise your hand" feature. To raise your hand via the telephone, please hit *9. You will be un-muted by the host when it is time for public comment.

ZOOM MEETING INSTRUCTIONS

You are invited to a Zoom webinar.

When: Mar 9, 2021 04:30 PM Eastern Time (US and Canada)

Topic: Planning Board Workshop and Public Hearing 3/9/2021

Please click the link below to join the webinar:

<https://us02web.zoom.us/j/88023394466>

Or iPhone one-tap :

US: +13126266799,,88023394466# or +19292056099,,88023394466#

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Webinar ID: 880 2339 4466

International numbers available: <https://us02web.zoom.us/j/88023394466>

For more information on how to use Zoom, please go to:

<https://www.portlandmaine.gov/remotepud>

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

WORKSHOP - 4:30 PM

- i. Level III Site Plan and Conditional Use; 69 Presumpscot Street; Portland Public School Department, Applicant. (estimated time 4:30 – 5:30 p.m.) The Planning Board will hold a workshop on a Level III site plan and conditional use application for a 15,750 square foot addition to the rear of the Presumpscot Elementary School to be used as a cafeteria and classroom space, along with an additional 2,160 square foot expansion to the front of the building for use as administrative and security space as well as associated site improvements. The subject property is 7 acres in size and is zoned I-M and R-5.

PUBLIC HEARING - 5:30 PM

1. ROLL CALL AND DECLARATION OF QUORUM

2. COMMUNICATION AND REPORTS

3. REPORT OF ATTENDANCE AT THE MEETING HELD ON FEBRUARY 23, 2021

Afternoon Workshop

383 Commercial Street: All Present

432 Stevens Avenue: Chann, Dundon, Dunfey, Mazer, Stanley, and Silk present; Smith recused.

Evening Hearing

Housing Trust Fund Renaming: All Present

4. REPORTS OF DECISIONS AT THE MEETING HELD ON FEBRUARY 23, 2021

- i. Housing Trust Fund Renaming; City of Portland, Applicant. Stanley moved and Dundon seconded a motion to approve the text amendment. Vote 5-0-2 (Chann and Dunfey abstained)

5. NEW BUSINESS

- i. Conditional Use; 432 Stevens Avenue; Portland Public School Department, Applicant. (estimated time 5:30 p.m.) The Planning Board will hold a public hearing on a conditional use permit application for building additions totaling 9,300 square feet and associated site drainage improvements at the Longfellow Elementary School. The subject property is 21.1 acres in size and is zoned R-5 Residential. A related Level II Site Plan application, PL-001319-2020, is under review by the Planning Authority.

Memorandum

Planning and Urban Development Department



To: Chair Mazer & Members of the Planning Board
From: Jimmy Dealaman, Planner
Date: March 5, 2021
Re: Presumpscot Elementary School Addition & Renovations Project
Project ID: PL-001297-2020, CU-001329-2020
Meeting Date: March 9, 2021
CBL: 425 A007, 428 F013, 427 1001

I. INTRODUCTION

Portland Public Schools has applied for a Conditional Use and a Level III Site Plan approval to facilitate the development of two new building additions, totaling 17,910 square feet, to the existing Presumpscot Elementary School located at 69 Presumpscot Street in the East Deering neighborhood.

The seven-acre site (Figure 1) is made up of three City-owned parcels, and situated in the R-5 Residential Zone.

The proposed expansion of the existing institutional use (elementary school) in the R-5 zone requires a Conditional Use Permit to be reviewed by the Planning Board for compliance with the Conditional Use standards as well as the requirements of the R-5 Conditional Use standards in Section 14-118 and Section 14-474 (general standards that apply to all conditional uses).



Figure 1: Development Site at Presumpscot Street Elementary School

Owner: City of Portland
Applicant: Portland Public Schools
Agent and Engineer: Frank Crabtree, Harriman
Landscape Architect: Howard Snyder, Harriman
Architect: Lisa Sawin, Harriman
Surveyor: Nick Elliston, Titcomb Associates

II. REQUIRED REVIEWS

<i>Applicant's Proposal</i>	<i>Applicable Standards</i>
New Structure with Floor Area Over 10, 000 SF	Level III Site Plan (Section 14-526)
Conditional Use (Institutional Use in R-5 zone)	Conditional Use in the R-5 zone (Section 14-118 & 14-474)

WAIVER REQUESTS

<i>Waivers</i>	<i>Citation</i>
Request to waive lighting plan requirement due to inability to model existing outdoor lighting fixtures as well as street lighting present on site which contribute to site lighting.	Technical Manual Section 12.6 – <i>Requires a certified lighting Plan which indicates the location of each current and proposed outdoor lighting fixture with projected hours of use.</i>



Figure 2: Aerial View of Development Site Existing Conditions – Source: Google Earth

III. PROJECT DATA

<i>Subject</i>	<i>Data</i>
Total area of the site	306,738 sf
Total Disturbed Area	56,628 sf
Existing Zoning	R-5 (small portion I-M)
Existing Use	Institutional (Elementary School)
Proposed Use	No Change

	<i>Existing</i>	<i>Proposed</i>	<i>Net Change</i>
Impervious Surface Area	88,078 sf	116,098 sf	+28,020 sf
Building Floor Area	25,875 sf	43,691 sf	+17,816 sf
Parking Spaces	50 spaces	No Change	No Change
Bicycle Parking Spaces	18 spaces	No Change	No Change

IV. BACKGROUND

The proposed project is part of Portland Public Schools’ “Building for Our Future”, which is an initiative to renovate four of Portland’s oldest elementary schools. In 2017, City voters approved a \$64 million Building for our Future Bond to renovate four elementary schools (Lyseth Elementary School, Longfellow Elementary School, Presumpscot Elementary School, and Reiche Elementary School). The Planning Board approved the Lyseth Elementary School building additions and related site work on April 23, 2019 (Application #: PL-000481-2019) and the project is currently in the final stages of construction.

V. EXISTING CONDITIONS



Figure 3: Existing Conditions (Image from Building Front) Source: Google

Presumpscot Elementary School was constructed in 1962 and currently has approximately 275 students and 42 staff. The existing building contains 21 classrooms/instruction rooms. The site contains a playground, athletic field, three classroom modulars at the rear of the school, and 50 parking spaces in four (4) small surface parking lots around the building.

The site fronts Presumpscot Street, and is bounded by Sherwood Street to the south, and the Grand Trunk Cemetery and residential Dalton Street to the east. The school is accessed via a circular driveway off of Presumpscot Street which also bifurcates into the designated staff parking area and one-way unaccepted street, “E Street,” that connects to Sherwood Street. The school is primarily surrounded by residential properties to the east, south, and west. Immediately to the north is 125 Presumpscot Street, which is an office building with a number of tenant-leased commercial spaces including the Maine Bureau of Motor Vehicles. The lot also features a public trail, the Presumpscot School Trail, along the northern boundary. The lot is primarily situated within the R-5 Residential Zone with a small northeast portion falling within the I-M Moderate Impact Zone.

VI. PROPOSED DEVELOPMENT

The applicant is proposing a building addition which includes a new cafeteria and five new classrooms (15,750 SF) placed behind the existing building. The applicant is also proposing a new administration addition and security vestibule (2,160 SF) added to the front entry area of the existing building. Furthermore, the project will involve other associated renovation work to the existing building to improve the security and fire safety systems.

Portland Public Schools has also proposed to minimize queuing and congestion at the school’s main drive off of Presumpscot Street, a new permanent bus pick-up and drop-off location for students on Sherwood Street at the end of the staff vehicle exit drive. As a result, student pick-up and drop-off at the front drive would be limited to parent vehicles picking up and dropping off students. The applicant plans to repair the deteriorated sidewalk and create an accessible route from the Sherwood Street bus pick-up and drop-off location to the school entry.

According to the applicant the school has been operating at an enrollment that requires three portable classroom units to accommodate the student population – the school currently lacks the capacity to have appropriately sized classrooms and Special Education spaces. The applicant proposes relocating the three classroom modulars and gas tank onsite to the athletic field during construction and will be temporarily occupying this new location until the project is concluded (in approximately 2 years). No additional students or staff are anticipated as a result of the main facility improvements.

Additional site work proposed includes modifying the existing fire lane drive to wrap around the entire perimeter of the new building, new service drive at the front entrance, repaving and recurfing along the main drive, new ADA signage and crosswalk striping, relocating the existing trail arbor, retaining stones, as well as moving the existing basketball court to beside the existing playground.

A new storm drainage collection and treatment system will be installed to manage stormwater resulting from the amount of new impervious surface on the site. Stormwater runoff is proposed to discharge into the woods behind the grass playfield.

School doorways are proposed to be lit with wall-mounted lights or canopy mounted lights for security.

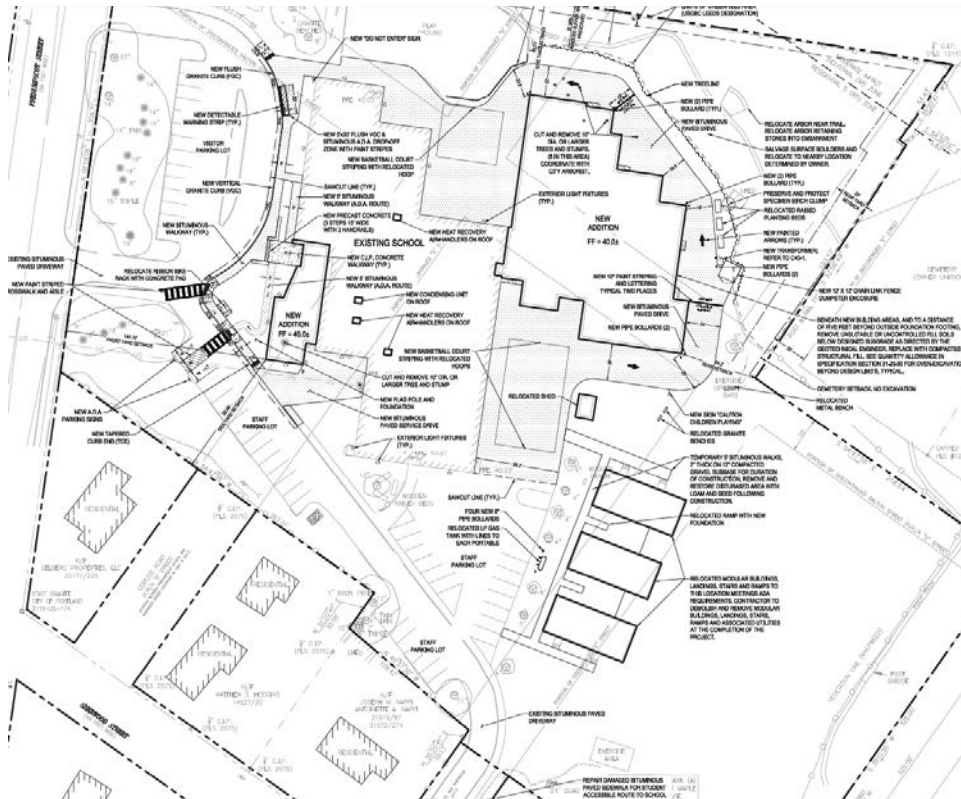


Figure 4: Screenshot from Current Site Plan

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

The owner of the property is the City of Portland. The applicant has provided a copy of quitclaim deed, recorded at the Cumberland County Registry of Deeds (Book 2650 Page 212), which demonstrates their right, title and interest in the property.

The estimated cost of the development is \$9,750,000 (construction cost) and \$13,000,000 (total project cost). The applicant has submitted a Statement of Financial Capacity letter from their director of budget and finance, as demonstration of their financial capacity.

The applicant's development team, Harriman, an architectural and engineering firm, has also submitted a statement speaking to their background in consulting services, resumes and relevant experience to complete the proposed development (Attachment E).

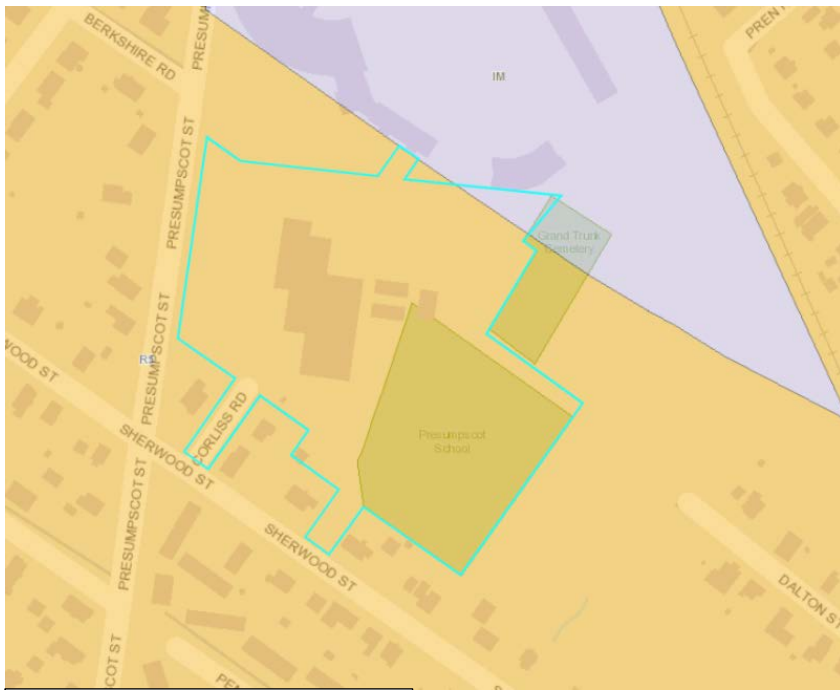


Figure 5: Screenshot of Zoning Map

V. ZONING ANALYSIS

A. DIMENSIONAL AND USE REQUIREMENTS

The parcel is located primarily in the R-5 Residential Zone with a small portion in the rear in the Moderate Impact Industrial Zone (I-M). However, the development area is located solely within the R-5 zone, and no work is proposed within the I-M zone; therefore, the proposal is subject solely to the requirements of the R-5 zone. Due to the location of the expanded institutional use within the R-5 zone, the project is considered a conditional use and is required to meet the zoning specific conditional use standards (Section 14-118) as well as the general conditional use standards (Section 14-474) which are reviewed in Section B and C respectively below.

The following table is provided to show the dimensional requirements of the R-5 zone (City Code Sec. 14-120) which are met.

	<i>Required</i>	<i>Proposed</i>
Lot Size	30,000 sq.ft.	306,738 sq. ft.
Area Per Dwelling Unit	N/A	N/A
Minimum Street Frontage	50 ft.	308 feet
Front Yard Minimum	20 feet	140.33 feet
Rear Yard Minimum	20 feet	54.2 feet
Side Yard (left)	12 feet	67.11 feet
Side Yard (right)	12 feet	89.49 feet
Maximum Lot Coverage	40%	16%
Minimum Lot Width	60 feet	496.32 feet
Maximum Structure Height	35 feet	24 feet
Open Space	6,000 SF	164,000 sq. ft.

B. ZONE-SPECIFIC CONDITIONAL USE STANDARDS – SEC. 14-118

Elementary schools are permitted in the R-5 zone as a conditional use, requiring review by the Planning Board. The applicant has submitted an analysis addressing how the proposal meets the R-5 Conditional Use Standards (Attachment Z) and staff confirm that the project meets the requirements of the conditional use standards as follows:

Sec. 14-118. Conditional uses. The following uses shall be permitted only upon the issuance of a conditional use permit, subject to the provisions of section 14-474 (conditional uses) and any special provisions, standards or requirements specified below:

(b) Institutional: Any of the following conditional uses provided that, notwithstanding section 14-474(a) (conditional uses) of this article, or any other provision of this Code, the Planning Board shall be substituted for the board of appeals as the reviewing authority:

1. Elementary, middle, and secondary school;

Such uses shall be subject to the following conditions and standards in addition to the provisions of section 14-474:

- a. *In the case of expansion of existing such uses onto land other than the lot on which the principal use is located, it shall be demonstrated that the proposed use cannot reasonably be accommodated on the existing site through more efficient utilization of land or buildings, and will not cause significant physical encroachment into established residential areas; and*

Staff Comments: The proposal does not involve any expansion outside the existing school lot.

- b. *The proposed use will not cause significant displacement or conversion of residential uses existing as of June 1, 1983, or thereafter; and*

Staff Comments: The proposal does not displace or convert any residential uses.

- c. *In the case of a use or use expansion which constitutes a combination of the above-listed uses with capacity for concurrent operations, the applicable minimum lot sizes shall be cumulative; and*

Staff Comments: No other use is present, so this provision does not apply to the subject proposal.

- d-g. **Staff Comments:** These provisions do not apply to the subject proposal.

C. GENERAL CONDITIONAL USE STANDARDS – SEC. 14-474

The following standards in Section 14-474 apply to all conditional uses:

2. *Standards. The Board shall, after review of required materials, authorize issuance of a conditional use permit, upon a showing that the proposed use, at the size and intensity contemplated at the proposed location, will not have substantially greater negative impacts than would normally occur from surrounding uses or other allowable uses in the same zoning district. The Board shall find that this standard is satisfied if it finds that:*
 - a. *The volume and type of vehicle traffic to be generated, hours of operation, expanse of pavement, and the number of parking spaces required are not substantially greater than would normally occur at surrounding uses or other allowable uses in the same zone; and*

Staff comment: The proposal is not expected to generate additional traffic as the applicant has stated that no additional students or staff are anticipated (Attachment Z). Similarly, the hours of operation are not expected to change. Review of the application package shows the addition aims to upgrade the current facility and create adequate space for the current student population.

The number of parking spaces is not proposed to change, however, the amount of new extent of pavement wrapping around the proposed site is proposed to ensure emergency vehicle access to the building. Some delivery is expected to occur at the kitchen doorway at the rear of the new building addition, however, given the student population is not expected to change, the change of delivery drop off location is not expected to create substantially greater traffic from existing conditions. Staff review has found any of the measurable changes proposed not to be substantially greater than would normally occur at the allowable school use permitted in the R-5 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*

Staff comment: The applicant's Conditional Use analysis (Attachment Z) provides detailed responses to the potential impacts of the proposal, and no unsanitary or harmful conditions are expected as a result of the proposal.

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

Staff comment: The design and operation of the expanded use is anticipated to have the same effects/impacts on the surrounding properties as the existing elementary school use. There is a slight increase in new bus and pedestrian traffic on Sherwood Street around the staff exit-drive due to the proposed bus pick-up and drop-off location being relocated to this new location. Several specific areas staff review focused on are described below:

Access Lane

Staff review examined a new location of the fire lane and provided comments to the applicant which raised some concerns about doors on the north and east of the addition with a potential to spill out into the vehicle area. These doors along the paved perimeter are expected to be used for exit and entry to the playgrounds, however the applicant has indicated that school staff monitor the movement of students in and out of all doors of the building. In response to staff comments, the applicant has proposed paint striping and signs to alert/caution drivers about the potential of children playing in the area. Please see staff review comments of the access lane under Section VII.B.I below.

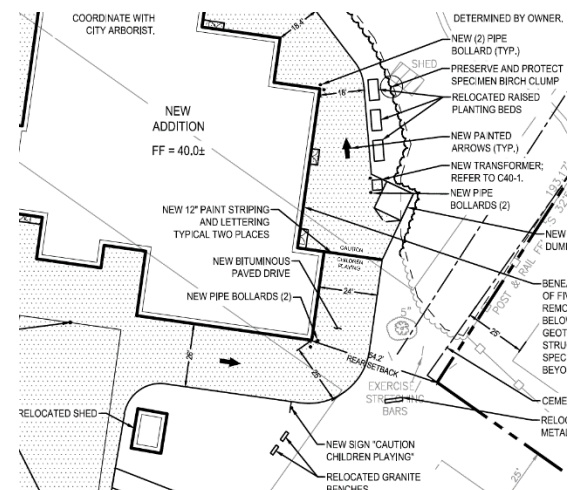


Figure 6: Screenshot of Access Lane

Rooftop Appurtenances

Although institutional uses in the R-5 zone are not subject to zone specific design standards, staff examined the visual impacts of the proposed rooftop mechanicals proposed to better understand the impacts on the surrounding uses. Please refer to *Site Design Standards* additional comments

(Section VII.A.4.) listed under Site Plan Review below. Given that the height of any rooftop mechanicals was not dissimilar or substantially greater than those present on the existing structure, staff found no visual impacts on the surrounding uses.

Other Design Comments

The proximity of the new addition was found to have minimal impact on the nearby commercial uses due to the new structure's location, which is approximately 10 feet closer to the shared property line to the north than the existing school structure. Also, the new addition is significantly set back from any residences (over 300 feet), which limits the visual impact.

Sherwood Street Bus Pick-up/Drop-off Location

The applicant proposes having a new bus pick-up/drop-off location on Sherwood Street at the end of the staff vehicle exit drive. While this operation proposes a slight increase in bus and pedestrian traffic at this location, overall, the school anticipates having only one bus utilizing that location twice per day. Staff will continue to review this aspect of the proposal, but staff believe this relocation will not have a substantially greater effect/impact on surrounding uses due to the low volume of bus trips to this new location and based on the fact that the route is already utilized by pedestrians accessing the site.

VII. DEVELOPMENT REVIEW

A. SITE PLAN SUBMISSION REQUIREMENTS (Section 14-527)

The applicant has submitted all necessary documentation with the exception of an exterior lighting plan. The applicant has requested a waiver for providing the required exterior lighting plan.

Staff continue to review the submitted materials and provide comments to the development team to ensure they meet all City requirements.

B. SITE PLAN STANDARDS (Section 14-526)

1. Transportation Standards

Impact on Surrounding Street Systems, Access and Circulation:

Access to the site by staff and students arriving by single-occupancy vehicle is not expected to change from the current operation. Vehicles access the site via a one-way southerly drive from Presumpscot Street. The visitor's cars then turn left in front of the school to the car drop-off drive or visitor parking lot, and then exit onto Presumpscot Street through the northerly driveway. Staff vehicles proceed with turning right in-front of the school to a restricted staff-only parking area and one-way exit drive exiting on "E" street.

Buses have historically picked up and dropped off students along the drive immediately in front of the school, however the applicant indicates that to lessen congestion and vehicles queuing in the front of the school, a bus pick-up and drop-up location for students off the E-street sidewalk leading to the school is a preferable alternative which has been successful during the recent pandemic procedures. The applicant proposes the new bus pick-up/drop-off location on Sherwood Street to be a permanent bus arrival arrangement. The applicant indicates that there is only one school bus, so they do not anticipate queuing to be a significant problem.

Along the northern property line runs the Portland Presumpscot School Trail, which starts at the northern playground and runs through the wooded area to the cemetery site. Before starting work, the applicant intends to coordinate with the Portland Trails representative.

There are no changes to the parking layout, however, the existing one-way emergency access drive around the building which exists to the north of the building is proposed to extend around the new perimeter of the building addition to maintain access. The applicant has provided a Fire Turning Template to demonstrate sufficient turn

radius (Plan 22). It should be noted that while the access lane is intended to be primarily sized to accommodate emergency vehicles, the access way would also now accommodate deliveries, as described below.

Deliveries are currently dropped off in the service area at the front of the building. The proposed changes include adding a primary delivery point at the kitchen doorway at the rear of the new building addition. It is expected that deliveries will still generally occur in the early morning prior to school opening. However, occasional deliveries may still occur throughout the day. According to the applicant has deliveries to the school would occur about 1-2 times per day.

Additionally, the existing dumpster in the front of the building is proposed to be relocated to the rear within a fenced enclosure, so it is expected that trash pick-up will also be expected to utilize that access lane around the building. Trash pick-up routinely occurs once per week.

The fire lane is described to serve multiple functions for the school. Doors along the paved perimeter of the addition may be used as an exit and entry to the playgrounds. It was reported that school staff monitor the movement of students in and out of all doors of the building.

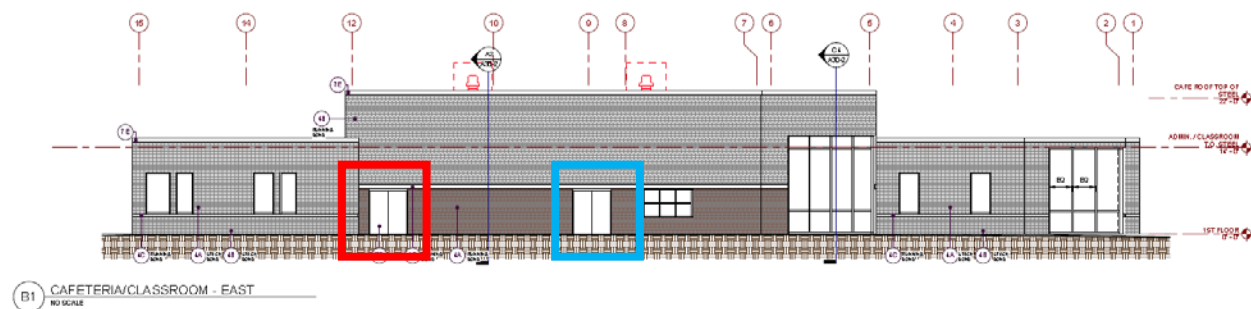


Figure 8: East elevation showing rear of the proposed addition, illustrating one area in question with potential for pedestrian traffic to spill from exterior door (on left) in red into the perimeter access lane. The entrance to the warming kitchen (on right) in blue is identified for reference to show where deliveries will occur.

Staff Comment: Staff continue to review the proposed changes to the site. The rerouted access lane location around the new building is a primary area under discussion particularly where there is overlap between vehicle routes and pedestrian circulation on the site. Overall, there seems to be appropriate existing signage restricting access to the sides and rear of the building to discourage unauthorized vehicles from accessing this area. However, the new traffic anticipated to use this lane is expected to increase slightly as a result of deliveries and trash pick-up being directed to the rear of the building.

To date, staff have asked the applicant about the potential for pedestrians to spill out from the external doors (at rear) into the restricted vehicle lane. Also, staff have asked for more information about how the lane will be regulated. The applicant's plans were updated to show signs and paint striping to caution drivers about the potential of children playing in the area.

Staff and consulting traffic engineer find that the caution signage and striping attempt to address the potential conflict between delivery vehicles circulating around the building and students playing, but overall, this activity will need to be managed (Attachment 4). Additionally, the turning templates to show vehicle circulation around the building are tight at certain points and may be difficult if there are obstructions along the route such as snow buildup. Staff believe it will be important that snow is cleared not only from the main footprint of the driveway but also the areas needed to maneuver (Attachment 1).

Staff continue to review the proposed bus pick-up and drop-off location on Sherwood Street. Preliminary feedback from Public Works have indicated that facilitating parent drop-off closer to the entrance of the school may incentivize students arriving by personal auto rather than the bus, which may present some equity concerns. As currently proposed staff recommend that bus arrival remain at the front entrance if possible (Attachment 1).

Sidewalks

No changes are proposed to the existing sidewalk which runs along the frontage of the site, which are confirmed by Public Works to be in relatively good condition.

The site includes an internal pedestrian path which connects the sidewalk on Presumpscot Street to the service drive in the front of the building. The internal path also runs to Sherwood Street where staff vehicles exit.

The current proposal plans to repave and curb the walkway which runs along the front of the building (Figure 7), as well as adding additional access route improvements to the proposed front addition entrance and connecting to the sidewalk on Sherwood Street.

Public Works have provided comments that if pedestrian access is intended to occur along “E” Street along the south of the site, then the internal walk will need to be made accessible. The recent plan submission (Plan 1) noted that the sidewalk route connecting the school to Sherwood Street will be repaired and made assessable as part of this project. The applicant also indicated that this work will occur separately from the work detailed in this plan set. To ensure that this improvement meets City Standards staff plan to recommend a condition of approval that the details of the sidewalk improvement first be reviewed and approved by Public Works to ensure the project provides sufficient pedestrian access.

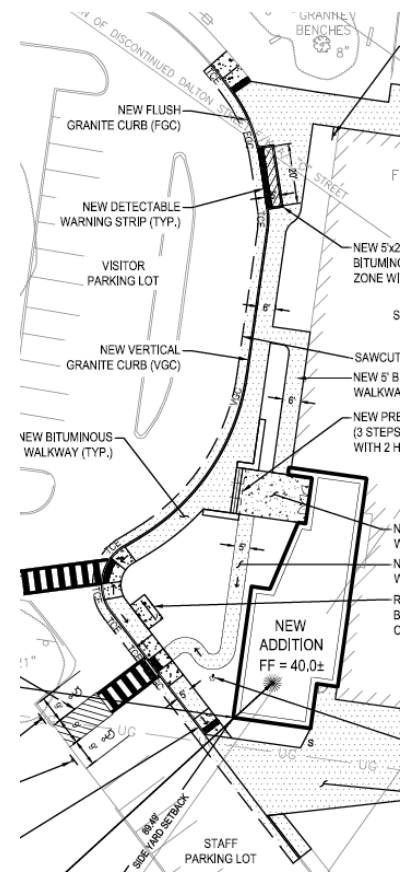


Figure 7: Screenshot Walkway Improvements on Site Plan

Public Transit Access

Greater Portland METRO Bus lines routes 9A and B stop at the Presumpscot Street intersection on Washington Avenue several times a day for service to the school. The applicant reports the Presumpscot Elementary School is a walk of approximately 1,000 feet to the bus stop.

There are no external access changes proposed as part of this proposal.

Parking

Division 20 parking standards require one (1) parking space for each room used for the purposes of instruction. The proposed project will increase the number of classrooms to 26 requiring 26 parking spaces. The current number of parking existing on the site (50 spaces) exceeds the minimum requirement, therefore meeting the parking requirements.

2. Environmental Quality Standards

Landscaping, Preservation of Significant Natural Features and Landscape

The applicant reports that there are no significant natural features in the vicinity of the proposed development activities on the site (Attachment N).

During a site visit conducted on November 30th, 2020, City staff discussed elements of the proposal with the development team, among which focused on landscaping. Some areas of discussion included relocating an existing arbor present on the site, making sure the clearing limits were clearly shown on the plan, as well as having the City Arborist inspect the vegetation proposed to be cleared.

On the current submission (Attachment DD) the applicant has indicated no tree-clearing beyond what is necessary for the required paved fire lane and embankment grading slopes. The plans (Plan 2) also show the proposed tree clearing line as well as the nine (9) trees that are over 10" caliper proposed to be removed. Where all of these trees proposed to be removed are outside the setback area, no replanting for removed trees is required.

The applicant is proposing to plant a total of 15 trees throughout the site, as well as a significant number of shrubs. It was noted by the Applicant that during the required neighborhood meeting that no neighbors requested any additional plantings. The proposed location of the new dumpster/recycling area is proposed to be screened from view by fencing at the rear of the property and is a significant distance away from nearby properties to minimize visual impacts.

Additionally, the applicant has provided a silt fence during construction to offer tree protection to existing trees onsite.

The City's Arborist reviewed the proposal and finds that the mix of shade and evergreen trees along the frontage is adequate. Recently provided comments forwarded to the applicant ask for the proposed Serbian Spruce tree to be reduced in size in order to allow for better chance of survival and easier maintenance. Staff will continue to work with the applicant on ensuring this comment is addressed.

Water Quality, Stormwater Management and Erosion Control

The proposed building additions and paving adds 28,020 square feet of impervious surface to the site. The proposal includes a stormwater system comprising of roof drain, catch basin, storm drain pipes, and a subsurface chamber sand filter to treat stormwater runoff from the new building roof and some associated walks. The treated stormwater is then piped under the large playfield and discharged into the wooded swale to the south east

The City's peer/consulting engineer has reviewed the applicant's plans (Plans 5, 6, 7) and Stormwater Report (Attachment Q), provided staff and the applicant with comments (Attachment 3) regarding the proposed treatment system's as well as erosion control measures. The applicant will continue to respond to these comments/questions to confirm the applicable standards are met. In general, the proposed treatment system is determined to be acceptable to meet the City's redevelopment/general standard for the new addition and new impervious area. Comments have also determined that there is adequate erosion and sedimentation control shown on the plans.

3. Public Infrastructure and Community Safety Standards

Availability and Adequate Capacity of Public Utilities

The applicant has provided an ability to serve letter (Attachment BB) from the Portland Water District as well as Wastewater Capacity Authorization from Public Works (Attachment CC), demonstrating adequate capacity of public utilities to support the project.

The Public Works Water Resources division is currently reviewing the proposed system connection to City infrastructure, and confirmation will be provided before the time of a public hearing.

Public Safety & Fire Prevention

The applicant has provided a turning template to demonstrate sufficient fire truck turning movement around the site.

A fire and life safety review of the site has been conducted of the project and review comments have been provided to the applicant. Staff will review that all updates are consistent with City Public safety standards.

To further the building meeting the public safety principles of Crime Prevention through Environmental Design (CPTED), the applicant indicates that the design of the front entry addition will enhance security by providing full visibility for staff to observe those seeking entry to the building, and will be well lit.

Consistency with City Master Plans

Staff have found that the proposal meets the goals and policies of the city's comprehensive plan, [Portland's Plan 2030](#), and have identified the following goals and policies which are relevant to the proposal:

A Full Service City

- Maintain and support a quality educational system that is responsive to the educational needs of our community.

An Accessible City

- Support livability by improving the quality of life in neighborhoods and improving the public health of residents.



4. Site Design Standards

Massing, Ventilation and Wind Impact / Noise and Vibration

The applicant proposes adding two (2) rooftop HVAC/mechanical units which are approximately 4.5 feet tall and six feet tall, respectively, and are set back away from the roof edge. These units are set back approximately 157 feet from the south property line at the nearest point, where there are residential uses in the vicinity. The applicant has indicated the noise levels to be low (Attachments X, Z), as well as other ventilating fans and louvers to have minimal noise and be primarily operated during the daytime hours. The plan also calls for two (2) new air-handler rooftop units on the existing building.

The nearest of these four (4) HVAC units is set back approximately 163 feet from the nearby commercial uses to the north and is not expected to have negative impacts visual or otherwise.

Based on the applicant's assessment, staff finds that the new HVAC and venting mechanisms are adequately distanced from abutting residential properties to minimize any impacts which might require additional screening.

Shadows

The proposed addition to the existing building will be one-story and is not anticipated to result in shadow impacts. Landscaping in the vicinity will be coordinated with the City Arborist, to ensure viability of plantings in the vicinity of the building.

Snow and Ice Loading

The existing and proposed building has been designed to have building wings with flat-roofs, so snow will slowly melt and flow down the roof drain pipes into the storm sewer. If snow accumulates on the rooftop to a significant point, the applicant has indicated that the School Department will hire a roofing contractor to move snow to the ground. The snow will then be removed from the site.

View Corridors

The site is not located within any corridors identified in the *Downtown Vision View Corridor Protection Plan*

Historic Resources

The development is not located within a designated historic district. Due to the proximity to the nearby cemetery, Planning Staff confirmed with historic preservation manager, Deb Andrews, that Grand Trunk Cemetery is not designated under Portland's historic preservation ordinance.

Exterior Lighting:

The applicant has indicated the presence of two existing street lights/spotlights on Presumpscot Street that light the front school parking lot. Other existing building-mounted lights also help to light the parking areas around the building.

No additional site lighting poles are proposed. The applicant has proposed some wall-mounted and canopy mounted light fixtures for security and submitted accompanying catalog sheets which staff will confirm meet the City's technical standards prior to a future public hearing. The applicant has also indicated that the temporary modulars will be lit for security.

In response to staff questions, the applicant has indicated that the last employee to leave the building is at 10:00 pm. The school principal has also indicated that the current parking lot is sufficiently lit. Where some portions of the site, such as existing parking areas, may not be able to demonstrate minimum illumination levels, etc. unless additional site lighting is provided – which would be informed by a lighting plan - to comply with the site lighting standards a waiver has been requested to waive the lighting plan requirement.

Staff is requesting that the applicant provide a lighting plan.

Signage and Wayfinding:

The proposal does not intend to propose any new identification signs. There are some directional traffic control “Do Not Enter” signs provided to prevent access against the one-way route around the building. Also there is a “Caution Children Playing” sign with paint striping to alert vehicles entering the access route around the building.

VI. PUBLIC COMMENT

A notice of this Workshop was sent to one hundred thirty (130) property owners within 500 feet and interested citizens, and appeared in the February 26th and 27th, 2021 editions of the *Portland Press-Herald*. A Neighborhood Meeting was held on October 21st, 2020 at 8:00 pm attended by twenty-six (26) people.

At the time of writing this report, the Planning Division has not received any public comments.

VIII. NEXT STEPS

At this time staff are requesting the board's feedback on the aforementioned topics and whether the design provides safe and reasonable access and internal circulation for the entire site for all users of the site, and if points of access and egress conflict with turning movements and traffic flows. In particular, staff are looking for board feedback about the perimeter access lane, as well as the new bus pick-up/drop-off location on Sherwood Street.

The final submission will need to include:

1. Further information to address staff CPTED and lighting concerns
2. Any other information or revisions as recommended by the Planning Board
3. Continue to address any other staff comments

VIII. ATTACHMENTS

PLANNING BOARD REPORT ATTACHMENTS

1. Department of Public Works Comments (email dated 3.4.2021)
2. City Arborist Comments (email dated 2.16.2021)
3. Consulting Civil Engineer Review (email dated 2.12.2021)
4. Consulting Traffic Engineer Comments (email dated 3.5.2021)

APPLICANT'S SUBMITTAL

- A. Project Summary
- B. Right Title Interest
- C. Zoning Assessment
- D. Financial Capability
- E. Technical Capability
- F. Traffic
- G. Access & Circulation
- H. Loading and Servicing
- I. Sidewalks
- J. Public Transit
- K. Off-Street Parking
- L. Bicycle Parking
- M. Snow Storage
- N. Significant Natural Features
- O. Landscape Preservation
- P. Site Landscaping
- Q. Water Quality, Stormwater, Erosion Control
- R. Consistency with Master Plans
- S. Public Safety and Fire Prevention
- T. Public Utilities
- U. Massing Venting Wind
- V. Snow and Ice Loading
- W. Exterior Lighting
- X. Noise and Vibration
- Y. Signage Wayfinding
- Z. Conditional Use
- AA. Historic Resources
- BB. Water District Ability to Serve Letter
- CC. Wastewater Capacity Authorization
- DD. Response to Staff Comment (dated 12.11.2020)
- EE. Response to Staff Comment (dated 3.4.2021)

PLANS

- | | |
|--------|--|
| Plan 1 | SITE-PLAN-LAYOUT(updated on 3.4.2021) |
| Plan 2 | EXISTING-SITE-CONDITIONS-PLAN (updated 12.11.2020) |
| Plan 3 | SITE-UTILITY-PLAN |
| Plan 4 | SITE-NOTES |
| Plan 5 | SITE-EROSION-CONTROL-NOTES |
| Plan 6 | PRE-DEVELOPMENT-DRAINAGE-PLAN |
| Plan 7 | POST-DEVELOPMENT-DRAINAGE-PLAN |
| Plan 8 | SITE-GRADING-AND-EROSION-CONTROL-PLAN |

Plan 9	SITE-DETAILS 1
Plan 10	SITE-DETAILS 2
Plan 11	STORMWATER-DETAILS
Plan 12	PLANTING-PLAN
Plan 13	PLANTING-DETAILS 1
Plan 14	PLANTING-DETAILS 2
Plan 15	FIRST-FLOOR-PLAN – AREA-A
Plan 16	SECOND-FLOOR-PLAN-AREA-B
Plan 17	EXTERIOR-ELEVATIONS
Plan 18	EXTERIOR-ELEVATIONS 2
Plan 19	BOUNDARY-SURVEY
Plan 20	CONSTRUCTION MANAGEMENT PLAN
Plan 21	SNOW PLAN
Plan 22	FIRE TRUCK TURNING PLAN



Jimmy Dealaman <jdealaman@portlandmaine.gov>

Reviewer Comments Needed - 69 Presumpscot Street

Mike Tremblay <mtremblay@portlandmaine.gov>

Fri, Mar 5, 2021 at 8:22 AM

To: Jimmy Dealaman <jdealaman@portlandmaine.gov>

Cc: Tom Errico <thomas.errico@tylin.com>

Jimmy,

Tom hit most of my comments.

- My biggest concern is providing an accessible route from the bus drop-off point to the entrance the students use. The updated site plan calls for repair of the damaged sidewalk; this should also include a new curb. For the portion in the City ROW, this curb should be granite and should be constructed to City standards (detail attached). Within the site, a different curb material may be used, though bituminous is discouraged due to lack of durability, as shown in the existing condition. All reconstructed sidewalks should comply with ADA standards (maximum 2.0% cross-slope).

- Dropping students off by bus on Sherwood Street but facilitating parent drop-off closer to the entrance of the school would seem to incentivize students arriving by personal auto rather than the bus; this also presents equity concerns. It is recommended that bus activity be moved to the front entrance if possible in the future.

- The fire truck turning templates are tight at some points, and may be increasingly difficult if there are any obstructions along the route (e.g. snow buildup along the edges). It will be important to clear snow not only from the main footprint of the driveway but also the areas needed to maneuver, for example, the full width of the driveway is required to maneuver around the new addition, particularly around the outside of the driveway.

- I concur that additional information on how the loading area in the new paved area will work. What size vehicles, how they will enter/exit the site, etc.

Mike Tremblay, P.E.

Senior Engineer

Engineering Division

Department of Public Works

City of Portland, ME

mtremblay@portlandmaine.gov

P. 207.874.8881 F. 207.874.8852



[Quoted text hidden]



Figure_I_12A_VeriticalGraniteCurb.pdf

51K



Jimmy Dealaman <jdealaman@portlandmaine.gov>

69 Presumpscot Street - Landscape Plan (PL-001297-2020)

Jeff Tarling <jst@portlandmaine.gov>

Tue, Feb 16, 2021 at 9:00 AM

To: Jimmy Dealaman <jdealaman@portlandmaine.gov>

Hi Jimmy -

The street tree question, knowing the site well, the mix of shade trees and evergreen trees along the frontage should be adequate. Knowing this is a school and seeing into the site is also important for safety reasons as well as traffic visibility this looks good as presented. The only landscape question is on the Serbian Spruce size showing a very large 14-16' tree and we would like to see a smaller 7-8' size tree as it will be easier to establish and care for. All too often those big trees which do have a quick impact, can decline if not well watered etc. A 7-8' tree should be more than fine.

Thanks

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

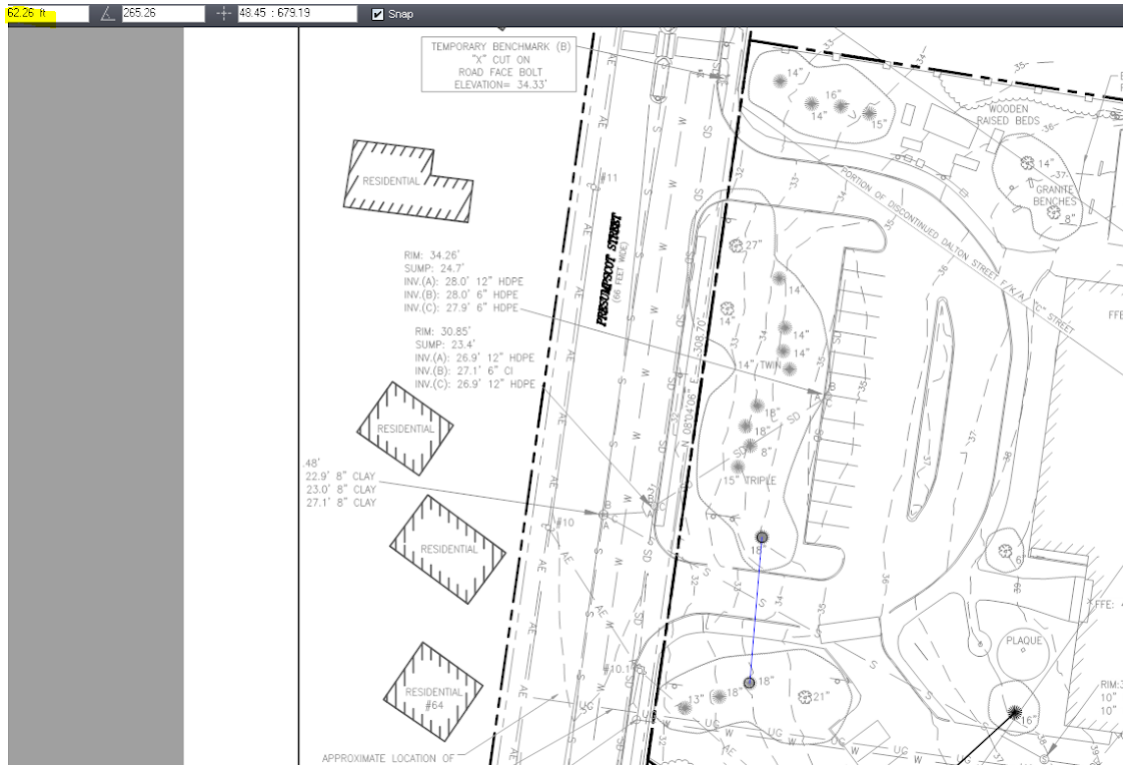
On Mon, Feb 15, 2021 at 7:15 PM Jimmy Dealaman

<jidealaman@portlandmaine.gov> wrote:

One more question! The Technical Manual asks for street trees for institutional uses to be thirty (30) to forty five (45) feet apart on center in the City right of way along all street frontages unless otherwise approved (by reviewing authority). Looking at the frontage (see image

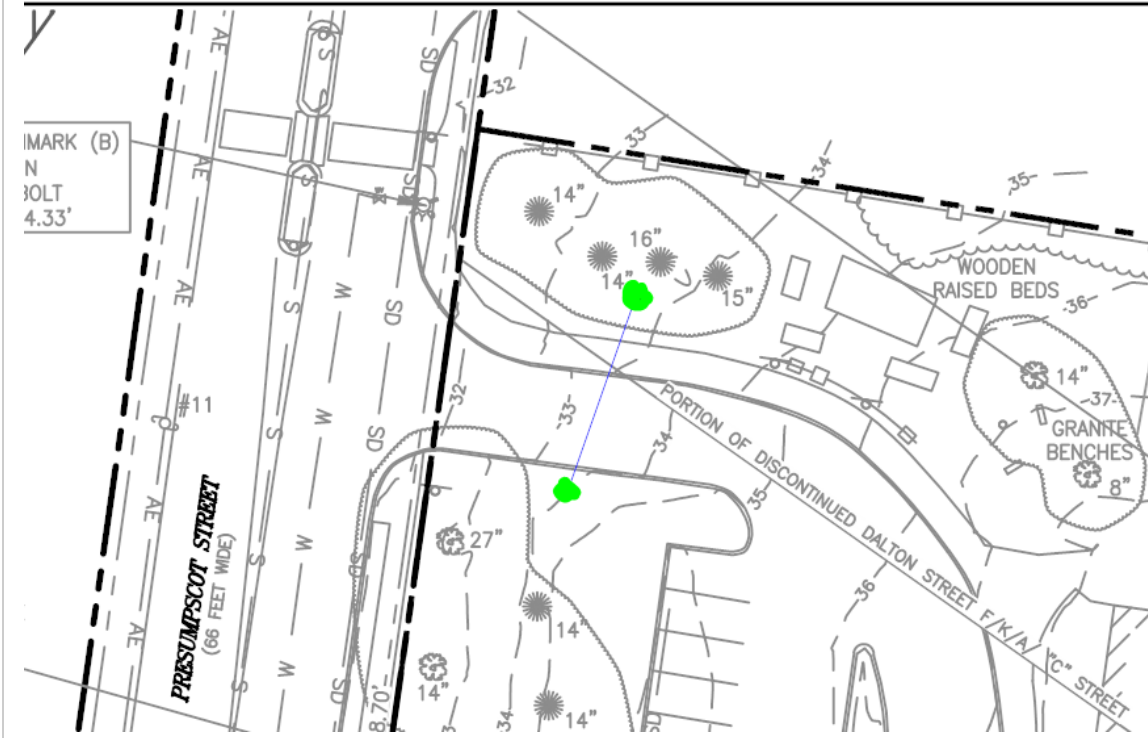
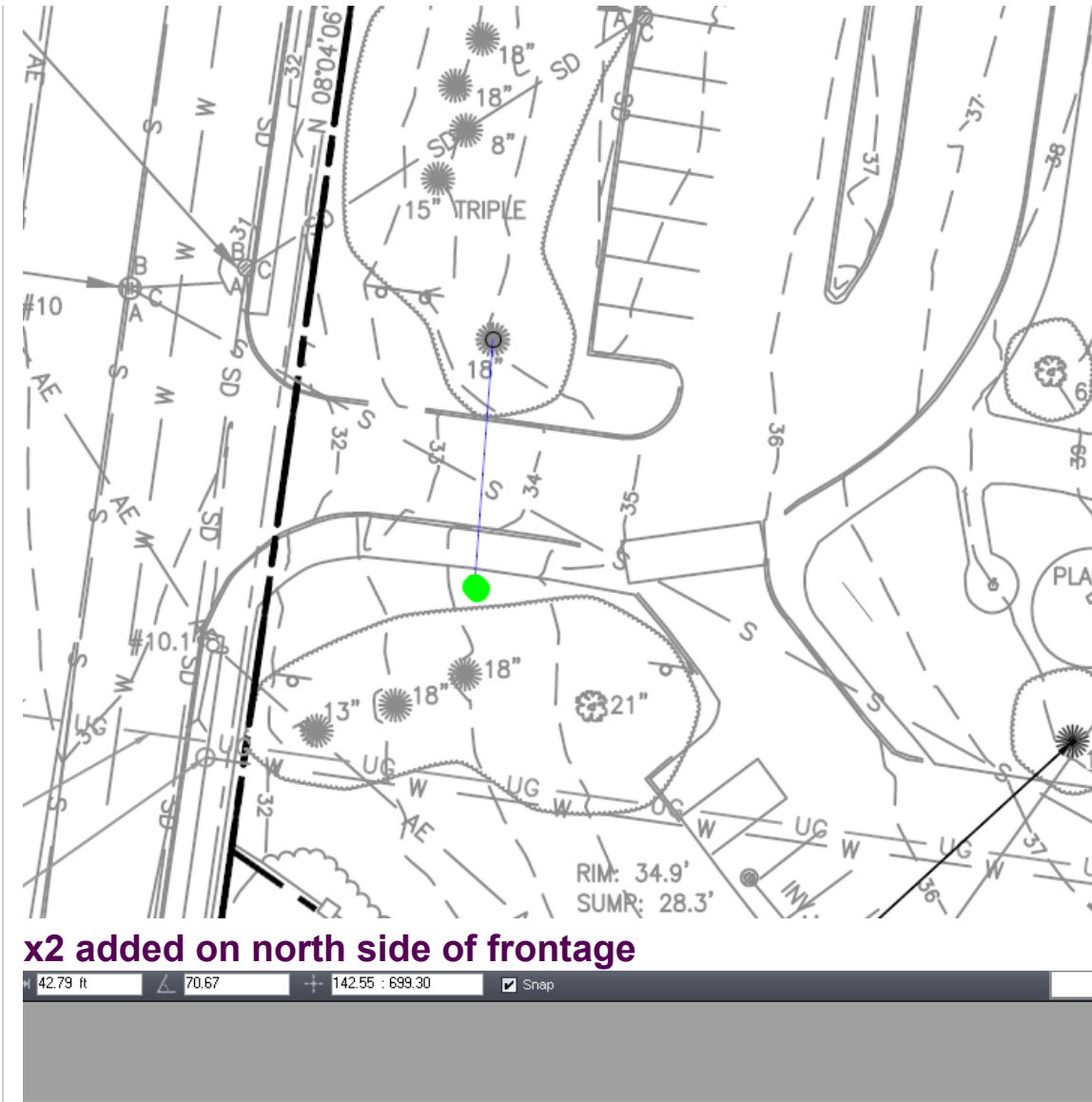
below) I think this means the applicant will need a waiver unless they plant about 3 trees to achieve this 45' apart rule.

Ex. image showing 63 feet in distance between trees separated by drive width



In order for the applicant to avoid needing a waiver, do you recommend adding 3 trees in the frontage (somewhere) to complete the uninterrupted 45' apart requirement? Below are locations I'm putting out there for your consideration, which are about 45' away from the next tree.

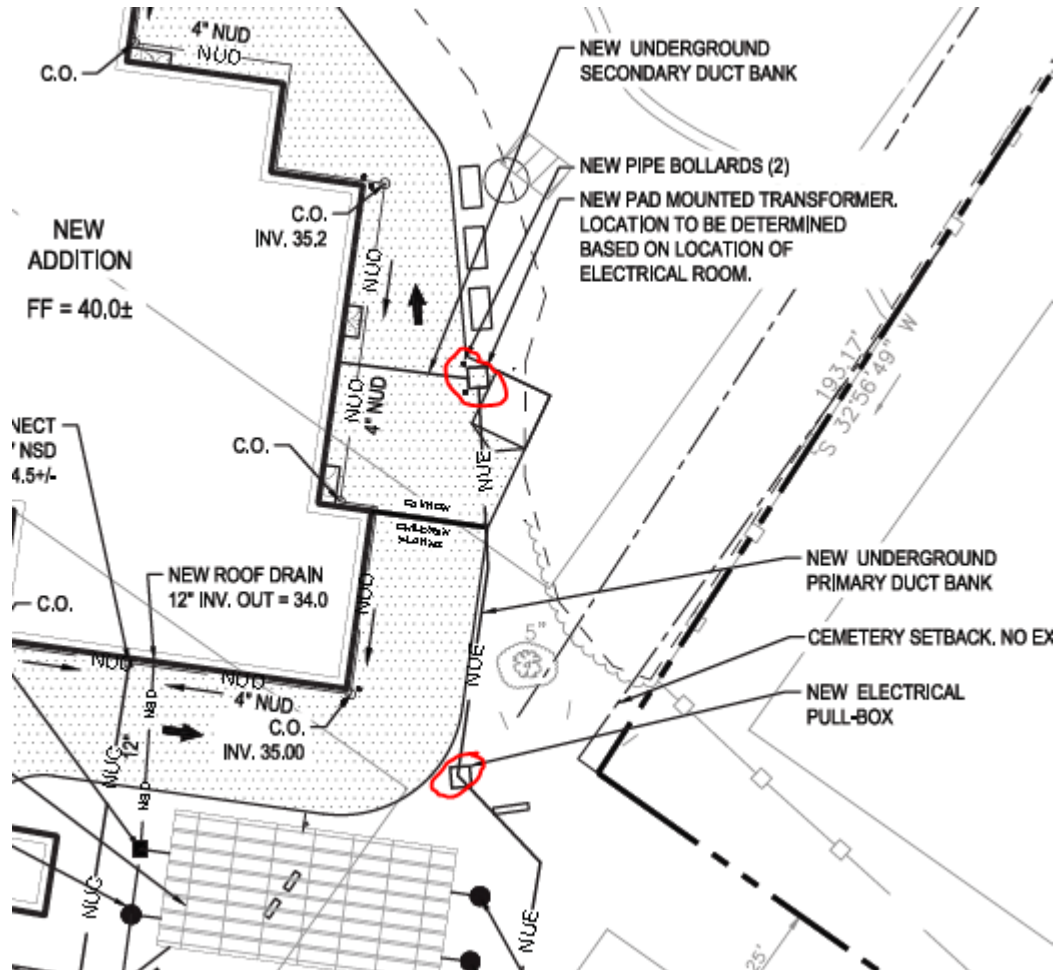
x1 added to south side of frontage



On Mon, Feb 15, 2021 at 6:41 PM Jimmy Dealaman

<jdealaman@portlandmaine.gov> wrote:

Hi Jeff, also, I'm not sure if the location of the electrical transformer now also circled in image below will change, but wondering your thoughts about screening that as well.



On Mon, Feb 15, 2021 at 3:34 PM Jimmy Dealaman

<jdealaman@portlandmaine.gov> wrote:

Hi Jeff,

I'm hoping to also touch early this week about 69 Presumpscot for some comments to include in my report. Again we toured this site back on November 30th. To recap, they're removing 9 trees outside the required setback (not triggering any requirements but are planting 15 trees. So any comments you have about the placement would be appreciated for the board and/or applicant.

Looking back at my notes there was one big question I had about the understory planting requirement which requires the project to have 41

shrubs. Unfortunately the planting plan doesn't really show an actual # of shrubs and instead more of an area (is this OK)?

Do you think the proposed combination of deciduous, evergreen, groundcovers (if we can count those) on site can be counted to fully satisfy this requirement of 41 shrubs? Or what is shown combined with the existing vegetation on the site perhaps? I will reach out to the applicant to get an updated planting plan. But in the meantime is an attached original planting plan. This should still be what's intended for the front anyways - a majority of plantings. The dumpster will change locations and be fenced in for screening as you will see on the updated site plan.

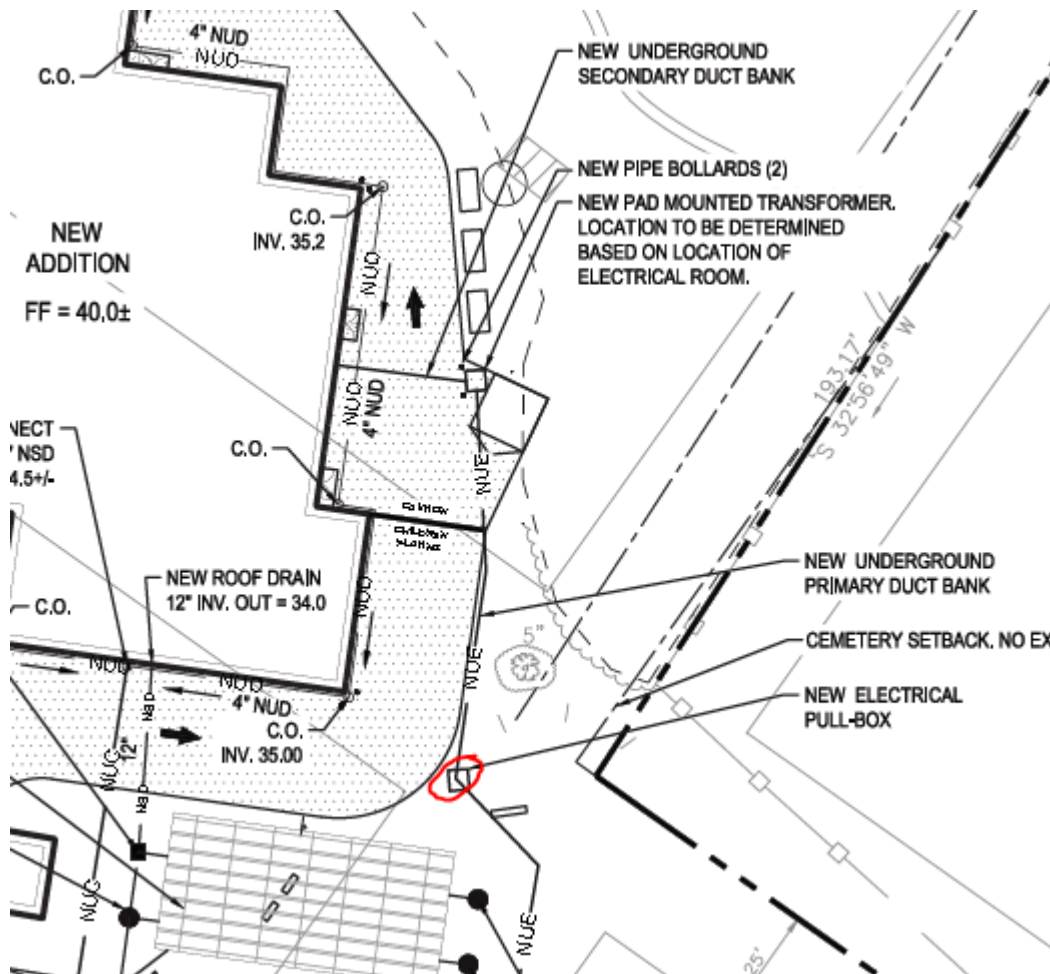


Also, they appear to be planting 15 trees (see screenshot below) what are your thoughts on these?

PLANT LEGEND

SHADE TREES		SIZE	NOTES	QTY
	Existing Tree to Remain Preserve and Protect in Place			Verify in Field
	Acer rubrum 'Redpointe' Red Maple variety	2.0" - 2.5" Cal.	Zone: 3 CPRTL	1
	Acer x freemanii 'Armstrong' Freeman Maple (Fastigate)	2.0" - 2.5" Cal.	Zone: 3	2
	Carpinus caroliniana American Hornbeam	2.0" - 2.5" Cal.	Zone: 3a CPRTL	2
	Ginkgo biloba 'Princeton Sentry' Maidenhair Tree (Male only)	2.0" - 2.5" Cal.	Zone: 3 CPRTL	--
ORNAMENTAL TREES		SIZE	NOTES	QTY
	Amelanchier arborea Downey Serviceberry	1.5" - 2.0" Cal.	Zone: 4 CPRTL	1
	Malus Snowdrift Snowdrift Crabapple	1.5" - 2.0" Cal.	Zone: 4 CPRTL	1
CONIFER TREES		SIZE	NOTES	QTY
	Picea omorika Serbian Spruce	14' - 16'	Zone: 4 CPRTL	1
	Thuja occidentalis Eastern Arborvitae	8' - 10'	Zone: 2	7

I do plan to have them show what screening they intend for a utility box at the rear of the property which is only shown on the updated Utility plan. Any recommendations on type of planting to screen this?



Thanks for any feedback!

Attachments:

- Planing Plan and Details** (what was originally submitted - will obtain updated version and resend)
- Existing Conditions Plan** (this plan has been updated to show a line of clearing and to coordinate with City Arborist)
- Site Layout Plan** (this plan has been updated)
- Site Utility Plan** (this plan has been updated)

On Thu, Oct 29, 2020 at 11:36 AM Jeff Tarling <jst@portlandmaine.gov> wrote:

Hi James -

The tree removal proposed looks fine, the large triple stem Oak has a defect and we considered removal in the future.

We do have a landscape question in regards to the number of plants and varieties... we typically like to see groves of plant types vs lots of different types. I would like to meet with the project landscape person to go over these details as some of the spec's are not up to current standards and the tree sizes incorrect, for example the Serbian Spruce, shown at 14' to 16' is way too big to move ! There are a lot of perennial plantings as well that typically in school grounds do not fare well, groundcover might be better suited.

Can we review with them?

Thanks

Jeff

This is a start in regards to current landscape details -

<https://www.isa-arbor.com/education/onlineresources/cadplanningspecifications>

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

On Wed, Oct 28, 2020 at 1:47 PM James Dealaman
<jdealaman@portlandmaine.gov> wrote:

Hi Jeff,

Trying to get caught up on comments - so many projects!

Could you possibly get eyes on the attached landscape plan this week? It appears they are removing the following trees (highlighted in screenshots below).

Also, there are three that are over 10" caliber removed are as follows:

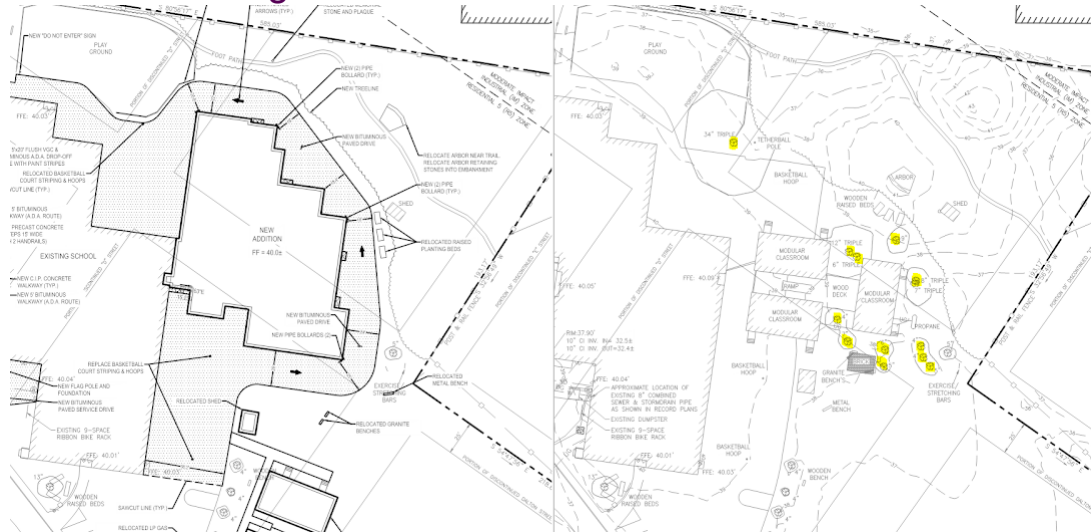
Trees Removed

34" Triple

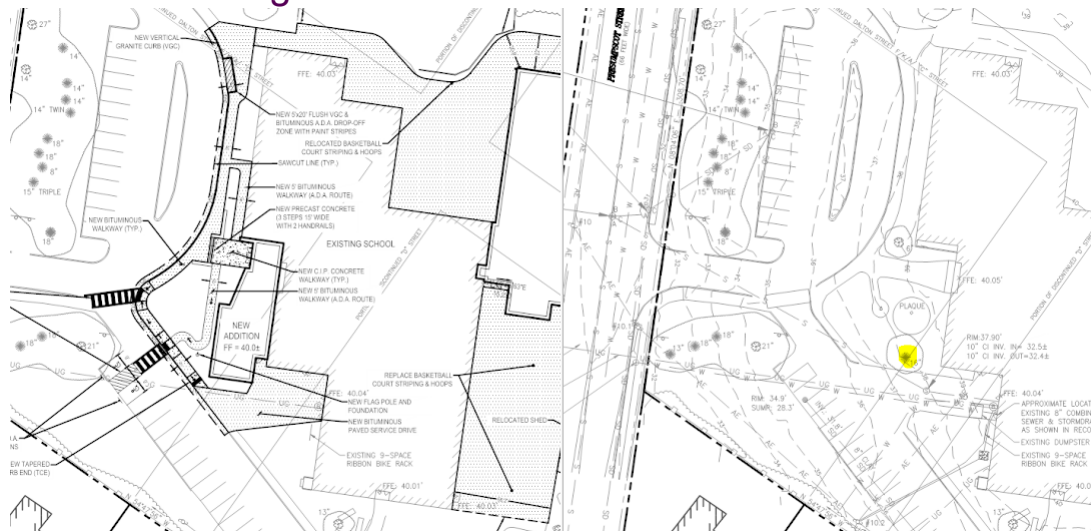
12" Triple

16" Unknown

Rear of Building



Front of building



--

Jimmy Dealaman, Planner
Planning and Urban Development Department
City Hall, 389 Congress Street, 4th Floor
Portland, Maine 04101
(207) 874-8718 (T)
(207) 756-8258 (F)
jdealaman@portlandmaine.gov

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jdealaman@portlandmaine.gov



Jimmy Dealaman <jdealaman@portlandmaine.gov>

69 Presumpscot Street

Lauren Swett <lswett@woodardcurran.com>

Fri, Feb 12, 2021 at 10:22 AM

To: Jimmy Dealaman <jdealaman@portlandmaine.gov>

Hi Jimmy,

My comments for 69 Presumpscot are below. Generally the same comments, but their stormwater system looks OK for the redevelopment standard here.

- The project is required to provide for stormwater management in compliance with the Maine DEP Chapter 500 and Section 5 of the City of Portland's Technical Manual. This project is specifically a redevelopment project, and the impacted area doesn't meet the threshold for a DEP permit, but is required to meet the City's standards. I think there's a bit of confusion on what is required for the redevelopment standard that I'll get into below.
 - Basic Standard – The project is providing for adequate erosion and sedimentation control on their plans.
 - Flooding Standard – The project does result in small increases in stormwater flow at some locations. At Watershed Analysis Points 3, 4, and 5, the increases are less than a tenth of a CFS, and are not to closed drainage systems, and the increase is insignificant. The increase at the Watershed Analysis Point 1 however should be confirmed with Water Resources as this drains to the City's infrastructure in Presumpscot Street.
 - Redevelopment/General Standard – The project does not meet the thresholds for a MaineDEP stormwater project so it is required to provide stormwater treatment in accordance with the City's Redevelopment standard. This requires treatment of 50% of any non-roof redeveloped impervious area proposed as part of the project, with the goal of providing treatment for the areas of the site that have greater pollution. If site layout is such that they can't provide treatment of the newly redeveloped impervious surface, we've also allowed for treatment of existing impervious surface as well. In looking at their proposed system, their non-roof impervious redeveloped area appears totals 10,110 SF.

The treatment system treats 2,110 SF of newly created non-roof impervious surface, and 3,370 SF of existing impervious surface. This would be acceptable to meet the requirement, and in addition the system has also been sized to treat the roof, and other non-impervious areas, also likely helping to meet the Flooding Standard.

- The subsurface sand filter is not shown with an impervious liner. If this type of system is to be used, the applicant should confirm the groundwater and bedrock depth in the area. If there is groundwater or bedrock, an impervious liner should be added to the proposed nonwoven geotextile fabric lining.
- Additional information should be provided on the proposed portables. The area where the portables are proposed is relatively flat, and only minor grading is proposed, however no utilities have been proposed to the buildings. The impact of the portables on the existing condition of the site should be shown, and if they are intended to be temporary, the plan should identify how the site will be restored following removal of the portables.

Let me know if you have any questions.

Thanks,

Lauren

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

Lauren Swett, P.E.*

Technical Manager

Woodard & Curran

41 Hutchins Drive

Portland, Maine 04102

Phone: (207)558-3763 (direct)

(207)219-3591 (cell)

(800)426-4262 (office)

Email: lswett@woodardcurran.com

*Licensed in Maine and Wisconsin

Commitment & Integrity Drive Results

www.woodardcurran.com

M.ASCE

Chair, Leader Training Committee

American Society of Civil Engineers

<http://regions.asce.org/leader-training-committee/>



Jimmy Dealaman <jdealaman@portlandmaine.gov>

Reviewer Comments Needed - 69 Presumpscot Street

Jimmy Dealaman <jdealaman@portlandmaine.gov> Fri, Mar 5, 2021 at 8:46 AM
To: Jimmy Dealaman <jdealaman@portlandmaine.gov>

----- Forwarded message -----

From: **Tom Errico** <thomas.errico@tylin.com>

Date: Thu, Mar 4, 2021 at 6:31 PM

Subject: RE: Reviewer Comments Needed - 69 Presumpscot Street

To: Jimmy Dealaman <jdealaman@portlandmaine.gov>, Michael Tremblay
<mtremblay@portlandmaine.gov>

Hi Jimmy – I suspect Mike will provide most of the comments but here are some thoughts from me:

- The Fire Truck turning template looks fine (it is tight on some building corners) and trucks can avoid the basketball posts. My question, which may have been noted previously, is will all fire trucks accessing the rear of the building arrive from E Street? The template assumes this, and FD should confirm this is acceptable.
- I think a condition of approval that requires upgrading the sidewalk from the bus drop off to the building makes sense.
- I would suggest that a turning template for truck movements at the side service area be provided, particularly as it relates to the one-way circulation system and avoiding opposite flow movements.
- I do think they attempt to address the potential conflict between delivery vehicles circulating around the building and students playing. This activity should be managed.

Thanks

3/5/2021

City of Portland Mail - Reviewer Comments Needed - 69 Presumpscot Street

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PROJECT SUMMARY

PRESUMPCOT ELEMENTARY SCHOOL ADDITIONS AND RENOVATIONS SITE PLAN LEVEL III REVIEW AND CONDITIONAL USE

August 2020

The single-story Presumpscot Elementary School, at 69 Presumpscot Street in Portland, is proposed to have two building additions, together with major renovations, to enhance the available facilities for the current student population. The purpose of the project is to transform the elementary school into a 21st century center of learning, update the security and fire safety systems, and preserve the 'neighborhood school', ensuring the children stay connected to their local community.

The school, located near the intersection of Presumpscot Street and Sherwood Street, consists of the main building and three detached, portable buildings at the rear of the main building, each housing two classrooms. The portables were installed in 2006, and are connected by a raised wood deck/ramp that doubles as an outdoor classroom. The portables will be relocated on-site for the construction duration, but will be removed from the site after the new additions are completed.

For many years, the school has been operating at an enrollment that requires the portable classroom units to accommodate the student population. In addition to these chronic capacity issues, the building lacks appropriately sized classrooms and Special Education (SpEd) spaces. Many of the rooms support multiple programs. Set-up time, scheduling and disruptions/distractions compromise these educational programs.

Currently there are approximately 275 students and 42 staff. No additional students or staff are anticipated, due to these facility improvements. The major building addition includes a cafeteria and classrooms, of approximately 15,750 sq.ft. ground area, placed behind the existing building. An Administration addition and new security vestibule, of approximately 2,160 sq.ft. ground area, will also be added to the front entry area of the existing building.

Paved drives, parking, and play areas surrounding the existing school will remain, where they are not disturbed by the construction of the new additions. Any paved areas that are disturbed will be fully reconstructed with new gravel base and bituminous pavement. The current 50 parking spaces in four small lots around the building will remain, including 2 ADA-accessible spaces. The fire lane drive around the north and east sides of the building will be relocated around the new Cafeteria/classroom addition.

A new storm drainage collection and treatment system will be installed to capture and treat the rainfall from the large addition to the east side of the school, together with some of the new and existing paved areas. A subsurface chamber sand filter will be installed utilizing 64 plastic stormwater chambers in a crushed stone bed, beneath the outdoor play area south of the building addition. The stormwater will be detained in the chambers and stone bed, and filtered down through the underlying sand filter. Once cleaned, the discharge water will be channeled through a buried storm drain pipe to discharge into the woods behind the grass playfield.



25. HISTORIC RESOURCES

Historic Resources – (14-526 (d) 5)

- The proposed new single-story Cafeteria and Classroom building addition to the Presumpscot Elementary School will be constructed partially within the Historic Landscape “Presumpscot School” zone playfield adjacent to the historic “Grand Trunk Cemetery”, as shown on the attached Historic Landscape Overlay Plan HL-1. There will be no disturbance to the cemetery, which is outside the property line of the Portland Public Schools. Permanent construction within the “Presumpscot School” playfield zone consists of approximately 1,620 sq.ft. of the school building addition and approximately 2,160 sq.ft. of bituminous paved fire lane. Temporary construction within the playfield zone will be relocation of the three modular classroom buildings and their wood stairs and ramps, covering an area of approximately 9,600 sq.ft. These three classroom buildings and their accessories will be fully removed after the new building construction is occupied. The disturbed area will then be returned to a grassed playfield. The remainder of the grassed playfield will continue to be useable for recreation during and after construction.
- A Certificate of Appropriateness is hereby requested.
- A small portion of the Cafeteria and Classroom building addition will be within 100’ of the Historic Landscape of the “Grand Trunk Cemetery”. The cemetery property will not be disturbed by this construction project.
- No archeological resources are known to exist on the Presumpscot Elementary School site.



HARRIMAN

PRESUMPCOT
ELEMENTARY SCHOOL

PORTLAND, MAINE	
Harriman Project No.	19151
Key Plan	Proj North

PLANNING BOARD
SEPTEMBER 16, 2020

Rev Date	Revision Description

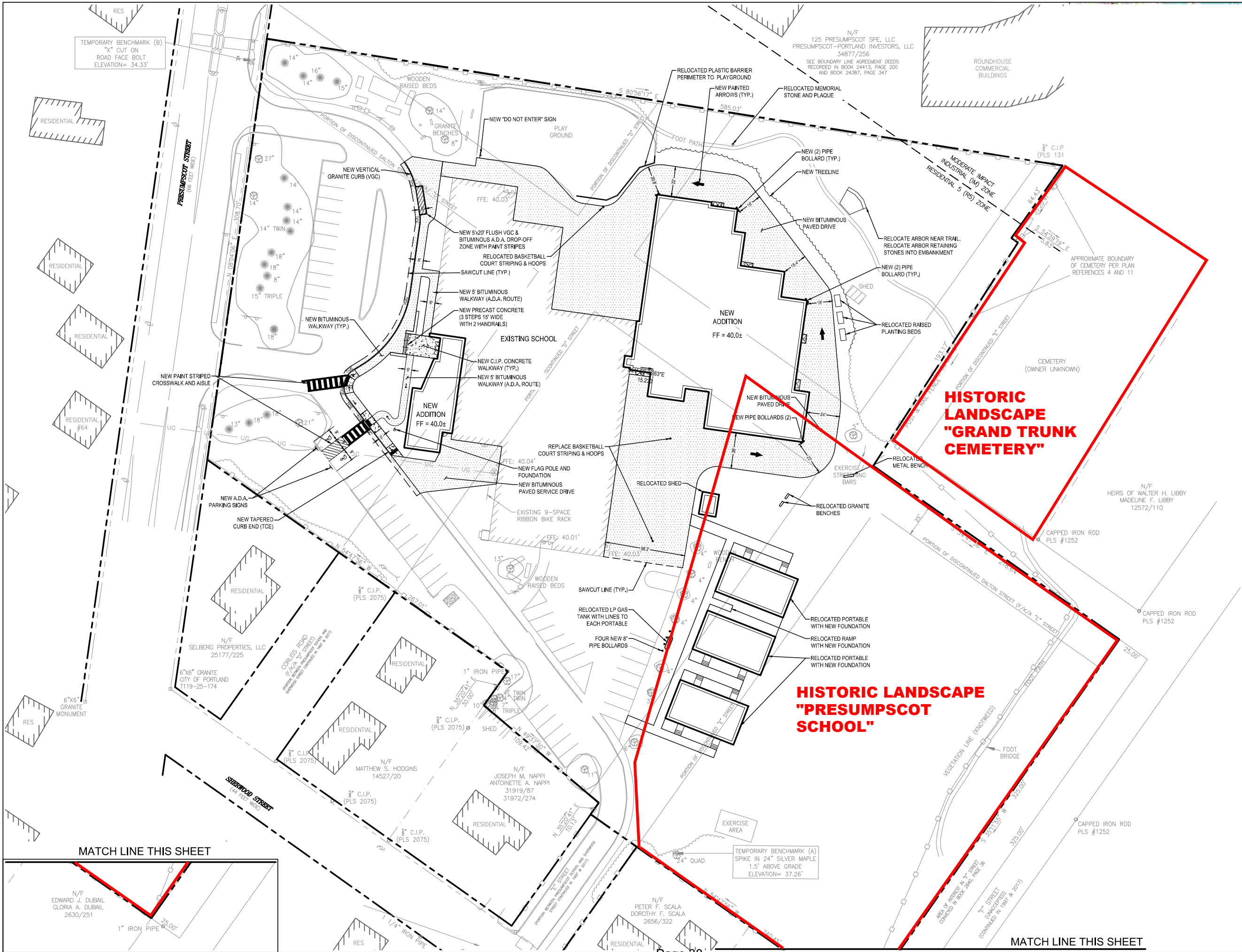
PRELIMINARY
NOT FOR
CONSTRUCTION

Drawing Scales	0 15' 30'
1" = 30'	

PA / PE:	FLC	© 2020
Drawn By:	BAW / HAS	Harriman Associates

HISTORIC
LANDSCAPE
OVERLAY PLAN

HL-1





2a. RIGHT, TITLE, & INTEREST

A deed for the Presumpscot Elementary School property is attached.

Know All Men by These Presents,

That WE, FRANCIS C. LAPPIN and ANNE M. LAPPIN, both of Portland in the County of Cumberland and State of Maine,

Lappin &

to

Portland
City of

War

in consideration of Four Hundred (\$400.00) Dollars

paid by the CITY OF PORTLAND, a body politic and corporate, located in said County and State,

the receipt whereof we do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said CITY OF PORTLAND, its successors

and assigns forever, ~~the following described premises~~

a certain lot or parcel of land situated on the easterly side of a proposed street, known as Corliss Road, which proposed street runs in a northeasterly direction from Sherwood Street in the City of Portland and being lot no. 74 as shown on a plan known as "Plan of Land Located in East Deering, Maine, formerly owned by Mary S. Lunt", said plan being recorded in the Cumberland County Registry of Deeds in Plan Book 2, Page 51, also in Plan Book 8, Page 91.

Also all right, title, and interest, if any, of the said Francis C. Lappin and Anne M. Lappin in and to so much of Corliss Road (shown on said plan as "D" Street) as lies adjacent to the above described lot.

Said above described lot being one of the four lots conveyed to Francis C. Lappin and Anne M. Lappin by deed from Effie F. Graffam dated May 5, 1952 and recorded in said Registry of Deeds in Book 2085, Page 113.



\$.55

On have and in hold the aforegranted and bargained premises with all the 213
privileges and appurtenances thereof, to the said CITY OF PORTLAND,

its successors

~~WIFE~~ and assigns, to it and their use and behoof forever.

And we do covenant with the said Grantee ^{its successors} / ~~WIFE~~ and assigns,
that we are lawfully seized in fee of the premises, that they are
free of all incumbrances;

that we have good right to sell and convey the same to the said
Grantee to hold as aforesaid; and that we and our heirs
shall and will Warrant and Defend the same to the said Grantee ,
^{its successors}
~~WIFE~~ and assigns forever, against the lawful claims and demands of
all persons.

In Witness Whereof, we the said Francis C. Lappin and Anne M. Lappin,
being husband and wife,

~~WIFE~~

~~WIFE~~ of ~~the~~ ~~WIFE~~

joining in this deed as Grantors, and
relinquishing and conveying our right by descent and all other
rights in the above described premises, have hereunto set our
hands and seals this nineteenth day of ~~August~~ December
in the year of our Lord one thousand nine hundred and sixty-one.

Signed, Sealed and Delivered
in presence of

John D. Monahan
John D. Monahan

Francis C. Lappin
Anne M. Lappin



State of Maine.

CUMBERLAND

ss. December 19 19 61.

Personally appeared the above named

Francis C. Lappin and Anne M. Lappin

and acknowledged the foregoing instrument
to be their free act and deed.

Before me,

John D. Monahan

Justice of the Peace

DEC 20 1961

REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE

Received at 11 H 10 M A M, and recorded in

BOOK 2650 .PAGE 212

Edward P. Thayer

Register

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2b. EASEMENTS

One existing easement is listed on the enclosed Existing Conditions and Boundary Survey, by Titcomb Associates, dated June 25, 2020. The description is an access easement to the Cemetery parcel to the east abutting the school site, through a discontinued City street (Dalton or 'C' Street). The proposed building

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Portland Water District

FROM SEBAGO LAKE TO CASCO BAY

September 22, 2020

Richard O. Marchessault
HARRIMAN

Re: 69 Presumpscot Street, PO
Ability to Serve with PWD Water

Dear Mr. Marchessault:

The Portland Water District has received your request for an Ability to Serve Determination for the noted site submitted on September 1, 2020. Based on the information provided and per the Approved as Noted plan dated September 22, 2020, 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 constitutes approval of the water system as currently designed and is valid for eighteen (18) months after the date of issue. Any changes affecting the approved water system will require further review and approval by PWD.**

Conditions of Service

The following conditions of service apply:

- A new 6-inch fire service may be installed from the water main in Presumpscot Street. The service should enter through the properties frontage on Presumpscot Street at least 10-feet from any side property lines.
- Our records show that the property is currently served with a 2.25-inch domestic water service with a 2-inch meter. The existing service line and meter at this site may be used to provide domestic water to the building.
- An approved backflow prevention device must be installed on the fire service line before the sprinkler riser prior to service activation. Please refer to the PWD website for more information on cross-connection control policies.
- The Portland Water District does not have record of any other existing infrastructure in public roads and recommends a survey and test pitting be performed by the development team prior to construction. Any conflicts that arise during construction are at the risk of the developer and may result in job shutdown until new plans are submitted by the developer and reviewed and approved by PWD.

Prior to construction, the owner or contractor will need to make an appointment to complete a service application form and pay all necessary fees. The appointment shall be requested through MEANS@pwd.org or by calling 207-774-5961 ext. 3199. Please allow (3) business days to process the service application paperwork. PWD will guide the applicant through the new development process during the appointment.



Existing Site Service

According to District records, the project site does currently have existing water service. A 2.25-inch diameter cast iron domestic service line provides water service to the site. Please refer to the “Conditions of Service” section of this letter for requirements related to the use of this service.

Water System Characteristics

According to District records, there is an 8-inch diameter cast iron water main in Presumpscot Street and a public fire hydrant located adjacent to the site. The most recent static pressure reading was 96 psi.

Public Fire Protection

The installation of new public hydrants to be accepted into the District water system will most likely not be required. It is your responsibility to contact the City of Portland Fire Department to ensure that this project is adequately served by existing and/or proposed hydrants.

Domestic Water Needs

The data noted above indicates there should be adequate pressure and volume of water to serve the domestic water needs of your proposed project. Based on the high water pressure in this area, we recommend that you consider the installation of pressure reducing devices that comply with state plumbing codes.

Private Fire Protection Water Needs

You have indicated that this project will require water service to provide private fire protection to the site. Please note that the District does not guarantee any quantity of water or pressure through a fire protection service. Please share these results with your sprinkler system designer so that they can design the fire protection system to best fit the noted conditions. If the data is out of date or insufficient for their needs, please contact MEANS to request a hydrant flow test and we will work with you to get more complete data.

Should you disagree with this determination, you may request a review by the District’s Internal Review Team. Your request for review must be in writing and state the reason for your disagreement with the determination. The request must be sent to MEANS@PWD.org or mailed to 225 Douglass Street, Portland Maine, 04104 c/o MEANS. The Internal Review Team will undertake review as requested within 2 weeks of receipt of a request for review.

If the District can be of further assistance in this matter, please let us know.

Sincerely,
Portland Water District



Robert A. Bartels, P.E.
Senior Project Engineer



4. ZONING ASSESSMENT

The Presumpscot Elementary School is in the R5 Zone. Schools are a Conditional Use in the R5 residential zone.

The Zoning Analysis Table is attached.



ZONING ANALYSIS Relevant Zone(s) R5 Residential

All Projects:

	Required	Proposed
Lot Size	30,000 sq.ft.	273,556 sq.ft.
Area Per Dwelling Unit	NA	NA
Minimum Street Frontage	50 ft.	308 ft.
Front Yard Minimum	20 ft.	140 ft.
Front Yard Maximum	NA	NA
Rear Yard	20 ft.	60 ft.
Yard Right	8 ft.	90 ft.
Yard Left	8 ft.	65 ft.
Side Street Setback	NA	NA
Step Back	NA	NA
Maximum Lot Coverage	40%	16%
Minimum Lot Coverage	NA	NA
Maximum Height	35 ft.	24 ft.
Open Space	6,000 sq.ft.	164,000 sq.ft.
Maximum Impervious Area	NA	NA
Pavement Setback	NA	NA
Floor Area Ratio	NA	NA
Off Street Parking Spaces	NA	NA
Loading Bays	NA	NA
Other 1		
Other 2		
Other 3		



CITY OF PORTLAND
Department of Public Works
Christopher C. Branch, P.E., Director

Date: September 30, 2020

Re: Wastewater Capacity Authorization

Address: 69 Presumpscot Street

Applicant: Portland Public Schools – Frank Crabtree, Harriman Assoc.

Planner: James Dealman

Anticipated Wastewater Flow:

Estimate of Anticipated Design Flows				
Development	Unit Size	Number of Units	Gallons per Day per Unit	Total Gallons per Day
Existing Flows to Remain				
School with Cafeteria	# Employees	42	12 GPD/Employee	504
School with Cafeteria	# Students	275	13 GPD/Student	3575
Proposed Additional Flows				
School with Cafeteria	# Employees	0	12 GPD/Employee	0
School with Cafeteria	# Employees	0	13 GPD/Student	
Net Change				+ 0
*Values based on STATE OF MAINE: SUBSURFACE WASTEWATER DISPOSAL RULES, most recent edition				

Comments:

The Department of Public Works, which includes the Water Resource Division, have reviewed and determined that the downstream sewers from the project address have the capacity to convey the estimated dry weather wastewater flows which will be generated from this development. It has been identified there will be no additions to the existing flows.

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

Sincerely,

CITY OF PORTLAND

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



6. FINANCIAL CAPABILITY

Portland Public Schools has furnished the attached Statement of Financial Capacity for the Presumpscot Elementary School additions and renovations.



PORTLAND PUBLIC SCHOOLS
prepared & empowered

Portland Public Schools
Executive Director of Budget & Finance 353
Cumberland Avenue
Portland, Maine 04101
September 9, 2020

The City of Portland Planning and Transportation Division
389 Congress Street
Portland, Maine 04101

Statement of Financial Capacity: The City of Portland, Portland Public Schools, and the Presumpscot Elementary School Renovation Project has available the sum of \$13,000,000 as of this date. We confirm that these funds are entirely free of any liens, debts and/or encumbrances and are available in the form of City of Portland General Obligation Bonds. Should you require verification of the above-mentioned funds, please contact me at your convenience.

Respectfully,

Miranda Fagulo
Portland Public Schools

Executive Director of Budget & Finance



December 11, 2020

James Dealaman, Planner
Planning and Urban Development Department
City Hall, 389 Congress Street, 4th Floor
Portland, Maine 04101

Re: Presumpscot Elementary School Additions
69 Presumpscot Street
Portland, ME
No. 19151
Response to Comments, dated 11-23-20

Dear Jim,

Thank you for providing these comments for review. I am responding to them in their original bulleted order since they are not numbered. I am however, assigning numbers to track them more easily. Please let me know if you have any further questions.

Submittal Requirements:

1. Distances from the new building additions to the front, rear, and both side property lines have been added to drawing C00-1 Site Layout Plan.
2. The intersection of Presumpscot Street and Sherwood Street has been completed on drawing C00-1 Site Layout Plan.
3. Corliss Road and E Street are both shown on drawing C00-1 Site Layout Plan, but I am not sure where 'Shaw Road' is located. The three school driveway entrances have also been noted.
4. Being all flat-roof building wings, both existing and proposed, the snow does not fall off the roof, but slowly melts and flows down the roof drain pipes into the storm sewer. On the rare occasion that it is deemed necessary, the School Department will hire a roofing contractor to carefully shovel or scoop the snow from the roof to the ground in designated areas. Then the hired snow removal contractor will remove the snow from the site, using a bucket-loader and dump trucks.
5. Section 17 discusses Public Safety and Fire Prevention. The School Department has emergency response procedures for every anticipated event. The attached Fire response page appears on the School Department website.
6. The existing fire hydrants located on Presumpscot Street are shown on drawing C00-1 Site Layout Plan.

AUBURN

BOSTON

PORTLAND

PORTSMOUTH

harriman.com



James Dealaman, Planner
December 11, 2020
Page 2 of 4

7. The existing dumpster in front of the existing building will be removed and relocated in a new fenced dumpster enclosure to the rear of the school, near the new kitchen, and be screened by solid fence webbing. The fenced enclosure will be large enough to accommodate a recycling container also.
8. Two outside HVAC or mechanical units were noted to be placed on the existing building roof and the front Administrative addition roof. Two additional small condensing fan units 2.5' tall by 3' wide have been added to the new Cafeteria addition roof.
9. The drawn square at the end of E Street is a short painted crosswalk, as shown in better detail on drawing C00-1 Site Layout Plan.
10. Yes, the Portland Water District had sent the attached Ability to Serve letter in September.

Access and Circulation:

11. Deliveries are currently dropped-off in the front service area. Following completion of the building additions, deliveries will primarily be dropped-off at the kitchen doorway at the rear of the new large building addition. Deliveries are often early in the morning, prior to school opening; however, occasional deliveries may occur at various times of the day.
12. The 9' wide accessible parking space next to the 9' wide cross-hatched loading area makes the spaces "van-accessible".
13. The single school bus travels down Sherwood Street and drops students off on the E-Street sidewalk leading to the school. The bus does not drive onto the school campus.
14. The parent cars enter the southerly drive from Presumpscot Street and turn left in-front of the school to the car drop-off drive or visitor parking lot, then exit onto Presumpscot Street through the northerly driveway. There is only one school bus, which typically does not enter the site, so the queuing is not a significant problem.
15. The Portland Presumpscot School Trail starts at the northern playground and runs through the wooded area to the Cemetery site. A note has been placed on drawing C00-1 Site Layout Plan to coordinate with the Portland Trails representative.

Other:

16. The setback lines have been shown on drawing C00-1 Site Layout Plan.
17. On the rare occasion that it is deemed necessary, the School Department will hire a roofing contractor to carefully shovel or scoop the snow from the roof to the ground in designated areas. Then the hired snow removal contractor will remove the snow from the site, using a bucket-loader and dump trucks.



Landscaping and Landscape Preservation:

18. A site visit with the Harriman landscape architect and civil engineer was conducted on Monday November 30, 2020 by Jeff Tarling, City Arborist and Jim Dealaman, City Planner. Also attending were Steve Stilphen of the School Department; Angela Taylor, School Principal; Dave Morrill, City Maintenance; and Mike Tremblay, Public Works. Many items of landscaping, preservation, and site planning were discussed.
19. A new pad-mounted transformer will be placed behind the new school addition, and will be screened from view by the school building to the west, existing woods to the north and east, and a new enclosed and screened fenced dumpster enclosure to the south. No additional plantings are needed near the transformer.
20. A Neighborhood Meeting was held for the Level III Site Plan Review on October 21, 2020 at 8:00 pm. None of the neighbors requested any additional plantings.
21. The tree-clearing limits are shown as no more than necessary for the required paved fire lane and embankment grading slopes.
22. Trees to be removed that are 10" diameter or larger have been added to drawing C10-1 Existing Conditions Plan.
23. The additional Conditional Use standards of 14-118 have been added to the attached Revised Conditional Use Standards exhibit #24.
24. A list of existing and proposed parking spaces has been added to the drawing C00-1 Site Layout Plan, along with notations for staff parking areas.

Related to General Conditional Use Standards (Section 14-474):

25. The paved fire lane serves multiple functions for the elementary school. The doors along the paved perimeter of the new addition may be used for exit and entry to the playgrounds. School staff monitors the movement of students in and out of all doors of the building.
26. The fire lane will be open for access for delivery vehicles and will not be gated. Signs and paint striping will be provided to caution drivers about the potential of children playing in the area.
27. The Portland Presumpscot School Trail starts at the northern playground and runs through the wooded area to the Cemetery site. This is part of the Portland Trails system.
28. The two larger rooftop HVAC/mechanical units are approximately 4.5' tall and 6' tall and set back away from the roof edge. There is no plan to provide added screening of these two individual units.
29. The first school employee arrives on weekdays at 6:30 am and the last employee closes the building at 10:00 pm.



James Dealaman, Planner
December 11, 2020
Page 4 of 4

CPTED / Lighting:

30. There are currently two street lights/spotlights in Presumpscot Street that light the front school parking lot. Building-mounted lights help light this lot as well as other parking areas around the building. The school principal has stated that the existing parking is sufficiently lit. The last employee leaves the building at 10:00 pm.
31. No additional site lighting poles are proposed. The proposed building-mounted exterior light fixture catalogue sheets were included in Section 20 Exterior Lighting of the initial submission.

Public Safety:

32. During design of the first of the four renovated schools, Lyseth Elementary School in 2018, the City Fire Chief furnished the required fire truck size/configuration for turning movement studies. A copy of that e-mail and truck dimensional sheet is attached.

We trust these noted revisions and revised documents address all the concerns. Let us know if you need any further documentation.

Thank you very much.

Sincerely,
Harriman

Frank L. Crabtree, P.E., LEED AP BD+C
Associate
fcrabtree@harriman.com

Enclosures: Revised Drawings and Reference Documents



7. TECHNICAL CAPABILITY

Portland Public Schools are managed by experienced staff who currently care for the physical and financial needs of the Presumpscot Elementary School, together with many other schools throughout the City of Portland.

Portland Public Schools engaged Harriman Architects and Engineers of Portland and Auburn, Maine, to design the building and site improvements to the Presumpscot Elementary School. Harriman is a full-service architectural/engineering firm with a 140- year history of successful consulting services. All architectural and engineering is being provided by Harriman employees.

Key personnel of Harriman include:

Mark Lee, AIA – Principle-in-Charge; Lisa Sawin, AIA – Project Manager/Lead Architect; Howard Snyder, ASLA – Landscape Architect; and Frank Crabtree, PE – Civil Engineer.

Key personnel resumes are attached.



EDUCATION

Boston Architectural College
Master of Architecture

Drexel University
Bachelor of Science in Civil Engineering
Bachelor of Science in
Architectural Engineering

REGISTRATIONS

ME, NH, MA, CT, NY
NCARB IDP Certification
EI

ACCREDITATIONS

Leadership in Energy and Environmental
Design Accredited Professional (LEEDAP)

Massachusetts Certified Public Purchasing Official
(MCPPO)

AFFILIATIONS

American Institute of Steel Construction Member
American Society of Civil Engineers, Member
Association of College & University
Housing Officers International, Member
U.S. Green Building Council
Society of College and University Planning

PRESENTATIONS

2010 - EACUBO Annual Meeting
"Attainable Goals: Breaking Down a
Long-Term Master Plan Can Help
Streamline Short-Term Decision Making"

2009 - ERAPPA Annual Conference "Attainable Goals:
Breaking Down a Master Plan"

2009 - Museum L-A Lecture Series, "Lewiston
Transforms: Adaptive Reuse of Architectural
Landmarks,"

2009 - Tri-State ASBO Conference, "How to Promote
and Organize A Successful School Construction
Project,"

2006 - Maine Library Association Annual Conference,
"Fryeburg Academy Library: A Collaborative Story,"

MARK D. LEE, AIA, LEED AP, MCPPO

PRINCIPAL, ARCHITECT

Mark D. Lee has experience in both structural engineering and architectural design, encompassing over 20 years and providing him a truly multidisciplinary perspective on building design.

Over the years, Mark has gained significant educational design experience on a variety of projects for public and private K-12 schools. Projects have included new construction, additions and renovations to existing facilities, as well as master plans and space/programming studies.

Before joining Harriman as an architectural designer, Mark was a structural engineering designer in Philadelphia and New York. In addition to working on projects with the Greater Philadelphia Transportation Authority, he has also worked on projects built in Indonesia and China. Mark has bachelor's degrees in both civil engineering and architectural engineering, as well as a master's degree in architecture.

RELEVANT EXPERIENCE:

Portland Public Schools – Portland, Maine

Lyseth Elementary School Addition and Renovations

Auburn School Department – Auburn, Maine

Planning, Design and Construction for new Edward Little High School

Beatrice Rafferty Elementary School – Perry, Maine

New Elementary School

South Portland School Department – South Portland, Maine

South Portland High School Addition and Renovations | Master Plan |
Secondary School Study

Camden Hills Regional High School – Rockport, Maine

New 800-Student School and 800-Seat Performing Arts Center

Biddeford High School – Biddeford, Maine

Addition and Renovations

Biddeford Middle School – Biddeford, Maine

New 780-Student School and 900-Seat Performing Arts Center

Maine Academy of Natural Science at Good Will-Hinckley – Hinckley, Maine

Moody School Historic Study, Addition and Renovation

Lewiston School Department – Lewiston, Maine

Master Plan | Geiger Elementary School, New 624-Student School | Lewiston
Regional Technical Center, The Green Ladle Culinary Arts Center

Mount Desert Island High School – Mount Desert, Maine

Addition and Renovations

Cheverus High School – Portland, Maine

Gymnasium Addition | Addition and Renovations | Master Plan

St. Dominic Regional High School – Auburn, Maine

New 450-Student School

MARK D. LEE, AIA, LEED AP, MCPPO

PUBLICATIONS

Building Design + Construction: Lighting Technology
"It's Still the Wild West Out There," April 2017

High Profile Focus: Institution & Schools
featuring SCUP North Atlantic Region, "The University
Library is the Hub of Student Collaboration and
Learning," March 2017

School Planning & Management "Acoustical
Considerations for 21st-Century K-12 Learning
Environments," June 2017

High Profile: New England Facilities Development
News, "Innovation on Campus: Five Trends in Higher
Education," August 2016

Kennebunk Elementary School – Kennebunk, Maine
New 600-Student School

Bridgton Academy – Bridgton, Maine
New Athletic Center | Master Plan

Fryeburg Academy – Fryeburg, Maine
Leura Hill Eastman Performing Arts Center | Master Plan | Harvey Dow Gibson
Athletic Center | Bion R. Cram Library | Athletic Fields | Hastings Dorm Masters
House

Bath School Department – Bath, Maine
Master Plan and Renovations

Hebron Academy – Hebron, Maine
Master Plan

Sacopee Valley High School – Hiram, Maine
ADA Upgrades

Buxton Elementary – Buxton, Maine
New 850-Student School

Westbrook Middle School – Westbrook, Maine
New 600-Student School

Nashua School District – Nashua, New Hampshire
Broad Street Elementary School Renovation | Sunset Heights Elementary
School Renovation | Mount Pleasant School Study | Elm Street School Study

Dover School District – Dover, New Hampshire
Garrison Elementary School Facilities Study | Garrison Elementary School,
Renovations

Hopkinton School District – Contoocook, New Hampshire
Facilities Planning Study

Exeter High School – Exeter, New Hampshire
New 2,000-Student School and 1,000-Seat Performing Arts Center



LISA D. SAWIN, AIA, NCARB, LEED AP BD+C, MCPPO
SENIOR ASSOCIATE, SENIOR ARCHITECT

Lisa Sawin, a licensed architect, brings nearly 15 years of professional experience in architectural design for a variety of K-12 and Higher Educational clients. Prior to joining Harriman, Lisa served as Project Manager and Project Architect providing design, detailing, marketing and project delivery skill-set.

Passionate about developing learning environments that support educators and students alike, Lisa is a hands-on project leader, working directly with school leadership, administration, and facilities personnel to provide meaningful solutions to operational and functional challenges.

EDUCATION

Norwich University
Masters in Architecture

Norwich University
Bachelor of Science in
Architectural Studies

REGISTRATIONS

ME, MA, VT

National Council of Architectural Registration Boards
(NCARB)

ACCREDITATIONS

Leadership in Energy and Environmental Design
Accredited Professional
(LEED AP BD+C)

Massachusetts Certified Public Purchasing Official
(MCPPO)

AFFILIATIONS

American Institute of Architects

U.S. Green Building Council, Maine
Chapter Member

RELEVANT EXPERIENCE:

RSU 21 - Kennebunk, Kennebunkport, and Arundel, Maine

Facilities and Educational Planning for all District Schools

Mildred L. Day Elementary School (RSU 21) - Arundel, Maine

Addition and Renovations

Kennebunk High School (RSU 21) - Kennebunk, Maine

Addition and Renovations

Auburn School Department - Auburn, Maine

Planning, Design and Construction for new Edward Little High School

Portland Public Schools - Portland, Maine

Lyseth Elementary School Addition and Renovations

Westbrook School Department - Westbrook, Maine

Saccarappa Elementary School Additions and Renovations

Sanford School Department - Sanford, Maine

K-8 Restructuring Study | Margaret Chase Smith Elementary School, Addition and Renovations | Converted Elementary School from former Middle School | Converted Middle School from former High School

Scarborough School Department - Scarborough, Maine

Long Range Facility Planning

Town of Wellesley - Wellesley, Massachusetts

Middle School Building Study

Twin Rivers School District* - McClellan, California

25-Year Master Plan of 63 Campuses | Professional Learning Community Center (P.L.C.C.)

Fresno United School District* - Fresno, California

Addicott Modernization | Turner Elementary School Classroom and Administration Building | Hoover High School Addition

Merced Unified School District* - Merced, California

Merced S.T.E.A.M. Center

Madera School District* - Madera, California

Madera Elementary School

**Experience prior to joining Harriman.*



EDUCATION

University of Maine
Bachelor of Science Civil Engineering

REGISTRATIONS

ME, MA, NH, VT, CT, RI

ACCREDITATIONS

Leadership in Energy and Environmental
Design Accredited Professional
(LEED AP BD+C)

Maine Department of Transportation Local Project
Administration (LPA)

AFFILIATIONS

American Society of Civil Engineers

U.S. Green Building Council
Maine Chapter Member

FRANK L. CRABTREE, P.E., LEED AP BD+C

ASSOCIATE, SENIOR CIVIL ENGINEER
USGBC - LEED PROJECT ADMINISTRATOR

Frank L. Crabtree's 40 years of experience includes a wide range of civil, environmental and site engineering for large and small sites for many governmental and educational clients. He has extensive experience in environmental storm water management and in managing the permitting and approval process required by state, federal, and municipal agencies.

Frank also coordinates Harriman's sustainability processing for the office and for our clients. Beginning with the certification of Maine's first LEED Certified university building, Frank has managed the process for many public and private sustainable projects over the past 15 years. He has extensive experience managing the team of designers, owner, and contractor through the various stages of the sustainability planning, designing, constructing, and certifying. Frank's work has been primarily with the US Green Building Council (USGBC) LEED Certification process, which is the benchmark standard in the U.S.

RELEVANT EXPERIENCE:

Portland Public Schools – Portland, Maine

Lyseth Elementary School Addition and Renovations

Auburn School Department – Auburn, Maine

Planning, Design and Construction for new Edward Little High School

Beatrice Rafferty Elementary School – Perry, Maine

New Elementary School

Lewiston Public Schools – Lewiston, Maine

Robert V. Connors, New 900± Student Elementary School, State and City Permitting | McMahon Elementary School, Site Design, Roadway Expansion, Natural-gas Extension, and State/City Permits | Raymond A. Geiger Elementary School, Site Selection, Stormwater, and Permitting | Lewiston High School Regional Technical Center, Site Design, Parking Expansion, Stormwater Treatment, Utilities for Constrained Site, City Permitting

RSU #21 – Kennebunk, Maine

Kennebunk High School Addition | Mildred L. Day Elementary School Addition and Renovation

York School Department – York, Maine

750-Seat Community Auditorium and Main Entry Addition, Site Design, Parking, Town of York Permitting

Noble High School – North Berwick, Maine

New Site Master Plan and Development | 11 Sports Fields | Six Parking Lots | State/Town Permits

Scarborough School Department – Scarborough, Maine

Wentworth Intermediate School, New 800-Student School | Scarborough High School Addition and Renovations

Scarborough Schools and Community Park – Scarborough, Maine

Reconstruction of High School and Town Park, New Pond/Fountain | Play Fields | Pedestrian Walks | Stormwater Treatment | State/Town Permits

FRANK L. CRABTREE, P.E., LEED AP BD+C

PRESENTATIONS

2013 – U.S. Green Building Council Maine Chapter,
"Rainwater Management: Rooftop to Pavement"

2010 – American Society of Professional Estimators,
"LEED Changes"

2009 – U.S. Green Building Council Maine Chapter,
"Site Design for LEED and DEP Standards"

2008 – Society for College and University Planning,
North Atlantic Region Symposium, Sustainability as
an Economic Driver: "Pathways to Success, "Pathways
to Green"

2007 – Northern New England Chapter of the
American Planning Association "LEED Certified
Construction"

Buxton Center Elementary School – Buxton, Maine

New 850-Student School

Cheverus High School – Portland, Maine

New Urban Sports Field and Tennis Court Complex | Parking Lots | Permitting

South Portland School Department – South Portland, Maine

Site Renovation | Relocate Sports Fields and Tennis Courts | New Parking Lots

St. Dominic Academy – Auburn, Maine

New 450-Student School

Westbrook Middle School – Westbrook, Maine

New 600-Student School, Traffic and Pedestrian Circulation | New Planning
and Site Development | Three Sports Fields | Stormwater Management | State/
Town Permits

Durham Community School – Durham, Maine

New 505-Student School

Biddeford High School - Biddeford, Maine

Addition and Renovations

Biddeford Middle School – Biddeford, Maine

New 780-Student School and 900-Seat Performing Arts Center

Bridgton Academy – Bridgton, Maine

Master Plan New Sports Fields | Fundraising Images

Fryeburg Academy – Fryeburg, Maine

New Sports Field Facility, Sports Fields | Leura Hill Eastman Performing Arts
Center | Site Parking/Utilities | Stormwater Treatment | State/Town Permits

Pemetic Elementary School – Southwest Harbor, Maine

Addition and Renovations

Broad Street School – Nashua, New Hampshire

Reconstructed Drives, Parking, Storm Drainage, Playground, and City/State
Permits

Idlehurst Elementary School – Somersworth, New Hampshire

New 530-Student School - NECHPS Sustainability Certification Management



HOWARD A. SNYDER, ASLA, CLARB

LANDSCAPE ARCHITECT

Howard Snyder, ASLA, CLARB is a landscape architect and planner with nearly twenty years of experience. He has worked on a range of project types considering civic, institutional, landscape planning, residential, resort, urban and public space developments in the United States and abroad. His work allows for an ability to synthesize a project's design process from the appropriate perspective and an ability to work with a staff of professionals from a variety of disciplines to provide outstanding design and service to clients. Prior to rejoining Harriman in early 2016, Howard served as Town Planner of Georgetown, Massachusetts.

EDUCATION

Master of Urban Planning and Public Policy
New York University, Robert F. Wagner Graduate School
of Public Service

Bachelor of Landscape Architecture
State University of New York, College of Environmental
Science & Forestry

REGISTRATIONS

MA, ME, CT

AFFILIATIONS

American Society of Landscape Architects

Boston Society of Landscape Architects

American Planning Association

RELEVANT EXPERIENCE:

Jewish Community Alliance – Portland, Maine

Landscape Architecture for a Community Center

City of Augusta – Augusta, Maine

Site Layout and Landscape Design for Adaptive Reuse of Mill Park Brick Building

Town of Kennebunk – Kennebunk, Maine

Streetscape Master Plan in the Lower Village District

University of Maine System – Maine

Campus Master Planning for Seven Campuses

University of New England – Biddeford, Maine

Campus Master Plan

Maplewood Avenue - Complete Streets – Portsmouth, New Hampshire

Streetscape Design

City of Rochester – Rochester, New Hampshire

Downtown Master Plan and Comprehensive Rezoning

Town of Raymond – Raymond, New Hampshire

Site Layout and Design for Police Facility

Atlantic Wharf – Boston, Massachusetts

Urban Design and Planning for Redevelopment of Atlantic Wharf

Beverly Farms Improvement Society – Beverly, Massachusetts

Facade and Streetscape Improvement Plan

Beverly Farms Improvement Society – Beverly, Massachusetts

Parking Strategy for Beverly Farms Business District

Bridgeport and Port Jefferson Steamship Authority – Bridgeport, Connecticut

Bridgeport Barnum Landing Ferry Terminal Site Design

Canaveral Port Authority – Port Canaveral, Florida

Port Canaveral Land Use and Development Plan

Canaveral Port Authority – Port Canaveral, Florida

On-call Services | Land Planning, Urban Design, and Market Analysis for Port Canaveral

City of Boston – Boston, Massachusetts

Cleveland Circle Streetscape Plan

City of Brockton – Brockton, Massachusetts

Comprehensive Master Plan

City of Haverhill – Haverhill, Massachusetts

Park Concept Design for Riverside Park

City of Newburyport – Newburyport, Massachusetts

Landscape Restoration for Bartlet Mall

City of Norwalk – Norwalk, Connecticut

Wall Street Area Master Plan

Department of Conservation and Recreation – Boston, Massachusetts

Landscape Design for Lederman Memorial

Duxbury Bay Maritime School – Duxbury, Massachusetts

Site Planning for Three Marine Based Facilities

Falmouth Yacht Club – Falmouth, Massachusetts

Renovation, Expansion and Landscape Architecture

Hingham Shipyard – Hingham, Massachusetts

Landscape Design and Signage Programming

Lawrence Mills – Lowell, Massachusetts

Urban Design, Site Design, and Landscape Architecture for Redevelopment

Malden Mills – Lawrence, Massachusetts

Schematic Designs for Reuse and Redevelopment Options

Steamship Authority – Oak Bluffs and Woods Hole, Massachusetts

Site Layout and Design for Ferry Terminals

Town of Burlington – Burlington, Massachusetts

Comprehensive Master Plan

Town of Nahant – Nahant, Massachusetts

Nahant Gateway Park and War Memorial

Town of Randolph – Randolph, Massachusetts

Comprehensive Master Plan

Town of Shutesbury – Shutesbury, Massachusetts

Community Visioning

Town of Truro – Truro, Massachusetts

Landscape Design for Civic Center and Residential Development

Village at Bailey's Pond – Amesbury, Massachusetts

Permitting and Landscape Design for Residential Development

Village of Newtonville – Newton, Massachusetts

Streetscape Design



March 4, 2021

James Dealaman, Planner
Planning and Urban Development Department
City Hall, 389 Congress Street, 4th Floor
Portland, Maine 04101

Re: Presumpscot Elementary School Additions
69 Presumpscot Street
Portland, ME
No. 19151
Response to Comments, dated 03-04-21

Dear Jim,

Thank you for providing this summary of the comments for review. I am responding to them in their original order since they are not numbered. I am however, assigning numbers to track them more easily. Please let me know if you have any further questions.

1. Site Lighting:

We would like to request a Waiver to Section 12.6 of the Technical Manual for the site lighting plan with photometric lighting levels. No new site lighting poles are proposed for this building addition project. The existing and new school doorways will be lit with wall-mounted lights or canopy-mounted lights for security. There are currently two streetlights/spotlights in Presumpscot Street that light the front school parking lot. Building-mounted lights help light this lot as well as other parking areas around the building. The school principal has stated that the existing parking is sufficiently lit. Any lighting level photometric plan could not include these existing lights, since their light level characteristics are not known. This would produce a plan that appeared to have much less light than actually exists. We therefore, believe the Waiver is justified.

Attached as Section 20 in the application binder are light fixture catalogue sheets for the selected building-mounted exterior light fixtures.

2. Neighborhood Meeting Information:

The Presumpscot Elementary School's neighborhood meeting was held on October 21, 2020, by a virtual Zoom meeting. The advertisement flyer for the meeting is attached. All three Portland Public Schools' neighborhood meetings were held on the same evening, with Presumpscot starting at 8:00 pm. Twenty-six people were in attendance at the Presumpscot meeting.

3. Site Access:

The Sherwood Street bus drop-off location is the intended point for student access from

AUBURN

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Page 2 of 2

busses, as a permanent condition. During the proposed construction duration, any deteriorated sidewalk pavement will be repaired in order to provide an accessible route from Sherwood Street to the school entry.

Once the new school addition is complete, most deliveries and all trash pickup will occur at the rear of the new addition(east side). The fire lane around the building will be open for access for delivery vehicles and will not be gated. Signs and paint striping will be provided to caution drivers about the potential of children playing in the area. The doors along the paved perimeter of the new addition may be used for exit and entry to the playgrounds. School staff monitors the movement of students in and out of all doors of the building.

The two larger rooftop HVAC/mechanical units near the front of the existing building are approximately 4.5' tall and 6' tall and set back away from the roof edge, as shown on the attached C00-1 Site Layout Plan. There are also two shorter 2.5' tall air-handler units on the roof, shown on the same drawing. There is no plan to provide added screening of these individual units.

We trust these noted revisions and revised documents address all the concerns. Let us know if you need any further documentation.

Thank you very much.

Sincerely,
Harriman

Frank L. Crabtree, P.E., LEED AP BD+C
Associate
fcrabtree@harriman.com

Enclosures: Revised drawing and flyer



8a. TRAFFIC

Transportation Analysis – (14-526 (a)1)

- The proposed Presumpscot Elementary School building additions and minor site renovations will not impact vehicular or pedestrian circulation on the adjacent streets. The site modifications will be occurring near the school building and will not affect the driveways, parking lots, or sidewalks between the school and Presumpscot Street or Sherwood Street.
- Since there is no student or staff population increase anticipated from this building project, there will be no significant change in traffic generation, and no need for a traffic study.

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8b. ACCESS AND CIRCULATION

Access and Circulation – (14-526 (a) 2a)

- Currently some of the school building doorways have exterior walks with slopes that cause them to not meet the ADA accessibility guidelines. The pavements around the building will be reconstructed to meet the ADA standards at all of the required egress doorways. The ADA standards will also be met at all of the walkways and curb ramps, and an accessible route will be constructed from the current ADA parking spaces to the new front entry vestibule.
- The site renovations around the Presumpscot Elementary School will maintain all of the current vehicular and pedestrian traffic flows. The bus and parent drop-off loop drives are staying in the same locations. The access/exit drive to Sherwood Street will remain unchanged. Emergency vehicle access around all sides of the building will be maintained by the expanded fire lane drive.
- No 'drive-up' features are incorporated into this elementary school.

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8c. LOADING AND SERVICING

Loading and Servicing – (14-526 (a) 2b)

- No changes are anticipated for the loading and servicing vehicular access to the building. The current layout of driveways near the school will remain virtually unchanged. The driveway to the south of the entry drive will continue to carry all the service vehicles.
- No turning templates for service vehicles are needed since the driveway configurations will not significantly change. A fire truck turning template is enclosed for the reconfigured fire lane around the new building addition to the east.

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9. SIDEWALKS

Sidewalks – (14-526 (a) 2c)

- No sidewalks along public streets will be affected by this school project. Sidewalks near the school building will be reconstructed in virtually the same locations. Walks along the front of the building, connecting the new building entry addition to the bus and parent drop-off areas will be graded at 5% or less to meet ADA accessibility standards.
- Engineered details of the sidewalks and curb ramps, which meet the City Standards in the Technical Manual, are included in the drawings.

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10. PUBLIC TRANSIT

Public Transit – (14-526 (a) 3)

- Greater Portland Metro Bus lines routes 9A and B stop at the Presumpscot Street intersection on Washington Avenue several times a day, for service to the school. The Presumpscot Elementary School is a walk of approximately 1000 feet to the bus stop.
- The current public-school bus access drive will not be changed.

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11a. OFF-STREET PARKING

Off-Street Parking – (14-526 (a) 4a and c)

- The parking demand will remain unchanged since no additional staff are anticipated for this school. The number of parking spaces around the school will not change from the existing 50 spaces. Two of those spaces are designated for ADA parking, with the appropriate drop-off aisle between.
- The existing drive and parking layout is being mostly maintained, and no new curb cuts are being developed.

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11b. BICYCLE PARKING

Bicycle Parking – (14-526 (a) 4b)

- The required bicycle parking for non-residential buildings is 2 spaces for every 10 vehicle parking spaces, up to the first 100 vehicle spaces. The Lyseth Elementary School will continue to have 50 parking spaces in four lots around the building. Therefore, 10 bike parking slots would be required [$2 \times (50) / 10 = 10$].
- Two existing nine-bike racks are located near the building, which provide space for up to 18 bicycles. See drawing C00-1. These racks will remain on the site but may be slightly relocated for better use.
- The existing bike racks consist of 'Wave' or 'Ribbon'-style, meeting the City Technical Standards.

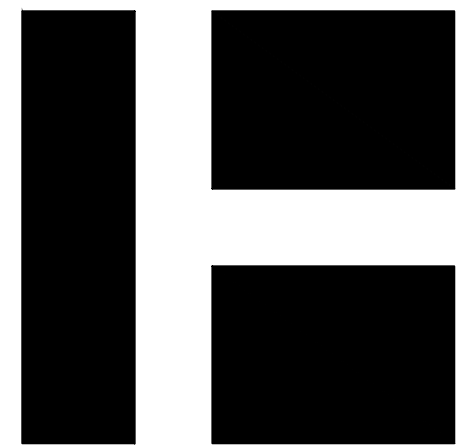
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12. SNOW STORAGE

Snow Storage- (14-526 (a) 4d)

- Snow plowing and removal around the Presumpscot Elementary School will continue in the same manner as it has been, with storage located generally as shown on the attached Snow Plan SP-1. When snow is greater than the available storage space, the snow will be loaded into trucks and removed from the site.



HARRIMAN

PRESUMPCOT
ELEMENTARY SCHOOL

PORTLAND, MAINE

Harriman Project No. 19151

Key Plan Proj North

GRAPHIC SCALE

0 15 30 60

(1 inch = 30 feet)

AUGUST 31, 2020

Rev Date Revision Description

PRELIMINARY
NOT FOR
CONSTRUCTION

1" = 30'

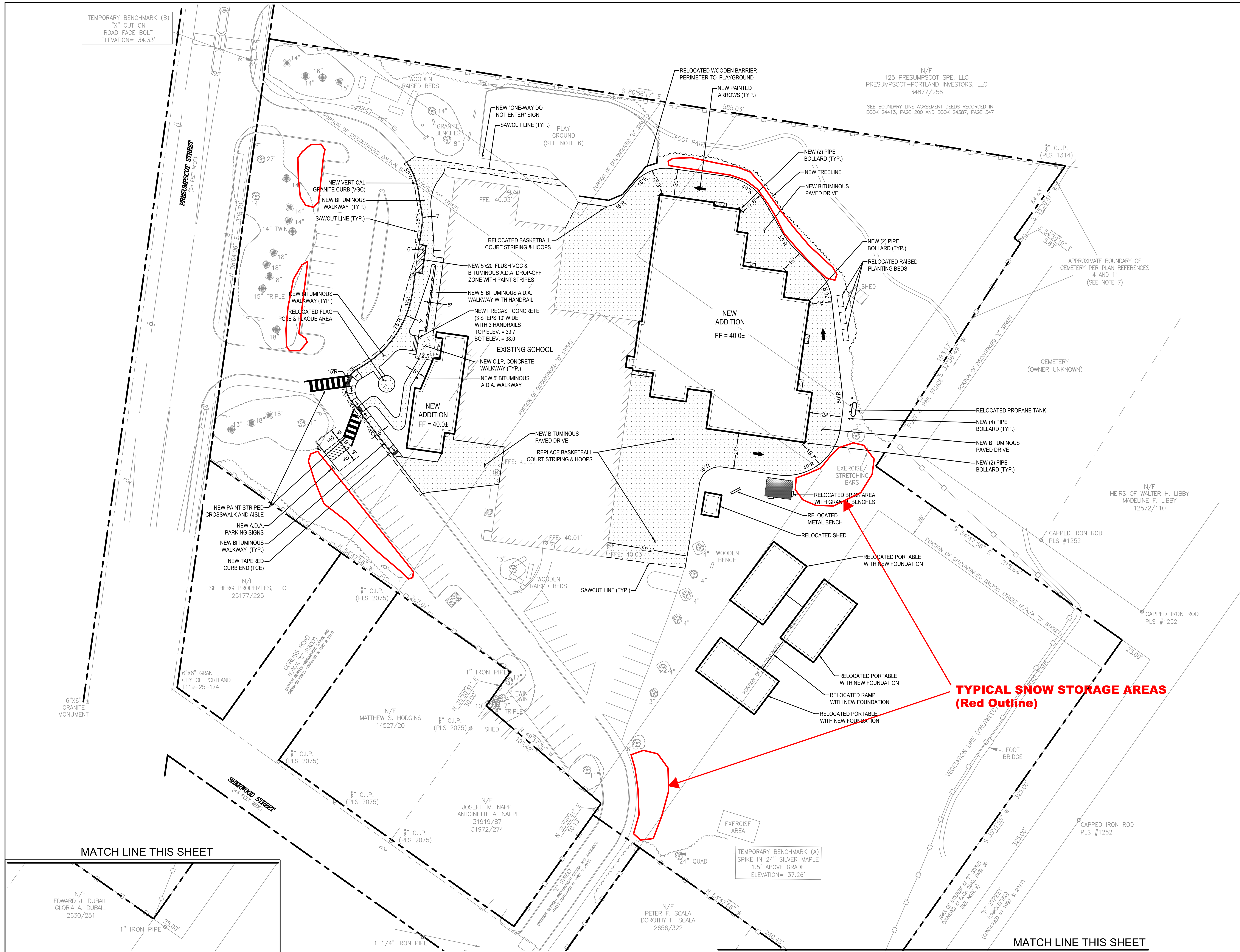
PA / PE: FLC

Drawn By: BAW

© 2020
Harriman Associates

SNOW PLAN

SP-1





13. SIGNIFICANT NATURAL FEATURES

Preservation of Significant Natural Features – (14-526 (b) 1)

- There are no significant natural features in the vicinity of the reconstruction activities on this developed Presumpscot School site. No wetlands are evident in the vicinity of the site.

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14a. LANDSCAPING AND LANDSCAPE PRESERVATION

Landscaping and Landscape Preservation –§14-526 (b) 2a

- Site development consists of expanding the footprint of an existing school. Proposed building addition will occur in an area that is mostly cleared and where temporary modular classrooms are currently situated.
- The new addition and associated paved fire lane will claim this cleared area but necessitate the removal of trees with caliper sizes above the 16" thresholds noted in 14-526-2A-iv(a) and the 10" threshold noted in 14-526-2A-iv(b). These trees are noted on sheet C10-1.
- There are two trees that are required to be removed; one tree has a triple trunk with a combined caliper size of 34" and a second tree has a triple trunk with a combined caliper size of 12".
- Replacement trees are shown on Sheet 40-1 Planting Plan.
- Tree species specified are selected from the *City of Portland Recommended Tree List, 2018*.
- During construction, existing plant material within the area of construction that is not designated for removal will be protected by measures consistent with *City of Portland Technical Manual, Section 4*.

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14b. SITE LANDSCAPE DESIGN

Site Landscaping – §14-526 (b) 2b

- Areas of the site around the renovated school building will be landscaped as shown on the Planting Plan L10.0. This planting plan notes location of proposed plant material and specifies species and sizes. The proposed planting design follows the standards outlined in the *City of Portland Technical Manual, Section 4*.
- Proposed site improvements currently do not consider a new service area.
- Existing dumpsters will be enclosed with privacy screening.

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STORMWATER MANAGEMENT REPORT

STORMWATER MANAGEMENT:

The Presumpscot Elementary School was built in 1962, and due to overcrowding, three temporary classroom modular buildings were added to the site in 2006. The existing single-story school is 25,650 SF. The overall site is 6.28 acres and is located within the R5 Residential Zone.

The proposed single-story 15,750 SF addition to the east side of the school is comprised of classrooms, Cafeteria, workrooms, mechanical/ electrical, toilet rooms and storage. The proposed Administration addition and renovation of 2,160 SF will include a new secure vestibule with administration offices. The additional impervious pavements, extending the fire lane around the new addition, total approximately 10,110 sq.ft. The total additional impervious campus coverage will be 28,020 sq.ft.(0.64-acre). The three modular classroom buildings are considered temporary, and thus have not been included in either the Pre-development or Post-development calculations.

Since the added impervious area is less than one acre, the project does not require either a DEP Site Location or Stormwater Permit application. However, because the additions classify as a City Level III Site Plan review, the DEP Chapter 500 stormwater standards must be met.

Setting on a localized high point, the Presumpscot Elementary School shed runoff in all directions off the site. Each sub-watershed area is designated as a Subcatchment, and each point of exit of the stormwater from the site is designated as a Watershed Analysis Point. The existing school building and the westerly portion of the site sheds stormwater westerly to Presumpscot Street, where it is intercepted by the City storm drainage catch basins and piping(designated as Watershed Analysis Point WAP-1. Runoff from the north side of the school and playgrounds crosses the north property line, shown on the drainage plans as Watershed Analysis Point WAP-2. Runoff from the wooded northeast corner of the site crosses the property line to a small cemetery, as WAP 3. The southerly portion of the playground, together with the large grass playfield behind the school sheds stormwater across the field to the east property line, designated as WAP-4. Parking and access drives to the south of the school shed stormwater to the southwest property line, designated as WAP-5.

The site will drain in the same directions in the Post-development condition, as in the Pre-

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development. Existing drainage channels will not be changed.

City Regulatory Standards

Stormwater will be designed to meet the Maine Department of Environmental Protection(MDEP) Chapter 500 rules. Basic Standards, General Standards, and Flooding Standards will be met. Basic standards include erosion and sedimentation control, inspection and maintenance, and general housekeeping. These are detailed on drawings C00.3 Site Erosion Control Notes, C30.1 Site Grading and Erosion Control Plan, and C50.1 Site Details. The attached written Site Maintenance Plan describes maintenance and housekeeping procedures for the school site. General Standards require that new impervious and developed areas are treated for both stormwater quality and quantity.

Soils mapping was obtained from the Medium Intensity Soil Survey for Cumberland County as shown on the attached Natural Resources Conservation Service soil mapping. As indicted on the attached soils map the primary hydrological soils group(HSG) covering the site are Lyman-Tunbridge complex(HSG-C), Lamoine silt loam(HSG-C), or Suffield silt loam(HSG-C). Therefore, the site around the Presumpscot School in the Hydrocad model uses HSG-C.

Stormwater Quantity (Flooding Standard)

The overall impact of this development on the adjacent properties will be negligible and undetectable. The Drainage Summary table below shows that the tabulated Post-Development peak flow rates at the property line analysis points are unchanged, with only minor increases or decreases. The slight increase in WAP-1 at the City street infrastructure is less than 0.2 cfs, which is negligible and well within margins of error of the modeling methods and assumptions. The method responsible for controlling the flow rate to WAP-4, which includes runoff from the larger building addition, is the use of a new subsurface underdrained chamber sand filter(Pond 2). The filter is located to treat the new building roof and some associated walks (Subcatchments 7 and 8). The treated stormwater is then piped under the large playfield to discharge in the wooded swale to the southeast.

The Pre-development and Post-development runoff calculations were modeled by the Hydrocad computer program (version 10.0), which uses the Natural Resource Conservation Service TR-55 and TR-20 methods. The 24-hour rainfall for Cumberland County is 5.8" for 25-year, 4.6" for 10-year, and 3.1" for 2-year. Runoff for the 24-hour Type 3 storm was modeled for 25-year, 10-year, and 2-year frequencies for both Pre-development and Post-development conditions, and compared in the following summary.

Drainage Summary			
Watershed Analysis Point	Pre-Development	Post-Development	Peak Flow Change
'WAP1' City Storm System at Presumpscot Street (P1)	25 Year = 5.20 cfs 10 Year = 3.99 2 Year = 2.46	25 Year = 5.35 cfs 10 Year = 4.17 2 Year = 2.63	+ 0.15 cfs + 0.18 + 0.17
'WAP2' North Property Line(R2)	25 Year = 3.82 cfs 10 Year = 2.67 2 Year = 1.32	25 Year = 3.27 cfs 10 Year = 2.30 2 Year = 1.16	- 0.55 cfs - 0.37 - 0.16
'WAP3' East Property Line at Cemetery(R3)	25 Year = 1.36 cfs 10 Year = 0.89 2 Year = 0.37	25 Year = 1.32 cfs 10 Year = 0.88 2 Year = 0.40	- 0.04 cfs - 0.01 + 0.03
'WAP4' East Property Line at Ballfield(R4)	25 Year = 6.30 cfs 10 Year = 4.32 2 Year = 2.03	25 Year = 6.37 cfs 10 Year = 4.09 2 Year = 1.74	+ 0.07 cfs - 0.23 - 0.29
'WAP5' South Property Line (R1)	25 Year = 4.45 cfs 10 Year = 3.35 2 Year = 1.98	25 Year = 4.42 cfs 10 Year = 3.35 2 Year = 2.00	- 0.03 cfs - 0.00 + 0.02

In summary, the redevelopment project will have no significant effect on storm water quantity at downstream properties or drainage areas.

Stormwater Quality (General Standards)

Since this school renovation and construction is a 'redevelopment' project, the DEP Chapter 500 standards require a comparison of both the Pre-development surfaces and the Post-development surfaces. The attached Redevelopment Treatment Calculations sheet itemizes the total surface areas on the site, and calculates an impact rating based on DEP-assigned pollutant

rankings. These Pre and Post weighed averages are then compared to determine the percentage of water quality treatment required for this property. The tabulation concludes that 60% of the proposed developed site area must receive treatment. The attached Stormwater Quality Summary Worksheet tabulates the treatment of the various new developed surfaces in the subcatchment areas. The notes below the table explain that the treatment ratio of the new impervious roof and paved areas is 63.7% of the new impervious areas, which meets the calculated 60% requirement of the Chapter 500 redevelopment standards. Combining the treatment of both new and existing impervious and vegetated 'developed' areas yields a treatment ratio of 65.9%, which also exceeds the 60% requirements of the Standards.

The storm water quality will be controlled primarily by the underdrained subsurface sand filter(Pond 2). The proposed treatment will reduce the pollutants draining off the site to meet the DEP requirements. The new subsurface sand filter will capture runoff from the roof, pavement, and grass in the two subcatchment areas, store the first-flush in the chamber and stone system, and overflow the excess inflow to the outfall. The system is designed with 'StormTech' SC-310 plastic chambers bedded in crushed stone, with an 18" sand filter and underdrain pipes beneath. The filtered water captured in the underdrain pipes is considered cleaned of pollutants, and will be directed to the wooded swale outfall. The attached Stormwater Quality Treatment Sizing worksheets include these calculations. Details, designs, and specifications for the filter beds are provided in the attached application package.

REDEVELOPMENT TREATMENT CALCULATIONS
Presumpscot Elementary School
Portland, ME

26-Aug-20

Parcel Area - 6.28 Acres
Area of Evaluation = 4.993 Acres
Project 19151

Pre-Development

Surface type	Pollutant Ranking	Area (Acres)	Impact rating
Med. Used Parking, other roads	4	0.81	3.24
Other Parking	3		3
Walkways Pedestrian Tennis Courts, Track	2	0.618	1.236
Roofs	2	0.594	1.188
Grass	2	2.82	5.64
Treatment Areas	1		1
Woods/Forest	0	0.151	0
Totals		4.993	15.304
Weighted Average			3.066

Post Development

Surface Type	Pollutant Ranking	Area (Acres)	Impact rating
Med. Used Parking, Other Roads	4	0.819	3.276
Other Parking	3		3
Walkways Pedestrian Tennis Courts, Track	2	0.685	1.37
Roofs	2	1.003	2.006
Grass	2	2.486	4.972
Treatment Areas	1		1
Woods/ Forest	0		0
Total		4.993	15.624
Weighted Average			3.134
		Rating Difference= Proposed-Existing	0.068 < 1

From Table 3 of Chapter 500 - Required Treatment is 60%.

STORMWATER QUALITY SUMMARY - DEP CHAPTER 500

Project: Presumpscot Elementary School
Portland, ME

Date 8/26/2020

Project No. 19151

Watershed Subcatchments - Quality Treatment:

Subcatch	New Impervious Area		New Lawn on Exg. Woods or meadow	New Impervious Area Treated	New Vegetated Area Treated	Exg. Impervious Area Treated	Exg. Vegetated Area Treated	Treated by:
	New Building	New Pavement						
	Sq. Ft.	Sq. Ft.	Sq. Ft.	Sq. Ft.	Sq. Ft.	Sq. Ft.	Sq. Ft.	
1		900						
2	2,160							
3		4,360	3,970					
4		2,880	1,430					
5		410						
6		350						
7	15,750			15,750				Subsurface Sand Filter
8		2,110		2,110		3,370	800	Subsurface Sand Filter
Totals =	17,910	10,110	5,400	17,860	0	3,370	800	
				Treated	Treated	Treated	Treated	

NOTES

- Total New Impervious area requiring treatment is $17,910 + 10,110 = 28,020$ sq. ft.
The amount of New Impervious area receiving treatment is 17,860 sq.ft.
Percent of the total **New Impervious** area being treated is $17860/28020 = 63.7 \%$
- Total New Developed area requiring treatment is $17,910 + 10,110 + 5,400 = 33,420$ sq. ft.
Total New Developed area being treated is 17,860 sq. ft.
Percent of the total **New Developed** area being treated is $17,860/33,420 = 53.4 \%$
- Considering the added treatment of existing vegetated and impervious areas:
Total New Developed area requiring treatment is $17,910 + 10,110 + 5,400 = 33,420$ sq. ft.
Total New and Existing Developed area being treated is $17,860 + 3,370 + 800 = 22,030$ sq. ft.
Percent of the total **New Developed** area being treated is $22,030/33,420 = 65.9 \%$
- Conclusion: Percentage of treatment required under DEP Chapter 500 Section 4(C)(2)(d) is **60%**. (see attached redevelopment calculations)
Since the proposed treatment exceeds the required redevelopment treatment level, the project is in compliance with Chapter 500.

STORMWATER QUALITY - TREATMENT SIZING

Project: Presumpscot Elementary School
Portland, Maine
Project No. 19101

Date 8/26/2020

Underdrained Subsurface Soil Filter

NE Building Addition + New Parking/walks

IMPERVIOUS AREAS CAPTURED: (proposed) = 21,230 sf

GRASS AREAS CAPTURED:(proposed) = 800 sf

MIN. FILTER BED SIZE:

(1"/12") 21230 + (0.4"/12") 800 = 1,796 cf min. bed Water Quality Vol.(WQV)

5% 21,230 + 2% 800 = 1,078 sf minimum bed area

Actual Bed Volume Proposed @ Water Quality Volume Depth = **1,984 cf**

Actual Bed Area Proposed = **1,624 sf**

Use StormTech SC 310

Each chamber 7.1' x 3.3' = 31 CF storage with 6" crushed stone base (23.5 sf/chamber)

8 Rows of 8 Chambers = 64 Chambers at 31 CF = 1984 CF

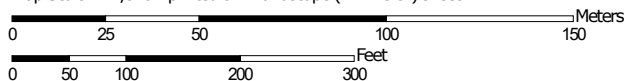
Bed size = 28' x 58' = 1624 sf

)

Soil Map—Cumberland County and Part of Oxford County, Maine
(Presumpscot Elementary School)



Map Scale: 1:2,020 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey
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8/26/2020
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Soil Map—Cumberland County and Part of Oxford County, Maine
(Presumpscot Elementary School)

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cumberland County and Part of Oxford County, Maine

Survey Area Data: Version 17, Jun 5, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Data not available.

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BuB HSG-'C'	Lamoine silt loam, 3 to 8 percent slopes	1.2	13.6%
HrB HSG-'C'	Lyman-Tunbridge complex, 0 to 8 percent slopes, rocky	5.3	62.0%
SuD2 HSG-'C'	Suffield silt loam, 15 to 25 percent slopes, eroded	2.1	24.4%
Totals for Area of Interest		8.6	100.0%

**POST-CONSTRUCTION STORM WATER MANAGEMENT PLAN
&
SITE MAINTENANCE PLAN
FOR
PRESUMPCOT ELEMENTARY SCHOOL**

**69 PRESUMPCOT STREET
PORTLAND, MAINE**

September 2020

Site Description

The site as referenced in this document refers to the Presumpscot Elementary School at 69 Presumpscot Street in Portland, ME. Refer to the site plans prepared by Harriman Architects and Engineers dated September 2020 for referenced site locations. The stormwater treatment system as referenced within this document refers to the system of catch basins, storm drain pipes, and subsurface chamber sand filter toward the northeast side of the property, designed to collect, convey, and treat stormwater runoff from the site.

Facility Contacts

Facility:	Presumpscot Elementary School Additions and Renovations 69 Presumpscot Street Portland, ME
Owner:	Portland Public Schools 353 Cumberland Avenue Portland, ME 04101 Telephone: 207- 842-5315
Maintenance Responsibility:	Steven Stilphen, Director of Facilities Telephone: 207-842-5315 (stilps@portlandschools.org)
Consultant/Designer:	Harriman Architects and Engineers 46 Harriman Drive Auburn, ME 04210 Telephone: 207-784-5100 Frank L. Crabtree, P.E. (fcrabtree@harriman.com)

Overview and Objectives

The Site Maintenance Plan (SMP) is an important component of the overall stormwater management system for the site. The SMP addresses various maintenance activities that should occur after construction and site stabilization. Proper implementation of the SMP can minimize pollutant generation and transport and maintain the stormwater treatment system to ensure proper operation. This SMP includes three primary components:

1. Site Management Practices
2. Inspections
3. Routine Maintenance and Corrective Actions

1. Site Management Practices

Site management practices are aimed at reducing pollutants by minimizing use of certain materials, using alternative materials, or removing pollutants prior to discharge to the stormwater treatment system. These practices shall include:

- a. Use slow release sulfur or plastic coated ureaform fertilizers (e.g., Nutralene).
- b. Do not fertilize vegetated swales or detention areas once vegetation is established.
- c. Minimize use of pesticides by using a sound integrated pest management (IPM) approach to monitor and control the actual pests present.
- d. Collect and remove autumn leaves to minimize transport to the stormwater treatment system.
- e. Minimize use of de-icing materials and sand.
- f. Routine sweeping of parking areas and driveways.
- g. Fertilizers, pesticides and other hazardous materials should be stored in enclosed areas to avoid exposure to precipitation. Material handling should be conducted to minimize risk of spillage and release to the storm water treatment system.

2. Inspections

A series of routine inspections shall be completed to allow for the early identification of potential problems, and to guide routine maintenance activities. Inspections shall be carried out in accordance with the Site Inspection Schedule (Table 1). Dates and observations shall be recorded for each inspection on the attached 'Inspection Log'.

3. Routine Maintenance and Corrective Actions

Routine maintenance activities are designed to ensure proper function of the stormwater management system and minimize pollutant transport from the site. Routine maintenance activities must be completed according to the schedule (Table 1) provided in this plan. This schedule is the minimum amount of maintenance required, and more frequent maintenance may be needed when indicated by the inspections. Corrective actions (supplemental maintenance activities or repairs) should be completed within 7 days of the inspection identifying the problem. Each maintenance activity will be recorded on the attached 'Maintenance and Repair Log'.

During construction, the Sitework Contractor, (not yet selected by Bid process) shall be responsible for cleaning and maintaining stormwater components on the schedule outlined in Table 2.

Following completion of construction, Portland staff will be responsible for cleaning and maintaining stormwater components on the schedule outlined in Table 1.

The following describes specific stormwater facilities maintenance requirements and minimum schedule of inspection and maintenance.

1. Vegetated drainage areas should be mowed at least once during the growing season. Larger brush or trees must not be allowed to become established in the channel. Any areas where the vegetation fails will be subject to erosion and should be repaired and revegetated.
2. If sediment in culverts or piped drainage systems exceeds 20% of the diameter of the pipe, it should be removed. This may be accomplished by hydraulic flushing or other mechanical means; however, care should be taken to not flush the sediments into the filter basins, or retention/detention pond as it will reduce the pond's capacity and hasten the time when it must be cleaned. Storm pipes should be inspected on an annual basis.
3. Catch basin sumps and the outlet control structures shall be cleaned of debris and sediment at least annually to minimize clogging and transportation of sediment during rainfall events.
4. Paved surfaces shall be swept or vacuumed at least annually in the spring to remove winter sand and periodically during the year on an as-needed basis to minimize the transportation of sediment during rainfall events.
5. Underdrained Subsurface Sand Filter shall be inspected semi-annually and following major storm events. The system should be inspected after every major storm in the first few months to ensure proper function. Thereafter the filter should be inspected at least once every six months to ensure that it is draining within 24 hours to 48 hours. Cleaning of the pre-treatment device shall be done as needed. When the average depth of sediment throughout the length of the Isolator Row exceeds 3 inches, clean-out must be performed.

Table 1 PRESUMPCOT ELEMENTARY SCHOOL Long-Term Inspection & Maintenance Plan				
	Spring	Fall or Yearly	After a Major	Every 2- 5 Years
Vegetated Areas				
Inspect all slopes and embankments	X		X	
Replant bare areas or areas with sparse growth	X		X	
Armor areas with rill erosion with an appropriate lining or divert the erosive flows to on-site areas able to withstand concentrated flows.	X		X	
Stormwater Channels				
Inspect ditches, swales and other open stormwater channels	X	X	X	
Remove any obstructions and accumulated sediments or debris	X	X		
Control vegetated growth and woody vegetation		X		
Repair any erosion of the ditch lining		X		
Mow vegetated ditches		X		
Remove woody vegetation growing through riprap		X		
Repair any slumping side slopes		X		
Replace riprap where underlying filter fabric or underdrain gravel is showing or where stones have dislodged		X		
Culverts				
Remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit	X	X	X	
Repair any erosion damage at the culvert's inlet and outlet	X	X	X	
Catch Basin Systems				
Remove and legally dispose of accumulated sediments and debris from the bottom of the basin, inlet grates, inflow channels to the basin, and pipes between basins	X	X		
Remove floating debris and floating oils (using oil absorptive pads) from any trap designed for such, and dispose in a legal manner	X	X		
Roadways and Paved Surfaces				
Clear accumulated winter sand in parking lots and along roadways	X			
Sweep pavement to remove sediment	X			
Grade road shoulders and remove excess sand either manually or by front-end loader	X			

Table 1 PRESUMPSCOT ELEMENTARY SCHOOL Long-Term Inspection & Maintenance Plan				
	Spring	Fall or Yearly	After a Major	Every 2- 5 Years
Ensure that stormwater is not impeded by accumulations of material or false ditches in the shoulder	X			
Subsurface Sand Filter – Isolator Rows				
Inspect isolator rows at each manhole and inspection port to see if collected sediment is 3" or deeper.	X	X		
Clean sediment out of sediment chamber with Jet-Vacuum equipment. If sediment is not at least 3" deep, the cleanout can be postponed until sediment build-up is at this level.		X		
Remove accumulated floating oils and trash. Use absorbent pads to remove oils, if sediment removal by vacuum truck is not concurrent.		X		
Inspect drainage rate to verify the system drains between 24 to 36 hours.	X	X		

The maintenance needs for most vegetative and stabilization measures may be found in the Maine Erosion and Sediment Control BMPs manual, latest published date.

PRESUMPCOT ELEMENTARY SCHOOL

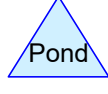
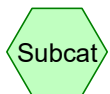
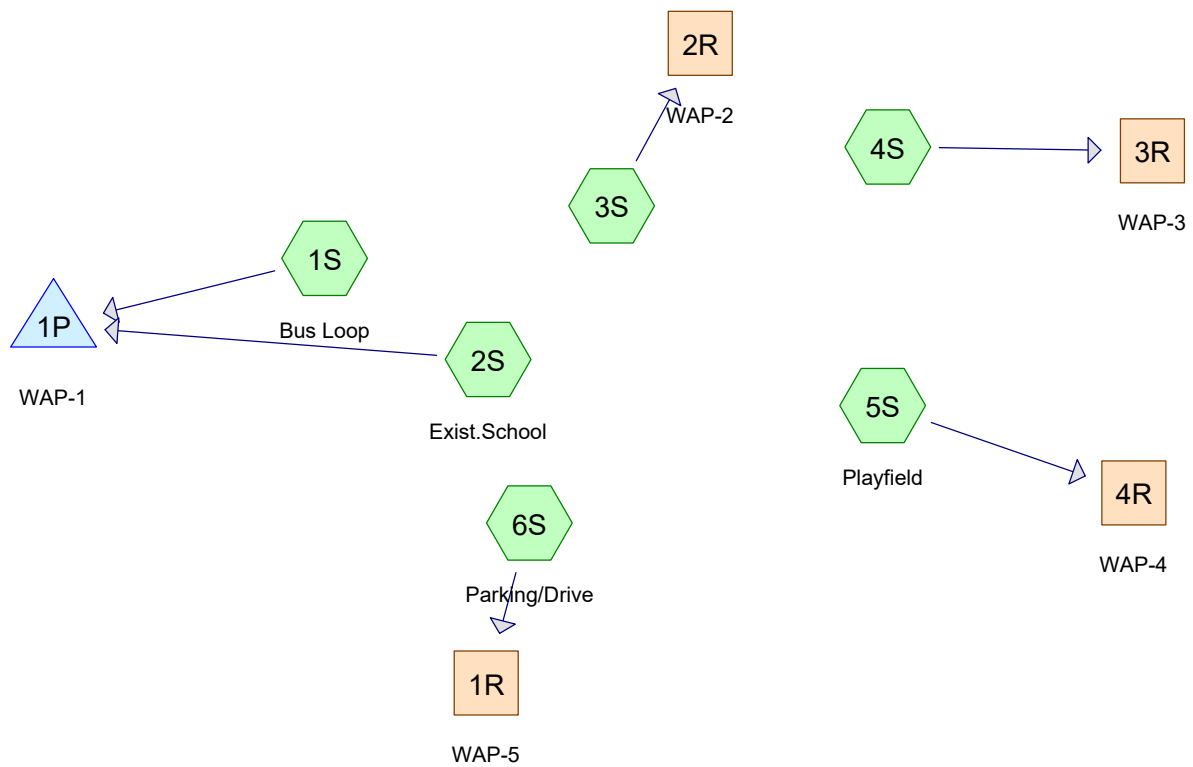
INSPECTION LOG

[illegible]

PRESUMPCOT ELEMENTARY SCHOOL

MAINTENANCE LOG

Date	Device or Area Maintained/ Repaired	Maintenance / Repair Completed By	Maintenance Completed/Corrective Actions Taken



Routing Diagram for Presumpscot ES Pre-Development
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Type III 24-hr 2 Year Rainfall=3.10"

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Time span=2.00-23.00 hrs, dt=0.05 hrs, 421 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Bus Loop	Runoff Area=41,400 sf 47.22% Impervious Runoff Depth>1.57" Flow Length=140' Tc=18.5 min CN=84 Runoff=1.23 cfs 0.124 af
Subcatchment2S: Exist.School	Runoff Area=25,650 sf 100.00% Impervious Runoff Depth>2.84" Tc=5.0 min CN=98 Runoff=1.78 cfs 0.139 af
Subcatchment3S:	Runoff Area=42,780 sf 24.57% Impervious Runoff Depth>1.18" Flow Length=175' Tc=6.2 min CN=78 Runoff=1.32 cfs 0.096 af
Subcatchment4S:	Runoff Area=27,380 sf 0.73% Impervious Runoff Depth>0.80" Flow Length=130' Slope=0.0450 '/' Tc=19.5 min CN=71 Runoff=0.37 cfs 0.042 af
Subcatchment5S: Playfield	Runoff Area=95,040 sf 9.12% Impervious Runoff Depth>1.06" Flow Length=400' Tc=14.2 min CN=76 Runoff=2.03 cfs 0.193 af
Subcatchment6S: Parking/Drive	Runoff Area=38,830 sf 60.49% Impervious Runoff Depth>1.88" Flow Length=105' Tc=5.3 min CN=88 Runoff=1.98 cfs 0.140 af
Reach 1R: WAP-5	Inflow=1.98 cfs 0.140 af Outflow=1.98 cfs 0.140 af
Reach 2R: WAP-2	Inflow=1.32 cfs 0.096 af Outflow=1.32 cfs 0.096 af
Reach 3R: WAP-3	Inflow=0.37 cfs 0.042 af Outflow=0.37 cfs 0.042 af
Reach 4R: WAP-4	Inflow=2.03 cfs 0.193 af Outflow=2.03 cfs 0.193 af
Pond 1P: WAP-1	Peak Elev=27.82' Storage=12 cf Inflow=2.46 cfs 0.263 af 12.0" Round Culvert n=0.010 L=290.0' S=0.0103 '/' Outflow=2.46 cfs 0.263 af

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Type III 24-hr 2 Year Rainfall=3.10"

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Summary for Subcatchment 1S: Bus Loop

Runoff = 1.23 cfs @ 12.26 hrs, Volume= 0.124 af, Depth> 1.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Rainfall=3.10"

	Area (sf)	CN	Description
*	19,550	98	Paved
	12,580	74	>75% Grass cover, Good, HSG C
	9,270	70	Woods, Good, HSG C
	41,400	84	Weighted Average
	21,850		52.78% Pervious Area
	19,550		47.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	70	0.0430	0.21		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
13.0	70	0.0360	0.09		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.10"
18.5	140	Total			

Summary for Subcatchment 2S: Exist.School

Runoff = 1.78 cfs @ 12.07 hrs, Volume= 0.139 af, Depth> 2.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Rainfall=3.10"

	Area (sf)	CN	Description
*	25,650	98	Roof
	25,650		100.00% Impervious Area

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

Summary for Subcatchment 3S:

Runoff = 1.32 cfs @ 12.10 hrs, Volume= 0.096 af, Depth> 1.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Rainfall=3.10"

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Type III 24-hr 2 Year Rainfall=3.10"

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	Area (sf)	CN	Description
*	10,510	98	Paved
	15,470	74	>75% Grass cover, Good, HSG C
	16,800	70	Woods, Good, HSG C
	42,780	78	Weighted Average
	32,270		75.43% Pervious Area
	10,510		24.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	70	0.0200	1.26		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
4.1	45	0.0370	0.18		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
1.2	60	0.0300	0.87		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
6.2	175	Total			

Summary for Subcatchment 4S:

Runoff = 0.37 cfs @ 12.31 hrs, Volume= 0.042 af, Depth> 0.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Rainfall=3.10"

	Area (sf)	CN	Description
*	200	98	Paved
	6,660	74	>75% Grass cover, Good, HSG C
	20,520	70	Woods, Good, HSG C
	27,380	71	Weighted Average
	27,180		99.27% Pervious Area
	200		0.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.5	130	0.0450	0.11		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.10"

Summary for Subcatchment 5S: Playfield

Runoff = 2.03 cfs @ 12.21 hrs, Volume= 0.193 af, Depth> 1.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Rainfall=3.10"

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Type III 24-hr 2 Year Rainfall=3.10"

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	Area (sf)	CN	Description
*	8,670	98	Paved/Roof
	74,530	74	>75% Grass cover, Good, HSG C
	11,840	70	Woods, Good, HSG C
	95,040	76	Weighted Average
	86,370		90.88% Pervious Area
	8,670		9.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	60	0.0200	1.22		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
8.4	90	0.0250	0.18		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
4.6	220	0.0130	0.80		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.4	30	0.0500	1.12		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.2	400	Total			

Summary for Subcatchment 6S: Parking/Drive

Runoff = 1.98 cfs @ 12.08 hrs, Volume= 0.140 af, Depth> 1.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Rainfall=3.10"

	Area (sf)	CN	Description
*	23,490	98	Paved
	13,590	74	>75% Grass cover, Good, HSG C
	1,750	70	Woods, Good, HSG C
	38,830	88	Weighted Average
	15,340		39.51% Pervious Area
	23,490		60.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	40	0.0500	0.20		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
0.6	45	0.0250	1.26		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
1.4	20	0.1000	0.23		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
5.3	105	Total			

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Type III 24-hr 2 Year Rainfall=3.10"

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Summary for Reach 1R: WAP-5

Inflow Area = 0.891 ac, 60.49% Impervious, Inflow Depth > 1.88" for 2 Year event
 Inflow = 1.98 cfs @ 12.08 hrs, Volume= 0.140 af
 Outflow = 1.98 cfs @ 12.08 hrs, Volume= 0.140 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs

Summary for Reach 2R: WAP-2

Inflow Area = 0.982 ac, 24.57% Impervious, Inflow Depth > 1.18" for 2 Year event
 Inflow = 1.32 cfs @ 12.10 hrs, Volume= 0.096 af
 Outflow = 1.32 cfs @ 12.10 hrs, Volume= 0.096 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs

Summary for Reach 3R: WAP-3

Inflow Area = 0.629 ac, 0.73% Impervious, Inflow Depth > 0.80" for 2 Year event
 Inflow = 0.37 cfs @ 12.31 hrs, Volume= 0.042 af
 Outflow = 0.37 cfs @ 12.31 hrs, Volume= 0.042 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs

Summary for Reach 4R: WAP-4

Inflow Area = 2.182 ac, 9.12% Impervious, Inflow Depth > 1.06" for 2 Year event
 Inflow = 2.03 cfs @ 12.21 hrs, Volume= 0.193 af
 Outflow = 2.03 cfs @ 12.21 hrs, Volume= 0.193 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs

Summary for Pond 1P: WAP-1

Inflow Area = 1.539 ac, 67.41% Impervious, Inflow Depth > 2.05" for 2 Year event
 Inflow = 2.46 cfs @ 12.09 hrs, Volume= 0.263 af
 Outflow = 2.46 cfs @ 12.09 hrs, Volume= 0.263 af, Atten= 0%, Lag= 0.1 min
 Primary = 2.46 cfs @ 12.09 hrs, Volume= 0.263 af

Routing by Stor-Ind method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs

Peak Elev= 27.82' @ 12.09 hrs Surf.Area= 13 sf Storage= 12 cf

Plug-Flow detention time= 0.2 min calculated for 0.263 af (100% of inflow)

Center-of-Mass det. time= 0.2 min (788.5 - 788.3)

Volume	Invert	Avail.Storage	Storage Description
#1	26.90'	54 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

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Type III 24-hr 2 Year Rainfall=3.10"

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Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.90	13	0	0
30.85	13	51	51
31.00	20	2	54

Device	Routing	Invert	Outlet Devices
#1	Primary	26.90'	12.0" Round Culvert L= 290.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 26.90' / 23.90' S= 0.0103 '/' Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=2.44 cfs @ 12.09 hrs HW=27.81' (Free Discharge)

↑**1=Culvert** (Inlet Controls 2.44 cfs @ 3.25 fps)

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Type III 24-hr 10 Year Rainfall=4.60"

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Time span=2.00-23.00 hrs, dt=0.05 hrs, 421 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Bus Loop	Runoff Area=41,400 sf 47.22% Impervious Runoff Depth>2.86" Flow Length=140' Tc=18.5 min CN=84 Runoff=2.24 cfs 0.226 af
Subcatchment2S: Exist.School	Runoff Area=25,650 sf 100.00% Impervious Runoff Depth>4.31" Tc=5.0 min CN=98 Runoff=2.66 cfs 0.212 af
Subcatchment3S:	Runoff Area=42,780 sf 24.57% Impervious Runoff Depth>2.34" Flow Length=175' Tc=6.2 min CN=78 Runoff=2.67 cfs 0.191 af
Subcatchment4S:	Runoff Area=27,380 sf 0.73% Impervious Runoff Depth>1.78" Flow Length=130' Slope=0.0450 '/' Tc=19.5 min CN=71 Runoff=0.89 cfs 0.093 af
Subcatchment5S: Playfield	Runoff Area=95,040 sf 9.12% Impervious Runoff Depth>2.17" Flow Length=400' Tc=14.2 min CN=76 Runoff=4.32 cfs 0.394 af
Subcatchment6S: Parking/Drive	Runoff Area=38,830 sf 60.49% Impervious Runoff Depth>3.25" Flow Length=105' Tc=5.3 min CN=88 Runoff=3.35 cfs 0.241 af
Reach 1R: WAP-5	Inflow=3.35 cfs 0.241 af Outflow=3.35 cfs 0.241 af
Reach 2R: WAP-2	Inflow=2.67 cfs 0.191 af Outflow=2.67 cfs 0.191 af
Reach 3R: WAP-3	Inflow=0.89 cfs 0.093 af Outflow=0.89 cfs 0.093 af
Reach 4R: WAP-4	Inflow=4.32 cfs 0.394 af Outflow=4.32 cfs 0.394 af
Pond 1P: WAP-1	Peak Elev=28.51' Storage=21 cf Inflow=3.98 cfs 0.438 af 12.0" Round Culvert n=0.010 L=290.0' S=0.0103 '/' Outflow=3.99 cfs 0.438 af

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Type III 24-hr 10 Year Rainfall=4.60"

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Summary for Subcatchment 1S: Bus Loop

Runoff = 2.24 cfs @ 12.25 hrs, Volume= 0.226 af, Depth> 2.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=4.60"

	Area (sf)	CN	Description
*	19,550	98	Paved
	12,580	74	>75% Grass cover, Good, HSG C
	9,270	70	Woods, Good, HSG C
	41,400	84	Weighted Average
	21,850		52.78% Pervious Area
	19,550		47.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	70	0.0430	0.21		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
13.0	70	0.0360	0.09		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.10"
18.5	140	Total			

Summary for Subcatchment 2S: Exist.School

Runoff = 2.66 cfs @ 12.07 hrs, Volume= 0.212 af, Depth> 4.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=4.60"

	Area (sf)	CN	Description
*	25,650	98	Roof
	25,650		100.00% Impervious Area

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

Summary for Subcatchment 3S:

Runoff = 2.67 cfs @ 12.10 hrs, Volume= 0.191 af, Depth> 2.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=4.60"

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Type III 24-hr 10 Year Rainfall=4.60"

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	Area (sf)	CN	Description
*	10,510	98	Paved
	15,470	74	>75% Grass cover, Good, HSG C
	16,800	70	Woods, Good, HSG C
	42,780	78	Weighted Average
	32,270		75.43% Pervious Area
	10,510		24.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	70	0.0200	1.26		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
4.1	45	0.0370	0.18		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
1.2	60	0.0300	0.87		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
6.2	175	Total			

Summary for Subcatchment 4S:

Runoff = 0.89 cfs @ 12.28 hrs, Volume= 0.093 af, Depth> 1.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=4.60"

	Area (sf)	CN	Description
*	200	98	Paved
	6,660	74	>75% Grass cover, Good, HSG C
	20,520	70	Woods, Good, HSG C
	27,380	71	Weighted Average
	27,180		99.27% Pervious Area
	200		0.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.5	130	0.0450	0.11		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.10"

Summary for Subcatchment 5S: Playfield

Runoff = 4.32 cfs @ 12.20 hrs, Volume= 0.394 af, Depth> 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=4.60"

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Type III 24-hr 10 Year Rainfall=4.60"

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	Area (sf)	CN	Description
*	8,670	98	Paved/Roof
	74,530	74	>75% Grass cover, Good, HSG C
	11,840	70	Woods, Good, HSG C
	95,040	76	Weighted Average
	86,370		90.88% Pervious Area
	8,670		9.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	60	0.0200	1.22		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
8.4	90	0.0250	0.18		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
4.6	220	0.0130	0.80		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.4	30	0.0500	1.12		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.2	400	Total			

Summary for Subcatchment 6S: Parking/Drive

Runoff = 3.35 cfs @ 12.08 hrs, Volume= 0.241 af, Depth> 3.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=4.60"

	Area (sf)	CN	Description
*	23,490	98	Paved
	13,590	74	>75% Grass cover, Good, HSG C
	1,750	70	Woods, Good, HSG C
	38,830	88	Weighted Average
	15,340		39.51% Pervious Area
	23,490		60.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	40	0.0500	0.20		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
0.6	45	0.0250	1.26		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
1.4	20	0.1000	0.23		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
5.3	105	Total			

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Type III 24-hr 10 Year Rainfall=4.60"

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Summary for Reach 1R: WAP-5

Inflow Area = 0.891 ac, 60.49% Impervious, Inflow Depth > 3.25" for 10 Year event
 Inflow = 3.35 cfs @ 12.08 hrs, Volume= 0.241 af
 Outflow = 3.35 cfs @ 12.08 hrs, Volume= 0.241 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs

Summary for Reach 2R: WAP-2

Inflow Area = 0.982 ac, 24.57% Impervious, Inflow Depth > 2.34" for 10 Year event
 Inflow = 2.67 cfs @ 12.10 hrs, Volume= 0.191 af
 Outflow = 2.67 cfs @ 12.10 hrs, Volume= 0.191 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs

Summary for Reach 3R: WAP-3

Inflow Area = 0.629 ac, 0.73% Impervious, Inflow Depth > 1.78" for 10 Year event
 Inflow = 0.89 cfs @ 12.28 hrs, Volume= 0.093 af
 Outflow = 0.89 cfs @ 12.28 hrs, Volume= 0.093 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs

Summary for Reach 4R: WAP-4

Inflow Area = 2.182 ac, 9.12% Impervious, Inflow Depth > 2.17" for 10 Year event
 Inflow = 4.32 cfs @ 12.20 hrs, Volume= 0.394 af
 Outflow = 4.32 cfs @ 12.20 hrs, Volume= 0.394 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs

Summary for Pond 1P: WAP-1

Inflow Area = 1.539 ac, 67.41% Impervious, Inflow Depth > 3.41" for 10 Year event
 Inflow = 3.98 cfs @ 12.10 hrs, Volume= 0.438 af
 Outflow = 3.99 cfs @ 12.10 hrs, Volume= 0.438 af, Atten= 0%, Lag= 0.1 min
 Primary = 3.99 cfs @ 12.10 hrs, Volume= 0.438 af

Routing by Stor-Ind method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs

Peak Elev= 28.51' @ 12.10 hrs Surf.Area= 13 sf Storage= 21 cf

Plug-Flow detention time= 0.2 min calculated for 0.437 af (100% of inflow)

Center-of-Mass det. time= 0.1 min (780.6 - 780.5)

Volume	Invert	Avail.Storage	Storage Description
#1	26.90'	54 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

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Type III 24-hr 10 Year Rainfall=4.60"

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Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.90	13	0	0
30.85	13	51	51
31.00	20	2	54

Device	Routing	Invert	Outlet Devices
#1	Primary	26.90'	12.0" Round Culvert L= 290.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 26.90' / 23.90' S= 0.0103 '/ Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=3.99 cfs @ 12.10 hrs HW=28.51' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 3.99 cfs @ 5.08 fps)

Presumpscot ES Pre-Development

Type III 24-hr 25 Year Rainfall=5.80"

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Time span=2.00-23.00 hrs, dt=0.05 hrs, 421 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Bus Loop	Runoff Area=41,400 sf 47.22% Impervious Runoff Depth>3.95" Flow Length=140' Tc=18.5 min CN=84 Runoff=3.07 cfs 0.313 af
Subcatchment2S: Exist.School	Runoff Area=25,650 sf 100.00% Impervious Runoff Depth>5.49" Tc=5.0 min CN=98 Runoff=3.37 cfs 0.269 af
Subcatchment3S:	Runoff Area=42,780 sf 24.57% Impervious Runoff Depth>3.35" Flow Length=175' Tc=6.2 min CN=78 Runoff=3.82 cfs 0.274 af
Subcatchment4S:	Runoff Area=27,380 sf 0.73% Impervious Runoff Depth>2.68" Flow Length=130' Slope=0.0450 '/' Tc=19.5 min CN=71 Runoff=1.36 cfs 0.141 af
Subcatchment5S: Playfield	Runoff Area=95,040 sf 9.12% Impervious Runoff Depth>3.15" Flow Length=400' Tc=14.2 min CN=76 Runoff=6.30 cfs 0.573 af
Subcatchment6S: Parking/Drive	Runoff Area=38,830 sf 60.49% Impervious Runoff Depth>4.38" Flow Length=105' Tc=5.3 min CN=88 Runoff=4.45 cfs 0.325 af
Reach 1R: WAP-5	Inflow=4.45 cfs 0.325 af Outflow=4.45 cfs 0.325 af
Reach 2R: WAP-2	Inflow=3.82 cfs 0.274 af Outflow=3.82 cfs 0.274 af
Reach 3R: WAP-3	Inflow=1.36 cfs 0.141 af Outflow=1.36 cfs 0.141 af
Reach 4R: WAP-4	Inflow=6.30 cfs 0.573 af Outflow=6.30 cfs 0.573 af
Pond 1P: WAP-1	Peak Elev=29.59' Storage=35 cf Inflow=5.22 cfs 0.582 af 12.0" Round Culvert n=0.010 L=290.0' S=0.0103 '/' Outflow=5.20 cfs 0.582 af

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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Subcatchment 1S: Bus Loop

Runoff = 3.07 cfs @ 12.25 hrs, Volume= 0.313 af, Depth> 3.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=5.80"

	Area (sf)	CN	Description
*	19,550	98	Paved
	12,580	74	>75% Grass cover, Good, HSG C
	9,270	70	Woods, Good, HSG C
	41,400	84	Weighted Average
	21,850		52.78% Pervious Area
	19,550		47.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	70	0.0430	0.21		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
13.0	70	0.0360	0.09		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.10"
18.5	140	Total			

Summary for Subcatchment 2S: Exist.School

Runoff = 3.37 cfs @ 12.07 hrs, Volume= 0.269 af, Depth> 5.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=5.80"

	Area (sf)	CN	Description
*	25,650	98	Roof
	25,650		100.00% Impervious Area

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

Summary for Subcatchment 3S:

Runoff = 3.82 cfs @ 12.09 hrs, Volume= 0.274 af, Depth> 3.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=5.80"

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Type III 24-hr 25 Year Rainfall=5.80"

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	Area (sf)	CN	Description
*	10,510	98	Paved
	15,470	74	>75% Grass cover, Good, HSG C
	16,800	70	Woods, Good, HSG C
	42,780	78	Weighted Average
	32,270		75.43% Pervious Area
	10,510		24.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	70	0.0200	1.26		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
4.1	45	0.0370	0.18		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
1.2	60	0.0300	0.87		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
6.2	175	Total			

Summary for Subcatchment 4S:

Runoff = 1.36 cfs @ 12.28 hrs, Volume= 0.141 af, Depth> 2.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=5.80"

	Area (sf)	CN	Description
*	200	98	Paved
	6,660	74	>75% Grass cover, Good, HSG C
	20,520	70	Woods, Good, HSG C
	27,380	71	Weighted Average
	27,180		99.27% Pervious Area
	200		0.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.5	130	0.0450	0.11		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.10"

Summary for Subcatchment 5S: Playfield

Runoff = 6.30 cfs @ 12.20 hrs, Volume= 0.573 af, Depth> 3.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=5.80"

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Type III 24-hr 25 Year Rainfall=5.80"

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	Area (sf)	CN	Description
*	8,670	98	Paved/Roof
	74,530	74	>75% Grass cover, Good, HSG C
	11,840	70	Woods, Good, HSG C
	95,040	76	Weighted Average
	86,370		90.88% Pervious Area
	8,670		9.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	60	0.0200	1.22		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
8.4	90	0.0250	0.18		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
4.6	220	0.0130	0.80		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.4	30	0.0500	1.12		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.2	400	Total			

Summary for Subcatchment 6S: Parking/Drive

Runoff = 4.45 cfs @ 12.08 hrs, Volume= 0.325 af, Depth> 4.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=5.80"

	Area (sf)	CN	Description
*	23,490	98	Paved
	13,590	74	>75% Grass cover, Good, HSG C
	1,750	70	Woods, Good, HSG C
	38,830	88	Weighted Average
	15,340		39.51% Pervious Area
	23,490		60.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	40	0.0500	0.20		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
0.6	45	0.0250	1.26		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
1.4	20	0.1000	0.23		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
5.3	105	Total			

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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Reach 1R: WAP-5

Inflow Area = 0.891 ac, 60.49% Impervious, Inflow Depth > 4.38" for 25 Year event
 Inflow = 4.45 cfs @ 12.08 hrs, Volume= 0.325 af
 Outflow = 4.45 cfs @ 12.08 hrs, Volume= 0.325 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs

Summary for Reach 2R: WAP-2

Inflow Area = 0.982 ac, 24.57% Impervious, Inflow Depth > 3.35" for 25 Year event
 Inflow = 3.82 cfs @ 12.09 hrs, Volume= 0.274 af
 Outflow = 3.82 cfs @ 12.09 hrs, Volume= 0.274 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs

Summary for Reach 3R: WAP-3

Inflow Area = 0.629 ac, 0.73% Impervious, Inflow Depth > 2.68" for 25 Year event
 Inflow = 1.36 cfs @ 12.28 hrs, Volume= 0.141 af
 Outflow = 1.36 cfs @ 12.28 hrs, Volume= 0.141 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs

Summary for Reach 4R: WAP-4

Inflow Area = 2.182 ac, 9.12% Impervious, Inflow Depth > 3.15" for 25 Year event
 Inflow = 6.30 cfs @ 12.20 hrs, Volume= 0.573 af
 Outflow = 6.30 cfs @ 12.20 hrs, Volume= 0.573 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs

Summary for Pond 1P: WAP-1

Inflow Area = 1.539 ac, 67.41% Impervious, Inflow Depth > 4.54" for 25 Year event
 Inflow = 5.22 cfs @ 12.10 hrs, Volume= 0.582 af
 Outflow = 5.20 cfs @ 12.11 hrs, Volume= 0.582 af, Atten= 0%, Lag= 0.3 min
 Primary = 5.20 cfs @ 12.11 hrs, Volume= 0.582 af

Routing by Stor-Ind method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs

Peak Elev= 29.59' @ 12.10 hrs Surf.Area= 13 sf Storage= 35 cf

Plug-Flow detention time= 0.2 min calculated for 0.582 af (100% of inflow)

Center-of-Mass det. time= 0.1 min (776.0 - 775.9)

Volume	Invert	Avail.Storage	Storage Description
#1	26.90'	54 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Presumpscot ES Pre-Development

Type III 24-hr 25 Year Rainfall=5.80"

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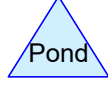
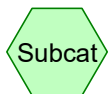
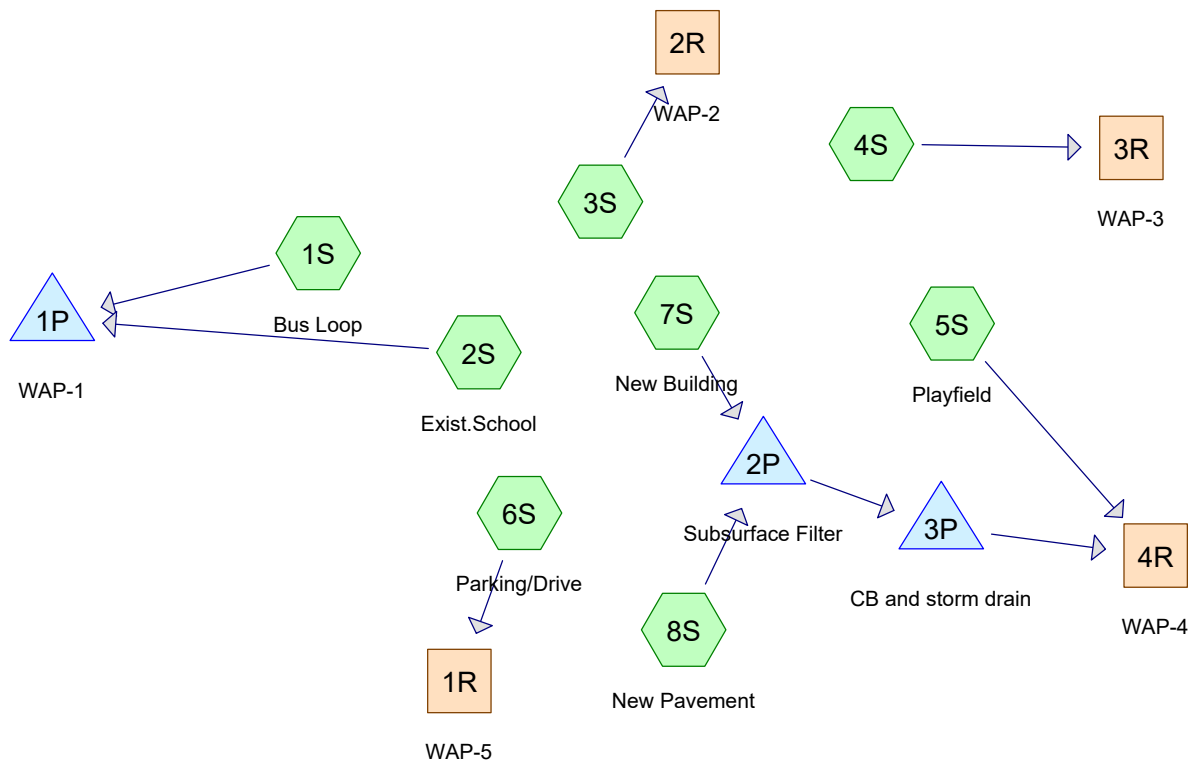
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Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.90	13	0	0
30.85	13	51	51
31.00	20	2	54

Device	Routing	Invert	Outlet Devices
#1	Primary	26.90'	12.0" Round Culvert L= 290.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 26.90' / 23.90' S= 0.0103 '/ Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=5.17 cfs @ 12.11 hrs HW=29.54' (Free Discharge)

↑ **1=Culvert** (Barrel Controls 5.17 cfs @ 6.59 fps)



Routing Diagram for Presumpscot ES Post-Development
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Presumpscot ES Post-Development

Type III 24-hr 2 Year Rainfall=3.10"

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Time span=2.00-23.00 hrs, dt=0.05 hrs, 421 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Bus Loop	Runoff Area=38,790 sf 50.99% Impervious Runoff Depth>1.64" Flow Length=140' Tc=18.5 min CN=85 Runoff=1.21 cfs 0.122 af
Subcatchment2S: Exist.School	Runoff Area=27,720 sf 100.00% Impervious Runoff Depth>2.84" Tc=4.0 min CN=98 Runoff=2.01 cfs 0.150 af
Subcatchment3S:	Runoff Area=36,920 sf 28.03% Impervious Runoff Depth>1.24" Flow Length=165' Tc=7.4 min CN=79 Runoff=1.16 cfs 0.088 af
Subcatchment4S:	Runoff Area=23,860 sf 12.07% Impervious Runoff Depth>0.95" Flow Length=130' Slope=0.0450 '/' Tc=19.5 min CN=74 Runoff=0.40 cfs 0.043 af
Subcatchment5S: Playfield	Runoff Area=83,890 sf 4.03% Impervious Runoff Depth>0.95" Flow Length=360' Tc=10.7 min CN=74 Runoff=1.74 cfs 0.153 af
Subcatchment6S: Parking/Drive	Runoff Area=37,870 sf 63.08% Impervious Runoff Depth>1.96" Flow Length=105' Tc=5.3 min CN=89 Runoff=2.00 cfs 0.142 af
Subcatchment7S: New Building	Runoff Area=15,750 sf 100.00% Impervious Runoff Depth>2.84" Tc=4.0 min CN=98 Runoff=1.14 cfs 0.085 af
Subcatchment8S: New Pavement	Runoff Area=6,280 sf 87.26% Impervious Runoff Depth>2.52" Tc=2.0 min CN=95 Runoff=0.44 cfs 0.030 af
Reach 1R: WAP-5	Inflow=2.00 cfs 0.142 af Outflow=2.00 cfs 0.142 af
Reach 2R: WAP-2	Inflow=1.16 cfs 0.088 af Outflow=1.16 cfs 0.088 af
Reach 3R: WAP-3	Inflow=0.40 cfs 0.043 af Outflow=0.40 cfs 0.043 af
Reach 4R: WAP-4	Inflow=1.74 cfs 0.153 af Outflow=1.74 cfs 0.153 af
Pond 1P: WAP-1	Peak Elev=27.87' Storage=13 cf Inflow=2.63 cfs 0.272 af 12.0" Round Culvert n=0.010 L=290.0' S=0.0103 '/' Outflow=2.63 cfs 0.272 af
Pond 2P: Subsurface Filter	Peak Elev=34.59' Storage=1,767 cf Inflow=1.57 cfs 0.116 af Discarded=0.18 cfs 0.116 af Primary=0.00 cfs 0.000 af Outflow=0.18 cfs 0.116 af
Pond 3P: CB and storm drain	Peak Elev=29.10' Storage=0 cf Inflow=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

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Type III 24-hr 2 Year Rainfall=3.10"

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Summary for Subcatchment 1S: Bus Loop

Runoff = 1.21 cfs @ 12.26 hrs, Volume= 0.122 af, Depth> 1.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Rainfall=3.10"

	Area (sf)	CN	Description
*	19,780	98	Paved
	9,740	74	>75% Grass cover, Good, HSG C
	9,270	70	Woods, Good, HSG C
	38,790	85	Weighted Average
	19,010		49.01% Pervious Area
	19,780		50.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	70	0.0430	0.21		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
13.0	70	0.0360	0.09		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.10"
18.5	140	Total			

Summary for Subcatchment 2S: Exist.School

Runoff = 2.01 cfs @ 12.06 hrs, Volume= 0.150 af, Depth> 2.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Rainfall=3.10"

	Area (sf)	CN	Description
*	27,720	98	Roof
	27,720		100.00% Impervious Area

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

Summary for Subcatchment 3S:

Runoff = 1.16 cfs @ 12.11 hrs, Volume= 0.088 af, Depth> 1.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Rainfall=3.10"

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Type III 24-hr 2 Year Rainfall=3.10"

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	Area (sf)	CN	Description
*	10,350	98	Paved
	14,980	74	>75% Grass cover, Good, HSG C
	11,590	70	Woods, Good, HSG C
	36,920	79	Weighted Average
	26,570		71.97% Pervious Area
	10,350		28.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	80	0.0170	1.21		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
6.0	70	0.0350	0.20		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
0.3	15	0.0300	0.87		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
7.4	165	Total			

Summary for Subcatchment 4S:

Runoff = 0.40 cfs @ 12.30 hrs, Volume= 0.043 af, Depth> 0.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Rainfall=3.10"

	Area (sf)	CN	Description
*	2,880	98	Paved
	1,890	74	>75% Grass cover, Good, HSG C
	19,090	70	Woods, Good, HSG C
	23,860	74	Weighted Average
	20,980		87.93% Pervious Area
	2,880		12.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.5	130	0.0450	0.11		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.10"

Summary for Subcatchment 5S: Playfield

Runoff = 1.74 cfs @ 12.16 hrs, Volume= 0.153 af, Depth> 0.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Rainfall=3.10"

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Type III 24-hr 2 Year Rainfall=3.10"

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	Area (sf)	CN	Description
*	3,380	98	Paved/Roof
	68,670	74	>75% Grass cover, Good, HSG C
	11,840	70	Woods, Good, HSG C
	83,890	74	Weighted Average
	80,510		95.97% Pervious Area
	3,380		4.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	65	0.0170	1.16		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
5.1	60	0.0380	0.20		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
4.3	205	0.0130	0.80		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.4	30	0.0500	1.12		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
10.7	360	Total			

Summary for Subcatchment 6S: Parking/Drive

Runoff = 2.00 cfs @ 12.08 hrs, Volume= 0.142 af, Depth> 1.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Rainfall=3.10"

	Area (sf)	CN	Description
*	23,890	98	Paved
	12,230	74	>75% Grass cover, Good, HSG C
	1,750	70	Woods, Good, HSG C
	37,870	89	Weighted Average
	13,980		36.92% Pervious Area
	23,890		63.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	40	0.0500	0.20		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
0.6	45	0.0250	1.26		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
1.4	20	0.1000	0.23		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
5.3	105	Total			

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Type III 24-hr 2 Year Rainfall=3.10"

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Summary for Subcatchment 7S: New Building

Runoff = 1.14 cfs @ 12.06 hrs, Volume= 0.085 af, Depth> 2.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Rainfall=3.10"

Area (sf)	CN	Description
* 15,750	98	Roof
15,750		100.00% Impervious Area

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

Summary for Subcatchment 8S: New Pavement

Runoff = 0.44 cfs @ 12.03 hrs, Volume= 0.030 af, Depth> 2.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Rainfall=3.10"

Area (sf)	CN	Description
* 5,480	98	Paved
800	74	>75% Grass cover, Good, HSG C
6,280	95	Weighted Average
800		12.74% Pervious Area
5,480		87.26% Impervious Area

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

Summary for Reach 1R: WAP-5

Inflow Area = 0.869 ac, 63.08% Impervious, Inflow Depth > 1.96" for 2 Year event

Inflow = 2.00 cfs @ 12.08 hrs, Volume= 0.142 af

Outflow = 2.00 cfs @ 12.08 hrs, Volume= 0.142 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs

Summary for Reach 2R: WAP-2

Inflow Area = 0.848 ac, 28.03% Impervious, Inflow Depth > 1.24" for 2 Year event

Inflow = 1.16 cfs @ 12.11 hrs, Volume= 0.088 af

Outflow = 1.16 cfs @ 12.11 hrs, Volume= 0.088 af, Atten= 0%, Lag= 0.0 min

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Type III 24-hr 2 Year Rainfall=3.10"

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Routing by Stor-Ind+Trans method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs

Summary for Reach 3R: WAP-3

Inflow Area = 0.548 ac, 12.07% Impervious, Inflow Depth > 0.95" for 2 Year event
 Inflow = 0.40 cfs @ 12.30 hrs, Volume= 0.043 af
 Outflow = 0.40 cfs @ 12.30 hrs, Volume= 0.043 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs

Summary for Reach 4R: WAP-4

Inflow Area = 2.432 ac, 23.23% Impervious, Inflow Depth > 0.75" for 2 Year event
 Inflow = 1.74 cfs @ 12.16 hrs, Volume= 0.153 af
 Outflow = 1.74 cfs @ 12.16 hrs, Volume= 0.153 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs

Summary for Pond 1P: WAP-1

Inflow Area = 1.527 ac, 71.42% Impervious, Inflow Depth > 2.14" for 2 Year event
 Inflow = 2.63 cfs @ 12.07 hrs, Volume= 0.272 af
 Outflow = 2.63 cfs @ 12.07 hrs, Volume= 0.272 af, Atten= 0%, Lag= 0.1 min
 Primary = 2.63 cfs @ 12.07 hrs, Volume= 0.272 af

Routing by Stor-Ind method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs

Peak Elev= 27.87' @ 12.07 hrs Surf.Area= 13 sf Storage= 13 cf

Plug-Flow detention time= 0.2 min calculated for 0.272 af (100% of inflow)

Center-of-Mass det. time= 0.1 min (784.6 - 784.4)

Volume	Invert	Avail.Storage	Storage Description
#1	26.90'	54 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.90	13	0	0
30.85	13	51	51
31.00	20	2	54

Device	Routing	Invert	Outlet Devices
#1	Primary	26.90'	12.0" Round Culvert L= 290.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 26.90' / 23.90' S= 0.0103 ' S= 0.0103 ' Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=2.55 cfs @ 12.07 hrs HW=27.85' (Free Discharge)↑**1=Culvert** (Inlet Controls 2.55 cfs @ 3.31 fps)

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Type III 24-hr 2 Year Rainfall=3.10"

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Summary for Pond 2P: Subsurface Filter

Inflow Area = 0.506 ac, 96.37% Impervious, Inflow Depth > 2.75" for 2 Year event
 Inflow = 1.57 cfs @ 12.05 hrs, Volume= 0.116 af
 Outflow = 0.18 cfs @ 11.80 hrs, Volume= 0.116 af, Atten= 88%, Lag= 0.0 min
 Discarded = 0.18 cfs @ 11.80 hrs, Volume= 0.116 af
 Primary = 0.00 cfs @ 2.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 34.59' @ 12.61 hrs Surf.Area= 3,274 sf Storage= 1,767 cf

Plug-Flow detention time= 70.8 min calculated for 0.116 af (100% of inflow)

Center-of-Mass det. time= 69.9 min (824.6 - 754.7)

Volume	Invert	Avail.Storage	Storage Description
#1	33.50'	117 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
#2	33.00'	325 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
			812 cf Overall x 40.0% Voids
#3	33.50'	1,689 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
			2,111 cf Overall x 80.0% Voids
#4	34.80'	325 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
			812 cf Overall x 40.0% Voids
2,456 cf			Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.50	26	0	0
38.00	26	117	117

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.00	1,624	0	0
33.50	1,624	812	812

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.50	1,624	0	0
34.80	1,624	2,111	2,111

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.80	1,624	0	0
35.30	1,624	812	812

Device	Routing	Invert	Outlet Devices
#1	Discarded	33.00'	2.400 in/hr Exfiltration over Surface area
#2	Primary	34.80'	12.0" Round Culvert L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 34.80' / 33.00' S= 0.0900 ' / Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

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Type III 24-hr 2 Year Rainfall=3.10"

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Discarded OutFlow Max=0.18 cfs @ 11.80 hrs HW=33.51' (Free Discharge)↑**1=Exfiltration** (Exfiltration Controls 0.18 cfs)**Primary OutFlow** Max=0.00 cfs @ 2.00 hrs HW=33.00' (Free Discharge)↑**2=Culvert** (Controls 0.00 cfs)**Summary for Pond 3P: CB and storm drain**

Inflow Area = 0.506 ac, 96.37% Impervious, Inflow Depth = 0.00" for 2 Year event
 Inflow = 0.00 cfs @ 2.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 2.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 2.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs / 2

Peak Elev= 29.10' @ 2.00 hrs Surf.Area= 13 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	29.10'	90 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 15.0" Round Pipe Storage L= 280.0' S= 0.0050 '/'
#2	29.10'	344 cf	
#3	30.70'	92 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		526 cf	
			Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
29.10	13	0	0
36.00	13	90	90

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.70	13	0	0
37.80	13	92	92

Device	Routing	Invert	Outlet Devices
#1	Primary	29.10'	3.7" Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=0.00 cfs @ 2.00 hrs HW=29.10' (Free Discharge)↑**1=Orifice/Grate** (Controls 0.00 cfs)

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Type III 24-hr 10 Year Rainfall=4.60"

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Time span=2.00-23.00 hrs, dt=0.05 hrs, 421 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Bus Loop	Runoff Area=38,790 sf 50.99% Impervious Runoff Depth>2.95" Flow Length=140' Tc=18.5 min CN=85 Runoff=2.17 cfs 0.219 af
Subcatchment2S: Exist.School	Runoff Area=27,720 sf 100.00% Impervious Runoff Depth>4.31" Tc=4.0 min CN=98 Runoff=3.00 cfs 0.229 af
Subcatchment3S:	Runoff Area=36,920 sf 28.03% Impervious Runoff Depth>2.42" Flow Length=165' Tc=7.4 min CN=79 Runoff=2.30 cfs 0.171 af
Subcatchment4S:	Runoff Area=23,860 sf 12.07% Impervious Runoff Depth>2.01" Flow Length=130' Slope=0.0450 '/' Tc=19.5 min CN=74 Runoff=0.88 cfs 0.092 af
Subcatchment5S: Playfield	Runoff Area=83,890 sf 4.03% Impervious Runoff Depth>2.01" Flow Length=360' Tc=10.7 min CN=74 Runoff=3.88 cfs 0.323 af
Subcatchment6S: Parking/Drive	Runoff Area=37,870 sf 63.08% Impervious Runoff Depth>3.35" Flow Length=105' Tc=5.3 min CN=89 Runoff=3.35 cfs 0.243 af
Subcatchment7S: New Building	Runoff Area=15,750 sf 100.00% Impervious Runoff Depth>4.31" Tc=4.0 min CN=98 Runoff=1.71 cfs 0.130 af
Subcatchment8S: New Pavement	Runoff Area=6,280 sf 87.26% Impervious Runoff Depth>3.98" Tc=2.0 min CN=95 Runoff=0.68 cfs 0.048 af
Reach 1R: WAP-5	Inflow=3.35 cfs 0.243 af Outflow=3.35 cfs 0.243 af
Reach 2R: WAP-2	Inflow=2.30 cfs 0.171 af Outflow=2.30 cfs 0.171 af
Reach 3R: WAP-3	Inflow=0.88 cfs 0.092 af Outflow=0.88 cfs 0.092 af
Reach 4R: WAP-4	Inflow=4.09 cfs 0.341 af Outflow=4.09 cfs 0.341 af
Pond 1P: WAP-1	Peak Elev=28.61' Storage=22 cf Inflow=4.18 cfs 0.448 af 12.0" Round Culvert n=0.010 L=290.0' S=0.0103 '/' Outflow=4.17 cfs 0.448 af
Pond 2P: Subsurface Filter	Peak Elev=35.21' Storage=2,324 cf Inflow=2.37 cfs 0.178 af Discarded=0.27 cfs 0.159 af Primary=0.66 cfs 0.018 af Outflow=0.93 cfs 0.178 af
Pond 3P: CB and storm drain	Peak Elev=30.55' Storage=222 cf Inflow=0.66 cfs 0.018 af Outflow=0.41 cfs 0.018 af

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Summary for Subcatchment 1S: Bus Loop

Runoff = 2.17 cfs @ 12.25 hrs, Volume= 0.219 af, Depth> 2.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=4.60"

	Area (sf)	CN	Description
*	19,780	98	Paved
	9,740	74	>75% Grass cover, Good, HSG C
	9,270	70	Woods, Good, HSG C
	38,790	85	Weighted Average
	19,010		49.01% Pervious Area
	19,780		50.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	70	0.0430	0.21		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
13.0	70	0.0360	0.09		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.10"
18.5	140	Total			

Summary for Subcatchment 2S: Exist.School

Runoff = 3.00 cfs @ 12.06 hrs, Volume= 0.229 af, Depth> 4.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=4.60"

	Area (sf)	CN	Description
*	27,720	98	Roof
	27,720		100.00% Impervious Area

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

Summary for Subcatchment 3S:

Runoff = 2.30 cfs @ 12.11 hrs, Volume= 0.171 af, Depth> 2.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=4.60"

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	Area (sf)	CN	Description
*	10,350	98	Paved
	14,980	74	>75% Grass cover, Good, HSG C
	11,590	70	Woods, Good, HSG C
	36,920	79	Weighted Average
	26,570		71.97% Pervious Area
	10,350		28.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	80	0.0170	1.21		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
6.0	70	0.0350	0.20		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
0.3	15	0.0300	0.87		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
7.4	165	Total			

Summary for Subcatchment 4S:

Runoff = 0.88 cfs @ 12.28 hrs, Volume= 0.092 af, Depth> 2.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=4.60"

	Area (sf)	CN	Description
*	2,880	98	Paved
	1,890	74	>75% Grass cover, Good, HSG C
	19,090	70	Woods, Good, HSG C
	23,860	74	Weighted Average
	20,980		87.93% Pervious Area
	2,880		12.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.5	130	0.0450	0.11		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.10"

Summary for Subcatchment 5S: Playfield

Runoff = 3.88 cfs @ 12.16 hrs, Volume= 0.323 af, Depth> 2.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=4.60"

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	Area (sf)	CN	Description
*	3,380	98	Paved/Roof
	68,670	74	>75% Grass cover, Good, HSG C
	11,840	70	Woods, Good, HSG C
	83,890	74	Weighted Average
	80,510		95.97% Pervious Area
	3,380		4.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	65	0.0170	1.16		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
5.1	60	0.0380	0.20		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
4.3	205	0.0130	0.80		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.4	30	0.0500	1.12		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
10.7	360	Total			

Summary for Subcatchment 6S: Parking/Drive

Runoff = 3.35 cfs @ 12.08 hrs, Volume= 0.243 af, Depth> 3.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=4.60"

	Area (sf)	CN	Description
*	23,890	98	Paved
	12,230	74	>75% Grass cover, Good, HSG C
	1,750	70	Woods, Good, HSG C
	37,870	89	Weighted Average
	13,980		36.92% Pervious Area
	23,890		63.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	40	0.0500	0.20		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
0.6	45	0.0250	1.26		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
1.4	20	0.1000	0.23		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
5.3	105	Total			

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Type III 24-hr 10 Year Rainfall=4.60"

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Summary for Subcatchment 7S: New Building

Runoff = 1.71 cfs @ 12.06 hrs, Volume= 0.130 af, Depth> 4.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=4.60"

Area (sf)	CN	Description
* 15,750	98	Roof
15,750		100.00% Impervious Area

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

Summary for Subcatchment 8S: New Pavement

Runoff = 0.68 cfs @ 12.03 hrs, Volume= 0.048 af, Depth> 3.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=4.60"

Area (sf)	CN	Description
* 5,480	98	Paved
800	74	>75% Grass cover, Good, HSG C
6,280	95	Weighted Average
800		12.74% Pervious Area
5,480		87.26% Impervious Area

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

Summary for Reach 1R: WAP-5

Inflow Area = 0.869 ac, 63.08% Impervious, Inflow Depth > 3.35" for 10 Year event

Inflow = 3.35 cfs @ 12.08 hrs, Volume= 0.243 af

Outflow = 3.35 cfs @ 12.08 hrs, Volume= 0.243 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs

Summary for Reach 2R: WAP-2

Inflow Area = 0.848 ac, 28.03% Impervious, Inflow Depth > 2.42" for 10 Year event

Inflow = 2.30 cfs @ 12.11 hrs, Volume= 0.171 af

Outflow = 2.30 cfs @ 12.11 hrs, Volume= 0.171 af, Atten= 0%, Lag= 0.0 min

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Routing by Stor-Ind+Trans method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs

Summary for Reach 3R: WAP-3

Inflow Area = 0.548 ac, 12.07% Impervious, Inflow Depth > 2.01" for 10 Year event
 Inflow = 0.88 cfs @ 12.28 hrs, Volume= 0.092 af
 Outflow = 0.88 cfs @ 12.28 hrs, Volume= 0.092 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs

Summary for Reach 4R: WAP-4

Inflow Area = 2.432 ac, 23.23% Impervious, Inflow Depth > 1.68" for 10 Year event
 Inflow = 4.09 cfs @ 12.16 hrs, Volume= 0.341 af
 Outflow = 4.09 cfs @ 12.16 hrs, Volume= 0.341 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs

Summary for Pond 1P: WAP-1

Inflow Area = 1.527 ac, 71.42% Impervious, Inflow Depth > 3.52" for 10 Year event
 Inflow = 4.18 cfs @ 12.07 hrs, Volume= 0.448 af
 Outflow = 4.17 cfs @ 12.07 hrs, Volume= 0.448 af, Atten= 0%, Lag= 0.2 min
 Primary = 4.17 cfs @ 12.07 hrs, Volume= 0.448 af

Routing by Stor-Ind method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs

Peak Elev= 28.61' @ 12.07 hrs Surf.Area= 13 sf Storage= 22 cf

Plug-Flow detention time= 0.2 min calculated for 0.448 af (100% of inflow)

Center-of-Mass det. time= 0.1 min (776.8 - 776.6)

Volume	Invert	Avail.Storage	Storage Description
#1	26.90'	54 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.90	13	0	0
30.85	13	51	51
31.00	20	2	54

Device	Routing	Invert	Outlet Devices
#1	Primary	26.90'	12.0" Round Culvert L= 290.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 26.90' / 23.90' S= 0.0103 ' / ' Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=4.05 cfs @ 12.07 hrs HW=28.55' (Free Discharge)↑**1=Culvert** (Inlet Controls 4.05 cfs @ 5.16 fps)

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Type III 24-hr 10 Year Rainfall=4.60"

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Printed 8/28/2020

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Summary for Pond 2P: Subsurface Filter

Inflow Area = 0.506 ac, 96.37% Impervious, Inflow Depth > 4.22" for 10 Year event
 Inflow = 2.37 cfs @ 12.05 hrs, Volume= 0.178 af
 Outflow = 0.93 cfs @ 12.25 hrs, Volume= 0.178 af, Atten= 61%, Lag= 11.7 min
 Discarded = 0.27 cfs @ 12.15 hrs, Volume= 0.159 af
 Primary = 0.66 cfs @ 12.25 hrs, Volume= 0.018 af

Routing by Stor-Ind method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 35.21' @ 12.25 hrs Surf.Area= 4,898 sf Storage= 2,324 cf

Plug-Flow detention time= 74.6 min calculated for 0.177 af (100% of inflow)

Center-of-Mass det. time= 74.0 min (821.0 - 747.0)

Volume	Invert	Avail.Storage	Storage Description
#1	33.50'	117 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
#2	33.00'	325 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
			812 cf Overall x 40.0% Voids
#3	33.50'	1,689 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
			2,111 cf Overall x 80.0% Voids
#4	34.80'	325 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
			812 cf Overall x 40.0% Voids
2,456 cf			Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.50	26	0	0
38.00	26	117	117

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.00	1,624	0	0
33.50	1,624	812	812

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.50	1,624	0	0
34.80	1,624	2,111	2,111

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.80	1,624	0	0
35.30	1,624	812	812

Device	Routing	Invert	Outlet Devices
#1	Discarded	33.00'	2.400 in/hr Exfiltration over Surface area
#2	Primary	34.80'	12.0" Round Culvert L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 34.80' / 33.00' S= 0.0900 '/' Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

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Type III 24-hr 10 Year Rainfall=4.60"

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Discarded OutFlow Max=0.27 cfs @ 12.15 hrs HW=35.10' (Free Discharge)↑**1=Exfiltration** (Exfiltration Controls 0.27 cfs)**Primary OutFlow** Max=0.65 cfs @ 12.25 hrs HW=35.21' (Free Discharge)↑**2=Culvert** (Inlet Controls 0.65 cfs @ 2.17 fps)**Summary for Pond 3P: CB and storm drain**

Inflow Area = 0.506 ac, 96.37% Impervious, Inflow Depth = 0.44" for 10 Year event
 Inflow = 0.66 cfs @ 12.25 hrs, Volume= 0.018 af
 Outflow = 0.41 cfs @ 12.42 hrs, Volume= 0.018 af, Atten= 38%, Lag= 10.6 min
 Primary = 0.41 cfs @ 12.42 hrs, Volume= 0.018 af

Routing by Stor-Ind method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs / 2

Peak Elev= 30.55' @ 12.42 hrs Surf.Area= 255 sf Storage= 222 cf

Plug-Flow detention time= 6.5 min calculated for 0.018 af (100% of inflow)

Center-of-Mass det. time= 6.5 min (747.4 - 741.0)

Volume	Invert	Avail.Storage	Storage Description
#1	29.10'	90 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
#2	29.10'	344 cf	15.0" Round Pipe Storage
			L= 280.0' S= 0.0050 '/
#3	30.70'	92 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		526 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
29.10	13	0	0
36.00	13	90	90

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.70	13	0	0
37.80	13	92	92

Device	Routing	Invert	Outlet Devices
#1	Primary	29.10'	3.7" Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=0.41 cfs @ 12.42 hrs HW=30.55' (Free Discharge)↑**1=Orifice/Grate** (Orifice Controls 0.41 cfs @ 5.47 fps)

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Type III 24-hr 25 Year Rainfall=5.80"

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Time span=2.00-23.00 hrs, dt=0.05 hrs, 421 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Bus Loop	Runoff Area=38,790 sf 50.99% Impervious Runoff Depth>4.05" Flow Length=140' Tc=18.5 min CN=85 Runoff=2.94 cfs 0.301 af
Subcatchment2S: Exist.School	Runoff Area=27,720 sf 100.00% Impervious Runoff Depth>5.49" Tc=4.0 min CN=98 Runoff=3.80 cfs 0.291 af
Subcatchment3S:	Runoff Area=36,920 sf 28.03% Impervious Runoff Depth>3.45" Flow Length=165' Tc=7.4 min CN=79 Runoff=3.27 cfs 0.244 af
Subcatchment4S:	Runoff Area=23,860 sf 12.07% Impervious Runoff Depth>2.96" Flow Length=130' Slope=0.0450 '/' Tc=19.5 min CN=74 Runoff=1.32 cfs 0.135 af
Subcatchment5S: Playfield	Runoff Area=83,890 sf 4.03% Impervious Runoff Depth>2.97" Flow Length=360' Tc=10.7 min CN=74 Runoff=5.77 cfs 0.476 af
Subcatchment6S: Parking/Drive	Runoff Area=37,870 sf 63.08% Impervious Runoff Depth>4.49" Flow Length=105' Tc=5.3 min CN=89 Runoff=4.42 cfs 0.325 af
Subcatchment7S: New Building	Runoff Area=15,750 sf 100.00% Impervious Runoff Depth>5.49" Tc=4.0 min CN=98 Runoff=2.16 cfs 0.165 af
Subcatchment8S: New Pavement	Runoff Area=6,280 sf 87.26% Impervious Runoff Depth>5.16" Tc=2.0 min CN=95 Runoff=0.87 cfs 0.062 af
Reach 1R: WAP-5	Inflow=4.42 cfs 0.325 af Outflow=4.42 cfs 0.325 af
Reach 2R: WAP-2	Inflow=3.27 cfs 0.244 af Outflow=3.27 cfs 0.244 af
Reach 3R: WAP-3	Inflow=1.32 cfs 0.135 af Outflow=1.32 cfs 0.135 af
Reach 4R: WAP-4	Inflow=6.37 cfs 0.517 af Outflow=6.37 cfs 0.517 af
Pond 1P: WAP-1	Peak Elev=29.84' Storage=38 cf Inflow=5.44 cfs 0.592 af 12.0" Round Culvert n=0.010 L=290.0' S=0.0103 '/' Outflow=5.35 cfs 0.592 af
Pond 2P: Subsurface Filter	Peak Elev=35.58' Storage=2,393 cf Inflow=3.00 cfs 0.227 af Discarded=0.27 cfs 0.184 af Primary=1.94 cfs 0.041 af Outflow=2.21 cfs 0.225 af
Pond 3P: CB and storm drain	Peak Elev=35.69' Storage=494 cf Inflow=1.94 cfs 0.041 af Outflow=0.91 cfs 0.041 af

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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Subcatchment 1S: Bus Loop

Runoff = 2.94 cfs @ 12.25 hrs, Volume= 0.301 af, Depth> 4.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=5.80"

	Area (sf)	CN	Description
*	19,780	98	Paved
	9,740	74	>75% Grass cover, Good, HSG C
	9,270	70	Woods, Good, HSG C
	38,790	85	Weighted Average
	19,010		49.01% Pervious Area
	19,780		50.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	70	0.0430	0.21		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
13.0	70	0.0360	0.09		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.10"
18.5	140	Total			

Summary for Subcatchment 2S: Exist.School

Runoff = 3.80 cfs @ 12.06 hrs, Volume= 0.291 af, Depth> 5.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=5.80"

	Area (sf)	CN	Description
*	27,720	98	Roof
	27,720		100.00% Impervious Area

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

Summary for Subcatchment 3S:

Runoff = 3.27 cfs @ 12.11 hrs, Volume= 0.244 af, Depth> 3.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=5.80"

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Type III 24-hr 25 Year Rainfall=5.80"

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	Area (sf)	CN	Description
*	10,350	98	Paved
	14,980	74	>75% Grass cover, Good, HSG C
	11,590	70	Woods, Good, HSG C
	36,920	79	Weighted Average
	26,570		71.97% Pervious Area
	10,350		28.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	80	0.0170	1.21		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
6.0	70	0.0350	0.20		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
0.3	15	0.0300	0.87		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
7.4	165	Total			

Summary for Subcatchment 4S:

Runoff = 1.32 cfs @ 12.27 hrs, Volume= 0.135 af, Depth> 2.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=5.80"

	Area (sf)	CN	Description
*	2,880	98	Paved
	1,890	74	>75% Grass cover, Good, HSG C
	19,090	70	Woods, Good, HSG C
	23,860	74	Weighted Average
	20,980		87.93% Pervious Area
	2,880		12.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.5	130	0.0450	0.11		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.10"

Summary for Subcatchment 5S: Playfield

Runoff = 5.77 cfs @ 12.15 hrs, Volume= 0.476 af, Depth> 2.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=5.80"

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Type III 24-hr 25 Year Rainfall=5.80"

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	Area (sf)	CN	Description
*	3,380	98	Paved/Roof
	68,670	74	>75% Grass cover, Good, HSG C
	11,840	70	Woods, Good, HSG C
	83,890	74	Weighted Average
	80,510		95.97% Pervious Area
	3,380		4.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	65	0.0170	1.16		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
5.1	60	0.0380	0.20		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
4.3	205	0.0130	0.80		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.4	30	0.0500	1.12		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
10.7	360	Total			

Summary for Subcatchment 6S: Parking/Drive

Runoff = 4.42 cfs @ 12.08 hrs, Volume= 0.325 af, Depth> 4.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=5.80"

	Area (sf)	CN	Description
*	23,890	98	Paved
	12,230	74	>75% Grass cover, Good, HSG C
	1,750	70	Woods, Good, HSG C
	37,870	89	Weighted Average
	13,980		36.92% Pervious Area
	23,890		63.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	40	0.0500	0.20		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
0.6	45	0.0250	1.26		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
1.4	20	0.1000	0.23		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
5.3	105	Total			

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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Subcatchment 7S: New Building

Runoff = 2.16 cfs @ 12.06 hrs, Volume= 0.165 af, Depth> 5.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=5.80"

Area (sf)	CN	Description
* 15,750	98	Roof
15,750		100.00% Impervious Area

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

Summary for Subcatchment 8S: New Pavement

Runoff = 0.87 cfs @ 12.03 hrs, Volume= 0.062 af, Depth> 5.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=5.80"

Area (sf)	CN	Description
* 5,480	98	Paved
800	74	>75% Grass cover, Good, HSG C
6,280	95	Weighted Average
800		12.74% Pervious Area
5,480		87.26% Impervious Area

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

Summary for Reach 1R: WAP-5

Inflow Area = 0.869 ac, 63.08% Impervious, Inflow Depth > 4.49" for 25 Year event

Inflow = 4.42 cfs @ 12.08 hrs, Volume= 0.325 af

Outflow = 4.42 cfs @ 12.08 hrs, Volume= 0.325 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs

Summary for Reach 2R: WAP-2

Inflow Area = 0.848 ac, 28.03% Impervious, Inflow Depth > 3.45" for 25 Year event

Inflow = 3.27 cfs @ 12.11 hrs, Volume= 0.244 af

Outflow = 3.27 cfs @ 12.11 hrs, Volume= 0.244 af, Atten= 0%, Lag= 0.0 min

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Type III 24-hr 25 Year Rainfall=5.80"

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Routing by Stor-Ind+Trans method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs

Summary for Reach 3R: WAP-3

Inflow Area = 0.548 ac, 12.07% Impervious, Inflow Depth > 2.96" for 25 Year event
 Inflow = 1.32 cfs @ 12.27 hrs, Volume= 0.135 af
 Outflow = 1.32 cfs @ 12.27 hrs, Volume= 0.135 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs

Summary for Reach 4R: WAP-4

Inflow Area = 2.432 ac, 23.23% Impervious, Inflow Depth > 2.55" for 25 Year event
 Inflow = 6.37 cfs @ 12.17 hrs, Volume= 0.517 af
 Outflow = 6.37 cfs @ 12.17 hrs, Volume= 0.517 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs

Summary for Pond 1P: WAP-1

Inflow Area = 1.527 ac, 71.42% Impervious, Inflow Depth > 4.65" for 25 Year event
 Inflow = 5.44 cfs @ 12.07 hrs, Volume= 0.592 af
 Outflow = 5.35 cfs @ 12.08 hrs, Volume= 0.592 af, Atten= 2%, Lag= 0.6 min
 Primary = 5.35 cfs @ 12.08 hrs, Volume= 0.592 af

Routing by Stor-Ind method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs

Peak Elev= 29.84' @ 12.08 hrs Surf.Area= 13 sf Storage= 38 cf

Plug-Flow detention time= 0.2 min calculated for 0.592 af (100% of inflow)

Center-of-Mass det. time= 0.1 min (772.3 - 772.2)

Volume	Invert	Avail.Storage	Storage Description
#1	26.90'	54 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.90	13	0	0
30.85	13	51	51
31.00	20	2	54

Device	Routing	Invert	Outlet Devices
#1	Primary	26.90'	12.0" Round Culvert L= 290.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 26.90' / 23.90' S= 0.0103 ' /' Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=5.27 cfs @ 12.08 hrs HW=29.72' (Free Discharge)↑**1=Culvert** (Barrel Controls 5.27 cfs @ 6.72 fps)

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Type III 24-hr 25 Year Rainfall=5.80"

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Summary for Pond 2P: Subsurface Filter

Inflow Area = 0.506 ac, 96.37% Impervious, Inflow Depth > 5.40" for 25 Year event
 Inflow = 3.00 cfs @ 12.05 hrs, Volume= 0.227 af
 Outflow = 2.21 cfs @ 12.12 hrs, Volume= 0.225 af, Atten= 26%, Lag= 3.9 min
 Discarded = 0.27 cfs @ 12.05 hrs, Volume= 0.184 af
 Primary = 1.94 cfs @ 12.12 hrs, Volume= 0.041 af

Routing by Stor-Ind method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs / 3
 Peak Elev= 35.58' @ 12.12 hrs Surf.Area= 4,898 sf Storage= 2,393 cf

Plug-Flow detention time= 76.3 min calculated for 0.224 af (99% of inflow)
 Center-of-Mass det. time= 69.8 min (813.2 - 743.3)

Volume	Invert	Avail.Storage	Storage Description
#1	33.50'	117 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
#2	33.00'	325 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
			812 cf Overall x 40.0% Voids
#3	33.50'	1,689 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
			2,111 cf Overall x 80.0% Voids
#4	34.80'	325 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
			812 cf Overall x 40.0% Voids
2,456 cf			Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.50	26	0	0
38.00	26	117	117

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.00	1,624	0	0
33.50	1,624	812	812

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.50	1,624	0	0
34.80	1,624	2,111	2,111

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.80	1,624	0	0
35.30	1,624	812	812

Device	Routing	Invert	Outlet Devices
#1	Discarded	33.00'	2.400 in/hr Exfiltration over Surface area
#2	Primary	34.80'	12.0" Round Culvert L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 34.80' / 33.00' S= 0.0900 ' / Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

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Type III 24-hr 25 Year Rainfall=5.80"

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Discarded OutFlow Max=0.27 cfs @ 12.05 hrs HW=35.10' (Free Discharge)↑**1=Exfiltration** (Exfiltration Controls 0.27 cfs)**Primary OutFlow** Max=1.74 cfs @ 12.12 hrs HW=35.52' (Free Discharge)↑**2=Culvert** (Inlet Controls 1.74 cfs @ 2.89 fps)**Summary for Pond 3P: CB and storm drain**

Inflow Area = 0.506 ac, 96.37% Impervious, Inflow Depth = 0.97" for 25 Year event
 Inflow = 1.94 cfs @ 12.12 hrs, Volume= 0.041 af
 Outflow = 0.91 cfs @ 12.27 hrs, Volume= 0.041 af, Atten= 53%, Lag= 9.1 min
 Primary = 0.91 cfs @ 12.27 hrs, Volume= 0.041 af

Routing by Stor-Ind method, Time Span= 2.00-23.00 hrs, dt= 0.05 hrs / 2

Peak Elev= 35.69' @ 12.27 hrs Surf.Area= 26 sf Storage= 494 cf

Plug-Flow detention time= 9.2 min calculated for 0.041 af (100% of inflow)

Center-of-Mass det. time= 9.0 min (746.0 - 737.0)

Volume	Invert	Avail.Storage	Storage Description
#1	29.10'	90 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
#2	29.10'	344 cf	15.0" Round Pipe Storage L= 280.0' S= 0.0050 '/'
#3	30.70'	92 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		526 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
29.10	13	0	0
36.00	13	90	90

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.70	13	0	0
37.80	13	92	92

Device	Routing	Invert	Outlet Devices
#1	Primary	29.10'	3.7" Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=0.91 cfs @ 12.27 hrs HW=35.61' (Free Discharge)↑**1=Orifice/Grate** (Orifice Controls 0.91 cfs @ 12.14 fps)



16. CONSISTENCY WITH CITY MASTER PLANS

Consistency with City Master Plans – (14-526 (c) 1)

- Expanded development at the Presumpscot Elementary School is accomplishing initiatives of 'Portland's Plan 2030' for educational enhancement. The 'Buildings for Our Future' report of 2013 contained recommendations for reconstruction and renovation of the City's elementary schools. The Presumpscot Elementary School is one of several that will be accomplishing these goals.
- No off-site infrastructure development is proposed.

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17. PUBLIC SAFETY AND FIRE PREVENTION

Public Safety and Fire Prevention – (14-526 (c))

- The renovated school discourages crime by the design of the new front entry Administration addition, which places windows for full visibility of staff to observe those seeking to enter the building. Doors will be operated by the attending staff person to control access as appropriate. The new front entry will be well lit by building-mounted exterior lights for a welcoming safe front area. Building-mounted exterior lights will provide light around the building to prevent dark hiding places. Throughout the site, landscaping will be primarily deciduous trees and shrubs to minimize dense evergreen hiding areas. Evergreens that may be selected will be low-growing in form and used in any disturbed areas with lower sunlight conditions.
- Access to the school building by emergency vehicles, including fire trucks, is maintained by the renovated site design to function the same as current access, and provide access around all four sides of the building. Relocated fire lanes are at least 16' wide. The fire truck template, furnished by the City Fire Department, has been placed on the site plan by the Autoturn /Vehicle Tracking computer program at the revised drive. This shows that a fire truck can access the south side of the school and drive around counter-clockwise to exit the north side of the school yard. See the attached Autoturn sketch FTT-1, that shows the drives and curves are sized appropriately for the larger fire trucks.
- The new building additions and renovations, together with the renovated site, have been designed consistent with Public safety standards of Technical Manual, Section 3. Pedestrian movements are improved by providing accessible routes and sidewalks for ADA access to the school's renovated front entry.
- Code Summary – attached Fire Department Checklist.



August 31, 2020

**Portland Fire Department
Site Review
Fire Department Checklist**

1. *Name of Applicant:*
Steven Stilphen
Portland Public Schools
353 Cumberland Avenue
Portland, ME 04101
207-842-5315
2. *Name of Architect:*
Lisa Sawin, AIA
Harriman
46 Harriman Drive
Auburn, Maine 04210
207-784-5162
3. *Proposed Use of Structure:*
Education
4. *Square footage of proposed structure (total and per story):*
One-Story Additions = 17,910 SF; Existing building – One story = 25,400 SF;
Total Ground Floor= 43,310 SF
Total with Mech. Mezznine (1390 SF) = 44,700 SF
5. *Elevation of Structures*
See A20.1, A20.2, A20.3, A20.4 Exterior Elevations
6. *Proposed Fire Protection of All Structures*
Construction: NFPA II (000), IBC 2B
Addressable Fire Alarm System (New Additions)
Sprinkled in accordance with NFPA 101 9.7/NFPA 13 (New Additions)

7. *Code Summary (NFPA 1)*

Chapter 6: Use and Classification, See above for Proposed Use of Structure

Chapter 10: General Safety Requirements

10.1.2 Building designed to NPFA 101 2018 with City of Portland Amendment (10-7-13) for the above listed occupancy uses

10.18.3.2 18" min clearance from sprinkler deflector to obstructions

Chapter 11: Building Services

11.1.2.1 Building designed to NFPA 70 NEC

11.2.1 Building designed to NFPA 90A, NFPA 90B

11.3 Single story building does not have an elevator

Chapter 12: Features of Fire Protection

12.2 Building designed to NPFA 101 2018 with City of Portland Amendment (10-7-13) for the above listed occupancy uses. Applicable section of this code (NFPA 1) will be addressed by compliance with NFPA 101.

Chapter 13: Fire Protection Systems

13.1 Building plans will be submitted to the City of Portland for review and approval with the building permit application.

Chapter 14: Means of Egress

14.1 Building designed to NPFA 101 2018 and Maine Uniform Building and Energy Code (MUBEC). Respective code summary will be provided with the building permit application.

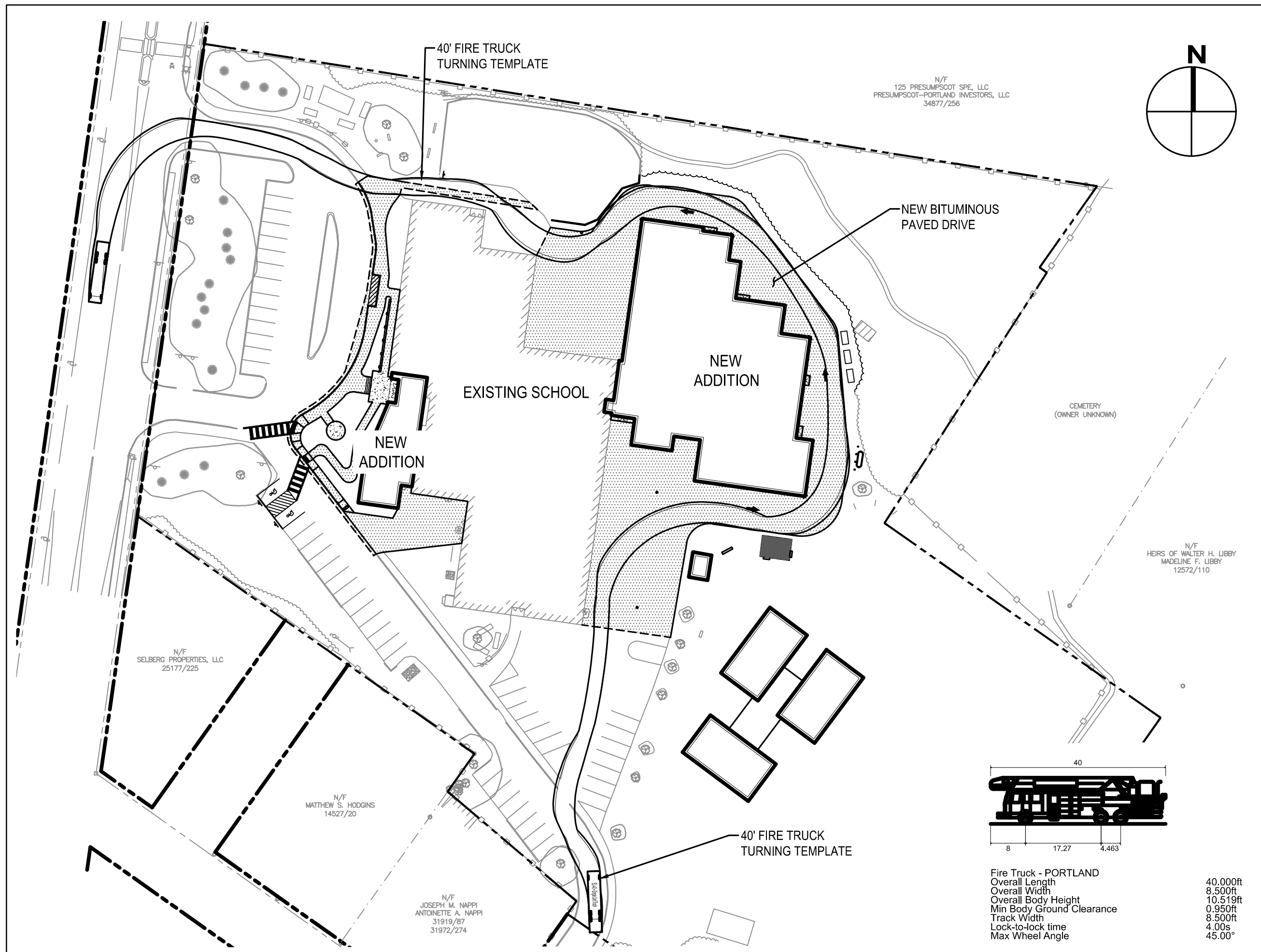
Chapter 16: Safeguarding Construction, Alteration, and Demolition Operations

16.1.1 General Contractor for the project will contact the City of Portland Fire Department to coordinate necessary requirements under this Chapter prior to construction.

Chapter 18 Fire Department Access and Water Supply

18.1.3 Plans

Knox Box will be provided at the building entrance. See site plans for access drive and water supply.



PRESUMPCOT
ELEMENTARY SCHOOL

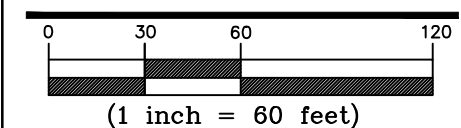
PORTLAND, MAINE

HA Project No. 19151

AUGUST 31, 2020

Rev Date	Revision Description

PRELIMINARY
NOT FOR
CONSTRUCTION



PA / PE: Drw By:

© 2020 Harriman Associates

FIRE TRUCK
TURNING PLAN

FTT-1



18. PUBLIC UTILITIES AVAILABILITY

Availability and Adequacy of Public Utilities – (14-526 (c) 3)

- Electrical service to the new Cafeteria addition will be extended from the overhead lines on the southwest side of the building, to a new transformer located on the east side of the new addition. An extension of the overhead lines will be made in the parking area, then the electrical lines across the playfield to the new transformer will be underground.
- Existing and proposed utilities connections to the school building are shown on drawing C40.1. The existing sanitary sewer connection will remain in-place to the existing school building. One new sanitary sewer connection will be made to the new Cafeteria building addition, around the north end of the existing building. The existing steam heating lines will remain in-place, to service the new Cafeteria addition. The domestic water line fed from Presumpscot Street will remain in-place. A new 6" fire-suppression water line will be extended across the site from the main in Presumpscot Street to connect with the existing building. As noted above, electrical service will be extended around the south side of the building to a new transformer located on the east side of the new Cafeteria building addition. Communication lines will be extended to the new additions within the existing building.
- Proposed sewer line connection is being made to the existing on-site sewer service line, and no new connections to sewer mains in the public way are proposed.
- Solid waste will be collected, stored, and disposed as it is currently. The trash dumpster located in the service yard on the south side of the school will be moved slightly to a new concrete pad and chain-link fence enclosure. The dumpster will be screened with privacy inserts in the chain-link fence. Access to the service yard and dumpster will be the same as existing.
- Communications with the public utility agencies are included. The enclosed letters of request have been sent to the Portland Water District and the City Public Works Department for water and sewer coordination. The attached Water District table was requested and returned to the Water District.



September 4, 2020

Chris Branch cbranch@portlandmaine.gov
Portland Public Works
212 Canco Road, Suite B
Portland, ME 04103

Re: Presumpscot Elementary School
Additions and Renovations
Project No. 19151
Capacity Letter Request

Dear Chris:

We are assisting the Portland Public Schools with the design of additions and renovations of the Presumpscot Elementary School at 69 Presumpscot Street. The additions will consist of a 15,750 sq.ft. Cafeteria and Classrooms single-story wing on the east side of the existing school; and a 2,290 sq.ft. administrative single-story addition to the front entry (west side) of the school. These building additions will enhance the daily experience for the students but will not increase the population of students or staff at the school.

Domestic water will continue to be served by the existing water line from Presumpscot Street. The current building occupants are approximately 275 students and 42 staff. Table 4C, Design Flows, of the Maine Subsurface Wastewater Disposal Rules, latest edition, shows daily flow for elementary school students of 13 gallons/day for a school with a cafeteria; and staff of 12 gallons/day. The gymnasium space has no shower facilities. The estimated daily water use for the renovated school is: 275 (13 gpd) + 42 (12 gpd) = 4,079 GPD.

An existing 8" diameter sewer line apparently carries sanitary flow from the building to the sewer main on Presumpscot Street. None of the new building addition roof drains will connect to any sanitary sewer line but will drain to the new on-site subsurface stormwater treatment system, with on-site stormwater discharge. A new 4" diameter sanitary sewer service from the new building addition to the east will extend around the north end of the existing building to connect into the existing 8" on-site sewer.

For inclusion in the Planning Board site application, please send me a letter stating the adequacy of the wastewater system to continue supplying the needs of the school. Please let me know if you have other concerns or suggestions that we should know about.

Thank you very much.

Sincerely,
Harriman

Frank L. Crabtree, P.E., LEED AP BD+C
Associate
fcrabtree@harriman.com

AUBURN

BOSTON

PORTLAND

PORTSMOUTH

harriman.com

cc: Steven Stilphen (stilps@portlandschools.org)



August 25, 2020

Heather Smith hsmith@pwd.org
MEANS Group
Portland Water District
225 Douglass Street
PO Box 3553
Portland, ME 04104-3553

Re: Presumpscot Elementary School
Additions and Renovations
Project No. 19151
Capacity Letter Request

Dear Heather:

We are assisting the Portland Public Schools with the design of additions and renovations to the Presumpscot Elementary School at 69 Presumpscot Street. The additions will consist of a 15,750 sq.ft. Cafeteria and Classrooms single-story wing on the east side of the existing school; and a 2,290 sq.ft. administrative single-story addition to the front entry (west side) of the school. These building additions will enhance the learning experience for the students, but will not increase the population of students or staff at the school.

Domestic water will continue to be served by the existing water line from Presumpscot Street. The current building occupants are approximately 275 students and 42 staff. Table 4C, Design Flows, of the Maine Subsurface Wastewater Disposal Rules, latest edition, shows daily flow for elementary school students of 13 gallons/day for a school with a cafeteria; and staff of 12 gallons/day. The gymnasium space has no shower facilities. The estimated daily water use for the renovated school is: 275 (13 gpd) + 42 (12 gpd) = 4,079 GPD.

Please send me a letter stating the adequacy of the water system to continue supplying the needs of the school, to include in a Planning Board site application.

AUBURN

Thank you very much.

BOSTON

Sincerely,
Harriman

PORTLAND

PORTSMOUTH

Frank L. Crabtree, P.E., LEED AP BD+C
Associate
fcrabtree@harriman.com

harriman.com

cc: Steven Stilphen (stilps@portlandschools.org)

Peak Flow Based on Fixture Count

Adapted from 2009 Maine State Internal Plumbing Code

Customer
Street Address
City

Portland Public Schools
69 Presumpscot Street
Portland

Fixture	Fixture Value 60 psi		No. of Fixtures		Fixture Value
Bathtub	4	x		=	0
Bidet	1	x		=	0
Dental Unit	1	x		=	0
Drinking Fountain - Public	0.5	x	16	=	8
Kitchen Sink	1.5	x		=	0
Bathroom Sink	1	x	18	=	18
Showerhead (Shower Only)	2	x	1	=	2
Service Sink	3	x	1	=	3
Toilet -Flushometer(high pressure)	5	x	24	=	120
-Tank Type	2.5	x		=	0
Urinal -Flushometer Valve	5	x	4	=	20
-Tank Type	2	x		=	0
Wash Sink (Each Set of Faucets)	2	x	6	=	12
Dishwasher	1.5	x		=	0
Washing Machine	4	x	1	=	4
Hose (outdoor spigot) <3/4 in.	2.5	x	4	=	10

Combined Fixture Value Total

197

Customer Peak Demand From Fig. 4-2 or 4-3
Pressure Factor From Table 4-1

Fire Sprinkler System(Yes/No)?

Yes

Irrigation(Yes/No)?

No

If yes, gpm required by
irrigation designer:

0

Total Fixed Demand (Peak Flow)

0

**Customer only needs to complete
the cells highlighted in blue**



19a. MASSING, VENTILATION, AND WIND IMPACT

Massing, Ventilations and Wind Impact – (14-526 (d) 1)

- The size and height of the new Cafeteria/Classroom building addition is typical for a single-story elementary school, and will not cause health or safety problems from changes in ventilation or wind effects on nearby structures. The building addition at 24' height and a setback of 65' from the north property line is within the zoning dimensional requirements.
- The existing Presumpscot Elementary School heating system is dual fuel, using either #2 oil or natural gas, as they choose. The new building additions will be served by a hot water heat exchanger using steam from the existing boiler, with outdoor air heat recovery units, finned tube radiation, and miscellaneous other small hot water heating units. No additional fuel-burning equipment will be installed in the school.
- Proposed additional ventilation units are an air-conditioning condensing unit and an air handler on the new Administration building roof. The units are approximately 120 ft. from the south property line. The air handler is approximately 4.5' tall, and the calculated maximum sound level from the air handler at the property line is only 40 decibels. The condensing unit on the same new Administration addition is 100 ft. from the south property line. It is approximately 6' tall, and its calculated sound level at the property line is only 21 decibels. Other ventilating fans and louvers located on the roof or building walls have minimal noise from the air they are venting. These air-handling fans operate primarily during the daytime, when the building spaces are occupied.

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19b. SNOW AND ICE LOADING

Snow and Ice Loading – (14-526 (d) 3)

- The Presumpscot Elementary School building additions have flat roofs that do not shed rainwater, snow, or ice to the ground. The roof structures are designed for the snow/ice loadings. The building design therefore prevents ice or snow from falling off the roof onto adjacent public ways or properties.

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20. EXTERIOR LIGHTING

Exterior Lighting – (14-526 (d) 6)

- No new site lighting poles are proposed for this Presumpscot School building addition project. The school doorways will be lit with wall-mounted lights or canopy- mounted lights for security. Attached are light fixture catalogue sheets for the selected building-mounted exterior light fixtures.
- There are no lights proposed in any street right-of-way.

JOB _____ TYPE _____

NOTES _____ APPROVALS _____

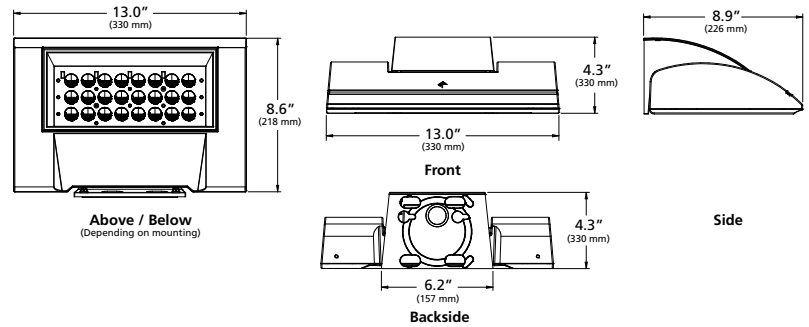
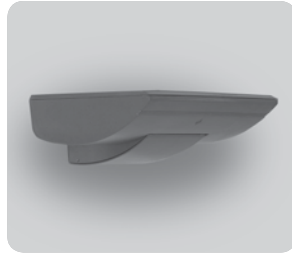
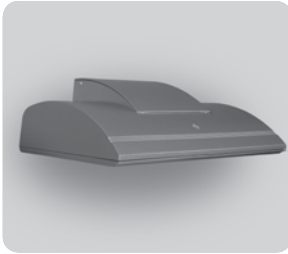
FEATURES

- -5° to +10° tilt adjustment
- High performance optics deliver up to 8,500 lumens
- up or down mountable without modification
- Diffused lens option
- Programmable occupancy sensor (dimming)
- NX and SiteSync wireless controls
- Up to 130 lumens per watt

Certifications



SPECIFICATIONS



Weight: 20 lbs

ORDERING CODE

Fixture	Mounting	Source	Wattage	Light Engine	Distribution	Voltage	Fixture Finish
WDS Wall Director Small	D Down U ¹ Up	24L 24 LEDs	30 30 Watts 40 40 Watts 60 60 Watts 75 75 Watts	3K7 3000K/70CRI 3K8 3000K/80CRI 4K7 4000K/70CRI 4K8 4000K/80CRI 5K7 5000K/70CRI	1 Type I 2 Type II 3 Type III 4W Type IV Wide 4F Type IV Forward WG ² Wall Graze SP Spot/Column FTD ² Forward Throw Diffuse WTD ² Wide Throw Diffuse	UNV 120-277V 347 ³ 347V 480 ³ 480V	BL Black DB Dark Bronze GT Graphite LG Light Gray PS Platinum Silver TT Titanium WH White CC Custom Color, consult representative
Control Options		Options		Accessories			
PC Button Photocell SCP-8F Programmable Occ. Sensor (<9' height) SCP-20F Programmable Occ. Sensor (9' - 20' height) SWP ⁴ SiteSync Wireless Pre-Commission NXWE ⁵ NX Wireless Enabled		EM ⁴ Internal Emergency Battery Backup SF Single Fuse & Fuse holder DF Double Fuse & Fuse holder		SCPREMOTE SCP configuration tool SWUSB SiteSync Software on USB SWTAB SiteSync Windows® Tablet SWBRG SiteSync Software Bridge Node			

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INTELLIGENCE

Kim Lighting reserves the right to change specifications without notice.

© 2018 KIM LIGHTING | 17760 Rowland Street | City of Industry | CA 91748
P 626.968.5666 | F 626.369.2695 | www.kimlighting.com | Rev. Oct. 12, 2018



¹ Not available with EM option or with SCP & SWPM sensor options.
² WG, FTD, and WTD come with a diffused lens.
³ 60 and 75 watt versions only
⁴ Universal voltage only (120-277), not available with PC option.
⁵ 120-347V only

LUMINAIRE PERFORMANCE

LED #	Nominal Lumen Package	Nominal Wattage	Lens Options	Distribution	3000K					4000K					5000K				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
24L	3,000	29	Clear Lens	1	3433	1	0	0	119	3519	1	0	0	122	3560	1	0	0	123
				2	3351	1	0	1	116	3436	1	0	1	119	3475	1	0	1	120
				3	3340	1	0	1	116	3424	1	0	1	119	3463	1	0	1	120
				4F	3343	1	0	1	116	3427	1	0	1	119	3466	1	0	1	120
				4W	3172	1	0	1	110	3252	1	0	1	113	3289	1	0	1	114
				SP	3600	3	0	0	125	3691	3	0	0	128	3733	3	0	0	129
			Diffuse Lens	WG	3372	2	0	1	117	3456	2	0	1	120	3496	2	0	1	121
				FTD	2855	1	0	1	99	2927	1	0	1	101	2960	1	0	1	103
				WTD	3151	1	0	1	109	3230	1	0	1	112	3267	1	0	1	113
	4,500	42	Clear Lens	1	4593	1	0	0	111	4708	1	0	0	113	4762	1	0	0	115
				2	4484	1	0	1	108	4596	1	0	1	111	4649	1	0	1	112
				3	4468	1	0	1	108	4581	1	0	1	110	4633	1	0	1	112
				4F	4472	1	0	1	108	4585	1	0	1	110	4637	1	0	1	112
				4W	4244	1	0	1	102	4350	1	0	1	105	4400	1	0	1	106
				SP	4817	3	0	0	116	4938	3	0	0	119	4994	3	0	0	120
			Diffuse Lens	WG	4511	2	0	1	109	4624	2	0	1	111	4677	2	0	1	113
				FTD	3819	1	0	1	92	3915	1	0	1	94	3960	1	0	1	95
				WTD	4215	1	0	1	102	4321	1	0	1	104	4371	1	0	1	105
	6,000	59	Clear Lens	1	6333	1	0	1	108	6492	1	0	1	111	6566	1	0	1	112
				2	6182	1	0	1	106	6338	1	0	1	108	6410	1	0	1	110
				3	6161	1	0	2	105	6316	1	0	2	108	6388	1	0	2	109
				4F	6166	1	0	2	105	6321	1	0	2	108	6393	1	0	2	109
				4W	5851	1	0	2	100	5998	1	0	2	103	6067	1	0	2	104
				SP	6641	4	0	0	114	6808	4	0	0	116	6886	4	0	0	118
			Diffuse Lens	WG	6219	3	0	1	106	6376	3	0	1	109	6449	3	0	1	110
				FTD	5266	1	0	1	90	5398	2	0	1	92	5460	2	0	1	93
				WTD	5812	1	0	1	99	5958	1	0	1	102	6026	1	0	1	103
	7,500	74	Clear Lens	1	7879	1	0	1	106	8077	1	0	1	109	8170	1	0	1	110
				2	7692	1	0	1	104	7885	1	0	1	107	7975	1	0	2	108
				3	7665	1	0	2	104	7858	1	0	2	106	7948	1	0	2	107
				4F	7672	1	0	2	104	7865	1	0	2	106	7955	1	0	2	107
				4W	7280	1	0	2	98	7463	1	0	2	101	7548	1	0	2	102
				SP	8263	4	0	0	112	8471	4	0	0	114	8567	4	0	0	116
			Diffuse Lens	WG	7738	3	0	1	105	7933	3	0	1	107	8023	3	0	1	108
				FTD	6552	2	0	1	89	6717	2	0	1	91	6793	2	0	2	92
				WTD	7231	2	0	1	98	7413	2	0	1	100	7498	2	0	1	101

Electrical Characteristics											Dimming					
System Watts	Current	Line Voltage		Amps AC						Min. Power Factor	Max THD (%)	Dimming Range	Source current out		Absolute voltage	
		VAC	Hz	120	208	240	277	347	480				Min	Max	Min	Max
29	350mA	120-480	50/60	0.24	0.14	0.12	0.10	0.08	0.06	>0.9	20	10% to 100%	0mA	1mA	0V	10V
42	500mA			0.38	0.22	0.19	0.16	0.13	0.09							
59	725mA			0.48	0.27	0.24	0.21	0.16	0.12							
74	925mA			0.67	0.39	0.34	0.29	0.23	0.17							

TM-21 LIFETIME CALCULATION

Projected Lumen Maintenance (25°C / 77°F)						
HOURS	0	25,000	36,000	50,000	100,000	Reported L70
Projected Lumen Maintenance	100%	97%	95%	93%	86%	> 60,000 hrs

Kim Lighting reserves the right to change specifications without notice.

SPECIFICATIONS

Housing

- Optical housing is a one-piece, die-cast low copper (<0.6%) aluminum alloy with integral heat sink. The housing rotates against mounting arm housing to provide -5° to 10° of adjustment with degree markers cast into the housing. At 0 adjustment, lens is totally concealed from view above horizontal with fixture mounted in the downward position.
- Mounting arm housing is one-piece die-cast, low copper (<0.6%) aluminum alloy with provisions for tilt mechanism. Mounting arm fastens to the mounting plate with keyhole slots freeing both hands for securing and wiring. One stainless steel socket-head screw on the tilt mechanism frees the optical housing to rotate for aiming. Tightening the screws locks the housing and lens frame together with sealing provided by a silicone gasket. For visual aiming, adjustment may be accomplished with the fixture on.
- Lens Frame is a one-piece, die-cast low copper (<0.6%) aluminum alloy with integral cooling fins to dissipate driver thermal.
- Luminaire housing shall be free of any visible heat fins, hardware or fasteners.
- Bracketry and hardware shall be stainless steel.

Optical Array

- LEDs shall be mounted to a metal printed circuit board assembly (MCPCB).
- Optical lenses shall be clear injection molded PMMA acrylic.
- Secondary lens is impact resistant 1/8" tempered glass with anti-reflective coating.

Electronic Module

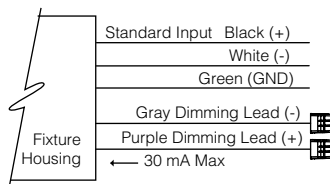
- Drivers shall be in direct contact with the die-cast aluminum lens frame across the entire surface area of the widest face for maximum thermal transfer.
- "Thermal Shield", secondary side, thermistor provides protection for the sustainable life of LED module and electronic components.
- Drivers shall have greater than a 0.9 power factor, less than 20% harmonic distortion, and be suitable for operation in -40°C to 40°C ambient environments
- Luminaires shall have integral surge protection that shall be U.L. recognized and have a surge current rating of 10,000 Amps using the industry standard 8/20uSec wave and surge rating of

372J. Surge protection device shall be wired in series.

- Drivers shall be U.L. recognized.
- Drivers shall not be compatible with current sourcing dimmers, consult factory for current list of known compatible dimming systems approved dimmers include Lutron Diva AVTV, Lutron Nova NFTV and NTFTV.

Dimming

- 10% to 100% dimming by the use of standard 0-10V interface driver.
- The thermal shield works in conjunction with the control system to assure that overheating will not harm the LEDs.
- The wiring harness is connected with the use of the Purple lead as the positive (+) and the Grey lead as the negative (-) to an available control signal (by others).



Specifications

- Luminaire shall be capable of operating at 100% brightness in a 40°C environment. Both driver and optical array shall have integral thermal protection that will dim the luminaire upon detection of temperatures in excess of 85°C.
- Luminaires not configured with a control system shall be provided with 0-10 purple and gray dimming leads.

Controls

- Optional universal voltage (120-277V) button photocontrol for dusk to dawn energy savings. Photocontrol is factory installed inside the housing with a fully gasketed sensor on the side wall. For multiple fixture mountings, one fixture is supplied with a photocell to operate the others.
- Occupancy Sensor shall be programmable and use passive infrared (PIR) sensing technology that reacts to changes in infrared energy (moving body heat) within the coverage area. Careful consideration must be given to obstructions that may block the sensor's line of sight.
- Factory default settings for SCP option shall be:
 - High mode: 10V - Low mode: 1V - Ramp-up

rate: disabled - Fade-down rate: disabled - Photocell: Off - Sensitivity: Full - Time Delay: Fade to low: 5 minutes - Time Delay: Fade to off: 1 hour

- The SCP enables any wall mounted luminaire, in excess of 30 watts, to meet California Title 24 requirements with integral 10KA surge protection for added reliability and serviceability. For more detail: http://www.aal.net/products/sensor_control_programmable
- SiteSync™ wireless control system for reduction in energy and maintenance cost while optimizing light quality 24/7. See ordering information or visit www.hubbellighting.com/products/sitesync for more details.
- Hubbell Control Solutions' NX Distributed Intelligence™ lighting control platform utilizes a Distributed Network Architecture (DNA) that connects intelligent devices including luminaires, controllers, panels, occupancy sensors, photocells, wall switches and dimmers, creating a system with an unmatched level of reliability, scalability and simplicity

Options

- Integral battery backup provides emergency path of egress lighting for the required 90 minutes for 0°C ambient environments or -20°C with thermal jacket.

- Fusing:

SF for 120, 277 and 347 Line Volts

DF for 208, 240 and 480 Line Volts

High temperature fuse holders factory installed inside the fixture housing. Fuse is included.

Mounting and Installation

- JUNCTION BOX: Standard with steel, quick-mount junction box plate that mounts directly to 4" J-Box
- Mounting plate is stainless steel and features a one-piece EPDM gasket on back side of plate to firmly seal fixture to wall surface, forbidding entry of moisture and particulates.

Servicing

- Housing shall be able to hang freely in an open service position for inspection of primary wire connections. Once in service position, the housing shall be able to be removed for service by sliding the assembly to the left (for down mounting) or to the right (for up mounting) and disconnecting the wiring plugs.

Kim Lighting reserves the right to change specifications without notice.

SPECIFICATIONS

- Driver assembly shall be mounted to a prewired internal tray with quick disconnects for removal. Fusing SF for 120, 277, and 347 line volts DF for 208, 240, and 480 line volts high temperature fuse holders factory installed inside the fixture housing. Fuse is included.

Finish:

- Luminaire finish shall consist of a five stage pretreatment regimen with a polymer primer sealer, oven dry off, and top coated with a thermoset super TGIC polyester powder coat finish.
- Luminaire finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance.
- Standard colors include (BL) Black, (DB) Dark Bronze, (GT) Graphite, (LG) Light Gray, (PS) Platinum Silver, (TT) Titanium, (WH) White, and (CC) Custom Color (Include RAL#).

Certifications and Listings

- UL1598, UL 8750 and Canadian CSA Std. C22.2 no.250.
- IDA approved, down light only, 3000K and warmer CCTs only.
- 1.5G rated
- IP65 Compliant

CAUTION:

- Fixtures must be grounded in accordance with national, state and/or local electrical codes, Failure to do so may result in serious personal injury.

WARRANTY:

- For full warranty see <http://www.hubbellighting.com/resources/warranty>

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21. NOISE AND VIBRATION

Noise and Vibration – (14-526 (d) 7)

- The only exterior mechanical equipment being added to the Presumpscot School are an air-conditioning condensing unit and an air handler on the new Administration building roof. Catalogue specifications and sound data for the units are attached. The units are approximately 120 ft. from the south property line. The calculated maximum sound level from the air handler at the property line is only 40 decibels. The condensing unit on the same new Administration addition is 100 ft. from the south property line. Its calculated sound level at the property line is only 21 decibels. These noise levels at the nearest property line are quite low, and would be similar to general background noise levels.
- There is no new emergency generator for this school.

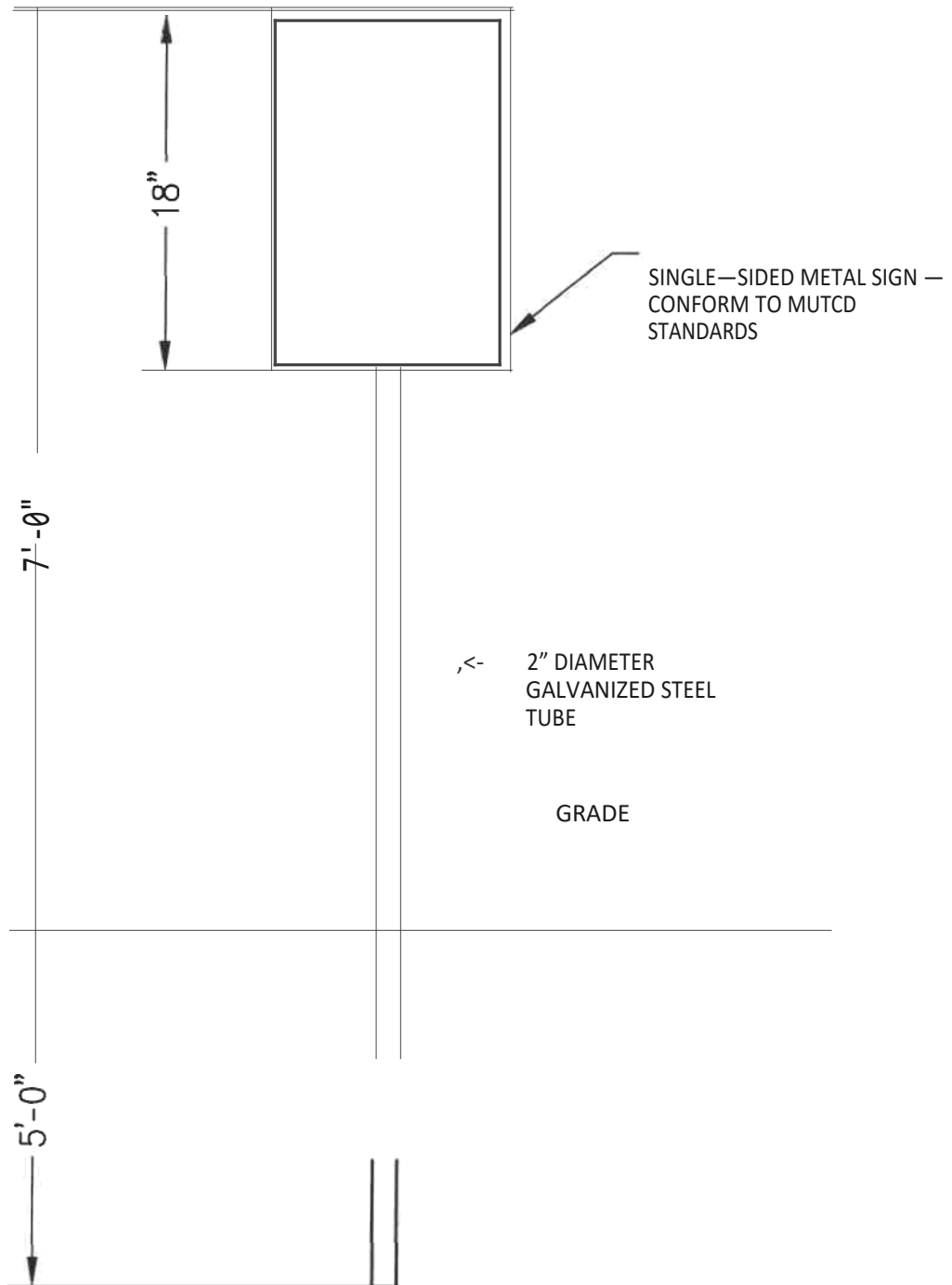
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22. SIGNAGE AND WAYFINDING

Signage and Wayfinding - (14-526 (d) 8)

- There are no new identification signs or monument signs proposed for the Presumpscot Elementary School.
- Any additional directional traffic control signs are shown on the Site Plan C00.1. Typical standard directional sign detail is attached.



TYPICAL
NOT TO SCALE

SIGN

B4



24. CONDITIONAL USE

Conditional Use Standards – (14-474)

- **Traffic:** The Presumpscot Elementary School building additions and renovations will provide a new cafeteria and classrooms, and will enhance the administrative spaces and the front entry to the school. No additional students or staff are anticipated. Therefore, no additional traffic is anticipated to be generated by this building project. Parking will remain unchanged. Relocation of the fire lane surrounding the building will result in a small increase in pavement.
- **Environmental Impacts:** The building additions and site renovations at the existing elementary school will not cause harmful conditions to the students, staff, or surrounding neighborhood.
 1. Noise: Two rooftop units will be located outdoors on the building roof. These units will more than 100' away from the nearest property line, and the sound levels measured at the nearest property line will be approximately 40 decibels, which is a minimal background noise level. See attachment 21.
 2. Glare: No new pole-mounted site lights will be added. The building-mounted site/security lighting will be shielded cut-off fixtures that will not produce glare at streets or property lines.
 3. Dust: During construction the contractor will control dust as specified on drawing C00.3. The completed reconstructed paved and grass surfaces will not produce dust.
 4. Sewage Disposal: The existing sanitary sewer will be used for the new school building additions. No on-site sewage disposal will occur.
 5. Air Emissions: The existing Presumpscot Elementary School receives its heat through a dual-fuel boiler using either #2 fuel-oil or natural gas. The new additions will utilize the existing heating system, so no additional fuel-burning equipment will be added to the elementary school.
 6. Odor: There are no activities or equipment at this renovated existing elementary school that will produce offensive odors.
 7. Lighting: No new site lighting poles are proposed for this Presumpscot School building addition project. The school doorways will be lit with wall-mounted lights or canopy-mounted lights.

8. Litter: None of the building additions or renovations will contribute litter to the project site.

- **Design and Operation:** The building additions and site renovation to the elementary school will operate the same as the existing school, and will not have substantially greater impact on surrounding properties. The Site Plan Level III attachments explain in detail how the proposed modifications have negligible impact to the neighborhood, and are consistent with the typical school development.
- **Zone Specific Criteria:** Residential Zone R5. Elementary Schools are noted as an institutional conditional use.

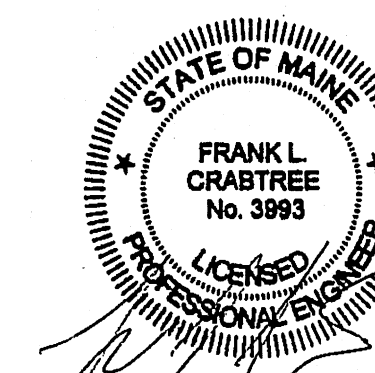
Additional Conditional Use Standards – (14-118(b))

- a. All expansion of the existing elementary school will be done on the same lot as the existing principal school.
- b. There are no residential uses on the existing school property.
- c. The proposed school expansion will not cause a combination of impacts regarding 'a' and 'b', above.
- d. The school additions are subject to site plan articles, which have been addressed and submitted under Level III Site Plan.
- e. The school additions are not 'community halls'.
- f. The school additions will not serve alcoholic beverages.
- g. The elementary school additions are not part of a college, university, or trade school; and the building height will be less than 55'.



PORTLAND, MAINE

Harriman Project No.	19151
Key Plan	Proj No.



PLANNING BOARD

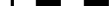
DECEMBER 11, 2020

Rev Date	Revision Description
03-04-2021	PLANNING BOARD REVISIONS

PRELIMINARY
NOT FOR
CONSTRUCTION

Drawing Scales
1" = 30'

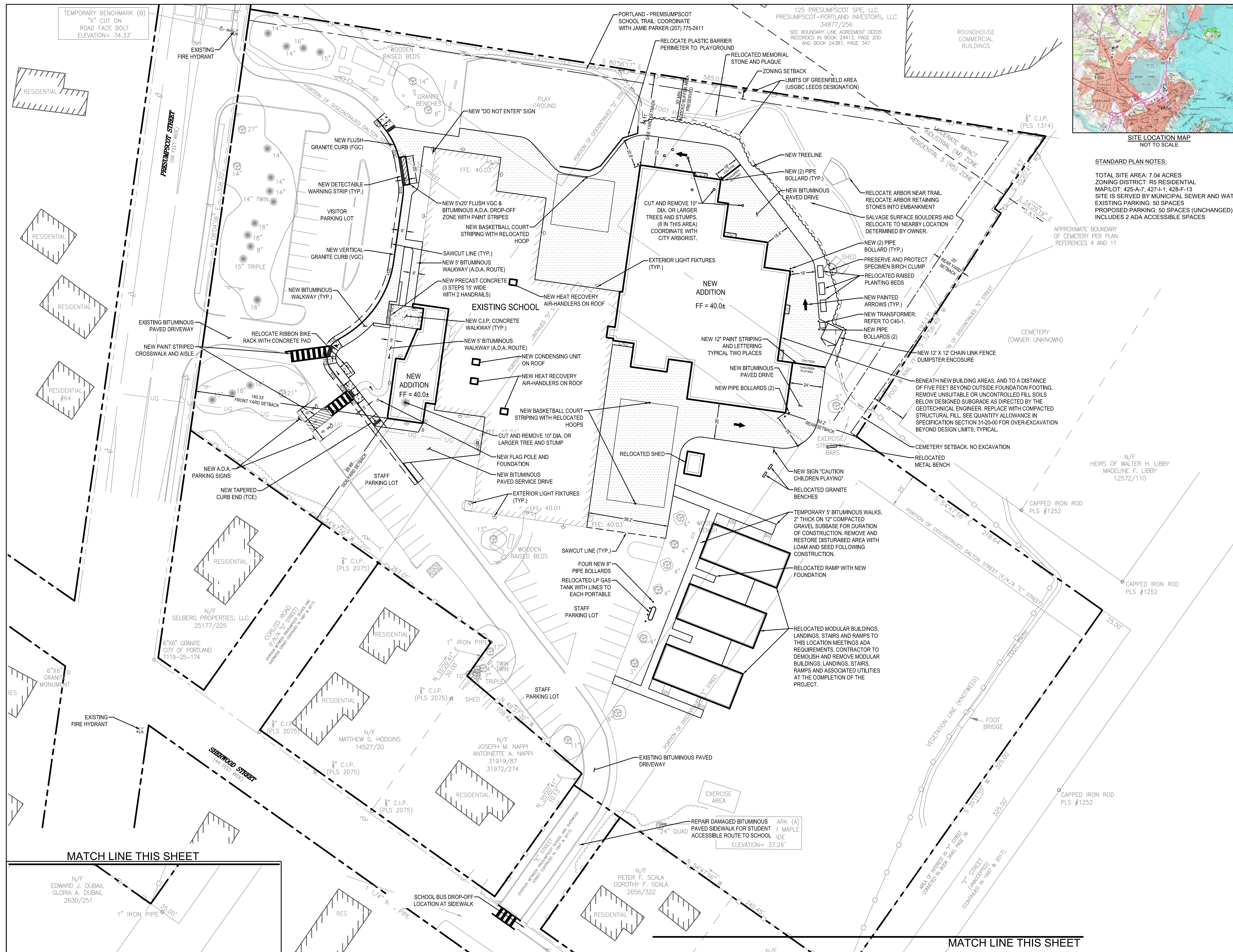
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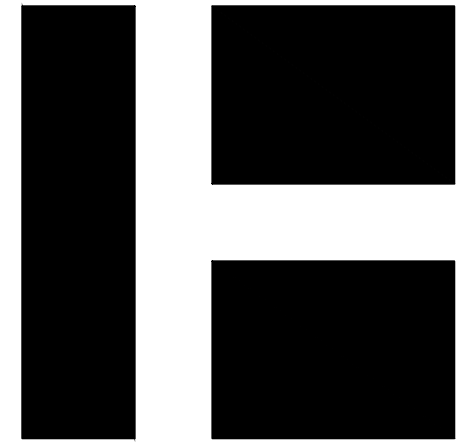
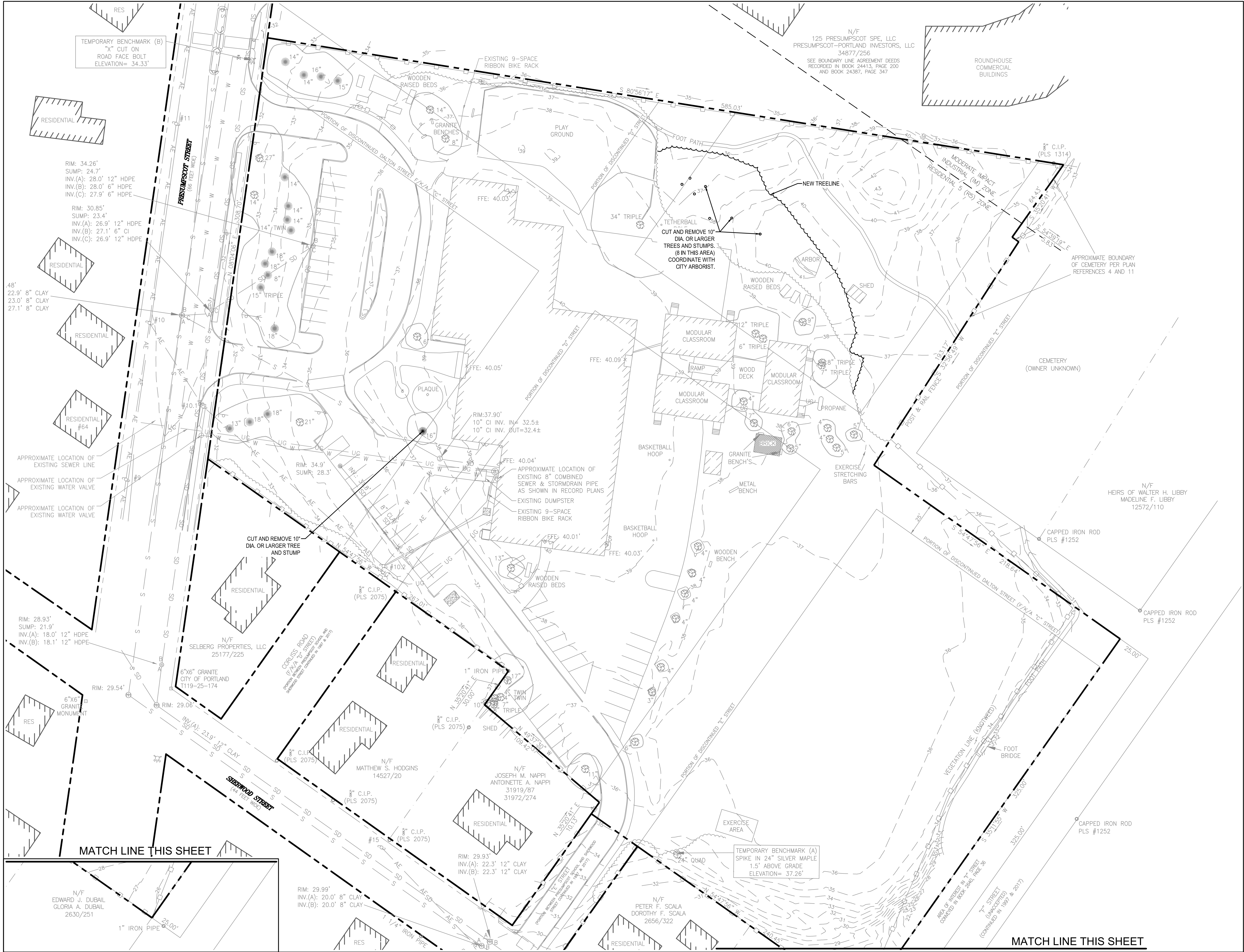
A horizontal graphic scale bar with alternating black and white segments. It is marked with '0' at the left end, '15'' in the middle, and '30'' at the right end.

PA / PE:	FLC	© 2021 Harriman Associates
Drawn By:	BAW / HAS	

SITE LAYOUT PLAN

C00-1

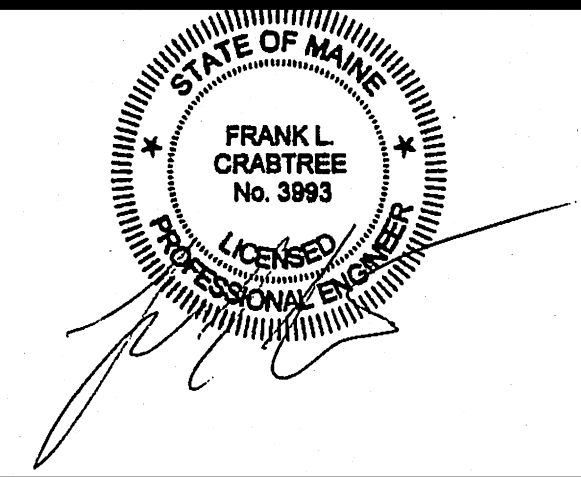




HARRIMAN

PRESUMPCOT
ELEMENTARY SCHOOL

Portland, Maine	
Harriman Project No.	19151
Key Plan	Proj North



PLANNING BOARD REVISION
DECEMBER 11, 2020

Rev Date	Revision Description

PRELIMINARY
NOT FOR
CONSTRUCTION

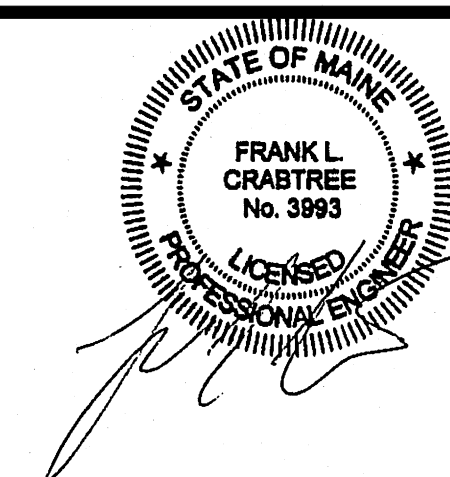
Drawing Scales 1" = 30'	0 15' 30'
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EXISTING CONDITIONS
PLAN

C10-1



Proj North



PRELIMINARY
NOT FOR
CONSTRUCTION

Drawing Scales
1" = 30'

A graphic scale bar with a black and white checkered pattern. It is marked with '0' at the left end, '15'' in the middle, and '30'' at the right end.

PA / PE:	FLC	© 2020 Harriman Associates
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SITE UTILITY PLAN

C40-1

- C3 LANDSCAPING NOTES**
SCALE: N.T.S

- C1** **UTILITY NOTES**
SCALE: N.T.S

B4 DIG SAFE NOTES

- ### B3 GRADING NOTES

- B2** GENERAL SITE NOTES
SCALE: N.T.S

STANDARD SITE LEGEND

- A5** PLAN REFERENCES
SCALE: N.T.S

- A4** **SURVEYOR NOTES**
SCALE: N.T.S

- A3 SIGN LEGEND**
SCALE: N.T.S

- A2) STANDARD SITE ABBREVIATIONS**
SCALE: N.T.S

- # STANDARD SITE LEGEND



1. GENERAL

- A. PLAN THE SEQUENCE OF CONSTRUCTION SO THAT THE SMALLEST PRACTICAL AREA OF LAND IS EXPOSED AT ANY ONE TIME DURING CONSTRUCTION. SCHEDULE THE WORK SUCH THAT SEDIMENTATION BARRIERS AND DETENTION PONDS ARE INSTALLED EARLY IN THE CONSTRUCTION SEQUENCE. TO PREVENT SEDIMENTS FROM UPHILL AREAS REACHING STREAMS, WETLANDS OR PROPERTY LINES, THE AREA DISTURBED BY STRIPPING OF VEGETATION, SOIL REMOVAL, AND REGARDING SHALL BE THE MINIMUM NECESSARY AT ANY ONE TIME. THE DURATION OF EXPOSURE OF THE DISTURBED AREA SHALL BE KEPT TO A PRACTICAL MINIMUM. UNTIL A DISTURBED AREA IS STABILIZED, SEDIMENT IN RUN-OFF SHALL BE TRAPPED BY THE USE OF DEBRIS BASIN, SEDIMENT BASINS, SILT TRAPS OR OTHER ACCEPTABLE METHODS.
- B. AFTER SUBSURFACE CHAMBER FILTER BEDS ARE CONSTRUCTED, INSTALL TEMPORARY PLUGS IN INLET PIPES TO PREVENT SILTY STORMWATER FROM ENTERING THE CHAMBERS DURING CONSTRUCTION. AFTER UPSTREAM AREAS ARE FULLY STABILIZED REMOVE THE PLUGS.
- C. TAKE NECESSARY STEPS TO PREVENT SOIL EROSION. REFER TO PUBLICATION OF MAINE DEP PARTICULARLY CHAPTER 500, AND THE MAINE SOIL AND WATER CONSERVATION COMMISSION FOR ADDITIONAL PREVENTION MEASURES TO STOP SOIL EROSION AND FOLLOW DEP MAINE EROSION AND SEDIMENT CONTROL BMP'S. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS IN CONFORMITY WITH ALL FEDERAL AND STATE PERMIT REQUIREMENTS CONCERNING WATER, AIR OR NOISE POLLUTION, OR THE DISPOSAL OF CONTAMINATED OR HAZARDOUS MATERIALS. EROSION CONTROL MEASURES SHOWN ON THE PLANS ARE MINIMUM ONLY. SATISFY THE CURRENT REQUIREMENTS OF THE REGULATORY AGENCIES. REPAIR ALL AREAS OF INSTABILITY AND EROSION IMMEDIATELY AND MAINTAIN UNTIL THE SITE IS FULLY STABILIZED.
- D. (NOT USED)
- E. WHENEVER PRACTICABLE, NO DISTURBANCE ACTIVITIES SHOULD TAKE PLACE WITHIN 50 FEET OF ANY PROTECTED NATURAL RESOURCE. IF DISTURBANCE ACTIVITIES TAKE PLACE BETWEEN 30 FEET AND 50 FEET OF ANY PROTECTED NATURAL RESOURCE, AND STORMWATER DISCHARGES THROUGH THE DISTURBED AREAS TOWARD THE PROTECTED NATURAL RESOURCE, PERIMETER EROSION CONTROLS MUST BE DOUBLED. IF DISTURBANCE ACTIVITIES TAKE PLACE LESS THAN 30 FEET FROM ANY PROTECTED NATURAL RESOURCE, AND STORMWATER DISCHARGES THROUGH THE DISTURBED AREAS TOWARD THE PROTECTED NATURAL RESOURCE, PERIMETER EROSION CONTROLS MUST BE DOUBLED AND DISTURBED AREAS MUST BE TEMPORARILY OR PERMANENTLY STABILIZED WITH 7 DAYS.
- F. EROSION CONTROL MESH: INTENDED AS A TEMPORARY EROSION CONTROL MEASURE THAT WILL DECOMPOSE AFTER STABILIZATION. OPEN WEAVE, SINGLE JUTE YARN OF LOOSELY TWISTED CONSTRUCTION, NOT VARYING IN THICKNESS BY MORE THAN ½ ITS NORMAL DIAMETER. THE WOVEN MATERIALS SHALL WEIGH 0.9 POUNDS PER SQUARE YARD. SYNTHETIC MESH MATERIAL MAY BE USED AS APPROVED. STAPLES: NO. 11 (OR HEAVIER) PLAIN IRON WIRE, MADE 6 INCHES IN LENGTH.
- G. EROSION CONTROL BLANKET: INTENDED AS A PERMANENT EROSION CONTROL MEASURE THAT WILL REINFORCE THE TOPSOIL AND VEGETATION AGAINST EROSION AFTER CONSTRUCTION. SYNTHETIC FIBER MATRIX SANDWICHED BETWEEN HEAVY DUTY UV STABILIZED NETTING. BLANKET SHALL WEIGH NOT LESS THAN 0.9 POUNDS PER SQUARE YARD. NORTH AMERICAN GREEN P300 OR APPROVED EQUAL. STAPLES: NO. 11 (OR HEAVIER) PLAIN IRON WIRE, MADE 6 INCHES IN LENGTH.
- H. SILT FENCE:
- POST: 1"X1" HARDWOOD POST, 4.5 FEET IN LENGTH.
- FABRIC: PERVIOUS 36" WIDE SHEET OF SYNTHETIC POLYMER OF 12-MIL THICKNESS, SUCH AS MIRAFI 100X, TERRA TEX-SC OR APPROVED EQUAL. THE BOTTOM OF THE FABRIC SHALL BE TRENCHED INTO THE EXISTING GROUND A MINIMUM OF 6 INCHES. IN ADDITION, HAY BALES OR DITCH CHECKS SHALL BE INSTALLED ALONG THE SILT FENCE TO CREATE SEDIMENTATION POOLS IN LOW AREAS WHERE RUN-OFF CONCENTRATES.

I. EROSION CONTROL SOIL/BARK MIX: SHALL CONSIST OF A MIX OF RECYCLED COMPOSTED BARK, FLUME GRIT, AND FRAGMENTED WOOD GENERATED FROM WATER-FLUME LOG HANDLING SYSTEMS. CONFORMING TO THE FOLLOWING:

1. PH - 5.0 TO 6.0.
 2. SCREEN SIZE - 6 INCHES MINUS.
 3. NO LESS THAN 25 PERCENT ORGANIC MATERIAL.
 4. NO STONES LARGER THAN 2 INCHES IN DIAMETER.
 5. APPROVE BY MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION FOR USE IN WETLANDS AND NEAR WATERWAYS.
- J. HAY BALES: BALES SHALL BE AT LEAST 14" X 18" X 30" IN SIZE, STAKED TWICE PER BALE. STAKES SHALL BE 1" X 1" X 36" WOODEN. PLACE BALES WITH TWINE ON SIDES OF BALE, NOT TOP OR BOTTOM.

K. CATCH BASIN SEDIMENT FILTER SACK: A FILTER FABRIC BAG WHICH HANGS UNDER THE GRATE TO CATCH SEDIMENTS. PROVIDE "STREAMGUARD MODEL 3003," "BASIN BAG" BY EMCO DISTRIBUTION, "SILT SACKS HIGH FLOW" BY ACF ENVIRONMENTAL, OR APPROVED EQUAL. INSTALL THE BAG DEVICE PER MANUFACTURER'S RECOMMENDATION.

L. BEFORE EARTHWORK IS STARTED, A SILT FENCE, FILTER BERM, OR STONE SEDIMENT DAM SHALL BE INSTALLED ALONG THE DOWN-SLOPE SIDE OF THE CONSTRUCTION SITE, AS NECESSARY, TO PREVENT SOIL SEDIMENT MIGRATION AWAY FROM THE SITE. INSTALL SILT FENCE OR FILTER BERM ALONG THE DOWN-SLOPE SIDE OF ALL TOP-SOIL AND SUBSOIL STOCKPILES.

M. EROSION CONTROLS BARRIERS SHALL BE REMOVED AFTER CONSTRUCTION IS COMPLETE, BUT NOT UNTIL FINISH GRADING, FINAL SEEDING, AND MULCHING HAS BEEN COMPLETED AND THE ESTABLISHED GRASS HAS STABILIZED THE SOIL. MAINTAIN BARRIERS IN GOOD CONDITION UNTIL REMOVED.

N. INSPECT EROSION AND SEDIMENTATION CONTROL WEEKLY AND AFTER STORM AND MAINTAIN IN GOOD WORKING CONDITION FOR PROJECT DURATION. REMOVE SILT DEPOSITS FROM THE SITE, PLACE IN AN AREA OF LOW EROSION POTENTIAL SO IT WILL NOT WASH INTO A WETLAND OR WATER BODY, SEED WITH EROSION CONTROL MIX, AND MULCH.

O. FILTER BERM: PLACE UNCOMPACTED EROSION CONTROL MIX IN A WINDROW AT LOCATIONS SHOWN ON THE PLAN OR AS DIRECTED BY THE ARCHITECT. AT A MINIMUM THE BERM SHALL BE 3 FEET WIDE AT THE BASE AND 2 FEET HIGH AT THE CENTER OF ALL POINTS ALONG ITS LENGTH. BERM MATERIAL, WHERE THE BERM IS STILL REQUIRED, WHICH HAS DECOMPOSED, CLOGGED WITH SEDIMENT, ERODED, OR BECOMES INEFFECTIVE, SHALL BE REPLACED. THE BERM SHALL BE REMOVED FROM THE SITE OR RAKED INTO NEARBY WOODS TO A DEPTH NO GREATER THAN 1", WHEN NO LONGER REQUIRED, AS APPROVED BY THE ARCHITECT.

P. TEMPORARY STABILIZATION: WITHIN 7 DAYS OF THE CESSATION OF CONSTRUCTION ACTIVITIES IN AN AREA THAT WILL NOT BE WORKED FOR MORE THAN 7 DAYS, STABILIZE EXPOSED SOIL WITH MULCH, OR OTHER NON-ERODIBLE COVER. STABILIZE AREAS WITHIN 75 FEET OF A WETLAND OR WATERBODY WITHIN 48 HOURS OF THE INITIAL DISTURBANCE OF THE SOIL OR PRIOR TO A STORM EVENT, WHICHEVER COMES FIRST. REMOVE TEMPORARY CONTROL MEASURES, SUCH AS SILT FENCE, WITHIN 30 DAYS AFTER PERMANENT STABILIZATION IS ATTAINED. REMOVE ANY ACCUMULATED SEDIMENTS AND STABILIZE. MAINTAIN TEMPORARY EROSION CONTROL MEASURES FOR THE FULL DURATION OF CONSTRUCTION. INSPECT WEEKLY AND AFTER EACH STORM AND REPAIR AS NEEDED. REMOVE SEDIMENTS FROM THE SITE, PLACE IN AREA OF LOW EROSION POTENTIAL, AND STABILIZE WITH SEED AND MULCH.

Q. PERMANENT STABILIZATION: IF THE AREA WILL NOT BE WORKED FOR MORE THAN ONE YEAR OR HAS BEEN BROUGHT TO FINAL GRADE, THEN PERMANENTLY STABILIZE THE AREA WITHIN 7 DAYS BY PLANTING VEGETATION, SEEDING, SOD, OR THROUGH THE USE OF PERMANENT MULCH, OR RIPRAP, OR ROAD SUB-BASE. "IF USING VEGETATION FOR STABILIZATION, SELECT THE PROPER VEGETATION FOR THE LIGHT, MOISTURE, AND SOIL CONDITIONS; AMEND AREAS OF DISTURBED SUBSOILS WITH TOPSOIL, COMPOST, OR FERTILIZERS; PROTECT SEEDED AREAS WITH MULCH OR, IF NECESSARY, EROSION CONTROL BLANKETS; AND SCHEDULE SODDING, PLANTING, AND SEEDING SO TO AVOID DIE-OFF FROM SUMMER DROUGHT AND FALL FROSTS." NEWLY SEEDDED OR SODDED AREAS MUST BE PROTECTED FROM VEHICLE TRAFFIC, EXCESSIVE PEDESTRIAN TRAFFIC, AND CONCENTRATED RUNOFF UNTIL VEGETATION IS WELL-ESTABLISHED WITH 90% COVER BY HEALTHY VEGETATION. IF NECESSARY, AREAS MUST BE REWORKED AND RESTABILIZED IF GERMINATION IS SPARSE, PLANT COVERAGE IS SPOTTY, OR TOPSOIL EROSION IS EVIDENT. PERMANENT STABILIZATION IS DEFINED AS FOLLOWS:

1. SEEDDED AREAS: PERMANENT STABILIZATION MEANS A 90% COVER OF THE DISTURBED AREA WITH MATURE, HEALTHY PLANTS WITH NO EVIDENCE OF WASHING OR RILLING OF THE TOPSOIL.
2. SODDED AREAS: PERMANENT STABILIZATION MEANS THE COMPLETE BINDING OF THE SOD ROOTS INTO THE UNDERLYING SOIL WITH NO SLUMPING OF THE SOD OR DIE-OFF.
3. PERMANENT MULCH: PERMANENT MULCHING MEANS TOTAL COVERAGE OF THE EXPOSED AREA WITH AN APPROVED MULCH MATERIAL. EROSION CONTROL MIX MAY BE USED AS MULCH FOR PERMANENT STABILIZATION ACCORDING TO THE APPROVED APPLICATION RATES AND LIMITATIONS.
4. RIPRAP: PERMANENT STABILIZATION MEANS THAT SLOPES STABILIZED WITH RIPRAP HAVE AN APPROPRIATE BACKING OF A WELL-GRADED GRAVEL OR APPROVED GEOTEXTILE TO PREVENT SOIL MOVEMENT FROM BEHIND THE RIPRAP. STONE MUST BE SIZED APPROPRIATELY. IT IS RECOMMENDED THAT ANGULAR STONE BE USED.
5. PAVED AREAS: PERMANENT STABILIZATION MEANS PLACEMENT OF THE COMPACTED SUBBASE GRAVEL IS COMPLETED, PROVIDED IT IS FREE OF FINE MATERIALS THAT MAY RUNOFF WITH A RAIN EVENT.
6. DITCHES, CHANNELS, AND SWALES: PERMANENT STABILIZATION MEANS THE CHANNEL IS STABILIZED WITH A 90% COVER OF HEALTHY VEGETATION, WITH A WELL-GRADED RIPRAP LINING, TURF REINFORCEMENT MAT, OR WITH ANOTHER NON-EMSVIE LINING SUCH AS CONCRETE OR ASPHALT PAVEMENT. THERE MUST BE NO EVIDENCE OF SLUMPING OF THE CHANNEL LINING, UNDERCUTTING OF THE CHANNEL BANKS OR DOWN-CUTTING OF THE CHANNEL.

2. TEMPORARY SEEDING AND MULCHING

A. TOPSOIL, STRIPPED AND STOCKPILED ON SITE SHALL BE IMMEDIATELY SEEDDED WITH EROSION CONTROL SEED MIX AND MULCHED WITH HAY. MULCH SHALL BE CURED STRAW FREE FROM NOXIOUS WEED SEEDS AND ROUGH OR WOODY MATERIALS.

B. EROSION CONTROL SEED:	Seed Type	% Weight	% Purity	% Germination
	Domestic Rye	70	85	80
	Perennial Rye	30	85	80

C. EXPOSED EARTHWORK AREAS WHICH WILL NOT BE WORKED ON FOR ONE WEEK SHALL BE MULCHED WITH STRAW.

D. UNFINISHED AREAS WHICH ARE NOT TO BE WORKED ON FOR ONE MONTH OR WILL BE WINTERED SHALL BE SEEDDED WITH EROSION CONTROL MIX AT A RATE OF 3 POUNDS OF SEED PER 1,000 SQ. FT. AND MULCHED WITH STRAW. APPLY STRAW MULCH AT THE RATE OF 75 POUNDS PER 1,000 SQ. FT. ANCHOR MULCH TO PREVENT WIND BLOWN MOVEMENT.

E. IN SENSITIVE AREAS (WITHIN 25 FT. OF STREAM OR WETLAND EDGE) TEMPORARY MULCH MUST BE APPLIED AT THE END OF EACH WORK DAY AND PRIOR TO ANY STORM EVENT. NO FILL SHALL BE PLACED ON HAY MULCH.

3. PERMANENT SEEDING AND MULCHING

A. GRASS SEED SHALL BE FREE FROM NOXIOUS WEED SEEDS AND RECLEANED, GRADE A RECENT CROP SEED, TREATED WITH APPROPRIATE FUNGICIDE AT TIME OF MIXING, DELIVERED TO THE SITE IN SEALED CONTAINERS WITH DEALER'S GUARANTEED ANALYSIS AND EACH VARIETY OF SEED SHALL HAVE PERCENTAGES OF GERMINATION OF NOT LESS THAN 80% AND A PERCENTAGE OF PURITY OF NOT LESS THAN 85%. SOW SEEDS AT A RATE OF 5lbs PER 1,000s.f.

B. WEED SEED CONTENT SHALL NOT EXCEED 0.25%. WET, MOLDY OR OTHERWISE DAMAGED SEED WILL BE REJECTED.

C. SEED MIX PROPORTIONS BY WEIGHT:

Seed Type	% Weight	% Purity	% Germination
Chewing Fesue	35	85	80
Creeping Red Fescue	35	85	80
Perennial Rye	30	85	80

4. WINTER CONSTRUCTION

- A. WINTER CONSTRUCTION" IS CONSTRUCTION ACTIVITY PERFORMED DURING THE PERIOD FROM NOVEMBER 1 THROUGH APRIL 15. IF DISTURBED AREAS ARE NOT STABILIZED WITH PERMANENT MEASURES BY NOVEMBER 1 OR NEW SOIL DISTURBANCE OCCURS AFTER NOVEMBER 1, BUT BEFORE APRIL 15, THEN THESE AREAS MUST BE PROTECTED AND RUNOFF FROM THEM MUST BE CONTROLLED BY ADDITIONAL MEASURES AND RESTRICTIONS.
- B. SITE STABILIZATION: FOR WINTER STABILIZATION, HAY MULCH IS APPLIED AT TWICE THE STANDARD TEMPORARY STABILIZATION RATE. AT THE END OF EACH CONSTRUCTION DAY, AREAS THAT HAVE BEEN BROUGHT TO FINAL GRADE MUST BE STABILIZED. MULCH MAY NOT BE SPREAD ON TOP OF SNOW.
- C. SEDIMENT BARRIERS: ALL AREAS WITHIN 75 FEET OF A PROTECTED NATURAL RESOURCE MUST BE PROTECTED WITH A DOUBLE ROW OF SEDIMENT BARRIERS.
- D. DITCH: ALL VEGETATED DITCH LINES THAT HAVE NOT BEEN STABILIZED BY NOVEMBER 1 OR WILL BE WORKED DURING THE WINTER CONSTRUCTION PERIOD MUST BE STABILIZED WITH AN APPROPRIATE STONE LINING BACKED BY AN APPROPRIATE GRAVEL BED OR GEOTEXTILE UNLESS SPECIFICALLY RELEASED FROM THIS STANDARD BY THE DEPARTMENT.
- E. SLOPES: MULCH NETTING MUST BE USED TO ANCHOR MULCH ON ALL SLOPES GREATER THAN 8% UNLESS EROSION CONTROL BLANKETS OR EROSION CONTROL MIX IS BEING USED ON THESE SLOPES.

5. DRAINAGE DITCHES AND EMBANKMENTS

- A. DRAINAGE DITCHES SHALL BE PROVIDED WITH TEMPORARY STONE CHECK DAMS SPACED NO GREATER THAN 100 FEET APART. TEMPORARY DITCH CHECK DAMS SHALL BE CONSTRUCTED WHERE INDICATED. ADDITIONAL TEMPORARY DITCH DAMS SHALL BE INSTALLED DURING THE CONSTRUCTION, WHERE NECESSARY TO PREVENT SOIL FROM LEAVING THE WORK AREA.
- B. GRASSED DRAINAGE DITCHES AND SWALES SHALL BE LINED WITH A CONTINUOUS MAT OF EROSION CONTROL MESH FOR FULL BOTTOM WIDTH AND SIDE SLOPES TO 12" ABOVE BOTTOM, WITHIN 48 HOURS OF FINAL GRADING AND PRIOR TO A STORM EVENT. IN ORDER TO STABILIZE THE LOAM, SEED AND MULCH.
- C. WHERE EROSIIVE VELOCITIES IN DITCHES OR EMBANKMENTS ARE ANTICIPATED OR EXPERIENCED AND SOIL CANNOT BE STABILIZED WITH MULCH AND MESH, SUBSTITUTE EROSION CONTROL SOIL/BARK MIX IN PLACE OF LOAM. SCREEN THE EROSION CONTROL SOIL/BARK MIX TO REMOVE WOOD, BARK AND STONES ONE INCH IN SIZE AND GREATER. IF EROSIIVE VELOCITIES ARE EXCESSIVE, PROVIDE A 12" THICK STONE RIP-RAP LINING ALONG DITCH BOTTOM AND UP SIDE SLOPES TO ONE FOOT ABOVE THE BOTTOM ELEVATION. PLACE NON-WOVEN GEOTEXTILE BENEATH RIP-RAP.
- D. STABILIZE POND EMBANKMENT (INTERIOR AND EXTERIOR), SLOPES STEEPER THAN THREE HORIZONTAL TO ONE VERTICAL AND DRAINAGE DITCHES BY SEPTEMBER 15, CONSISTING OF PERMANENT SEEDING AND MULCH. IF THIS DATE CANNOT BE MET, PROVIDE ALTERNATIVE PERMANENT OR TEMPORARY STABILIZATION DESCRIBED AS FALL AND WINTER STABILIZATION.
- E. INSTALL EROSION CONTROL MESH OVER MULCH ON SLOPES STEEPER THAN SIX HORIZONTAL TO ONE VERTICAL (16%) AND IN CONFORMANCE TO DOT STANDARD SPECIFICATION, LATEST EDITION, SECTION 9.48, PARAGRAPHS 613.03 THROUGH 613.06. ANCHOR MESH AS RECOMMENDED BY MANUFACTURER.
- F. PERMANENTLY RIP-RAP INLETS AND OUTLETS OF CULVERTS AND PIPE OUTFALLS WITHIN 48 HOURS OF INSTALLATION, AS SPECIFIED IN SECTION 312000 - EARTH MOVING AND AS SHOWN ON THE DRAWINGS.
- G. INSTALL PERMANENT EROSION CONTROL BLANKET AROUND CULVERT INLETS AND OUTLETS AS SHOWN ON THE DRAWINGS AND ACCORDING TO MANUFACTURERS' RECOMMENDATIONS.
1. PREPARE SOIL WITH LOAM, FERTILIZER AND SEED AS SPECIFIED IN SECTION 329200 PRIOR TO INSTALLING THE EROSION CONTROL BLANKET.
 2. INSTALL PERMANENT EROSION CONTROL BLANKET FIVE FEET MINIMUM IN ALL DIRECTIONS AROUND CULVERT INLETS.
 3. INSTALL PERMANENT EROSION CONTROL BLANKET FIVE FEET MINIMUM IN ALL DIRECTIONS AROUND CULVERT OUTLETS AND A SIX FOOT WIDTH CENTERED ALONG THE OUTLET CHANNEL FOR TEN FEET.
 4. INSTALL STAPLES AS SHOWN ON THE EROSION CONTROL BLANKET DETAIL ON THE DRAWINGS AND THROUGHOUT THE BLANKET IN AN 16 BY 18 INCH GRID.

6. PARKING AND DRIVES

- A. PLACE A TEMPORARY STABILIZED CONSTRUCTION EXITS WHERE VEHICLES LEAVE THE SITE AND ENTER EXISTING PAVED ROADS, CONSISTING OF A 6" LAYER OF 1 1/2" TO 3" CRUSHED STONE, TRACKING A SPILLING OF EARTH AND/OR DEBRIS ON PUBLIC STREETS SHALL BE AVOIDED TO THE MAXIMUM EXTENT POSSIBLE. CLEAN UP AND REMOVE SUCH SPILLAGE.
- B. AS THE CRUSHED STONE STABILIZED CONSTRUCTION EXITS CONTINUE TO SCRUB THE SOIL FROM THE TRUCKS, THE STONE LAYER WILL TEND TO FILL WITH SEDIMENTS. WHEN THIS OCCURS, REMOVE THE STONE AND SEDIMENT AND REPLACE IT WITH A CLEAN LAYER OF STONE.
- C. AS SOON AS POSSIBLE AFTER ROADS AND PARKING AREAS ARE CLEARED, GRUBBED AND GRADED TO THE REQUIRED SUBGRADE, THE BASE GRAVEL SHALL BE PLACED.

7. REMOVAL AND DISPOSAL

WHEN PERMANENT SOIL STABILIZATION HAS BEEN ACHIEVED, TEMPORARY MATERIALS AND DEVICES THAT ARE NOT READILY DEGRADABLE SHALL BE REMOVED AND DISPOSED OF OFF SITE. SILT FENCES, FILTER BERMS AND CATCH BASIN SEDIMENT FILTERS MUST BE FULLY REMOVED. REUSABLE MATERIALS ARE AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR.

8. STONES FOR RIP-RAP

- A. SIZE THE STONE MIXTURE SUCH THAT 50% OF THE STONES, BY WEIGHT, ARE LARGER THAN THE SPECIFIED D50 SIZE. STONES SHALL NOT BE SCHISTOSIC.
- B. PLAIN RIP-RAP: 4" TO 12" DIAMETER, HARD, SOUND ANGULAR STONES. D50 = 6".
- C. SPECIAL RIP-RAP: 8" TO 18" WIDE SOUND STONES WITH FLAT TOP SURFACE, D50 = 11".
- D. THE STONES SHALL BE PLACED WITH THEIR BENDS AT RIGHT ANGLES TO THE SLOPE, THE LARGER STONES BEING USED IN BOTTOM COURSES.
- E. THE FINISHED WORK SHALL PRESENT AN EVEN, TIGHT AND REASONABLY SMOOTH SURFACE CONFORMING TO THE REQUIRED CONTOUR AND HAVE A NEAT ORDERLY APPEARANCE WITHOUT SCATTERED STONES.
- F. SPECIAL RIP-RAP SHALL BE HAND-PLACED IN CLOSE CONTACT TO FORM AN EVEN, TIGHT AND REASONABLY SMOOTH SURFACE WITH RELATIVELY FLAT TOP SURFACES. USE NO SMALL STONES OR SPALL.

9. PLANTING TIME

- A. SEEDING: SEEDING SHALL BE DONE BETWEEN AUGUST 15TH TO SEPTEMBER 15TH AND/OR APRIL 15TH TO JUNE 15TH.
- B. SODDING: SODDING MAY BE DONE BETWEEN APRIL 15TH AND NOVEMBER 15TH.
- C. VARIANCE: IF SPECIAL CONDITIONS EXIST WHICH MAY WARRANT A VARIANCE IN THE ABOVE PLANTING DATES, A WRITTEN REQUEST SHALL BE SUBMITTED TO THE ARCHITECT STATING THE SPECIAL CONDITIONS FOR THE PROPOSED VARIANCE. PERMISSION FOR THE VARIANCE WILL BE GIVEN IF WARRANTED IN THE OPINION OF THE ARCHITECT. REGARDLESS OF THE TIME OF SEEDING, THE CONTRACTOR SHALL BE RESPONSIBLE FOR A FULL GROWTH OF GRASS.
- D. PLACE PERMANENT SOIL STABILIZATION WITHIN 15 DAYS OF FINAL GRADING.

10. SPILL PREVENTION AND GROUNDWATER PROTECTION

- A. AREAS INSIDE AND OUTSIDE THE CONTRACT WORK LIMITS SHALL BE PROTECTED FROM LUBRICANTS, FUEL, SEDIMENT, LITTER, CONSTRUCTION DEBRIS, CHEMICALS AND OTHER POLLUTANTS.
- B. TAKE PRECAUTIONS AND CONFORM TO ALL FEDERAL, STATE AND LOCAL REGULATIONS TO PREVENT POLLUTANTS FROM BEING DISCHARGED FROM MATERIALS ON SITE, INCLUDING STORAGE PRACTICES TO MINIMIZE EXPOSURE OF THE MATERIALS TO STORMWATER. IMPLEMENT SPILL PREVENTION, CONTAINMENT AND RESPONSE.
- C. DURING CONSTRUCTION, LIQUID PETROLEUM PRODUCTS AND OTHER HAZARDOUS MATERIALS WITH POTENTIAL TO CONTAMINATE GROUNDWATER MAY NOT BE STORED OR HANDLED IN AREAS OF THE SITE DRAINING TO AN INFILTRATION AREA. AN "INFILTRATION AREA" IS ANY AREA OF THE SITE THAT BE DESIGN OR AS A RESULT OF SOILS, TOPOGRAPHY ACCUMULATES RUNOFF THAT INFILTRATES INTO THE SOIL. IMPERVIOUS LINERS OR MATERIALS MUST BE USED TO STORE OR CONTAIN THE HAZARDOUS MATERIALS AND PREVENT THEM FROM ENTERING THE GROUNDWATER.

11. FUGITIVE SEDIMENT AND DUST

- A. USE TRAFFIC CONTROL TO RESTRICT TRAFFIC TO PREDETERMINED ROUTES. MAINTAIN AS MUCH NATURAL VEGETATION AS IS PRACTICABLE. USE PHASING OF CONSTRUCTION TO REDUCE THE AREA OF LAND DISTURBED AT ANY ONE TIME. THE USE OF TEMPORARY MULCHING, PERMANENT MULCHING, TEMPORARY VEGETATIVE COVER, PERMANENT VEGETATIVE COVER, OR SODDING WILL REDUCE THE NEED FOR DUST CONTROL. USE MECHANICAL SWEEPERS ON PAVED SURFACES WHERE NECESSARY TO PREVENT DUST BUILDUP. STATIONARY SOURCES OF DUST, I.E. ROCK CRUSHERS, SHOULD UTILIZE FINE WATER SPRAYS TO CONTROL DUST.
- B. THE EXPOSED SOIL SURFACE SHOULD BE MOISTENED PERIODICALLY WITH ADEQUATE WATER TO CONTROL DUST.
- C. CALCIUM CHLORIDE SHALL BE EITHER LOOSE DRY GRANULES OR FLAKES FINE ENOUGH TO FEED THROUGH A SPREADER AT A RATE THAT WILL KEEP SURFACE MOIST BUT NOT CAUSE POLLUTION OR PLANT DAMAGE. LIQUID CALCIUM CHLORIDE CAN ALSO BE USED. TO REDUCE POTENTIAL FOR ENVIRONMENTAL DEGRADATION, USE ONLY WHEN OTHER METHODS ARE NOT PRACTICAL.
- D. COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL. IN AREAS ADJACENT TO WATERWAYS, USE CHEMICALLY STABLE AGGREGATE.
- E. WHEN TEMPORARY DUST CONTROL MEASURES ARE USED, REPETITIVE TREATMENT SHALL BE APPLIED AS NEEDED TO ACCOMPLISH CONTROL.

12. DEBRIS AND OTHER MATERIALS: MINIMIZE THE EXPOSURE OF CONSTRUCTION DEBRIS, BUILDING AND LANDSCAPING MATERIALS, TRASH, FERTILIZERS, HERBICIDES, DETERGENTS, SANITARY WASTE AND OTHER MATERIALS TO PRECIPITATION AND STORMWATER RUNOFF.

13. EXCAVATION DE-WATERING

- A. WATER FROM CONSTRUCTION DEWATERING OPERATIONS SHALL BE CLEANED OF SEDIMENT BEFORE REACHING WETLANDS, WATER BODIES, STREAMS, OR SITE BOUNDARIES. UTILIZE TEMPORARY SEDIMENT BASINS, EROSION CONTROL, SOIL FILTER BERMS BACKED BY STAKED HAY BALES, A DIRT BAG 55" SEDIMENT FILTER BAG BY ACF ENVIRONMENTAL, INC. OR OTHER APPROVED BEST MANAGEMENT PRACTICES (BMP'S).
- B. IN SENSITIVE AREAS, NEAR STREAMS OR PONDS, DISCHARGE THE WATER FROM THE DE-WATERING OPERATION INTO A TEMPORARY SEDIMENT BASIN CREATED BY A SURROUNDING FILTER BERM OF UNCOMPACTED EROSION CONTROL MIX IMMEDIATELY BACKED BY STAKED HAY BALES (SEE THE SITE DETAILS). LOCATE THE TEMPORARY SEDIMENT BASIN AT LEAST 100 FEET FROM THE NEAREST WATER BODY, SUCH THAT THE FILTERED WATER WILL FLOW THROUGH UNDISTURBED VEGETATED SOIL AREAS PRIOR TO REACHING THE WATER BODY OR PROPERTY LINE.
- C. PREPARE A DE-WATERING PLAN TO ADDRESS EXCAVATION DE-WATERING FOLLOWING HEAVY RAINFALL EVENTS OR WHERE THE EXCAVATION MAY INTERCEPT THE GROUNDWATER TABLE DURING CONSTRUCTION. THE COLLECTED WATER NEEDS TREATMENT AND A DISCHARGE POINT THAT WILL NOT CAUSE DOWNGRADIENT EROSION AND OFFSITE SEDIMENTATION OR WITHIN A RESOURCE. FOLLOW THE DETAIL OF THE PLAN THROUGHOUT CONSTRUCTION DURATION.
- D. THE OWNER OR REGULATORY AGENCIES DO NOT AUTHORIZE A WATER DISCHARGE THAT IS MIXED WITH A SOURCE OF NON-STORMWATER, INCLUDING THE FOLLOWING: WASTEWATER FROM CLEANOUT OF CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS OR OTHER CONSTRUCTION MATERIALS; FUELS, OILS OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE; SOAPS, SOLVENTS OR DETERGENTS USED IN VEHICLE AND EQUIPMENT WASHING; AND TOXIC OR HAZARDOUS SUBSTANCES FROM A SPILL OR OTHER RELEASE.

14. UNAUTHORIZED NON-STORMWATER DISCHARGES: THE DEPARTMENT OF ENVIRONMENTAL PROTECTION DOES NOT AUTHORIZE DISCHARGES OF THE FOLLOWING:

- WASTEWATER FROM THE WASHOUT OR CLEAN OUT OF CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS OR OTHER CONSTRUCTION MATERIALS.
- FUELS, OILS OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE.
- SOAPS, SOLVENTS OR DETERGENTS USED IN VEHICLE AND EQUIPMENT WASHING.
- TOXIC OR HAZARDOUS SUBSTANCES FROM A SPILL OR OTHER RELEASE.

15. AUTHORIZED NON-STORMWATER DISCHARGES: IMPLEMENT APPROPRIATE POLLUTION PREVENTION MEASURES FOR THE NON-STORMWATER COMPONENT(S) OF THE FOLLOWING DISCHARGES:

- FIREFIGHTING ACTIVITY.
- FIRE HYDRANT FLUSHINGS.
- VEHICLE WASH-WATER IF DETERGENTS ARE NOT USED AND WASHING IS LIMITED TO EXTERIOR OF VEHICLES (ENGINE, UNDERCARRIAGE AND TRANSMISSION WASHING IS PROHIBITED).
- DUST CONTROL RUNOFF IN ACCORDANCE WITH PERMIT CONDITIONS AND DEP CHAPTER 500 APPENDIX (C)(3)
- ROUTINE EXTERNAL BUILDING WASH-DOWN, NOT INCLUDING SURFACE PAINT REMOVAL, THAT DOES NOT INVOLVE DETERGENTS.
- PAVEMENT WASH-WATER (WHERE SPILLS/LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE NOT OCCURRED, UNLESS ALL SPILLED MATERIAL HAD BEEN REMOVED) IF DETERGENTS ARE NOTE USED
- UNCONTAMINATED AIR CONDITIONING OR COMPRESSOR CONDENSATE.
- UNCONTAMINATED GROUNDWATER OR SPRING WATER.
- FOUNDATION OR FOOTER DRAIN-WATER WHERE FLOWS ARE NOT CONTAMINATED.
- UNCONTAMINATED EXCAVATION DE-WATERING (SEE REQUIREMENTS IN DEP CHAPTER 500 APPENDIX C)(5).
- POTABLE WATER SOURCES INCLUDING WATERLINE FLUSHINGS.
- LANDSCAPING IRRIGATION.

16. CONSTRUCTION INSPECTION AND MAINTENANCE

- A. INSPECT DISTURBED AND IMPERVIOUS AREAS, EROSION CONTROL, BEST MANAGEMENT PRACTICES (BMP'S), MATERIALS STORAGE AREAS THAT ARE EXPOSED TO PRECIPITATION AND LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE AT LEAST ONCE A WEEK AS WELL AS BEFORE AND WITHIN 24 HOURS AFTER A RAIN EVENT AND PRIOR TO COMPLETING PERMANENT STABILIZATION. A PERSON WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROL, AND STANDARDS AND CONDITIONS OF THE PERMIT, SHALL CONDUCT THE INSPECTIONS.
- B. UPON DISCOVERY OF A PROBLEM, REPAIR BMP'S NO LATER THAN THE END OF THE NEXT WORK DAY. IF ADDITIONAL BMP'S OR SIGNIFICANT REPAIRS ARE NECESSARY, IMPLEMENTATION MUST BE COMPLETED WITHIN 7 CALENDAR DAYS AND PRIOR TO A RAIN EVENT.
- C. KEEP A LOG (REPORT) SUMMARIZING THE INSPECTIONS AND CORRECTIVE ACTION TAKEN, INCLUDING THE NAME AND QUALIFICATIONS OF THE PERSON MAKING THE INSPECTIONS, THE DATE OF THE INSPECTIONS AND MAJOR OBSERVATIONS OF OPERATION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROLS, MATERIALS STORAGE AREAS AND VEHICLES ACCESS POINTS TO THE PARCEL. MAJOR OBSERVATIONS MUST INCLUDE BMP'S THAT NEED MAINTENANCE, BMP'S THAT FAILED TO OPERATE AS DESIGNED OR PROVED INADEQUATE FOR A PARTICULAR LOCATION AND LOCATION(S) WHERE ADDITIONAL BMP'S ARE NEEDED. NOTE IN THE LOG THE CORRECTIVE ACTION TAKEN AND WHEN IT WAS TAKEN. THE LOG MUST BE MADE ACCESSIBLE TO THE OWNER, ARCHITECT AND REGULATORY AGENCIES' STAFF AND A COPY MUST BE PROVIDED UPON REQUEST. THE PERMITTEE SHALL RETAIN A COPY OF THE LOG FOR A PERIOD OF AT LEAST THREE YEARS FROM THE COMPLETION OF PERMANENT STABILIZATION.

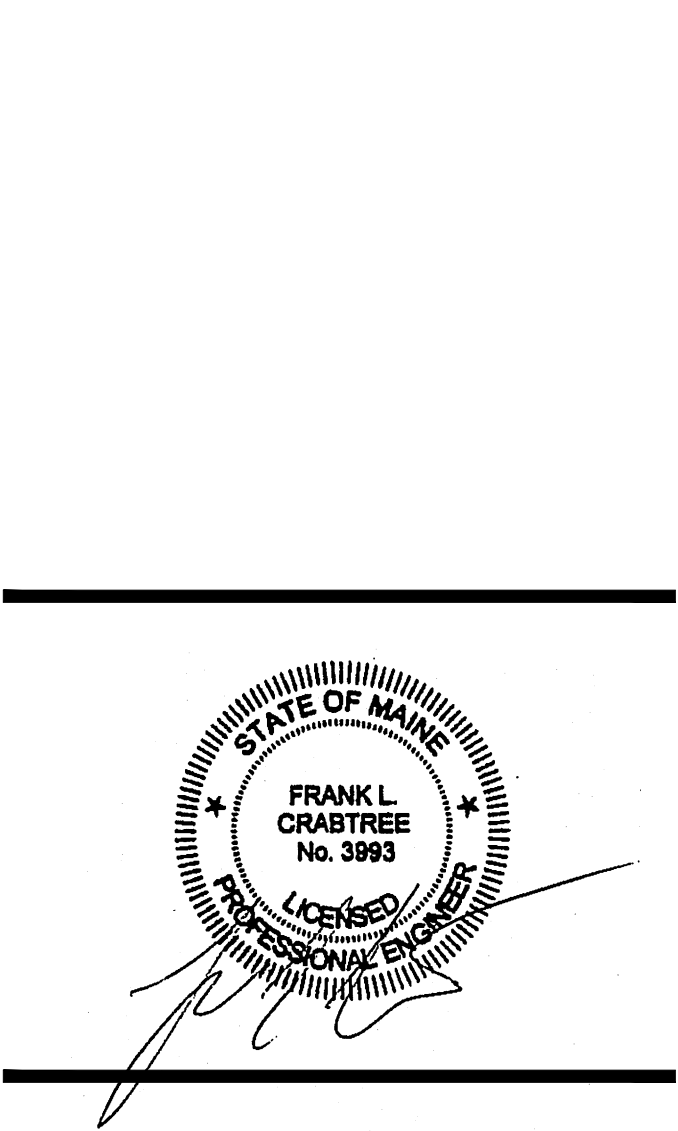
17. CONSTRUCTION OBSERVATIONS NOTES

- A. CONSTRUCTION OBSERVATIONS: THE OWNER WILL RETAIN THE SERVICES OF A PROFESSIONAL ENGINEER TO OBSERVE THE CONSTRUCTION AND STABILIZATION OF ALL STORMWATER MANAGEMENT STRUCTURES. CONTRACTOR MUST NOTIFY THE ENGINEER OF THE SCHEDULE FOR CONSTRUCTION OF STORM PONDS AND FILTER BEDS. IF NECESSARY, THE ENGINEER WILL INTERPRET THE POND'S CONSTRUCTION PLAN FOR THE CONTRACTOR.
- B. UNDERDRAINED SUBSURFACE SOIL FILTER: REFER TO NOTES ON DRAWING C60-1.



PRESUMPCOT
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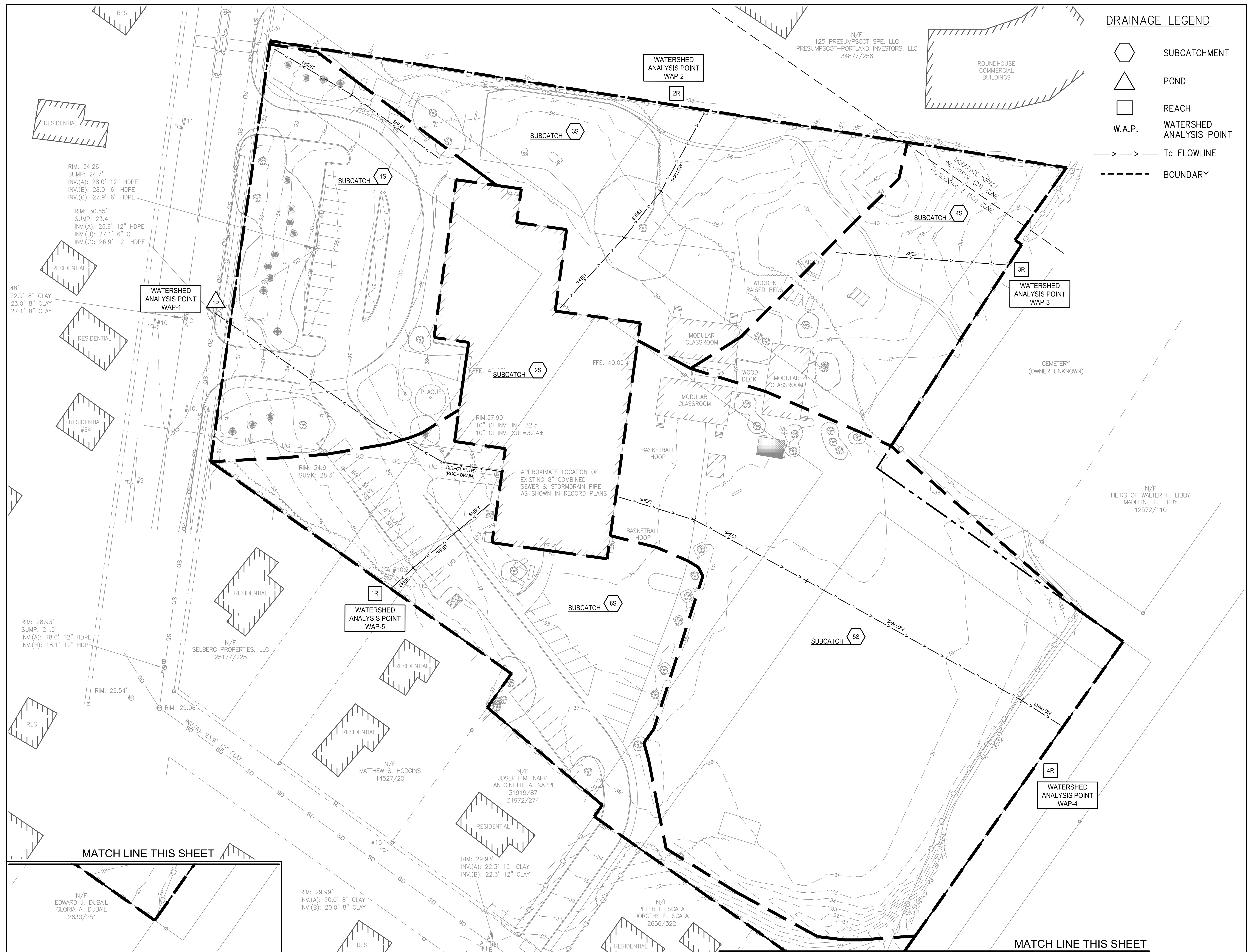
Rev	Date	Revision Description

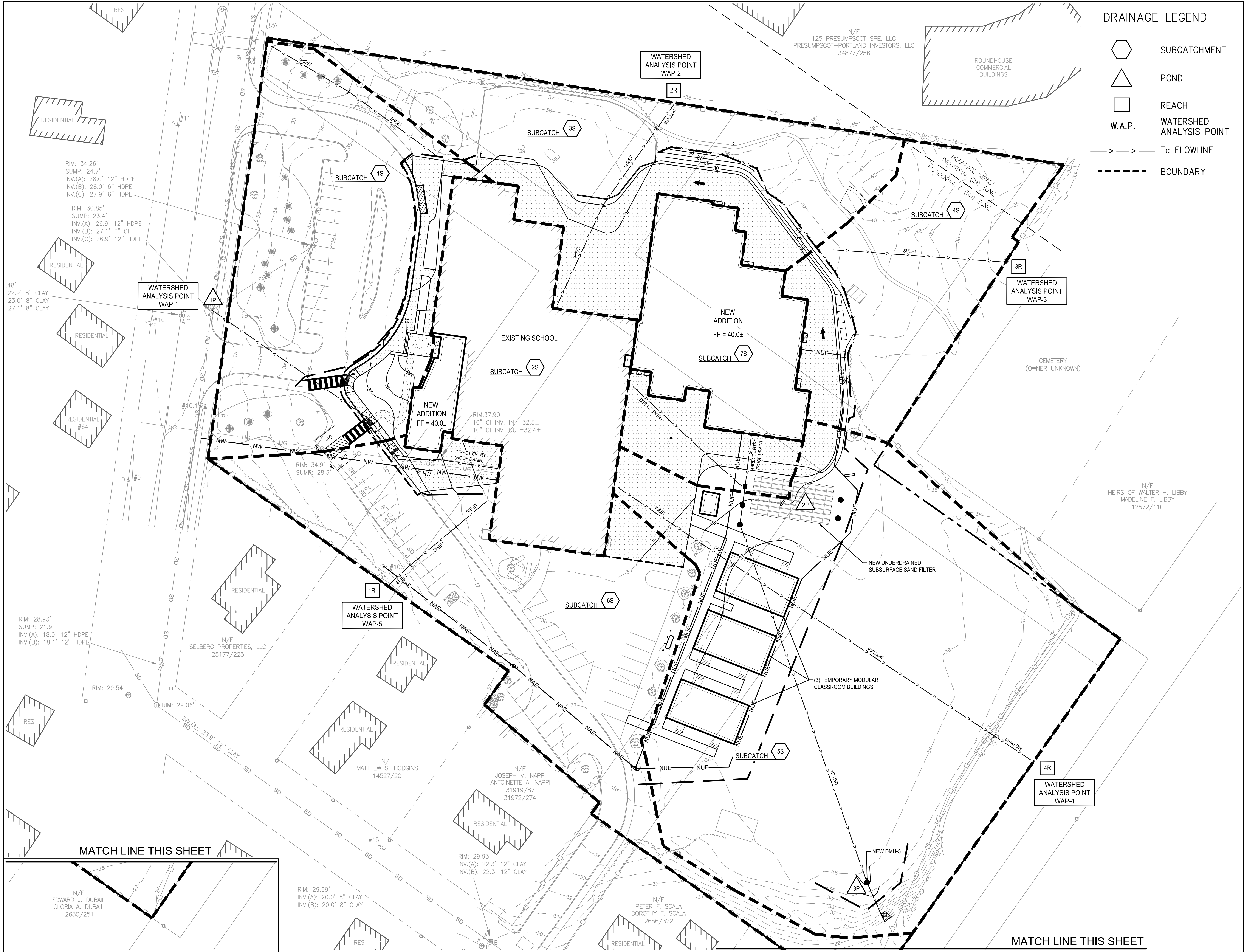
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Drawing Scales	
PA / PE:	FLC
Drawn By:	BAW / HAS
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SITE EROSION
CONTROL NOTES

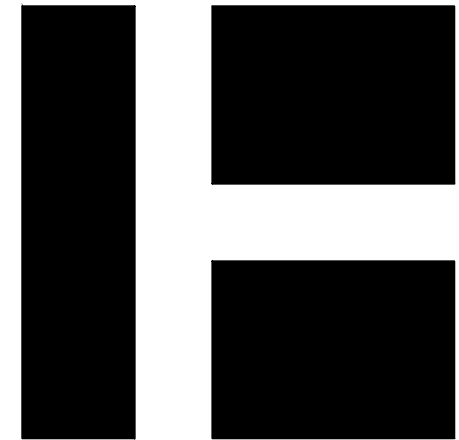
C00-3





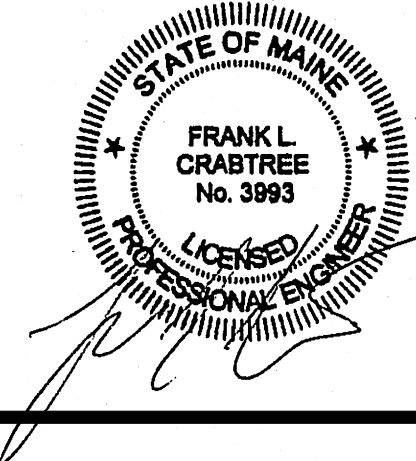
DRAINAGE LEGEND

- SUBCATCHMENT
- POND
- REACH
- W.A.P.
- Tc FLOWLINE
- BOUNDARY



PRESUMPCOT
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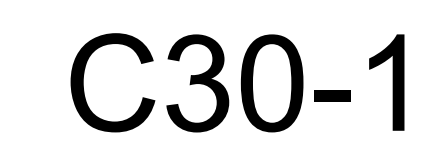
Drawing Scales 1" = 30'	0 15' 30'
PA / PE: FLC	© 2020 Harriman Associates
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POST-DEVELOPMENT
DRAINAGE PLAN

C12-1



Proj North





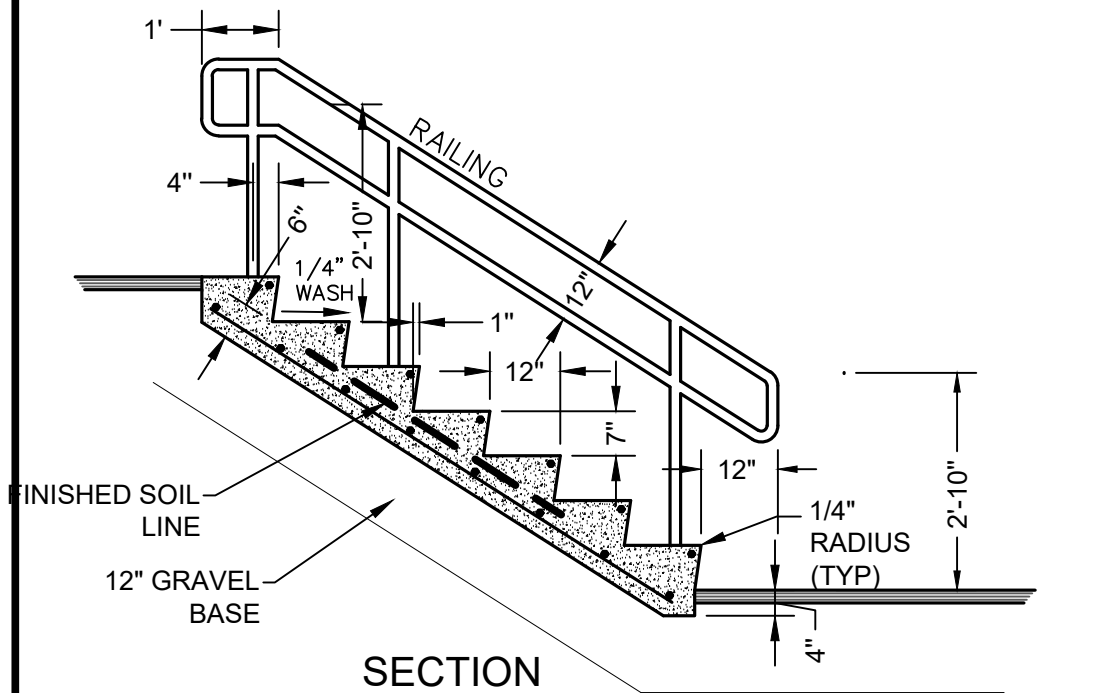
C2 DETECTABLE WARNING PLATE
SCALE: N.T.S



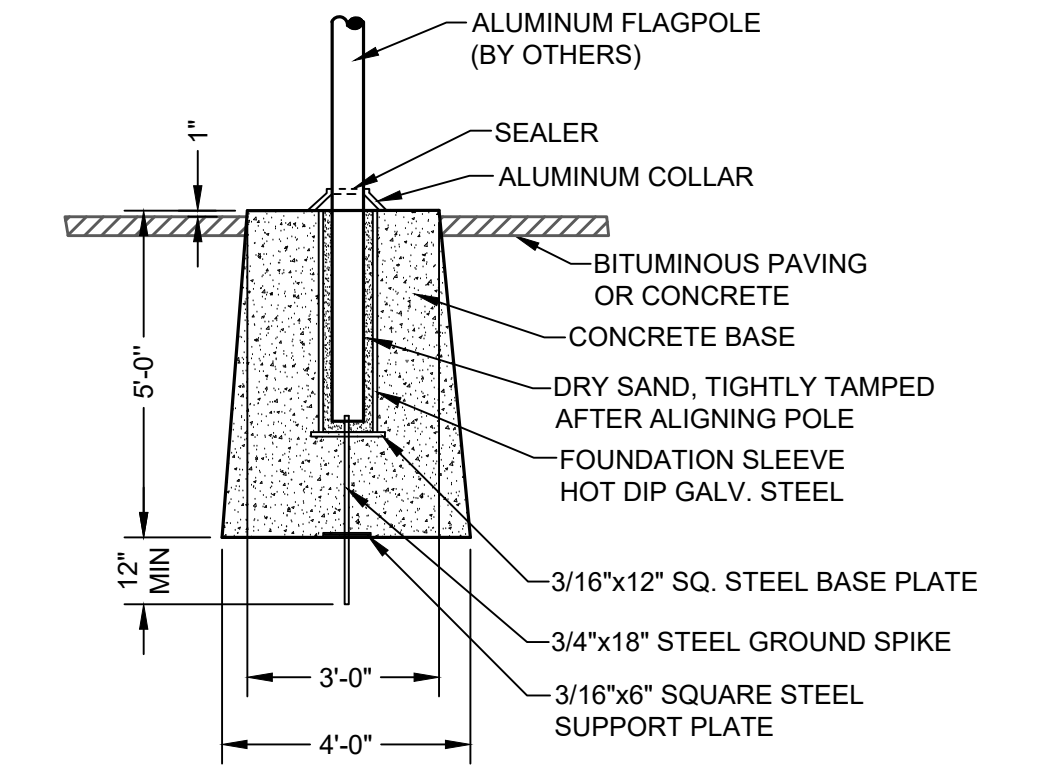
A3 C.I.P. CONCRETE SURFACING



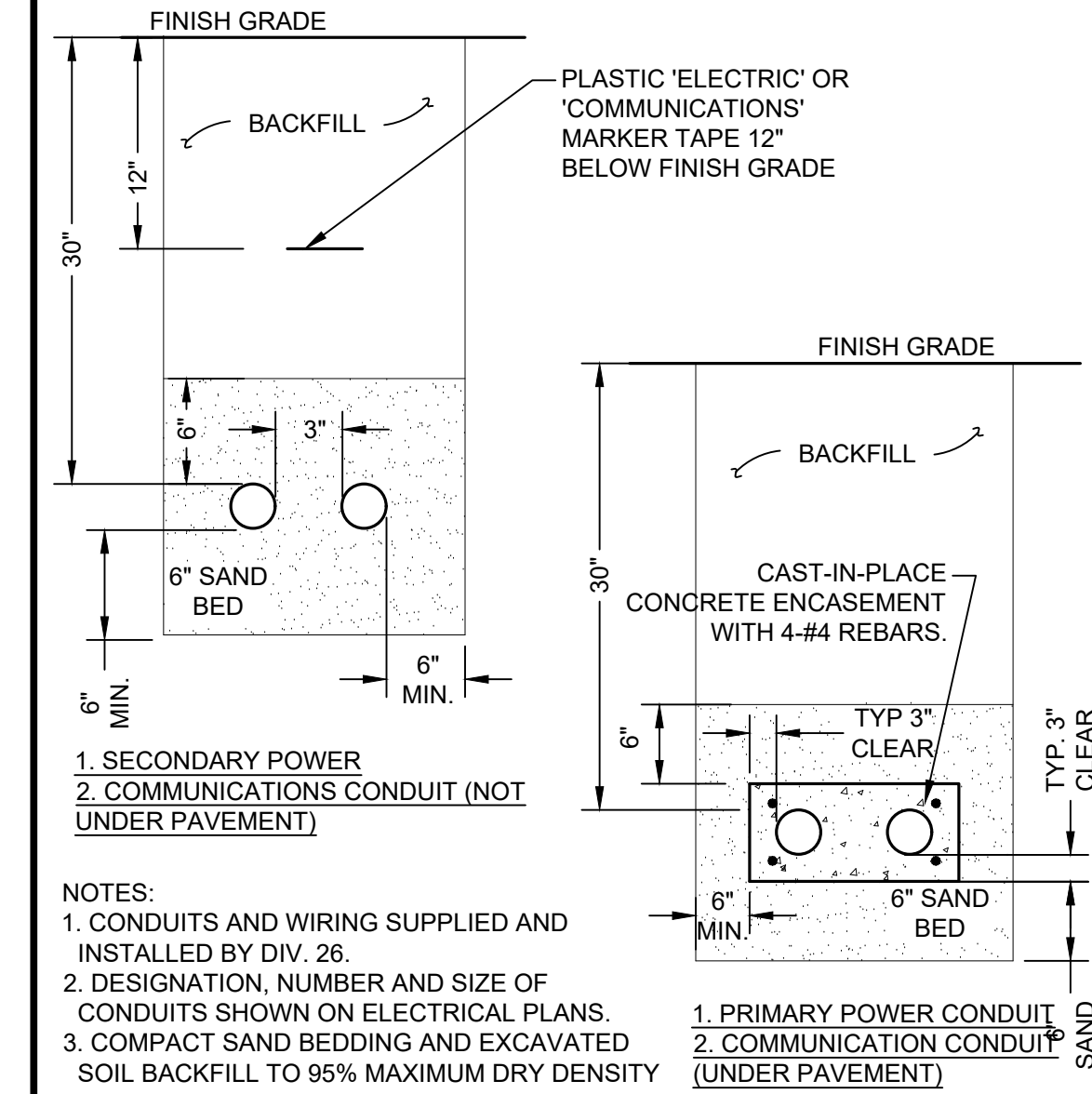
1. 4000 PSI CONCRETE AT 28 DAYS.
2. STAIR IS CHEM-TREATED PRIOR TO INSTALLATION.
3. STAIR WILL HAVE (4) LIFTING INSERTS. CAP AFTER INSTALLATION.
4. RAILINGS ARE 1 1/2" O.D. STEEL PIPE.
5. PLACE RAIL POSTS IN 4 1/2" DEEP HOLE AND GROUT WITH NON-SHRINK MORTAR.
6. REINFORCING: #5 BARS AT 12" O.C., BOTH WAYS WITH (1) #4 BAR IN EACH NOSE.
7. SEE SITE PLAN FOR NUMBER OF RISERS.



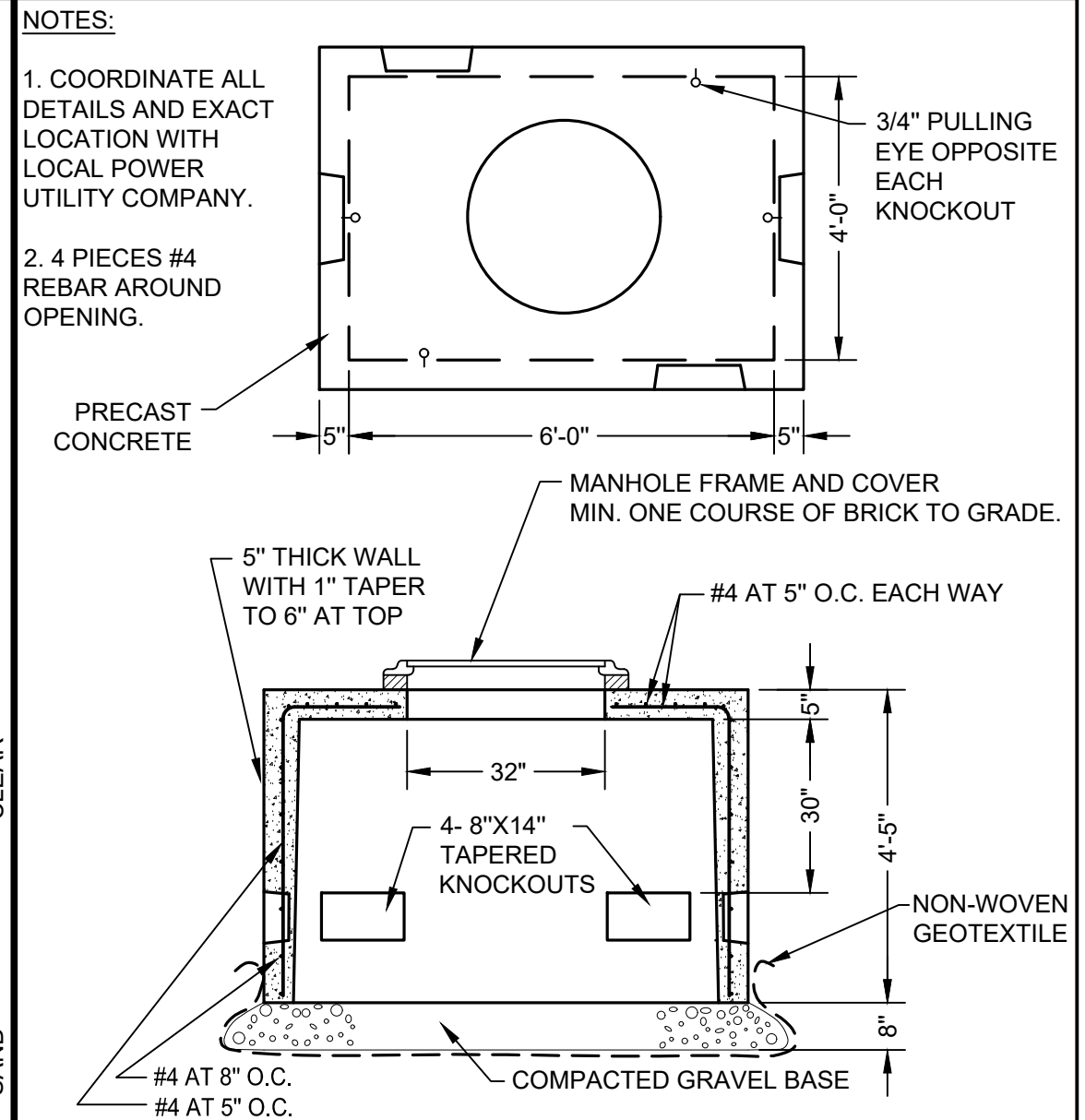
C4 TYPICAL PRECAST CONCRETE STEP
SCALE: N.T.S



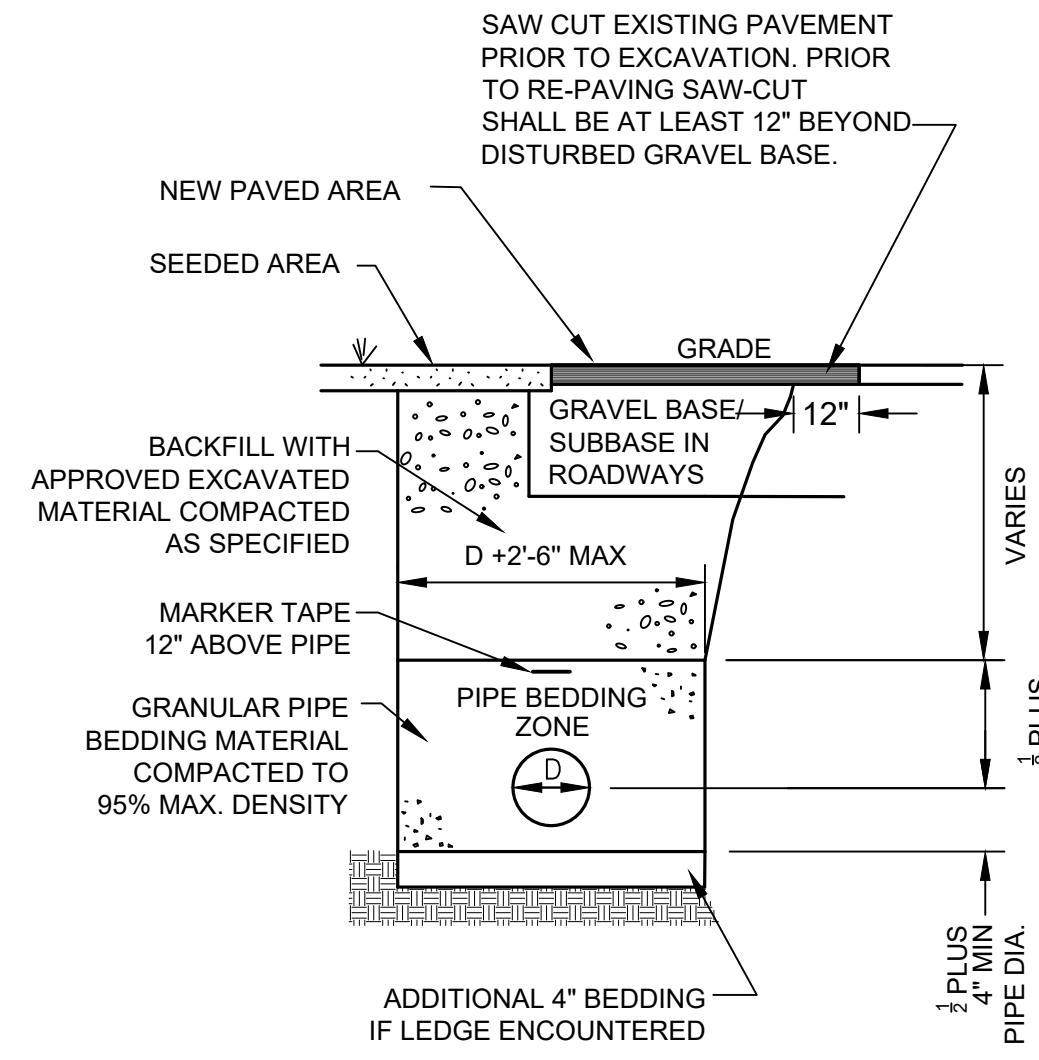
C3 FLAG POLE BASE
SCALE: N.T.S



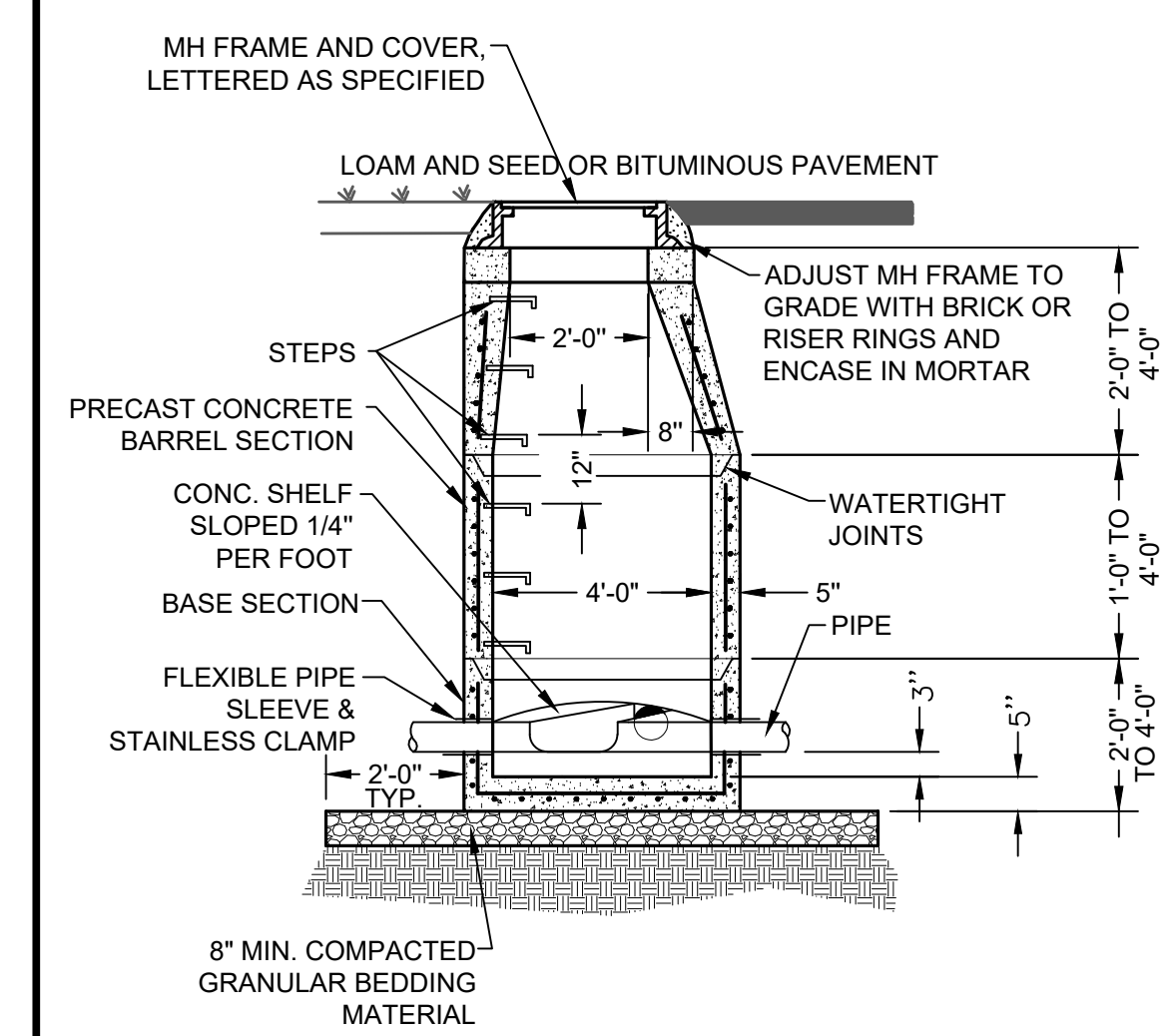
C2 TYPICAL DUCT BANK SECTION
SCALE: N.T.S



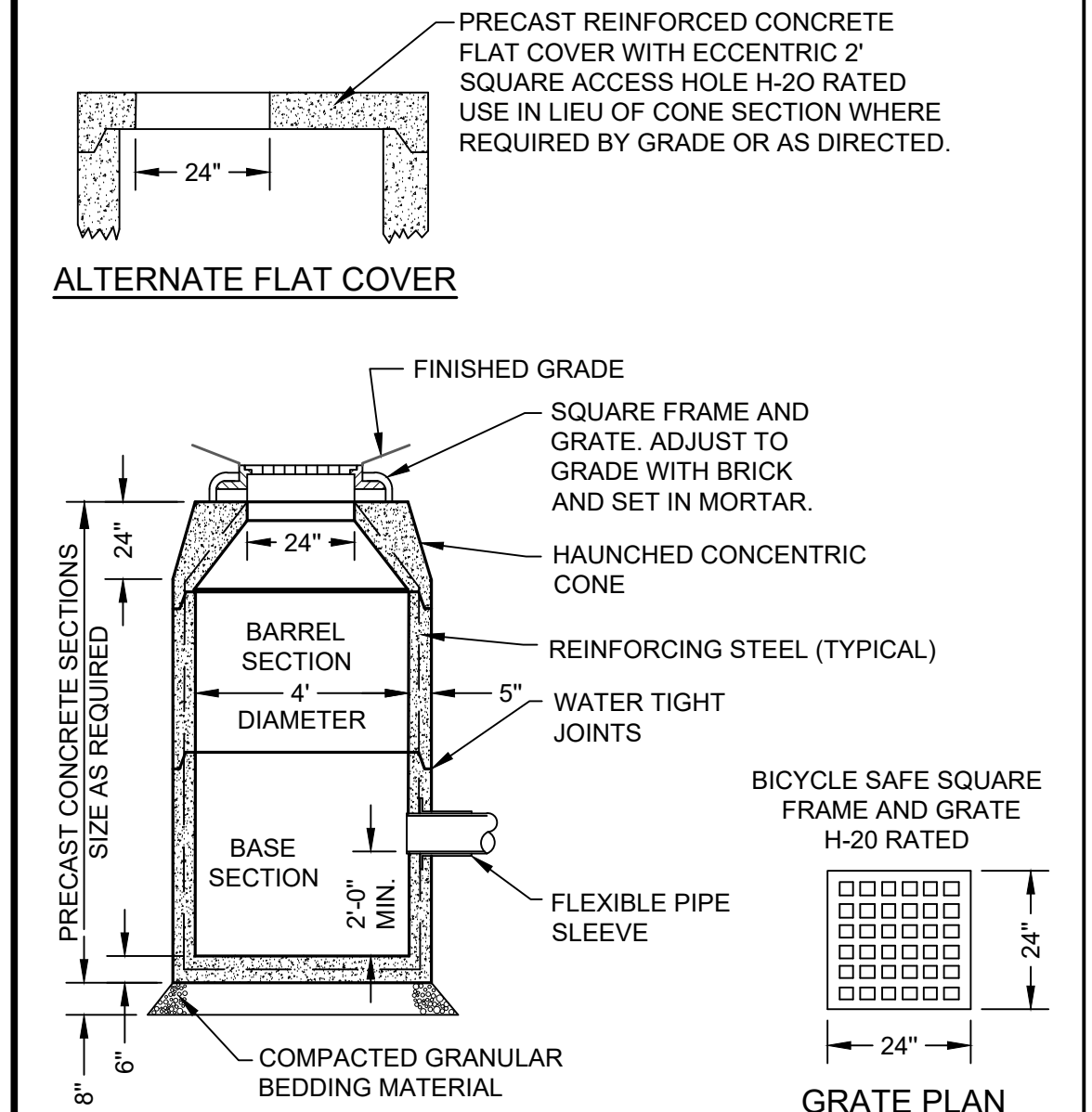
C1 PRECAST CONCRETE SPLICE BOX
SCALE: N.T.S



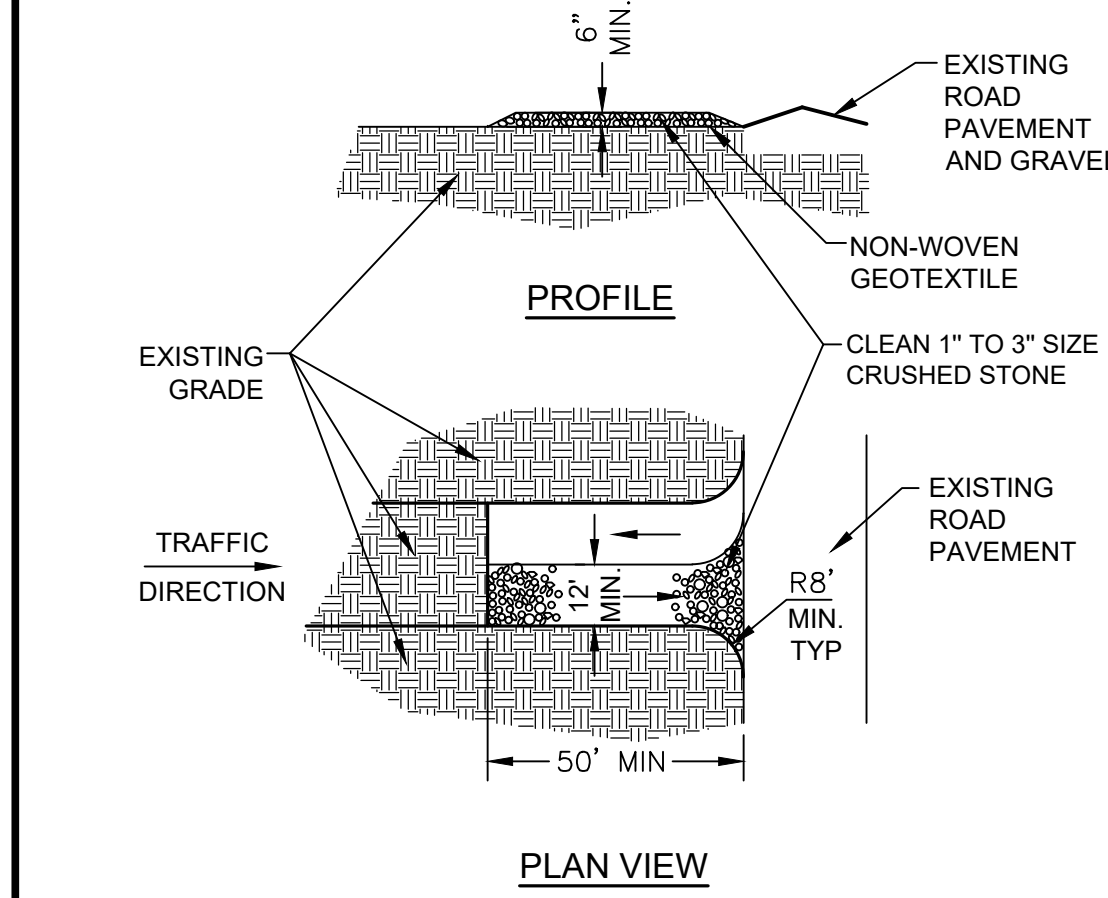
B3 PIPE TRENCH DETAIL
SCALE: N.T.S



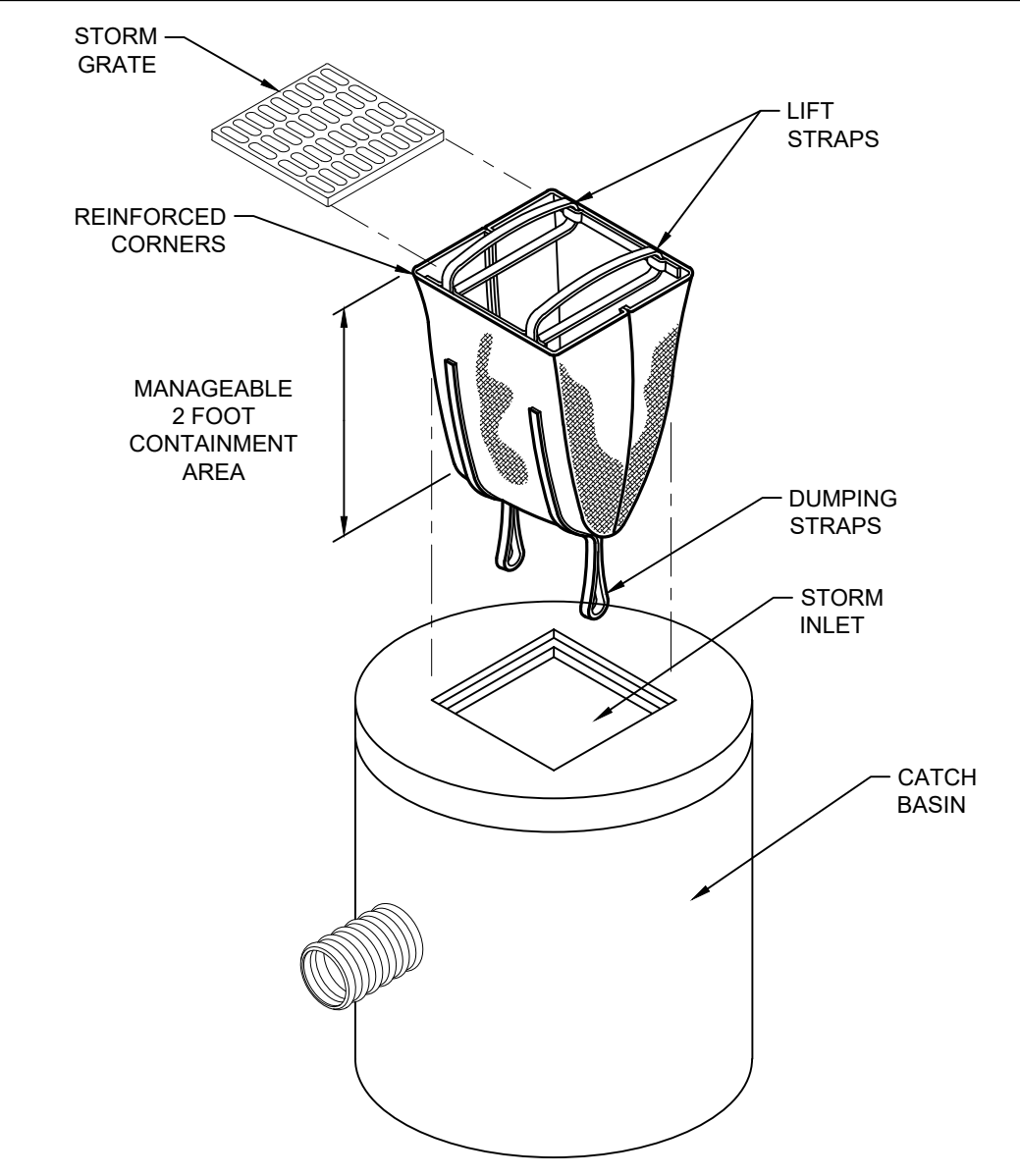
B2 PRECAST CONCRETE MANHOLE
SCALE: N.T.S



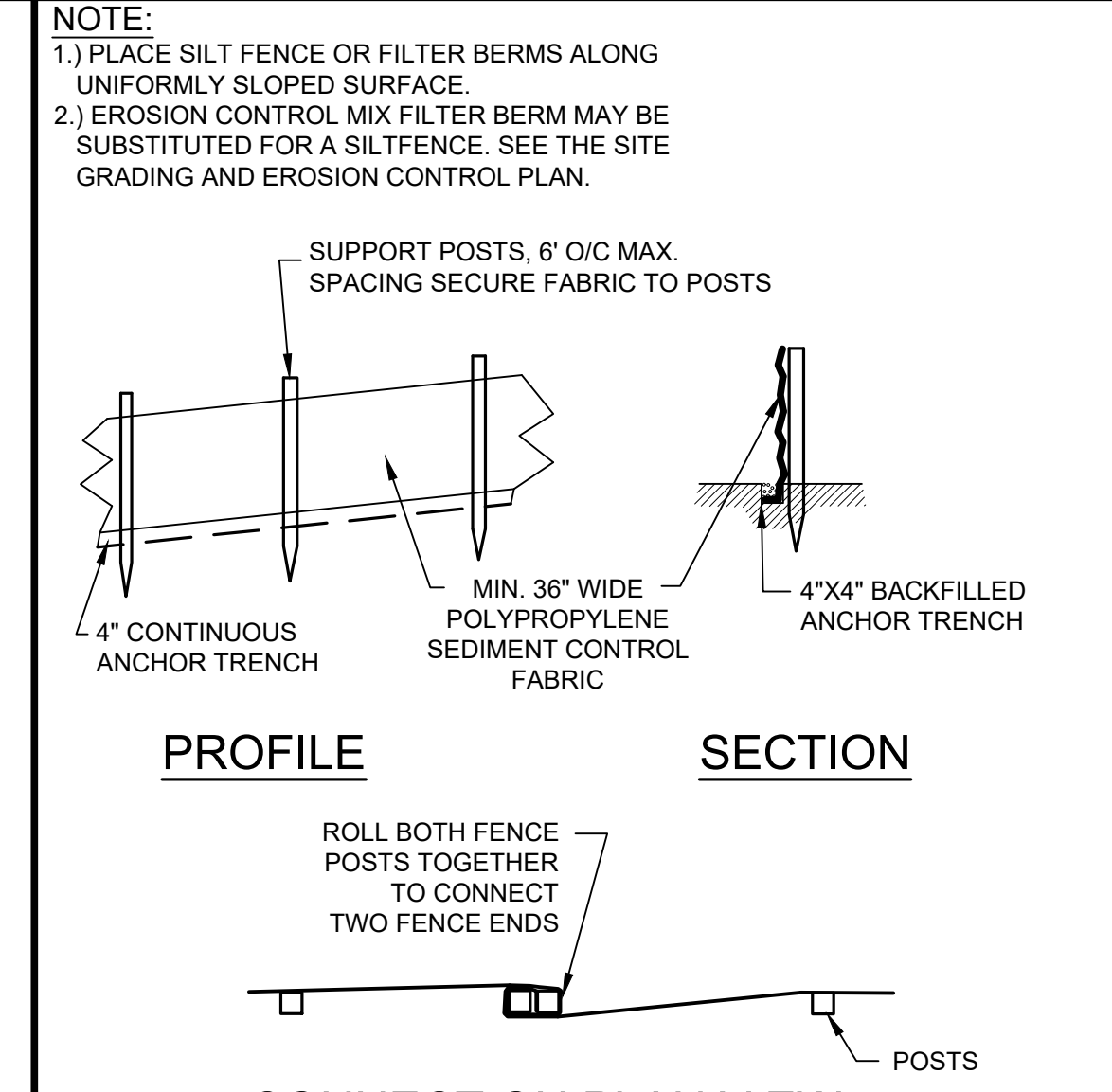
B1 PRECAST CONCRETE CATCH BASIN
SCALE: N.T.S



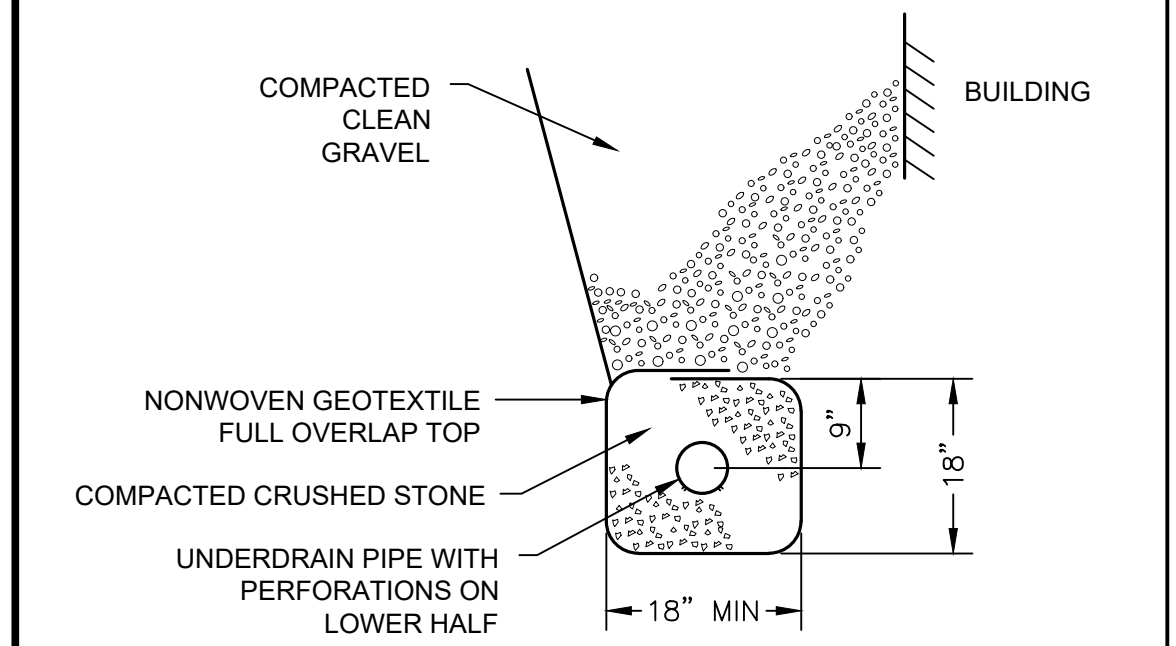
A4 TEMP STABILIZED CONSTRUCTION EXIT
SCALE: N.T.S



A3 SEDIMENT FILTER SACK
SCALE: N.T.S



A2 SILT FENCE
SCALE: N.T.S

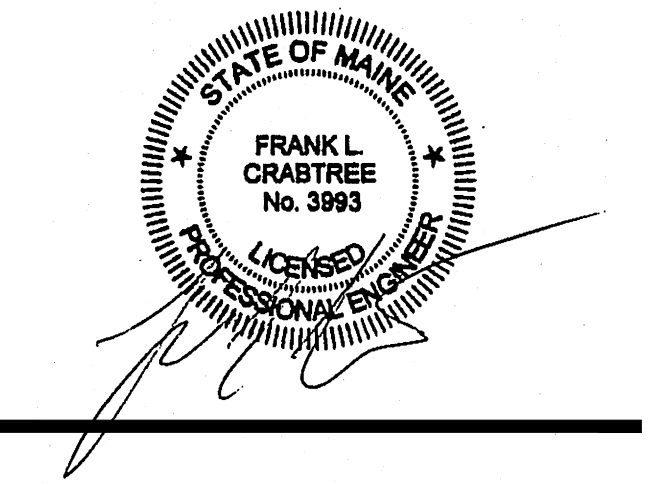


A1 UNDERDRAIN OR FOUNDATION DRAIN
SCALE: N.T.S

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SITE DETAILS

C50-2

1. BASIN EXCAVATION: THE AREA OF THE BASIN MAY BE EXCAVATED IN PREPARATION OF THE INSTALLATION OF THE UNDERDRAIN AND CAN BE USED FOR A SEDIMENT TRAP FROM THE SITE DURING CONSTRUCTION. AFTER EXCAVATION OF THE BASIN, THE OUTLET STRUCTURE AND PIPING SYSTEM MUST BE INSTALLED AT THE APPROPRIATE ELEVATION AND PROTECTED WITH A SEDIMENT BARRIER. IF THE BASIN IS TO BE USED AS A SEDIMENT TRAP, THE SIDES OF THE EMBANKMENTS MUST BE MULCHED AND MAINTAINED TO PREVENT EROSION.
2. COMPACTION OF SOIL FILTER: FILTER SAND AND UNDERDRAIN BEDDING MATERIAL MUST BE ONLY COMPACTED LIGHTLY BY INSTALLATION EQUIPMENT. THE BED SHOULD BE INSTALLED IN AT LEAST 2 LIFTS TO PREVENT POCKETS OF LOOSE MATERIAL.
3. OUTLET DISCHARGE: OUTFLOW OF THE FILTER BASIN UNDERDRAIN CAN BE CONTROLLED BY A VALVE (2" PLASTIC BALL VALVE, TYPE 346, WITH A BALL VALVE HANDLE EXTENSION, TYPE 615, WITH A THREE-PIECE VALVE BOX INSTALLED OVER THE VALVE). UPON COMPLETION OF THE INSTALLATION OF THE SOIL FILTER MEDIA, THE CONTRACTOR SHALL FLOOD THE BASIN TO THE DESIGN ELEVATION WITH CLEAN WATER AND ADJUST THE OUTFLOW TO OBTAIN A 24 HOUR TO 48 HOUR RELEASE TIME.
4. CONSTRUCTION SEQUENCE: EROSION AND SEDIMENTATION FROM UNSTABLE SUBCATCHMENTS IS THE MOST COMMON REASON FOR FILTER FAILURE. NOT HEEDING THE CONSTRUCTION SEQUENCING CRITERIA IS LIKELY TO RESULT IN THE NEED TO REPLACE THE SOIL FILTER. THE FILTER SAND MUST NOT BE INSTALLED UNTIL THE AREA THAT DRAINS TO THE FILTER HAS BEEN PERMANENTLY STABILIZED WITH PAVEMENT OR OTHER STRUCTURE, 90% VEGETATION COVER, OR OTHER PERMANENT STABILIZATION. OTHERWISE, THE RUNOFF FROM THE CONTRIBUTING DRAINAGE AREA MUST BE DIVERTED AROUND THE FILTER UNTIL STABILIZATION IS COMPLETED UNLESS THE DEPARTMENT HAS DETERMINED THAT SUFFICIENT MEASURES ARE BEING TAKEN TO PREVENT EROSION OF MATERIAL FROM THE UNSTABLE CATCHMENT AREA AND DEPOSITION ON THE FILTER.
5. TESTING AND SUBMITTALS: THE CONTRACTOR SHALL IDENTIFY THE LOCATION OF THE SOURCE OF EACH COMPONENT OF THE FILTER MATERIAL. ALL RESULTS OF FIELD AND LABORATORY TESTING SHALL BE SUBMITTED TO THE PROJECT ENGINEER FOR CONFIRMATION. THE CONTRACTOR SHALL:

B. PERFORM A SIEVE ANALYSIS CONFORMING TO ASTM C136 (STANDARD TEST METHOD FOR SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES; 1996A) ON EACH MATERIAL.

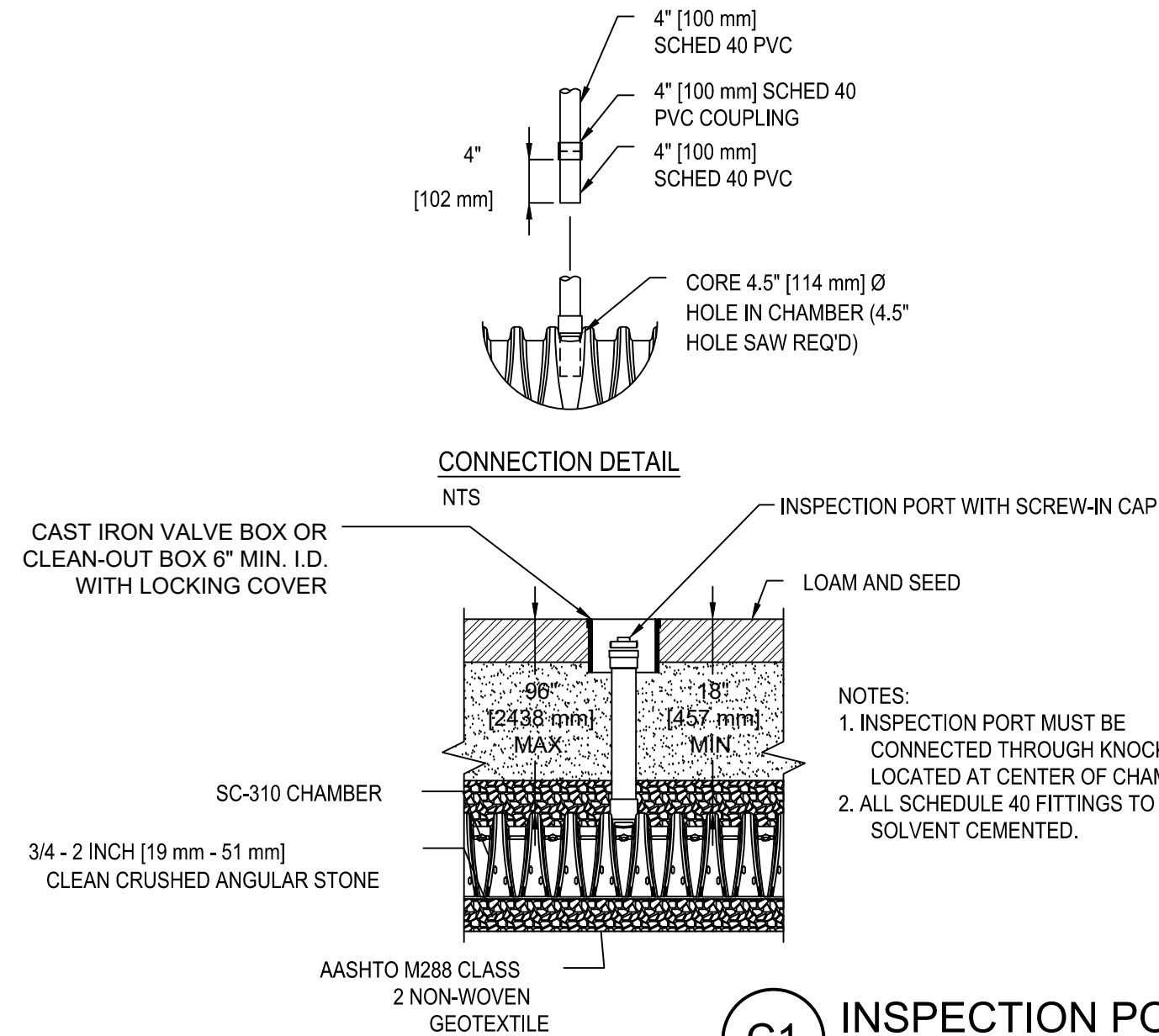
COARSE FILTER
SAND LAYER
(MEDOT #703.01)

SIEVE SIZE	% BY WEIGHT
$\frac{3}{8}$ "	100
#4	95-100
#8	80-100
#16	50-85
#30	25-60
#50	10-30
#100	2-10
#200	0-5* (8 TO 10)

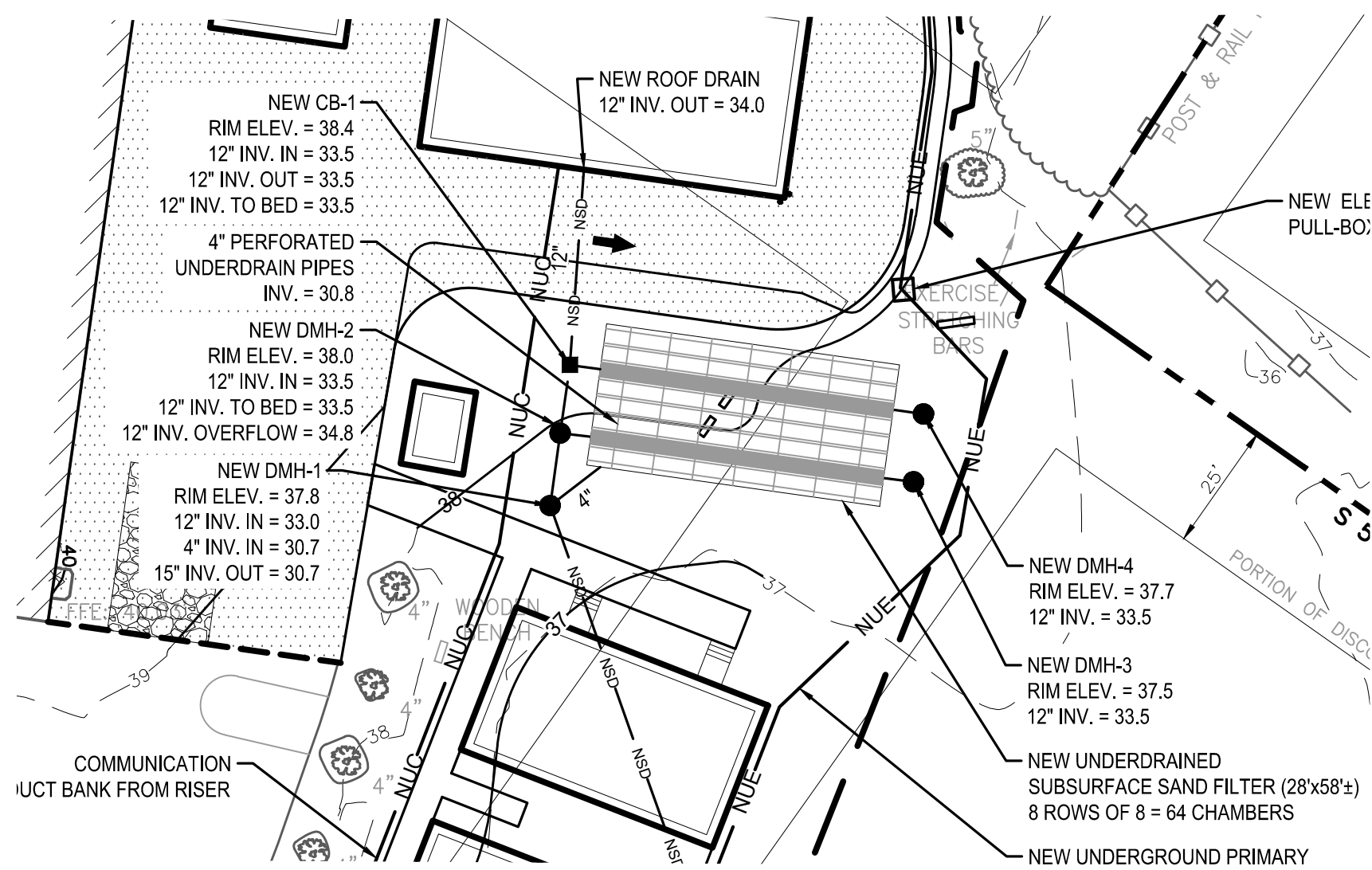
COARSE GRAVEL	MEDOT
SPECIFICATIONS FOR UNDERDRAINS (MEDOT #703.22)	

SIEVE SIZE	% PASSING BY WEIGHT
UNDERDRAIN TYPE B	
1"	90-100
$\frac{3}{4}$ "	75-100
#4	50-100
#20	15-80
#50	0-15
#200	0-5

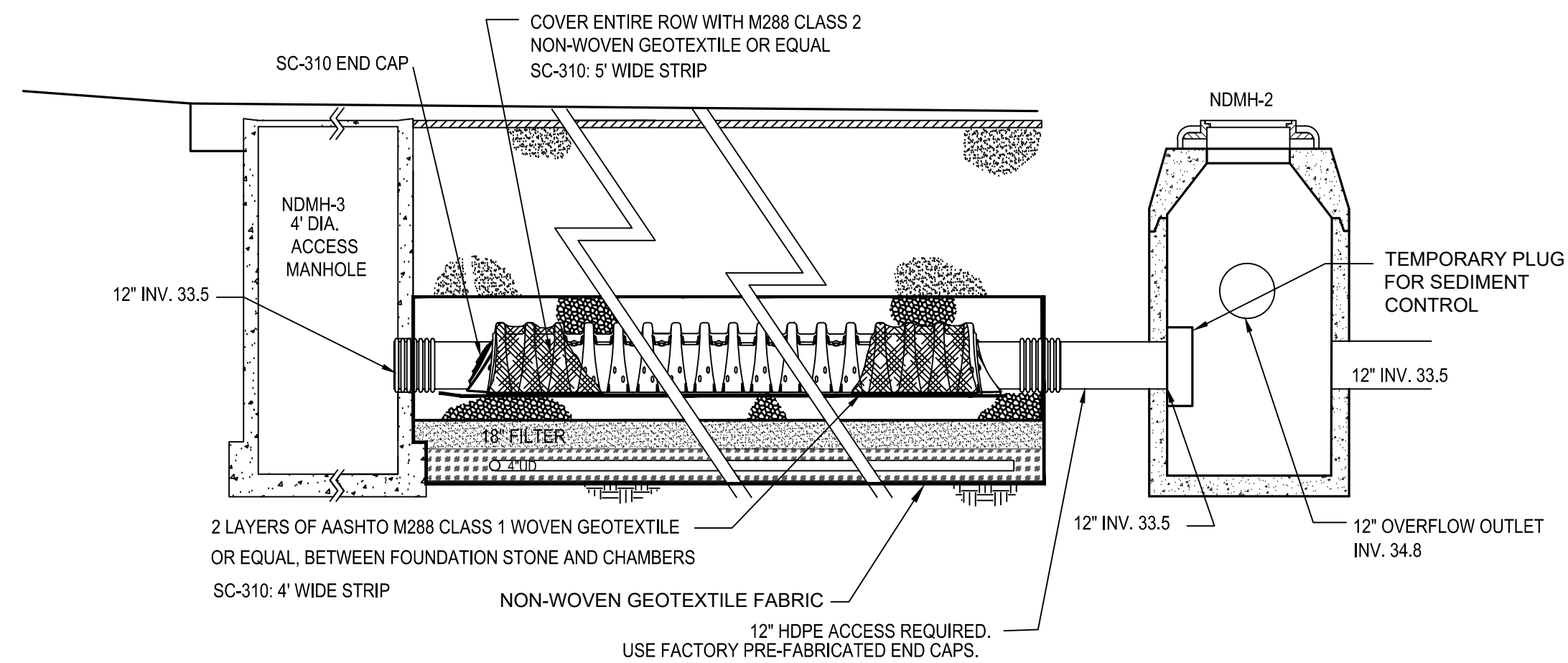
1. FIELD OBSERVATION OF THE FILTER BASIN SHALL BE PROVIDED FOR EACH PHASE OF CONSTRUCTION BY THE DESIGN ENGINEER.
AT A MINIMUM, CONTRACTOR SHALL NOTIFY ARCHITECT ONE WEEK PRIOR TO THE FOLLOWING:
 - AFTER PRELIMINARY CONSTRUCTION OF THE FILTER GRADES AND ONCE THE UNDERDRAIN PIPES ARE INSTALLED BUT NOT BACKFILLED;
 - AFTER THE DRAINAGE LAYER IS CONSTRUCTED AND PRIOR TO THE INSTALLATION OF THE FILTER SAND;
 - AFTER THE FILTER SAND HAS BEEN PLACED AND CHAMBERS ARE BEING INSTALLED;
 - ALL MATERIAL USED FOR THE CONSTRUCTION OF THE FILTER BASIN WILL BE APPROVED BY THE DESIGN ENGINEER AFTER TESTS BY A CERTIFIED LABORATORY SHOW THAT THEY ARE PASSING DEP SPECIFICATIONS SHOWN ON THIS SHEET.
2. CHAMBER MANUFACTURER'S REPRESENTATIVE SHALL INSPECT THE CHAMBER INSTALLATION AT THE FOLLOWING TIMES:
 - A. DURING INSTALLATION OF CHAMBERS.
PARTICULARLY OBSERVING THE ISOLATOR ROW.
 - B. FOLLOWING COMPLETION OF SYSTEM INSTALLATION AND BACK FILL.
 - C. FOLLOWING STABILIZATION OF GROUND SURFACE AREAS DRAINING INTO THE CHAMBERS.
3. MAINTENANCE: PROVIDE THE MANUFACTURER'S REPRESENTATIVE FOR ONE YEAR OF MAINTENANCE FROM THE DATE OF SUBSTANTIAL COMPLETION.



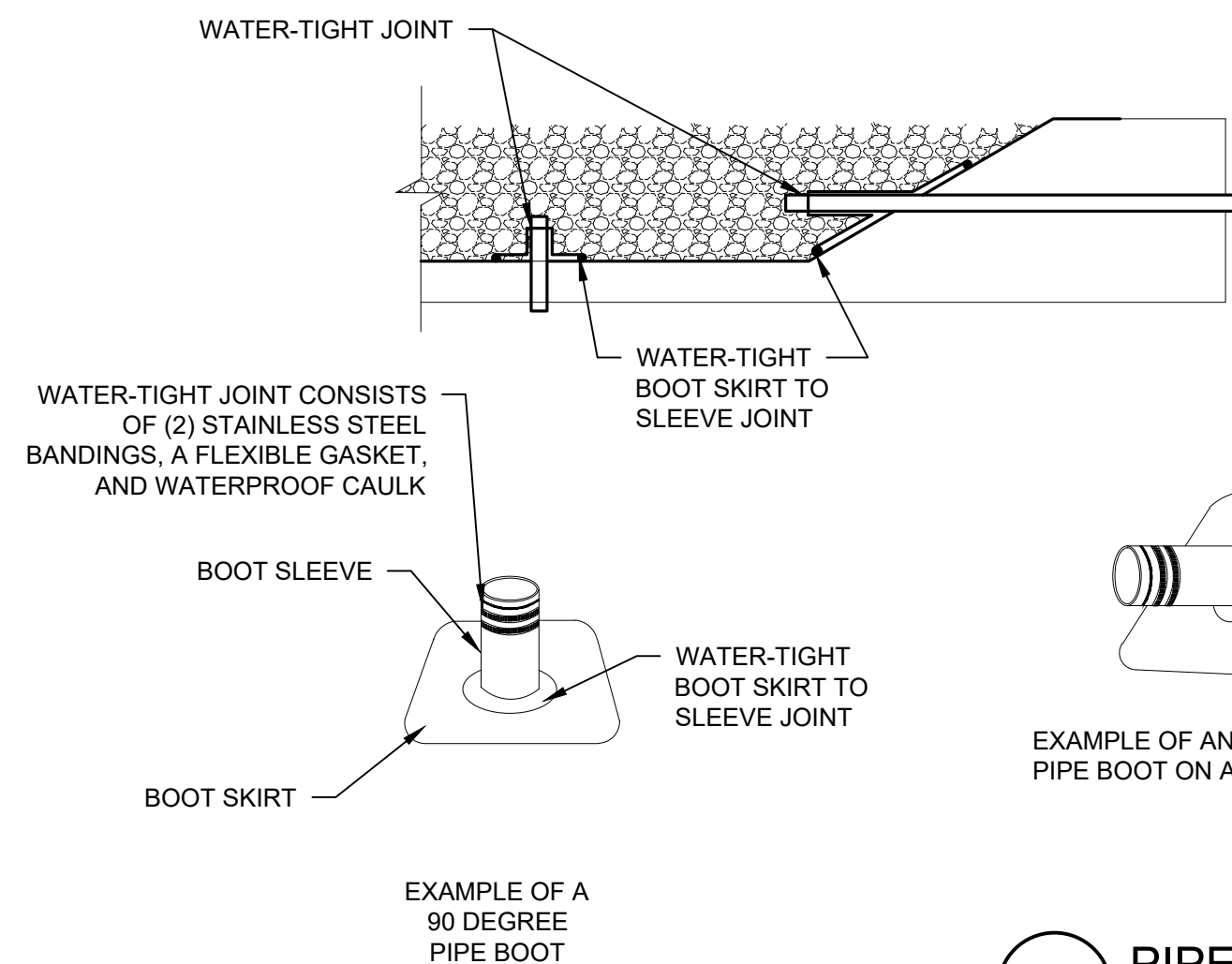
C2 UNDERDRAIN SUBSURFACE SAND FILTER NOTES



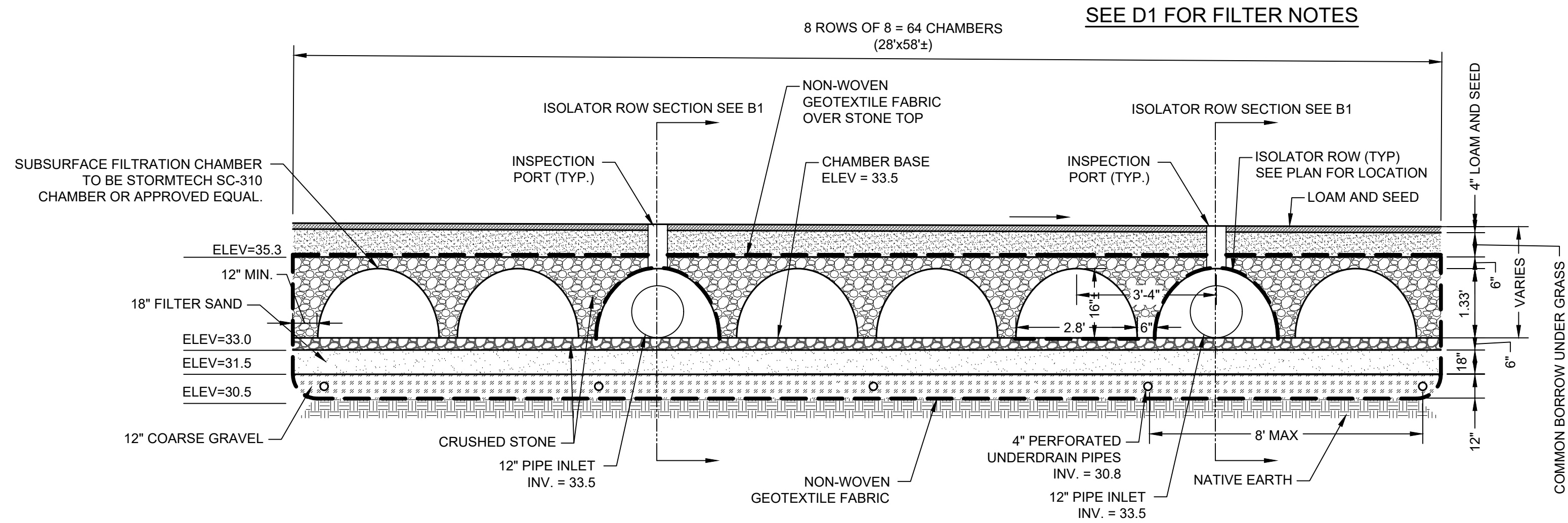
B2 UNDERDRAIN SUBSURFACE SAND FILTER
PLAN



B1 ISOLATOR ROWS DETAIL



A2 PIPE PENETRATION DETAILS



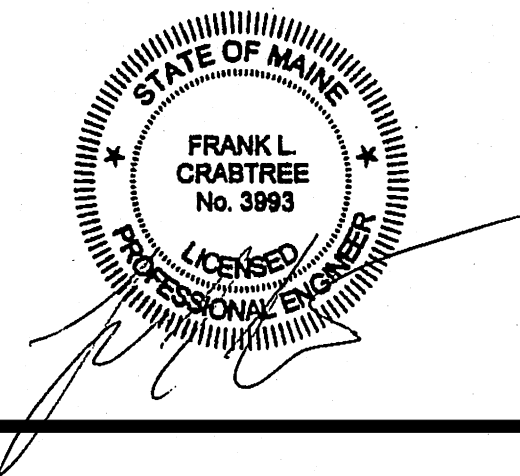
A1 UNDERDRAIN SUBSURFACE SAND FILTER SECTION



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PLANNING BOARD

SEPTEMBER 16, 2020

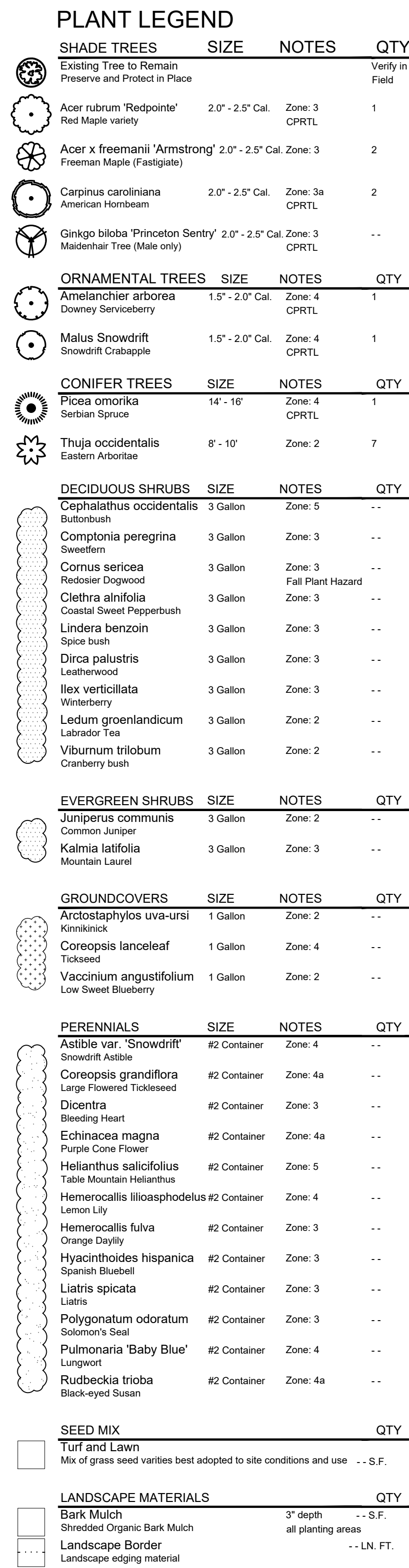
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PRELIMINARY
NOT FOR
CONSTRUCTION

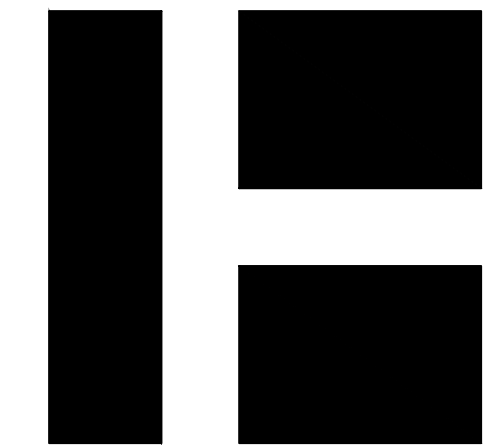
Drawing Scales	
PA / PE: FLC	© 2020 Harriman Associates
Drawn By: BAW / HAS	

STORMWATER DETAILS

C60-1



1. Plant material symbols represent anticipated size at 75% maturity.
2. Code "L" = City of Portland Recommended Tree List, 2018 edition
3. Not all plant material species and quantities shown will be used. Final plant material specifications dependent on conformance to, and approval by, local and state regulations and agencies.
4. Plant material specified shall conform to ANLA American Standard for Nursery Stock, ANSI Z60.1 current edition.
5. No permanent irrigation system is proposed.



HARRIMAN

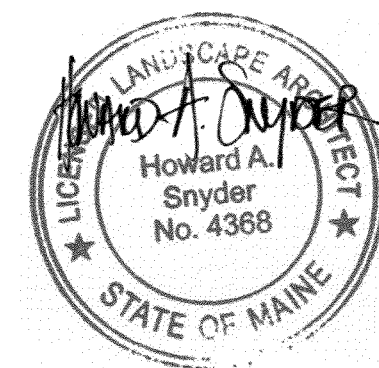
PRESUMPCOT
ELEMENTARY SCHOOL

PORTLAND, MAINE

Harriman Project No.	19151
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Key Plan

Proj Nor



PLANNING BOARD

SEPTEMBER 16, 2020

Rev	Date	Description

PRELIMINARY
NOT FOR
CONSTRUCTION

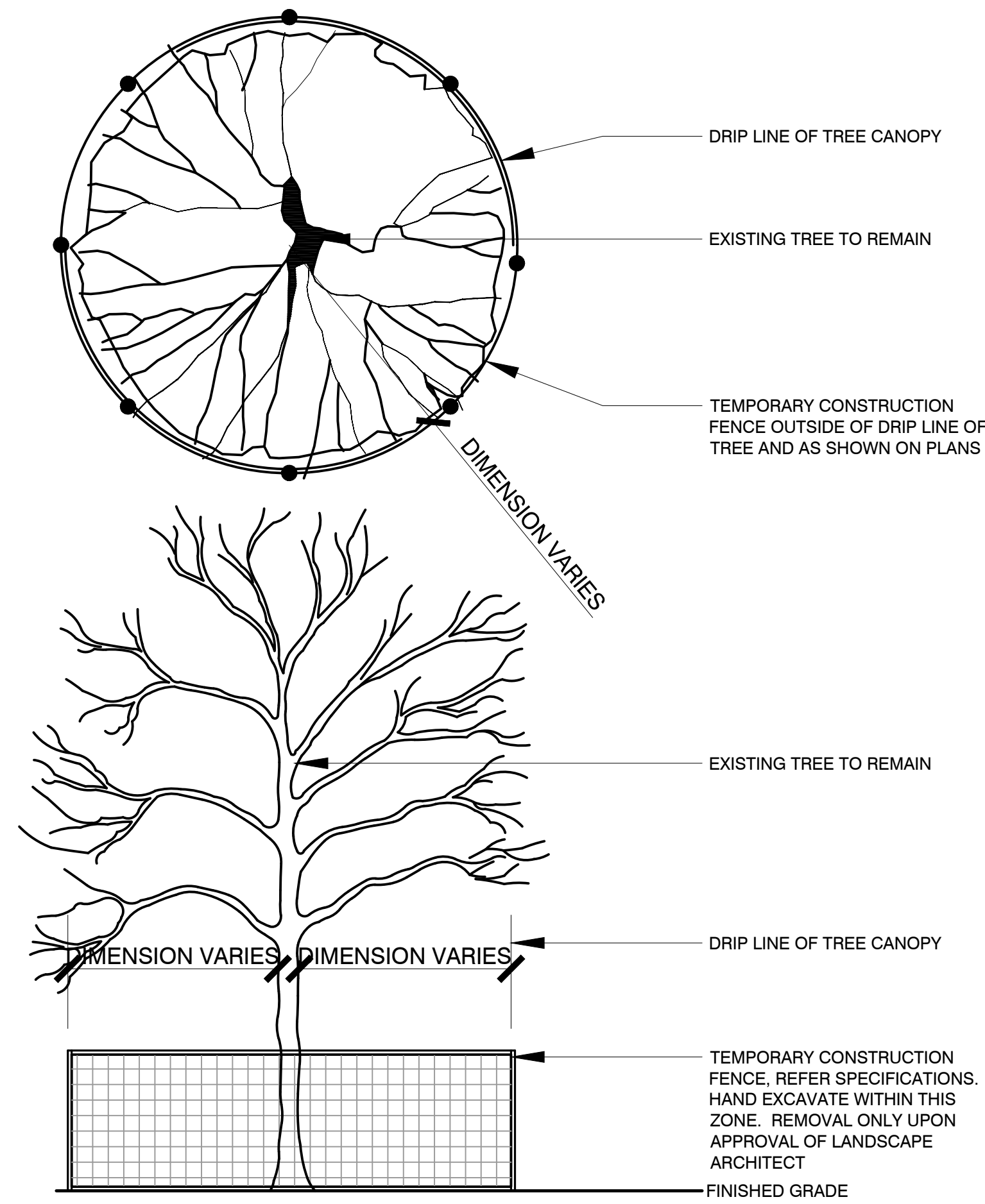


PA / PE:	HAS	© 2020 Harriman Associates
Drawn By:	HAS	

PLANTING PLAN

L40-1

PLAN



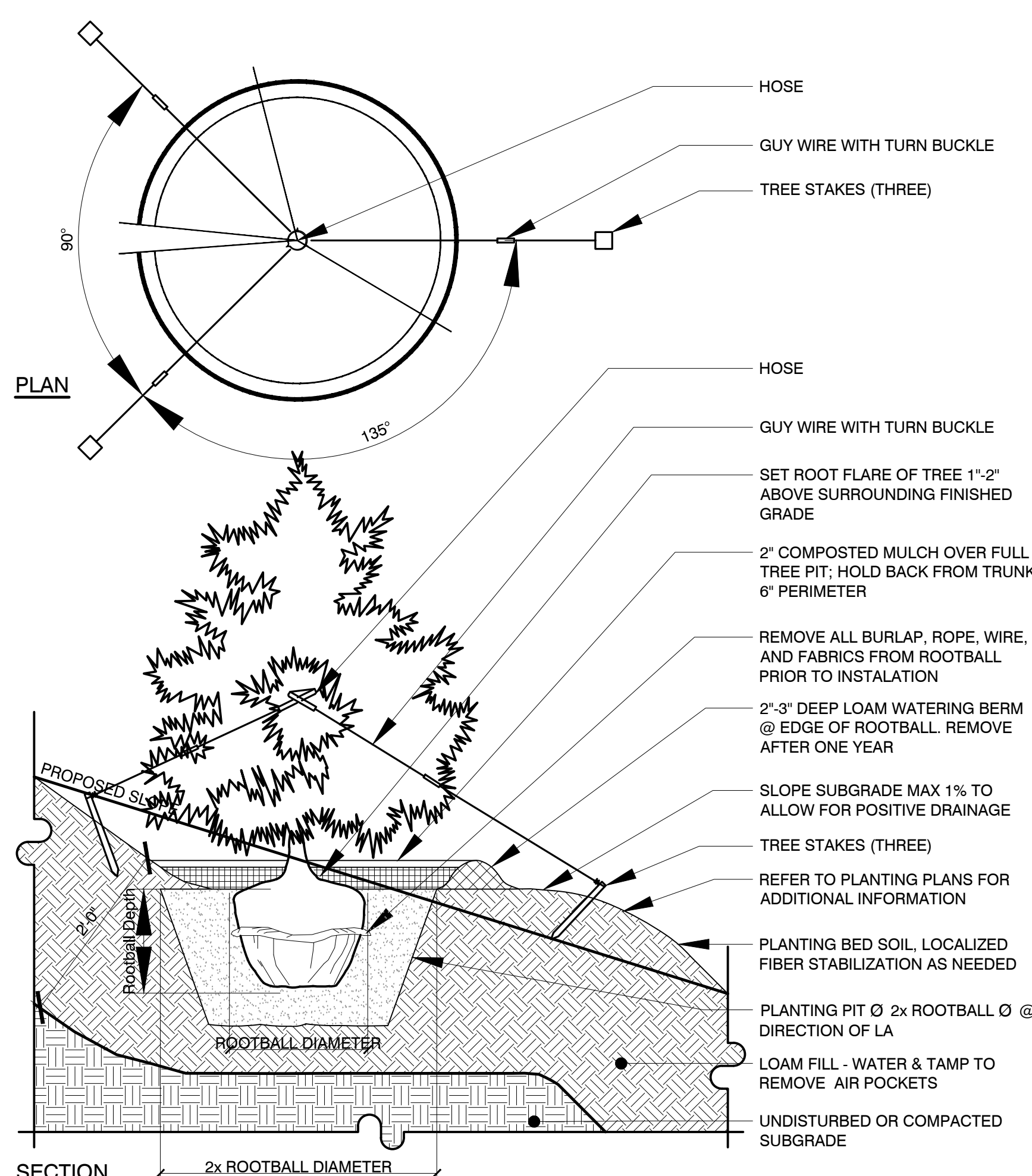
SECTION

B3 PROTECTION FOR EXISTING TREES

Scale: Not To Scale

NOTE:
1. DO NOT STORE ANY MACHINERY OR MATERIALS WITHIN FENCED AREAS UNLESS OTHERWISE NOTED IN THE CONTRACT DOCUMENTS

PLAN

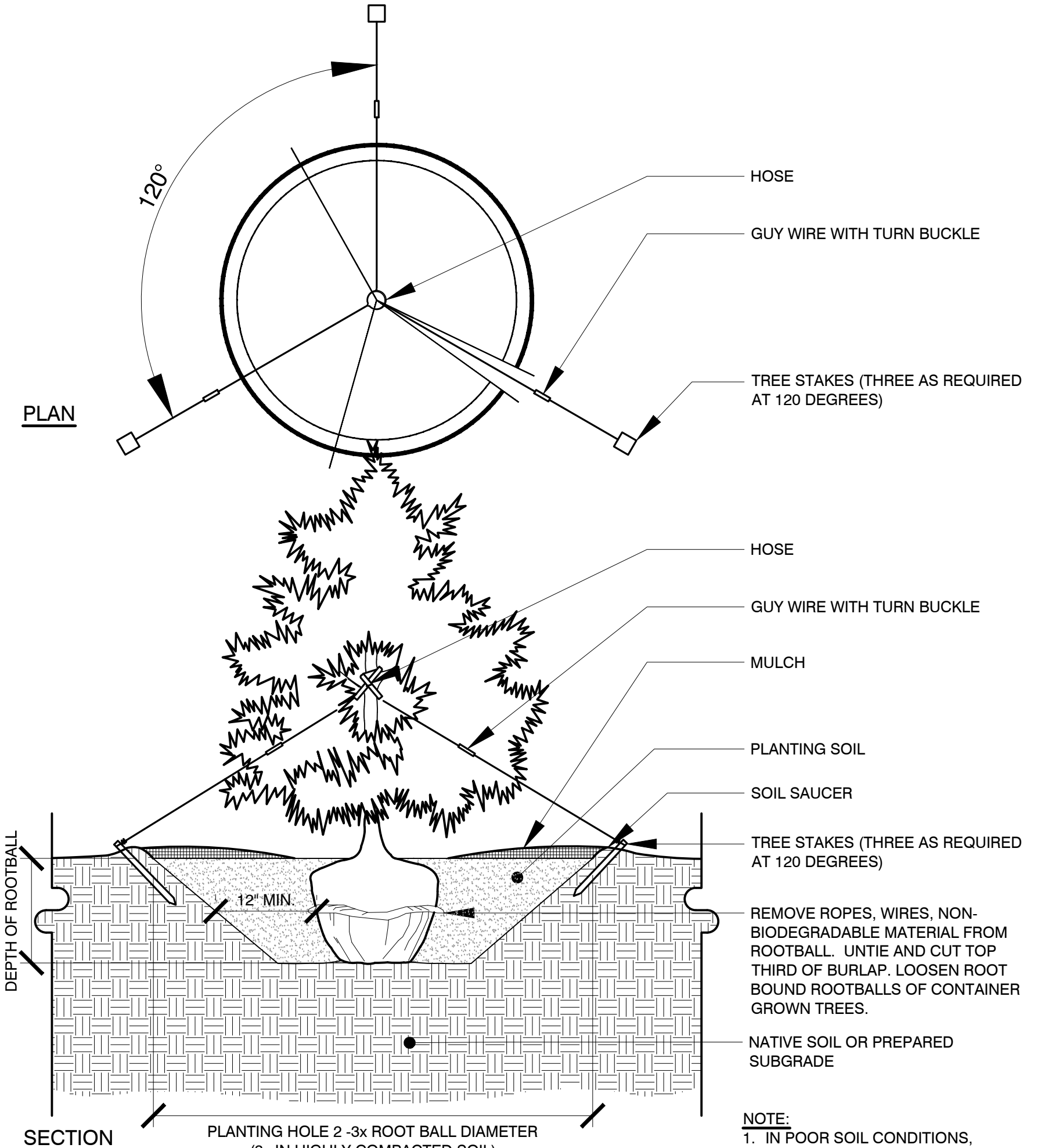


SECTION

B2 EVERGREEN TREE PLANTING, STEEP TO MODERATE SLOPES

Scale: Not To Scale

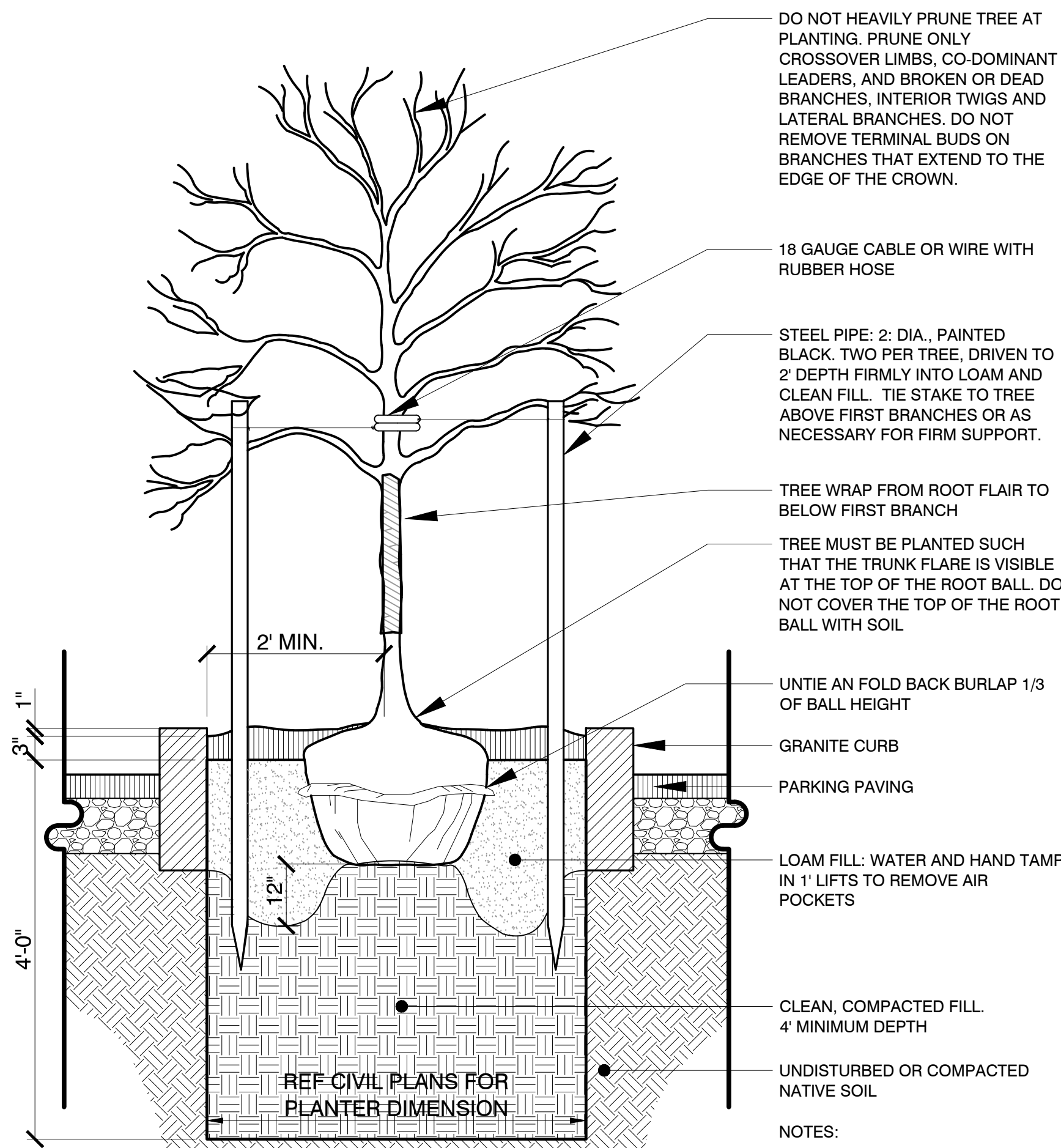
PLAN



SECTION

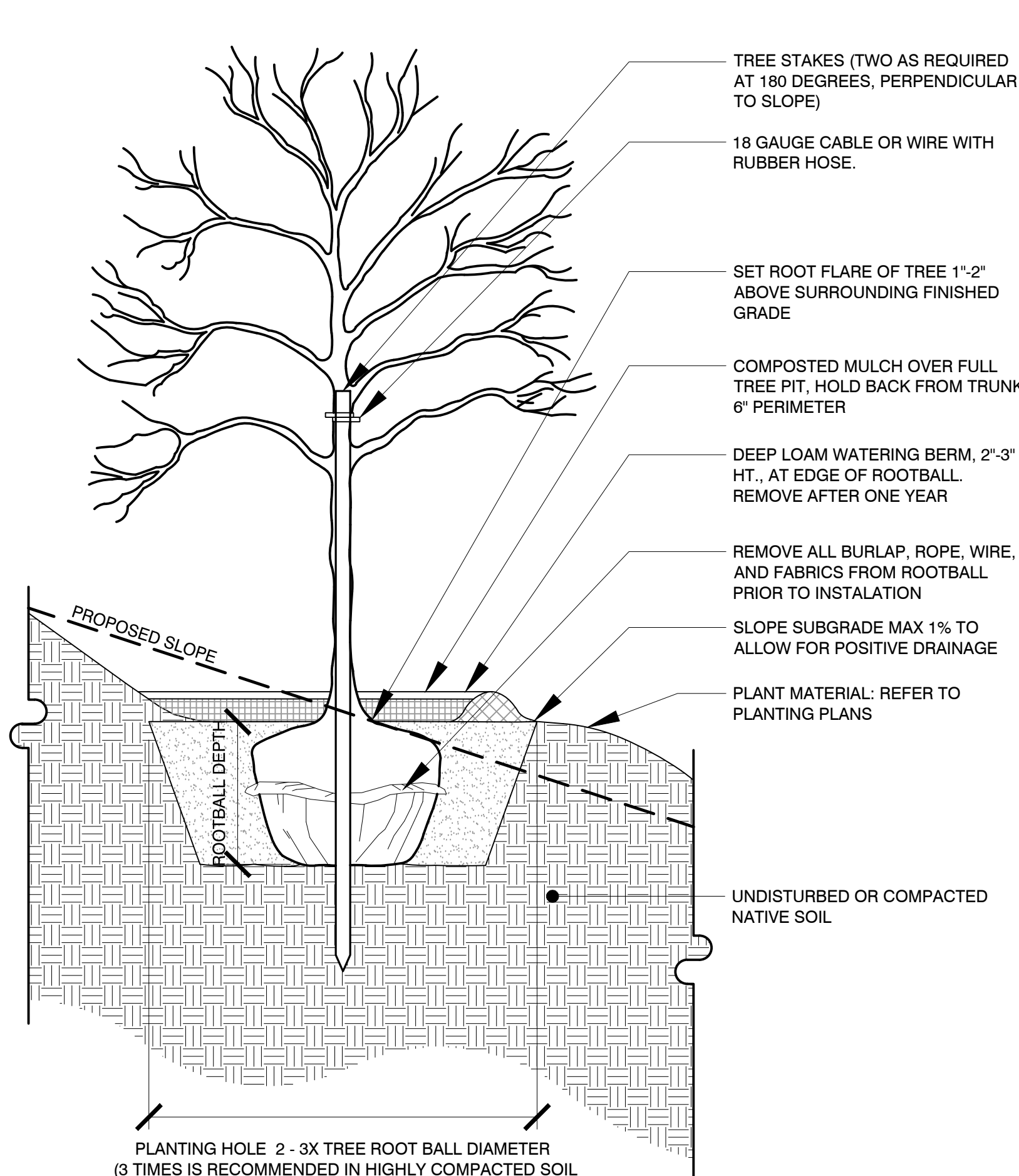
B1 CONIFER TREE PLANTING

Scale: Not To Scale



A3 DECIDUOUS TREE PLANTING: PARKING ISLAND

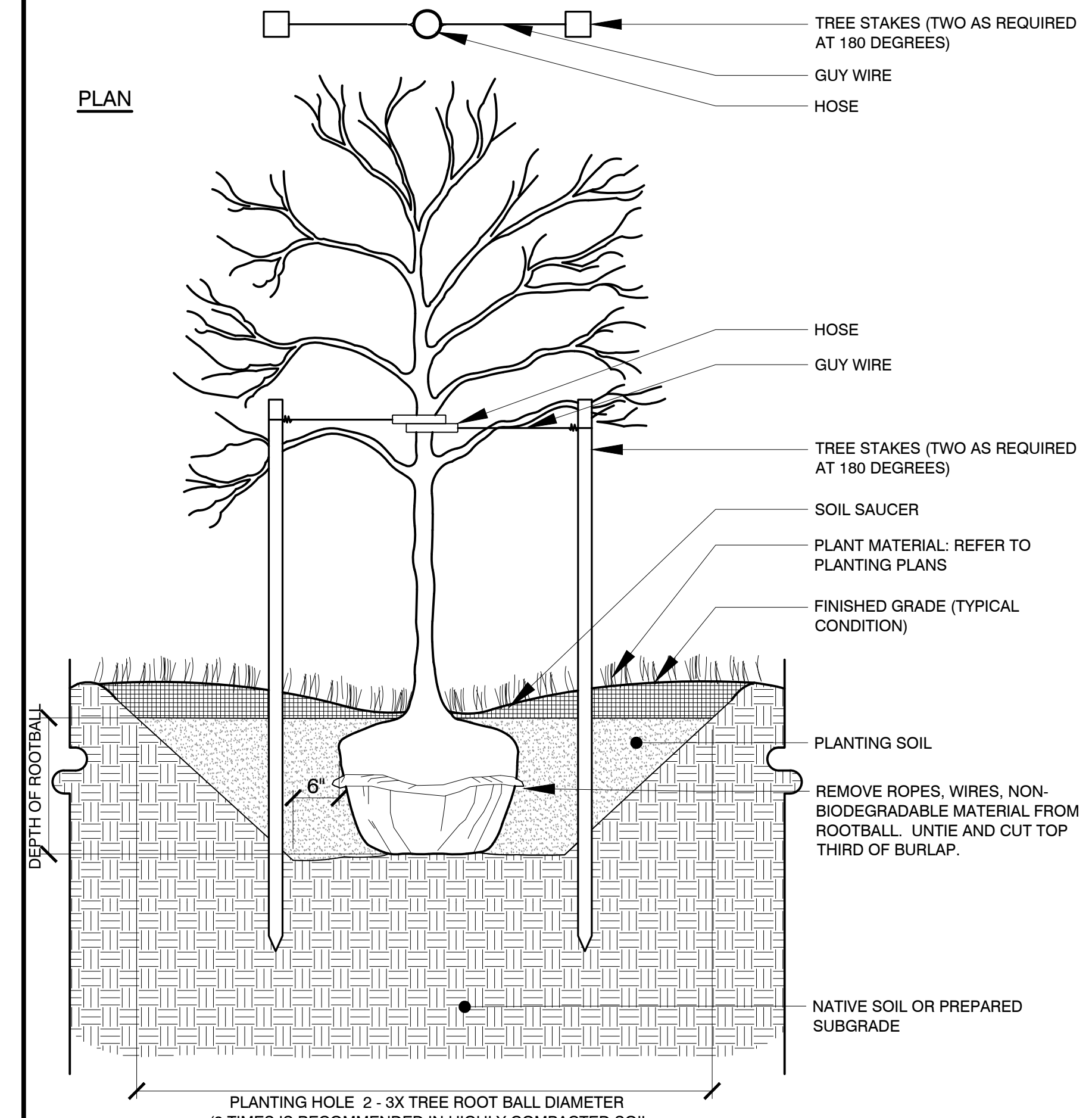
Scale: Not To Scale



A2 DECIDUOUS TREE PLANTING: MODERATE TO STEEP SLOPES

Scale: Not To Scale

PLAN



SECTION

A1 DECIDUOUS TREE PLANTING

Scale: Not To Scale

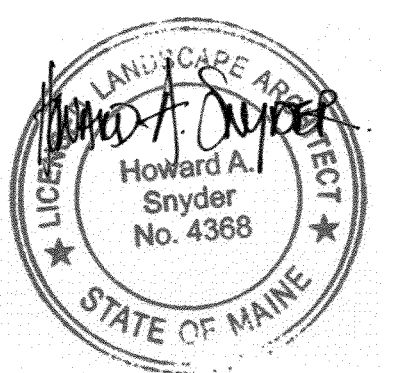


PRESUMPCOT
ELEMENTARY SCHOOL

PORTLAND, MAINE

Harriman Project No. 19151

Key Plan



PLANNING BOARD
SEPTEMBER 16, 2020

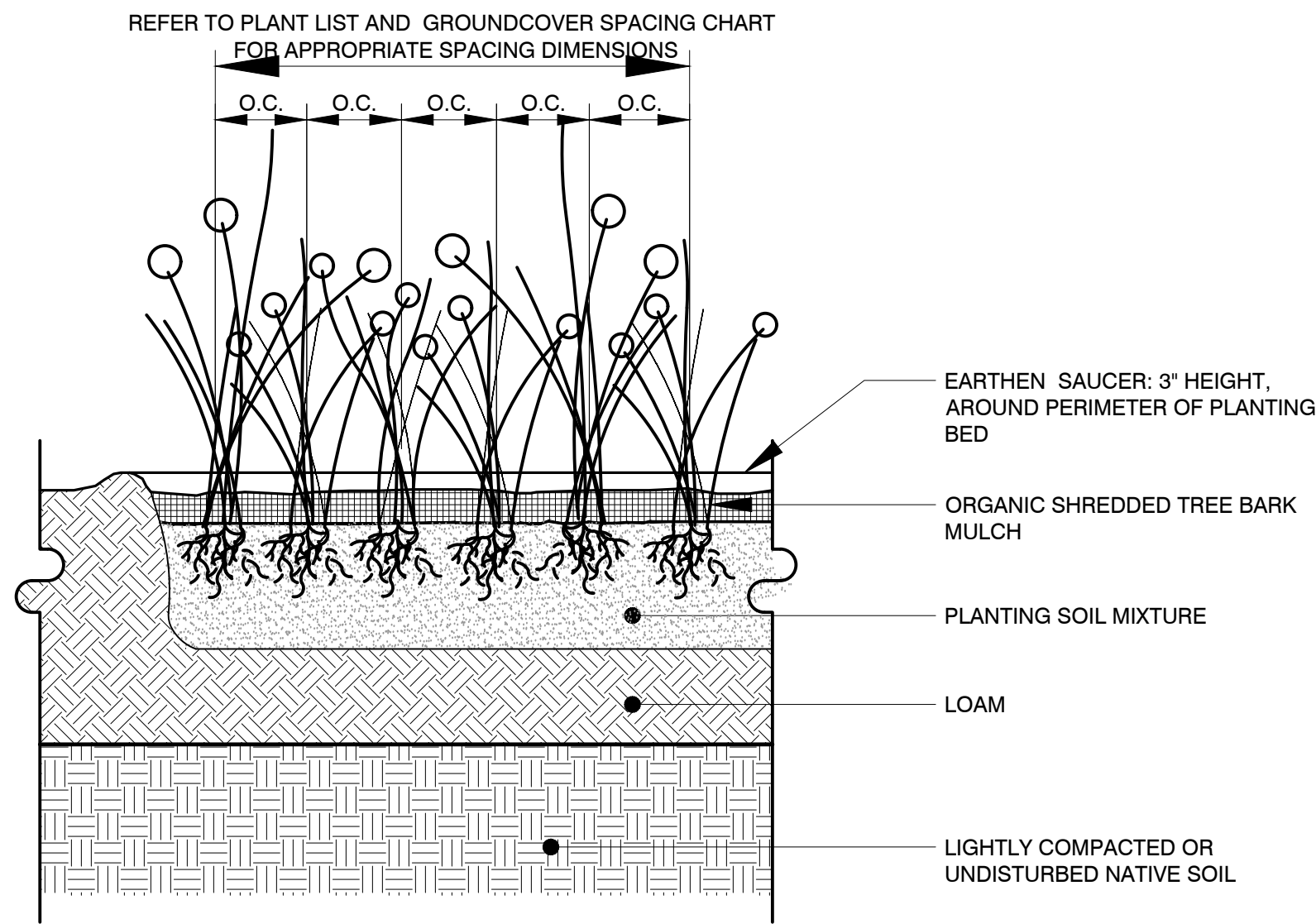
Rev	Date	Revision Description

PRELIMINARY
NOT FOR
CONSTRUCTION

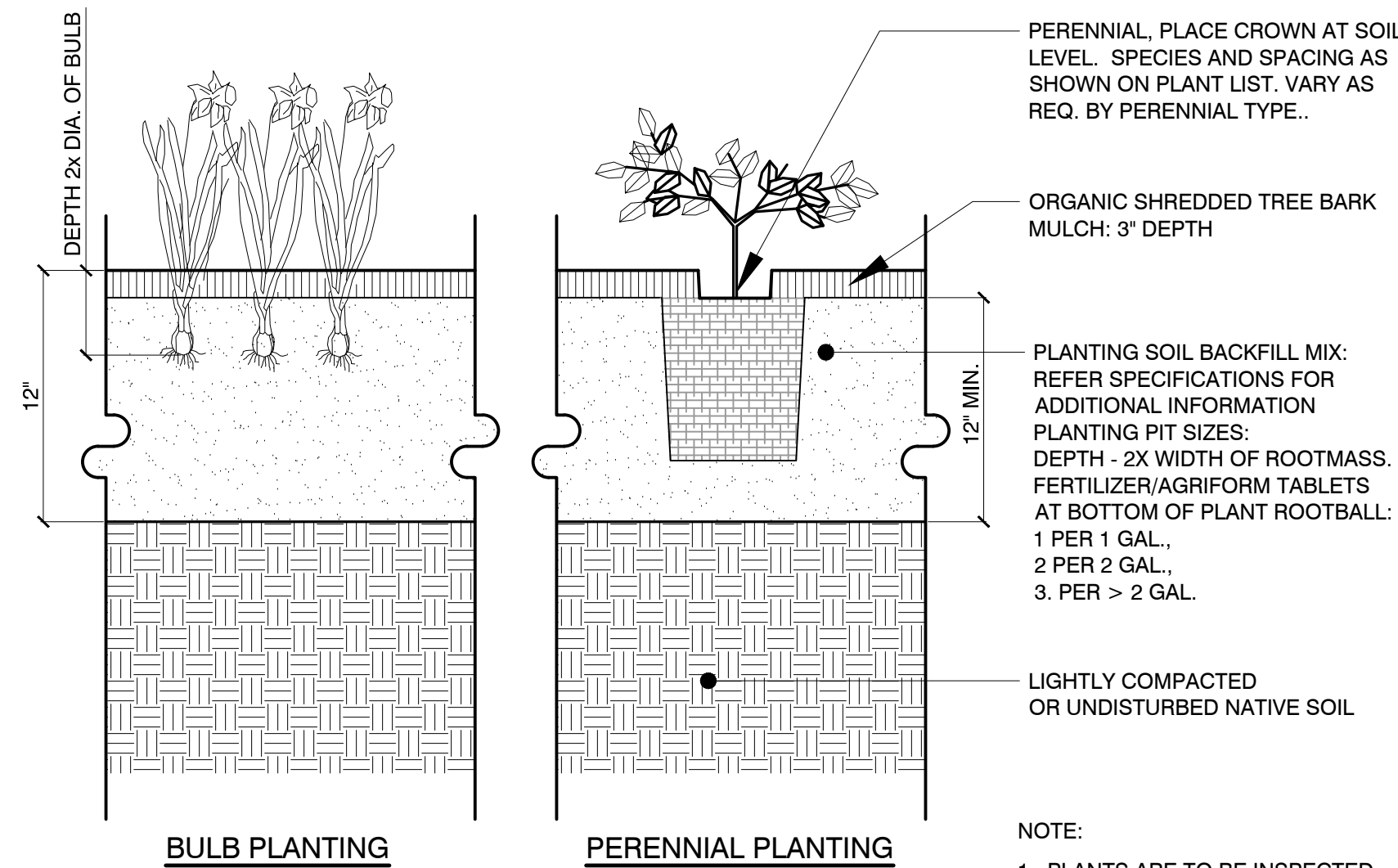
PA / PE:	HAS	© 2020
Drawn By:	HAS	Harriman Associates

PLANTING
DETAILS

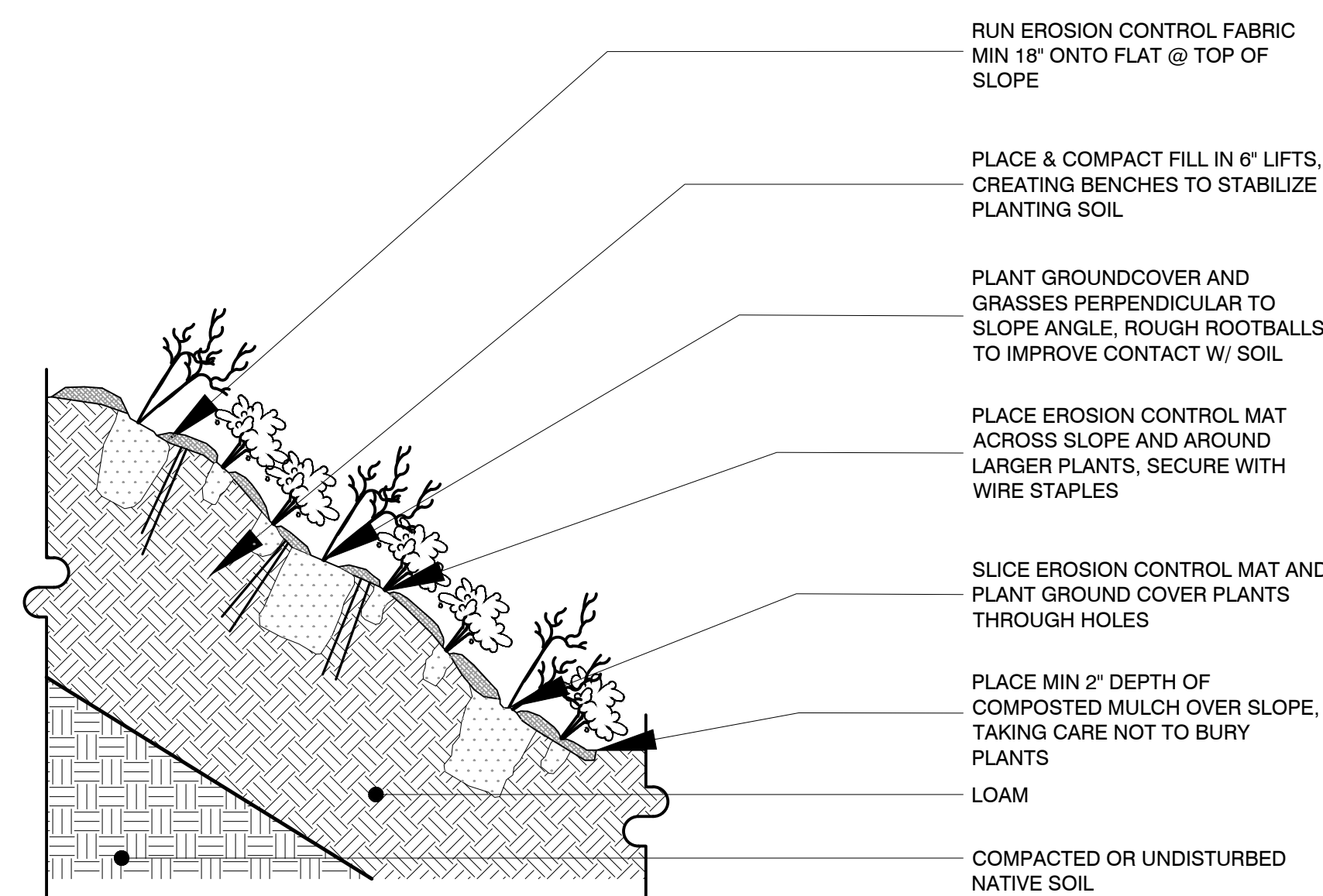
L50-1



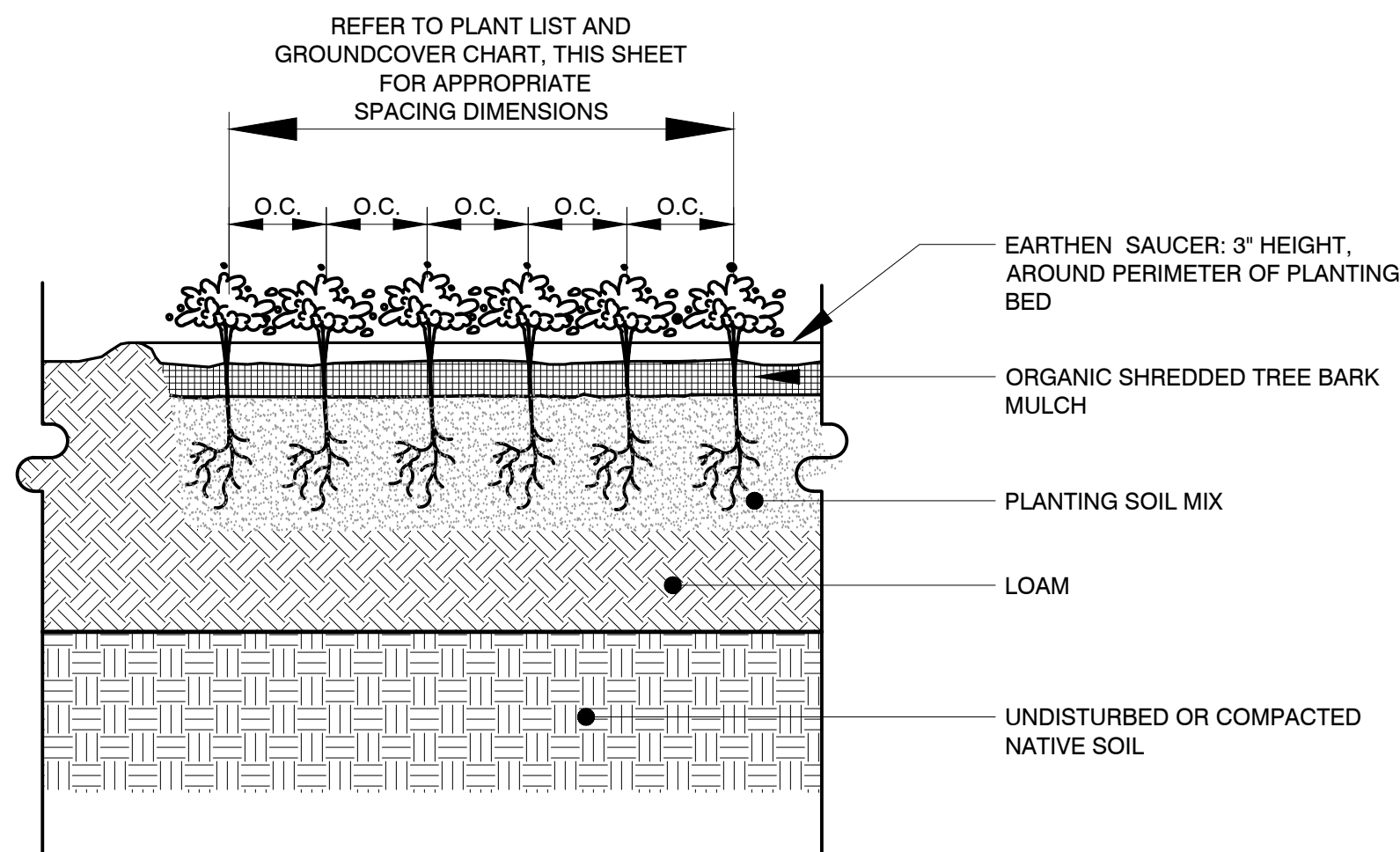
C3 ORNAMENTAL GRASS PLANTING
Scale: Not To Scale



C2 BULB AND PERENNIAL PLANTING
Scale: Not to Scale



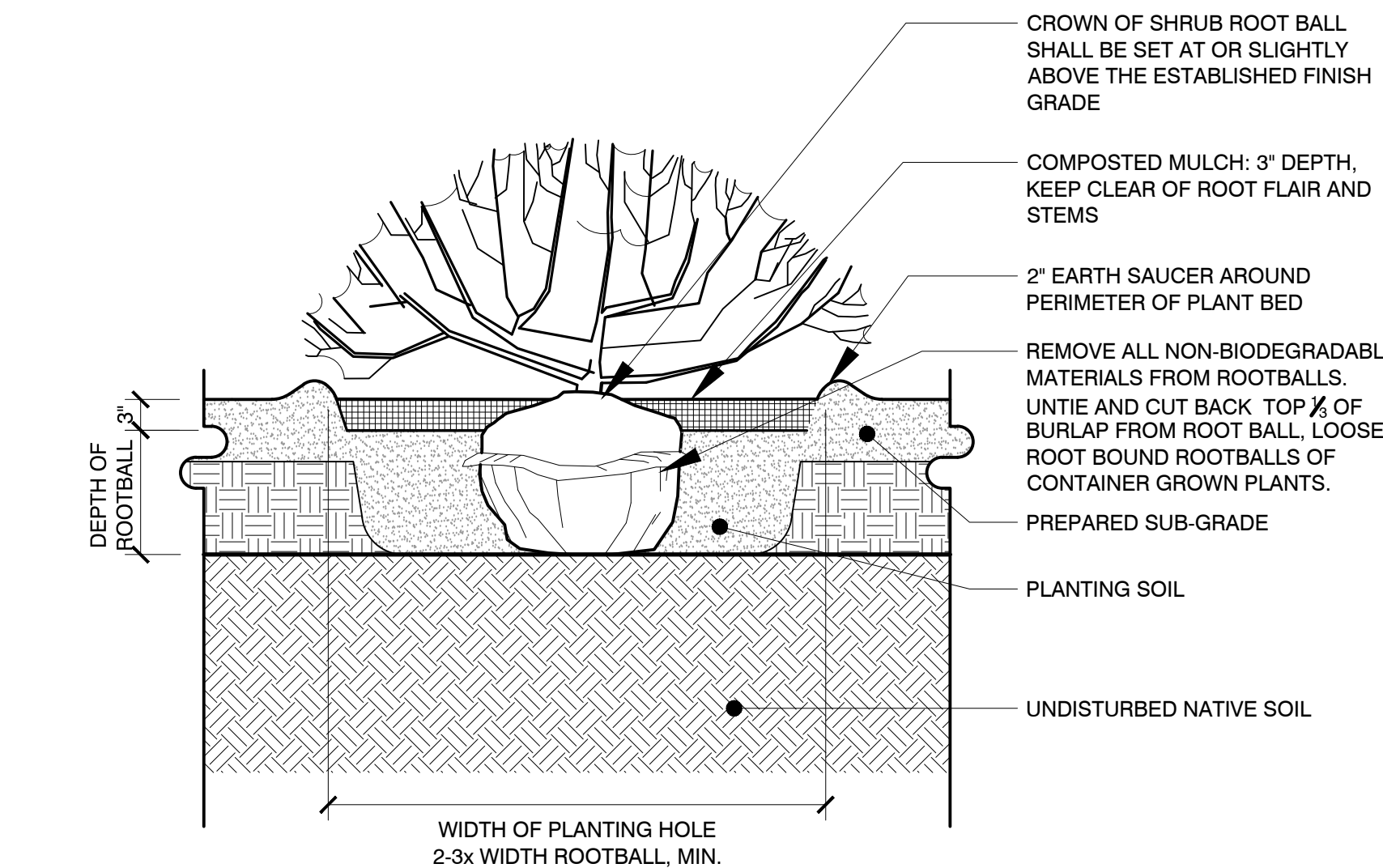
C1 GROUND COVER PLANTING: 3:1 SLOPE OR GREATER
Scale: Not to Scale



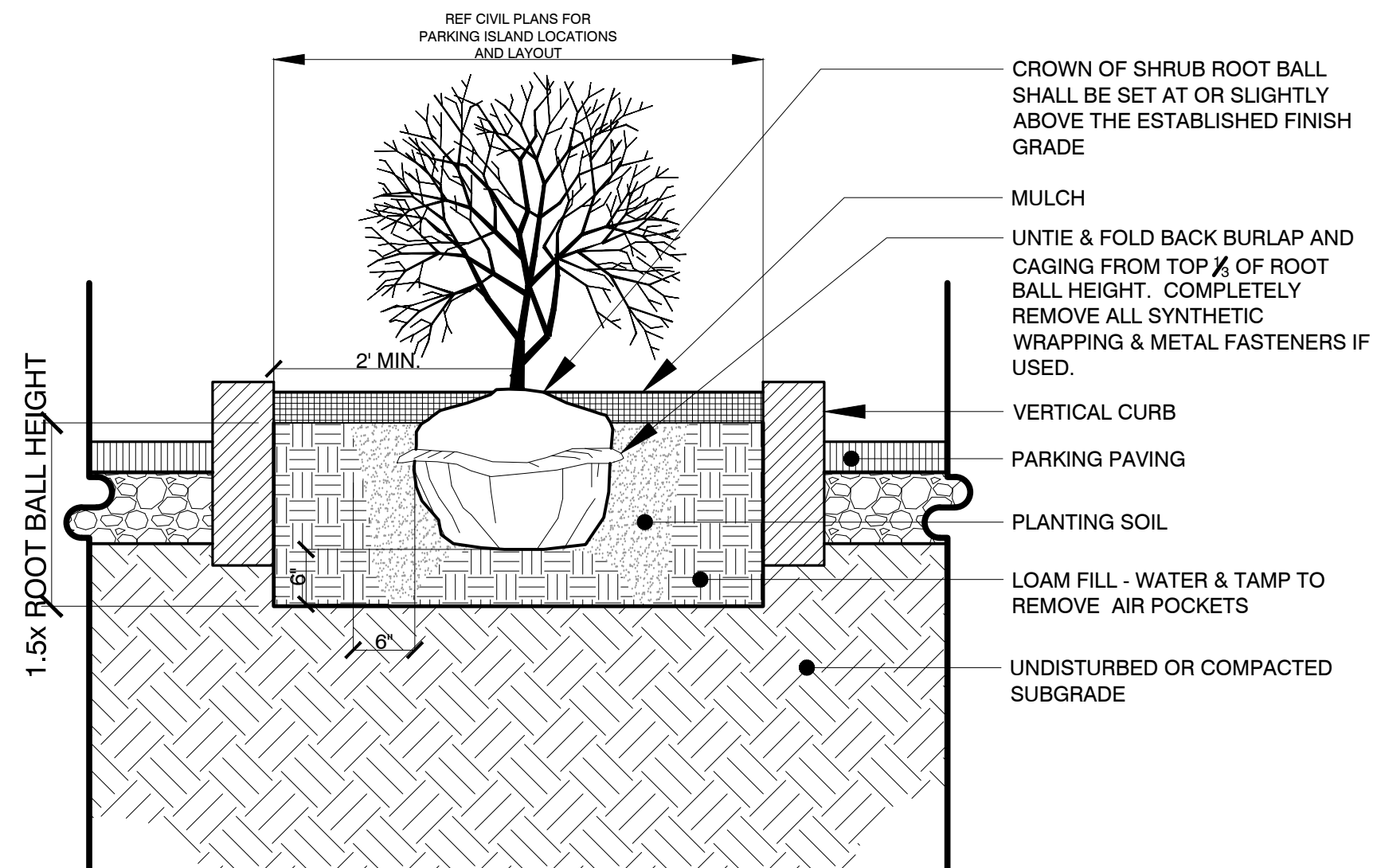
B3 GROUND COVER PLANTING
Scale: Not To Scale

PLANT SPACING ('A')	ROW SPACING ('B')
6 IN. O.C.	5 IN. O.C.
8 IN. O.C.	7 IN. O.C.
10 IN. O.C.	8 1/2 IN. O.C.
12 IN. O.C.	10 1/2 IN. O.C.
15 IN. O.C.	13 IN. O.C.
18 IN. O.C.	16 IN. O.C.
24 IN. O.C.	21 IN. O.C.
30 IN. O.C.	26 IN. O.C.
36 IN. O.C.	30 IN. O.C.
48 IN. O.C.	42 IN. O.C.
54 IN. O.C.	48 IN. O.C.
60 IN. O.C.	54 IN. O.C.

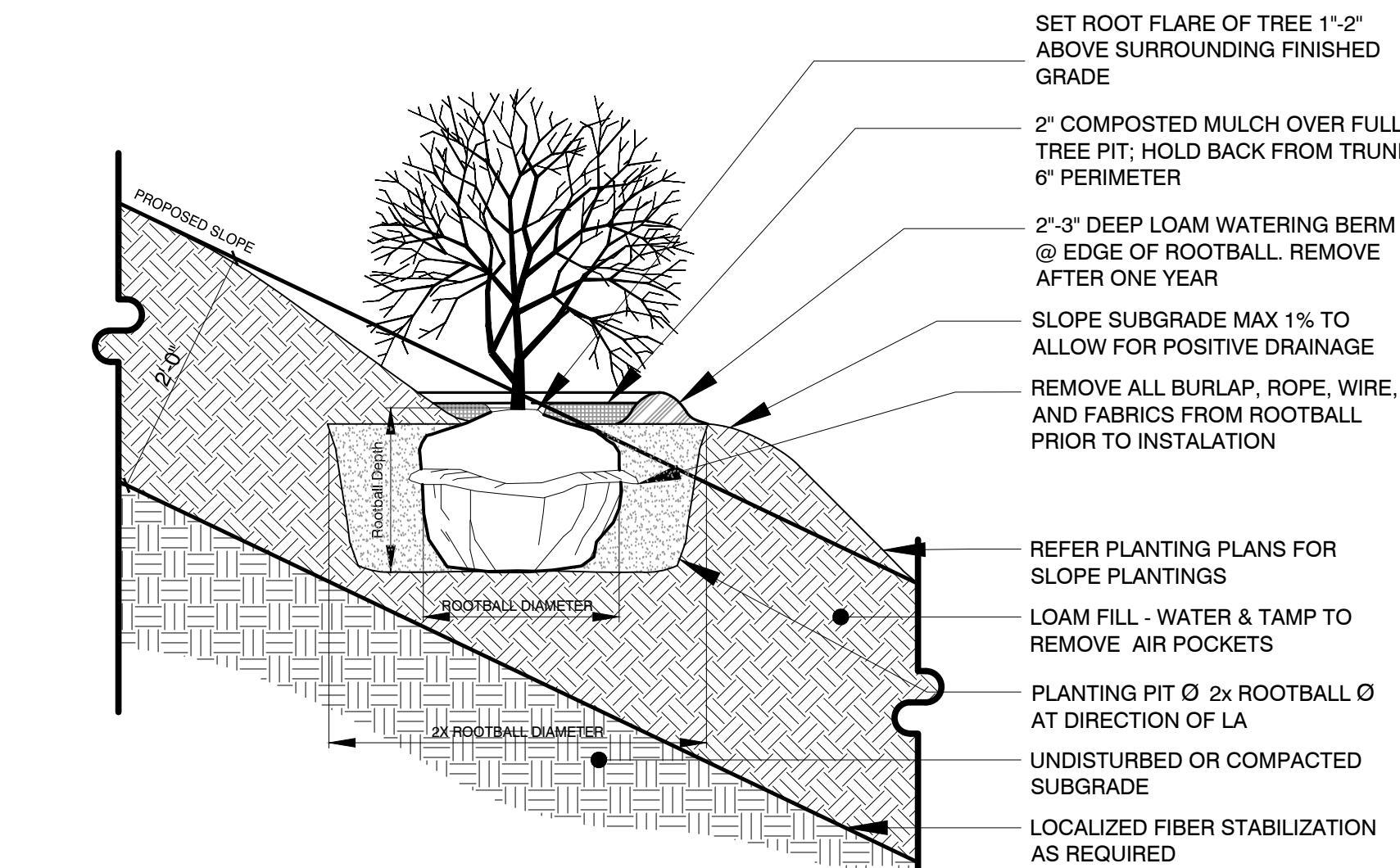
B2 GROUND COVER, PERENNIAL AND ORNAMENTAL GRASS SPACING CHART
Scale: Not to Scale



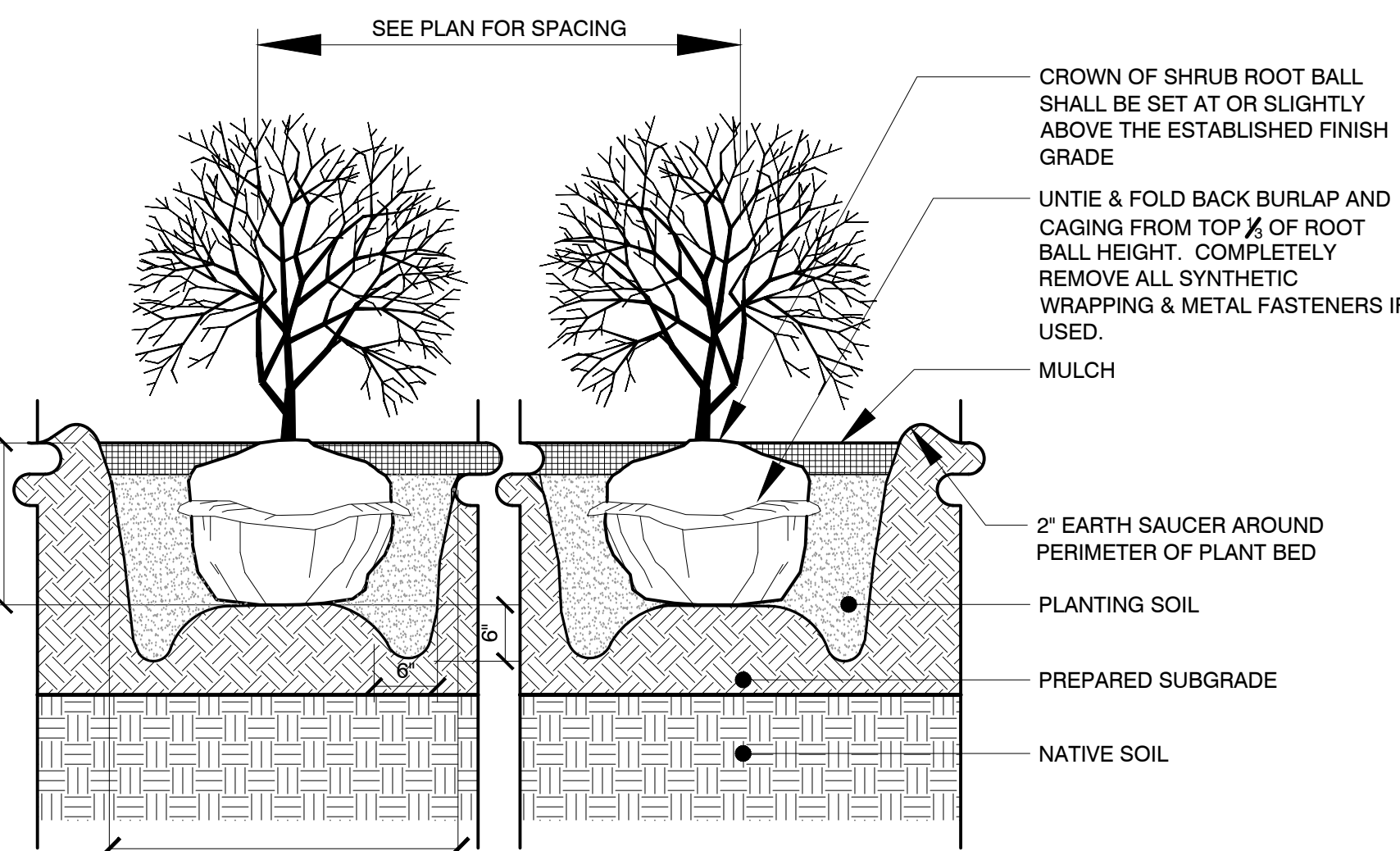
B1 CONIFER SHRUB PLANTING
Scale: Not To Scale



A3 SHRUB PLANTING: PARKING ISLAND
Scale: Not To Scale



A2 SHRUB PLANTING: STEEP TO MODERATE SLOPES
Scale: Not to Scale



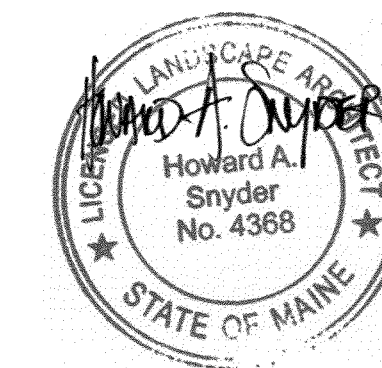
A1 DECIDUOUS SHRUB PLANTING
Scale: Not To Scale



PRESUMPCOT ELEMENTARY SCHOOL

PORTLAND, MAINE

Harriman Project No. 19151
Key Plan



PLANNING BOARD SEPTEMBER 16, 2020

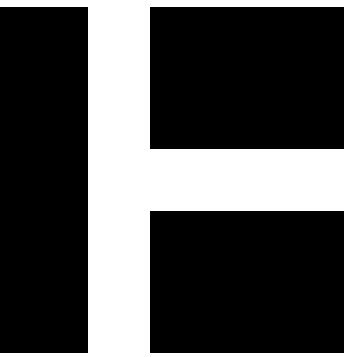
Rev Date	Revision Description

PRELIMINARY NOT FOR CONSTRUCTION

PA / PE: HAS © 2020
Drawn By: HAS Harriman Associates

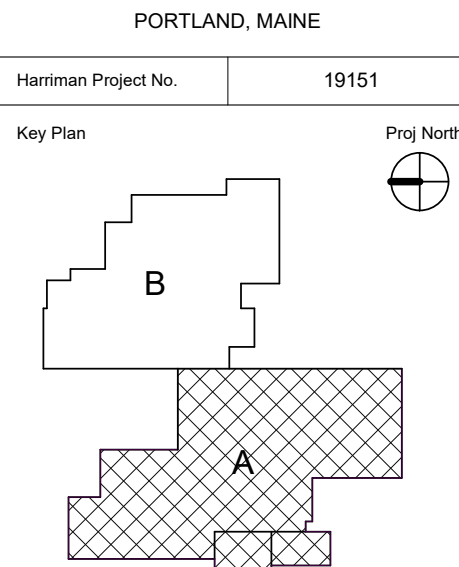
PLANTING DETAILS

L50-2



HARRIMAN

PRESUMPCOT
ELEMENTARY SCHOOL



GENERAL NOTES

- SEE DRAWING A40.1 FOR PARTITION TYPES.
- DIMENSIONS LOCATING INTERIOR PARTITIONS ARE TO FACE OF GPDW OR CMU UNLESS NOTED OTHERWISE.
- SEE DRAWING A60.1 FOR DOOR SCHEDULE.
- SEE DRAWING A61.1 FOR ROOM FINISH SCHEDULE. NEW WALL/PNTNS AND PATCHING OF EXISTING WALL/PNTNS NOT LABELED SHALL BE PAINTED TO MATCH EXISTING ADJACENT WALLS, U.N.O.
- SEE EXTERIOR ELEVATIONS ON DRAWINGS A20.1, A20.2 & A20.3 FOR WINDOW TYPES.
- PROVIDE CONTROL JOINTS IN GPDW PARTITIONS AT A MAX SPACING OF 30'-0" UNLESS NOTED OTHERWISE. MAX SPACING AT ABUSE GPDW IS 28'-0" UNO. LOCATE AT EDGE OF DOOR FRAME UP TO CEILING WHERE PRACTICAL. REVIEW LOCATIONS WITH THE ARCHITECT.
- AT REMOVED FIXTURES, PARTITIONS, EQUIPMENT, CASEWORK, ETC., THAT WILL BECOME EXPOSED TO VIEW, PATCH AND PARGE PARTIONS TO CREATE A SMOOTH SURFACE. PAINT TO MATCH EXISTING ADJACENT U.N.O.
- PATCH ALL OPENINGS CREATED FOR INSTALLATION OF NEW MECH., PLUMB., ELEC., ETC., WITH MATERIALS TO MATCH ADJACENT CONSTRUCTION.
- REFER TO A01.1 CODE PLAN FOR DH, CR, AND ADA PUSH BUTTON LOCATIONS.

SYMBOLS LEGEND

- PARTITION TAG
SEE A40.1 FOR PARTITION TAG KEY & PARTITION DEFINITION DETAILS
- ROOM NAME AND NUMBER
SEE A61.1 FOR SCHEDULE
- DOOR & BORROWED LITE NUMBERS
SEE A60.1 FOR SCHEDULE
- MISCELLANEOUS ITEMS MARKER
SEE SCHEDULE ON A60.1

PLANNING BOARD
SEPTEMBER 16, 2020

Rev Date	Revision Description

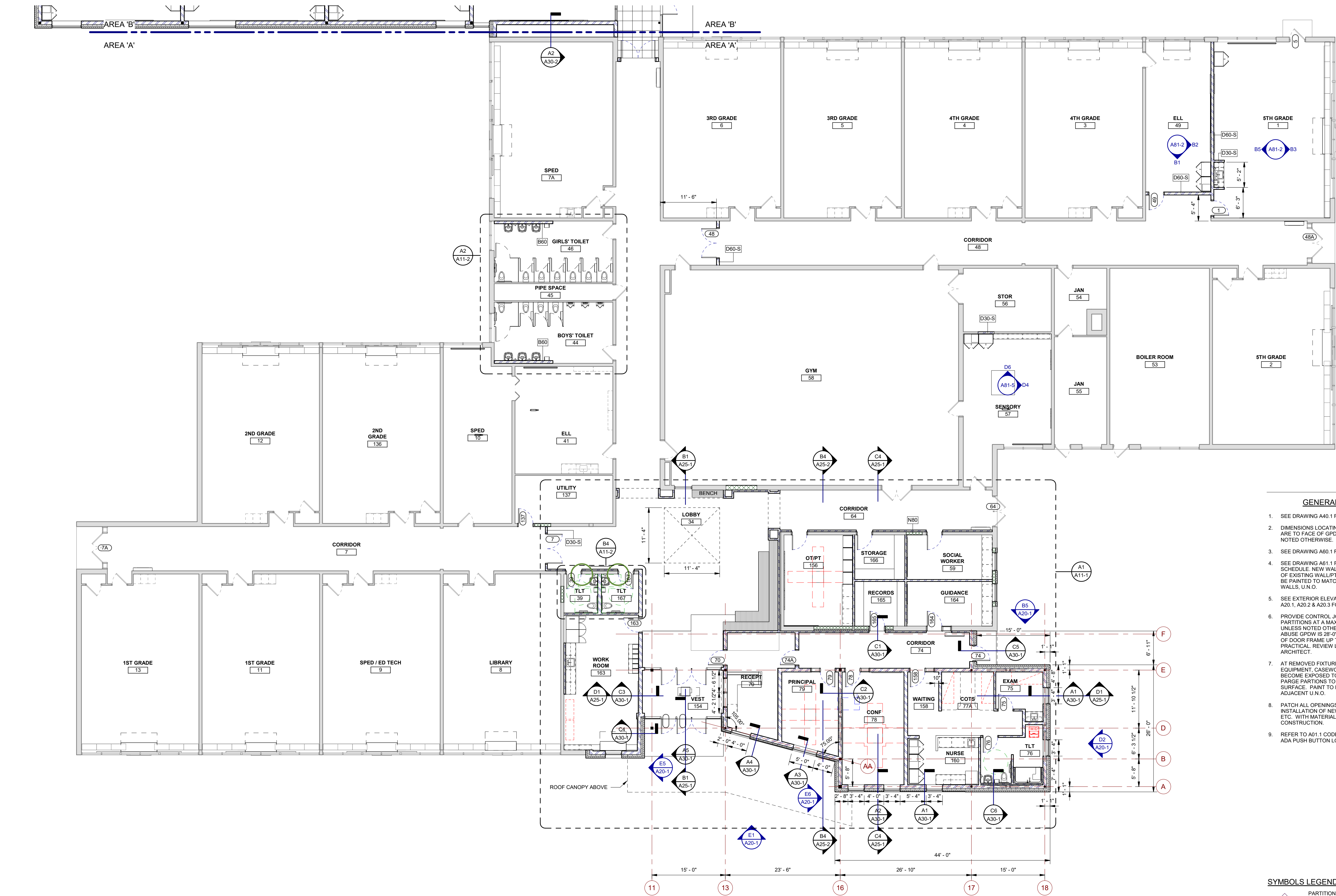
PRELIMINARY
NOT FOR
CONSTRUCTION

PA / PE: MDL
Drawn By: EJR

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Harriman Associates

FIRST FLOOR PLAN -
AREA A

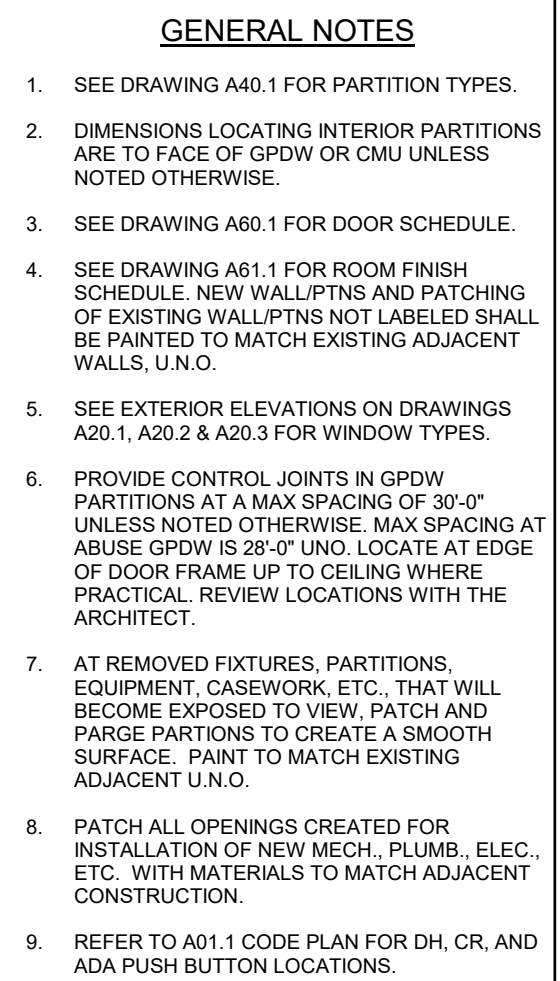
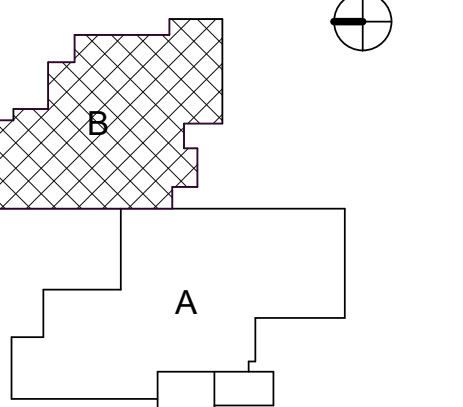
A10-1



A1 FIRST FLOOR PLAN - AREA A
NO SCALE



PORTLAND, MAINE	
Harriman Project No.	19151
Key Plan	Proj North



SEPTEMBER 16, 2020

[illegible]

PRELIMINARY
NOT FOR
CONSTRUCTION

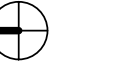
PA / PE: MDL	© 2020 Harriman Associates
Drawn By: EJR	

A10-2

A1 FIRST FLOOR PLAN - AREA B
NO SCALE



PORTLAND, MAINE	
Harriman Project No.	19151
Key Plan	Proj North



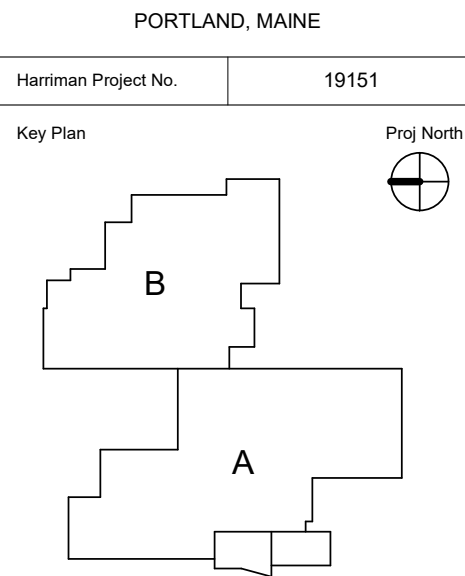
CODE	DESCRIPTION	MFR / COLOR
4A	BRICK VENEER (FIELD)	
4B	BRICK VENEER (FIELD)	
4C	BRICK ACCENT	
4D	BRICK VENEER (FIELD)	
4E	BRICK VENEER (FIELD)	
7A	UHPC WALL PANELS (ARCHITECTURAL ULTRA HIGH PERFORMANCE CONCRETE PANELS)	
7E	PREFINISHED ROOF EDGE STRIP	
8C	HM DOOR AND FRAME	

[illegible]

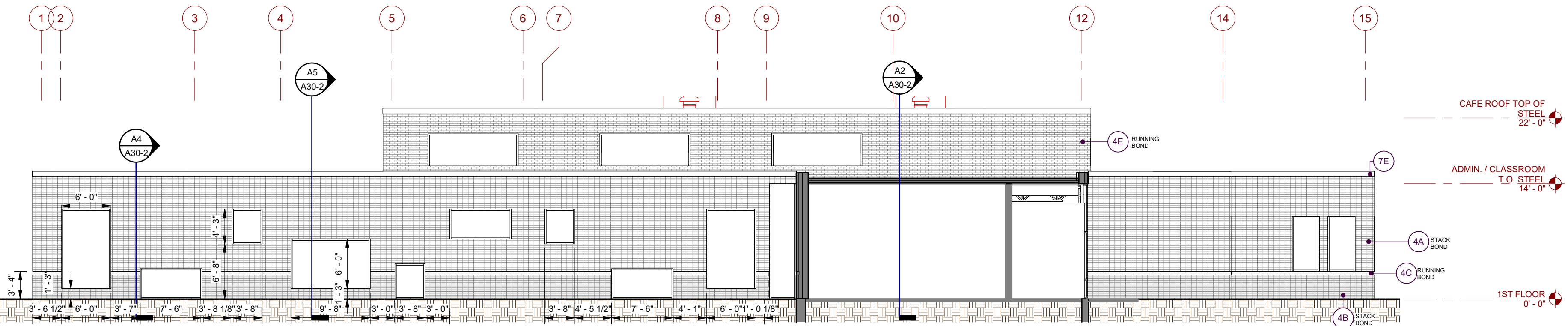
PA / PE: MDL	© 2020 Harriman Associates
Drawn By: EJR	

A20-1

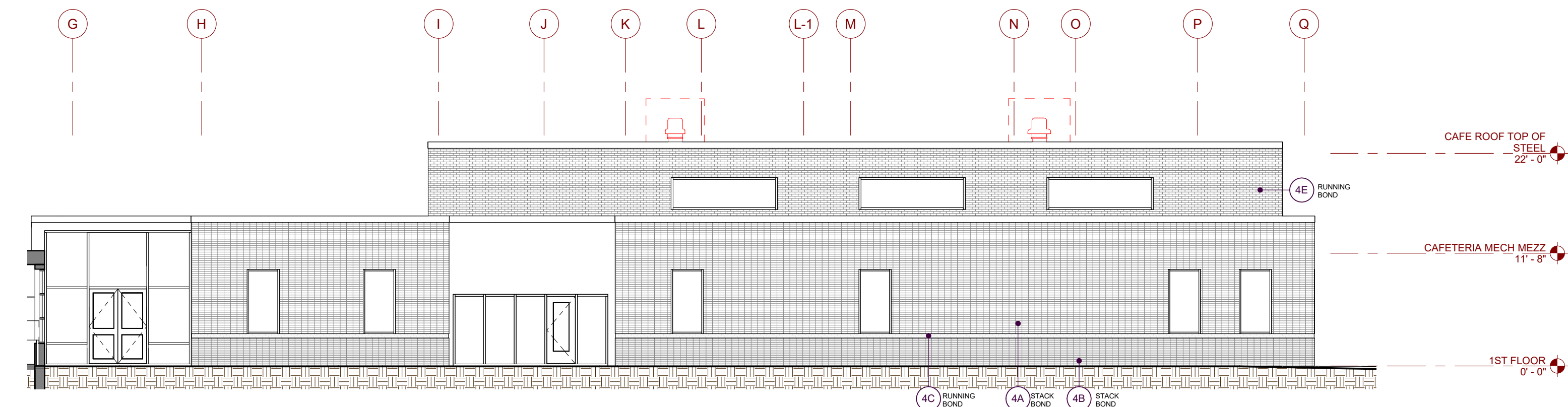
PRESUMPCOT
ELEMENTARY SCHOOL



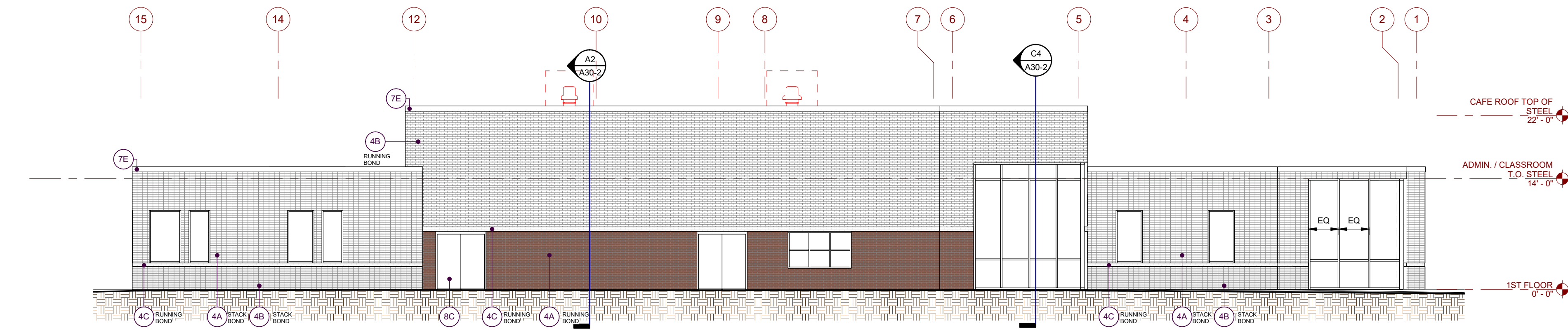
D1 CLASSROOM ELEVATION - WEST
NO SCALE



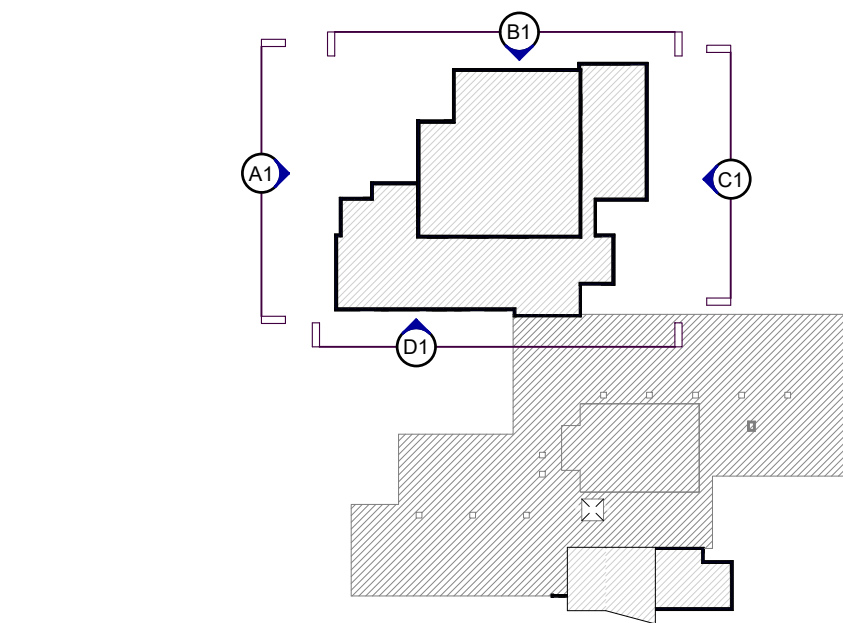
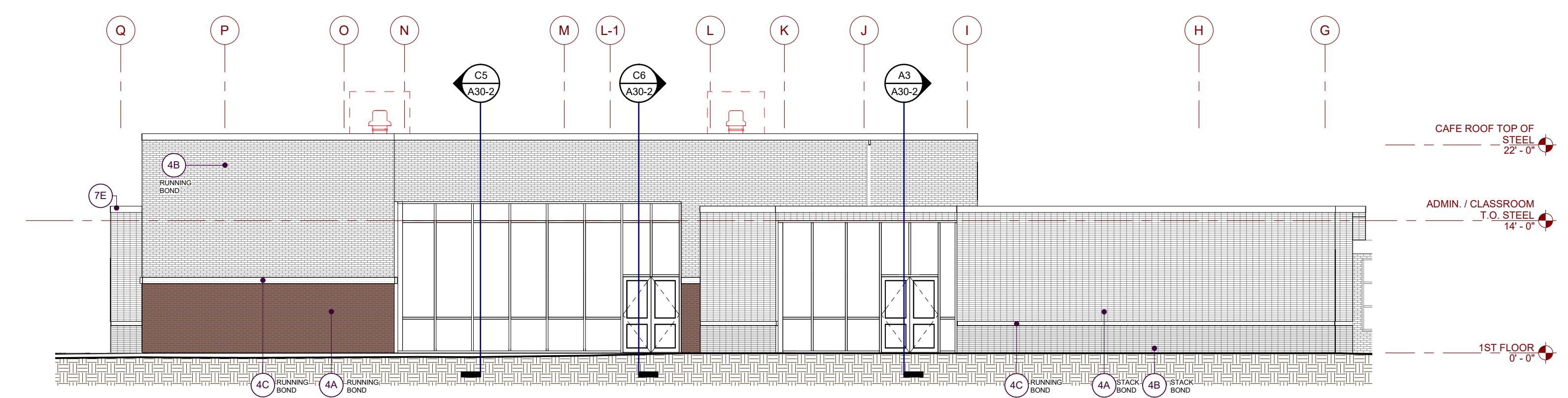
C1 CAFETERIA/CLASSROOM - SOUTH
NO SCALE



B1 CAFETERIA/CLASSROOM - EAST
NO SCALE



A1 CAFETERIA/CLASSROOM - NORTH
NO SCALE



A5 ELEVATION KEY PLAN A20.2
NO SCALE

EXTERIOR MATERIALS LEGEND		
CODE	DESCRIPTION	MFR / COLOR
4A	BRICK VENEER (FIELD)	
4B	BRICK VENEER (FIELD)	
4C	BRICK ACCENT	
4D	BRICK VENEER (FIELD)	
4E	BRICK VENEER (FIELD)	
7A	UHPG WALL PANELS (ARCHITECTURAL ULTRA HIGH PERFORMANCE CONCRETE PANELS)	
7E	PREFINISHED ROOF EDGE STRIP	
8C	HM DOOR AND FRAME	

PLANNING BOARD
SEPTEMBER 16, 2020

Rev Date	Revision Description

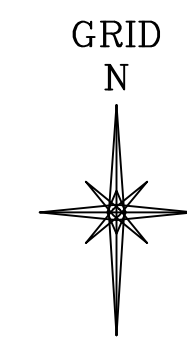
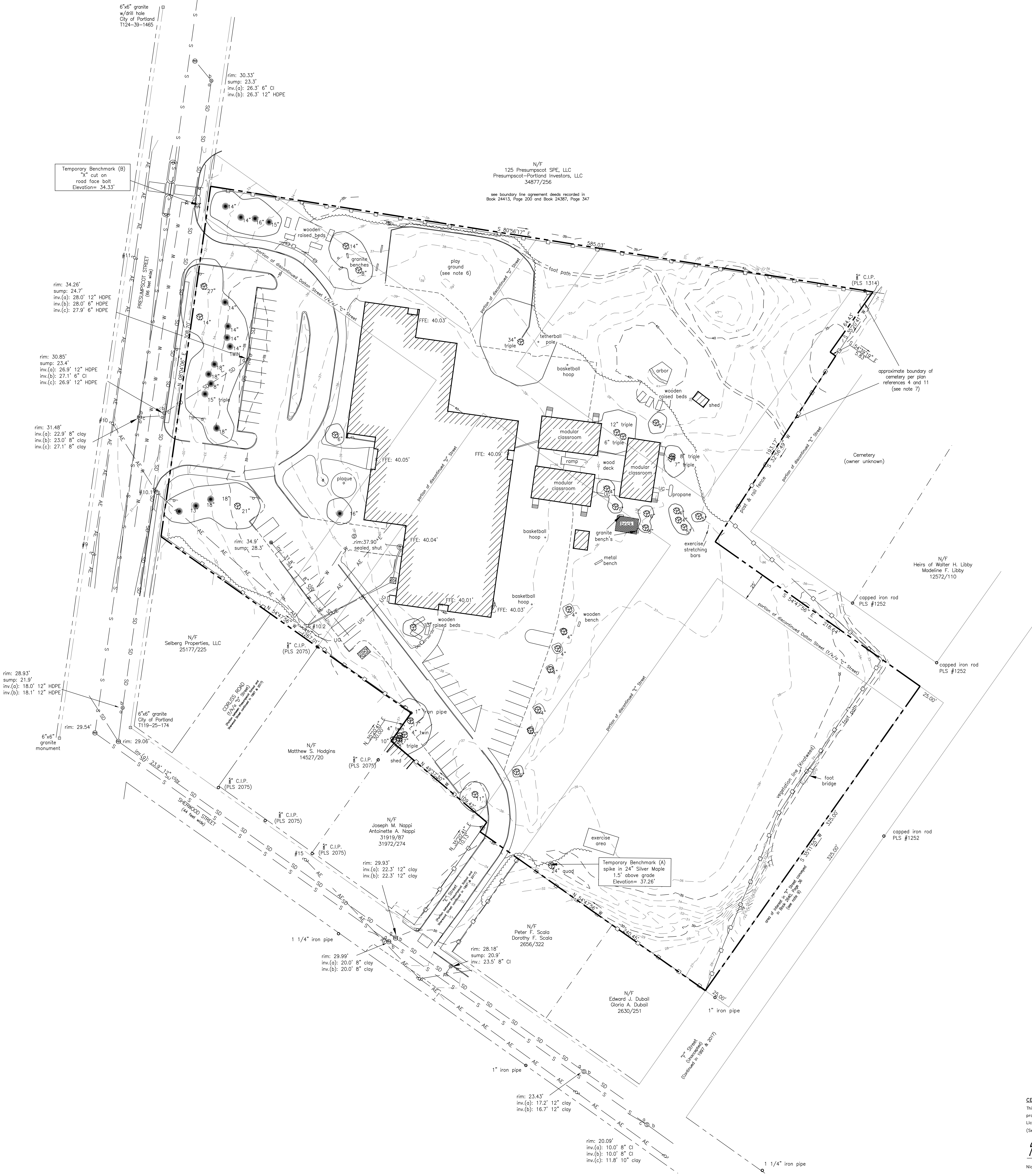
PRELIMINARY
NOT FOR
CONSTRUCTION

PA / PE: MDL
Drawn By: EJR

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EXTERIOR ELEVATIONS

A20-2



LEGEND	
	Monument - found
	Iron marker - found
	Property line (locus)
	Property line (abutter)
	Right of way line
	3-ft ROW offset line
	Chain link fence
	Board fence
	Edge of pavement
	Curb
	Sign
	Lamp or light pole
	Utility pole
	Guy wire
	Water valve
	Fire hydrant
	Sewer manhole
	Catch basin (round)
	Drain manhole
	Ballard
	Overhead utility line
	Sewer line
	Storm drain
	Underground water line
	Underground gas line
	Underground electric line
	Underground telephone line
	Contours (10')
	Contours (5ft)
	Now or formerly of Dead reference (Book/Page)
	C.I.P.
	Capped iron pin
	Finished floor elevation
	Tree line
	Deciduous tree
	Coniferous tree
	Existing building
	Concrete
	Tree canopy
	Flag pole

- NOTES**
- 1) Book and Page references are to the Cumberland County Registry of Deeds.
 - 2) Bearings are referenced to grid north, Maine State Plane Coordinate System, NAD83, West Zone. City of Portland Monument "119-25-174" located at the intersection of Presumpscot Street and Sherwood Street held for base point. City of Portland Monument "1124-39-1465" located on the westerly side of Presumpscot Street held for datum.
 - 3) Elevations are based on City of Portland datum derived from City monument: "1119-25-174" located at the intersection of Presumpscot Street and Sherwood Street. To adjust elevations to NAVD83, subtract: 0.63'.
 - Benchmark (A) is a spike in a 24" Silver Maple, 1.5' above grade. Elevation: 37.26'. Benchmark (B) is an "x" cut on road face bolt of fire hydrant. Elevation: 34.33'.
 - 4) Utility information on this plan is based on locations marked by others, plans, and visual inspection. Other utilities may exist and/or utilities shown on this plan may not be exact. DigSafe and/or the appropriate utilities should be contacted prior to any construction.
 - 5) Property lies within Zone X based on FIRM Community #230251 Panel #2007-C, dated December 8, 1998. It does not lie within a special flood hazard area.
 - 6) Playground equipment not located.
 - 7) The exact boundary location for the cemetery parcel is uncertain. Property lines shown in this vicinity utilize information on referenced plans and existing fencing. It is recommended the City of Portland take measures to formalize a property line location for the cemetery parcel.
 - 8) The City of Portland was not indexed for this survey.
 - 9) The Certificate of Taking of Property document recorded in Book 2640, Page 36 for Parcel 1 included "...all the right, title, and interest, if any, of the said Leo Warner in and to so much of "E" Street and "F" Street as shown on said plan as lies adjacent to the above described lots." Parcel 8 in the same document describes "All the area included within certain dedicated streets, designated on said Plan as proposed "E", "D", and "C" (emphasis added) Streets." It is believed the intention was to include "F" Street, however a title attorney should be consulted.

- PLAN REFERENCES**
- 1) Plan of Property in Portland, Maine made for City of Portland School Department by H.L. & E.C. Jordan dated June 6, 1961.
 - 2) Plan Showing Dimensions of Old Cemetery Lot at Proposed Site of New Presumpscot School by H.L. & E.C. Jordan. Undated.
 - 3) Plan of Boundary Survey at Dalton Street made for Walter H. Libby III, Lucy M. Copp, Madeline F. Morrill & Mark W. Libby by Owen Haskell, Inc. dated September 16, 2015.
 - 4) Plan of Land owned by Mrs. Mary S. Lunt by James Johnson dated August 1865. Recorded in Plan Book 2, Page 51.
 - 5) Plan of Land Formerly Owned by Mary S. Lunt, Now Owned By C.B. Dalton & Co. by James Johnson dated May 1903. Recorded in Plan Book 10, Page 91.
 - 6) Plan of Land Title Survey on Presumpscot Street in Portland, prepared for Jewell & Boutin, P.A. by DesLauriers & Associates, Inc. dated October 13, 2000.
 - 7) Plan of Boundary Line Agreement Survey On Presumpscot Street in Portland, prepared for Jewell & Boutin, P.A. by Northeast Civil Solutions, dated October 13, 2000 and revised through February 19, 2002.
 - 8) Plan of Boundary Survey and Split by R.W. Eaton Associates dated April 8, 2011 and revised through February 3, 2020.
 - 9) Blue sheet right of way sketches for Sherwood Street and Presumpscot Street on file of the City of Portland Engineering Department.
 - 10) Digital CAD file entitled "Sherwood Street Sidewalk 2014.dwg" obtained from the City of Portland Engineering Department.
 - 11) Plan of Land in Portland, recorded in Plan Book 8, Page 1.

EASEMENTS / ENCUMBRANCES

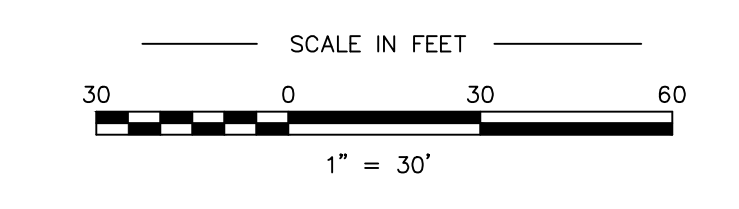
1) Subject to an access easement to the Cemetery parcel over "C" Street as described in a deed recorded in Book 730, Page 240.

AREA

273,758 Sq. Ft. / 6.28 Acres

OWNERS OF RECORD

City of Portland
Book 2703, Page 189
Book 2650, Page 212
Book 2705, Page 202
Book 2638, Page 210
Book 2638, Page 208
Book 2640, Page 36



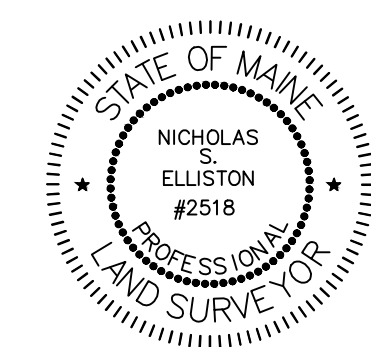
CERTIFICATION

This survey conforms to the current standards of practice set forth by the Maine State Board of Licensure for Land Surveyors.

(See note 8)

Nicholas S. Elliston

Nicholas S. Elliston, P.L.S. #2518



PLAN OF Existing Conditions & Boundary Survey 69 Presumpscot Street Portland, Maine		
MADE FOR Harriman		
46 Harriman Drive Auburn, Maine		
JOB #220037	DATE: June 25, 2020	SCALE: 1" = 30'
BOOK #914		
220037.dwg	133 Gray Road, Falmouth, Maine 04105 (207)797-9199 www.titcombsurvey.com	



23. CONSTRUCTION MANGEMENT PLAN

- The General Construction Management Plan Template for the Presumpscot Elementary School is attached, with proposed construction schedule included.
- Construction Management drawing CM-1 for the Presumpscot School construction project is attached.

**Construction Management Plan
for
Portland Public Schools
Presumpscot Elementary School
Additions and Renovations
September 2020**

Applicant: Portland Public Schools
Preparer: Harriman

Construction Management Plans shall depict the overall planning, coordination, and control of a construction site, including phases as applicable, from beginning to completion. The City's goal for a construction management plan is to support a safe construction site and protect the public safety, accessibility (including preserving accessible pedestrian, bicycle, and vehicular modes of transport throughout the city), and welfare during construction. In addition, the construction management plan shall minimize construction impacts in their duration and magnitude to the surrounding area and develop an effective communication process for resolving concerns and conflicts.

The Construction Management Plan will be submitted as part of the Site Plan Review and it shall address the construction logistics for a project. The Construction Management Plan shall include the following submissions: 1) a construction management site plan, 2) a construction schedule (time frame); and 3) a written narrative addressing the categories below.

A. Construction Management Principles

The following narrative provides an overview of the construction management principles that the Applicant has identified to minimize impacts from the construction, such as noise, vibrations, ground movement, truck traffic, and other construction related factors to the surrounding building and communities.

The school is at 69 Presumpscot Street in Portland near the intersection of Sherwood Street. To separate construction traffic from daily school bus and parent traffic, it is intended to have the contractors enter and exit through the Sherwood Street driveway, while the school students and staff enter and exit through the Presumpscot Street driveways. To maintain the full number of existing classrooms through the construction duration, the three temporary modular classroom buildings will be relocated to the grass playfield, away from the new building construction area. These modulares will be removed following completion of the school facilities.

The selected Contractor will provide the City with a plan that indicates site access constraints, and signage/barriers to access at points of entry to the public, prior to construction. A general approach to phases of the work has been included in the attached Construction Management Plan.

A final site access map prepared by the Contractor cannot be provided as part of this submission, since the project will be bid publicly in order to select the Contractor. The Site Plan Review process must proceed before the Contractor has been selected. The safety of the

site, the scheduling of deliveries, and construction means and methods must be the responsibility of the Contractor to maintain an effective and safe corridor for the workers and site users. It is understood that the information provided in this document is provided as general information, and the Contractor will provide more specific information to the City upon award of the contract.

No utility connections or roadway work is anticipated in the Presumpscot Street corridor.

B. Development Review of Construction Management Plan

The Contractor shall submit a construction management plan that provides a comprehensive logistics and safety program for the construction project, which will be reviewed and approved as part of the site plan review process. Minimizing impacts to areas surrounding the building/construction site will be primary considerations in the process.

The Planning Authority and the Department of Public Works have the right to seek revisions to an approved Construction Management Plan or require a condition of approval that states an applicant shall coordinate a project's construction schedule with the timing of nearby construction activity, in order to avoid cumulative impacts on a neighborhood. Such a condition may involve a delay in commencement of construction, if necessary.

The following details define the intended approach to the successful management of the project construction, and the construction management plan will address the general conditions contained below.

C. Performance Guarantees, Inspection Fees, Preconstruction Meeting, and Permits

Prior to scheduling a preconstruction meeting and the issuance of any city required permits, Contractor shall meet all of the requirements contained in Section 14-530. Development review fees and post approval requirements and 14-532. General requirements and enforcement of Portland's Land Use Code.

Other permits, as applicable, include

1. **Street Opening and Street Occupancy Permits:** Construction activity in the public right-of-way are controlled by Chapter 25 and sewer and stormwater system connections are controlled by Chapters 24 and 32 of the Land Use Code. All required permits shall be obtained through the Department of Public Works and the requests shall conform with the approved construction management plan.
2. **Blasting:** Blasting, if required, shall conform with all measures of Article VIII. Regulation of Explosives in the Land Use Code and Section 3.7 Standards for Blasting and Regulation of Explosives in Portland's Technical Manual.
3. **Building Code:** Employ the best practices, as applicable, of Chapter 33 Safeguards During Construction, from the 2009 International Building Code.

D. Construction Administration and Communication

The Contractor will work diligently to implement a communication strategy as outlined below. The communication strategy is intended to ensure that all construction operations are performed in accordance with all agreements, ordinances and special permits applicable to this project. The Contractor will work closely with adjacent abutters, businesses and all parties informed, as far in advance as possible, of scheduled work, particularly work

anticipated to cause significant noise, vibrations, or dust. The final construction management plan shall provide for the following:

1. Contact Person and contact information for the applicant and contractor, and who is available 24 hours.
2. Construction Signage posted on the site with Contact Information for Contractor.
3. Describe any additional communication strategies
 - Directional and safety signage
 - On-site safety/coordination meetings
4. All construction site signage is temporary and shall be removed at project completion. Signage will be included in the final construction management plan provided by the Contractor.

E. Construction Schedule

1. The contractor shall submit a schedule or time line for the construction project.
2. The construction schedule is proposed to follow the general timeline as follows:

The Presumpscot Elementary School project anticipates a general schedule as follows:
(see Construction Management Plan CM-1)

Summer 2021 – Fall 2021/Winter 2022

- a. Install erosion control measures
- b. Establish contractor and school occupant traffic routes, and install temporary construction fencing and gates
- c. Install drainage east of Presumpscot School through ballfield area
- d. Install electrical primary ductbank through easterly ballfield area
- e. Relocate modular classroom buildings to east side of Presumpscot School
- f. Demolish trees, pavements, etc
- g. Install remaining drainage, sewer, and utilities
- h. Excavate and install building foundations
- i. Install subsurface storm treatment bed/ connect to storm drain
- j. Begin construction of Cafeteria/Classroom Building and Administration/Entry building additions

Spring 2022 – Fall 2022

- k. Maintain erosion control and remove where stabilization is complete
- l. Maintain erosion control and remove sediment as needed
- m. Complete building construction.
- n. Construct finish pavements adjacent to finished building additions and along north and east fire lane
- o. Install landscaping and finished grass areas throughout the school site
- p. Remove temporary construction fence
- q. Remove temporary erosion control measures, remove captured sediments, and clean storm drain system

3. Hours of Construction. Construction may occur during the daytime hours as defined in Section 17-18. Construction Activities for Building permit (Attachment 1) and Section 25-129. Noise, dust and debris (Attachment 2).
4. Extended Hours or Night Work: Pursuant to Section 17-18, this section does not apply to emergency utility work or “Situations where the public works authority or the office of building inspections determines that the construction activity is of a unique character which cannot reasonably be completed or performed during the permitted hours and which is not of a recurring nature, provided that prior to engaging in such activity the contractor or his representatives gives notice of the time and scope of such proposed activity, the notice to be given in a manner approved by the public works authority.”
5. Material Deliveries: Schedule and designated location for delivery of materials and boxed goods.

F. Security & Public Safety

1. The Construction Management Plan will depict all proposed fencing or other barriers and access gates (with Knox locking devices) with the intent of separating pedestrian and vehicle circulation from the construction site.
2. Structures undergoing construction, alteration, or demolition operations, including those in underground locations, shall comply with NFPA 1 Chapter 16. *Safeguarding Construction, Alteration, and Demolition Operations*.
3. Fire Safety Program. An overall construction or demolition fire safety program shall be developed. Essential items to be emphasized include the following:
 - Good Housekeeping
 - On-site security
 - Installation of new fire protection systems as construction progresses
 - Preservation of existing systems during demolition
 - Organization and training of an on-site fire brigade
 - Development of a pre-fire plan with the local fire department
 - Rapid communication
 - Consideration of special hazards resulting from previous occupancies
 - Protection of existing structures and equipment from exposure fires resulting from construction, alteration, and demolition operations
4. Blasting, if required, shall conform with all measures of Article VIII. Regulation of Explosives in the Land Use Code and Section 3.7 Standards for Blasting and Regulation of Explosives in Portland's Technical Manual.
5. Any proposed temporary security lighting shall be shown on CMP and all fixtures shall be full cutoffs.

G. Construction Permitting and Traffic Control Plans

1. Construction Activity in Public Streets: Construction activity in the public right-of-way is controlled by Chapter 25 Article VII of the City Code of Ordinances. Required licenses and permits, restrictions on activity, and fees & area are outlined in that Chapter. Rules and Regulations for Excavation Activity are available through the Street Opening Clerk at the Department of Public Works. At no time can construction

activity including delivery vehicles close or block streets or affect public safety access without prior notice and approval of the Department of Public Works.

2. Sewer and Stormwater: Sewer and stormwater water system connections are controlled by Chapters 24 and 32 of the City Code of Ordinance. Required permits for new connections and/or abandonment of existing connections are available through the Street Opening Clerk at the Department of Public Works. Rules and Regulations for these utility systems are available through the City Engineer's office of the Department of Public Works and in Section II of the Technical Manual.
3. Traffic Control Plans: Construction activity that impacts the existing public street system must be controlled to protect the safety of the construction workers and all modes of the traveling public. Projects are required to submit a satisfactory 'maintenance of traffic' (MOT) plan prior to any site plan, subdivision, or street opening permit approval. MOT plans may be required for projects that have impacts on local streets.

Maintenance of Traffic (MOT) plans shall provide for the safe passage of the public through or along the construction work zone. On a case-by-case basis, applicants may be allowed to close a street and/or detour a mode of traffic when absolutely necessary for safety. MOT plans shall employ the appropriate techniques and devices as called for in the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). In addition:

- Construction speed signing may be used as needed to slow traffic
- Traffic Control signs shall not be placed where they are an obstruction to bicycles or pedestrians.
- In some situations, flaggers may be required.
- Police details may be required at lighted intersections and may be requested by the City's transportation engineer or his designee.

All existing modes of travel in work zone area shall be accommodated if impacted by the activity. The safe passage of pedestrians, bicyclists, transit providers, and motorists are of equal importance when planning out the work zone; no pre-existing travel mode may be eliminated without the express approval of the Department of Public Works. The MOT should also address on-street parking impacts, including deliveries and parking for adjoining businesses and property owners, analysis of roadway capacity or diversion capacity if street closure or change to roadway capacity is required, and coordination with other on-going or future construction or utility projects in the vicinity.

- Traffic control of bicycle and pedestrian facilities or routes through work zones shall be maintained until the bicycle and pedestrian facilities or routes are ready for safe operation. Traffic control will not be removed to allow auto travel at the expense of bicycle and pedestrians.
- Barrier systems utilized to separate the construction activity from the public street and /or sidewalk shall not inhibit sight distances, particularly for visibility of pedestrians and bicyclists.

- ADA compliance shall be maintained.

Use of public parking spaces or the blockage of any portion of sidewalk for the purpose of construction activity shall require an occupancy permit and appropriate fee as assessed by the Department of Public Works.

H. Site Management and Controls

The final Construction Management Plan will address maintaining the site in a safe condition and will include the following:

1. Regular trash and debris removal
2. Street cleaning and damage controls
3. Dust controls- The construction shall comply with Portland's requirements under Section 25-129 on Noise, dust and debris (Attachment 2).
4. Noise: The construction shall comply with Portland's requirements under Section 17-18 of the City Code (Attachment 1) and Section 25-129 on Noise, dust and debris (Attachment 2).
5. Rodent Control will be provided, if applicable, by a professional exterminator and consistent with Chapter 22 of the City Code.
6. Snow Removal: Pursuant to Section 25-173 Contractors to ensure a safe means of travel within the work zone.
 - 1) Snow/ice removal or commence automatically from (1" of snow and up) or Ice
 - 2) Remove snow as needed within the work zone, including parking spaces & not to block any driveways or sight lines with the piles of snow.
 - 3) Clear all walks & ramps with the work zone
 - 4) Sand or Salt as needed
 - 5) Clear all basin or drainage to help snow melt
 - 6) This would include Monday-Friday Sat/Sunday/Holidays

I. Erosion Control and Preservation of Trees

1. The Contractor shall install all erosion and sedimentation controls as depicted on the approved erosion and sedimentation control plan prior to the pre-construction meeting for inspection by the City. The Contractor shall regularly inspect the control measures, no less than weekly and after significant storm events, and maintain any installed temporary or permanent stormwater management systems in working order. The contractor shall document all inspection activities and corrective actions and be prepared to provide these documents for inspection by the City, Maine Department of Environmental Protection or the U.S. Environmental Protection Agency upon request.
2. The Contractor shall maintain all tree and landscaping preservation measures as depicted on the landscaping plan within the area of construction.
3. The storage of materials shall be identified and avoid being located under/near trees.

J. Construction Staging Area

1. The Construction Management Plan shall depict location of the material staging areas, the location on onsite temporary construction trailers, the location on onsite truck delivery holding areas, the location onsite truck washing stations, masonry mixing stations, the general location of the construction security fence and the general location of temporary construction dumpsters. An open storage areas shall be shown on the plan.

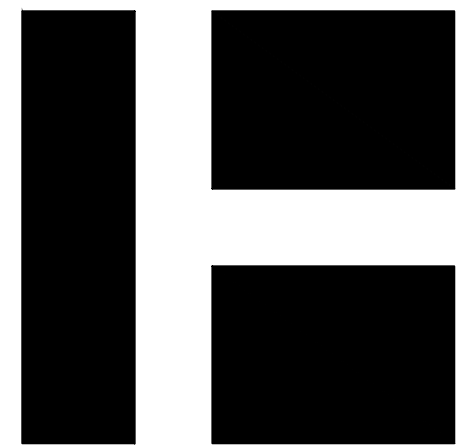
2. **Delivery Truck Holding Areas On-Site:** The delivery holding area shall be shown on the plan and shall not be blocked during construction. On days when the construction activities require multiple truck deliveries, these deliveries will be carefully scheduled so that there is always adequate on-site area for the holding of the trucks until they can be unloaded. Once at the site all vehicles will be brought within the fence line and will make every attempt to avoid queueing on public streets.
3. **Delivery Truck Holding Areas Off-Site:** In the event that adequate on-site area for holding of trucks is not available, an off-site marshalling area will be utilized for trucking. The designated off-site location will be identified in the construction management plan.

K. Parking During Construction

1. **Construction Parking:** Adequate parking for construction workers shall either be provided on site or arrangements for off-street parking at an off-site location shall be provided. The parking arrangements shall be included in the construction management plan.
2. **Parking:** Where existing facilities are remaining in operation during construction, the construction management plan shall identify how the parking for employees and others shall be managed.
3. **Truck Routes and Volumes:** The Construction Management Plan shall address the designated truck routes and expected truck volumes.

L. Special Measures as Necessary

This construction work will take place over a 2-year or long period. The Construction Management Plan should provide details and demonstrate that all appropriate special measures have been taken to avoid, minimize, or possibly compensate for potential impacts. This may include taking baseline measurements before construction, such as arranging to photograph the foundations of nearby properties upon consent of the owners, in order to assess any future impacts of vibration, noise, etc.



HARRIMAN

PRESUMPSCOT
ELEMENTARY SCHOOL

PORTLAND, MAINE

Harriman Project No.	19151
Key Plan	Proj North



PLANNING BOARD
SEPTEMBER 16, 2020

Rev Date	Revision Description

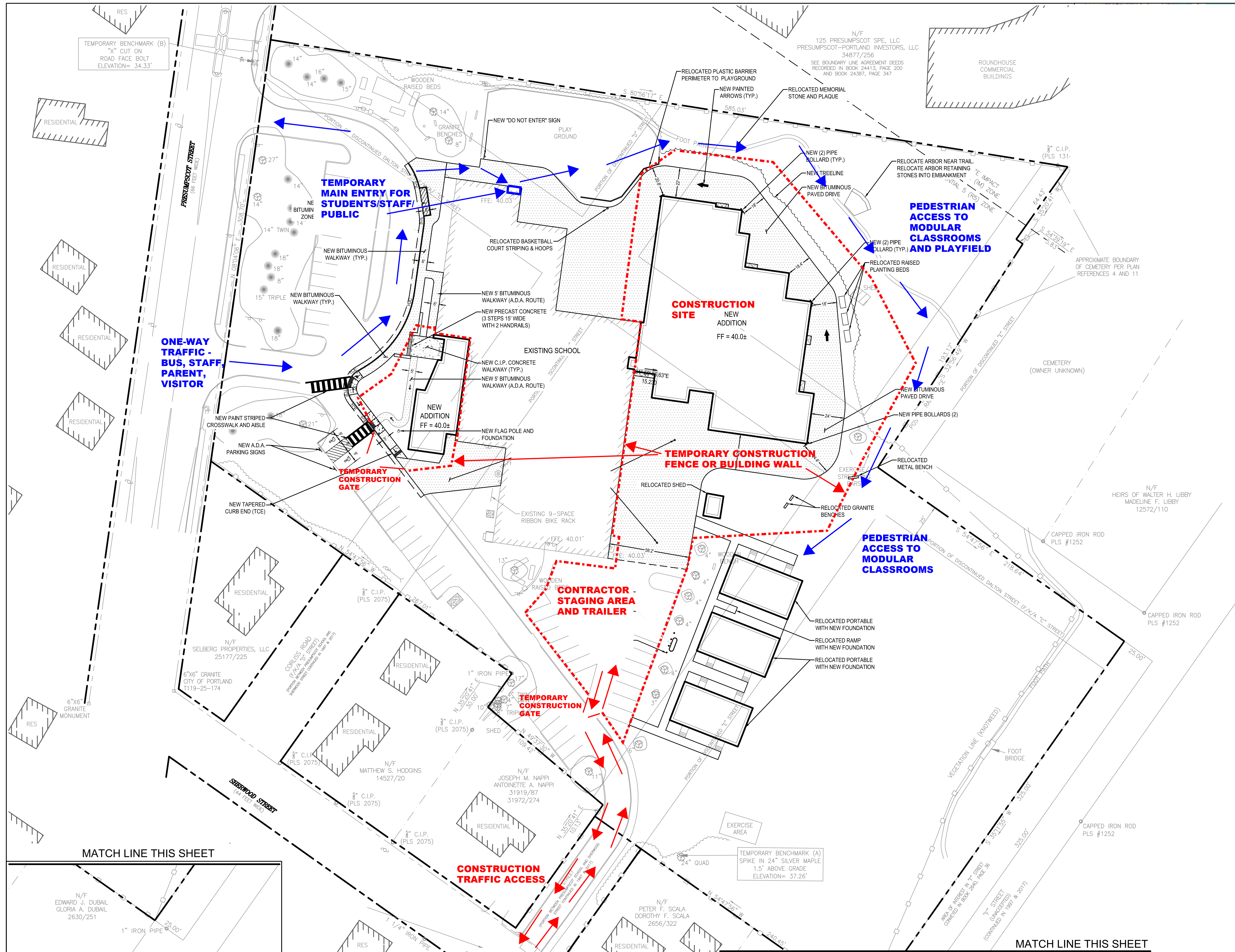
PRELIMINARY
NOT FOR
CONSTRUCTION

1" = 30'	0 15' 30'
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CONSTRUCTION
MANAGEMENT
PLAN - 1

CM-1



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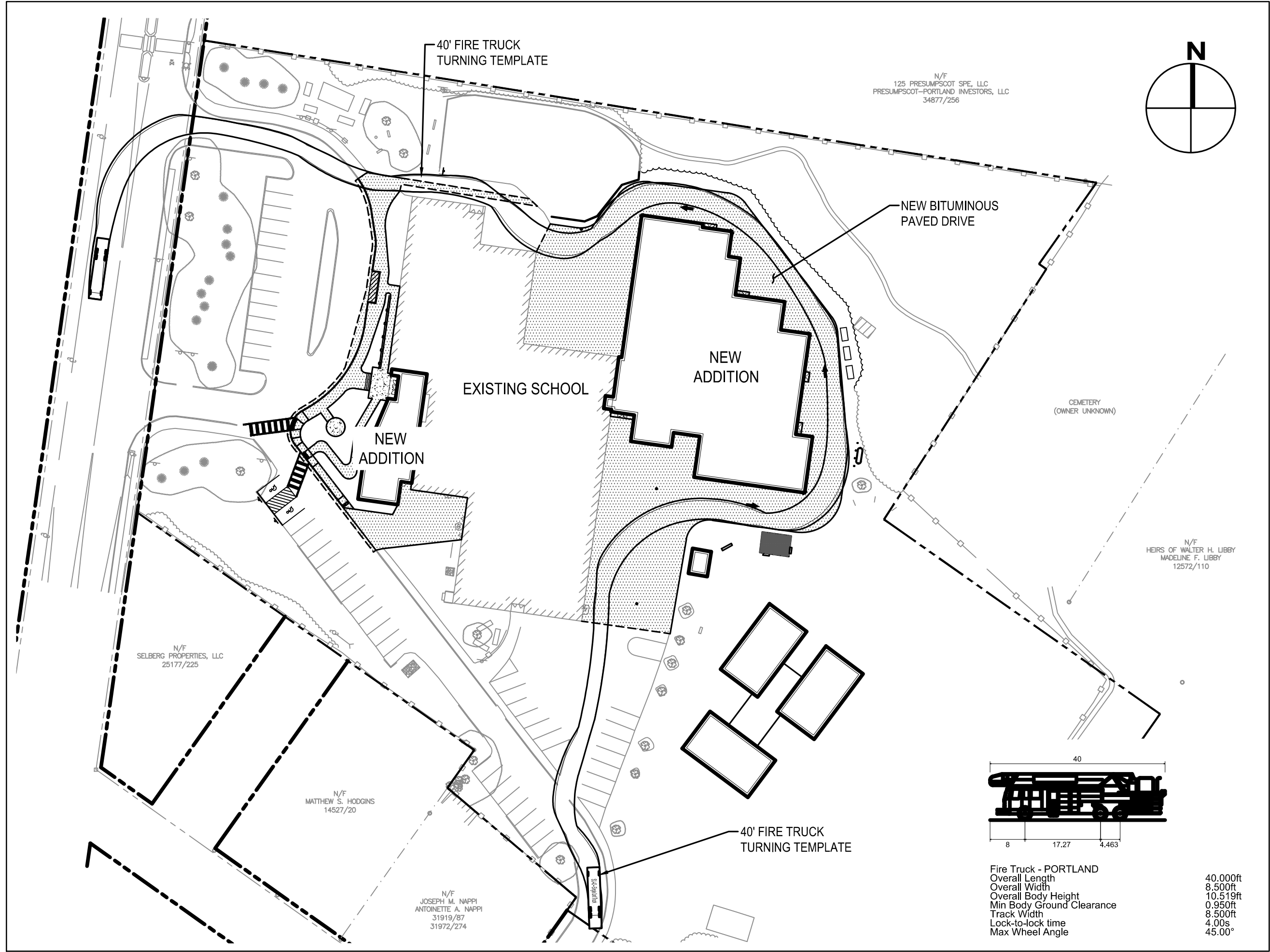


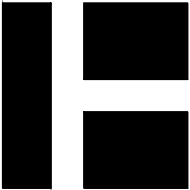
Proj North

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SP-1







HARRIMAN

PRESUMPCOT
ELEMENTARY SCHOOL

PORTLAND, MAINE

HA Project No.	19151
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AUGUST 31, 2020

Rev Date	Revision Description

PRELIMINARY
NOT FOR
CONSTRUCTION

0 30 60 120



(1 inch = 60 feet)

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FIRE TRUCK
TURNING PLAN

FTT-1

Page 208

PLANNING BOARD REPORT PORTLAND, MAINE



Conditional Use
Longfellow Elementary School Addition & Renovation Project
CU-001340-2020
Portland Public Schools, Applicant
CBL: 175 Boo1, 175 Boo2, 175 Coo2, 181 Hoo1

Submitted to: Portland Planning Board:
Public Hearing Date: March 9, 2021

Prepared by: Jimmy Dealaman
Date: March 5, 2021

I. INTRODUCTION

Portland Public Schools is seeking approval for a Conditional Use Permit to expand the existing institutional use at 432 Stevens Avenue in order to facilitate the development of a new two-story, 7,250 square foot addition to the existing Longfellow Elementary School, located in the Deering Center neighborhood.

The 21.4-acre educational campus (Figure 1) is within an R-5 Residential zone and consists of four City owned parcels occupied by Deering High School and Longfellow Elementary School.

The proposed expansion of the existing institutional use (elementary school) in the R-5 zone requires a Conditional Use Permit to be reviewed by the Planning Board for compliance with the Conditional Use standards as well as the requirements of the R-5 Conditional Use standards in Section 14-118 and Section 14-474 (general standards that apply to all conditional uses).



Figure 1: Longfellow Elementary (highlighted) and Deering High Schools Educational Campus

Pursuant to site plan review thresholds, a separate Level II Site Plan application (PL-001319-2020) is under review by Planning staff for conformance with the standards of Portland's site plan ordinance. As this application was under review prior to the December 1, 2020 effective date of the new land use code, all code citations in this memo refer to the previous code.

Owner: City of Portland
Applicant: Portland Public Schools
Agent and Engineer: Frank Crabtree, Harriman
Landscape Architect: Howard Snyder, Harriman
Architect: Lisa Sawin, Harriman
Surveyor: Nick Elliston, Titcomb Associates

II. REQUIRED REVIEWS

<i>Review</i>	<i>Applicable Standards</i>
New Structure Under 50, 000 SF	Level II Site Plan
Conditional Use (Institutional Use in R-5 zone)	Conditional Use in the R-5 zone (Section 14-118 & 14-474)

III. PROJECT DATA

Total area of the site (campus)	930,101 SF
Total Disturbed Area (development)	30,490 SF
Existing Zoning	R-5
Existing Use	Institutional (School)
Proposed Use	Institutional (School)

Longfellow Elementary School	<i>Existing</i>	<i>Proposed</i>	<i>Net Change</i>
Impervious Surface Area	66,778 SF	73,486 SF	+6,708 SF
Building Floor Area	49,820 SF	59,120 SF	+9,300 SF
Estimated Cost of Project	\$10.5 million (construction budget), \$14 million (total project cost)		

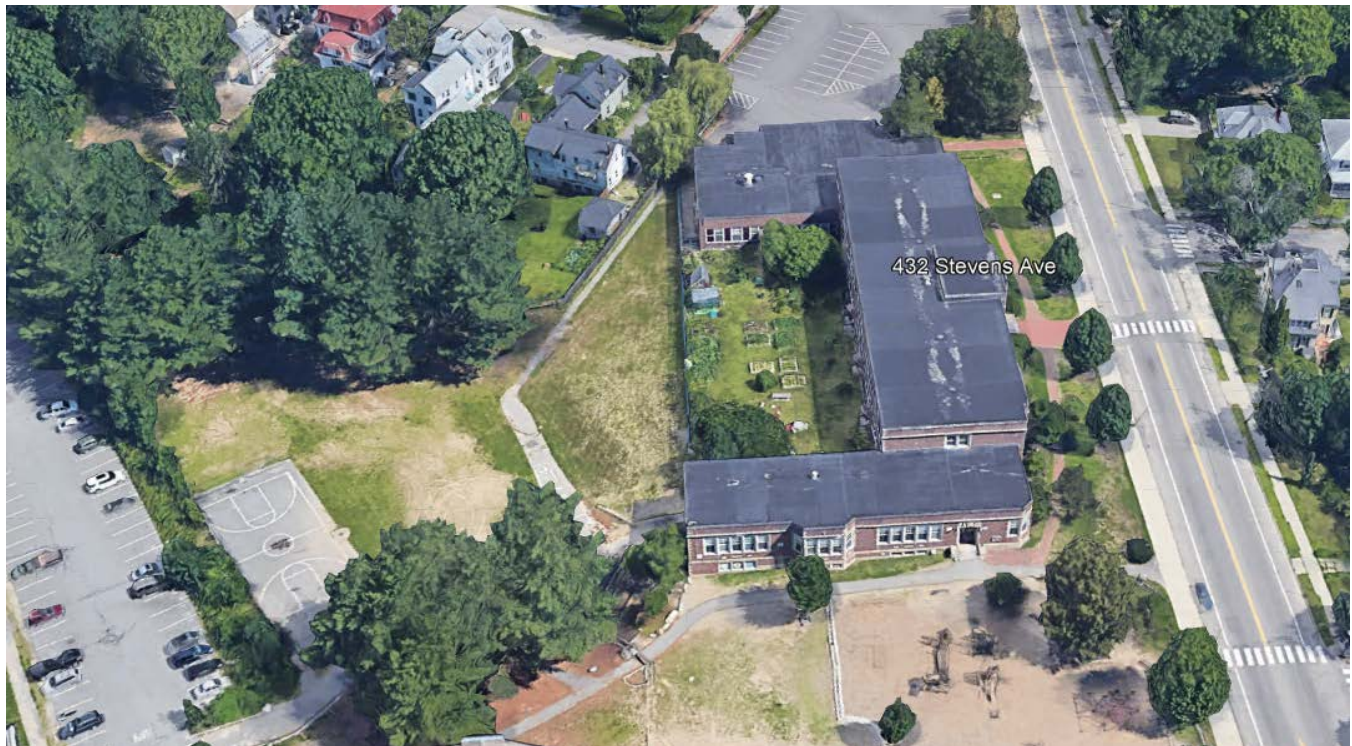


Figure 2: Aerial View of Development Site Existing Conditions – Source: Google Earth

IV. BACKGROUND

The proposed project is part of Portland Public Schools’ “Building for Our Future” program, which is an initiative to renovate four of Portland’s oldest elementary schools. In 2017, City voters approved a \$64 million bond to renovate four elementary schools (Lyseth Elementary School, Longfellow Elementary School, Presumpscot Elementary School, and Reiche Elementary School). The Planning Board approved the Lyseth Elementary School building additions and related site work on April 23, 2019 (Application #: PL-000481-2019) and the project is currently in the final stages of construction.

V. EXISTING CONDITIONS

Longfellow Elementary School was constructed in 1952 and currently has approximately 323 students and 51 staff. The existing two-story building contains 29 classrooms and instruction rooms. The site fronts on Stevens Avenue, a priority corridor identified in the City's Comprehensive Plan, and it shares an educational campus with Deering High School. The existing Longfellow Elementary School building contains an interior courtyard at the rear of the building. To the south is a playground and passive lawn area with pathways that separate the elementary and high schools. To the north is a surface parking lot. There is a parking lot at the rear of the two schools, further west are various athletic fields and facilities which are also known as "Presumpscot Park."

The surrounding area consists primarily of residential uses with a mix of commercial retail along Stevens Avenue.



Figure 3: Existing Conditions (Image from Rear of Deering High School) – Source: Google Earth

VI. PROPOSED DEVELOPMENT

The proposal seeks to add a new two-story 7,250 square foot addition to the existing elementary school as well as interior renovations to update the current facilities (Attachment A). The addition will consist of an approximately 5,100 square foot single-story wing on the west side of the existing school that will include a cafeteria and warming kitchen. Connected to the single-story wing will be a new 2,050 square foot, two-story addition consisting of classroom space. A 100 square foot space to accommodate an elevator would be located within the southeast corner of the existing interior courtyard area (Figure 5). The northeast corner of the school is planned to become an accessible/primary entrance with a new entry stair and accessible ramp proposed. School doorways are proposed to be lit with wall-mounted lights or canopy mounted lights for security.

As part of the addition, the applicant proposes to add pavement at the rear and side of the new addition as well as a loading dock and ramp on the north side of the property. Using a scaled measure, staff estimates the widened paved area totals approximately 9,812 square feet. The applicant also proposes to widen the existing access/way in order to allow for emergency vehicle access. Since the last Planning Board workshop, due to updated feedback from life safety, the

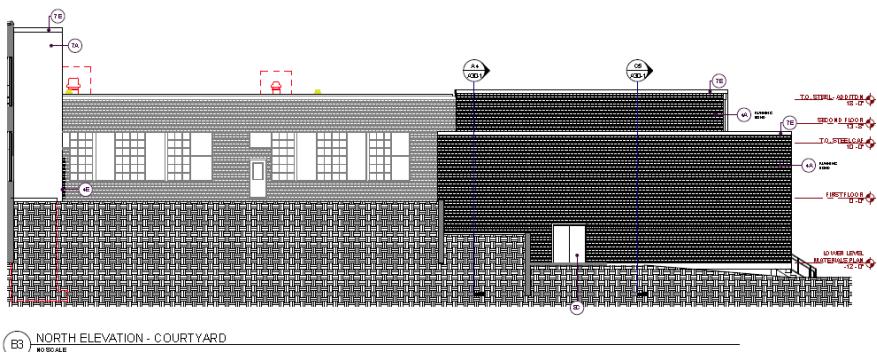


Figure 4: North Elevation Showing Proposed Addition

locations of the three (3) temporary modular in the parking lot are expected to change. As the project continues to be reviewed by staff to meet site plan standards, staff have proposed a condition requiring that the placement and location of the modulars be approved by staff to ensure that all applicable standards will be met.

The delivery loading dock location to the north will be enclosed with a structural wall to accommodate the topography. The loading area is adjacent to an existing three family home at 240 Concord Street, and set back from the neighboring lot line by approximately 45 feet. To minimize any impacts, the applicant has proposed a vegetated buffer to help screen the operation (Plan 12).

Other improvements include a new storm drainage collection and treatment system to capture and treat rainfall from the building addition to the west, as well as a new subsurface chamber sand filter in a crushed stone bed, beneath an outdoor grass area to the north of the building addition which will filter stormwater runoff (Plans 5, 6, 7).

There are also three (3) temporary modular classroom units proposed to be placed in the parking lot to the north during construction which is expected to occur between June 2021 and removed at the end of construction around Fall 2023. Each of these modular units will have wall-mounted porch lights at exterior doors for security. Once the modular units are removed after construction the existing parking lot will be restriped and re-painted and returned to existing conditions.

The level of student population and staff are not expected to increase as a result of these facility improvements.

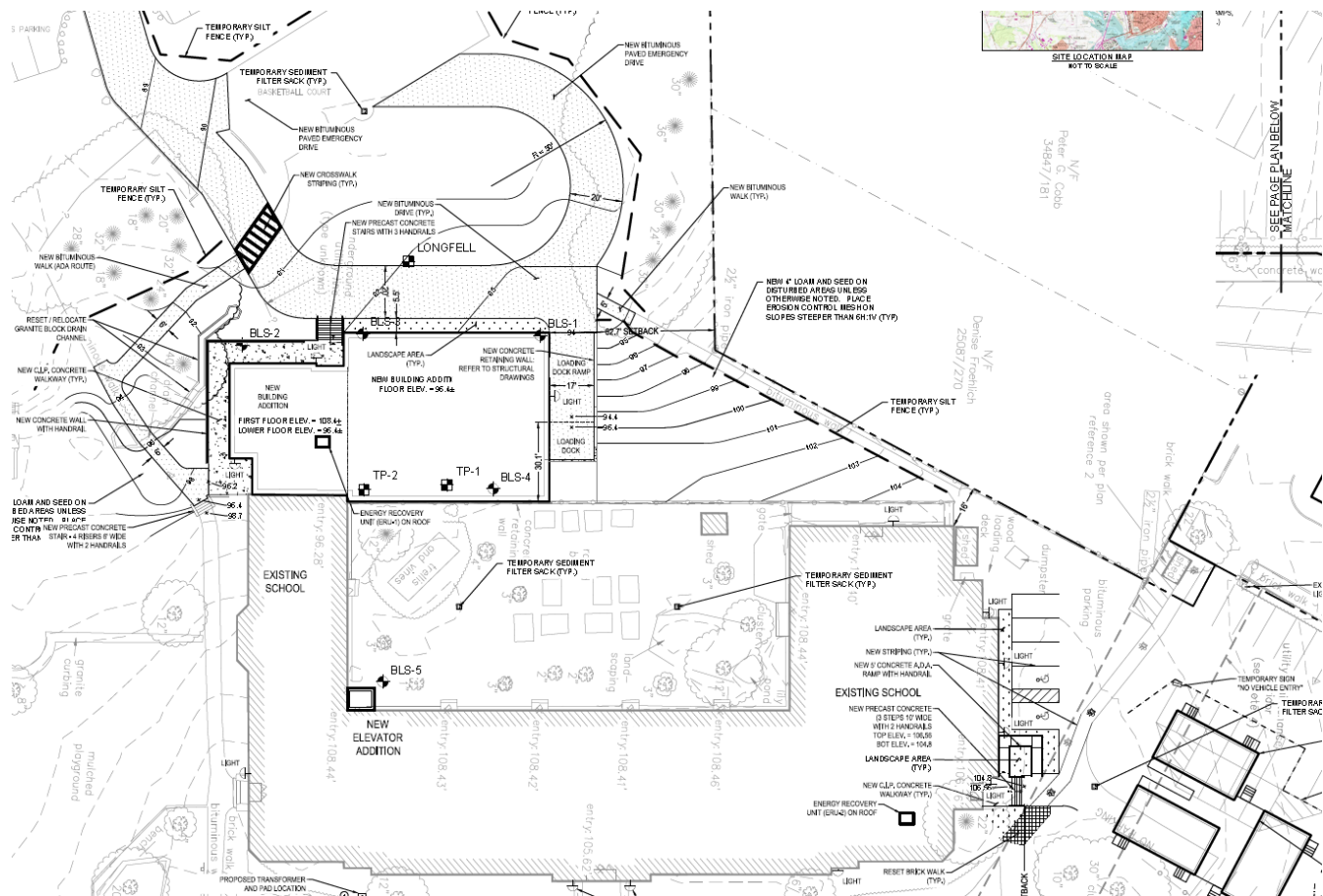


Figure 5: Site Plan

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

The owner of the property is the City of Portland. The applicant has provided a copy of quitclaim deed, recorded at the Cumberland County Registry of Deeds (Book 02074 Page 173), which demonstrates their right, title and interest in the property (Attachment B).

The estimated cost of the construction is \$10.5 million. The applicant has submitted a Statement of Financial Capacity letter (Attachment C) from their director of budget and finance, as demonstration of their financial capacity.

The applicant's development team, Harriman, an architectural and engineering firm, has also submitted a statement speaking to their background in consulting services, resumes and relevant experience to complete the proposed development (Attachment D)

V. STAFF REVIEW

A. ZONING ASSESSMENT

The proposed institutional use (elementary school) is a conditional use in the R-5 zone and the school meets all of the R-5 dimensional requirements.

B. ZONE-SPECIFIC CONDITIONAL USE STANDARDS – SEC. 14-118

Elementary schools are permitted in the R-5 zone as a conditional use, requiring review by the Planning Board. The applicant has submitted an analysis addressing how the proposal meets the R-5 Conditional Use Standards (Attachment E) and staff confirm that the project meets the requirements of the conditional use standards as follows:

Sec. 14-118. Conditional uses. The following uses shall be permitted only upon the issuance of a conditional use permit, subject to the provisions of section 14-474 (conditional uses) and any special provisions, standards or requirements specified below:

(b) Institutional: Any of the following conditional uses provided that, notwithstanding section 14-474(a) (conditional uses) of this article, or any other provision of this Code, the Planning Board shall be substituted for the board of appeals as the reviewing authority:

- 1. Elementary, middle, and secondary school;*

Such uses shall be subject to the following conditions and standards in addition to the provisions of section 14-474:

- a. In the case of expansion of existing such uses onto land other than the lot on which the principal use is located, it shall be demonstrated that the proposed use cannot reasonably be accommodated on the existing site through more efficient utilization of land or buildings, and will not cause significant physical encroachment into established residential areas; and*

Staff Comments: The existing Longfellow Elementary School building is situated on multiple lots/parcels all held in common ownership by the City of Portland, which make up the educational campus shared with Deering High School. The proposed addition, which expands the existing use, is located on the existing site of the principal use, therefore this standard is not applicable.

- b. The proposed use will not cause significant displacement or conversion of residential uses existing as of June 1, 1983, or thereafter; and*

Staff Comments: Not applicable. The proposal does not displace or convert any residential uses.

- c. *In the case of a use or use expansion which constitutes a combination of the above-listed uses with capacity for concurrent operations, the applicable minimum lot sizes shall be cumulative; and*

Staff Comments: The educational campus hosts two schools (Longfellow Elementary School & Deering High School), and is subject to the dimensional requirements of Section 14-120 (d) which require each school to have a minimum of 30,000 square feet. The two schools together require 60,000 square feet, and with the educational campus making up approximately 21.4-acres (930,101 square feet), both uses continue to meet the minimum lot size requirements of the R-5 zone and therefore complies with this standard.

- d-g. **Staff Comments:** These provisions do not apply to the subject proposal.

C. GENERAL CONDITIONAL USE STANDARDS – SEC. 14-474

The following standards in 14-474 apply to all conditional uses:

2. *Standards. The Board shall, after review of required materials, authorize issuance of a conditional use permit, upon a showing that the proposed use, at the size and intensity contemplated at the proposed location, will not have substantially greater negative impacts than would normally occur from surrounding uses or other allowable uses in the same zoning district. The Board shall find that this standard is satisfied if it finds that:*
- a. *The volume and type of vehicle traffic to be generated, hours of operation, expanse of pavement, and the number of parking spaces required are not substantially greater than would normally occur at surrounding uses or other allowable uses in the same zone; and*

Staff comment: Based on the plan (Plan 1) and documents (Attachments E, G) submitted by the applicant, the project is not expected to have a substantial impact on traffic and parking given there are no increases in student population or staffing, or an increase in parking supply.

All deliveries currently access the north parking lot through Concord Street. The current proposal would instead utilize the west access drive (at the rear of the building) and be utilized for deliveries at a loading dock off the proposed cafeteria. The applicant has reported that very few vehicles will be using the new delivery area; only one or two per day. The delivery vehicles come between 8:00 a.m. and 2:00 p.m.

In response to initial staff comments, the applicant has widened the west access drive in order to allow for emergency vehicle access to the rear of the new building.

Staff review has found that this conditional use standard is sufficiently met due to anticipated traffic, hours of operation, expanse of pavement, and parking not to be substantially greater or have a substantial impact on adjacent properties compared to its current use. Additional staff comments supporting this finding are attached to this report (Attachments 1, 2).

- b. *The proposed use will not create unsanitary or harmful conditions by reason of noise, glare, dust, sewage disposal, emissions to the air, odor, lighting, or litter; and*

Staff comment: The project is not expected to create unsanitary or harmful conditions from any of the above categories. The applicant's Conditional Use analysis (Attachment E) provides details regarding potential impacts, and staff have found the proposal would not create unsanitary or harmful conditions.

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

Staff comment: The applicant has stated that the project will operate the same as the existing school, and will not have a substantially greater impact on the surrounding properties (Attachment E). The school currently receives deliveries via the north parking lot through Concord Street. The applicant proposes to relocate the delivery area to the rear of the building and has responded that the new enlarged west drive is expected to be used by one or two delivery vehicles per day accessing the new cafeteria space between 8:00 am and 2:00 pm (Attachment G). The design and operation of the proposed use is anticipated to be only slightly greater where the deliveries are proposed for a formalized/designated loading dock setting, however staff find that the location of this facility is expected to improve the loading and delivery operations to the existing site by providing a designated space designed for that function. Overall, the proposed expansion of the existing school is not anticipated to change the student population and therefore there are generally the same effects/impacts anticipated from the existing elementary school use - which is allowed in the R-5 zone as a conditional use.

VI. PUBLIC COMMENT

A notice of this Workshop was sent to three hundred five (305) property owners within 500 feet and interested citizens, and appeared in the February 26th and 27th, 2021 editions of the *Portland Press-Herald*. A Neighborhood Meeting is not required for this project and the Planning Department has not received any public comments.

VII. STAFF RECOMMENDATION

Subject to the proposed motions and conditions of approval listed below, Planning Department staff recommends that the Planning Board approve the proposed conditional use for the expansion of the existing school at 432 Stevens Avenue. Staff review finds the conditional use application meets all relevant standards.

VIII. PROPOSED MOTIONS

A. CONDITIONAL USE

On the basis of the application, plans, reports and other information submitted by the applicant, the findings and recommendations contained in the Planning Board Report for the public hearing on March 9, 2021 for application CU-001340-2020 relevant to Portland's Conditional Use Standards and other regulations, and the testimony presented at the Planning Board hearing:

The Planning Board **[finds/does not find]** that the proposed conditional use for the expansion of the institutional use is in conformance with sections 14-474 and 14-118 of the Land Use Code subject to the following condition of approval:

1. The applicant shall submit a revised site plan to update the placement and location of the proposed modular classroom buildings for review and approval by the Planning Authority prior to site plan approval.

VIII. ATTACHMENTS**PLANNING BOARD REPORT ATTACHMENTS**

1. Department of Public Works Comments (email dated 3.5.2021)
2. Consulting Traffic Engineer Comments (email dated 3.5.2021)
3. City Arborist Comments (email dated 2.11.2021)

APPLICANT'S SUBMITTAL

- A. Project Summary
- B. Right Title Interest
- C. Financial Capability
- D. Technical Capability
- E. Response to Section. 14-474 & 14-118
- F. Zoning Assessment
- G. Response to Staff Comment (dated 2.9.2021)

PLANS

- | | |
|---------|---------------------------------------|
| Plan 1 | SITE PLAN (updated on 2.10.2021) |
| Plan 2 | SITE-NOTES |
| Plan 3 | SITE-EROSION-CONTROL-NOTES |
| Plan 4 | EXISTING-SITE-CONDITIONS-PLAN |
| Plan 5 | PRE-DEVELOPMENT-DRAINAGE-PLAN |
| Plan 6 | POST-DEVELOPMENT-DRAINAGE-PLAN |
| Plan 7 | SITE-GRADING-AND-EROSION-CONTROL-PLAN |
| Plan 8 | SITE-UTILITY-PLAN |
| Plan 9 | SITE-DETAILS 1 |
| Plan 10 | SITE-DETAILS 2 |
| Plan 11 | STORMWATER-DETAILS |
| Plan 12 | PLANTING-PLAN |
| Plan 13 | PLANTING-DETAILS 1 |
| Plan 14 | PLANTING-DETAILS 2 |
| Plan 15 | LOWER-LEVEL-FLOOR-PLAN |
| Plan 16 | FIRST-FLOOR-PLAN |
| Plan 17 | SECOND-FLOOR-PLAN |
| Plan 18 | EXTERIOR-ELEVATIONS |
| Plan 19 | COURTYARD-ELEVATIONS |
| Plan 20 | EXISTING-CONDITIONS-SURVEY |
| Plan 21 | CONSTRUCTION MANAGEMENT PLAN |
| Plan 22 | SNOW PLAN |



Jimmy Dealaman <jdealaman@portlandmaine.gov>

Any Additional Feedback? - 432 Stevens Avenue (Conditional Use App)

Mike Tremblay <mtremblay@portlandmaine.gov>

Fri, Mar 5, 2021 at 8:25 AM

To: Tom Errico <thomas.errico@tylin.com>

Cc: Jimmy Dealaman <jdealaman@portlandmaine.gov>

Jimmy,

The comments I have are site plan related, not conditional use.

Mike Tremblay, P.E.

Senior Engineer

Engineering Division

Department of Public Works

City of Portland, ME

mtremblay@portlandmaine.gov

P. [207.874.8881](tel:207.874.8881) F. [207.874.8852](tel:207.874.8852)



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Jimmy Dealaman <jdealaman@portlandmaine.gov>

Any Additional Feedback? - 432 Stevens Avenue (Conditional Use App)

Tom Errico <thomas.errico@tylin.com>

Fri, Mar 5, 2021 at 7:28 AM

To: Jimmy Dealaman <jdealaman@portlandmaine.gov>, Mike Tremblay
<mtremblay@portlandmaine.gov>

Hi Jimmy – I have no comments as it relates to traffic items. Please contact me if you have any questions.

Thanks

Thomas A. Errico, PE

Senior Associate

Traffic Engineering Director

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Notice: Under Maine law, documents - including e-mails - in the possession of public officials or city employees about government business may be classified as public records. There are very few exceptions. As a result, please be advised that what is written in an e-mail could be released to the public and/or the media if requested.



Jimmy Dealaman <jdealaman@portlandmaine.gov>

432 Stevens Ave - Conditional Use Application

Jeff Tarling <jst@portlandmaine.gov>

Thu, Feb 11, 2021 at 4:13 PM

To: Jimmy Dealaman <jdealaman@portlandmaine.gov>

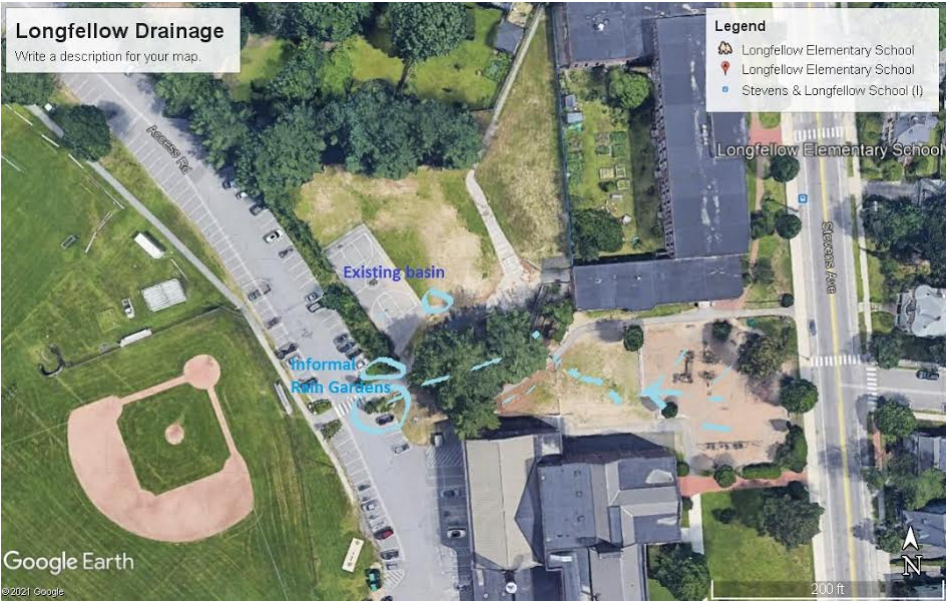
Cc: "lswett@woodardcurran.com" <lswett@woodardcurran.com>

Hi Jimmy -

In review of the proposed addition to Longfellow School wanted to check the following topics:

a) Parking lot hedge and fencing - The fence and hedge surrounding the parking lot is not in great shape and thought should be given to a) replace the fence with a low wooden guardrail or 4' high black vinyl chain link fencing. The hedge surrounding the fence does provide screening of the parked cars and has value, groups of shrub planting might be as effective or infilling the missing hedge plants.

b) Existing trees, drainage and entrance from Deering High School Parking lot - There are several recently planted trees near the proposed construction site that should be replanted elsewhere on the School grounds. Drainage from the Longfellow School playground has been an issue as it surface flows to the parking lot below. Part of the in-house science storm water project has creatively channeled the water flow through the school playground site to the closest catch basin. The basin near the existing basketball court has routinely been a problem of clogging and impaired function. Hopefully the project drainage plan looks close at the flow.



Existing hedge and fencing -





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

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PROJECT SUMMARY

LONGFELLOW ELEMENTARY SCHOOL **ADDITIONS AND RENOVATIONS** **SITE PLAN LEVEL II REVIEW AND CONDITIONAL USE**

September 2020

Owner/Applicant:

Portland Public Schools
353 Cumberland Avenue
contact: Steven Stilphen
stilps@portlandschools.org
874-8100

Preparer/Architect:

Harriman
46 Harriman Drive
Auburn, ME
Contact: Frank L. Crabtree, PE
fcrabtree@harriman.com
(207) 784-5100

The two-story Longfellow Elementary School, at 432 Stevens Avenue in Portland, is proposed to have building additions, together with major renovations, to enhance the available facilities for the current student population. The purpose of the project is to transform the elementary school into a 21st century center of learning, update the security and fire safety systems, and preserve the 'neighborhood school', ensuring the children stay connected to their local community.

The school, located on an educational campus together with Deering High School, occupies approximately 2.8 acres of the total 18.8-acre parcel. The elementary school was constructed in 1952, and currently has approximately 323 students and 51 staff. No additional students or staff are anticipated, due to these facility improvements. The existing two-story school has a ground coverage area of approximately 24,910 SF, and a total floor area of approximately 49,820 SF. The additions will consist of approximately 5,100 sq.ft. Cafeteria and Warming Kitchen single-story wing on the west side of the existing school, with a connected 2,050 sq.ft. two-story Classroom addition. In the interior courtyard, a small 100 sq.ft. elevator addition will be located, and a new entry stair and accessible ramp

will be added to the northeast corner of the school. This new accessible entrance will become the primary entry to the building. The total ground floor additions will equal 7,250 sq.ft., while the total for all floors will be approximately 9,300 sq.ft. These building additions will enhance the learning experience for the students, but will not increase the population of students or staff at the school.

Paved drives, parking, and play areas surrounding the existing school will remain, where they are not disturbed by the construction of the new additions. Any paved areas that are disturbed will be fully reconstructed with new gravel base and bituminous pavement. The current 58 parking spaces in the parking lot north of the building will remain, including 2 ADA-accessible spaces.

A new storm drainage collection and treatment system will be installed to capture and treat the rainfall from the building addition to the west side of the school. A subsurface chamber sand filter will be installed utilizing 25 plastic stormwater chambers in a crushed stone bed, beneath an outdoor grass area to the north of the building addition. The stormwater will be detained in the chambers and stone bed, and filtered down through the underlying sand filter. Once cleaned, the discharge water will be channeled through a buried storm drain pipe to connect to the existing catch basin and storm drain in the westerly play area.



2a. RIGHT, TITLE, & INTEREST

A deed for the Longfellow Elementary School property is attached.

Know all Men by these Presents, That

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We, Randal L. Gullifer, Greta M. Gullifer, Arthur G. Estabrook and Bertha M. Estabrook, all of Portland, in the County of Cumberland and State of Maine

in consideration of one dollar and other valuable considerations paid by City of Portland, a municipal corporation organized for governmental purposes and located in said Portland

the receipt whereof we do hereby acknowledge, do hereby remise, release, bargain, sell and convey, and forever quit-claim unto the said City of Portland, its successors and Assigns forever, A certain lot or parcel of land situated in said Portland beginning at a point in the Northeasterly side line of Concord Street said point being distant Northwesterly along the Northeasterly side line of Concord Street One Hundred eighty-five and six tenths (185.6) feet more or less, from the point of intersection formed by the Northeasterly side line of Concord Street and the Northwesterly side line of Stevens Avenue; thence Northeasterly and at a right angles to the said Northeasterly side line of Concord Street a distance of eighty-eight (88) feet, more or less, to a point in the Southwesterly side line of land of the City of Portland; thence Northwesterly along the said Southwesterly side line of land of the City of Portland and at right angles to the last described course a distance of twenty-seven and eight tenths (27.8) feet, more or less, to a point in the Northwesterly side line of Concord Street as laid out and accepted by order of the City Council on November 19, 1951; thence Southwesterly along the Northwesterly side line of said Concord Street as laid out and accepted by order of the City Council on November 19, 1951; a distance of eighty-eight (88) feet, more or less, to the Northeasterly side line of Concord Street as laid out and accepted March 8, 1875; thence Southeasterly along the said Northeasterly side line of Concord Street as laid out and accepted March 8, 1875, a distance of twenty-seven and eight tenths (27.8) feet, more or less, to the point of beginning.

Meaning and intending hereby to convey a strip of land twenty-seven and eight tenths (27.8) feet wide off the Southeasterly side of Lot Number 46 as shown on Plan of land of Thomas S. Files, said plan being recorded in Cumberland County Registry of Deeds, in Plan Book 3, Page 23.

Being a portion of the same premises conveyed to Randal L. Gullifer et als by Adelaid N. Blake by Warranty Deed dated November 8, 1948 and recorded in Cumberland County Registry of Deeds in Book 1933, Page 378.

To Have and to Hold the same, together with all the privileges and appurtenances thereunto belonging, to it the said City of Portland, its successors assigns forever.

U.S.I.R.
\$1.10
R.L.G.&
2-28-52

And we do covenant with the said Grantee, its successors

heirs and assigns, that we will warrant and forever defend the premises to it the said Grantee, its successors

heirs and assigns forever, against the lawful claims and demands of all persons claiming by, through or under us.

In Witness Whereof, the said Randal L. Gullifer and Greta M. Gullifer, being husband and wife and Arthur G. Estabrook and Bertha M. Estabrook, being husband and wife each joining in this deed as Grantor and each relinquishing and conveying our right by descent and all other rights in the above described premises,

have hereunto set our hand and seals this 28th day of February in the year of our Lord one thousand nine hundred and fifty-two.

Signed, Sealed and Delivered in presence of
Patricia E. Meally

Randal L. Gullifer	Seal
Arthur G. Estabrook	Seal
Bertha M. Estabrook	Seal
Greta M. Gullifer	Seal

State of Maine, CUMBERLAND, SS. February 28, 1952
the above named Randal L. Gullifer

Personally appeared

and acknowledged the above instrument to be his free act and deed.
Before me, Patricia E. Meally, Notary Public, Notarial Seal.

g Received March 4, 1952, at 3 o'clock 31 m. P. M., and recorded according to the original.



6. FINANCIAL CAPABILITY

Portland Public Schools has furnished the attached Statement of Financial Capacity for the Longfellow Elementary School additions and renovations.



PORTLAND PUBLIC SCHOOLS
prepared & empowered

Portland Public Schools
Executive Director of Budget & Finance 353
Cumberland Avenue
Portland, Maine 04101
September 9, 2020

The City of Portland Planning and Transportation Division
389 Congress Street
Portland, Maine 04101

Statement of Financial Capacity: The City of Portland, Portland Public Schools, and the Longfellow Elementary School Renovation Project has available the sum of \$14,000, 000 as of this date. We confirm that these funds are entirely free of any liens, debts and/or encumbrances and are available in the form of City of Portland General Obligation Bonds. Should you require verification of the above- mentioned funds, please contact me at your convenience.

Respectfully,

Miranda Fawcett
Portland Public Schools

Executive Director of Budget & Finance



7. TECHNICAL CAPABILITY

Portland Public Schools are managed by experienced staff who currently care for the physical and financial needs of the Longfellow Elementary School, together with many other schools throughout the City of Portland.

Portland Public Schools engaged Harriman Architects and Engineers of Portland and Auburn, Maine, to design the building and site improvements to the Longfellow Elementary School. Harriman is a full-service architectural/engineering firm with a 140- year history of successful consulting services. All architectural and engineering is being provided by Harriman employees.

Key personnel of Harriman include:

Mark Lee, AIA – Principle-in-Charge; Lisa Sawin, AIA – Project Manager/Lead Architect; Howard Snyder, ASLA – Landscape Architect; and Frank Crabtree, PE – Civil Engineer.

Key personnel resumes are attached.



MARK D. LEE, AIA, LEED AP, MCPPO

PRINCIPAL, ARCHITECT

Mark D. Lee has experience in both structural engineering and architectural design, encompassing over 20 years and providing him a truly multidisciplinary perspective on building design.

Over the years, Mark has gained significant educational design experience on a variety of projects for public and private K-12 schools. Projects have included new construction, additions and renovations to existing facilities, as well as master plans and space/programming studies.

Before joining Harriman as an architectural designer, Mark was a structural engineering designer in Philadelphia and New York. In addition to working on projects with the Greater Philadelphia Transportation Authority, he has also worked on projects built in Indonesia and China. Mark has bachelor's degrees in both civil engineering and architectural engineering, as well as a master's degree in architecture.

EDUCATION

Boston Architectural College
Master of Architecture

Drexel University
Bachelor of Science in Civil Engineering
Bachelor of Science in
Architectural Engineering

REGISTRATIONS

ME, NH, MA, CT, NY
NCARB IDP Certification
EI

ACCREDITATIONS

Leadership in Energy and Environmental
Design Accredited Professional (LEED AP)

Massachusetts Certified Public Purchasing Official
(MCPPO)

AFFILIATIONS

American Institute of Steel Construction Member
American Society of Civil Engineers, Member
Association of College & University
Housing Officers International, Member
U.S. Green Building Council
Society of College and University Planning

PRESENTATIONS

2010 - EACUBO Annual Meeting
"Attainable Goals: Breaking Down a
Long-Term Master Plan Can Help
Streamline Short-Term Decision Making"

2009 - ERAPPA Annual Conference "Attainable Goals:
Breaking Down a Master Plan"

2009 - Museum L-A Lecture Series, "Lewiston
Transforms: Adaptive Reuse of Architectural
Landmarks,"

2009 - Tri-State ASBO Conference, "How to Promote
and Organize A Successful School Construction
Project,"

2006 - Maine Library Association Annual Conference,
"Fryeburg Academy Library: A Collaborative Story,"

RELEVANT EXPERIENCE:

Portland Public Schools – Portland, Maine

Lyseth Elementary School Addition and Renovations

Auburn School Department – Auburn, Maine

Planning, Design and Construction for new Edward Little High School

Beatrice Rafferty Elementary School – Perry, Maine

New Elementary School

South Portland School Department – South Portland, Maine

South Portland High School Addition and Renovations | Master Plan |
Secondary School Study

Camden Hills Regional High School – Rockport, Maine

New 800-Student School and 800-Seat Performing Arts Center

Biddeford High School – Biddeford, Maine

Addition and Renovations

Biddeford Middle School – Biddeford, Maine

New 780-Student School and 900-Seat Performing Arts Center

Maine Academy of Natural Science at Good Will-Hinckley – Hinckley, Maine

Moody School Historic Study, Addition and Renovation

Lewiston School Department – Lewiston, Maine

Master Plan | Geiger Elementary School, New 624-Student School | Lewiston
Regional Technical Center, The Green Ladle Culinary Arts Center

Mount Desert Island High School – Mount Desert, Maine

Addition and Renovations

Cheverus High School – Portland, Maine

Gymnasium Addition | Addition and Renovations | Master Plan

St. Dominic Regional High School – Auburn, Maine

New 450-Student School

MARK D. LEE, AIA, LEED AP, MCPPO

PUBLICATIONS

Building Design + Construction: Lighting Technology
"It's Still the Wild West Out There," April 2017

High Profile Focus: Institution & Schools
featuring SCUP North Atlantic Region, "The University
Library is the Hub of Student Collaboration and
Learning," March 2017

School Planning & Management "Acoustical
Considerations for 21st-Century K-12 Learning
Environments," June 2017

High Profile: New England Facilities Development
News, "Innovation on Campus: Five Trends in Higher
Education," August 2016

Kennebunk Elementary School – Kennebunk, Maine
New 600-Student School

Bridgton Academy – Bridgton, Maine
New Athletic Center | Master Plan

Fryeburg Academy – Fryeburg, Maine
Leura Hill Eastman Performing Arts Center | Master Plan | Harvey Dow Gibson
Athletic Center | Bion R. Cram Library | Athletic Fields | Hastings Dorm Masters
House

Bath School Department – Bath, Maine
Master Plan and Renovations

Hebron Academy – Hebron, Maine
Master Plan

Sacopee Valley High School – Hiram, Maine
ADA Upgrades

Buxton Elementary – Buxton, Maine
New 850-Student School

Westbrook Middle School – Westbrook, Maine
New 600-Student School

Nashua School District – Nashua, New Hampshire
Broad Street Elementary School Renovation | Sunset Heights Elementary
School Renovation | Mount Pleasant School Study | Elm Street School Study

Dover School District – Dover, New Hampshire
Garrison Elementary School Facilities Study | Garrison Elementary School,
Renovations

Hopkinton School District – Contoocook, New Hampshire
Facilities Planning Study

Exeter High School – Exeter, New Hampshire
New 2,000-Student School and 1,000-Seat Performing Arts Center



LISA D. SAWIN, AIA, NCARB, LEED AP BD+C, MCPPO
SENIOR ASSOCIATE, SENIOR ARCHITECT

Lisa Sawin, a licensed architect, brings nearly 15 years of professional experience in architectural design for a variety of K-12 and Higher Educational clients. Prior to joining Harriman, Lisa served as Project Manager and Project Architect providing design, detailing, marketing and project delivery skill-set.

Passionate about developing learning environments that support educators and students alike, Lisa is a hands-on project leader, working directly with school leadership, administration, and facilities personnel to provide meaningful solutions to operational and functional challenges.

EDUCATION

Norwich University
Masters in Architecture

Norwich University
Bachelor of Science in
Architectural Studies

REGISTRATIONS

ME, MA, VT

National Council of Architectural Registration Boards
(NCARB)

ACCREDITATIONS

Leadership in Energy and Environmental Design
Accredited Professional
(LEED AP BD+C)

Massachusetts Certified Public Purchasing Official
(MCPPO)

AFFILIATIONS

American Institute of Architects

U.S. Green Building Council, Maine
Chapter Member

RELEVANT EXPERIENCE:

RSU 21 - Kennebunk, Kennebunkport, and Arundel, Maine

Facilities and Educational Planning for all District Schools

Mildred L. Day Elementary School (RSU 21) - Arundel, Maine

Addition and Renovations

Kennebunk High School (RSU 21) - Kennebunk, Maine

Addition and Renovations

Auburn School Department - Auburn, Maine

Planning, Design and Construction for new Edward Little High School

Portland Public Schools - Portland, Maine

Lyseth Elementary School Addition and Renovations

Westbrook School Department - Westbrook, Maine

Saccarappa Elementary School Additions and Renovations

Sanford School Department - Sanford, Maine

K-8 Restructuring Study | Margaret Chase Smith Elementary School, Addition and Renovations | Converted Elementary School from former Middle School | Converted Middle School from former High School

Scarborough School Department - Scarborough, Maine

Long Range Facility Planning

Town of Wellesley - Wellesley, Massachusetts

Middle School Building Study

Twin Rivers School District* - McClellan, California

25-Year Master Plan of 63 Campuses | Professional Learning Community Center (P.L.C.C.)

Fresno United School District* - Fresno, California

Addicott Modernization | Turner Elementary School Classroom and Administration Building | Hoover High School Addition

Merced Unified School District* - Merced, California

Merced S.T.E.A.M. Center

Madera School District* - Madera, California

Madera Elementary School

**Experience prior to joining Harriman.*



EDUCATION

University of Maine
Bachelor of Science Civil Engineering

REGISTRATIONS

ME, MA, NH, VT, CT, RI

ACCREDITATIONS

Leadership in Energy and Environmental
Design Accredited Professional
(LEED AP BD+C)

Maine Department of Transportation Local Project
Administration (LPA)

AFFILIATIONS

American Society of Civil Engineers

U.S. Green Building Council
Maine Chapter Member

FRANK L. CRABTREE, P.E., LEED AP BD+C

ASSOCIATE, SENIOR CIVIL ENGINEER
USGBC - LEED PROJECT ADMINISTRATOR

Frank L. Crabtree's 40 years of experience includes a wide range of civil, environmental and site engineering for large and small sites for many governmental and educational clients. He has extensive experience in environmental storm water management and in managing the permitting and approval process required by state, federal, and municipal agencies.

Frank also coordinates Harriman's sustainability processing for the office and for our clients. Beginning with the certification of Maine's first LEED Certified university building, Frank has managed the process for many public and private sustainable projects over the past 15 years. He has extensive experience managing the team of designers, owner, and contractor through the various stages of the sustainability planning, designing, constructing, and certifying. Frank's work has been primarily with the US Green Building Council (USGBC) LEED Certification process, which is the benchmark standard in the U.S.

RELEVANT EXPERIENCE:

Portland Public Schools – Portland, Maine

Lyseth Elementary School Addition and Renovations

Auburn School Department – Auburn, Maine

Planning, Design and Construction for new Edward Little High School

Beatrice Rafferty Elementary School – Perry, Maine

New Elementary School

Lewiston Public Schools – Lewiston, Maine

Robert V. Connors, New 900± Student Elementary School, State and City Permitting | McMahon Elementary School, Site Design, Roadway Expansion, Natural-gas Extension, and State/City Permits | Raymond A. Geiger Elementary School, Site Selection, Stormwater, and Permitting | Lewiston High School Regional Technical Center, Site Design, Parking Expansion, Stormwater Treatment, Utilities for Constrained Site, City Permitting

RSU #21 – Kennebunk, Maine

Kennebunk High School Addition | Mildred L. Day Elementary School Addition and Renovation

York School Department – York, Maine

750-Seat Community Auditorium and Main Entry Addition, Site Design, Parking, Town of York Permitting

Noble High School – North Berwick, Maine

New Site Master Plan and Development | 11 Sports Fields | Six Parking Lots | State/Town Permits

Scarborough School Department – Scarborough, Maine

Wentworth Intermediate School, New 800-Student School | Scarborough High School Addition and Renovations

Scarborough Schools and Community Park – Scarborough, Maine

Reconstruction of High School and Town Park, New Pond/Fountain | Play Fields | Pedestrian Walks | Stormwater Treatment | State/Town Permits

FRANK L. CRABTREE, P.E., LEED AP BD+C

PRESENTATIONS

2013 – U.S. Green Building Council Maine Chapter, "Rainwater Management: Rooftop to Pavement"

2010 – American Society of Professional Estimators, "LEED Changes"

2009 – U.S. Green Building Council Maine Chapter, "Site Design for LEED and DEP Standards"

2008 – Society for College and University Planning, North Atlantic Region Symposium, Sustainability as an Economic Driver: "Pathways to Success, "Pathways to Green"

2007 – Northern New England Chapter of the American Planning Association "LEED Certified Construction"

Buxton Center Elementary School – Buxton, Maine

New 850-Student School

Cheverus High School – Portland, Maine

New Urban Sports Field and Tennis Court Complex | Parking Lots | Permitting

South Portland School Department – South Portland, Maine

Site Renovation | Relocate Sports Fields and Tennis Courts | New Parking Lots

St. Dominic Academy – Auburn, Maine

New 450-Student School

Westbrook Middle School – Westbrook, Maine

New 600-Student School, Traffic and Pedestrian Circulation | New Planning and Site Development | Three Sports Fields | Stormwater Management | State/Town Permits

Durham Community School – Durham, Maine

New 505-Student School

Biddeford High School - Biddeford, Maine

Addition and Renovations

Biddeford Middle School – Biddeford, Maine

New 780-Student School and 900-Seat Performing Arts Center

Bridgton Academy – Bridgton, Maine

Master Plan New Sports Fields | Fundraising Images

Fryeburg Academy – Fryeburg, Maine

New Sports Field Facility, Sports Fields | Leura Hill Eastman Performing Arts Center | Site Parking/Utilities | Stormwater Treatment | State/Town Permits

Pemetic Elementary School – Southwest Harbor, Maine

Addition and Renovations

Broad Street School – Nashua, New Hampshire

Reconstructed Drives, Parking, Storm Drainage, Playground, and City/State Permits

Idlehurst Elementary School – Somersworth, New Hampshire

New 530-Student School - NECHPS Sustainability Certification Management



HOWARD A. SNYDER, ASLA, CLARB

LANDSCAPE ARCHITECT

Howard Snyder, ASLA, CLARB is a landscape architect and planner with nearly twenty years of experience. He has worked on a range of project types considering civic, institutional, landscape planning, residential, resort, urban and public space developments in the United States and abroad. His work allows for an ability to synthesize a project's design process from the appropriate perspective and an ability to work with a staff of professionals from a variety of disciplines to provide outstanding design and service to clients. Prior to rejoining Harriman in early 2016, Howard served as Town Planner of Georgetown, Massachusetts.

EDUCATION

Master of Urban Planning and Public Policy
New York University, Robert F. Wagner Graduate School
of Public Service

Bachelor of Landscape Architecture
State University of New York, College of Environmental
Science & Forestry

REGISTRATIONS

MA, ME, CT

AFFILIATIONS

American Society of Landscape Architects

Boston Society of Landscape Architects

American Planning Association

RELEVANT EXPERIENCE:

Jewish Community Alliance – Portland, Maine

Landscape Architecture for a Community Center

City of Augusta – Augusta, Maine

Site Layout and Landscape Design for Adaptive Reuse of Mill Park Brick Building

Town of Kennebunk – Kennebunk, Maine

Streetscape Master Plan in the Lower Village District

University of Maine System – Maine

Campus Master Planning for Seven Campuses

University of New England – Biddeford, Maine

Campus Master Plan

Maplewood Avenue - Complete Streets – Portsmouth, New Hampshire

Streetscape Design

City of Rochester – Rochester, New Hampshire

Downtown Master Plan and Comprehensive Rezoning

Town of Raymond – Raymond, New Hampshire

Site Layout and Design for Police Facility

Atlantic Wharf – Boston, Massachusetts

Urban Design and Planning for Redevelopment of Atlantic Wharf

Beverly Farms Improvement Society – Beverly, Massachusetts

Facade and Streetscape Improvement Plan

Beverly Farms Improvement Society – Beverly, Massachusetts

Parking Strategy for Beverly Farms Business District

Bridgeport and Port Jefferson Steamship Authority – Bridgeport, Connecticut

Bridgeport Barnum Landing Ferry Terminal Site Design

Canaveral Port Authority – Port Canaveral, Florida

Port Canaveral Land Use and Development Plan

Canaveral Port Authority – Port Canaveral, Florida

On-call Services | Land Planning, Urban Design, and Market Analysis for Port Canaveral

City of Boston – Boston, Massachusetts

Cleveland Circle Streetscape Plan

City of Brockton – Brockton, Massachusetts

Comprehensive Master Plan

City of Haverhill – Haverhill, Massachusetts

Park Concept Design for Riverside Park

City of Newburyport – Newburyport, Massachusetts

Landscape Restoration for Bartlet Mall

City of Norwalk – Norwalk, Connecticut

Wall Street Area Master Plan

Department of Conservation and Recreation – Boston, Massachusetts

Landscape Design for Lederman Memorial

Duxbury Bay Maritime School – Duxbury, Massachusetts

Site Planning for Three Marine Based Facilities

Falmouth Yacht Club – Falmouth, Massachusetts

Renovation, Expansion and Landscape Architecture

Hingham Shipyard – Hingham, Massachusetts

Landscape Design and Signage Programming

Lawrence Mills – Lowell, Massachusetts

Urban Design, Site Design, and Landscape Architecture for Redevelopment

Malden Mills – Lawrence, Massachusetts

Schematic Designs for Reuse and Redevelopment Options

Steamship Authority – Oak Bluffs and Woods Hole, Massachusetts

Site Layout and Design for Ferry Terminals

Town of Burlington – Burlington, Massachusetts

Comprehensive Master Plan

Town of Nahant – Nahant, Massachusetts

Nahant Gateway Park and War Memorial

Town of Randolph – Randolph, Massachusetts

Comprehensive Master Plan

Town of Shutesbury – Shutesbury, Massachusetts

Community Visioning

Town of Truro – Truro, Massachusetts

Landscape Design for Civic Center and Residential Development

Village at Bailey's Pond – Amesbury, Massachusetts

Permitting and Landscape Design for Residential Development

Village of Newtonville – Newton, Massachusetts

Streetscape Design



24. CONDITIONAL USE

Revised 1-27-21

Conditional Use Standards – (14-474)

- **Traffic:** The Longfellow Elementary School building additions and renovations will provide a new cafeteria and classrooms, and will enhance the administrative spaces and the front entry to the school. No additional students or staff are anticipated. Therefore, no additional traffic is anticipated to be generated by this building project. Parking will remain unchanged. An added delivery area for the new cafeteria west of the building will result in a small increase in pavement.
- **Environmental Impacts:** The building additions and site renovations at the existing elementary school will not cause harmful conditions to the students, staff, or surrounding neighborhood.
 1. Noise: One added rooftop air-handler unit will be located outdoors on the existing building roof. This unit will more than 100' away from the nearest property line, and the sound level measured at the nearest property line will be approximately 34 decibels, which is a minimal background noise level. See attachment 21.
 2. Glare: No new pole-mounted site lights will be added. The building-mounted site/security lighting will be shielded cut-off fixtures that will not produce glare at streets or property lines.
 3. Dust: During construction the contractor will control dust as specified on drawing C00.3. The completed reconstructed paved and grass surfaces will not produce dust.
 4. Sewage Disposal: An additional sanitary sewer line will be extended to a City sewer main, to service the new school building addition. No on-site sewage disposal will occur.
 5. Air Emissions: The existing Longfellow Elementary School receives its heat through underground heating lines from the adjacent Deering High School heating system. The new additions will utilize the existing heating system, so no additional fuel-burning equipment will be added to either the elementary school or the high school.
 6. Odor: There are no activities or equipment at this renovated existing elementary school that will produce offensive odors.

7. Lighting: No new site lighting poles are proposed for this Longfellow School building addition project. The school doorways will be lit with wall-mounted lights or canopy-mounted lights.
 8. Litter: None of the building additions or renovations will contribute litter to the project site.
- **Design and Operation:** The building additions and site renovation to the elementary school will operate the same as the existing school, and will not have substantially greater impact on surrounding properties. The Site Plan Level II attachments explain in detail how the proposed modifications have negligible impact to the neighborhood, and are consistent with the typical school development.
 - **Zone Specific Criteria:** Residential Zone R5. Elementary Schools are noted as an institutional conditional use.

Additional Conditional Use Standards – (14-118(b))

- a. All expansion of the existing elementary school will be done on the same lot as the existing principal school.
- b. There are no residential uses on the existing school property.
- c. The proposed school expansion will not cause a combination of impacts regarding 'a' and 'b', above.
- d. The school additions are subject to site plan articles, which have been addressed and submitted under Level II Site Plan.
- e. The school additions are not 'community halls'.
- f. The school additions will not serve alcoholic beverages.
- g. The elementary school additions are not part of a college, university, or trade school; and the building height will be less than 55'.



4. ZONING ASSESSMENT

The Longfellow Elementary School is in the R5 Zone. Schools are a Conditional Use in the R5 residential zone.

The Zoning Analysis Table is attached.



ZONING ANALYSIS Relevant Zone(s) R5 Residential

All Projects:

	Required	Proposed
Lot Size	30,000 sq.ft.	121,968 sq.ft.
Area Per Dwelling Unit	NA	NA
Minimum Street Frontage	50 ft.	600 ft.
Front Yard Minimum	20 ft.	70 ft.
Front Yard Maximum	NA	NA
Rear Yard	20 ft.	800 ft.
Yard Right	8 ft.	60 ft.
Yard Left	8 ft.	600 ft.
Side Street Setback	NA	NA
Step Back	NA	NA
Maximum Lot Coverage	40%	27%
Minimum Lot Coverage	NA	NA
Maximum Height	35 ft.	25 ft.
Open Space	6,000 sq.ft.	55,000 sq.ft.
Maximum Impervious Area	NA	NA
Pavement Setback	NA	NA
Floor Area Ratio	NA	NA
Off Street Parking Spaces	NA	NA
Loading Bays	NA	NA
Other 1		
Other 2		
Other 3		

Planned Residential Unit Developments (PRUD) Requirements

	Required	Proposed
Minimum Lot Size		
Minimum Lot Area per Dwelling		
Maximum # Units per Building		
Maximum Building Length		
Maximum Accessory Building Length		
Minimum Setbacks		
Minimum Building Separation		
Minimum Open Space		

Affordable Housing Density Bonuses (if applicable)

	Bonus Increase or Decrease	Maximum Allowable With Bonus	Proposed
Density			
Height			
Setback Reduction			
Recreation Space			
Maximum Accessory Building Length			
Minimum Setbacks			
Minimum Building Separation			
Minimum Open Space			
Explanatory Text 1 (optional):			
Explanatory Text 2 (optional):			
Explanatory Text 3 (optional):			

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February 9, 2021

James Dealaman, Planner
Planning and Urban Development Department
City Hall, 389 Congress Street, 4th Floor
Portland, Maine 04101

Re: Longfellow Elementary School Additions
432 Stevens Avenue
Portland, ME
No. 19150
Response to Comments, dated 02-02-21

Dear Jim,

Thank you for providing these comments for review. I am responding to them in their original order since they are not numbered. I am however, assigning numbers to track them more easily. Please let me know if you have any further questions.

Transportation:

1. The bicycle path shown on drawing C00-1 is existing. It will remain in the site access drive.
2. Most students ride bicycles or walk to the Longfellow school. One bus picks up and drops off a few students in front of the school, on Stevens Avenue. Most parent vehicles also line up in front of the school on Stevens Avenue. Many parents also walk to the school to get their children. Three small busses pickup students from 'after-school' activities within the parking lot, which is accessed from Concord Street. These busses circulate into the school from the southerly drive on Concord Street, and back through the parking lot and out the northerly drive onto Concord Street. The busses have no issue making this route daily.
3. Regarding the access path/drive to the west of the school, no deliveries currently use that access way. All deliveries access the north parking lot through Concord Street. The enlarged west access drive will only be used by delivery vehicles because of the cafeteria building addition. There will be very few vehicles using this new westerly drive to the new cafeteria delivery area; only one or two per day. The delivery vehicles come between 8:00 am and 2:00 pm.
4. Currently there are 29 classrooms/instruction rooms in the school. The proposed addition will add one instructional room, for a new total of 30.

Environmental Quality:

5. Waiting for City Arborist comments.
6. Waiting for City Stormwater Consulting Engineer comments.

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7. Waiting for confirmation on the High School parking lot drainage problems.
8. Yes, the Emergency/Fire response document on the School Department website applies to the Longfellow Elementary School.
9. The west access path will be reconstructed to a 20' width, as required, and is shown on the attached C00-1 Site Plan.
10. The west access drive has been tested with the Auto-turn computer model for a fire truck, and the printout is attached.
11. Changes to the curbing for the west access drive will be shown on C00-1 Site Plan.

Site Design:

12. A note has been added to the attached revised Snow Plan SP-1, that states, "If snow accumulation exceeds on-site storage space, Portland Public Schools will remove the snow from the site as necessary."
13. Two new heat recovery units(HRU-1 and HRU-2) are shown on the roof of the existing school and the new addition, on attached revised drawing C00-1 Site Plan. The unit catalogue sheet is attached in the original submission in Exhibit 21 – Noise and Vibration. The units are both the same size and are only 3'-8" tall and set back at least 15' from the existing roof edge, and therefore, should not be objectionable from public streets or nearby sites. No separate screening is proposed.
14. The new electrical pad-mounted transformer will be located in front of the existing school building toward the south end of the building. The transformer will be screened from Stevens Avenue by six new 6' to 8' Dwarf Emerald Green Arborvitae, as shown on the attached revised C00-1 Site Plan.
15. There are no existing site light poles in the parking lot to the north of the building. However, City light poles on the adjacent streets shed sufficient light for the parking lot. The City street light pole on the corner of Pleasant Street has a spotlight aimed to light the parking lot. And there is a light fixture on the pole on the corner of Concord Street West and the school access drive, aimed into the lot. These existing light poles have been added to drawing C00-1 Site Plan. Proposed building-mounted site light fixture locations are also shown on the attached revised C00-1 Site Plan.
16. The attached revised catalogue sheets show the selected fixture model, which meets the maximum lumen and CCT levels.
17. There are no existing site light poles in the parking lot to the north of the building. However, City light poles on the adjacent streets shed sufficient light for the parking lot. The City street light pole on the corner of Pleasant Street has a spotlight aimed to light the parking lot. And there is a light fixture on the pole on the corner of Concord Street West and the school access



drive, aimed into the lot.

18. The modular units will have wall-mounted porch lights at exterior doors for security.
19. The existing parking lot striping will be retained and re-painted, once the modular classroom units are removed from the site. The parking lot will be returned to existing condition as shown on drawing C10-1, as originally submitted. This project does not have a second phase.
20. Distances to adjacent property lines from the existing and proposed buildings are shown on the attached revised C00-1 Site Plan.

Construction Management Plan:

21. The modular classroom units are proposed to be placed in the parking lot approximately in June 2021 and removed at the end of construction in approximately Fall 2023.
22. The Construction Management Plan and the attached C00-1 Site Plan have been revised to exclude parking in partial spaces by the proposed jersey barriers.
23. During construction, the parking lot will lose 15 parking spaces, due to the modular classroom units. The remaining spaces will be reserved for the school's use. For contractor use, approximately 30 spaces will be available in the high school parking lot to the west of the elementary school site.

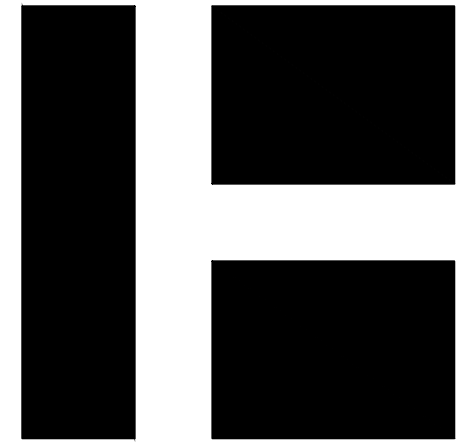
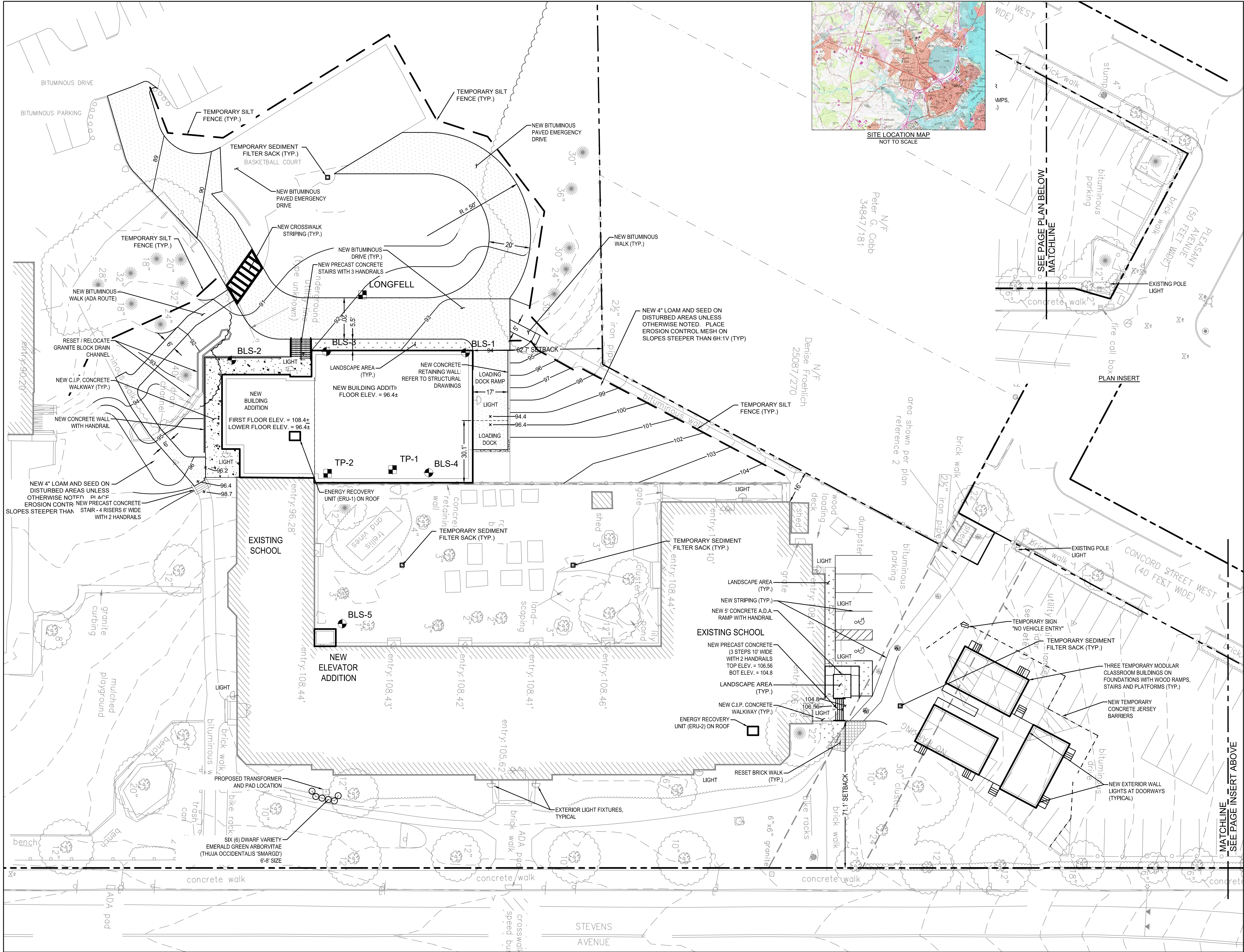
We trust these noted revisions and revised documents address the concerns. Let us know if you need any further documentation.

Thank you very much.

Sincerely,
Harriman

Frank L. Crabtree, P.E., LEED AP BD+C
Associate
fcrabtree@harriman.com

Enclosures: Revised drawing and exhibits



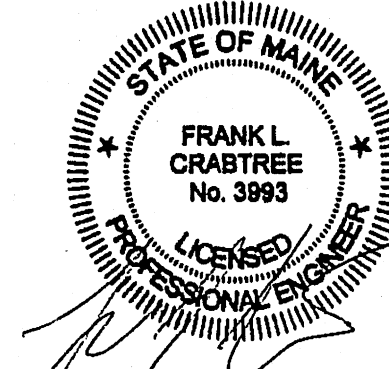
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PORTLAND, MAINE

Harriman Project No. 19150

Key Plan Proj North



PLANNING BOARD

SEPTEMBER 28, 2020

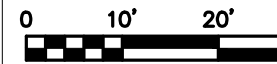
Rev Date Revision Description

02-10-2021 Planning Board Review Comments

Drawing Status

PRELIMINARY
NOT FOR
CONSTRUCTION

Drawing Scales
1" = 20'



PA / PE: FLC

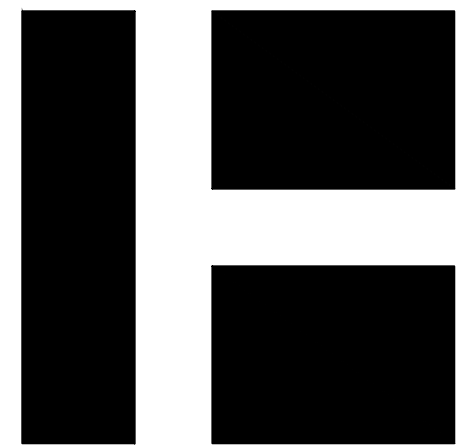
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Drawn By: HAS / BAW

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SITE PLAN

C00-1

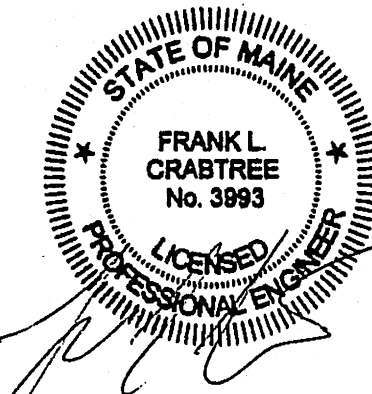


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Rev Date	Revision Description

Drawing Status

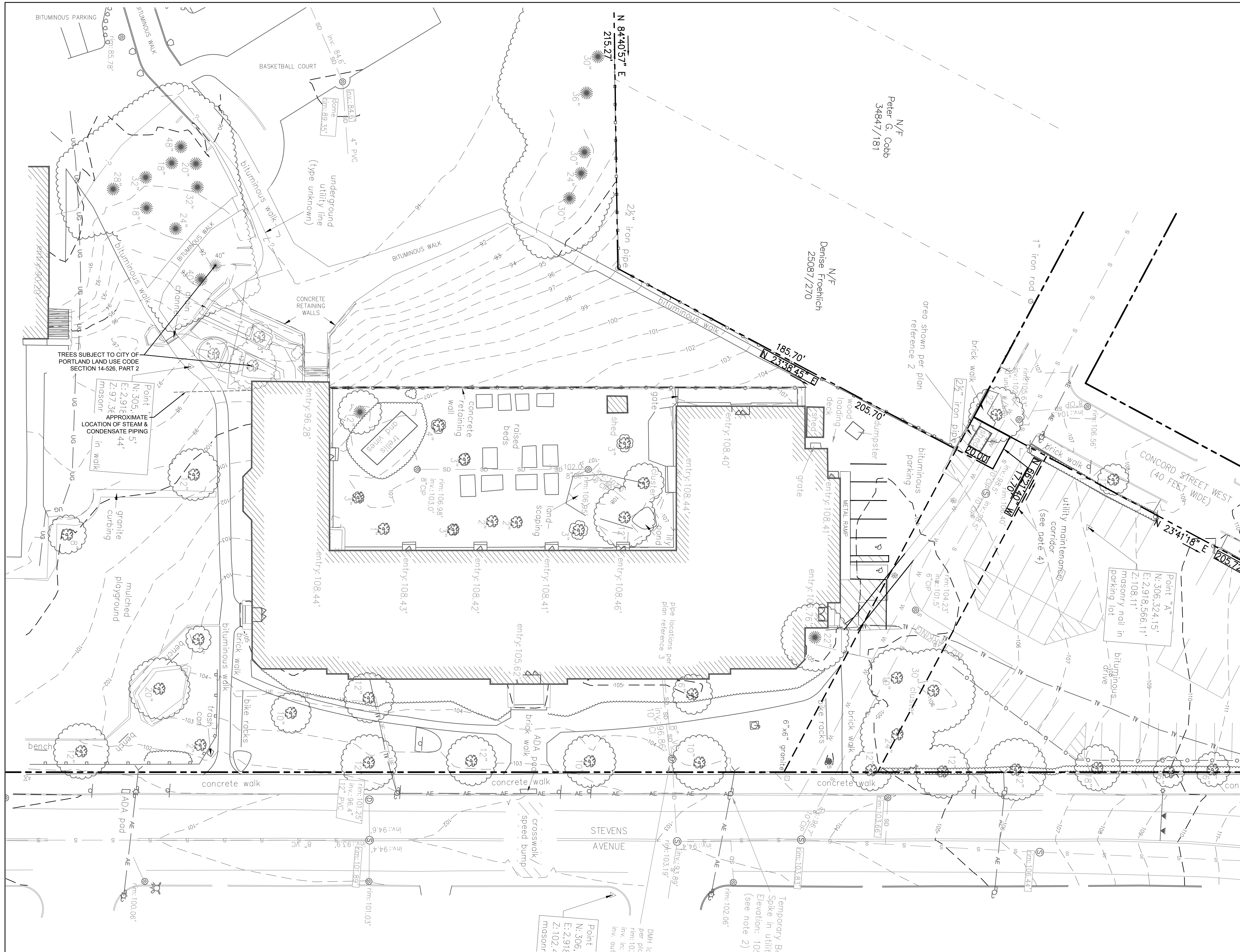
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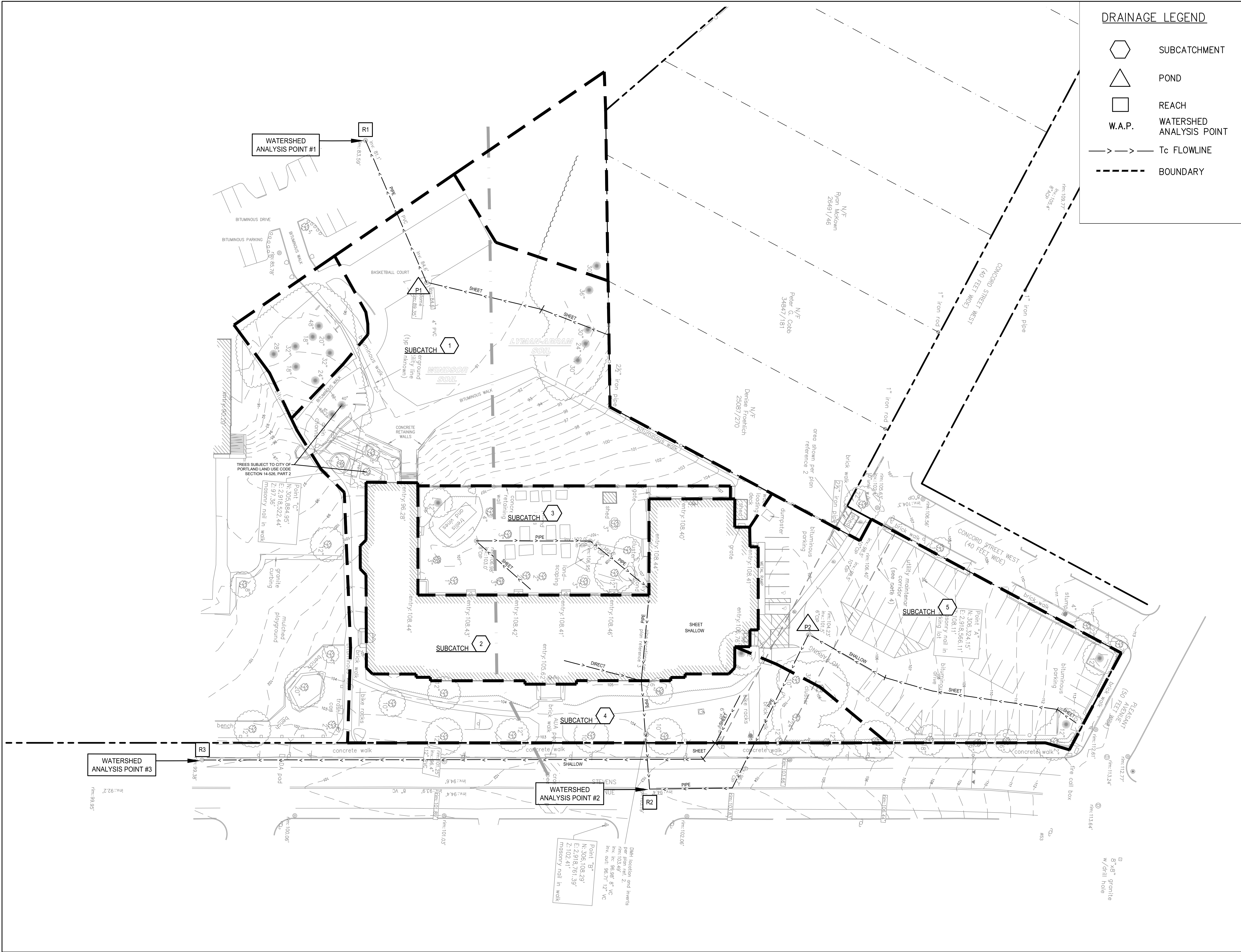
Drawing Scales	0 10' 20' 30'
1" = 20'	

PA / PE:	FLC	© 2020
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EXISTING
SITE CONDITIONS PLAN

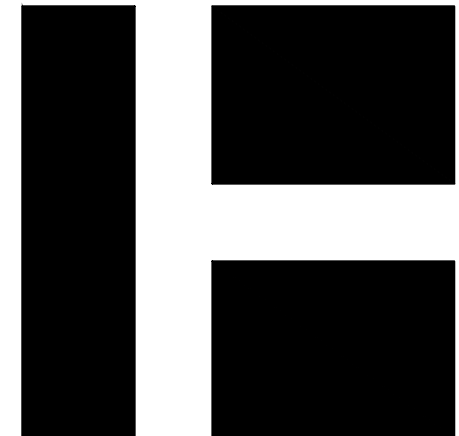
C10-1





DRAINAGE LEGEND

- SUBCATCHMENT
- POND
- REACH
- W.A.P.
- WATERSHED ANALYSIS POINT
- Tc FLOWLINE
- BOUNDARY



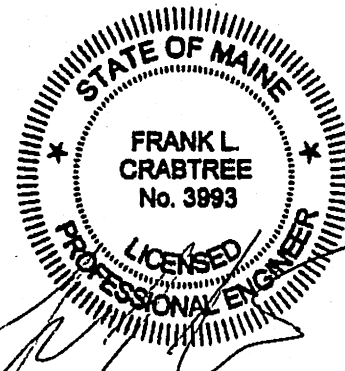
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SEPTEMBER 28, 2020

Rev Date	Revision Description

Drawing Status

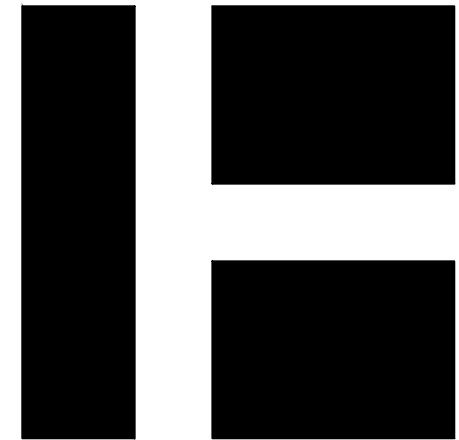
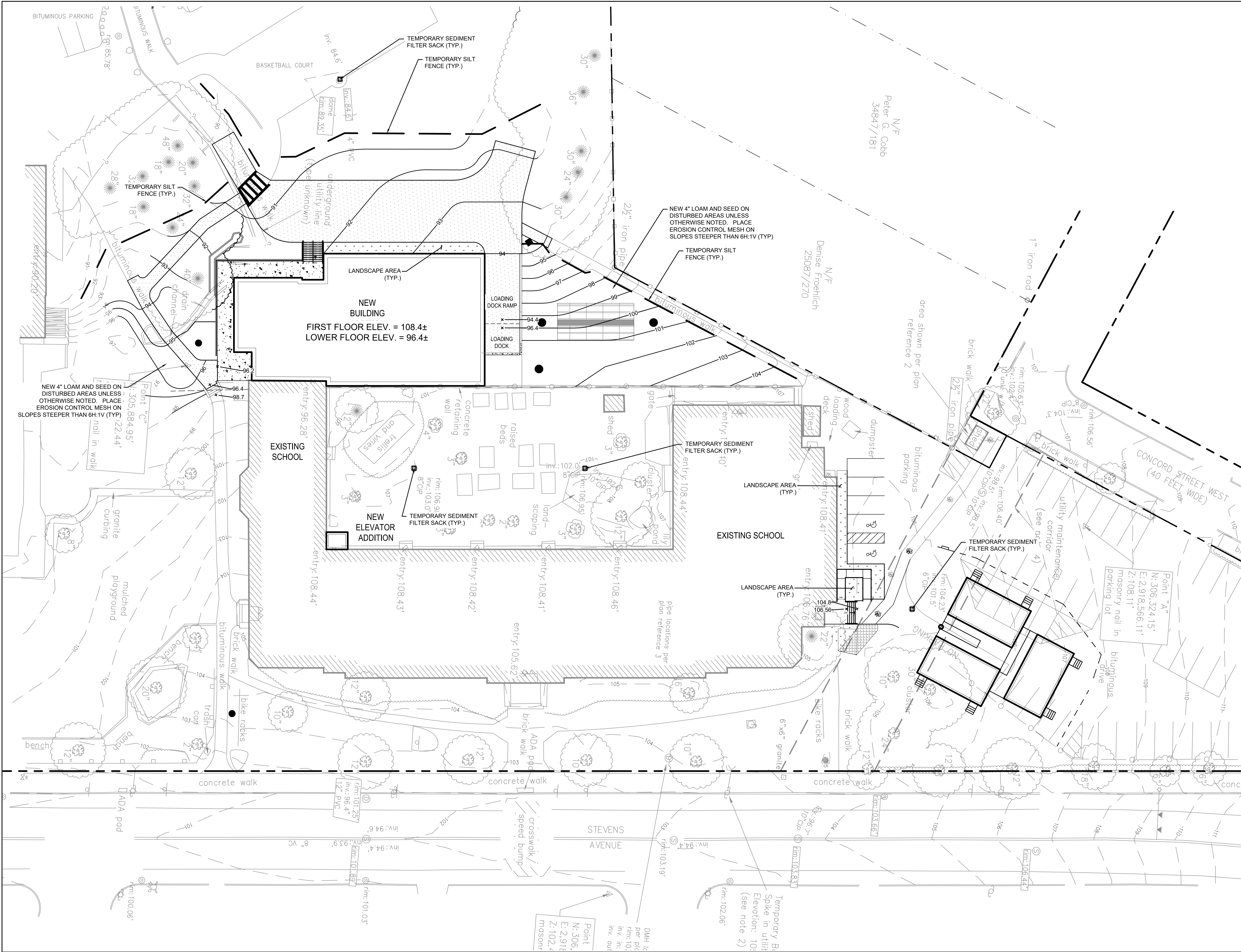
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Drawing Scales	0 15' 30' 45'
1" = 30'	

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PRE-DEVELOPMENT
DRAINAGE PLAN

C11-1



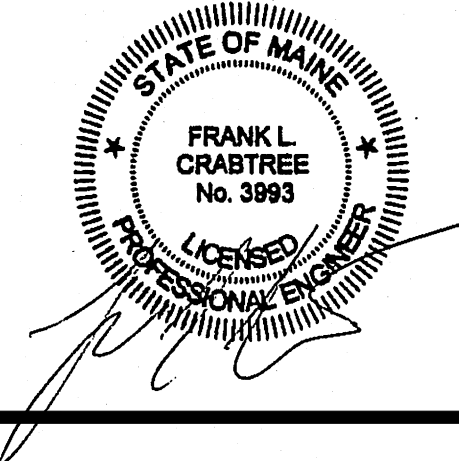
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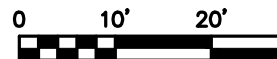
PLANNING BOARD
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Rev Date Revision Description

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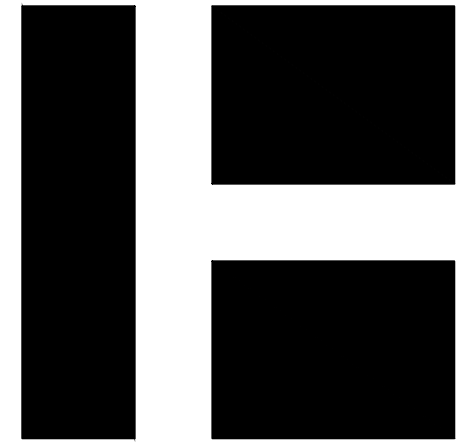
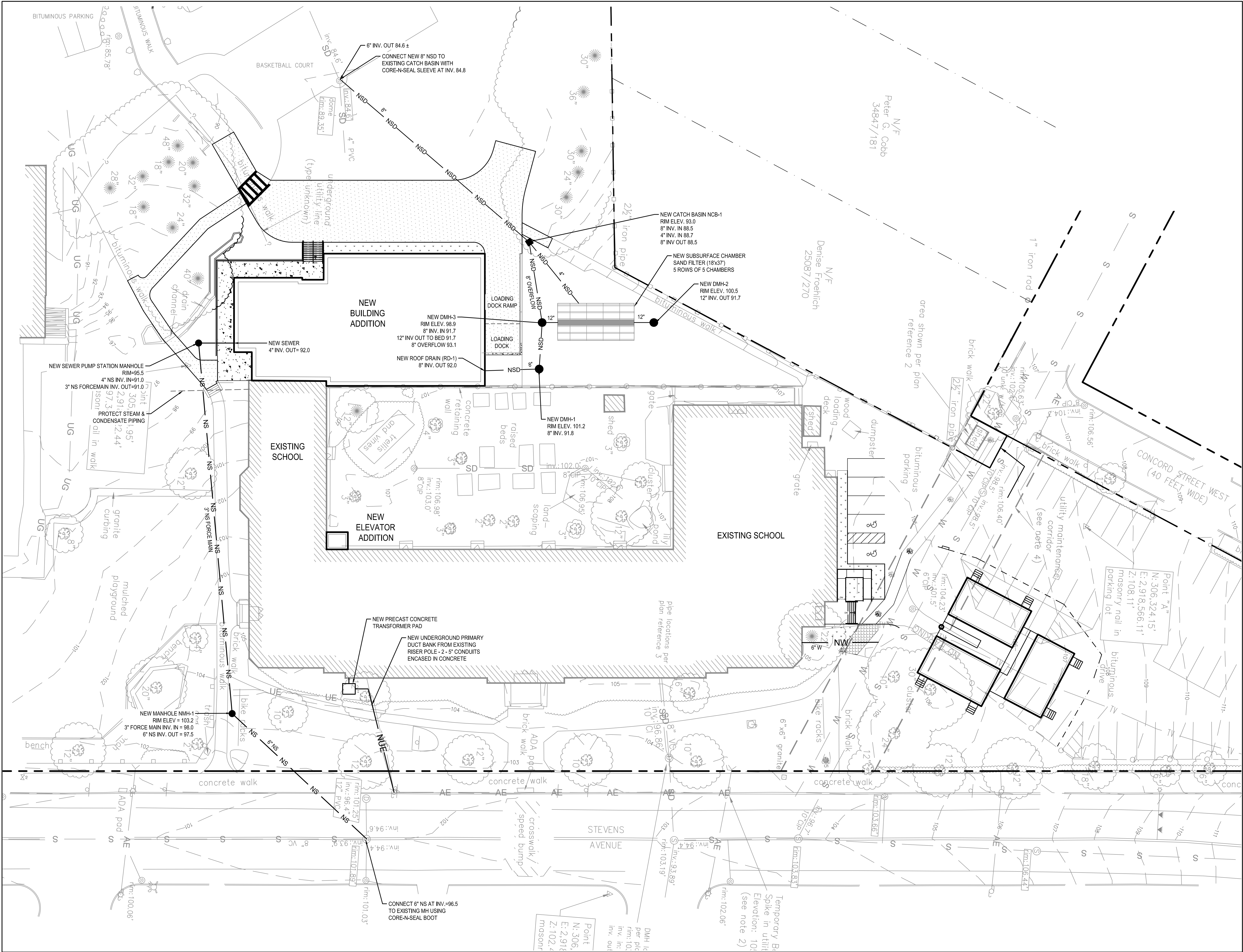
Drawing Scales
1" = 20'



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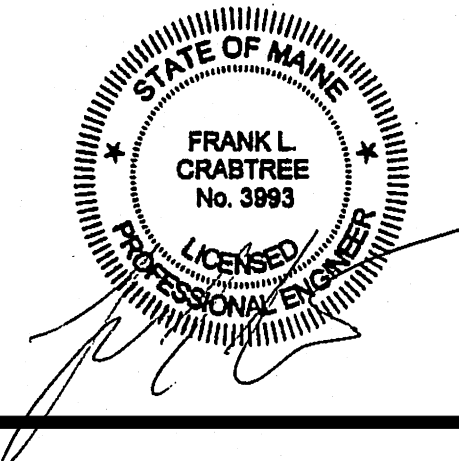
SITE GRADING AND
EROSION CONTROL PLAN

C30-1



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PORTLAND, MAINE	
Harriman Project No.	19150
Key Plan	Proj North



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SEPTEMBER 28, 2020

Rev Date	Revision Description

Drawing Status

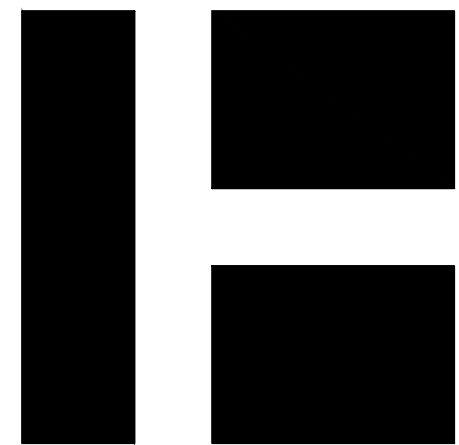
**PRELIMINARY
NOT FOR
CONSTRUCTION**

Drawing Scales	0 10' 20' 30'
1" = 20'	

PA / PE:	FLC	© 2020
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SITE UTILITY PLAN

C40-1



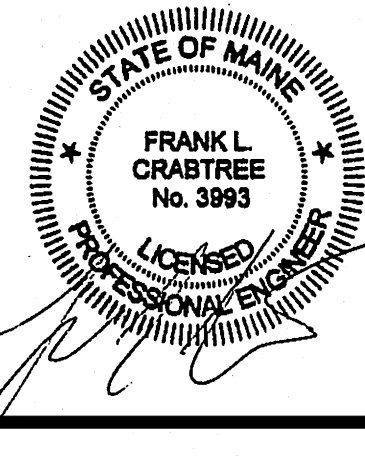
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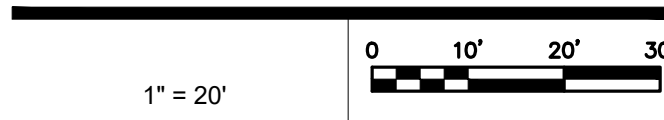


PLANNING BOARD

SEPTEMBER 28, 2020

Rev Date	Revision Description

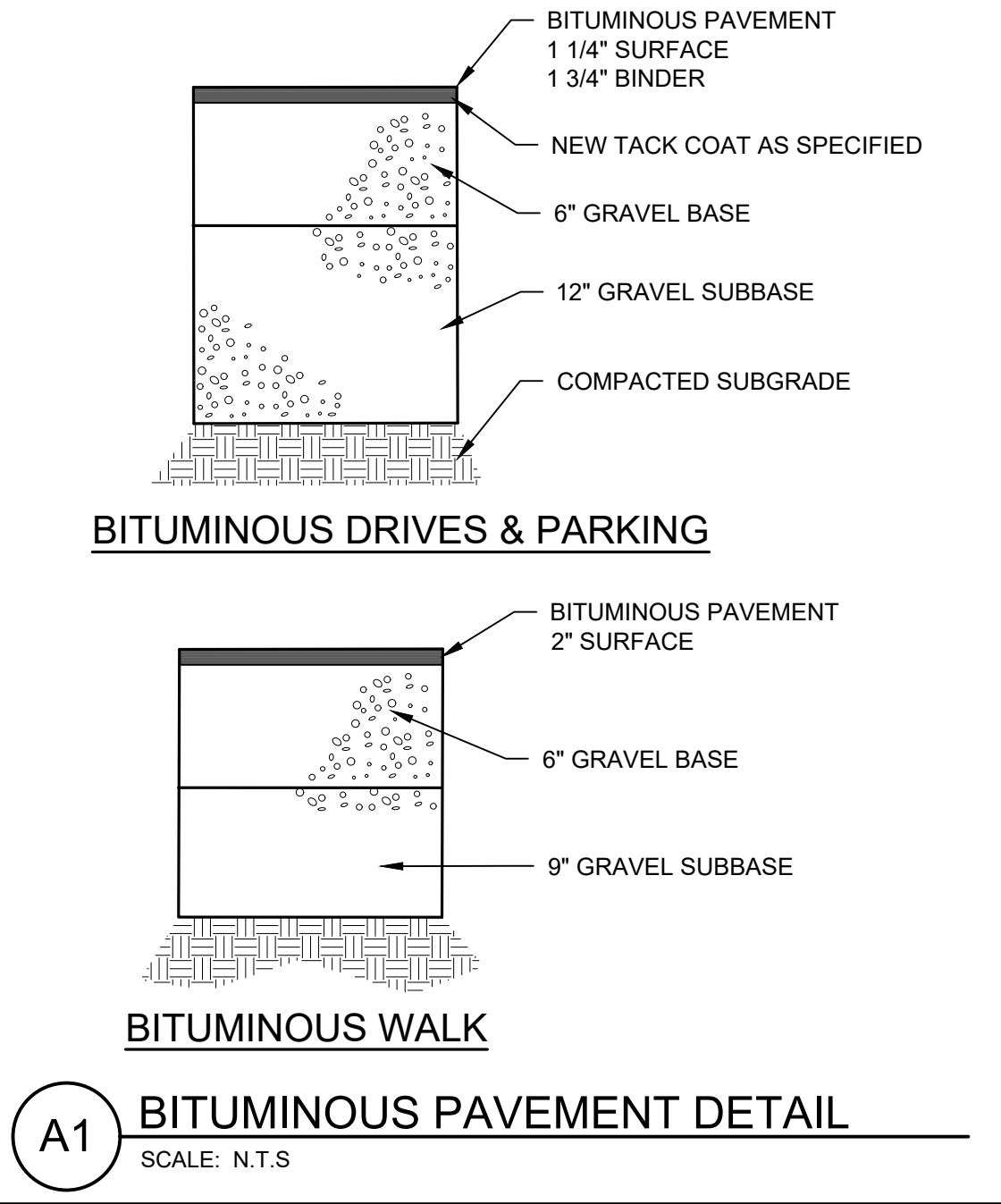
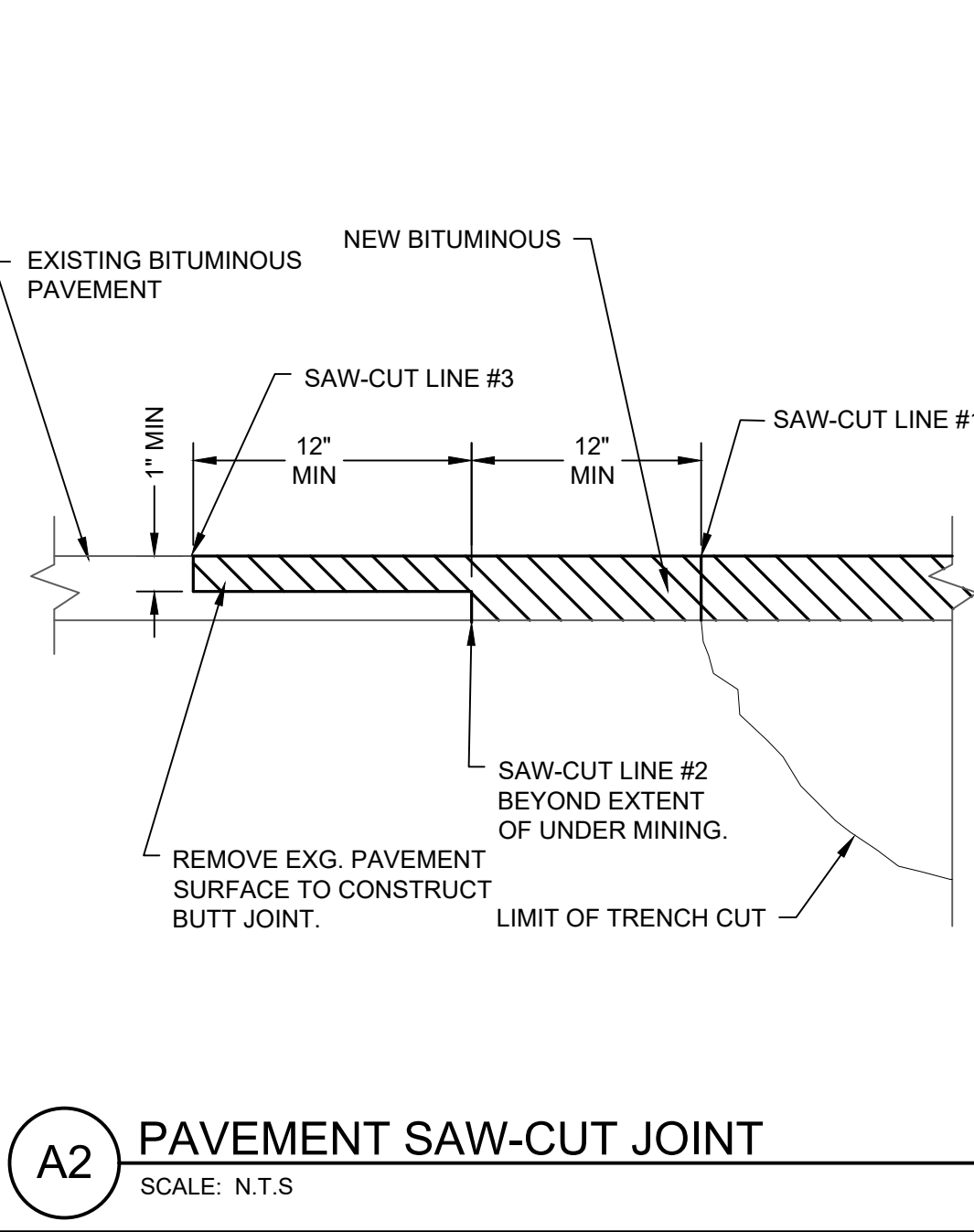
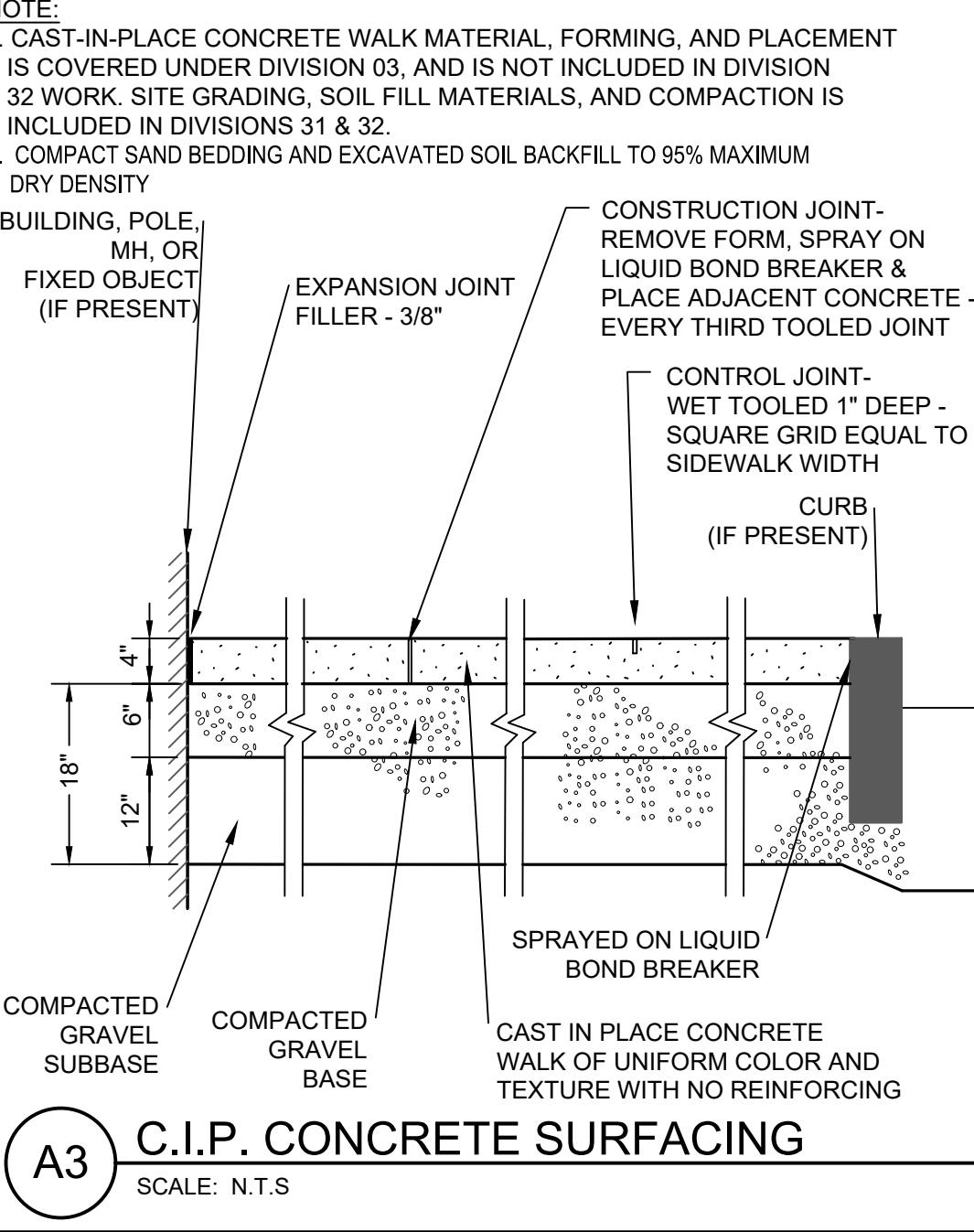
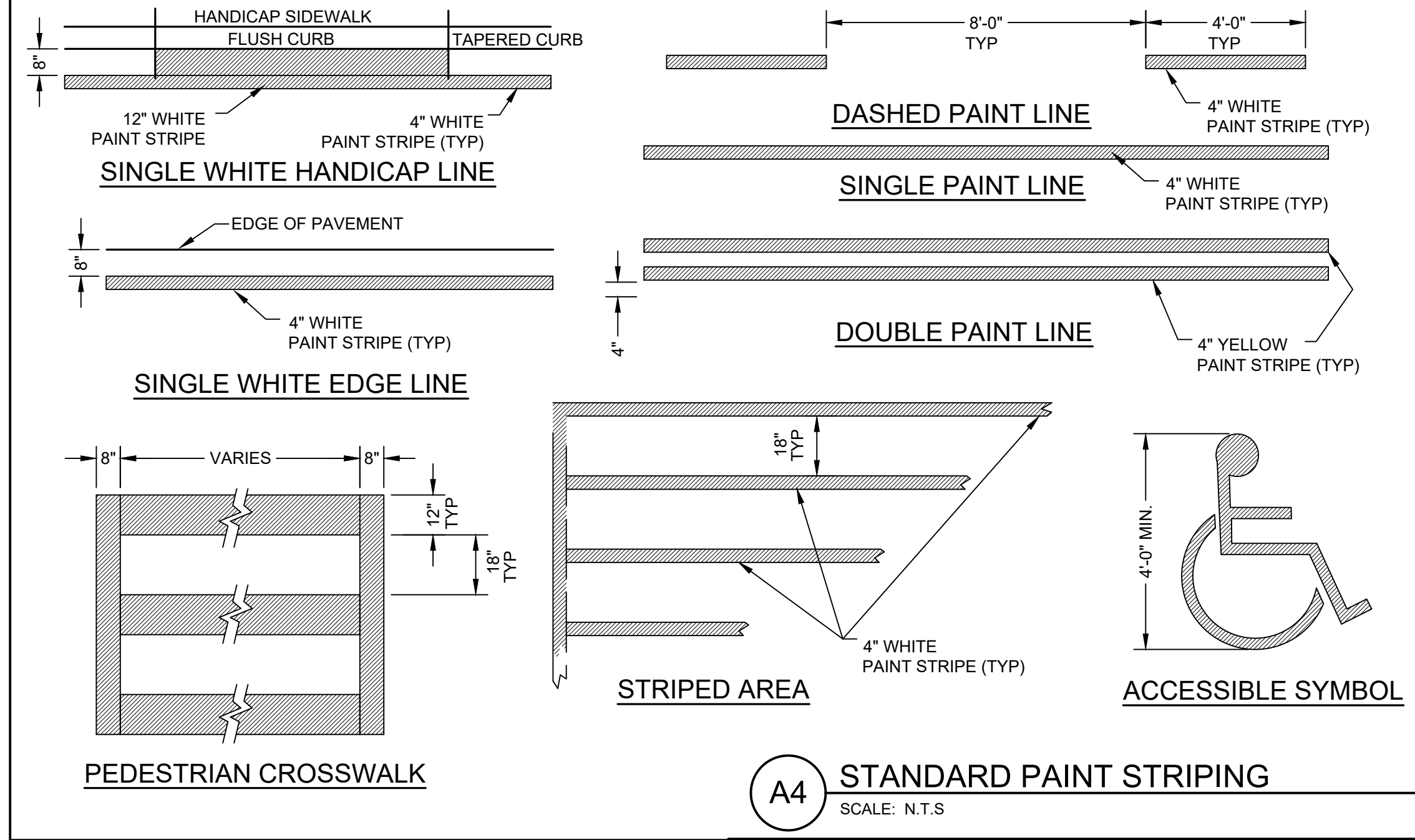
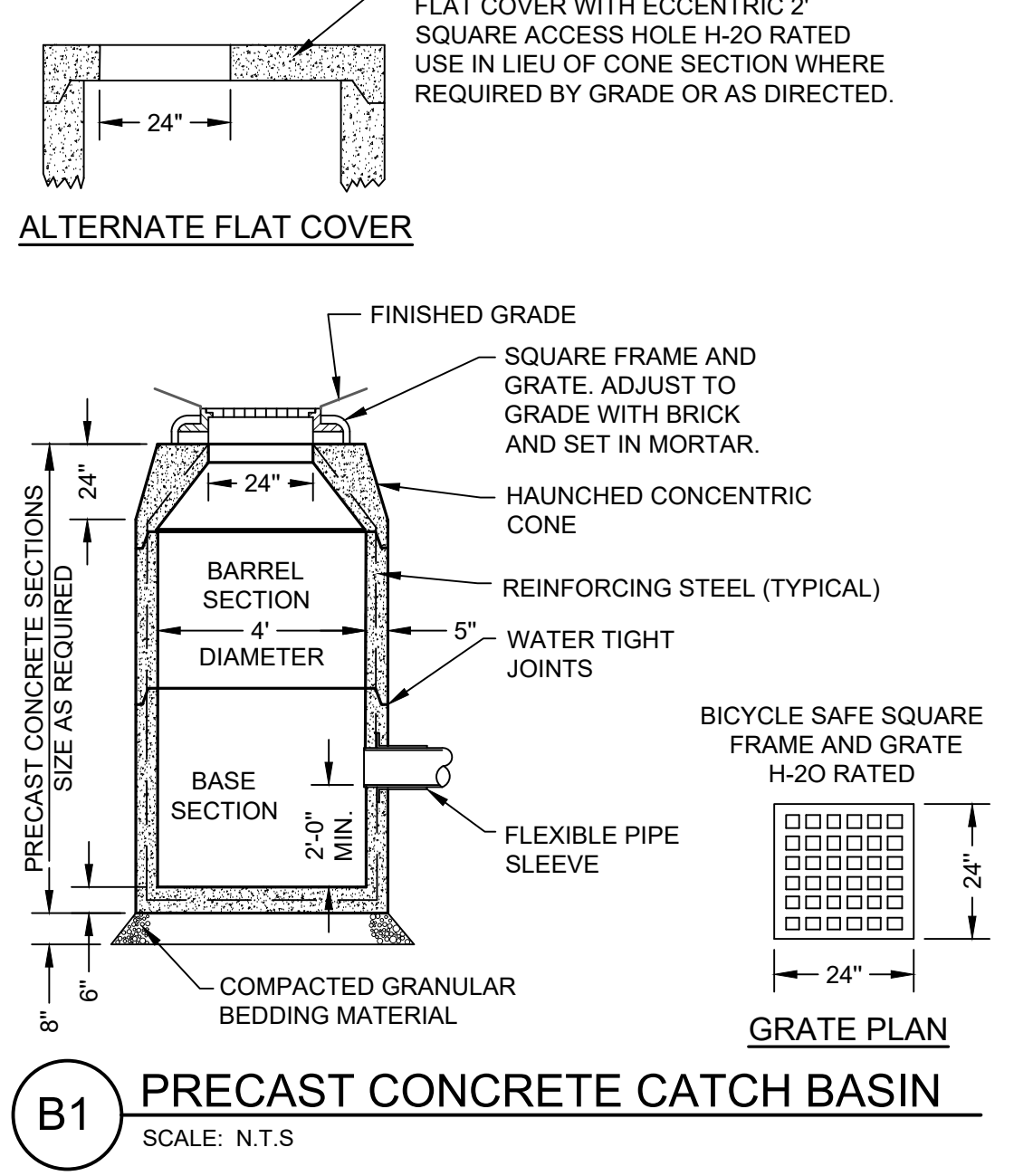
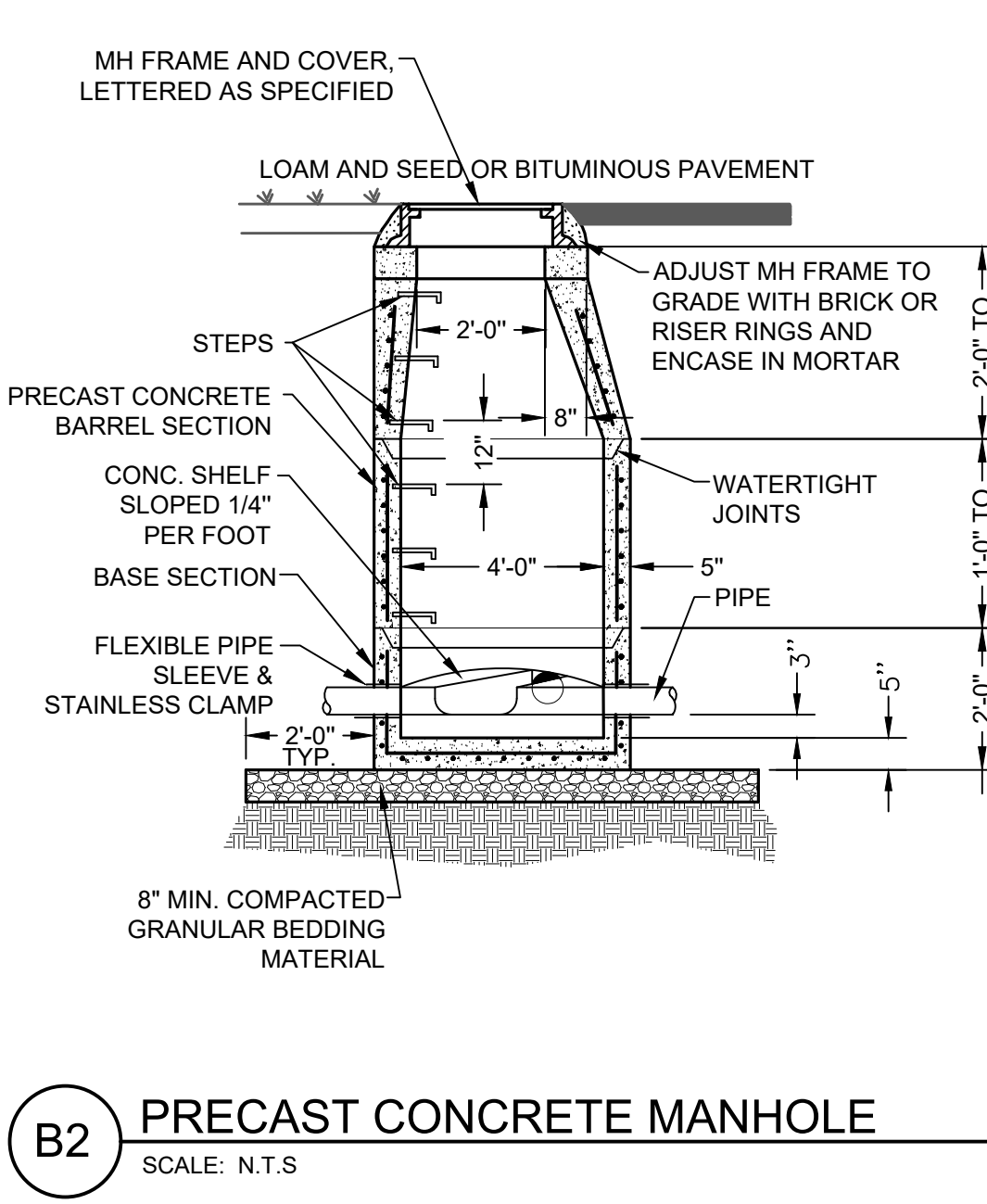
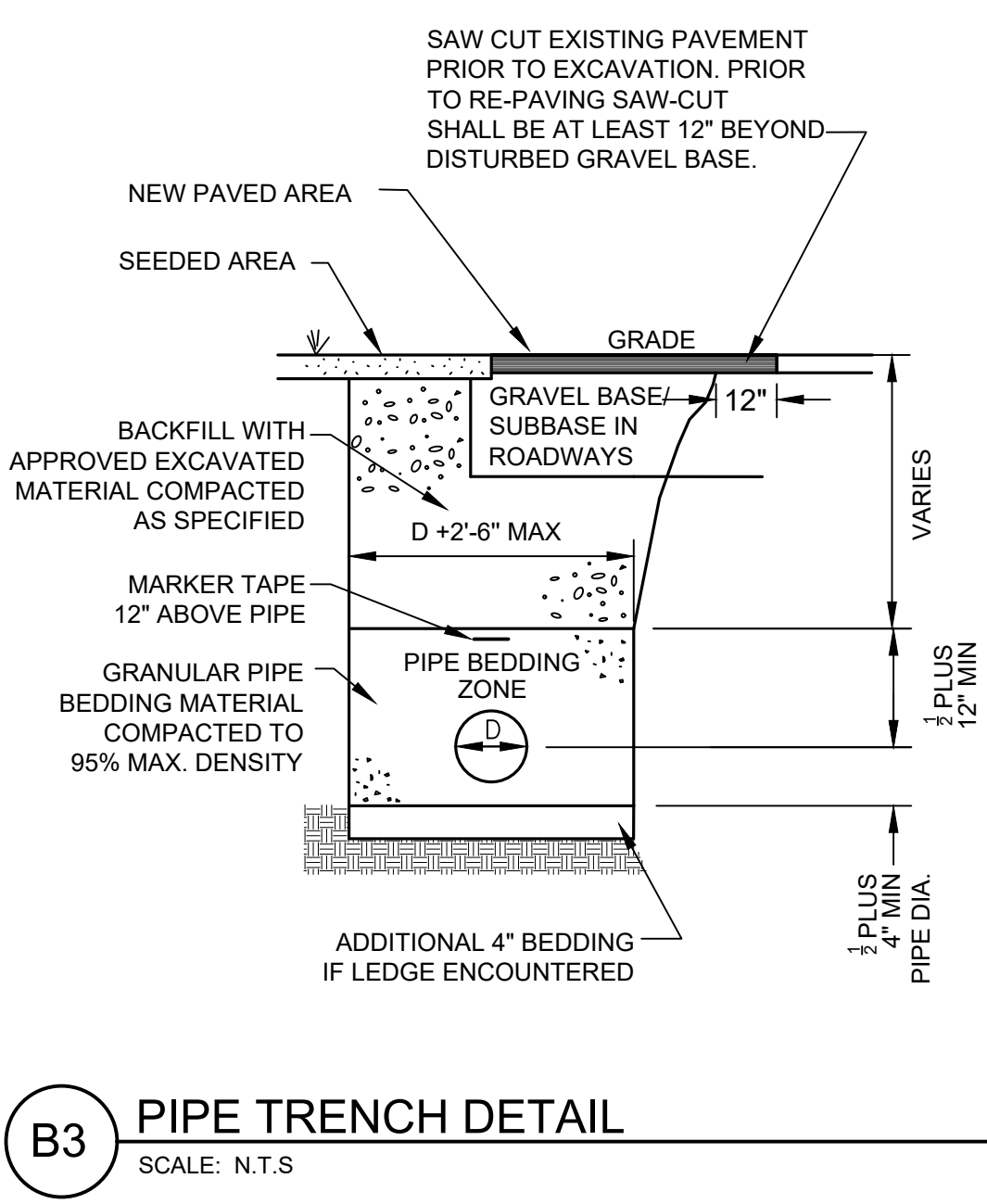
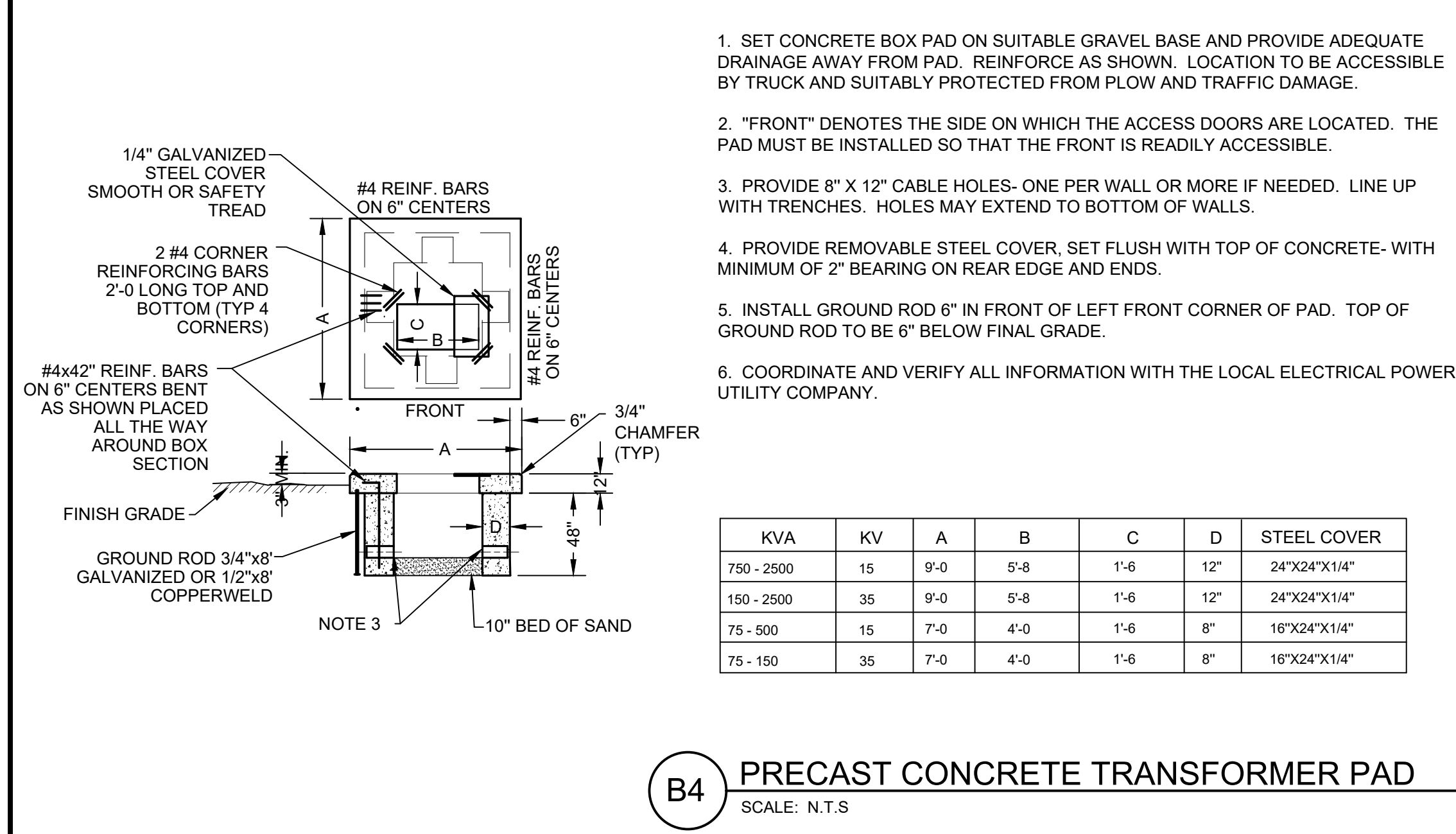
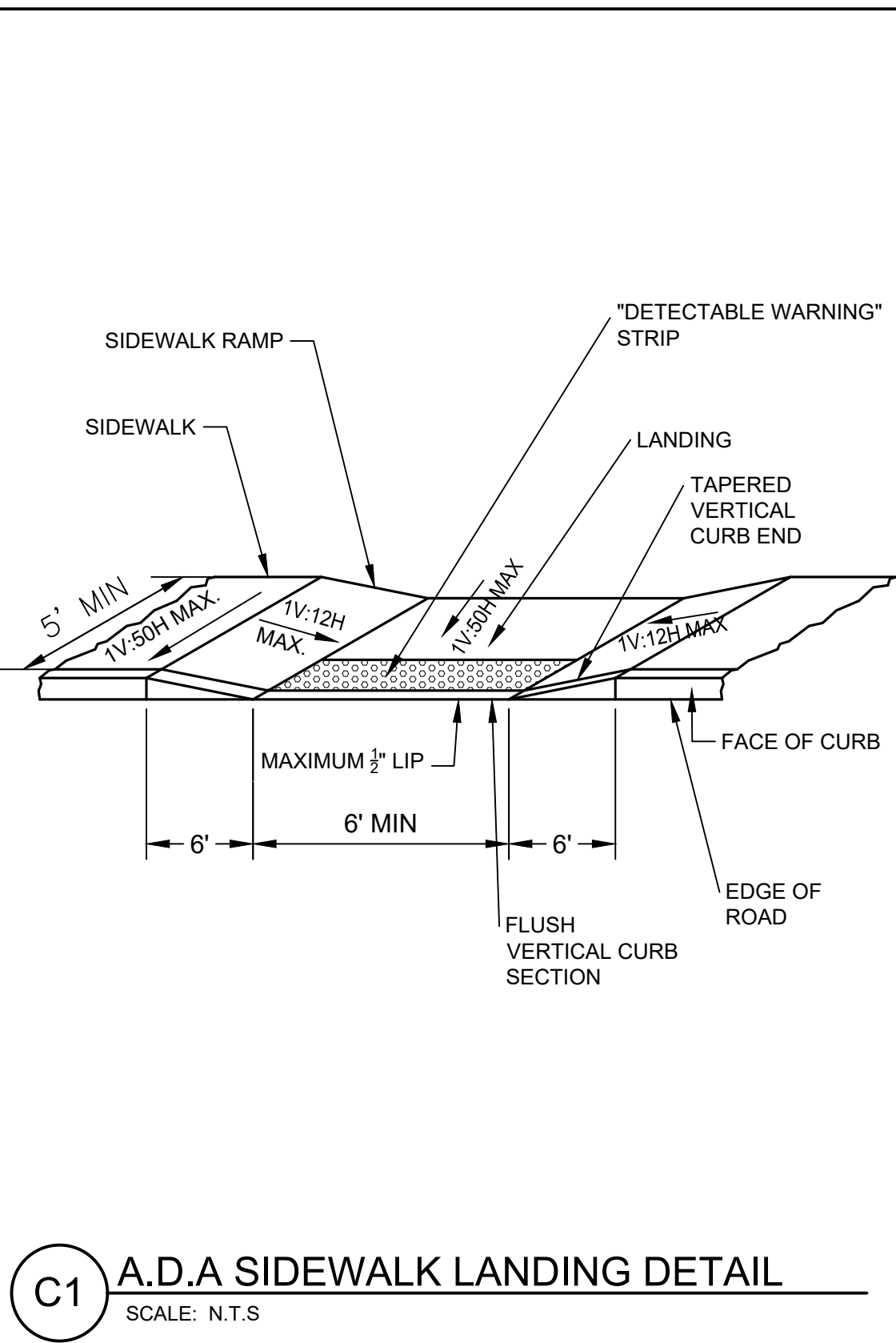
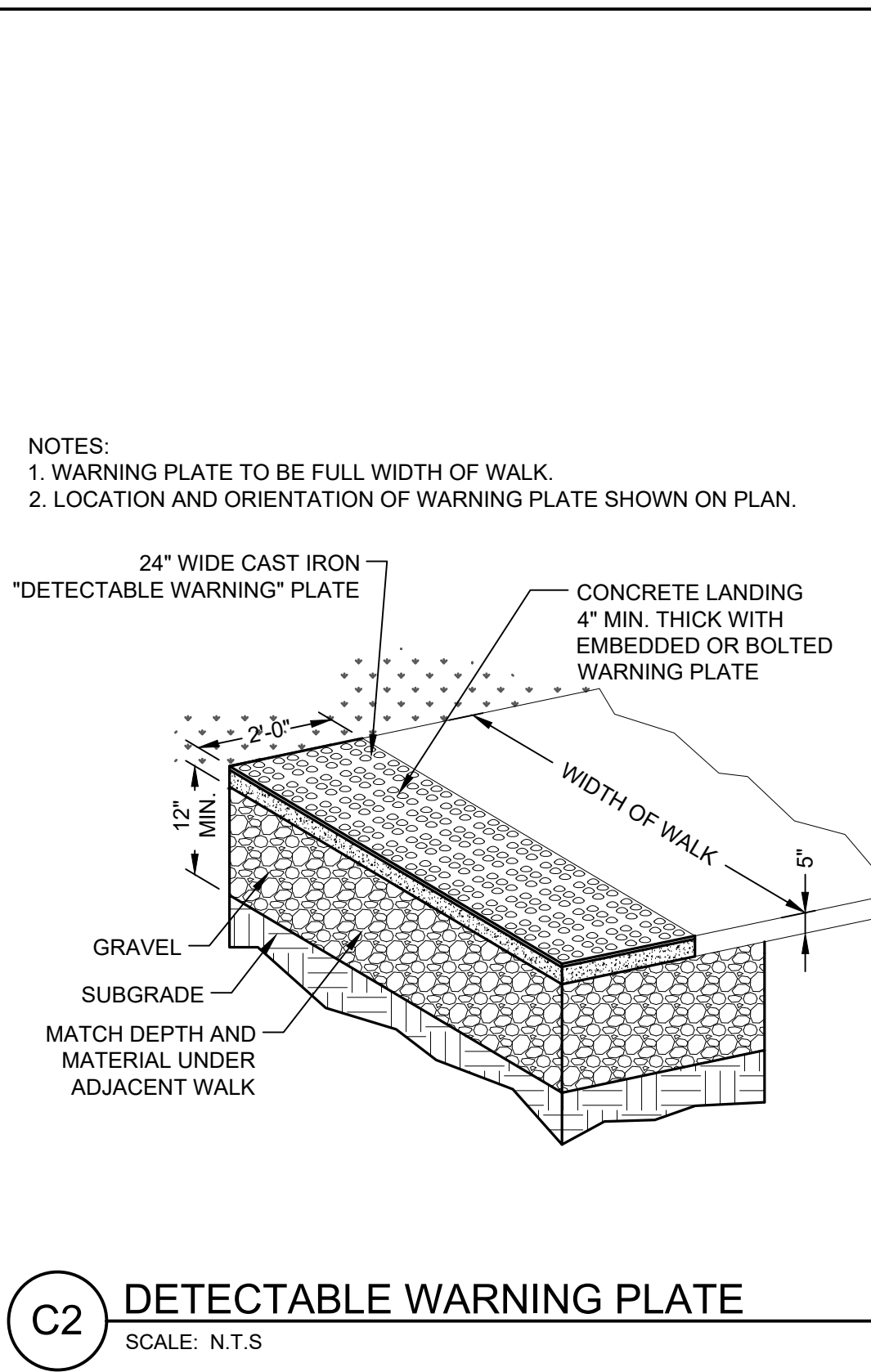
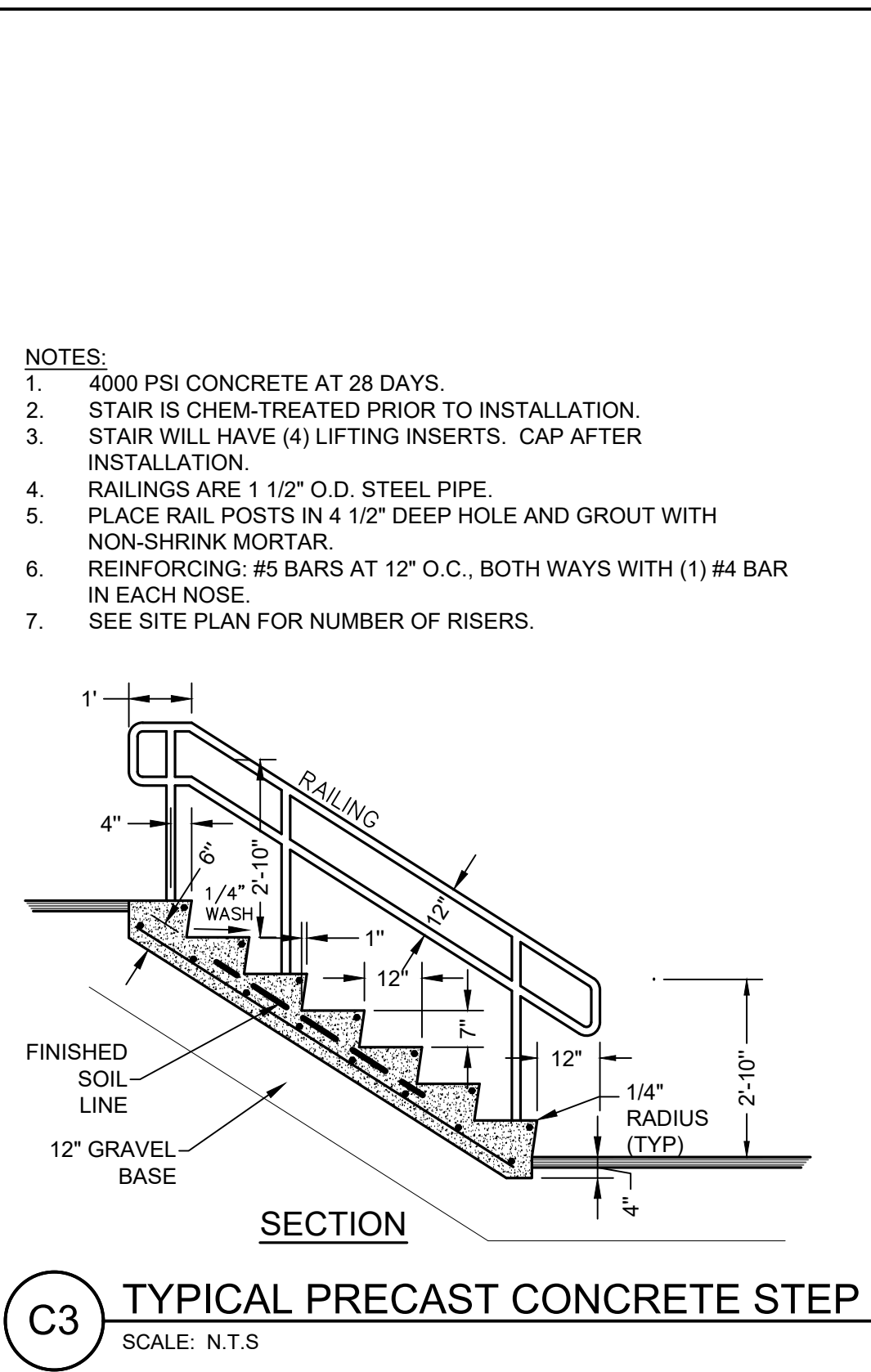
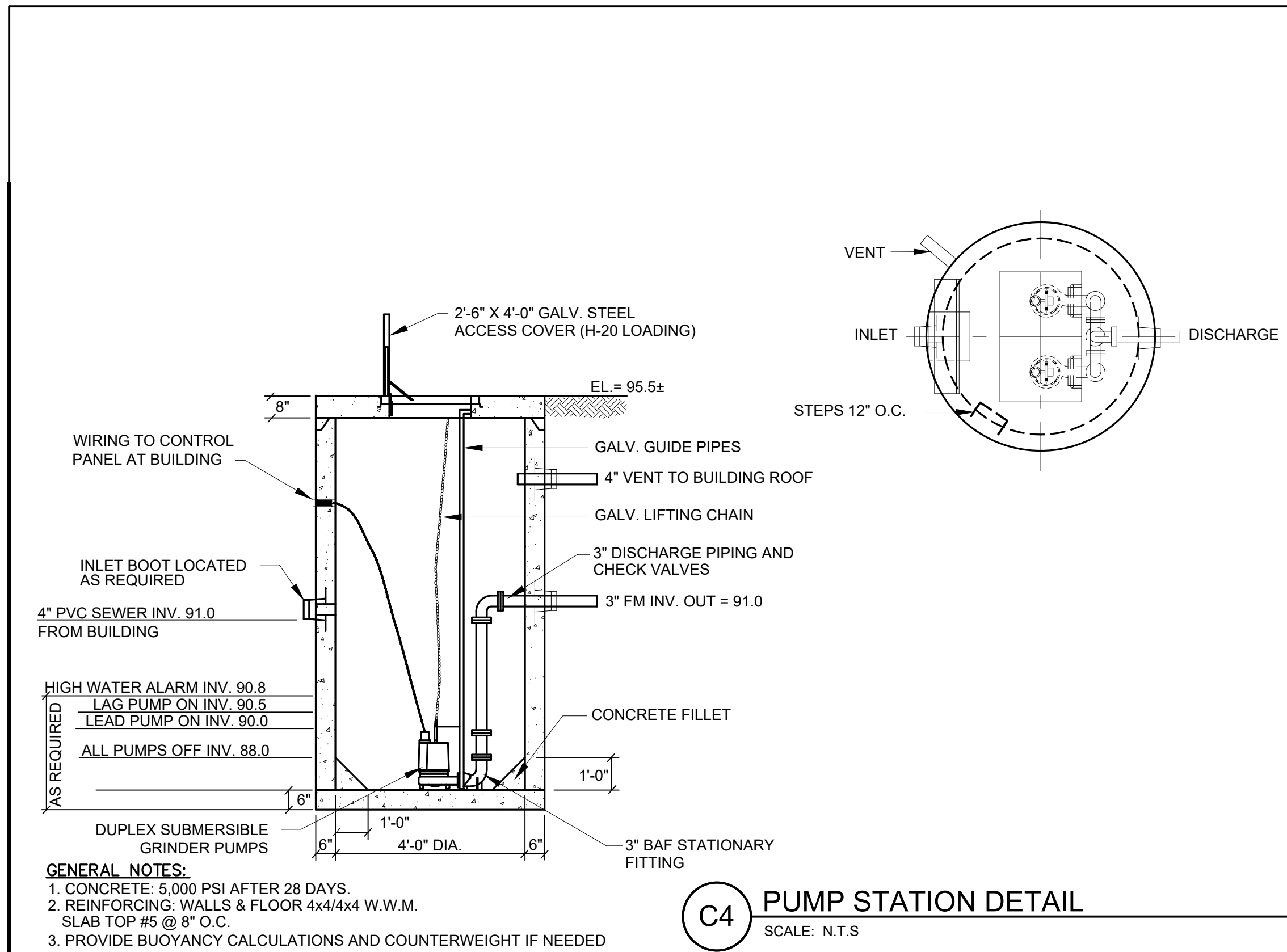
PRELIMINARY
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CONSTRUCTION



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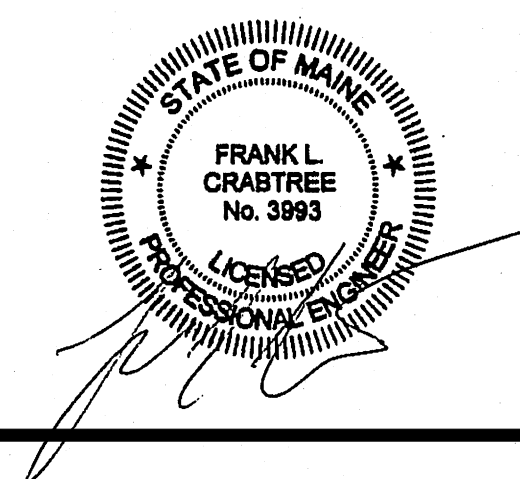
SITE DETAILS

C50-1





PORTLAND, MAINE

Key Plan Proj North

SEPTEMBER 28, 2020

Rev	Date	Description

[illegible]

1" = 20'

A horizontal graphic scale bar with alternating black and white segments. It is marked with '0' at the left end, '10'' in the middle, and '20'' at the right end.

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C50-2



NOTE:

- 1.) PLACE SILT FENCE OR FILTER BERMS ALONG UNIFORMLY SLOPED SURFACE.
- 2.) EROSION CONTROL MIX FILTER BERM MAY BE SUBSTITUTED FOR A SILTFENCE. SEE THE SITE GRADING AND EROSION CONTROL PLAN.



UNDERDRAIN SUBSURFACE SAND FILTER NOTES:

1. BASIN EXCAVATION: THE AREA OF THE BASIN MAY BE EXCAVATED IN PREPARATION OF THE INSTALLATION OF THE UNDERDRAIN AND CAN BE USED FOR A SEDIMENT TRAP FROM THE SITE DURING CONSTRUCTION. AFTER EXCAVATION OF THE BASIN, THE OUTLET STRUCTURE AND PIPING SYSTEM MUST BE INSTALLED AT THE APPROPRIATE ELEVATION AND PROTECTED WITH A SEDIMENT BARRIER. IF THE BASIN IS TO BE USED AS A SEDIMENT TRAP, THE SIDES OF THE EMBANKMENTS MUST BE MULCHED AND MAINTAINED TO PREVENT EROSION.
2. COMPACTION OF SOIL FILTER: FILTER SAND AND UNDERDRAIN BEDDING MATERIAL MUST BE ONLY COMPACTED LIGHTLY BY INSTALLATION EQUIPMENT. THE BED SHOULD BE INSTALLED IN AT LEAST 2 LIFTS TO PREVENT POCKETS OF LOOSE MATERIAL.
3. OUTLET DISCHARGE: OUTFLOW OF THE FILTER BASIN UNDERDRAIN CAN BE CONTROLLED BY A VALVE (2" PLASTIC BALL VALVE, TYPE 346, WITH A BALL VALVE HANDLE EXTENSION, TYPE 615, WITH A THREE-PIECE VALVE BOX INSTALLED OVER THE VALVE). UPON COMPLETION OF THE INSTALLATION OF THE SOIL FILTER MEDIA, THE CONTRACTOR SHALL FLOOD THE BASIN TO THE DESIGN ELEVATION WITH CLEAN WATER AND ADJUST THE OUTFLOW TO OBTAIN A 24 HOUR TO 48 HOUR RELEASE TIME.
4. CONSTRUCTION SEQUENCE: EROSION AND SEDIMENTATION FROM UNSTABLE SUBCATCHMENTS IS THE MOST COMMON REASON FOR FILTER FAILURE. NOT HEEDING THE CONSTRUCTION SEQUENCING CRITERIA IS LIKELY TO RESULT IN THE NEED TO REPLACE THE SOIL FILTER. THE FILTER SAND MUST NOT BE INSTALLED UNTIL THE AREA THAT DRAINS TO THE FILTER HAS BEEN PERMANENTLY STABILIZED WITH PAVEMENT OR OTHER STRUCTURE, 90% VEGETATION COVER, OR OTHER PERMANENT STABILIZATION. OTHERWISE, THE RUNOFF FROM THE CONTRIBUTING DRAINAGE AREA MUST BE DIVERTED AROUND THE FILTER UNTIL STABILIZATION IS COMPLETED UNLESS THE DEPARTMENT HAS DETERMINED THAT SUFFICIENT MEASURES ARE BEING TAKEN TO PREVENT EROSION OF MATERIAL FROM THE UNSTABLE CATCHMENT AREA AND DEPOSITION ON THE FILTER.
5. TESTING AND SUBMITTALS: THE CONTRACTOR SHALL IDENTIFY THE LOCATION OF THE SOURCE OF EACH COMPONENT OF THE FILTER MATERIAL. ALL RESULTS OF FIELD AND LABORATORY TESTING SHALL BE SUBMITTED TO THE PROJECT ENGINEER FOR CONFIRMATION. THE CONTRACTOR SHALL:

A. SUBMIT SAMPLES OF EACH THE FILTER SAND AND SAMPLES OF THE UNDERDRAIN BEDDING MATERIAL. SAMPLES MUST BE A COMPOSITE OF TEN DIFFERENT LOCATIONS (GRABS) FROM 12" INTO THE STOCKPILE OR PIT. SAMPLE SIZE REQUIRED WILL BE DETERMINED BY THE TESTING LABORATORY.

B. PERFORM A SIEVE ANALYSIS CONFORMING TO ASTM C136 (STANDARD TEST METHOD FOR SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES; 1996A) ON EACH MATERIAL.

THE FILTER SAND SHALL BE TESTED AT A SOIL TESTING LAB AND:

- MEET ALL OF THE BELOW GRADATION EXCEPT THAT IT SHALL HAVE BETWEEN 8% AND 10% PASSING THE #200 SIEVE*
- HAVE MINIMAL CLAY CONTENT OF LESS THAN 2%.
- BE FREE OF STONES, STUMPS, ROOTS OR OTHER OBJECTS GREATER THAN 2".

COARSE FILTER
SAND LAYER
(MEDOT #703.01)

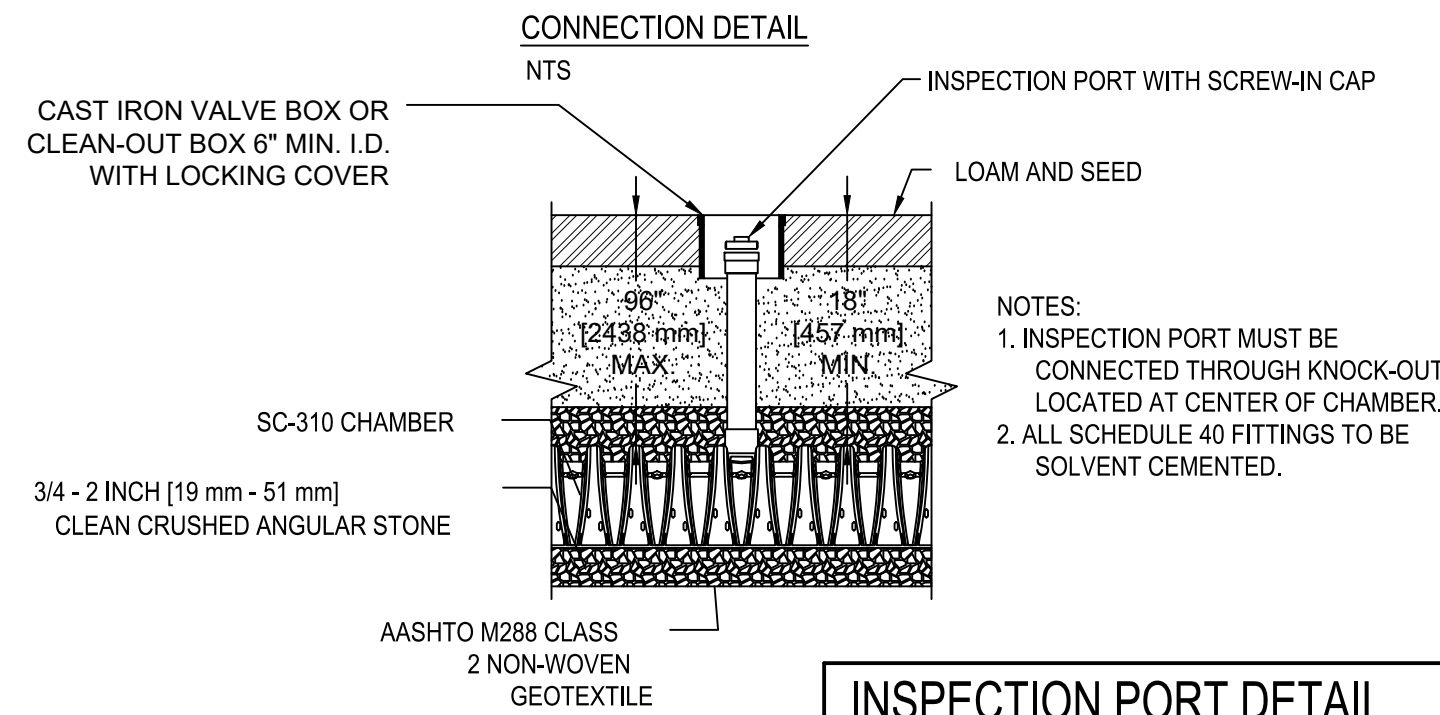
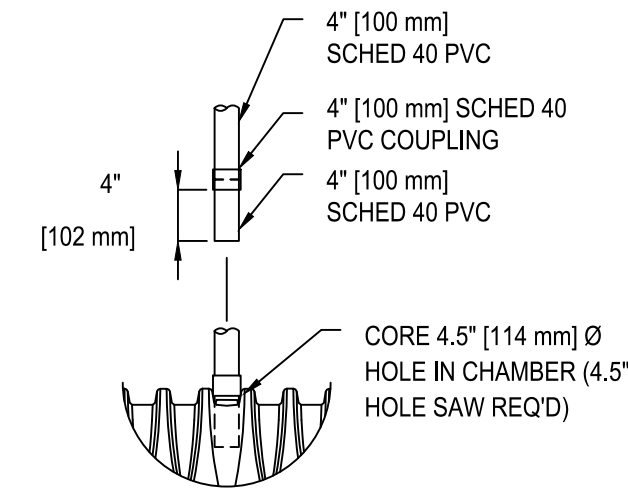
SIEVE SIZE	% BY WEIGHT
3/8"	100
#4	95-100
#8	80-100
#16	50-85
#30	25-60
#50	10-30
#100	2-10
#200	0-5* (8 TO 10)

COARSE GRAVEL
SPECIFICATIONS FOR UNDERDRAINS (MEDOT #703.22)

SIEVE SIZE	% PASSING BY WEIGHT
UNDERDRAIN TYPE B	
1"	90-100
3/4"	75-100
#4	50-100
#20	15-80
#50	0-15
#200	0-5

CONSTRUCTION OVERSIGHT:

1. FIELD OBSERVATION OF THE FILTER BASIN SHALL BE PROVIDED FOR EACH PHASE OF CONSTRUCTION BY THE DESIGN ENGINEER.
AT A MINIMUM, CONTRACTOR SHALL NOTIFY ARCHITECT ONE WEEK PRIOR TO THE FOLLOWING:
 - AFTER PRELIMINARY CONSTRUCTION OF THE FILTER GRADES AND ONCE THE UNDERDRAIN PIPES ARE INSTALLED BUT NOT BACKFILLED;
 - AFTER THE DRAINAGE LAYER IS CONSTRUCTED AND PRIOR TO THE INSTALLATION OF THE FILTER SAND;
 - AFTER THE FILTER SAND HAS BEEN PLACED AND CHAMBERS ARE BEING INSTALLED;
 - ALL MATERIAL USED FOR THE CONSTRUCTION OF THE FILTER BASIN WILL BE APPROVED BY THE DESIGN ENGINEER AFTER TESTS BY A CERTIFIED LABORATORY SHOW THAT THEY ARE PASSING DEP SPECIFICATIONS SHOWN ON THIS SHEET.
2. CHAMBER MANUFACTURER'S REPRESENTATIVE SHALL INSPECT THE CHAMBER INSTALLATION AT THE FOLLOWING TIMES:
 - A. DURING INSTALLATION OF CHAMBERS.
PARTICULARLY OBSERVING THE ISOLATOR ROW.
 - B. FOLLOWING COMPLETION OF SYSTEM INSTALLATION AND BACK FILL.
 - C. FOLLOWING STABILIZATION OF GROUND SURFACE AREAS DRAINING INTO THE CHAMBERS.
3. MAINTENANCE: PROVIDE THE MANUFACTURER'S REPRESENTATIVE FOR ONE YEAR OF MAINTENANCE FROM THE DATE OF SUBSTANTIAL COMPLETION.



UNDERDRAIN SUBSURFACE SAND FILTER NOTES

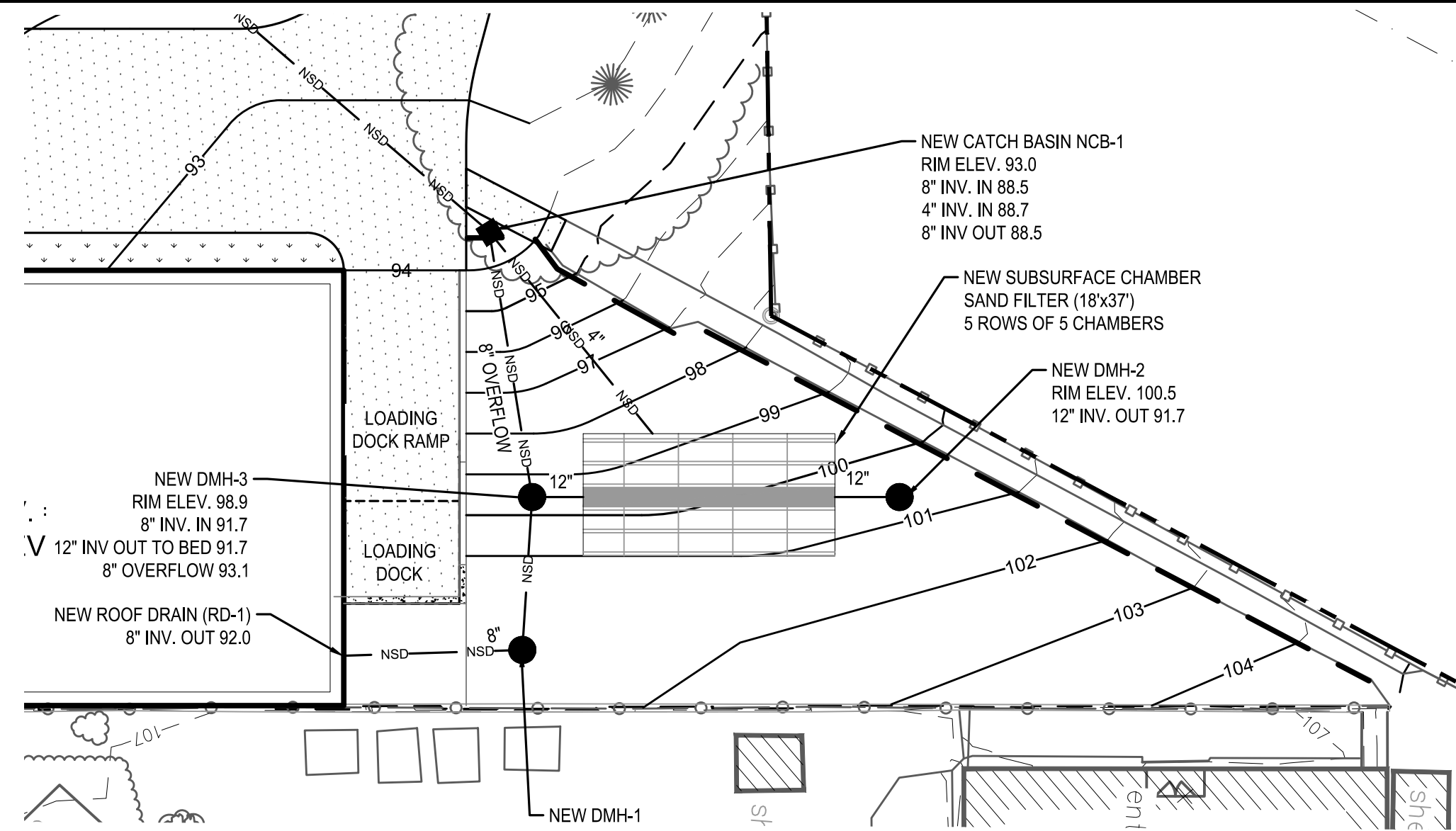
NOT TO SCALE

C2

INSPECTION PORT DETAIL

NOT TO SCALE

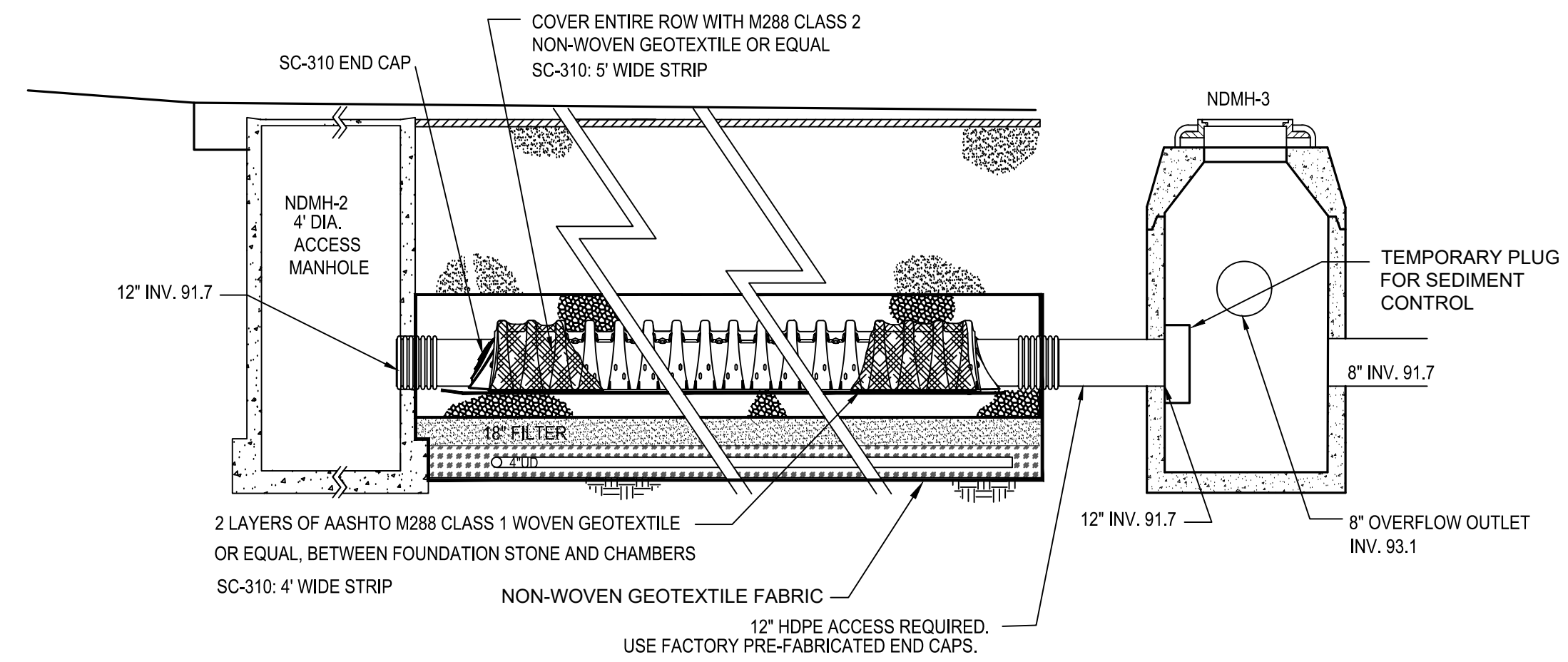
C1



UNDERDRAIN SUBSURFACE SAND FILTER PLAN

SCALE: 1"=20'

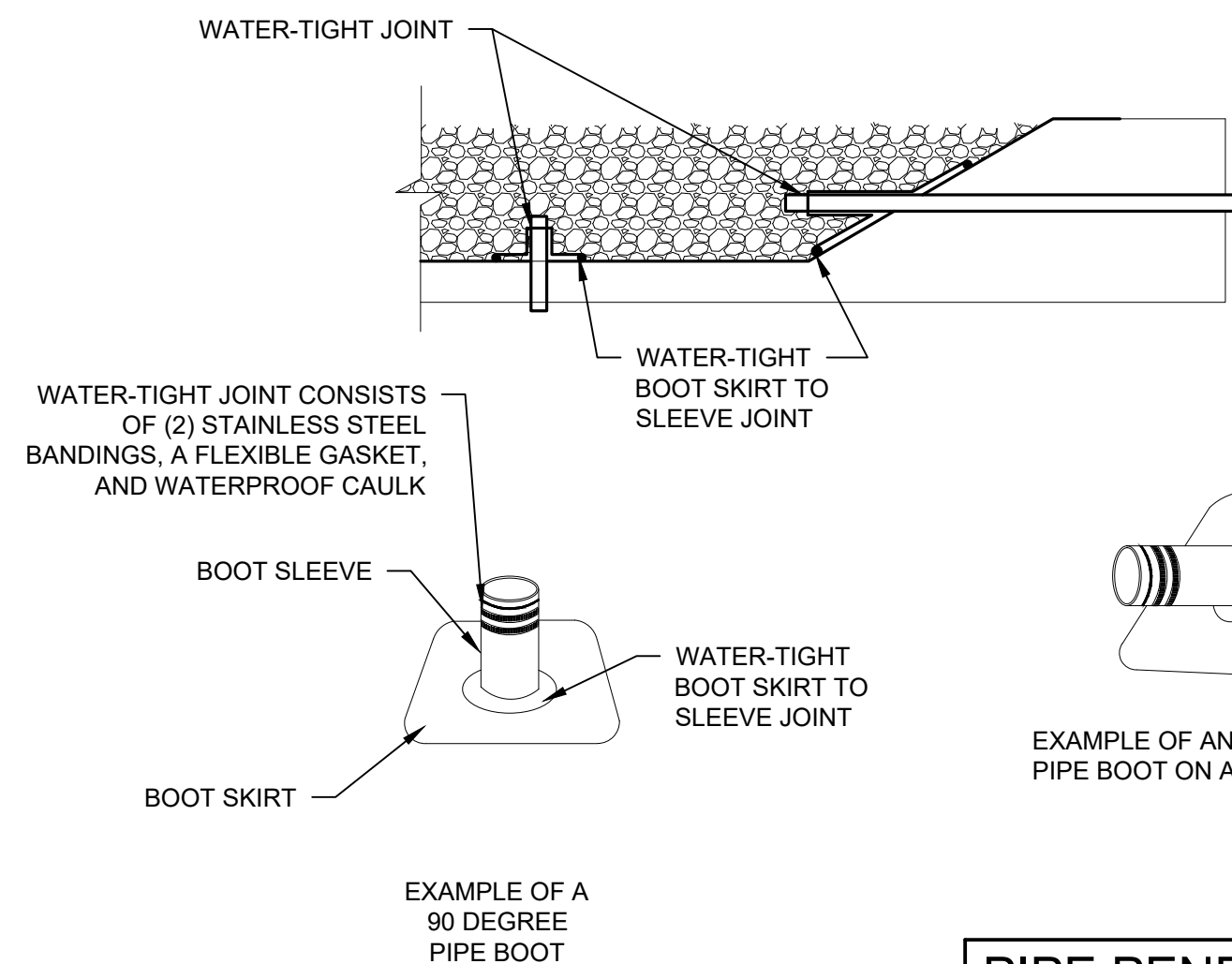
B3



ISOLATOR ROWS DETAIL

NOT TO SCALE

B1



NOTE: CONSIDERATION MUST BE GIVEN DURING DESIGN TO ENSURE WORKABLE SPACE ON ALL SIDES OF BOOT TO ALLOW FOR SOUND JOINTS TO BE CREATED

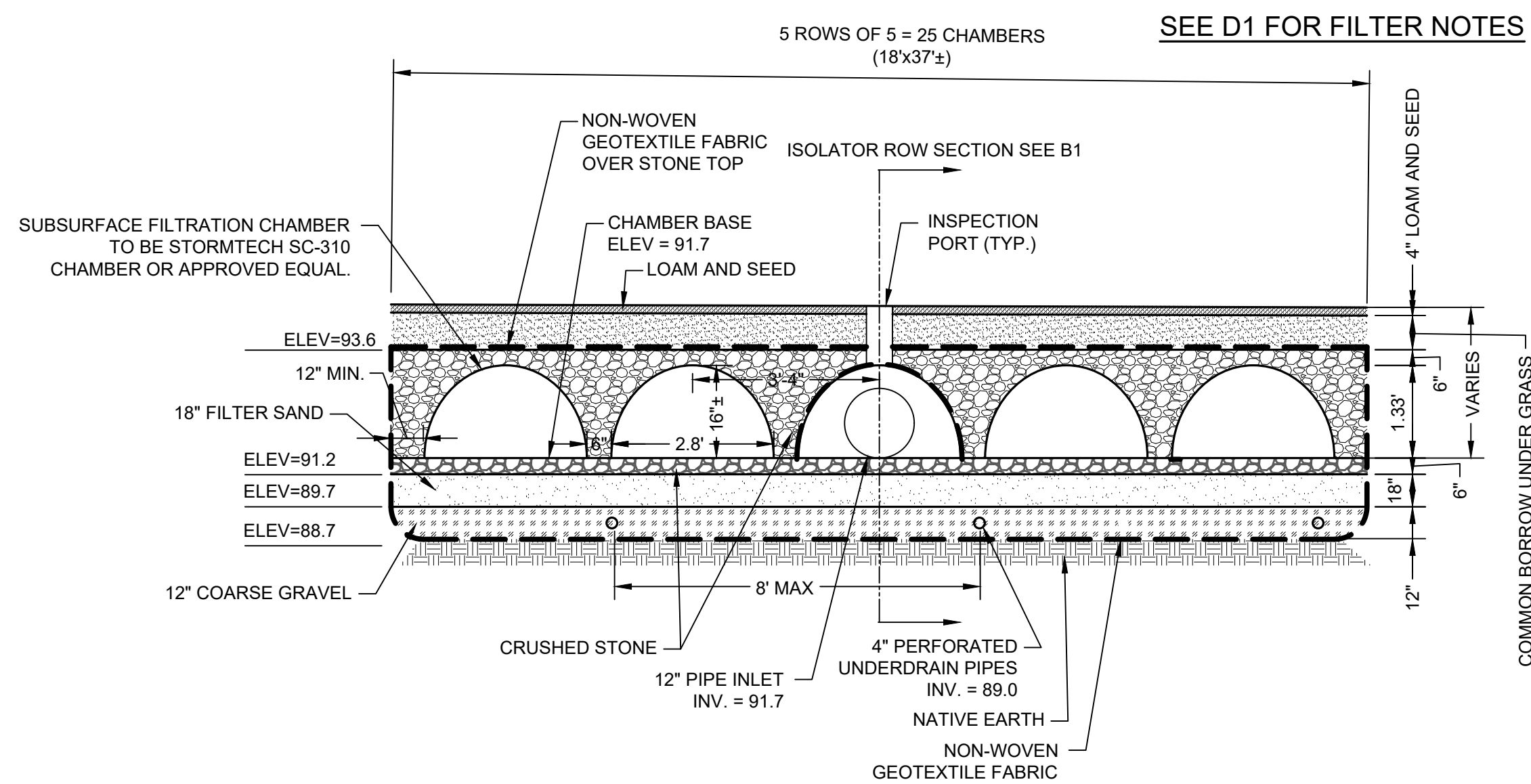
EXAMPLE OF AN ANGLED PIPE BOOT ON A SLOPE

PIPE BOOTS ARE FABRICATED FROM THE SAME LINER TYPE USED WITHIN THE FILTER. THEY ARE DESIGNED TO BE SEALED WATER-TIGHT TO THE PIPE AND LINING SYSTEM.

PIPE PENETRATION DETAILS

NOT TO SCALE

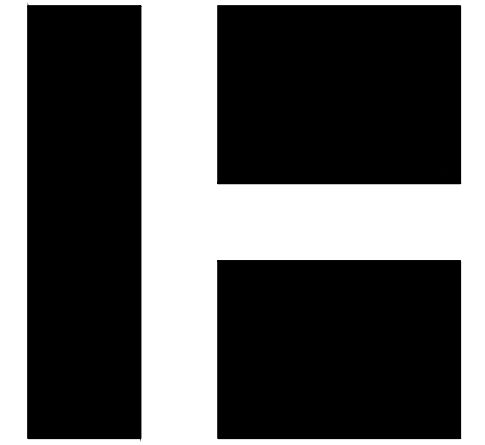
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UNDERDRAIN SUBSURFACE SAND FILTER SECTION

NOT TO SCALE

A1



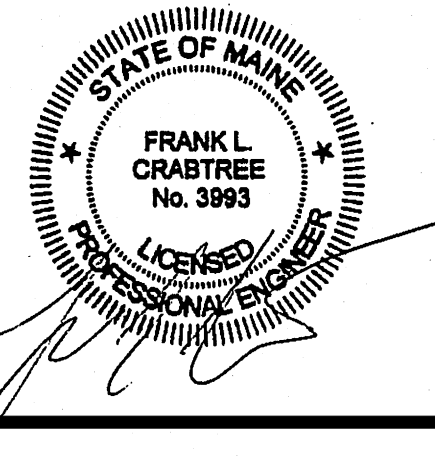
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ELEMENTARY SCHOOL

PORTLAND, MAINE

Harriman Project No. 19150

Key Plan Proj North



PLANNING BOARD

SEPTEMBER 28, 2020

Rev Date Revision Description

PRELIMINARY
NOT FOR
CONSTRUCTION

1" = 20' 0 10' 20' 30'

PA / PE: FLC
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STORMWATER DETAILS

C60-1



PORTLAND, MAINE

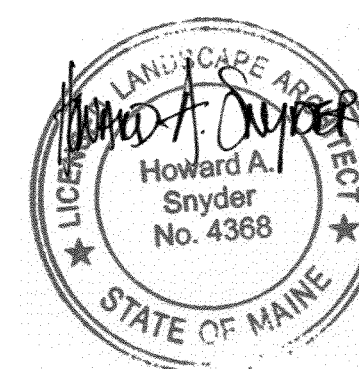
Harriman Project No.	19150
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Key Plan

Proj Nor



1. Plant material symbols represent anticipated size at 75% maturity.
2. CPRTL = City of Portland Recommended Tree List, 2018 edition
3. Not all plant material species and quantities shown will be used. Final plant material specifications dependent on conformance to, and approval by, local and state regulations and agencies.
4. Plant material specified shall conform to ANLA American Standard for Nursery Stock, ANSI Z60.1 current edition.
5. No permanent irrigation system is proposed.



SEPTEMBER 28, 2020

Rev	Date	Description

Drawing Status

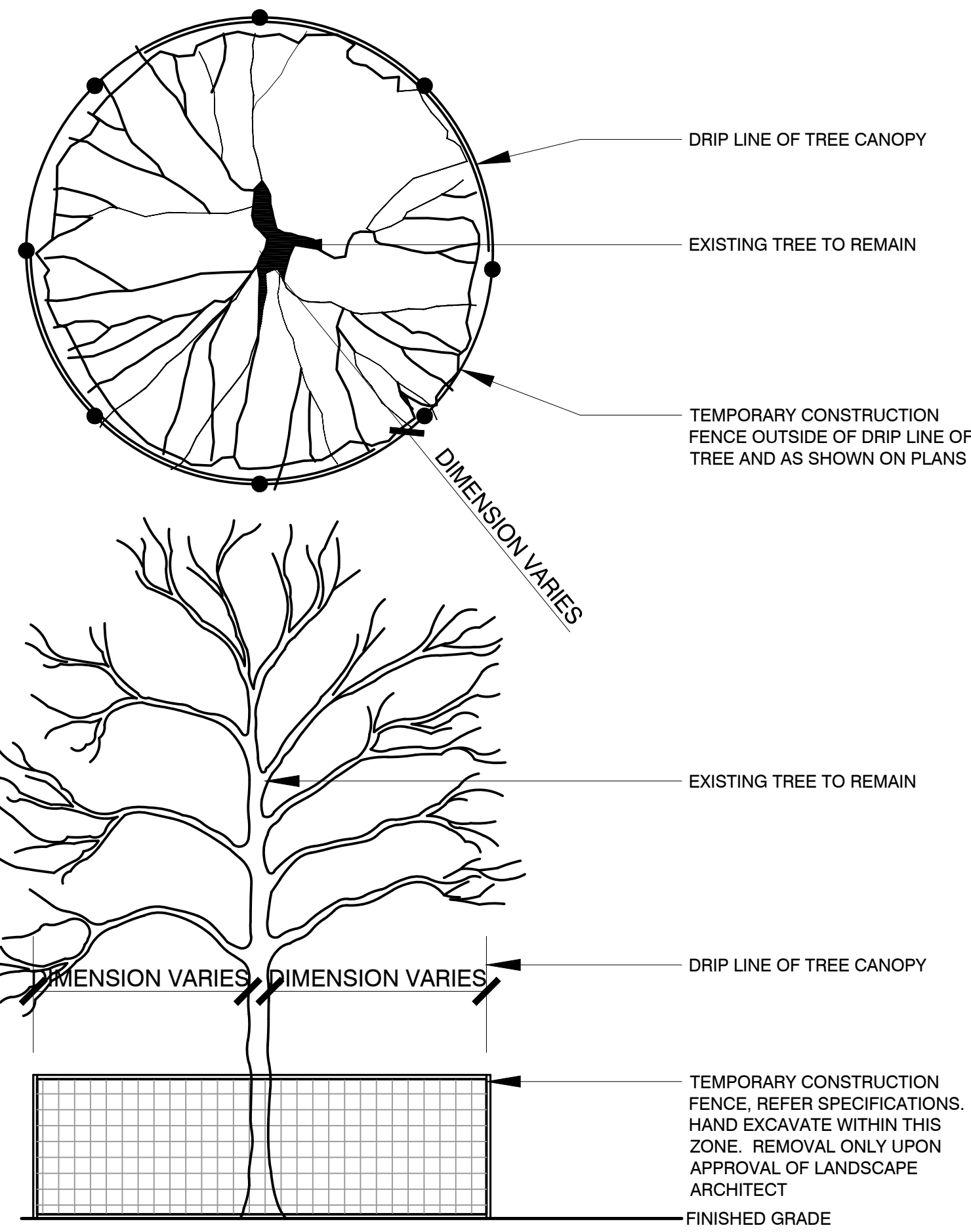
PRELIMINARY
NOT FOR
CONSTRUCTION

Drawing Scales
1" = 20' - 0"

PA / PE:	HAS	© 2020 Harriman Associates
Drawn By:	HAS	

PLANTING PLAN

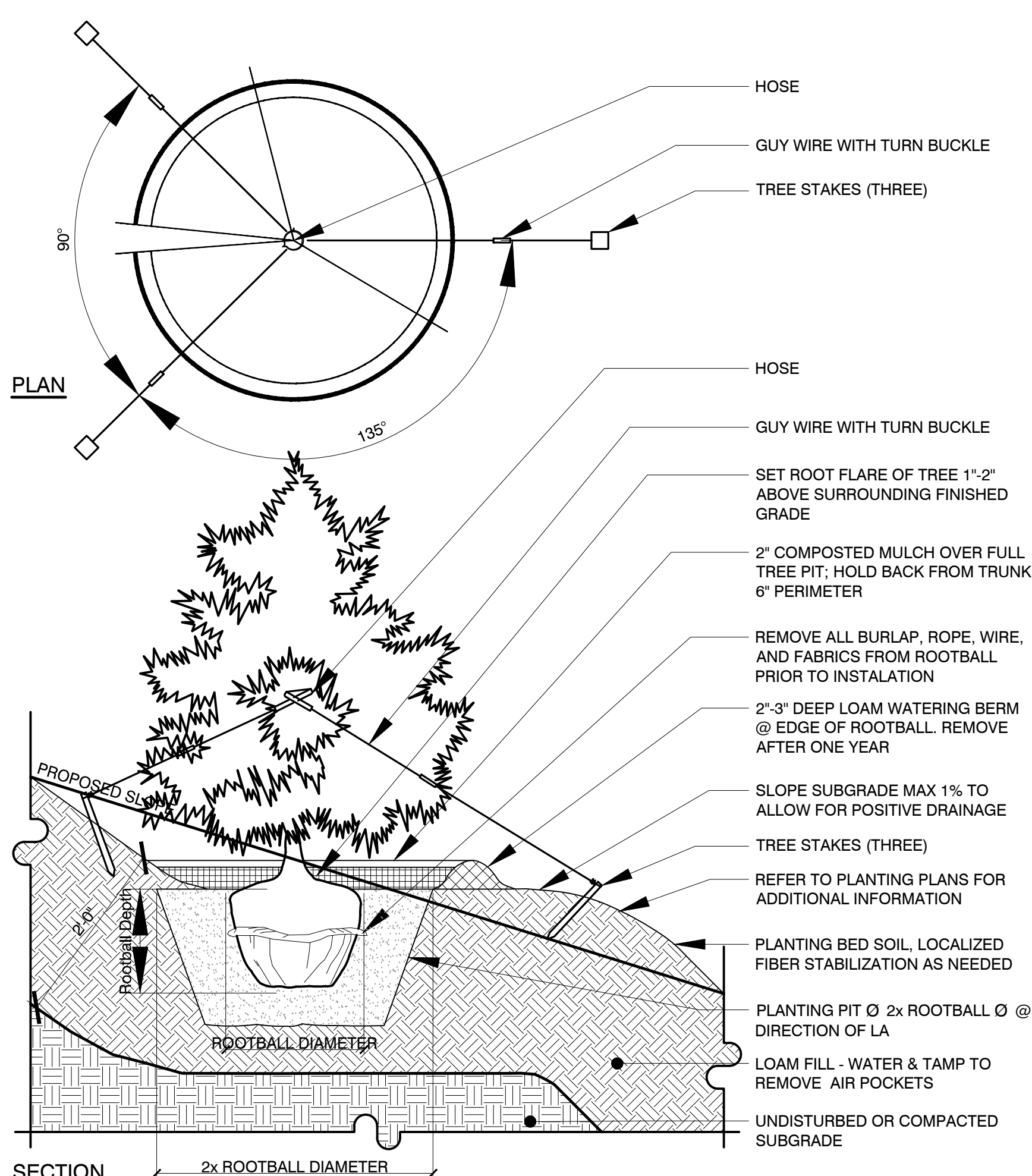
L40-1



SECTION

B3 PROTECTION FOR EXISTING TREES

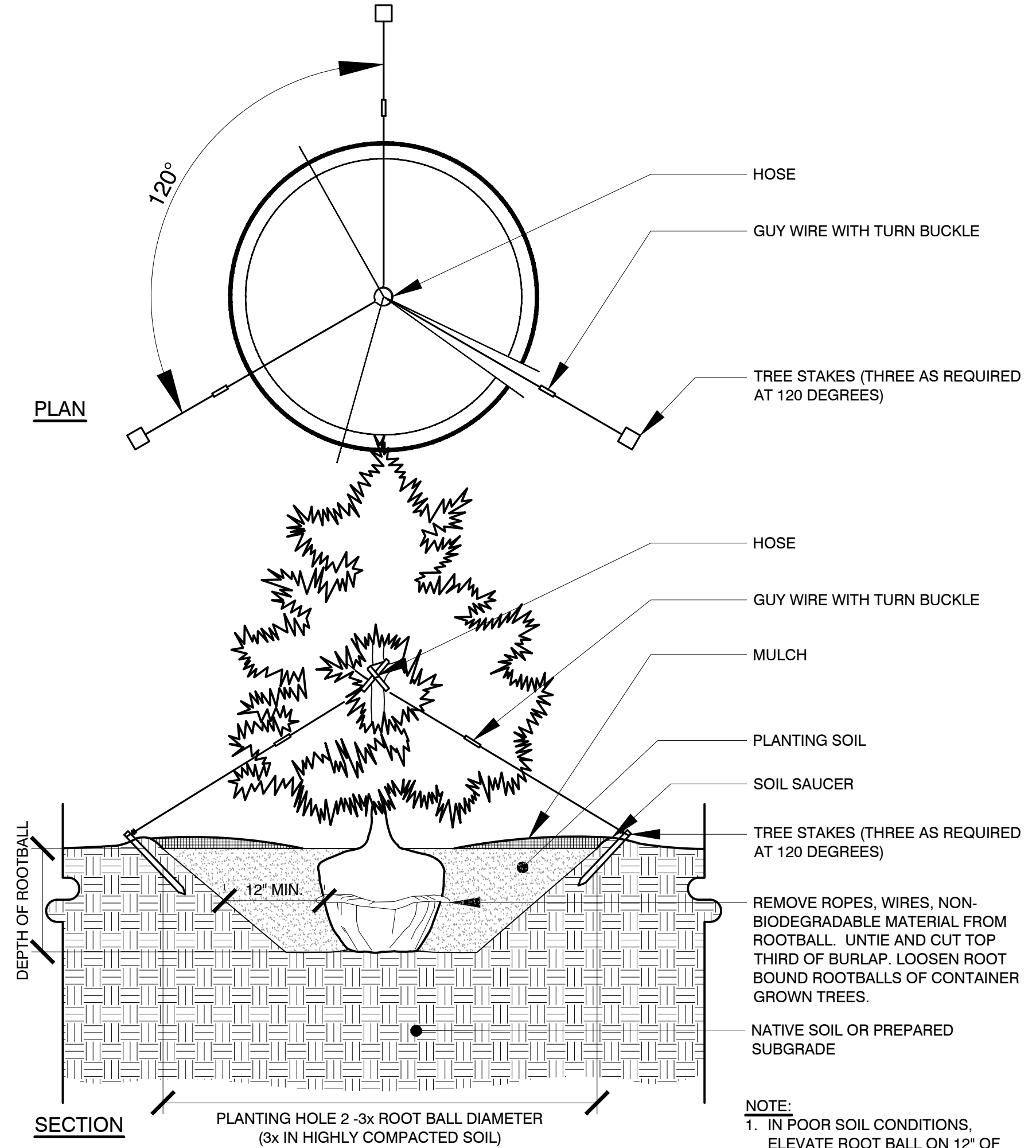
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SECTION

B2 EVERGREEN TREE PLANTING, STEEP TO MODERATE SLOPES

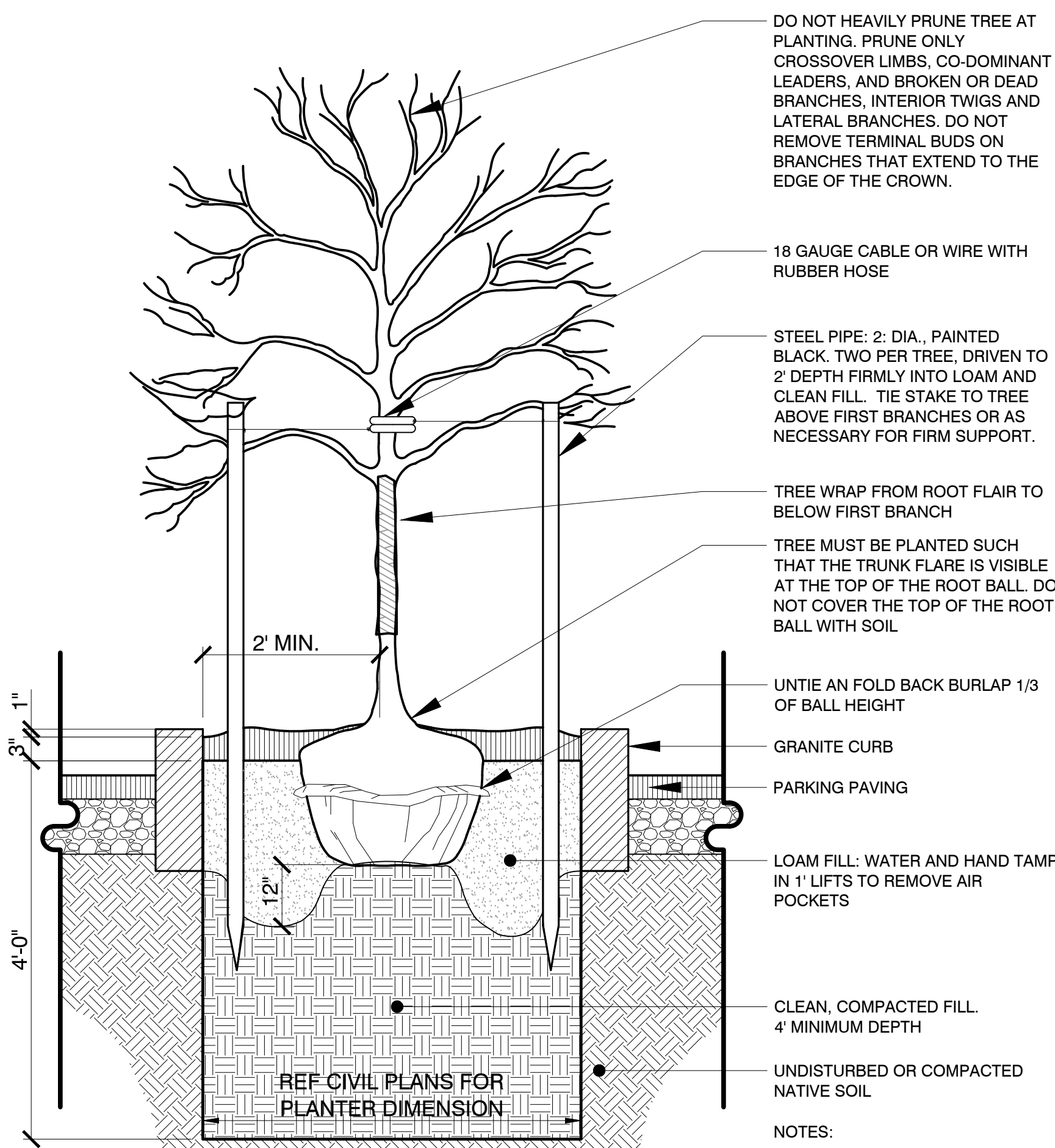
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SECTION

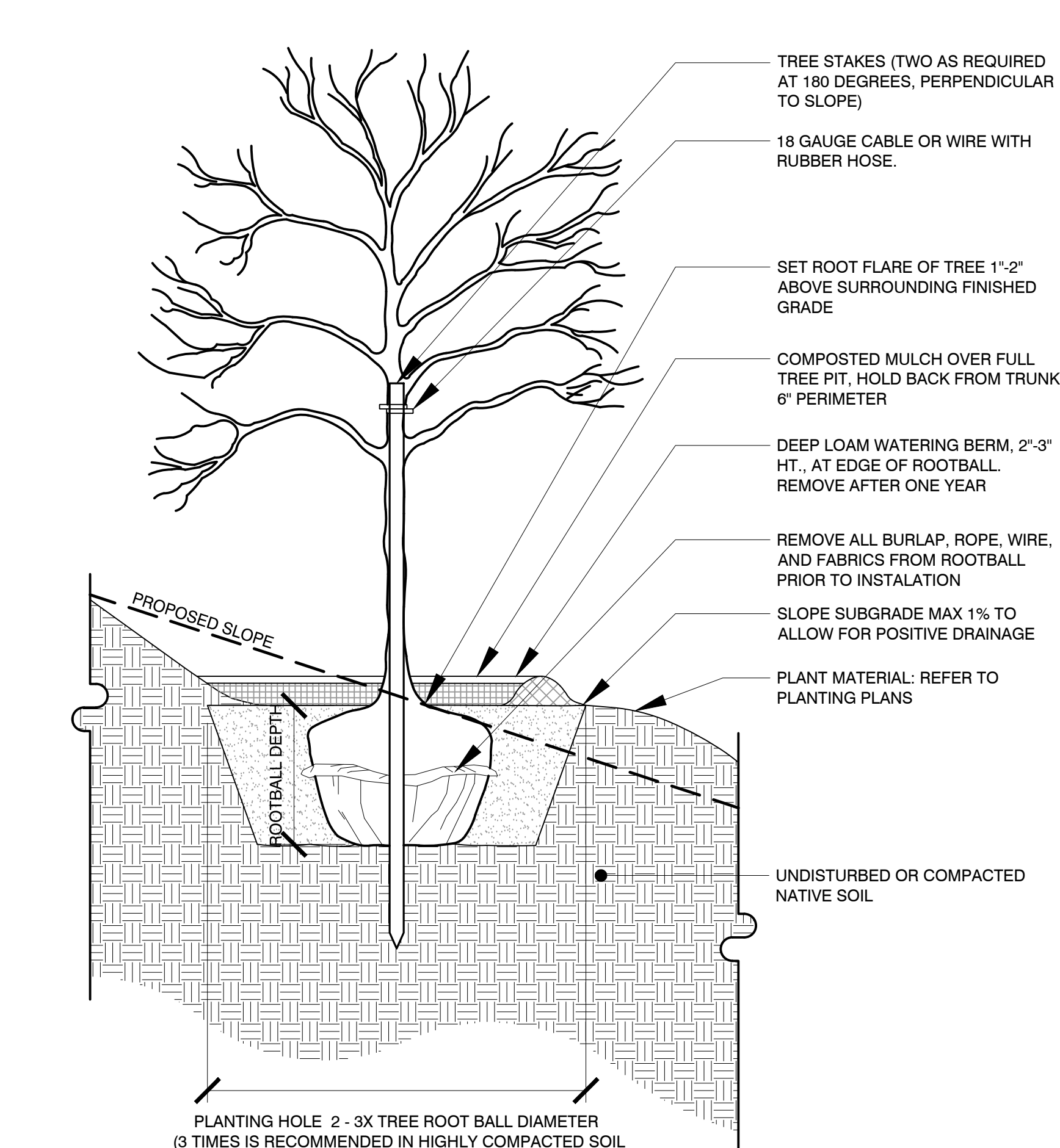
B1 CONIFER TREE PLANTING

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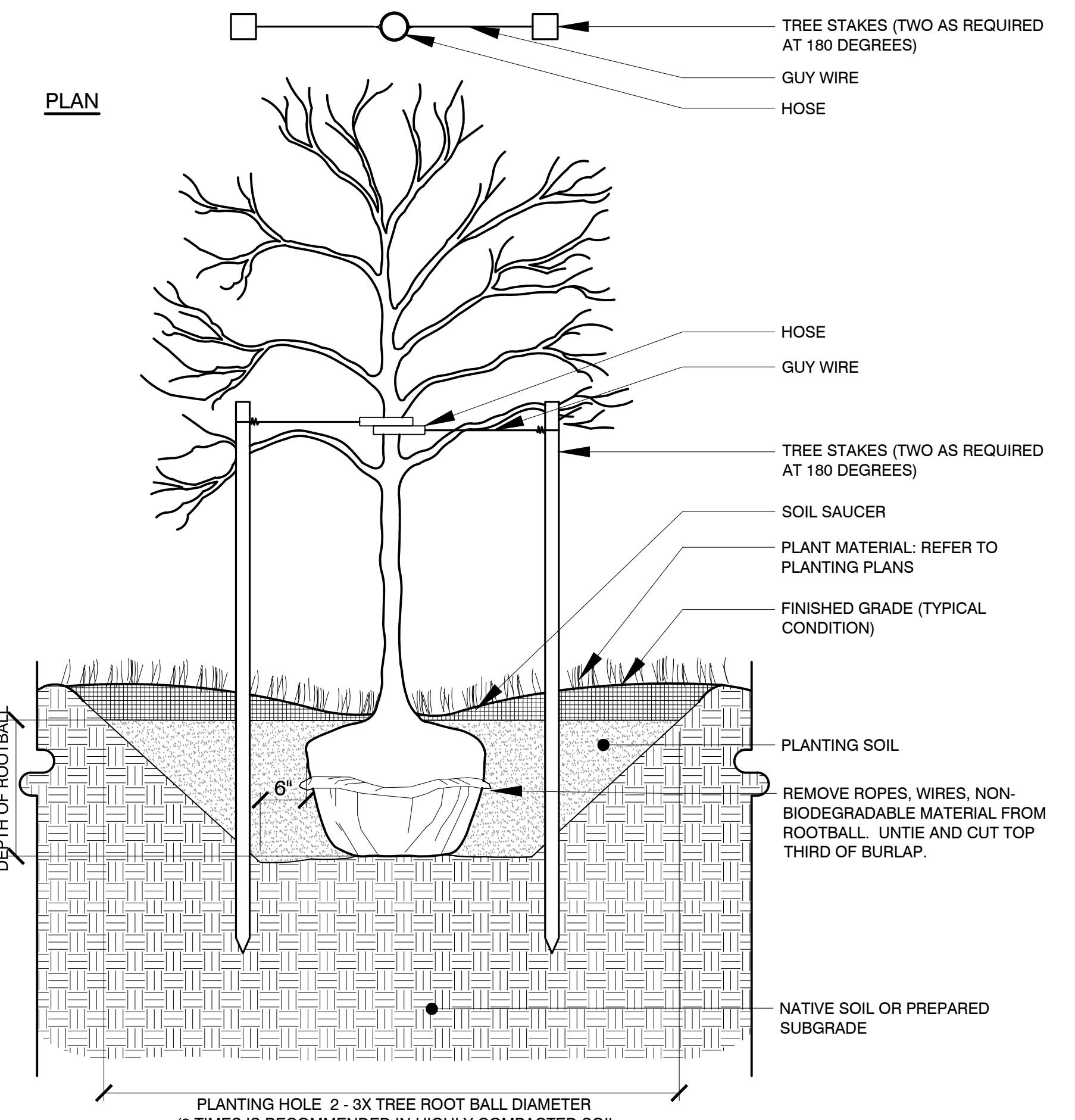
A3 DECIDUOUS TREE PLANTING: PARKING ISLAND

Scale: Not To Scale



A2 DECIDUOUS TREE PLANTING: MODERATE TO STEEP SLOPES

Scale: Not To Scale



A1 DECIDUOUS TREE PLANTING

Scale: Not To Scale

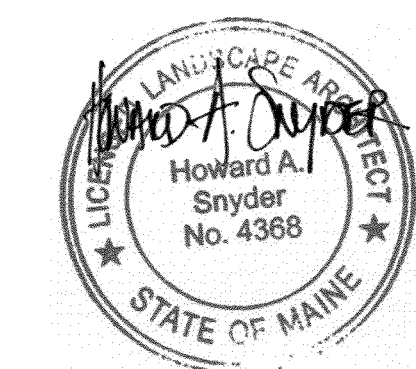


LONGFELLOW ELEMENTARY SCHOOL

PORTLAND, MAINE

Harriman Project No. 19150

Key Plan



PLANNING BOARD

SEPTEMBER 28, 2020

Rev	Date	Revision Description

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PLANTING DETAILS

L50-1



PORTLAND, MAINE

Harriman Project No.	19150
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Key Plan Proj North

A

1. SEE DRAWING A40 FOR PARTITION TYPES.
2. DIMENSIONS LOCATING INTERIOR PARTITIONS ARE TO FACE OF GIPWD OR CMU UNLESS OTHERWISE NOTED.
3. SEE DRAWING A40 FOR DOOR SCHEDULE.
4. SEE DRAWING A61.1 FOR ROOM FINISH SCHEDULE. NEW WALLPAPERS AND PATCHING OF EXISTING WALLPAPERS SHALL BE PAINTED TO MATCH EXISTING ADJACENT WALLS AND CEILING.
5. SEE EXTERIOR ELEVATIONS ON DRAWINGS A40.1, A20.2 & A20.3 FOR WINDOWS.
6. PROVIDE CONTIGUOUS JOINTS IN GYPW AT MAXIMUM 10' ON CENTER (O.C.) UNLESS NOTED OTHERWISE. MAX SPACING AT JOINTS IS 8' O.C. PROVIDE JOINTS OF DOOR FRAME UP TO CEILING WHERE NECESSARY. REVIEW LOCATIONS WITH THE ARCHITECT.
7. AT REMOVED FATHINGS, PARTITIONS, AND CASEWORK, EXISTING MATERIALS WILL BECOME EXPOSED TO VIEW. PATCH AND REPAIR EXISTING MATERIALS TO MATCH SURFACE. PAINT TO MATCH EXISTING MATERIALS.
8. PATCH ALL OPENINGS CAUSED BY INSTALLATION OF NEW MECH., PLUMB, ELEC. OR OTHER MATERIALS TO MATCH ADJACENT CONSTRUCTION.
9. REFER TO A40.1 CODE PLAN FOR DH, CR, AND A40.2 PARTITION LOCATION.

ROOM NAME	PARTITION TAG SEE A40.1 FOR PARTITION TAG KEY & PARTITION DEFINITION DETAILS ROOM NAME AND NUMBER SEE A61.1 FOR SCHEDULE DOOR & BORROWED LITE NUMBERS SEE A60.1 FOR SCHEDULE MISCELLANEOUS ITEMS MARKER SEE SCHEDULE ON A80.1
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SEPTEMBER 28, 2020

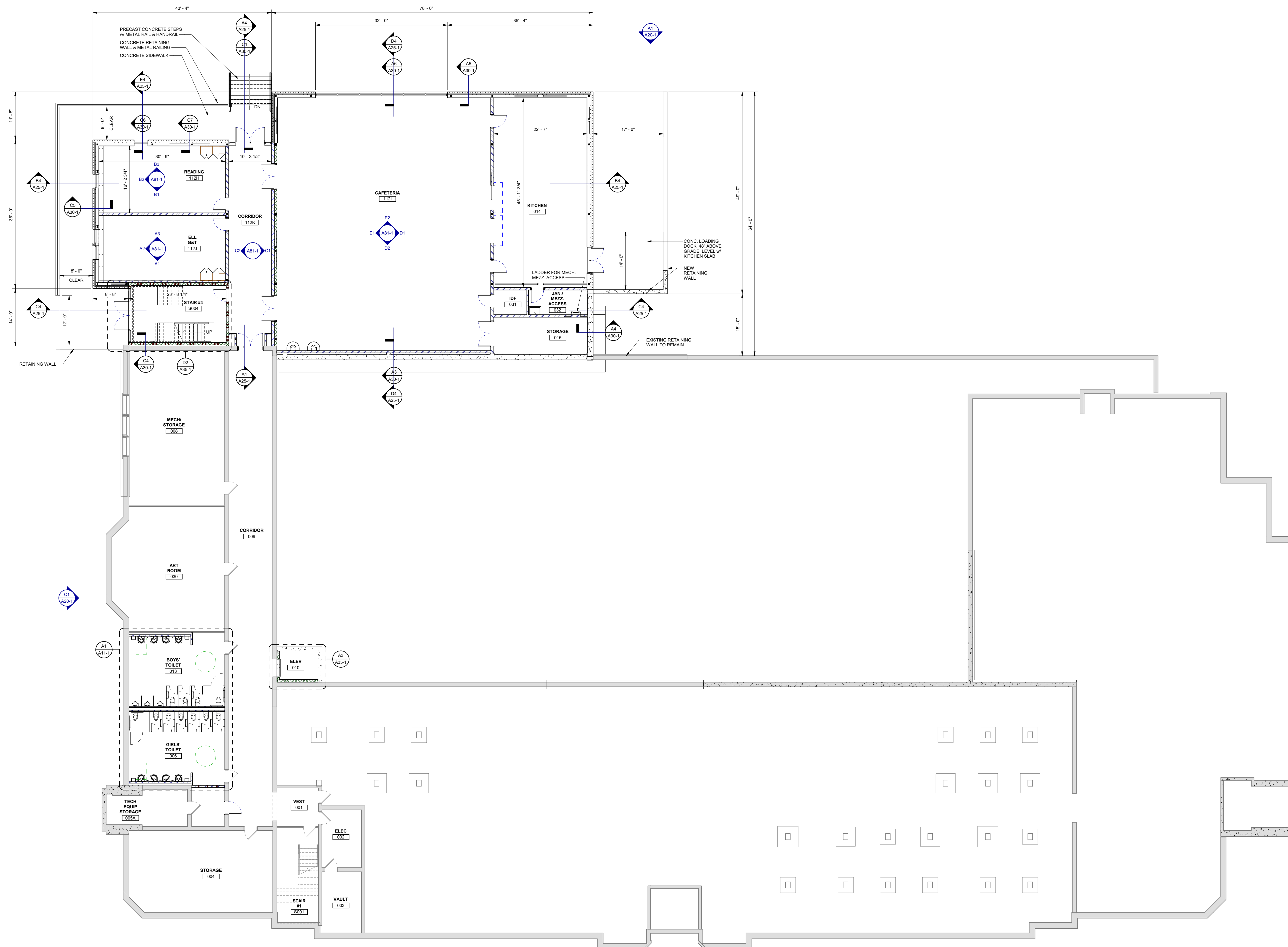
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NOT FOR
CONSTRUCTION

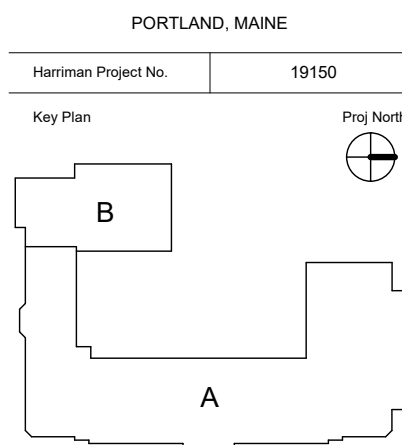
PA / PE: MDL	© 2020 Hamman Associates
Drawn By: EJR	

LOWER LEVEL FLOOR
PLAN

A10-1



LONGFELLOW
ELEMENTARY SCHOOL



GENERAL NOTES

- SEE DRAWING A40.1 FOR PARTITION TYPES.
- DIMENSIONS LOCATING INTERIOR PARTITIONS ARE TO FACE OF GPDW OR CMU UNLESS NOTED OTHERWISE.
- SEE DRAWING A60.1 FOR DOOR SCHEDULE.
- SEE DRAWING A61.1 FOR ROOM FINISH SCHEDULE. NEW WALLPAPERS AND PATCHING OF EXISTING WALLPAPERS NOT LABELED SHALL BE PAINTED TO MATCH EXISTING ADJACENT WALLS U.N.O.
- SEE EXTERIOR ELEVATIONS ON DRAWINGS A20.1, A20.2 & A20.3 FOR WINDOW TYPES.
- PROVIDE CONTROL JOINTS IN GPDW PARTITIONS AT A MAX SPACING OF 30'-0" UNLESS NOTED OTHERWISE. MAX SPACING AT ABUSE GPDW IS 28'-0" UNO. LOCATE AT EDGE OF DOOR FRAME UP TO CEILING WHERE PRACTICAL. REVIEW LOCATIONS WITH THE ARCHITECT.
- AT REMOVED FIXTURES, PARTITIONS, EQUIPMENT, CASEWORK, ETC., THAT WILL BECOME EXPOSED TO VIEW, PATCH AND PARGE PARTITIONS TO CREATE A SMOOTH SURFACE. PAINT TO MATCH EXISTING ADJACENT U.N.O.
- PATCH ALL OPENINGS CREATED FOR INSTALLATION OF NEW MECH., PLUMB., ELEC., ETC., WITH MATERIALS TO MATCH ADJACENT CONSTRUCTION.
- REFER TO A01.1 CODE PLAN FOR DH, CR, AND ADA PUSH BUTTON LOCATIONS.

SYMBOLS LEGEND

- 216 PARTITION TAG
SEE A40.1 FOR PARTITION TAG KEY & PARTITION DEFINITION DETAILS
- 101 ROOM NAME
SEE A61.1 FOR SCHEDULE
- 201 DOOR & BORROWED LITE NUMBERS
SEE A60.1 FOR SCHEDULE
- 72 MISCELLANEOUS ITEMS MARKER
SEE SCHEDULE ON A60.1

PLANNING BOARD

SEPTEMBER 28, 2020

Rev	Date	Revision Description

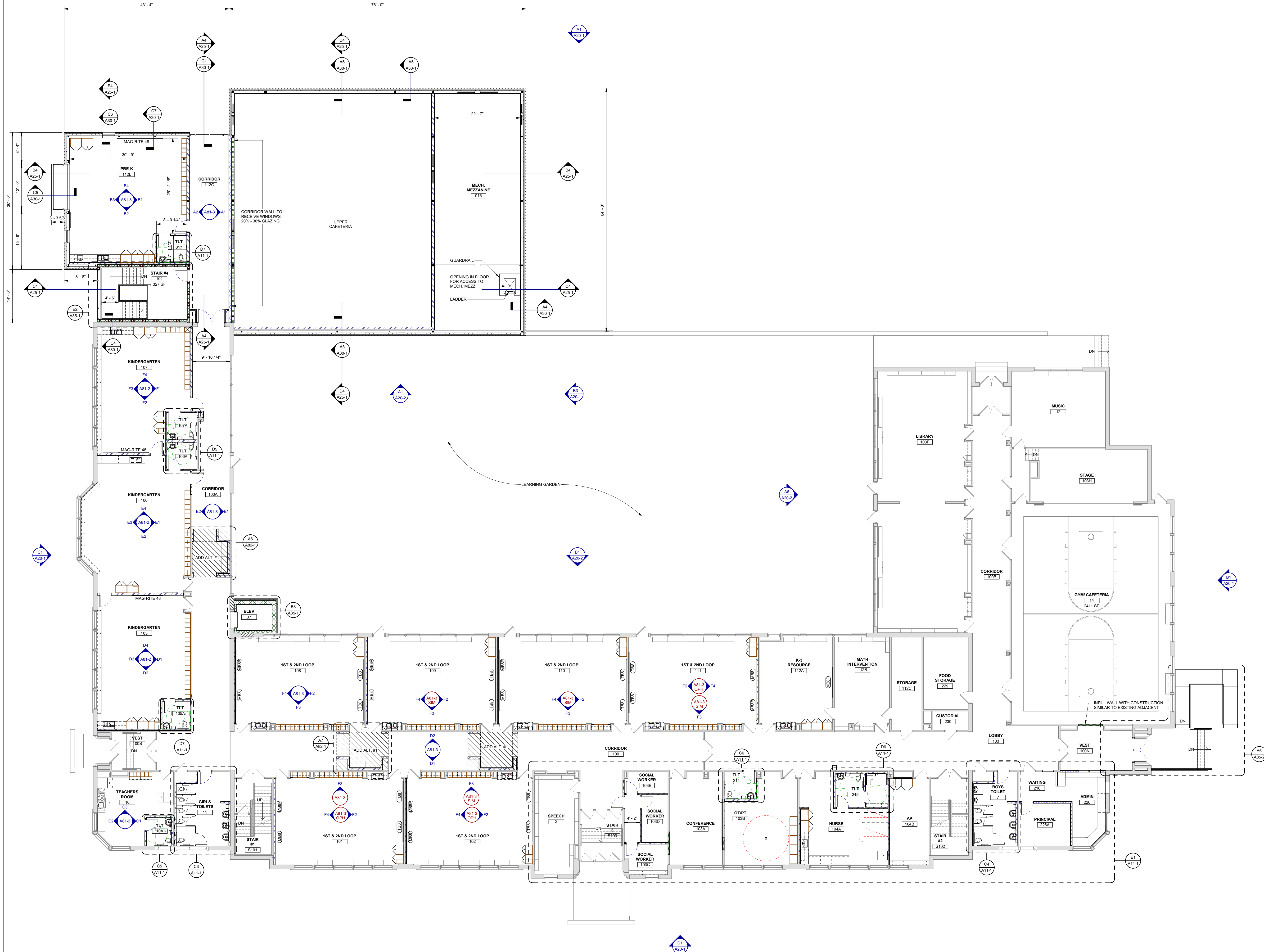
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NOT FOR
CONSTRUCTION

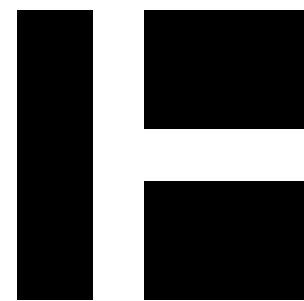
PA/PE: MDL
Drawn By: EJR

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FIRST FLOOR PLAN

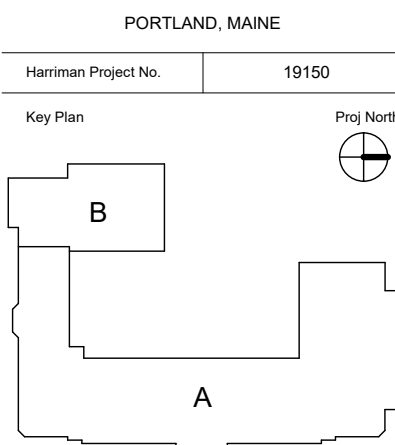
A10-2





HARRIMAN

LONGFELLOW
ELEMENTARY SCHOOL



GENERAL NOTES

- SEE DRAWING A40.1 FOR PARTITION TYPES.
- DIMENSIONS LOCATING INTERIOR PARTITIONS ARE TO FACE OF GPDW OR CMU UNLESS NOTED OTHERWISE.
- SEE DRAWING A60.1 FOR DOOR SCHEDULE.
- SEE DRAWING A61.1 FOR ROOM FINISH SCHEDULE. NEW WALLPAPERS AND PATCHING OF EXISTING WALLPAPERS NOT LABELED SHALL BE PAINTED TO MATCH EXISTING ADJACENT WALLS U.N.O.
- SEE EXTERIOR ELEVATIONS ON DRAWINGS A20.1, A20.2 & A20.3 FOR WINDOW TYPES.
- PROVIDE CONTROL JOINTS IN GPDW PARTITIONS AT A MAX SPACING OF 30'-0" UNLESS NOTED OTHERWISE. MAX SPACING AT ABUSE GPDW IS 28'-0" UNO. LOCATE AT EDGE OF DOOR FRAME UP TO CEILING WHERE PRACTICAL. REVIEW LOCATIONS WITH THE ARCHITECT.
- AT REMOVED FIXTURES, PARTITIONS, EQUIPMENT, CASEWORK, ETC., THAT WILL BECOME EXPOSED TO VIEW, PATCH AND PARGE PARTITIONS TO CREATE A SMOOTH SURFACE. PAINT TO MATCH EXISTING ADJACENT U.N.O.
- PATCH ALL OPENINGS CREATED FOR INSTALLATION OF NEW MECH., PLUMB., ELEC., ETC., WITH MATERIALS TO MATCH ADJACENT CONSTRUCTION.
- REFER TO A01.1 CODE PLAN FOR DH, CR, AND ADA PUSH BUTTON LOCATIONS.

SYMBOLS LEGEND

- | | |
|--|---|
| | PARTITION TAG
SEE A40.1 FOR PARTITION TAG KEY & PARTITION DEFINITION DETAILS |
| | ROOM NAME AND NUMBER
SEE A61.1 FOR SCHEDULE |
| | DOOR & BORROWED LITE NUMBERS
SEE A60.1 FOR SCHEDULE |
| | MISCELLANEOUS ITEMS MARKER
SEE SCHEDULE ON A60.1 |

PLANNING BOARD

SEPTEMBER 28, 2020

Rev. Date	Revision Description

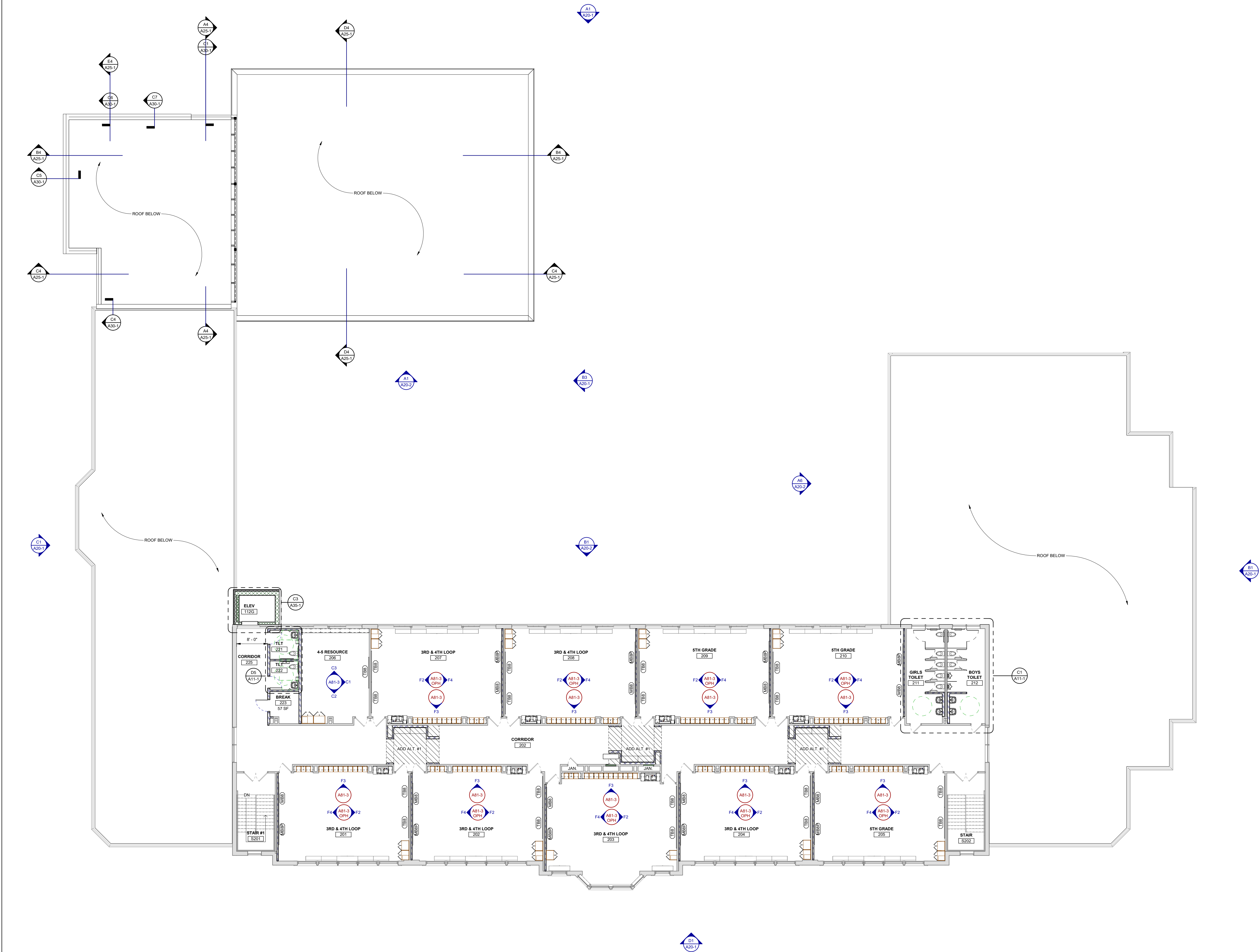
PRELIMINARY
NOT FOR
CONSTRUCTION

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Drawn By: EJR

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SECOND FLOOR PLAN

A10-3



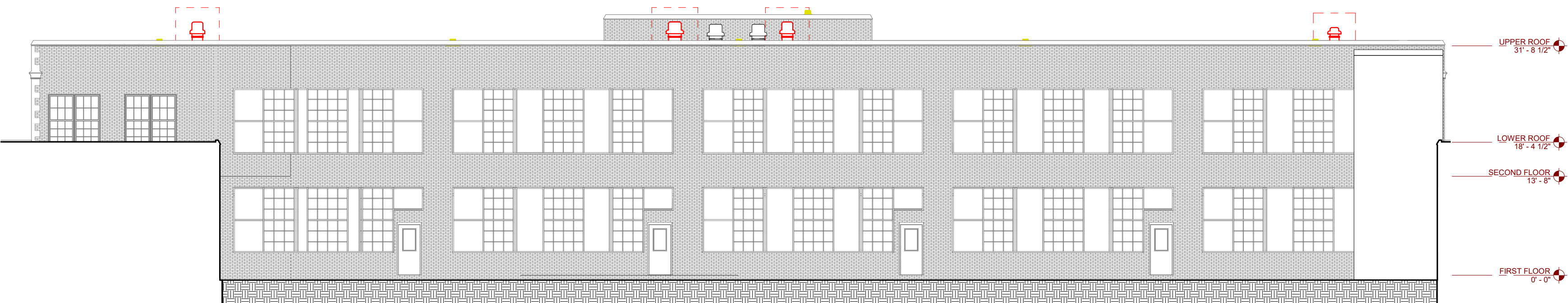
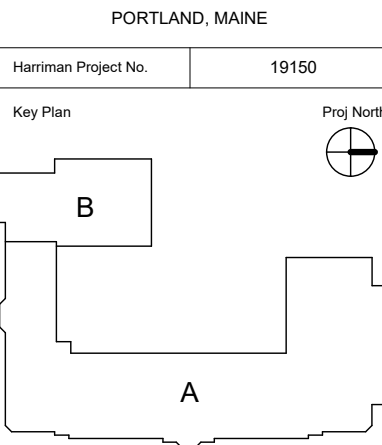


C5 **KEY PLAN**
NO SCALE



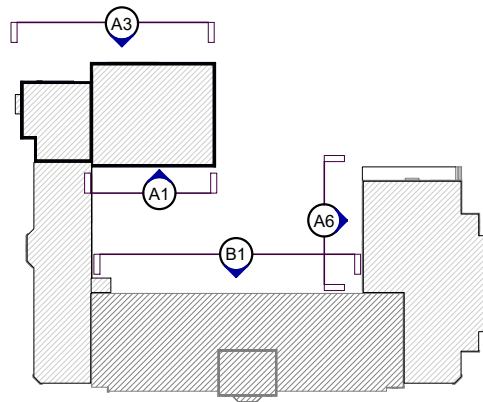
A20-1

LONGFELLOW
ELEMENTARY SCHOOL

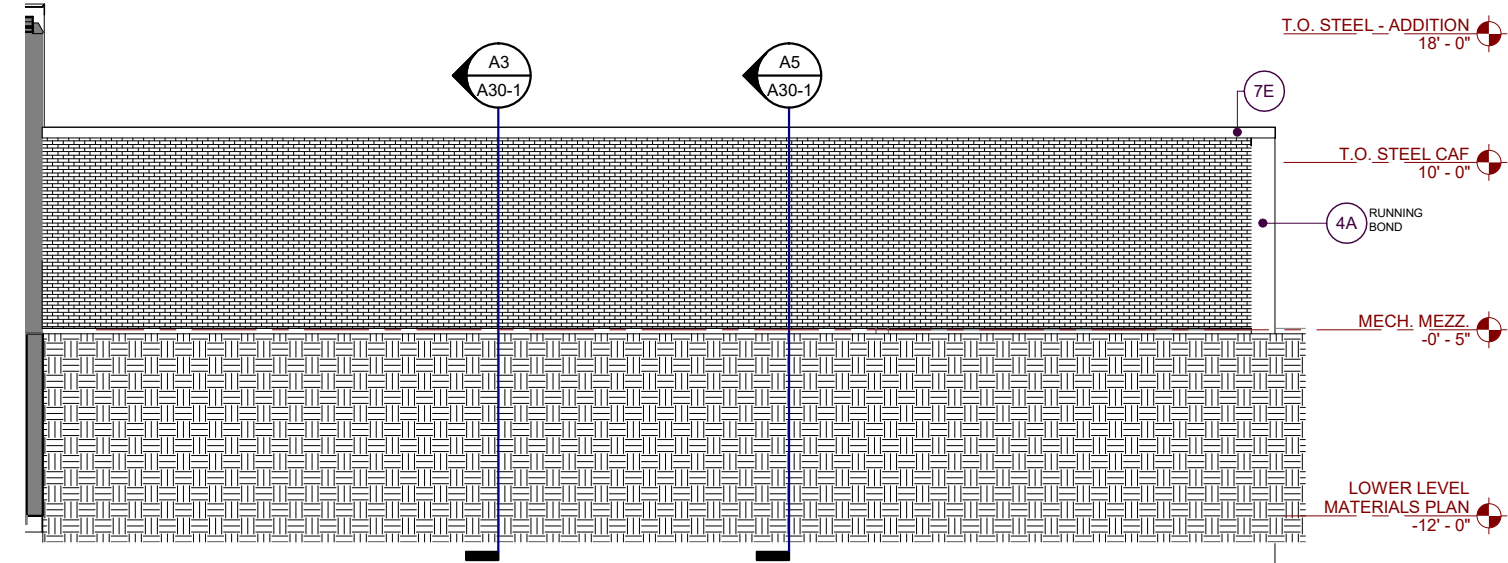


B1 WEST ELEVATION - COURTYARD
NO SCALE

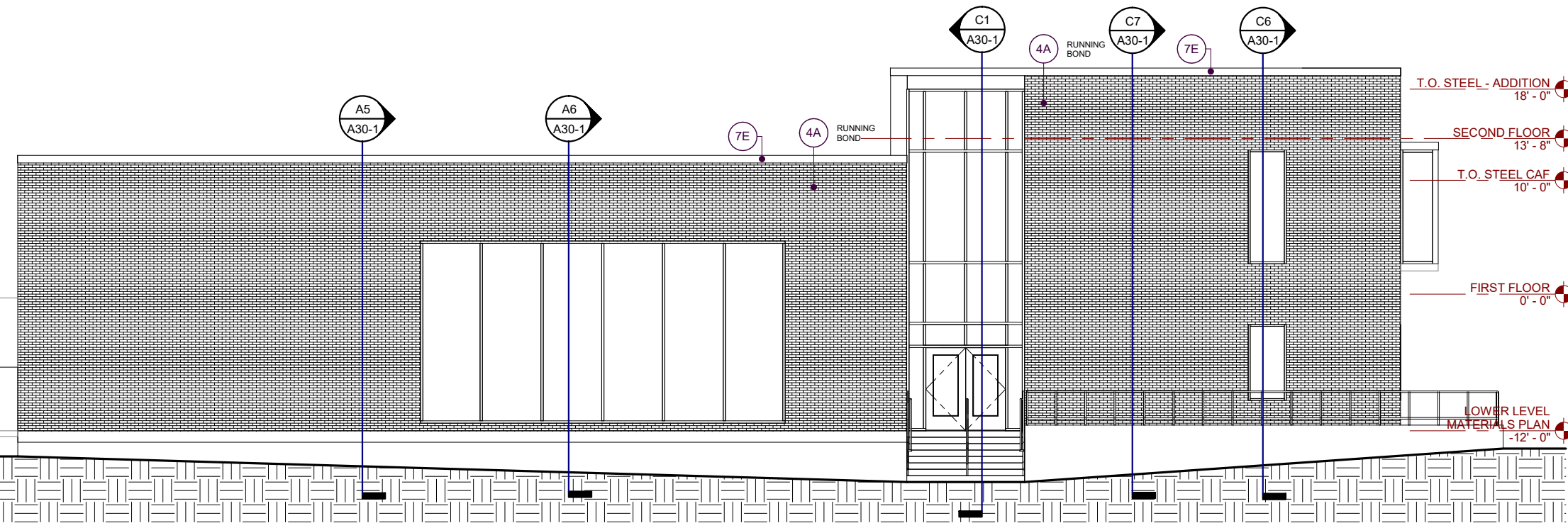
EXTERIOR MATERIALS LEGEND	
CODE	DESCRIPTION
4A	BRICK VENEER (FIELD)
4E	BRICK VENEER (FIELD)
7A	COMPOSITE METAL PANEL
7E	PREFINISHED ROOF EDGE STRIP
8C	HM DOOR AND FRAME



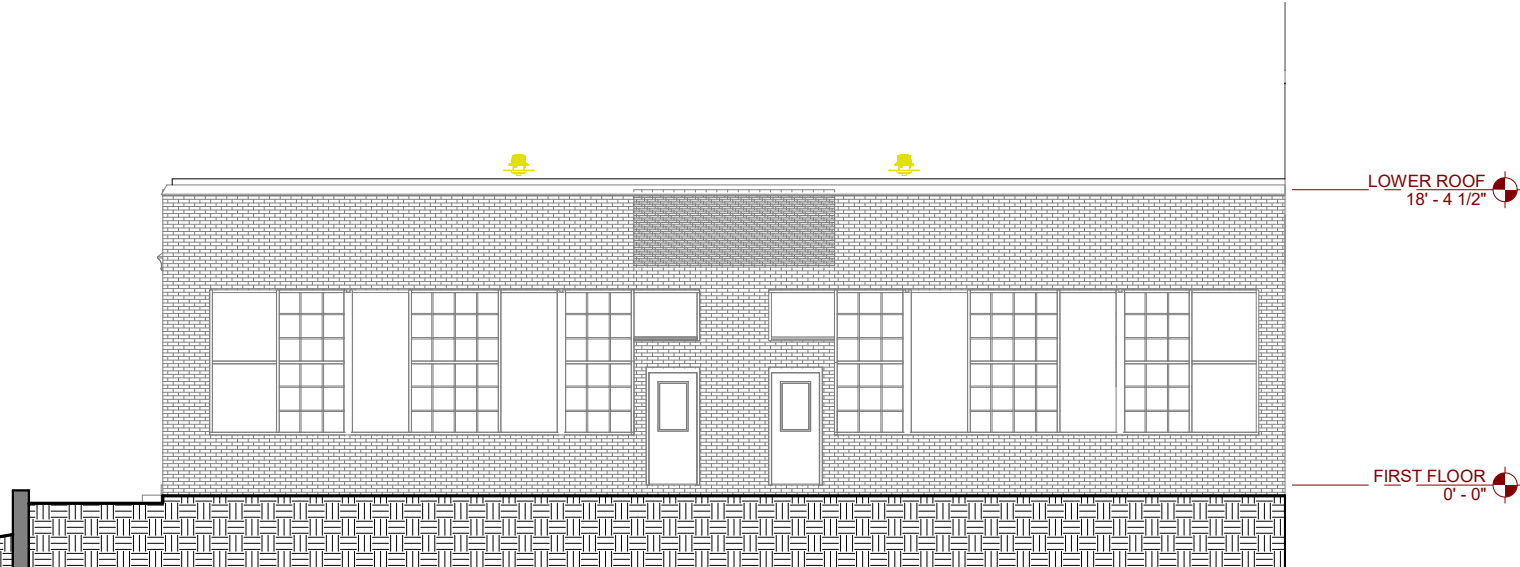
B7 KEY PLAN
NO SCALE



A1 EAST ELEVATION - ADDITION
NO SCALE



A3 WEST ELEVATION - ADDITION
NO SCALE



A6 SOUTH ELEVATION - COURTYARD
NO SCALE

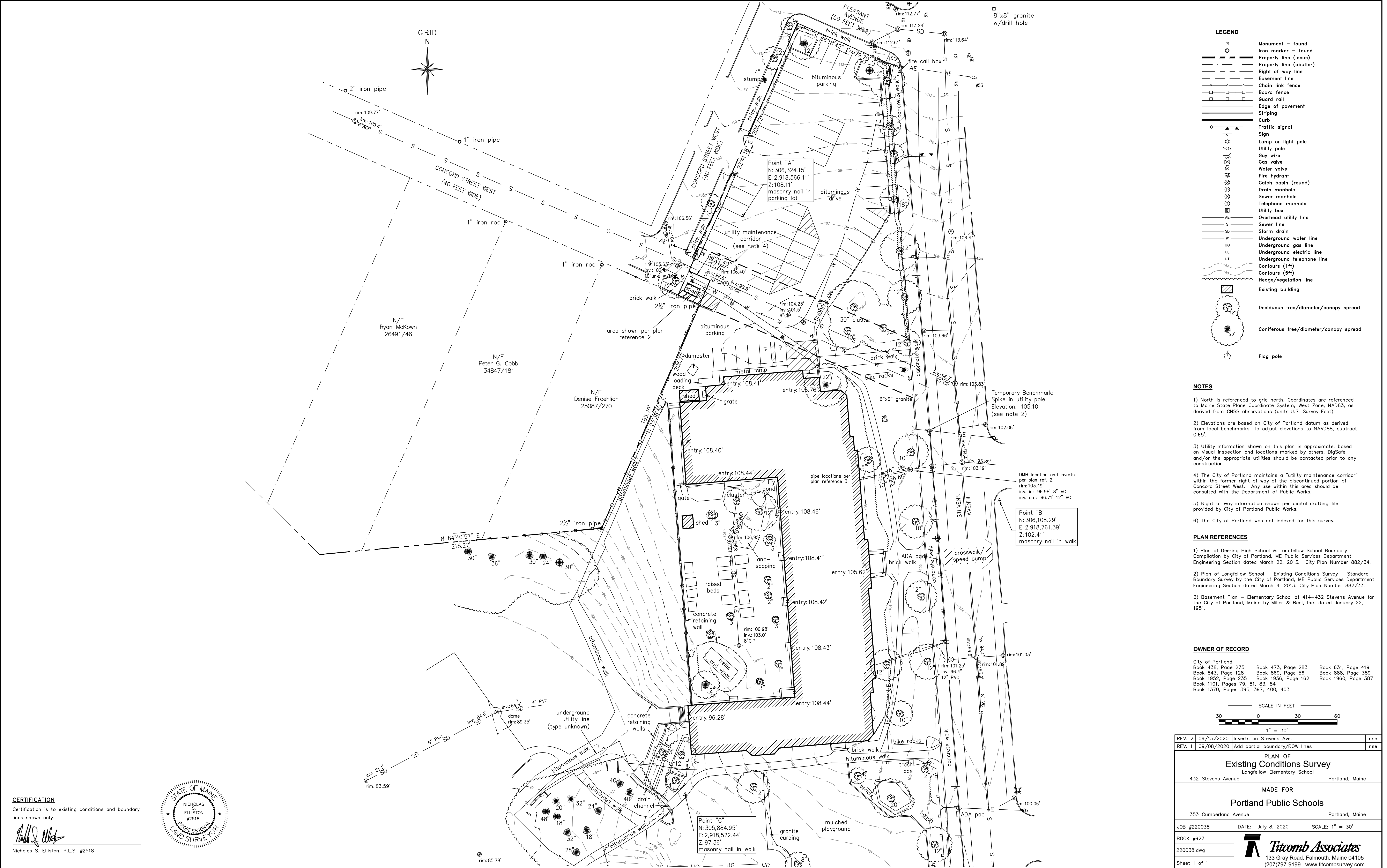
PLANNING BOARD
SEPTEMBER 28, 2020

Rev Date	Revision Description

PRELIMINARY
NOT FOR
CONSTRUCTION

COURTYARD ELEVATIONS

A20-2



CERTIFICATION
Certification is to existing conditions and boundary lines shown only.

Nicholas S. Elliston
Nicholas S. Elliston, P.L.S. #2518





23. CONSTRUCTION MANGEMENT PLAN

- The General Construction Management Plan Template for the Longfellow Elementary School is attached, with proposed construction schedule included.
- Construction Management drawing CM-1 for the Longfellow School construction project is attached.

**Construction Management Plan
for
Portland Public Schools
Longfellow Elementary School
Additions and Renovations
September 2020**

Applicant: Portland Public Schools
Preparer: Harriman

Construction Management Plans shall depict the overall planning, coordination, and control of a construction site, including phases as applicable, from beginning to completion. The City's goal for a construction management plan is to support a safe construction site and protect the public safety, accessibility (including preserving accessible pedestrian, bicycle, and vehicular modes of transport throughout the city), and welfare during construction. In addition, the construction management plan shall minimize construction impacts in their duration and magnitude to the surrounding area and develop an effective communication process for resolving concerns and conflicts.

The Construction Management Plan will be submitted as part of the Site Plan Review and it shall address the construction logistics for a project. The Construction Management Plan shall include the following submissions: 1) a construction management site plan, 2) a construction schedule (time frame); and 3) a written narrative addressing the categories below.

A. Construction Management Principles

The following narrative provides an overview of the construction management principles that the Applicant has identified to minimize impacts from the construction, such as noise, vibrations, ground movement, truck traffic, and other construction related factors to the surrounding building and communities.

The school is at 432 Stevens Avenue in Portland near the intersection of Pleasant Avenue. To separate construction traffic from daily school bus and parent traffic, it is intended to have the contractors enter and exit through the Deering High School parking lot driveway from Leland Street, while the school students and staff enter and exit through the Stevens Avenue and Concord Street entries. To maintain the full number of existing classrooms through the construction duration, three temporary modular classroom buildings will be located in the paved parking lot to the north of the building, away from most of the new building construction. These modulares will be removed following completion of the school facilities.

The selected Contractor will provide the City with a plan that indicates site access constraints, and signage/barriers to access at points of entry to the public, prior to construction. A general approach to phases of the work has been included in the attached Construction Management Plan.

A final site access map prepared by the Contractor cannot be provided as part of this submission, since the project will be bid publicly in order to select the Contractor. The Site Plan Review process must proceed before the Contractor has been selected. The safety of the

site, the scheduling of deliveries, and construction means and methods must be the responsibility of the Contractor to maintain an effective and safe corridor for the workers and site users. It is understood that the information provided in this document is provided as general information, and the Contractor will provide more specific information to the City upon award of the contract.

Both electric and sanitary utility connections are anticipated to be constructed in the Stevens Avenue right-of-way.

B. Development Review of Construction Management Plan

The Contractor shall submit a construction management plan that provides a comprehensive logistics and safety program for the construction project, which will be reviewed and approved as part of the site plan review process. Minimizing impacts to areas surrounding the building/construction site will be primary considerations in the process.

The Planning Authority and the Department of Public Works have the right to seek revisions to an approved Construction Management Plan or require a condition of approval that states an applicant shall coordinate a project's construction schedule with the timing of nearby construction activity, in order to avoid cumulative impacts on a neighborhood. Such a condition may involve a delay in commencement of construction, if necessary.

The following details define the intended approach to the successful management of the project construction, and the construction management plan will address the general conditions contained below.

C. Performance Guarantees, Inspection Fees, Preconstruction Meeting, and Permits

Prior to scheduling a preconstruction meeting and the issuance of any city required permits, Contractor shall meet all of the requirements contained in Section 14-530. Development review fees and post approval requirements and 14-532. General requirements and enforcement of Portland's Land Use Code.

Other permits, as applicable, include

1. **Street Opening and Street Occupancy Permits:** Construction activity in the public right-of-way are controlled by Chapter 25 and sewer and stormwater system connections are controlled by Chapters 24 and 32 of the Land Use Code. All required permits shall be obtained through the Department of Public Works and the requests shall conform with the approved construction management plan.
2. **Blasting:** Blasting, if required, shall conform with all measures of Article VIII. Regulation of Explosives in the Land Use Code and Section 3.7 Standards for Blasting and Regulation of Explosives in Portland's Technical Manual.
3. **Building Code:** Employ the best practices, as applicable, of Chapter 33 Safeguards During Construction, from the 2009 International Building Code.

D. Construction Administration and Communication

The Contractor will work diligently to implement a communication strategy as outlined below. The communication strategy is intended to ensure that all construction operations are performed in accordance with all agreements, ordinances and special permits applicable to this project. The Contractor will work closely with adjacent abutters, businesses and all

parties informed, as far in advance as possible, of scheduled work, particularly work anticipated to cause significant noise, vibrations, or dust. The final construction management plan shall provide for the following:

1. Contact Person and contact information for the applicant and contractor, and who is available 24 hours.
2. Construction Signage posted on the site with Contact Information for Contractor.
3. Describe any additional communication strategies
 - Directional and safety signage
 - On-site safety/coordination meetings
4. All construction site signage is temporary and shall be removed at project completion. Signage will be included in the final construction management plan provided by the Contractor.

E. Construction Schedule

1. The contractor shall submit a schedule or time line for the construction project.
2. The construction schedule is proposed to follow the general timeline as follows:

The Longfellow Elementary School project anticipates a general schedule as follows:
(see Construction Management Plan CM-1)

Summer 2021 – Winter 2021

- a. Install erosion control measures
- b. Establish contractor and school occupant traffic routes, and install temporary construction fencing and gates
- c. Locate modular classroom buildings to north side of Longfellow School
- d. Demolish trees, pavements, etc
- e. Excavate and install building foundations
- f. Begin construction of Cafeteria/Classroom building addition
- g. Install subsurface storm treatment bed and connect to storm drain
- h. Install electrical primary ductbank in front of building
- i. Install sanitary sewer line from new Cafeteria/Classroom addition

Spring 2022 – Fall 2022

- j. Maintain erosion control and remove sediment as needed
- k. Remove erosion control where stabilization is complete
- l. Complete Cafeteria/Classroom building construction.
- m. Construct Administration area steps and ADA ramp
- n. Construct finish pavements adjacent to finished building additions
- o. Install landscaping and finished grass areas throughout the school site
- p. Remove temporary construction fence where not needed
- q. Remove temporary erosion control measures, remove captured sediments, and clean storm drain system

Winter 2022 – Fall 2023

- r. Continue and complete interior renovations in the existing school

- s. Remove modular classroom buildings and foundations, and restore pavement and grass surfaces
3. Hours of Construction. Construction may occur during the daytime hours as defined in Section 17-18. Construction Activities for Building permit (Attachment 1) and Section 25-129. Noise, dust and debris (Attachment 2).
4. Extended Hours or Night Work: Pursuant to Section 17-18, this section does not apply to emergency utility work or “Situations where the public works authority or the office of building inspections determines that the construction activity is of a unique character which cannot reasonably be completed or performed during the permitted hours and which is not of a recurring nature, provided that prior to engaging in such activity the contractor or his representatives gives notice of the time and scope of such proposed activity, the notice to be given in a manner approved by the public works authority.”
5. Material Deliveries: Schedule and designated location for delivery of materials and boxed goods.

F. Security & Public Safety

1. The Construction Management Plan will depict all proposed fencing or other barriers and access gates (with Knox locking devices) with the intent of separating pedestrian and vehicle circulation from the construction site.
2. Structures undergoing construction, alteration, or demolition operations, including those in underground locations, shall comply with NFPA 1 Chapter 16. *Safeguarding Construction, Alteration, and Demolition Operations*.
3. Fire Safety Program. An overall construction or demolition fire safety program shall be developed. Essential items to be emphasized include the following:
 - o Good Housekeeping
 - o On-site security
 - o Installation of new fire protection systems as construction progresses
 - o Preservation of existing systems during demolition
 - o Organization and training of an on-site fire brigade
 - o Development of a pre-fire plan with the local fire department
 - o Rapid communication
 - o Consideration of special hazards resulting from previous occupancies
 - o Protection of existing structures and equipment from exposure fires resulting from construction, alteration, and demolition operations
4. Blasting, if required, shall conform with all measures of Article VIII. Regulation of Explosives in the Land Use Code and Section 3.7 Standards for Blasting and Regulation of Explosives in Portland’s Technical Manual.
5. Any proposed temporary security lighting shall be shown on CMP and all fixtures shall be full cutoffs.

G. Construction Permitting and Traffic Control Plans

1. Construction Activity in Public Streets: Construction activity in the public right-of-way is controlled by Chapter 25 Article VII of the City Code of Ordinances. Required licenses and permits, restrictions on activity, and fees & area are outlined in that

Chapter. Rules and Regulations for Excavation Activity are available through the Street Opening Clerk at the Department of Public Works. At no time can construction activity including delivery vehicles close or block streets or affect public safety access without prior notice and approval of the Department of Public Works.

2. Sewer and Stormwater: Sewer and stormwater water system connections are controlled by Chapters 24 and 32 of the City Code of Ordinance. Required permits for new connections and/or abandonment of existing connections are available through the Street Opening Clerk at the Department of Public Works. Rules and Regulations for these utility systems are available through the City Engineer's office of the Department of Public Works and in Section II of the Technical Manual.
3. Traffic Control Plans: Construction activity that impacts the existing public street system must be controlled to protect the safety of the construction workers and all modes of the traveling public. Projects are required to submit a satisfactory 'maintenance of traffic' (MOT) plan prior to any site plan, subdivision, or street opening permit approval. MOT plans may be required for projects that have impacts on local streets.

Maintenance of Traffic (MOT) plans shall provide for the safe passage of the public through or along the construction work zone. On a case-by-case basis, applicants may be allowed to close a street and/or detour a mode of traffic when absolutely necessary for safety. MOT plans shall employ the appropriate techniques and devices as called for in the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). In addition:

- Construction speed signing may be used as needed to slow traffic
- Traffic Control signs shall not be placed where they are an obstruction to bicycles or pedestrians.
- In some situations, flaggers may be required.
- Police details may be required at lighted intersections and may be requested by the City's transportation engineer or his designee.

All existing modes of travel in work zone area shall be accommodated if impacted by the activity. The safe passage of pedestrians, bicyclists, transit providers, and motorists are of equal importance when planning out the work zone; no pre-existing travel mode may be eliminated without the express approval of the Department of Public Works. The MOT should also address on-street parking impacts, including deliveries and parking for adjoining businesses and property owners, analysis of roadway capacity or diversion capacity if street closure or change to roadway capacity is required, and coordination with other on-going or future construction or utility projects in the vicinity.

- Traffic control of bicycle and pedestrian facilities or routes through work zones shall be maintained until the bicycle and pedestrian facilities or routes are ready for safe operation. Traffic control will not be removed to allow auto travel at the expense of bicycle and pedestrians.

- Barrier systems utilized to separate the construction activity from the public street and /or sidewalk shall not inhibit sight distances, particularly for visibility of pedestrians and bicyclists.
- ADA compliance shall be maintained.

Use of public parking spaces or the blockage of any portion of sidewalk for the purpose of construction activity shall require an occupancy permit and appropriate fee as assessed by the Department of Public Works.

H. Site Management and Controls

The final Construction Management Plan will address maintaining the site in a safe condition and will include the following:

1. Regular trash and debris removal
2. Street cleaning and damage controls
3. Dust controls- The construction shall comply with Portland's requirements under Section 25-129 on Noise, dust and debris (Attachment 2).
4. Noise: The construction shall comply with Portland's requirements under Section 17-18 of the City Code (Attachment 1) and Section 25-129 on Noise, dust and debris Attachment 2).
5. Rodent Control will be provided, if applicable, by a professional exterminator and consistent with Chapter 22 of the City Code.
6. Snow Removal: Pursuant to Section 25-173 Contractors to ensure a safe means of travel within the work zone.
 - 1) Snow/ice removal or commence automatically from (1" of snow and up) or Ice
 - 2) Remove snow as needed within the work zone, including parking spaces & not to block any driveways or sight lines with the piles of snow.
 - 3) Clear all walks & ramps with the work zone
 - 4) Sand or Salt as needed
 - 5) Clear all basin or drainage to help snow melt
 - 6) This would include Monday-Friday Sat/Sunday/Holidays

I. Erosion Control and Preservation of Trees

1. The Contractor shall install all erosion and sedimentation controls as depicted on the approved erosion and sedimentation control plan prior to the pre-construction meeting for inspection by the City. The Contractor shall regularly inspect the control measures, no less than weekly and after significant storm events, and maintain any installed temporary or permanent stormwater management systems in working order. The contractor shall document all inspection activities and corrective actions and be prepared to provide these documents for inspection by the City, Maine Department of Environmental Protection or the U.S. Environmental Protection Agency upon request.
2. The Contractor shall maintain all tree and landscaping preservation measures as depicted on the landscaping plan within the area of construction.
3. The storage of materials shall be identified and avoid being located under/near trees.

J. Construction Staging Area

1. The Construction Management Plan shall depict location of the material staging areas, the location on onsite temporary construction trailers, the location on onsite truck delivery holding areas, the location onsite truck washing stations, masonry mixing

stations, the general location of the construction security fence and the general location of temporary construction dumpsters. An open storage areas shall be shown on the plan.

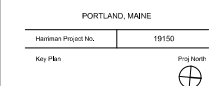
2. **Delivery Truck Holding Areas On-Site:** The delivery holding area shall be shown on the plan and shall not be blocked during construction. On days when the construction activities require multiple truck deliveries, these deliveries will be carefully scheduled so that there is always adequate on-site area for the holding of the trucks until they can be unloaded. Once at the site all vehicles well be brought within the fence line and will make every attempt to avoid queueing on public streets.
3. **Delivery Truck Holding Areas Off-Site:** In the event that adequate on-site area for holding of trucks is not available, an off-site marshalling area will be utilized for trucking. The designated off-site location will be identified in the construction management plan.

K. Parking During Construction

1. **Construction Parking:** Adequate parking for construction workers shall either be provided on site or arrangements for off-street parking at an off-site location shall be provided. The parking arrangements shall be included in the construction management plan.
2. **Parking:** Where existing facilities are remaining in operation during construction, the construction management plan shall identify how the parking for employees and others shall be managed.
3. **Truck Routes and Volumes:** The Construction Management Plan shall address the designated truck routes and expected truck volumes.

L. Special Measures as Necessary

This construction work will take place over a 2-year or long period. The Construction Management Plan should provide details and demonstrate that all appropriate special measures have been taken to avoid, minimize, or possibly compensate for potential impacts. This may include taking baseline measurements before construction, such as arranging to photograph the foundations of nearby properties upon consent of the owners, in order to assess any future impacts of vibration, noise, etc.



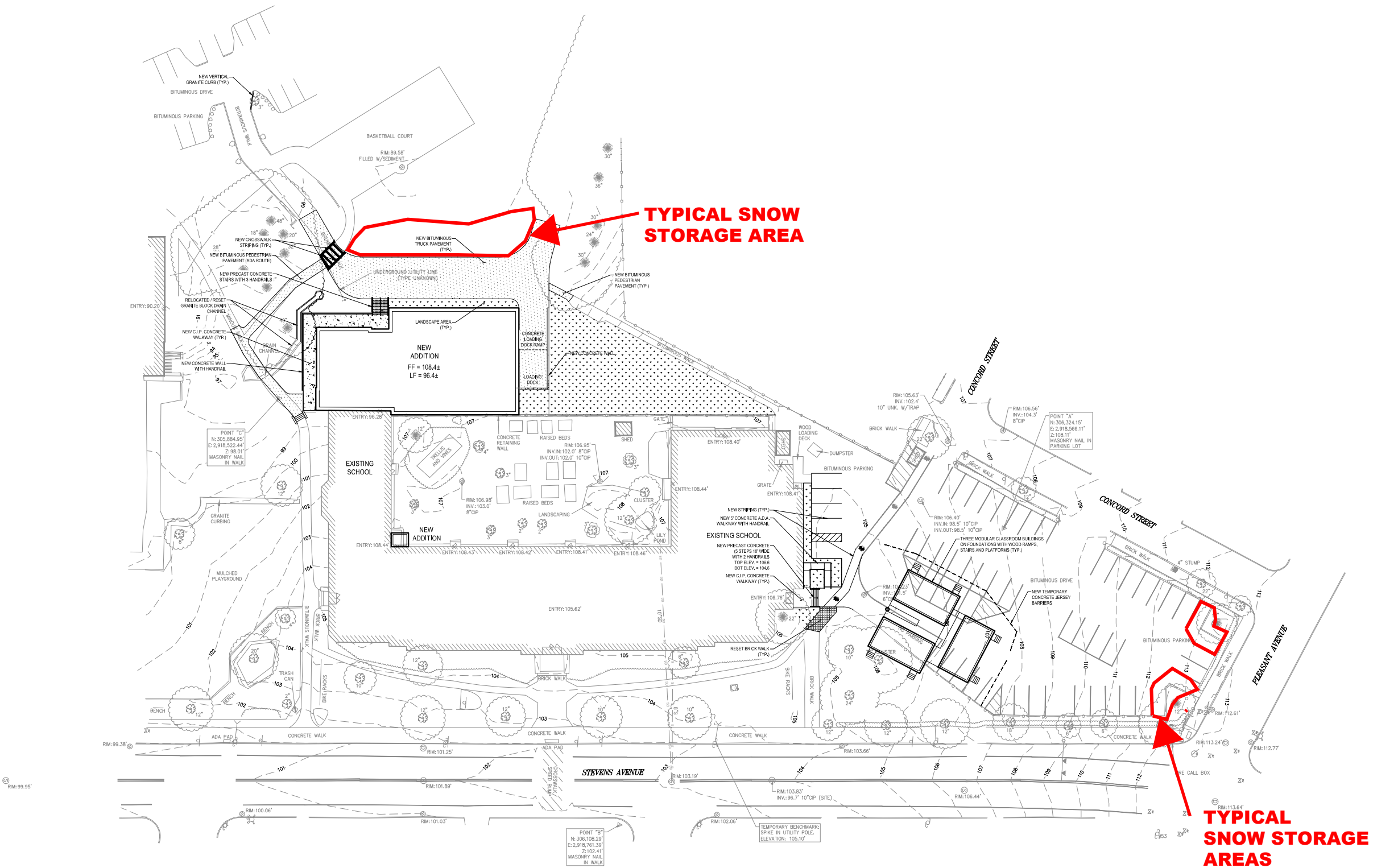
CM-1

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LONGFELLOW
ELEMENTARY SCHOOL

PORTLAND, MAINE	
Harriman Project No.	19150
Key Plan	Proj North



**NOTE:
IF SNOW ACCUMULATION EXCEEDS
ON-SITE STORAGE SPACE, PORTLAND
PUBLIC SCHOOLS WILL REMOVE THE
SNOW FROM THE SITE, AS NECESSARY.**

SEPTEMBER 10, 2020	
Rev	Description

PRELIMINARY
NOT FOR
CONSTRUCTION

Drawing Scale	0' 10' 20' 30'

SNOW PLAN

SP-1