

1. Legal Ad

Documents: [PB LEGAL AD 4-12-16.DOCX](#)

2. Agenda

Documents: [PB AGENDA 4-12-16.DOCX](#)

3. Waynflete School - 360 Spring Street

3.I. Report

Documents: [360 SPRING STREET \(MEMO\).PDF](#)

3.II. Report Attachments

Documents: [360 SPRING STREET \(REPORT ATTACHMENTS\).PDF](#)

3.III. Applicants Submittal

Documents: [360 SPRING STREET \(APPLICANTS SUBMITTAL\).PDF](#)

3.IV. Plans

Documents: [360 SPRING STREET \(PLANS\).PDF](#)

4. Expansion Of India Street Historic District

4.I. Report And Attachments

Documents: [INDIA STREET \(PB REPORT AND ATTACHMENTS\).PDF](#)

5. B-2b Text Amendments - Forest Avenue

5.I. Postponing Memo

Documents: [POSTPONING MEMO.PDF](#)

**LEGAL ADVERTISEMENT
PORTLAND PLANNING BOARD MEETING**

The Portland Planning Board will hold a meeting on Tuesday, April 12, 2016, Council Chambers, 2nd Floor, City Hall, 389 Congress Street. **Public comments will be taken at this meeting.**

Workshop – 4:30 p.m.

- i. Level III Site Plan Application; Campus Upgrades; 360 Spring Street; Waynflete School, Applicant. (4:30 – 6:00 p.m. estimated time) The Planning Board will hold a workshop on the proposed demolition of the current gymnasium, construction of a new gymnasium, the renovation and expansion of the lower school, and the development of playgrounds, gardens and associated site features. The proposed new building footprint is 20,838 sq. ft. and the proposed total floor area is 40,110 sq. ft. which is a net total floor area of 21,901 sq. ft. The site is located in the R-4 zone with the Waynflete School Overlay Zone and the West End Historic District.

Public Hearing – 7:00 p.m.

- i. Expansion of the India Street Historic District, City of Portland, Applicant. (7:00 -8:00 p.m estimated time) The Planning Board will hold a public hearing on a request by M & D Federal, LLC., to expand the western boundary of the India Street Historic District to include the properties at 88, 96 and 100 Federal Street. The proposed district expansion is being recommended by the Historic Preservation Board.

Evening Workshop (Immediately following the Public Hearing)

- i. Zoning Text Amendments for B-2b Zone, City of Portland, Applicant. (8:00 p.m estimated time) The Planning Board will hold a workshop on potential concepts for text amendments to the B-2b zone that support the goals of Transforming Forest Avenue, including but not limited to concepts of minimum building height and incentives for historic preservation.

ELIZABETH BOEPPLE, CHAIR - PORTLAND PLANNING BOARD

CITY OF PORTLAND, MAINE

PLANNING BOARD

Elizabeth Boepple, Chair
Sean Dundon, Vice Chair
Carol Morrisette
David Eaton
Kristien Nichols
Maggie Stanley
Lisa Whited

AGENDA PORTLAND PLANNING BOARD MEETING

The Portland Planning Board will hold a meeting on Tuesday, April 12, 2016, Council Chambers, 2nd Floor, City Hall, 389 Congress Street. **Public comments will be taken at the workshop and public hearing.**

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PUBLIC HEARING – 7:00 p.m.

1. ROLL CALL AND DECLARATION OF QUORUM

2. COMMUNICATIONS AND REPORTS

3. REPORT OF ATTENDANCE AT THE MEETING HELD ON MARCH 22, 2016:

Workshop: Boepple, Dundon, Morrisette, Nichols, Stanley and Whited present. Eaton recused.

Public Hearing: All members present.

4. REPORT OF DECISIONS AT THE MEETING HELD ON MARCH 22, 2016:

- i. Zoning Map Amendment from B-2 and R-5 to B-2b; Vicinity Forest Avenue, Preble Street Extension and Baxter Boulevard, City of Portland, Applicant. Dundon moved, Morrisette seconded a motion to recommend the proposed map amendment for adoption to the City Council. Voted: 6-1, Whited opposed.
- ii. Subdivision Review and Conditional Use Review for Ensuring Affordable Housing; 169 Newbury Street; Luminato Condominium, LLC., Applicant. Dundon moved, Morrisette seconded a motion to waive the 20 wide driveway width to allow the width as shown on the plan. Vote: 7-0. Dundon moved and Whited seconded a motion to waive the street tree requirement to allow a financial contribution of \$2,400 to the street tree fund. Vote: 7-0. Dundon moved and Whited seconded a motion to approve the subdivision plan with 6 conditions. Vote: 7-0. Dundon moved and Whited seconded a motion to approve the conditional use to ensure workforce housing. Vote: 7-0.

- iii. Conditional Use; 235 Ocean Avenue; Cheverus High School, Applicant. Dundon moved and Morrisette seconded a motion to approve the conditional use for the conversion of a single family house to office space with one condition. Vote: 7-0
- iv. Level III Site Plan and Subdivision; 4 Unit Residential Building; 31 Fore Street; Bob and Carrie LeBlanc, Applicants. Dundon moved and Morrisette seconded a motion to waive the driveway width to allow 27.75 feet. Vote: 7-0 Dundon moved and Morrisette seconded a motion to waive the driveway separation from the corner to allow 31.26 feet. Vote: 7-0. Dundon moved and Morrisette seconded a motion to waive the street tree requirement and allow a tree to be planted on the property or to pay \$200 into the street tree fund. Vote: 7-0. Dundon moved and Morrisette seconded a motion to approve the subdivision plan with two conditions of approval. Vote: 7-0. Dundon moved and Morrisette seconded a motion to approve the site plan application with 7 conditions of approval. Vote: 7-0.

5. NEW BUSINESS

- i. Expansion of the India Street Historic District, City of Portland, Applicant. (7:00 -8:00 p.m. estimated time) The Planning Board will hold a public hearing on a request by M & D Federal, LLC., to expand the western boundary of the India Street Historic District to include the properties at 88, 96 and 100 Federal Street. The proposed district expansion is being recommended by the Historic Preservation Board.

6. EVENING WORKSHOP (Immediately following the Public Hearing)

- i. Zoning Text Amendments for B-2b Zone, City of Portland, Applicant. (8:00 p.m. estimated time) The Planning Board will hold a workshop on potential concepts for text amendments to the B-2b zone that support the goals of Transforming Forest Avenue, including but not limited to concepts of minimum building height and incentives for historic preservation.

ELIZABETH BOEPPLE, CHAIR - PORTLAND PLANNING BOARD



Memorandum

Planning and Urban Development Department

Planning Division

To: Elizabeth Boepple, Vice Chair, and Members of the Portland Planning Board
From: Nell Donaldson, Planner
Date: April 8, 2016
Re: Waynflete Gym and Lower School
Project #: 2016-034 **CBL:** 61-F-2, 3, 4, 5, 6, 7, and 11
Meeting Date: April 12, 2016

I. INTRODUCTION

The Waynflete School has requested preliminary Level III site plan review for the construction of new gymnasium and Lower School facilities on their 5.6 acre campus in the city's West End. The project involves the demolition of the existing gym, replacement with a new 13,000 SF building, the renovation and expansion of the Lower School, and the construction of new outdoor play spaces. Sidewalk, stormwater and utility upgrades are also proposed.

This development is being referred to the Planning Board for compliance with the site plan standards of the land use code. A total of 484 notices were sent to property owners within 1,000 feet of the site and a legal ad ran in the *Portland Press Herald* on April 4 and 5, 2015.

Applicant: The Waynflete School

Consultants: Lauren Swett, Woodard & Curran; Scott Simons Architects; Titcomb Associates, Surveyor

II. REQUIRED REVIEWS

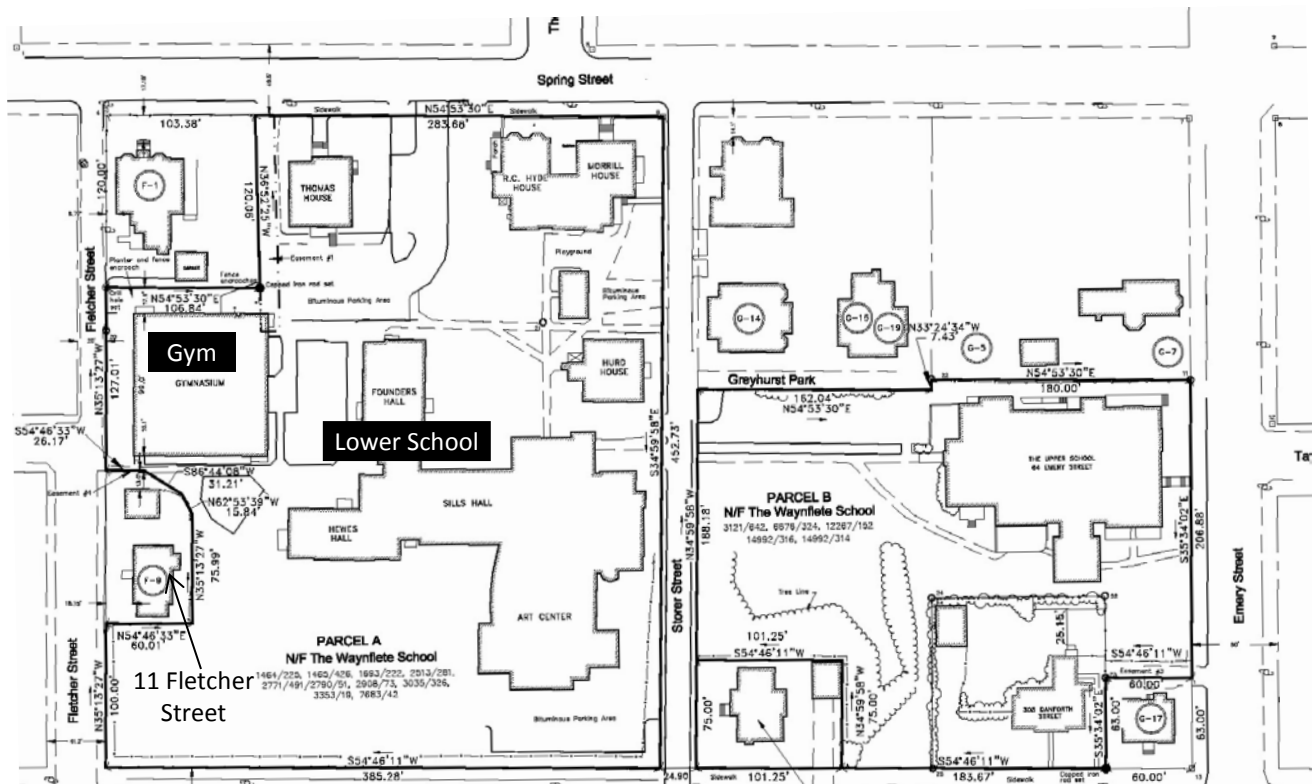
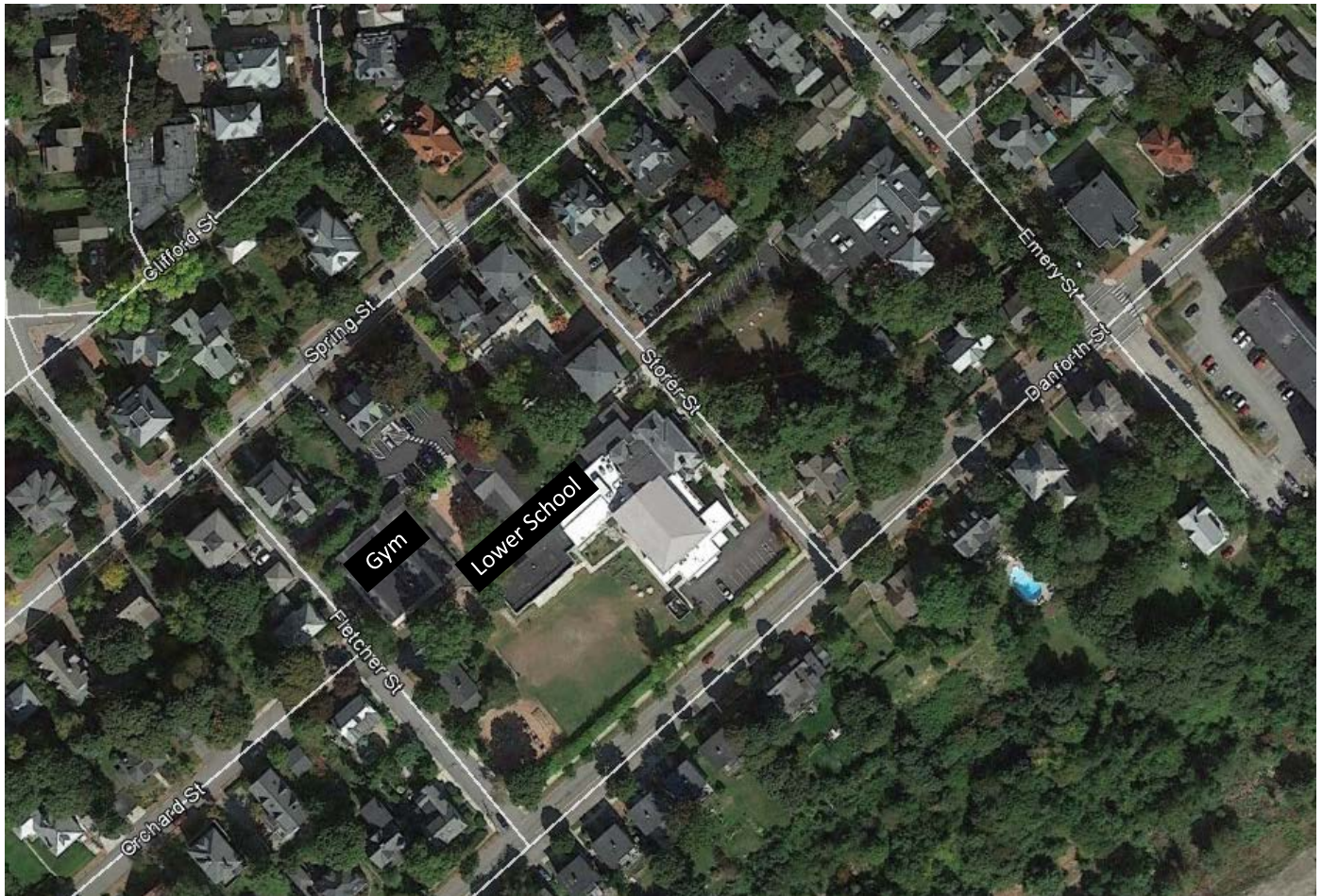
<i>Waiver Requests</i>	<i>Applicable Standards</i>
<i>Maximum illumination level – to allow an illumination level of 5.1 foot candles outside the south entrance of the Lower School</i>	Technical Manual, <i>Section 12.2.3</i> . Maximum illumination levels shall be 5.0 foot candles when measured at grade.
<i>Light trespass – to allow an illumination level of .4 foot candles at the property line south of the gym</i>	Technical Manual, <i>Section 12.2.5</i> . Maximum illumination level at the property line shall not exceed .1 foot candle when measured at grade.

<i>Review</i>	<i>Applicable Standards</i>
Site Plan	<i>Section 14-526, with Historic Preservation review</i>

III. PROJECT DATA

Existing Zoning	R-4 with Waynflete Overlay
Existing Use	School
Proposed Use	School
Proposed Development Program	13,400 SF gymnasium and 26,700 SF Lower School
Parcel Size	Approximately 5.6 acres

	<i>Existing</i>	<i>Proposed</i>	<i>Net Change</i>
Building Footprint	9,242 SF (Gym) 4,520 (Lower School)	10,568 SF 10,270 SF	1,326 SF 5,750 SF
Building Floor Area	9,242 SF (Gym) 8,967 (Lower School)	13,412 SF 26,698 SF	4,170 SF 17,731 SF
Impervious Surface Area	91,876 SF	96,652 SF	4,776 SF
Parking Spaces (on site)	50	50	0
Bicycle Parking Spaces	<i>Numbers to be provided at time of final review</i>		
Estimated Cost of Project	\$12,500,000		



Figures 1 and 2: Waynflete campus, including existing gym and Lower School, aerial (above) and survey (below)

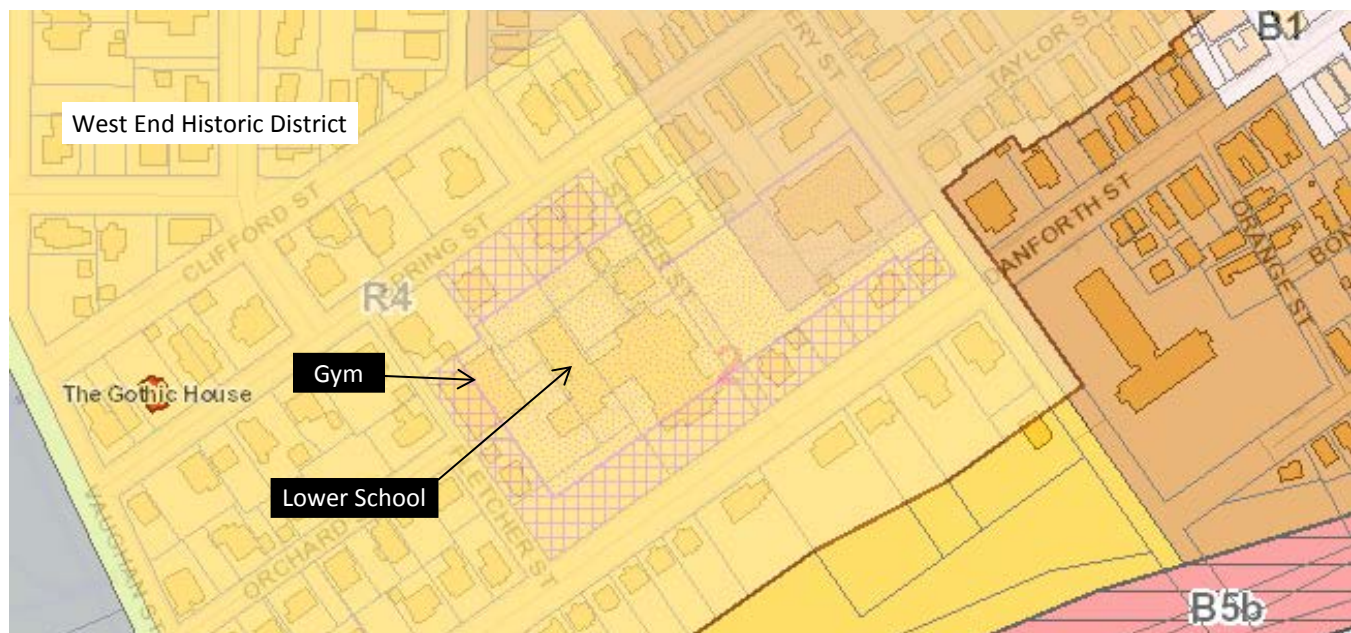
IV. BACKGROUND & EXISTING CONDITIONS

The Waynflete School is a 550 student private day school serving students from early childhood to 12th grade, with approximately 110 full time faculty and staff. The campus has occupied its home in the West End since the early 1900s, and today consists of an Upper School on Emery Street, a Middle School on Spring and Storer Streets, a Lower School at the center of the campus, an arts center, a gymnasium, various administrative buildings, and outdoor play and gathering spaces. The campus occupies most of the block surrounded by Spring Street, Storer Street, Danforth Street, and Fletcher Street, and half of the block to the east to Emery Street (*Figures 1 and 2*).

The existing Lower School occupies an early 20th century building at the center of the campus, with the most recent major addition in 1960. The school's master plan has listed the renovation and addition proposed under this application as a priority action item for at least 10 years (*Attachment V*).

Similarly, the existing gym, which lies along Fletcher Street but fronts the interior of the campus, was constructed in the mid-1970s. Like the Lower School, its renovation or replacement has comprised a priority in the school's master plan since 2005 (*Attachment V*).

Waynflete lies in the R-4 residential zone and is subject to the Waynflete Overlay, a zoning designation created in 2010 with the expressed intent of balancing Waynflete's growth with the need for clearly defined campus boundaries. Waynflete also lies within the West End Historic District. Residential uses surround the school on all sides.



Figures 3 and 4: Existing zoning (above); view of existing gym from Fletcher Street (right)





Figure 5: Proposed gym and Lower School from southwest

V. PROPOSED DEVELOPMENT

Under the current site plan application, Waynflete proposes three major campus upgrades:

1. *Renovation and expansion of Lower School:* The plans include an 18,000 SF expansion of the existing Lower School in order to provide larger classrooms, maximize shared spaces, add office space, and enhance connections to the adjacent outdoor play spaces while meeting Passive House certification standards. Enrollment is not anticipated to increase as a product of the expansion.
2. *Construction of a new gymnasium:* The plans also include the demolition of the existing gym and replacement with a larger facility with greater capacity, expanded locker rooms, additional court space, and office space in the same location on Fletcher Street. The building is designed to meet LEED Platinum standards.
3. *Renovated grounds and play spaces.* Lastly, the plans show redesigned play spaces between the gym and Lower School and between the Lower School and the adjacent neighbor on Fletcher Street, as well as a garden space to the east of the Lower School.

Stormwater and utility improvements are proposed in association with this work, as are sidewalk and crosswalk upgrades.

VI. PUBLIC COMMENT

The Planning Division has not received any public comments on the plans. Waynflete hosted a neighborhood meeting on Monday, March 4. The meeting minutes show that neighbors raised questions about the size of the proposed gym building, the design of the gym building, landscaping along the gym frontage on Fletcher Street, internal pedestrian circulation, and construction sequencing and impacts to school operations (*Attachment T*).

VII. RIGHT, TITLE, & INTEREST

Waynflete's submittal includes deeds as evidence of right, title, and interest (*Attachment E*). There are four easements which currently encumber the site, including driveway access easements to abutters on Spring Street and Emery Street, a utility pole easement to Central Maine Power, and a sidewalk easement agreement with the abutter on Fletcher Street, where the school's walkway from Fletcher Street/Orchard Street has historically encroached on the 11 Fletcher Street property (*Figure 2*). In their most recent submittal, Waynflete has provided a copy of this easement (*Attachment E*). Under the current plans, this walkway will be reconstructed entirely within Waynflete's property. Staff has requested that all easements be depicted where shown on the final plan set.

Bill Clark, the city's surveyor, has reviewed the survey submitted with the preliminary application and writes,

Need to mark property corners and add State Plane Coordinates.

Site plan refers to a existing conditions plan dated 10/27/2015. Was that included?

The site plan shows boundary information. [Add information on surveyor or source.]

I think it will be best to include the stamped surveyor's existing conditions plan in the submission set for the Archives.

In the most recently submitted plan set, the existing conditions plan has been provided. The applicant has stated that the boundary survey will be updated and included with the final plan set.

VIII. FINANCIAL & TECHNICAL CAPACITY

The estimated cost of the project is approximately \$12.5 million. Waynflete has submitted a letter from People's United Bank attesting to the institution's financial and management capacity (*Attachment I*).

IX. ZONING ANALYSIS

Staff conducted a preliminary zoning analysis for both proposed buildings under the R-4 and Waynflete Overlay Zones. This zoning analysis raised questions about the applicant's proposed setback, building height, and lot coverage calculations. In response to these questions, Waynflete has provided supplemental zoning information (*Attachment G*). In this supplemental information, the school documents front yard and side yard setback calculations which meet the R-4 dimensional requirements, the methodology for which has been reviewed by Ann Machado, the city's Zoning Administrator. It should be noted that, in the plans, an existing non-conformity in the rear yard gym setback is maintained; Ms. Machado has advised that this is allowable so long as the non-conformity is not exacerbated. The applicant has also provided building height and lot coverage calculations which demonstrate that the plans meet the provisions of the R-4 and Waynflete Overlay Zones.

The Waynflete Overlay Zone includes language related to off-street parking and loading. These provisions are discussed in detail under site plan review below.

X. SITE PLAN SUBMISSION REQUIREMENTS (*Section 14-527*)

Per the city's land use ordinance, the final plan submittal shall include all submittal requirements as noted in *Sections 14-527(e) and (f)*.

In their preliminary application, the applicant has noted that a Maine Construction General Permit will be required. The applicant has asked that this will be treated as a condition of approval.

The applicant has also provided a Construction Logistics Plan in the preliminary submittal (*Attachment J*). Tom Errico, the city's consulting traffic engineer, has reviewed this plan and notes,

A Construction Logistics Plan has been provided. In general, I find it to be acceptable, although I need to conduct a review of the construction vehicle access route and the applicant will need to provide details on traffic management during construction of the sidewalk.

The applicant has reviewed these comments and noted that the logistics plan will be updated. It should be noted that construction easements will be required.

XI. SITE PLAN REVIEW

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

1. **Transportation Standards**

a. *Impact on Surrounding Street Systems*

In their preliminary submittal, the applicant has stated that “the campus upgrades are not being proposed for the purpose of accommodating larger enrollments; rather, it is intended to improve the overall learning experience of the classrooms. As such, an increase in traffic throughout, to, and from the site is not anticipated at this time” (*Attachment K*). Both planning staff and Mr. Errico have requested additional information from the applicant on this point, as the application notes that gym capacity will increase under the proposed plans and the square footage of the Lower School building is proposed to expand substantially. Mr. Errico writes,

The application materials speak to increased gym capacity and having a larger venue for other nonathletic events. The applicant should provide specific details on how the occupancy loading capacity of the gym will change with the project. If an increase is expected, the applicant should note increases traffic and parking levels.

In their most recent submittal, the applicant has provided a copy of Waynflete’s 2005 Campus Master Plan, with an update from 2008 (*Attachment V*). The applicant has also provided a copy of the school’s 2008 Transportation Demand Management (TDM) Plan, required pursuant to the overlay zoning, as well as two subsequent reports pertaining to this plan (*Attachment K*). In their most recent submittal, they have noted that they have contracted with a traffic engineering firm to update the TDM plan. As part of this work, they anticipate developing information on the project’s potential impacts on trip generation. This documentation will be available at the time of final hearing.

b. *Access and Circulation*

The most recent plans include new brick sidewalks on the lower part of Fletcher Street, Danforth Street, and a small portion of Spring Street where utility work is proposed. The plans also include new ramps and crosswalks at Fletcher Street and Danforth Street (similar crosswalks at Storer Street and Danforth have been eliminated from the plans due to grade and alignment constraints and at the suggestion of the city’s traffic engineer.) The primary entrance to the gym and Lower School would be from the main campus entrance on Spring Street. A secondary, gated entrance is to remain from Fletcher Street, in the space between the proposed gym and the abutter at 11 Fletcher Street. Internal circulation is proposed via concrete sidewalk. No new vehicular access is proposed, although the applicant does anticipate repaving in the area of utility work in the access drive from Spring Street.

Regarding the proposed sidewalk and crosswalk elements, Mr. Errico writes,

I generally find the proposed crosswalk on Danforth Street to be acceptable. Please noted the following:

- *Warning signs that meet MUTCD standards shall be installed on Danforth Street.*
- *I need to review the ramp configurations with City staff.*
- *A detectible warning panel and any physical adjustment to ramp on the west side of Fletcher Street shall be included.*
- *On-street parking will likely need to be prohibited on the south side of Danforth Street in the area of the crosswalk. This change will require Council Action regarding changes to the Traffic Schedule. The applicant would be required to provide supporting information for the Council packet.*

Bruce Hyman, the city’s Transportation Program Manager, has also reviewed the sidewalk and crosswalk plans and writes,

The ramps, as shown in D202 (the detail sheet) and the Site Plan in C100, are not ADA compliant. If the ramps are to be constructed as shown, the Detectable Warning Panels need to extend the full width of the ramp (the flush area), not with two individual panels. The ramp detail on Sheet D202 should also provide additional information on grades on

the ramps (e.g., 8% on the ramping down, and maximum of 2% cross-slopes on the landing areas within the ramp. They should indicate how the grades within the landing area of the ramp will prevent ponding of water within the landing area and also at the base of the ramp where it meets the street (a typical problem that needs to be avoided).

For the ramping down portions of the ramps, there may need to be curb at the backside of the ramp for proper ramping down. The detail needs to be clearer for the contractor.

In their most recent submittal, the applicant notes that additional coordination around the location of crosswalks, ramps, and renovated sidewalks will be required. These questions will be resolved prior to final site plan review.

c. *Public Transit Access*

Greater Portland METRO's Route 8 follows Emery Street southbound past Waynflete's Upper School. Staff is investigating the applicability of the public transit access standard of the site plan ordinance.

d. *Parking*

As noted above, the Waynflete Overlay Zone contains its own regulations related to off-street parking, which state that "[t]he amount of parking required for any change of use, new building, or building addition within the zone shall be determined during site plan review, based on an analysis of school-wide demand and supply, pursuant to a comprehensive school-wide TDM plan (Section 14-276.7). Waynflete has not proposed to create any additional off-street vehicular or bicycle parking under this application. As noted above, they have also stated that trip generation will not change as a product of the proposed construction. Both Mr. Errico and planning staff have requested more information in this regard, and in response, the applicant has both provided the school's existing TDM plan and stated that they intend to update that plan over the course of this review. A more complete discussion of parking supply and demand related to the proposed Lower School and gym projects will be provided at the time of final review.

Related to the issue of parking, it should be noted that, when the city's Planning Board approved Waynflete's Arts Center in 2007, it did so with a condition, based largely on Historic Preservation grounds, that the parking lot on the south side of the Arts Center be revisited at the time of the school's next Planning Board level site plan review, and that this "facility may be required to be relocated based upon the conditions at that time." In 2013, the Historic Preservation Board approved a condition with similar wording, noting that the "parking lot, dumpster, and associated enclosure [should] be maintained in good order and not expanded beyond their current boundaries." Under the current application, Waynflete proposes to leave this parking area in its current condition, where it is screened by existing vegetation on the Danforth frontage. Deb Andrews, the city's Historic Preservation Manager, has stated that she will resolve the subject of this parking with the Historic Preservation Board prior to their final hearing on the project. No major concerns with the continuation of this parking are anticipated at this time.

e. *Transportation Demand Management*

A Transportation Demand Management Plan is required both as a product of the Overlay Zone and site plan review. As noted above, the applicant has provided a copy of their existing TDM plan and stated that this plan will be updated to reflect current conditions. The revised plan will be discussed at the time of final review.

2. *Environmental Quality Standards*

a. *Preservation of Significant Natural Features*

There are no known significant natural features on the site.

b. *Landscaping and Landscape Preservation*

The preliminary landscaping plans show, at a conceptual level, the plan for the quad area between the gym and the Lower School and the sloped play area directly to the west of the Lower School, both of which will be reworked as a product of this application. In reviewing these conceptual plans, planning staff has

expressed concern about the loss of mature plantings on the north side of the gym. Jeff Tarling, the city's arborist, has acknowledged the necessity of replacement plantings in this area, writing,

The replacement of the existing Hemlock hedge is a key element in the landscape plan. Options include Serbian Spruce, Swiss Stone Pine, Chamaecyparis (Cedar), Red Cedar (Juniper), Arborvitae. This discussion has been ongoing with the project team.

Staff has also noted that a transformer is proposed for this area, proximate to the northerly abutter, and has advised that this transformer either be more adequately buffered or moved to a location more interior to the site.

In the most recent submittal, the applicant shows many of the species requested by Mr. Tarling in the area between the north side of the gym and the abutter's property and state that they are currently engaging this abutter with respect to plant selection, screening, and landscaping treatments. They have also noted that they are exploring alternative locations for the transformer.

Mr. Tarling has also commented on the existing white oak which lies on the property at 11 Fletcher Street near the Waynflete property line. He writes,

The proposed project should work to minimize impact to this 'Heritage' White Oak tree on the nearby property. This would include minimizing disturbance to the root zone. (The root zone likely extends beyond the drip line of the canopy in places) Work in the area beneath the drip line should minimize disturbance, storage of materials and follow best management practices. (see notes / web links from ISA, 'Avoiding construction standards and Treatment of trees by construction', these standards & recommendations can be incorporated into the final landscape plan, perhaps in the notes section.)

In their most recent submittal, the applicant has acknowledged potential impacts to this tree and stated that utility locations will be reviewed and adjusted to minimize impacts to the existing root system.

Lastly, Mr. Tarling has also commented on the proposed landscape treatment for proposed retaining walls abutting 11 Fletcher Street. He writes,

The project proposes to move existing retaining walls closer to private property lines. Landscape buffer zones between the active play areas and private properties and effective treatment is a key element of the landscape plan for the proposed project. Quality existing vegetation should be incorporated into the design when possible.

In the most recent submittal, the applicant has provided wall sections which demonstrate the length and height of these walls. Additional comments from Mr. Tarling will be available at the time of final review.

Street trees currently exist along all property frontages. No additional street trees are proposed.

c. *Water Quality/Storm Water Management/Erosion Control*

Under the current plans, the applicant proposes to increase the impervious surface on the site by approximately 5,000 SF. The plans include a subsurface underdrained sand filter in the field area to the south of the Lower School. This filter system will reduce the peak runoff rate and treat 100% of the site's new impervious area, as well as a significant portion of the site's impervious area overall.

Steve Bushey, the city's consulting civil engineer, has reviewed the grading and drainage and stormwater management plans and found them generally acceptable. His comments, which are largely technical in nature, are included as *Attachment 5*.

3. Public Infrastructure and Community Safety Standards

a. Consistency with Related Master Plans

The project is generally deemed consistent with related master plans.

b. Public Safety and Fire Prevention

In preliminary comments, staff has raised some concerns with respect to Crime Prevention through Environmental Design (CPTED), particularly as it relates to the sunken stairwells on the north and south sides of the proposed gym building. In their most recent submittal, the applicant has noted that these stairwells will have canopies, fencing, and lighting which should mitigate public safety concerns. In the final submittal, the applicant should provide a detail for fencing. Any fencing used in these locations should allow for some natural surveillance into the stairwells, particularly on the north side, where foot traffic is likely to be less frequent.

The applicant has provided a fire code analysis for review by the city's Fire Prevention Bureau (*Attachment Q*). Assistant Fire Chief Keith Gautreau has reviewed the life safety summary and notes the following,

Emergency access to these proposed buildings is difficult and limited. The campus does not have any proposed fire lanes or emergency access to the lower school.

I would like to see the two nearest fire hydrants data on water flow from the PWD Portland Water District.

*2009 NFPA 1 18.4 Fire Flow Requirements for Buildings
-may require additional installation of fire hydrants to meet fire flow requirements.*

Since providing these comments, Assistant Chief Gautreau has met with Waynflete to discuss these concerns. His final comments will be available at the time of final review.

c. Availability and Capacity of Public Utilities

In their preliminary application, the applicant has noted again that the plans "are not being proposed to accommodate a larger enrollment...As such, an increase in the utility supply needs of the site is not anticipated and we therefore do not anticipate the need to verify capacity to serve" (*Attachment O*). Staff is working with DPW to review this approach.

Per the plans, the applicant proposes to discharge stormwater and sewer, via separate lines, into the combined sewer in Danforth Street. David Margolis-Pineo, the city's Deputy Engineer, has reviewed the plans and notes,

City Code does not allow for drain laterals to be connected to catchbasins. The proposed drainage connection shall be to the combined sewer in Danforth St and if the lateral is 8" or larger a manhole shall be installed.

In their most recent submittal, the applicant has noted that they are working with the Department of Public Works on the location of storm drain connections.

4. Site Design Standards

a. Massing, Ventilation, and Wind Impact

The bulk, location, or height of the proposed buildings are not likely to result in health or safety problems from a reduction in ventilation to abutting structures.

b. Shadows

The project is not anticipated to result in shadows on publicly accessible open space.

c. *Snow and Ice Loading*

The project is not anticipated to result in snow or ice accumulation on public ways or adjacent properties.

d. *View Corridors*

The project does not abut a protected view corridor.

e. *Historic Resources*

The project lies within the West End Historic District. As such, it is required to obtain a certificate of appropriateness under the city's historic preservation ordinance. The Historic Preservation Board has reviewed the plans at two workshops on November 4, 2015 and March 10, 2016. At the most recent of these workshops, the board generally reacted favorably to the plans and elevations, focusing outstanding comments on the Fletcher Street façade of the proposed gym building, and particularly the way that this façade interfaces with the street. Landscaping, materials, and window design remain to be resolved prior to a final Historic Preservation hearing.

f. *Exterior Lighting*

The applicant has provided cut sheets showing full cutoff fixtures in compliance with the city's Technical Manual (*Attachment R*). The applicant has also provided a photometric plan which shows that the lighting exceeds the maximum permitted illumination level of 5.0 foot candles at the southern entrance to the Lower School, where a reading of 5.1 foot candles is shown. These plans also exceed maximum illumination levels at the property line immediately south of the proposed gym, where an illumination level of .4 foot candles is shown (greater than the .1 foot candle illumination level permitted in the city's Technical Manual). In both of these instances, adequate illumination is necessary in order to light stairs and/or entrances, and particularly in the case of the gym lighting, there are CPTED concerns. The applicant has requested waivers for these lighting conditions.

g. *Noise and Vibration*

The applicant has provided documentation on the HVAC and mechanical equipment, and has stated that such equipment will be located on roof tops or in screened utility yards and positioned toward the interior of the campus to mitigate noise impacts.

h. *Signage and Wayfinding*

The preliminary submittal notes that signs will be limited to building names and will be designed to the Waynflete standard. As a development in a historic district, signs are subject to review under the historic preservation ordinance.

i. *Zoning-Related Design Standards*

Because the project is proposed in a historic district, design review falls entirely to the Historic Preservation Board. As noted above, the Historic Preservation Board is in the process of reviewing the drawings. Documentation on the Historic Preservation Board's findings will be available at the time of final plan review.

XII. NEXT STEPS

1. Applicant to address staff comments and additional comments of the Planning Board;
2. Applicant to prepare final plan submission, including site plan submittal requirements as included in 14-527(e) and (f) for review by the Planning Authority and Planning Board; and
3. Hold final Planning Board Hearing.

XIII. ATTACHMENTS

PLANNING BOARD REPORT ATTACHMENTS

1. Department of Public Works review (memo from David Margolis-Pineo, 3/22/16)
2. Traffic Engineer review (memo from Thomas Errico, 3/18/16)
3. Transportation Division review (memo from Bruce Hyman, 3/22/16)
4. City Arborist review (memo from Jeff Tarling, 3/18/16)

5. Civil Engineer review (memo from Steve Bushey, 4/5/16)
6. Fire Prevention Bureau review (memo from Keith Gautreau, 3/9/16)

APPLICANT'S SUBMITTALS

- A. Cover Letter (from Lauren Swett, 2/16/16)
- B. Level III Site Plan Application
- C. Application Fees
- D. Project Description
- E. Evidence of Right, Title, and Interest
- F. Evidence of State and/or Federal Permits
- G. Assessment of Zoning
- H. Easements and Other Burdens
- I. Evidence of Financial and Technical Capacity
- J. Construction Management Plan
- K. Traffic Analysis (including TDM Plan)
- L. Significant Natural Features
- M. Stormwater Management Plan and Calculations
- N. Consistency with Master Plan
- O. Utility Capacity to Serve
- P. Solid Waste
- Q. Summary of Fire Codes
- R. Consistency with Portland Design Standards and Design Manual
- S. HVAC and Manufacturing Equipment Verification
- T. Neighborhood Meeting Minutes
- U. Cover Letter (response to comments from Lauren Swett, 3/31/16)
- V. 2005 Waynflete Master Plan

PLANS

- Plan 1. Cover Sheet
- Plan 2. Boundary Survey
- Plan 3. Existing Conditions Survey
- Plan 4. Existing Conditions Plan
- Plan 5. Site Demolition Plan
- Plan 6. Site Plan
- Plan 7. Grading & Drainage Plan
- Plan 8. Utility Plan
- Plan 9. Spring Street Connection Plan
- Plan 10. Civil Details - 1
- Plan 11. Civil Details - 2
- Plan 12. Civil Details - 3
- Plan 13. Civil Details - 4
- Plan 14. Civil Details - 5
- Plan 15. Pre-Development Drainage Area Plan
- Plan 16. Post-Development Drainage Area Plan
- Plan 17. Site Plan (Landscape)
- Plan 18. Materials & Layout Plan North
- Plan 19. Materials & Layout Plan South
- Plan 20. Planting Plan North
- Plan 21. Planting Plan South
- Plan 22. Wall Elevations
- Plan 23. Construction Details
- Plan 24. Construction Details
- Plan 25. Construction Details
- Plan 26. Life Safety Plan & Code Summary (Gym)

- Plan 27. Lower & Mezzanine Level Floor Plan (Gym)
- Plan 28. Elevations (Gym)
- Plan 29. Life Safety Plan & Code Summary (Lower School)
- Plan 30. Lower Level Floor Plan (Lower School)
- Plan 31. Main Level Floor Plan (Lower School)
- Plan 32. Upper Level Floor Plan (Lower School)
- Plan 33. Exterior Elevations (Lower School)
- Plan 34. Exterior Elevations (Lower School)

March 22, 2016

Memo To: Nell Donaldson

Barbara Barhydt

From: David Margolis-Pineo

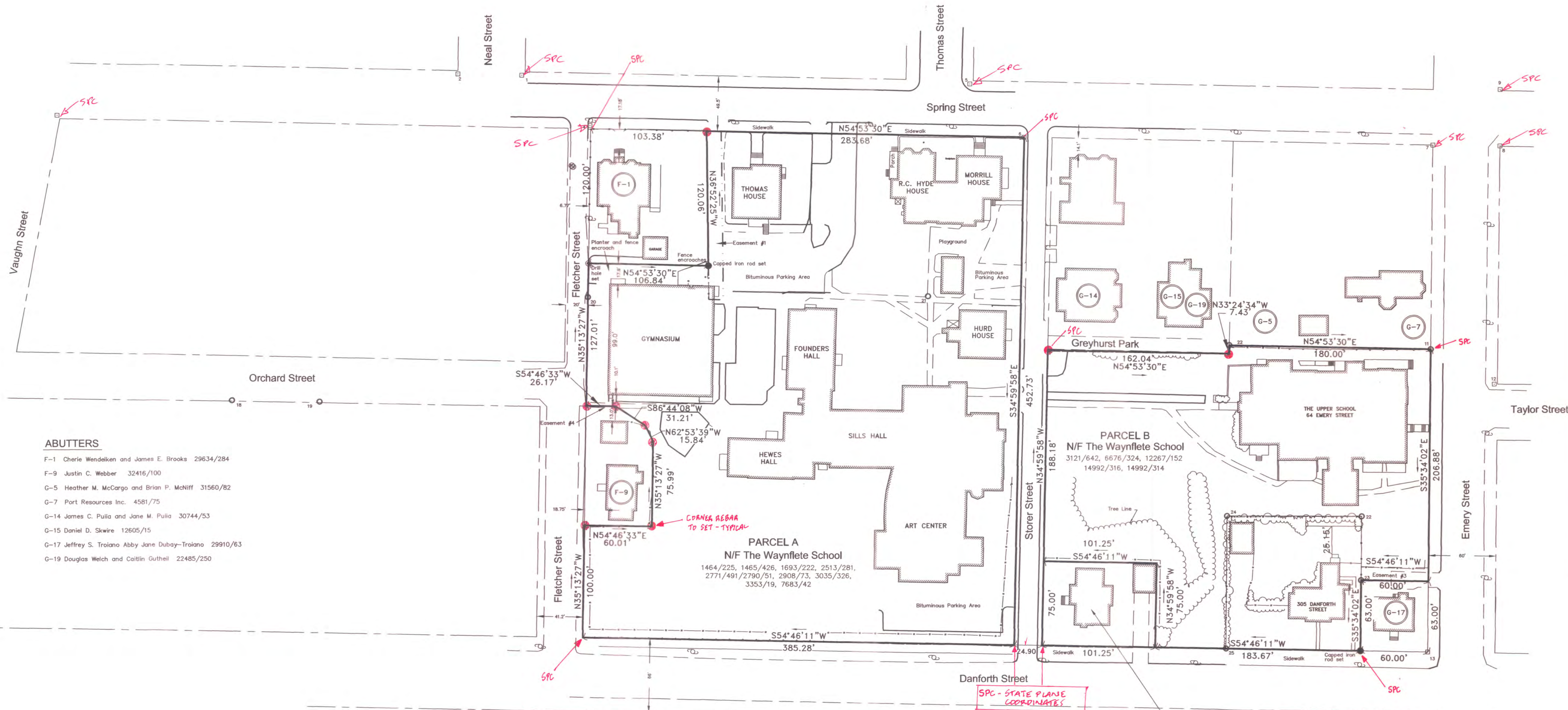
Re: 360 Spring St. – Waynflete School Campus Upgrade

1. Add note to Sheet C-002 stating that, “All work within the street right of way shall meet City of Portland Technical Manual Standards.” Understood this note is on Sheet C-100. Thank you
2. Note that the installation of a cross walk at Storer St. may eliminate on-street parking potential.
3. City Code does not allow for drain laterals to be connected to catchbasins. The proposed drainage connection shall be to the combined sewer in Danforth St and if the lateral is 8” or larger a manhole shall be installed.

From Bill Clark, city surveyor:

4. Need to mark property corners and add State Plane Coordinates.
5. Site plan refers to a existing conditions plan dated 10/27/2015. Was that included?
6. The site plan shows boundary information. On a similar site plan (Avesta Housing on Bishop Street) I posed the question to the Chairman of the Board for Professional Land Surveyors if a Professional Land Surveyor stamp is required to which he replied
"It sure looks like there should be a surveyor's seal on this one; they are clearly defining the limits of the property. Quite often I'll see plans that say "boundary survey done by (someone)" but this plan only references plans and looks like a compilation"
7. I think it will be best to include the stamped surveyor's existing conditions plan in the submission set for the Archives.

We have no further comments at this time.



ABUTTERS

F-1 Cherie Wendelken and James E. Brooks 29634/284
F-9 Justin C. Webber 32416/100
G-5 Heather M. McCargo and Brian P. McNiff 31560/82
G-7 Port Resources Inc. 4581/75
G-14 James C. Pulla and Jane M. Pulla 30744/53
G-15 Daniel D. Skwire 12605/15
G-17 Jeffrey S. Trolano Abby Jane Dubay-Trolano 29910/63
G-19 Douglas Welch and Caitlin Guthell 22485/250

DESCRIPTION OF MONUMENTS

- 1) 8"x8" Granite with brass plug, 5" below sidewalk
- 2) Drill hole in brick
- 3) 8"x8" Granite with brass plug at grade
- 4) 8"x8" Granite with Drill hole, at grade
- 5) 8"x8" Granite with brass plug, at grade
- 6) Stone post 3' above grade, inside corner
- 7) 10"x11" Granite with "M", at grade, inside corner
- 8) 9"x11" Granite with "M", at grade, inside corner
- 9) 10"x11" Granite with "M", at grade, inside corner
- 10) 8"x8" Granite with brass plug, 1" above grade
- 11) capped iron rod, PLS #466, at grade
- 12) 8"x8" Granite with brass plug 1" above grade
- 13) 9"x5" Granite with "M", 5" below grade, inside corner
- 14) 6"x6" Granite with brass plug at grade
- 15) City of Portland survey disk, PLS#2230
- 16) 8"x10" Granite 1" above grade inside corner
- 17) 8"x10" Granite with "M", at grade inside corner
- 18) 3/4" pipe, at grade
- 19) Capped iron rod, PLS #284
- 20) 1" pipe, 4" below grade
- 21) 1" pipe, at grade
- 22) Capped iron rod, PLS #466, at grade
- 23) Capped iron rod, PLS #466, at grade
- 24) 3/4" Pipe, at grade
- 25) 3/4" Pipe, 2" below grade

NOTES

- 1) Bearings are referenced to the True North as determined by astronomic observation.
- 2) Deed and Plan Book references are to the Cumberland County Registry of deeds.
- 3) Pipe sizes shown are inside diameter (I.D.).
- 4) Street lines for Storer and Fletcher Streets are based on building ties shown in the field notes for Reference #5 and #6. Street lines for Spring, Emery, and Danforth Streets are based on monuments as shown.

PLAN REFERENCES

- 1) Plan of land at Emery and Danforth Streets, from a copy by M.C. Pingree recorded November 6, 1871 recorded in Plan Book 3 Page 27.
- 2) "Plan of lot on Emery Street Owned by Charles S. Fabes" by W.A. Goodwin, C.E., dated May 11, 1874, and recorded in Plan Book 3 Page 26.
- 3) "Plan of Division of Land Belonging to Jerseys, Parleys & Cram". By E.C. Jordan, C.E., dated July 28, 1886 and recorded in Plan Book 6 Page 12.
- 4) City of Portland monument maps, dated 1925, on file at the City of Portland Department of Public Works.
- 5) Plan of Fletcher Street, dated December 13, 1934, on file at the City of Portland Department of Public Works.
- 6) Plan of Storer Street, undated, on file at the City of Portland Department of Public Works.
- 7) "Plan of Property ... made for John W. Gordon" by H.J. & E.C. Jordan dated September 28, 1959.
- 8) Plan of Danforth, Salem, May, School, and Briggs Streets by Owen Haskell Inc., dated December 4, 1974.
- 9) Standard Boundary Survey ... made for Christopher M. Harte " by Titcomb Associates Inc. dated February 4, 1997.
- 10) Standard Boundary Survey made for The Waynflete School by Titcomb Associates Inc. dated April 26, 1999.

EASEMENTS OF RECORD

- 1) "The right to use the way hereby named as a driveway" granted to George P. Westcott by Abby D. Hersey et al. by deed dated June 10, 1886, and recorded in Book 529 Page 21.
- 2) Pole easement granted to Central Maine Power Co. by Waynflete School by deed dated August 16, 1955, and Recorded in Book 2276 Page 253.
- 3) Driveway easement granted to Monty Q. Hogen and James H. Harrison by Waynflete School by deed dated March 10, 2000, and Recorded in Book 15361 Page 281.
- 4) Sidewalk Easement Agreement between Helen A. Webber and Waynflete School by deed dated September 25, 2006 and recorded in Book 24399 Page 338.

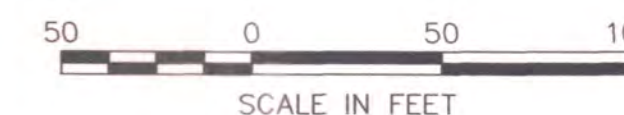
OWNER OF RECORD / AREA

Parcel 'A' -- The Waynflete School
Area: 156,374 sq ft = 3.59 Acres
Parcel 'B' -- The Waynflete School
Area: 80,272 sq ft = 1.84 Acres
Parcel 'C' -- The Waynflete School
Area: 7,594 sq ft = 0.17 Acres
Total Area: 244,240 sq ft = 5.60 Acres

CERTIFICATION

This survey conforms to the current standards of practice set forth by the Maine State Board of Licensure for Land Surveyors.

Rev. J. Croteau, P.L.S. #2273



Standard Boundary Survey		
Spring, Emery, Danforth, Fletcher, & Storer Streets Portland, Maine		
made for		
The Waynflete School		
360 Spring Street Portland, Maine		
JOB#	93093	DATE: August 13, 2015
BOOK#	532	SCALE: 1" = 50'
DISC#	380	
FILE#	6831	

Titcomb Associates
133 Gray Road, Falmouth, Maine 04105
(207) 797-9199 www.titcombsurvey.com

SURVEY REVIEW 3/16/2016

S1



Helen Donaldson <hcd@portlandmaine.gov>

Waynflete Project - Preliminary Traffic Comments

1 message

Tom Errico <thomas.errico@tylin.com>

Fri, Mar 18, 2016 at 11:42 AM

To: Helen Donaldson <HCD@portlandmaine.gov>

Cc: David Margolis-Pineo <DMP@portlandmaine.gov>, Katherine Earley <KAS@portlandmaine.gov>, Jeremiah Bartlett <JBartlett@portlandmaine.gov>, Jeff Tarling <JST@portlandmaine.gov>

Hi Nell – I have reviewed the site plan application materials and offer the following preliminary traffic comments.

- I generally find the proposed crosswalk on Danforth Street to be acceptable. Please noted the following:
 - Warning signs that meet MUTCD standards shall be installed on Danforth Street.
 - I need to review the ramp configurations with City staff.
 - A detectible warning panel and any physical adjustment to ramp on the west side of Fletcher Street shall be included.
 - On-street parking will likely need to be prohibited on the south side of Danforth Street in the area of the crosswalk. This change will require Council Action regarding changes to the Traffic Schedule. The applicant would be required to provide supporting information for the Council packet.
- The application materials speak to increased gym capacity and having a larger venue for other non-athletic events. The applicant should provide specific details on how the occupancy loading capacity of the gym will change with the project. If an increase is expected, the applicant should note increases traffic and parking levels.
- I need to review the TDM plan and determine if any revisions are required.
- A Construction Logistics Plan has been provided. In general, I find it to be acceptable, although I need to conduct a review of the construction vehicle access route and the applicant will need to provide details on traffic management during construction of the sidewalk.

If you have any questions or comments, please contact me.

Best regards,

Thomas A. Errico, PE
Senior Associate
Traffic Engineering Director



12 Northbrook Drive

Falmouth, ME 04105

[207.781.4721](tel:207.781.4721) (main)

[207.347.4354](tel:207.347.4354) (direct)

[207.400.0719](tel:207.400.0719) (mobile)

[207.781.4753](tel:207.781.4753) (fax)

thomas.errico@tylin.com

Visit us online at www.tylin.com

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"One Vision, One Company"

Please consider the environment before printing.



Helen Donaldson <hcd@portlandmaine.gov>

Waynflete

Bruce Hyman <bhyman@portlandmaine.gov>
To: David Margolis-Pineo <dmp@portlandmaine.gov>
Cc: Helen Donaldson <hcd@portlandmaine.gov>

Tue, Mar 22, 2016 at 9:03 AM

The ramps, as shown in D-202 (the detail sheet) and the Site Plan in C-100, are not ADA-compliant. If the ramps are to be constructed as shown the the Detectable Warning Panels need to extend the full width of the ramp (the flush area), not with two individual panels. The ramp detail on Sheet D-202 should also provide additional information on grades on the ramps (e.g., 8% on the ramping down, and maximum of 2% cross-slopes on the landing areas within the ramp. They should indicate how the grades within the landing area of the ramp will prevent ponding of water within the landing area and also at the base of the ramp where it meets the street (a typical problem that needs to be avoided).

For the ramping down portions of the ramps, there may need to be curb at the back-side of the ramp for proper ramping down. The detail needs to be clearer for the contractor.

Did they consider a more standard two ramp configuration so the cross-walk is not skewed at Storer Street/Danforth or differently aligned at Danforth/Spring?

Is this not in a Historic District? They show Yellow DWPs, not the Gray with the full brick surround which is the Historic District ramp detail.

Let me know if you have any other questions or need clarification of the above.

Bruce

On Tue, Mar 22, 2016 at 8:30 AM, David Margolis-Pineo <dmp@portlandmaine.gov> wrote:
[Quoted text hidden]

—
Bruce Hyman
Transportation Program Manager
Transportation Division

Department of Planning & Urban Development
389 Congress Street
Portland, Maine 04101
(207) 874-8717 phone

bhyman@portlandmaine.gov
<http://www.portlandmaine.gov/1363/Transportation-Division>
Yes! Transportation's Good Here



Helen Donaldson <hcd@portlandmaine.gov>

Waynfleet Project

1 message

Jeff Tarling <jst@portlandmaine.gov>

Fri, Mar 18, 2016 at 5:03 PM

To: Helen Donaldson <hcd@portlandmaine.gov>

Hi Nell -

In review of the proposed Waynfleet project we would outline these basic landscape items:

a) Existing White Oak - The proposed project should work to minimize impact to this 'Heritage' White Oak tree on the nearby property. This would include minimizing disturbance to the root zone. (The root zone likely extends beyond the drip line of the canopy in places) Work in the area beneath the drip line should minimize disturbance, storage of materials and follow best management practises. (see notes / web links from ISA, 'Avoiding construction standards and Treatment of trees by construction', these standards & recommendations can be Incorporated into the final landscape plan, perhaps in the notes section.)

b) Replacement of Evergreen buffer along private property North of the proposed gym, The replacement of the existing Hemlock hedge is a key element in the landscape plan. Options include Serbian Spruce, Swiss Stone Pine, Chamaecyparis (Cedar), Red Cedar (Juniper), Arborvitae. This discussion has been on-going with the project team.

c) New retaining walls, private property edges - The project proposes to move existing retaining walls closer to private property lines. Landscape buffer zones between the active play areas and private properties and effective treatment is a key element of the landscape plan for the proposed project. Quality existing vegetation should be Incorporated into the design when possible.

d) Landscape plan elements - the next revision of the landscape plan should include plant names, locations and quantities. Conversation in the preliminary phase of the project agreed that this should come after the first landscape review.

<http://www.treesaregood.com/treecare/resources/AvoidingTreeDamage.pdf>

<http://www.treesaregood.com/treecare/resources/ConstructionDamage.pdf>

—

Jeff Tarling
Portland Public Services — City Arborist
55 Portland Street
Portland, ME. 04101
(207) 874.8820
jst@portlandmaine.gov



Stantec Consulting Services Inc.
482 Payne Road Scarborough Court, Scarborough ME 04074-8929

April 5, 2016

Attention: Helen Donaldson

City of Portland
389 Congress Street
Portland, ME 04101

**Subject: Waynflete School Gym & Lower School Development
Site Plan Application
Engineering Review Comments**

Dear Nell:

Stantec has reviewed application materials related to the proposed Waynflete School Gym & Lower School development prepared by Woodard & Curran. Our review has been limited to those aspects of the project related to Stormwater Management, Drainage, and Utility Design along with related details. The purpose of the review was to determine compliance with applicable City code provisions and general engineering practice. The project involves the demolition and reconstruction of the Gymnasium, renovation and addition to the Lower School and various other site improvements. The development site is located between Spring Street and Danforth Street.

The following documents were reviewed:

- Level III Site Plan Application and supporting documents as supplied by the City Planning Department.
- Plan documents including the 13 sheet Civil series and Architectural series. Stantec did not review the Landscape series drawings.

We provide the following comments:

C-001 Existing Conditions Plan

- The existing catch basin located north of Founders Hall should be investigated to determine where it discharges to and whether it is connected to the system(s) ultimately draining to Danforth Street. Per the watershed maps it appears to be part of the systems that will be reconstructed.
- We suggest that the existing utilities be further identified with pipe sizes if this information is available. We understand that existing Spring Street water service will be replaced. It's not clear if that the existing service provides water to the Gymnasium, Founders Hall and the Arts Center. The PWD should weigh in on how the new services for domestic and Fire services will be aligned. It appears sensible that a new Fire Line supply meter assembly will be installed



April 5, 2016

Page 2

thus allowing multiple buildings to be served. This should be confirmed for acceptance by PWD however.

- Is it possible to confirm if there is a sanitary sewer service exiting the Arts Center to the 8" PVC line located south of the building? Is there plumbing in the Founders Hall wing that will remain and require reconnection to the proposed Lower School plumbing? These questions may become addressed when more detailed MEP work is performed understandably.
- We suggest the locations of all nearby fire hydrants in the vicinity of the site be identified if possible. It's not clear where the nearest hydrants are and whether one or more onsite hydrants are necessary.
- We suspect there may need to be some temporary utility provisions made during construction for power, communications, gas and water. Notes regarding this might be helpful to address whatever needs each utility provider may have.

C-100 Site Plan

- The alignment of the new brick sidewalk along Danforth Street appears to be offset from the existing concrete walk by a foot or so. Is this intentional and acceptable to Public Services?
- We note that the limits of work may increase in various locations due to the required excavation depths for drainage and utilities. For example the excavation depth for DMH 2 and DMH 3 will require a large hole that is likely to extend out into Fletcher Street, thus requiring street restoration in accordance with the City's standards.

C-103 Spring Street Connection Plan

- We suggest the engineer clarify where the water and sewer services for the Thomas House are located to assure the new work doesn't impact them.
- It's not clear if there is one or two water services off the main line in Spring Street since there appear to be two shutoffs located just northwest of the Thomas House. The PWD should clarify. If these are to be discontinued this will need to be completed in accordance with PWD requirements.
- The grading for the Spring Street connection should be clarified perhaps with some spot grades or contouring. This seems like a replace in kind situation; however it's not entirely clear.
- The water main size should be identified on the plan and the details for the meter pit provided. We assume this is to be a Fire Line supply meter, if so, then the PWD should provide a letter of support for this installation. Provisions for the tie in on the street including a Tapping sleeve and valve also should be identified.



April 5, 2016

Page 3

- CMP will likely require an easement for the primary power service to the Transformer. This should simply be noted on the plan. If details of the underground electric will be on a Site Electrical plan then that should also be noted for cross reference purposes.

C-101 Grading and Drainage Plan

- Although it may not be clearly known yet, some thought should be given to a construction entrance and staging area(s) and any measures for temporary erosion and sediment control that may be necessary. This may include items consistent with the construction management plan by Wright Ryan to be shown on this drawing.
- We note that several drainage structures exceed 10 feet in depth thus these pose challenges for construction to a certain extent. One idea to explore, if not already considered, might be to connect the upper playground drainage to pipe 16 rather than extending the drainage system around the north and west sides of the new gym. This might help eliminate the significantly deep structures DMH 2 and DMH 3. There may be a reason for the alignment as designed and if so, then that is the designer's choice.
- It appears that the Founders Hall roof drainage will be tied into Pipe 5 (6"). We simply recommend this be reviewed for capacity as a 6" size line has limited capacity. It's not clear exactly how the Founders Hall roof drain works however we caution against the tie in to a 6" pipe if possible. The sizing of all the new roof drains should be coordinated with the Mechanical designers to assure proper pipe sizing in any case.
- It may be worthy to review the vertical alignment of the drainage run from DMH 1 to DMH6 to verify if the structure depths need to be as deep as currently shown. Perhaps the upstream segments can be shallower. If this has already been considered then that's the designer's choice.
- If DMH 3 remains as designed then a temporary construction easement from the abutting landowner may be required due to the structure installation depth and excavation limits.
- The designer might consider tying AD3 to CB2 to avoid two inlets into DMH1.

C-102 Utility Plan

- We recommend that exit elevations for the sanitary services be identified on the plans (at least by the time of CD production).
- The water main sizes should be identified and whether there are fire and domestic water services to the existing and new structures. Will temporary water need to be provided for any of the buildings? This doesn't need detailing, simply notes describing what may be needed.
- The transformer pad size should be noted as either 7x7 or 9x9.
- Are the two existing 8" sewer lines from the ball field to Danforth Street to remain in place? Can one of these lines be abandoned? Does the owner have any record of the condition



April 5, 2016

Page 4

of these pipes and are they acceptable for continued use. Perhaps Public Services has some indication of possible I & I concerns?

- Should the existing catch basin in Danforth Street be replaced? This is likely a Public Services determination.
- It's not clear where the underground telecom is located on the north side of the proposed gym.

Predevelopment Drainage Plan

- It's not clear why Subarea 402S is included in the model, although it appears to somehow discharge into the existing 48" storage pipes located on the south side of the Arts Center. As there is no change from pre to post for this area it isn't clear why the area is included. While not critical, there is no specific information on this area identified on the plan thus it's difficult to review the closed drainage associated with the area. If there is information on how there is a closed pipe system serving this subarea it may be worthy to include on the plan, especially since the subarea includes private and public property?
- It's not clear how subarea 61S ties a roof drain into the 48" storage pipes as the routing of any pipe(s) from that building area are not shown on the plan.
- Ultimately the plans should address the removal of the existing 8" pipe connection to the Danforth Street sewer. We understand a new 12" pipe connection is to be installed.
- There is a Time of Concentration path for subarea 90S that appears to end at the back of the existing retaining wall. Is there a catch basin or other structure there that then ties into the closed drainage? Any change to this flow path is unlikely to have a significant impact on the model so it's not of great concern, simply some explanation perhaps. This is true for the post model also.

Post Development Drainage Area Plan

- The primary comment we offer relates to the functioning of the existing 48" storage pipes on the overall management of stormwater from the site. According to the post development routing computations the 48" pipes only partially fill during a 25 year storm event (invert at 119.16' and peak elevation is 120.47'), thus it appears there may be opportunity to store additional runoff volume in the storage pipes. The engineer may consider adjustments to the control structure regulating how the pipe storage functions and perhaps they may be able to reduce the size of the proposed underdrained chambered filter field by holding more volume in the existing pipes. Otherwise there needs to be further inspection of this existing system to understand how it functions during heavier rainfalls since the model suggests it doesn't fill up much. An inspection to identify water marks on the interior piping etc. may be helpful to gauge how the system actually functions. The pipe storage doesn't achieve the water quality benefits, however, the city may be more interested in achieving greater flood control measures



April 5, 2016

Page 5

instead as it relates to the Combined flows entering the sewer system in the street. There seems to be some lost benefit with these 48" pipes unless we do not understand something within the model.

- As currently proposed and modeled the systems more than satisfy the provisions for water quality benefits and flood control storage. We note that the installation of the underdrained system will involve excavation of materials that will likely require removal from the site, thus it should be anticipated there will be soils removed. We did not review any data related to the potential for rock removal within the project limits so the applicant may need to address that need if necessary.
- We understand the owner will need to enter into the City's Standard Stormwater Drainage System Maintenance Agreement following approvals.

Regards,

STANTEC CONSULTING SERVICES INC.

Stephen R. Bushey, P.E.

Associate

Phone: (207) 887-3478

Fax: (207) 883-3376

Stephen.Bushey@stantec.com

C.

V:\1953\active\195350349\civil\admin\working_documents\lfr_review_city_2016.04.05.docx

MEMORANDUM

To: FILE
From: Nell Donaldson
Subject: Application ID: 2016-034
Date: 3/22/2016

Comments Submitted by: Keith Gautreau/Fire on 3/9/2016

Emergency access to these proposed buildings is difficult and limited. The campus does not have any proposed fire lanes or emergency access to the lower school.

Comments Submitted by: Keith Gautreau/Fire on 3/9/2016

Construction Management Plan

Streets must maintain a 20' width for Fire Department access at all times.

Fire Hydrants shall not be blocked or enclosed by fencing. A 3' foot clearance must be kept at all times around the fire hydrant.

If gates are locked, a Portland Fire Department Knox padlock must be purchased by the applicant to allow access for the Fire Department.

The Construction Company' emergency contact information shall be posted on the property in case of an after hours emergency.

All construction shall comply with 2009 NFPA 1 Chapter 16 Safeguards During Building Construction, Alteration, and Demolition Operations.

Any cutting and welding done will require a Hot Work Permit from Fire Department.

Comments Submitted by: Keith Gautreau/Fire on 3/9/2016

I would like to see the two nearest fire hydrants data on water flow from the PWD Portland Water District.

2009 NFPA 1 18.4 Fire Flow Requirements for Buildings

-may require additional installation of fire hydrants to meet fire flow requirements.



February 16, 2016

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

Re: Waynflete School Campus Upgrades
Level III Site Plan

Dear Barbara:

On behalf of the Waynflete School, enclosed please find one paper copy and an electronic copy on CD of the Level III Site Plan Application and Plan Sets for the proposed Gymnasium and Lower School Expansion at Waynflete School, located at 360 Spring Street in Portland, Maine. These documents were prepared in accordance with Chapter 14, Land Use Code of Ordinances of the City of Portland, Maine and meet the applicable sections of the City of Portland Design and Technical Manuals.

The proposed project will include the following components:

- Demolition of the existing athletic facility and construction of a new 13,600 sf gymnasium;
- Renovation and addition of the Lower School, supporting early Childhood through 5th grade education; and
- Development of new playgrounds, educational gardens, and site features.

Construction is not anticipated to begin until 2017. It is our understanding that, in accordance with Section 14-532(c) of the City's Land Use Code, site plan approvals expire within 12 months from the date of approval, unless another time period is agreed upon between the Planning Authority and the Applicant, not to exceed three years from the date of approval. We are therefore requesting that site plan approval be extended through 2017.

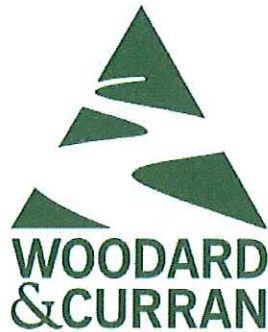
We look forward to working with your office on this project, and would be glad to meet to discuss this application in greater detail. Please do not hesitate to contact me if you have any questions or require additional information.

Sincerely,

WOODARD & CURRAN INC.

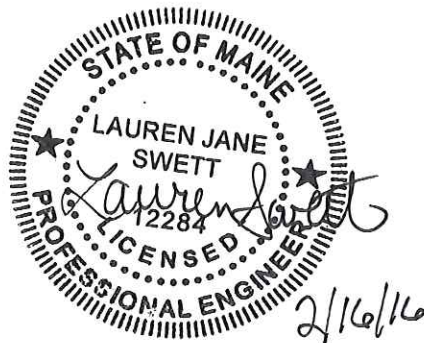
Lauren Swett, PE
Project Engineer

Enclosures: \$1,250 Check for Level III Site Plan Amendment Fee
Application narrative & attachments (1 Hardcopy)
Full Sized Plan Set
CD with electronic copy of all submitted materials



LEVEL III SITE PLAN APPLICATION

Waynflete School
Campus Upgrades



woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

41 Hutchins Drive, Portland, Maine 04102
Tel. (207) 774-2112 Fax (207) 774-6635

229423

Scott Simons Architects

February 2016

TABLE OF CONTENTS

SECTION	PAGE NO.
1. APPLICATION FORM.....	1-1
2. APPLICATION FEES.....	2-1
3. PROJECT DESCRIPTION	3-1
3.1 Introduction.....	3-1
3.2 Project Purpose and Need	3-1
3.3 Existing Conditions	3-1
3.4 Proposed Development	3-1
3.4.1 Architectural Approach	3-1
3.4.2 Landscaping Approach.....	3-1
3.5 Attachments	3-2
4. EVIDENCE OF RIGHT, TITLE AND INTEREST	4-1
4.1 Attachments	4-1
5. EVIDENCE OF STATE AND/OR FEDERAL APPROVALS	5-1
6. ASSESSMENT OF ZONING	6-1
6.1 Parking	6-1
6.2 Dimensional Requirements	6-1
7. EASEMENTS AND OTHER BURDENS	7-1
8. EVIDENCE OF FINANCIAL & TECHNICAL CAPACITY.....	8-1
8.1 Financial Capacity	8-1
8.2 Technical Capacity	8-1
8.3 Attachments	8-1
9. CONSTRUCTION MANAGEMENT PLAN	9-1
9.1 Attachments	9-1
10. TRAFFIC ANALYSIS	10-1
11. SIGNIFICANT NATURAL FEATURES	11-1
12. STORMWATER MANAGEMENT PLAN & CALCULATIONS	12-1
12.1 Basic Standard (Soil Erosion and Sedimentation Control)	12-1
12.1.1 Erosion and Sedimentation Control Plan.....	12-1
12.2 General Standard (Water Quality).....	12-1
12.2.1 Underdrained Subsurface Sand Filter	12-2
12.3 Flooding Standard (Water Quantity).....	12-2
12.3.1 Pre-Development Conditions.....	12-3
12.3.2 Post-Development Conditions	12-3
12.4 Inspection and Maintenance of Stormwater Systems.....	12-4
12.5 Attachments	12-4

13. CONSISTENCY WITH MASTER PLAN.....	13-1
14. UTILITY CAPACITY TO SERVE.....	14-1
15. SOLID WASTE.....	15-1
15.1 Commercial Solid Waste	15-1
15.2 Construction & Land Clearing Debris	15-1
15.3 Special & Hazardous Waste	15-1
15.4 Findings	15-1
16. SUMMARY OF FIRE CODES	16-1
17. CONSISTENCY WITH PORTLAND DESIGN STANDARDS & DESIGN MANUAL	17-1
17.1 Attachments	17-2
18. HVAC & MANUFACTURING EQUIPMENT VERIFICATION.....	18-1
19. BOUNDARY SURVEY	19-1
19.1 Attachments	19-1

LIST OF TABLES

TABLE	PAGE NO.
Table 6-1: Waynflete School Athletic Facility Dimensional Requirements	6-1
Table 6-2: Waynflete Lower School Dimensional Requirements	6-2
Table 12-1: Water Quality Treatment Percentages.....	12-2
Table 12-2: Summary of Peak Runoff Rates	12-3



1. APPLICATION FORM

February 16, 2016

RE: Waynflete Gym & Lower School – Agent Authorization

To Whom It May Concern:

Woodard & Curran will be acting as our agent for all local, state, and federal permitting associated with the Waynflete School Campus Upgrades project located at 360 Spring Street in Portland, Maine.

Please contact me if you have any questions.

Sincerely,



Anne C. Hagstrom
Director of Finance and Operations
Waynflete School
360 Spring Street
Portland, ME 04096

(207) 774-7863 ext. 1227
ahagstrom@waynflete.org

Portland, Maine



Yes. Life's good here.

Jeff Levine, AICP, Director
Planning & Urban Development Department

Electronic Signature and Fee Payment Confirmation

Notice: Your electronic signature is considered a legal signature per state law.

By digitally signing the attached document(s), you are signifying your understanding this is a legal document and your electronic signature is considered a **legal signature** per Maine state law. You are also signifying your intent on paying your fees by the opportunities below.

I, the undersigned, intend and acknowledge that no Site Plan or Historic Preservation Applications can be reviewed until payment of appropriate application fees are **paid in full** to the Inspections Office, City of Portland Maine by method noted below:

☐

Within 24-48 hours, once my complete application and corresponding paperwork has been electronically delivered, I intend to **call the Inspections Office** at 207-874-8703 and speak to an administrative representative and provide a credit/debit card over the phone.

☐

Within 24-48 hours, once my application and corresponding paperwork has been electronically delivered, I intend to **call the Inspections Office** at 207-874-8703 and speak to an administrative representative and provide a credit/debit card over the phone.

☒

I intend to deliver a payment method ^{in person via check} ~~through the U.S. Postal Service mail~~ once my application paperwork has been electronically delivered.

Lauren Swett (AGENT)
Applicant Signature:

2/16/16
Date:

Lauren Swett (AGENT)
I have provided digital copies and sent them on: 2/16/16

2/16/16
Date:

NOTE: All electronic paperwork must be delivered to buildinginspections@portlandmaine.gov or by physical means i.e. a thumb drive or CD to the Inspections Office, City Hall, 3rd Floor, Room 315.



Level III – Preliminary and Final Site Plans Development Review Application Portland, Maine

Planning and Urban Development Department
Planning Division

Portland's Planning and Urban Development Department coordinates the development review process for site plan, subdivision and other applications under the City's Land Use Code. Attached is the application form for a Level III: Preliminary or Final Site Plan. Please note that Portland has delegated review from the State of Maine for reviews under the Site Location of Development Act, Chapter 500 Stormwater Permits, and Traffic Movement Permits.

Level III: Site Plan Development includes:

- New structures with a total floor area of 10,000 sq. ft. or more except in Industrial Zones.
- New structures with a total floor area of 20,000 sq. ft. or more in Industrial Zones.
- New temporary or permanent parking area(s) or paving of existing unpaved parking areas for more than 75 vehicles.
- Building addition(s) with a total floor area of 10,000 sq. ft. or more (cumulatively within a 3 year period) except in Industrial Zones.
- Building addition(s) with a total floor area of 20,000 sq. ft. or more in Industrial Zones.
- A change in the use of a total floor area of 20,000 sq. ft. or more in any existing building (cumulatively within a 3 year period).
- Multiple family development (3 or more dwelling units) or the addition of any additional dwelling unit if subject to subdivision review.
- Any new major or minor auto business in the B-2 or B-5 Zone, or the construction of any new major or minor auto business greater than 10,000 sq. ft. of building area in any other permitted zone.
- Correctional prerelease facilities.
- Park improvements: New structures greater than 10,000 sq. ft. and/or facilities encompassing 20,000 sq. ft. or more (excludes rehabilitation or replacement of existing facilities); new nighttime outdoor lighting of sports, athletic or recreation facilities not previously illuminated.
- Land disturbance of 3 acres or more (includes stripping, grading, grubbing, filling or excavation).

Portland's development review process and requirements are outlined in the Land Use Code (Chapter 14) which is available on our website:

Land Use Code: <http://me-portland.civicplus.com/DocumentCenter/Home/View/1080>

Design Manual: <http://me-portland.civicplus.com/DocumentCenter/View/2355>

Technical Manual: <http://me-portland.civicplus.com/DocumentCenter/View/2356>

Planning Division

Fourth Floor, City Hall
389 Congress Street
(207) 874-8719

Office Hours

Monday thru Friday
8:00 a.m. – 4:30 p.m.

PROJECT NAME: Waynflete School Campus Upgrades

PROPOSED DEVELOPMENT ADDRESS:

360 Spring Street, Portland, ME

PROJECT DESCRIPTION:

Demolition of existing athletic facility, construction of new gymnasium, renovation and expansion of "Lower School", and the development of new playgrounds, educational gardens, and associated site features.

061 F002001, 061 F003001, 061 F004001,
061 F005001, 061 F006001, 061 F007001,

CHART/BLOCK/LOT: 061 F011001

PRELIMINARY PLAN
FINAL PLAN

2/16/16 (date)
_____ (date)

CONTACT INFORMATION:

Applicant – must be owner, Lessee or Buyer Name: Anne C. Hagstrom, Director of Finance & Operations Business Name, if applicable: Waynflete School Address: 360 Spring Street City/State : Portland ME Zip Code: 04102	Applicant Contact Information Work # 207-774-7863 ext. 1227 Home# Cell # Fax# e-mail: ahagstrom@waynflete.org
Owner – (if different from Applicant) N/A Name: Address: City/State : Zip Code:	Owner Contact Information Work # Home# Cell # Fax# e-mail:
Agent/ Representative Name: Woodard & Curran, c/o Lauren Swett, PE Address: 41 Hutchins Drive City/State : Portland ME Zip Code: 04102	Agent/Representative Contact information Work # 207-558-3763 Cell # e-mail: lswett@woodardcurran.com
Billing Information Name: Scott Simons Architects, c/o Austin Smith Address: 75 York Street City/State : Portland ME Zip Code: 04101	Billing Information Work # 207-772-4656 Cell # Fax# e-mail: austin@simonsarchitects.com

Engineer Name: Woodard & Curran, c/o Lauren Swett, PE Address: 41 Hutchins Drive City/State : Portland ME Zip Code: 04102	Engineer Contact Information Work # 207-558-3763 Cell # Fax# e-mail: lswett@woodardcurran.com
Surveyor Name: Titcomb Associates, c/o Rex Croteau Address: 133 Gray Road City/State : Falmouth ME Zip Code: 04105	Surveyor Contact Information Work # 207-797-9199 Cell # Fax# e-mail: rcroteau@titcombsurvey.com
Architect Name: Scott Simons Architects, c/o Austin Smith Address: 75 York Street City/State : Portland ME Zip Code: 04101	Architect Contact Information Work # 207-772-4656 Cell # Fax# e-mail: austin@simonsarchitects.com
Attorney Name: Address: City/State : Zip Code:	Attorney Contact Information Work # Cell # Fax# e-mail:

APPLICATION FEES:

Check all reviews that apply. (Payment may be made by Credit Card, Cash or Check payable to the City of Portland.)

Level III Development (check applicable reviews) ___ Less than 50,000 sq. ft. (\$500.00) X 50,000 - 100,000 sq. ft. (\$1,000) ___ 100,000 - 200,000 sq. ft. (\$2,000) ___ 200,000 - 300,000 sq. ft. (\$3,000) ___ over 300,00 sq. ft. (\$5,000) ___ Parking lots over 11 spaces (\$1,000) ___ After-the-fact Review (\$1,000.00 plus applicable application fee) Plan Amendments (check applicable reviews) ___ Planning Staff Review (\$250) ___ Planning Board Review (\$500) The City invoices separately for the following: • Notices (\$.75 each) • Legal Ad (% of total Ad) • Planning Review (\$40.00 hour) • Legal Review (\$75.00 hour) Third party review fees are assessed separately. Any outside reviews or analysis requested from the Applicant as part of the development review, are the responsibility of the Applicant and are separate from any application or invoice fees.	Other Reviews (check applicable reviews) ___ Traffic Movement (\$1,000) X Stormwater Quality (\$250) ___ Subdivisions (\$500 + \$25/lot) # of Lots ___ x \$25/lot = ___ ___ Site Location (\$3,000, except for residential projects which shall be \$200/lot) # of Lots ___ x \$200/lot = ___ ___ Other _____ ___ Change of Use ___ Flood Plain ___ Shoreland ___ Design Review ___ Housing Replacement ___ Historic Preservation
---	--

APPLICATION SUBMISSION:

1. All site plans and written application materials must be submitted electronically on a CD or thumb drive with each plan and each document submitted as separate files. Naming conventions for the individual files can be found on the **Electronic Plan and Document Submittal** page of the City's website at <http://me-portland.civicplus.com/764/Electronic-Plan-and-Documents-Submittal>
2. In addition, one (1) paper set of the plans (full size), one (1) paper set of plans (11 x 17), paper copy of written materials, and the application fee must be submitted to the Building Inspections Office to start the review process.

The application must be complete, including but not limited to the contact information, project data, application checklists, wastewater capacity, plan for fire department review, and applicant signature. The submissions shall include one (1) paper packet with folded plans containing the following materials:

1. One (1) full size site plans that must be folded.
2. One (1) copy of all written materials or as follows, unless otherwise noted:
 - a. Application form that is completed and signed.
 - b. Cover letter stating the nature of the project.
 - c. All Written Submittals (Sec. 14-525 2. (c), including evidence of right, title and interest.
3. A stamped standard boundary survey prepared by a registered land surveyor at a scale not less than one inch to 50 feet.
4. Plans and maps based upon the boundary survey and containing the information found in the attached sample plan checklist.
5. One (1) set of plans reduced to 11 x 17.

Please refer to the application checklist (attached) for a detailed list of submission requirements.

APPLICANT SIGNATURE:

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Planning Authority and Code Enforcement's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

This application is for a Level III Site Plan review. It is not a permit to begin construction. An approved site plan, a Performance Guarantee, Inspection Fee, Building Permit, and associated fees will be required prior to construction. Other Federal, State or local permits may be required prior to construction, which are the responsibility of the applicant to obtain.

Signature of Applicant:  (AGENT)	Date: 2/16/16
--	------------------

PROJECT DATA

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

Total Area of Site	156,374 (Boundary Survey Parcel A) sq. ft.
Proposed Total Disturbed Area of the Site	91,130 sq. ft.
If the proposed disturbance is greater than one acre, then the applicant shall apply for a Maine Construction General Permit (MCGP) with DEP and a Stormwater Management Permit, Chapter 500, with the City of Portland.	
Impervious Surface Area	
Impervious Area (Total Existing)	91,876 sq. ft.
Impervious Area (Total Proposed)	96,652 sq. ft.
Building Ground Floor Area and Total Floor Area	
Building Footprint (Total Existing)	Gym: 9,242 LS: 4,520 sq. ft.
Building Footprint (Total Proposed)	Gym: 10,568 LS: 10,270 sq. ft.
Building Floor Area (Total Existing)	Gym: 9,242 LS: 8,967 sq. ft.
Building Floor Area (Total Proposed)	Gym: 13,412 LS: 26,698 sq. ft.
Zoning	
Existing	R4 & Waynflete Overlay
Proposed, if applicable	N/A
Land Use	
Existing	School
Proposed	School
Residential, if applicable	
# of Residential Units (Total Existing)	N/A
# of Residential Units (Total Proposed)	
# of Lots (Total Proposed)	
# of Affordable Housing Units (Total Proposed)	
Proposed Bedroom Mix	
# of Efficiency Units (Total Proposed)	N/A
# of One-Bedroom Units (Total Proposed)	
# of Two-Bedroom Units (Total Proposed)	
# of Three-Bedroom Units (Total Proposed)	
Parking Spaces	
# of Parking Spaces (Total Existing)	N/A
# of Parking Spaces (Total Proposed)	
# of Handicapped Spaces (Total Proposed)	
Bicycle Parking Spaces	
# of Bicycle Spaces (Total Existing)	N/A
# of Bicycle Spaces (Total Proposed)	
Estimated Cost of Project	
	\$12,500,000

PRELIMINARY PLAN (Optional) - Level III Site Plan			
Applicant Checklist	Planner Checklist	# of Copies	GENERAL WRITTEN SUBMISSIONS CHECKLIST
X		1	Completed Application form
X		1	Application fees
X		1	Written description of project
X		1	Evidence of right, title and interest
X		1	Evidence of state and/or federal approvals, if applicable
X		1	Written assessment of proposed project's compliance with applicable zoning requirements
X		1	Summary of existing and/or proposed easement, covenants, public or private rights-of-way, or other burdens on the site
N/A		1	Written requests for waivers from site plan or technical standards, if applicable.
X		1	Evidence of financial and technical capacity
X		1	Traffic Analysis (may be preliminary, in nature, during the preliminary plan phase)
Applicant Checklist	Planner Checklist	# of Copies	SITE PLAN SUBMISSIONS CHECKLIST
X		1	Boundary Survey meeting the requirements of Section 13 of the City of Portland's Technical Manual
X		1	Preliminary Site Plan including the following: (information provided may be preliminary in nature during preliminary plan phase)
X			Proposed grading and contours;
X			Existing structures with distances from property line;
X			Proposed site layout and dimensions for all proposed structures (including piers, docks or wharves in Shoreland Zone), paved areas, and pedestrian and vehicle access ways;
X			Preliminary design of proposed stormwater management system in accordance with Section 5 of the Technical Manual (note that Portland has a separate applicability section);
X			Preliminary infrastructure improvements;
X			Preliminary Landscape Plan in accordance with Section 4 of the Technical Manual;
N/A			Location of significant natural features (including wetlands, ponds, watercourses, floodplains, significant wildlife habitats and fisheries or other important natural features) located on the site as defined in Section 14-526 (b) (1);
N/A			Proposed buffers and preservation measures for significant natural features, as defined in Section 14-526 (b) (1);
X			Location , dimensions and ownership of easements, public or private rights of way, both existing and proposed;
X			Exterior building elevations.



2. APPLICATION FEES

A check for the application fee has been included with the submission. The application fee includes:

Level III Development 50,000 square feet – 100,000 square feet: \$1,000

Stormwater Quality Review: \$250

Total Fee: \$1,250



3. PROJECT DESCRIPTION

3.1 INTRODUCTION

The Waynflete School is located at 360 Spring Street in Portland, Maine. The attached Location Map shows the project location. The property is located within the Residential (R4) Zone and the Waynflete Overlay Zone. The school owns approximately 5.6 acres of an area bound by Spring, Storer, Danforth, Emery, and Fletcher Streets; the boundary survey attached to Section 19 of this Report shows the full Waynflete School Campus area. The school is proposing the following campus upgrades:

- Demolition of the existing athletic facility and construction of a new 13,600 sf gymnasium;
- Renovation and addition of the Lower School, supporting early Childhood through 5th grade education; and
- Development of new playgrounds, educational gardens, and site features.

3.2 PROJECT PURPOSE AND NEED

The proposed project is intended to upgrade the learning experience of the classrooms. It should be noted that the proposed expansion is not intended to accommodate a larger enrollment. The proposed campus upgrade will better serve the needs of the school today and into the future. The new Lower School will be a high-performance, sustainable building that provides spaces custom designed for Waynflete's unique teaching needs and goals aligning with their commitment *"to help students adopt healthy values and acquire new skills in an everchanging world"*.

3.3 EXISTING CONDITIONS

The Existing Conditions Plan, included in the drawings submitted with this application, depicts the existing conditions of the Waynflete School Campus (the Site). No portion of the development is within the 100-year flood plain; a FEMA flood zone map has been attached for your reference. The Site is currently fully developed. The majority of the city-block bound by Spring, Storer, Danforth, and Fletcher Streets, is occupied by the Waynflete School campus, except for two small residential parcels. Topography slopes generally in a southerly direction, towards Danforth Street. No wetlands are present on the Site.

3.4 PROPOSED DEVELOPMENT

The project involves the demolition of the existing athletic facility, the construction of a new gymnasium, the renovation and expansion of the "Lower School", the renovation of Founders Hall, and the construction of new playgrounds, educational gardens, utilities, site features and stormwater management systems. A set of project design plans showing the proposed development is attached to this application. The set includes site, utility, and grading and drainage plans as well as architectural and landscaping plans.

3.4.1 Architectural Approach

The attached Schematic Design Narrative from Scott Simons Architects describes some of the basis for the proposed project. Also attached to this Section are architectural renderings of the proposed project.

3.4.2 Landscaping Approach

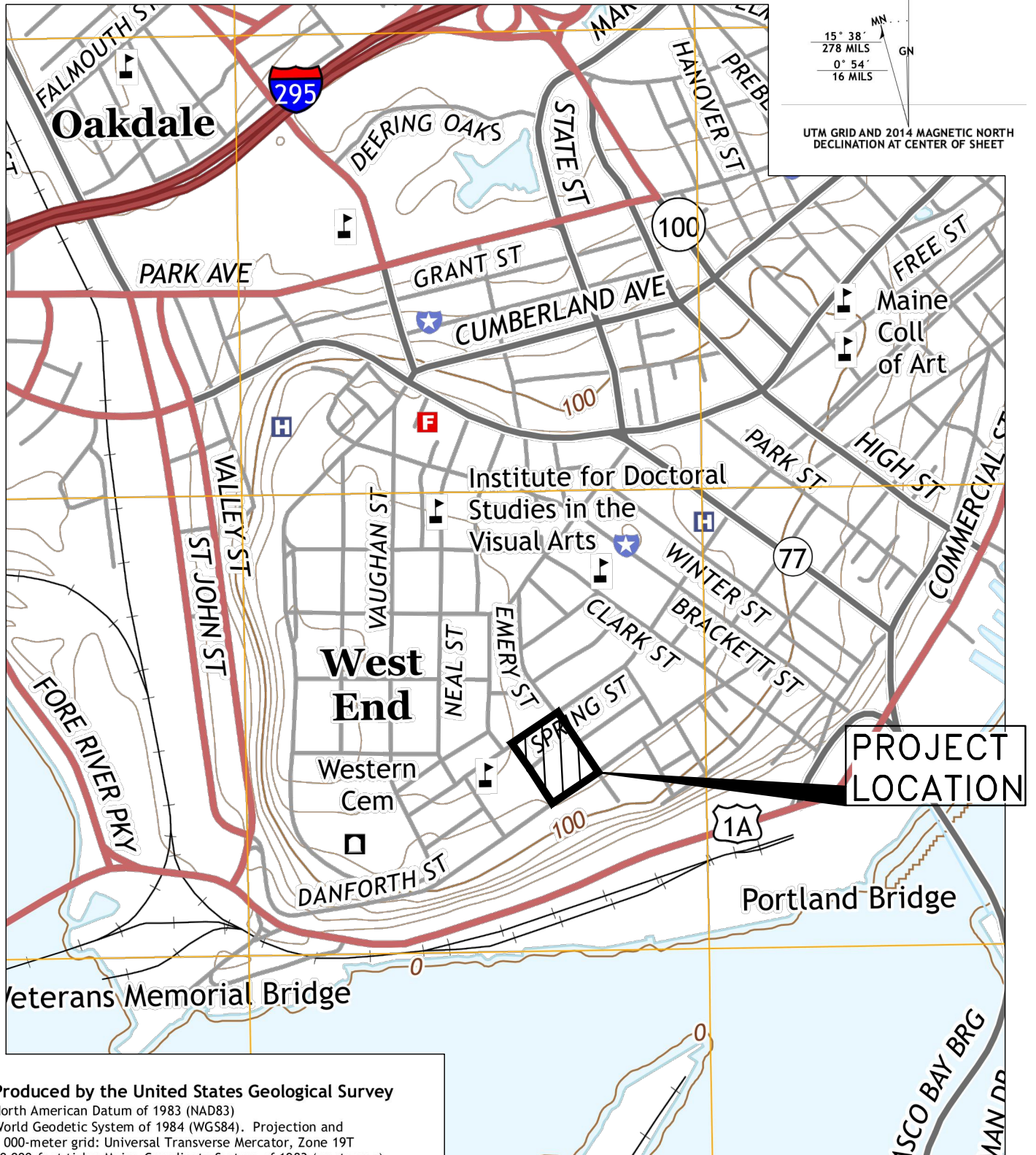
The attached landscape plans, developed by Michael Boucher Landscape Architecture are divided into the following zones:

- The Upper Playground is a relatively flat rectangular area bounded on three sides by the gym, Lower School and Founders Hall, and by the bus loop parking area on the fourth side. A fence and gate (to match existing) separates the yard from the parking area. A concrete walkway along the gym façade allows an accessible route, and a snow removal path, from the parking area to the main entrances of the Gym and Lower School. The playground area consists of four play “pods” within an impervious playground surface, for various play opportunities. Planting beds along Founders Hall and the new lower school provide spaces for sensory gardens. Waynflete’s lower school will be determining the exact use of each of the play pods as well as the plants for the sensory garden, with further study by a playground committee.
- The Gymnasium landscape consists of an arborvitae hedge to act as a buffer between the Gymnasium and the adjacent neighbor on Fletcher Street; as well as street trees planted along Fletcher Street. Adjacent to the southwest side of the gym The third side of the gymnasium is adjacent to a new Fletcher Street concrete entry walk located in a similar footprint to the existing Fletcher Street walkway.
- The Slope Playground lies between the new Lower School and the adjacent neighbor on Fletcher Street. There is an approximate 14 foot grade change between the entries of the Gymnasium and Lower School and the playfield. Two play pods sit at different elevations along the slope, connected by a trail and granite steps. This zone is planted with new native trees, shrubs and groundcover, creating a natural playground zone. A grass slope leads to the playfield to allow for sledding in the winter. A concrete retaining wall has been proposed adjacent to the neighbor’s property, replacing an existing slope and wooden retaining structure.
- The Playfield remains in its current location, and will be rehabilitated and reseeded post-construction.
- The Lower Playground will remain in its current state and location, this is outside the area of work. A new retaining wall separates this playground from the adjacent Fletcher Street neighbor to the northwest, replacing the existing wooden retaining structure.
- The Garden lies between two sets of egress stairs, in the current orchard location. This zone allows a space for the school to plant new orchard trees or relocate their container gardens if desired.

The planting palette will be finalized after a site walk and review with city arborist Jeff Tarling.

3.5 ATTACHMENTS

- Location Map
- FEMA Map
- Schematic Design Narrative
- Architectural Renderings
- Design Plans (Bound Separately)



41 Hutchins Drive
 Portland, Maine 04102
 800.426.4262 | www.woodardcurran.com

COMMITMENT & INTEGRITY DRIVE RESULTS

PROJECT LOCATION FIGURE

DESIGNED BY: N/A
 DRAWN BY: BCM

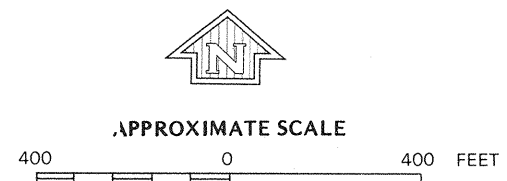
CHECKED BY: LJS
 229423 LOCATION FIG.dwg

WAYNFLETE SCHOOL
 360 SPRING STREET
 PORTLAND, ME 04102

WAYNFLETE GYMNASIUM
 & LOWER SCHOOL

JOB NO.: JOB NUMBER
 DATE: FEB. 2106
 SCALE: SCALE

FIG. 1



NATIONAL FLOOD INSURANCE PROGRAM

**FIRM
FLOOD INSURANCE RATE MAP**

**CITY OF
PORTLAND, MAINE
CUMBERLAND COUNTY**

PANEL 13 OF 17
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
230051 0013 B

EFFECTIVE DATE:
JULY 17, 1986



Federal Emergency Management Agency

ADJOINING AREA SHOWN AS INSET A ON PANEL 230051 0016 B

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

WAYNFLETE LOWER SCHOOL

The Waynflete Lower School currently occupies space on the lower and upper levels of Founders Hall and Hewes Wing. Founders Hall, originally a stable on the Horace Dudley estate, was purchased by the school and converted to classrooms in 1912. Hewes Wing was built in 1960. Since being converted to classroom space Founders and Hewes Wing have undergone many upgrades and renovations to respond to the changing needs of the school. Due to the design and age of the buildings, the Lower School classroom spaces are tight and cluttered creating a less than ideal environment for teaching and learning. Classrooms are not located in the best way for cross age connections and there's no one point of handicapped access or gathering space for families. While the existing Lower School has served its purpose housing one of Maine's premiere institutions of learning over the past 100 years, it is apparent that designing and building a new Lower School facility tailored to the school's specific needs will best serve Waynflete's current and future program needs.

Although Scott Simons Architects has been working alongside Waynflete for nearly a decade on ideas and design concepts for a new Lower School, SSA has been working closely with the Lower School Design Committee and the Lower School faculty developing the most recent design concepts since February of 2015. The process began by synthesizing information provided by Waynflete with relation to floor space requirements and enrollment numbers. SSA subsequently used this information to identify Waynflete's ideal Lower School classroom sizes for E/C, K/1, 2/3, and 4/5 and utilized this to form the foundation for early design strategies. As the schematic design process continued SSA further tailored the design to not only optimize classroom space requirements but also integrate daylighting and environmental certification strategies to maximize comfort within the learning environment and prioritize sustainability. The proposed design represents a forward-looking approach to design for education and is consistent with Waynflete's "Mission" and "Core Beliefs".

SITE

The Lower School is bordered by the Waynflete Campus on the north, south and east and by a private residence to the west facing Fletcher Street. To the north, the existing Lower School playground borders the new Lower School. The new building design acts to preserve as much open space as possible while emphasizing the connection between the new lower school and playground by providing unobstructed views both in to and out of the building's lobby. In many ways, this visual connection echoes Waynflete's mission to provide an emphasis on play alongside of the rigorous expectations of their academic programs. To the west the new Lower School borders an existing private residence. Between the residence and the new Lower School there currently exists a small "natural" playground and a hill that is used for sledding in the winter months and connects the lower ball field to the playground to the north of the new Lower School. SSA was tasked with carefully considering the impact of the new building on these areas and the new design works to preserve these functions while maintaining ample sightlines for faculty to oversee activities in the playground, "natural" playground and lower field simultaneously. The southern border of the new building borders the existing play field. Waynflete once again emphasized the importance of its on campus spaces by directing SSA to minimize the impact the new Lower School would have on the open green space. SSA carefully conducted several on site studies that

allowed members of the faculty and design committee to see first hand what the impact on these spaces would be. Ultimately the current design was chosen for its minimal impact and for the strong connection it makes between the interior and exterior of the building. To the east the new Lower School abuts the existing Sills Hall. The siting of the new school recognizes the inherent complexities of construction directly against an existing adjacent structure and has provided space to accommodate this based on input from the project's structural consultant.

Overall the site strategy aims to take full advantage of the southern exposure for daylighting by careful arrangement of the building form. In addition the project takes full advantage of the existing grade change to mitigate environmental impacts.

BUILDING DESCRIPTION

The overall form of the new Lower School is intended to have a residential scale providing a sense of comfort for the Lower School students. The familiar gabled roof forms act to define the various programmatic spaces and provide dramatic vaulted interiors in several of the classrooms. The window openings on all exposed facades provide a sense of playfulness and help to break down the scale of some of the larger walls. When entering occupants are greeted by a lobby space that has a direct connection to the outdoor environment and is open to the lower level. The connection to the lower level is made via an open amphitheater space that looks out across a shared classroom space and down through expansive openings that allow for direct views of the lower field. The amphitheater is designed to host Lower School gatherings and provide a common space for casual socializing and additional break out space throughout the school day. At the field level the building houses the arts space to the west and the after school space to the east. Each of these spaces has a continuous connecting deck that affords occupants the ability to open directly to the play field when weather conditions allow.

On the main level are the EC and K/1 spaces. These classroom spaces connect directly with the main entrance lobby providing direct access to the classroom spaces for the youngest students. Each classroom features varied views to the exterior and windows that respond to the scale of the students. Some windows are located directly at floor level and allow for unobstructed views to the natural environment outside, others provide seating areas for quiet study and reflection and others provide views to the treetops and sky beyond. In the EC classroom space the design addresses the need to have some direct access to exterior space by providing a small deck that opens directly into the classroom space. The EC and K/1 classrooms are connected by a shared classroom space for collaborative learning. This space bridges over the amphitheater below and provides direct views to the play field on the exterior and lobby/amphitheater on the interior. In addition to the lobby space, the main level houses the administrative desk that has direct access and sightlines to the main entrance providing a secure point of entry. The main level also houses the Director of the Lower School's office and connects to the existing Founder's Hall, which will be renovated as another project phase and provide further support programs. The elevator connecting all levels is centrally located in the lobby for ease of accessibility.

After moving up the sky lit lobby to the top level occupants encounter shared classroom spaces and a central solarium space that opens directly onto a roof deck that provides areas for outdoor learning and planting. On the west end of the building above the K/1 classroom space is the 2/3

classroom which is equipped with its own egress stair opening directly to the outside at the lower level for safety. The east end of the upper level opens directly to the existing upper level of Founder's Hall housing the 4/5 classroom spaces.

MATERIALS

The exterior of the new building is clad in white cementitious paneling on the main level and second levels. The material is intended to provide minimal clean lines further emphasizing the familiar gable forms that shape the classroom spaces. The white color was chosen to help connect the new Lower School to the other adjacent white buildings. On the lower level the exterior cladding material is heat-treated wood to provide natural warmth and contrast the white gabled forms above. The natural material allows the building to successfully transition to the ground plane and play field on the south and west elevations. At the play field the building above is supported by a series of load bearing tilted columns that actively engage students through their playful form in better understanding how the forces of the building are transferred to the ground plane from above. The lower level deck and ceiling are wood clad to provide warmth and another opportunity to ground the building to the field by using natural materials. The central amphitheater space, shared classroom space on the main level and solarium on the upper level serve as a connector between the gabled forms and are characterized primarily by their openness. The windows are all aluminum clad for durability.

Though the layout of each classroom space will be designed to specifically address the needs of the grade levels that it serves, all spaces will be characterized by their clean geometries and use of natural finish materials. These materials will be specifically chosen to provide comfort, environmental sustainability and optimized air quality all in line with the environmental certification goals the project will achieve. The ceilings in the classroom spaces will be clad in wood slats with specific acoustical qualities. All millwork will have natural finishes and interior partitions will be painted drywall. Classroom spaces will be carpet tile while the lobby area will be resilient porcelain flooring. The amphitheater will be clad in wood for warmth of material and the lower level will be polished concrete slab.

SUSTAINABILITY

The Lower School is designed to achieve Passive House (PHIUS) certification. The building envelope is designed to have maximum insulative qualities minimizing the need for heating and cooling. All mechanical equipment is high efficiency/high performance, as outlined in the mechanical narrative. Lighting is energy efficient LED type. Plumbing fixtures are selected for durability, performance, and water efficiency.

SUMMARY

With the construction of the new Lower School Waynflete will have a building that better serves the needs of the school today and into the future. The new Lower School will be a high-performance, sustainable building that provides spaces custom designed for Waynflete's unique teaching needs

and goals aligning with their commitment “to help students adopt healthy values and acquire new skills in an ever-changing world”.

WAYNFLETE GYMNASIUM

Waynflete's existing Gymnasium, originally designed and constructed in the middle of the 1970s, serves as the school's primary indoor athletic space. Over the past four decades the athletic program has grown increasing the need for expanded on campus practice space for various athletic programs, expanded varsity playing space and expanded seating capacity for varsity athletic contests. Due to the increasing demands put on the existing building many of the buildings major mechanical system along with the gym floor and existing Kalwall are in need of replacement. The amount associated with these repairs has been identified in the range of approximately \$580,000. Concisely stated the existing facility does not meet Waynflete's current needs.

Scott Simons Architects has been working with Waynflete and the Gymnasium Design Committee since May of 2015 on the current design concept for the expanded Gymnasium. Beginning with a thorough analysis of the site and adjacent spaces and programs that would potentially be impacted by expanding the footprint of the new Gymnasium, Scott Simons Architects developed a concept for the new space. The reimagined Gymnasium increases the building's capacity allowing it to more comfortably host varsity athletic contests. The expanded court space creates two junior varsity practice courts which can be simultaneously used. Additionally the design incorporates office space for athletic and physical education staff specifically tailored to their program's needs. Working closely with the Gymnasium Design Committee and various design consultants, SSA has continued to develop the site plan and design for the building that will expand the gym from its current 9,340 SF to 13,614 SF to better accommodate Waynflete's program. The proposed design will accommodate these needs within the very tight urban campus addressing the concerns of neighboring residents and with a design that is mindful of the importance of environmental sustainability.

SITE

The Gymnasium site is bordered by private residences on the south and north, Fletcher Street on the West and the existing Lower School playground on the east. Because of limiting setback requirements the footprint of the new building is limited with regard to increases in size on north, south and west sides. The current design is mindful of these front yard and side yard setbacks while optimizing the amount of usable space inside of the building. The design accomplishes this by utilizing exterior stairs for egress in two locations and locating several programmatic elements below grade with no footprint extending above. The exterior stair on the southwest side of the Gym allows for direct delivery access from Fletcher Street through a large double door opening making hosting large events in the new Gymnasium as convenient and efficient as possible. Although not a setback imposed by zoning, SSA worked closely with Waynflete's Lower School staff to minimize

the impact on the existing adjacent playground to the east by holding the footprint as close to the existing Gym's footprint as possible without making spatial compromises to the new Gym's program.

The entrance from Fletcher Street is currently heavily used during Lower School drop off and dismissal times. The design for the new Gymnasium takes this into consideration by maintaining the same line of direct access from Fletcher Street. In addition, the new design also provides generous covered waiting space on the south side to shelter students and parents from inclement weather during drop off and dismissal times. The new building has two entrances, both on the east (campus) side. The entrance on the northeast is intended to serve the athletic functions of the space in a location very similar to the existing Gym entrance. Its adjacency to the parking loop makes this an ideal location for pick up and drop off and serves the needs of larger functions by allowing for the most direct access to the Gym's entrance from on street parking on adjacent Spring Street. The entrance on the southeast is intended to provide more direct access to the adjacent Lower School minimizing outdoor travel for younger students in the cold winter months.

BUILDING DESCRIPTION

The new Gymnasium is designed to play host to athletic contests and provide a space that can accommodate larger campus wide events and functions as well. The new Gym's floor level is further sunken into the ground (approximately 6') allowing occupants to enter directly on the mezzanine level a full floor level above the gym floor below. During basketball games and other athletic and non athletic functions bleachers will extend from below the mezzanine to allow for direct access from the mezzanine to the gym floor level. Along the mezzanine at the upper level are two stairs that allow for access to the lower level at times when the bleachers are retracted. At the same upper level are the Athletic and Assistant Athletic Director's offices. Located near the main entrance to the building, these offices have direct sight lines helping to create a secure point of entry. The mezzanine level also contains four individual unisex toilet rooms with shared sinks and a centrally located elevator to provide handicap accessible access to the lower level.

In addition to the gym floor, the lower level houses both the home and visiting locker rooms that each contain two bathroom stalls, shared sinks and a shower. These are located below the mezzanine level and have direct individual access to the gym floor on the north and south sides of the court. Two physical education offices are located on the south side of the gym to provide direct physical and visual access to the gym floor. The lower level also contains several spaces dedicated to storage of athletic equipment and several spaces for mechanical and electrical equipment TBD.

On the exterior the building is designed to respond to the scale of the residential neighborhood in which it is sited. To accomplish this the building elevation was designed to address the scale on the Fletcher Street (west) side by stepping down to a scale that bears relation to other residences on the street. The west facade also incorporates a number of openings to further scale down its scale adjacent to the street and prevent it from having a wall-like feel similar to the existing Gymnasium's west facade. On the east elevation facing the playground the building is once again scaled down to a single story to allow for maximum light and air to enter the outdoor space and respect the current feeling of openness. On the large south facing facade the design incorporates an awning that both scales down the elevation and provides cover for students and parents at drop off and

dismissal. Planting material will be utilized to create buffers between adjacent neighboring properties and at the Fletcher Street facade to once more help scale down the building and allow it to blend successfully within the context of the West End neighborhood. The interior of the building is designed with multipurpose functions in mind. The design strategy is to minimize the amount of exposed steel and employ the most cost effective structural system and utilize these cost savings on wood cladding and materials generally not associated with the typical gymnasium. The ceiling HVAC and structural are almost entirely concealed by a series of hanging wood panels that create a shell below the ceiling that serve to better tailor the scale of the space while dressing up the Gym and make it a more appealing space for functions that lie outside athletics (i.e. baccalaureate, all school events, etc.). The wood ceiling panels would not simply act as an aesthetic element but also as an acoustic element making the space more comfortable for all occupants and events.

MATERIALS

The exteriors of the new building are clad with brick to better help the building blend in with both the historic context of the neighborhood and other buildings on campus. The windows are all aluminum clad for durability. Roof overhangs are designed to shade and shelter the entrances and walkway from Fletcher Street and provide covered outdoor spaces. The undersides of the new roofs will be clad with wood, providing warmth and texture to these surfaces. The interior walls will be painted drywall with some use of natural wood paneling to provide a warm feel and needed durability for athletic practices and events. Flooring on the mezzanine will be porcelain. The remainder of the space is covered by the gym floor and additional porcelain flooring for durability. Ceilings will be a combination of wood paneling, acoustic ceiling tile, or painted drywall.

SUSTAINABILITY

The Gymnasium is designed to achieve LEED Platinum (Version 4 certification). All mechanical equipment is high efficiency/high performance, as outlined in the mechanical narrative. Lighting is energy efficient fluorescent and/or LED lamps. Plumbing fixtures are selected for durability, performance, and water efficiency. A large photovoltaic array will be installed on the roof to offset electricity costs as well.

SUMMARY

With this Gym Waynflete will be able to better accommodate the existing and future needs for the athletic program now and into the future. The new, expanded building, will be a high-performance, sustainable building that serves the needs of the school and enhances the context of the neighborhood and campus. It can play host to athletic and non-athletic functions making it a valuable asset in what is a very compact urban campus with limited room for expansion. The new building provides the entire Waynflete community a space consistent with its mission "devoted to the healthy development of the whole person: mind, body and spirit."









4. EVIDENCE OF RIGHT, TITLE AND INTEREST

The Waynflete School owns approximately 3.6 acres of the city-block bound by Spring, Storer, Danforth, and Fletcher Streets. A letter referencing the specific deeds associated with each parcel, which serve as evidence of right, title, and interest, has been attached to this Section. Copies of these deeds are included.

4.1 ATTACHMENTS

- Right, Title, & Interest Letter, dated January 28, 2016, prepared by Bernstein, Shur, Sawyer & Nelson, PA.
- Copies of referenced deeds



**Bernstein, Shur,
Sawyer & Nelson, P.A.**
100 Middle Street
PO Box 9729
Portland, ME 04104-5029

τ (207) 774-1200

✉ (207) 774-1127

Mary E. Costigan
(207) 228-7147 direct
mcostigan@bernsteinshur.com

January 28, 2016

Portland Planning Board
389 Congress Street
Portland, Maine 04101

RE: Waynflete School Site Plan Application

Dear Planning Board Members:

Please accept this letter as evidence of right, title and interest for Waynflete School in the property proposed for development with a new lower school and gym. As set forth in more detail below, Waynflete School is the owner of the subject property through numerous conveyances over the years.

17 Fletcher Street - The Gym Parcel (Identified on the Portland Tax Maps as 61-F-4):

- 1) Warranty deed from Albert W. Romano and Ralph Romano, Jr. to The Waynflete School dated October 8, 1959 and recorded in the Cumberland County Registry of Deeds in Book 2505, Page 259.
- 2) Warranty deed from Millard C. Webber, Jr. to The Waynflete School dated November 30, 1959 and recorded in the Cumberland County Registry of Deeds in Book 2513, Page 281.
- 3) Warranty deed from Magel W. Brawn to The Waynflete School dated January 18, 1973 and recorded in the Cumberland County Registry of Deeds in Book 3353, Page 19.

16 Storer Street – Lower School Parcel (Identified on the Portland Tax Maps as 61-F-3 - 8-10):

- 1) Warranty deed from Waynflete Latin School, Incorporated to The Waynflete School dated March 20, 1935 and recorded in the Cumberland County Registry of Deeds in Book 1464, Page 225.

January 28, 2016
Page 2

2) Warranty deed from Parent Realty Co. to The Waynflete School dated March 30, 1935 and recorded in the Cumberland County Registry of Deeds in Book 1465, Page 426.

3) Warranty deed from Ethel Fox Baxter to Waynflete School dated October 1, 1942 and recorded in the Cumberland County Registry of Deeds in Book 1693, Page 222.

Thank you for time and consideration. Please let me know if I can provide any further information.

Sincerely,



Mary E. Costigan

cc: Ann Hagstrom

Know All Men by These Presents.

That We, ALBERT W. ROMANO and RALPH ROMANO, JR., both of Portland,
in the County of Cumberland and State of Maine,

in consideration of One Dollar (\$1.00) and other valuable consideration,

paid by THE WAYNFLETE SCHOOL, a charitable and educational corporation organized and existing under the laws of the State of Maine and located in said Portland,
the receipt whereof we do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said THE WAYNFLETE SCHOOL, its successors

and assigns forever, a certain lot or parcel of land with the buildings thereon situated in part on the easterly side of Fletcher Street in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows:

Beginning at a point marked by an iron on the said easterly side of Fletcher Street one hundred and ninety (190) feet northerly from a stone post located at the intersection of the northerly side of Danforth Street and the easterly side of said Fletcher Street, said point of beginning also being the northwesterly corner of land now or formerly of Philip J. Deering, Jr.; thence running easterly by said Deering land sixty (60) feet to an iron; thence running southerly at right angles with said last named course by said Deering land ninety (90) feet to an iron and land now or formerly of the Parent Realty Company; thence running easterly by land of said Parent Realty Company one hundred and three (103) feet to an iron and land now or formerly of the Waynflete Latin School, Incorp.; thence northerly by land of said Waynflete Latin School, Incorp. one hundred fifty-three and three tenths (153.3) feet to a point; thence westerly at right angles with said last named course and by land of said Waynflete Latin School, Incorp. fifty-six (56) feet to an iron; thence northerly by land of said Waynflete Latin School, Incorp. fifty and one-tenth (50.1) feet to an iron situated at the southeast corner of land now or formerly of Sarah A. Wescott; thence westerly by land now or formerly of Sarah A. Wescott one hundred seven and seven tenths (107.7) feet to a passageway leading southerly from Spring Street to Fletcher and Orchard Streets; thence southerly by said passageway and by the easterly line of Fletcher Street ninety-three and nine tenths (93.9) feet to an iron; thence same course southerly twenty (20) feet to an iron and point of beginning.

Subject, however, to certain rights of way and easements as more particularly set forth in a certain Warranty Deed given by Raffaele Romano to Philip J. Deering, Jr., dated September 13, 1926 and recorded in Cumberland County Registry of Deeds in Book 1244, Page 437, to which deed reference is hereby made for a more particular description of said rights and easements.

The above described premises are a portion of the premises conveyed to said Raffaele Romano by Caroline M. Grisfield et al by Warranty Deed dated July 20, 1922 and recorded in said Registry of Deeds in Book 1110, Page 27.



Romano
&
to
Waynflete
School
--
War

To have and to hold the aforegranted and bargained premises with all the privileges and appurtenances thereof, to the said THE WAYNFLETE SCHOOL, its successors

~~heirs~~ and assigns, to its ^{successors} and their use and behoof forever.

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

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 ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons, except as aforesaid.

In Witness Whereof, we the said ALBERT W. ROMANO and RALPH ROMANO, JR., and Celeste C. Romano, wife of the said Albert W. Romano, and June B. Romano, wife of the said Ralph Romano, Jr.

~~Wife of~~ ~~of the said~~

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

Signed, Sealed and Delivered
in presence of

Louis J. Fournier
to all

Albert W. Romano
Celeste C. Romano
Ralph Romano Jr
June B. Romano

State of Maine. CUMBERLAND, ss. October 8 1959.
Personally appeared the above named Albert W. Romano and Ralph Romano, Jr.

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

Before me,

Louis J. Fournier
Justice of the Peace

OCT 9 1959
REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE

Received at 11 H 50M AM, and recorded in

BOOK 2505 PAGE 259 Martha K. Shady Register

Know All Men by These Presents,

281

That I, MILLARD C. WEBBER, JR., of Portland, in the County of
Cumberland and State of Maine,

in consideration of One Dollar (\$1.00) and other valuable consider-
ation, being less than One Hundred Dollars (\$100.00),

paid by THE WAYNFLETE SCHOOL, a charitable and educational corpora-
tion organized and existing under the laws of the State of Maine
and located in said Portland,

the receipt whereof I **do hereby acknowledge, do hereby give, grant,**
bargain, sell and convey unto the said THE WAYNFLETE SCHOOL, its
successors

Webber
Jr

to

Waynflete
School

--
War

hereby and assigns forever, a certain lot or parcel of land situated
Easterly of Fletcher Street, in said Portland, bounded and des-
cribed as follows: Beginning at an iron at the Northeast corner of
the lot of land conveyed by John W. Gordon et al to this Grantor
by deed dated October 1, 1959 and recorded in Cumberland County
Registry of Deeds in Book 2507, Page 101, said corner marking an
angle in land conveyed by Albert W. Romano et al to said Waynflete
School by deed dated October 3, 1959 and recorded in said Registry,
Book 2505, Page 259; thence by said Waynflete land S 18° 10' E
14.03 feet to an iron; thence by other land of the Grantor N 45°
57' W 15.37 feet to an iron and land of said Waynflete School;
said iron also marking the most Easterly corner of other land con-
veyed by said Waynflete School to the Grantor by deed of even date
herewith; thence by said Waynflete School land N 71° 50' E 7.35
feet to the point of beginning, and being a portion of the land
conveyed to this Grantor by John W. Gordon et al as aforesaid.
Said above described courses are magnetic and of the date of 1955.

Also hereby conveying all my right, title and interest in and
to a certain twenty (20) foot right of way over land now of this
Grantee, said right of way being more particularly described in the
second paragraph of said deed from John W. Gordon et al to this
Grantor.

Also hereby conveying all my right, title and interest in the
use of the driveway over land now of this Grantee as more partic-
ularly described in paragraph three of said deed from John W. Gordon
et al to this Grantor.

Also hereby conveying all my right, title and interest in and
to a certain gas pipe easement over land now of this Grantee as
more particularly described in paragraph three of said deed from
John W. Gordon et al to this Grantor.

282 To have and in hold the aforegranted and bargained premises with all the privileges and appurtenances thereof, to the said THE WAYNFLETE SCHOOL, its successors

has _____ gns, to its and their use and behoof forever.

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

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

In Witness Whereof, I, the said MILLARD C. WEBBER, JR.,

and HELEN A. WEBBER,

wife of the said Millard C. Webber, Jr.,

joining in this deed as Grantor, and relinquishing and conveying all right by descent and all other rights in the above described premises, have hereunto set our hands and seals this 30th day of November in the year of our Lord one thousand nine hundred and fifty-nine.

Signed, Sealed and Delivered
in presence of

Carl Beyer

Millard C. Webber, Jr.
Helen C. Webber, Jr.

State of Maine. CUMBERLAND, ss. November 30, 19 59.
Personally appeared the above named Millard C. Webber, Jr.

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

Before me, Carl Beyer
Justice of the Peace

REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE
Received at 11:57 A.M., and recorded in
BOOK 2573 PAGE 281 DEC 1 1959
Edward P. Lyon Registrar

Known All Men by these Presents,

That I, MAGEL W. BRAUN, of Portland in the County of Cumberland and State of Maine, do hereby certify that I am the owner of the following described property:

in consideration of one dollar (\$1.00) and other valuable considerations,

paid by THE WAYNFLETE SCHOOL, a corporation organized and existing under the laws of the State of Maine and having its principal place of business at said Portland, whose address is 356 Spring Street, Portland, Maine 04102, Successors

the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey, unto the said The Waynflete School,

all my right, title and interest in and to the following described property:

A certain lot or parcel of land, with the buildings thereon, situated on the easterly side of Fletcher Street in Portland in the County of Cumberland and State of Maine, bounded and described as follows:

Beginning on the easterly side line of said Fletcher Street at the south-westerly corner of that certain lot or parcel of land conveyed to Roy E. Braun and the Grantor by Alice D. Kilborn by deed, dated August 25, 1952 and recorded in the Cumberland County Registry of Deeds in Book 2100, Page 221; thence easterly by land formerly of T. C. Hersey and parallel with the south-easterly side line of Spring Street one hundred seven and seven tenths (107.7) feet to the westerly side of a passageway about thirteen (13) feet wide leading southerly from Spring Street to the former residence of the late T. C. Hersey; thence northerly by said passageway thirty and one hundredth (30.01) feet to a drill hole; thence westerly at an included angle of ninety-one degrees forty-five minutes (91° 45') with the last described course one hundred six and eighty-four hundredths (106.84) feet, more or less, to a drill hole in said easterly side line of Fletcher Street; thence southerly by said easterly side line of Fletcher Street thirty (30) feet to the point of beginning.

Being a portion of the premises conveyed to Roy E. Braun and Magel W. Braun, as joint tenants and not as tenants in common, by Alice D. Kilborn by said deed, dated August 25, 1952 and recorded in said Registry of Deeds in Book 2100, Page 221. The said Roy E. Braun died on May 13, 1961.

[illegible]

ἵσταται:

[illegible]

We have and in hold the aforegranted and bargained premises,

with all privileges and appurtenances thereof to the said The
Waynflete School, its

[illegible]

Successors ~~HEREIN~~ and Assigns, to its and their use and behoof forever.

And I do covenant with the said Grantee, its / Successors
and Assigns, that I am lawfully seized in fee of the premises;
that they are free of all incumbrances;

ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED DATE 05-01-2001 BY 60322 UCBAW

that, I have good right to sell and convey the same to the said
Grantee to hold as aforesaid; and that I and my Heirs, shall
and will Warrant and Defend the same to the said Grantee, its

Successors
~~HEREIN~~ and Assigns forever, against the lawful claims and demands
of all persons.

21

XXXXXXXXXXXXXXXXXXXX

~~XX~~

Signed, Sealed and Delivered
in presence of

Magel Christ

January 18, 1973

and acknowledged the above instrument to be her free and
voluntary deed.

Before me,

James H. Adams
Notary Public

Notary Public

REGISTRY OF DEEDS: CUMBERLAND COUNTY, MAINE

Received at BOOK 3353 H 25 N.P.M. and recorded in PAGE 19

Register

Know all Men by these Presents, That

225

Waynfflete Latin School, Incorporated, a corporation duly organized under and existing by the laws of the State of Maine and having a place of business at Portland, in the County of Cumberland and State of Maine, in consideration of one dollar and other good and valuable considerations to it paid by The Waynfflete School, a literary, educational and scientific corporation organized and existing under the provisions of Chapter 70 of the Revised Statutes of Maine and all acts additional thereto and amendatory thereof, and located at said Portland,

the receipt whereof is ~~do~~ hereby acknowledged do hereby give, grant, bargain, sell and convey unto the said The Waynfflete School, its successors and assigns forever, A certain lot or parcel of land with the buildings thereon, situated in said Portland, and bounded and described as follows: Beginning at a point in the northeasterly side line of land conveyed by Caroline M. Crisfield and Agnes P. Lowell to Raffaele Romano by deed dated July 20, 1922, and recorded in Cumberland County Registry of Deeds in Book 1110, at page 27, said point being distant along said northeasterly side line one hundred (100) feet from the northerly side line of Danforth Street; thence south, seventy-one degrees (71°) thirty minutes (30') west, a distance of sixty (60) feet to a point; thence north, eighteen degrees (18°) thirty minutes (30') west, a distance of one hundred fifty-three and three tenths (153.3) feet, to a point; thence south, seventy-one degrees (71°) thirty minutes (30') west, a distance of fifty-six (56) feet to a point; thence north, eighteen degrees (18°) thirty minutes (30') west, a distance of fifty and seven-hundredths (50.07) feet to the southwesterly corner of a thirteen (13) foot passageway described in a deed from Margaret C. Dudley to said Crisfield and Lowell, dated April 30, 1912, and recorded in said Cumberland County Registry of Deeds in Book 891, at page 310; thence north, seventy-one degrees (71°) thirty minutes (30') east, along the northwesterly side line of land conveyed by said Crisfield and said Lowell to said Romano, a distance of one hundred sixteen (116) feet to the northerly corner of land so conveyed and to the land of Charles Cook; thence south, eighteen degrees (18°) thirty minutes (30') east, by land of said Cook and by land of the late Edward Fox, along the northeasterly side line of land conveyed as aforesaid by said Crisfield and Lowell to said Romano, a distance of two hundred three and thirty-seven hundredths (203.37) feet to the point of beginning; together with said certain thirteen (13) foot passageway running from the lot hereby conveyed to Spring Street, said passageway being bounded on the west by land now or formerly of George P. Wescott and on the east by land now or formerly of Julia St. F. Thaxter, subject, however, to rights of passage and use heretofore granted to and in said passageway.

The grantor hereby conveys to The Waynfflete School the right to maintain for efficient service to the property hereby conveyed, a sewer, water pipes and gas and electric connections in the present location of such sewer, water pipes and gas and electric connections or in any other location provided by said Raffaele Romano or his heirs and assigns.

The premises herein conveyed are subject to a right of way reserved by said Raffaele Romano for himself, his heirs and assigns, from the land now or formerly belonging to him adjoining the land hereby conveyed on the southwest to said passageway leading to Spring Street and also rights of passage over said passageway leading to Spring Street, said right of way to be an extension of said passageway.

This conveyance is made subject to a certain mortgage from the said Waynfflete Latin School, Incorporated to the Maine Savings Bank, dated July 2, 1928 and recorded in said Cumberland County Registry of Deeds, Book 1294, Page 50, which grantee assumes and agrees to pay.

Un Have and in Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said The Waynfflete School, its successors ~~do~~ and assigns, to its and their use and behoof forever. And it does ~~do~~ covenant with the said grantee, its successors ~~do~~ and assigns, that it is lawfully seized in fee of the premises; that they are free of all in cumberances; except as above set out,

that it has ~~do~~ good right to sell and convey the same to the said grantee ~~do~~ to hold as aforesaid; and that it and its ~~do~~ successors ~~do~~ shall and will warrant and defend the same to the said grantee, its successors ~~do~~ and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, the said Waynfflete Latin School, Incorporated has caused these presents to be signed and its corporate seal to be hereunto affixed by Anne M. Gannett, its President and Philip C. Keith, its Treasurer, hereto duly authorized,

Land - and seal this 20th day of March in the year of our Lord one thousand nine hundred and thirty-five.

Signed, Sealed and Delivered
in presence of

Florence M. Hollywood

Florence M. Hollywood

WAYNFLETE LATIN SCHOOL, INCORPORATED
CORPORATE SEAL
By Anne M. Gannett, its President
And Philip C. Keith, its Treasurer

State of Maine, CUMBERLAND, ss. March -- 1935.

Personally appeared

the above named Anne M. Gannett,

and acknowledged the above instrument to be the free act and deed of the Waynfflete Latin School, Incorporated and of herself as President.
Before me, Florence M. Hollywood, Notary Public, Notarial Seal. *Justices of the Peace.*

Received March 20, 1935, at 3 o'clock 30 m. P. M., and recorded according to the original

U.S.I.R.
\$1.00
W.L.S.
Inc.
3/20/35

Received March 30, 1935, at 11h 25m A. M., and recorded according to the original -

Parent
Realty
Co.
to
Waynflete
School
War.

U.S.I.R.
\$1.00
P.R.C.
3/30/35

KNOW ALL MEN BY THESE PRESENTS, That Parent Realty Co., a corporation organized under and existing by the laws of the State of Maine and located at Portland, in the County of Cumberland and State of Maine, in consideration of one dollar and other good and valuable considerations to it paid by The Waynflete School, a literary, educational and scientific corporation organized and existing under the provisions of Chapter 70 of the Revised Statutes of Maine and all acts additional thereto and amendatory thereof, and located at said Portland, the receipt whereof is hereby acknowledged, do hereby give, grant, bargain, sell and convey unto the said The Waynflete School, its successors and assigns forever,

A certain lot or parcel of land situated on the Northerly side of Danforth Street, in Portland, in said County, and bounded and described as follows: Beginning on said side of said Danforth Street at the Southeasterly corner of a certain lot of land conveyed to Raffaele Romano by Caroline M. Crisfield and Agnes P. Lowell by deed dated July 20, 1922, and recorded in Cumberland County Registry of Deeds in Book 1110, Page 27, which corner is on the division line between the land hereby conveyed and land now or formerly of the Estate of Edward Fox, and running thence Northwesterly by said division line one hundred (100) feet, more or less, to land conveyed by said Romano to Waynflete Latin School, Incorporated, by deed dated December 10, 1923, and recorded in said Registry in Book 1158, Page 29; thence Southwesterly by said Waynflete Latin School land to the Southwesterly corner thereof; thence continuing Southwesterly to the Southeasterly corner of a lot of land conveyed by said Romano to Philip J. Deering, Jr., by deed dated September 13, 1926, recorded in said Registry in Book 1244, Page 437; thence continuing Southwesterly by said Deering land to Fletcher Street; thence Southeasterly by said Fletcher Street to Danforth Street; thence Northerly by said Danforth Street to the place of beginning.

Being the same premises conveyed to this Grantor by said Raffaele Romano by warranty deed dated May 19th, 1927, and recorded in said Registry in Book 1265, Page 286.

This conveyance is made subject to a reservation, however, in favor of said Raffaele Romano, his heirs and assigns, of the right to maintain and use a certain sewer running from a building on adjoining land of said Romano across the land hereby conveyed to Danforth Street, with the right to enter whenever necessary upon the land hereby conveyed for the purpose of cleaning, repairing, replacing and removing said sewer, and in the event of such entry the premises are to be restored to their previous condition at the expense of said Romano, his heirs and assigns, exercising such right. Provided, however, that said sewer right may be terminated at any time by the Grantee, its successors and assigns, by giving notice of such termination in writing to the then owner of said adjoining premises served by said sewer, and, in the event of such notice, the then owner of said adjoining premises shall, with-

in ninety (90) days of the receipt of said notice, remove and discontinue the use of said sewer at his expense and shall have the right at his expense to run a sewer across the land hereby conveyed at a location to be designated by the Grantee, its successors or assigns, such location to be suitable for the proper drainage of said adjoining premises of said Romano, his heirs and assigns; and the owners of said adjoining premises and of the premises hereby conveyed shall have the same rights and privileges as to said sewer as are herein provided in connection with the existing sewer.

TO HAVE AND TO HOLD the aforegranted and bargained premises with all the privileges and appurtenances thereof, to the said The Waynflete School, its successors and assigns, to its and their use and behoof forever.

And it does covenant with the said Grantee, its successors and assigns, that it is lawfully seized in fee of the premises, that they are free of all incumbrances except as above set out, that it has good right to sell and convey the same to the said Grantee to hold as aforesaid; and that it and its successors, shall and will warrant and defend the same to the said Grantee, its successors and assigns forever, against the lawful claims and demands of all persons.

IN WITNESS WHEREOF, the said Parent Realty Co. has caused these presents to be signed and a wafer seal which it adopts as its corporate seal to be hereunto affixed by Spaulding Bisbee, its President and William D. Ireland, its Treasurer, hereto duly authorized this 30th day of March, in the year of our Lord one thousand nine hundred and thirty-five.

Signed, Sealed and Delivered in Presence of

Florence M. Hollywood

PARENT REALTY CO.

Seal

By Spaulding Bisbee, Its President

Marguerite T. Mahoney

And William D. Ireland Its Treasurer

State of Maine. Cumberland, ss. March 30th, 1935. Personally appeared the above named Spaulding Bisbee and acknowledged the above instrument by him signed to be the free act and deed of the Parent Realty Co. and of himself as President.

Before me, Roger V. Snow Justice of the Peace

Received March 30, 1935, at 11h 45m A. M., and recorded according to the original

 KNOW ALL MEN BY THESE PRESENTS, That I, Claud H. Thomas of Otisfield, in the County of Cumberland and State of Maine mortgagee owner of a certain mortgage given by Lester F. Thomas of Otisfield, in the County of Cumberland and State of Maine to me dated March 30, 1934 A. D. and recorded in Cumberland Registry of Deeds, Book 1435, Page 196, do hereby acknowledge that I have received full payment and satisfaction of the same and of the debt thereby secured, and in consideration thereof I do hereby cancel and discharge said mortgage, and release unto the said Lester F. Thomas, his heirs and assigns forever the premises therein described.

Thomas
to
Thomas
Disch.

IN WITNESS WHEREOF, I the said Claud H. Thomas have hereunto set my hand and seal this twenty-ninth day of March A. D. 1935.

Know all Men by these Presents, That

I, Ethel Fox Baxter, of Cape Elizabeth in the County of Cumberland and State of Maine,

in consideration of one dollar and other valuable considerations paid by Waynflete School, a corporation organized and existing under the laws of the State of Maine and located at Portland in said County of Cumberland and State of Maine, the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said Waynflete School, its successors and assigns forever, the following described property:

A certain lot or parcel of land with the buildings thereon situated on the northerly side of Danforth Street and westerly side of Storer Street in said City of Portland, bounded and described as follows: Beginning on the northerly side of Danforth Street at the easterly corner of land formerly of T. C. Hersey; thence easterly on Danforth Street one hundred seventy-four (174) feet six and one-half (6½) inches to the center line of Storer Street; thence northerly parallel with said Hersey line and in the middle line of said Storer Street two hundred twenty-seven (227) feet more or less to a point equally distant from Spring Street and Danforth Street; thence westerly one hundred seventy-four (174) feet six and one-half (6½) inches to said Hersey land; thence southerly by said Hersey land to said Danforth Street at the point of beginning, subject to the location of the westerly half of a way twenty-five (25) feet wide now known as Storer Street.

Being the same premises conveyed to me by Clinton L. Baxter, Trustee, by deed dated April 23, 1901, recorded in Cumberland County Registry of Deeds in Book 851, Page 77.

U.S.I.R.
\$7.70
E.F.B.
10/1/42

On Have and in Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said Waynflete School, its successors

heirs and assigns, to its and their use and behoof forever. And I do covenant with the said Grantee, its successors heirs and assigns, that I am lawfully seized in fee of the premises; that they are free of all incumbrances;

that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my heirs, shall and will warrant and defend the same to the said Grantee, its successors heirs and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, I, the said Ethel Fox Baxter by Ellen B. Moyer, my Attorney acting under power of Attorney, dated February 12, 1942 and recorded in Cumberland County Registry of Deeds, said Ethel Fox Baxter being a widow,

my hand and seal this first day of October have hereunto set one thousand nine hundred and forty-two. in the year of our Lord

Signed, Sealed and Delivered in presence of

John F. Dana

Ethel Fox Baxter

Seal

by Ellen B. Moyer, her attorney

State of Maine, CUMBERLAND, SS. October 1, 1942.

Personally appeared

the above named Ellen B. Moyer, Attorney for Ethel Fox Baxter, and acknowledged the above instrument to be her free act and deed. in her said capacity and the free act and deed of said Ethel Fox Baxter.

Before me, John F. Dana, Justice of the Peace.

Received October 1 19 42, at 1 o'clock 44 m. P. M., and recorded according to the original.



5. EVIDENCE OF STATE AND/OR FEDERAL APPROVALS

In addition to the City's Level III Site Plan Review, a Maine Construction General Permit will be required from the Maine Department of Environmental Protection (DEP) prior to construction. A copy of this permit will be provided to the City upon receipt.



6. ASSESSMENT OF ZONING

As previously discussed, no portion of the development is within the 100-year flood plain; a FEMA flood zone map is attached to Section 3 of this Report. The proposed project is therefore not subject to the City's Shoreland and Flood Plan Management Regulations. The proposed project is located with the R4 Residential Zone and the Waynflete School Overlay Zone. These zones are regulated by Division 5 and 16 of the City of Portland Land Use Ordinance, respectively. Schools are a permitted use within the Waynflete School Overlay Zone. The Waynflete School is an existing, previously approved use located entirely within the Waynflete School Overlay Zone; the proposed project will not result in a change in use. The following Sections describe how the proposed project will comply with the City's parking and dimensional requirements within these zones.

6.1 PARKING

The proposed campus upgrades are NOT being proposed for the purpose of accommodating a larger enrollment; rather the proposed project is intended to upgrade the learning experience of the classrooms and better serve the educational needs of the school. As such, no new parking is proposed.

6.2 DIMENSIONAL REQUIREMENTS

In accordance with Section 14-276.6(c) of the City's Land Use Ordinance, the maximum coverage by buildings within the Waynflete School Overlay Zone shall be the same as in the underlying zone, except that maximum coverage within the Waynflete Campus Core Subdistrict shall be 40% and all the land within the Campus owned or occupied by Waynflete School shall be considered a single lot for the purpose of calculating maximum coverage by buildings. A portion of the proposed gymnasium is located within the Waynflete Edge Subdistrict; all other work is located within the Waynflete Core Subdistrict. The space and bulk regulations of the R-4 district continue to apply within the Campus Edge Subdistrict, which has a maximum lot coverage of 30%. The total campus building area, accounting for the demolition and reconstruction of the athletic facility and the lower school, is now 69,191 square feet, which is approximately 28% of the Waynflete Campus; the proposed lot coverage does not exceed the requirements of the Waynflete Campus Core Subdistrict or the Campus Edge Subdistrict.

The Waynflete School's existing athletic facility is a Legally Non-Conforming Building. As such, the Development Team has met with the City of Portland Zoning Administrator to develop the following setback requirements for the new replacement gymnasium:

Table 6-1: Waynflete School Athletic Facility Dimensional Requirements

	REQUIRED	PROVIDED
Rear Yard Setback	Existing MIN	Existing Maintained
Front Yard Setback	Average of Parcel 061 F001001 & 061 G001001	15.73 FT
Side Yard Setback	Average of Parcel 061 F001001 & 061 F009001	11.50 FT
Building Height	Existing MAX	Existing Maintained*

*Note: The proposed building height is 21-feet, eight and ¾ inches, which is lower than the height of the existing building.

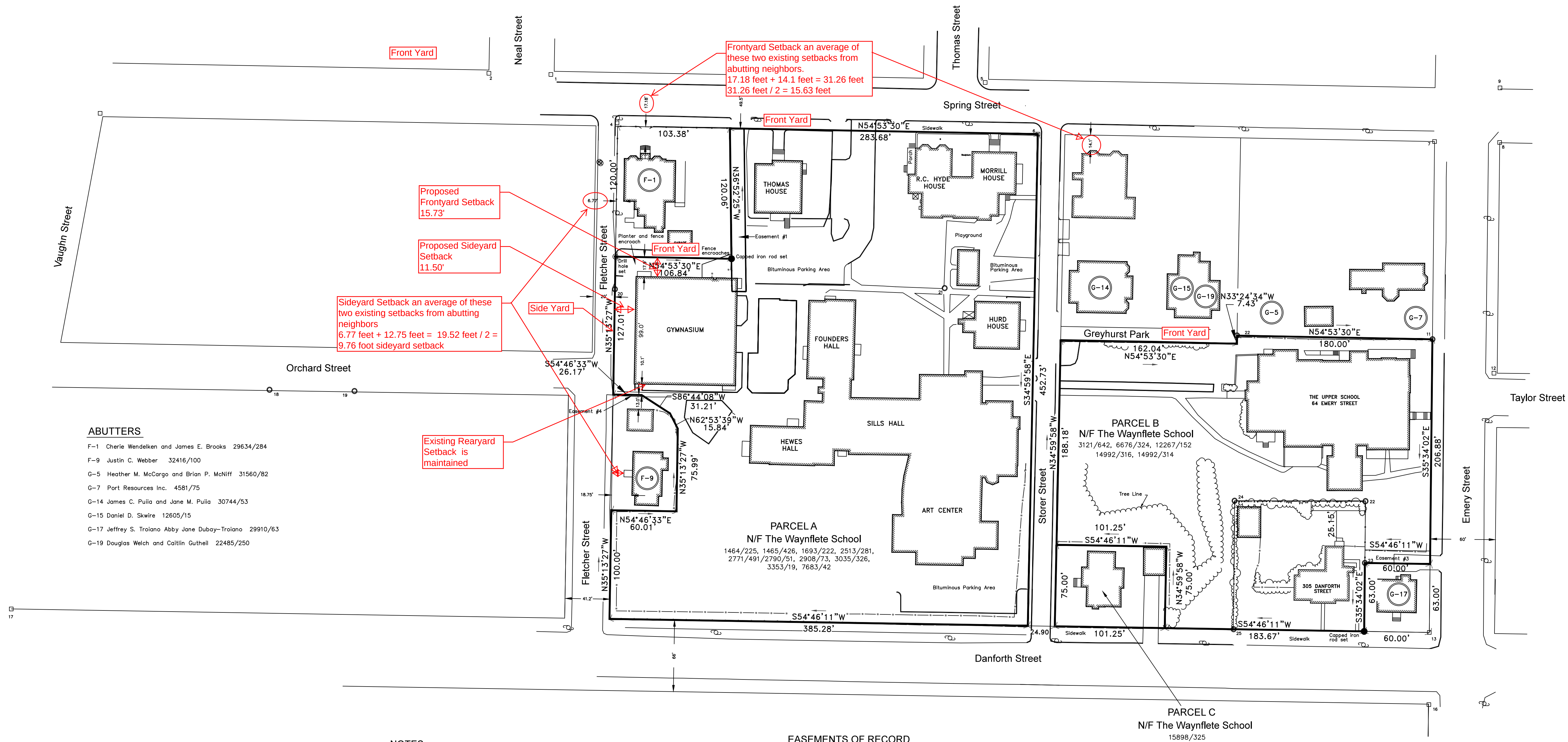
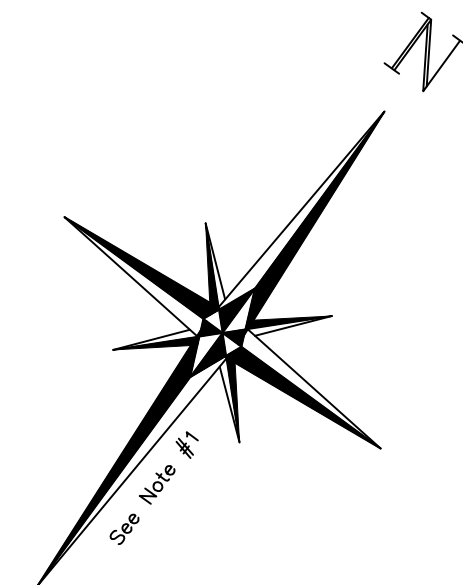
The dimensional requirements for the work associated with the Lower School are described in Sections 14-105 and 14-276.6. It should be noted that, for past work at the Waynflete campus associated with the Franklin Theater & Arts Center, due to the intricate roof lines and varying grade elevations, the Zoning Administrator recommended calculating

building heights based on the average of measurements from the existing grade to the top of the roof edge at two foot intervals around the full perimeter of the building. Utilizing this method to calculate the building height of the proposed lower school yields a building height of 33-feet and one half-inch, which is less than the 35-foot maximum permitted.

The proposed project will not result in any changes to the existing front yard setback, lot size, street frontage, or lot width associated with the Lower School. The dimensional requirements for the side and rear yard setbacks are summarized in the table below:

Table 6-2: Waynflete Lower School Dimensional Requirements

	REQUIRED	PROVIDED
Side Yard Setback	16 FT	41 FT
Rear Yard Setback	25 FT	120 FT



ABUTTERS

F-1 Cherie Wendelken and James E. Brooks 29634/284
F-9 Justin C. Webber 32416/100
G-5 Heather M. McCargo and Brian P. McNiff 31560/82
G-7 Port Resources Inc. 4581/75
G-14 James C. Pulla and Jane M. Pulla 30744/53
G-15 Daniel D. Skwire 12605/15
G-17 Jeffrey S. Troiano Abby Jane Dubay-Troiano 29910/63
G-19 Douglas Welch and Caitlin Guthrie 22485/250

DESCRIPTION OF MONUMENTS

- 1) 8"x8" Granite with brass plug, 5" below sidewalk
- 2) Drill hole in brick.
- 3) 8"x8" Granite with brass plug at grade.
- 4) 8"x8" Granite with Drill hole, at grade
- 5) 8"x8" Granite with brass plug, at grade
- 6) Stone post 3" above grade, inside corner.
- 7) 10"x11" Granite with "M", at grade, inside corner
- 8) 9"x11" Granite with "M" at grade, inside corner
- 9) 10"x11" Granite with "M" at grade, inside corner
- 10) 8"x8" Granite with brass plug, 1" above grade
- 11) capped iron rod, PLS #466, at grade
- 12) 8"x8" Granite with brass plug 1" above grade
- 13) 9"x5" Granite with "M", 5" below grade, inside corner
- 14) 6"x6" Granite with brass plug at grade
- 15) City of Portland survey disk, PLS#2230
- 16) 8"x8" Granite 1" above grade inside corner
- 17) 8"x10" Granite with "M", at grade inside corner
- 18) 3/4" pipe, at grade
- 19) Capped iron rod, PLS #284
- 20) 1" pipe, 4" below grade
- 21) 1" pipe, at grade
- 22) Capped iron rod, PLS #466, at grade
- 23) Capped iron rod, PLS #466, at grade
- 24) 3/4" Pipe, at grade
- 25) 3/4" Pipe, 2" below grade

NOTES

- 1) Bearings are referenced to the True North as determined by astronomic observation.
- 2) Deed and Plan Book references are to the Cumberland County Registry of deeds.
- 3) Pipe sizes shown are inside diameter (I.D.).
- 4) Street lines for Storer and Fletcher Streets are based on building ties shown in the field notes for Reference #5 and #6. Street lines for Spring, Emery, and Danforth Streets are based on monuments as shown.

PLAN REFERENCES

- 1) Plan of land at Emery and Danforth Streets, from a copy by M.C. Pingree recorded November 6, 1871 recorded in Plan Book 3 Page 27.
- 2) "Plan of lot on Emery Street Owned by Charles S. Forbes" by W.A. Goodwin, C.E., dated May 11, 1874, and recorded in Plan Book 3 Page 26.
- 3) "Plan of Division of Land Belonging to Jerome, Parley & Cram" by E.C. Jordan, C.E., dated July 28, 1886 and recorded in Plan Book 6 Page 12.
- 4) City of Portland monument maps, dated 1925, on file at the City of Portland Department of Public Works.
- 5) Plan of Fletcher Street, dated December 13, 1934, on file at the City of Portland Department of Public Works.
- 6) Plan of Storer Street, undated, on file at the City of Portland Department of Public Works.
- 7) "Plan of Property ... made for John W. Gordon" by H.I. & E.C. Jordan dated September 28, 1959.
- 8) Plan of Danforth, Salem, May, School, and Briggs Streets by Owen Haskell Inc., dated December 4 1974.
- 9) Standard Boundary Survey ... made for Christopher M. Harte " by Titcomb Associates Inc. dated February 4, 1997.
- 10) Standard Boundary Survey made for The Waynflete School by Titcomb Associates Inc. dated April 26, 1999.

EASEMENTS OF RECORD

- 1) "The right to use the way before named as a driveway" granted to George P. Westcott by Abby D. Hersey et al. by deed dated June 10, 1886, and recorded in Book 529 Page 21.
- 2) Pole easement granted to Central Maine Power Co. by Waynflete School by deed dated August 16, 1955, and Recorded in Book 2276 Page 253.
- 3) Driveway easement granted to Monty Q. Hagen and James H. Harrison by Waynflete School by deed dated March 10, 2000, and Recorded in Book 15361 Page 261.
- 4) Sidewalk Easement Agreement between Helen A. Webber and Waynflete School by deed dated September 25, 2006 and recorded in Book 24399 Page 338.

OWNER OF RECORD / AREA

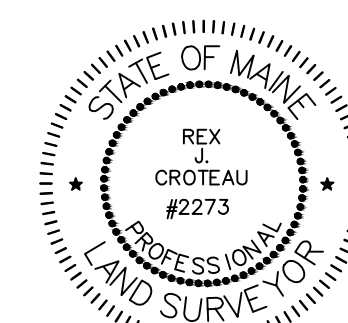
Parcel 'A' -- The Waynflete School
Area: 156,374 sq ft = 3.59 Acres
Parcel 'B' -- The Waynflete School
Area: 80,272 sq ft = 1.84 Acres
Parcel 'C' -- The Waynflete School
Area: 7,594 sq ft = 0.17 Acres
Total Area: 244,240 sq ft = 5.60 Acres

Frontyard and sideyard setback calculations,
Waynflete Gymnasium
March 01, 2016
Scott Simons Architects

CERTIFICATION

This survey conforms to the current standards of practice set forth by the Maine State Board of Licensure for Land Surveyors.

Rex J. Croteau, P.L.S. #2273



(FIG. 3)

Standard Boundary Survey

Spring, Emery, Danforth, Fletcher, & Storer Streets Portland, Maine

The Waynflete School

360 Spring Street Portland, Maine

JOB#	93093	DATE:	August 13, 2015	SCALE:	1" = 50'
BOOK#	532				
DISC#	380				
FILE#	6831				

Titcomb Associates
133 Gray Road, Falmouth, Maine 04105
(207)797-9199 www.titcombsurvey.com



7. EASEMENTS AND OTHER BURDENS

The Boundary Survey attached to Section 19 herein shows and describes easements located within the Waynflete Campus.

EASEMENT DEED

This Easement deed is dated as of this 21st day of September, 2006 by and between **Helen A. Webber** of 11 Fletcher Street, Portland, Maine ("Grantor") and **The Waynflete School**, a Maine non-profit corporation having a mailing address of 360 Spring Street, Portland Maine 04102 ("Grantee").

WHEREAS, Grantee has enjoyed the permissive use of a portion of the land of Grantor located at 11 Fletcher Street ("Grantor's Land") for many years as the location of an existing paved walkway (the "Walkway") for pedestrian access to the adjacent Waynflete School campus (the "Campus"); and

WHEREAS, in exchange for Grantor's permission, Grantee has performed services upon and provided benefits to Grantor's Land in recognition of Grantor's generosity and permission to use the Walkway; and

WHEREAS, Grantor and Grantee wish to create perpetual easement rights in favor of Grantee for the continued use of the Walkway to access the Campus, and to create an obligation on the part of Grantee to continue to perform services to Grantor's Land for as long as Grantor shall live thereupon;

NOW THEREFORE, for Three Thousand Dollars (\$3,000), the mutual promises and covenants herein contained, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Grantor and Grantee hereby covenant and agree as follows:

1. Grantor does hereby grant to Grantee, its successors and assigns, a perpetual right and easement for the use of the Walkway in or near its existing location, for use by Grantor, its agents, servants, students and invitees, for the purpose of pedestrian access to the Campus from Fletcher Street and/or Orchard Street, together with a further right and easement in and to the area of Grantor's Land near the Walkway as identified in the sketch attached hereto as Exhibit A (such area and the Walkway together known herein and depicted on Exhibit A as the "Easement Area," being generally located north and northwesterly of the existing garage on Grantor's Land), for the purpose of access to the Walkway with personnel and equipment for the maintenance and improvement of the Walkway from time to time to keep it in a safe and attractive condition. Grantee shall further be allowed within the Easement Area to locate landscaping, fencing, lighting, or other related improvements consistent with the ongoing use of the Walkway for the purposes set forth herein, so that its appearance may be integrated with that of the rest of the Campus. Grantee shall have the specific right to construct and maintain a fence line from the corner of the existing garage on Grantor's Land extending across the Walkway to the gymnasium located on the Campus. Grantee shall have the right to resurface (pave) the Walkway from time to time, and shall have a right to reasonably alter or widen its location within the Easement Area consistent with the further terms and conditions hereof. For the purposes of this Easement, "pedestrian access" to the Campus shall

include access by bicycle, wheelchair, or other non-motorized means of conveyance.

2. Grantee shall keep and maintain the Walkway in a good, safe and attractive condition, such maintenance being the sole responsibility of Grantee. Grantee shall provide reasonable advance notice to Grantor prior to the commencement of any work within the Easement Area that shall create unusual noise, vibration, dust, or disturbance.
3. Grantee agrees that (i) any entry or work upon the Easement Area shall not materially adversely interfere with Grantor's use of the remaining portions of Grantor's Land; and (ii) in connection with any entry upon or work performed in or upon the Easement Area by Grantee that shall impact Grantor's Land in any way, Grantee shall promptly and fully restore the property to the same or better condition as existed prior to the entry or work (this shall not act as a license to enter Grantor's Land outside of the Easement Area without advance permission); and (iii) all work that is performed by Grantee shall be performed in a good and workmanlike manner. Grantee shall require any of its contractors or agents performing work upon the Easement Area to carry types and amounts of insurance as are usual and customary.
4. Grantee agrees to indemnify and hold harmless Grantor from and against any and all damages, liabilities, losses, expenses, claims and suits (including the cost of defending the same or enforcing this indemnity, including reasonable attorneys' fees) incurred or suffered in consequence of either bodily injury to any person (including death) or damage to any property arising directly out of Grantee's acts or omissions related to the easement granted hereby, or the exercise by Grantee of the rights granted by this easement or the breach or violation of the terms hereof by Grantee. This indemnity shall not apply, however, to any costs, damages, claims, losses, suits, fees or injuries arising from Grantor's own negligence, recklessness, or willful misconduct.
5. In consideration of the Easement herein described, Grantee further agrees and covenants that during the time that Grantor Helen A. Webber shall reside at the house located on Grantor's Land ("Grantor's House"), Grantee shall mow the lawn around Grantor's House, plow the sidewalk and driveway serving Grantor's House, and promptly remove and dispose of any and all litter or debris which may accumulate on or near the Easement Area. The foregoing obligation as to mowing and plowing shall terminate upon the death of Grantor Helen A. Webber, or upon any conveyance of Grantor's Land other than to a trust or entity controlled by or created for the benefit of Helen A. Webber personally. The obligation for removal of rubbish and debris shall continue as reasonably associated with Grantee's maintenance obligations as to the Easement Area. The termination of Grantee's obligations under this Section 5 shall not revoke, affect, or diminish Grantee's perpetual easement rights described above in any way.

Witness my hand and seal this 21st day of September, 2006.

WITNESS

Michael H. Hill

Helen A. Webber
Helen A. Webber

State of Maine
County of Cumberland

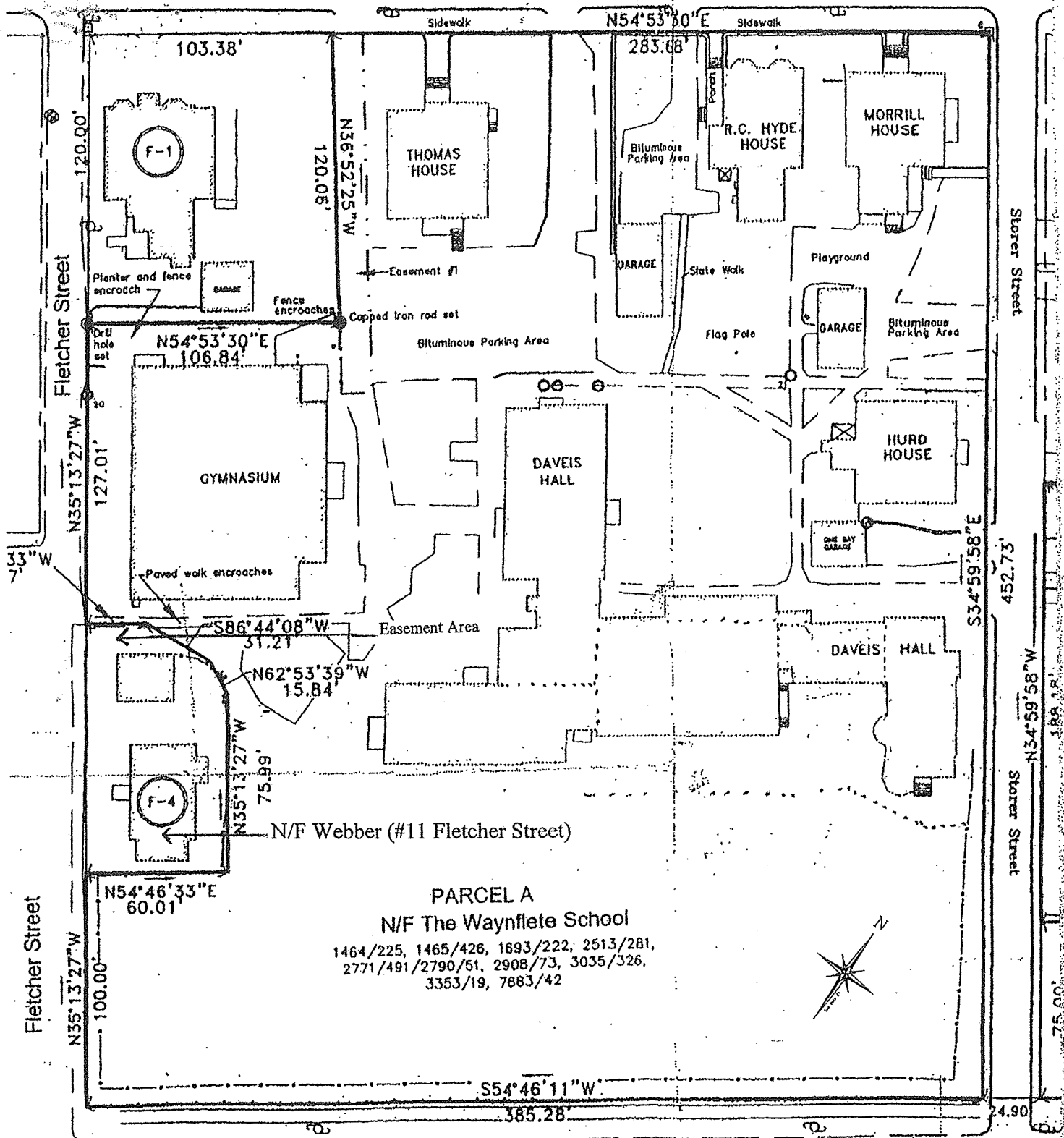
September 21, 2006

Then personally appeared before me the above named Helen A. Webber and acknowledged the foregoing instrument to be her free act and deed.

Before me,

Michael H. Hill
~~Notary Public/Attorney at Law~~

MICHAEL H. HILL



Received
 Recorded Register of Deeds
 Sep. 25, 2006 02:11:57P
 Cumberland County
 John B. O'Brien



8. EVIDENCE OF FINANCIAL & TECHNICAL CAPACITY

8.1 FINANCIAL CAPACITY

Attached to this Section is a letter from the Waynflete School Director of Finance and Operations demonstrating that the facility has enough financial capacity to support the proposed project.

8.2 TECHNICAL CAPACITY

Scott Simons Architects is the architect for the project and Woodard & Curran is the civil engineering firm completing the site design and permitting for the project. Both Woodard & Curran and Scott Simons Architects have significant experience completing similar types of development projects in Maine, and specifically in Portland.

Resumes or additional company information for Woodard & Curran, other consultants referenced within this application, or key personnel involved in preparing this application can be provided upon request.

8.3 ATTACHMENTS

- Financial Capacity Letter

Memorandum

To: Elizabeth Boepple, Chair, and Members of the Portland Planning Board
From: Anne C. Hagstrom, Director of Finance and Operations, Waynflete School
Date: February 16, 2016
Re: Financing for Construction of Lower School and Gymnasium

The construction of a new and renovated Lower School and a new Gymnasium are important priorities for the Waynflete Board of Trustees. The estimated construction costs for the Lower School are approximately \$8,200,000 and, for the Gym, approximately \$4,500,000.

Waynflete is in the beginning phase of an \$8,000,000 fundraising campaign, half of which is for building projects. Donor interest for the building projects has been strong with nearly \$2,000,000 in gifts and pledges so far including one gift for the Lower School for \$750,000. In addition to the \$4,000,000 in gifts anticipated for construction, the School has \$9,600,000 available in tax exempt bond financing.



February 10, 2016

Planning Board
City of Portland
389 Congress Street
Portland, Maine 04101

Dear Planning Board Members:

I am pleased to provide this letter of recommendation regarding The Waynflete School's proposed Lower School and Gymnasium Projects.

Waynflete began its commercial banking relationship with People's United Bank in October 2014. This relationship includes deposit accounts and loan facilities, a significant portion of which remains available for the projects described above. I am pleased to report that all aspects of our mutual relationship have been handled in a fully satisfactory manner. Waynflete has demonstrated that it has both the financial capacity and the management ability to successfully bring the proposed projects to fruition.

If I can be of any further assistance, please feel free to contact me at your convenience.

Sincerely,

A handwritten signature in black ink, appearing to read 'Lisa C. Hook', is written in a cursive style.

Lisa C. Hook
Senior Vice President



9. CONSTRUCTION MANAGEMENT PLAN

The proposed development will be constructed in a single phase. On-site work for this project is anticipated to begin in 2017. All erosion and sediment control measures will be installed prior to any soil disturbance. The project contractor will be required to submit a detailed construction management plan for review by the City of Portland prior to the start of construction. A Logistics Plan has been attached to this Section, which notes the sequence and layout for construction activities.

9.1 ATTACHMENTS

- Logistics Plan

WAYNFLETE SCHOOL
LOGISTICS PLAN E: LOWER SCHOOL, FOUNDERS, GYM & CONNECTOR

WR

Wright-Ryan

11/16/15

NOTES:

SEQUENCE: GYM, CONNECTOR, FOUNDERS, LOWER SCHOOL

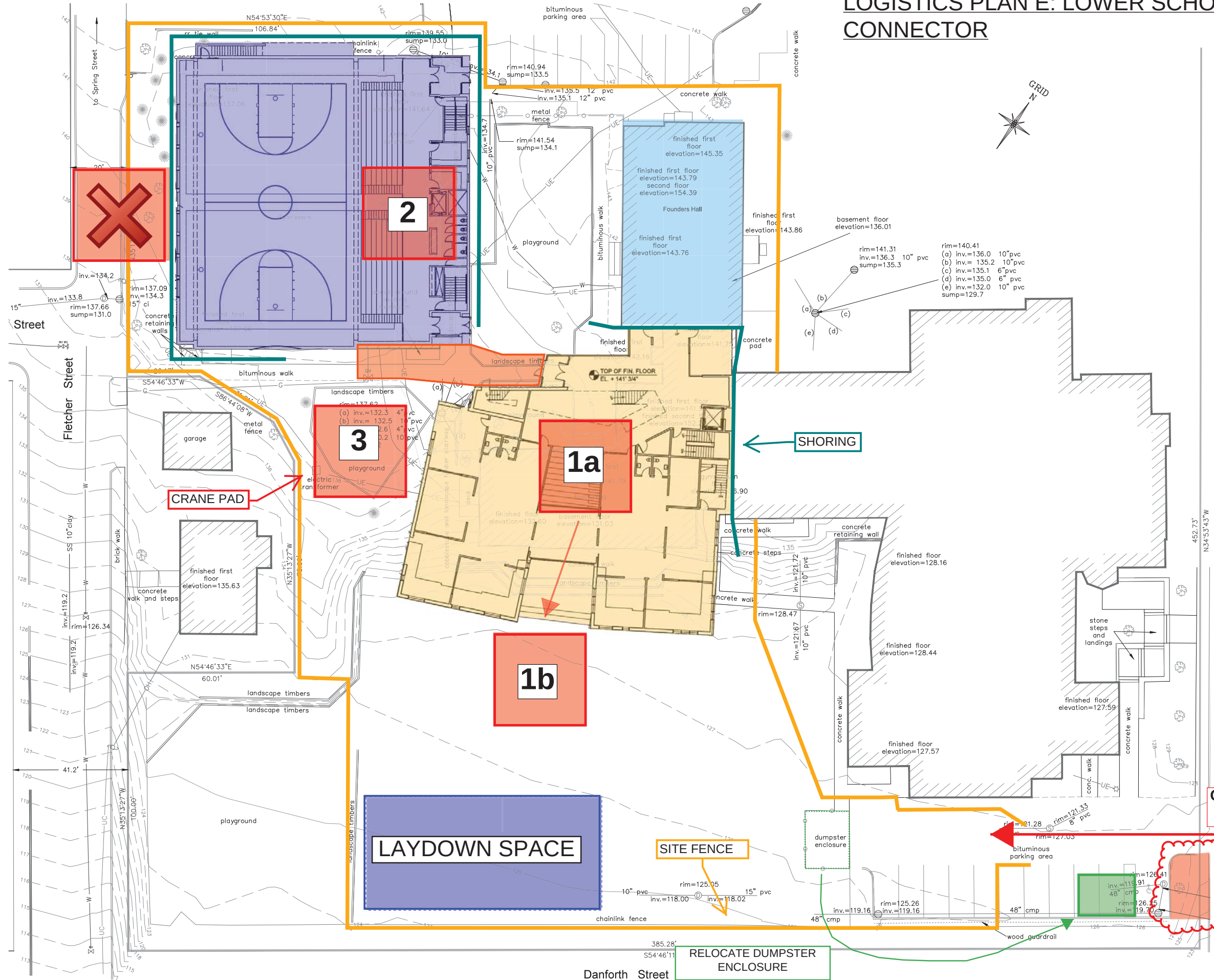
CRANE PADS:

- 1a: FIRST LOCATION**
- 1b: SECOND LOCATION**
- 2. LOCATION FOR GYM BIG STEEL**
- 3. INTERMEDIARY LOCATION**
- X. MULTIPLE ELECTRICAL LINES IN THE WAY - NOT LIKELY**

THIS PLAN APPLIES TO THE PROJECT IF ALL CONSTRUCTION TAKES PLACE AT ONCE.

CONSTRUCTION ENTRANCE

REMOVE PLANTINGS FOR DELIVERY ACCESS AND REPLACE WHEN COMPLETE





10. TRAFFIC ANALYSIS

The campus upgrades are not being proposed for the purpose of accommodating a larger enrollment; rather, it is intended to improve the overall learning experience of the classrooms. As such, an increase in traffic throughout, to, and from the Site is not anticipated at this time. No new parking lots are proposed. The school's current traffic management protocols and existing campus parking areas will be maintained.

Waynflete School

Transportation and Parking Demand Management Plan

September, 2008

Introduction

In 2007 Waynflete received site plan approval from the City of Portland for the construction of a new theater. This theater is currently under construction with an anticipated opening in January of 2009. The new theater will have 276 seats, an increase of approximately 125 over the current theater. While the student enrollment is not anticipated to increase as a result of the project, the approval from the City of Portland to construct the Arts Center included several conditions. The City of Portland required that Waynflete complete a parking management plan with respect to event parking as a condition of their site plan approval for phase 2 of the Arts Center to be completed early in 2009. The specific condition #9 is as follows:

“With respect to the event parking, the applicant will provide a written parking management plan prior to issuance of Certificate of Occupancy and a performance report no less than 18 months to 2 years following Certificate of Occupancy to evaluate effectiveness of the parking management plan. Any identified deficiencies in parking will be rectified by an amendment to the parking management plan subject to approval by the Planning Authority. Prior to the Planning Authority approval, Waynflete shall provide a copy of the plan to the Western Promenade Neighborhood Association for input.”

The Historic Preservation Board also has one condition:

“The parking lot and dumpster enclosure, as shown on the revised site plan, are approved on a temporary basis only. Parking lot and dumpster enclosure shall be relocated in conjunction with Waynflete’s next development requiring Planning Board approval (including changes of use) and/or within 5 years of a Certificate of Occupancy being issued for the new Arts Center. Location and treatment of said elements to be substantially consistent with the original Arts Center site plan approval by the Historic Preservation Board in 2001 (attached) or in an equally recessive location, as determined by the Historic Preservation Board at that time.”

Waynflete retained Gorrill-Palmer Consulting Engineers Inc. to complete a parking study to quantify the parking demand during events, to work with the School and the surrounding neighborhood to develop an event parking management plan, and to address other parking and traffic concerns.

Issues

Waynflete's consultant, Community Design Studio, conducted a series of confidential interviews and a well-attended Neighborhood Forum to determine issues of concern to neighbors, including traffic and parking. In summary, the major concerns are: volume of traffic coming into the neighborhood; distracted drivers; all-day parking on neighborhood streets (including hardship for those without driveways), congestion at drop-off/pick-up times, blocked driveways, safety for students/parents, blocked emergency vehicles; environmental impact of volume of cars.

Waynflete Transportation and Parking Guiding Principles

The School has developed five transportation and parking related goals for the future and is committed to addressing each of these goals in ways that aim to balance community concerns, environmental issues and essential institutional operations:

- 1 – Manage school-related parking and traffic to reduce adverse impact in the West End and Western Promenade neighborhoods.
- 2 – Increase safety in the area (through monitoring, controls, signage changes)
- 3 – Reduce the School's overall carbon 'footprint' by lowering the number of vehicle trips to and from campus.
- 4 – Strengthen communication with residential neighbors on this and other topics.
- 5 – Build understanding in the School community (students, families, employees) about parking, traffic and related issues of environmental sustainability and urban congestion.

Data Collection

Waynflete is an independent day school with an average student population of 550 students and employs approximately 110 full time faculty and staff, bringing over 650 individuals to and from the School on a daily basis.

Gorrill-Palmer Consulting Engineers Inc. inventoried the existing parking supply both on and off campus for the study area shown in Figure 1 of the report along with on-street parking restrictions. The result of this inventory is shown in Figure 1 of this report.

Parking Supply

In summary, Waynflete currently has 39 off street parking spaces on the campus with an additional 11 interim spaces which will be available upon completion of the theater, for a total of 50. In addition to the on-campus parking, there are approximately 640 on street parking spaces. Of these 640 spaces, they are identified as:

- 379 @ Unrestricted
- 5 @ 5 min
- 3 @ 15 min
- 20 @ 1 hour
- 225 @ 2 hours
- 8 @ Not on school days between 7 AM and 4 PM

Daytime Parking Demand

Gorrill-Palmer also estimated the daytime demand by completing parking counts while school was on vacation and again while it was in session. The results of these counts showed the impact of the school to be approximately 128 cars on a typical school day on the surrounding roadway network. This left approximately 300 spaces in the surrounding area that could be utilized. These results are shown on Figure 4.

Transportation and Parking Demand Management Plan

Objective- The objective of the Transportation and Parking Demand Management (TPDM) Plan is to reduce the parking demand in the neighborhood surrounding the School by a variety of specific strategies such as rideshare, transit, bicycling, walking, and utilization of existing off street parking.

However, there are a variety of initiatives currently underway that will influence this plan, such as the Peninsula Transit Study and the Metro Route Study. The purpose of this initial plan is to implement a plan with the understanding that it will need to be updated based on the findings of these ongoing initiatives. Revisions are expected to take place in future years as methods and practices are refined and additional information, such as the Peninsula Transit Study and the METRO Bus Route Study, become available. This initial TPDM plan includes:

- Completion of a student/parent/faculty survey
- Transportation coordinator
- Education / Informational Materials
- Development of a rideshare program
- Incentives to use Public Transportation

- Encouragement of bicycling and walking
- Utilization of Satellite Parking Areas
- Event Parking and Coordination

Action Items

1. Prepare and conduct a transportation survey of the Students, Parents, Staff/Faculty

The School has experience surveying and communicating with its employees, parents and students via electronic means, and will develop a computerized survey. The survey questions will be submitted to the City Planning Department staff for review and input before the survey is conducted. The survey will consist of a variety of questions such as the following:

- What year were you born?
- What is your gender?
- How do you travel to Waynflete?
- Do you need to use your car to travel to school?
- What major local roadway do you take to work, if you travel by private vehicle?
- What time do you typically arrive at school?
- What time do you typically leave school?
- If you travel by private vehicle, do you carpool?
- If you travel by private vehicle, what keeps you from using transit options?
- If you are a student or a parent of a student and do not use the school's bus, why?
- If you could not park within one mile of school, would you be likely to use other transit options?
- If you are a faculty or staff member and public bus service were more frequent, would you be more likely to use it?
- If you are a faculty or staff member and could ride on one of the existing Waynflete buses, would you?
- If Waynflete paid for the public bus pass, would you be more likely to use it?
- Do you live less than one mile from the school? Five miles? More than five miles?
- If you live close to campus, what keeps you from biking or walking to the school?
- Are there other factors or incentives that would encourage you to use the bus, mass transit, or car pool options?

The surveys would be completed on-line via a provider such as Survey Monkey, with the information being linked to a database program that would allow for quick and powerful analysis of the information.

Potential impacts on:

Events: This could identify how close the persons are that may attend the event and how they may be inclined to travel to the event. This may further identify incentives to use the bus, mass transit, or car pool, walk or bike to the event.

School Day: Similar to “events”, this will identify the likelihood of them using other means of travel to get to the school. This could result in slightly different incentives than the “events” incentives, but could be based on evaluating the same survey information.

2. Transportation Coordinator

Waynflete’s Director of Finance and Operations will oversee and direct the parking and transportation initiatives. This will include working with the City of Portland Planning staff in implementing the Plan.

Potential Impacts on:

Events & School Day: The Transportation Coordinator will oversee the initiatives for both events and the typical school day to ensure a cohesive and consistent plan.

3. Educational / Informational Materials

Waynflete has a student handbook, which has already been published for the coming year, which includes their current parking policy. This handbook is distributed to all students, parents and staff annually and will be updated in future years to highlight the goals of the plan, their participation, and the desired outcomes; and to emphasize how reducing the parking demand integrates into the School’s green campus initiative. This material will emphasize an “open door” policy with respect to continued feedback and suggestions for the program.

Information about the new parking and traffic initiatives will be communicated to the Waynflete community early in the school year and, to the extent possible, prior to the start of school through email and other written communication. The School will also host a Waynflete community meeting this fall with faculty, staff, parents, and trustees to discuss community issues including a discussion of the new parking and traffic initiatives.

Potential impacts on:

Events & School Day: The handbook, other written communication, and meetings will address both events and typical school day procedures.

4. *Development of a Waynflete Rideshare Program*

This program will be designed to encourage carpooling by educating staff, parents, and students about the need to reduce the number of vehicles traveling to campus by matching rideshare candidates and by encouraging carpooling with others they know who commute into the City.

Goal: The goal is to have at least two riders per vehicle who are not in the same family, with a guaranteed ride home service in case of illness, scheduling conflict, or family emergency. Employees who carpool will be given preference to available on-site parking.

Prior to each special event, reminders will be sent to parents via email to car pool. The School will assess and refine this program at least annually. The carpool program will have a goal of ten percent of the cars used by staff and parents (not participating in busing, biking or walking) by the end of the first year.

Potential impacts on:

Events: The special event reminders could reduce the parking demand by encouraging carpooling.

School Day: This part of the plan could reduce parking demand by matching candidates and providing incentives.

5. *Encourage Use of School Busing/Transit*

Waynflete currently operates 5 buses and 1 van on six morning and afternoon routes. Approximately 26% of the students are bused to and from school with a significant amount of the remainder being dropped off.

Goal: To be determined after tabulation of survey results.

Currently, students using the bus service are charged a fee for that service. To encourage more participation, Waynflete will freeze transportation fees for the upcoming year and, through its budgetary process, explore the financial feasibility of further reductions to transportation fees.

To encourage staff to utilize public bus transportation, Waynflete will make bus transit passes available. These passes will be fully paid for by Waynflete. The School will also evaluate the feasibility of staff utilizing Waynflete school buses for transportation.

The School will also consider additional incentives to encourage bus ridership, mass transit, and carpooling by incorporating students, parents, and staff in the development of more ideas when school begins in the fall. There are two existing groups that focus on environmental issues – the Waynflete Environmental Action Group which is a student led group, and the “Green Team” which is a faculty and staff committee. In addition, student government, the Parents Association, trustees, and administrative leadership will be asked to take an active role in the development of short and long-term solutions including suggestions for incentives such as monthly drawings from the bus or carpool ridership for free café lunches, a ski pass or other prizes.

The students, faculty, and staff have already taken leadership roles over the past three years in the 'greening' of the School in many ways: paper use, recycling, bringing lunches in re-usable containers, energy consumption, energy-efficient lightbulbs, composting, and “green” construction, to name a few.

This combination of incentives will be revisited and re-evaluated by the School annually to determine their efficacy.

Potential impacts on:

Events: This aspect of the plan will primarily benefit the typical school day more than the special events, but by making the parents, students and faculty more aware of the alternatives for the typical school day, it will have a residual effect when those same persons attend an event.

School Day: This could have a significant effect on the daily parking demand, as well as the drop-off and pick-up time periods, by encouraging and providing incentives for more busing and transit use.

6. *Bicycling and Walking Program*

Waynflete currently has bicycle racks at several locations on the campus and will continue to encourage staff and students who live within a half mile or more of the campus to walk or bike when possible. The school will also explore additional secure bike storage facilities.

Potential impacts on:

Events & School Day: It would be expected that if the school could increase the use of biking and walking through incentives or improved facilities, it would affect both events as well as the school day parking demands.

7. Designated Satellite Parking Areas

The use of existing off-street off campus parking lots which could be shared by Waynflete faculty, staff, students and for events will be explored.

Goal: The goal of this initiative will be to obtain 25 spaces in the first year of the plan and to also locate additional lots that can be used for special events when needed. For example, Waynflete volunteers parked in a satellite lot for the annual road race, Spring Sprint.

Potential impacts on:

Events & School Day: Providing satellite lots can reduce the on-street parking demand for both events as well as a school day. For a school day, the bus route could potentially include the lot in their route. For special events, the parking lot could be identified in the notice that is sent out prior to the event and a shuttle to the event could also be explored.

8. Event Parking and Coordination

Existing Event Demand- In order to determine the peak parking demand during an event at the school, Gorrill-Palmer consulted with the School and neighborhood representatives and, based on their consultation, selected the annual auction as the model for an event, since the attendance at the auction is typically approximately 300 people which slightly exceeds the seating capacity of the new theater.

The auction was held on Saturday March 8th from 6:00 PM to 9:00 PM. The demand attributed to the auction was determined by completing parking counts within the study area shown in Figure 1 during two time periods; on Saturday March 8th at 7:45 PM during the height of the auction and the following Saturday on March 15th at 7:45 PM. The difference in the total parked cars at these two times, 120 cars, is approximately the demand due to the auction, which again, slightly exceeds the maximum number of people anticipated to attend an event at the new theater. These results are shown in Figure 5.

Anticipated Demand due to the Theater- In a typical year, the school anticipates that it will fill the auditorium 8-10 evenings with Waynflete-related programs. The theater seats 276 people and assuming there are also 24 student actors and directors the total is approximately 300 people, similar to the number of people who attended the auction. Assuming a typical 2.5 persons per vehicle results in a total anticipated parking demand of 120 vehicles. This is exactly the same demand identified in the study discussed previously under “Existing Event Demand” and therefore the assumption appears appropriate. The available on-campus parking supply will be approximately 50 vehicles, which results in 70 vehicles to be accommodated elsewhere. The parking study showed there was sufficient unoccupied parking spaces to accommodate this evening event demand (e.g. 83 spaces on Danforth, 25 spaces on Spring, 27 spaces on Emery Street and Emery Street Extension, and 101 spaces on Vaughan).

Event Management: The School will email or mail notices to staff, students, and/or parents prior to each School event, encouraging car pooling and to advise of locations where parking is appropriate. For each non-school, event, Waynflete will hold the sponsors responsible for directing attendees to identified parking areas.

Event Coordination: With the construction of the new theater, there will be two locations on campus where larger events could potentially occur, the new theater and the existing gymnasium. The school will review their schedule of events at each location to minimize the potential of overlapping events and associated parking demand.

Potential impacts on:

Events: This aspect of the plan will primarily benefit the special events more than the school day by potentially avoiding overlapping events at the two facilities and associated parking demands.

Timetable for Plan Action Items

The estimated time frames for each of the action items presented in this First Year TPDM plan are summarized below.

<i>Action Item</i>	<i>Timeframe for Implementation</i>
Prepare Informational Material	Ongoing
Communicate TPDM Plan to Families and Staff	Ongoing
Offer free Metro passes to faculty and staff	September 2008
Begin Development of a Rideshare Program	September 2008
Assign Parking in Offsite Lots	September 2008
Approval of Event Parking Plan by City Staff	September-Oct. 2008
Draft Employee/Staff/Student Survey	October 2008
Waynflete School Wide Meeting	October 2008
Review Survey with City Staff	November 2008
Conduct Employee Survey	Nov-Dec. 2008
Assess success of First Year TPDM Plan	June 2009

Waynflete School
Transportation and Parking Demand Management Plan

Six Month Interim Assessment

The following action items and time frames were identified in the TPDM Plan that was approved by the City in November and our progress on each is noted.

<i>Action Item</i>	<i>Timeframe for Implementation</i>
Prepare Informational Material	Ongoing; will be updated for fall
Communicate TPDM Plan to Families and Staff	Ongoing; working on new ideas for communication
Offer free Metro passes to faculty and staff	September 2008 (completed)
Begin Development of a Rideshare Program	September 2008 (Joined Go Maine)
Assign Parking in Offsite Lots	September 2008 (completed)
Approval of Event Parking Plan by City Staff	September-Oct. 2008 (completed)
Draft Employee/Staff/Student Survey	October 2008 (Completed)
Waynflete School Wide Meeting	Fall 2008 (completed)
Review Survey with City Staff	November 2008 (completed)
Conduct Employee Survey	Nov-Dec. 2008 (completed)
Assess success of First Year TPDM Plan	June 2009 (completed)

Other steps taken:

Daily:

- Restrict Waynflete employees from parking along Spring Street between Thomas Street and Vaughan Street.
- Give priority on-campus parking to employees in carpools.
- Require employees to submit commuting plans annually.
- Installed signage at request of City for vanpool/carpool parking.
- Entered into lease of 20 parking spaces at Christian Science parking lot. Currently in negotiation for additional 5 spaces. Looking for other locations.
- Met with Maine Med about their parking program and their employees parking on Vaughan Street; they agreed to talk to those individuals
- Included a survey for families as well as students and employees.
- Formed Parent Parking Committee in winter with representation across all three school divisions. Held three meetings; committee will resume meetings in fall. Information sharing and awareness building about neighbor concerns, parking

issues, bus routes and issues, formation of recommendations for new bus route and working on changes in opening receptions for parents in August and new ways to share information with parents.

- Promoting new bus route for remainder of year for parents who work at UNUM and live west of City on a trial basis.
- Froze bus rates for current year.
- Updating parking and traffic information and adding section to Student Handbook for next year that sorts families by zipcode and school to facilitate carpooling. (note: some of this is available on school's website)
- Added bike racks to main campus and Fore River Fields.

Events:

- Instituted event parking plans for large events that event managers complete to help ensure communication about parking, carpooling, etc. through weekly and calendar and other means.
- Have arrangements with CSC and Mercy to rent parking lots for large night events if necessary.
- Completed parking monitoring of two largest theater events since January by Gorrill Palmer: Theater Opening and Jonathan Edwards Concert. No problems identified with Theater opening; waiting for report on concert.
- Maximize spaces in on-campus lots for large events by moving school vehicles elsewhere.

Survey information:

Surveys were sent out to parents, students, and employees in mid December to meet the plan goal. 48% (230) of parents responded, 42% (75) of faculty and staff (full and part-time staff), 34% (79) of Upper School students. The timing of the surveys was problematic as it was before a holiday and we are considering additional surveys.

Data from the surveys shows a significant number of employees and families who carpool to campus. Of respondents, approximately 35% of parents and 40% of staff regularly carpool. In addition, 46% of families and 42% of employees who do not currently carpool would be interested in doing so if other families or staff members lived near them. The School is planning to increase the ease with which families can find local carpools by adding a section to the School Directory in which families will be listed by zip code and school division. Many employees have already elected to sign up for Go Maine to find carpools and rideshares in their communities.

There is also strong interest in using greener alternatives to commute to campus. 44% of responding employees regularly do not bring a private vehicle to campus but rather walk, bicycle, ride a scooter, or take a public or Waynflete bus. (Some of these people are using alternative methods of transportation more in spring and fall than in the winter.) In addition, more than 58% of responding employees state that they would be interested in utilizing public bus transportation if it were more widespread and convenient. Close to 30% of responding families use the Waynflete School Bus on a regular basis, as well.

The most common reasons for not riding the Waynflete Bus are cost and convenience (due to after school commitments and the fact that the bus does not pass near enough to the student's home). The new Parent Parking Committee, referenced above, is looking at ways to increase bus ridership and carpooling.

The School plans to conduct a follow-up Parent Transportation Survey to focus on methods that may increase carpooling and bus ridership, and also plans to address other issues, including congestion and clarification of pick-up and drop-off guidelines.

2009-2010 school year goals.

Continuation of existing practices, e.g. employee commuting plans, carpool priority, off site parking, event parking plans.

Increase education and awareness for all

Continue to explore ways to increase employee/parent carpooling, student bus ridership

Work to address end of day congestion issues in Thomas/Clifford Street intersection

Continue to look for more off-site parking

Address intersection and site line issues with the City.

Waynflete School
Transportation and Parking Demand Management Plan

Performance Report 1/7/11

In the fall of 2008, Waynflete School submitted a Transportation and Parking Demand Management Plan (the Plan) to the City. The Plan was approved by the City Planning Authority November 17, 2008 and the School was asked to provide a performance report within two years of the Certificate of Occupancy for the Theater issued January 8, 2009. (An interim report was submitted in June, 2009.)

All of the action items identified in the “Timetable for Plan Action Items” have been completed. Many of these steps are ongoing such as encouraging carpooling and non-vehicular methods of transportation, the use of offsite parking for employees, communication and reminders to families and staff, and offering free Metro passes to employees.

In addition to the requirements in the plan, a number of other steps have been taken:

- Employees are restricted by school policy from parking along a number of streets even though those areas are legal parking areas.
- Employees are required to submit commuting plans annually by the start of school.
- Employees who carpool are given priority parking spaces on campus.
- On-campus daily parking has been maximized to include as many employees as possible and still maintain spaces for visitors, handicapped persons, school vehicles, and snow removal.
- Signage for vanpool/carpool parking was added to on-campus lots.
- Twenty-five spaces are leased from the Christian Science Church for ten months/year and assigned to employees.
- Additional offsite parking options are being considered for the future if resources permit.
- Conversations were held with representatives from Maine Medical Center about their employees who regularly park on Vaughan Street.
- An ad hoc Parent Parking Committee met during the winter of 2009 to help increase awareness of parking issues and encourage bus ridership.
- An ad hoc Employee Parking Committee met during the winter of 2010 to help devise comprehensive parking assignment protocols for all full-time and most part-time employees and all faculty and staff were asked to participate in conversations about parking and traffic.
- Parking information is provided for all parents at the beginning of each year and throughout the year through emails, newsletters, reminders.
- Student parking compliance is strictly enforced by the Upper School Director and the Transportation Director.

- Upper School students are reminded periodically throughout the year of parking restrictions and the importance of careful driving by the Upper School Director, Athletic Director, and coaches.
- Student and employee handbooks are updated at least annually with parking and traffic information. In addition to student addresses and phones, a zip code section was added to the student handbook to facilitate carpooling.
- Bike racks were added to the main campus and Fore River Fields.
- Event parking plans for large events are completed by event managers to help ensure communication about parking, carpooling, etc. through Waynflete Weekly, calendar and other means and submitted to the Transportation Coordinator.
- Arrangements have been made with Christian Science Church and Mercy Hospital to rent parking lots for large events, if necessary.
- Parking monitoring of the two largest theater events in 2009 (Theater Opening and Jonathan Edwards Concert) was completed by Gorrill Palmer - - and no problems were identified with either.
- Neighborhood monitoring by staff during large day and night events was instituted. This has consisted of placing cones by certain driveways that may be blocked (with notice to the homeowner) and posting staff in orange vests around the campus and the neighborhood to direct visitors to appropriate parking areas.
- “Event Parking” signs were created to use for large events to direct visitors to campus parking lots.

There is one aspect of the plan which still needs attention, namely the goal to *increase safety in the area through monitoring, controls, signage changes*. At the time of the plan submittal, it was anticipated that this was a longer term goal and will require the involvement of the City and neighbors. The School intends to take steps towards achieving this goal within the next year.

The School recognizes that parking and traffic issues require ongoing attention and management and that there are neighborhood safety issues still to address. With a school community of approximately 550 students, 150 faculty and staff, and parents, arriving and departing daily, there will be situations from time to time that are frustrating for neighbors and for the School. We are committed to trying to minimize those situations and resolving conflicts when they occur.

Respectfully submitted,

Mark W. Segar
Head of School



11. SIGNIFICANT NATURAL FEATURES

The Site is fully developed and there are no known areas of significant natural features, including unusual natural areas, rare or endangered botanical features, areas of significant wildlife habitats, or wetland areas.

A Historic Preservation Application for Certificate of Appropriateness was submitted on October 5, 2015, and a public hearing has been scheduled for March 16, 2016.



12. STORMWATER MANAGEMENT PLAN & CALCULATIONS

As previously described, the Site is currently entirely developed by the Waynflete School campus. The project will disturb more than one acre of area and will result in more than 1,000 Square-Feet of new impervious area. Applicable regulations that govern stormwater management on this site include Section 5 of the City of Portland Technical Manual, Chapter 32 of the City of Portland Code of Ordinances, and the Maine Stormwater Best Management Practices (BMP) Manual. Under Section 5 of the City Technical Manual, the project is subject to the Basic, General, and Flooding Standards of the Maine Department of Environmental Protection Chapter 500 Stormwater Regulations.

Adequate provisions have been made to collect, treat, and detain the required amount of stormwater runoff generated from the Site. The following sections describe the proposed compliance with these standards.

12.1 BASIC STANDARD (SOIL EROSION AND SEDIMENTATION CONTROL)

These standards address erosion and sedimentation control, inspection and maintenance, and good housekeeping practices. The application includes erosion and sediment control plans, details, and notes. These notes cover good housekeeping practices. The Erosion and Sedimentation Control Plan for the proposed project is provided below.

12.1.1 Erosion and Sedimentation Control Plan

The overall goal of the Soil Erosion and Sedimentation Plan is to restrict the potential for erosion and sedimentation at the site and down-gradient of the site. A variety of erosion control techniques will be implemented to achieve this goal. During construction, these include:

- Positive grades throughout the construction site to direct flow to sediment control barriers;
- Diversion barriers to keep upslope runoff from flowing through the construction site;
- Preserving and maintaining vegetated areas to the maximum extent possible;
- Installation and maintenance of sedimentation barriers adjacent to the project;
- Installation and maintenance of construction entrances at the travelled interface between stabilized and non-stabilized portions of the project site;
- Controls for fugitive dust, debris, and other materials;
- Permanent seeding and mulching applied as soon as areas are at final grades; and
- Inspection of all in-place measures after every significant rainfall until permanent measures are in place.

Structural measures will be installed where shown on the Soil Erosion and Sedimentation Control Plan, which is included in the drawings attached to Section 3 of this Report; details for the proposed measures are also included in the drawings. All measures will be implemented in accordance with the "Maine Erosion and Sedimentation Handbook for Construction: Best Management Practices"; they will be installed prior to any earth disturbing activities. All temporary measures will be removed after the areas are permanently stabilized.

Permanent erosion control measures will include vegetation and pavement. Areas of concentrated flow will be protected from erosion by establishing vegetation and riprap. All measures will be maintained in effective operating condition. The Contractor will be responsible for implementing and maintaining all erosion and sediment control measures and will use the attached inspection report form or equivalent.

12.2 GENERAL STANDARD (WATER QUALITY)

The DEP Chapter 500 Stormwater Regulations requires that at least 80% of the developed Site and 95% of impervious area be treated through the use of wetponds, filtration, infiltration, or buffers. An Underdrained Subsurface Sand Filter has been selected as the water quality treatment BMP for the Site, as there is limited available space on the Site for treatment measures that require surface area. Alternative methods were considered, such as space efficient Filterra

units, but were not selected because of the large areas required for treatment and because of the potential for snow plow damage on the Site.

Table 12-1 below outlines the treated areas and calculated percentages demonstrating conformance with the DEP Chapter 500 General Standard:

Table 12-1: Water Quality Treatment Percentages

	NET AREA INCREASE (SQUARE-FEET)	TREATED BY BMP* (SQUARE-FEET)	PERCENT TREATED
Impervious Area	4,776	40,833	>100%
Developed Area	0	47,429	>100%

*Note: Includes both new and existing areas

No new developed area will be created as the site is already entirely developed. The total new impervious area anticipated to result from the construction of the proposed development is approximately 4,776 Square-Feet. 100% of the new impervious area will be treated. This area, in addition to existing impervious and developed areas, will drain to an Underdrained Subsurface Sand Filter, which includes a bed of Stormtech chambers and will store and treat runoff before discharging from the Site.

12.2.1 Underdrained Subsurface Sand Filter

Adequate provisions have been made to collect stormwater runoff from the project area via a series of catch basins and inlets, which drain to an Underdrained Subsurface Sand Filter (USSF) designed to store and treat stormwater volumes generated from the 2-year, 10-year, and 25-year 24-hour storm events. The stormwater is directed through the initial subsurface chamber rows, which are identified as the pretreatment isolator rows of the system, before the remainder of the chambers are filled hydraulically via the porous stone bedding and water infiltrates down through the sand filter; stormwater that is not discarded via infiltration into the subsurface soils will be hydraulically collected by an underdrain system and then discharged to an outlet control structure. When larger storm events occur and the chambers are full, stormwater will be directed over the weir wall within a drainage manhole and bypass the chamber system via a manifold system to the outlet control structure.

The USSF has been designed based on Chapter 7.3 of Volume III of the DEP Stormwater BMP Manual; calculations demonstrating compliance with the BMP design requirements have been included at the end of this Section. Based on the results of the geotechnical evaluation conducted by SW Cole in 2015, separation between the proposed USSF and bedrock/groundwater is not anticipated to be an issue.

On-site soils testing was also completed by a research hydrologist from the sustainable Environments Branch of the National Risk Management Research Laboratory at the Environmental Protection Agency. A City-wide study is being completed to determine the potential for using infiltration systems in the City. Based on the data from this study, we anticipate that the proposed USSF will promote infiltration; however, infiltration has not been modeled so that a conservative outflow estimate can be made for the flooding standard, as described in the following section.

12.3 FLOODING STANDARD (WATER QUANTITY)

The MaineDEP Chapter 500 Stormwater Regulations indicate that the stormwater management system must detain, retain, or result in the infiltration of the stormwater flows from the 24-hour storm of the 2-, 10- and 25-year frequencies such that peak flows from the post-development design of the site do not exceed those from the pre-development design. The proposed USSF will provide both detention and infiltration of stormwater flows, in compliance with the Flooding Standard.

Stormwater modeling was completed using the HydroCAD 10.00 Stormwater Modeling System by Applied Microcomputer Systems, which uses TR-20 runoff calculation methodology. The HydroCAD output for both the pre- and post-development models are attached to this Section. The new Chapter 500 Stormwater regulations, adopted in August 2015, define new standard rainfall amounts for the 2-year, 10-year and 25-year, 24-hour storm events; a Type III rainfall distribution was applied to the storm events.

Subcatchment drainage areas were delineated based on topographical information. HydroCAD provides a lookup table for curve number (CN), which is a measure of the retention and runoff properties of various surfaces based on the Hydrological Soil Group (HSG) and land cover type using TR-55 methodology. The HSG for the Site was taken from the USDA Natural Resources Conservation Service Web Soil Survey; the Site consists entirely of HSG Type A. The area of each land cover type was delineated utilizing topographical information and HydroCAD computed the final CN for each subcatchment based on an area-weighted average.

The Time of Concentration (Tc) is the time required for runoff to travel from the most hydrologically distant point of a watershed to the point of discharge. The Tc for each subcatchment drainage area was computed within HydroCAD using TR-55 methodology as the sum of the travel times for each consecutive flow segment along the longest hydraulic flow path. The longest hydraulic flow path was delineated utilizing contour data and partitioned into segments based on flow types, land cover, and slopes. The primary types of flow consist of sheet flow, shallow concentrated flow, and channel flows. A minimum Tc of five minutes was utilized for all subcatchments.

12.3.1 Pre-Development Conditions

As previously described, the Site is currently entirely developed by the Waynflete School campus. The Site slopes generally in the south-easterly direction and discharges towards the combined sewer system in Danforth Street, which will serve as the study point for the Site. Currently, there are two stormwater pipes entering the combined sewer system in Danforth Street, one at the catch basin located at the intersection of Danforth and Fletcher Streets, and one direct connection mid-block between Fletcher and Storer Street. The Pre-Development stormwater model consists of seven subcatchments. Existing subcatchment boundaries, drainage patterns, and features are shown on Figure 12-1, Pre-Development Drainage Area Plan.

12.3.2 Post-Development Conditions

The proposed drainage structures and features are shown on Figure 12-2, Post-Development Drainage Area Plan. The Post-Development Site has been delineated based on topography as eight subcatchments, similar to those in the Pre-Development model, all of which ultimately discharge to the combined sewer system in Danforth Street. The proposed project will eliminate the mid-block connection to the combined sewer, and will upgrade the connection to the catch basin at the Danforth and Fletcher intersection.

Adequate provisions have been made to collect and dispose of stormwater generated from the developed area of the Site. An USSF, which includes a bed of StormTech storage chambers, has been designed to store and treat stormwater volumes generated on-site. The HydroCAD Reports for both the Pre- and Post-Development conditions are attached to this Section. Table 12-2 below provides a summary of the peak runoff rates for the 24-hour, 2-year, 10-year, and 25-year Type III storm events. As shown below, there is a net decrease in the post-development rate of runoff during all storms at the Site's study point.

Table 12-2: Summary of Peak Runoff Rates

STUDY POINT (EXISTING COMBINED SEWER SYSTEM IN DANFORTH STREET)	PEAK RUNOFF RATE (CFS)		
	2-YEAR STORM	10-YEAR STORM	25-YEAR STORM
Pre-Development	3.85	6.95	9.54

Post-Development	1.91	3.66	5.39
Difference	-1.94	-3.29	-4.15

The proposed stormwater management system has been designed to decrease peak flow rates and to improve water quality. As the Site's peak runoff rate has been reduced, the proposed development is not anticipated to result in adverse effects, including flooding and erosion, to abutting and downstream properties.

12.4 INSPECTION AND MAINTENANCE OF STORMWATER SYSTEMS

General inspection and maintenance during and after construction must take place in accordance with the requirements outlined in Chapter 500, Stormwater Management, Appendix B, Inspection and Maintenance and Stormwater Management, Maine Department of Environmental Protection publication No. DEPLW0738. The Waynflete School will be responsible for implementing the maintenance and inspection requirements for the stormwater management system associated with the new development. The USSF and associated stormwater infrastructure will be inspected and maintained per the guidance outlined herein.

In accordance with Ordinance Section 27-1536(2)(b), the Waynflete School will enter into a Drainage Maintenance Agreement with the City in a form acceptable to Corporation Counsel. A third-party person from the list of approved inspectors maintained by the Water Resource Protection Department with knowledge of stormwater management and erosion and sediment control, including the standards and conditions in the permit, shall conduct the inspections and perform maintenance of the facilities. On or by July 15th of each year, Certification that the stormwater management system has been inspected, cleaned, and maintained shall be submitted to the Director of Water Resource Protection in a form provided by that Department.

The inspection and maintenance criteria outlined in Chapter 500 Stormwater Regulations will be followed. Monitoring and maintenance is critical for the proper operation of the USSF and StormTech chamber system. First year post-construction monitoring differs primarily by its increased frequency to assure proper system functioning. Post-construction routine monitoring is based on USEPA requirements for good housekeeping practices.

Post-Construction: Inspection frequency should be at least once every six months and after every major storm in the first year following construction.

- ☐ Ensure system drains within 24-36 hours; and
- ☐ Clean pre-treatment devices and remove debris and sediment buildup from Isolator Rows as needed (when the average depth of sediment throughout the length of the Isolator Row exceeds three inches).

Trash, debris, and sediment shall be removed from storm drain pipes as needed on a semi-annual basis. In addition to the inspection and maintenance of stormwater systems, paved areas will be inspected annually each spring. Periodic sweeping of pavement will reduce the amount of sediment available to enter the USSF, in turn reducing the need to clean the Stormwater system.

12.5 ATTACHMENTS

- Stormwater Erosion & Sedimentation Control Inspection Report Form
- USSF Design Calculations
- Figure 12.1 Pre-Development Drainage Area Plan
- Figure 12.2 Post-Development Drainage Area Plan
- Pre-Development HydroCAD Report
- Post-Development HydroCAD Report

**STORMWATER EROSION & SEDIMENTATION CONTROL
INSPECTION REPORT FORM**

Inspectors:

Date: ____ / ____ / ____

_____ of _____ (Project Owner)

_____ of _____ (Contractor)

_____ of _____

_____ of _____

Storm Event? ☐ Yes ☐ No Rainfall Amount _____ Storm Duration _____ hours

Visual Observations of Activity and Site Conditions:

Disturbed Soil Areas:

Storage Of Soils:

Sediment & Erosion Control Measures:

Construction Site Entrance:

Surface Stabilization:

Corrective Actions Taken

Attachments (if any):

Signature:

Representing:

Representing:



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PORTLAND, MAINE 04102
TEL. (207) 774-2112
FAX (207) 774-6635

CLIENT Scott Simons Architects
PROJECT Wynnflete School Campus Upgrades
DESIGNED BY AEA DATE 2-1-16
CHECKED BY _____ DATE _____
PROJECT NO. 229423 SHEET NO. 1 OF 1

Underdrained Subsurface Sand Filter Design Calculations

Per Chapter 7.3 of Volume III of the Maine DEP Stormwater BMP Manual

Treatment : $(1" \times \text{Impervious Area}) + (0.4" \times \text{Pervious Area})$
Volume

Impervious Area = 42,442 SF

Pervious Area = 11,465 SF

→ Treatment Volume Req'd = 3,919 CF OK
Provided = 4,019 CF OK

Impoundment : Storage Provided @ Elevation $\leq 18"$? Yes OK
Depth

Surface Area : $5\% (\text{Impervious Area}) + 2\% (\text{Pervious Area})$

→ Surface Area Req'd = 2,351 SF
Provided = 4,717 SF OK

Isolator Row :
Sizing

Treatment Flow Rate = $\frac{1.88 \text{ CFS}}{(1\text{-yr Storm})} \Rightarrow 6$
MC-3500 Chambers = 0.3 CFS chambers Req'd

Chambers Provided = 12 OK

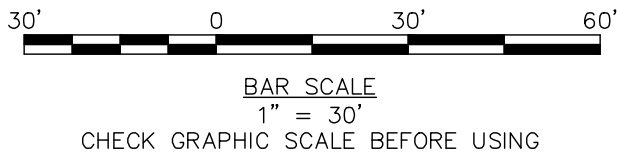
Release : System drains w/in 24-36 hours? 27 hours OK
Time



STORMWATER LEGEND

- 1X SUBCATCHMENT AREAS
- TIME OF CONCENTRATION (Tc) FLOW LINE
- LIMIT OF SUBCATCHMENT AREA
- SP1 STUDY POINT

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Portland, Maine 04101
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207.772.4656



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Portland, Maine 04102
800.426.4262 | www.woodardcurran.com
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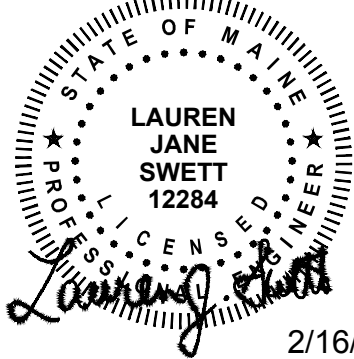
PROJECT NAME:

WAYNFLETE
GYM + LOWER SCHOOL

NEW CONSTRUCTION

WAYNFLETE SCHOOL
360 SPRING STREET
PORTLAND, MAINE 04102

SEAL:



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REVISION:

1	DATE
2	DATE
3	DATE
4	DATE
5	DATE
6	DATE

DATE OF ISSUE: FEBRUARY 2016

PROJECT NUMBER: 229423

STATUS: PLANNING BOARD SUBMISSION

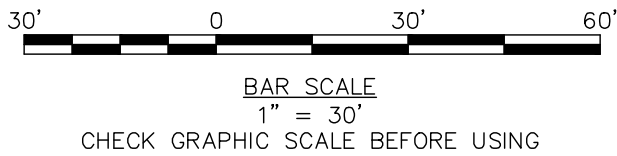
PRE
DEVELOPMENT
DRAINAGE AREA
PLAN

PRE



STORMWATER LEGEND

- 1S SUBCATCHMENT AREAS
- TIME OF CONCENTRATION (Tc)
FLOW LINE
- LIMIT OF SUBCATCHMENT AREA
- SP1 STUDY POINT



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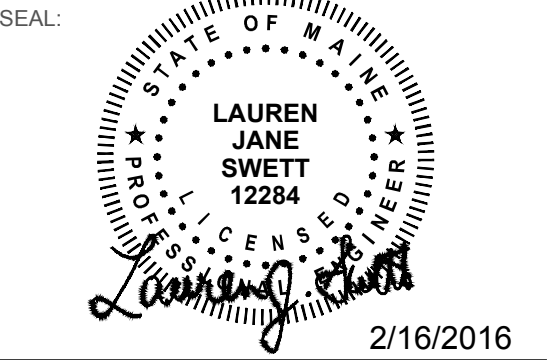
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PROJECT NAME:

WAYNFLETE
GYM + LOWER SCHOOL

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WAYNFLETE SCHOOL
360 SPRING STREET
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DATE OF ISSUE: FEBRUARY 2016

PROJECT NUMBER: 229423

STATUS: PLANNING BOARD SUBMISSION

POST
DEVELOPMENT
DRAINAGE AREA
PLAN

POST

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Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.14	98	Impervious (402S)
1.13	39	Lawn/field, HSG A (10S, 60S, 70S, 90S)
0.09	39	Pervious (402S)
0.18	98	Roof runoff (61S, 80S)
1.59	98	impervious (10S, 60S, 70S, 90S)
3.14	75	TOTAL AREA

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Page 3

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 10S: Area draining to Runoff Area=19,633 sf 57.01% Impervious Runoff Depth>0.92"
Flow Length=91' Slope=0.0300 '/' Tc=7.7 min CN=73 Runoff=0.42 cfs 0.034 af

Subcatchment 60S: Lawn/Field S of school Runoff Area=16,715 sf 84.98% Impervious Runoff Depth>1.99"
Tc=5.0 min CN=89 Runoff=0.92 cfs 0.064 af

Subcatchment 61S: Auditorium Roof Runoff Area=4,485 sf 100.00% Impervious Runoff Depth>2.87"
Tc=5.0 min CN=98 Runoff=0.32 cfs 0.025 af

Subcatchment 70S: Thomas & Davies & Runoff Area=41,034 sf 78.01% Impervious Runoff Depth>1.67"
Tc=5.0 min CN=85 Runoff=1.92 cfs 0.131 af

Subcatchment 80S: FoundersHall Runoff Area=3,498 sf 100.00% Impervious Runoff Depth>2.87"
Tc=5.0 min CN=98 Runoff=0.25 cfs 0.019 af

Subcatchment 90S: Playground Runoff Area=41,240 sf 29.19% Impervious Runoff Depth>0.25"
Flow Length=188' Tc=14.6 min CN=56 Runoff=0.09 cfs 0.020 af

Subcatchment 402S: New Prkng lot Runoff Area=10,240 sf 60.94% Impervious Runoff Depth>1.03"
Tc=5.0 min CN=75 Runoff=0.28 cfs 0.020 af

Reach 161R: roof drain Avg. Flow Depth=0.15' Max Vel=6.63 fps Inflow=0.32 cfs 0.025 af
6.0" Round Pipe n=0.013 L=129.0' S=0.0911 '/' Capacity=1.69 cfs Outflow=0.32 cfs 0.025 af

Pond 206P: City CB @ Fletcher & Danforth Peak Elev=109.59' Inflow=1.79 cfs 0.162 af
8.0" Round Culvert n=0.013 L=18.0' S=0.2750 '/' Outflow=1.79 cfs 0.162 af

Pond 207P: Existing CB Peak Elev=131.47' Inflow=1.92 cfs 0.131 af
10.0" Round Culvert n=0.010 L=60.0' S=0.1287 '/' Outflow=1.92 cfs 0.131 af

Pond 210P: Existing FI Peak Elev=132.39' Inflow=0.42 cfs 0.034 af
10.0" Round Culvert n=0.010 L=102.0' S=0.1008 '/' Outflow=0.42 cfs 0.034 af

Pond 217P: Existing DMH Peak Elev=125.48' Inflow=2.17 cfs 0.150 af
8.0" Round Culvert n=0.013 L=89.0' S=0.0367 '/' Outflow=2.17 cfs 0.150 af

Pond 220P: Existing DMH Peak Elev=122.06' Inflow=0.42 cfs 0.034 af
10.0" Round Culvert n=0.010 L=108.0' S=0.0335 '/' Outflow=0.42 cfs 0.034 af

Pond 227P: Existing SMH Peak Elev=121.98' Inflow=2.17 cfs 0.150 af
8.0" Round Culvert n=0.013 L=71.0' S=0.2025 '/' Outflow=2.17 cfs 0.150 af

Pond 230P: Existing DMH Peak Elev=120.15' Inflow=1.79 cfs 0.143 af
8.0" Round Culvert n=0.010 L=156.0' S=0.0272 '/' Outflow=1.79 cfs 0.143 af

Pond 240P: Existing DMH Peak Elev=115.91' Inflow=1.79 cfs 0.143 af
8.0" Round Culvert n=0.010 L=58.0' S=0.0833 '/' Outflow=1.79 cfs 0.143 af

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Pond 260P: Storage Pipes

Peak Elev=119.87' Storage=164 cf Inflow=1.52 cfs 0.108 af
12.0" Round Culvert n=0.010 L=30.0' S=0.0380 '/ Outflow=1.37 cfs 0.108 af

Pond 340P: CB at SW Cor prkng lot

Peak Elev=129.34' Inflow=0.28 cfs 0.020 af
8.0" Round Culvert n=0.010 L=56.0' S=0.1000 '/ Outflow=0.28 cfs 0.020 af

Link SP1: Existing Combined Sewer in Danforth

Inflow=3.85 cfs 0.313 af
Primary=3.85 cfs 0.313 af

Total Runoff Area = 3.14 ac Runoff Volume = 0.313 af Average Runoff Depth = 1.19"
38.86% Pervious = 1.22 ac 61.14% Impervious = 1.92 ac

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Page 5

Summary for Subcatchment 10S: Area draining to Sanctuary

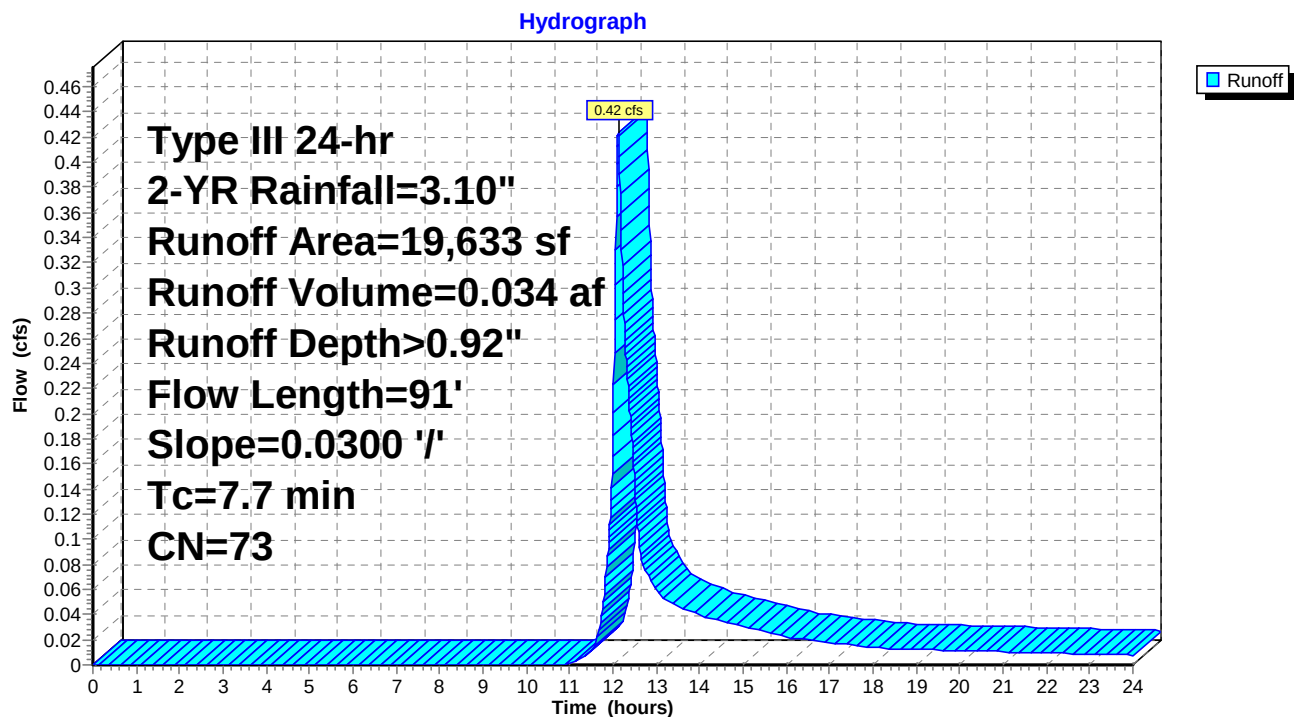
Runoff = 0.42 cfs @ 12.12 hrs, Volume= 0.034 af, Depth> 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.10"

	Area (sf)	CN	Description
*	11,192	98	impervious
*	8,441	39	Lawn/field, HSG A
	19,633	73	Weighted Average
	8,441		42.99% Pervious Area
	11,192		57.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	91	0.0300	0.20		Sheet Flow, A-B
Grass: Short n= 0.150 P2= 3.19"					

Subcatchment 10S: Area draining to Sanctuary



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Page 6

Summary for Subcatchment 60S: Lawn/Field S of school

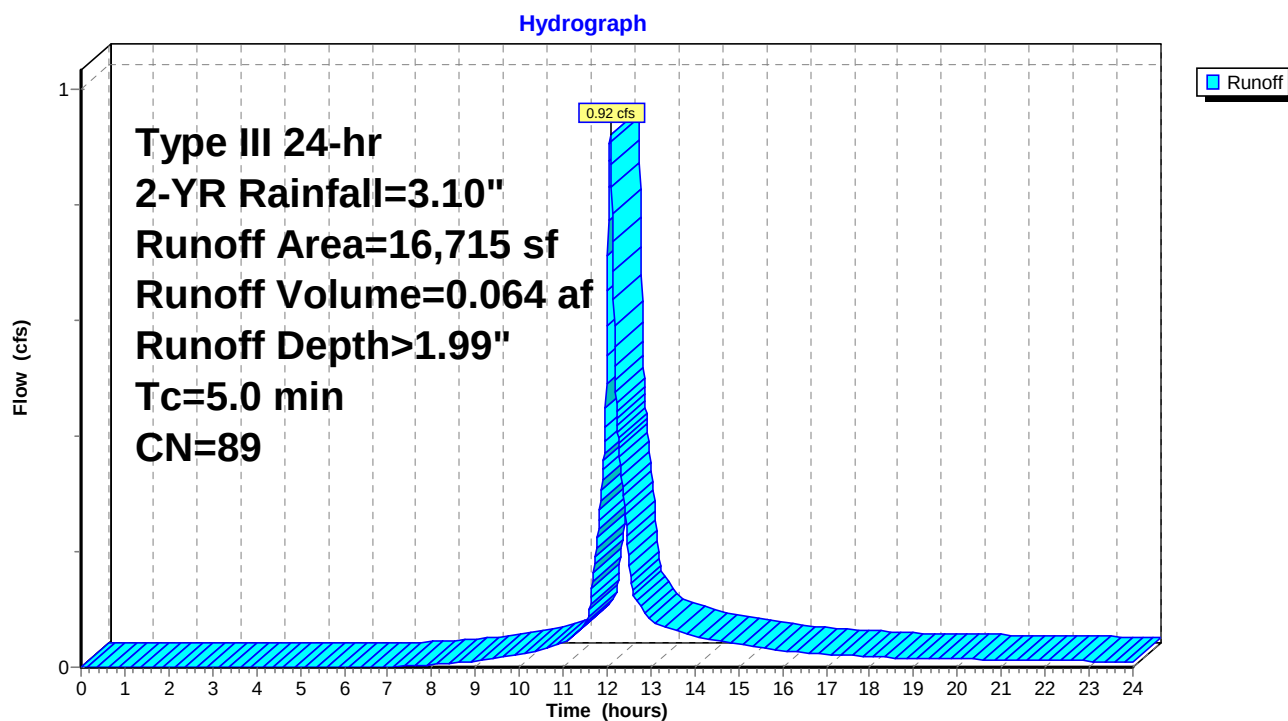
Runoff = 0.92 cfs @ 12.07 hrs, Volume= 0.064 af, Depth> 1.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.10"

	Area (sf)	CN	Description
*	14,205	98	impervious
*	2,510	39	Lawn/field, HSG A
	16,715	89	Weighted Average
	2,510		15.02% Pervious Area
	14,205		84.98% Impervious Area

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

Subcatchment 60S: Lawn/Field S of school



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

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Page 7

Summary for Subcatchment 61S: Auditorium Roof

Runoff = 0.32 cfs @ 12.07 hrs, Volume= 0.025 af, Depth> 2.87"

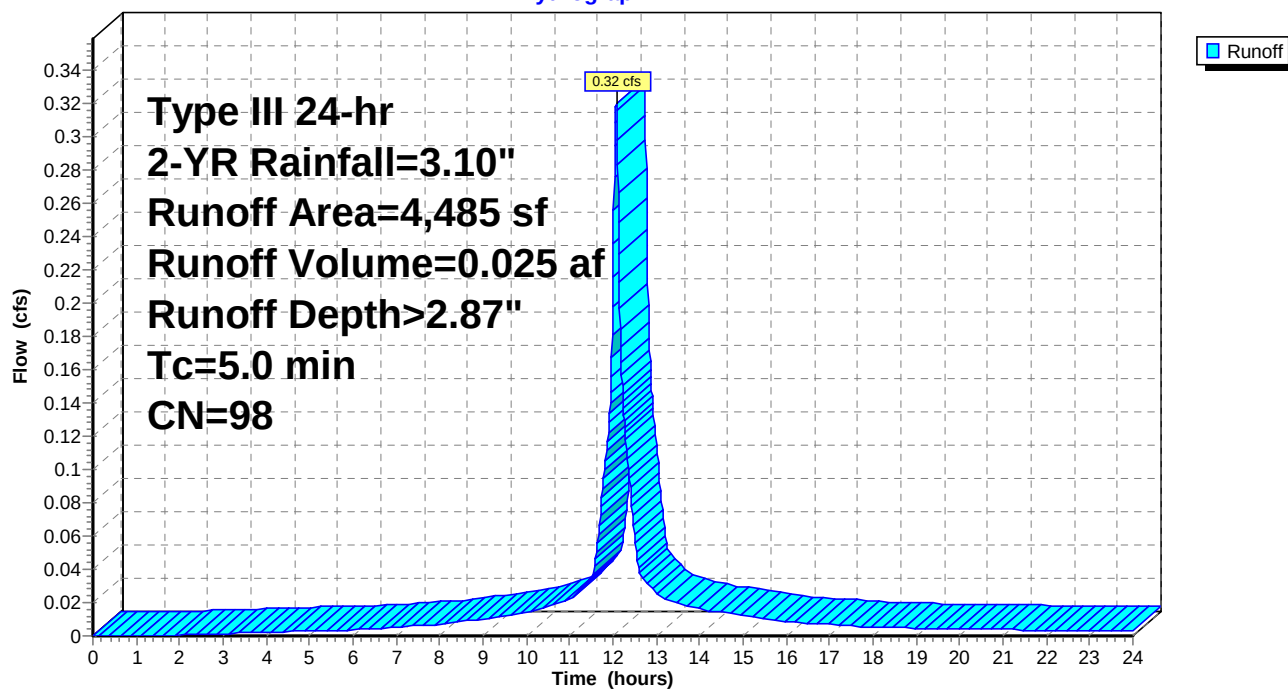
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.10"

	Area (sf)	CN	Description
*	4,485	98	Roof runoff
	4,485		100.00% Impervious Area

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

Subcatchment 61S: Auditorium Roof

Hydrograph



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PRE
Type III 24-hr 2-YR Rainfall=3.10"

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Page 8

Summary for Subcatchment 70S: Thomas & Davies & Gym

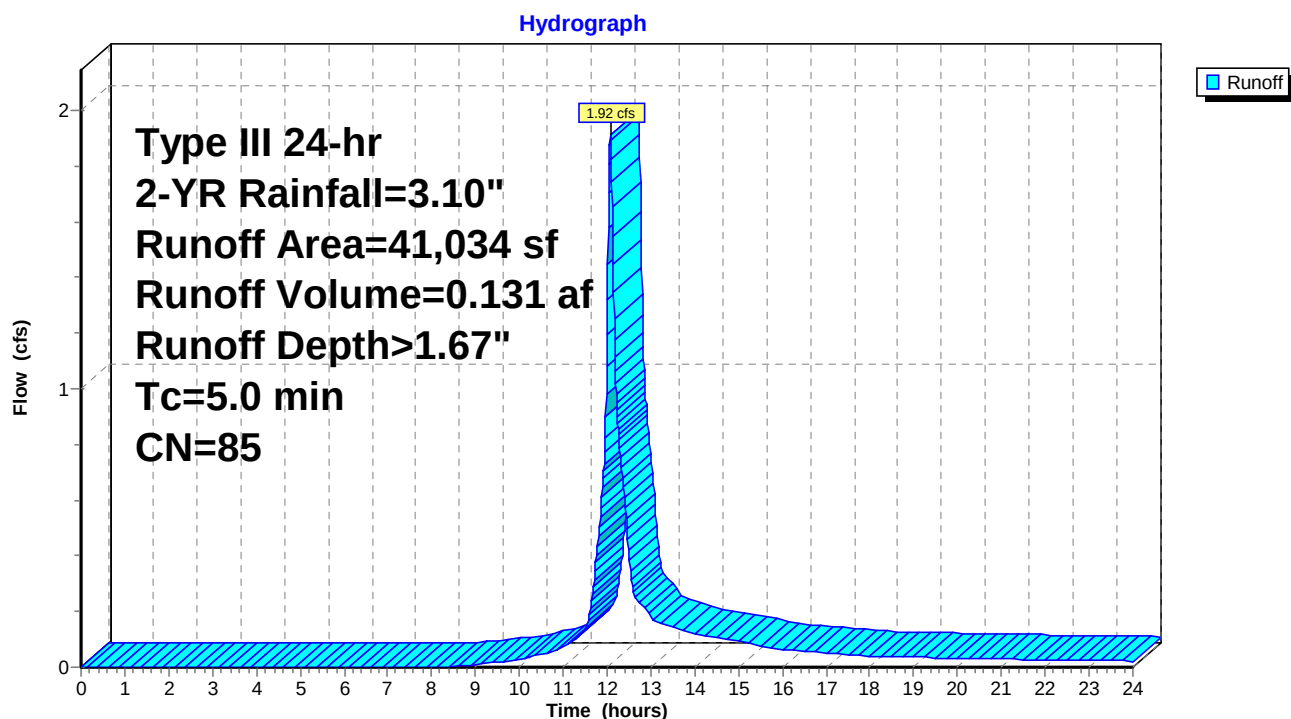
Runoff = 1.92 cfs @ 12.08 hrs, Volume= 0.131 af, Depth> 1.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.10"

	Area (sf)	CN	Description
*	32,011	98	impervious
*	9,023	39	Lawn/field, HSG A
	41,034	85	Weighted Average
	9,023		21.99% Pervious Area
	32,011		78.01% Impervious Area

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

Subcatchment 70S: Thomas & Davies & Gym



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

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Page 9

Summary for Subcatchment 80S: FoundersHall

Runoff = 0.25 cfs @ 12.07 hrs, Volume= 0.019 af, Depth> 2.87"

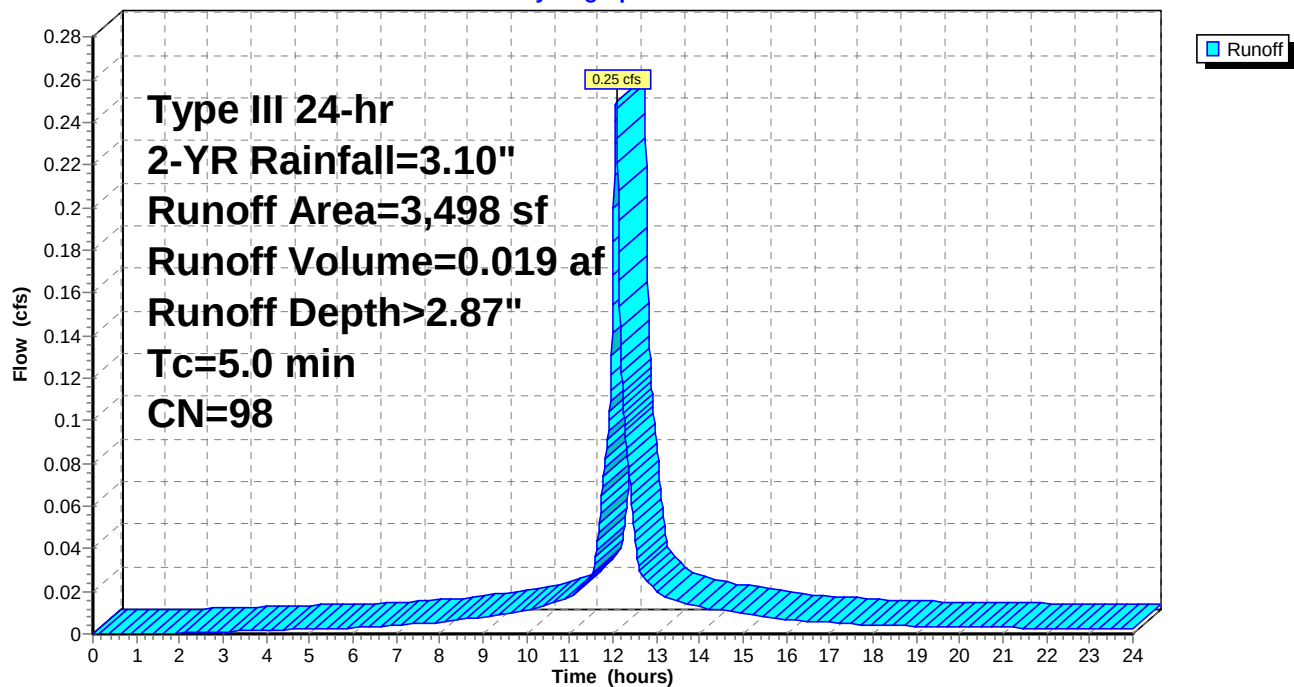
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.10"

	Area (sf)	CN	Description
*	3,498	98	Roof runoff
	3,498		100.00% Impervious Area

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

Subcatchment 80S: FoundersHall

Hydrograph



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PRE
Type III 24-hr 2-YR Rainfall=3.10"

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Page 10

Summary for Subcatchment 90S: Playground

Runoff = 0.09 cfs @ 12.47 hrs, Volume= 0.020 af, Depth> 0.25"

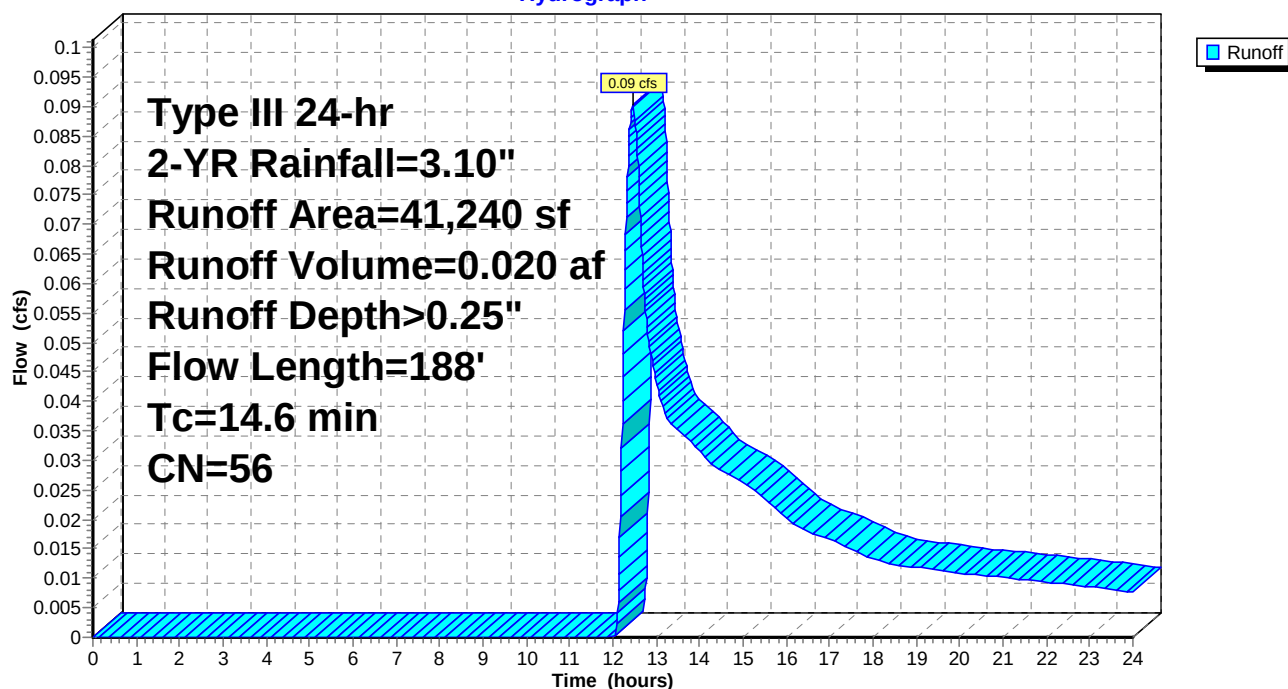
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.10"

	Area (sf)	CN	Description
*	12,037	98	impervious
*	29,203	39	Lawn/field, HSG A
	41,240	56	Weighted Average
	29,203		70.81% Pervious Area
	12,037		29.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	100	0.0100	0.13		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.19"
1.7	88	0.0154	0.87		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
14.6	188	Total			

Subcatchment 90S: Playground

Hydrograph



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

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Page 11

Summary for Subcatchment 402S: New Prkng lot

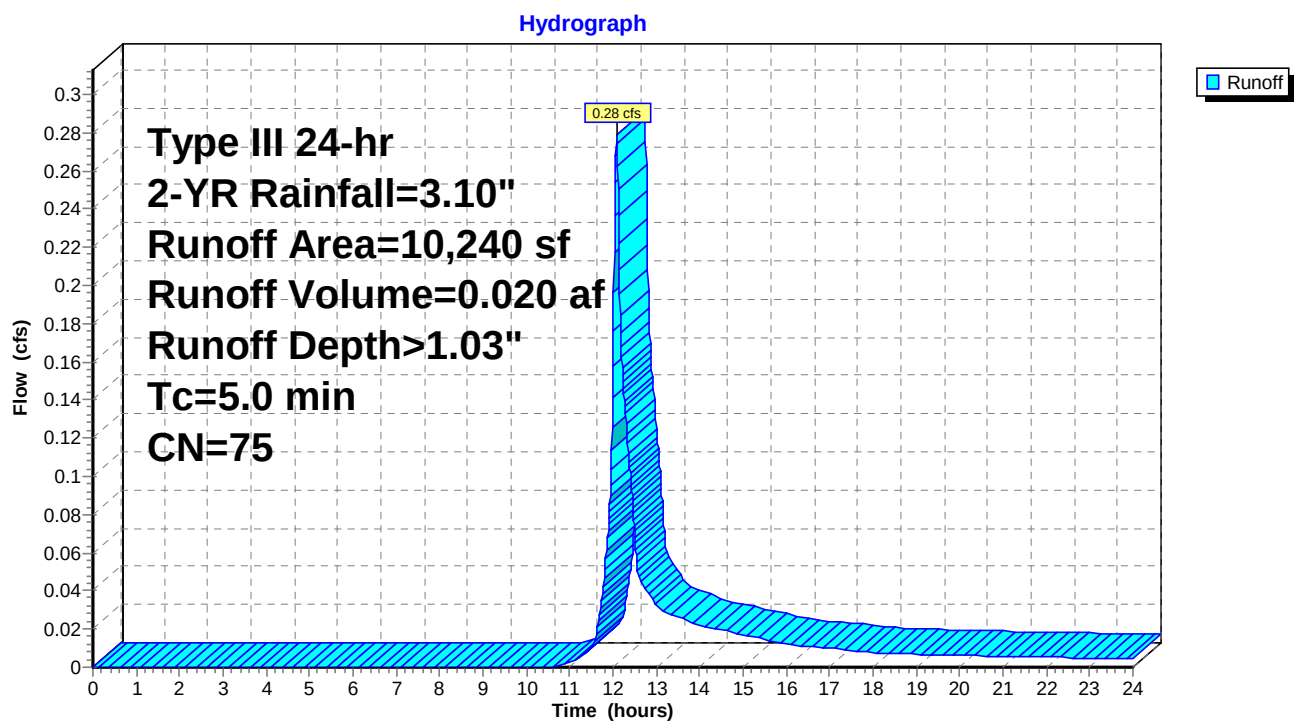
Runoff = 0.28 cfs @ 12.08 hrs, Volume= 0.020 af, Depth> 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.10"

	Area (sf)	CN	Description
*	4,000	39	Pervious
*	6,240	98	Impervious
	10,240	75	Weighted Average
	4,000		39.06% Pervious Area
	6,240		60.94% Impervious Area

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

Subcatchment 402S: New Prkng lot



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

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Page 12

Summary for Reach 161R: roof drain

Inflow Area = 0.10 ac, 100.00% Impervious, Inflow Depth > 2.87" for 2-YR event
Inflow = 0.32 cfs @ 12.07 hrs, Volume= 0.025 af
Outflow = 0.32 cfs @ 12.08 hrs, Volume= 0.025 af, Atten= 0%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Max. Velocity= 6.63 fps, Min. Travel Time= 0.3 min

Avg. Velocity= 2.17 fps, Avg. Travel Time= 1.0 min

Peak Storage= 6 cf @ 12.07 hrs

Average Depth at Peak Storage= 0.15'

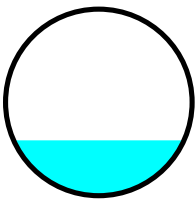
Bank-Full Depth= 0.50' Flow Area= 0.2 sf, Capacity= 1.69 cfs

6.0" Round Pipe

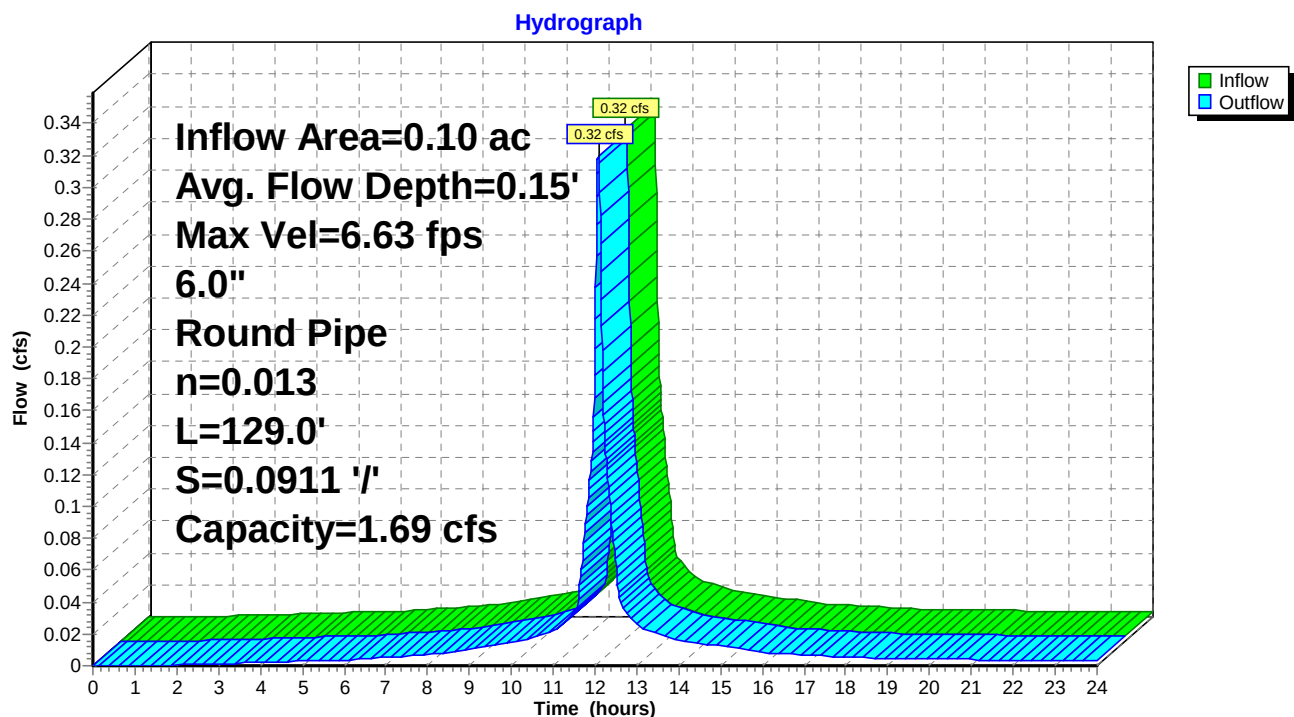
n= 0.013 Corrugated PE, smooth interior

Length= 129.0' Slope= 0.0911 '/

Inlet Invert= 130.00', Outlet Invert= 118.25'



Reach 161R: roof drain



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

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Page 13

Summary for Pond 206P: City CB @ Fletcher & Danforth

Inflow Area = 2.12 ac, 52.17% Impervious, Inflow Depth > 0.92" for 2-YR event
Inflow = 1.79 cfs @ 12.12 hrs, Volume= 0.162 af
Outflow = 1.79 cfs @ 12.12 hrs, Volume= 0.162 af, Atten= 0%, Lag= 0.0 min
Primary = 1.79 cfs @ 12.12 hrs, Volume= 0.162 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Peak Elev= 109.59' @ 12.12 hrs

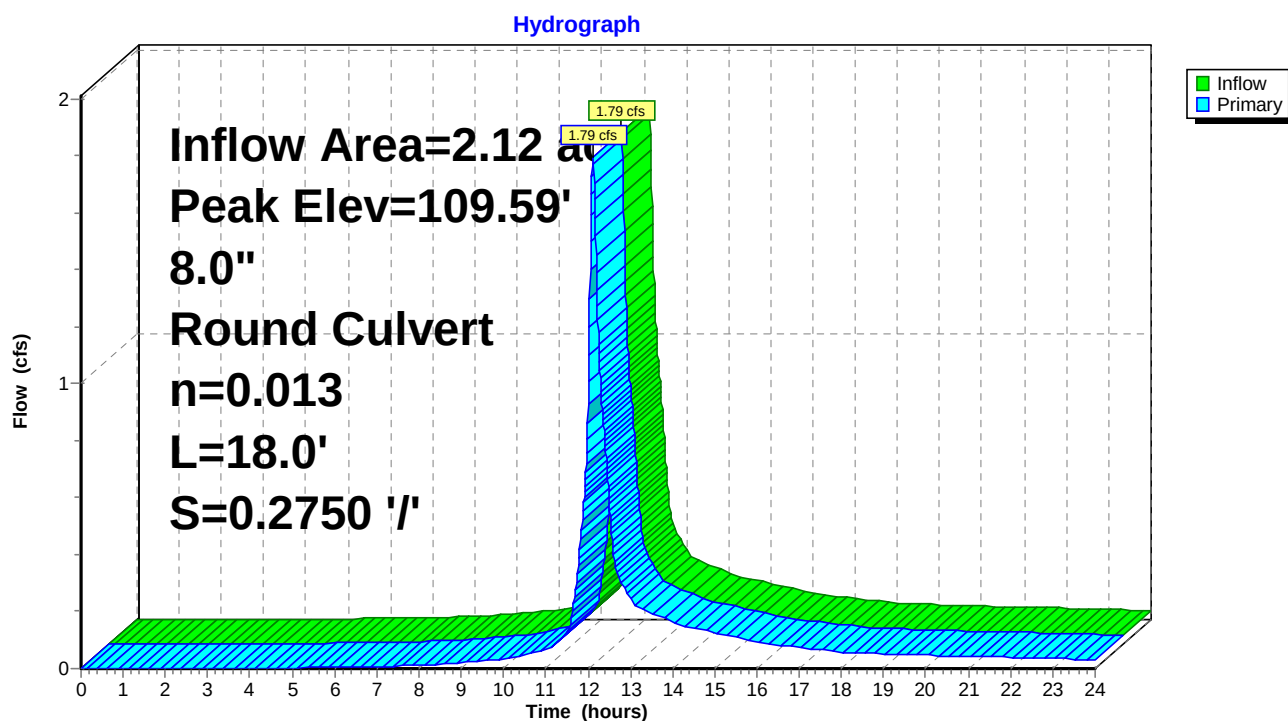
Flood Elev= 111.26'

Device	Routing	Invert	Outlet Devices
#1	Primary	107.43'	8.0" Round Culvert L= 18.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 107.43' / 102.48' S= 0.2750 '/ Cc= 0.900 n= 0.013 Clay tile, Flow Area= 0.35 sf

Primary OutFlow Max=1.79 cfs @ 12.12 hrs HW=109.59' (Free Discharge)

↑**1=Culvert** (Inlet Controls 1.79 cfs @ 5.13 fps)

Pond 206P: City CB @ Fletcher & Danforth



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Page 14

Summary for Pond 207P: Existing CB

Inflow Area = 0.94 ac, 78.01% Impervious, Inflow Depth > 1.67" for 2-YR event
Inflow = 1.92 cfs @ 12.08 hrs, Volume= 0.131 af
Outflow = 1.92 cfs @ 12.08 hrs, Volume= 0.131 af, Atten= 0%, Lag= 0.0 min
Primary = 1.92 cfs @ 12.08 hrs, Volume= 0.131 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Peak Elev= 131.47' @ 12.08 hrs

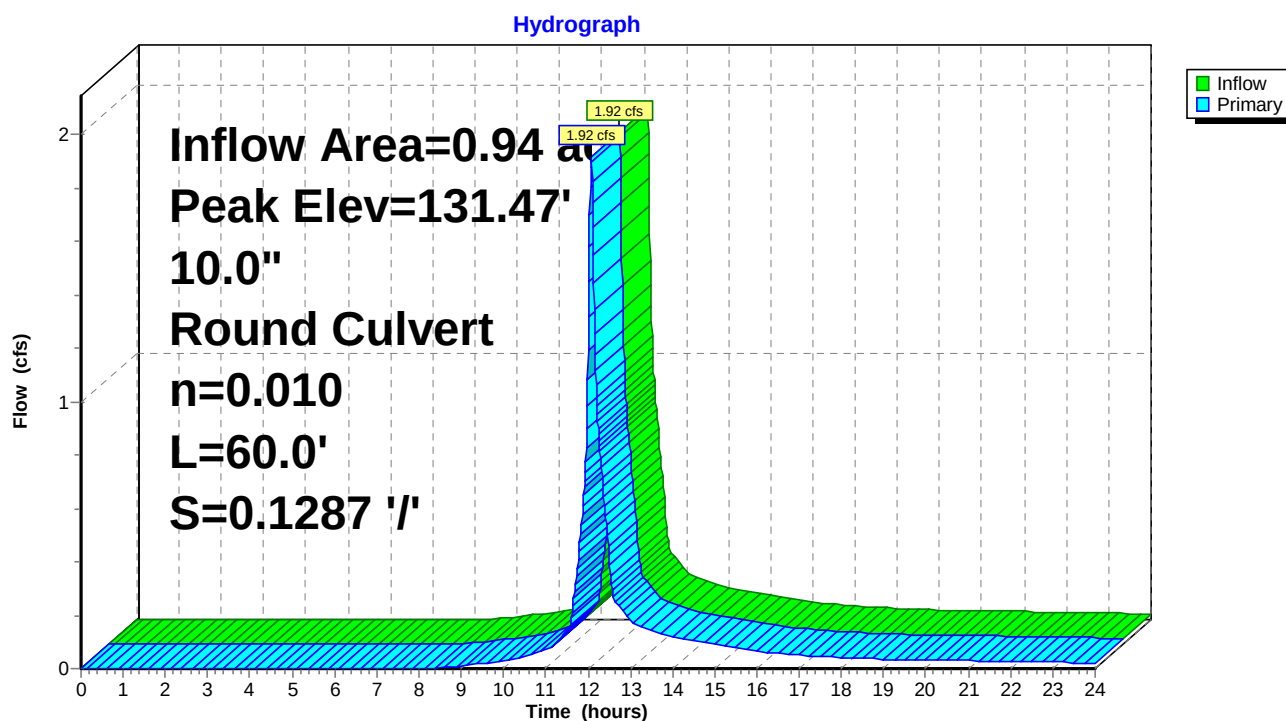
Flood Elev= 137.62'

Device	Routing	Invert	Outlet Devices
#1	Primary	130.20'	10.0" Round Culvert L= 60.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 130.20' / 122.48' S= 0.1287 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=1.91 cfs @ 12.08 hrs HW=131.47' (Free Discharge)

↑1=Culvert (Inlet Controls 1.91 cfs @ 3.51 fps)

Pond 207P: Existing CB



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Page 15

Summary for Pond 210P: Existing FI

Inflow Area = 0.45 ac, 57.01% Impervious, Inflow Depth > 0.92" for 2-YR event
Inflow = 0.42 cfs @ 12.12 hrs, Volume= 0.034 af
Outflow = 0.42 cfs @ 12.12 hrs, Volume= 0.034 af, Atten= 0%, Lag= 0.0 min
Primary = 0.42 cfs @ 12.12 hrs, Volume= 0.034 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Peak Elev= 132.39' @ 12.12 hrs

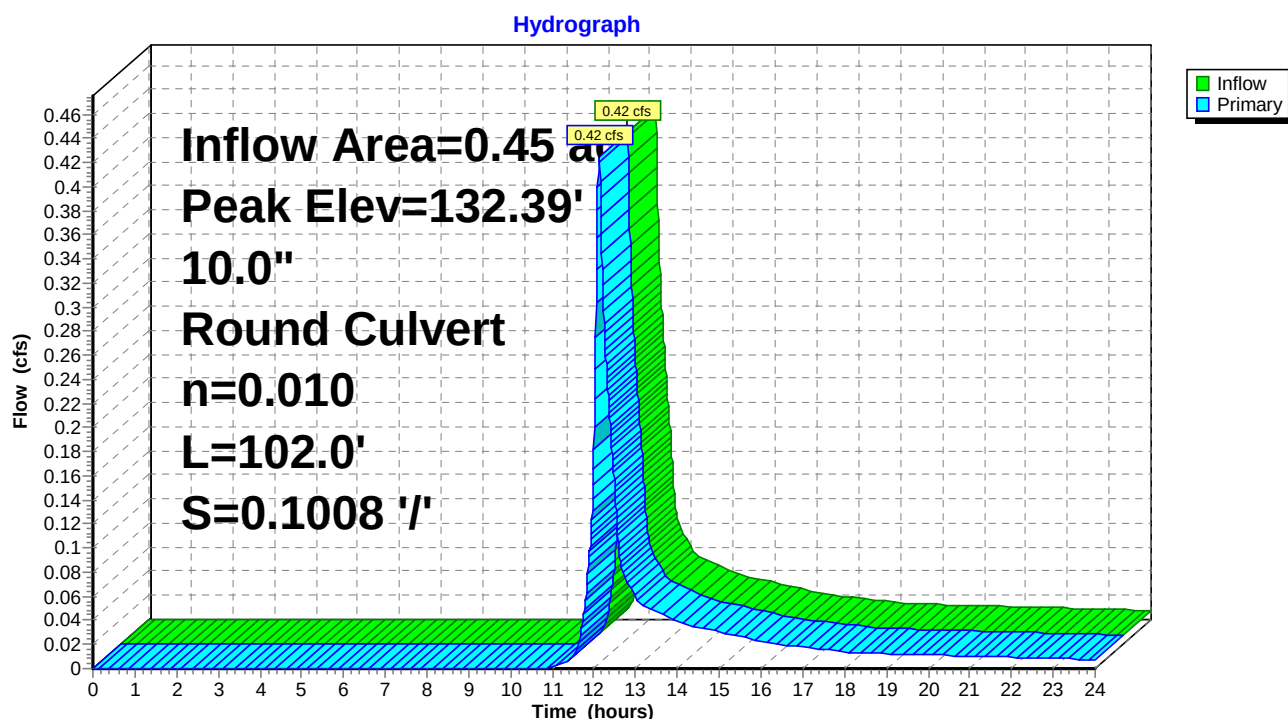
Flood Elev= 140.41'

Device	Routing	Invert	Outlet Devices
#1	Primary	132.00'	10.0" Round Culvert L= 102.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 132.00' / 121.72' S= 0.1008 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.42 cfs @ 12.12 hrs HW=132.39' (Free Discharge)

↑**1=Culvert** (Inlet Controls 0.42 cfs @ 1.68 fps)

Pond 210P: Existing FI



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Page 16

Summary for Pond 217P: Existing DMH

Inflow Area = 1.02 ac, 79.74% Impervious, Inflow Depth > 1.76" for 2-YR event
Inflow = 2.17 cfs @ 12.07 hrs, Volume= 0.150 af
Outflow = 2.17 cfs @ 12.07 hrs, Volume= 0.150 af, Atten= 0%, Lag= 0.0 min
Primary = 2.17 cfs @ 12.07 hrs, Volume= 0.150 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Peak Elev= 125.48' @ 12.07 hrs

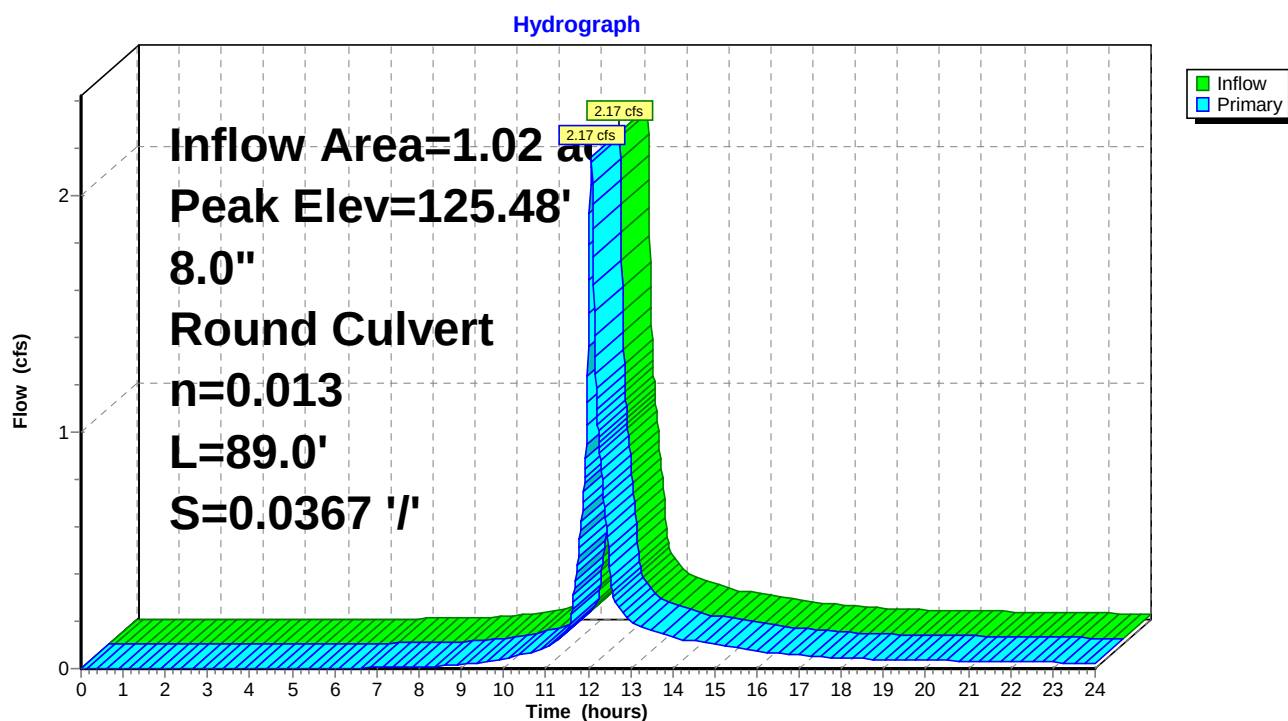
Flood Elev= 126.98'

Device	Routing	Invert	Outlet Devices
#1	Primary	122.48'	8.0" Round Culvert L= 89.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 122.48' / 119.21' S= 0.0367 '/' Cc= 0.900 n= 0.013 Cast iron, coated, Flow Area= 0.35 sf

Primary OutFlow Max=2.16 cfs @ 12.07 hrs HW=125.46' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 2.16 cfs @ 6.19 fps)

Pond 217P: Existing DMH



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Page 17

Summary for Pond 220P: Existing DMH

Inflow Area = 0.45 ac, 57.01% Impervious, Inflow Depth > 0.92" for 2-YR event
Inflow = 0.42 cfs @ 12.12 hrs, Volume= 0.034 af
Outflow = 0.42 cfs @ 12.12 hrs, Volume= 0.034 af, Atten= 0%, Lag= 0.0 min
Primary = 0.42 cfs @ 12.12 hrs, Volume= 0.034 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Peak Elev= 122.06' @ 12.12 hrs

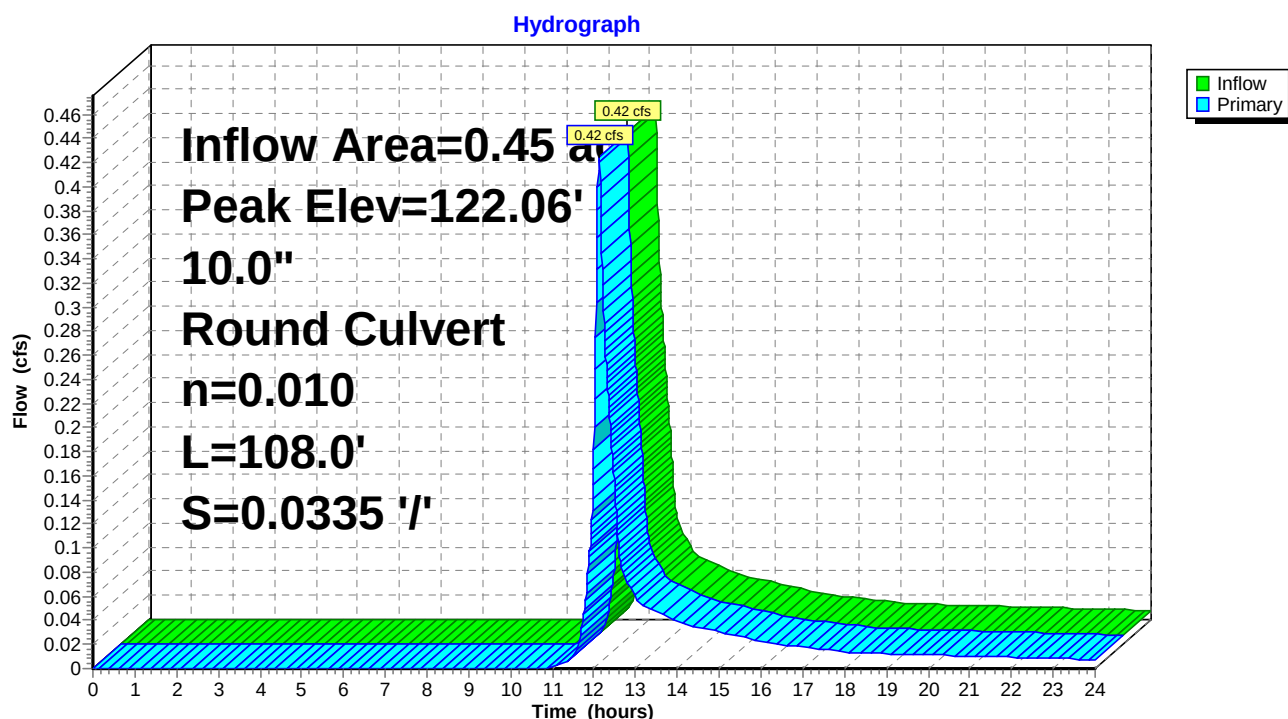
Flood Elev= 128.47'

Device	Routing	Invert	Outlet Devices
#1	Primary	121.67'	10.0" Round Culvert L= 108.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 121.67' / 118.05' S= 0.0335 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.42 cfs @ 12.12 hrs HW=122.06' (Free Discharge)

↑**1=Culvert** (Inlet Controls 0.42 cfs @ 1.68 fps)

Pond 220P: Existing DMH



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Page 18

Summary for Pond 227P: Existing SMH

Inflow Area = 1.02 ac, 79.74% Impervious, Inflow Depth > 1.76" for 2-YR event
Inflow = 2.17 cfs @ 12.07 hrs, Volume= 0.150 af
Outflow = 2.17 cfs @ 12.07 hrs, Volume= 0.150 af, Atten= 0%, Lag= 0.0 min
Primary = 2.17 cfs @ 12.07 hrs, Volume= 0.150 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Peak Elev= 121.98' @ 12.07 hrs

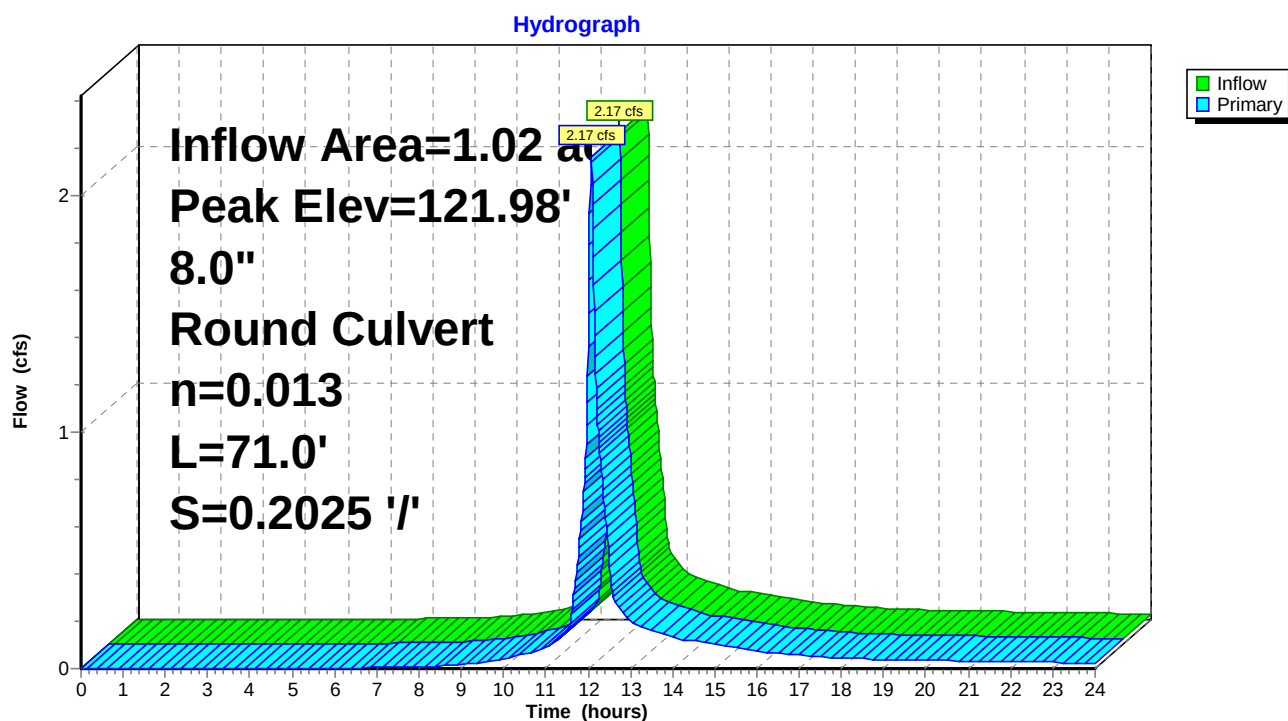
Flood Elev= 123.81'

Device	Routing	Invert	Outlet Devices
#1	Primary	118.98'	8.0" Round Culvert L= 71.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 118.98' / 104.60' S= 0.2025 '/' Cc= 0.900 n= 0.013 Clay tile, Flow Area= 0.35 sf

Primary OutFlow Max=2.16 cfs @ 12.07 hrs HW=121.96' (Free Discharge)

↑1=Culvert (Inlet Controls 2.16 cfs @ 6.19 fps)

Pond 227P: Existing SMH



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Page 19

Summary for Pond 230P: Existing DMH

Inflow Area = 1.17 ac, 70.73% Impervious, Inflow Depth > 1.46" for 2-YR event
Inflow = 1.79 cfs @ 12.12 hrs, Volume= 0.143 af
Outflow = 1.79 cfs @ 12.12 hrs, Volume= 0.143 af, Atten= 0%, Lag= 0.0 min
Primary = 1.79 cfs @ 12.12 hrs, Volume= 0.143 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Peak Elev= 120.15' @ 12.12 hrs

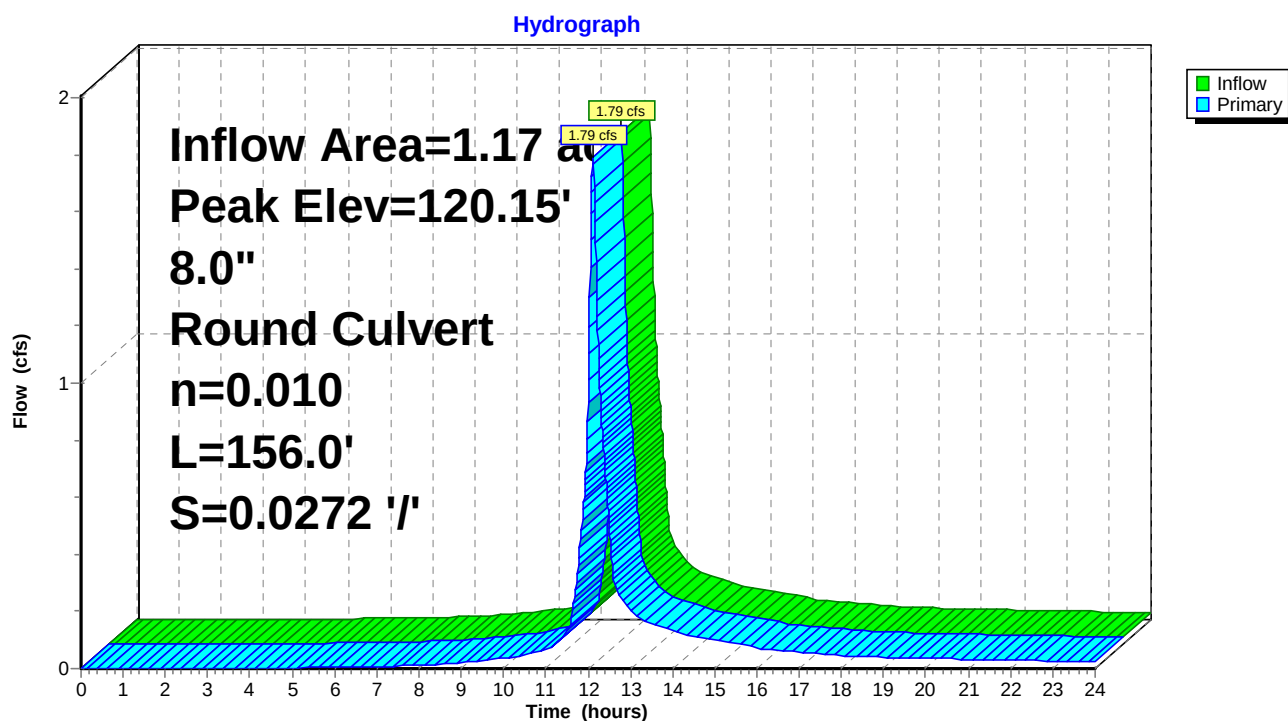
Flood Elev= 125.05'

Device	Routing	Invert	Outlet Devices
#1	Primary	118.00'	8.0" Round Culvert L= 156.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 118.00' / 113.76' S= 0.0272 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=1.79 cfs @ 12.12 hrs HW=120.15' (Free Discharge)

↑1=Culvert (Inlet Controls 1.79 cfs @ 5.12 fps)

Pond 230P: Existing DMH



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Page 20

Summary for Pond 240P: Existing DMH

Inflow Area = 1.17 ac, 70.73% Impervious, Inflow Depth > 1.46" for 2-YR event
Inflow = 1.79 cfs @ 12.12 hrs, Volume= 0.143 af
Outflow = 1.79 cfs @ 12.12 hrs, Volume= 0.143 af, Atten= 0%, Lag= 0.0 min
Primary = 1.79 cfs @ 12.12 hrs, Volume= 0.143 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Peak Elev= 115.91' @ 12.12 hrs

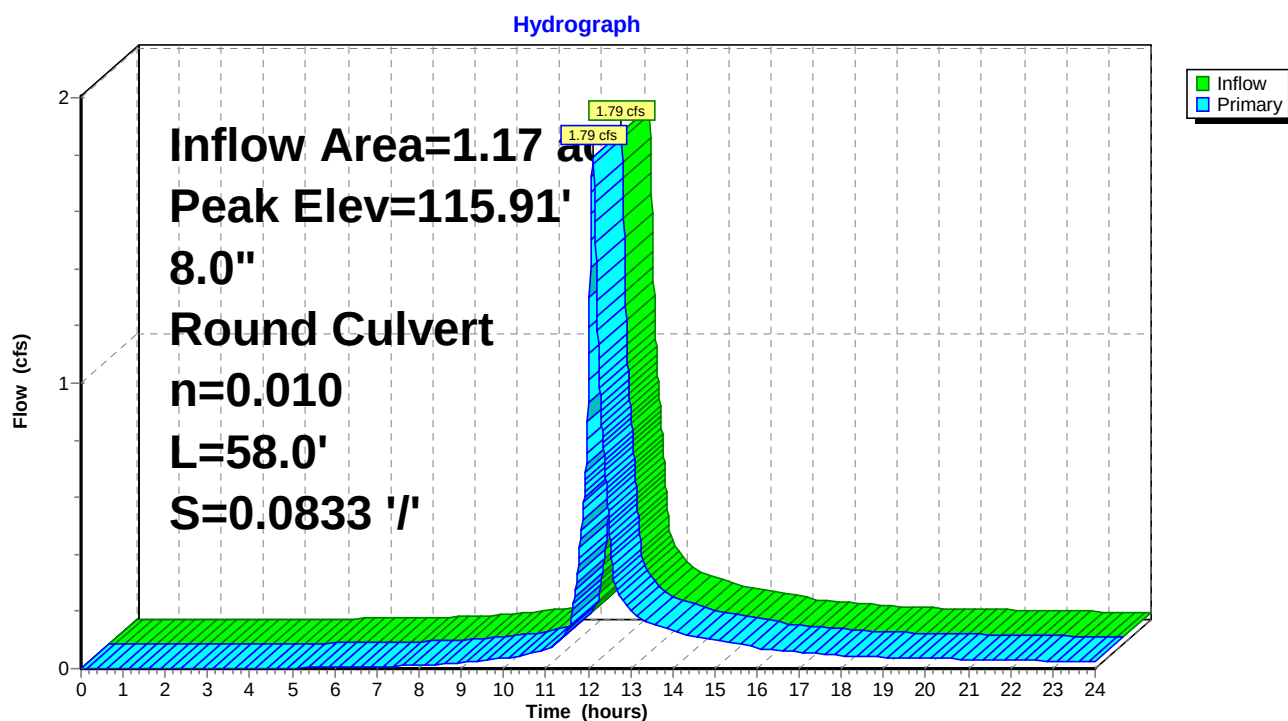
Flood Elev= 124.03'

Device	Routing	Invert	Outlet Devices
#1	Primary	113.76'	8.0" Round Culvert L= 58.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 113.76' / 108.93' S= 0.0833 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=1.79 cfs @ 12.12 hrs HW=115.91' (Free Discharge)

↑1=Culvert (Inlet Controls 1.79 cfs @ 5.12 fps)

Pond 240P: Existing DMH



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Page 21

Summary for Pond 260P: Storage Pipes

Inflow Area = 0.72 ac, 79.29% Impervious, Inflow Depth > 1.80" for 2-YR event
Inflow = 1.52 cfs @ 12.08 hrs, Volume= 0.108 af
Outflow = 1.37 cfs @ 12.11 hrs, Volume= 0.108 af, Atten= 10%, Lag= 2.3 min
Primary = 1.37 cfs @ 12.11 hrs, Volume= 0.108 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 119.87' @ 12.11 hrs Surf.Area= 564 sf Storage= 164 cf
Flood Elev= 125.26' Surf.Area= 0 sf Storage= 3,468 cf

Plug-Flow detention time= 1.1 min calculated for 0.108 af (100% of inflow)
Center-of-Mass det. time= 1.0 min (808.5 - 807.5)

Volume	Invert	Avail.Storage	Storage Description
#1	119.16'	3,468 cf	48.0" Round Pipe Storage L= 276.0' S= 0.0027 '/

Device	Routing	Invert	Outlet Devices
#1	Primary	119.16'	12.0" Round Culvert L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 119.16' / 118.02' S= 0.0380 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.36 cfs @ 12.11 hrs HW=119.87' (Free Discharge)

↑**1=Culvert** (Inlet Controls 1.36 cfs @ 2.27 fps)

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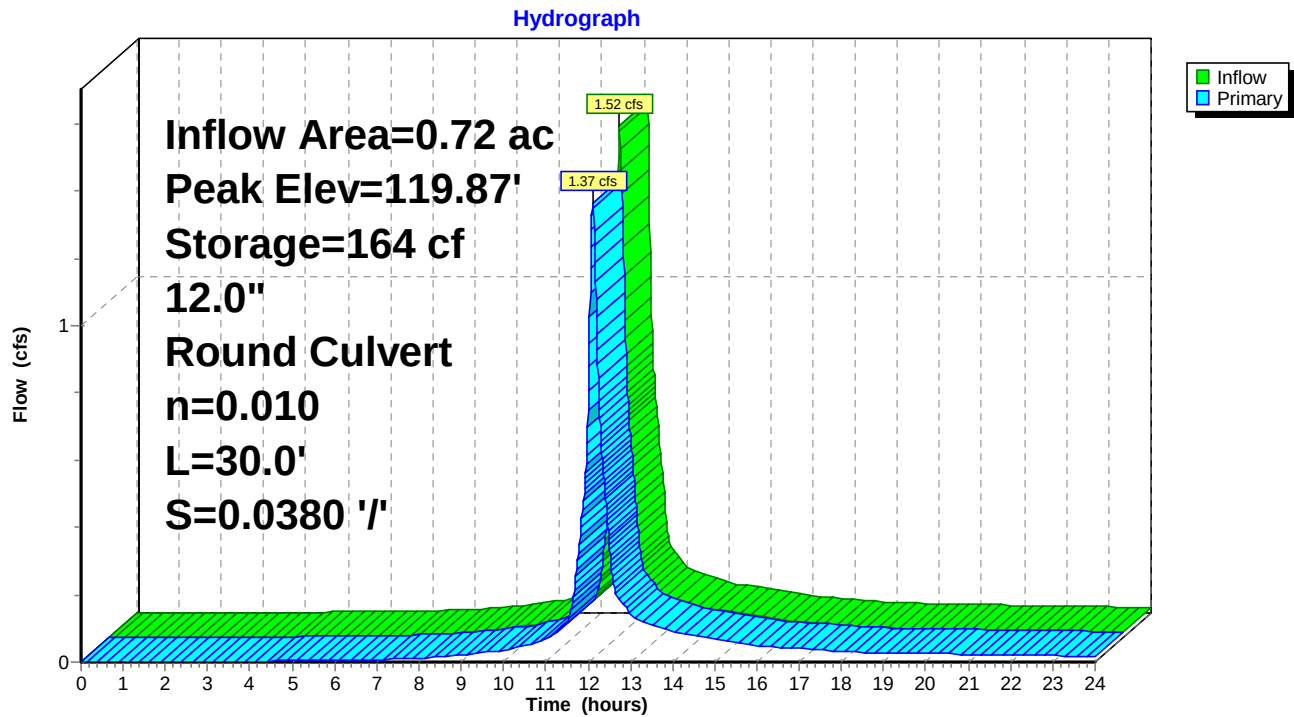
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Page 22

Pond 260P: Storage Pipes



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Page 23

Summary for Pond 340P: CB at SW Cor prkng lot

Inflow Area = 0.24 ac, 60.94% Impervious, Inflow Depth > 1.03" for 2-YR event
Inflow = 0.28 cfs @ 12.08 hrs, Volume= 0.020 af
Outflow = 0.28 cfs @ 12.08 hrs, Volume= 0.020 af, Atten= 0%, Lag= 0.0 min
Primary = 0.28 cfs @ 12.08 hrs, Volume= 0.020 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

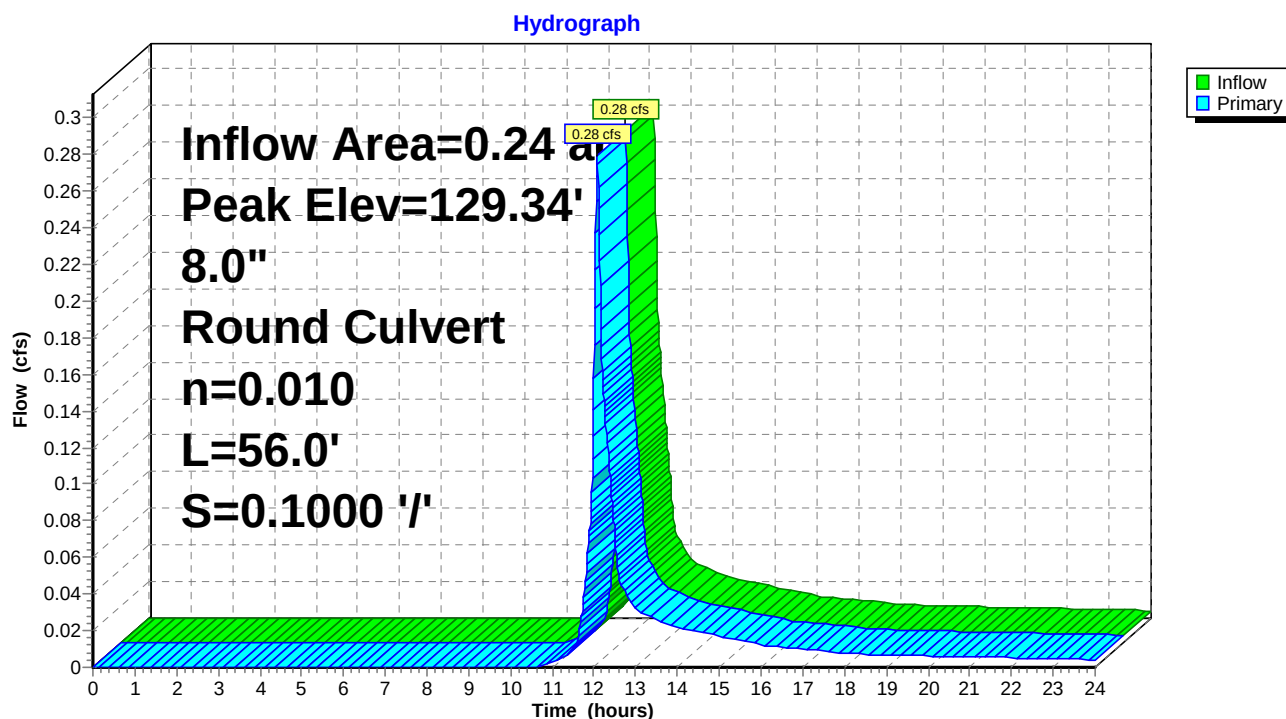
Peak Elev= 129.34' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	129.00'	8.0" Round Culvert L= 56.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 129.00' / 123.40' S= 0.1000 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.28 cfs @ 12.08 hrs HW=129.34' (Free Discharge)

↑**1=Culvert** (Inlet Controls 0.28 cfs @ 1.57 fps)

Pond 340P: CB at SW Cor prkng lot



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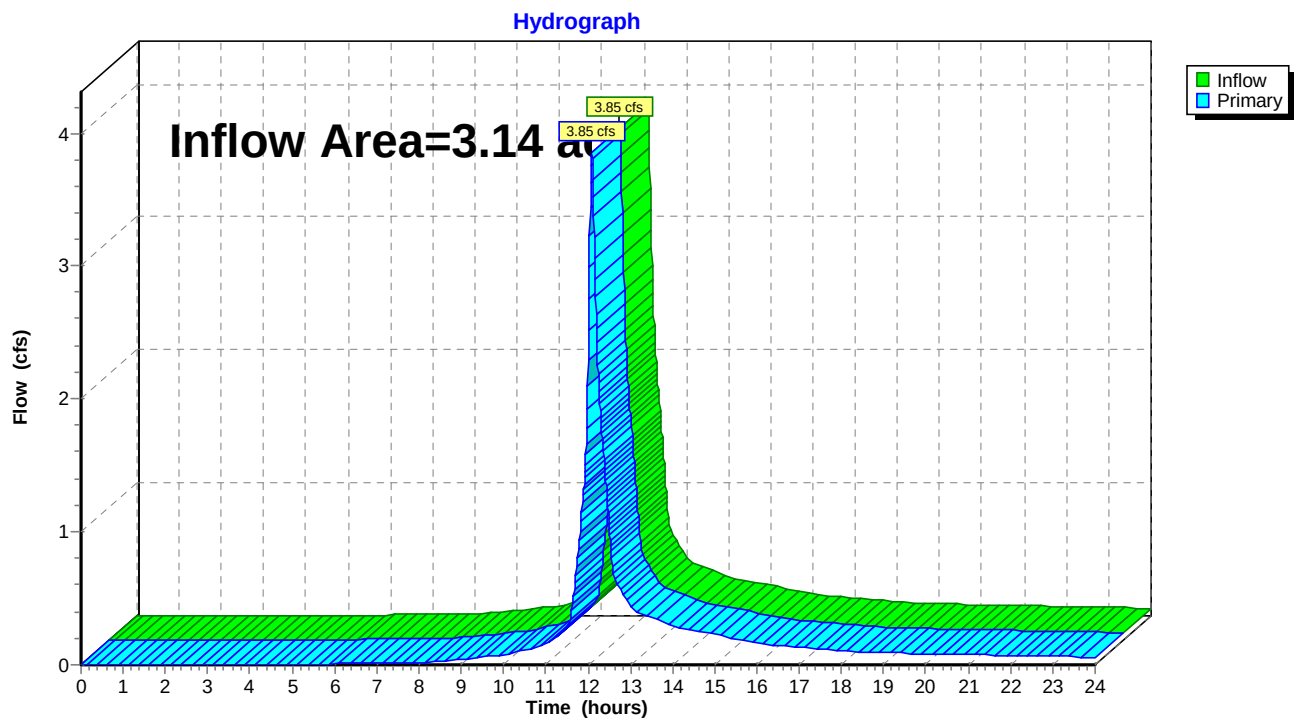
Page 24

Summary for Link SP1: Existing Combined Sewer in Danforth

Inflow Area = 3.14 ac, 61.14% Impervious, Inflow Depth > 1.19" for 2-YR event
Inflow = 3.85 cfs @ 12.09 hrs, Volume= 0.313 af
Primary = 3.85 cfs @ 12.09 hrs, Volume= 0.313 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link SP1: Existing Combined Sewer in Danforth



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Page 25

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 10S: Area draining to Runoff Area=19,633 sf 57.01% Impervious Runoff Depth>1.97"
Flow Length=91' Slope=0.0300 '/' Tc=7.7 min CN=73 Runoff=0.97 cfs 0.074 af

Subcatchment 60S: Lawn/Field S of school Runoff Area=16,715 sf 84.98% Impervious Runoff Depth>3.39"
Tc=5.0 min CN=89 Runoff=1.54 cfs 0.108 af

Subcatchment 61S: Auditorium Roof Runoff Area=4,485 sf 100.00% Impervious Runoff Depth>4.36"
Tc=5.0 min CN=98 Runoff=0.48 cfs 0.037 af

Subcatchment 70S: Thomas & Davies & Runoff Area=41,034 sf 78.01% Impervious Runoff Depth>3.00"
Tc=5.0 min CN=85 Runoff=3.41 cfs 0.235 af

Subcatchment 80S: FoundersHall Runoff Area=3,498 sf 100.00% Impervious Runoff Depth>4.36"
Tc=5.0 min CN=98 Runoff=0.37 cfs 0.029 af

Subcatchment 90S: Playground Runoff Area=41,240 sf 29.19% Impervious Runoff Depth>0.84"
Flow Length=188' Tc=14.6 min CN=56 Runoff=0.54 cfs 0.066 af

Subcatchment 402S: New Prkng lot Runoff Area=10,240 sf 60.94% Impervious Runoff Depth>2.13"
Tc=5.0 min CN=75 Runoff=0.60 cfs 0.042 af

Reach 161R: roof drain Avg. Flow Depth=0.18' Max Vel=7.42 fps Inflow=0.48 cfs 0.037 af
6.0" Round Pipe n=0.013 L=129.0' S=0.0911 '/' Capacity=1.69 cfs Outflow=0.48 cfs 0.037 af

Pond 206P: City CB @ Fletcher & Danforth Peak Elev=114.62' Inflow=3.48 cfs 0.327 af
8.0" Round Culvert n=0.013 L=18.0' S=0.2750 '/' Outflow=3.48 cfs 0.327 af

Pond 207P: Existing CB Peak Elev=133.32' Inflow=3.41 cfs 0.235 af
10.0" Round Culvert n=0.010 L=60.0' S=0.1287 '/' Outflow=3.41 cfs 0.235 af

Pond 210P: Existing FI Peak Elev=132.64' Inflow=0.97 cfs 0.074 af
10.0" Round Culvert n=0.010 L=102.0' S=0.1008 '/' Outflow=0.97 cfs 0.074 af

Pond 217P: Existing DMH Peak Elev=132.11' Inflow=3.79 cfs 0.265 af
8.0" Round Culvert n=0.013 L=89.0' S=0.0367 '/' Outflow=3.79 cfs 0.265 af

Pond 220P: Existing DMH Peak Elev=122.31' Inflow=0.97 cfs 0.074 af
10.0" Round Culvert n=0.010 L=108.0' S=0.0335 '/' Outflow=0.97 cfs 0.074 af

Pond 227P: Existing SMH Peak Elev=127.45' Inflow=3.79 cfs 0.265 af
8.0" Round Culvert n=0.013 L=71.0' S=0.2025 '/' Outflow=3.79 cfs 0.265 af

Pond 230P: Existing DMH Peak Elev=123.87' Inflow=3.12 cfs 0.261 af
8.0" Round Culvert n=0.010 L=156.0' S=0.0272 '/' Outflow=3.12 cfs 0.261 af

Pond 240P: Existing DMH Peak Elev=119.63' Inflow=3.12 cfs 0.261 af
8.0" Round Culvert n=0.010 L=58.0' S=0.0833 '/' Outflow=3.12 cfs 0.261 af

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Page 26

Pond 260P: Storage Pipes

Peak Elev=120.18' Storage=377 cf Inflow=2.62 cfs 0.187 af
12.0" Round Culvert n=0.010 L=30.0' S=0.0380 '/ Outflow=2.16 cfs 0.187 af

Pond 340P: CB at SW Cor prkng lot

Peak Elev=129.54' Inflow=0.60 cfs 0.042 af
8.0" Round Culvert n=0.010 L=56.0' S=0.1000 '/ Outflow=0.60 cfs 0.042 af

Link SP1: Existing Combined Sewer in Danforth

Inflow=6.95 cfs 0.592 af
Primary=6.95 cfs 0.592 af

Total Runoff Area = 3.14 ac Runoff Volume = 0.592 af Average Runoff Depth = 2.26"
38.86% Pervious = 1.22 ac 61.14% Impervious = 1.92 ac

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Page 27

Summary for Subcatchment 10S: Area draining to Sanctuary

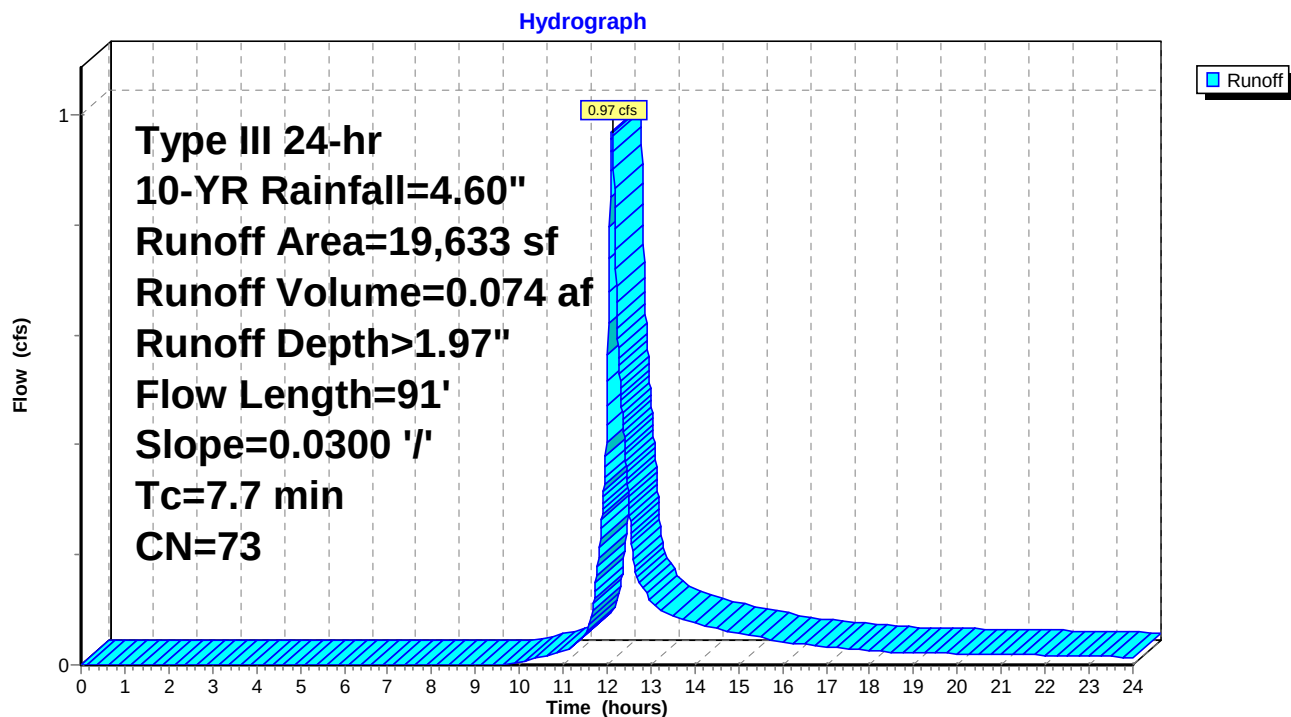
Runoff = 0.97 cfs @ 12.11 hrs, Volume= 0.074 af, Depth> 1.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.60"

	Area (sf)	CN	Description
*	11,192	98	impervious
*	8,441	39	Lawn/field, HSG A
	19,633	73	Weighted Average
	8,441		42.99% Pervious Area
	11,192		57.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	91	0.0300	0.20		Sheet Flow, A-B
Grass: Short n= 0.150 P2= 3.19"					

Subcatchment 10S: Area draining to Sanctuary



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Page 28

Summary for Subcatchment 60S: Lawn/Field S of school

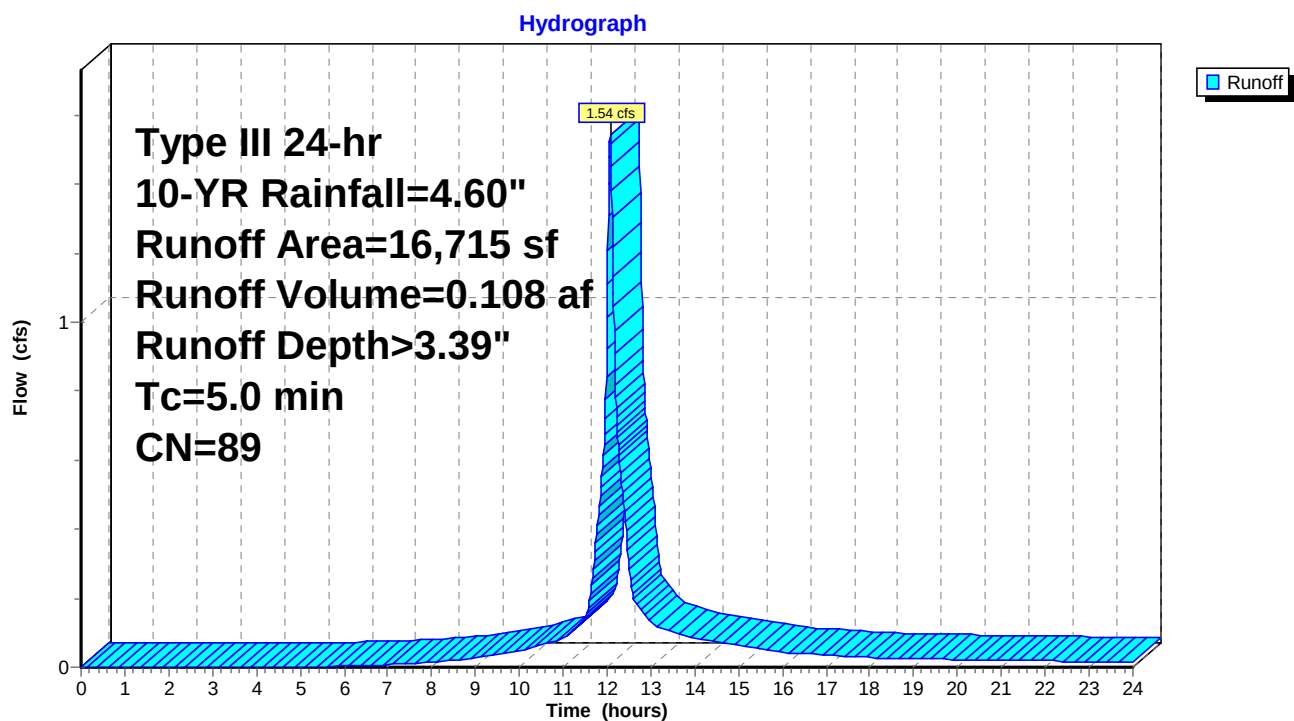
Runoff = 1.54 cfs @ 12.07 hrs, Volume= 0.108 af, Depth> 3.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.60"

	Area (sf)	CN	Description
*	14,205	98	impervious
*	2,510	39	Lawn/field, HSG A
	16,715	89	Weighted Average
	2,510		15.02% Pervious Area
	14,205		84.98% Impervious Area

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

Subcatchment 60S: Lawn/Field S of school



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

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Page 29

Summary for Subcatchment 61S: Auditorium Roof

Runoff = 0.48 cfs @ 12.07 hrs, Volume= 0.037 af, Depth> 4.36"

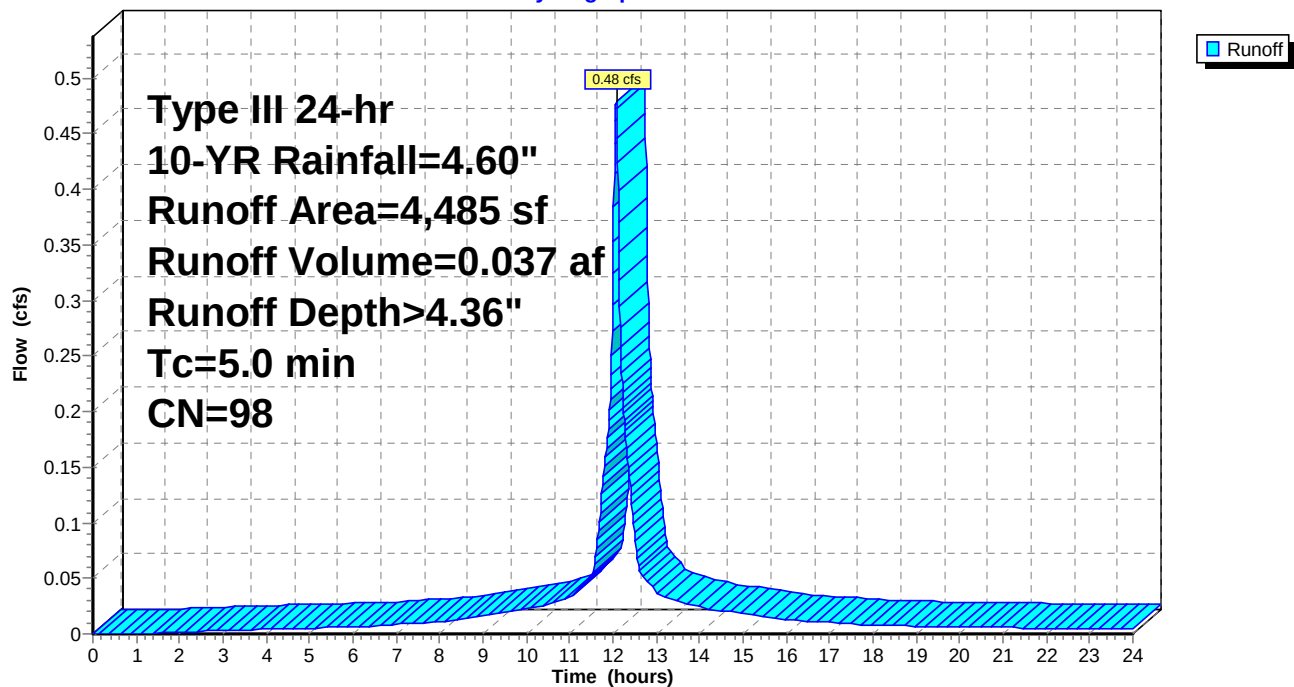
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.60"

	Area (sf)	CN	Description
*	4,485	98	Roof runoff
	4,485		100.00% Impervious Area

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

Subcatchment 61S: Auditorium Roof

Hydrograph



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PRE
Type III 24-hr 10-YR Rainfall=4.60"

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Page 30

Summary for Subcatchment 70S: Thomas & Davies & Gym

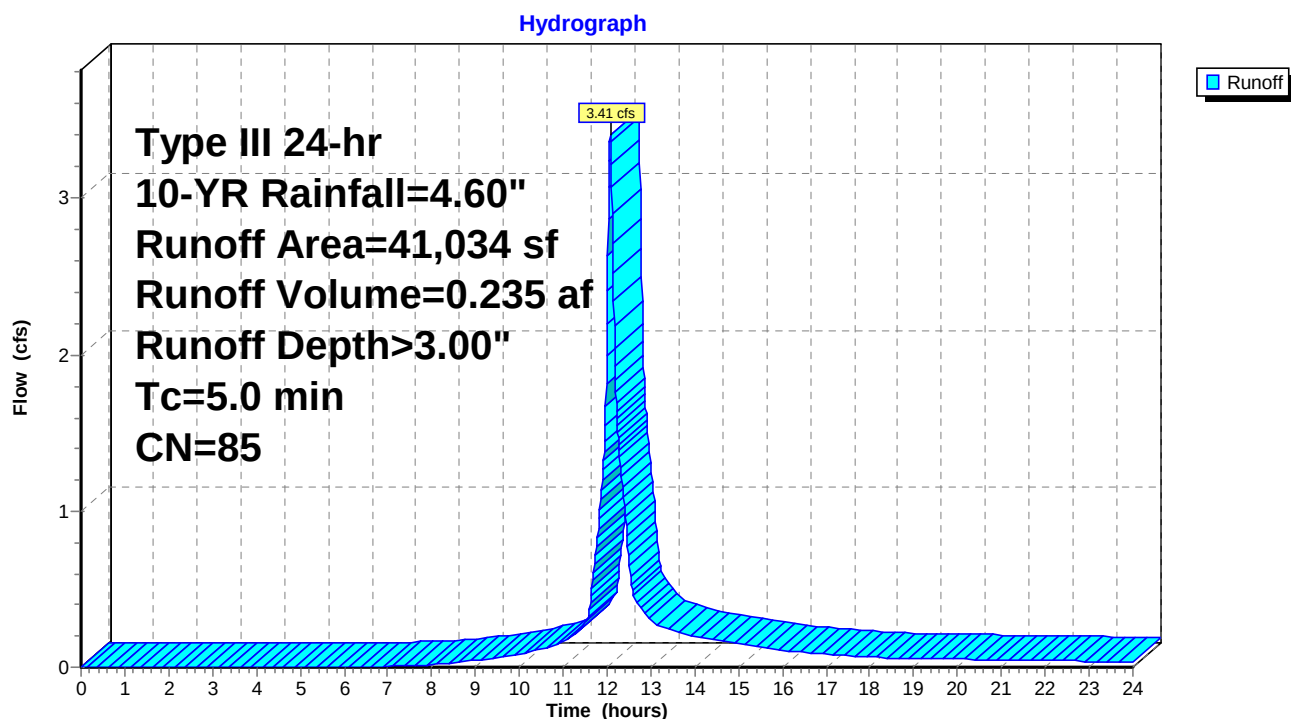
Runoff = 3.41 cfs @ 12.07 hrs, Volume= 0.235 af, Depth> 3.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.60"

	Area (sf)	CN	Description
*	32,011	98	impervious
*	9,023	39	Lawn/field, HSG A
	41,034	85	Weighted Average
	9,023		21.99% Pervious Area
	32,011		78.01% Impervious Area

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

Subcatchment 70S: Thomas & Davies & Gym



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

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Page 31

Summary for Subcatchment 80S: FoundersHall

Runoff = 0.37 cfs @ 12.07 hrs, Volume= 0.029 af, Depth> 4.36"

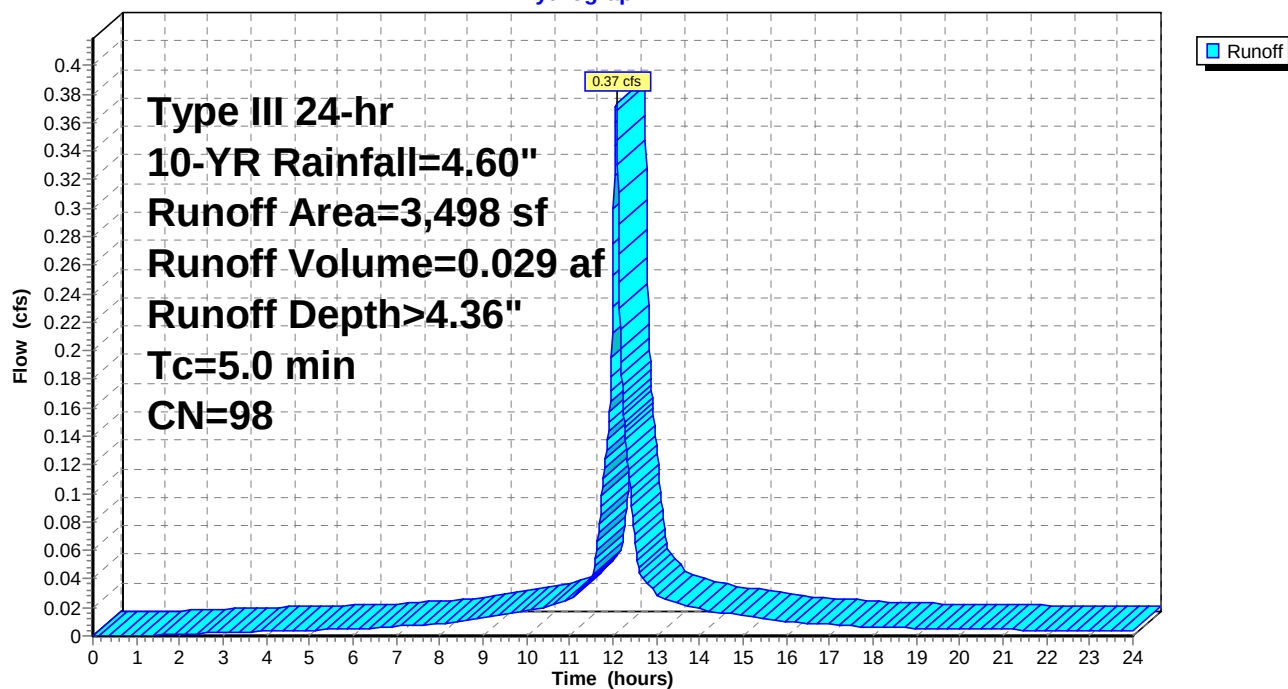
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.60"

	Area (sf)	CN	Description
*	3,498	98	Roof runoff
	3,498		100.00% Impervious Area

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

Subcatchment 80S: FoundersHall

Hydrograph



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

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Page 32

Summary for Subcatchment 90S: Playground

Runoff = 0.54 cfs @ 12.25 hrs, Volume= 0.066 af, Depth> 0.84"

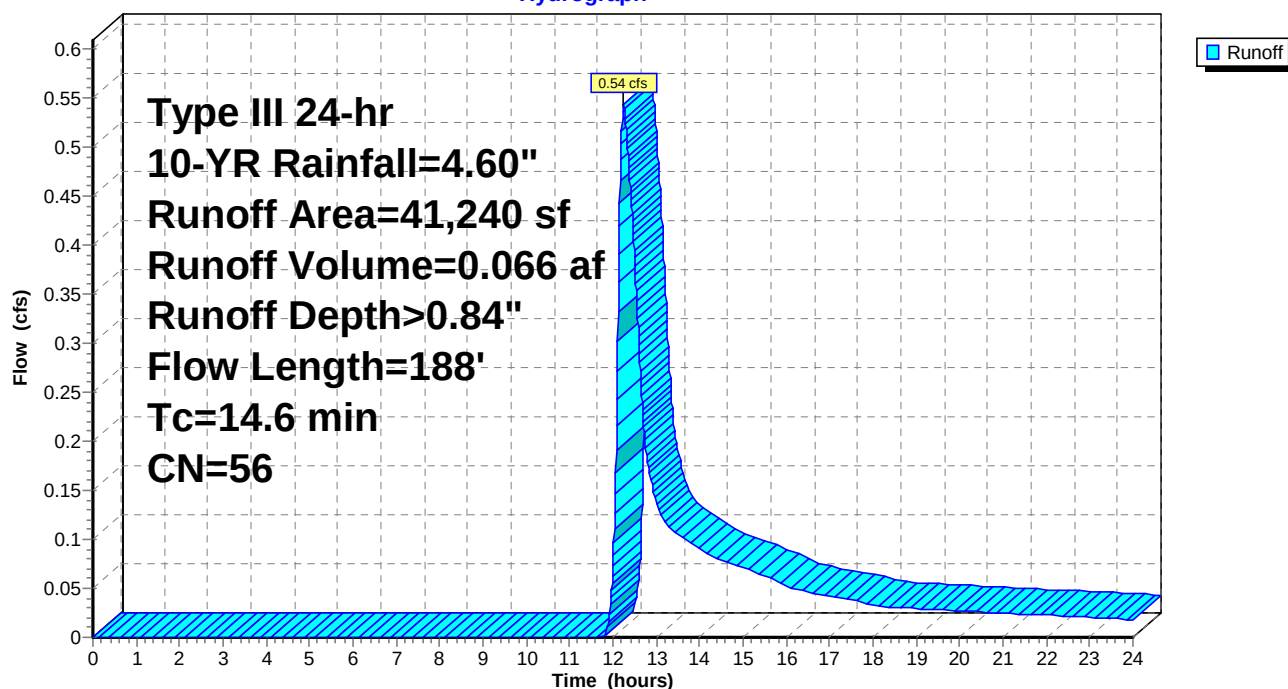
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.60"

	Area (sf)	CN	Description
*	12,037	98	impervious
*	29,203	39	Lawn/field, HSG A
	41,240	56	Weighted Average
	29,203		70.81% Pervious Area
	12,037		29.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	100	0.0100	0.13		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.19"
1.7	88	0.0154	0.87		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
14.6	188	Total			

Subcatchment 90S: Playground

Hydrograph



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

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Page 33

Summary for Subcatchment 402S: New Prkng lot

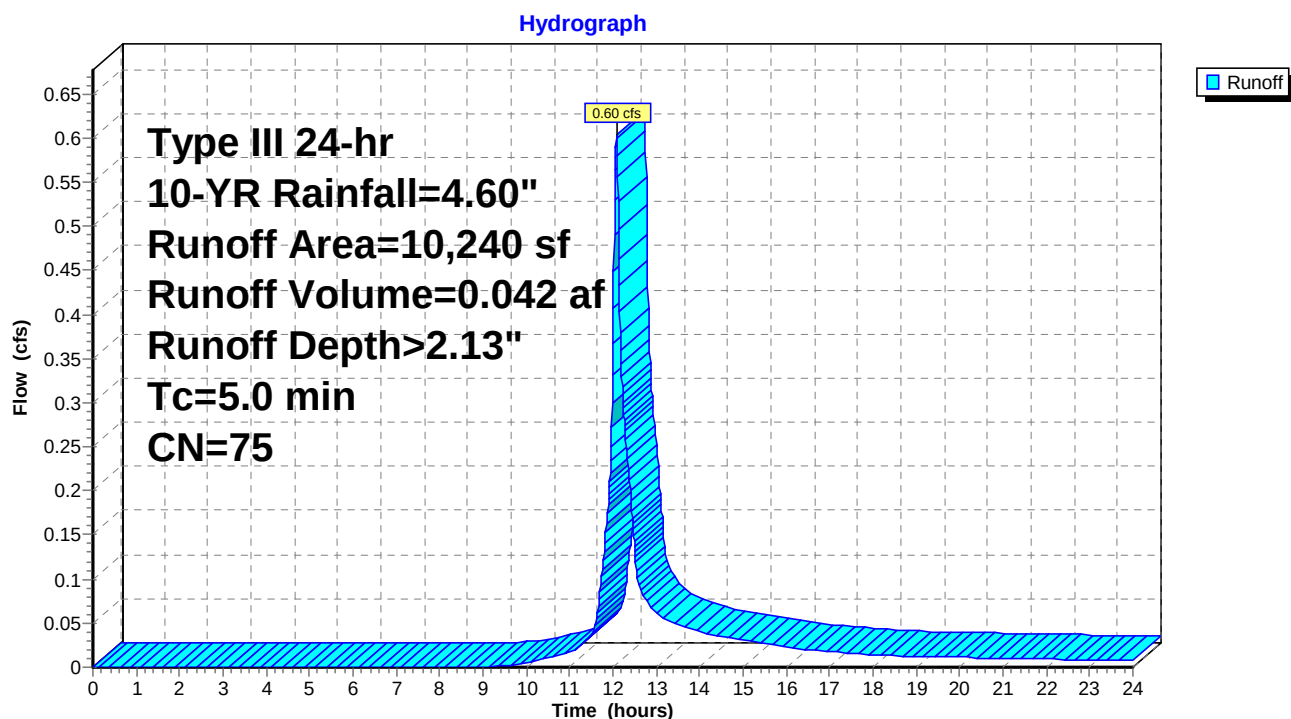
Runoff = 0.60 cfs @ 12.08 hrs, Volume= 0.042 af, Depth> 2.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.60"

	Area (sf)	CN	Description
*	4,000	39	Pervious
*	6,240	98	Impervious
	10,240	75	Weighted Average
	4,000		39.06% Pervious Area
	6,240		60.94% Impervious Area

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

Subcatchment 402S: New Prkng lot



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

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Page 34

Summary for Reach 161R: roof drain

Inflow Area = 0.10 ac, 100.00% Impervious, Inflow Depth > 4.36" for 10-YR event
Inflow = 0.48 cfs @ 12.07 hrs, Volume= 0.037 af
Outflow = 0.48 cfs @ 12.08 hrs, Volume= 0.037 af, Atten= 0%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Max. Velocity= 7.42 fps, Min. Travel Time= 0.3 min

Avg. Velocity= 2.45 fps, Avg. Travel Time= 0.9 min

Peak Storage= 8 cf @ 12.07 hrs

Average Depth at Peak Storage= 0.18'

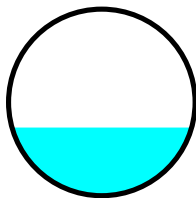
Bank-Full Depth= 0.50' Flow Area= 0.2 sf, Capacity= 1.69 cfs

6.0" Round Pipe

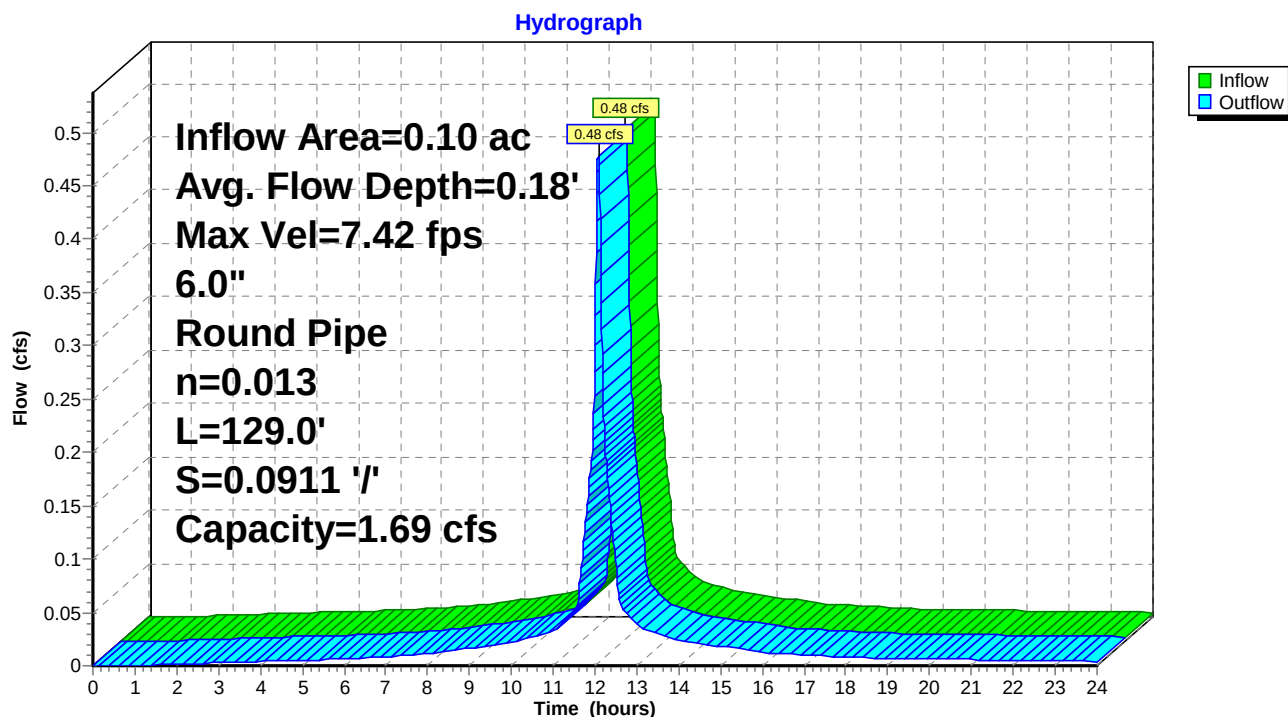
n= 0.013 Corrugated PE, smooth interior

Length= 129.0' Slope= 0.0911 '/'

Inlet Invert= 130.00', Outlet Invert= 118.25'



Reach 161R: roof drain



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

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Page 35

Summary for Pond 206P: City CB @ Fletcher & Danforth

Inflow Area = 2.12 ac, 52.17% Impervious, Inflow Depth > 1.85" for 10-YR event
Inflow = 3.48 cfs @ 12.13 hrs, Volume= 0.327 af
Outflow = 3.48 cfs @ 12.13 hrs, Volume= 0.327 af, Atten= 0%, Lag= 0.0 min
Primary = 3.48 cfs @ 12.13 hrs, Volume= 0.327 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Peak Elev= 114.62' @ 12.13 hrs

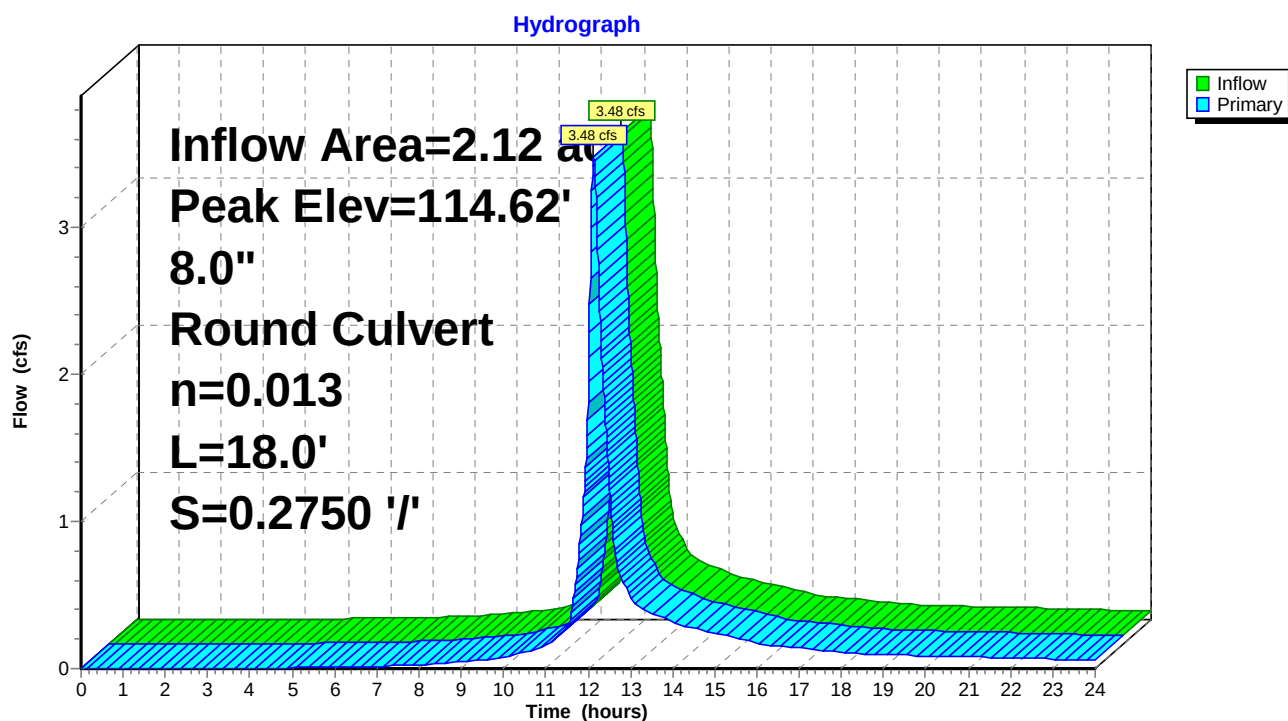
Flood Elev= 111.26'

Device	Routing	Invert	Outlet Devices
#1	Primary	107.43'	8.0" Round Culvert L= 18.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 107.43' / 102.48' S= 0.2750 '/ Cc= 0.900 n= 0.013 Clay tile, Flow Area= 0.35 sf

Primary OutFlow Max=3.47 cfs @ 12.13 hrs HW=114.61' (Free Discharge)

↑1=Culvert (Inlet Controls 3.47 cfs @ 9.95 fps)

Pond 206P: City CB @ Fletcher & Danforth



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

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Page 36

Summary for Pond 207P: Existing CB

Inflow Area = 0.94 ac, 78.01% Impervious, Inflow Depth > 3.00" for 10-YR event
Inflow = 3.41 cfs @ 12.07 hrs, Volume= 0.235 af
Outflow = 3.41 cfs @ 12.07 hrs, Volume= 0.235 af, Atten= 0%, Lag= 0.0 min
Primary = 3.41 cfs @ 12.07 hrs, Volume= 0.235 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Peak Elev= 133.32' @ 12.07 hrs

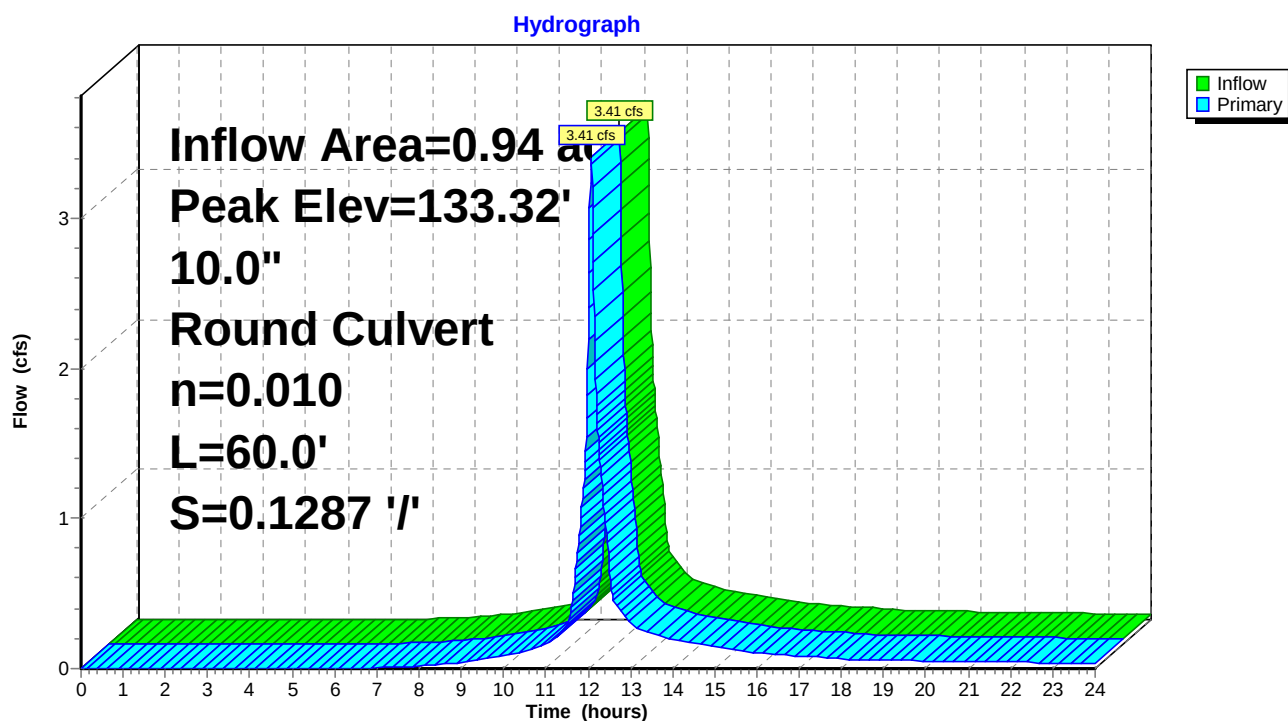
Flood Elev= 137.62'

Device	Routing	Invert	Outlet Devices
#1	Primary	130.20'	10.0" Round Culvert L= 60.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 130.20' / 122.48' S= 0.1287 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=3.40 cfs @ 12.07 hrs HW=133.31' (Free Discharge)

↑1=Culvert (Inlet Controls 3.40 cfs @ 6.24 fps)

Pond 207P: Existing CB



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

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Page 37

Summary for Pond 210P: Existing FI

Inflow Area = 0.45 ac, 57.01% Impervious, Inflow Depth > 1.97" for 10-YR event
Inflow = 0.97 cfs @ 12.11 hrs, Volume= 0.074 af
Outflow = 0.97 cfs @ 12.11 hrs, Volume= 0.074 af, Atten= 0%, Lag= 0.0 min
Primary = 0.97 cfs @ 12.11 hrs, Volume= 0.074 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Peak Elev= 132.64' @ 12.11 hrs

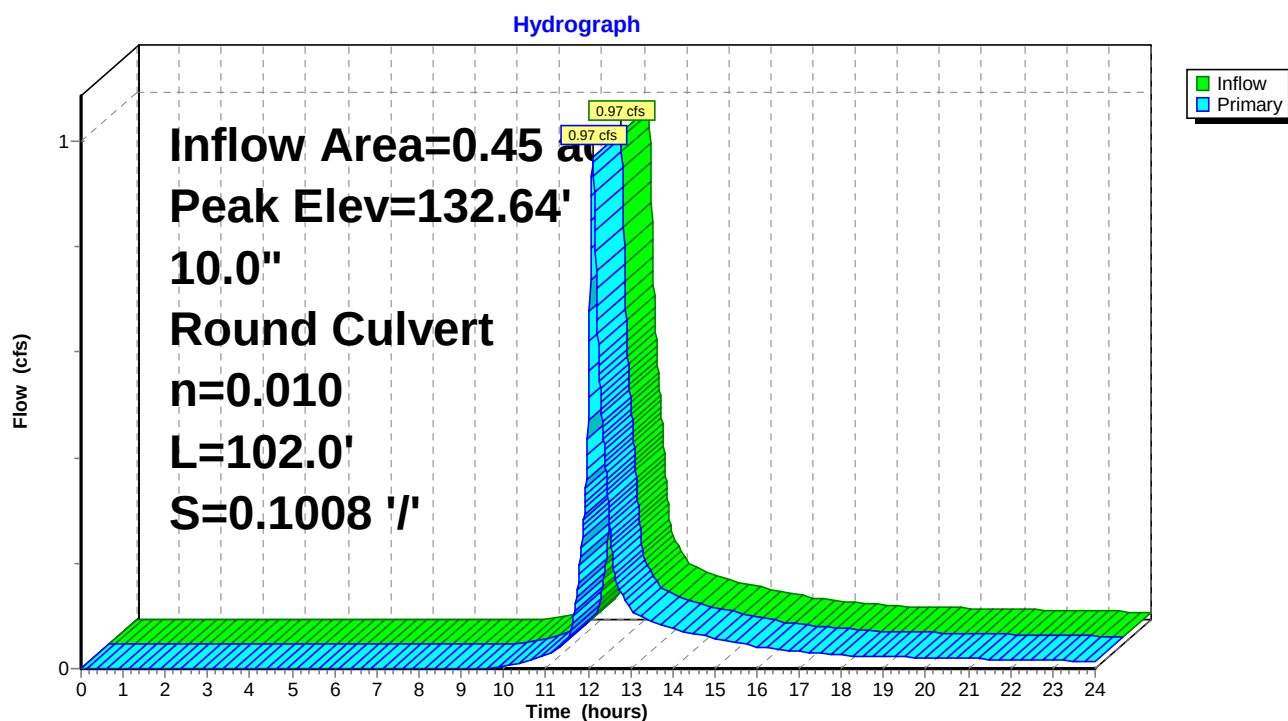
Flood Elev= 140.41'

Device	Routing	Invert	Outlet Devices
#1	Primary	132.00'	10.0" Round Culvert L= 102.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 132.00' / 121.72' S= 0.1008 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.97 cfs @ 12.11 hrs HW=132.64' (Free Discharge)

↑1=Culvert (Inlet Controls 0.97 cfs @ 2.15 fps)

Pond 210P: Existing FI



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

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Page 38

Summary for Pond 217P: Existing DMH

Inflow Area = 1.02 ac, 79.74% Impervious, Inflow Depth > 3.10" for 10-YR event
Inflow = 3.79 cfs @ 12.07 hrs, Volume= 0.265 af
Outflow = 3.79 cfs @ 12.07 hrs, Volume= 0.265 af, Atten= 0%, Lag= 0.0 min
Primary = 3.79 cfs @ 12.07 hrs, Volume= 0.265 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Peak Elev= 132.11' @ 12.07 hrs

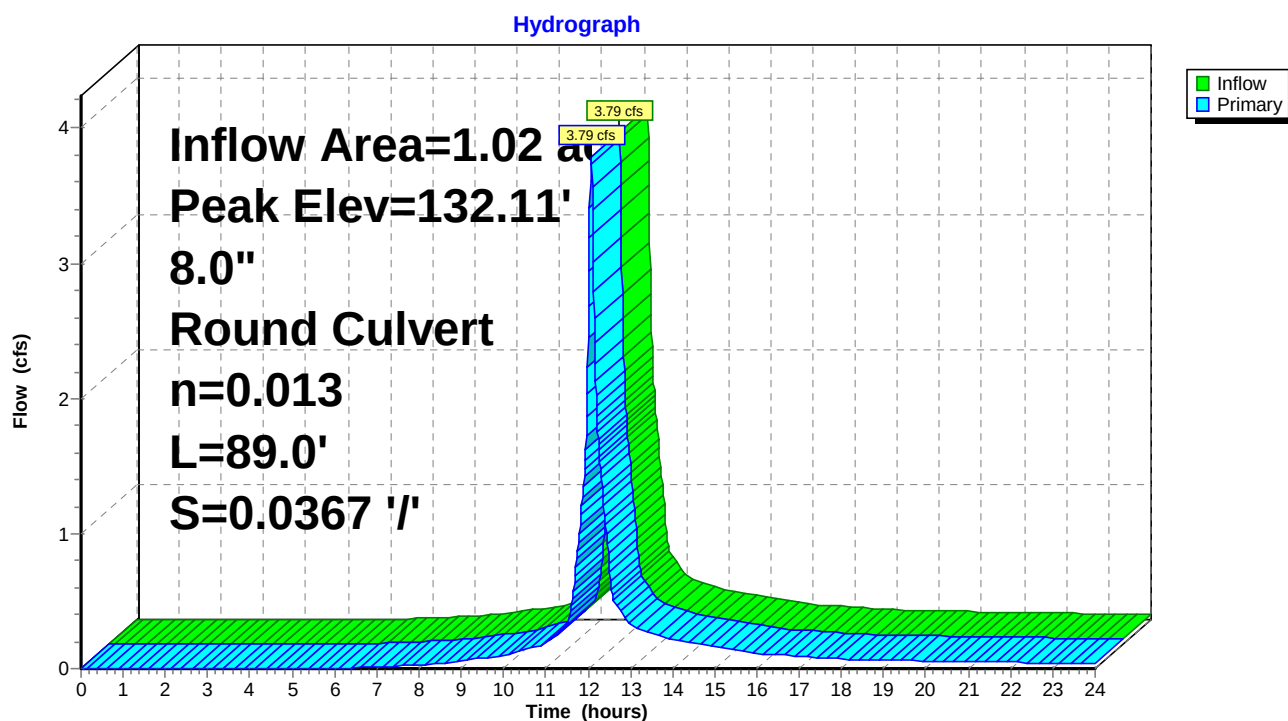
Flood Elev= 126.98'

Device	Routing	Invert	Outlet Devices
#1	Primary	122.48'	8.0" Round Culvert L= 89.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 122.48' / 119.21' S= 0.0367 '/' Cc= 0.900 n= 0.013 Cast iron, coated, Flow Area= 0.35 sf

Primary OutFlow Max=3.78 cfs @ 12.07 hrs HW=132.06' (Free Discharge)

↑**1=Culvert** (Barrel Controls 3.78 cfs @ 10.82 fps)

Pond 217P: Existing DMH



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Page 39

Summary for Pond 220P: Existing DMH

Inflow Area = 0.45 ac, 57.01% Impervious, Inflow Depth > 1.97" for 10-YR event
Inflow = 0.97 cfs @ 12.11 hrs, Volume= 0.074 af
Outflow = 0.97 cfs @ 12.11 hrs, Volume= 0.074 af, Atten= 0%, Lag= 0.0 min
Primary = 0.97 cfs @ 12.11 hrs, Volume= 0.074 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Peak Elev= 122.31' @ 12.11 hrs

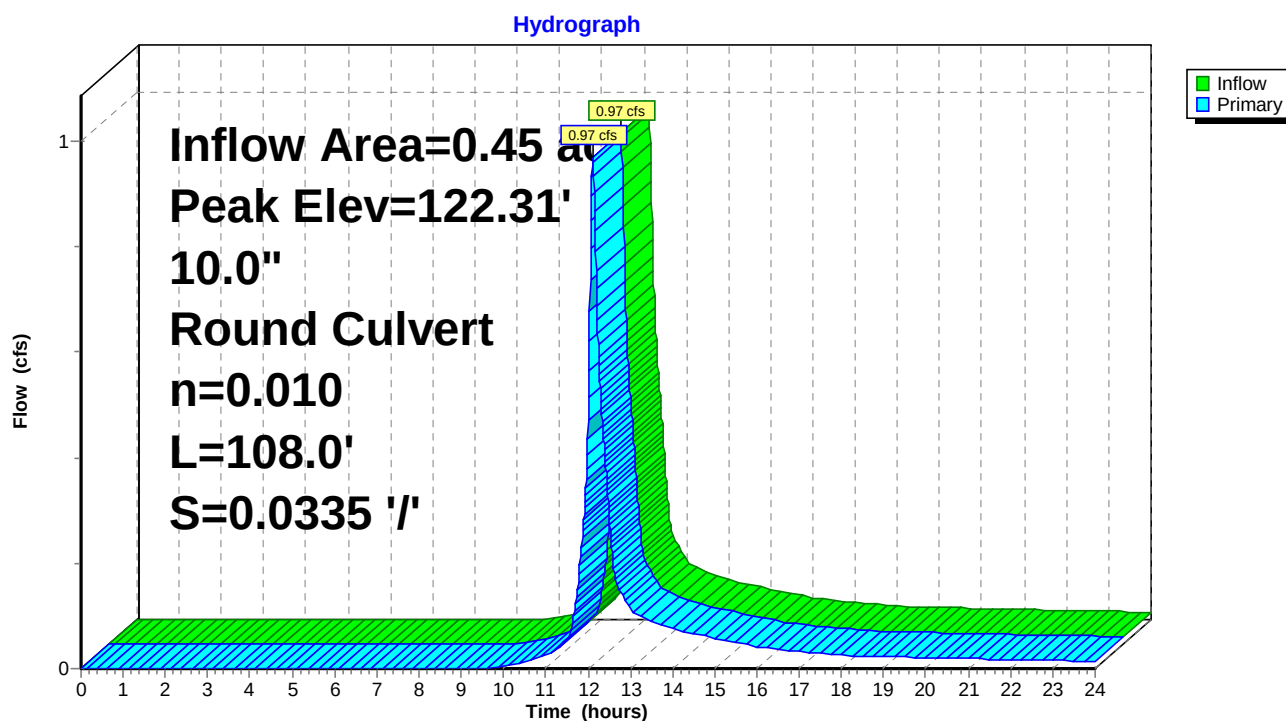
Flood Elev= 128.47'

Device	Routing	Invert	Outlet Devices
#1	Primary	121.67'	10.0" Round Culvert L= 108.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 121.67' / 118.05' S= 0.0335 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.97 cfs @ 12.11 hrs HW=122.31' (Free Discharge)

1=Culvert (Inlet Controls 0.97 cfs @ 2.15 fps)

Pond 220P: Existing DMH



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

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Page 40

Summary for Pond 227P: Existing SMH

Inflow Area = 1.02 ac, 79.74% Impervious, Inflow Depth > 3.10" for 10-YR event
Inflow = 3.79 cfs @ 12.07 hrs, Volume= 0.265 af
Outflow = 3.79 cfs @ 12.07 hrs, Volume= 0.265 af, Atten= 0%, Lag= 0.0 min
Primary = 3.79 cfs @ 12.07 hrs, Volume= 0.265 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Peak Elev= 127.45' @ 12.07 hrs

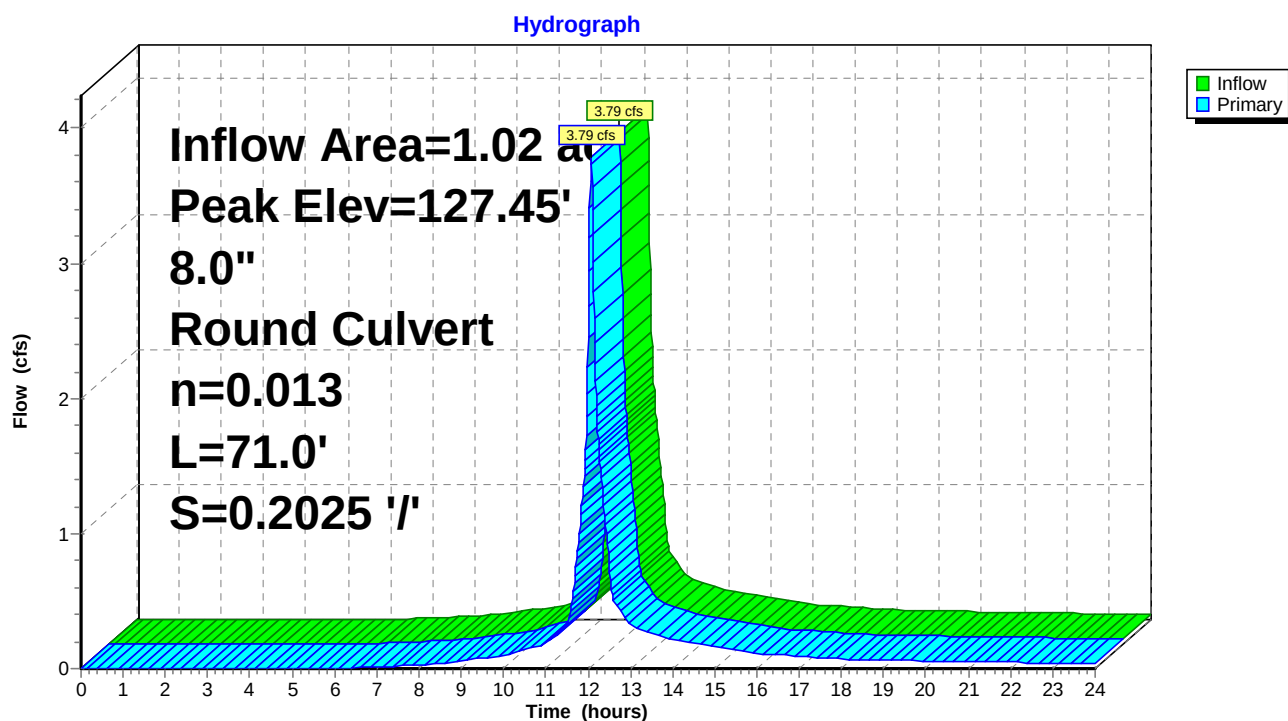
Flood Elev= 123.81'

Device	Routing	Invert	Outlet Devices
#1	Primary	118.98'	8.0" Round Culvert L= 71.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 118.98' / 104.60' S= 0.2025 '/' Cc= 0.900 n= 0.013 Clay tile, Flow Area= 0.35 sf

Primary OutFlow Max=3.78 cfs @ 12.07 hrs HW=127.42' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 3.78 cfs @ 10.82 fps)

Pond 227P: Existing SMH



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

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Page 41

Summary for Pond 230P: Existing DMH

Inflow Area = 1.17 ac, 70.73% Impervious, Inflow Depth > 2.67" for 10-YR event
Inflow = 3.12 cfs @ 12.12 hrs, Volume= 0.261 af
Outflow = 3.12 cfs @ 12.12 hrs, Volume= 0.261 af, Atten= 0%, Lag= 0.0 min
Primary = 3.12 cfs @ 12.12 hrs, Volume= 0.261 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Peak Elev= 123.87' @ 12.12 hrs

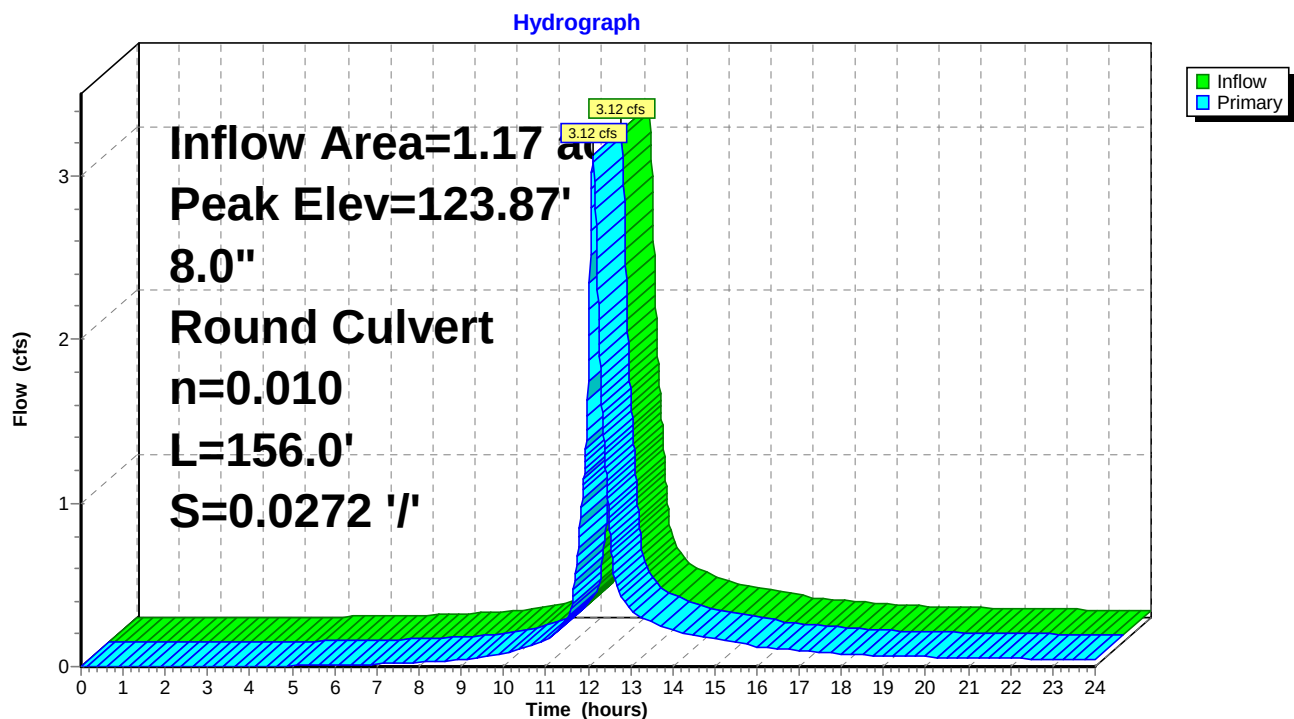
Flood Elev= 125.05'

Device	Routing	Invert	Outlet Devices
#1	Primary	118.00'	8.0" Round Culvert L= 156.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 118.00' / 113.76' S= 0.0272 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=3.12 cfs @ 12.12 hrs HW=123.87' (Free Discharge)

↑**1=Culvert** (Inlet Controls 3.12 cfs @ 8.95 fps)

Pond 230P: Existing DMH



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Page 42

Summary for Pond 240P: Existing DMH

Inflow Area = 1.17 ac, 70.73% Impervious, Inflow Depth > 2.67" for 10-YR event
Inflow = 3.12 cfs @ 12.12 hrs, Volume= 0.261 af
Outflow = 3.12 cfs @ 12.12 hrs, Volume= 0.261 af, Atten= 0%, Lag= 0.0 min
Primary = 3.12 cfs @ 12.12 hrs, Volume= 0.261 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Peak Elev= 119.63' @ 12.12 hrs

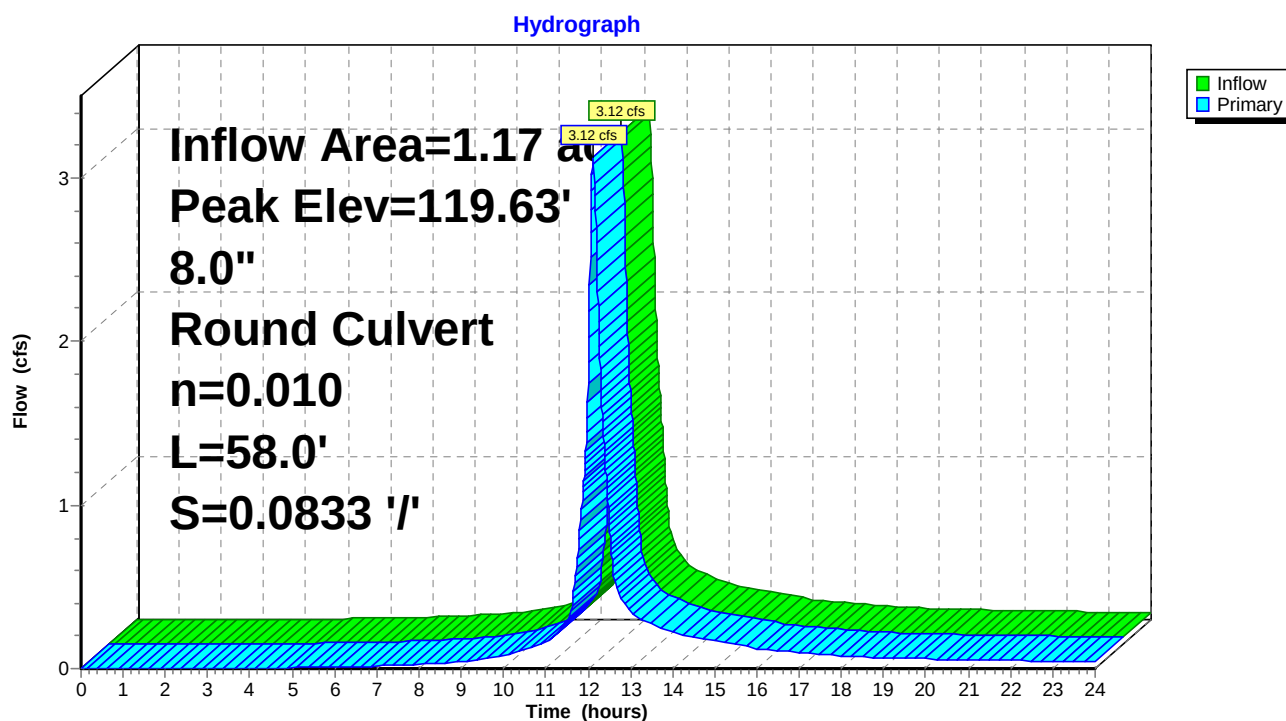
Flood Elev= 124.03'

Device	Routing	Invert	Outlet Devices
#1	Primary	113.76'	8.0" Round Culvert L= 58.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 113.76' / 108.93' S= 0.0833 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=3.12 cfs @ 12.12 hrs HW=119.63' (Free Discharge)

↑**1=Culvert** (Inlet Controls 3.12 cfs @ 8.95 fps)

Pond 240P: Existing DMH



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Page 43

Summary for Pond 260P: Storage Pipes

Inflow Area = 0.72 ac, 79.29% Impervious, Inflow Depth > 3.12" for 10-YR event
Inflow = 2.62 cfs @ 12.07 hrs, Volume= 0.187 af
Outflow = 2.16 cfs @ 12.13 hrs, Volume= 0.187 af, Atten= 18%, Lag= 3.1 min
Primary = 2.16 cfs @ 12.13 hrs, Volume= 0.187 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 120.18' @ 12.13 hrs Surf.Area= 797 sf Storage= 377 cf
Flood Elev= 125.26' Surf.Area= 0 sf Storage= 3,468 cf

Plug-Flow detention time= 1.4 min calculated for 0.187 af (100% of inflow)
Center-of-Mass det. time= 1.3 min (797.0 - 795.7)

Volume	Invert	Avail.Storage	Storage Description
#1	119.16'	3,468 cf	48.0" Round Pipe Storage L= 276.0' S= 0.0027 '/'

Device	Routing	Invert	Outlet Devices
#1	Primary	119.16'	12.0" Round Culvert L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 119.16' / 118.02' S= 0.0380 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.15 cfs @ 12.13 hrs HW=120.18' (Free Discharge)

↑**1=Culvert** (Inlet Controls 2.15 cfs @ 2.74 fps)

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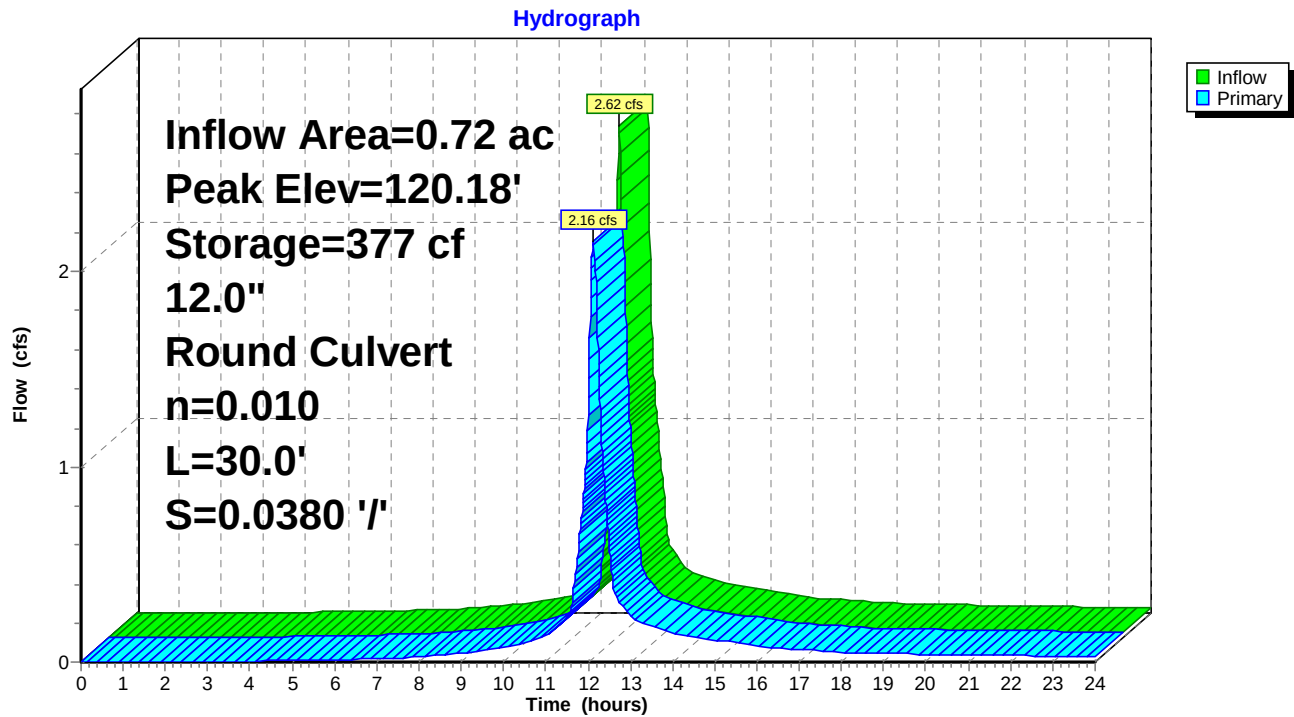
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Type III 24-hr 10-YR Rainfall=4.60"

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Page 44

Pond 260P: Storage Pipes



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

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Page 45

Summary for Pond 340P: CB at SW Cor prkng lot

Inflow Area = 0.24 ac, 60.94% Impervious, Inflow Depth > 2.13" for 10-YR event
Inflow = 0.60 cfs @ 12.08 hrs, Volume= 0.042 af
Outflow = 0.60 cfs @ 12.08 hrs, Volume= 0.042 af, Atten= 0%, Lag= 0.0 min
Primary = 0.60 cfs @ 12.08 hrs, Volume= 0.042 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

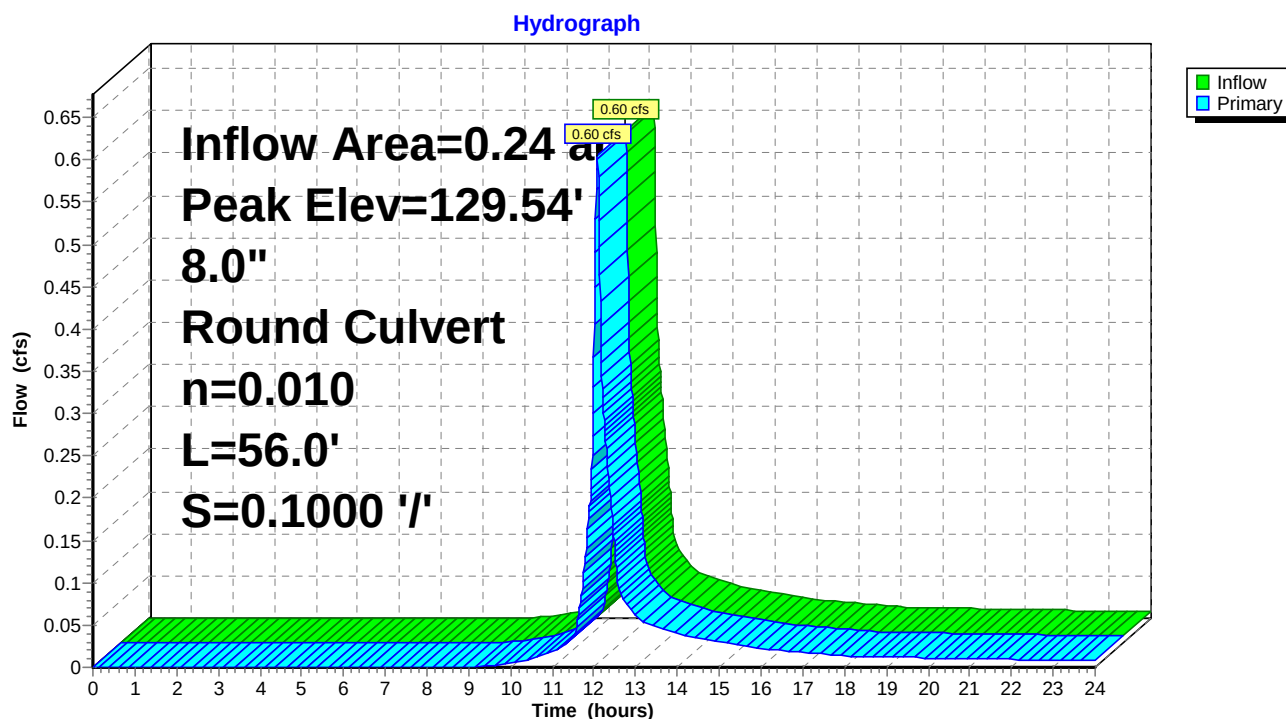
Peak Elev= 129.54' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	129.00'	8.0" Round Culvert L= 56.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 129.00' / 123.40' S= 0.1000 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.60 cfs @ 12.08 hrs HW=129.54' (Free Discharge)

↑**1=Culvert** (Inlet Controls 0.60 cfs @ 1.98 fps)

Pond 340P: CB at SW Cor prkng lot



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

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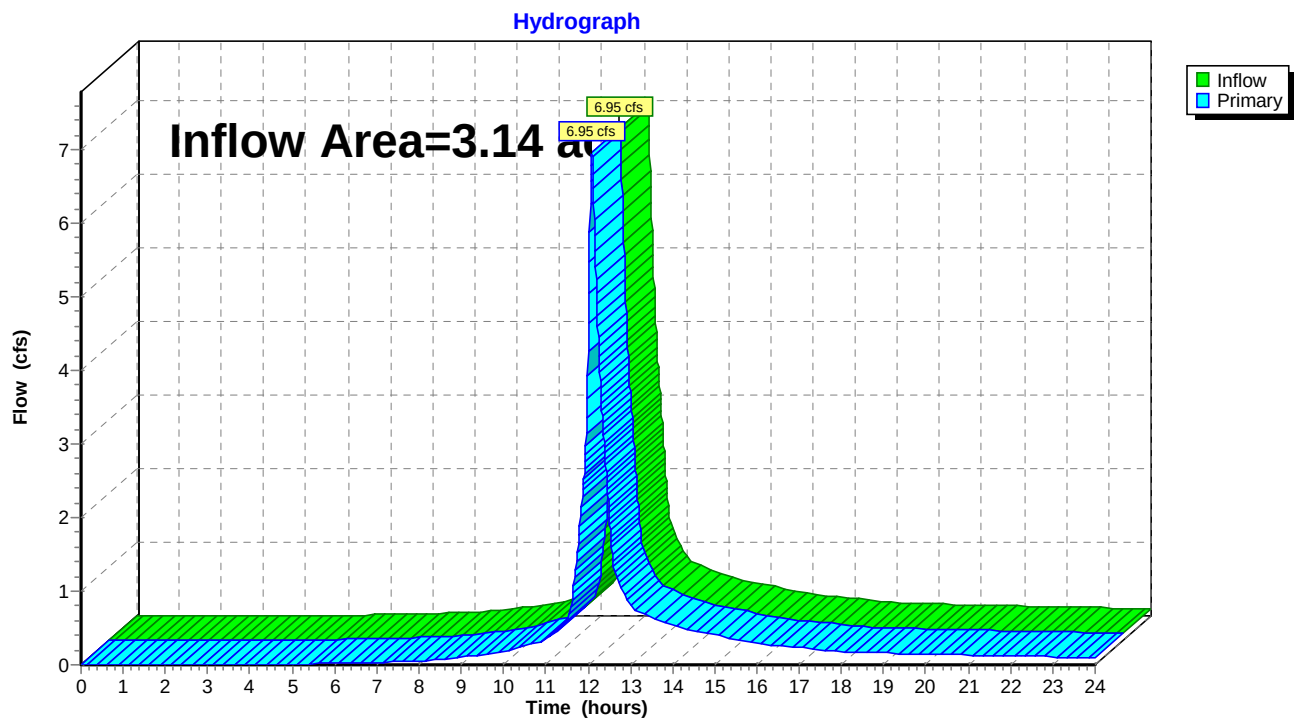
Page 46

Summary for Link SP1: Existing Combined Sewer in Danforth

Inflow Area = 3.14 ac, 61.14% Impervious, Inflow Depth > 2.26" for 10-YR event
Inflow = 6.95 cfs @ 12.09 hrs, Volume= 0.592 af
Primary = 6.95 cfs @ 12.09 hrs, Volume= 0.592 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link SP1: Existing Combined Sewer in Danforth



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

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Page 47

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 10S: Area draining to Runoff Area=19,633 sf 57.01% Impervious Runoff Depth>2.92"
Flow Length=91' Slope=0.0300 '/' Tc=7.7 min CN=73 Runoff=1.45 cfs 0.110 af

Subcatchment 60S: Lawn/Field S of school Runoff Area=16,715 sf 84.98% Impervious Runoff Depth>4.54"
Tc=5.0 min CN=89 Runoff=2.04 cfs 0.145 af

Subcatchment 61S: Auditorium Roof Runoff Area=4,485 sf 100.00% Impervious Runoff Depth>5.56"
Tc=5.0 min CN=98 Runoff=0.61 cfs 0.048 af

Subcatchment 70S: Thomas & Davies & Runoff Area=41,034 sf 78.01% Impervious Runoff Depth>4.11"
Tc=5.0 min CN=85 Runoff=4.63 cfs 0.323 af

Subcatchment 80S: FoundersHall Runoff Area=3,498 sf 100.00% Impervious Runoff Depth>5.56"
Tc=5.0 min CN=98 Runoff=0.47 cfs 0.037 af

Subcatchment 90S: Playground Runoff Area=41,240 sf 29.19% Impervious Runoff Depth>1.47"
Flow Length=188' Tc=14.6 min CN=56 Runoff=1.11 cfs 0.116 af

Subcatchment 402S: New Prkng lot Runoff Area=10,240 sf 60.94% Impervious Runoff Depth>3.11"
Tc=5.0 min CN=75 Runoff=0.89 cfs 0.061 af

Reach 161R: roof drain Avg. Flow Depth=0.21' Max Vel=7.90 fps Inflow=0.61 cfs 0.048 af
6.0" Round Pipe n=0.013 L=129.0' S=0.0911 '/' Capacity=1.69 cfs Outflow=0.60 cfs 0.048 af

Pond 206P: City CB @ Fletcher & Danforth Peak Elev=121.80' Inflow=4.97 cfs 0.480 af
8.0" Round Culvert n=0.013 L=18.0' S=0.2750 '/' Outflow=4.97 cfs 0.480 af

Pond 207P: Existing CB Peak Elev=135.60' Inflow=4.63 cfs 0.323 af
10.0" Round Culvert n=0.010 L=60.0' S=0.1287 '/' Outflow=4.63 cfs 0.323 af

Pond 210P: Existing FI Peak Elev=132.91' Inflow=1.45 cfs 0.110 af
10.0" Round Culvert n=0.010 L=102.0' S=0.1008 '/' Outflow=1.45 cfs 0.110 af

Pond 217P: Existing DMH Peak Elev=142.08' Inflow=5.10 cfs 0.360 af
8.0" Round Culvert n=0.013 L=89.0' S=0.0367 '/' Outflow=5.10 cfs 0.360 af

Pond 220P: Existing DMH Peak Elev=122.58' Inflow=1.45 cfs 0.110 af
10.0" Round Culvert n=0.010 L=108.0' S=0.0335 '/' Outflow=1.45 cfs 0.110 af

Pond 227P: Existing SMH Peak Elev=134.09' Inflow=5.10 cfs 0.360 af
8.0" Round Culvert n=0.013 L=71.0' S=0.2025 '/' Outflow=5.10 cfs 0.360 af

Pond 230P: Existing DMH Peak Elev=129.28' Inflow=4.12 cfs 0.363 af
8.0" Round Culvert n=0.010 L=156.0' S=0.0272 '/' Outflow=4.12 cfs 0.363 af

Pond 240P: Existing DMH Peak Elev=123.72' Inflow=4.12 cfs 0.363 af
8.0" Round Culvert n=0.010 L=58.0' S=0.0833 '/' Outflow=4.12 cfs 0.363 af

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

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Page 48

Pond 260P: Storage Pipes

Peak Elev=120.47' Storage=626 cf Inflow=3.53 cfs 0.254 af
12.0" Round Culvert n=0.010 L=30.0' S=0.0380 '/ Outflow=2.69 cfs 0.254 af

Pond 340P: CB at SW Cor prkng lot

Peak Elev=129.78' Inflow=0.89 cfs 0.061 af
8.0" Round Culvert n=0.010 L=56.0' S=0.1000 '/ Outflow=0.89 cfs 0.061 af

Link SP1: Existing Combined Sewer in Danforth

Inflow=9.54 cfs 0.839 af
Primary=9.54 cfs 0.839 af

Total Runoff Area = 3.14 ac Runoff Volume = 0.839 af Average Runoff Depth = 3.21"
38.86% Pervious = 1.22 ac 61.14% Impervious = 1.92 ac

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Page 49

Summary for Subcatchment 10S: Area draining to Sanctuary

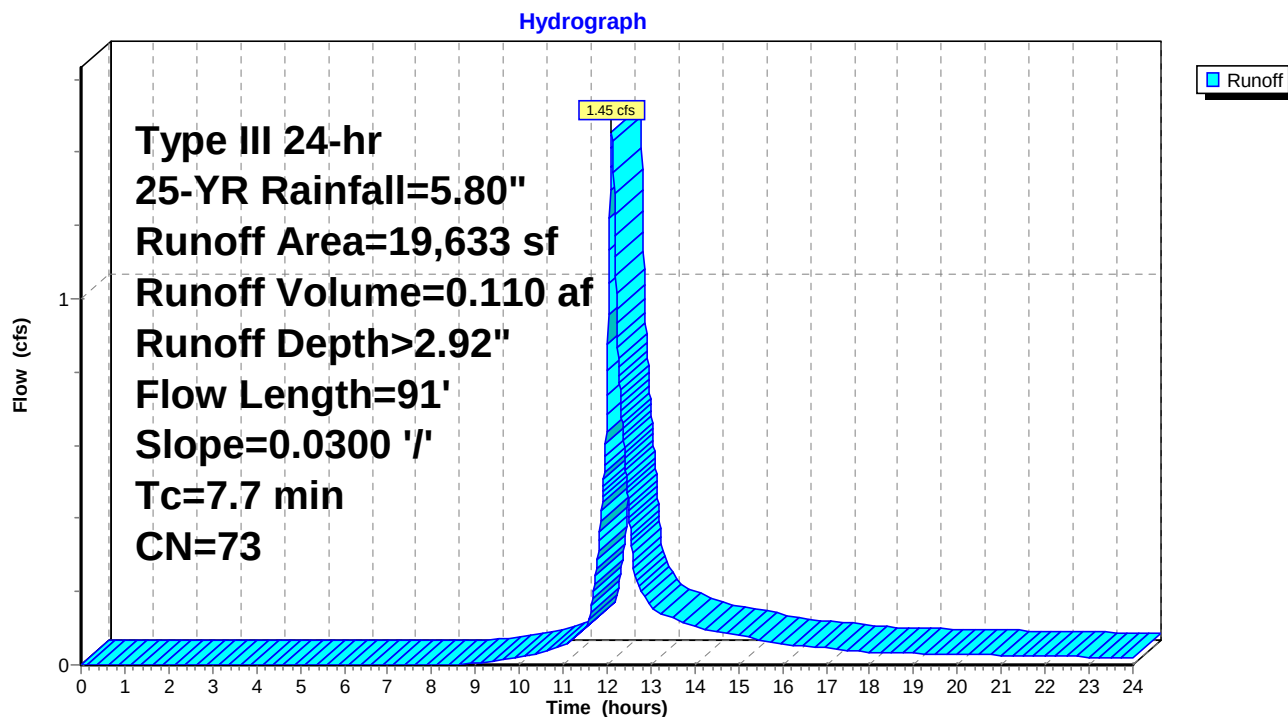
Runoff = 1.45 cfs @ 12.11 hrs, Volume= 0.110 af, Depth> 2.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

	Area (sf)	CN	Description
*	11,192	98	impervious
*	8,441	39	Lawn/field, HSG A
	19,633	73	Weighted Average
	8,441		42.99% Pervious Area
	11,192		57.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	91	0.0300	0.20		Sheet Flow, A-B
Grass: Short n= 0.150 P2= 3.19"					

Subcatchment 10S: Area draining to Sanctuary



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

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Page 50

Summary for Subcatchment 60S: Lawn/Field S of school

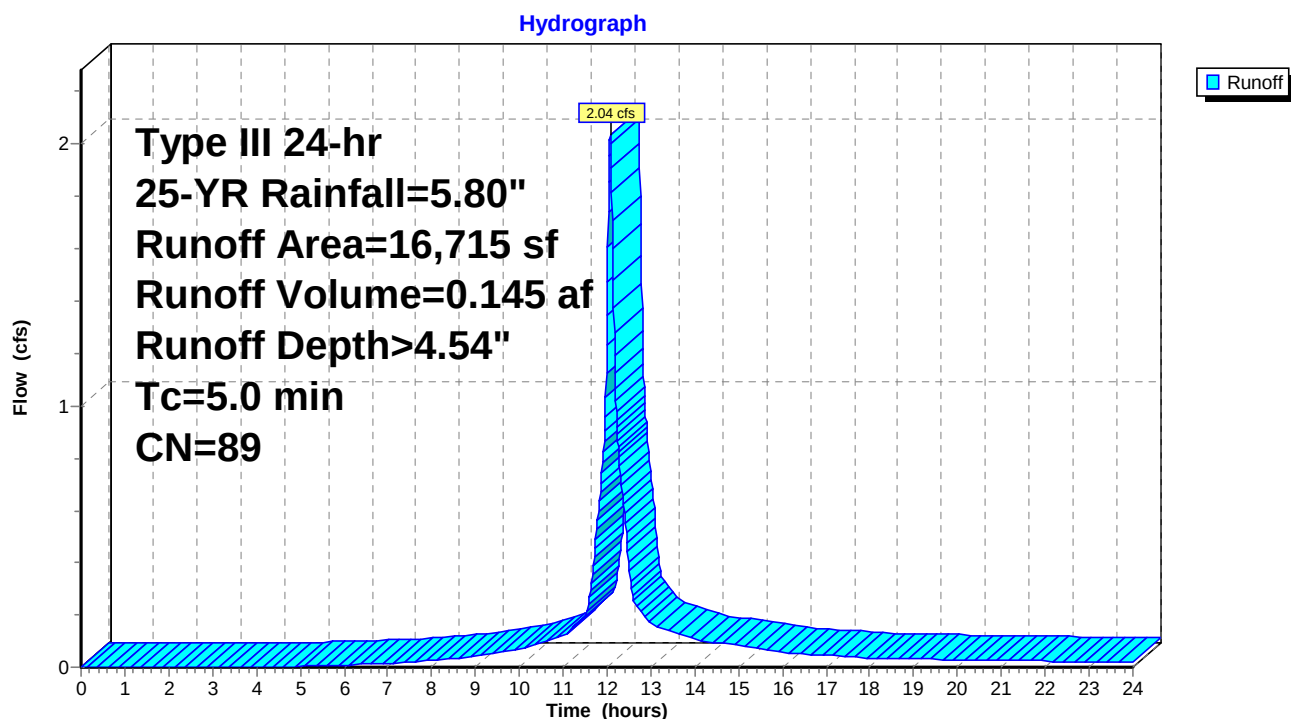
Runoff = 2.04 cfs @ 12.07 hrs, Volume= 0.145 af, Depth> 4.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

	Area (sf)	CN	Description
*	14,205	98	impervious
*	2,510	39	Lawn/field, HSG A
	16,715	89	Weighted Average
	2,510		15.02% Pervious Area
	14,205		84.98% Impervious Area

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

Subcatchment 60S: Lawn/Field S of school



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

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Page 51

Summary for Subcatchment 61S: Auditorium Roof

Runoff = 0.61 cfs @ 12.07 hrs, Volume= 0.048 af, Depth> 5.56"

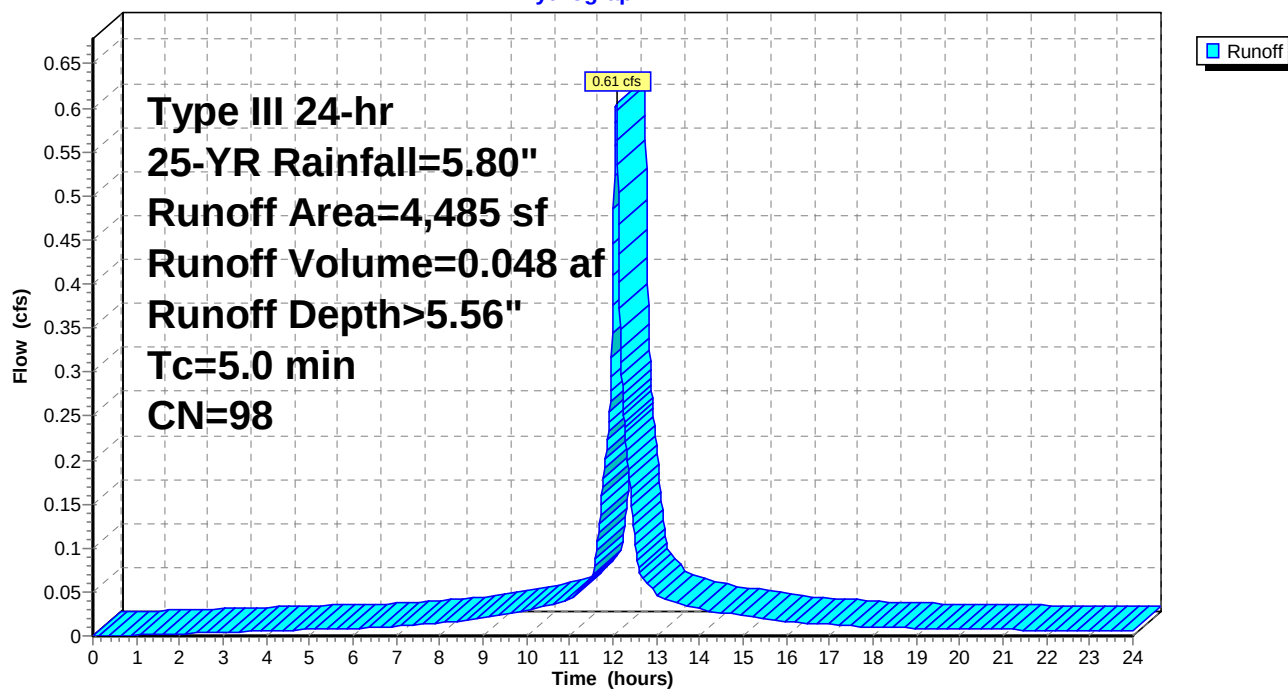
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

	Area (sf)	CN	Description
*	4,485	98	Roof runoff
	4,485		100.00% Impervious Area

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

Subcatchment 61S: Auditorium Roof

Hydrograph



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

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Page 52

Summary for Subcatchment 70S: Thomas & Davies & Gym

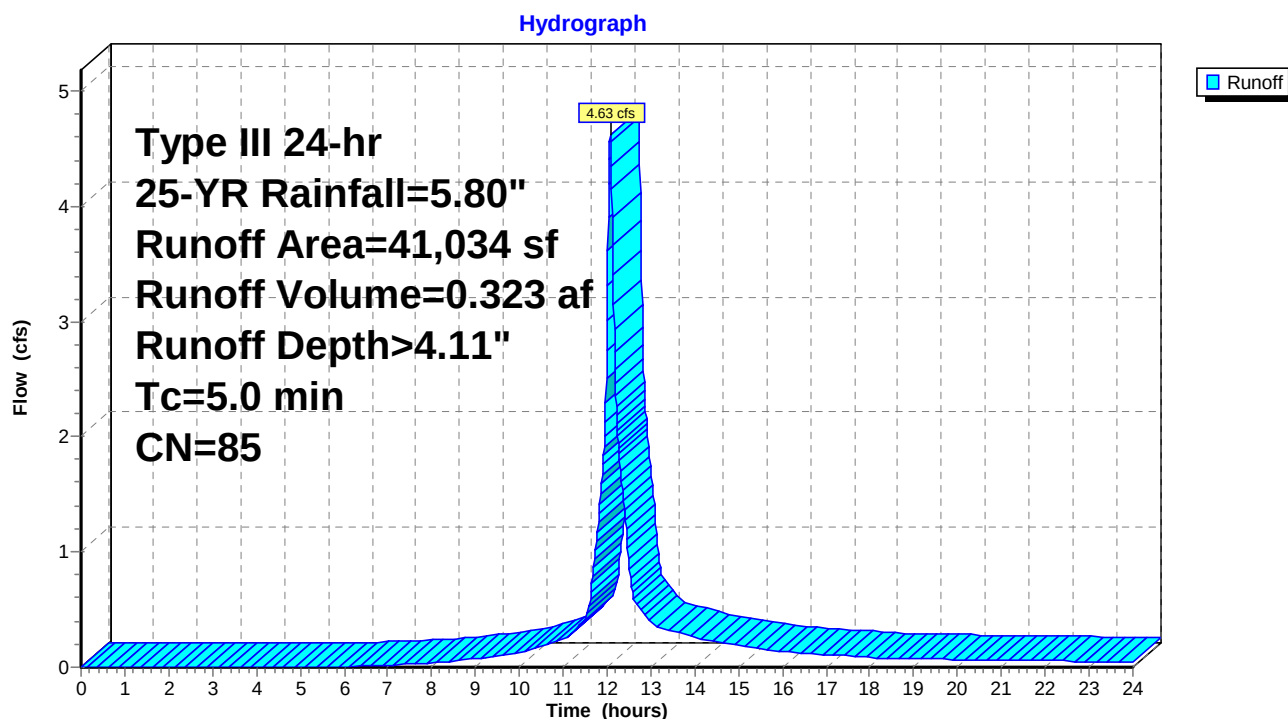
Runoff = 4.63 cfs @ 12.07 hrs, Volume= 0.323 af, Depth> 4.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

	Area (sf)	CN	Description
*	32,011	98	impervious
*	9,023	39	Lawn/field, HSG A
	41,034	85	Weighted Average
	9,023		21.99% Pervious Area
	32,011		78.01% Impervious Area

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

Subcatchment 70S: Thomas & Davies & Gym



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

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Page 53

Summary for Subcatchment 80S: FoundersHall

Runoff = 0.47 cfs @ 12.07 hrs, Volume= 0.037 af, Depth> 5.56"

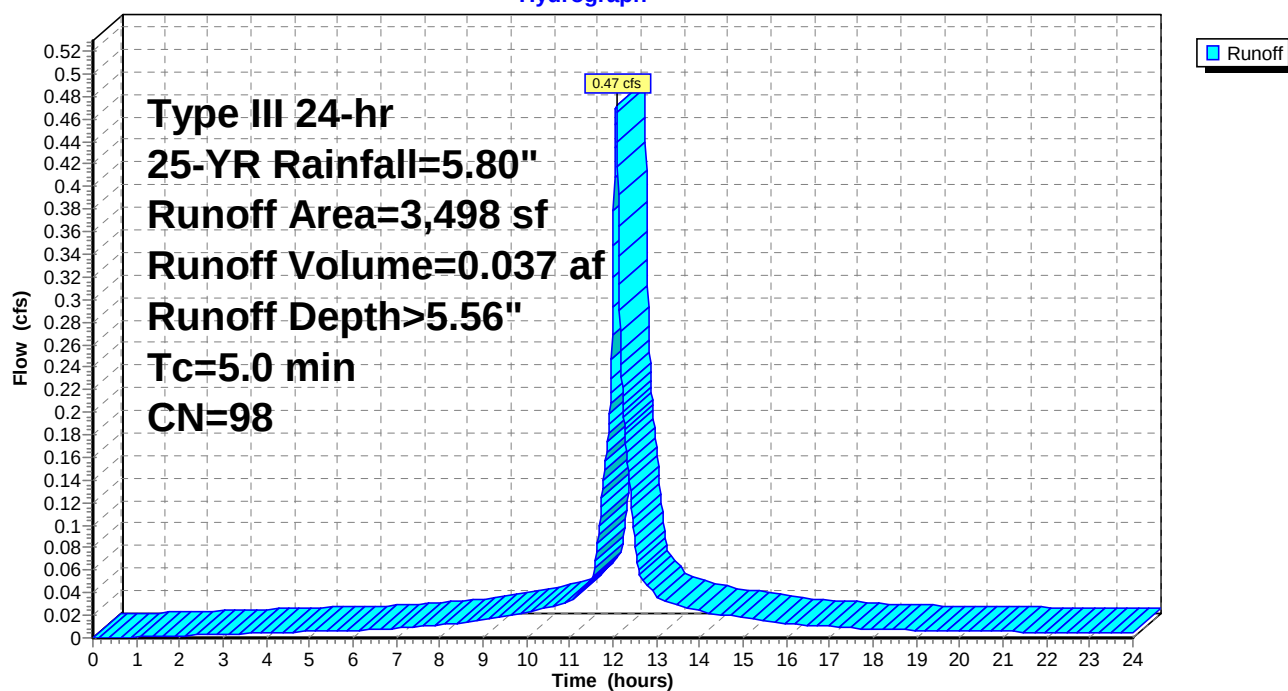
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

	Area (sf)	CN	Description
*	3,498	98	Roof runoff
	3,498		100.00% Impervious Area

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

Subcatchment 80S: FoundersHall

Hydrograph



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

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Page 54

Summary for Subcatchment 90S: Playground

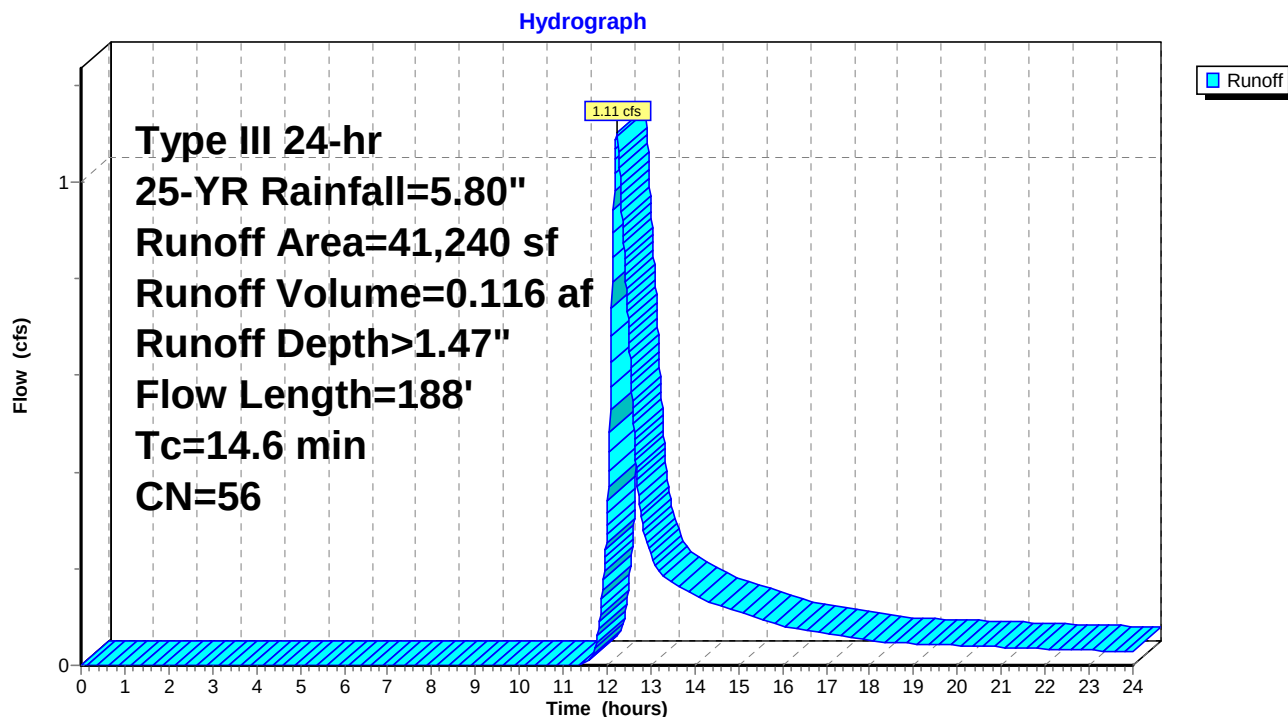
Runoff = 1.11 cfs @ 12.22 hrs, Volume= 0.116 af, Depth> 1.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

	Area (sf)	CN	Description
*	12,037	98	impervious
*	29,203	39	Lawn/field, HSG A
	41,240	56	Weighted Average
	29,203		70.81% Pervious Area
	12,037		29.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	100	0.0100	0.13		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.19"
1.7	88	0.0154	0.87		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
14.6	188	Total			

Subcatchment 90S: Playground



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

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Page 55

Summary for Subcatchment 402S: New Prkng lot

Runoff = 0.89 cfs @ 12.08 hrs, Volume= 0.061 af, Depth> 3.11"

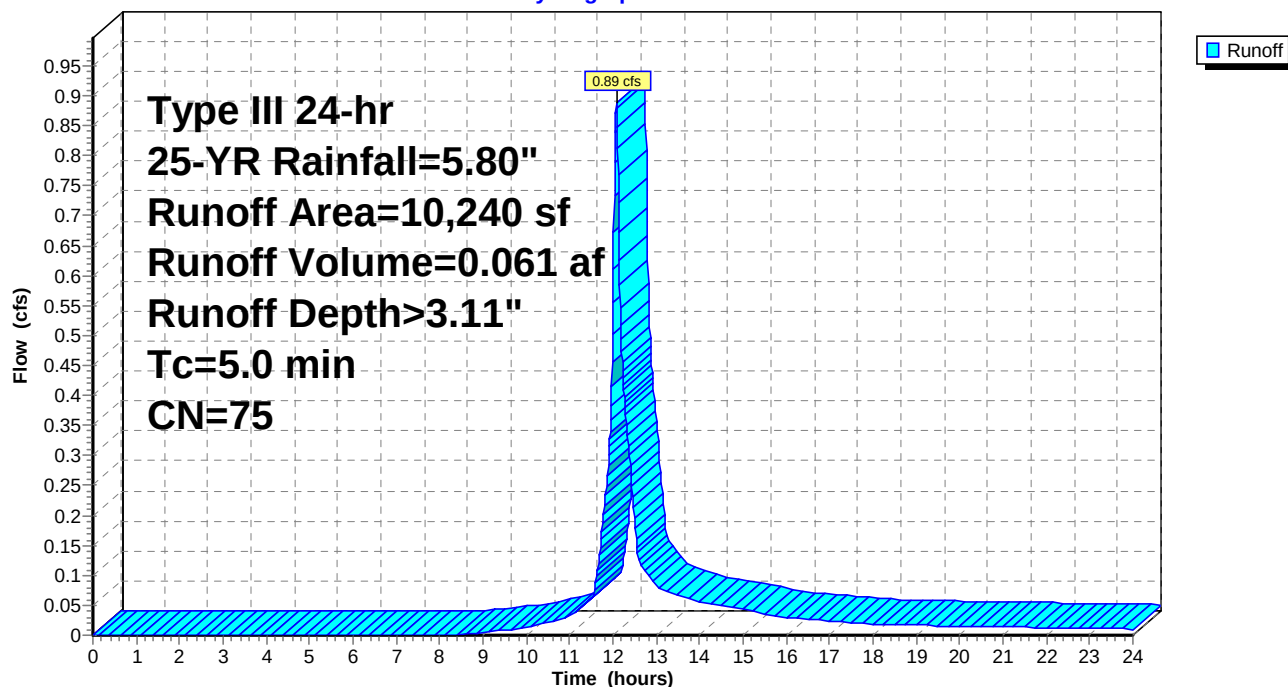
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

	Area (sf)	CN	Description
*	4,000	39	Pervious
*	6,240	98	Impervious
	10,240	75	Weighted Average
	4,000		39.06% Pervious Area
	6,240		60.94% Impervious Area

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

Subcatchment 402S: New Prkng lot

Hydrograph



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

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Page 56

Summary for Reach 161R: roof drain

Inflow Area = 0.10 ac, 100.00% Impervious, Inflow Depth > 5.56" for 25-YR event
Inflow = 0.61 cfs @ 12.07 hrs, Volume= 0.048 af
Outflow = 0.60 cfs @ 12.08 hrs, Volume= 0.048 af, Atten= 0%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Max. Velocity= 7.90 fps, Min. Travel Time= 0.3 min

Avg. Velocity= 2.64 fps, Avg. Travel Time= 0.8 min

Peak Storage= 10 cf @ 12.07 hrs

Average Depth at Peak Storage= 0.21'

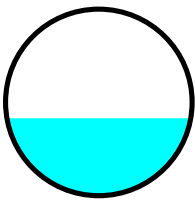
Bank-Full Depth= 0.50' Flow Area= 0.2 sf, Capacity= 1.69 cfs

6.0" Round Pipe

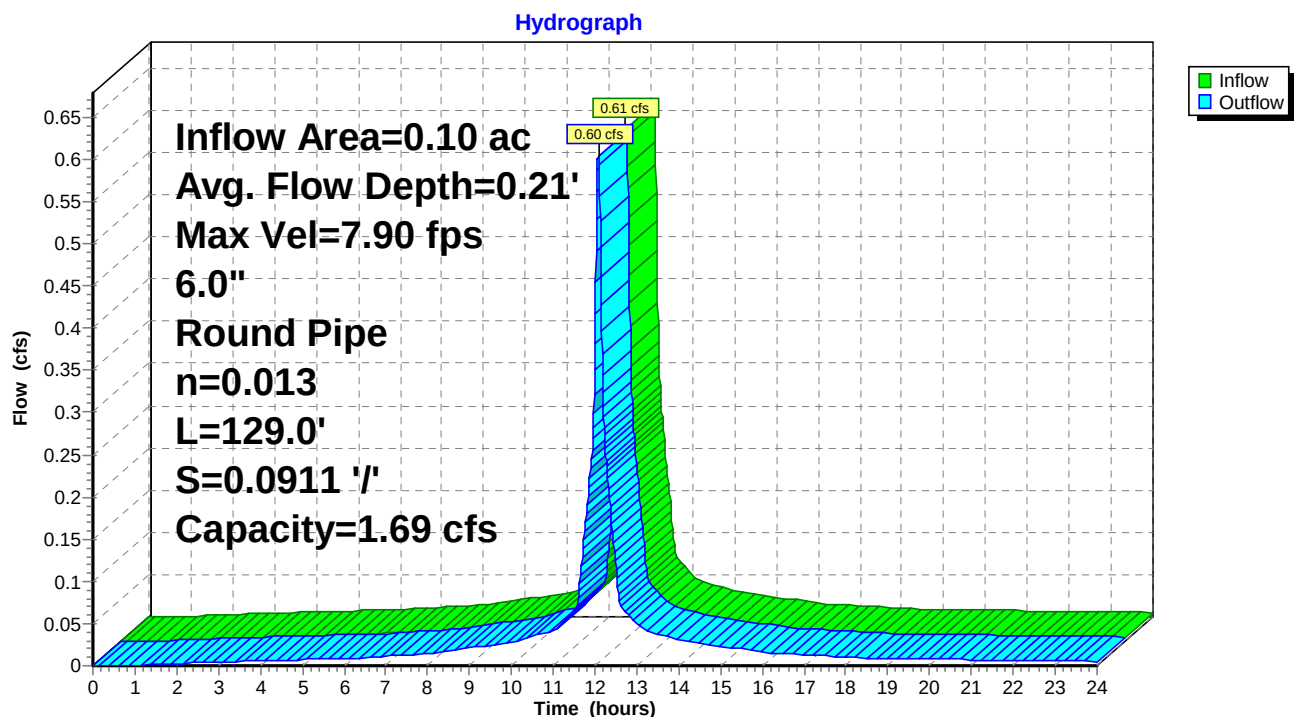
n= 0.013 Corrugated PE, smooth interior

Length= 129.0' Slope= 0.0911 '/'

Inlet Invert= 130.00', Outlet Invert= 118.25'



Reach 161R: roof drain



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Page 57

Summary for Pond 206P: City CB @ Fletcher & Danforth

Inflow Area = 2.12 ac, 52.17% Impervious, Inflow Depth > 2.72" for 25-YR event
Inflow = 4.97 cfs @ 12.14 hrs, Volume= 0.480 af
Outflow = 4.97 cfs @ 12.14 hrs, Volume= 0.480 af, Atten= 0%, Lag= 0.0 min
Primary = 4.97 cfs @ 12.14 hrs, Volume= 0.480 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Peak Elev= 121.80' @ 12.14 hrs

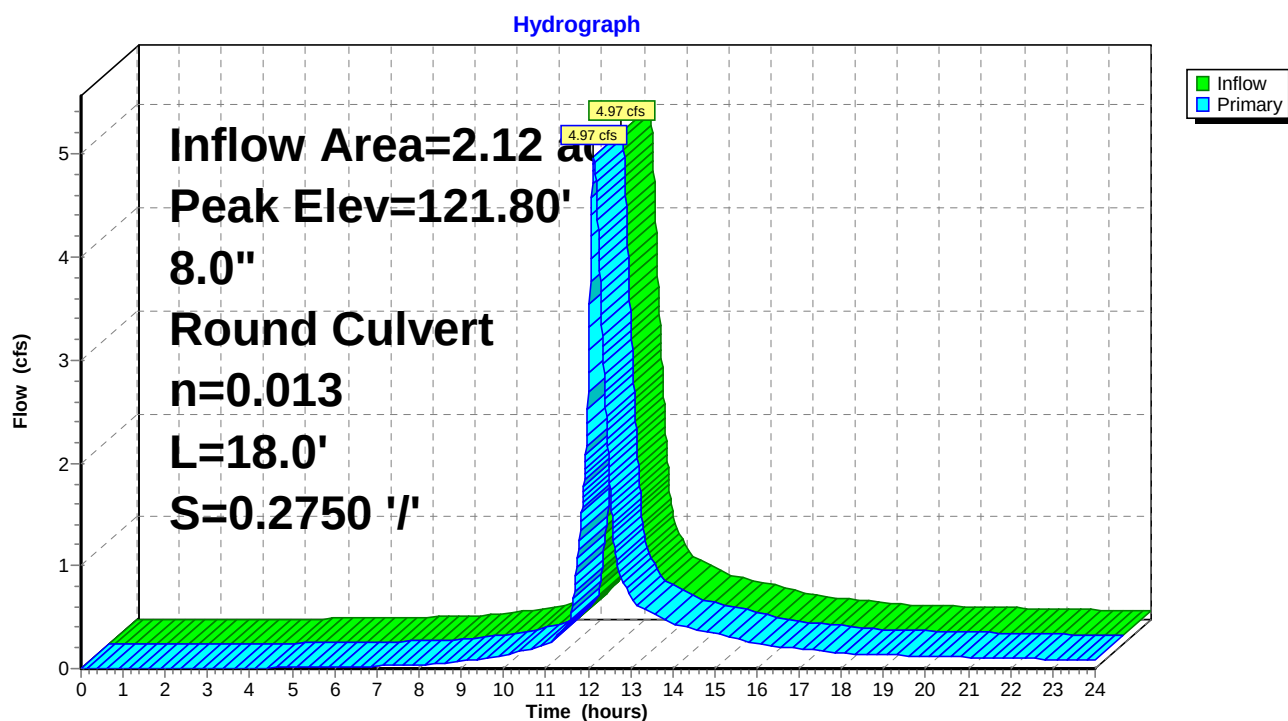
Flood Elev= 111.26'

Device	Routing	Invert	Outlet Devices
#1	Primary	107.43'	8.0" Round Culvert L= 18.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 107.43' / 102.48' S= 0.2750 '/ Cc= 0.900 n= 0.013 Clay tile, Flow Area= 0.35 sf

Primary OutFlow Max=4.97 cfs @ 12.14 hrs HW=121.79' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 4.97 cfs @ 14.24 fps)

Pond 206P: City CB @ Fletcher & Danforth



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

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Page 58

Summary for Pond 207P: Existing CB

Inflow Area = 0.94 ac, 78.01% Impervious, Inflow Depth > 4.11" for 25-YR event
Inflow = 4.63 cfs @ 12.07 hrs, Volume= 0.323 af
Outflow = 4.63 cfs @ 12.07 hrs, Volume= 0.323 af, Atten= 0%, Lag= 0.0 min
Primary = 4.63 cfs @ 12.07 hrs, Volume= 0.323 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Peak Elev= 135.60' @ 12.07 hrs

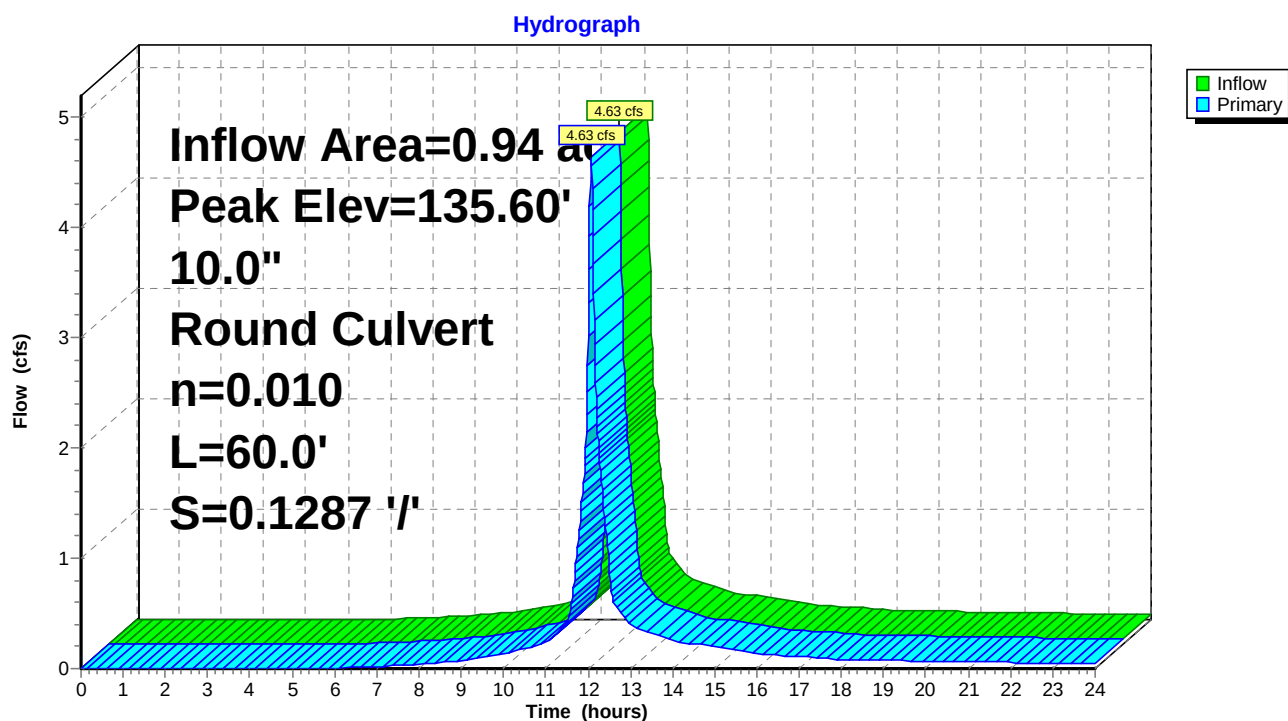
Flood Elev= 137.62'

Device	Routing	Invert	Outlet Devices
#1	Primary	130.20'	10.0" Round Culvert L= 60.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 130.20' / 122.48' S= 0.1287 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=4.62 cfs @ 12.07 hrs HW=135.58' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 4.62 cfs @ 8.47 fps)

Pond 207P: Existing CB



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

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Page 59

Summary for Pond 210P: Existing FI

Inflow Area = 0.45 ac, 57.01% Impervious, Inflow Depth > 2.92" for 25-YR event
Inflow = 1.45 cfs @ 12.11 hrs, Volume= 0.110 af
Outflow = 1.45 cfs @ 12.11 hrs, Volume= 0.110 af, Atten= 0%, Lag= 0.0 min
Primary = 1.45 cfs @ 12.11 hrs, Volume= 0.110 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Peak Elev= 132.91' @ 12.11 hrs

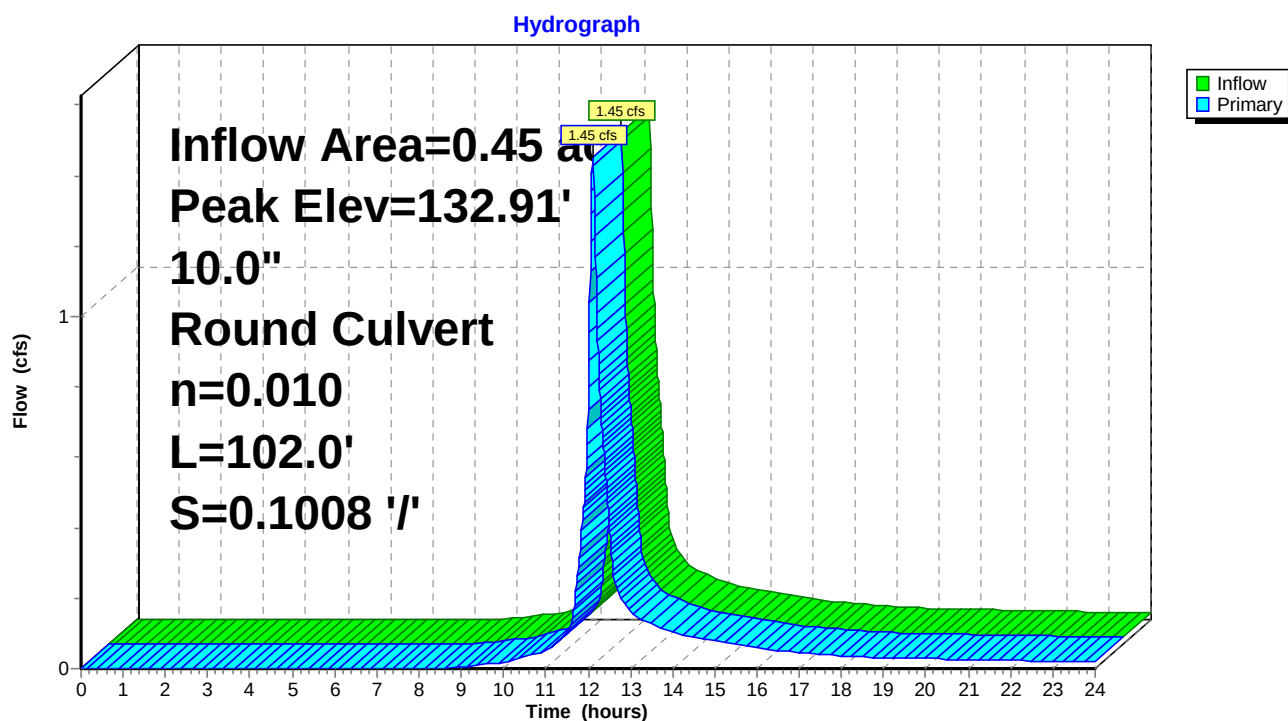
Flood Elev= 140.41'

Device	Routing	Invert	Outlet Devices
#1	Primary	132.00'	10.0" Round Culvert L= 102.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 132.00' / 121.72' S= 0.1008 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=1.45 cfs @ 12.11 hrs HW=132.91' (Free Discharge)

↑1=Culvert (Inlet Controls 1.45 cfs @ 2.66 fps)

Pond 210P: Existing FI



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Page 60

Summary for Pond 217P: Existing DMH

Inflow Area = 1.02 ac, 79.74% Impervious, Inflow Depth > 4.22" for 25-YR event
Inflow = 5.10 cfs @ 12.07 hrs, Volume= 0.360 af
Outflow = 5.10 cfs @ 12.07 hrs, Volume= 0.360 af, Atten= 0%, Lag= 0.0 min
Primary = 5.10 cfs @ 12.07 hrs, Volume= 0.360 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Peak Elev= 142.08' @ 12.07 hrs

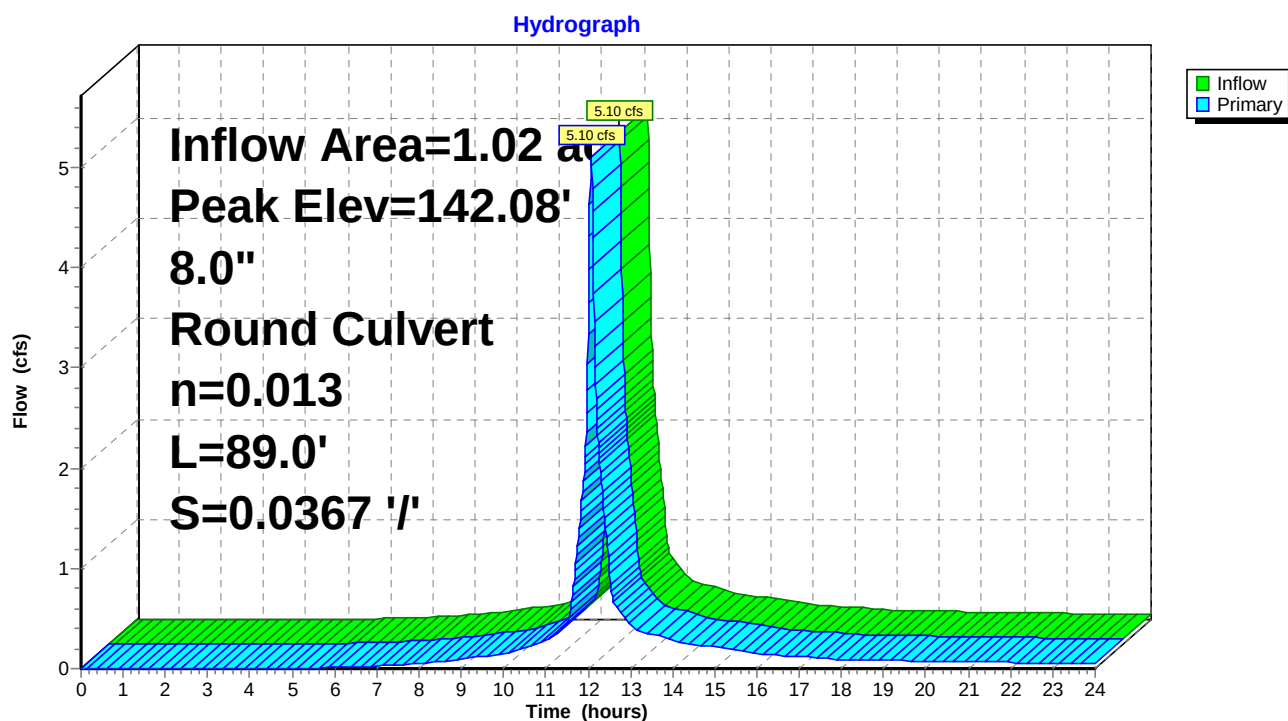
Flood Elev= 126.98'

Device	Routing	Invert	Outlet Devices
#1	Primary	122.48'	8.0" Round Culvert L= 89.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 122.48' / 119.21' S= 0.0367 '/' Cc= 0.900 n= 0.013 Cast iron, coated, Flow Area= 0.35 sf

Primary OutFlow Max=5.09 cfs @ 12.07 hrs HW=142.01' (Free Discharge)

↑**1=Culvert** (Barrel Controls 5.09 cfs @ 14.59 fps)

Pond 217P: Existing DMH



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Page 61

Summary for Pond 220P: Existing DMH

Inflow Area = 0.45 ac, 57.01% Impervious, Inflow Depth > 2.92" for 25-YR event
Inflow = 1.45 cfs @ 12.11 hrs, Volume= 0.110 af
Outflow = 1.45 cfs @ 12.11 hrs, Volume= 0.110 af, Atten= 0%, Lag= 0.0 min
Primary = 1.45 cfs @ 12.11 hrs, Volume= 0.110 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Peak Elev= 122.58' @ 12.11 hrs

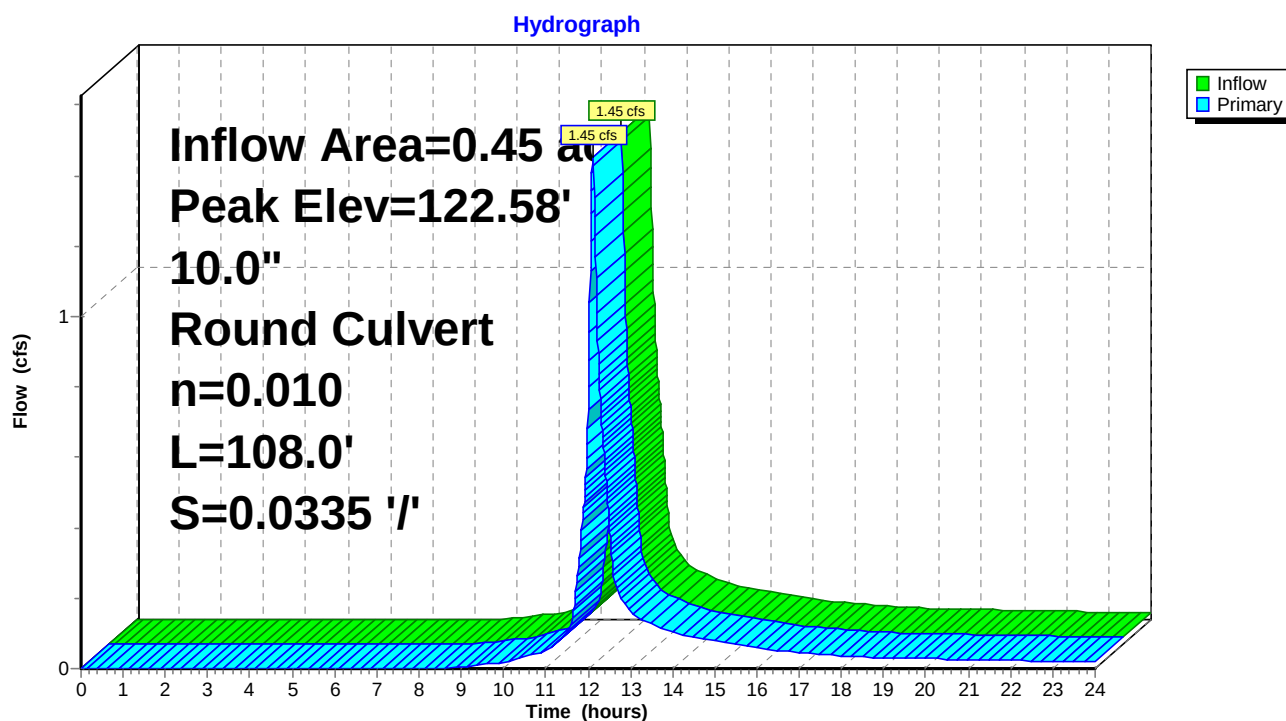
Flood Elev= 128.47'

Device	Routing	Invert	Outlet Devices
#1	Primary	121.67'	10.0" Round Culvert L= 108.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 121.67' / 118.05' S= 0.0335 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=1.45 cfs @ 12.11 hrs HW=122.58' (Free Discharge)

↑1=Culvert (Inlet Controls 1.45 cfs @ 2.66 fps)

Pond 220P: Existing DMH



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Page 62

Summary for Pond 227P: Existing SMH

Inflow Area = 1.02 ac, 79.74% Impervious, Inflow Depth > 4.22" for 25-YR event
Inflow = 5.10 cfs @ 12.07 hrs, Volume= 0.360 af
Outflow = 5.10 cfs @ 12.07 hrs, Volume= 0.360 af, Atten= 0%, Lag= 0.0 min
Primary = 5.10 cfs @ 12.07 hrs, Volume= 0.360 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Peak Elev= 134.09' @ 12.07 hrs

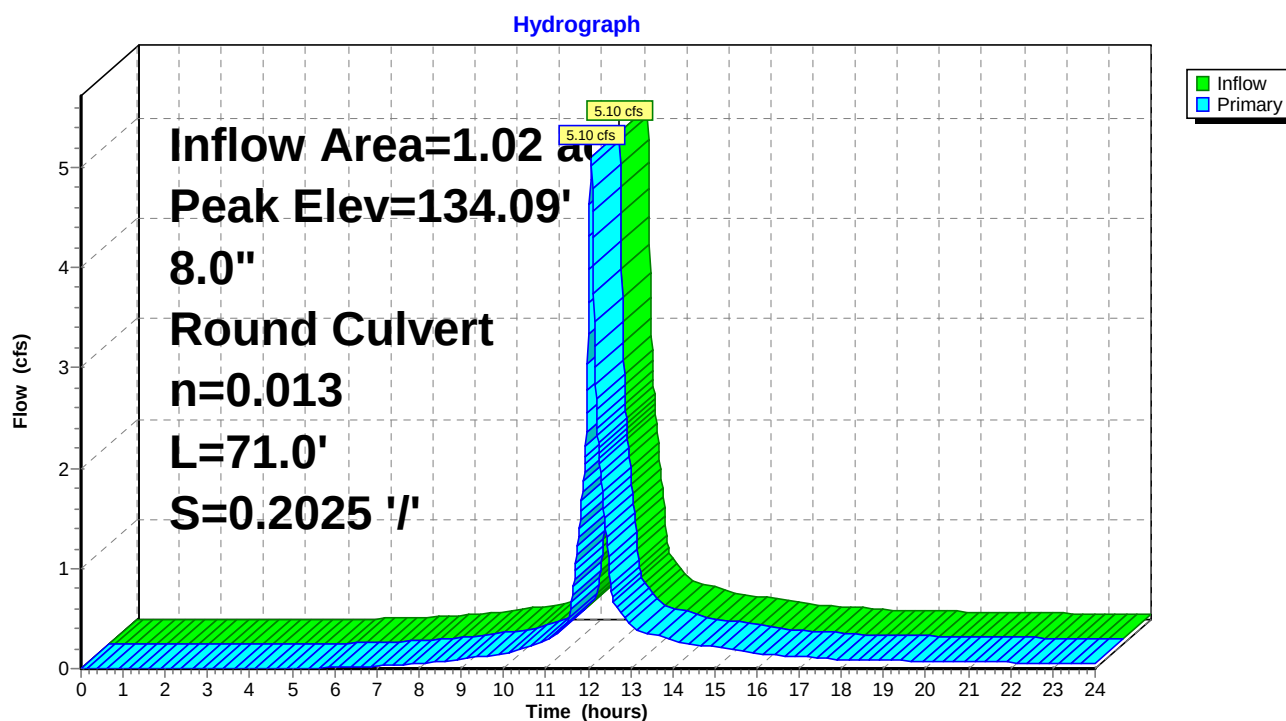
Flood Elev= 123.81'

Device	Routing	Invert	Outlet Devices
#1	Primary	118.98'	8.0" Round Culvert L= 71.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 118.98' / 104.60' S= 0.2025 '/ Cc= 0.900 n= 0.013 Clay tile, Flow Area= 0.35 sf

Primary OutFlow Max=5.09 cfs @ 12.07 hrs HW=134.04' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 5.09 cfs @ 14.59 fps)

Pond 227P: Existing SMH



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

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Page 63

Summary for Pond 230P: Existing DMH

Inflow Area = 1.17 ac, 70.73% Impervious, Inflow Depth > 3.72" for 25-YR event
Inflow = 4.12 cfs @ 12.12 hrs, Volume= 0.363 af
Outflow = 4.12 cfs @ 12.12 hrs, Volume= 0.363 af, Atten= 0%, Lag= 0.0 min
Primary = 4.12 cfs @ 12.12 hrs, Volume= 0.363 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Peak Elev= 129.28' @ 12.12 hrs

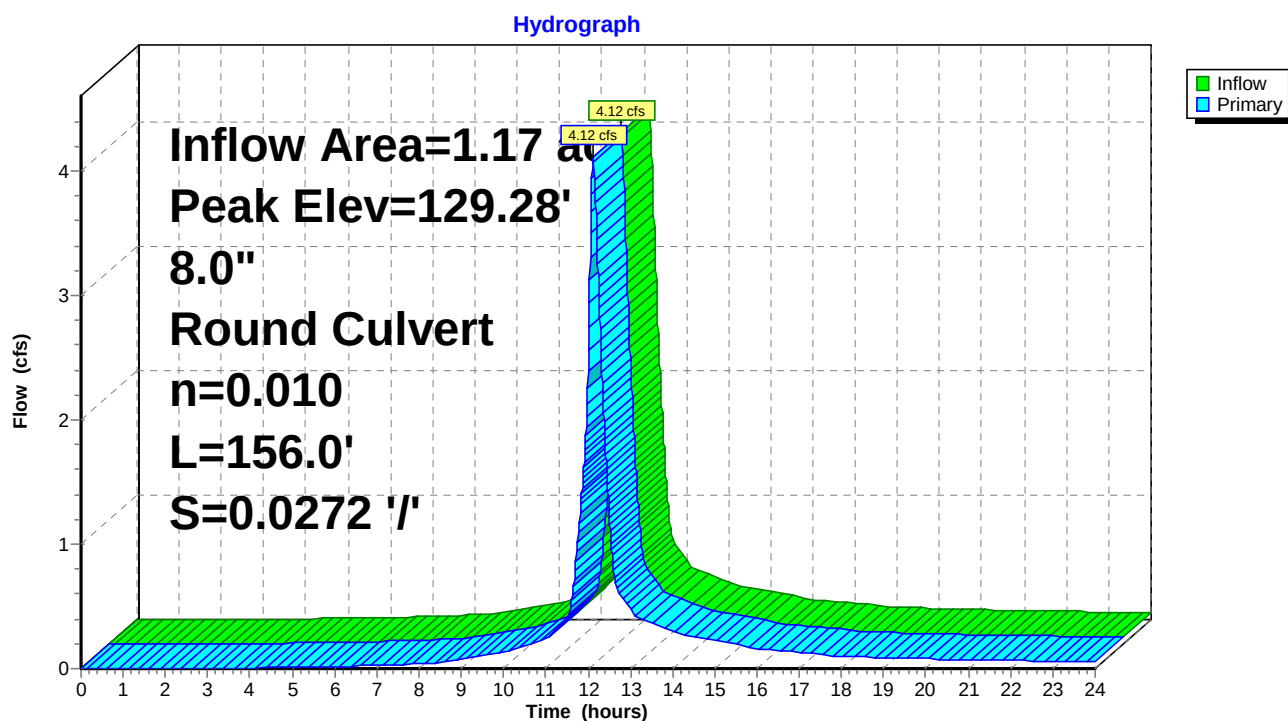
Flood Elev= 125.05'

Device	Routing	Invert	Outlet Devices
#1	Primary	118.00'	8.0" Round Culvert L= 156.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 118.00' / 113.76' S= 0.0272 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=4.11 cfs @ 12.12 hrs HW=129.26' (Free Discharge)

↑ **1=Culvert** (Barrel Controls 4.11 cfs @ 11.79 fps)

Pond 230P: Existing DMH



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Page 64

Summary for Pond 240P: Existing DMH

Inflow Area = 1.17 ac, 70.73% Impervious, Inflow Depth > 3.72" for 25-YR event
Inflow = 4.12 cfs @ 12.12 hrs, Volume= 0.363 af
Outflow = 4.12 cfs @ 12.12 hrs, Volume= 0.363 af, Atten= 0%, Lag= 0.0 min
Primary = 4.12 cfs @ 12.12 hrs, Volume= 0.363 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Peak Elev= 123.72' @ 12.12 hrs

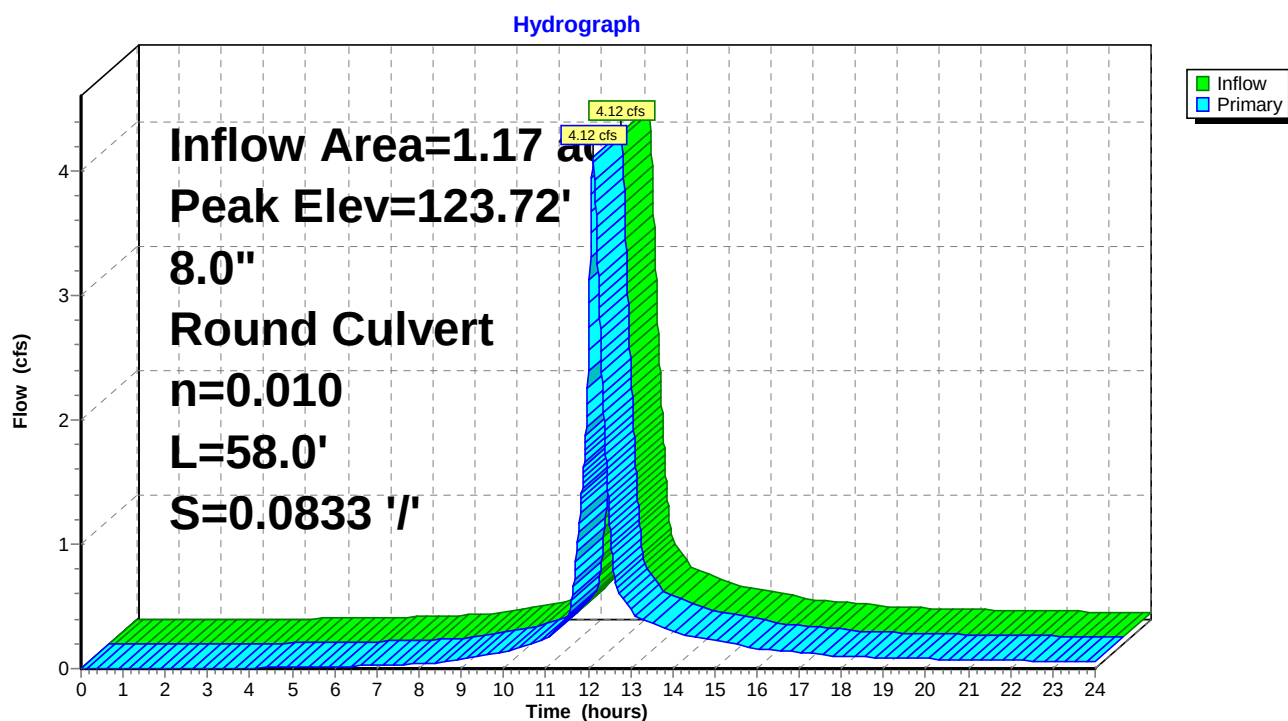
Flood Elev= 124.03'

Device	Routing	Invert	Outlet Devices
#1	Primary	113.76'	8.0" Round Culvert L= 58.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 113.76' / 108.93' S= 0.0833 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=4.11 cfs @ 12.12 hrs HW=123.71' (Free Discharge)

↑**1=Culvert** (Inlet Controls 4.11 cfs @ 11.79 fps)

Pond 240P: Existing DMH



5. Pre

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

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Page 65

Summary for Pond 260P: Storage Pipes

Inflow Area = 0.72 ac, 79.29% Impervious, Inflow Depth > 4.22" for 25-YR event
Inflow = 3.53 cfs @ 12.07 hrs, Volume= 0.254 af
Outflow = 2.69 cfs @ 12.14 hrs, Volume= 0.254 af, Atten= 24%, Lag= 3.8 min
Primary = 2.69 cfs @ 12.14 hrs, Volume= 0.254 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 120.47' @ 12.14 hrs Surf.Area= 924 sf Storage= 626 cf
Flood Elev= 125.26' Surf.Area= 0 sf Storage= 3,468 cf

Plug-Flow detention time= 1.6 min calculated for 0.254 af (100% of inflow)
Center-of-Mass det. time= 1.6 min (790.6 - 789.1)

Volume	Invert	Avail.Storage	Storage Description
#1	119.16'	3,468 cf	48.0" Round Pipe Storage L= 276.0' S= 0.0027 '/'

Device	Routing	Invert	Outlet Devices
#1	Primary	119.16'	12.0" Round Culvert L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 119.16' / 118.02' S= 0.0380 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.68 cfs @ 12.14 hrs HW=120.47' (Free Discharge)

↑**1=Culvert** (Inlet Controls 2.68 cfs @ 3.42 fps)

5. Pre

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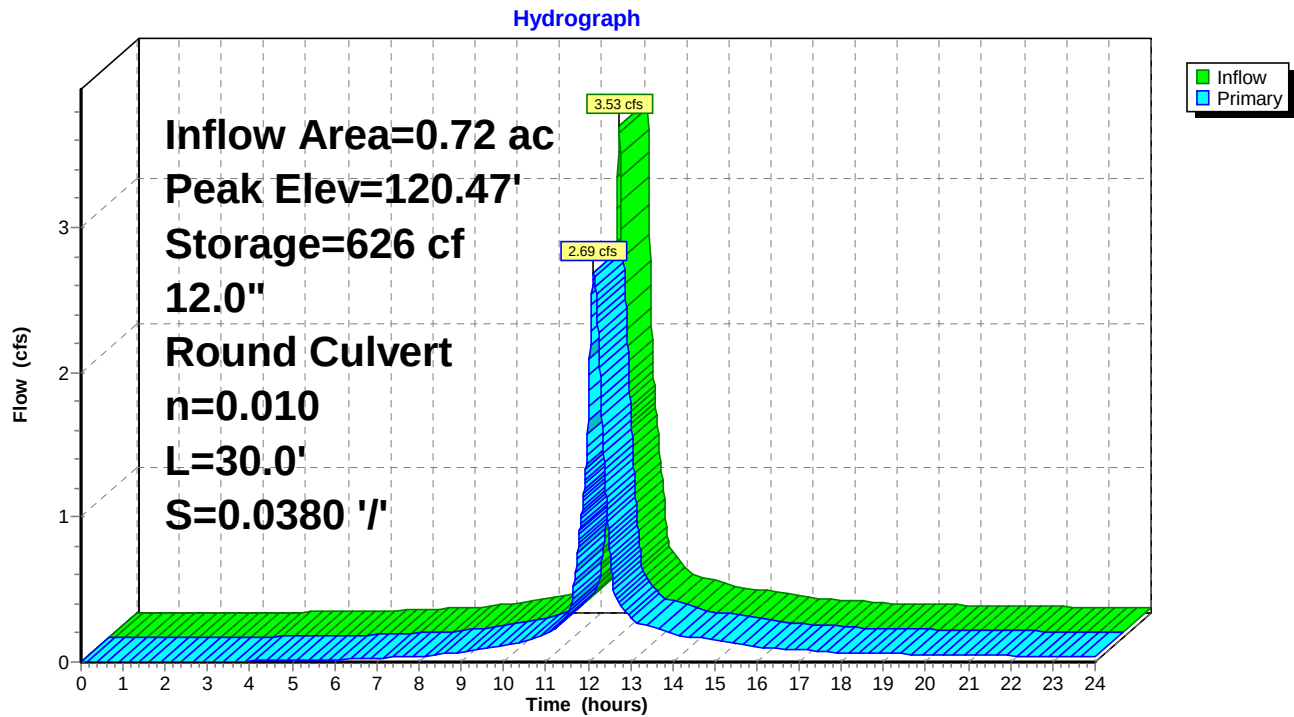
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PRE
Type III 24-hr 25-YR Rainfall=5.80"

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Page 66

Pond 260P: Storage Pipes



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PRE
Type III 24-hr 25-YR Rainfall=5.80"

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Page 67

Summary for Pond 340P: CB at SW Cor prkng lot

Inflow Area = 0.24 ac, 60.94% Impervious, Inflow Depth > 3.11" for 25-YR event
Inflow = 0.89 cfs @ 12.08 hrs, Volume= 0.061 af
Outflow = 0.89 cfs @ 12.08 hrs, Volume= 0.061 af, Atten= 0%, Lag= 0.0 min
Primary = 0.89 cfs @ 12.08 hrs, Volume= 0.061 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

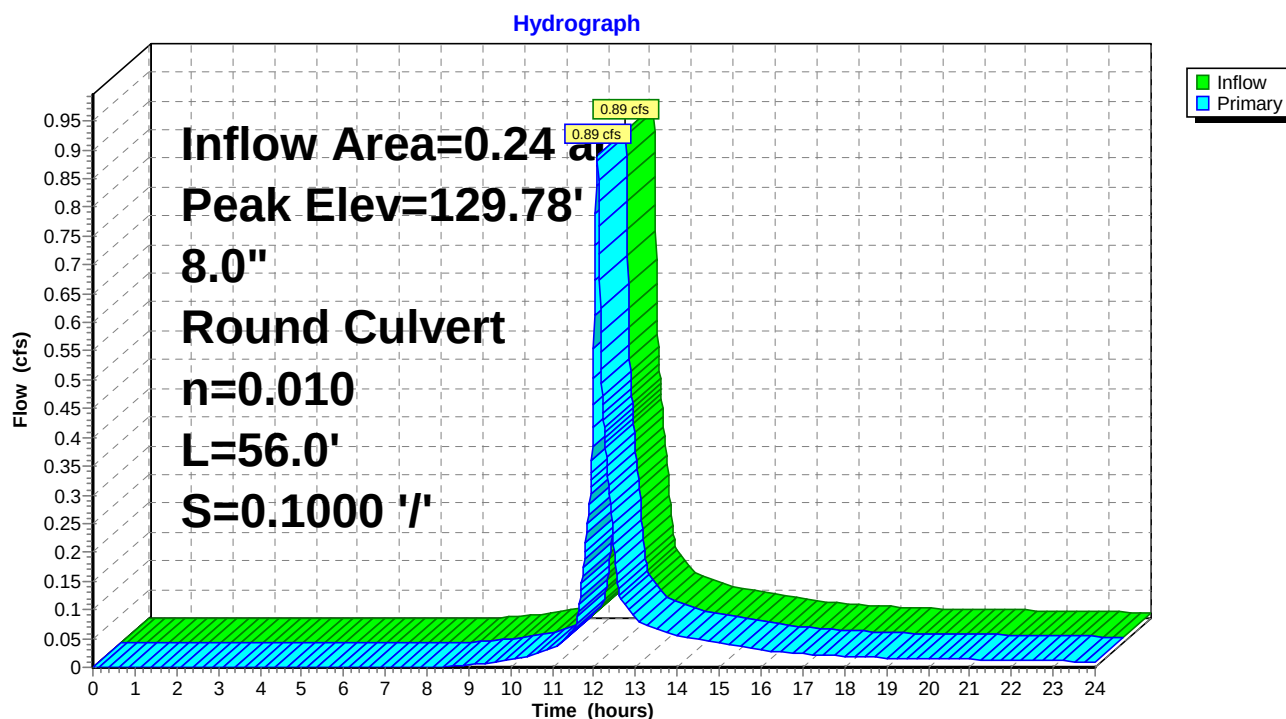
Peak Elev= 129.78' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	129.00'	8.0" Round Culvert L= 56.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 129.00' / 123.40' S= 0.1000 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.89 cfs @ 12.08 hrs HW=129.78' (Free Discharge)

↑**1=Culvert** (Inlet Controls 0.89 cfs @ 2.54 fps)

Pond 340P: CB at SW Cor prkng lot



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

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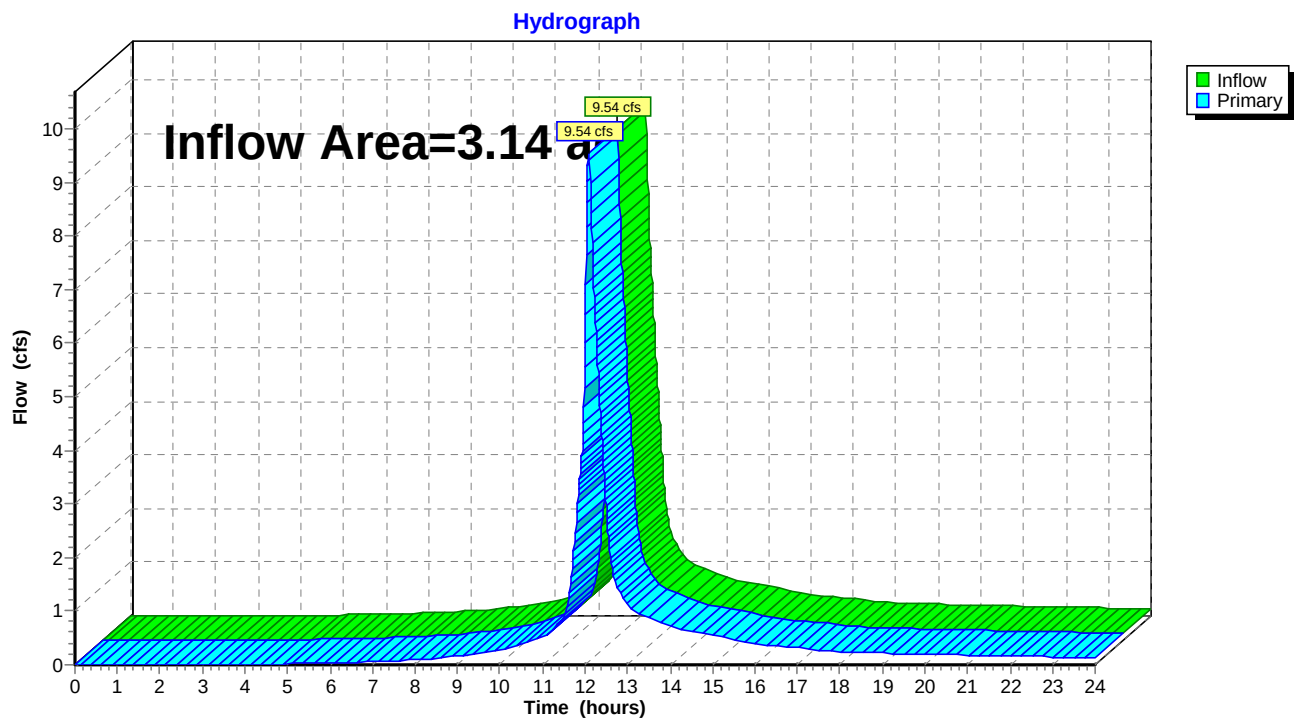
Page 68

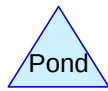
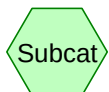
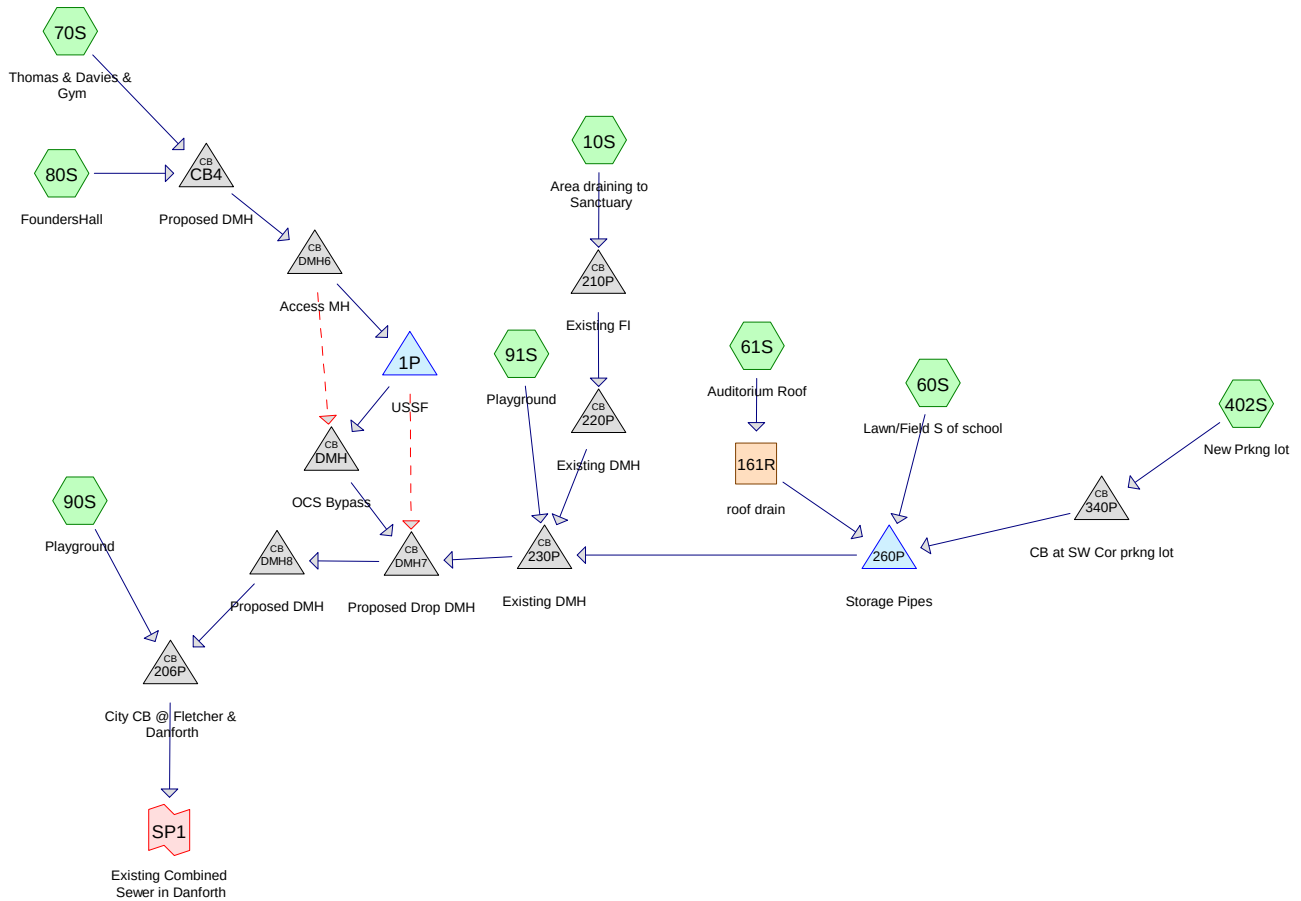
Summary for Link SP1: Existing Combined Sewer in Danforth

Inflow Area = 3.14 ac, 61.14% Impervious, Inflow Depth > 3.21" for 25-YR event
Inflow = 9.54 cfs @ 12.09 hrs, Volume= 0.839 af
Primary = 9.54 cfs @ 12.09 hrs, Volume= 0.839 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link SP1: Existing Combined Sewer in Danforth





Routing Diagram for 6. Post

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Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.14	98	Impervious (402S)
1.02	39	Lawn/field, HSG A (10S, 60S, 70S, 90S, 91S)
0.09	39	Pervious (402S)
0.32	98	Roof runoff (61S, 80S)
1.57	98	impervious (10S, 60S, 70S, 90S, 91S)
3.14	77	TOTAL AREA

6. Post

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POST
Type III 24-hr 1-YR Rainfall=2.60"

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Page 3

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 10S: Area draining to Runoff Area=19,254 sf 56.16% Impervious Runoff Depth=0.58"
Flow Length=91' Slope=0.0300 '/' Tc=7.7 min CN=72 Runoff=0.24 cfs 0.021 af

Subcatchment 60S: Lawn/Field S of school Runoff Area=16,715 sf 84.98% Impervious Runoff Depth=1.54"
Tc=5.0 min CN=89 Runoff=0.72 cfs 0.049 af

Subcatchment 61S: Auditorium Roof Runoff Area=4,485 sf 100.00% Impervious Runoff Depth=2.37"
Tc=5.0 min CN=98 Runoff=0.27 cfs 0.020 af

Subcatchment 70S: Thomas & Davies & Runoff Area=44,441 sf 74.20% Impervious Runoff Depth=1.13"
Flow Length=91' Slope=0.1593 '/' Tc=5.0 min CN=83 Runoff=1.39 cfs 0.096 af

Subcatchment 80S: FoundersHall Runoff Area=9,466 sf 100.00% Impervious Runoff Depth=2.37"
Tc=5.0 min CN=98 Runoff=0.56 cfs 0.043 af

Subcatchment 90S: Playground Runoff Area=27,554 sf 25.26% Impervious Runoff Depth=0.09"
Flow Length=117' Tc=9.2 min CN=54 Runoff=0.01 cfs 0.004 af

Subcatchment 91S: Playground Runoff Area=4,688 sf 69.20% Impervious Runoff Depth=0.96"
Tc=5.0 min CN=80 Runoff=0.12 cfs 0.009 af

Subcatchment 402S: New Prkng lot Runoff Area=10,240 sf 60.94% Impervious Runoff Depth=0.71"
Tc=5.0 min CN=75 Runoff=0.18 cfs 0.014 af

Reach 161R: roof drain Avg. Flow Depth=0.13' Max Vel=6.29 fps Inflow=0.27 cfs 0.020 af
6.0" Round Pipe n=0.013 L=129.0' S=0.0911 '/' Capacity=1.69 cfs Outflow=0.27 cfs 0.020 af

Pond 1P: USSF Peak Elev=120.77' Storage=6,062 cf Inflow=1.95 cfs 0.139 af
Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Pond 206P: City CB @ Fletcher & Danforth Peak Elev=108.16' Inflow=1.42 cfs 0.118 af
12.0" Round Culvert n=0.010 L=20.0' S=0.2475 '/' Outflow=1.42 cfs 0.118 af

Pond 210P: Existing FI Peak Elev=132.28' Inflow=0.24 cfs 0.021 af
10.0" Round Culvert n=0.010 L=102.0' S=0.1008 '/' Outflow=0.24 cfs 0.021 af

Pond 220P: Existing DMH Peak Elev=121.96' Inflow=0.24 cfs 0.021 af
10.0" Round Culvert n=0.010 L=108.0' S=0.0335 '/' Outflow=0.24 cfs 0.021 af

Pond 230P: Existing DMH Peak Elev=118.89' Inflow=1.42 cfs 0.114 af
10.0" Round Culvert n=0.010 L=83.0' S=0.0257 '/' Outflow=1.42 cfs 0.114 af

Pond 260P: Storage Pipes Peak Elev=119.78' Storage=114 cf Inflow=1.17 cfs 0.084 af
12.0" Round Culvert n=0.010 L=30.0' S=0.0380 '/' Outflow=1.07 cfs 0.084 af

Pond 340P: CB at SW Cor prkng lot Peak Elev=129.27' Inflow=0.18 cfs 0.014 af
8.0" Round Culvert n=0.010 L=56.0' S=0.1000 '/' Outflow=0.18 cfs 0.014 af

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Type III 24-hr 1-YR Rainfall=2.60"

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Page 4

Pond CB4: Proposed DMH

Peak Elev=123.18' Inflow=1.95 cfs 0.139 af
12.0" Round Culvert n=0.010 L=24.0' S=0.0621 '/' Outflow=1.95 cfs 0.139 af

Pond DMH: OCS Bypass

Peak Elev=119.42' Inflow=0.00 cfs 0.000 af
10.0" Round Culvert n=0.010 L=60.0' S=0.0692 '/' Outflow=0.00 cfs 0.000 af

Pond DMH6: Access MH

Peak Elev=120.57' Inflow=1.95 cfs 0.139 af
Primary=1.95 cfs 0.139 af Secondary=0.00 cfs 0.000 af Outflow=1.95 cfs 0.139 af

Pond DMH7: Proposed Drop DMH

Peak Elev=116.06' Inflow=1.42 cfs 0.114 af
10.0" Round Culvert n=0.010 L=84.0' S=0.0175 '/' Outflow=1.42 cfs 0.114 af

Pond DMH8: Proposed DMH

Peak Elev=114.59' Inflow=1.42 cfs 0.114 af
10.0" Round Culvert n=0.010 L=33.0' S=0.1445 '/' Outflow=1.42 cfs 0.114 af

Link SP1: Existing Combined Sewer in Danforth

Inflow=1.42 cfs 0.118 af
Primary=1.42 cfs 0.118 af

Total Runoff Area = 3.14 ac Runoff Volume = 0.257 af Average Runoff Depth = 0.98"
35.41% Pervious = 1.11 ac 64.59% Impervious = 2.03 ac

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POST
Type III 24-hr 1-YR Rainfall=2.60"

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Page 5

Summary for Subcatchment 10S: Area draining to Sanctuary

Runoff = 0.24 cfs @ 12.13 hrs, Volume= 0.021 af, Depth= 0.58"

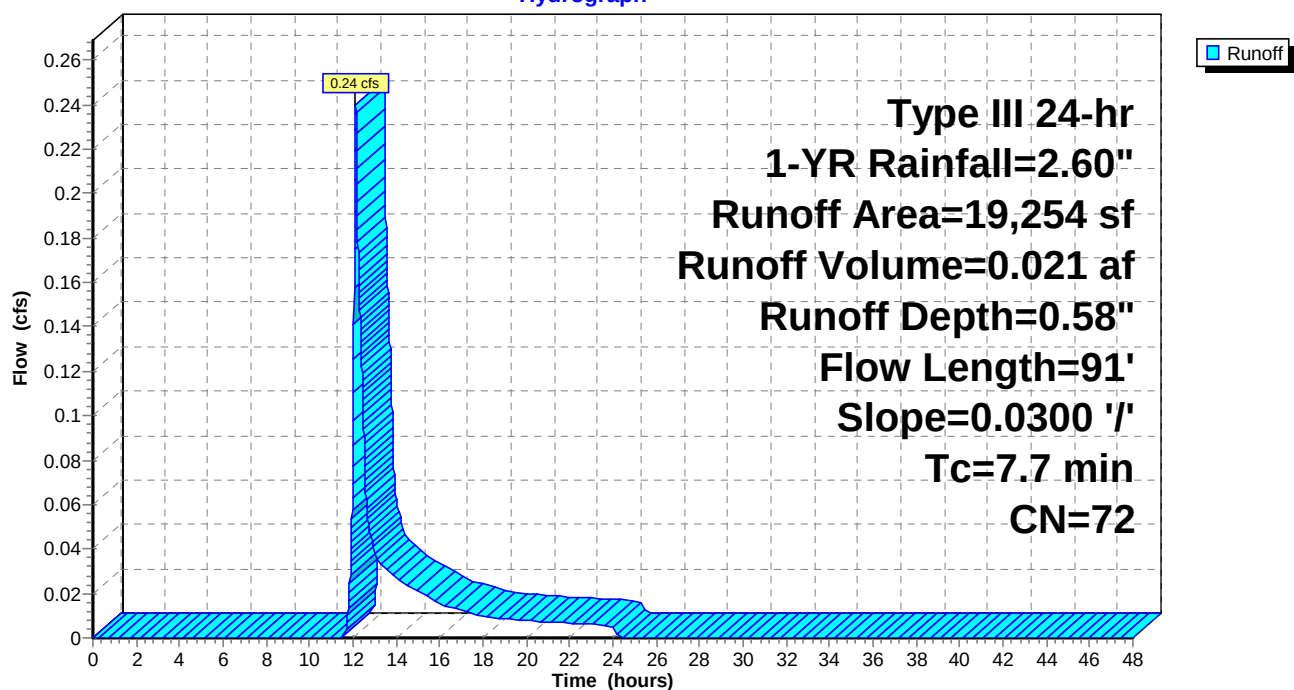
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-YR Rainfall=2.60"

	Area (sf)	CN	Description
*	10,813	98	impervious
*	8,441	39	Lawn/field, HSG A
	19,254	72	Weighted Average
	8,441		43.84% Pervious Area
	10,813		56.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	91	0.0300	0.20		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.19"

Subcatchment 10S: Area draining to Sanctuary

Hydrograph



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POST
Type III 24-hr 1-YR Rainfall=2.60"

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Page 6

Summary for Subcatchment 60S: Lawn/Field S of school

Runoff = 0.72 cfs @ 12.07 hrs, Volume= 0.049 af, Depth= 1.54"

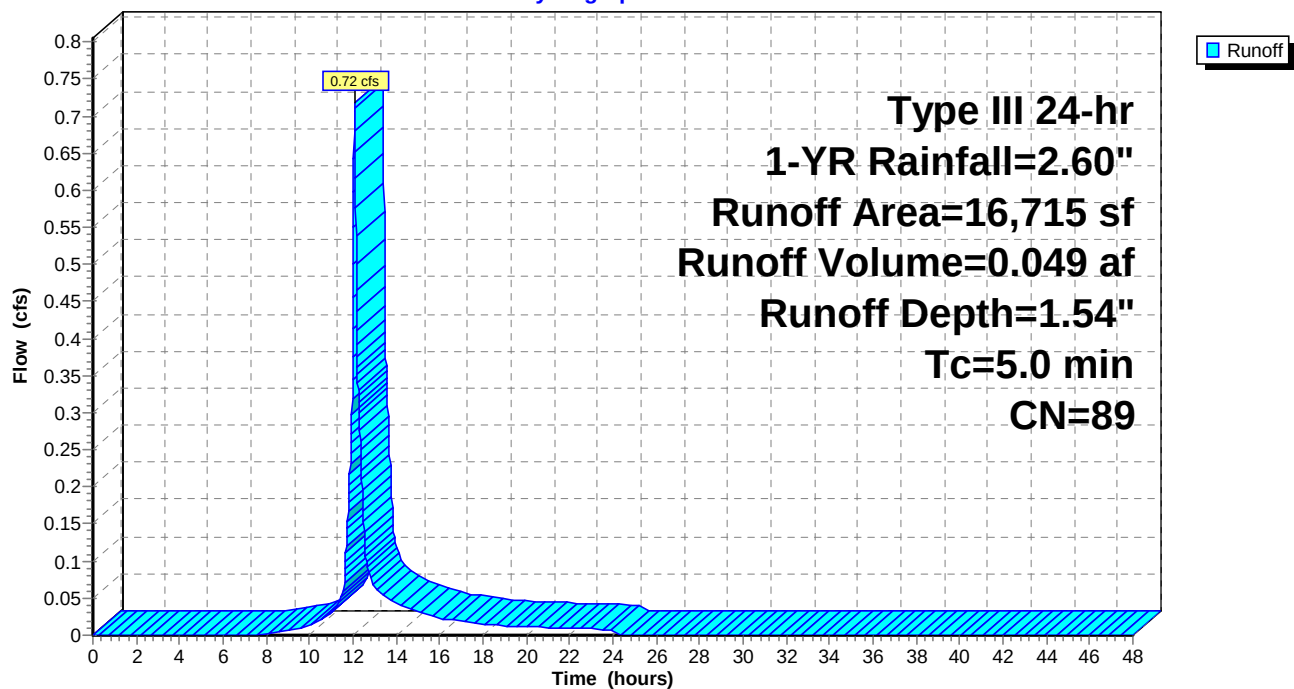
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-YR Rainfall=2.60"

	Area (sf)	CN	Description
*	14,205	98	impervious
*	2,510	39	Lawn/field, HSG A
	16,715	89	Weighted Average
	2,510		15.02% Pervious Area
	14,205		84.98% Impervious Area

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

Subcatchment 60S: Lawn/Field S of school

Hydrograph



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POST
Type III 24-hr 1-YR Rainfall=2.60"

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Page 7

Summary for Subcatchment 61S: Auditorium Roof

Runoff = 0.27 cfs @ 12.07 hrs, Volume= 0.020 af, Depth= 2.37"

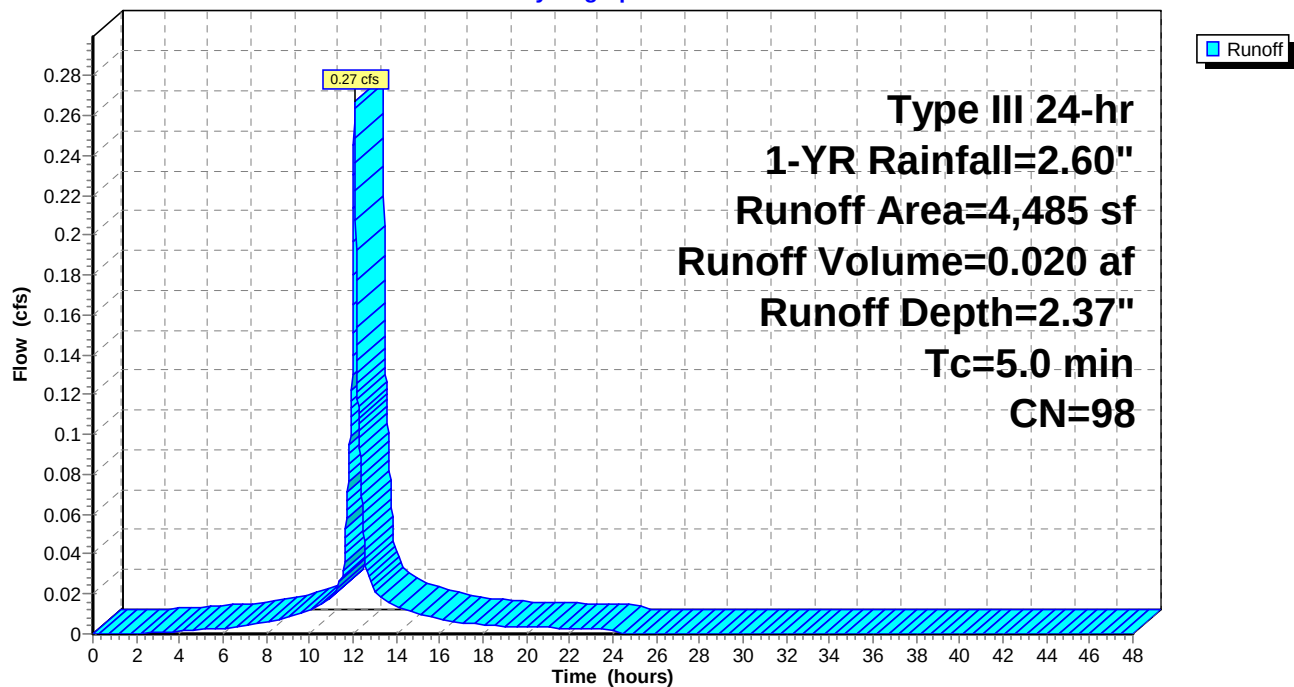
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-YR Rainfall=2.60"

	Area (sf)	CN	Description
*	4,485	98	Roof runoff
	4,485		100.00% Impervious Area

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

Subcatchment 61S: Auditorium Roof

Hydrograph



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POST
Type III 24-hr 1-YR Rainfall=2.60"

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Page 8

Summary for Subcatchment 70S: Thomas & Davies & Gym

Runoff = 1.39 cfs @ 12.08 hrs, Volume= 0.096 af, Depth= 1.13"

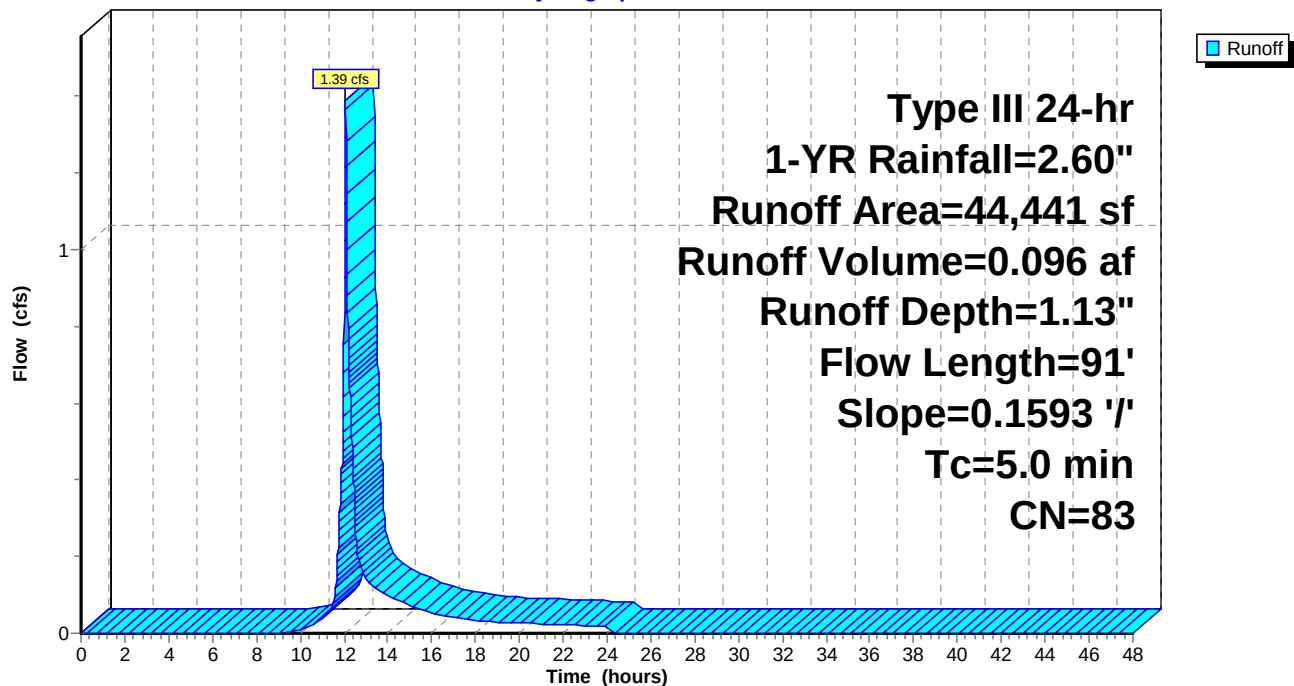
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-YR Rainfall=2.60"

	Area (sf)	CN	Description
*	32,976	98	impervious
*	11,465	39	Lawn/field, HSG A
	44,441	83	Weighted Average
	11,465		25.80% Pervious Area
	32,976		74.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	91	0.1593	0.38		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.19"
4.0	91	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 70S: Thomas & Davies & Gym

Hydrograph



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Type III 24-hr 1-YR Rainfall=2.60"

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Page 9

Summary for Subcatchment 80S: FoundersHall

Runoff = 0.56 cfs @ 12.07 hrs, Volume= 0.043 af, Depth= 2.37"

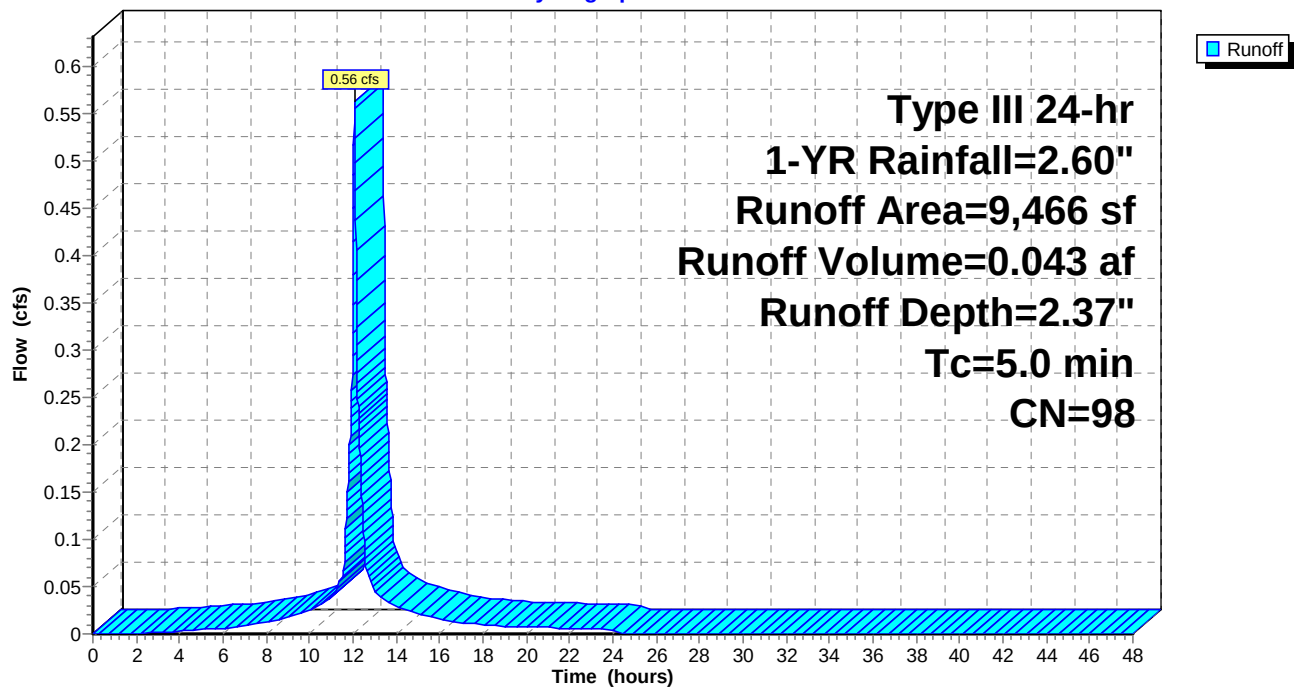
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-YR Rainfall=2.60"

	Area (sf)	CN	Description
*	9,466	98	Roof runoff
	9,466		100.00% Impervious Area

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

Subcatchment 80S: FoundersHall

Hydrograph



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Type III 24-hr 1-YR Rainfall=2.60"

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Page 10

Summary for Subcatchment 90S: Playground

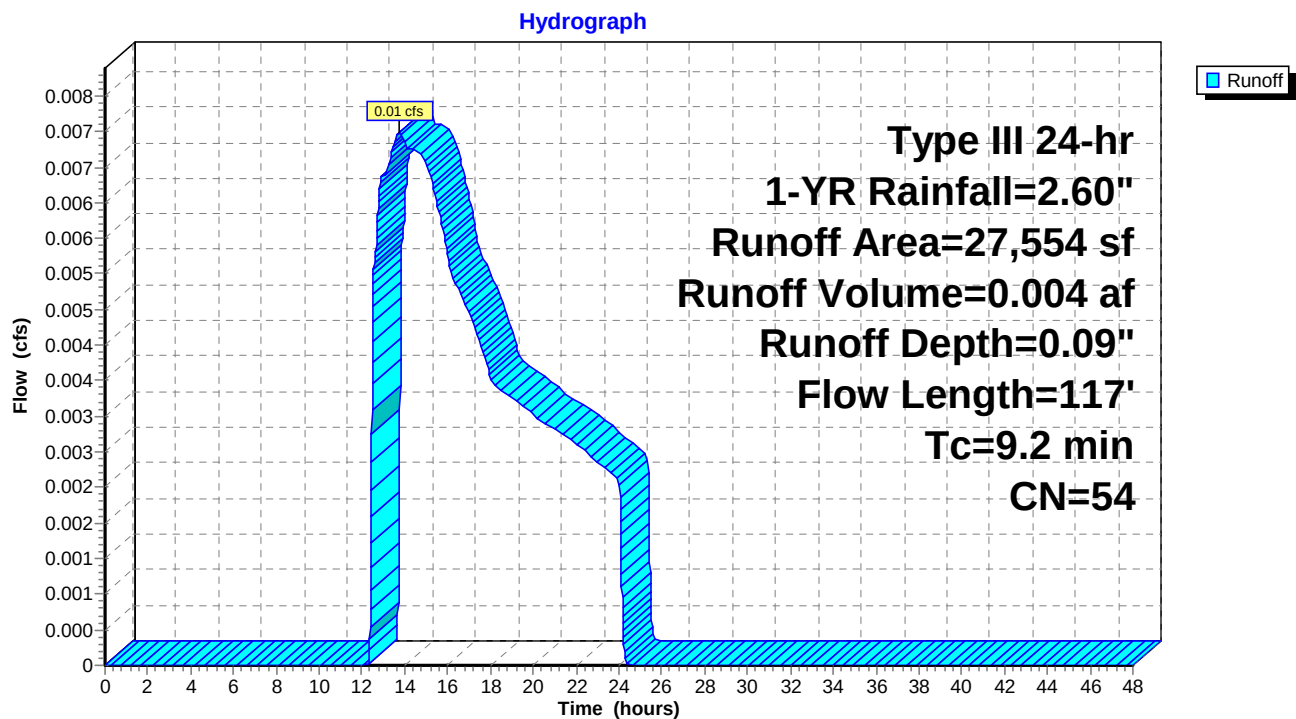
Runoff = 0.01 cfs @ 13.75 hrs, Volume= 0.004 af, Depth= 0.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-YR Rainfall=2.60"

	Area (sf)	CN	Description
*	6,960	98	impervious
*	20,594	39	Lawn/field, HSG A
	27,554	54	Weighted Average
	20,594		74.74% Pervious Area
	6,960		25.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.0250	0.19		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.19"
0.2	17	0.0588	1.70		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
9.2	117	Total			

Subcatchment 90S: Playground



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Type III 24-hr 1-YR Rainfall=2.60"

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Page 11

Summary for Subcatchment 91S: Playground

Runoff = 0.12 cfs @ 12.08 hrs, Volume= 0.009 af, Depth= 0.96"

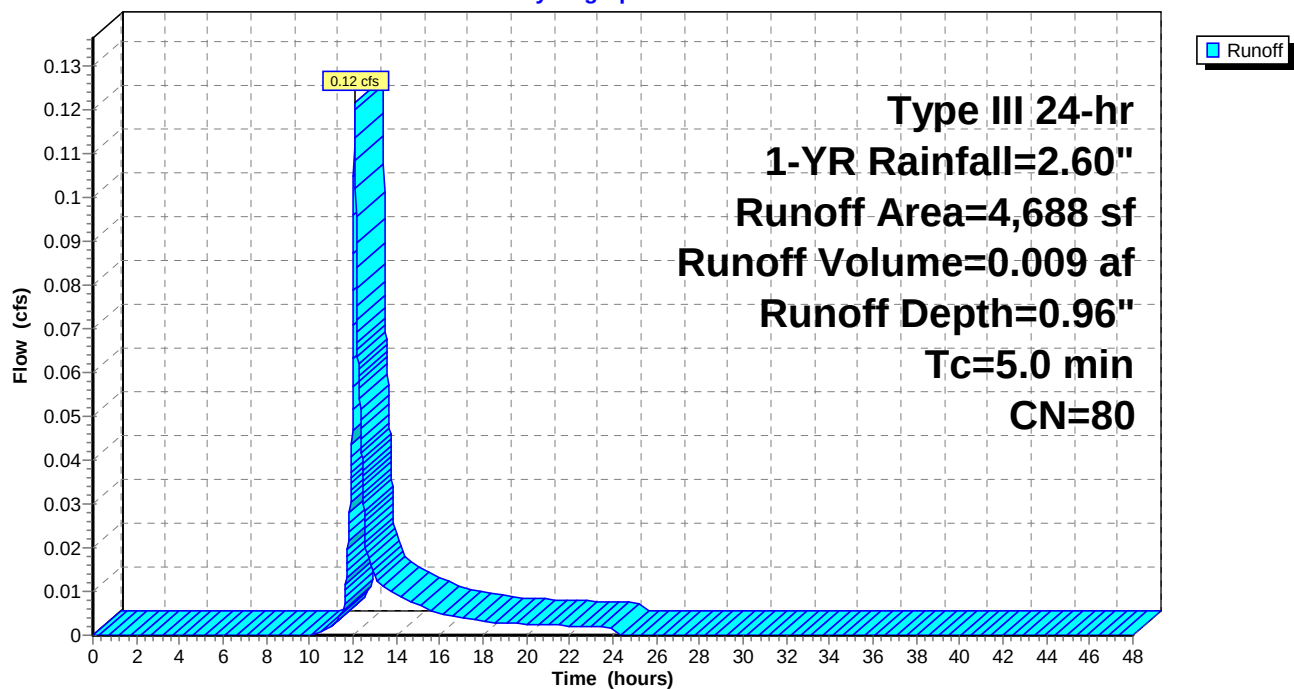
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-YR Rainfall=2.60"

	Area (sf)	CN	Description
*	3,244	98	impervious
*	1,444	39	Lawn/field, HSG A
	4,688	80	Weighted Average
	1,444		30.80% Pervious Area
	3,244		69.20% Impervious Area

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

Subcatchment 91S: Playground

Hydrograph



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POST

Type III 24-hr 1-YR Rainfall=2.60"

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Page 12

Summary for Subcatchment 402S: New Prkng lot

Runoff = 0.18 cfs @ 12.08 hrs, Volume= 0.014 af, Depth= 0.71"

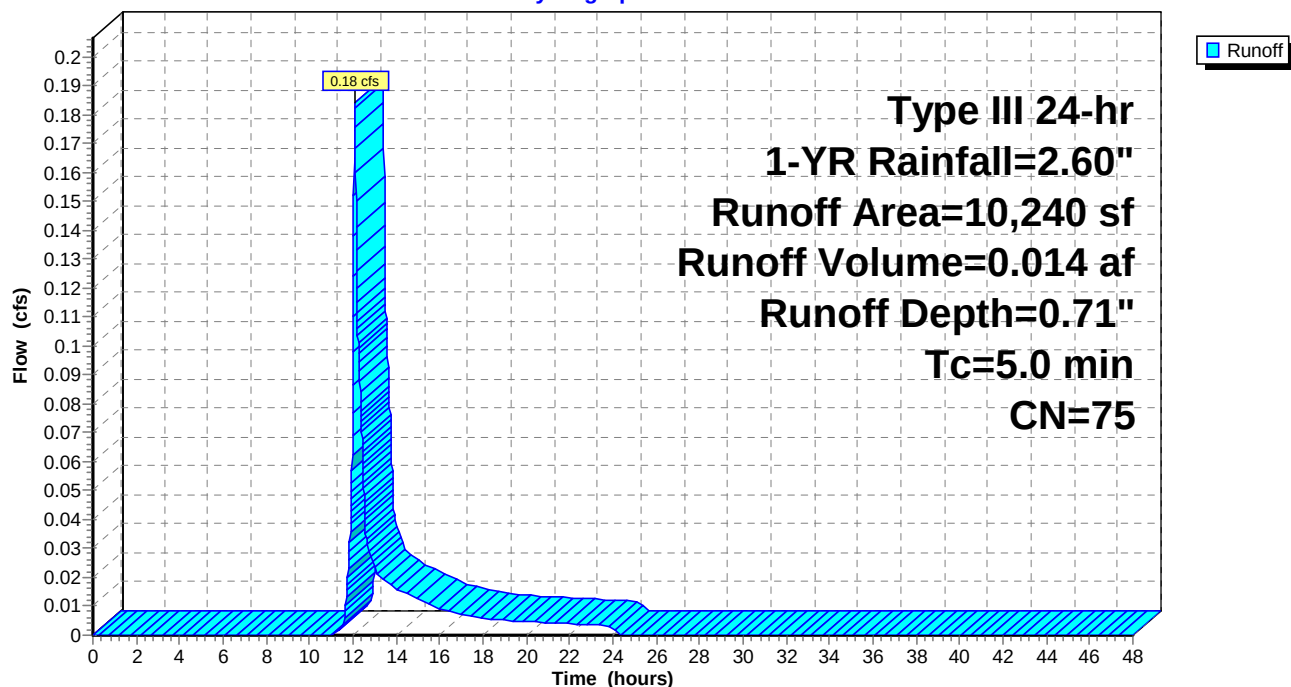
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-YR Rainfall=2.60"

	Area (sf)	CN	Description
*	4,000	39	Pervious
*	6,240	98	Impervious
	10,240	75	Weighted Average
	4,000		39.06% Pervious Area
	6,240		60.94% Impervious Area

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

Subcatchment 402S: New Prkng lot

Hydrograph



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Type III 24-hr 1-YR Rainfall=2.60"

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Page 13

Summary for Reach 161R: roof drain

Inflow Area = 0.10 ac, 100.00% Impervious, Inflow Depth = 2.37" for 1-YR event
Inflow = 0.27 cfs @ 12.07 hrs, Volume = 0.020 af
Outflow = 0.27 cfs @ 12.08 hrs, Volume = 0.020 af, Atten = 0%, Lag = 0.6 min

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

Max. Velocity = 6.29 fps, Min. Travel Time = 0.3 min

Avg. Velocity = 2.04 fps, Avg. Travel Time = 1.1 min

Peak Storage = 5 cf @ 12.07 hrs

Average Depth at Peak Storage = 0.13'

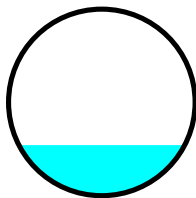
Bank-Full Depth = 0.50' Flow Area = 0.2 sf, Capacity = 1.69 cfs

6.0" Round Pipe

n = 0.013 Corrugated PE, smooth interior

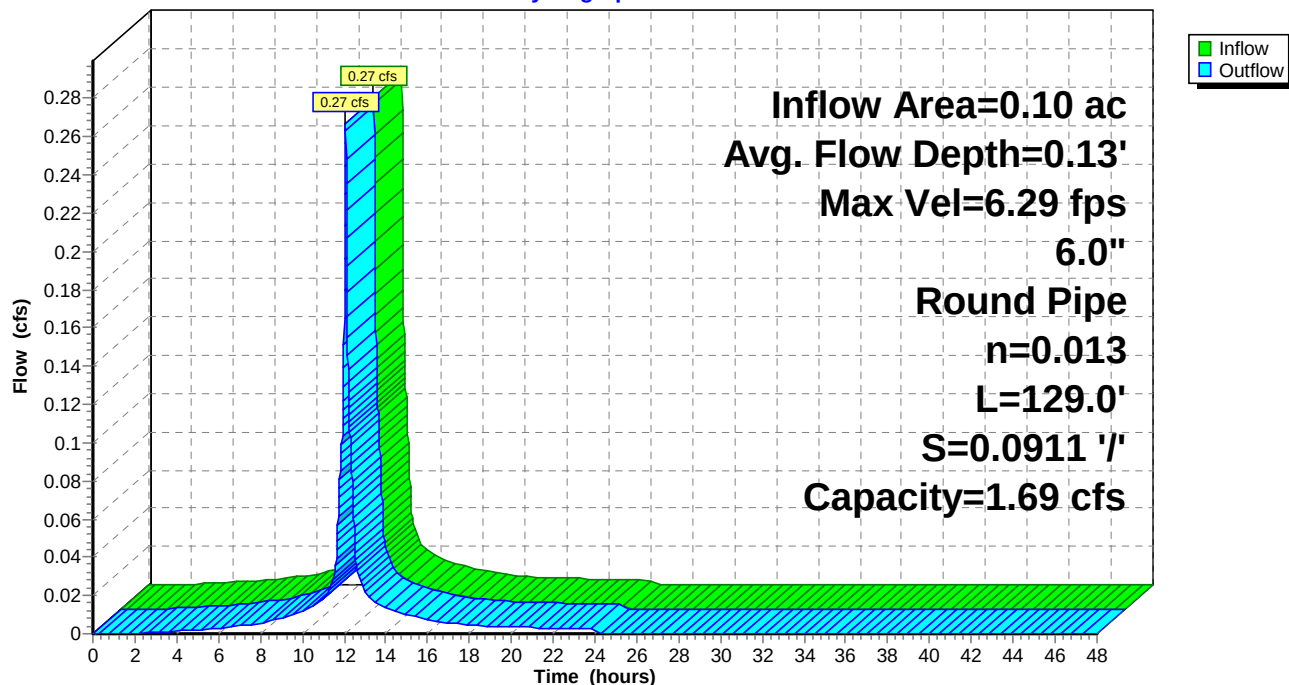
Length = 129.0' Slope = 0.0911 '/'

Inlet Invert = 130.00', Outlet Invert = 118.25'



Reach 161R: roof drain

Hydrograph



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Type III 24-hr 1-YR Rainfall=2.60"

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Page 14

Summary for Pond 1P: USSF

Inflow Area = 1.24 ac, 78.73% Impervious, Inflow Depth = 1.35" for 1-YR event
 Inflow = 1.95 cfs @ 12.08 hrs, Volume= 0.139 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 120.77' @ 24.29 hrs Surf.Area= 4,717 sf Storage= 6,062 cf
 Flood Elev= 126.48' Surf.Area= 4,717 sf Storage= 16,044 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	118.85'	6,599 cf	51.42'W x 91.74'L x 5.50'H Field A 25,943 cf Overall - 9,445 cf Embedded = 16,499 cf x 40.0% Voids
#2A	119.60'	9,445 cf	ADS_StormTech MC-3500 d +Cap x 84 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 7 Rows of 12 Chambers Cap Storage= +14.9 cf x 2 x 7 rows = 208.6 cf
		16,044 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	119.67'	8.0" Round Culvert L= 7.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 119.67' / 119.52' S= 0.0214 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf
#2	Device 1	123.35'	5.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Device 1	121.10'	8.0" Vert. Orifice/Grate C= 0.600
#4	Device 5	118.85'	2.410 in/hr Exfiltration over Surface area above 118.85' Conductivity to Groundwater Elevation = 113.00' Excluded Surface area = 4,717 sf
#5	Secondary	116.02'	6.0" Round Culvert L= 31.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 116.02' / 115.88' S= 0.0045 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf

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Type III 24-hr 1-YR Rainfall=2.60"

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Page 15

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=118.85' (Free Discharge)

1=Culvert (Controls 0.00 cfs)

2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

3=Orifice/Grate (Controls 0.00 cfs)

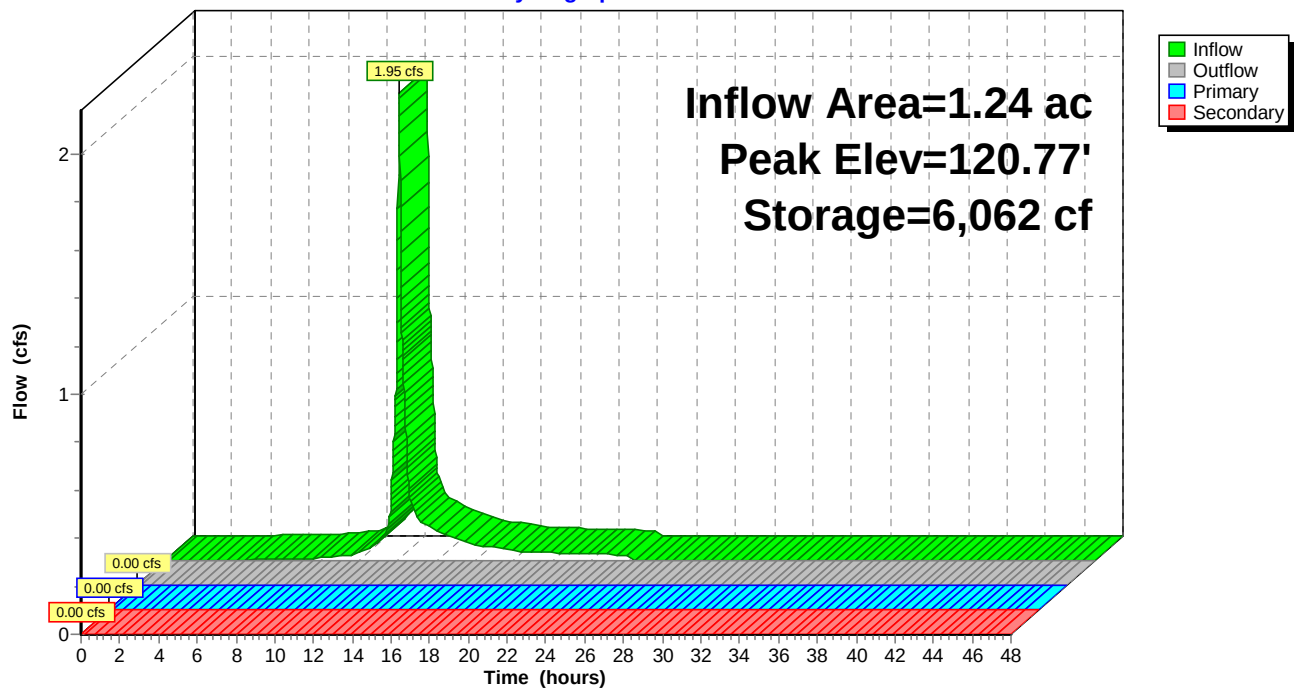
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=118.85' (Free Discharge)

5=Culvert (Passes 0.00 cfs of 1.20 cfs potential flow)

4=Exfiltration (Controls 0.00 cfs)

Pond 1P: USSF

Hydrograph



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Type III 24-hr 1-YR Rainfall=2.60"

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Page 16

Summary for Pond 206P: City CB @ Fletcher & Danforth

Inflow Area = 3.14 ac, 64.59% Impervious, Inflow Depth = 0.45" for 1-YR event
Inflow = 1.42 cfs @ 12.11 hrs, Volume= 0.118 af
Outflow = 1.42 cfs @ 12.11 hrs, Volume= 0.118 af, Atten= 0%, Lag= 0.0 min
Primary = 1.42 cfs @ 12.11 hrs, Volume= 0.118 af

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

Peak Elev= 108.16' @ 12.11 hrs

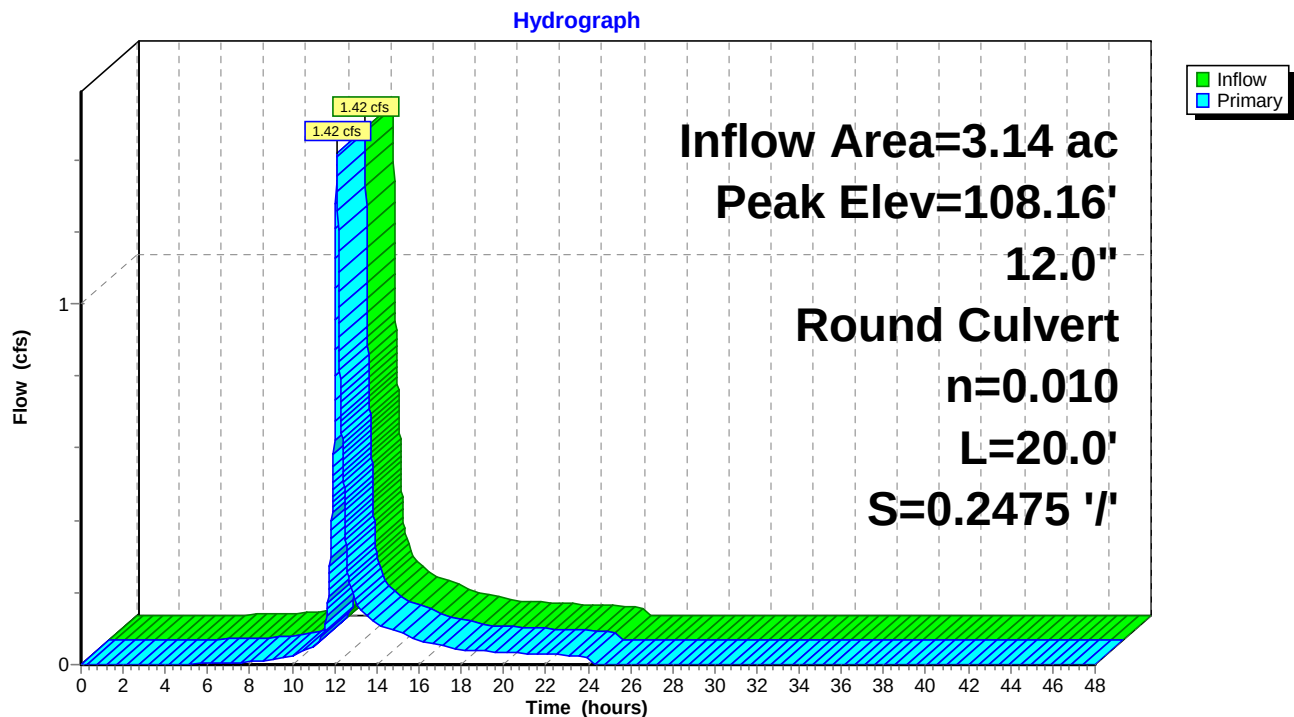
Flood Elev= 111.26'

Device	Routing	Invert	Outlet Devices
#1	Primary	107.43'	12.0" Round Culvert L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 107.43' / 102.48' S= 0.2475 ' / Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.42 cfs @ 12.11 hrs HW=108.16' (Free Discharge)

↑**1=Culvert** (Inlet Controls 1.42 cfs @ 2.30 fps)

Pond 206P: City CB @ Fletcher & Danforth



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Type III 24-hr 1-YR Rainfall=2.60"

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Page 17

Summary for Pond 210P: Existing FI

Inflow Area = 0.44 ac, 56.16% Impervious, Inflow Depth = 0.58" for 1-YR event
Inflow = 0.24 cfs @ 12.13 hrs, Volume= 0.021 af
Outflow = 0.24 cfs @ 12.13 hrs, Volume= 0.021 af, Atten= 0%, Lag= 0.0 min
Primary = 0.24 cfs @ 12.13 hrs, Volume= 0.021 af

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

Peak Elev= 132.28' @ 12.13 hrs

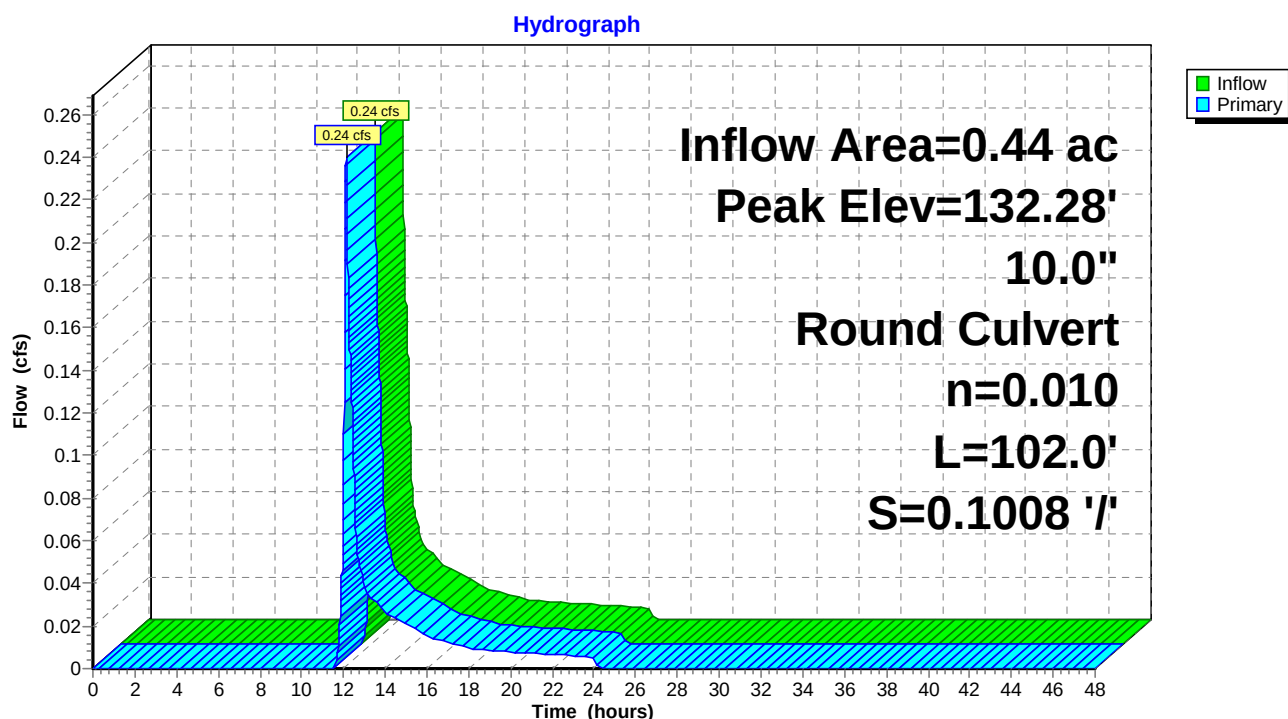
Flood Elev= 140.41'

Device	Routing	Invert	Outlet Devices
#1	Primary	132.00'	10.0" Round Culvert L= 102.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 132.00' / 121.72' S= 0.1008 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.24 cfs @ 12.13 hrs HW=132.28' (Free Discharge)

↑**1=Culvert** (Inlet Controls 0.24 cfs @ 1.43 fps)

Pond 210P: Existing FI



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Type III 24-hr 1-YR Rainfall=2.60"

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Page 18

Summary for Pond 220P: Existing DMH

Inflow Area = 0.44 ac, 56.16% Impervious, Inflow Depth = 0.58" for 1-YR event
Inflow = 0.24 cfs @ 12.13 hrs, Volume= 0.021 af
Outflow = 0.24 cfs @ 12.13 hrs, Volume= 0.021 af, Atten= 0%, Lag= 0.0 min
Primary = 0.24 cfs @ 12.13 hrs, Volume= 0.021 af

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

Peak Elev= 121.96' @ 12.13 hrs

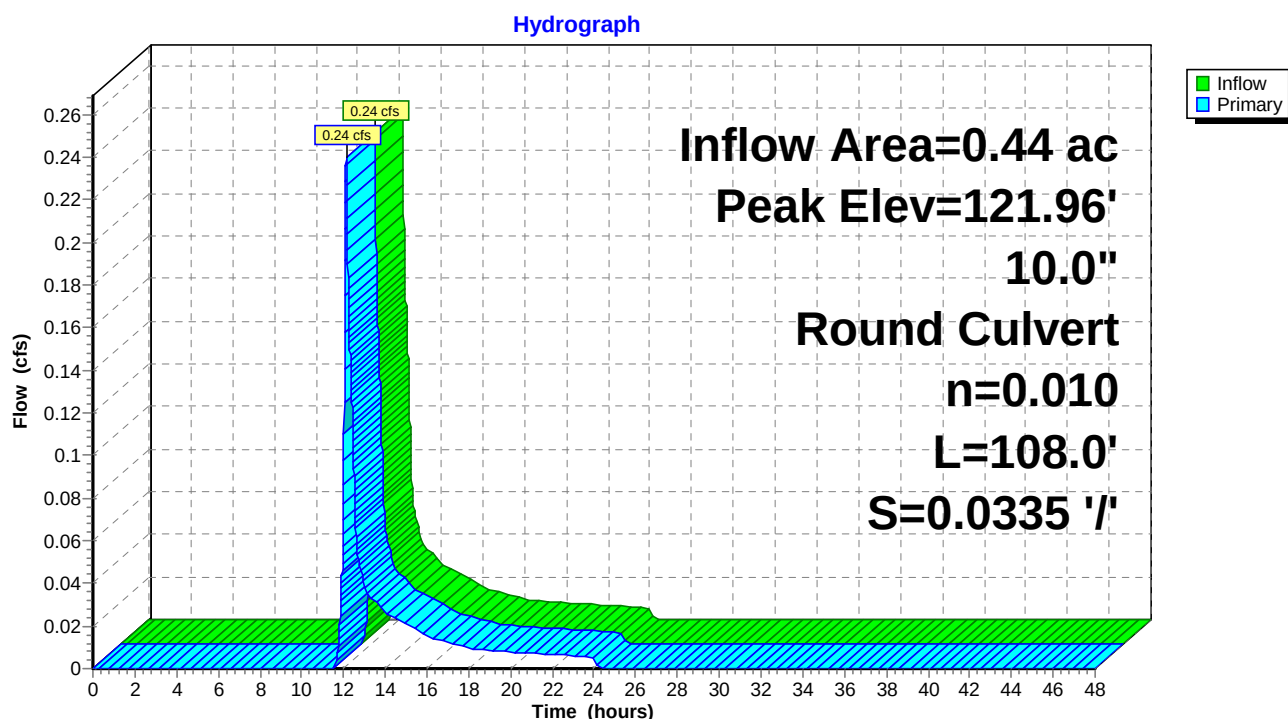
Flood Elev= 128.47'

Device	Routing	Invert	Outlet Devices
#1	Primary	121.67'	10.0" Round Culvert L= 108.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 121.67' / 118.05' S= 0.0335 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.24 cfs @ 12.13 hrs HW=121.96' (Free Discharge)

↑**1=Culvert** (Inlet Controls 0.24 cfs @ 1.44 fps)

Pond 220P: Existing DMH



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Type III 24-hr 1-YR Rainfall=2.60"

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Page 19

Summary for Pond 230P: Existing DMH

Inflow Area = 1.27 ac, 70.40% Impervious, Inflow Depth = 1.07" for 1-YR event
Inflow = 1.42 cfs @ 12.11 hrs, Volume= 0.114 af
Outflow = 1.42 cfs @ 12.11 hrs, Volume= 0.114 af, Atten= 0%, Lag= 0.0 min
Primary = 1.42 cfs @ 12.11 hrs, Volume= 0.114 af

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

Peak Elev= 118.89' @ 12.11 hrs

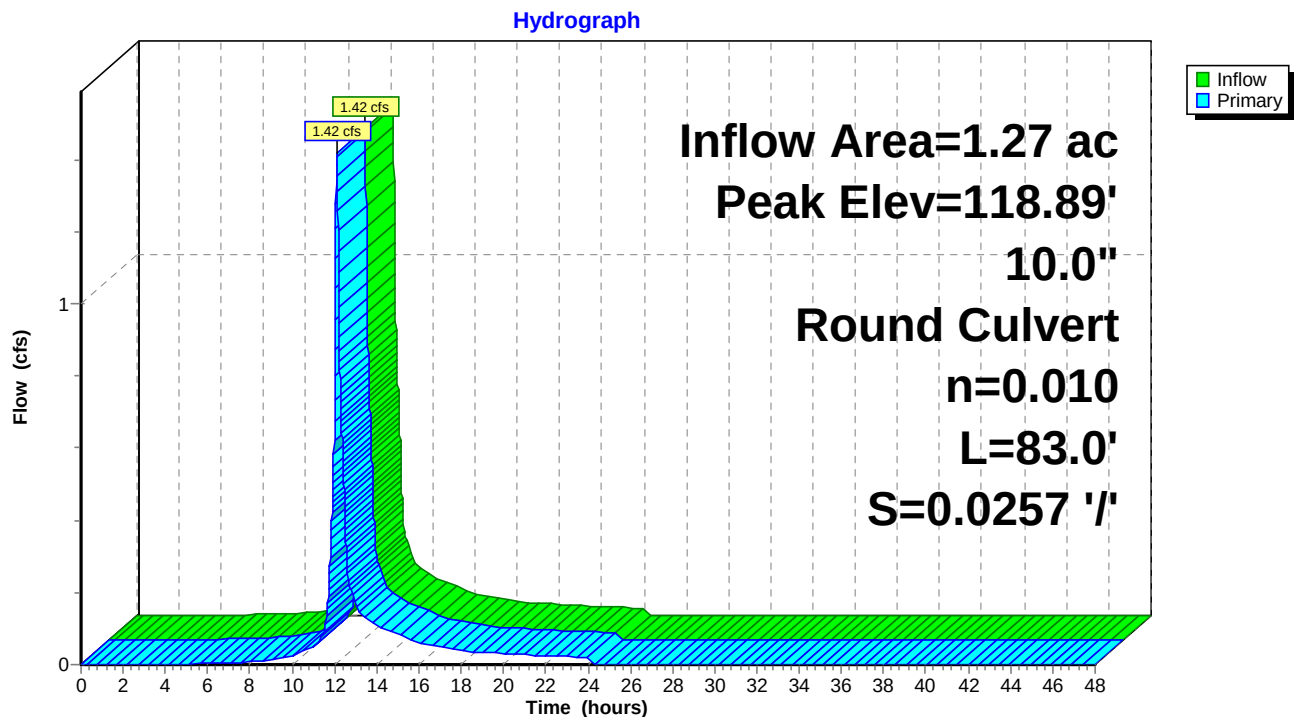
Flood Elev= 125.05'

Device	Routing	Invert	Outlet Devices
#1	Primary	118.00'	10.0" Round Culvert L= 83.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 118.00' / 115.87' S= 0.0257 ' S= 0.0257 ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=1.42 cfs @ 12.11 hrs HW=118.89' (Free Discharge)

↑**1=Culvert** (Inlet Controls 1.42 cfs @ 2.60 fps)

Pond 230P: Existing DMH



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Page 20

Summary for Pond 260P: Storage Pipes

Inflow Area = 0.72 ac, 79.29% Impervious, Inflow Depth = 1.39" for 1-YR event
Inflow = 1.17 cfs @ 12.08 hrs, Volume= 0.084 af
Outflow = 1.07 cfs @ 12.11 hrs, Volume= 0.084 af, Atten= 8%, Lag= 2.0 min
Primary = 1.07 cfs @ 12.11 hrs, Volume= 0.084 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 119.78' @ 12.11 hrs Surf.Area= 454 sf Storage= 114 cf
Flood Elev= 125.26' Surf.Area= 0 sf Storage= 3,468 cf

Plug-Flow detention time= 1.0 min calculated for 0.084 af (100% of inflow)
Center-of-Mass det. time= 1.0 min (814.5 - 813.5)

Volume	Invert	Avail.Storage	Storage Description
#1	119.16'	3,468 cf	48.0" Round Pipe Storage L= 276.0' S= 0.0027 '/

Device	Routing	Invert	Outlet Devices
#1	Primary	119.16'	12.0" Round Culvert L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 119.16' / 118.02' S= 0.0380 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.07 cfs @ 12.11 hrs HW=119.78' (Free Discharge)

↑**1=Culvert** (Inlet Controls 1.07 cfs @ 2.11 fps)

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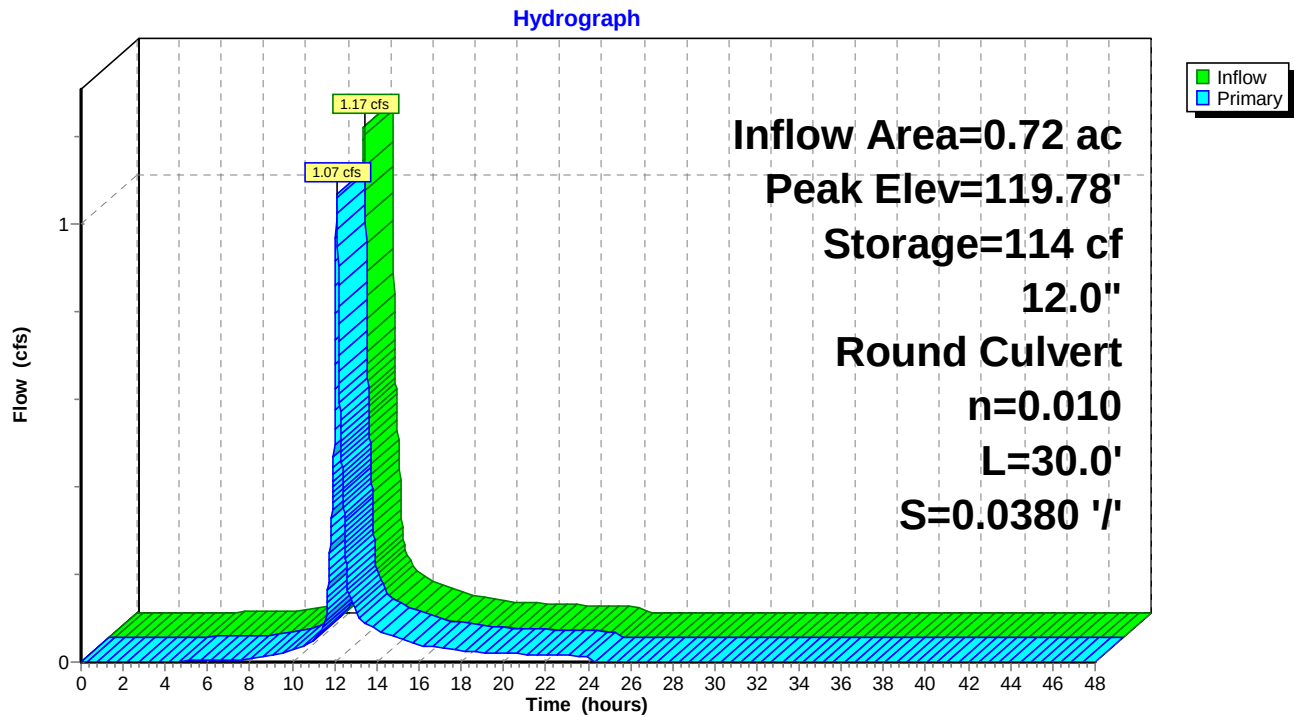
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Page 21

Pond 260P: Storage Pipes



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Type III 24-hr 1-YR Rainfall=2.60"

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Page 22

Summary for Pond 340P: CB at SW Cor prkng lot

Inflow Area = 0.24 ac, 60.94% Impervious, Inflow Depth = 0.71" for 1-YR event
Inflow = 0.18 cfs @ 12.08 hrs, Volume= 0.014 af
Outflow = 0.18 cfs @ 12.08 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min
Primary = 0.18 cfs @ 12.08 hrs, Volume= 0.014 af

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

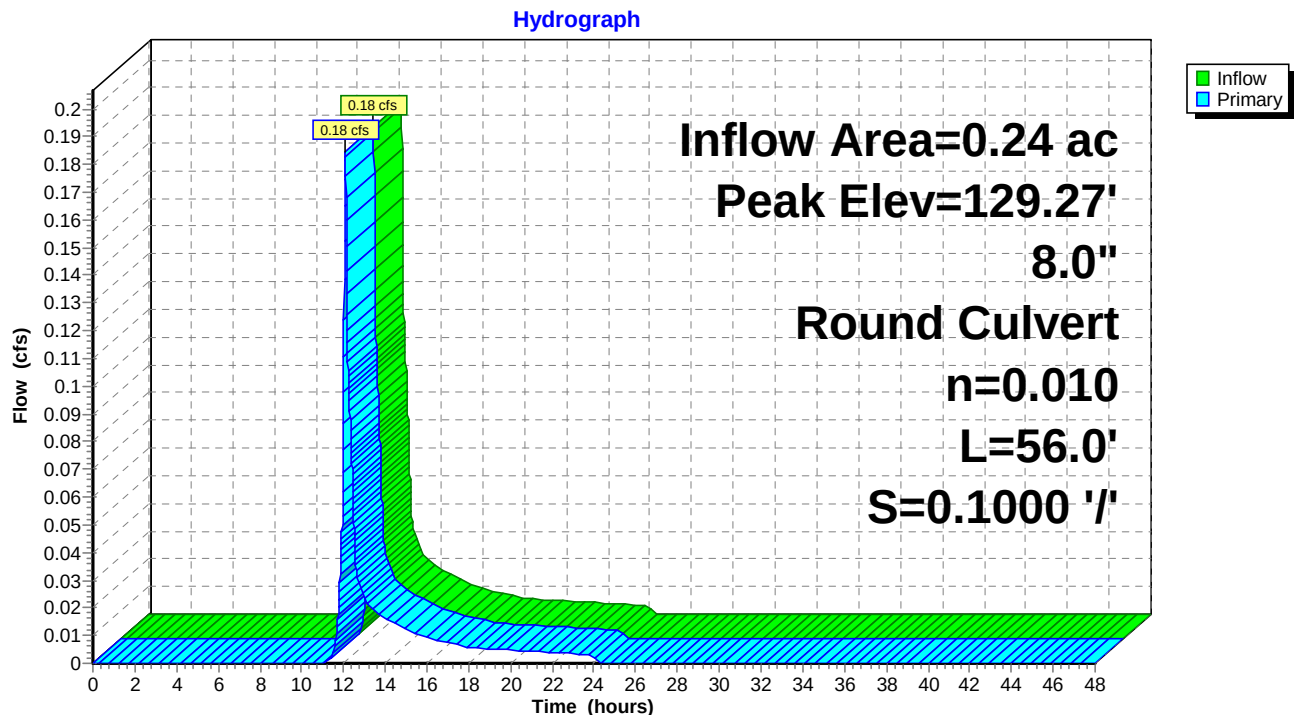
Peak Elev= 129.27' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	129.00'	8.0" Round Culvert L= 56.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 129.00' / 123.40' S= 0.1000 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.18 cfs @ 12.08 hrs HW=129.27' (Free Discharge)

↑**1=Culvert** (Inlet Controls 0.18 cfs @ 1.39 fps)

Pond 340P: CB at SW Cor prkng lot



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Page 23

Summary for Pond CB4: Proposed DMH

Inflow Area = 1.24 ac, 78.73% Impervious, Inflow Depth = 1.35" for 1-YR event
Inflow = 1.95 cfs @ 12.08 hrs, Volume= 0.139 af
Outflow = 1.95 cfs @ 12.08 hrs, Volume= 0.139 af, Atten= 0%, Lag= 0.0 min
Primary = 1.95 cfs @ 12.08 hrs, Volume= 0.139 af

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

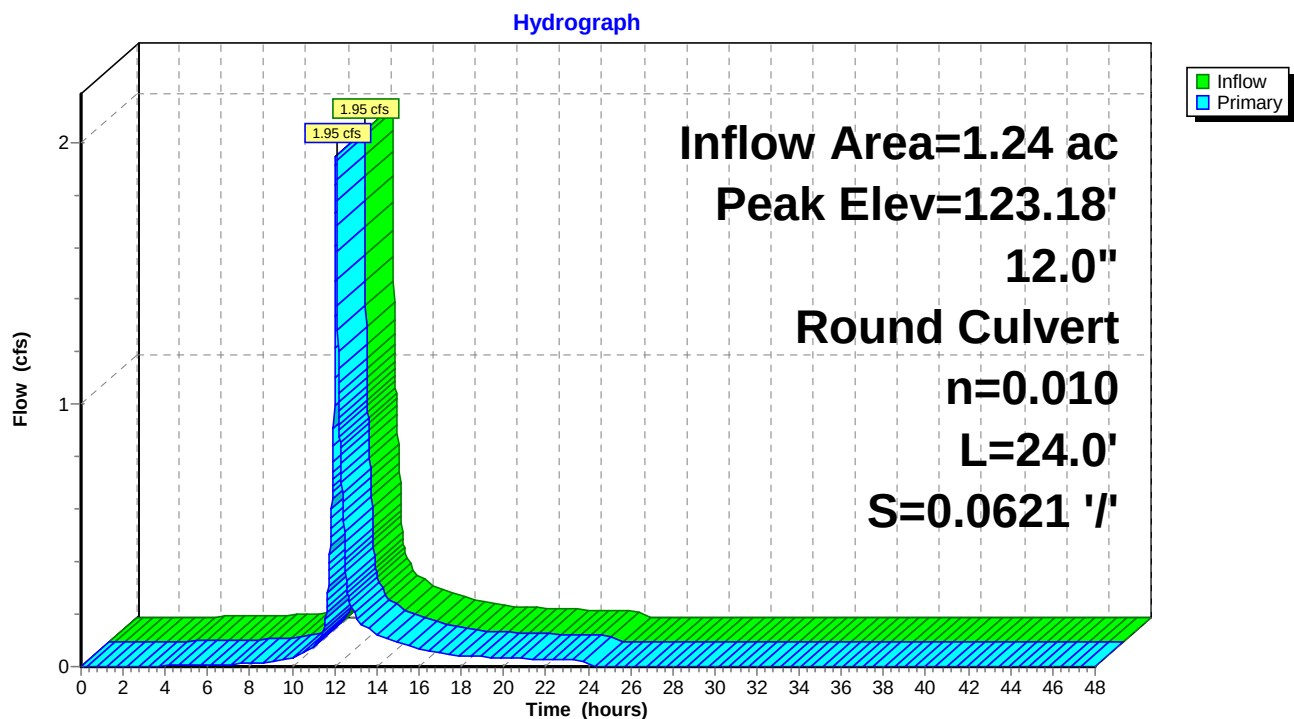
Peak Elev= 123.18' @ 12.08 hrs

Flood Elev= 127.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	122.26'	12.0" Round Culvert L= 24.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 122.26' / 120.77' S= 0.0621 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.95 cfs @ 12.08 hrs HW=123.18' (Free Discharge)
↑**1=Culvert** (Inlet Controls 1.95 cfs @ 2.58 fps)

Pond CB4: Proposed DMH



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Type III 24-hr 1-YR Rainfall=2.60"

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Page 24

Summary for Pond DMH: OCS Bypass

Inflow Area = 1.24 ac, 78.73% Impervious, Inflow Depth = 0.00" for 1-YR event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

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

Peak Elev= 119.42' @ 0.00 hrs

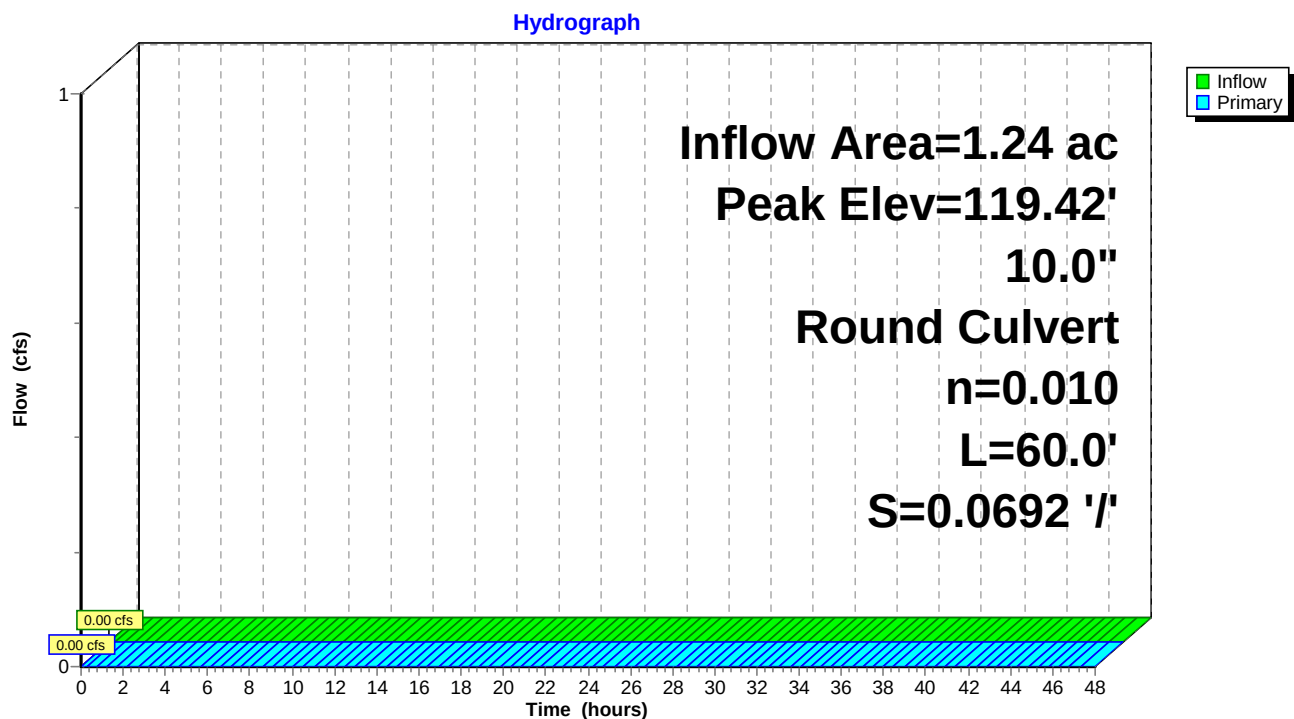
Flood Elev= 126.48'

Device	Routing	Invert	Outlet Devices
#1	Primary	119.42'	10.0" Round Culvert L= 60.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 119.42' / 115.27' S= 0.0692 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=119.42' (Free Discharge)

↑1=Culvert (Controls 0.00 cfs)

Pond DMH: OCS Bypass



6. Post

Type III 24-hr 1-YR Rainfall=2.60"

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Page 25

Summary for Pond DMH6: Access MH

Inflow Area = 1.24 ac, 78.73% Impervious, Inflow Depth = 1.35" for 1-YR event
 Inflow = 1.95 cfs @ 12.08 hrs, Volume= 0.139 af
 Outflow = 1.95 cfs @ 12.08 hrs, Volume= 0.139 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.95 cfs @ 12.08 hrs, Volume= 0.139 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

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

Peak Elev= 120.57' @ 12.08 hrs

Flood Elev= 126.85'

Device	Routing	Invert	Outlet Devices
#1	Primary	119.77'	24.0" Round Culvert L= 9.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 119.77' / 119.77' S= 0.0000 ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Secondary	119.77'	24.0" Round Culvert L= 2.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 119.77' / 119.77' S= 0.0000 ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 3.14 sf
#3	Device 2	123.35'	4.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.94 cfs @ 12.08 hrs HW=120.56' (Free Discharge)

1=Culvert (Barrel Controls 1.94 cfs @ 2.48 fps)
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=119.77' (Free Discharge)

2=Culvert (Controls 0.00 cfs)


3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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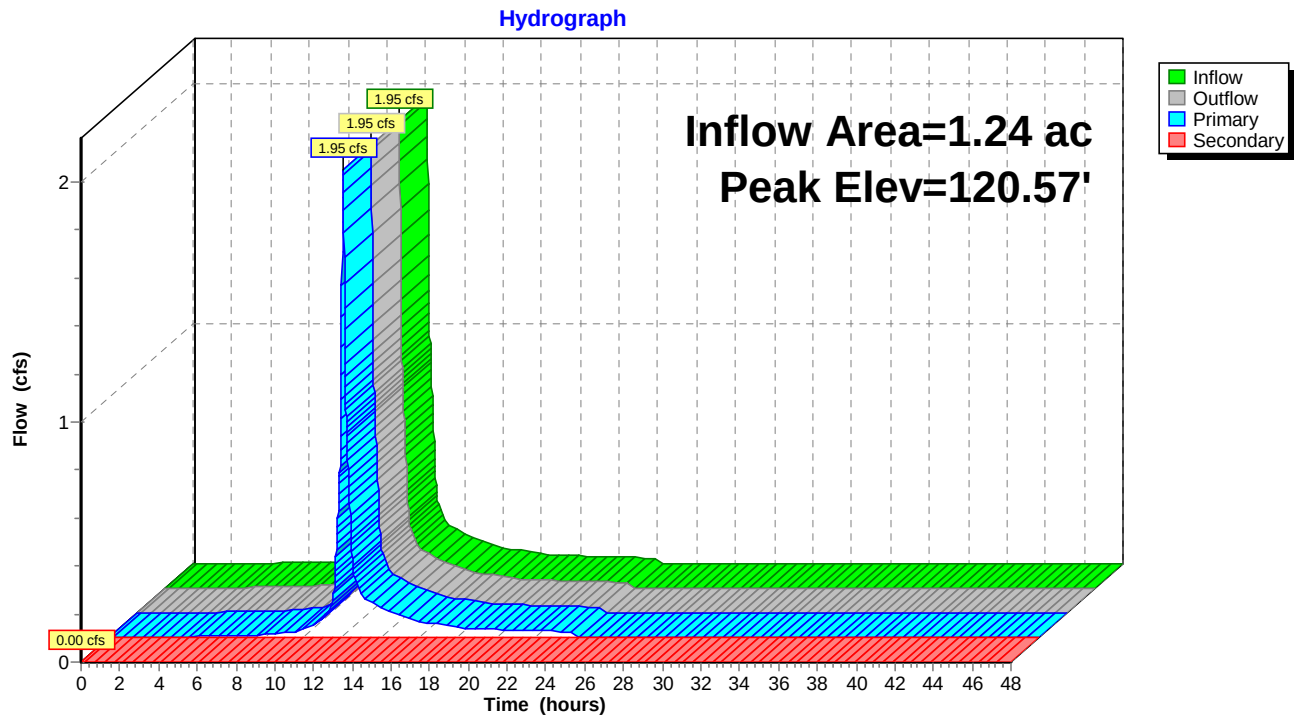
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Page 26

Pond DMH6: Access MH



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Page 27

Summary for Pond DMH7: Proposed Drop DMH

Inflow Area = 2.51 ac, 74.51% Impervious, Inflow Depth = 0.54" for 1-YR event
Inflow = 1.42 cfs @ 12.11 hrs, Volume= 0.114 af
Outflow = 1.42 cfs @ 12.11 hrs, Volume= 0.114 af, Atten= 0%, Lag= 0.0 min
Primary = 1.42 cfs @ 12.11 hrs, Volume= 0.114 af

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

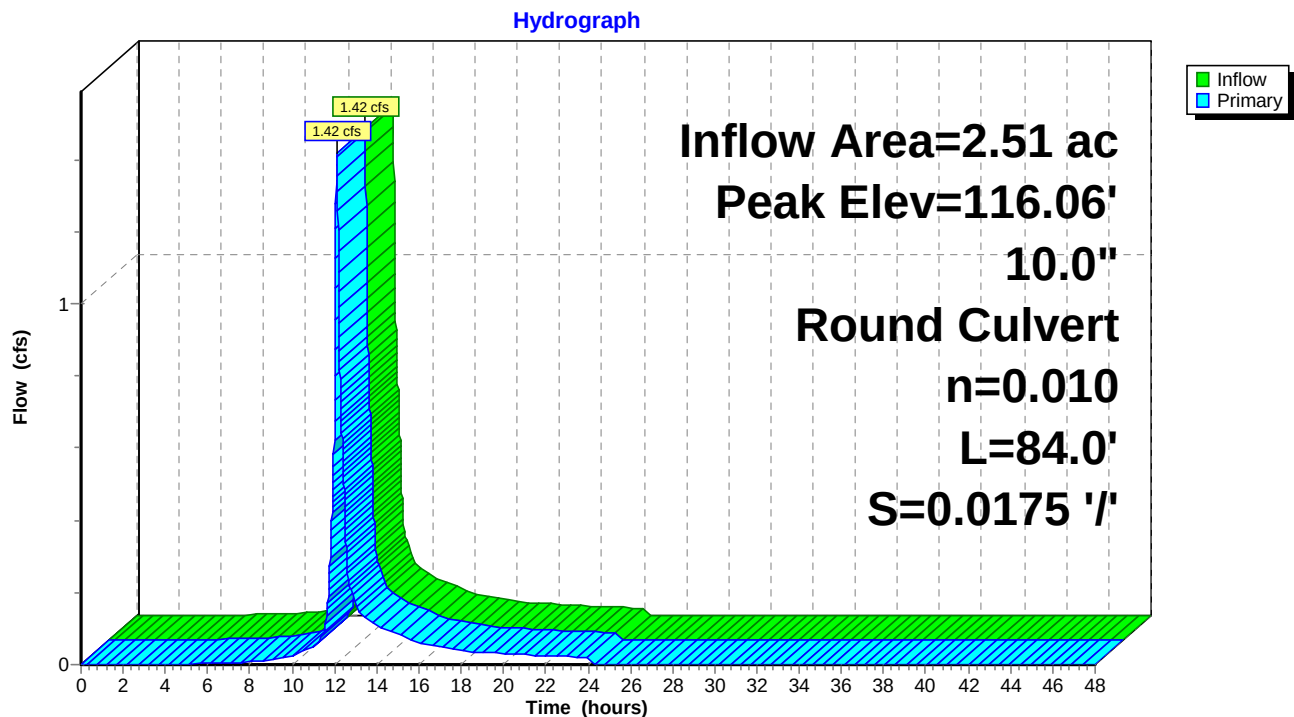
Peak Elev= 116.06' @ 12.11 hrs

Flood Elev= 124.69'

Device	Routing	Invert	Outlet Devices
#1	Primary	115.17'	10.0" Round Culvert L= 84.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 115.17' / 113.70' S= 0.0175 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=1.42 cfs @ 12.11 hrs HW=116.06' (Free Discharge)
↑**1=Culvert** (Inlet Controls 1.42 cfs @ 2.60 fps)

Pond DMH7: Proposed Drop DMH



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Type III 24-hr 1-YR Rainfall=2.60"

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Page 28

Summary for Pond DMH8: Proposed DMH

Inflow Area = 2.51 ac, 74.51% Impervious, Inflow Depth = 0.54" for 1-YR event
Inflow = 1.42 cfs @ 12.11 hrs, Volume= 0.114 af
Outflow = 1.42 cfs @ 12.11 hrs, Volume= 0.114 af, Atten= 0%, Lag= 0.0 min
Primary = 1.42 cfs @ 12.11 hrs, Volume= 0.114 af

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

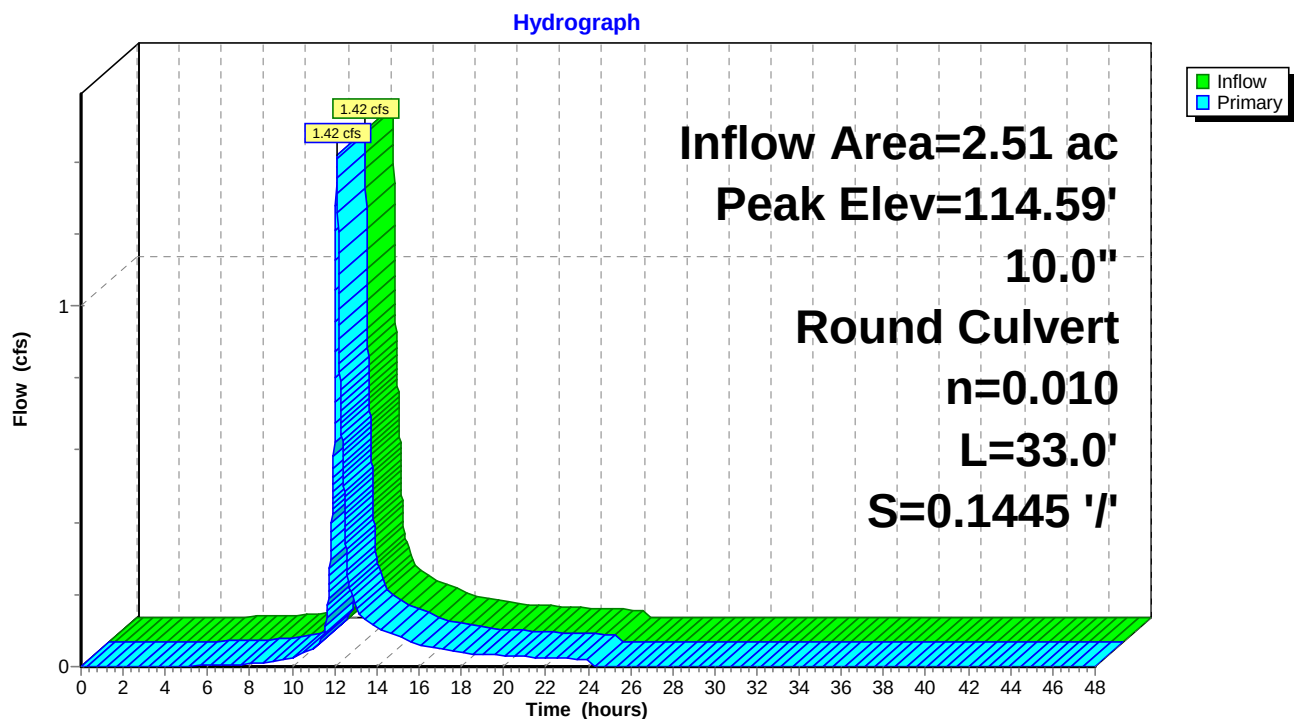
Peak Elev= 114.59' @ 12.11 hrs

Flood Elev= 123.71'

Device	Routing	Invert	Outlet Devices
#1	Primary	113.70'	10.0" Round Culvert L= 33.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 113.70' / 108.93' S= 0.1445 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=1.42 cfs @ 12.11 hrs HW=114.58' (Free Discharge)
1=Culvert (Inlet Controls 1.42 cfs @ 2.60 fps)

Pond DMH8: Proposed DMH



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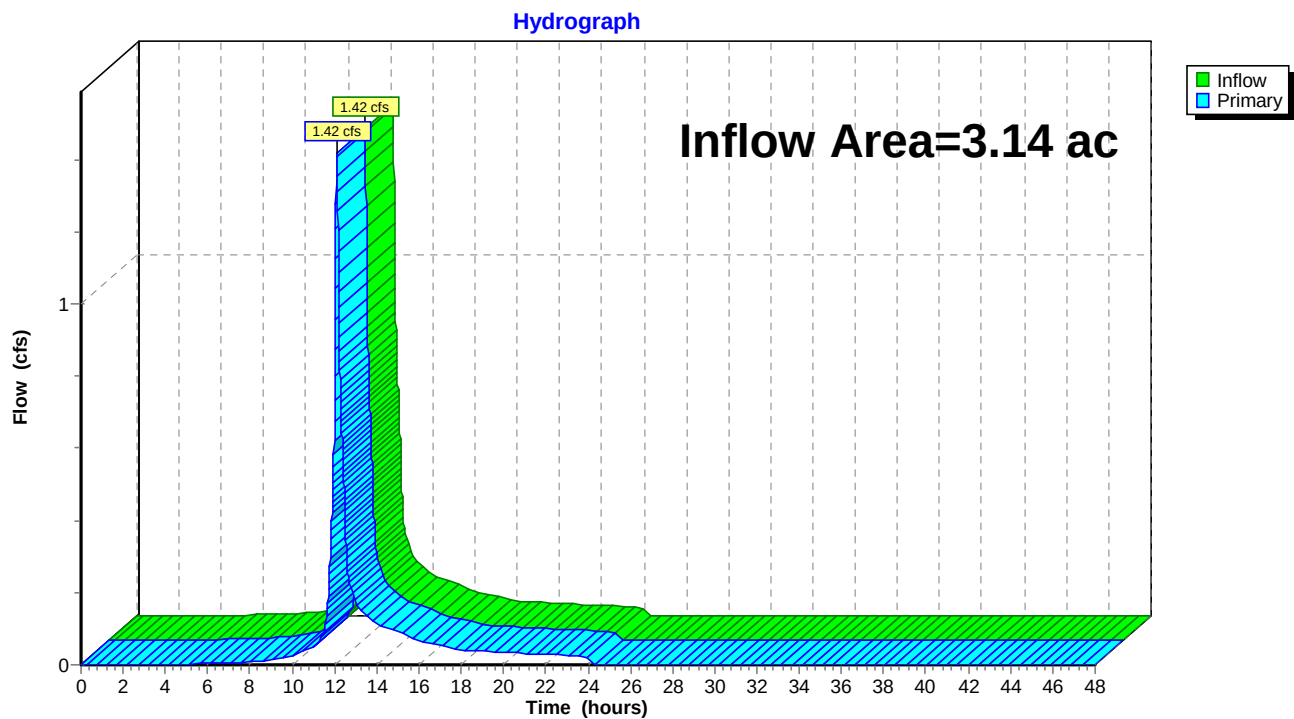
Page 29

Summary for Link SP1: Existing Combined Sewer in Danforth

Inflow Area = 3.14 ac, 64.59% Impervious, Inflow Depth = 0.45" for 1-YR event
Inflow = 1.42 cfs @ 12.11 hrs, Volume= 0.118 af
Primary = 1.42 cfs @ 12.11 hrs, Volume= 0.118 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link SP1: Existing Combined Sewer in Danforth



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

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Page 30

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 10S: Area draining to Runoff Area=19,254 sf 56.16% Impervious Runoff Depth=0.87"
Flow Length=91' Slope=0.0300 '/' Tc=7.7 min CN=72 Runoff=0.39 cfs 0.032 af

Subcatchment 60S: Lawn/Field S of school Runoff Area=16,715 sf 84.98% Impervious Runoff Depth=1.99"
Tc=5.0 min CN=89 Runoff=0.92 cfs 0.064 af

Subcatchment 61S: Auditorium Roof Runoff Area=4,485 sf 100.00% Impervious Runoff Depth=2.87"
Tc=5.0 min CN=98 Runoff=0.32 cfs 0.025 af

Subcatchment 70S: Thomas & Davies & Runoff Area=44,441 sf 74.20% Impervious Runoff Depth=1.53"
Flow Length=91' Slope=0.1593 '/' Tc=5.0 min CN=83 Runoff=1.89 cfs 0.130 af

Subcatchment 80S: FoundersHall Runoff Area=9,466 sf 100.00% Impervious Runoff Depth=2.87"
Tc=5.0 min CN=98 Runoff=0.68 cfs 0.052 af

Subcatchment 90S: Playground Runoff Area=27,554 sf 25.26% Impervious Runoff Depth=0.20"
Flow Length=117' Tc=9.2 min CN=54 Runoff=0.04 cfs 0.010 af

Subcatchment 91S: Playground Runoff Area=4,688 sf 69.20% Impervious Runoff Depth=1.33"
Tc=5.0 min CN=80 Runoff=0.17 cfs 0.012 af

Subcatchment 402S: New Prkng lot Runoff Area=10,240 sf 60.94% Impervious Runoff Depth=1.03"
Tc=5.0 min CN=75 Runoff=0.28 cfs 0.020 af

Reach 161R: roof drain Avg. Flow Depth=0.15' Max Vel=6.63 fps Inflow=0.32 cfs 0.025 af
6.0" Round Pipe n=0.013 L=129.0' S=0.0911 '/' Capacity=1.69 cfs Outflow=0.32 cfs 0.025 af

Pond 1P: USSF Peak Elev=121.19' Storage=7,622 cf Inflow=2.57 cfs 0.182 af
Primary=0.03 cfs 0.014 af Secondary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.014 af

Pond 206P: City CB @ Fletcher & Danforth Peak Elev=108.33' Inflow=1.91 cfs 0.177 af
12.0" Round Culvert n=0.010 L=20.0' S=0.2475 '/' Outflow=1.91 cfs 0.177 af

Pond 210P: Existing FI Peak Elev=132.37' Inflow=0.39 cfs 0.032 af
10.0" Round Culvert n=0.010 L=102.0' S=0.1008 '/' Outflow=0.39 cfs 0.032 af

Pond 220P: Existing DMH Peak Elev=122.04' Inflow=0.39 cfs 0.032 af
10.0" Round Culvert n=0.010 L=108.0' S=0.0335 '/' Outflow=0.39 cfs 0.032 af

Pond 230P: Existing DMH Peak Elev=119.26' Inflow=1.91 cfs 0.152 af
10.0" Round Culvert n=0.010 L=83.0' S=0.0257 '/' Outflow=1.91 cfs 0.152 af

Pond 260P: Storage Pipes Peak Elev=119.87' Storage=164 cf Inflow=1.52 cfs 0.108 af
12.0" Round Culvert n=0.010 L=30.0' S=0.0380 '/' Outflow=1.37 cfs 0.108 af

Pond 340P: CB at SW Cor prkng lot Peak Elev=129.34' Inflow=0.28 cfs 0.020 af
8.0" Round Culvert n=0.010 L=56.0' S=0.1000 '/' Outflow=0.28 cfs 0.020 af

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

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Page 31

Pond CB4: Proposed DMH

Peak Elev=123.50' Inflow=2.57 cfs 0.182 af
12.0" Round Culvert n=0.010 L=24.0' S=0.0621 '/' Outflow=2.57 cfs 0.182 af

Pond DMH: OCS Bypass

Peak Elev=119.51' Inflow=0.03 cfs 0.014 af
10.0" Round Culvert n=0.010 L=60.0' S=0.0692 '/' Outflow=0.03 cfs 0.014 af

Pond DMH6: Access MH

Peak Elev=120.69' Inflow=2.57 cfs 0.182 af
Primary=2.57 cfs 0.182 af Secondary=0.00 cfs 0.000 af Outflow=2.57 cfs 0.182 af

Pond DMH7: Proposed Drop DMH

Peak Elev=116.43' Inflow=1.91 cfs 0.166 af
10.0" Round Culvert n=0.010 L=84.0' S=0.0175 '/' Outflow=1.91 cfs 0.166 af

Pond DMH8: Proposed DMH

Peak Elev=114.96' Inflow=1.91 cfs 0.166 af
10.0" Round Culvert n=0.010 L=33.0' S=0.1445 '/' Outflow=1.91 cfs 0.166 af

Link SP1: Existing Combined Sewer in Danforth

Inflow=1.91 cfs 0.177 af
Primary=1.91 cfs 0.177 af

Total Runoff Area = 3.14 ac Runoff Volume = 0.344 af Average Runoff Depth = 1.32"
35.41% Pervious = 1.11 ac 64.59% Impervious = 2.03 ac

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

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Page 32

Summary for Subcatchment 10S: Area draining to Sanctuary

Runoff = 0.39 cfs @ 12.12 hrs, Volume= 0.032 af, Depth= 0.87"

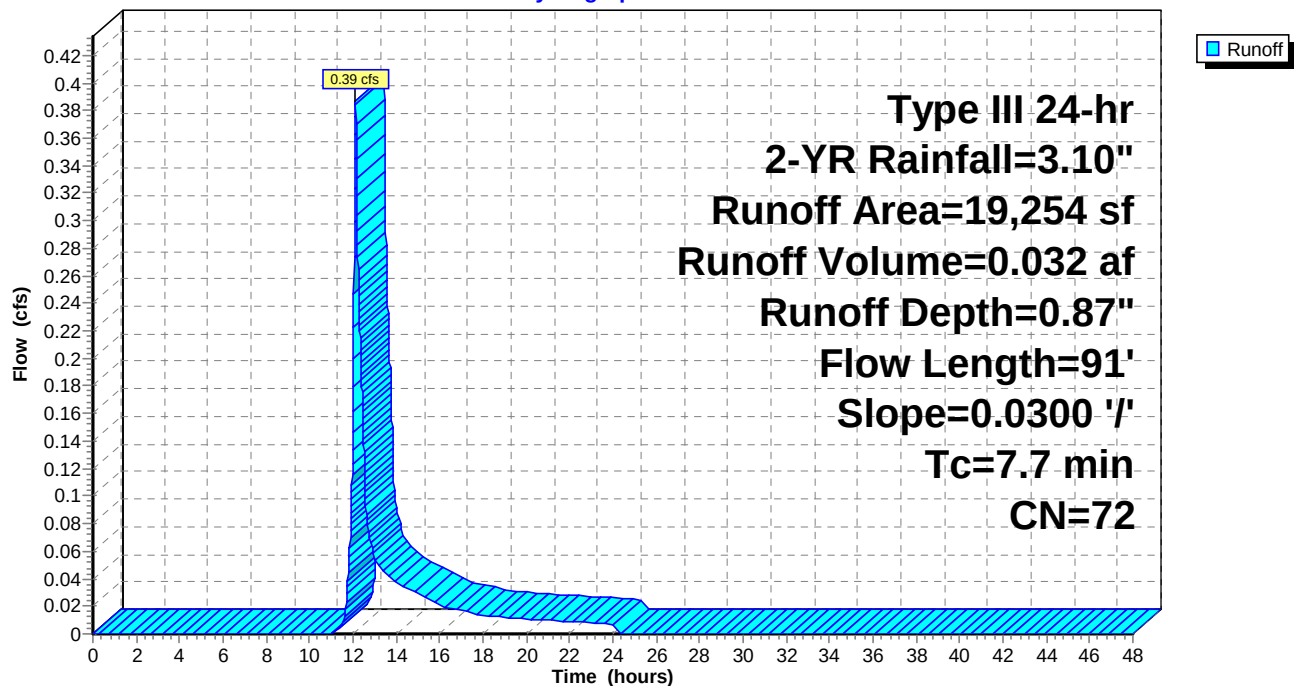
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.10"

	Area (sf)	CN	Description
*	10,813	98	impervious
*	8,441	39	Lawn/field, HSG A
	19,254	72	Weighted Average
	8,441		43.84% Pervious Area
	10,813		56.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	91	0.0300	0.20		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.19"

Subcatchment 10S: Area draining to Sanctuary

Hydrograph



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

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Page 33

Summary for Subcatchment 60S: Lawn/Field S of school

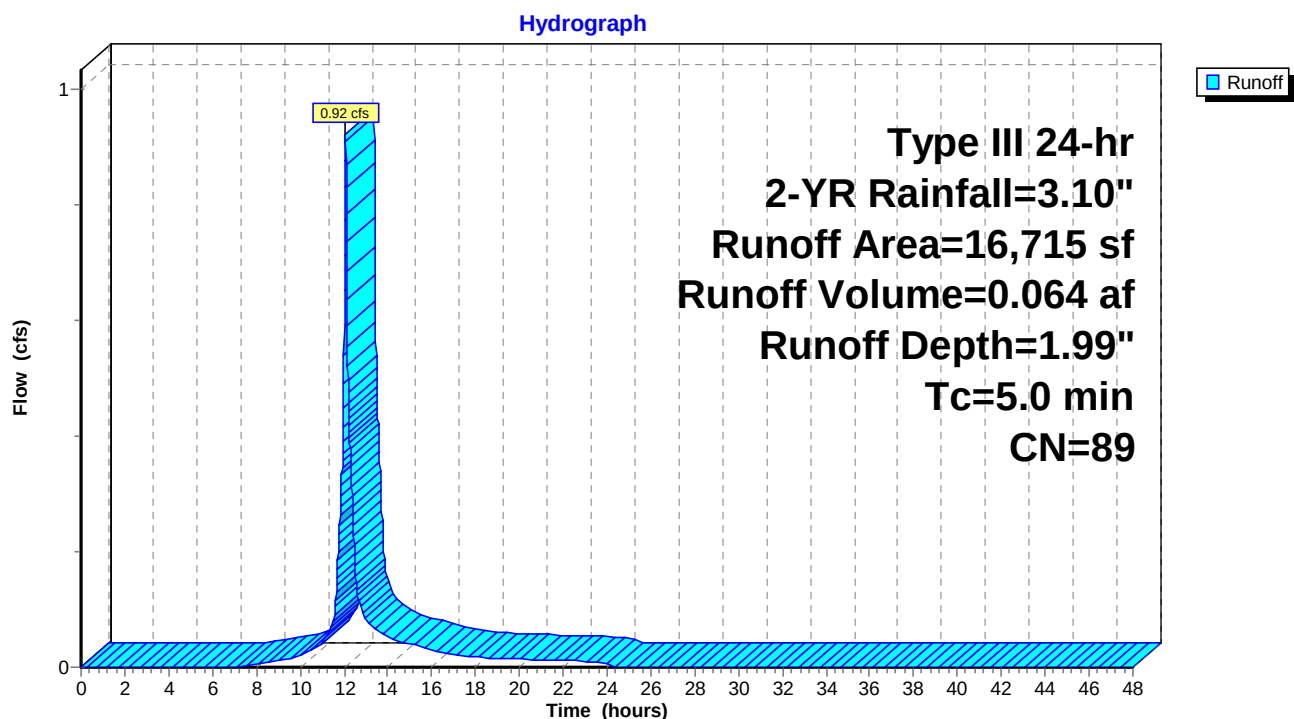
Runoff = 0.92 cfs @ 12.07 hrs, Volume= 0.064 af, Depth= 1.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.10"

	Area (sf)	CN	Description
*	14,205	98	impervious
*	2,510	39	Lawn/field, HSG A
	16,715	89	Weighted Average
	2,510		15.02% Pervious Area
	14,205		84.98% Impervious Area

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

Subcatchment 60S: Lawn/Field S of school



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

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Page 34

Summary for Subcatchment 61S: Auditorium Roof

Runoff = 0.32 cfs @ 12.07 hrs, Volume= 0.025 af, Depth= 2.87"

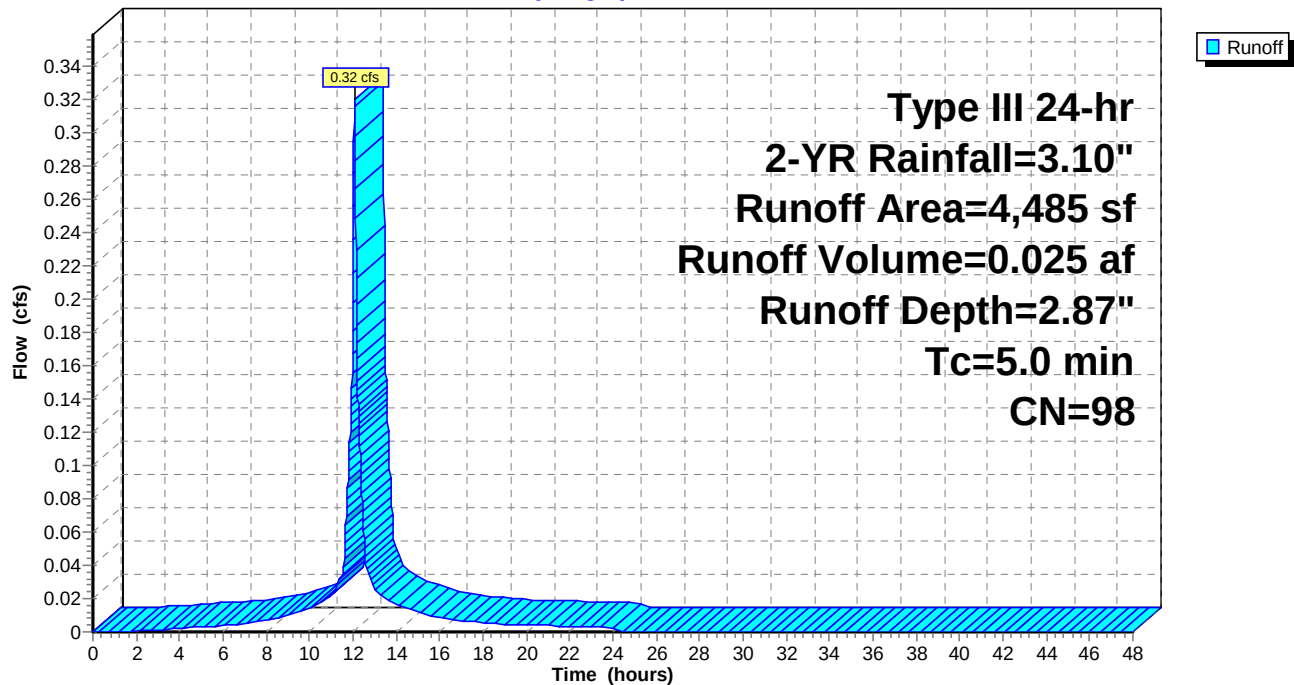
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.10"

	Area (sf)	CN	Description
*	4,485	98	Roof runoff
	4,485		100.00% Impervious Area

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

Subcatchment 61S: Auditorium Roof

Hydrograph



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

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Page 35

Summary for Subcatchment 70S: Thomas & Davies & Gym

Runoff = 1.89 cfs @ 12.08 hrs, Volume= 0.130 af, Depth= 1.53"

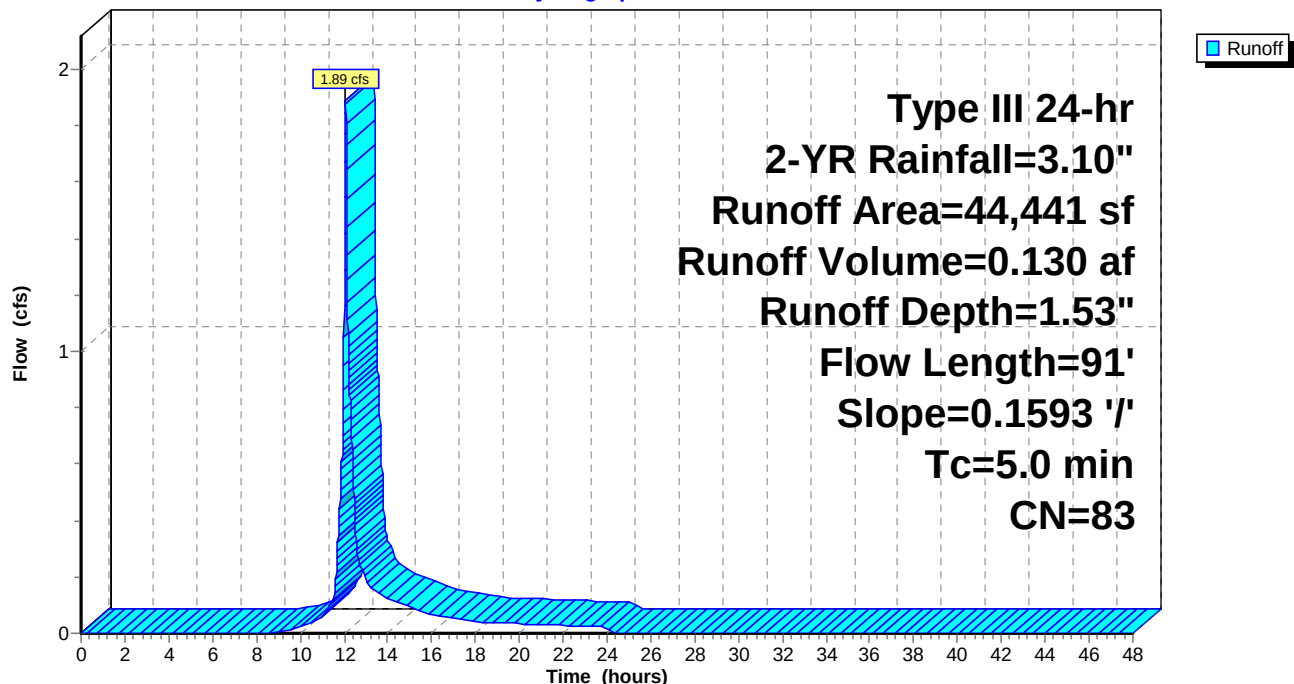
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.10"

	Area (sf)	CN	Description
*	32,976	98	impervious
*	11,465	39	Lawn/field, HSG A
	44,441	83	Weighted Average
	11,465		25.80% Pervious Area
	32,976		74.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	91	0.1593	0.38		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.19"
4.0	91	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 70S: Thomas & Davies & Gym

Hydrograph



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

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Page 36

Summary for Subcatchment 80S: FoundersHall

Runoff = 0.68 cfs @ 12.07 hrs, Volume= 0.052 af, Depth= 2.87"

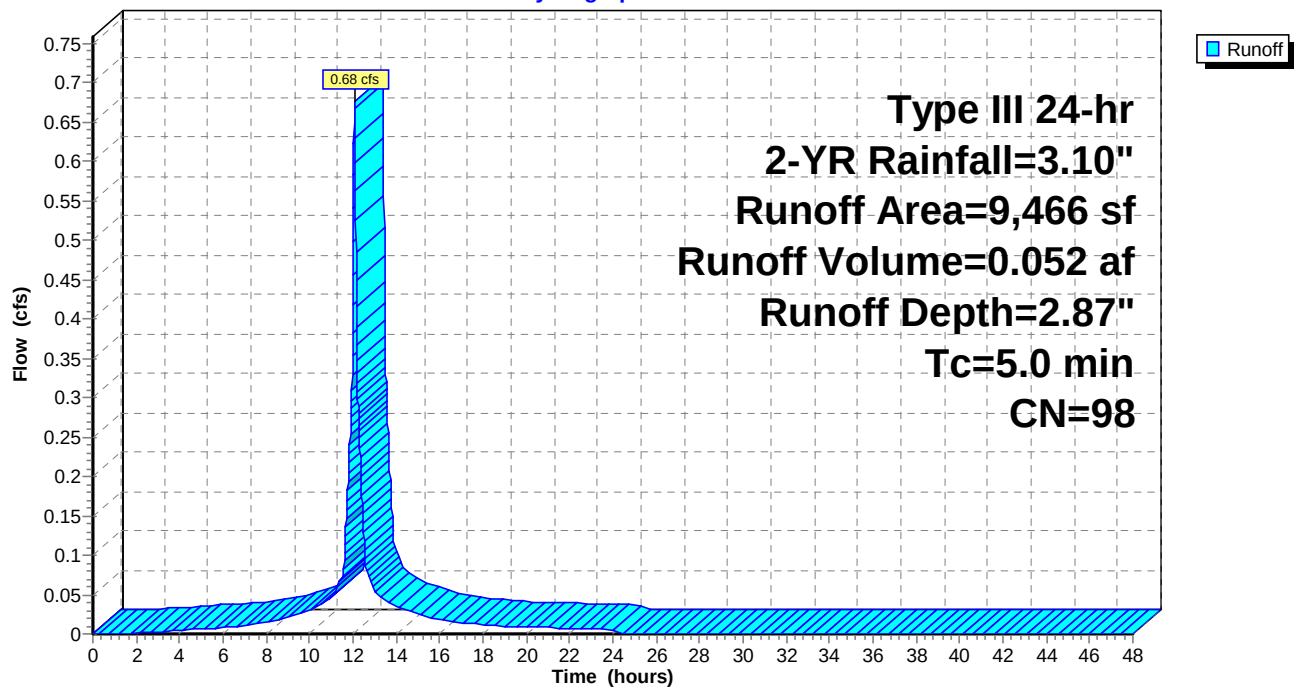
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.10"

	Area (sf)	CN	Description
*	9,466	98	Roof runoff
	9,466		100.00% Impervious Area

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

Subcatchment 80S: FoundersHall

Hydrograph



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

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Page 37

Summary for Subcatchment 90S: Playground

Runoff = 0.04 cfs @ 12.42 hrs, Volume= 0.010 af, Depth= 0.20"

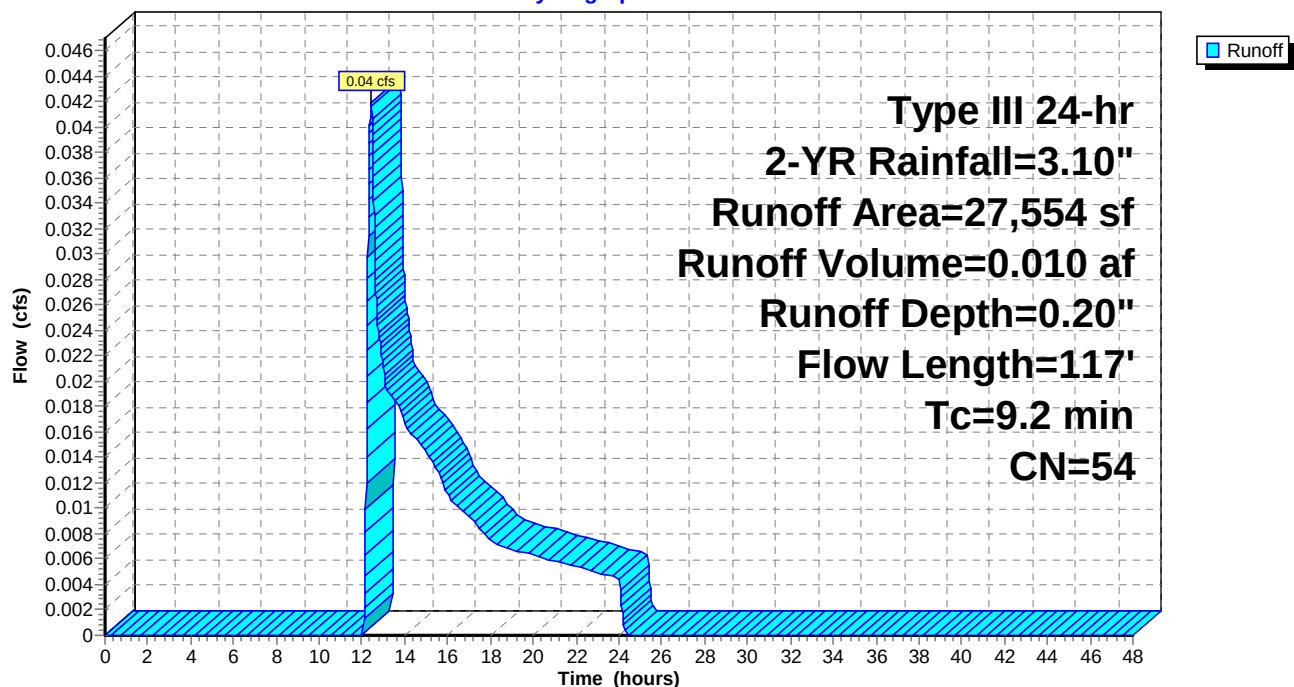
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.10"

	Area (sf)	CN	Description
*	6,960	98	impervious
*	20,594	39	Lawn/field, HSG A
	27,554	54	Weighted Average
	20,594		74.74% Pervious Area
	6,960		25.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.0250	0.19		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.19"
0.2	17	0.0588	1.70		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
9.2	117	Total			

Subcatchment 90S: Playground

Hydrograph



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Page 38

Summary for Subcatchment 91S: Playground

Runoff = 0.17 cfs @ 12.08 hrs, Volume= 0.012 af, Depth= 1.33"

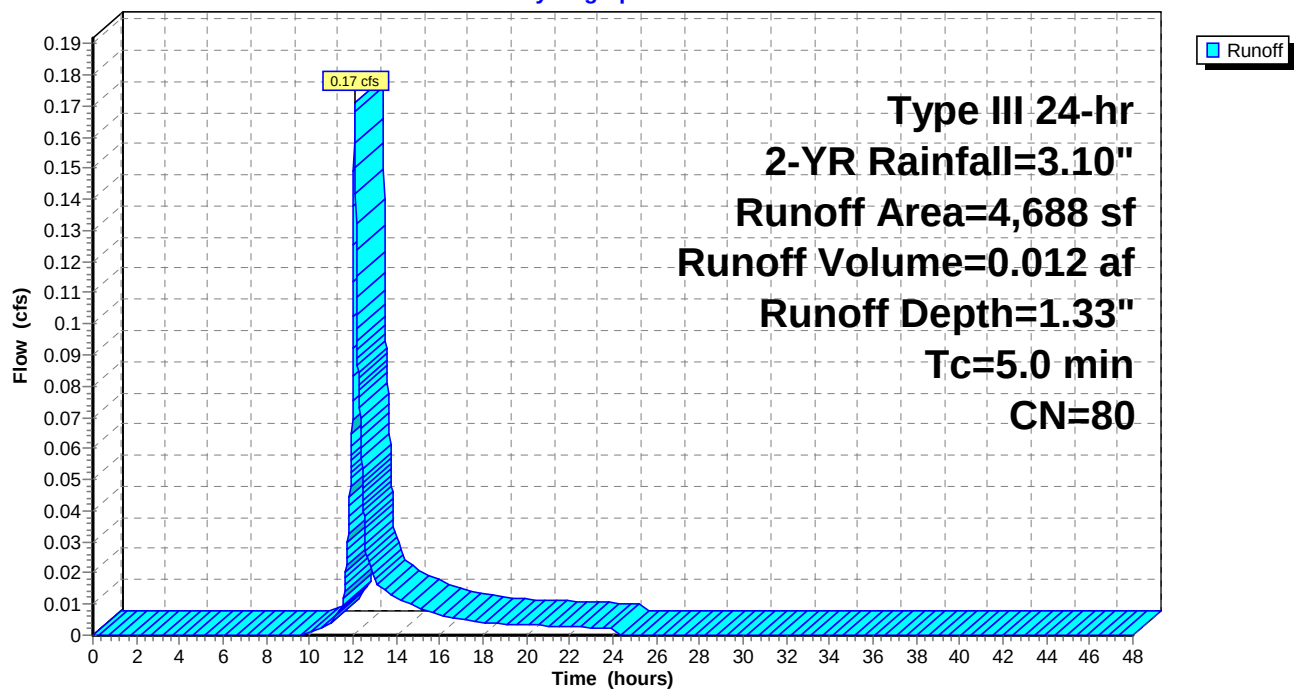
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.10"

	Area (sf)	CN	Description
*	3,244	98	impervious
*	1,444	39	Lawn/field, HSG A
	4,688	80	Weighted Average
	1,444		30.80% Pervious Area
	3,244		69.20% Impervious Area

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

Subcatchment 91S: Playground

Hydrograph



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Page 39

Summary for Subcatchment 402S: New Prkng lot

Runoff = 0.28 cfs @ 12.08 hrs, Volume= 0.020 af, Depth= 1.03"

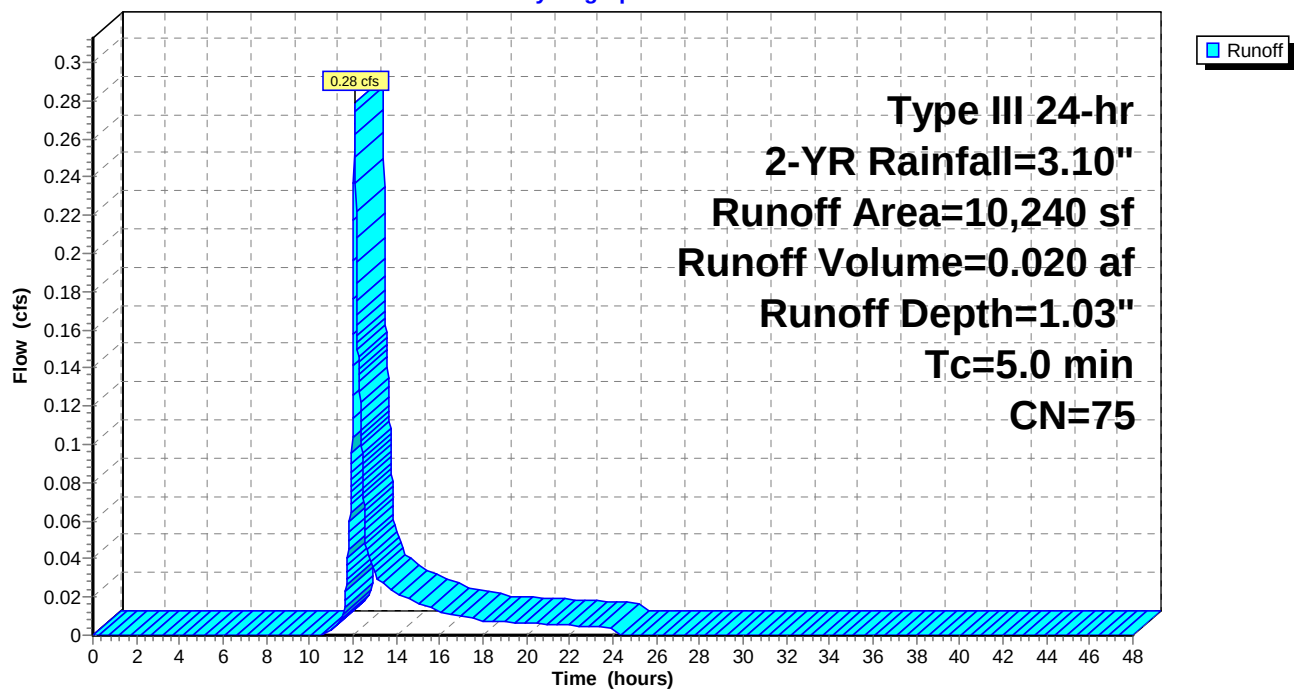
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.10"

	Area (sf)	CN	Description
*	4,000	39	Pervious
*	6,240	98	Impervious
	10,240	75	Weighted Average
	4,000		39.06% Pervious Area
	6,240		60.94% Impervious Area

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

Subcatchment 402S: New Prkng lot

Hydrograph



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

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Page 40

Summary for Reach 161R: roof drain

Inflow Area = 0.10 ac, 100.00% Impervious, Inflow Depth = 2.87" for 2-YR event
Inflow = 0.32 cfs @ 12.07 hrs, Volume = 0.025 af
Outflow = 0.32 cfs @ 12.08 hrs, Volume = 0.025 af, Atten = 0%, Lag = 0.6 min

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

Max. Velocity = 6.63 fps, Min. Travel Time = 0.3 min

Avg. Velocity = 2.15 fps, Avg. Travel Time = 1.0 min

Peak Storage = 6 cf @ 12.07 hrs

Average Depth at Peak Storage = 0.15'

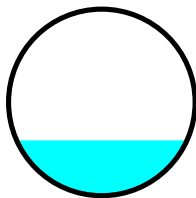
Bank-Full Depth = 0.50' Flow Area = 0.2 sf, Capacity = 1.69 cfs

6.0" Round Pipe

n = 0.013 Corrugated PE, smooth interior

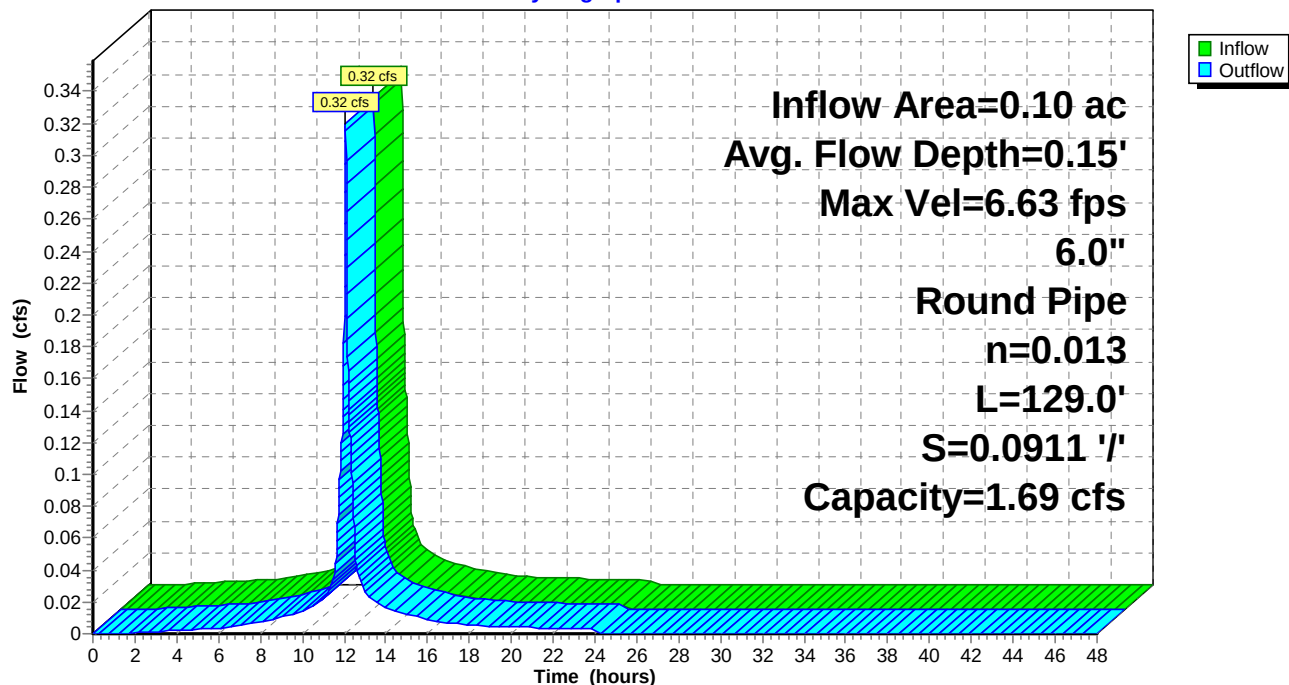
Length = 129.0' Slope = 0.0911 '/'

Inlet Invert = 130.00', Outlet Invert = 118.25'



Reach 161R: roof drain

Hydrograph



6. Post

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

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Page 41

Summary for Pond 1P: USSF

Inflow Area = 1.24 ac, 78.73% Impervious, Inflow Depth = 1.76" for 2-YR event
 Inflow = 2.57 cfs @ 12.07 hrs, Volume= 0.182 af
 Outflow = 0.03 cfs @ 24.01 hrs, Volume= 0.014 af, Atten= 99%, Lag= 715.9 min
 Primary = 0.03 cfs @ 24.01 hrs, Volume= 0.014 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 121.19' @ 24.01 hrs Surf.Area= 4,717 sf Storage= 7,622 cf
 Flood Elev= 126.48' Surf.Area= 4,717 sf Storage= 16,044 cf

Plug-Flow detention time= 1,009.8 min calculated for 0.014 af (8% of inflow)
 Center-of-Mass det. time= 739.1 min (1,550.5 - 811.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	118.85'	6,599 cf	51.42'W x 91.74'L x 5.50'H Field A 25,943 cf Overall - 9,445 cf Embedded = 16,499 cf x 40.0% Voids
#2A	119.60'	9,445 cf	ADS_StormTech MC-3500 d +Cap x 84 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 7 Rows of 12 Chambers Cap Storage= +14.9 cf x 2 x 7 rows = 208.6 cf
		16,044 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	119.67'	8.0" Round Culvert L= 7.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 119.67' / 119.52' S= 0.0214 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf
#2	Device 1	123.35'	5.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Device 1	121.10'	8.0" Vert. Orifice/Grate C= 0.600
#4	Device 5	118.85'	2.410 in/hr Exfiltration over Surface area above 118.85' Conductivity to Groundwater Elevation = 113.00' Excluded Surface area = 4,717 sf
#5	Secondary	116.02'	6.0" Round Culvert L= 31.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 116.02' / 115.88' S= 0.0045 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf

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Page 42

Primary OutFlow Max=0.03 cfs @ 24.01 hrs HW=121.19' (Free Discharge)

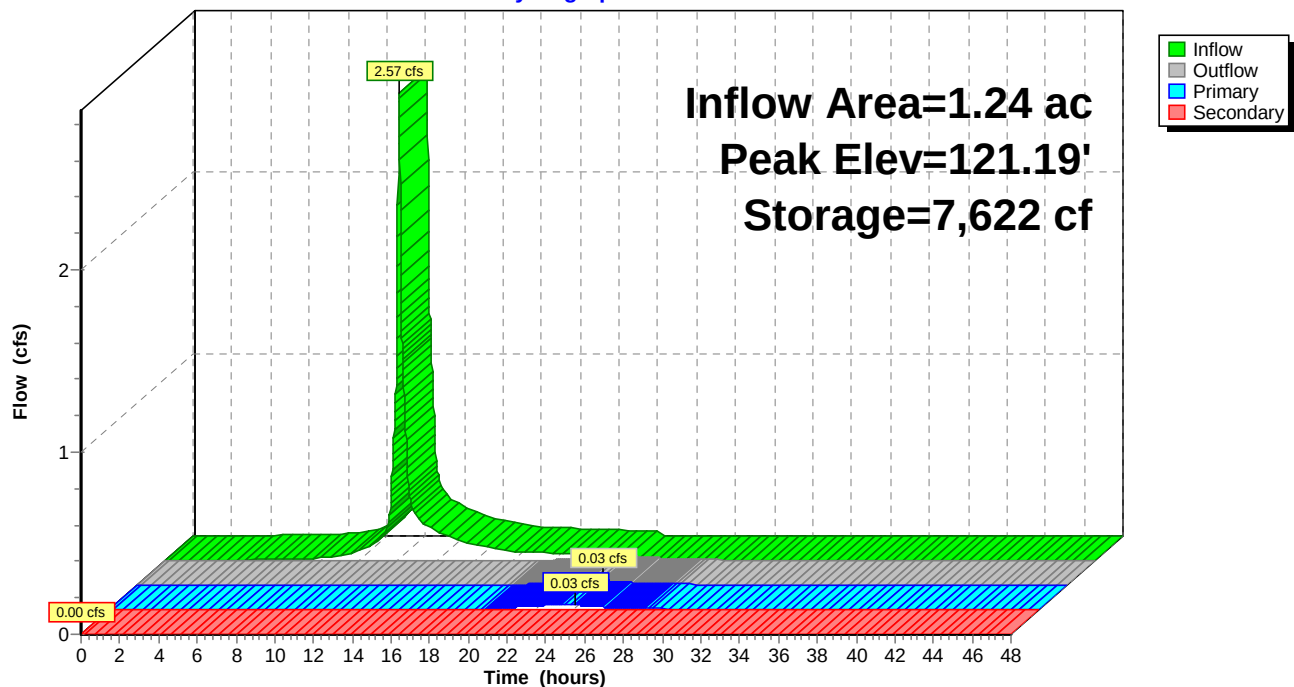
- 1=Culvert (Passes 0.03 cfs of 1.44 cfs potential flow)
- 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
- 3=Orifice/Grate (Orifice Controls 0.03 cfs @ 1.01 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=118.85' (Free Discharge)

- 5=Culvert (Passes 0.00 cfs of 1.20 cfs potential flow)
- 4=Exfiltration (Controls 0.00 cfs)

Pond 1P: USSF

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Page 43

Summary for Pond 206P: City CB @ Fletcher & Danforth

Inflow Area = 3.14 ac, 64.59% Impervious, Inflow Depth > 0.68" for 2-YR event
Inflow = 1.91 cfs @ 12.11 hrs, Volume= 0.177 af
Outflow = 1.91 cfs @ 12.11 hrs, Volume= 0.177 af, Atten= 0%, Lag= 0.0 min
Primary = 1.91 cfs @ 12.11 hrs, Volume= 0.177 af

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

Peak Elev= 108.33' @ 12.11 hrs

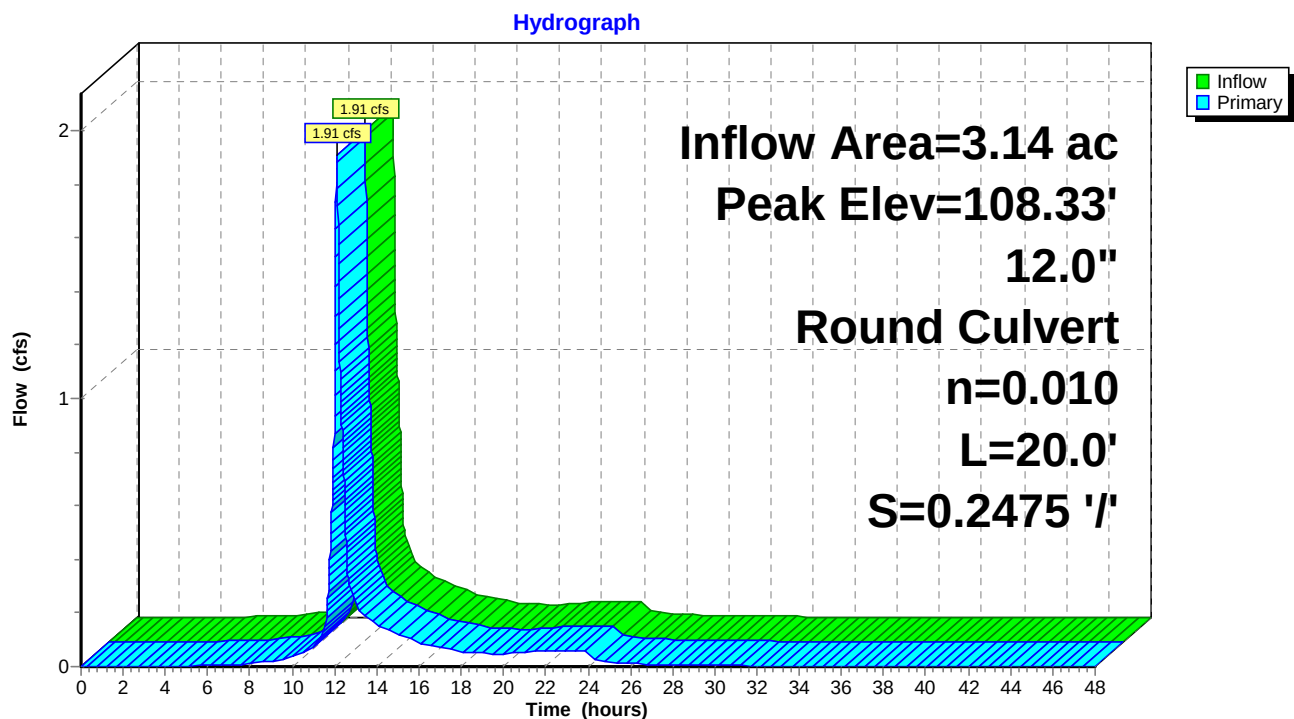
Flood Elev= 111.26'

Device	Routing	Invert	Outlet Devices
#1	Primary	107.43'	12.0" Round Culvert L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 107.43' / 102.48' S= 0.2475 ' S= 0.2475 ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.91 cfs @ 12.11 hrs HW=108.33' (Free Discharge)

↑1=Culvert (Inlet Controls 1.91 cfs @ 2.55 fps)

Pond 206P: City CB @ Fletcher & Danforth



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

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Page 44

Summary for Pond 210P: Existing FI

Inflow Area = 0.44 ac, 56.16% Impervious, Inflow Depth = 0.87" for 2-YR event
Inflow = 0.39 cfs @ 12.12 hrs, Volume= 0.032 af
Outflow = 0.39 cfs @ 12.12 hrs, Volume= 0.032 af, Atten= 0%, Lag= 0.0 min
Primary = 0.39 cfs @ 12.12 hrs, Volume= 0.032 af

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

Peak Elev= 132.37' @ 12.12 hrs

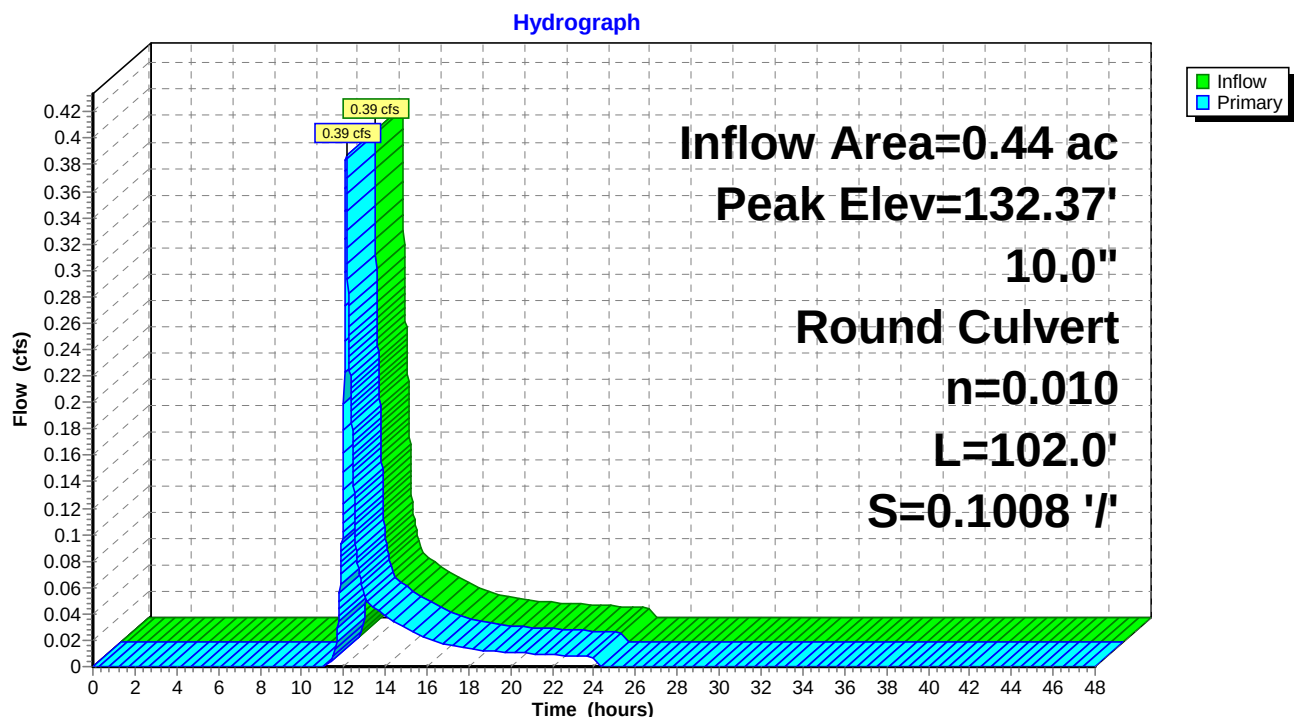
Flood Elev= 140.41'

Device	Routing	Invert	Outlet Devices
#1	Primary	132.00'	10.0" Round Culvert L= 102.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 132.00' / 121.72' S= 0.1008 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.38 cfs @ 12.12 hrs HW=132.37' (Free Discharge)

↑**1=Culvert** (Inlet Controls 0.38 cfs @ 1.64 fps)

Pond 210P: Existing FI



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Page 45

Summary for Pond 220P: Existing DMH

Inflow Area = 0.44 ac, 56.16% Impervious, Inflow Depth = 0.87" for 2-YR event
Inflow = 0.39 cfs @ 12.12 hrs, Volume= 0.032 af
Outflow = 0.39 cfs @ 12.12 hrs, Volume= 0.032 af, Atten= 0%, Lag= 0.0 min
Primary = 0.39 cfs @ 12.12 hrs, Volume= 0.032 af

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

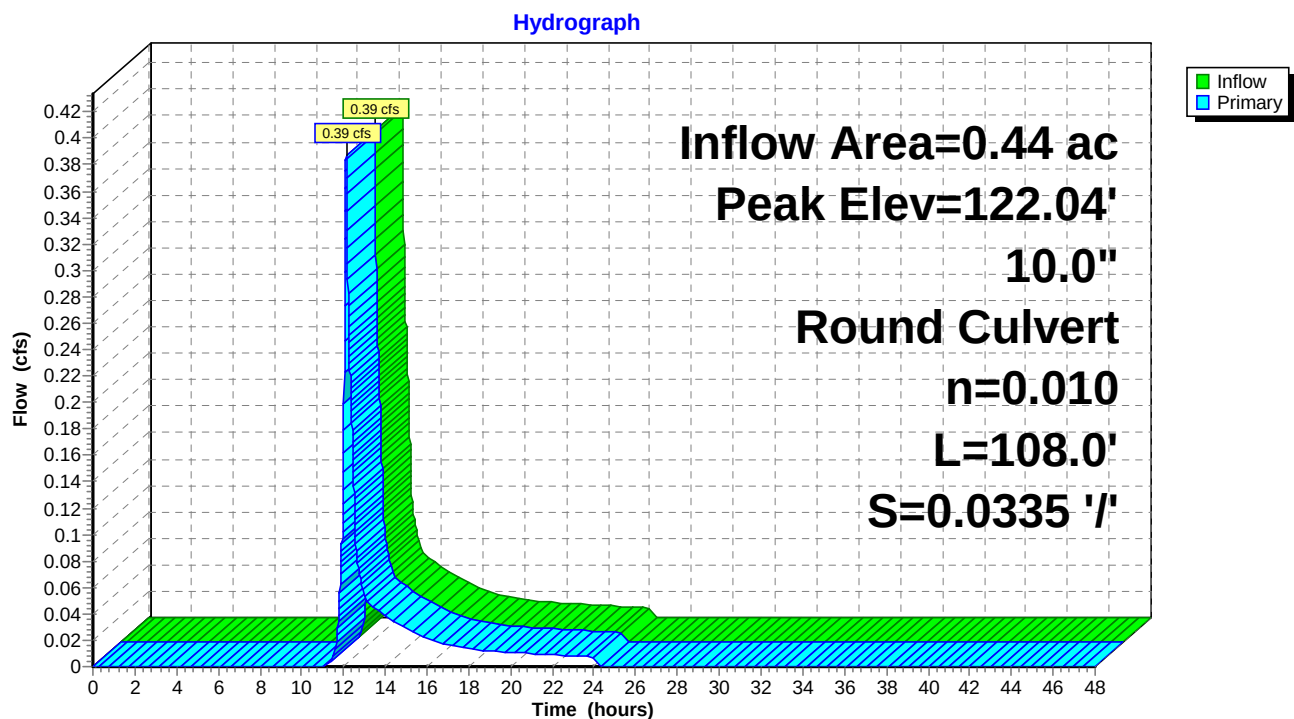
Peak Elev= 122.04' @ 12.12 hrs

Flood Elev= 128.47'

Device	Routing	Invert	Outlet Devices
#1	Primary	121.67'	10.0" Round Culvert L= 108.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 121.67' / 118.05' S= 0.0335 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.39 cfs @ 12.12 hrs HW=122.04' (Free Discharge)
↑**1=Culvert** (Inlet Controls 0.39 cfs @ 1.64 fps)

Pond 220P: Existing DMH



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Page 46

Summary for Pond 230P: Existing DMH

Inflow Area = 1.27 ac, 70.40% Impervious, Inflow Depth = 1.44" for 2-YR event
Inflow = 1.91 cfs @ 12.11 hrs, Volume= 0.152 af
Outflow = 1.91 cfs @ 12.11 hrs, Volume= 0.152 af, Atten= 0%, Lag= 0.0 min
Primary = 1.91 cfs @ 12.11 hrs, Volume= 0.152 af

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

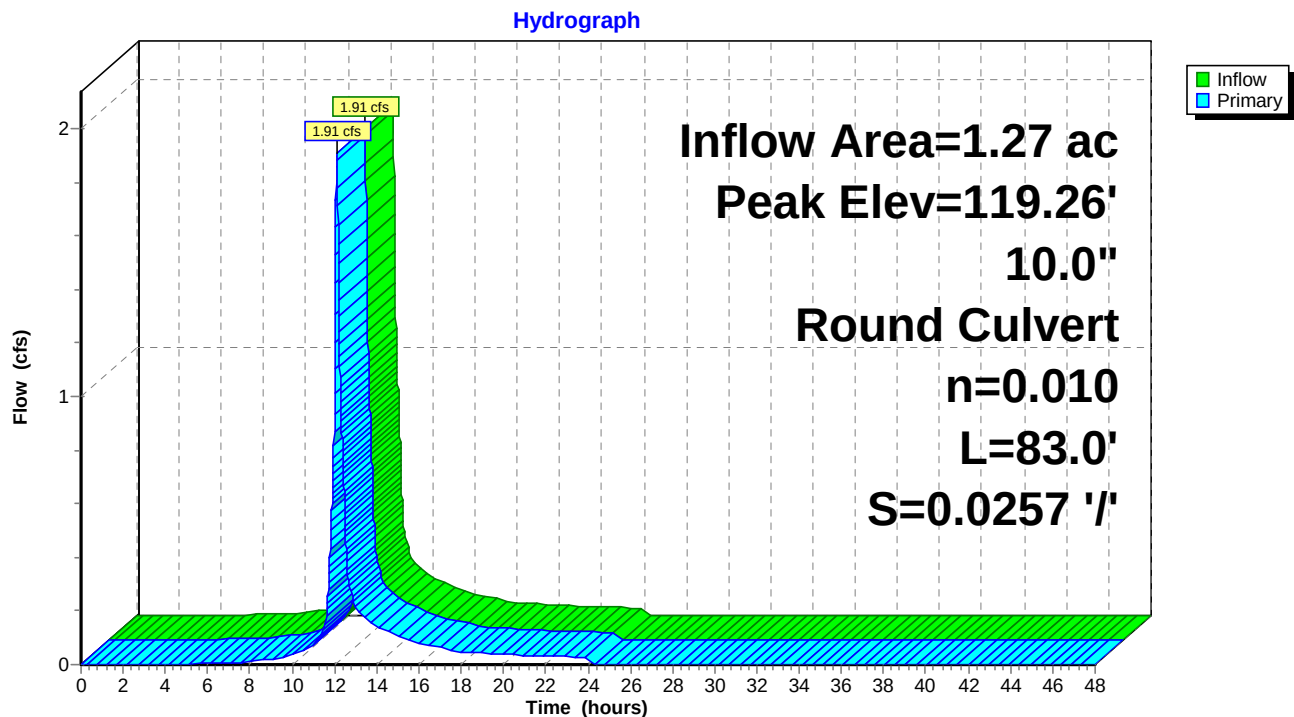
Peak Elev= 119.26' @ 12.11 hrs

Flood Elev= 125.05'

Device	Routing	Invert	Outlet Devices
#1	Primary	118.00'	10.0" Round Culvert L= 83.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 118.00' / 115.87' S= 0.0257 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=1.91 cfs @ 12.11 hrs HW=119.26' (Free Discharge)
↑**1=Culvert** (Inlet Controls 1.91 cfs @ 3.49 fps)

Pond 230P: Existing DMH



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Page 47

Summary for Pond 260P: Storage Pipes

Inflow Area = 0.72 ac, 79.29% Impervious, Inflow Depth = 1.80" for 2-YR event
Inflow = 1.52 cfs @ 12.08 hrs, Volume= 0.108 af
Outflow = 1.37 cfs @ 12.11 hrs, Volume= 0.108 af, Atten= 10%, Lag= 2.3 min
Primary = 1.37 cfs @ 12.11 hrs, Volume= 0.108 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 119.87' @ 12.11 hrs Surf.Area= 564 sf Storage= 164 cf
Flood Elev= 125.26' Surf.Area= 0 sf Storage= 3,468 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 1.1 min (809.2 - 808.1)

Volume	Invert	Avail.Storage	Storage Description
#1	119.16'	3,468 cf	48.0" Round Pipe Storage L= 276.0' S= 0.0027 '/

Device	Routing	Invert	Outlet Devices
#1	Primary	119.16'	12.0" Round Culvert L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 119.16' / 118.02' S= 0.0380 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.36 cfs @ 12.11 hrs HW=119.87' (Free Discharge)

↑**1=Culvert** (Inlet Controls 1.36 cfs @ 2.27 fps)

6. Post

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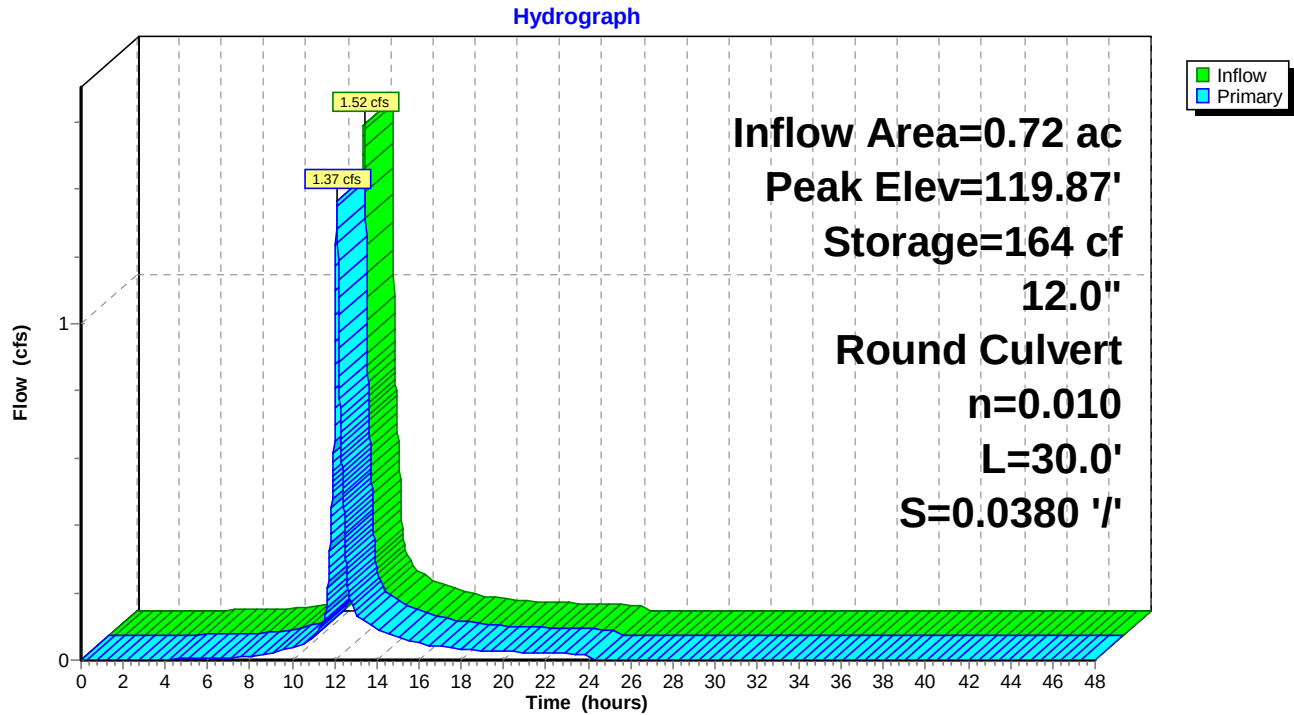
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Type III 24-hr 2-YR Rainfall=3.10"

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Page 48

Pond 260P: Storage Pipes



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

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Page 49

Summary for Pond 340P: CB at SW Cor prkng lot

Inflow Area = 0.24 ac, 60.94% Impervious, Inflow Depth = 1.03" for 2-YR event
Inflow = 0.28 cfs @ 12.08 hrs, Volume= 0.020 af
Outflow = 0.28 cfs @ 12.08 hrs, Volume= 0.020 af, Atten= 0%, Lag= 0.0 min
Primary = 0.28 cfs @ 12.08 hrs, Volume= 0.020 af

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

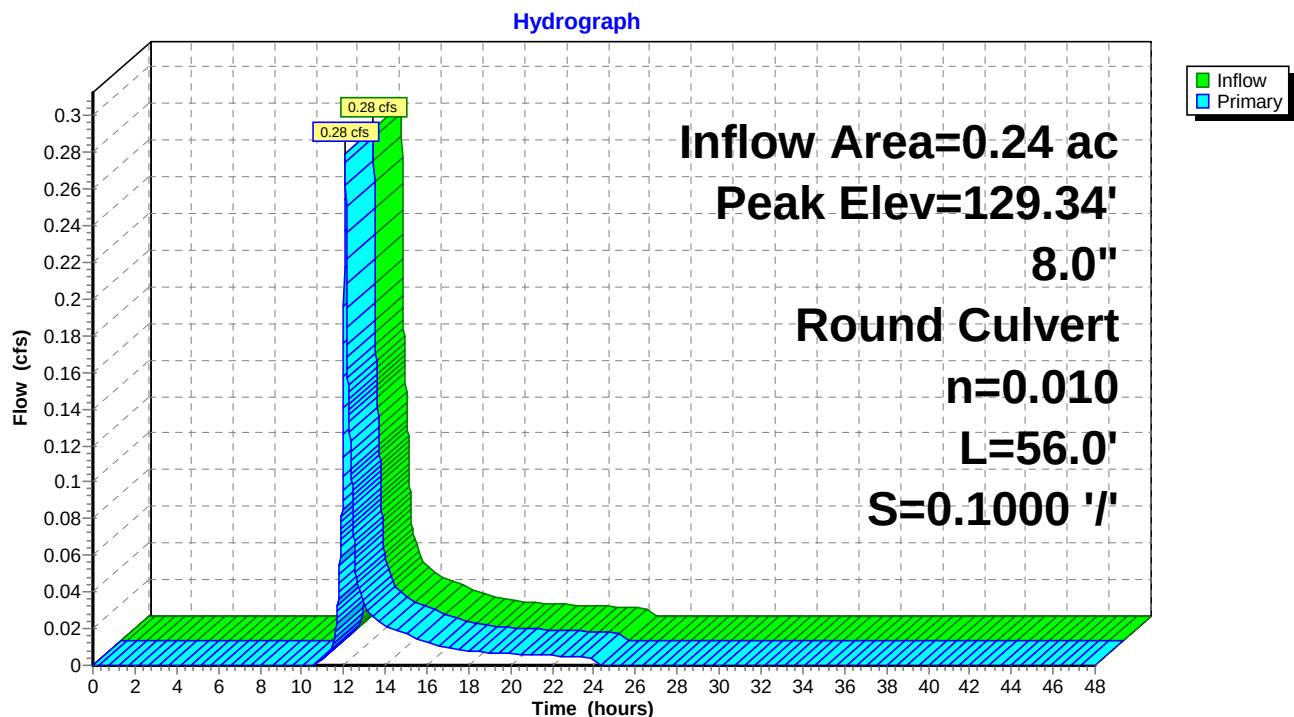
Peak Elev= 129.34' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	129.00'	8.0" Round Culvert L= 56.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 129.00' / 123.40' S= 0.1000 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.28 cfs @ 12.08 hrs HW=129.34' (Free Discharge)

↑**1=Culvert** (Inlet Controls 0.28 cfs @ 1.57 fps)

Pond 340P: CB at SW Cor prkng lot



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Page 50

Summary for Pond CB4: Proposed DMH

Inflow Area = 1.24 ac, 78.73% Impervious, Inflow Depth = 1.76" for 2-YR event
Inflow = 2.57 cfs @ 12.07 hrs, Volume= 0.182 af
Outflow = 2.57 cfs @ 12.07 hrs, Volume= 0.182 af, Atten= 0%, Lag= 0.0 min
Primary = 2.57 cfs @ 12.07 hrs, Volume= 0.182 af

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

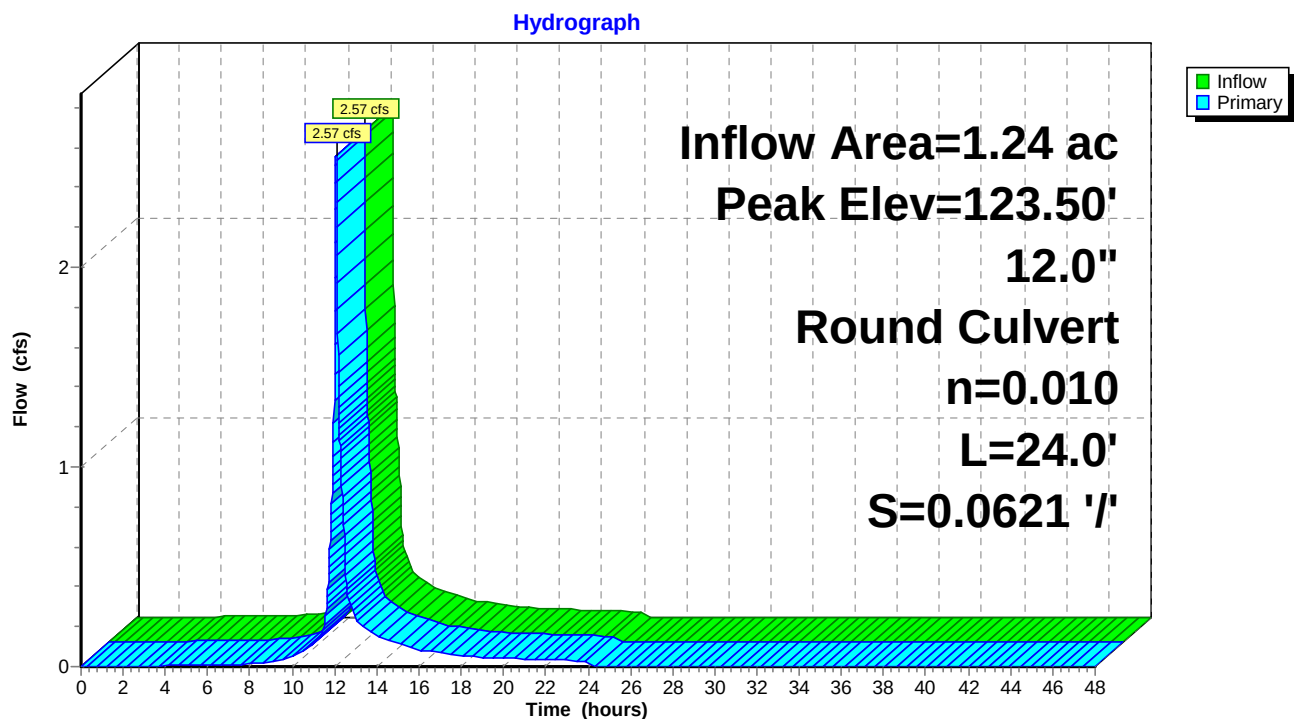
Peak Elev= 123.50' @ 12.07 hrs

Flood Elev= 127.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	122.26'	12.0" Round Culvert L= 24.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 122.26' / 120.77' S= 0.0621 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.56 cfs @ 12.07 hrs HW=123.50' (Free Discharge)
↑**1=Culvert** (Inlet Controls 2.56 cfs @ 3.26 fps)

Pond CB4: Proposed DMH



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

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Page 51

Summary for Pond DMH: OCS Bypass

Inflow Area = 1.24 ac, 78.73% Impervious, Inflow Depth > 0.14" for 2-YR event
Inflow = 0.03 cfs @ 24.01 hrs, Volume= 0.014 af
Outflow = 0.03 cfs @ 24.01 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min
Primary = 0.03 cfs @ 24.01 hrs, Volume= 0.014 af

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

Peak Elev= 119.51' @ 24.01 hrs

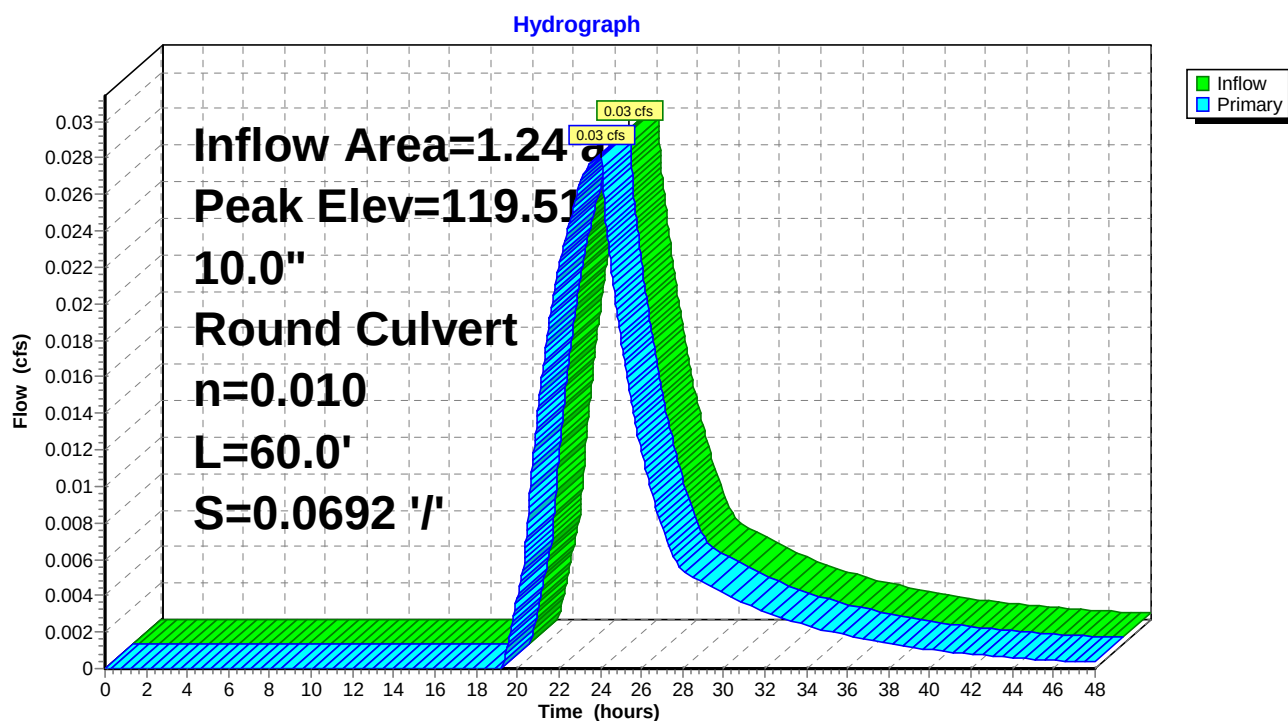
Flood Elev= 126.48'

Device	Routing	Invert	Outlet Devices
#1	Primary	119.42'	10.0" Round Culvert L= 60.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 119.42' / 115.27' S= 0.0692 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.03 cfs @ 24.01 hrs HW=119.51' (Free Discharge)

↑**1=Culvert** (Inlet Controls 0.03 cfs @ 0.80 fps)

Pond DMH: OCS Bypass



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

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Page 52

Summary for Pond DMH6: Access MH

Inflow Area = 1.24 ac, 78.73% Impervious, Inflow Depth = 1.76" for 2-YR event
 Inflow = 2.57 cfs @ 12.07 hrs, Volume= 0.182 af
 Outflow = 2.57 cfs @ 12.07 hrs, Volume= 0.182 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.57 cfs @ 12.07 hrs, Volume= 0.182 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

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

Peak Elev= 120.69' @ 12.07 hrs

Flood Elev= 126.85'

Device	Routing	Invert	Outlet Devices
#1	Primary	119.77'	24.0" Round Culvert L= 9.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 119.77' / 119.77' S= 0.0000 ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Secondary	119.77'	24.0" Round Culvert L= 2.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 119.77' / 119.77' S= 0.0000 ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 3.14 sf
#3	Device 2	123.35'	4.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=2.56 cfs @ 12.07 hrs HW=120.69' (Free Discharge)

1=Culvert (Barrel Controls 2.56 cfs @ 2.68 fps)
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=119.77' (Free Discharge)

2=Culvert (Controls 0.00 cfs)


3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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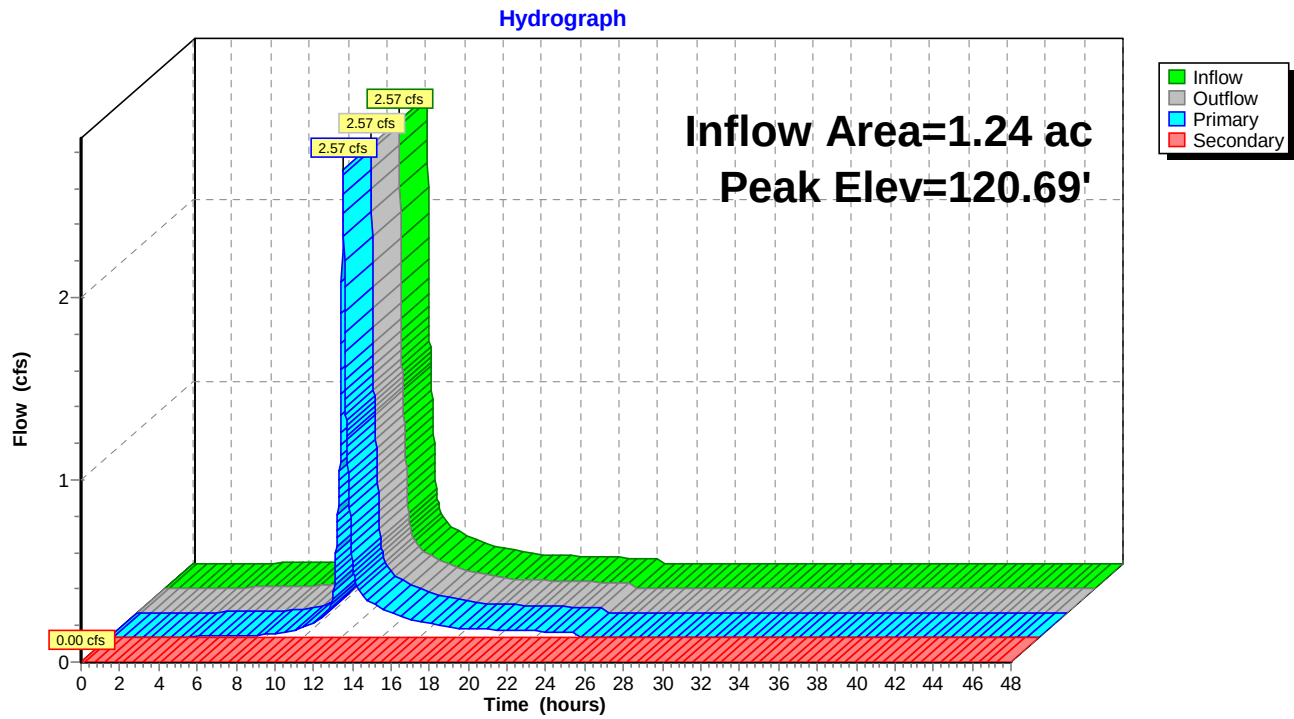
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Type III 24-hr 2-YR Rainfall=3.10"

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Page 53

Pond DMH6: Access MH



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Page 54

Summary for Pond DMH7: Proposed Drop DMH

Inflow Area = 2.51 ac, 74.51% Impervious, Inflow Depth > 0.80" for 2-YR event
Inflow = 1.91 cfs @ 12.11 hrs, Volume= 0.166 af
Outflow = 1.91 cfs @ 12.11 hrs, Volume= 0.166 af, Atten= 0%, Lag= 0.0 min
Primary = 1.91 cfs @ 12.11 hrs, Volume= 0.166 af

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

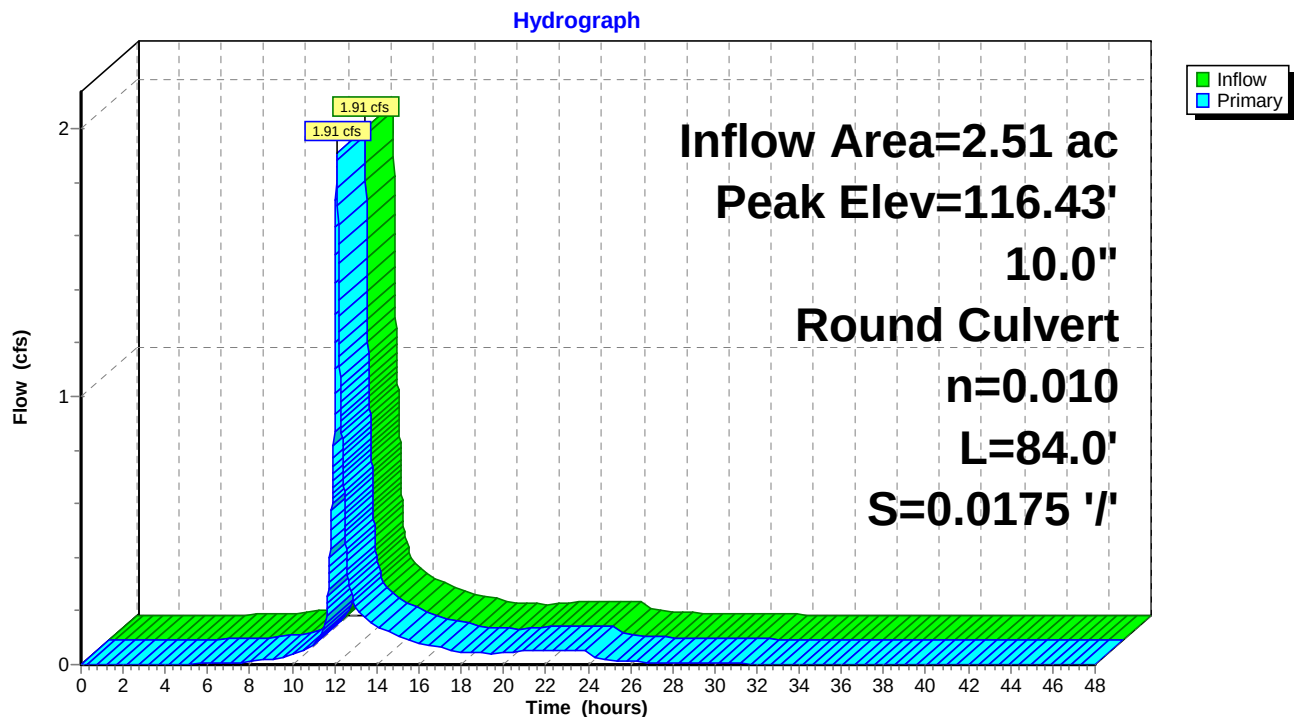
Peak Elev= 116.43' @ 12.11 hrs

Flood Elev= 124.69'

Device	Routing	Invert	Outlet Devices
#1	Primary	115.17'	10.0" Round Culvert L= 84.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 115.17' / 113.70' S= 0.0175 ' S= 0.0175 ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=1.91 cfs @ 12.11 hrs HW=116.43' (Free Discharge)
↑**1=Culvert** (Inlet Controls 1.91 cfs @ 3.49 fps)

Pond DMH7: Proposed Drop DMH



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Page 55

Summary for Pond DMH8: Proposed DMH

Inflow Area = 2.51 ac, 74.51% Impervious, Inflow Depth > 0.80" for 2-YR event
Inflow = 1.91 cfs @ 12.11 hrs, Volume= 0.166 af
Outflow = 1.91 cfs @ 12.11 hrs, Volume= 0.166 af, Atten= 0%, Lag= 0.0 min
Primary = 1.91 cfs @ 12.11 hrs, Volume= 0.166 af

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

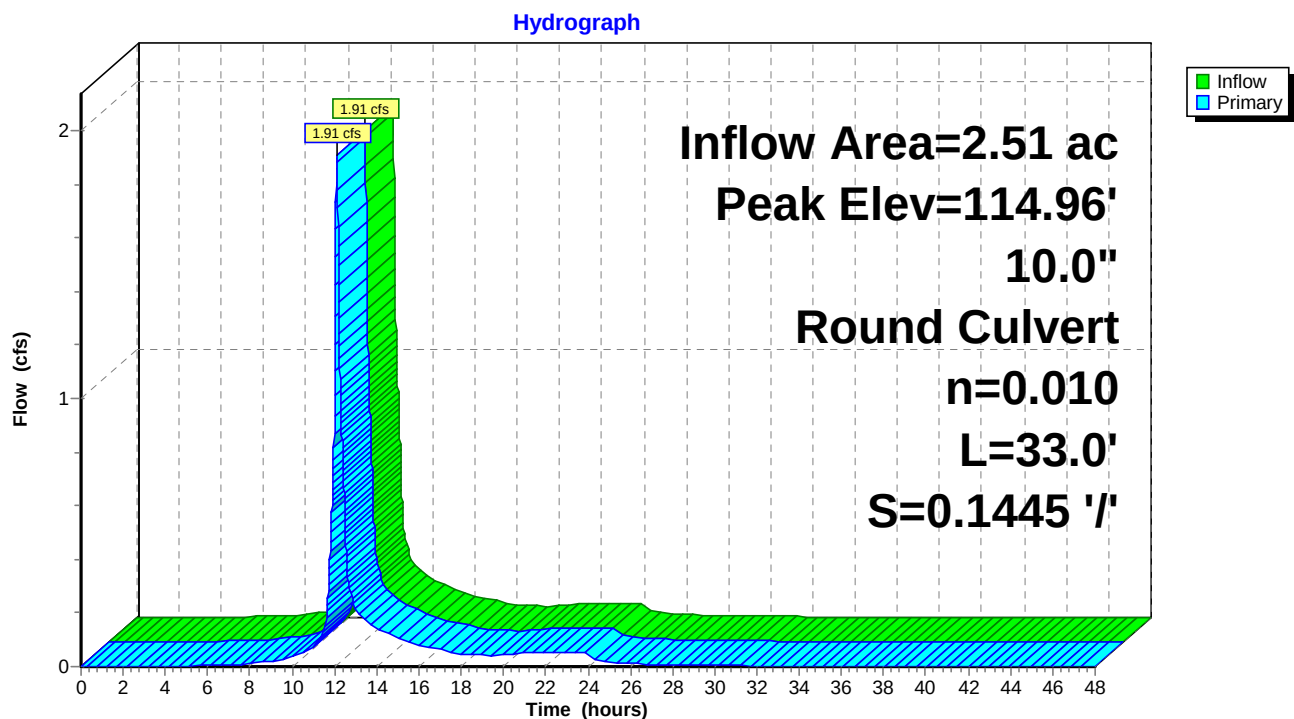
Peak Elev= 114.96' @ 12.11 hrs

Flood Elev= 123.71'

Device	Routing	Invert	Outlet Devices
#1	Primary	113.70'	10.0" Round Culvert L= 33.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 113.70' / 108.93' S= 0.1445 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=1.91 cfs @ 12.11 hrs HW=114.96' (Free Discharge)
↑**1=Culvert** (Inlet Controls 1.91 cfs @ 3.50 fps)

Pond DMH8: Proposed DMH



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

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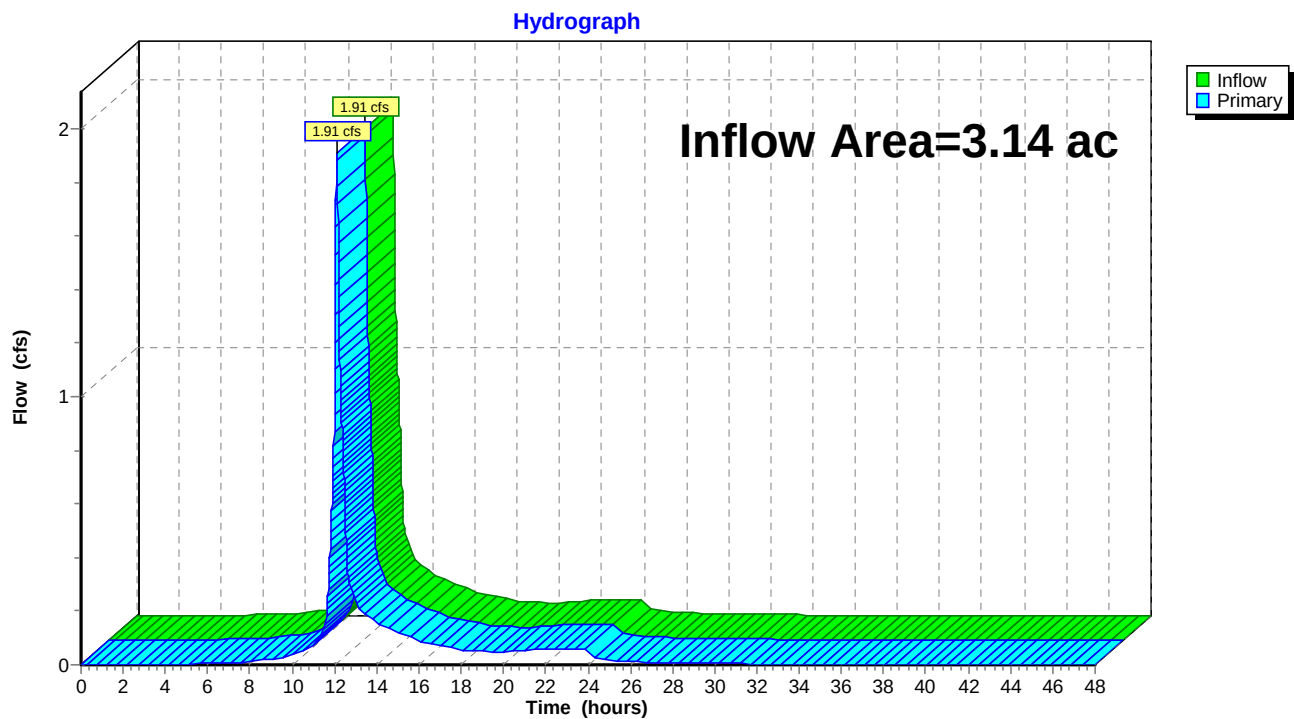
Page 56

Summary for Link SP1: Existing Combined Sewer in Danforth

Inflow Area = 3.14 ac, 64.59% Impervious, Inflow Depth > 0.68" for 2-YR event
Inflow = 1.91 cfs @ 12.11 hrs, Volume= 0.177 af
Primary = 1.91 cfs @ 12.11 hrs, Volume= 0.177 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link SP1: Existing Combined Sewer in Danforth



6. Post

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

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Page 57

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 10S: Area draining to Runoff Area=19,254 sf 56.16% Impervious Runoff Depth=1.89"
 Flow Length=91' Slope=0.0300 '/' Tc=7.7 min CN=72 Runoff=0.91 cfs 0.070 af

Subcatchment 60S: Lawn/Field S of school Runoff Area=16,715 sf 84.98% Impervious Runoff Depth=3.39"
 Tc=5.0 min CN=89 Runoff=1.54 cfs 0.108 af

Subcatchment 61S: Auditorium Roof Runoff Area=4,485 sf 100.00% Impervious Runoff Depth=4.36"
 Tc=5.0 min CN=98 Runoff=0.48 cfs 0.037 af

Subcatchment 70S: Thomas & Davies & Runoff Area=44,441 sf 74.20% Impervious Runoff Depth=2.81"
 Flow Length=91' Slope=0.1593 '/' Tc=5.0 min CN=83 Runoff=3.48 cfs 0.239 af

Subcatchment 80S: FoundersHall Runoff Area=9,466 sf 100.00% Impervious Runoff Depth=4.36"
 Tc=5.0 min CN=98 Runoff=1.01 cfs 0.079 af

Subcatchment 90S: Playground Runoff Area=27,554 sf 25.26% Impervious Runoff Depth=0.73"
 Flow Length=117' Tc=9.2 min CN=54 Runoff=0.34 cfs 0.039 af

Subcatchment 91S: Playground Runoff Area=4,688 sf 69.20% Impervious Runoff Depth=2.55"
 Tc=5.0 min CN=80 Runoff=0.33 cfs 0.023 af

Subcatchment 402S: New Prkng lot Runoff Area=10,240 sf 60.94% Impervious Runoff Depth=2.13"
 Tc=5.0 min CN=75 Runoff=0.60 cfs 0.042 af

Reach 161R: roof drain Avg. Flow Depth=0.18' Max Vel=7.42 fps Inflow=0.48 cfs 0.037 af
 6.0" Round Pipe n=0.013 L=129.0' S=0.0911 '/' Capacity=1.69 cfs Outflow=0.48 cfs 0.037 af

Pond 1P: USSF Peak Elev=121.45' Storage=8,567 cf Inflow=4.49 cfs 0.318 af
 Primary=0.37 cfs 0.151 af Secondary=0.00 cfs 0.000 af Outflow=0.37 cfs 0.151 af

Pond 206P: City CB @ Fletcher & Danforth Peak Elev=109.43' Inflow=3.66 cfs 0.470 af
 12.0" Round Culvert n=0.010 L=20.0' S=0.2475 '/' Outflow=3.66 cfs 0.470 af

Pond 210P: Existing FI Peak Elev=132.62' Inflow=0.91 cfs 0.070 af
 10.0" Round Culvert n=0.010 L=102.0' S=0.1008 '/' Outflow=0.91 cfs 0.070 af

Pond 220P: Existing DMH Peak Elev=122.28' Inflow=0.91 cfs 0.070 af
 10.0" Round Culvert n=0.010 L=108.0' S=0.0335 '/' Outflow=0.91 cfs 0.070 af

Pond 230P: Existing DMH Peak Elev=121.04' Inflow=3.36 cfs 0.280 af
 10.0" Round Culvert n=0.010 L=83.0' S=0.0257 '/' Outflow=3.36 cfs 0.280 af

Pond 260P: Storage Pipes Peak Elev=120.18' Storage=377 cf Inflow=2.62 cfs 0.188 af
 12.0" Round Culvert n=0.010 L=30.0' S=0.0380 '/' Outflow=2.16 cfs 0.188 af

Pond 340P: CB at SW Cor prkng lot Peak Elev=129.54' Inflow=0.60 cfs 0.042 af
 8.0" Round Culvert n=0.010 L=56.0' S=0.1000 '/' Outflow=0.60 cfs 0.042 af

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

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Page 58

Pond CB4: Proposed DMH

Peak Elev=125.03' Inflow=4.49 cfs 0.318 af
12.0" Round Culvert n=0.010 L=24.0' S=0.0621 '/' Outflow=4.49 cfs 0.318 af

Pond DMH: OCS Bypass

Peak Elev=119.78' Inflow=0.37 cfs 0.151 af
10.0" Round Culvert n=0.010 L=60.0' S=0.0692 '/' Outflow=0.37 cfs 0.151 af

Pond DMH6: Access MH

Peak Elev=121.01' Inflow=4.49 cfs 0.318 af
Primary=4.49 cfs 0.318 af Secondary=0.00 cfs 0.000 af Outflow=4.49 cfs 0.318 af

Pond DMH7: Proposed Drop DMH

Peak Elev=118.21' Inflow=3.36 cfs 0.431 af
10.0" Round Culvert n=0.010 L=84.0' S=0.0175 '/' Outflow=3.36 cfs 0.431 af

Pond DMH8: Proposed DMH

Peak Elev=116.74' Inflow=3.36 cfs 0.431 af
10.0" Round Culvert n=0.010 L=33.0' S=0.1445 '/' Outflow=3.36 cfs 0.431 af

Link SP1: Existing Combined Sewer in Danforth

Inflow=3.66 cfs 0.470 af
Primary=3.66 cfs 0.470 af

Total Runoff Area = 3.14 ac Runoff Volume = 0.637 af Average Runoff Depth = 2.43"
35.41% Pervious = 1.11 ac 64.59% Impervious = 2.03 ac

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

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Page 59

Summary for Subcatchment 10S: Area draining to Sanctuary

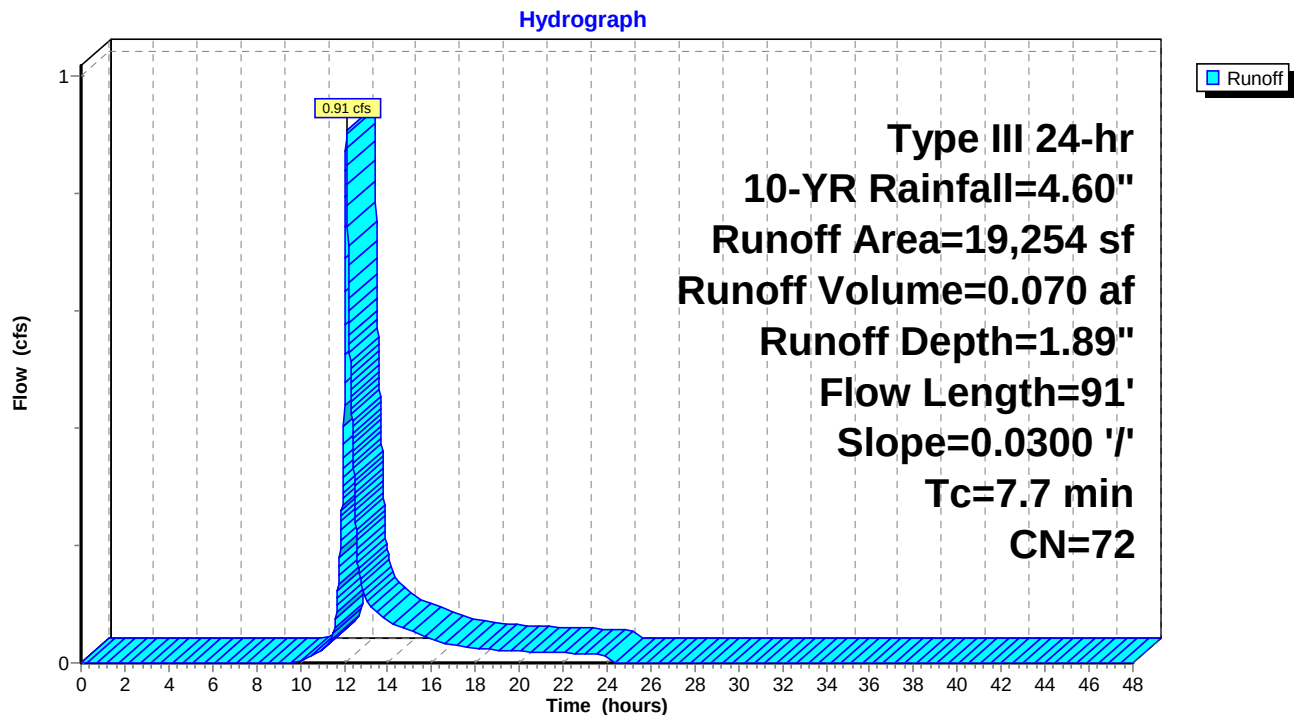
Runoff = 0.91 cfs @ 12.11 hrs, Volume= 0.070 af, Depth= 1.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.60"

	Area (sf)	CN	Description
*	10,813	98	impervious
*	8,441	39	Lawn/field, HSG A
	19,254	72	Weighted Average
	8,441		43.84% Pervious Area
	10,813		56.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	91	0.0300	0.20		Sheet Flow, A-B
Grass: Short n= 0.150 P2= 3.19"					

Subcatchment 10S: Area draining to Sanctuary



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

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Page 60

Summary for Subcatchment 60S: Lawn/Field S of school

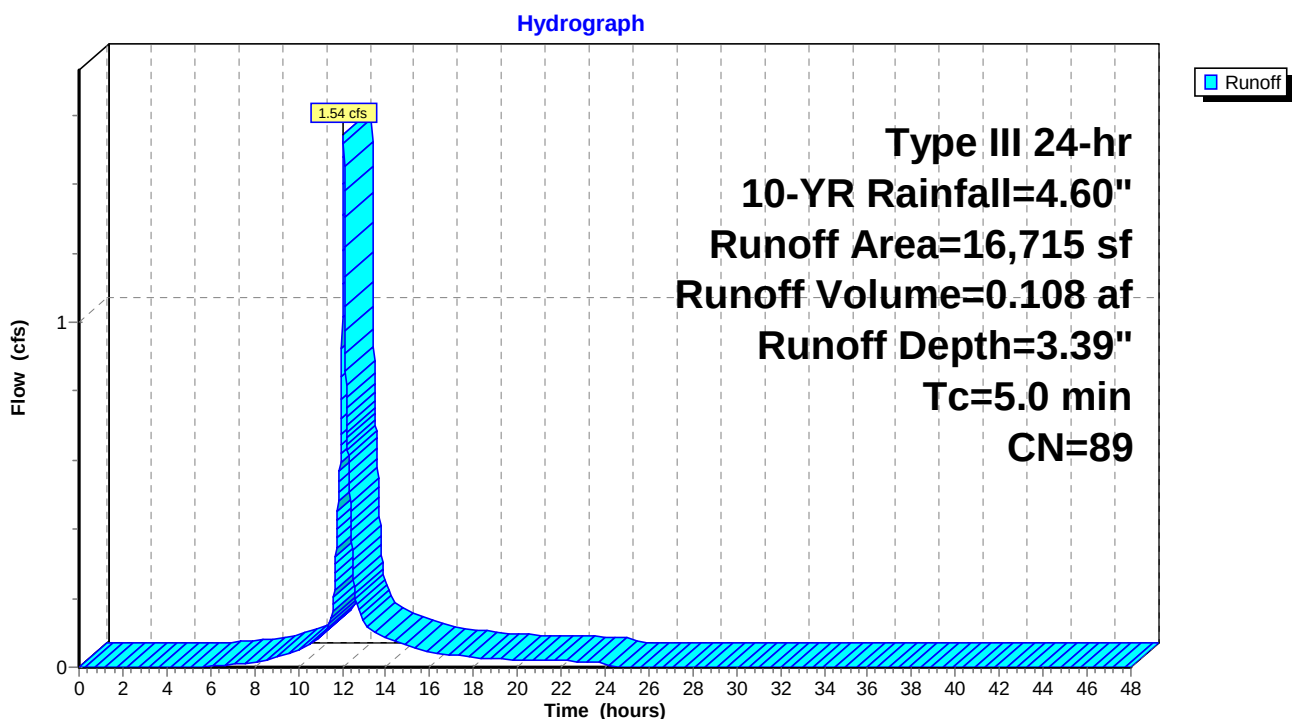
Runoff = 1.54 cfs @ 12.07 hrs, Volume= 0.108 af, Depth= 3.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.60"

	Area (sf)	CN	Description
*	14,205	98	impervious
*	2,510	39	Lawn/field, HSG A
	16,715	89	Weighted Average
	2,510		15.02% Pervious Area
	14,205		84.98% Impervious Area

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

Subcatchment 60S: Lawn/Field S of school



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

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Page 61

Summary for Subcatchment 61S: Auditorium Roof

Runoff = 0.48 cfs @ 12.07 hrs, Volume= 0.037 af, Depth= 4.36"

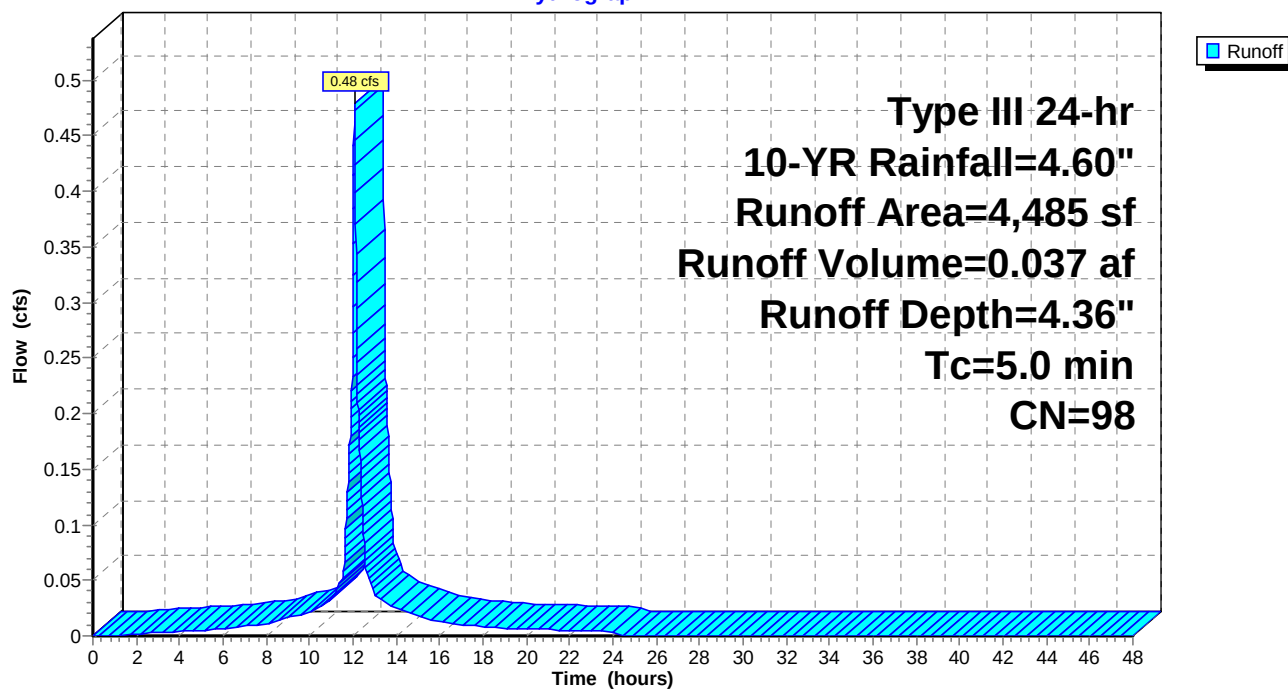
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.60"

	Area (sf)	CN	Description
*	4,485	98	Roof runoff
	4,485		100.00% Impervious Area

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

Subcatchment 61S: Auditorium Roof

Hydrograph



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

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Page 62

Summary for Subcatchment 70S: Thomas & Davies & Gym

Runoff = 3.48 cfs @ 12.07 hrs, Volume= 0.239 af, Depth= 2.81"

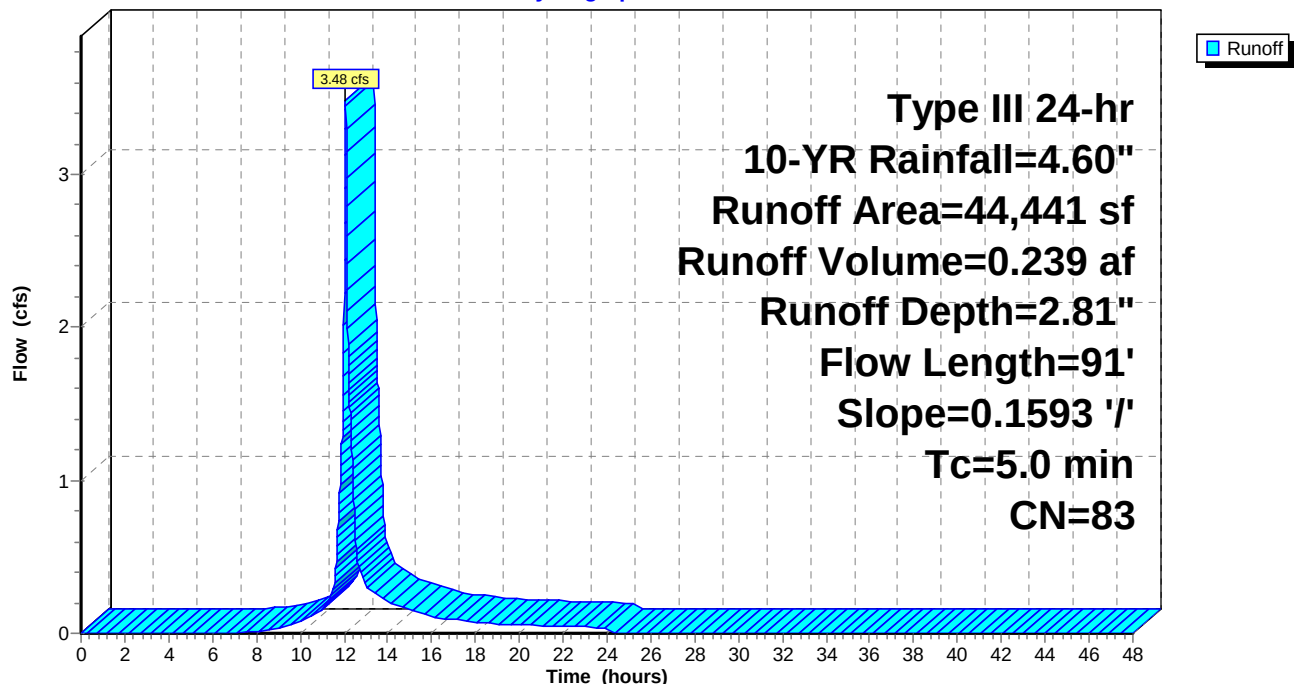
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.60"

	Area (sf)	CN	Description
*	32,976	98	impervious
*	11,465	39	Lawn/field, HSG A
	44,441	83	Weighted Average
	11,465		25.80% Pervious Area
	32,976		74.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	91	0.1593	0.38		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.19"
4.0	91	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 70S: Thomas & Davies & Gym

Hydrograph



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

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Page 63

Summary for Subcatchment 80S: FoundersHall

Runoff = 1.01 cfs @ 12.07 hrs, Volume= 0.079 af, Depth= 4.36"

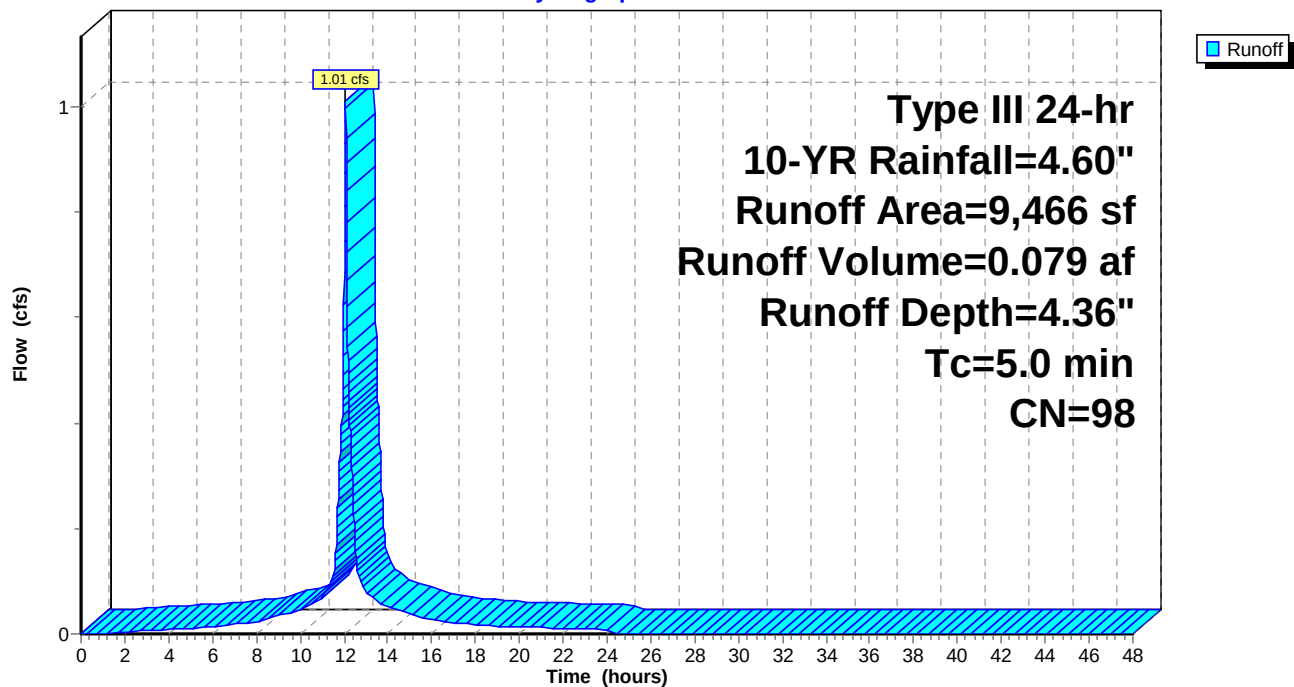
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.60"

	Area (sf)	CN	Description
*	9,466	98	Roof runoff
	9,466		100.00% Impervious Area

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

Subcatchment 80S: FoundersHall

Hydrograph



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

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Page 64

Summary for Subcatchment 90S: Playground

Runoff = 0.34 cfs @ 12.16 hrs, Volume= 0.039 af, Depth= 0.73"

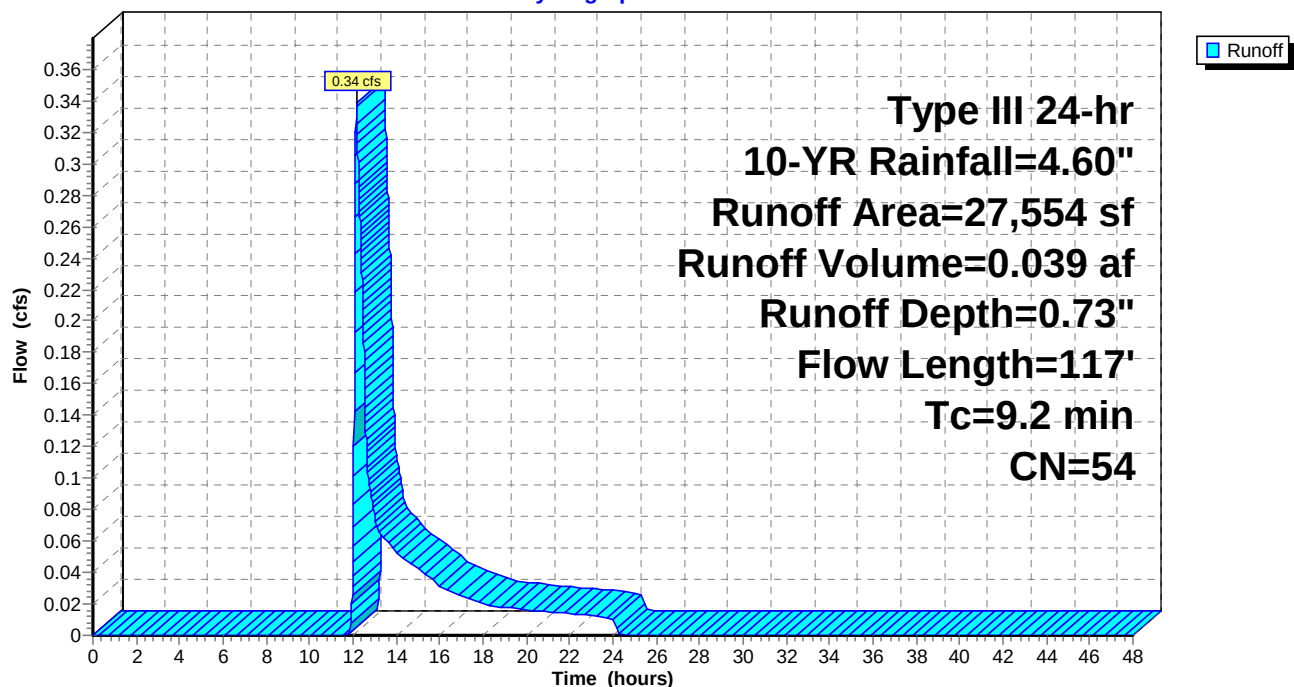
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.60"

	Area (sf)	CN	Description
*	6,960	98	impervious
*	20,594	39	Lawn/field, HSG A
	27,554	54	Weighted Average
	20,594		74.74% Pervious Area
	6,960		25.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.0250	0.19		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.19"
0.2	17	0.0588	1.70		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
9.2	117	Total			

Subcatchment 90S: Playground

Hydrograph



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

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Page 65

Summary for Subcatchment 91S: Playground

Runoff = 0.33 cfs @ 12.07 hrs, Volume= 0.023 af, Depth= 2.55"

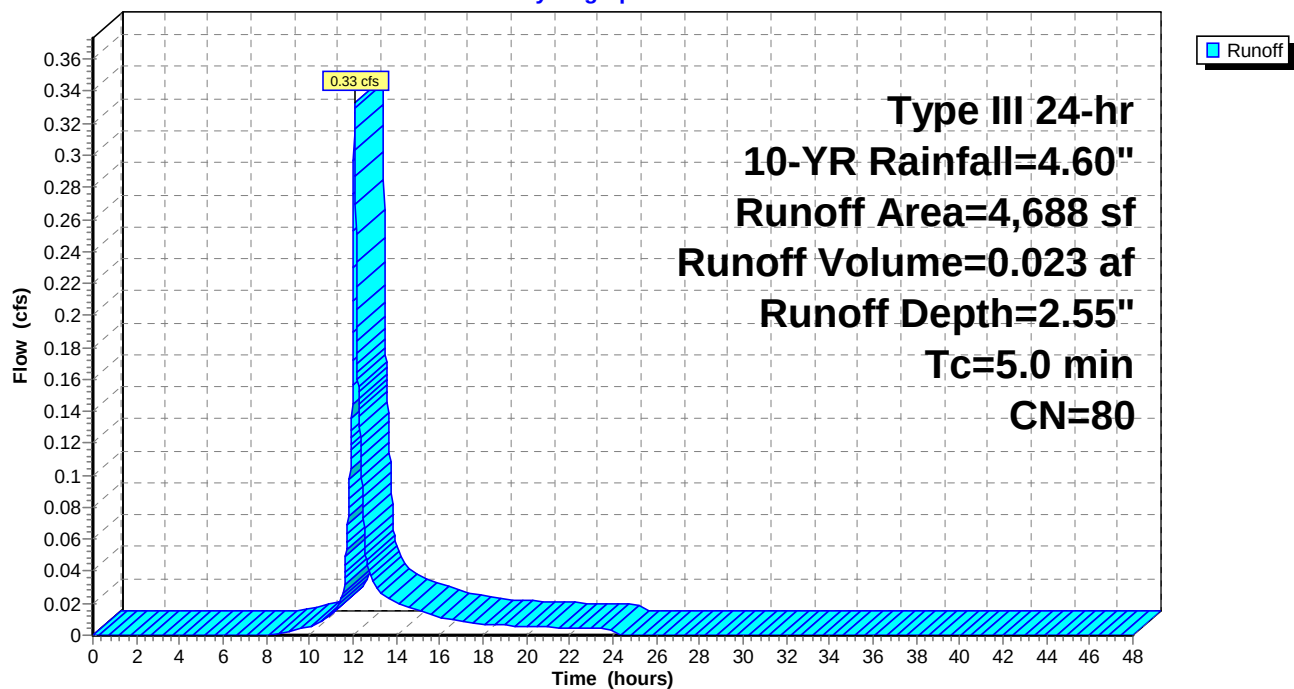
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.60"

	Area (sf)	CN	Description
*	3,244	98	impervious
*	1,444	39	Lawn/field, HSG A
	4,688	80	Weighted Average
	1,444		30.80% Pervious Area
	3,244		69.20% Impervious Area

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

Subcatchment 91S: Playground

Hydrograph



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

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Page 66

Summary for Subcatchment 402S: New Prkng lot

Runoff = 0.60 cfs @ 12.08 hrs, Volume= 0.042 af, Depth= 2.13"

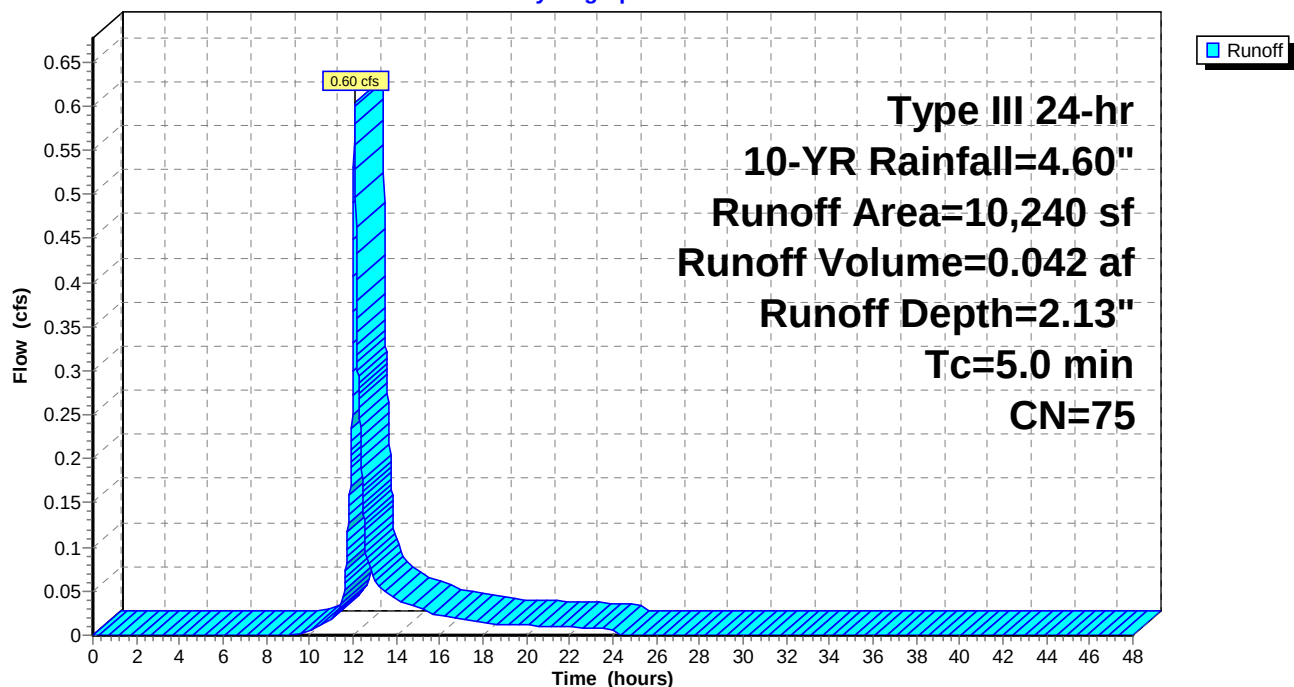
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.60"

	Area (sf)	CN	Description
*	4,000	39	Pervious
*	6,240	98	Impervious
	10,240	75	Weighted Average
	4,000		39.06% Pervious Area
	6,240		60.94% Impervious Area

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

Subcatchment 402S: New Prkng lot

Hydrograph



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

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Page 67

Summary for Reach 161R: roof drain

Inflow Area = 0.10 ac, 100.00% Impervious, Inflow Depth = 4.36" for 10-YR event
 Inflow = 0.48 cfs @ 12.07 hrs, Volume = 0.037 af
 Outflow = 0.48 cfs @ 12.08 hrs, Volume = 0.037 af, Atten = 0%, Lag = 0.5 min

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

Max. Velocity = 7.42 fps, Min. Travel Time = 0.3 min

Avg. Velocity = 2.44 fps, Avg. Travel Time = 0.9 min

Peak Storage = 8 cf @ 12.07 hrs

Average Depth at Peak Storage = 0.18'

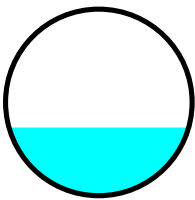
Bank-Full Depth = 0.50' Flow Area = 0.2 sf, Capacity = 1.69 cfs

6.0" Round Pipe

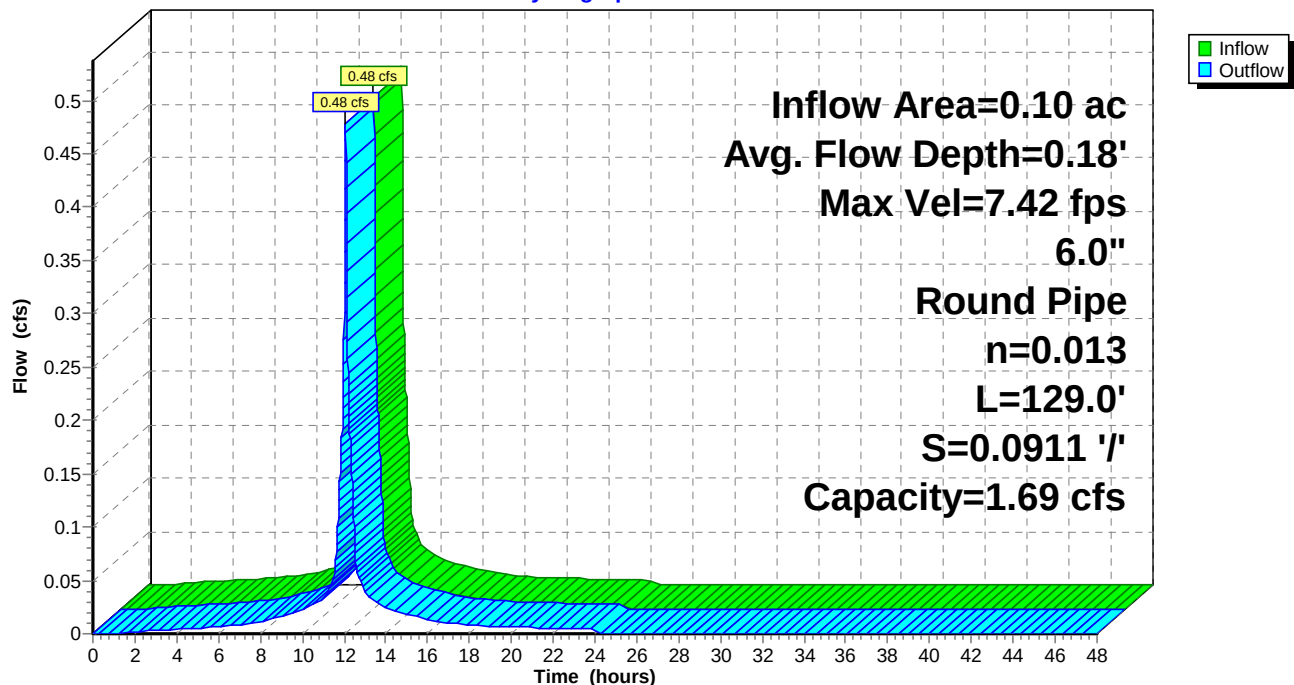
n = 0.013 Corrugated PE, smooth interior

Length = 129.0' Slope = 0.0911 '/'

Inlet Invert = 130.00', Outlet Invert = 118.25'

**Reach 161R: roof drain**

Hydrograph



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

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Page 68

Summary for Pond 1P: USSF

Inflow Area = 1.24 ac, 78.73% Impervious, Inflow Depth = 3.09" for 10-YR event
 Inflow = 4.49 cfs @ 12.07 hrs, Volume= 0.318 af
 Outflow = 0.37 cfs @ 13.08 hrs, Volume= 0.151 af, Atten= 92%, Lag= 60.5 min
 Primary = 0.37 cfs @ 13.08 hrs, Volume= 0.151 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 121.45' @ 13.08 hrs Surf.Area= 4,717 sf Storage= 8,567 cf
 Flood Elev= 126.48' Surf.Area= 4,717 sf Storage= 16,044 cf

Plug-Flow detention time= 343.2 min calculated for 0.151 af (47% of inflow)
 Center-of-Mass det. time= 222.8 min (1,022.0 - 799.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	118.85'	6,599 cf	51.42'W x 91.74'L x 5.50'H Field A 25,943 cf Overall - 9,445 cf Embedded = 16,499 cf x 40.0% Voids
#2A	119.60'	9,445 cf	ADS_StormTech MC-3500 d +Cap x 84 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 7 Rows of 12 Chambers Cap Storage= +14.9 cf x 2 x 7 rows = 208.6 cf
		16,044 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	119.67'	8.0" Round Culvert L= 7.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 119.67' / 119.52' S= 0.0214 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf
#2	Device 1	123.35'	5.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Device 1	121.10'	8.0" Vert. Orifice/Grate C= 0.600
#4	Device 5	118.85'	2.410 in/hr Exfiltration over Surface area above 118.85' Conductivity to Groundwater Elevation = 113.00' Excluded Surface area = 4,717 sf
#5	Secondary	116.02'	6.0" Round Culvert L= 31.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 116.02' / 115.88' S= 0.0045 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf

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

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Page 69

Primary OutFlow Max=0.37 cfs @ 13.08 hrs HW=121.45' (Free Discharge)

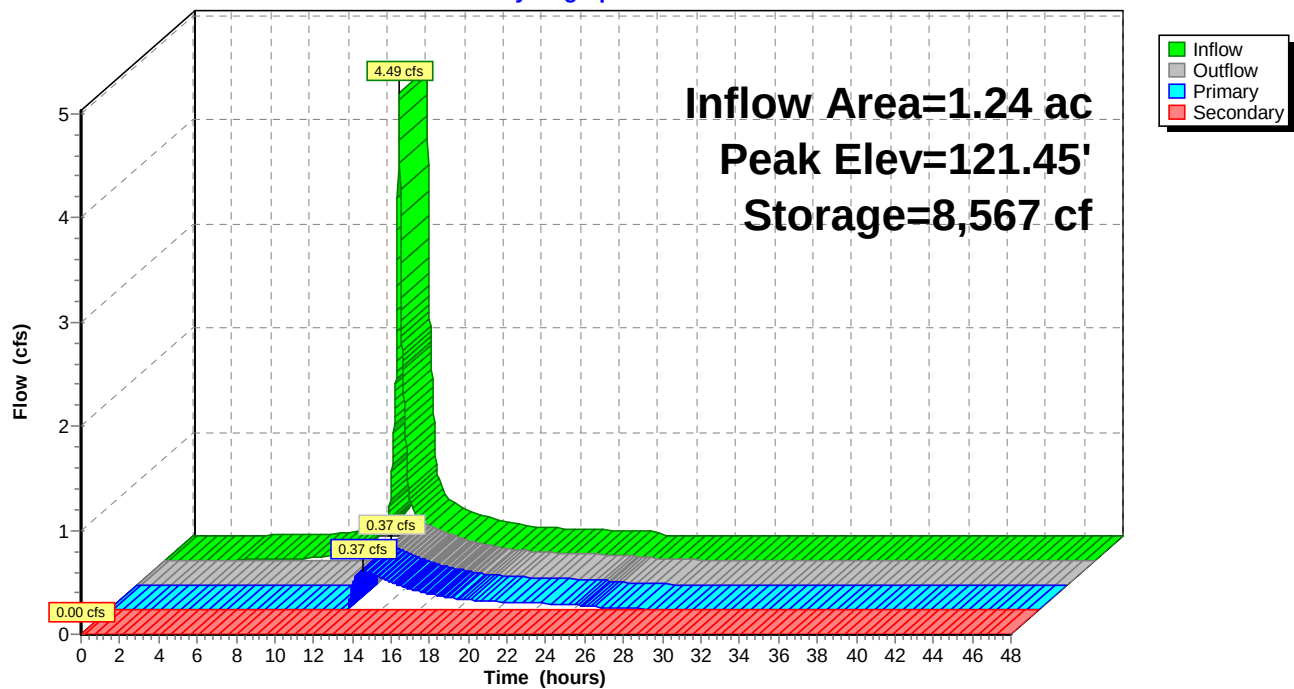
- 1=Culvert (Passes 0.37 cfs of 1.59 cfs potential flow)
- 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
- 3=Orifice/Grate (Orifice Controls 0.37 cfs @ 2.00 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=118.85' (Free Discharge)

- 5=Culvert (Passes 0.00 cfs of 1.20 cfs potential flow)
- 4=Exfiltration (Controls 0.00 cfs)

Pond 1P: USSF

Hydrograph



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

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Page 70

Summary for Pond 206P: City CB @ Fletcher & Danforth

Inflow Area = 3.14 ac, 64.59% Impervious, Inflow Depth > 1.79" for 10-YR event
Inflow = 3.66 cfs @ 12.12 hrs, Volume= 0.470 af
Outflow = 3.66 cfs @ 12.12 hrs, Volume= 0.470 af, Atten= 0%, Lag= 0.0 min
Primary = 3.66 cfs @ 12.12 hrs, Volume= 0.470 af

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

Peak Elev= 109.43' @ 12.12 hrs

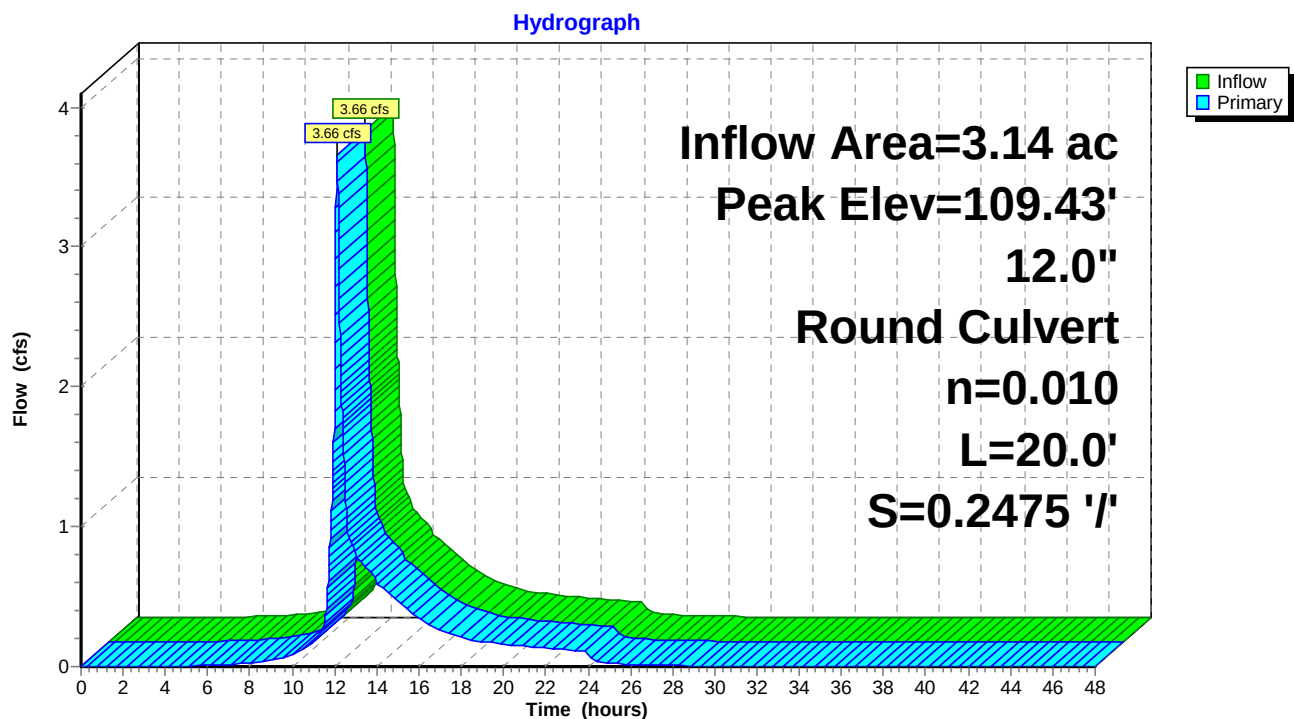
Flood Elev= 111.26'

Device	Routing	Invert	Outlet Devices
#1	Primary	107.43'	12.0" Round Culvert L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 107.43' / 102.48' S= 0.2475 ' S= 0.2475 ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.66 cfs @ 12.12 hrs HW=109.43' (Free Discharge)

↑1=Culvert (Inlet Controls 3.66 cfs @ 4.65 fps)

Pond 206P: City CB @ Fletcher & Danforth



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

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Page 71

Summary for Pond 210P: Existing FI

Inflow Area = 0.44 ac, 56.16% Impervious, Inflow Depth = 1.89" for 10-YR event
Inflow = 0.91 cfs @ 12.11 hrs, Volume= 0.070 af
Outflow = 0.91 cfs @ 12.11 hrs, Volume= 0.070 af, Atten= 0%, Lag= 0.0 min
Primary = 0.91 cfs @ 12.11 hrs, Volume= 0.070 af

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

Peak Elev= 132.62' @ 12.11 hrs

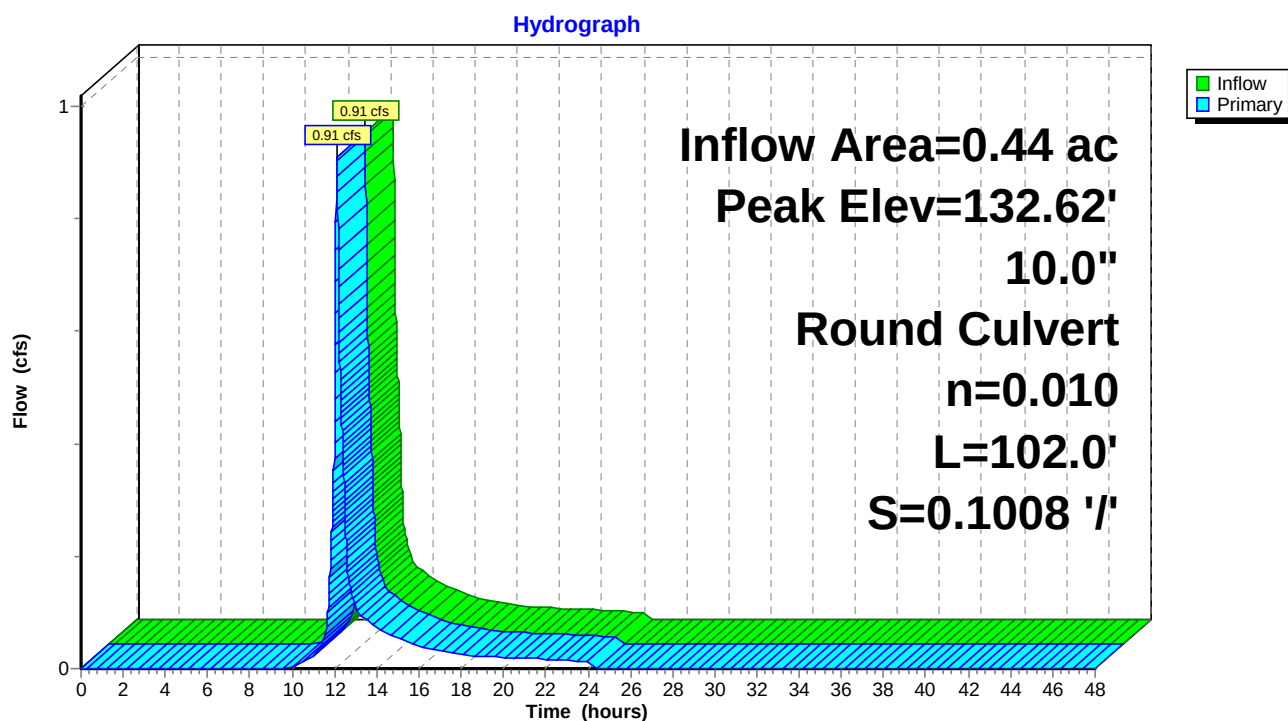
Flood Elev= 140.41'

Device	Routing	Invert	Outlet Devices
#1	Primary	132.00'	10.0" Round Culvert L= 102.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 132.00' / 121.72' S= 0.1008 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.91 cfs @ 12.11 hrs HW=132.61' (Free Discharge)

↑**1=Culvert** (Inlet Controls 0.91 cfs @ 2.11 fps)

Pond 210P: Existing FI



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

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Page 72

Summary for Pond 220P: Existing DMH

Inflow Area = 0.44 ac, 56.16% Impervious, Inflow Depth = 1.89" for 10-YR event
Inflow = 0.91 cfs @ 12.11 hrs, Volume= 0.070 af
Outflow = 0.91 cfs @ 12.11 hrs, Volume= 0.070 af, Atten= 0%, Lag= 0.0 min
Primary = 0.91 cfs @ 12.11 hrs, Volume= 0.070 af

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

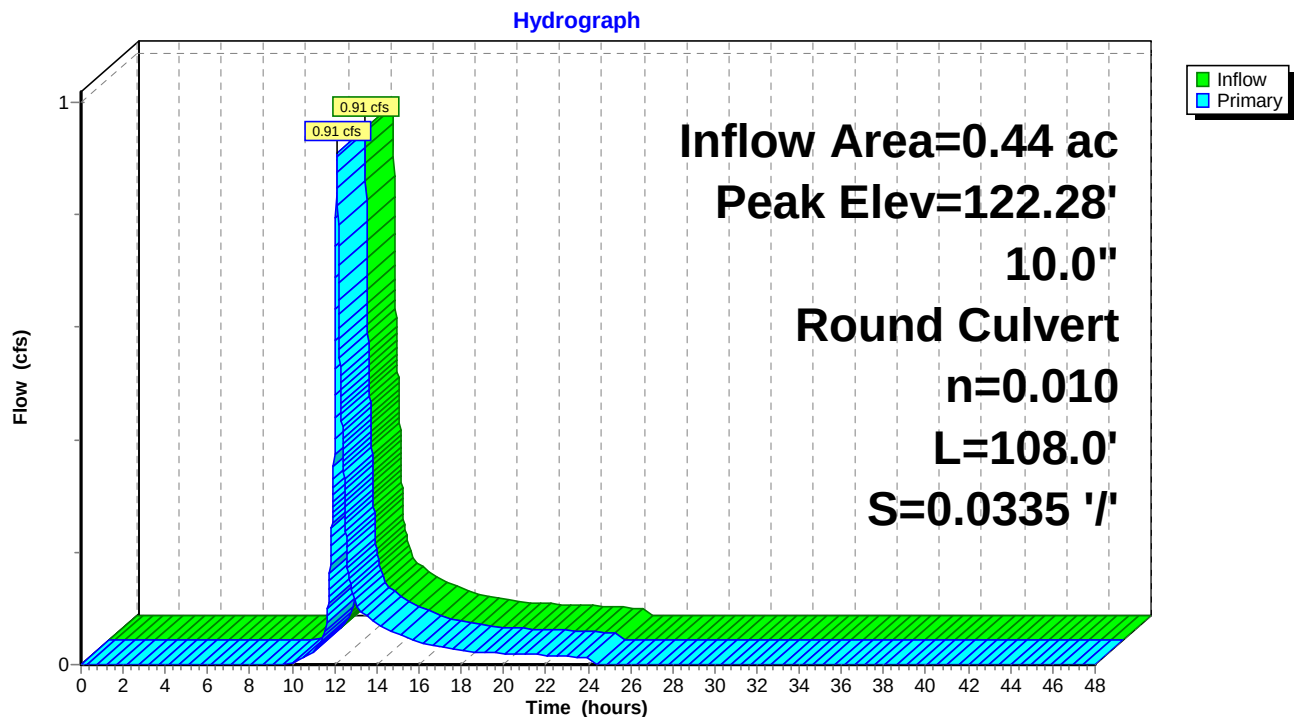
Peak Elev= 122.28' @ 12.11 hrs

Flood Elev= 128.47'

Device	Routing	Invert	Outlet Devices
#1	Primary	121.67'	10.0" Round Culvert L= 108.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 121.67' / 118.05' S= 0.0335 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.91 cfs @ 12.11 hrs HW=122.28' (Free Discharge)
↑**1=Culvert** (Inlet Controls 0.91 cfs @ 2.11 fps)

Pond 220P: Existing DMH



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Page 73

Summary for Pond 230P: Existing DMH

Inflow Area = 1.27 ac, 70.40% Impervious, Inflow Depth = 2.64" for 10-YR event
Inflow = 3.36 cfs @ 12.11 hrs, Volume= 0.280 af
Outflow = 3.36 cfs @ 12.11 hrs, Volume= 0.280 af, Atten= 0%, Lag= 0.0 min
Primary = 3.36 cfs @ 12.11 hrs, Volume= 0.280 af

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

Peak Elev= 121.04' @ 12.11 hrs

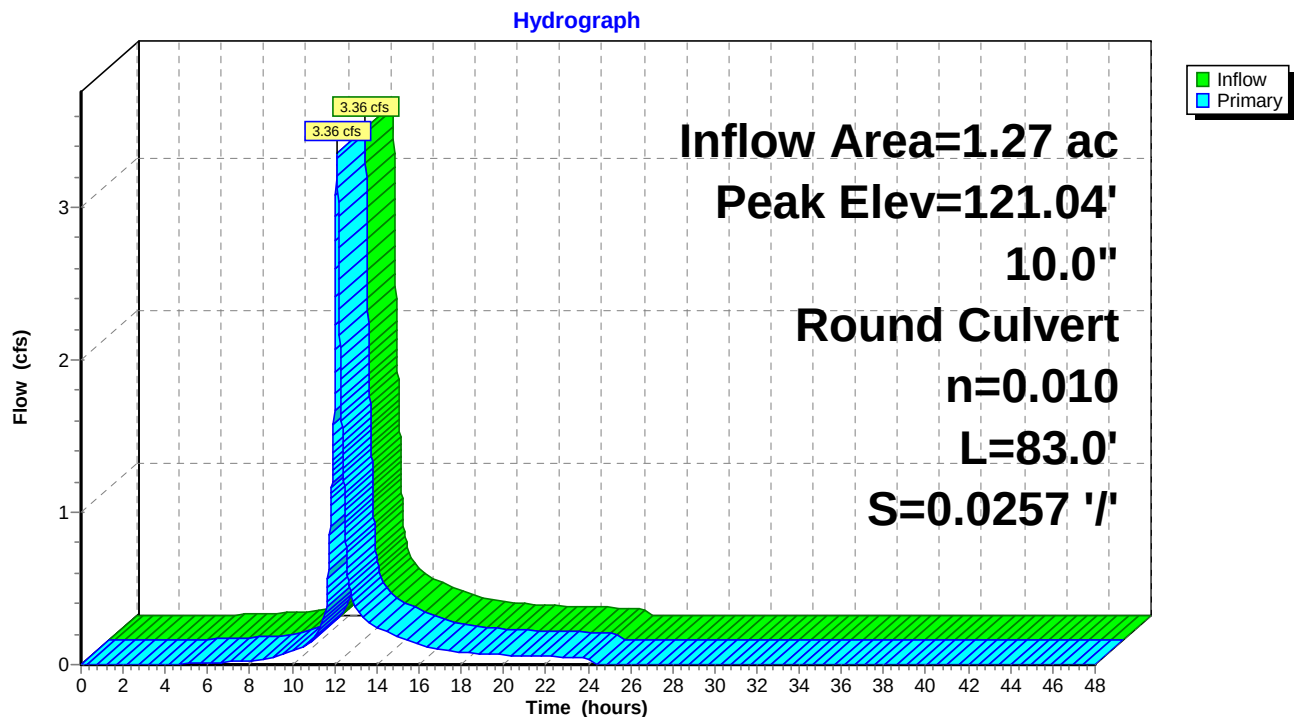
Flood Elev= 125.05'

Device	Routing	Invert	Outlet Devices
#1	Primary	118.00'	10.0" Round Culvert L= 83.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 118.00' / 115.87' S= 0.0257 ' S= 0.0257 ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=3.35 cfs @ 12.11 hrs HW=121.03' (Free Discharge)

↑**1=Culvert** (Inlet Controls 3.35 cfs @ 6.15 fps)

Pond 230P: Existing DMH



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

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Page 74

Summary for Pond 260P: Storage Pipes

Inflow Area = 0.72 ac, 79.29% Impervious, Inflow Depth = 3.12" for 10-YR event
 Inflow = 2.62 cfs @ 12.07 hrs, Volume= 0.188 af
 Outflow = 2.16 cfs @ 12.13 hrs, Volume= 0.188 af, Atten= 18%, Lag= 3.1 min
 Primary = 2.16 cfs @ 12.13 hrs, Volume= 0.188 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 120.18' @ 12.13 hrs Surf.Area= 797 sf Storage= 377 cf
 Flood Elev= 125.26' Surf.Area= 0 sf Storage= 3,468 cf

Plug-Flow detention time= 1.4 min calculated for 0.188 af (100% of inflow)
 Center-of-Mass det. time= 1.4 min (797.7 - 796.3)

Volume	Invert	Avail.Storage	Storage Description
#1	119.16'	3,468 cf	48.0" Round Pipe Storage L= 276.0' S= 0.0027 '/

Device	Routing	Invert	Outlet Devices
#1	Primary	119.16'	12.0" Round Culvert L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 119.16' / 118.02' S= 0.0380 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.15 cfs @ 12.13 hrs HW=120.18' (Free Discharge)

↑**1=Culvert** (Inlet Controls 2.15 cfs @ 2.74 fps)

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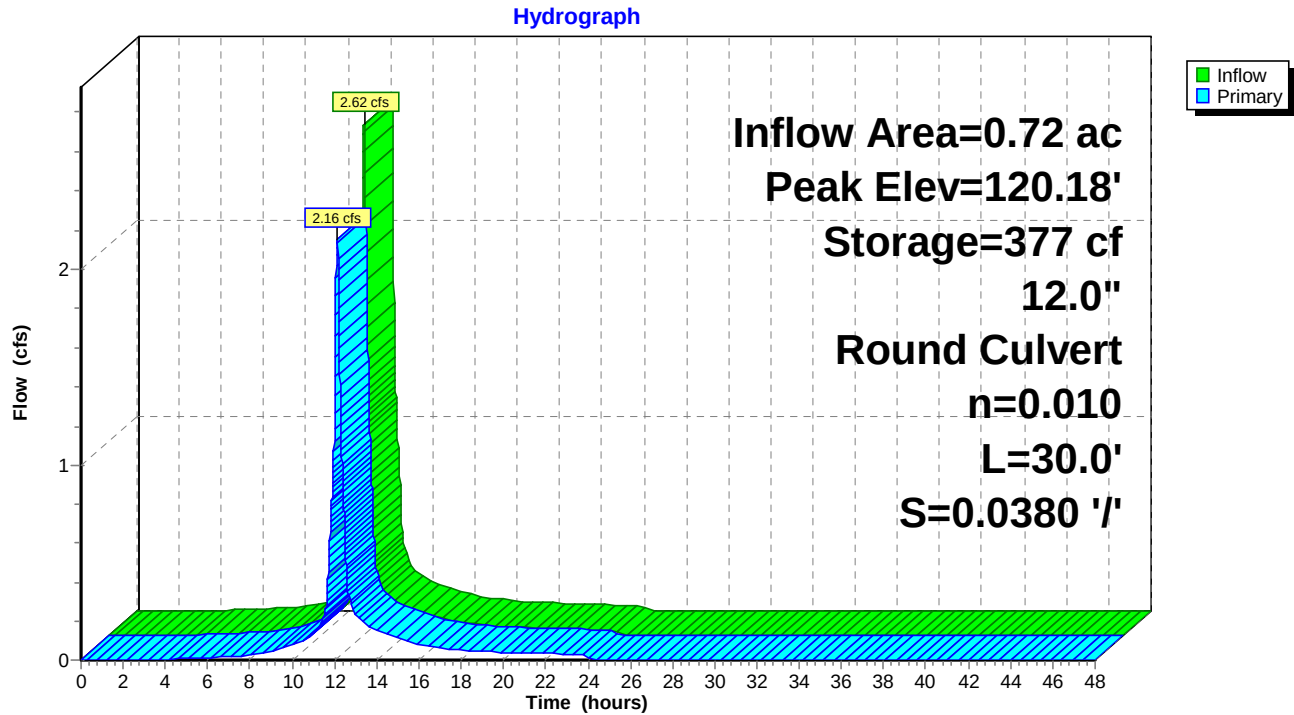
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Type III 24-hr 10-YR Rainfall=4.60"

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Page 75

Pond 260P: Storage Pipes



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

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Page 76

Summary for Pond 340P: CB at SW Cor prkng lot

Inflow Area = 0.24 ac, 60.94% Impervious, Inflow Depth = 2.13" for 10-YR event
Inflow = 0.60 cfs @ 12.08 hrs, Volume= 0.042 af
Outflow = 0.60 cfs @ 12.08 hrs, Volume= 0.042 af, Atten= 0%, Lag= 0.0 min
Primary = 0.60 cfs @ 12.08 hrs, Volume= 0.042 af

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

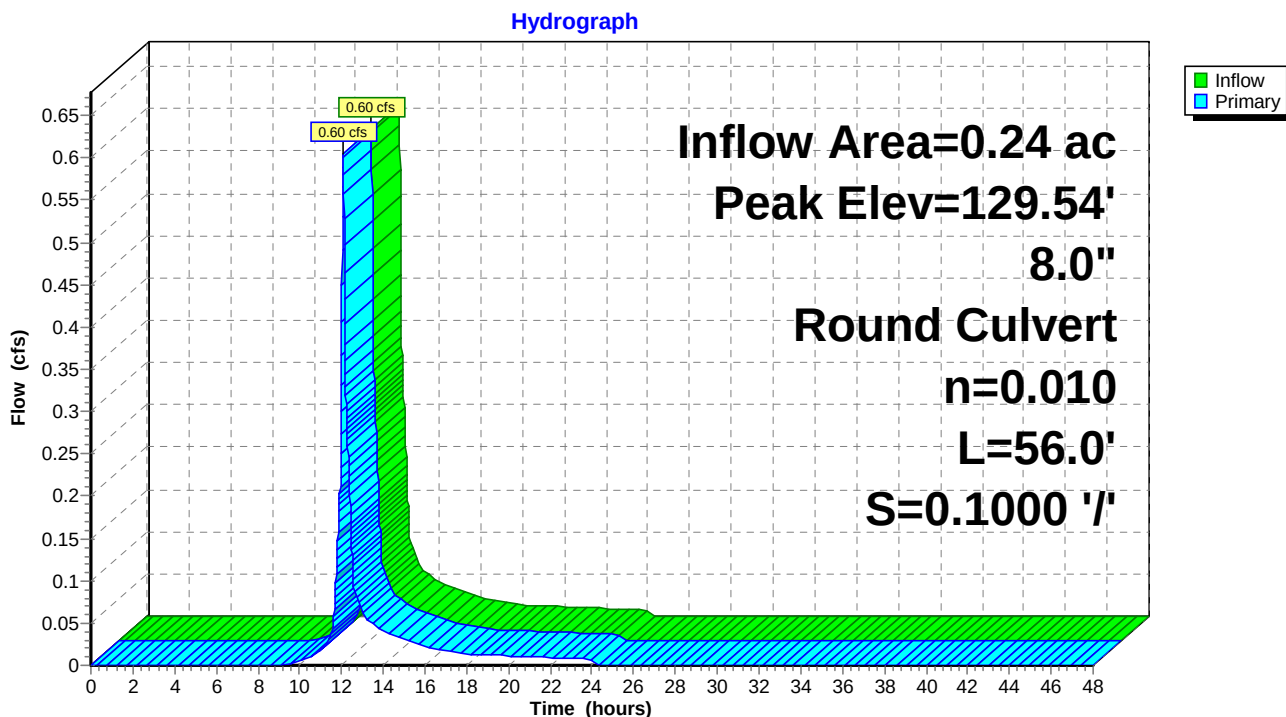
Peak Elev= 129.54' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	129.00'	8.0" Round Culvert L= 56.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 129.00' / 123.40' S= 0.1000 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.60 cfs @ 12.08 hrs HW=129.54' (Free Discharge)

↑**1=Culvert** (Inlet Controls 0.60 cfs @ 1.98 fps)

Pond 340P: CB at SW Cor prkng lot



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

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Page 77

Summary for Pond CB4: Proposed DMH

Inflow Area = 1.24 ac, 78.73% Impervious, Inflow Depth = 3.09" for 10-YR event
Inflow = 4.49 cfs @ 12.07 hrs, Volume= 0.318 af
Outflow = 4.49 cfs @ 12.07 hrs, Volume= 0.318 af, Atten= 0%, Lag= 0.0 min
Primary = 4.49 cfs @ 12.07 hrs, Volume= 0.318 af

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

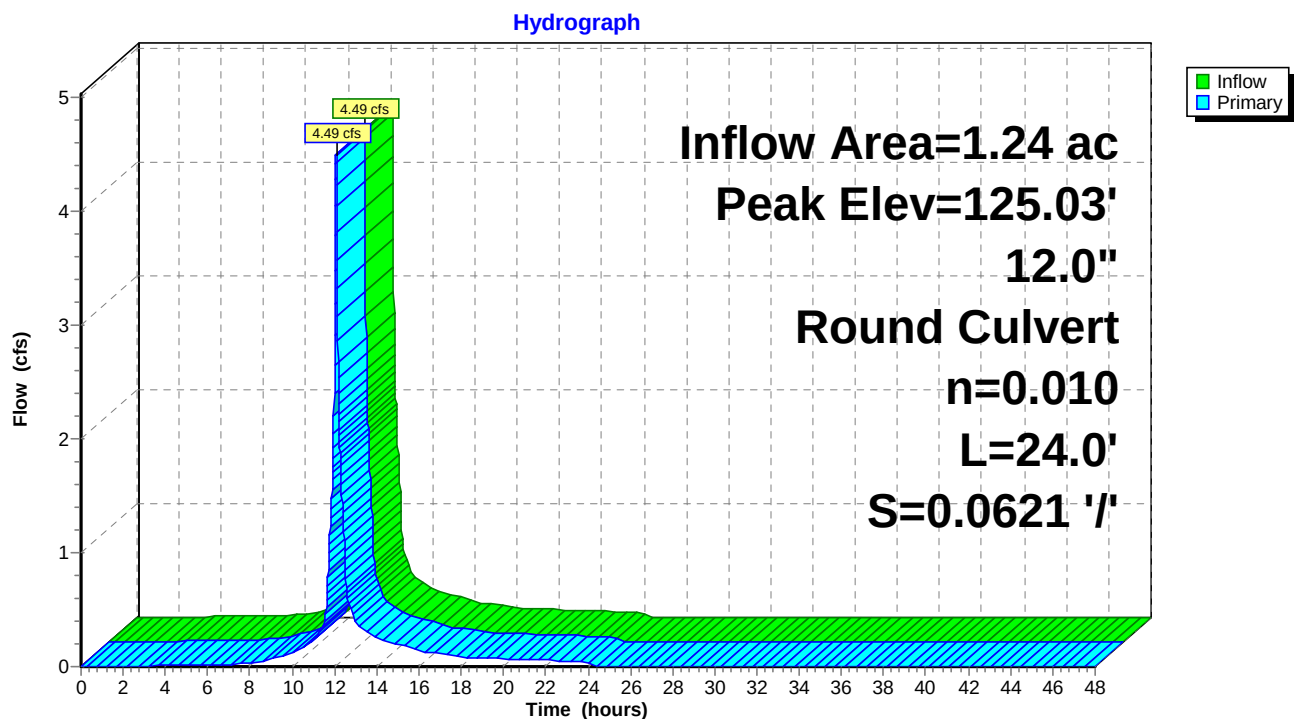
Peak Elev= 125.03' @ 12.07 hrs

Flood Elev= 127.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	122.26'	12.0" Round Culvert L= 24.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 122.26' / 120.77' S= 0.0621 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=4.48 cfs @ 12.07 hrs HW=125.02' (Free Discharge)
↑**1=Culvert** (Inlet Controls 4.48 cfs @ 5.71 fps)

Pond CB4: Proposed DMH



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

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Page 78

Summary for Pond DMH: OCS Bypass

Inflow Area = 1.24 ac, 78.73% Impervious, Inflow Depth > 1.46" for 10-YR event
Inflow = 0.37 cfs @ 13.08 hrs, Volume= 0.151 af
Outflow = 0.37 cfs @ 13.08 hrs, Volume= 0.151 af, Atten= 0%, Lag= 0.0 min
Primary = 0.37 cfs @ 13.08 hrs, Volume= 0.151 af

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

Peak Elev= 119.78' @ 13.08 hrs

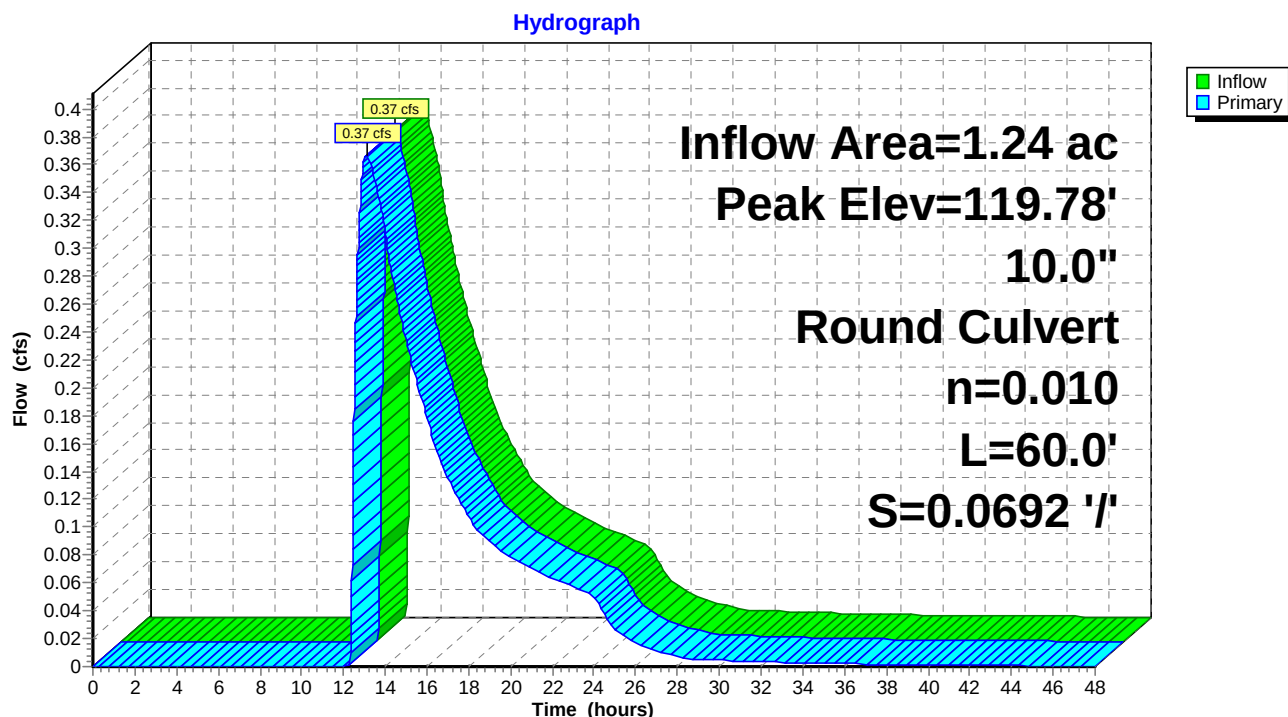
Flood Elev= 126.48'

Device	Routing	Invert	Outlet Devices
#1	Primary	119.42'	10.0" Round Culvert L= 60.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 119.42' / 115.27' S= 0.0692 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.37 cfs @ 13.08 hrs HW=119.78' (Free Discharge)

↑**1=Culvert** (Inlet Controls 0.37 cfs @ 1.62 fps)

Pond DMH: OCS Bypass



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Page 79

Summary for Pond DMH6: Access MH

Inflow Area = 1.24 ac, 78.73% Impervious, Inflow Depth = 3.09" for 10-YR event
 Inflow = 4.49 cfs @ 12.07 hrs, Volume= 0.318 af
 Outflow = 4.49 cfs @ 12.07 hrs, Volume= 0.318 af, Atten= 0%, Lag= 0.0 min
 Primary = 4.49 cfs @ 12.07 hrs, Volume= 0.318 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

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

Peak Elev= 121.01' @ 12.07 hrs

Flood Elev= 126.85'

Device	Routing	Invert	Outlet Devices
#1	Primary	119.77'	24.0" Round Culvert L= 9.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 119.77' / 119.77' S= 0.0000 ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Secondary	119.77'	24.0" Round Culvert L= 2.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 119.77' / 119.77' S= 0.0000 ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 3.14 sf
#3	Device 2	123.35'	4.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=4.48 cfs @ 12.07 hrs HW=121.01' (Free Discharge)↑ **1=Culvert** (Barrel Controls 4.48 cfs @ 3.14 fps)**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=119.77' (Free Discharge)↑ **2=Culvert** (Controls 0.00 cfs)↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

6. Post

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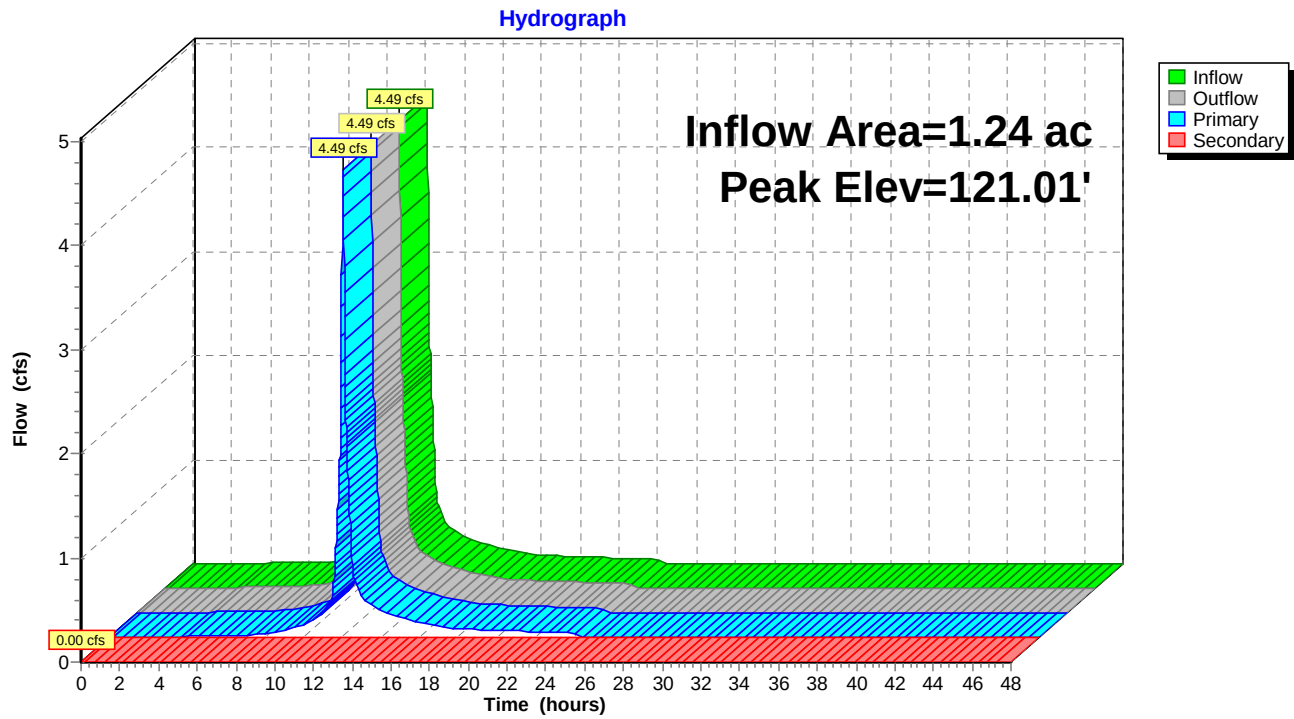
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Type III 24-hr 10-YR Rainfall=4.60"

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Page 80

Pond DMH6: Access MH



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

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Page 81

Summary for Pond DMH7: Proposed Drop DMH

Inflow Area = 2.51 ac, 74.51% Impervious, Inflow Depth > 2.06" for 10-YR event
Inflow = 3.36 cfs @ 12.11 hrs, Volume= 0.431 af
Outflow = 3.36 cfs @ 12.11 hrs, Volume= 0.431 af, Atten= 0%, Lag= 0.0 min
Primary = 3.36 cfs @ 12.11 hrs, Volume= 0.431 af

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

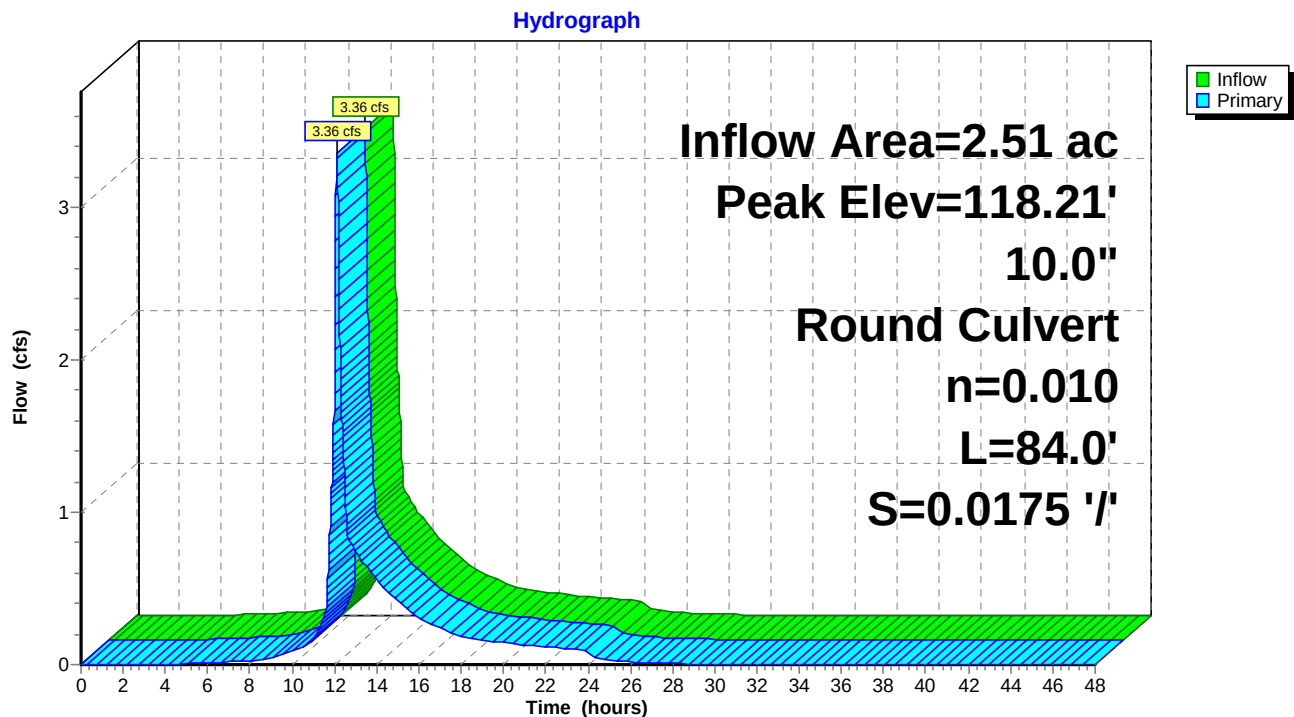
Peak Elev= 118.21' @ 12.11 hrs

Flood Elev= 124.69'

Device	Routing	Invert	Outlet Devices
#1	Primary	115.17'	10.0" Round Culvert L= 84.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 115.17' / 113.70' S= 0.0175 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=3.35 cfs @ 12.11 hrs HW=118.20' (Free Discharge)
↑**1=Culvert** (Inlet Controls 3.35 cfs @ 6.15 fps)

Pond DMH7: Proposed Drop DMH



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POST
Type III 24-hr 10-YR Rainfall=4.60"

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Page 82

Summary for Pond DMH8: Proposed DMH

Inflow Area = 2.51 ac, 74.51% Impervious, Inflow Depth > 2.06" for 10-YR event
Inflow = 3.36 cfs @ 12.11 hrs, Volume= 0.431 af
Outflow = 3.36 cfs @ 12.11 hrs, Volume= 0.431 af, Atten= 0%, Lag= 0.0 min
Primary = 3.36 cfs @ 12.11 hrs, Volume= 0.431 af

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

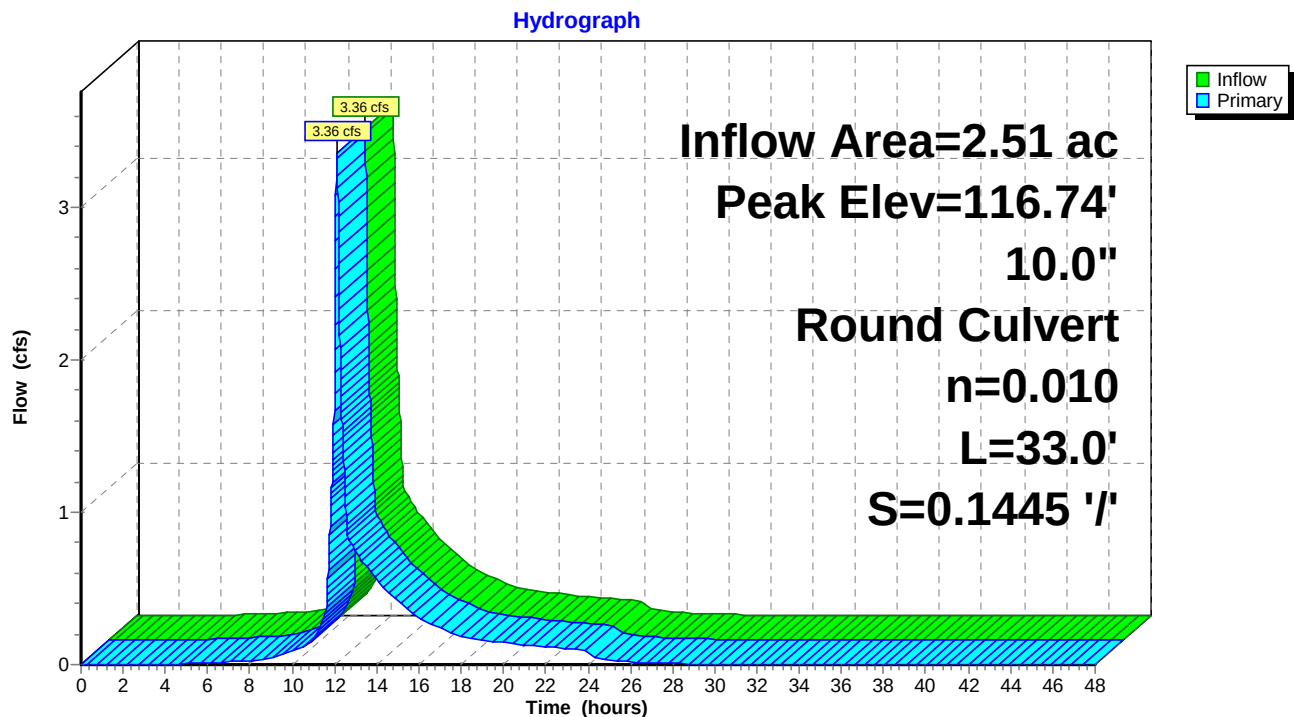
Peak Elev= 116.74' @ 12.11 hrs

Flood Elev= 123.71'

Device	Routing	Invert	Outlet Devices
#1	Primary	113.70'	10.0" Round Culvert L= 33.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 113.70' / 108.93' S= 0.1445 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=3.35 cfs @ 12.11 hrs HW=116.73' (Free Discharge)
↑**1=Culvert** (Inlet Controls 3.35 cfs @ 6.15 fps)

Pond DMH8: Proposed DMH



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

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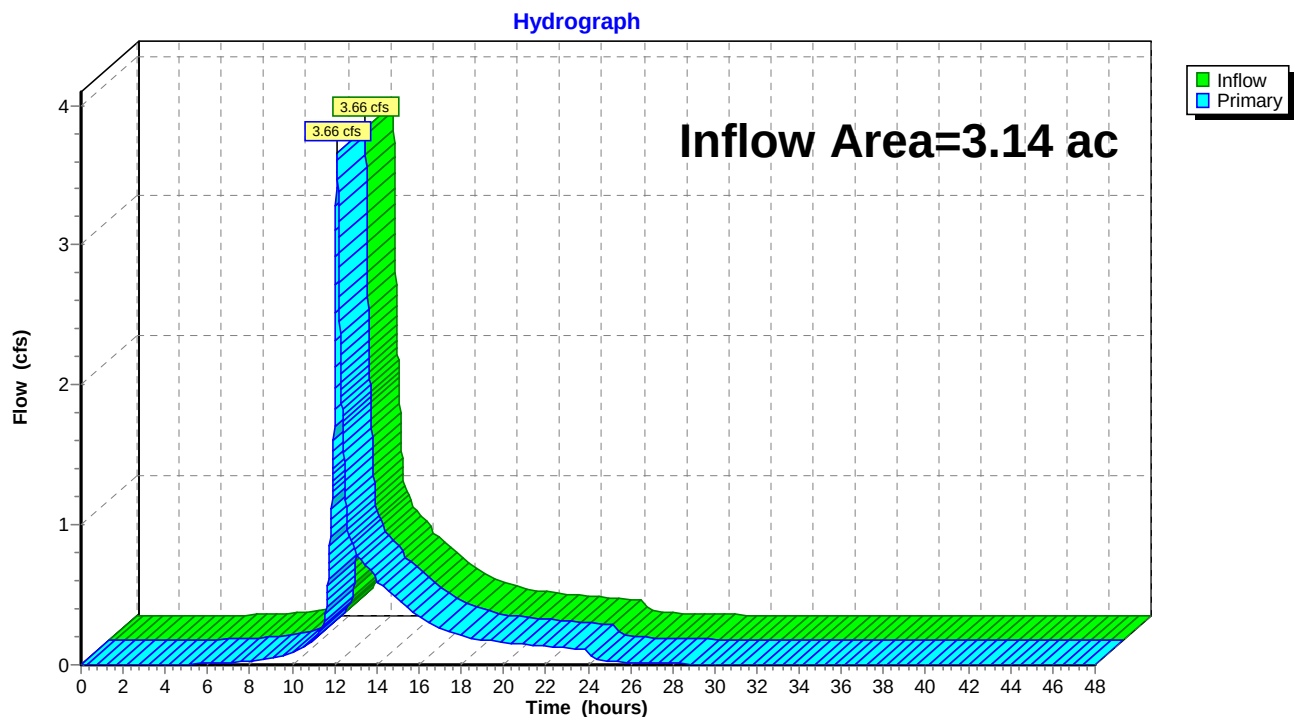
Page 83

Summary for Link SP1: Existing Combined Sewer in Danforth

Inflow Area = 3.14 ac, 64.59% Impervious, Inflow Depth > 1.79" for 10-YR event
Inflow = 3.66 cfs @ 12.12 hrs, Volume= 0.470 af
Primary = 3.66 cfs @ 12.12 hrs, Volume= 0.470 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link SP1: Existing Combined Sewer in Danforth



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

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Page 84

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 10S: Area draining to Runoff Area=19,254 sf 56.16% Impervious Runoff Depth=2.83"
 Flow Length=91' Slope=0.0300 '/' Tc=7.7 min CN=72 Runoff=1.38 cfs 0.104 af

Subcatchment 60S: Lawn/Field S of school Runoff Area=16,715 sf 84.98% Impervious Runoff Depth=4.54"
 Tc=5.0 min CN=89 Runoff=2.04 cfs 0.145 af

Subcatchment 61S: Auditorium Roof Runoff Area=4,485 sf 100.00% Impervious Runoff Depth=5.56"
 Tc=5.0 min CN=98 Runoff=0.61 cfs 0.048 af

Subcatchment 70S: Thomas & Davies & Runoff Area=44,441 sf 74.20% Impervious Runoff Depth=3.91"
 Flow Length=91' Slope=0.1593 '/' Tc=5.0 min CN=83 Runoff=4.79 cfs 0.332 af

Subcatchment 80S: FoundersHall Runoff Area=9,466 sf 100.00% Impervious Runoff Depth=5.56"
 Tc=5.0 min CN=98 Runoff=1.28 cfs 0.101 af

Subcatchment 90S: Playground Runoff Area=27,554 sf 25.26% Impervious Runoff Depth=1.33"
 Flow Length=117' Tc=9.2 min CN=54 Runoff=0.75 cfs 0.070 af

Subcatchment 91S: Playground Runoff Area=4,688 sf 69.20% Impervious Runoff Depth=3.60"
 Tc=5.0 min CN=80 Runoff=0.47 cfs 0.032 af

Subcatchment 402S: New Prkng lot Runoff Area=10,240 sf 60.94% Impervious Runoff Depth=3.11"
 Tc=5.0 min CN=75 Runoff=0.89 cfs 0.061 af

Reach 161R: roof drain Avg. Flow Depth=0.21' Max Vel=7.90 fps Inflow=0.61 cfs 0.048 af
 6.0" Round Pipe n=0.013 L=129.0' S=0.0911 '/' Capacity=1.69 cfs Outflow=0.60 cfs 0.048 af

Pond 1P: USSF Peak Elev=121.91' Storage=10,207 cf Inflow=6.07 cfs 0.433 af
 Primary=1.16 cfs 0.265 af Secondary=0.00 cfs 0.000 af Outflow=1.16 cfs 0.265 af

Pond 206P: City CB @ Fletcher & Danforth Peak Elev=111.19' Inflow=5.39 cfs 0.726 af
 12.0" Round Culvert n=0.010 L=20.0' S=0.2475 '/' Outflow=5.39 cfs 0.726 af

Pond 210P: Existing FI Peak Elev=132.86' Inflow=1.38 cfs 0.104 af
 10.0" Round Culvert n=0.010 L=102.0' S=0.1008 '/' Outflow=1.38 cfs 0.104 af

Pond 220P: Existing DMH Peak Elev=122.53' Inflow=1.38 cfs 0.104 af
 10.0" Round Culvert n=0.010 L=108.0' S=0.0335 '/' Outflow=1.38 cfs 0.104 af

Pond 230P: Existing DMH Peak Elev=123.02' Inflow=4.45 cfs 0.390 af
 10.0" Round Culvert n=0.010 L=83.0' S=0.0257 '/' Outflow=4.45 cfs 0.390 af

Pond 260P: Storage Pipes Peak Elev=120.47' Storage=626 cf Inflow=3.53 cfs 0.254 af
 12.0" Round Culvert n=0.010 L=30.0' S=0.0380 '/' Outflow=2.69 cfs 0.254 af

Pond 340P: CB at SW Cor prkng lot Peak Elev=129.78' Inflow=0.89 cfs 0.061 af
 8.0" Round Culvert n=0.010 L=56.0' S=0.1000 '/' Outflow=0.89 cfs 0.061 af

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

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Page 85

Pond CB4: Proposed DMH

Peak Elev=126.90' Inflow=6.07 cfs 0.433 af
12.0" Round Culvert n=0.010 L=24.0' S=0.0621 '/' Outflow=6.07 cfs 0.433 af

Pond DMH: OCS Bypass

Peak Elev=120.15' Inflow=1.16 cfs 0.265 af
10.0" Round Culvert n=0.010 L=60.0' S=0.0692 '/' Outflow=1.16 cfs 0.265 af

Pond DMH6: Access MH

Peak Elev=121.24' Inflow=6.07 cfs 0.433 af
Primary=6.07 cfs 0.433 af Secondary=0.00 cfs 0.000 af Outflow=6.07 cfs 0.433 af

Pond DMH7: Proposed Drop DMH

Peak Elev=120.60' Inflow=4.64 cfs 0.656 af
10.0" Round Culvert n=0.010 L=84.0' S=0.0175 '/' Outflow=4.64 cfs 0.656 af

Pond DMH8: Proposed DMH

Peak Elev=119.13' Inflow=4.64 cfs 0.656 af
10.0" Round Culvert n=0.010 L=33.0' S=0.1445 '/' Outflow=4.64 cfs 0.656 af

Link SP1: Existing Combined Sewer in Danforth

Inflow=5.39 cfs 0.726 af
Primary=5.39 cfs 0.726 af

Total Runoff Area = 3.14 ac Runoff Volume = 0.893 af Average Runoff Depth = 3.41"
35.41% Pervious = 1.11 ac 64.59% Impervious = 2.03 ac

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

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Page 86

Summary for Subcatchment 10S: Area draining to Sanctuary

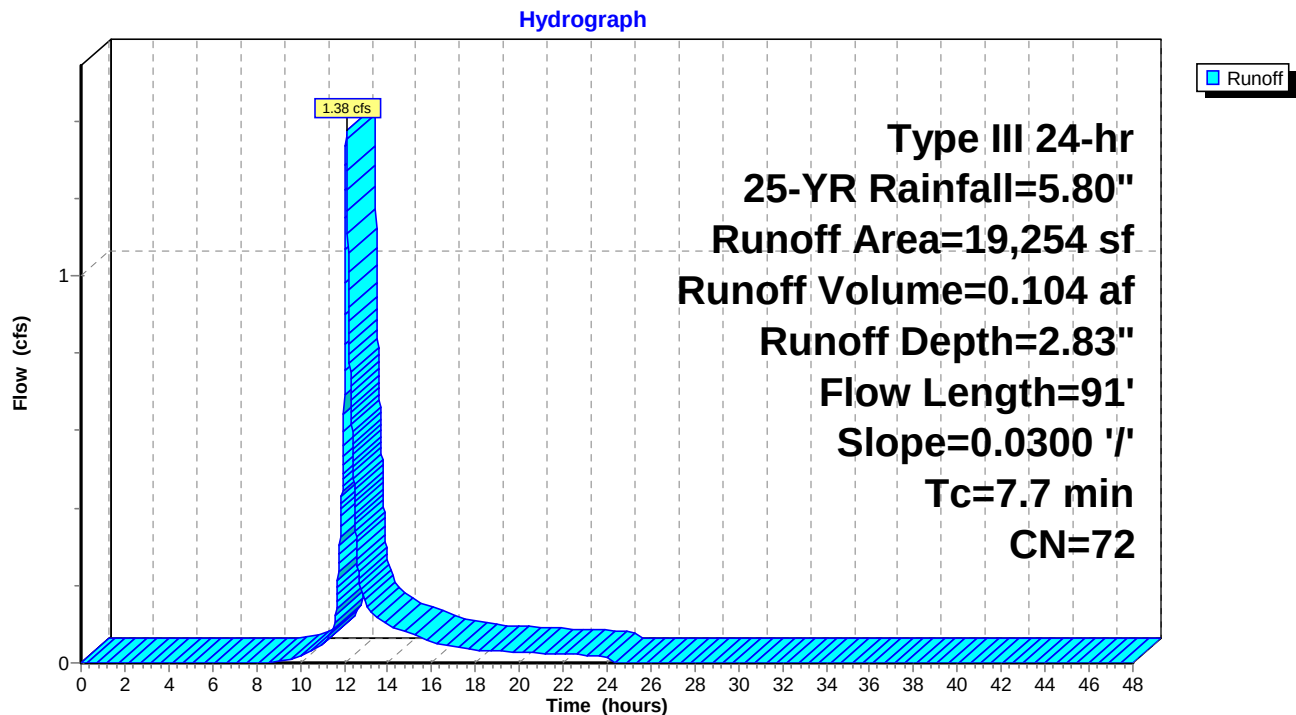
Runoff = 1.38 cfs @ 12.11 hrs, Volume= 0.104 af, Depth= 2.83"

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

	Area (sf)	CN	Description
*	10,813	98	impervious
*	8,441	39	Lawn/field, HSG A
	19,254	72	Weighted Average
	8,441		43.84% Pervious Area
	10,813		56.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	91	0.0300	0.20		Sheet Flow, A-B
Grass: Short n= 0.150 P2= 3.19"					

Subcatchment 10S: Area draining to Sanctuary



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

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Page 87

Summary for Subcatchment 60S: Lawn/Field S of school

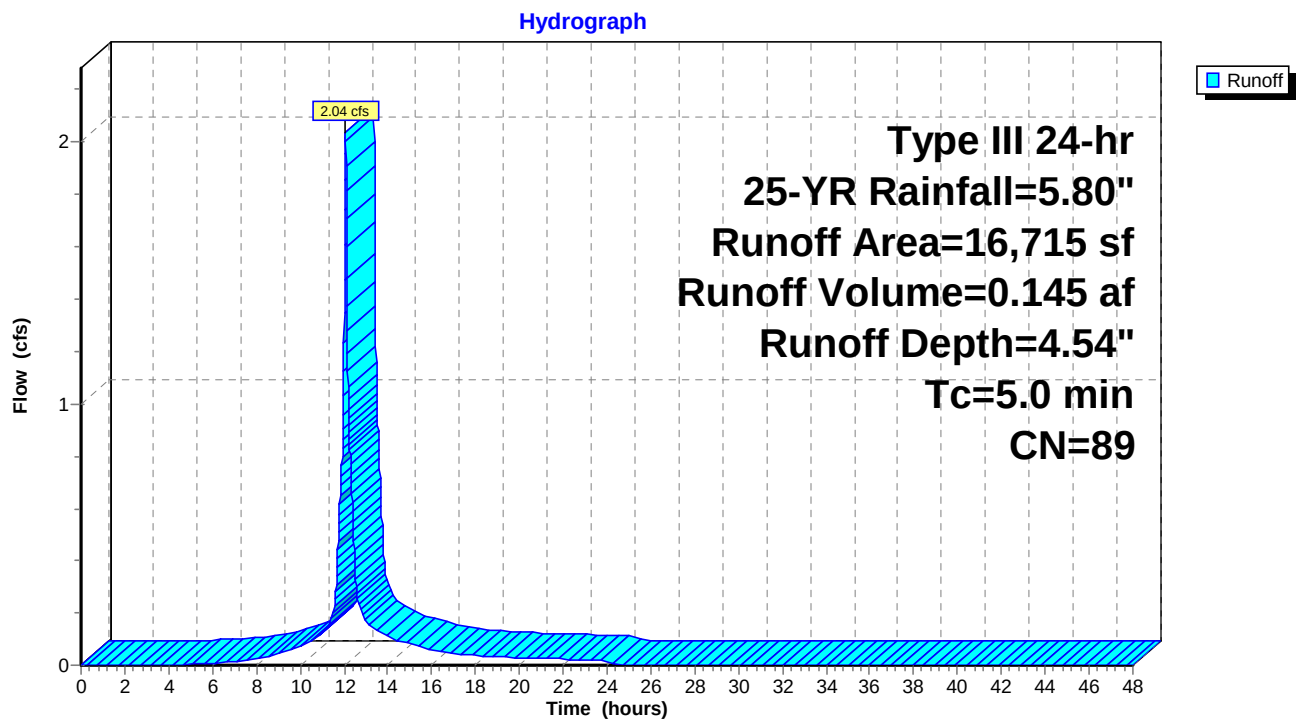
Runoff = 2.04 cfs @ 12.07 hrs, Volume= 0.145 af, Depth= 4.54"

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

	Area (sf)	CN	Description
*	14,205	98	impervious
*	2,510	39	Lawn/field, HSG A
	16,715	89	Weighted Average
	2,510		15.02% Pervious Area
	14,205		84.98% Impervious Area

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

Subcatchment 60S: Lawn/Field S of school



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

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Page 88

Summary for Subcatchment 61S: Auditorium Roof

Runoff = 0.61 cfs @ 12.07 hrs, Volume= 0.048 af, Depth= 5.56"

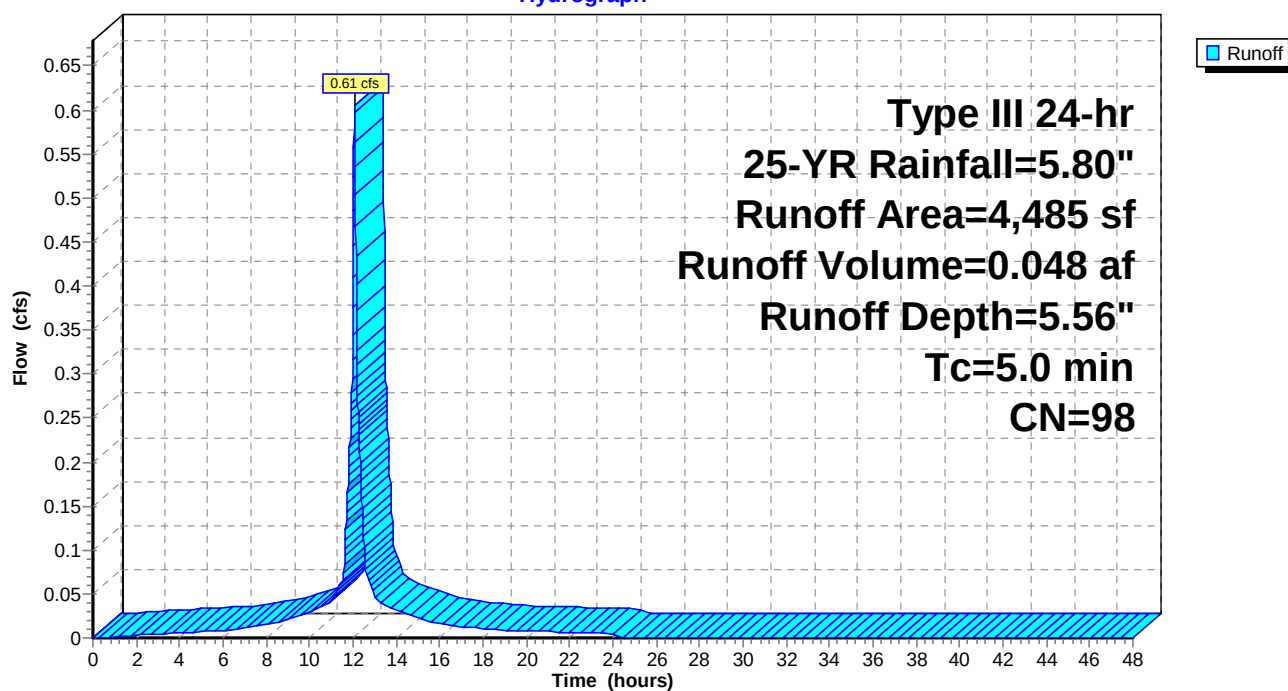
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

	Area (sf)	CN	Description
*	4,485	98	Roof runoff
	4,485		100.00% Impervious Area

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

Subcatchment 61S: Auditorium Roof

Hydrograph



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

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Page 89

Summary for Subcatchment 70S: Thomas & Davies & Gym

Runoff = 4.79 cfs @ 12.07 hrs, Volume= 0.332 af, Depth= 3.91"

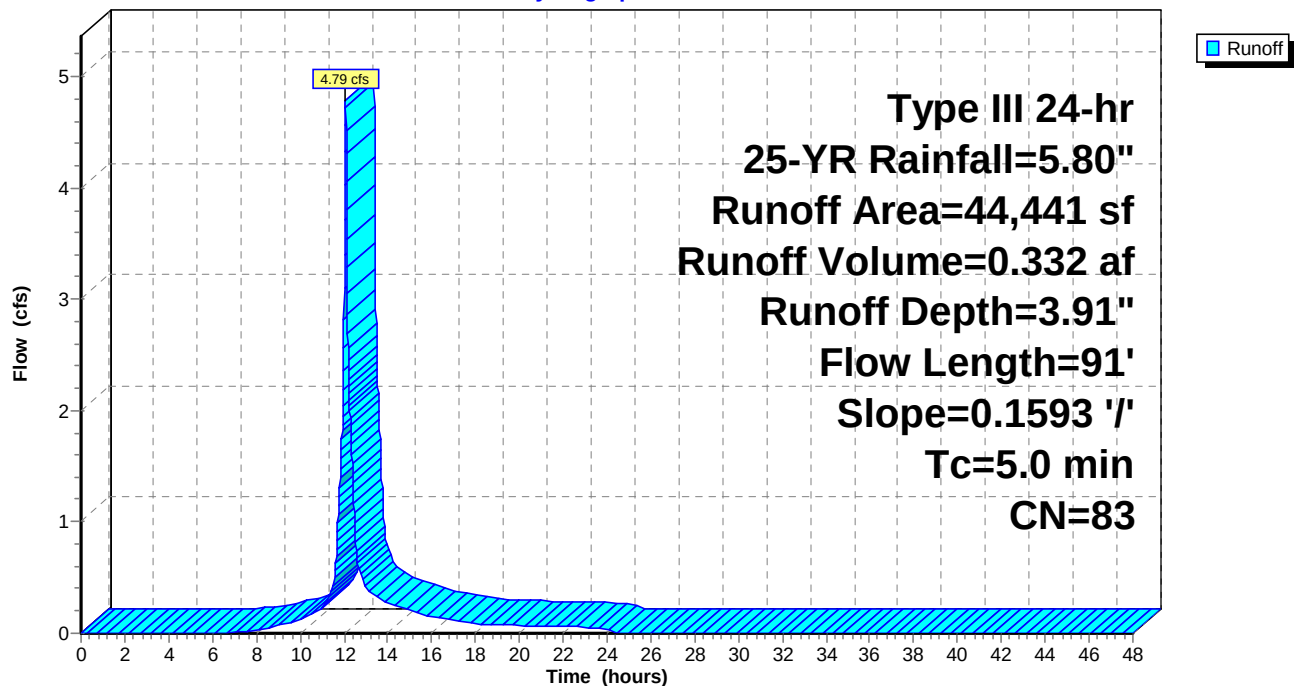
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

	Area (sf)	CN	Description
*	32,976	98	impervious
*	11,465	39	Lawn/field, HSG A
	44,441	83	Weighted Average
	11,465		25.80% Pervious Area
	32,976		74.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	91	0.1593	0.38		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.19"
4.0	91	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 70S: Thomas & Davies & Gym

Hydrograph



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

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Page 90

Summary for Subcatchment 80S: FoundersHall

Runoff = 1.28 cfs @ 12.07 hrs, Volume= 0.101 af, Depth= 5.56"

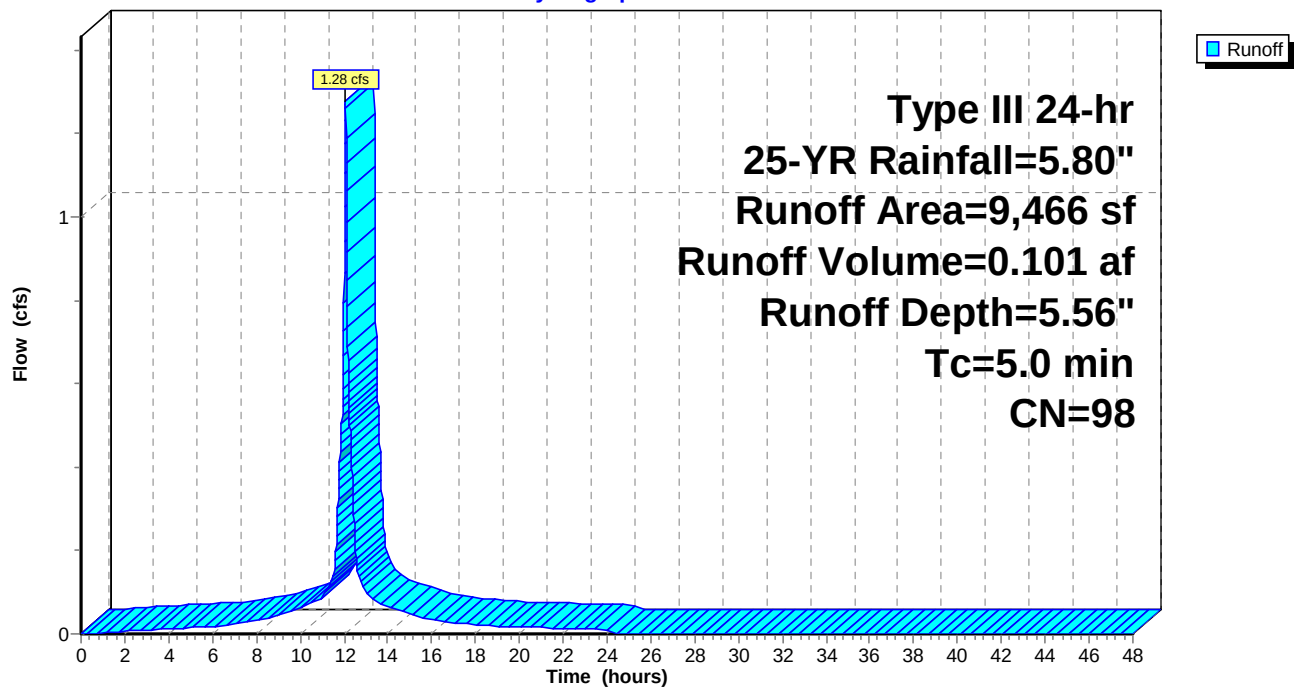
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

	Area (sf)	CN	Description
*	9,466	98	Roof runoff
	9,466		100.00% Impervious Area

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

Subcatchment 80S: FoundersHall

Hydrograph



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

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Page 91

Summary for Subcatchment 90S: Playground

Runoff = 0.75 cfs @ 12.15 hrs, Volume= 0.070 af, Depth= 1.33"

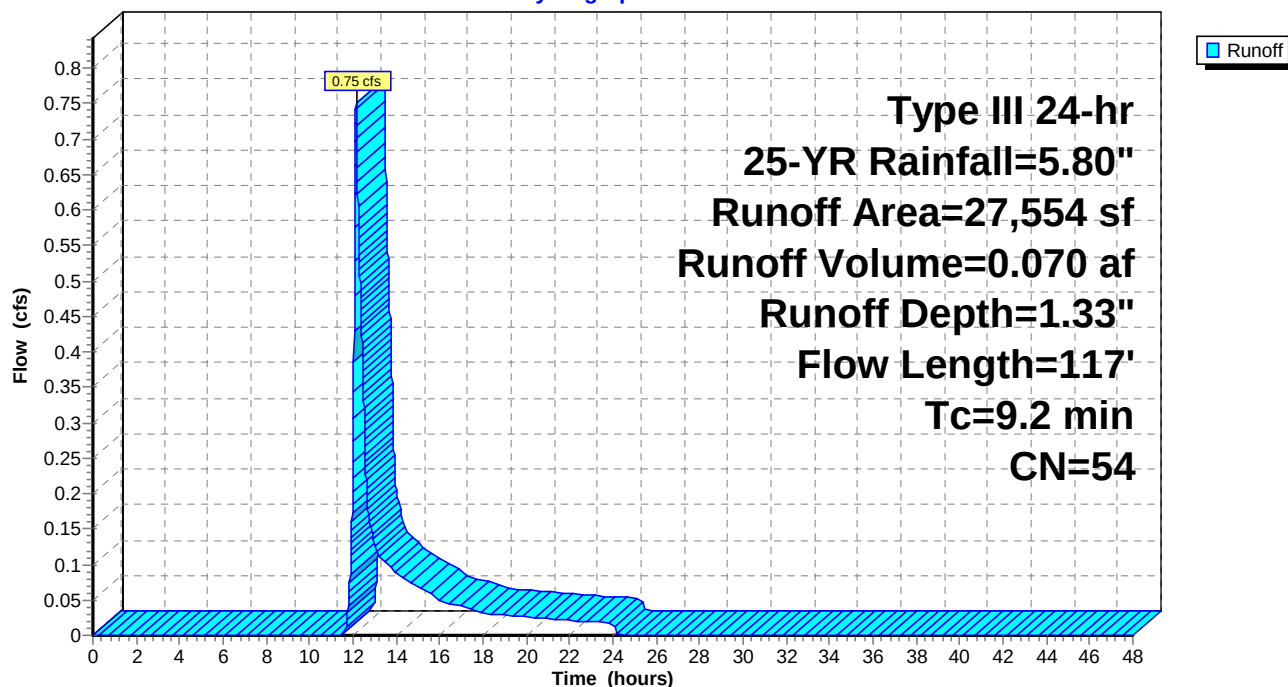
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

	Area (sf)	CN	Description
*	6,960	98	impervious
*	20,594	39	Lawn/field, HSG A
	27,554	54	Weighted Average
	20,594		74.74% Pervious Area
	6,960		25.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.0250	0.19		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.19"
0.2	17	0.0588	1.70		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
9.2	117	Total			

Subcatchment 90S: Playground

Hydrograph



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

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Page 92

Summary for Subcatchment 91S: Playground

Runoff = 0.47 cfs @ 12.07 hrs, Volume= 0.032 af, Depth= 3.60"

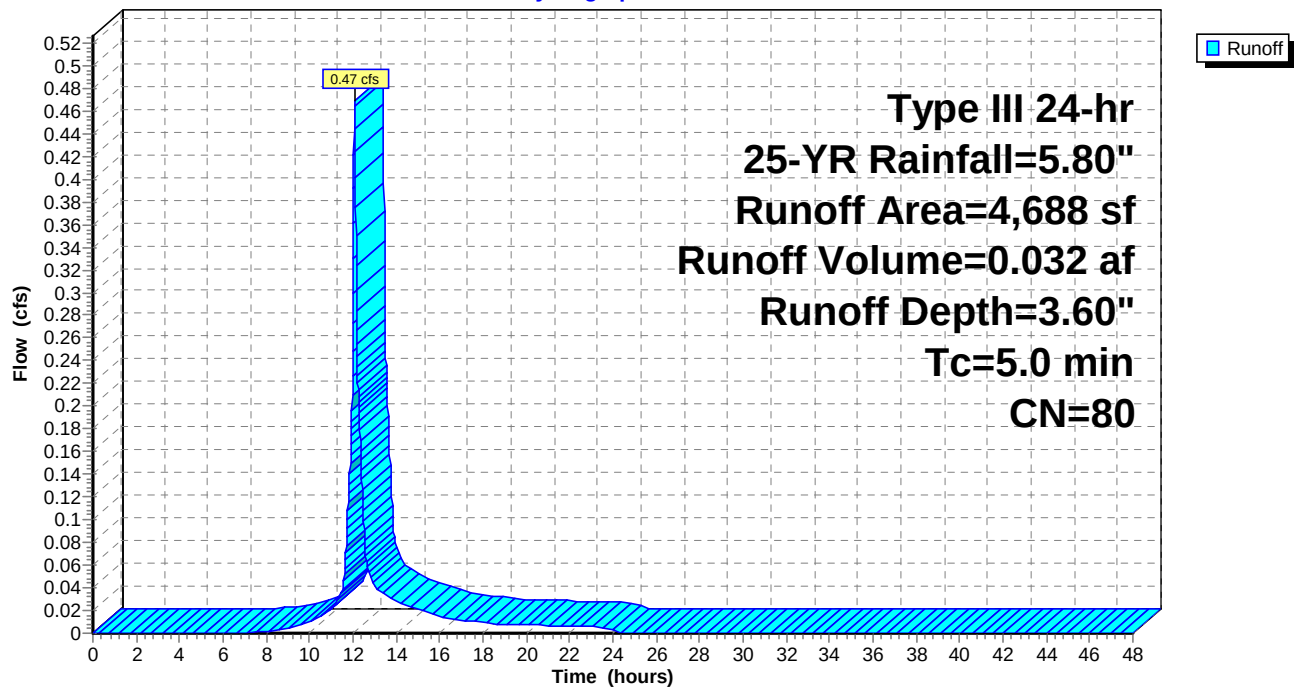
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

	Area (sf)	CN	Description
*	3,244	98	impervious
*	1,444	39	Lawn/field, HSG A
	4,688	80	Weighted Average
	1,444		30.80% Pervious Area
	3,244		69.20% Impervious Area

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

Subcatchment 91S: Playground

Hydrograph



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

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Page 93

Summary for Subcatchment 402S: New Prkng lot

Runoff = 0.89 cfs @ 12.08 hrs, Volume= 0.061 af, Depth= 3.11"

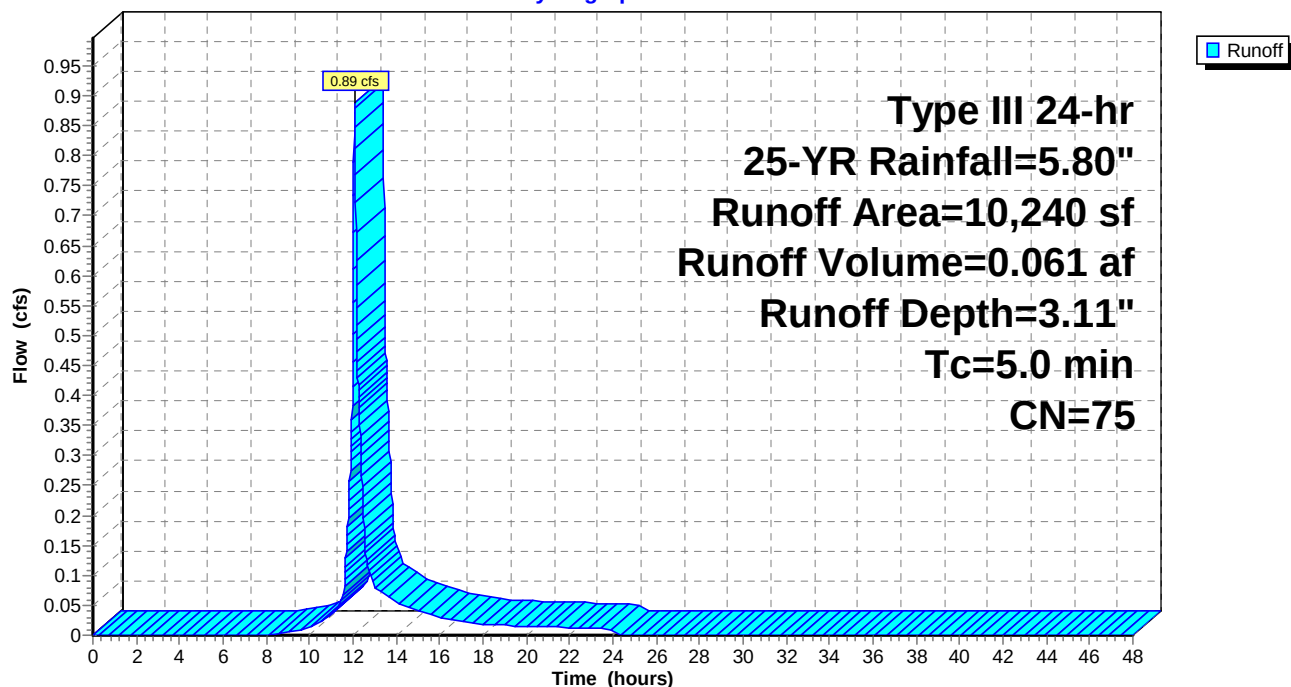
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

	Area (sf)	CN	Description
*	4,000	39	Pervious
*	6,240	98	Impervious
	10,240	75	Weighted Average
	4,000		39.06% Pervious Area
	6,240		60.94% Impervious Area

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

Subcatchment 402S: New Prkng lot

Hydrograph



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

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Page 94

Summary for Reach 161R: roof drain

Inflow Area = 0.10 ac, 100.00% Impervious, Inflow Depth = 5.56" for 25-YR event
 Inflow = 0.61 cfs @ 12.07 hrs, Volume = 0.048 af
 Outflow = 0.60 cfs @ 12.08 hrs, Volume = 0.048 af, Atten = 0%, Lag = 0.5 min

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

Max. Velocity = 7.90 fps, Min. Travel Time = 0.3 min

Avg. Velocity = 2.62 fps, Avg. Travel Time = 0.8 min

Peak Storage = 10 cf @ 12.07 hrs

Average Depth at Peak Storage = 0.21'

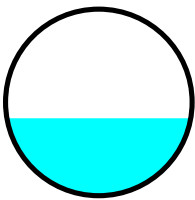
Bank-Full Depth = 0.50' Flow Area = 0.2 sf, Capacity = 1.69 cfs

6.0" Round Pipe

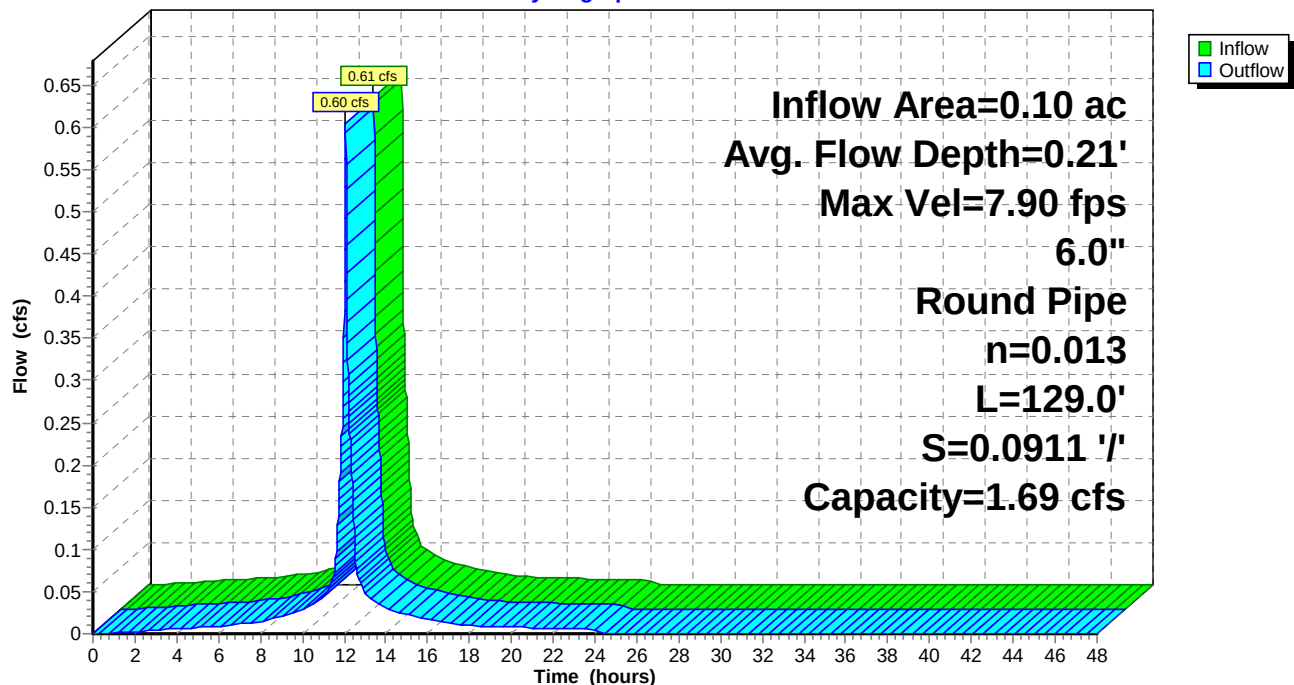
n = 0.013 Corrugated PE, smooth interior

Length = 129.0' Slope = 0.0911 '/'

Inlet Invert = 130.00', Outlet Invert = 118.25'

**Reach 161R: roof drain**

Hydrograph



6. Post

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

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Page 95

Summary for Pond 1P: USSF

Inflow Area = 1.24 ac, 78.73% Impervious, Inflow Depth = 4.20" for 25-YR event
 Inflow = 6.07 cfs @ 12.07 hrs, Volume= 0.433 af
 Outflow = 1.16 cfs @ 12.51 hrs, Volume= 0.265 af, Atten= 81%, Lag= 26.1 min
 Primary = 1.16 cfs @ 12.51 hrs, Volume= 0.265 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 121.91' @ 12.51 hrs Surf.Area= 4,717 sf Storage= 10,207 cf
 Flood Elev= 126.48' Surf.Area= 4,717 sf Storage= 16,044 cf

Plug-Flow detention time= 259.1 min calculated for 0.265 af (61% of inflow)
 Center-of-Mass det. time= 154.4 min (946.7 - 792.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	118.85'	6,599 cf	51.42'W x 91.74'L x 5.50'H Field A 25,943 cf Overall - 9,445 cf Embedded = 16,499 cf x 40.0% Voids
#2A	119.60'	9,445 cf	ADS_StormTech MC-3500 d +Cap x 84 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 7 Rows of 12 Chambers Cap Storage= +14.9 cf x 2 x 7 rows = 208.6 cf
		16,044 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	119.67'	8.0" Round Culvert L= 7.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 119.67' / 119.52' S= 0.0214 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf
#2	Device 1	123.35'	5.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Device 1	121.10'	8.0" Vert. Orifice/Grate C= 0.600
#4	Device 5	118.85'	2.410 in/hr Exfiltration over Surface area above 118.85' Conductivity to Groundwater Elevation = 113.00' Excluded Surface area = 4,717 sf
#5	Secondary	116.02'	6.0" Round Culvert L= 31.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 116.02' / 115.88' S= 0.0045 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf

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

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Page 96

Primary OutFlow Max=1.16 cfs @ 12.51 hrs HW=121.91' (Free Discharge)

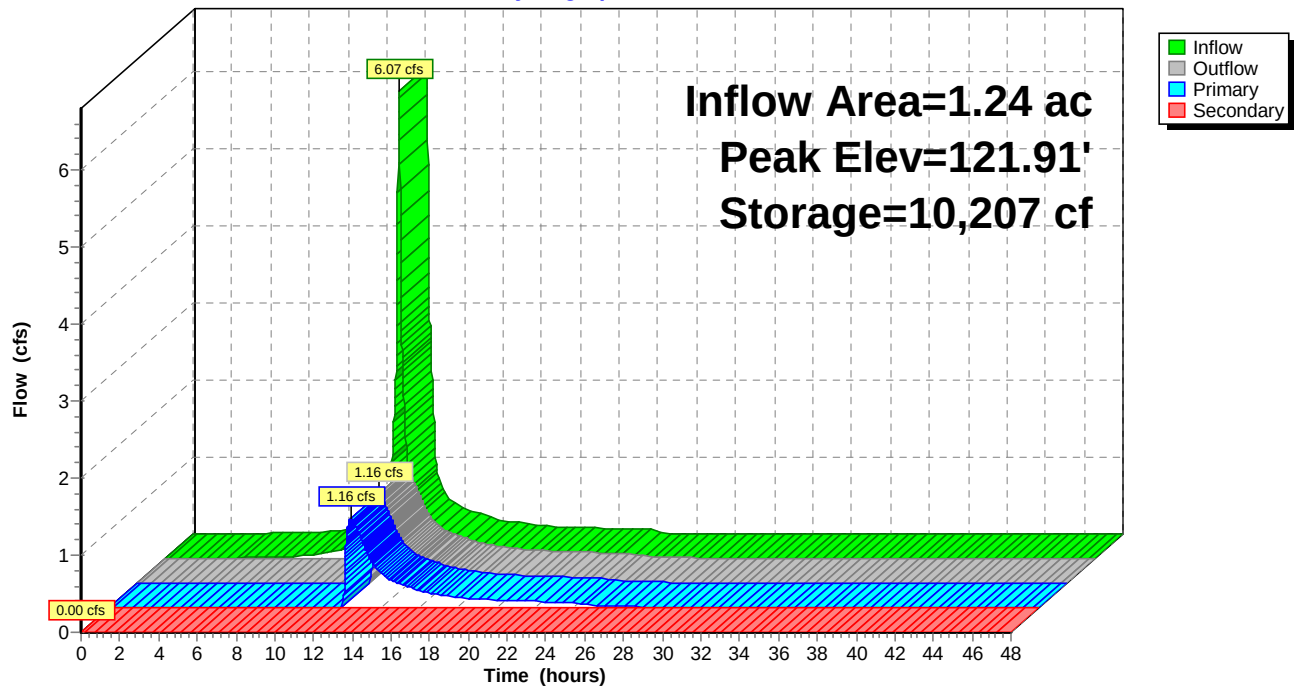
- 1=Culvert (Passes 1.16 cfs of 1.83 cfs potential flow)
- 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
- 3=Orifice/Grate (Orifice Controls 1.16 cfs @ 3.34 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=118.85' (Free Discharge)

- 5=Culvert (Passes 0.00 cfs of 1.20 cfs potential flow)
- 4=Exfiltration (Controls 0.00 cfs)

Pond 1P: USSF

Hydrograph



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

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Page 97

Summary for Pond 206P: City CB @ Fletcher & Danforth

Inflow Area = 3.14 ac, 64.59% Impervious, Inflow Depth = 2.77" for 25-YR event
Inflow = 5.39 cfs @ 12.14 hrs, Volume= 0.726 af
Outflow = 5.39 cfs @ 12.14 hrs, Volume= 0.726 af, Atten= 0%, Lag= 0.0 min
Primary = 5.39 cfs @ 12.14 hrs, Volume= 0.726 af

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

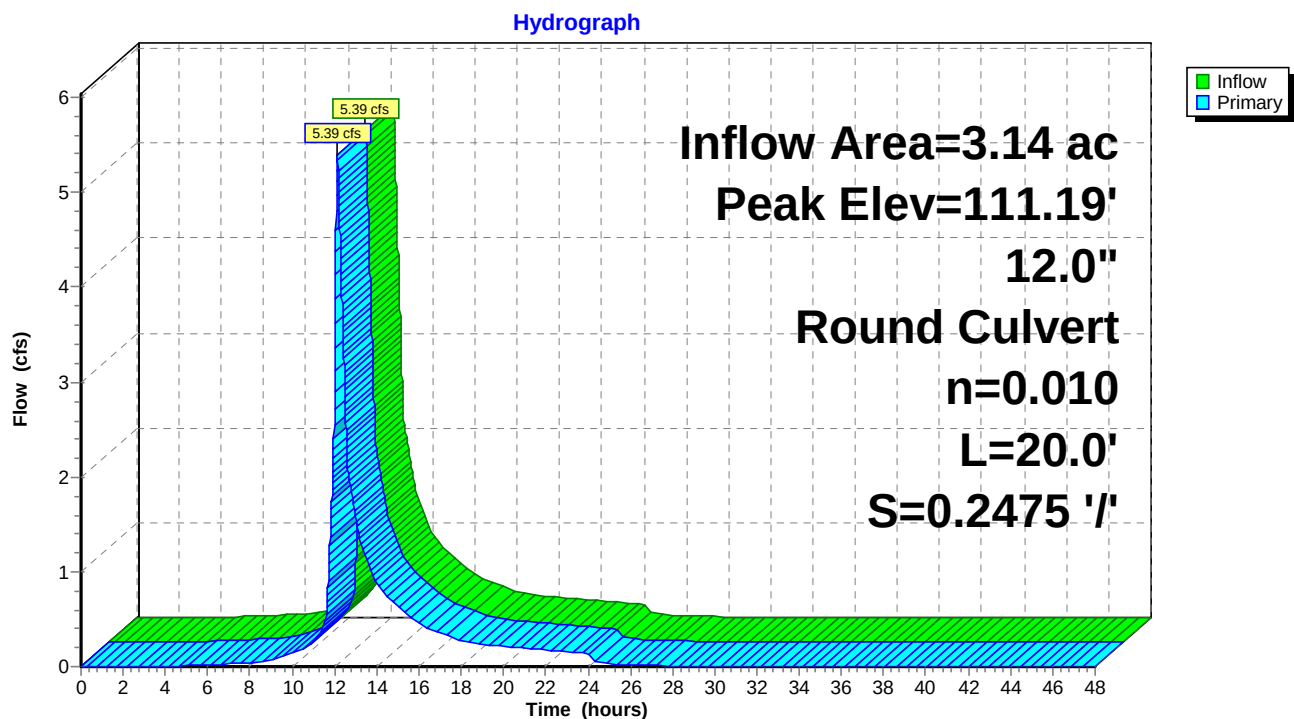
Peak Elev= 111.19' @ 12.14 hrs

Flood Elev= 111.26'

Device	Routing	Invert	Outlet Devices
#1	Primary	107.43'	12.0" Round Culvert L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 107.43' / 102.48' S= 0.2475 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=5.39 cfs @ 12.14 hrs HW=111.19' (Free Discharge)
↑1=Culvert (Inlet Controls 5.39 cfs @ 6.86 fps)

Pond 206P: City CB @ Fletcher & Danforth



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Page 98

Summary for Pond 210P: Existing FI

Inflow Area = 0.44 ac, 56.16% Impervious, Inflow Depth = 2.83" for 25-YR event
Inflow = 1.38 cfs @ 12.11 hrs, Volume= 0.104 af
Outflow = 1.38 cfs @ 12.11 hrs, Volume= 0.104 af, Atten= 0%, Lag= 0.0 min
Primary = 1.38 cfs @ 12.11 hrs, Volume= 0.104 af

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

Peak Elev= 132.86' @ 12.11 hrs

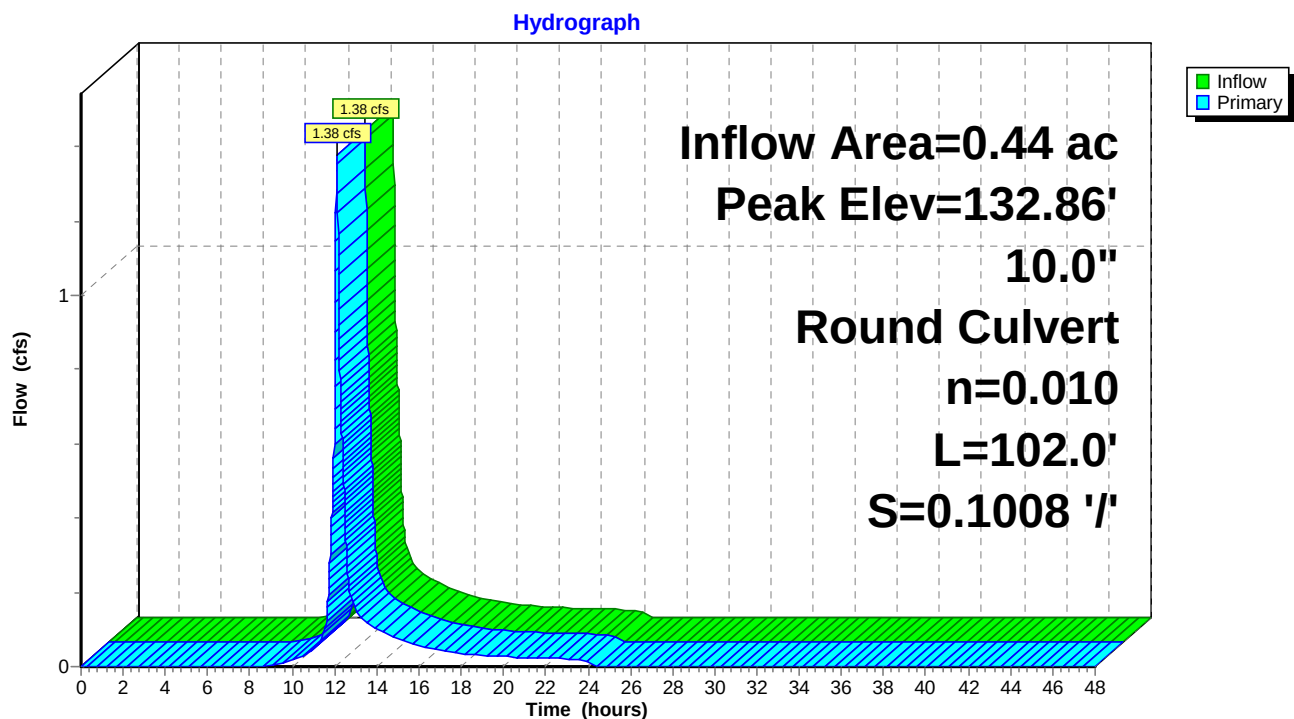
Flood Elev= 140.41'

Device	Routing	Invert	Outlet Devices
#1	Primary	132.00'	10.0" Round Culvert L= 102.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 132.00' / 121.72' S= 0.1008 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=1.38 cfs @ 12.11 hrs HW=132.86' (Free Discharge)

↑**1=Culvert** (Inlet Controls 1.38 cfs @ 2.53 fps)

Pond 210P: Existing FI



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Page 99

Summary for Pond 220P: Existing DMH

Inflow Area = 0.44 ac, 56.16% Impervious, Inflow Depth = 2.83" for 25-YR event
Inflow = 1.38 cfs @ 12.11 hrs, Volume= 0.104 af
Outflow = 1.38 cfs @ 12.11 hrs, Volume= 0.104 af, Atten= 0%, Lag= 0.0 min
Primary = 1.38 cfs @ 12.11 hrs, Volume= 0.104 af

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

Peak Elev= 122.53' @ 12.11 hrs

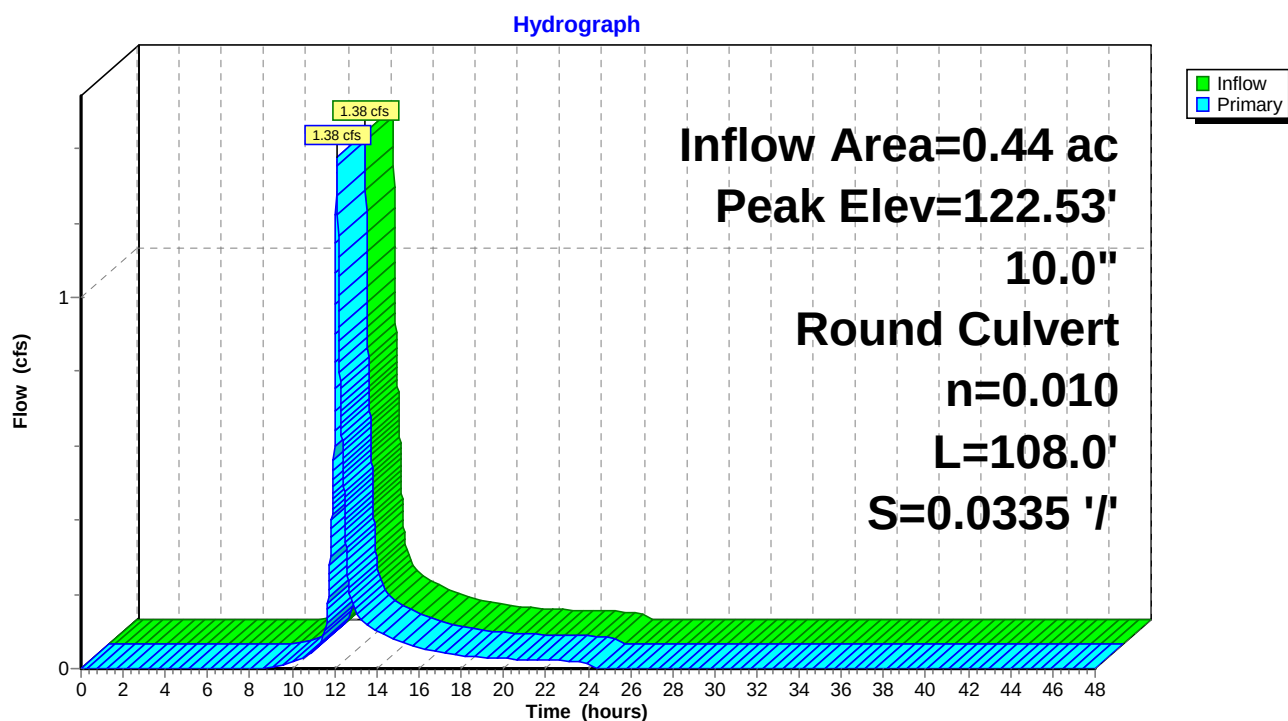
Flood Elev= 128.47'

Device	Routing	Invert	Outlet Devices
#1	Primary	121.67'	10.0" Round Culvert L= 108.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 121.67' / 118.05' S= 0.0335 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=1.37 cfs @ 12.11 hrs HW=122.53' (Free Discharge)

↑**1=Culvert** (Inlet Controls 1.37 cfs @ 2.52 fps)

Pond 220P: Existing DMH



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

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Page 100

Summary for Pond 230P: Existing DMH

Inflow Area = 1.27 ac, 70.40% Impervious, Inflow Depth = 3.69" for 25-YR event
 Inflow = 4.45 cfs @ 12.12 hrs, Volume= 0.390 af
 Outflow = 4.45 cfs @ 12.12 hrs, Volume= 0.390 af, Atten= 0%, Lag= 0.0 min
 Primary = 4.45 cfs @ 12.12 hrs, Volume= 0.390 af

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

Peak Elev= 123.02' @ 12.12 hrs

Flood Elev= 125.05'

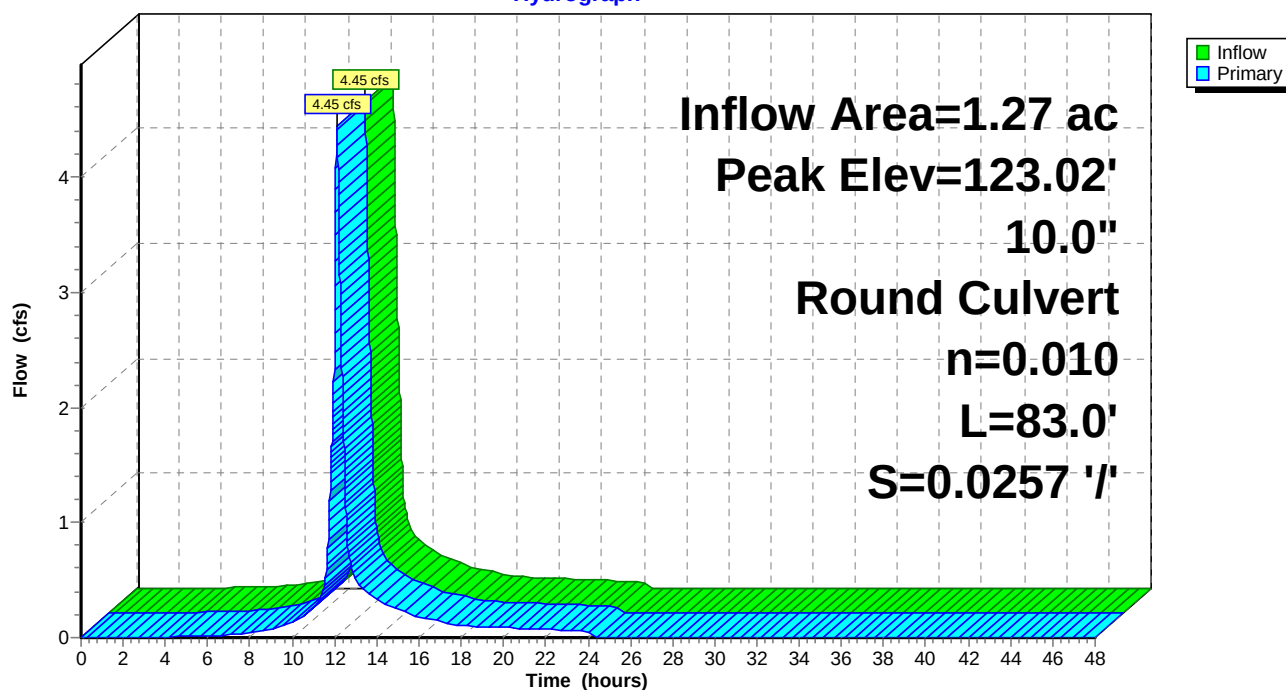
Device	Routing	Invert	Outlet Devices
#1	Primary	118.00'	10.0" Round Culvert L= 83.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 118.00' / 115.87' S= 0.0257 ' S= 0.0257 ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=4.44 cfs @ 12.12 hrs HW=123.01' (Free Discharge)

↑1=Culvert (Inlet Controls 4.44 cfs @ 8.14 fps)

Pond 230P: Existing DMH

Hydrograph



6. Post

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

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Page 101

Summary for Pond 260P: Storage Pipes

Inflow Area = 0.72 ac, 79.29% Impervious, Inflow Depth = 4.22" for 25-YR event
 Inflow = 3.53 cfs @ 12.07 hrs, Volume= 0.254 af
 Outflow = 2.69 cfs @ 12.14 hrs, Volume= 0.254 af, Atten= 24%, Lag= 3.8 min
 Primary = 2.69 cfs @ 12.14 hrs, Volume= 0.254 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 120.47' @ 12.14 hrs Surf.Area= 924 sf Storage= 626 cf
 Flood Elev= 125.26' Surf.Area= 0 sf Storage= 3,468 cf

Plug-Flow detention time= 1.6 min calculated for 0.254 af (100% of inflow)
 Center-of-Mass det. time= 1.6 min (791.3 - 789.6)

Volume	Invert	Avail.Storage	Storage Description
#1	119.16'	3,468 cf	48.0" Round Pipe Storage L= 276.0' S= 0.0027 '/

Device	Routing	Invert	Outlet Devices
#1	Primary	119.16'	12.0" Round Culvert L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 119.16' / 118.02' S= 0.0380 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.68 cfs @ 12.14 hrs HW=120.47' (Free Discharge)

↑**1=Culvert** (Inlet Controls 2.68 cfs @ 3.42 fps)

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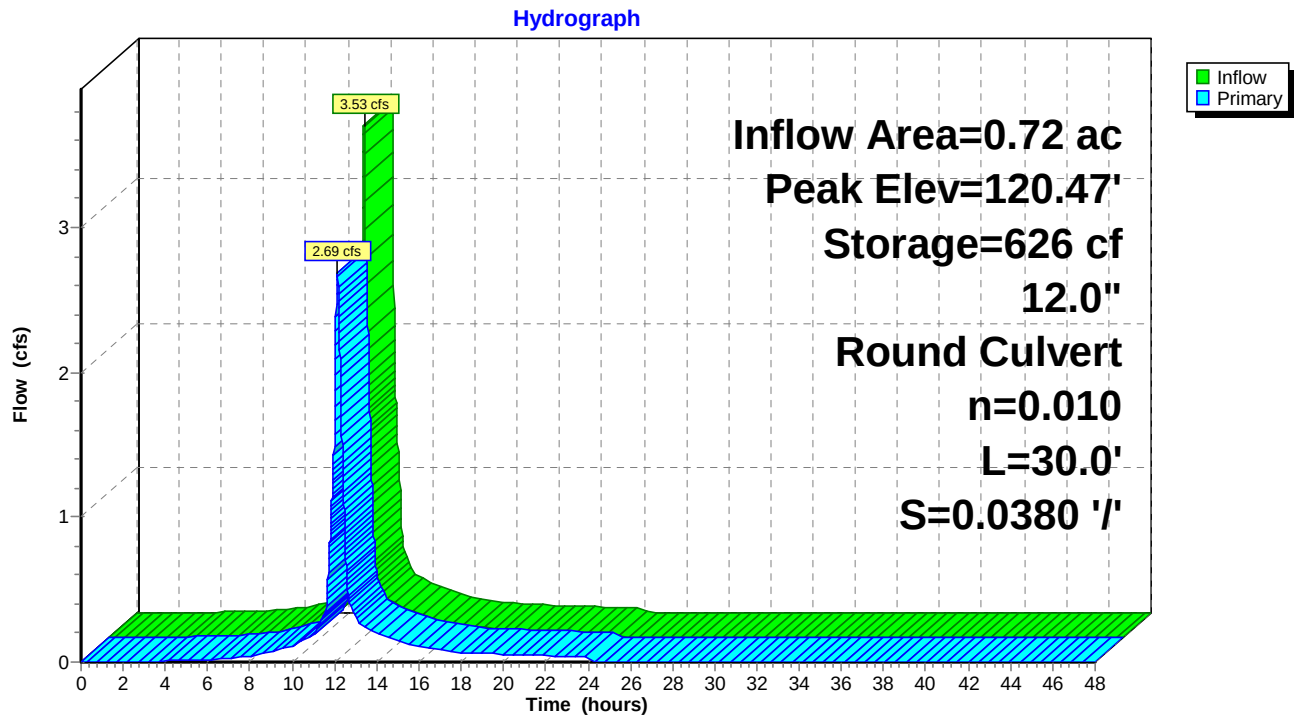
POST

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

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Page 102

Pond 260P: Storage Pipes



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POST
Type III 24-hr 25-YR Rainfall=5.80"

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Page 103

Summary for Pond 340P: CB at SW Cor prkng lot

Inflow Area = 0.24 ac, 60.94% Impervious, Inflow Depth = 3.11" for 25-YR event
Inflow = 0.89 cfs @ 12.08 hrs, Volume= 0.061 af
Outflow = 0.89 cfs @ 12.08 hrs, Volume= 0.061 af, Atten= 0%, Lag= 0.0 min
Primary = 0.89 cfs @ 12.08 hrs, Volume= 0.061 af

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

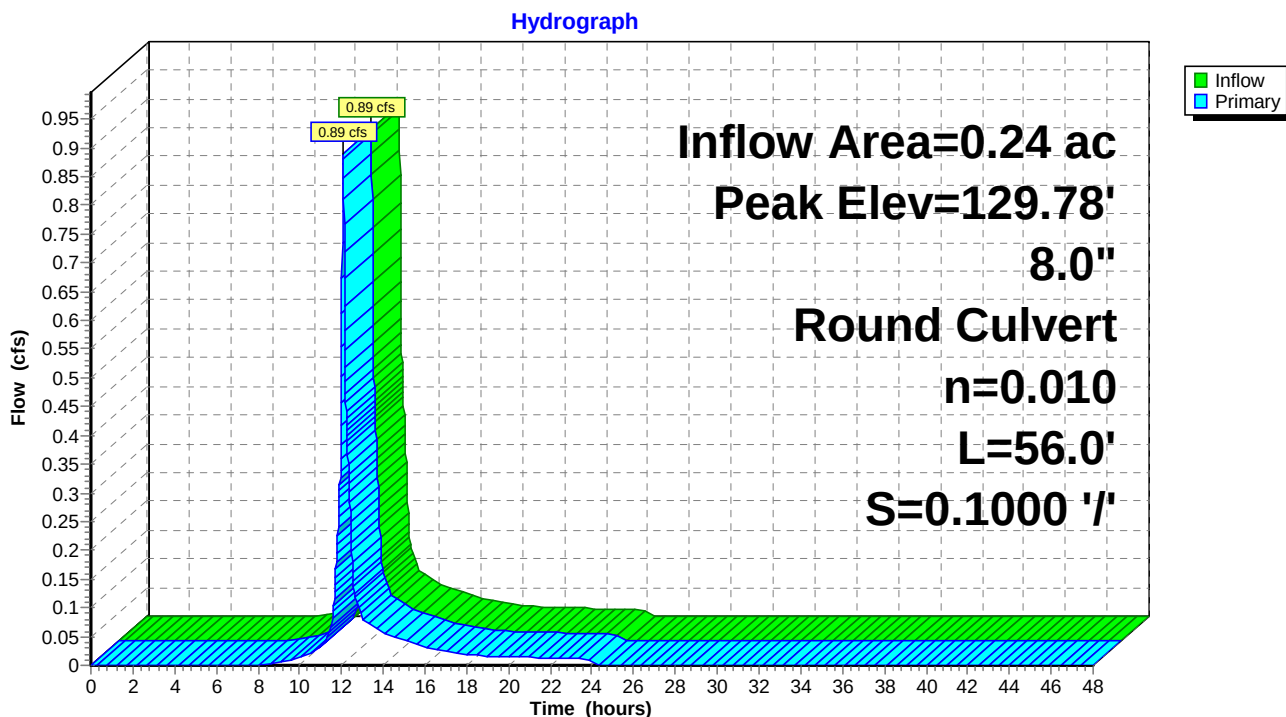
Peak Elev= 129.78' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	129.00'	8.0" Round Culvert L= 56.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 129.00' / 123.40' S= 0.1000 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.89 cfs @ 12.08 hrs HW=129.78' (Free Discharge)

↑**1=Culvert** (Inlet Controls 0.89 cfs @ 2.54 fps)

Pond 340P: CB at SW Cor prkng lot



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Page 104

Summary for Pond CB4: Proposed DMH

Inflow Area = 1.24 ac, 78.73% Impervious, Inflow Depth = 4.20" for 25-YR event
Inflow = 6.07 cfs @ 12.07 hrs, Volume= 0.433 af
Outflow = 6.07 cfs @ 12.07 hrs, Volume= 0.433 af, Atten= 0%, Lag= 0.0 min
Primary = 6.07 cfs @ 12.07 hrs, Volume= 0.433 af

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

Peak Elev= 126.90' @ 12.07 hrs

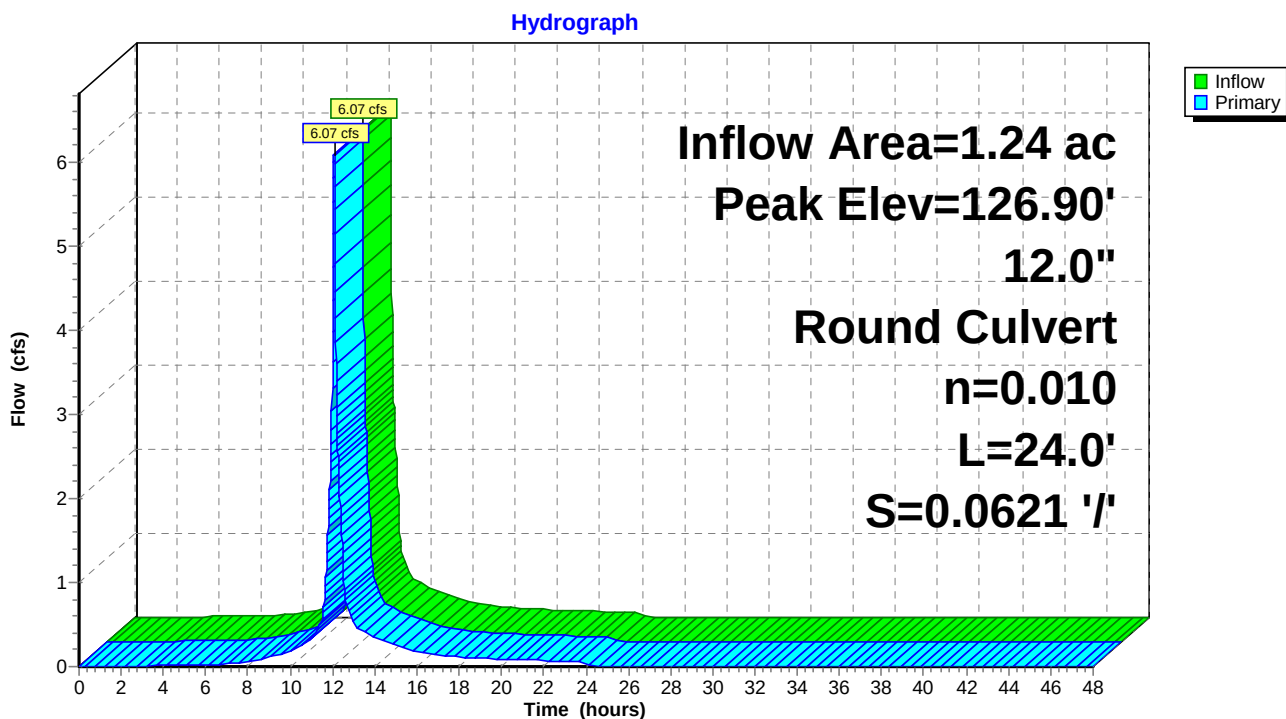
Flood Elev= 127.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	122.26'	12.0" Round Culvert L= 24.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 122.26' / 120.77' S= 0.0621 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=6.06 cfs @ 12.07 hrs HW=126.88' (Free Discharge)

↑**1=Culvert** (Inlet Controls 6.06 cfs @ 7.72 fps)

Pond CB4: Proposed DMH



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

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Page 105

Summary for Pond DMH: OCS Bypass

Inflow Area = 1.24 ac, 78.73% Impervious, Inflow Depth > 2.57" for 25-YR event
Inflow = 1.16 cfs @ 12.51 hrs, Volume= 0.265 af
Outflow = 1.16 cfs @ 12.51 hrs, Volume= 0.265 af, Atten= 0%, Lag= 0.0 min
Primary = 1.16 cfs @ 12.51 hrs, Volume= 0.265 af

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

Peak Elev= 120.15' @ 12.51 hrs

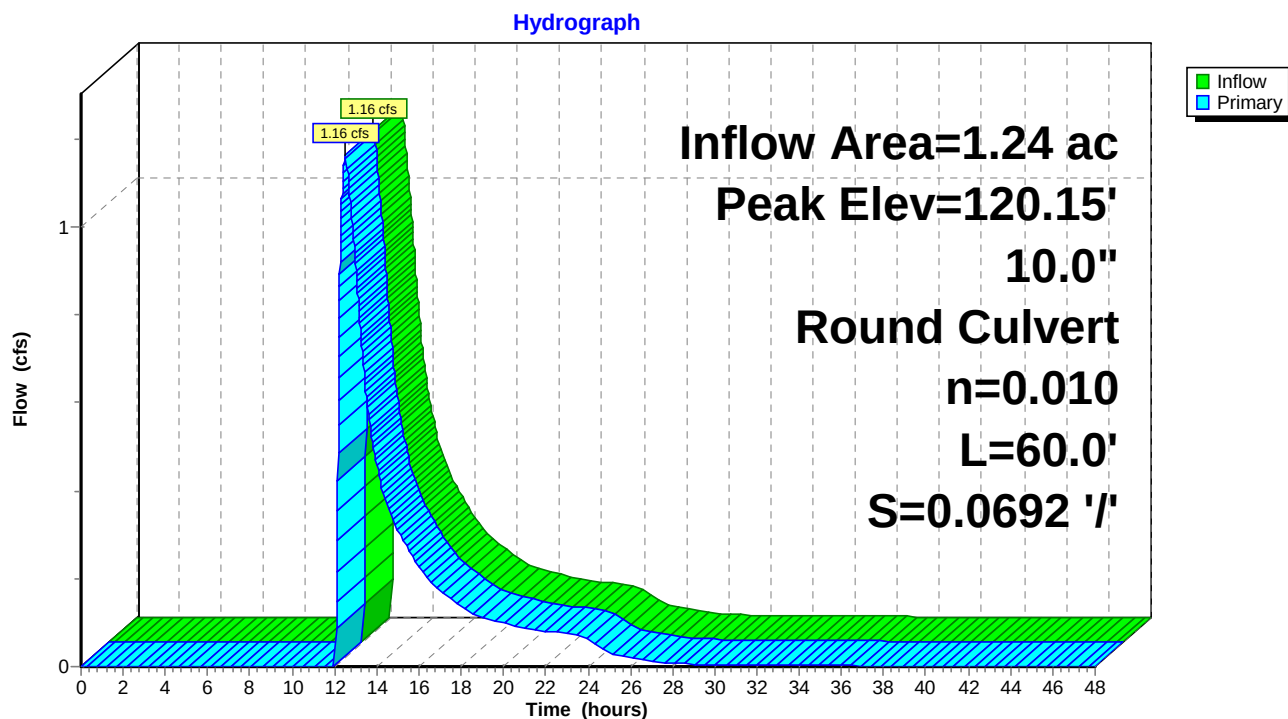
Flood Elev= 126.48'

Device	Routing	Invert	Outlet Devices
#1	Primary	119.42'	10.0" Round Culvert L= 60.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 119.42' / 115.27' S= 0.0692 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=1.17 cfs @ 12.51 hrs HW=120.15' (Free Discharge)

↑**1=Culvert** (Inlet Controls 1.17 cfs @ 2.30 fps)

Pond DMH: OCS Bypass



6. Post

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Page 106

Summary for Pond DMH6: Access MH

Inflow Area = 1.24 ac, 78.73% Impervious, Inflow Depth = 4.20" for 25-YR event
 Inflow = 6.07 cfs @ 12.07 hrs, Volume= 0.433 af
 Outflow = 6.07 cfs @ 12.07 hrs, Volume= 0.433 af, Atten= 0%, Lag= 0.0 min
 Primary = 6.07 cfs @ 12.07 hrs, Volume= 0.433 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

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

Peak Elev= 121.24' @ 12.07 hrs

Flood Elev= 126.85'

Device	Routing	Invert	Outlet Devices
#1	Primary	119.77'	24.0" Round Culvert L= 9.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 119.77' / 119.77' S= 0.0000 ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Secondary	119.77'	24.0" Round Culvert L= 2.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 119.77' / 119.77' S= 0.0000 ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 3.14 sf
#3	Device 2	123.35'	4.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=6.06 cfs @ 12.07 hrs HW=121.23' (Free Discharge)

1=Culvert (Barrel Controls 6.06 cfs @ 3.43 fps)
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=119.77' (Free Discharge)

2=Culvert (Controls 0.00 cfs)


3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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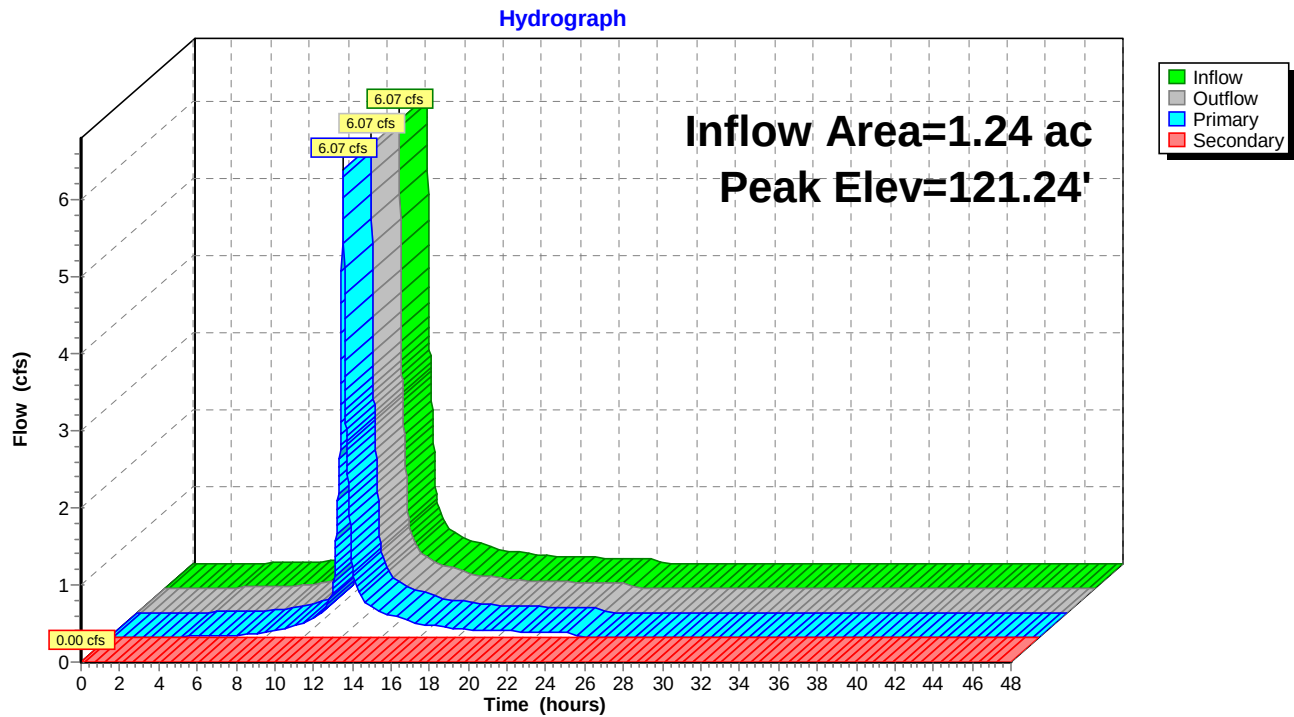
POST

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Page 107

Pond DMH6: Access MH



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Page 108

Summary for Pond DMH7: Proposed Drop DMH

Inflow Area = 2.51 ac, 74.51% Impervious, Inflow Depth = 3.14" for 25-YR event
Inflow = 4.64 cfs @ 12.14 hrs, Volume= 0.656 af
Outflow = 4.64 cfs @ 12.14 hrs, Volume= 0.656 af, Atten= 0%, Lag= 0.0 min
Primary = 4.64 cfs @ 12.14 hrs, Volume= 0.656 af

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

Peak Elev= 120.60' @ 12.14 hrs

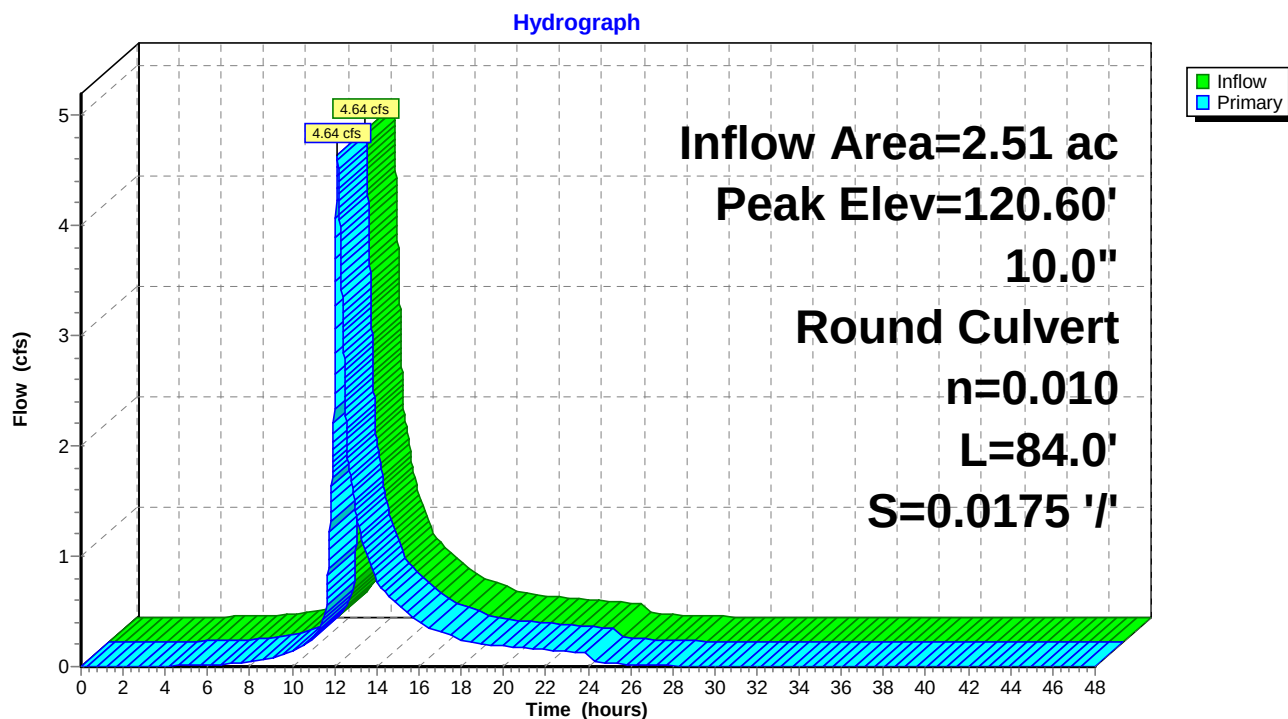
Flood Elev= 124.69'

Device	Routing	Invert	Outlet Devices
#1	Primary	115.17'	10.0" Round Culvert L= 84.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 115.17' / 113.70' S= 0.0175 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=4.64 cfs @ 12.14 hrs HW=120.60' (Free Discharge)

↑**1=Culvert** (Inlet Controls 4.64 cfs @ 8.51 fps)

Pond DMH7: Proposed Drop DMH



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Page 109

Summary for Pond DMH8: Proposed DMH

Inflow Area = 2.51 ac, 74.51% Impervious, Inflow Depth = 3.14" for 25-YR event
Inflow = 4.64 cfs @ 12.14 hrs, Volume= 0.656 af
Outflow = 4.64 cfs @ 12.14 hrs, Volume= 0.656 af, Atten= 0%, Lag= 0.0 min
Primary = 4.64 cfs @ 12.14 hrs, Volume= 0.656 af

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

Peak Elev= 119.13' @ 12.14 hrs

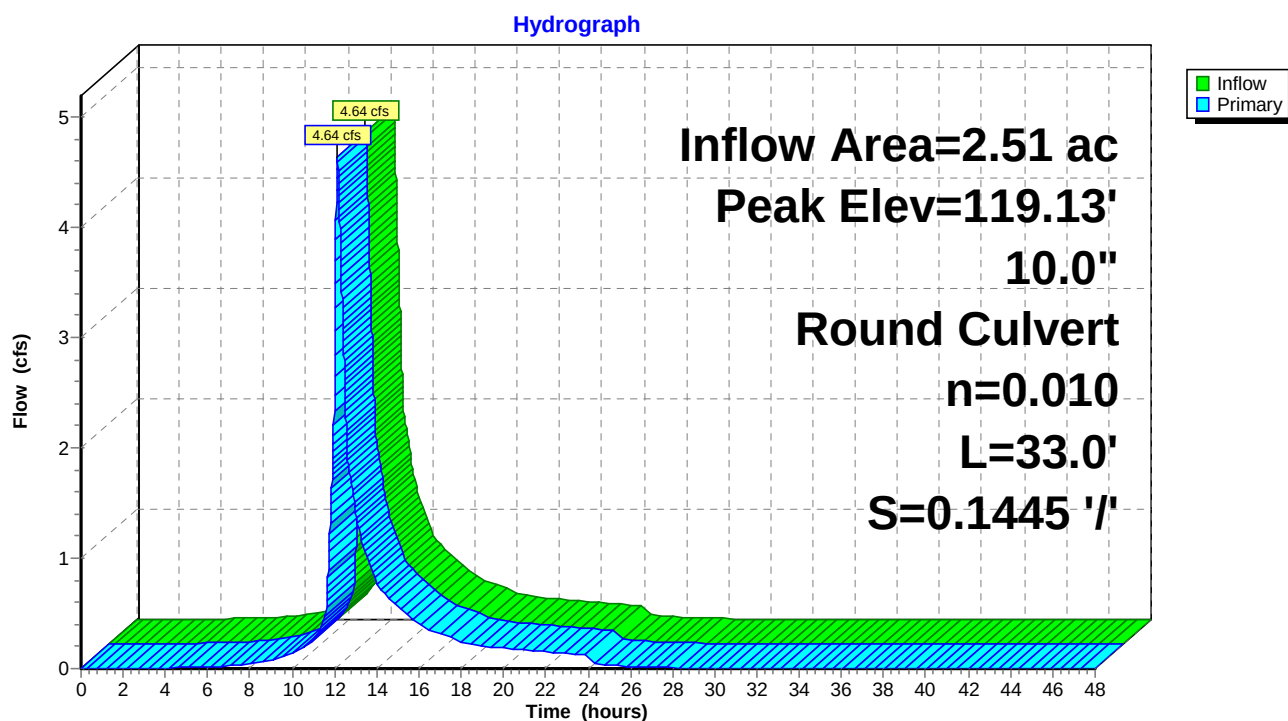
Flood Elev= 123.71'

Device	Routing	Invert	Outlet Devices
#1	Primary	113.70'	10.0" Round Culvert L= 33.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 113.70' / 108.93' S= 0.1445 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=4.64 cfs @ 12.14 hrs HW=119.13' (Free Discharge)

↑1=Culvert (Inlet Controls 4.64 cfs @ 8.51 fps)

Pond DMH8: Proposed DMH



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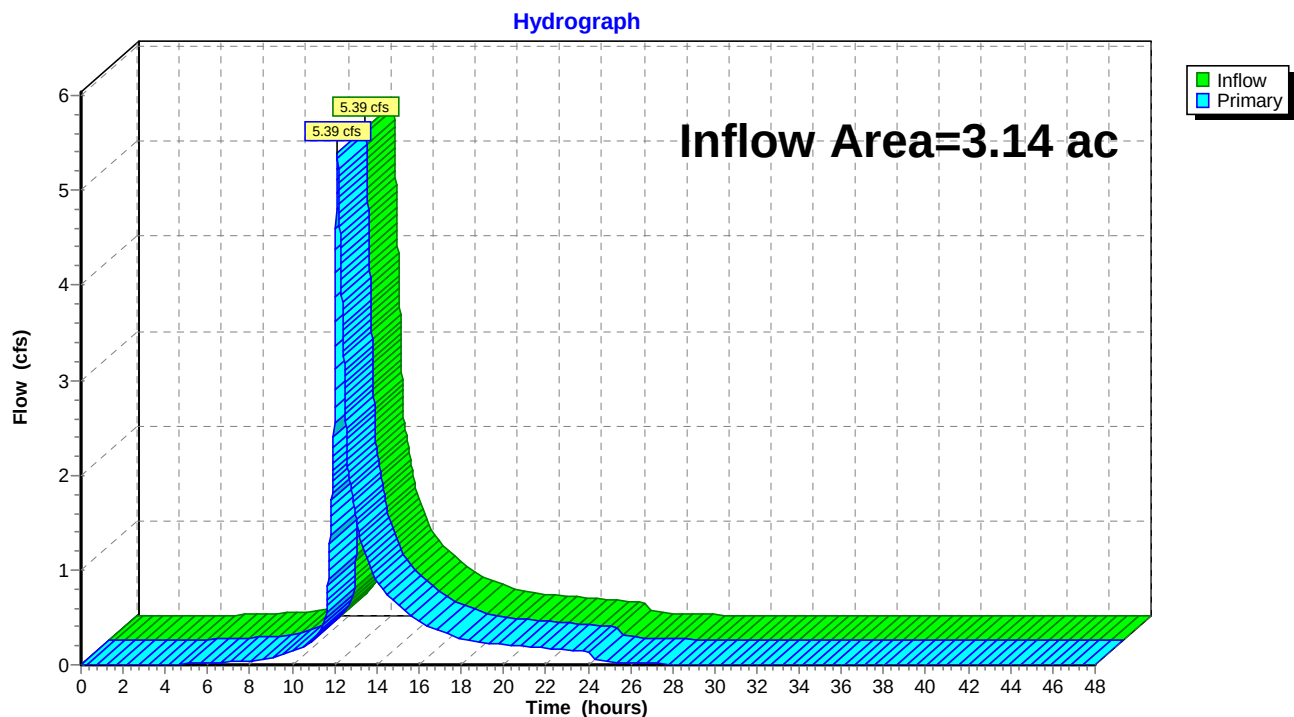
Page 110

Summary for Link SP1: Existing Combined Sewer in Danforth

Inflow Area = 3.14 ac, 64.59% Impervious, Inflow Depth = 2.77" for 25-YR event
Inflow = 5.39 cfs @ 12.14 hrs, Volume= 0.726 af
Primary = 5.39 cfs @ 12.14 hrs, Volume= 0.726 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link SP1: Existing Combined Sewer in Danforth





13. CONSISTENCY WITH MASTER PLAN

The Waynflete School Campus is an existing, previously approved development subject to the zoning requirements of the Waynflete School Overlay Zone; the proposed project will not result in a change in use. Section 6 of this Report describes how the proposed project will comply with the zoning requirements. The Schematic Design Narrative from Scott Simons Architects attached to Section 3 of this Report describes some of the basis for the proposed project and includes a description of the project's compliance with the City's Historic Preservation requirements; a Historic Preservation Application for Certificate of Appropriateness was submitted on October 5, 2015, and a public hearing has been scheduled for March 16, 2016.



14. UTILITY CAPACITY TO SERVE

The campus upgrades are not being proposed to accommodate a larger enrollment; rather, it is intended to improve the classroom learning experience. As such, an increase in the utility supply needs for the Site is not anticipated and we therefore do not anticipate the need to verify capacity to serve with Portland Water District or Department of Public Services for this project. However, it should be noted that the project team will be coordinating the design of the proposed project with the appropriate utilities and will obtain approvals for any modifications to existing services. Evidence of approvals for this work will be provided to the City upon receipt.

The Site's existing sewer services and storm drain system discharge to the City's combined sewer system. The proposed project will improve overall conditions by separating the Site's sewer services from the storm drain system. The Site's storm drain system currently enters the City's combined sewer system in Danforth Street via two eight inch pipes; one of these pipes will be demolished and the other will be upgraded to a ten inch pipe. The cross-sectional area of the ten-inch pipe will not exceed the cross-sectional area of the two existing eight-inch pipes, such that the overall size of the connection to the combined sewer system will not be increased.

Additionally, in accordance with Section 2.7.2. of the City of Portland Technical Manual, catch basin drain pipes of less than ten inches in diameter are not permitted; the existing catch basin connection at the corner of Fletcher and Danforth Streets is eight inches. This pipe will be upgraded to 12 inches to accommodate existing capacity issues. As further described in Section 12 of this report, an on-site, subsurface stormwater treatment and detention system is proposed for the playfield, which reduces the peak rate of runoff from the site and provides stormwater treatment.



15. SOLID WASTE

15.1 COMMERCIAL SOLID WASTE

All solid waste materials from the Waynflete School will continue to be transported and disposed of in accordance with applicable laws and regulations. As previously noted, the proposed expansion is not intended to accommodate a larger enrollment; as such, an increase in waste generation from the Site is not anticipated at this time.

15.2 CONSTRUCTION & LAND CLEARING DEBRIS

As with any construction project, the proposed construction will generate construction, demolition, and land-clearing debris. The contractor(s) for the construction work will be fully responsible for handling all waste generated by the project and for managing and disposing of it in accordance with Maine Solid Waste Management Regulations - 06-096 CMR 400-409. The contractor(s) will be bound by contract to dispose of all materials in full accordance with applicable Maine regulations and approval of the City of Portland. All efforts will be made during construction to minimize waste and to recycle. Construction debris will be transported to a waste management facility licensed to accept the waste materials.

15.3 SPECIAL & HAZARDOUS WASTE

The proposed development will not produce any special or hazardous waste.

15.4 FINDINGS

Adequate provisions for solid waste disposal have been made. General solid waste, construction, demolition, and land-clearing debris will be managed in full accordance with all applicable laws and will not cause a deleterious effect on the environment.



16. SUMMARY OF FIRE CODES

The items in the Portland Fire Department Site Review Checklist are addressed as follows:

- Name, address, telephone number of applicant
 - o The Waynflete School, c/o Anne C. Hagstrom, Director of Finance & Operations
 - o 360 Spring Street, Portland, ME 04102
 - o 207-774-7863 ext. 1227
- Name, address, telephone number of architect
 - o Scott Simons Architects, c/o Austin Smith
 - o 75 York Street, Portland, ME 04101
 - o 207-772-4656
- Proposed uses of any structures [NFPA and IBC classification]
 - o The proposed use of the structures will be consistent with the existing school use.
- Square footage of all structures [total and per story].
 - o This information is provided on the attached plan set.
- Elevations of all structures
 - o This information is provided on the attached plan set.
- Proposed fire protection of all structures
 - o All structures shall be sprinkled.
- Hydrant locations
 - o This information is provided on the attached plan set.
- Water main size and location
 - o This information is provided on the attached plan set.
- Access to all structures [min. 2 sides]
 - o This information is provided on the attached plan set.
- A code summary shall be included referencing NFPA 1 and all fire department technical standards.
 - o A code summary referencing NFPA 1 and all fire department technical standards is provided on Sheet G002 of the Architectural Plan Sets for both the Waynflete Lower School Addition & Renovations and the Waynflete Gymnasium.

The full plan set has been provided to the Fire Department Reviewer, along with a cover letter including the above information.



17. CONSISTENCY WITH PORTLAND DESIGN STANDARDS & DESIGN MANUAL

The City of Portland has design standards contained within Section 14-526 of the City Code; the City of Portland Design Manual does not contain any design guidance relevant to the Waynflete School Campus. The proposed development will follow the City's design standards as described below:

a) *Transportation Standards*

The campus upgrades are not being proposed for the purpose of accommodating a larger enrollment; rather, it is intended to improve the overall learning experience of the classrooms. As such, an increase in traffic throughout, to, and from the Site is not anticipated at this time. No new curb cuts or parking lots are proposed. The school's current traffic management protocols and existing campus parking areas will be maintained.

b) *Environmental Quality Standards*

1. *Preservation of Significant Natural Features*

The Site is fully developed and there are no known areas of significant natural features, including unusual natural areas, threatened or endangered botanical features, areas of significant wildlife habitats, aquifers, waterbodies, or wetland areas.

2. *Landscaping & Landscape Preservation*

Landscaping Plans are included in the Design Drawings attached to Section 3 of this Report. Existing trees will be preserved to the maximum extent practicable. Vegetation not specified for removal will be protected during construction. The project design team will request a meeting with the City Arborist, Jeff Tarling, to review the Landscaping Plan and to coordinate proposed plantings and the preservation of existing landscaping.

3. *Water Quality, Stormwater Management & Erosion Control*

The proposed project has been designed to minimize the amount of stormwater leaving the site. As further described in Section 12 of this report, an on-site, subsurface stormwater treatment and detention system is proposed, which reduces the peak rate of runoff from the site, provides stormwater treatment, and complies with the standards of Section 5 of the Technical Manual. The proposed project will not result in the flooding of adjacent lots or City property. The proposed project is not located within the watershed of an Urban Impaired Stream and is not anticipated to pose a risk of groundwater contamination either during or post-construction.

The proposed project has also been designed to provide for adequate and sanitary disposal of sewage, as further described in Section 14 of this Report.

c) *Public Infrastructure & Community Safety Standards*

The proposed project's consistency with City Master Plans is described in Section 13 of this Report.

As a School Campus, provisions for public safety are of the utmost importance and have been incorporated into the design of site visibility, access, and territorial reinforcement. The school's current traffic management protocols, including emergency vehicle access, will be maintained.

The availability and adequate capacity of public utilities is described in Section 14 of this Report.

The full plan set has been provided to the Fire Department Reviewer, along with a cover letter including the items in the Portland Fire Department Site Review Checklist.

d) *Site Design Standards*

1. *Massing, ventilation, and wind impact:* The proposed Lower School is within the school campus and does not result in any changes to ventilation or significant change in wind patterns or any adverse effects on the adjacent neighbor on Fletcher Street. The proposed Gymnasium will be recessed into the ground an additional six feet, such that the proposed roof height will be lower than the existing roof height of the current gymnasium. The Lower School will be pursuing a Passive House certification and, as a result, will have minimal HVAC systems. Air source heat pumps will be used with condensers on roof tops or in screened utility yards. The gymnasium will be serviced by a major roof top mechanical unit, which will be screened and positioned so that it faces the campus interior.
2. *Shadows:* The footprints of both the proposed and existing Lower School and Gymnasium are essentially the same, and there is no significant change to building heights; no adverse impacts from shadows are anticipated to result from the proposed project.
3. *Snow and ice loading:* The proposed buildings have been designed to accommodate appropriate snow and ice loads and to prevent significant amounts of accumulated snow and ice from loading or falling onto adjacent properties or public ways.
4. *View corridors:* The proposed buildings are located within the Waynflete School Campus and comply with the building height requirements, as described in Section 6 of this Report, and will therefore not obstruct public view corridors identified in the City's Downtown Vision View Corridor Protection Plan.
5. *Historic Resources:* A Historic Preservation Application for Certificate of Appropriateness was submitted on October 5, 2015, and a public hearing has been scheduled for March 16, 2016.
6. *Exterior Lighting:* Cut Sheets for all proposed lighting fixtures, in addition to a Photometric Plan, are attached to this Section for your reference. No pole mounted light fixtures will be used; all site lighting will be building mounted or on the underside of canopies. All exterior light fixtures will be full cutoff with no light emitted above the horizontal plane. No light trespass onto the adjacent properties or street is anticipated to result from the proposed project.
7. *Noise and Vibration:* Noise associated with the proposed development will not exceed regulated levels. The Lower School will be serviced by air source heat pumps and condensers will be located on roof tops and in a concealed utility yard. The Gymnasium will be serviced by a major rooftop air handling unit located on a rooftop within the campus and screened for noise reduction. Proposed HVAC equipment is further described in Section 18 of this Report.
8. *Signage and Wayfinding:* All signage will be limited to building names and function and will be designed to the Waynflete campus standards.
9. *Zoning Related Design Standards:* An assessment of the City Zoning requirements is provided in Section 6 of this Report. There are no other zoning related design standards associated with the proposed project; the City of Portland Design Manual does not contain any design guidance relevant to the Waynflete School Campus.

17.1 ATTACHMENTS

- Lighting Fixture Cut Sheets
- Photometric Plan

PHILIPS LIGHTOLIER

Downlighting

SlimSurface LED

5" and 7" round aperture
surface mount downlight

TYPE C1



Project: _____
Location: _____
Cat.No: _____
Type: _____
Lamps: _____ Qty: _____
Notes: _____

SlimSurface LED is a 5/8" thick surface mounted luminaire with the appearance of a recessed downlight. Easy to install into most standard j-boxes, the SlimSurface LED round apertures are available in a 5" 650 lm and 7" 1000 lm fixture.

Ordering information

example: S5R830K7AL

Series	Size	Shape	CRI	CCT	Lumens	Finish	UL listing
S		R					
S SlimSurface	5 5"	R Round	8 80 9 90 ¹	27K 2700K 30K 3000K 35K 3500K 40K 4000K	7 650lm	blank White AL Aluminum BK Black	blank Wet location
	5 5"	R Round	8 80	30K 3000K	7 650lm	blank White	-D Damp location
	7 7"	R Round	8 80 9 90 ¹	27K 2700K 30K 3000K 35K 3500K 40K 4000K	10 1000lm	blank White AL Aluminum BK Black	blank Wet location
	7 7"	R Round	8 80	30K 3000K	10 1000lm	blank White	-D Damp location



White



Black



Aluminum

1. 90 CRI is only available with 2700K

Note: Lumen output is calculated based on 80 CRI and 3000K CCT. Please consult adjustment factors table on page 3 for other lumen outputs.

Features

- Flange:** One piece plastic flange. Injection molded white, applied aluminum, or black.
- Lens:** High transmittance lens allowing for smooth, comfortable light pattern.
- Power supply:** Integral class 2 driver. Factory wired electronic LED driver (see Electrical section for specifications)
- LED Strip:** Utilizes Philips LEDs.
- Lifetime:** Expected lifetime 50,000 hours and backed by a 5-year warranty (see Philips.com/warranties for details).
- Compliance:** Non-conductive fixture for shower light application. This product complies with the requirements of the California Energy Commission regulated under Title 24, and has been listed in the Title 20 database.

Electrical

Electronic power supply: RoHS compliant. Class 2 power unit. Unit tolerates sustained open circuit and short circuit output conditions without damage.

Dimming: All luminaires are intended for use with incandescent standard type dimmers (TRIAC). 10%-100% dimming range.

Lumen Output	Max. Input Current	Max. Input Power
630lm	0.08A	9.5W
980lm	0.13A	14.2W

Input Voltage 120V
Input Frequency 50/60Hz
Power Factor > 0.9
Max. THD < 15%
Minimum Operating Temperature -20°C

Labels

cULus listed for damp locations (wall mount applications and wet locations (covered ceilings). ENERGY STAR® certified.

Compatibility

Installs into standard J-box applications:



3 1/2" round (plastic)



4" square (plastic)
Not compatible with S5R



4" octagonal (metal)



4" square (metal)
Not compatible with S5R

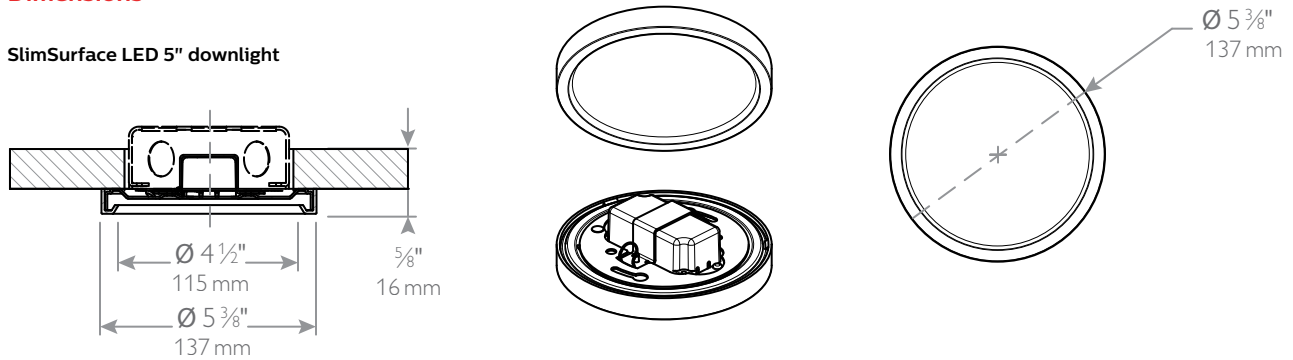
Note: 2 1/8" deep octagon junction box recommended for through circuit wiring applications.

S5R & S7R SlimSurface LED

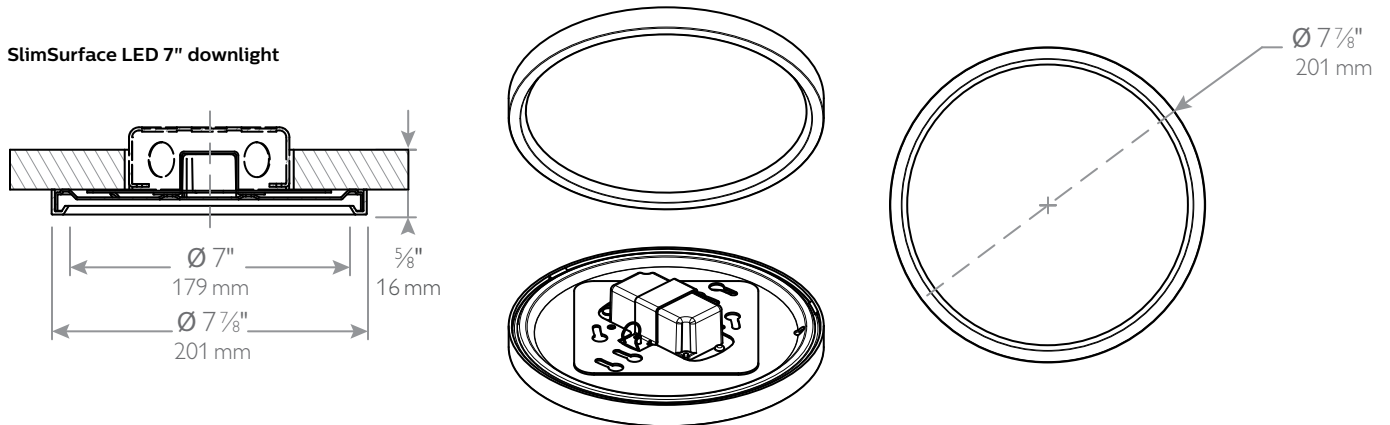
5" and 7" round aperture surface mount downlight

Dimensions

SlimSurface LED 5" downlight



SlimSurface LED 7" downlight

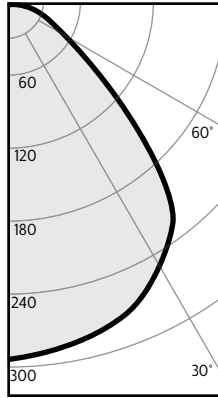


S5R & S7R SlimSurface LED

5" and 7" round aperture surface mount downlight

S5R830K7 • 10 W LED, 3000 K, 80 CRI

Candela Curves



Report#: 438GFR

Output lumens:	625lm	Input Watts ² :	9.8W
Spacing Criterion:	1.3	Efficacy:	64.8lm/w
Field Angle:	141°	CCT ³ :	3000 K
Beam Angle:	92°	CRI:	>80

Angle	Mean CP	Lumens
0	294	
5	291	28
10	286	
15	282	80
20	276	
25	265	122
30	253	
35	236	147
40	211	
45	157	121
50	108	
55	74	68
60	53	
65	39	40
70	30	
75	22	23
80	14	
85	5	6
90	0	

Single unit data

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5'	12	6.5'
6'	8	7.8'
7'	6	9.1'
8'	5	10.4'
9'	4	11.7'

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5'	26.7	0.43
6'	17.5	0.29
7'	12.5	0.20
8'	10.4	0.17
9'	8.4	0.14

38'x38'x10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%	
Wall	70	50	30	10	50	10	50	10	50	10	0	
RCR	Zonal cavity method - Effective floor reflectance = 20%											
Room Cavity Ratio	0	119	119	119	119	116	116	111	111	106	106	100
	1	111	107	103	100	104	98	100	95	96	92	87
	2	102	95	89	84	93	83	90	81	87	80	76
	3	94	85	78	72	84	72	81	71	78	69	66
	4	87	77	69	63	75	63	73	62	71	61	58
	5	81	69	61	55	68	55	66	55	64	54	52
	6	75	63	55	49	62	49	61	49	59	48	46
	7	70	58	50	44	57	44	55	44	54	43	41
	8	65	53	45	40	52	40	51	39	50	39	37
	9	61	49	41	36	48	36	47	36	46	36	34
10	58	45	38	33	45	33	44	33	43	33	31	

Zonal lumens & percentages

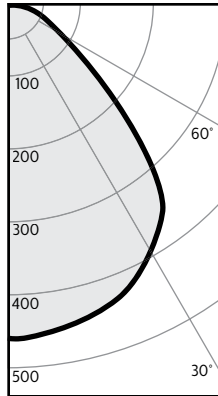
Zone	Lumens	%Luminaire
0-30	230	36.2%
0-40	377	59.3%
0-60	566	89.2%
0-90	635	100.0%

CRI and CCT adjustment factors

90 CRI 2700K = 84%
80 CRI 2700K = 100%
80 CRI 3000K = 100%
80 CRI 3500K = 105%
80 CRI 4000K = 109%

S7R830K10 • 14 W LED, 3000 K, 80 CRI

Candela Curves



Report#: 441GFR

Output lumens:	977lm	Input Watts ² :	13.8W
Spacing Criterion:	1.3	Efficacy:	70.8lm/w
Field Angle:	140°	CCT ³ :	3000 K
Beam Angle:	91°	CRI:	>80

Angle	Mean CP	Lumens
0	461	
5	457	43
10	450	
15	444	125
20	433	
25	415	192
30	395	
35	365	227
40	322	
45	235	182
50	161	
55	111	102
60	80	
65	59	60
70	45	
75	34	36
80	22	
85	10	11
90	0	

Single unit data

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5'	18	6.5'
6'	13	7.8'
7'	9	9.1'
8'	7	10.4'
9'	6	11.7'

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5'	41.2	0.61
6'	27.0	0.40
7'	19.3	0.29
8'	16.1	0.24
9'	12.9	0.19

38'x38'x10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%	
Wall	70	50	30	10	50	10	50	10	50	10	0	
RCR	Zonal cavity method - Effective floor reflectance = 20%											
Room Cavity Ratio	0	119	119	119	119	116	116	111	111	106	106	100
	1	111	107	103	100	104	98	100	95	96	92	87
	2	102	95	89	84	93	83	90	82	87	80	76
	3	94	85	78	73	84	72	81	71	78	70	66
	4	87	77	69	63	76	63	73	62	71	61	59
	5	81	70	62	56	69	56	67	55	65	54	52
	6	75	63	55	50	63	49	61	49	59	49	46
	7	70	58	50	44	57	44	56	44	54	44	42
	8	66	53	46	40	53	40	51	40	50	40	38
	9	62	49	42	36	49	36	48	36	47	36	34
10	58	46	38	33	45	33	44	33	43	33	31	

Zonal lumens & percentages

Zone	Lumens	%Luminaire
0-30	360	36.9%
0-40	587	60.1%
0-60	871	89.2%
0-90	977	100.0%

CRI and CCT adjustment factors

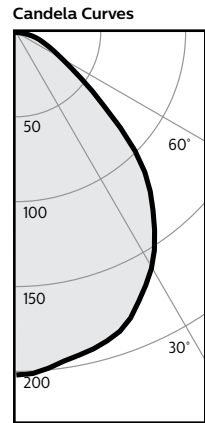
90 CRI 2700K = 84%
80 CRI 2700K = 100%
80 CRI 3000K = 100%
80 CRI 3500K = 105%
80 CRI 4000K = 109%

1. Tested using absolute photometry as specified in LM79: IESNA Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products.
2. Wattage: controlled to within 5%
3. Correlated Color Temperature: within specs as defined in ANSI_NEMA_ANSLG C78.377-2008: Specifications for the Chromaticity of Solid State Lighting Products.

S5R & S7R SlimSurface LED

5" and 7" round aperture surface mount downlight

S5R927K7 • 10 W LED, 2700 K, 90 CRI



Report¹: 683GFR

Output lumens:	395lm	Input Watts ² :	9.7W
Spacing Criterion:	1.1	Efficacy:	40.7lm/w
Field Angle:	130°	CCT ³ :	2700 K
Beam Angle:	82°	CRI:	>90

Angle	Mean CP	Lumens
0	222	
5	219	21
10	213	
15	207	58
20	197	
25	181	83
30	163	
35	141	88
40	119	
45	88	68
50	60	
55	41	38
60	30	
65	22	22
70	17	
75	13	13
80	8	
85	3	4
90	0	

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5'	9	5.5'
6'	6	6.6'
7'	5	7.7'
8'	3	8.8'
9'	3	9.9'

* Beam diameter is where foot-candles drop to 50% of maximum.

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5'	16.8	0.43
6'	11.0	0.28
7'	7.9	0.20
8'	6.6	0.17
9'	5.2	0.13

38'x38'x10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										

Room Cavity Ratio	0	1	2	3	4	5	6	7	8	9	10
0	119	119	119	119	116	116	111	111	106	106	100
1	111	107	104	100	105	99	101	96	97	93	88
2	103	96	90	86	94	85	91	83	88	81	77
3	95	86	80	74	85	74	82	72	80	71	68
4	89	78	71	65	77	65	75	64	72	63	60
5	82	71	63	58	70	57	68	57	66	56	54
6	77	65	57	52	64	52	63	51	61	51	48
7	72	60	52	47	59	47	58	46	56	46	44
8	67	55	48	42	55	42	53	42	52	42	40
9	63	51	44	39	51	39	50	38	48	38	36
10	60	48	40	36	47	36	46	35	45	35	34

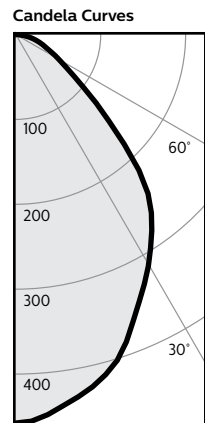
Zonal lumens & percentages

Zone	Lumens	%Luminaire
0-30	162	41.1%
0-40	250	63.4%
0-60	356	90.0%
0-90	395	100.0%

CRI and CCT adjustment factors

90 CRI 2700K = 84%
80 CRI 2700K = 100%
80 CRI 3000K = 100%
80 CRI 3500K = 105%
80 CRI 4000K = 109%

S7R927K10 • 14 W LED, 2700 K, 90 CRI



Report¹: 681GFR

Output lumens:	779lm	Input Watts ² :	14.2W
Spacing Criterion:	1.1	Efficacy:	54.8lm/w
Field Angle:	132°	CCT ³ :	2700 K
Beam Angle:	83°	CRI:	>90

Angle	Mean CP	Lumens
0	443	
5	435	41
10	419	
15	401	113
20	374	
25	338	156
30	308	
35	276	172
40	241	
45	178	137
50	120	
55	83	76
60	60	
65	46	46
70	35	
75	27	28
80	18	
85	8	9
90	0	

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5'	18	5.5'
6'	12	6.6'
7'	9	7.7'
8'	7	8.8'
9'	5	9.9'

* Beam diameter is where foot-candles drop to 50% of maximum.

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5'	32.9	0.63
6'	21.6	0.41
7'	15.4	0.30
8'	12.9	0.25
9'	10.3	0.20

38'x38'x10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										

Room Cavity Ratio	0	1	2	3	4	5	6	7	8	9	10
0	119	119	119	119	116	116	111	111	106	106	100
1	111	107	103	100	104	98	100	95	96	92	88
2	102	96	90	85	94	84	90	82	87	80	77
3	95	86	79	73	84	73	82	72	79	70	67
4	88	78	70	64	76	64	74	63	72	62	60
5	82	71	63	57	70	57	68	56	66	56	53
6	76	65	57	51	64	51	62	50	60	50	48
7	71	59	51	46	58	46	57	46	56	45	43
8	67	55	47	42	54	42	53	41	52	41	39
9	63	51	43	38	50	38	49	38	48	38	36
10	59	47	40	35	47	35	46	35	45	35	33

Zonal lumens & percentages

Zone	Lumens	%Luminaire
0-30	310	39.8%
0-40	482	61.9%
0-60	696	89.3%
0-90	779	100.0%

CRI and CCT adjustment factors

90 CRI 2700K = 84%
80 CRI 2700K = 100%
80 CRI 3000K = 100%
80 CRI 3500K = 105%
80 CRI 4000K = 109%

- Tested using absolute photometry as specified in LM79: IESNA Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products.
- Wattage: controlled to within 5%
- Correlated Color Temperature: within specs as defined in ANSI_NEMA_ANSI C78.377-2008: Specifications for the Chromaticity of Solid State Lighting Products.

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philips.com/luminaires



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Philips Lighting Canada Ltd.
A division of Philips Electronics Ltd.
281 Hillmount Rd, Markham, ON, Canada L6C 2S3
Tel. 800-668-9008



P9000 | Recessed

TYPE C2



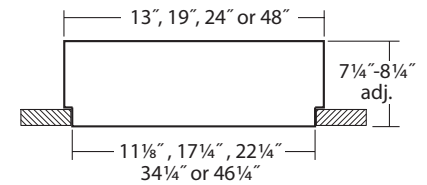
PRUDENTIAL LTG.

PRULITE.COM 213.746.0360



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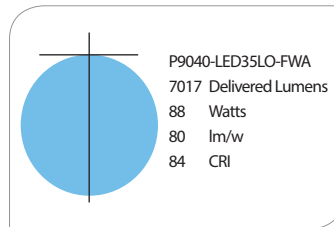
Job:



Clean, radiant, celestial, at times almost invisible.

P9000 – a slimmer, refined version of P8900 – minimal 7/16" trim or trimless with flush lens that melts into its environment. Optional drop down lens creates a playful 'bubble-like' effect.

Perfect partner to our P4000 Sky Oculus pendant.



		LOW	MED	STD	HIGH
12":	lm	550	700	1100	1400
	w	14	18	28	35
18":	lm	950	1650	1950	2150
	w	19	33	39	47
2':	lm	2100	3150	3900	5300
	w	35	54	67	97
3':	lm	4500	7000	9000	13275
	w	56	87	113	177
4':	lm	7000	8800	13900	21000
	w	88	110	174	281

Lumen output may vary +/- 5%
4000K used for lm/ft estimates above
3500K -2% If, 3000K -4%, 2700K -6%
See LED Details PDF for more info

SERIES	LED COLOR	OUTPUT	SHIELDING	TRIM COLOR	CIRCUITING	VOLTAGE	CEILING SYSTEMS	CONTROLS	OPTIONS
9012 12" diam.	LED27 2700K	LO Low	FWA Flush White Acrylic Lens	TMW Textured Matte White Standard	SC Single Circuit	120 277 UNV 120-277	X1 T-Bar X3 Hard Ceiling Flange trim X7 Hard Ceiling Trimless mud- over Flange	ND Non-dimming DM10 0-10v 10% dimming Standard DM01 0-10v 1% dimming STEP Step Dimming 100-50-Off DML 1% Lutron Dimming DMD 0.1% DALI Dimming DMG 1% DALI Dimming	EML Emergency Battery, Low EMH Emergency Battery, High (NA 18" and 2') PRUBIN Meticulous binning and labeling every LED board within a 2-step MacAd- ams ellipse
9018 18" diam.	LED3 3000K	MO Medium	DWA Drop White Acrylic lens	YGW Gloss White Y Premium Color CC Custom Color					
9020 2" diam.	LED35 3500K	SO Standard							
9030 3" diam.	LED4 4000K	HO High							
9040 4" diam.		PROG Program- mable light output (specify de- sired lumens or watts per fixture)							



Prudential Ltg. reserves the right to change design specifications or materials without notice. Please visit www.prulite.com for most current data.
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Sky Oculus Series

1

8-11-15



P9000 | Recessed



PRUDENTIAL LTG.

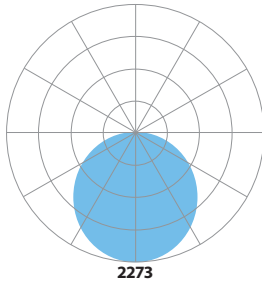
PRULITE.COM 213.746.0360

PHOTOMETRICS

Low Output:

P9040-LED35LO-FWA
7017 Delivered Lumens
88 Watts
80 lm/w
84 CRI
3500 CCT
Light Labs Test #L041411805

Zonal Lumen Summary:
0-90 = 100%



Vertical Angle	0	22.25	45	67.5	90
0	2273	2273	2273	2273	2273
5	2260	2260	2260	2260	2260
15	212	212	212	212	212
25	2005	2005	2005	2005	2005
35	1773	1773	1773	1773	1773
45	1484	1484	1484	1484	1484
55	1150	1150	1150	1150	1150
65	807	807	807	807	807
75	440	440	440	440	440
85	131	131	131	131	131
90	0	0	0	0	0

LUMEN MAINTENANCE

Designed to last with cool running mid-power LEDs projected to maintain 90% (L90) of their initial output for 100,000 hours (at HO), and L70 exceeding 150,000 hours.

LED SYSTEM LED modules and drivers are field replaceable.

PROG (optional) Programmable light output. Specify desired lumens or watts per fixture.

BINNING Standard binning (all Prudential LED boards) includes testing at the chip level and board integration to provide consistent color temperature within a 3-step MacAdam ellipse, with +/- 5% lumen output range and +/- .004 Duv.

PRUBIN™ Prudential Ltg's exclusive 'job binning' method that ensures color temperature consistency across all luminaires on a project. Meticulously testing and labeling EVERY LED BOARD to +/- 25 lumens, +/- 50k CCT and +/- .004 Duv — while also separating positive from negative — allows us to match color, hue and intensity throughout a project and provides a consistent color temperature within a 2-step MacAdam ellipse.

LABELS ETL damp labeled and I.B.E.W. manufactured

ELECTRICAL Must specify LED dimming controls. LED fixtures have constant current driver(s) with less than 20% THD when loaded to a minimum of 60%. Drivers sink a maximum of 6mA per driver. DM10 LED drivers are 0-10V dimmable and are compatible with most 0-10V wall slide dimmers and direct 0-10V analog signal dimmers. Max driver size 1.25" w x 1" h.

CONSTRUCTION

Housing Die-formed 20-gauge USA steel, >20% PC recycled, 100% recyclable

Lens Thermoformed acrylic, 100% recyclable

MOUNTING Recessed mounted into exposed T-bar or hard ceiling applications

WARRANTY Single-source, 5 year limited warranty covers standard components and construction



Prudential Ltg. reserves the right to change design specifications or materials without notice. Please visit www.prulite.com for most current data.
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Sky Oculus Series

2

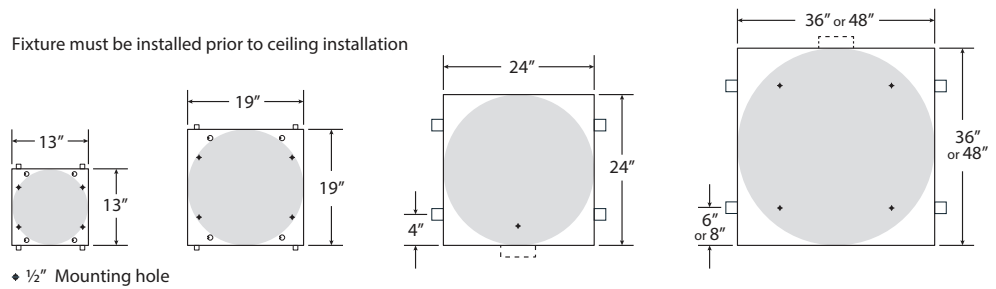
8-11-15



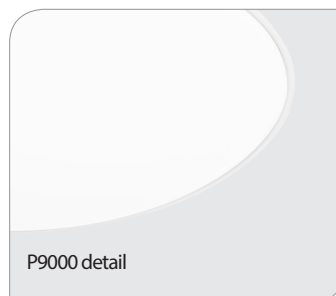
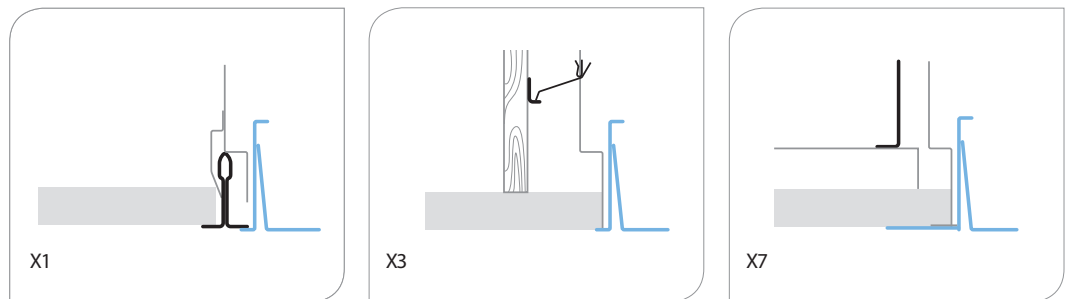
Client: GKK Works, Architect: GKK Works

MOUNTING LOCATIONS

Fixture must be installed prior to ceiling installation



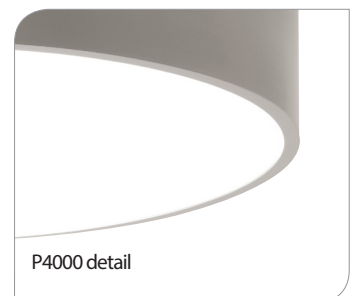
CEILING SYSTEMS



P9000 detail



P8900 detail



P4000 detail

FINELITE

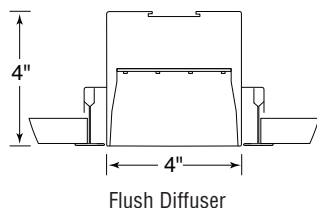
High Performance 4" Aperture (HP-4) - Recessed

Date Project Type Comments 

DESCRIPTION

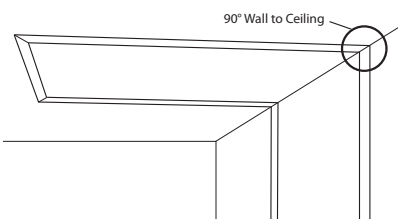
High Performance 4" Aperture Recessed (HP-4 R) is a patented, linear LED luminaire. HP-4 R is the first recessed linear LED luminaire to feature On-Grid™ mounting for standard lengths, making installation quick and easy. HP-4 R is RoHS compliant.

TYPE L1



DIMENSIONS & DIFFUSER

Glare-free experience is attained with mid-powered LEDs and a precise diffuser to eliminate pixilation.



MITERED ANGLES

Fully illuminated corners have internal secondary diffusers to ensure against light leaks. Custom angles are available.



SEAMLESS ILLUMINATION

Internal secondary diffusers at corners, joints and seams ensure visually seamless, uniform, continuous illumination.

ORDERING GUIDE

Sample Number: HP-4 R - 32' - SO - 3500K - 120V - SC - C1 - OBO



Finelite **Series HP-4 R**

Length (Minimum 2', increments accurate to 1/16th", Standard)

Light Engine (SO - Standard Output, HO - High Output)

LED Color Temperature (3000K, 3500K, 4000K)

Voltage (120V, 277V)

Circuiting (SC - Single Circuit)*

Mounting (C1 - 1" T-Bar, C2 - 9/16" T-Bar, C3 - Screw Slot, C3F - Flush Screw Slot, VF - Visible Flange, C2T - 9/16" Tegular,

C1T - 1" Tegular, SF - Spackle Flange, TZ6 (C1, C2, C2T, C3, C3F) - Tech Zone 6")

Integrated Sensor (OBO - Occupancy Sensor, OBD - Daylight)

*Contact factory for switching options.

Protected by one or more US Patents: 8915613; D702,391; D702,390; D700,732

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FINELITE

High Performance 4" Aperture (HP-4) - Recessed

PHOTOMETRY

Standard Output

Efficacy (Lumen per watt): 79.9

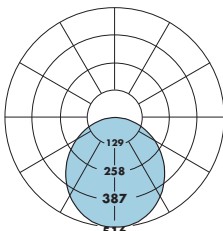
Total luminaire output: 1447 Lumens (362 lumens/foot)
18 Watts (4.5 watts/foot)

CRI: 83

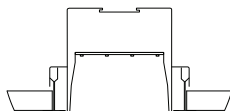
R9: 10

CCT: 4000K

ITL LM79 Report 74686



— Refer to www.finelite.com for additional photometry and product information.



CANDLEPOWER SUMMARY						
	0.0	22.5	45	67.5	90	Flux
0	514	514	514	514	514	
5	514	511	511	511	513	49
15	493	492	492	491	492	139
25	453	492	492	491	492	139
35	397	397	395	395	394	247
45	331	330	328	328	326	254
55	255	256	256	255	251	228
65	179	179	180	178	174	177
75	103	103	104	102	99	109
85	33	33	34	34	33	37
90	0	2	4	5	6	

PHOTOMETRY

High Output

Efficacy (Lumen per watt): 74.6

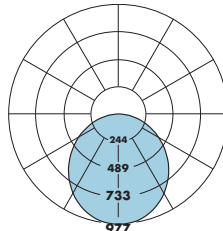
Total luminaire output: 2754 Lumens (689 lumens/foot)
37 Watts (9.2 watts/foot)

CRI: 83

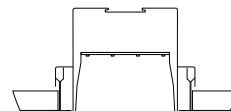
R9: 10

CCT: 4000K

ITL LM79 Report 74687



— Refer to www.finelite.com for additional photometry and product information.



CANDLEPOWER SUMMARY						
	0.0	22.5	45	67.5	90	Flux
0	973	973	973	973	973	
5	974	969	968	969	972	92
15	936	932	931	932	934	263
25	860	859	855	856	858	395
35	754	755	750	751	751	470
45	628	629	625	625	623	483
55	487	489	488	486	481	435
65	341	342	343	340	334	337
75	199	198	198	194	190	208
85	65	64	64	63	61	70
90	0	4	6	8	8	

PHOTOMETRY

Standard Output

Efficacy (Lumen per watt): 74

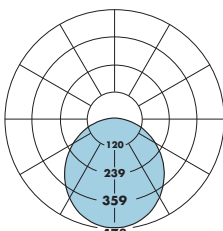
Total luminaire output: 1348 Lumens (337 lumens/foot)
18 Watts (4.5 watts/foot)

CRI: 84

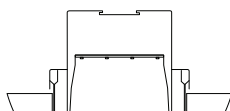
R9: 14

CCT: 3500K

ITL LM79 Report 74684



— Refer to www.finelite.com for additional photometry and product information.



CANDLEPOWER SUMMARY						
	0.0	22.5	45	67.5	90	Flux
0	476	476	476	476	476	
5	476	474	473	473	475	45
15	457	456	455	455	456	129
25	420	422	418	418	419	193
35	368	369	367	367	367	230
45	308	307	306	306	304	236
55	238	239	238	238	235	213
65	167	167	168	166	163	165
75	97	97	97	96	94	102
85	32	31	32	32	32	35
90	0	2	4	5	6	

PHOTOMETRY

High Output

Efficacy (Lumen per watt): 70.5

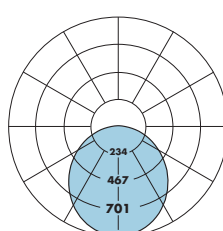
Total luminaire output: 2622 Lumens (656 lumens/foot)
37 Watts (9.2 watts/foot)

CRI: 84

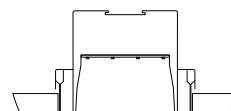
R9: 16

CCT: 3500K

ITL LM79 Report 74685



— Refer to www.finelite.com for additional photometry and product information.



CANDLEPOWER SUMMARY						
	0.0	22.5	45	67.5	90	Flux
0	930	930	930	930	930	
5	930	926	925	925	928	88
15	893	890	889	890	891	251
25	820	821	816	816	817	377
35	719	719	714	715	714	448
45	598	598	595	595	592	460
55	463	464	463	462	456	413
65	325	325	326	323	317	320
75	188	188	189	186	181	198
85	61	61	62	62	60	67
90	0	2	5	6	7	

Consult www.finelite.com for 3000K photometric reports.

Protected by one or more US Patents: 8915613; D702,391; D702,390; D700,732

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FINELITE

High Performance 4" Aperture (HP-4) - Recessed

SPECIFICATIONS

CONSTRUCTION: Precision-cut 6061-T6 extruded aluminum body. Internal joiner system, plug-together wiring, standard. Housing is powder coated.

ENDCAPS: Flat endcaps add 0.05" to each end of luminaire.

MITERED CORNERS: Illuminated 90° corners in a single plane are standard. Custom angles are available (90° minimum on inside corners). Contact factory.

REFLECTORS: Die-formed 20-gauge cold-rolled steel reflectors are finished in 96 LG high reflectance matte white powder coat paint.

DIFFUSER: 12" maximum lens length. Internal secondary diffusers at corners, joints and seams ensure visually seamless, uniform, continuous illumination. Frost white snap-in lens, 73% transmissive, 99% diffusion.

LIGHT ENGINE: Two lumens packages are available, Standard Output (SO) and High Output (HO). A separate chart summarizes lumen distribution and wattage. LM79 test reports are available for each distribution. Light engines are replaceable.

LUMEN MAINTENANCE: 90% of initial light output (L90) at 100,000 hours; 70% of initial light output (L70) 168,000 hours.

LED COLOR TEMPERATURE (CCT): 3000K, 3500K, or 4000K.

DRIVER: Replaceable 120V/277V Constant Current Reduction dimming driver standard. Can be wired dimming or non-dimming. 0-10V dimming controls with a range of 10%- 100%. Dimming to 1% available; consult factory. Driver is fully accessible from below the ceiling. Power Factor: ≥ 0.9 . Total Harmonic Distortion (THD) $< 20\%$. Expected driver lifetime: 100,000 hours.

LUTRON DRIVER OPTIONS: Lut3W-3-wire, LutES-EcoSystem, Lut2W-2-wire.

ELECTRICAL: Optional emergency to generator/inverter wiring, internal generator transfer switch, nightlight wiring, step-dimming driver, backup battery. Factory-choice low-profile backup battery available. 8' minimum fixture length for low profile battery pack. Bodine BSL722 battery pack also available; 4' minimum fixture length. Backup battery delivers 1300 lumens. Half of a 4' section will be illuminated in emergency mode.



INTEGRATED SENSORS: Integrated PIR (Passive Infrared) occupancy and/or daylight sensors available. Refer to Occupancy Sensor and Daylight Sensor tech sheets for more information.

MOUNTING: Standard bracket design works with most lay-in ceiling types. Brackets secure luminaire to the ceiling grid from above. Tie-in T-Bar brackets. Connect luminaire to T-Bar for securing to structure. Consult local codes for tie-wire recommendations.

FEED: Standard with one 18-gauge/5-conductor single-circuit feed. 14-gauge feed used when fixture current exceeds 5 amps. Optional 6' flex conduit whips available.

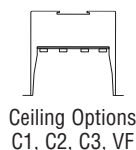
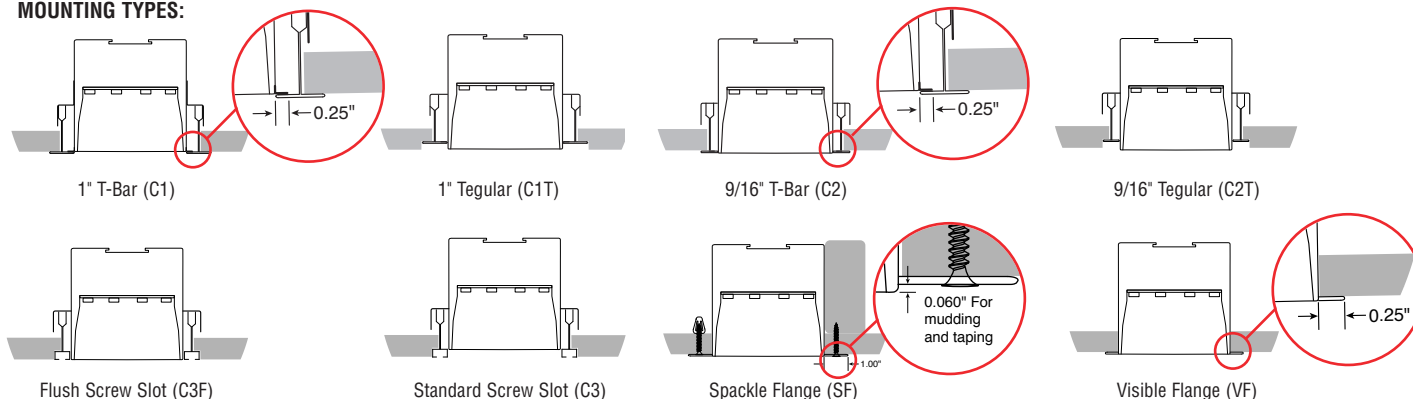
LENGTHS: Standard 4', 8', and 12' section lengths can be combined to make longer runs. Contact factory for custom lengths, angles and configurations accurate to 1/16th-inch.

LABELS: Fixture and electrical components are ETL-listed conforming to UL 1598 in the U.S.A. and CAN/CSA C22.2 No. 250.0 in Canada. In accordance with NEC Code 410.73 (G), this luminaire contains an internal driver disconnect. Damp Location.

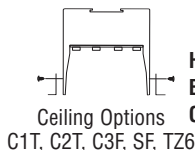
WEIGHT: 2.8 lb/ft.

WARRANTY: 10-year warranty on all standard components. Optional accessories such as emergency battery packs are covered by their individual manufacturer warranties.

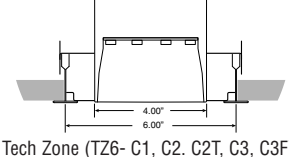
MOUNTING TYPES:



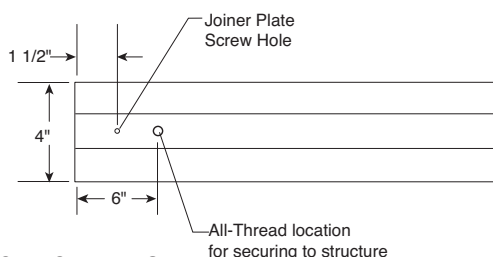
Housing With Extruded Flange (V1)



Housing Without Extruded Flange (V2)
Ceiling Hardware Attached

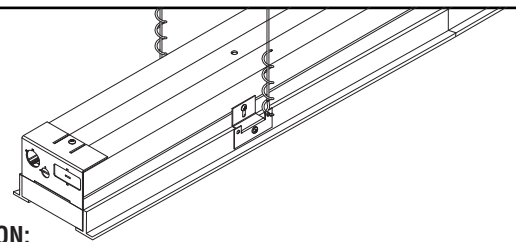


Tech Zone (TZ6- C1, C2, C2T, C3, C3F)



SHEET ROCK INSTALLATION:

Flex conduit is secured to top of fixture. Support to structure using All-Thread. All-Thread support holes are located on each end of the fixture.



T-BAR INSTALLATION:

HP-4 R for T-Bar installations comes standard with a splice plate at the end of the luminaire. Mounting brackets (supplied) secure the fixture to T-Bar and provide support to structure location. All starter/independent fixtures are 11/16" shorter than nominal. All joiner/ender fixture are normal length.

FINELITE

High Performance 4" Aperture (HP-4) - Recessed

	Lumen Output Per Foot					
	3000K		3500K		4000K	
	SO	HO	SO	HO	SO	HO
Lumens Per Foot	329.75	639.25	337	655.5	361.75	689
Watts Per Foot	4.45	9.35	4.55	9.3	4.525	9.225
Efficacy (LPW)	74.1	68.4	74.1	70.5	79.9	74.6

SO - Standard Output, HO - High Output

Protected by one or more US Patents: 8915613; D702,391; D702,390; D700,732

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FINELITE

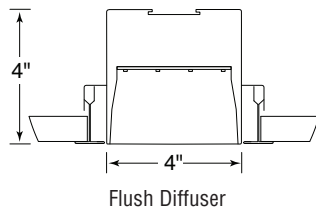
High Performance 4" Aperture (HP-4) - Recessed

Date Project Type Comments 

DESCRIPTION

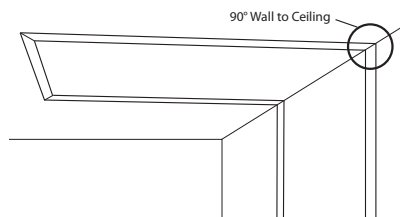
High Performance 4" Aperture Recessed (HP-4 R) is a patented, linear LED luminaire. HP-4 R is the first recessed linear LED luminaire to feature On-Grid™ mounting for standard lengths, making installation quick and easy. HP-4 R is RoHS compliant.

TYPE L2



DIMENSIONS & DIFFUSER

Glare-free experience is attained with mid-powered LEDs and a precise diffuser to eliminate pixilation.



MITERED ANGLES

Fully illuminated corners have internal secondary diffusers to ensure against light leaks. Custom angles are available.



SEAMLESS ILLUMINATION

Internal secondary diffusers at corners, joints and seams ensure visually seamless, uniform, continuous illumination.

ORDERING GUIDE

Sample Number: HP-4 R - 32' - SO - 3500K - 120V - SC - C1 - OBO



Finelite **Series HP-4 R**

Length (Minimum 2', increments accurate to 1/16th", Standard)

Light Engine (SO - Standard Output, HO - High Output)

LED Color Temperature (3000K, 3500K, 4000K)

Voltage (120V, 277V)

Circuiting (SC - Single Circuit)*

Mounting (C1 - 1" T-Bar, C2 - 9/16" T-Bar, C3 - Screw Slot, C3F - Flush Screw Slot, VF - Visible Flange, C2T - 9/16" Tegular,

C1T - 1" Tegular, SF - Spackle Flange, TZ6 (C1, C2, C2T, C3, C3F) - Tech Zone 6")

Integrated Sensor (OBO - Occupancy Sensor, OBD - Daylight)

*Contact factory for switching options.

Protected by one or more US Patents: 8915613; D702,391; D702,390; D700,732

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FINELITE

High Performance 4" Aperture (HP-4) - Recessed

PHOTOMETRY

Standard Output

Efficacy (Lumen per watt): 79.9

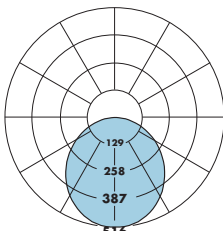
Total luminaire output: 1447 Lumens (362 lumens/foot)
18 Watts (4.5 watts/foot)

CRI: 83

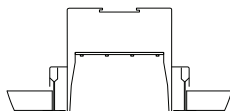
R9: 10

CCT: 4000K

ITL LM79 Report 74686



— Refer to www.finelite.com for additional photometry and product information.



CANDLEPOWER SUMMARY						
	0.0	22.5	45	67.5	90	Flux
0	514	514	514	514	514	
5	514	511	511	511	513	49
15	493	492	492	491	492	139
25	453	492	492	491	492	139
35	397	397	395	395	394	247
45	331	330	328	328	326	254
55	255	256	256	255	251	228
65	179	179	180	178	174	177
75	103	103	104	102	99	109
85	33	33	34	34	33	37
90	0	2	4	5	6	

PHOTOMETRY

High Output

Efficacy (Lumen per watt): 74.6

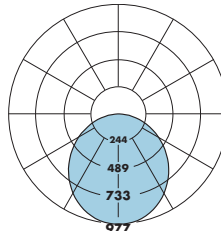
Total luminaire output: 2754 Lumens (689 lumens/foot)
37 Watts (9.2 watts/foot)

CRI: 83

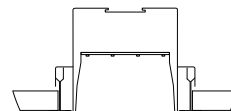
R9: 10

CCT: 4000K

ITL LM79 Report 74687



— Refer to www.finelite.com for additional photometry and product information.



CANDLEPOWER SUMMARY						
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45	628	629	625	625	623	483
55	487	489	488	486	481	435
65	341	342	343	340	334	337
75	199	198	198	194	190	208
85	65	64	64	63	61	70
90	0	4	6	8	8	

PHOTOMETRY

Standard Output

Efficacy (Lumen per watt): 74

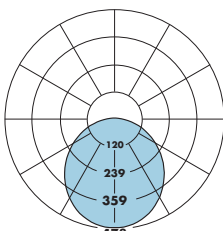
Total luminaire output: 1348 Lumens (337 lumens/foot)
18 Watts (4.5 watts/foot)

CRI: 84

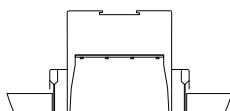
R9: 14

CCT: 3500K

ITL LM79 Report 74684



— Refer to www.finelite.com for additional photometry and product information.



CANDLEPOWER SUMMARY						
	0.0	22.5	45	67.5	90	Flux
0	476	476	476	476	476	
5	476	474	473	473	475	45
15	457	456	455	455	456	129
25	420	422	418	418	419	193
35	368	369	367	367	367	230
45	308	307	306	306	304	236
55	238	239	238	238	235	213
65	167	167	168	166	163	165
75	97	97	97	96	94	102
85	32	31	32	32	32	35
90	0	2	4	5	6	

PHOTOMETRY

High Output

Efficacy (Lumen per watt): 70.5

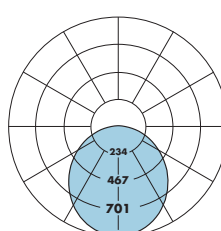
Total luminaire output: 2622 Lumens (656 lumens/foot)
37 Watts (9.2 watts/foot)

CRI: 84

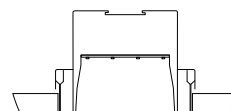
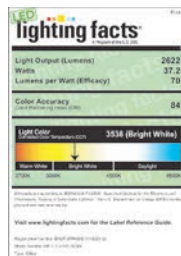
R9: 16

CCT: 3500K

ITL LM79 Report 74685



— Refer to www.finelite.com for additional photometry and product information.



CANDLEPOWER SUMMARY						
	0.0	22.5	45	67.5	90	Flux
0	930	930	930	930	930	
5	930	926	925	925	928	88
15	893	890	889	890	891	251
25	820	821	816	816	817	377
35	719	719	714	715	714	448
45	598	598	595	595	592	460
55	463	464	463	462	456	413
65	325	325	326	323	317	320
75	188	188	189	186	181	198
85	61	61	62	62	60	67
90	0	2	5	6	7	

Consult www.finelite.com for 3000K photometric reports.

Protected by one or more US Patents: 8915613; D702,391; D702,390; D700,732

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FINELITE

High Performance 4" Aperture (HP-4) - Recessed

SPECIFICATIONS

CONSTRUCTION: Precision-cut 6061-T6 extruded aluminum body. Internal joiner system, plug-together wiring, standard. Housing is powder coated.

ENDCAPS: Flat endcaps add 0.05" to each end of luminaire.

MITERED CORNERS: Illuminated 90° corners in a single plane are standard. Custom angles are available (90° minimum on inside corners). Contact factory.

REFLECTORS: Die-formed 20-gauge cold-rolled steel reflectors are finished in 96 LG high reflectance matte white powder coat paint.

DIFFUSER: 12" maximum lens length. Internal secondary diffusers at corners, joints and seams ensure visually seamless, uniform, continuous illumination. Frost white snap-in lens, 73% transmissive, 99% diffusion.

LIGHT ENGINE: Two lumens packages are available, Standard Output (SO) and High Output (HO). A separate chart summarizes lumen distribution and wattage. LM79 test reports are available for each distribution. Light engines are replaceable.

LUMEN MAINTENANCE: 90% of initial light output (L90) at 100,000 hours; 70% of initial light output (L70) 168,000 hours.

LED COLOR TEMPERATURE (CCT): 3000K, 3500K, or 4000K.

DRIVER: Replaceable 120V/277V Constant Current Reduction dimming driver standard. Can be wired dimming or non-dimming. 0-10V dimming controls with a range of 10%- 100%. Dimming to 1% available; consult factory. Driver is fully accessible from below the ceiling. Power Factor: ≥ 0.9 . Total Harmonic Distortion (THD) $< 20\%$. Expected driver lifetime: 100,000 hours.

LUTRON DRIVER OPTIONS: Lut3W-3-wire, LutES-EcoSystem, Lut2W-2-wire.

ELECTRICAL: Optional emergency to generator/inverter wiring, internal generator transfer switch, nightlight wiring, step-dimming driver, backup battery. Factory-choice low-profile backup battery available. 8' minimum fixture length for low profile battery pack. Bodine BSL722 battery pack also available; 4' minimum fixture length. Backup battery delivers 1300 lumens. Half of a 4' section will be illuminated in emergency mode.



INTEGRATED SENSORS: Integrated PIR (Passive Infrared) occupancy and/or daylight sensors available. Refer to Occupancy Sensor and Daylight Sensor tech sheets for more information.

MOUNTING: Standard bracket design works with most lay-in ceiling types. Brackets secure luminaire to the ceiling grid from above. Tie-in T-Bar brackets. Connect luminaire to T-Bar for securing to structure. Consult local codes for tie-wire recommendations.

FEED: Standard with one 18-gauge/5-conductor single-circuit feed. 14-gauge feed used when fixture current exceeds 5 amps. Optional 6' flex conduit whips available.

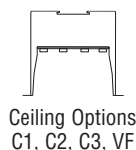
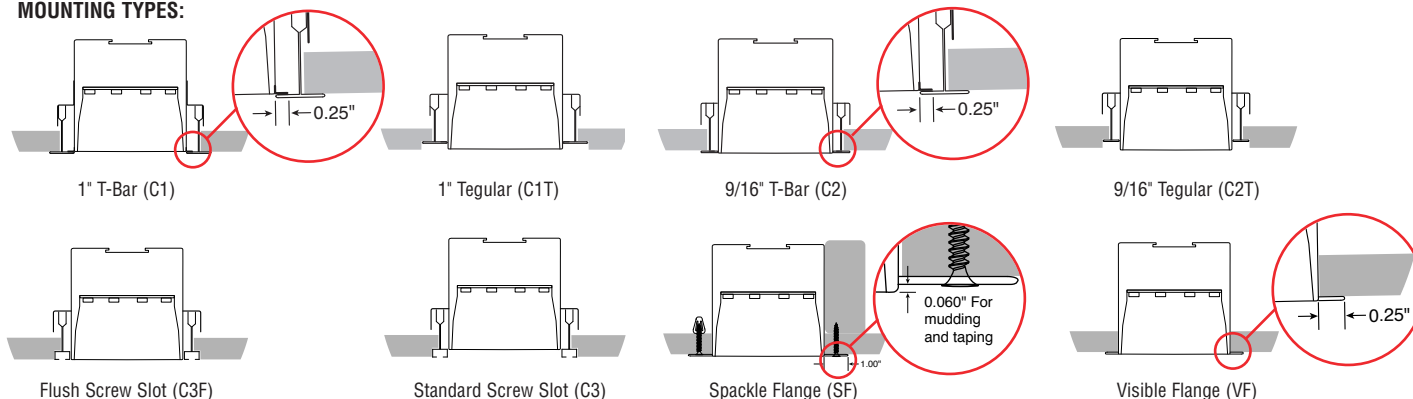
LENGTHS: Standard 4', 8', and 12' section lengths can be combined to make longer runs. Contact factory for custom lengths, angles and configurations accurate to 1/16th-inch.

LABELS: Fixture and electrical components are ETL-listed conforming to UL 1598 in the U.S.A. and CAN/CSA C22.2 No. 250.0 in Canada. In accordance with NEC Code 410.73 (G), this luminaire contains an internal driver disconnect. Damp Location.

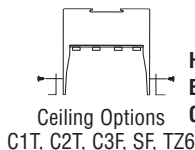
WEIGHT: 2.8 lb/ft.

WARRANTY: 10-year warranty on all standard components. Optional accessories such as emergency battery packs are covered by their individual manufacturer warranties.

MOUNTING TYPES:



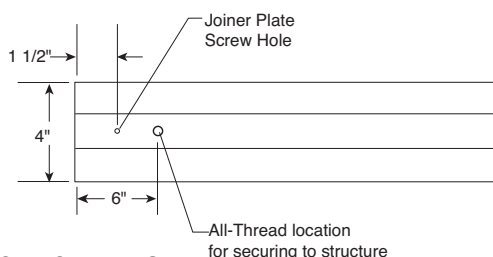
Housing With Extruded Flange (V1)



**Housing Without Extruded Flange (V2)
Ceiling Hardware Attached**

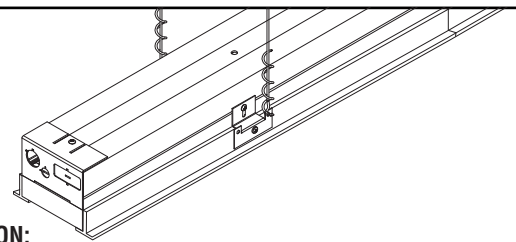
SHEET ROCK INSTALLATION:

Flex conduit is secured to top of fixture. Support to structure using All-Thread. All-Thread support holes are located on each end of the fixture.



T-BAR INSTALLATION:

HP-4 R for T-Bar installations comes standard with a splice plate at the end of the luminaire. Mounting brackets (supplied) secure the fixture to T-Bar and provide support to structure location. All starter/independent fixtures are 11/16" shorter than nominal. All joiner/ender fixture are normal length.



FINELITE

High Performance 4" Aperture (HP-4) - Recessed

	Lumen Output Per Foot					
	3000K		3500K		4000K	
	SO	HO	SO	HO	SO	HO
Lumens Per Foot	329.75	639.25	337	655.5	361.75	689
Watts Per Foot	4.45	9.35	4.55	9.3	4.525	9.225
Efficacy (LPW)	74.1	68.4	74.1	70.5	79.9	74.6

SO - Standard Output, HO - High Output

Protected by one or more US Patents: 8915613; D702,391; D702,390; D700,732

Finelite, Inc. • 30500 Whipple Road • Union City, CA 94587-1530 • 510 / 441-1100 • Fax: 510 / 441-1510 • www.finelite.com

Due to continuing product improvements, Finelite reserves the right to change specifications without notice. Please visit www.finelite.com for most current data.

DESCRIPTION

The patented Lumark Crosstour™ LED Wall Pack Series of luminaires provides an architectural style with super bright, energy efficient LEDs. The low-profile, rugged die-cast aluminum construction, universal back box, stainless steel hardware along with a sealed and gasketed optical compartment make the Crosstour impervious to contaminants. The Crosstour wall luminaire is ideal for wall/surface, inverted mount for façade/canopy illumination, post/bollard, site lighting, floodlight and low level pathway illumination including stairs. Typical applications include building entrances, multi-use facilities, apartment buildings, institutions, schools, stairways and loading docks test.

SPECIFICATION FEATURES

Construction

Slim, low-profile LED design with rugged one-piece, die-cast aluminum hinged removable door and back box. Matching housing styles incorporate both a small and large design. The small housing is available in 7W and 18W. The large housing is available in the 26W model. Patent pending secure lock hinge feature allows for safe and easy tool-less electrical connections with the supplied push-in connectors. Back box includes three (3) half-inch, NPT threaded conduit entry points. The universal back box supports both the small and large forms and mounts to standard 3-1/2" to 4" round and octagonal, 4" square, single gang and masonry junction boxes. Key hole gasket allows for adaptation to junction box or wall. External fin design extracts heat from the fixture surface. One-piece silicone gasket seals door and back box. Minimum 5" wide pole for site lighting application. Not recommended for car wash applications.

Optical

Silicone sealed optical LED chamber incorporates a custom engineered mirrored anodized reflector providing high-efficiency illumination. Optical assembly includes impact-resistant tempered glass and meets IESNA requirements for full cutoff compliance. Solid state LED Crosstour luminaires are thermally optimized with five (5) lumen packages in cool 5000K or neutral warm 3500K LED color temperature (CCT).

Electrical

LED driver is mounted to the die-cast housing for optimal heat sinking. LED thermal management system incorporates both conduction and natural convection to transfer heat rapidly away from the LED source. 7W models operate in -40°C to 40°C [-40°F to 104°F]. 18W and 26W models operate in -40°C to 40°C [-40°F to 104°F]. High ambient 50°C models available. Crosstour luminaires maintain greater than 90% of initial

Catalog #

Project

Comments

Prepared by

Type

Date

light output after 72,000 hours of operation. Three (3) half-inch NPT threaded conduit entry points allow for thru-branch wiring. Back box is an authorized electrical wiring compartment. Integral LED electronic driver incorporates surge protection. 120-277V 50/60Hz or 347V 60Hz models.

Finish

Crosstour is protected with a Super durable TGIC carbon bronze or summit white polyester powder coat paint. Super durable TGIC powder coat paint finishes withstand extreme climate conditions while providing optimal color and gloss retention of the installed life.

Warranty

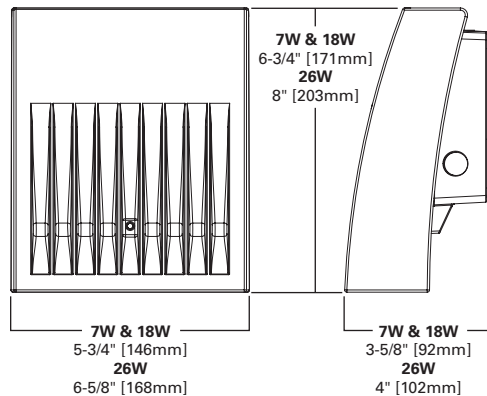
Five-year warranty.



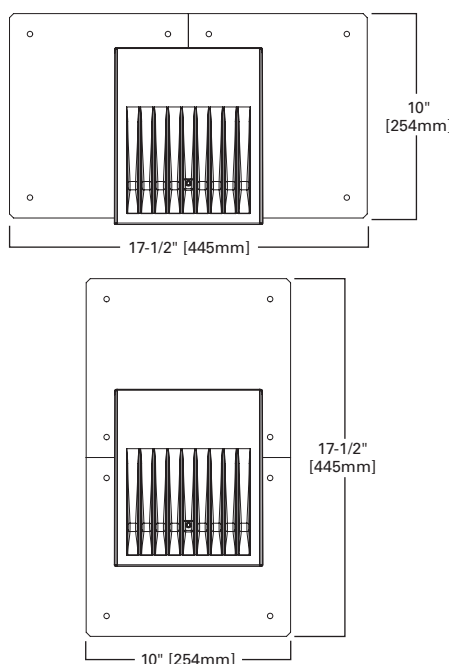
XTOR CROSSTOUR LED

APPLICATIONS:
WALL / SURFACE
POST / BOLLARD
LOW LEVEL
FLOODLIGHT
INVERTED
SITE LIGHTING

DIMENSIONS



ESCUTCHEON PLATES



CERTIFICATION DATA

UL/cUL Wet Location Listed
LM79 / LM80 Compliant
ROHS Compliant
ADA Compliant
NOM Compliant Models
IP66 Ingress Protection Rated
Title 24 Compliant
DesignLights Consortium® Qualified*

TECHNICAL DATA

40°C Maximum Ambient Temperature
External Supply Wiring 90°C Minimum

EPA

Effective Projected Area (Sq. Ft.):
XTOR1A/XTOR2A=0.34
XTOR3A=0.45

SHIPPING DATA:

Approximate Net Weight:
3.7 – 5.25 lbs. [1.7 – 2.4 kgs.]

LUMEN MAINTENANCE

Ambient Temperature	TM-21 Lumen Maintenance (72,000 Hours)	Theoretical L70 (Hours)
XTOR1A Model		
25°C	> 92%	> 290,000
40°C	> 92%	> 290,000
50°C	> 91%	> 270,000
XTOR2A Model		
25°C	> 91%	> 270,000
40°C	> 90%	> 260,000
50°C	> 88%	> 225,000
XTOR3A Model		
25°C	> 91%	> 280,000
40°C	> 91%	> 270,000
50°C	> 89%	> 240,000

LUMENS - CRI/CCT TABLE

LED Information	XTOR1A	XTOR2A	XTOR2A-N	XTOR3A	XTOR3A-N
Delivered Lumens (Wall Mount)	722	1,633	1,523	2,804	2,284
Delivered Lumens (With Flood Accessory Kit) ¹	468	1,060	978	2,168	1,738
B.U.G. Rating ²	B0-U0-G0	B1-U0-G0	B1-U0-G0	B1-U0-G0	B1-U0-G0
CCT (Kelvin)	5,000	5,000	3,500	5,000	3,500
CRI (Color Rendering Index)	65	65	70	65	70
Power Consumption (Watts)	7W	18W	18W	26W	26W

NOTES: 1 Includes shield and visor. 2 B.U.G. Rating does not apply to floodlighting.

CURRENT DRAW

Voltage	Model Series		
	XTOR1A	XTOR2A	XTOR3A
120V	0.05A	0.15A	0.22A
208V	0.03A	0.08A	0.13A
240V	0.03A	0.07A	0.11A
277V	0.03A	0.06A	0.10A
347V	0.025A	0.058A	0.082A

ORDERING INFORMATION

Sample Number: XTOR2A-N-WT-PC1

Series ¹	LED Kelvin Color	Housing Color	Options (Add as Suffix)	Accessories (Order Separately)
XTOR1A=Small Door, 7W XTOR2A=Small Door, 18W XTOR3A=Small Door, 26W	[Blank]=Bright White (Standard) 5000K N=Neutral Warm White, 3500K ²	[Blank]=Carbon Bronze (Standard) WT=Summit White	PC1=Photocontrol 120V ³ PC2=Photocontrol 208-277V ^{3,4} 347V=347V ⁵ HA=50°C High Ambient ⁵	WG/XTOR=Wire Guard ⁶ XTORFLD-KNC=Knuckle Floodlight Kit ⁷ XTORFLD-TRN=Trunnion Floodlight Kit ⁷ XTORFLD-KNC-WT=Knuckle Floodlight Kit, Summit White ⁷ XTORFLD-TRN-WT=Trunnion Floodlight Kit, Summit White ⁷ EWP/XTOR=Escutcheon Wall Plate, Carbon Bronze EWP/XTOR-WT=Escutcheon Wall Plate, Summit White

NOTES: 1 DesignLights Consortium® Qualified. Refer to www.designlights.org Qualified Products List under Family Models for details. 2 XTOR1A not available in 3500K. 3 Photocontrols are factory installed. 4 Order PC2 for 347V models. 5 Thru-branch wiring not available with HA option or with 347V. 6 Wire guard for wall/surface mount. Not for use with floodlight kit accessory. 7 Floodlight kit accessory supplied with knuckle (KNC) or trunnion (TRN) base, small and large top visors and small and large impact shields.

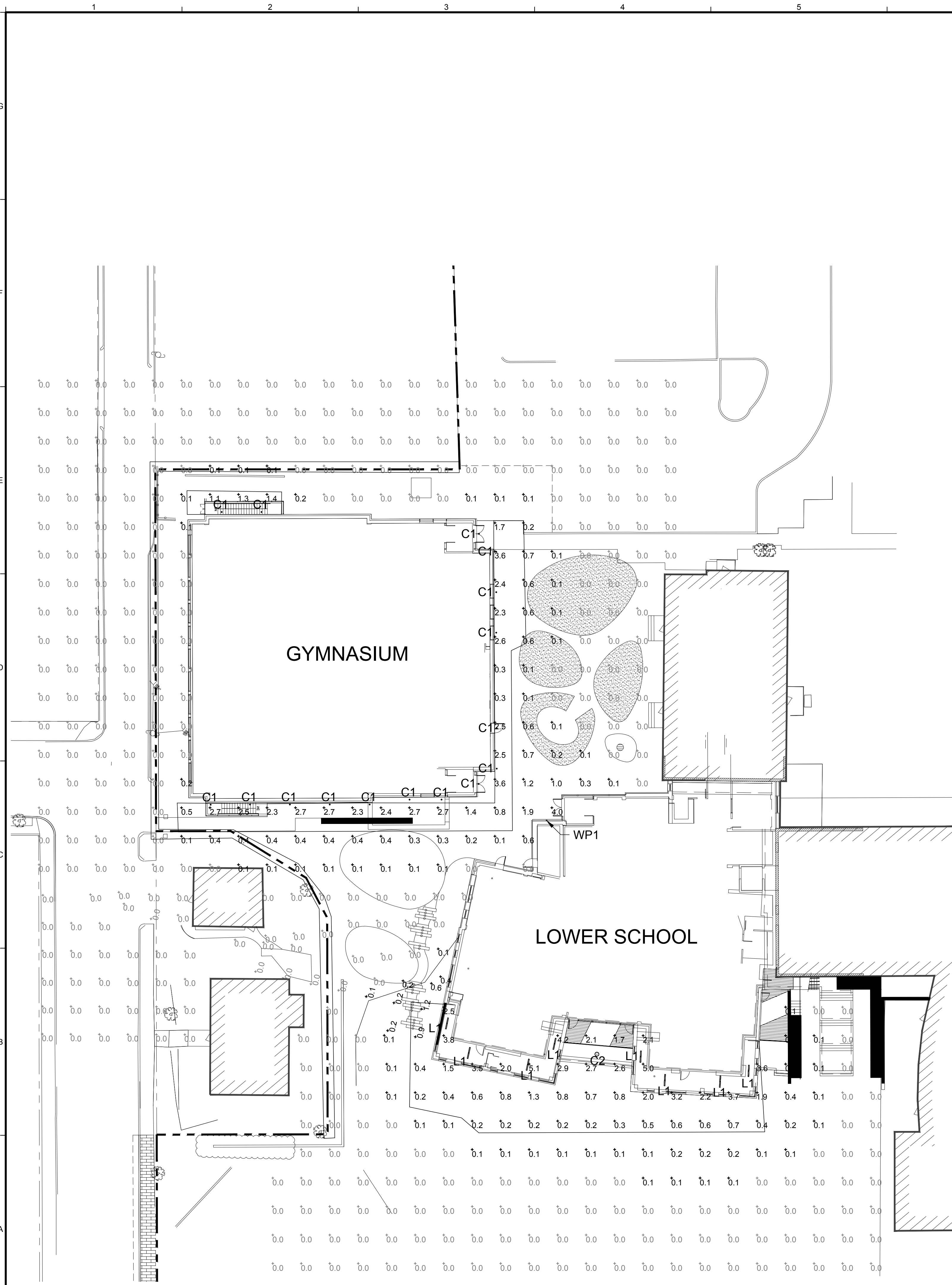
STOCK ORDERING INFORMATION

7W Series	18W Series	26W Series
XTOR1A=7W, 5000K, Carbon Bronze	XTOR2A=18W, 5000K, Carbon Bronze	XTOR3A=26W, 5000K, Carbon Bronze
XTOR1A-WT=7W, 5000K, Summit White	XTOR2A-N=18W, 3500K, Carbon Bronze	XTOR3A-N=26W, 3500K, Carbon Bronze
XTOR1A-PC1=7W, 5000K, 120V PC, Carbon Bronze	XTOR2A-WT=18W, Summit White	XTOR3A-WT=26W, Summit White
	XTOR2A-PC1=18W, 120V PC, Carbon Bronze	XTOR3A-PC1=26W, 120V PC, Carbon Bronze

5-DAY QUICK SHIP ORDERING INFORMATION

7W Series	18W Series	26W Series
XTOR1A-WT-PC1=7W, 5000K, Summit White, 120V PC	XTOR2A-PC2=18W, 5000K, 208-277V PC, Carbon Bronze	XTOR3A-PC2=26W, 5000K, 208-277V PC, Carbon Bronze
	XTOR2A-WT-PC1=18W, 5000K, Summit White, 120V PC	XTOR3A-WT-PC1=26W, 5000K, Summit White, 120V PC
	XTOR2A-WT-PC2=18W, 5000K, Summit White, 208-277V PC	XTOR3A-WT-PC2=26W, 5000K, Summit White, 208-277V PC
	XTOR2A-N-WT=18W, 3500K, Summit White	XTOR3A-N-WT=26W, 3500K, Summit White
	XTOR2A-N-PC1=18W, 3500K, 120V PC, Carbon Bronze	XTOR3A-N-PC1=26W, 3500K, 120V PC, Carbon Bronze
	XTOR2A-N-PC2=18W, 3500K, 208-277V PC, Carbon Bronze	XTOR3A-N-PC2=26W, 3500K, 208-277V PC, Carbon Bronze
	XTOR2A-N-WHT-PC1=18W, 3500K, Summit White, 120V PC	XTOR3A-N-WHT-PC1=26W, 3500K, Summit White, 120V PC
	XTOR2A-N-WT-PC2=18W, 3500K, Summit White, 208-277V PC	XTOR3A-N-WT-PC2=26W, 3500K, Summit White, 208-277V PC

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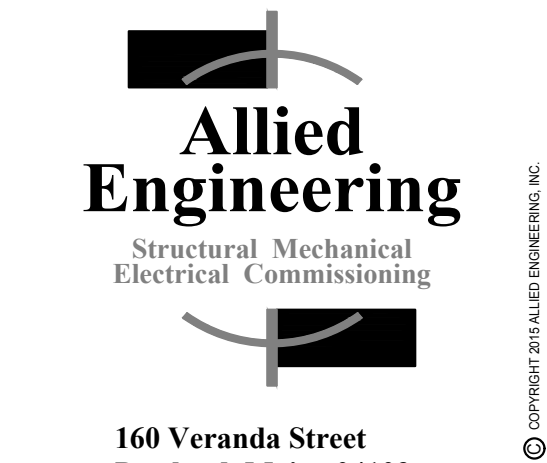


LUMINAIRE SCHEDULE - SITE									
TYPE	DESCRIPTION	MFR	CATALOG SERIES NUMBER SEE NOTE 1	MOUNTING	VOLTS	LAMP			KEY NOTES
						QTY PER FIXTURE	WATTS	TYPE	
C1	5" ROUND SURFACE MOUNTED DOWNLIGHT	PHILIPS	S-5-R-8-35K-650	SURFACE	120	1	9.5	LED ARRAY- 3500K	
C2	18" ROUND RECESSED DOWNLIGHT	PRUDENTIAL	9018-LED35-LO-FWA	RECESSED	120	1	19	LED ARRAY- 3500K	
L1	4' LONG 4" APERTURE DOWNLIGHT	FINELITE	HP4R-4'-SO-3500K	RECESSED	120	1	36.8	LED ARRAY- 3500K	
L2	8' LONG 4" APERTURE DOWNLIGHT	FINELITE	HP4R-8'-SO-3500K	RECESSED	120	1	73.6	LED ARRAY- 3500K	
WP1	LED WALLPACK	LUMARK	XTOR2A-N	WALL SURFACE- 10'-0" AFG	120	1	18	LED ARRAY- 3500K	
NOTES									
1 NOTE THAT THESE NUMBERS ARE NOT COMPLETE CATALOG NUMBERS. PROVIDE ALL REQUIREMENTS ON SCHEDULE, NOTES, SPECS, AND DRAWINGS COMBINED.									
2 CATALOG SERIES NUMBERS ARE USED TO ESTABLISH A LEVEL OF QUALITY AND NOT INTENDED TO LIMIT COMPETITION. SERIES NUMBERS ARE NOT COMPLETE CATALOG NUMBERS. COMPLY WITH ADDITIONAL REQUIREMENTS IN SPECIFICATIONS AND DRAWINGS.									
3 PROVIDE WALL/CEILING, OR PENDANT MOUNTING AS INDICATED ON PLANS. PROVIDE NUMBER OF FACES AND ARROWS AS INDICATED.									
4 PROVIDE PROGRAMMED START BALLAST WITH ROOMS THAT HAVE OCCUPANCY SENSORS.									
5 VERIFY CEILING STRUCTURE AND MOUNTING HEIGHT PRIOR TO ORDERING ANY LIGHT FIXTURES.									

STATISTICAL AREA SUMMARY					
STAT ZONE NAME	AVERAGE (fc)	MAXIMUM (fc)	MINIMUM (fc)	AVG/MIN RATIO (fc)	MAX/MIN RATIO (fc)
PROPERTY LINE	0.04	0.4	0.0	0.00	0.00
GYM NORTH STAIR EXIT	1.27	1.4	1.1	1.15	1.27
SOUTH AND EAST WALKWAYS	1.86	3.6	0.2	9.3	18.00
LOWER SCHOOL SOUTH	1.68	5.1	0.20	8.40	25.50



75 York Street,
Portland, Maine 04101
simonsarchitects.com
207.772.4656



Allied Project No: 15051
Cad File: 15051ES.dwg

PROJECT NAME:
**WAYNEFLETE
LOWER SCHOOL**
ADDITION & RENOVATIONS

WAYNEFLETE SCHOOL
360 SPRING STREET
PORTLAND, MAINE 04102

SEAL:

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REVISION:	
1	DATE
2	DATE
3	DATE
4	DATE
5	DATE
6	DATE

DATE OF ISSUE:
PROJECT NUMBER: 2013-0050
STATUS: DESIGN DEVELOPMENT

ELECTRICAL
SITE PHOTOMETRIC
PLAN AND
SCHEDULES

SL-100

SITE PERMITTING ~ 31 MARCH 2016 ~ NOT FOR CONSTRUCTION



18. HVAC & MANUFACTURING EQUIPMENT VERIFICATION

Allied Engineering, Inc., has verified that the proposed HVAC equipment meets federal emissions standards. The new Triangle Tube “Prestige Solo” condensing natural gas boiler has low emissions and low production of NOx. This unit is certified by the South Coast Air Quality Management District (SCAQMD). It is our understanding that the SCAQMD requirements are stricter than federal requirements.

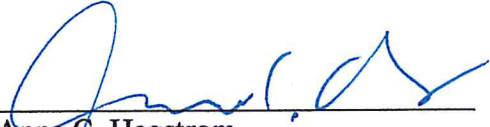
NEIGHBORHOOD MEETING CERTIFICATION

I, Anne Hagstrom Director of Finance and Operations at Waynflete School, hereby certify that a neighborhood meeting was held on March 14, 2016 from 6:30-7:30 at Waynflete School.

I also certify that on March 1, 2016 an invitation to the meeting was mailed to all the neighbors on the mailing list provided by the Planning Division which included property owners within 1000 feet of the proposed development and residents on the "interested parties" list.

A digital copy of the notice was also provided to the Planning Division (jmy@portlandmaine.gov) to be forwarded to those on the interested citizen list who receive email notices and to the assigned planner.

Signed,



Anne C. Hagstrom
Director of Finance and Operations

3/20, 2016

Attached to this certification are:

1. Copy of the invitation sent
2. Sign in sheets
3. Meeting minutes

March 1, 2016

Dear Neighbor,

I am writing to invite you to join us for a neighborhood meeting to discuss Waynflete's preliminary site plan application to the City of Portland Planning Board for approval of renovations to and new construction of the Lower School and construction of a new Gymnasium.

Meeting date: Monday, March 14, 2016
Meeting time: 6:30-7:30 p.m.
Meeting location: Art Center Music Room (Please see campus map enclosed.)

The Portland City code requires that property owners within 500 feet of the proposed development and residents on an "interested parties list" be invited to participate in a neighborhood meeting. We have also invited neighbors from a wider radius who might not be on the lists provided by the City. If you are aware of someone who would like to attend, but did not receive this invitation, please ask them to contact us. A sign-in sheet will be circulated and minutes of the meeting will be taken. Both the sign-in sheet and minutes will be submitted to the Planning Board.

Waynflete has identified the Lower School as a building priority for over a decade due to aging facilities as well as limitations of space and function. The design we are proposing would replace the Hewes Wing built in 1960 with a new building constructed to Passive House standards along with interior renovations to Founders Hall which was purchased by the School in 1912. The Gymnasium, originally built in 1974, is also in need of substantial improvements. Our intent is to remove the existing gym and replace it with a more functional and attractive building designed to achieve a LEED Platinum rating using a slightly larger footprint but essentially the same height. Both buildings are designed with environmental sustainability as an important consideration. Passive House is a newer building standard designed to achieve significant reductions in energy usage.

We are hopeful that construction on one or both projects will begin by May/June of 2017 and be completed for the opening of school in 2018. When completed, the new and renovated spaces will serve a similar student population size and significantly enhance the quality of the School's academic programs.

I also wanted to take this opportunity to encourage you to stroll through campus during the evenings or on weekends or use one of our playgrounds when school or summer programs are not in session. The preservation of open space has been one of the important values guiding the School's campus planning and we are glad to be able to share our campus with our neighbors.

I hope you can join us on March 14. If you have any questions please call me at ext. 1201 or Anne Hagstrom, Director of Finance and Operations, at ext. 1227. We hope to see you there.

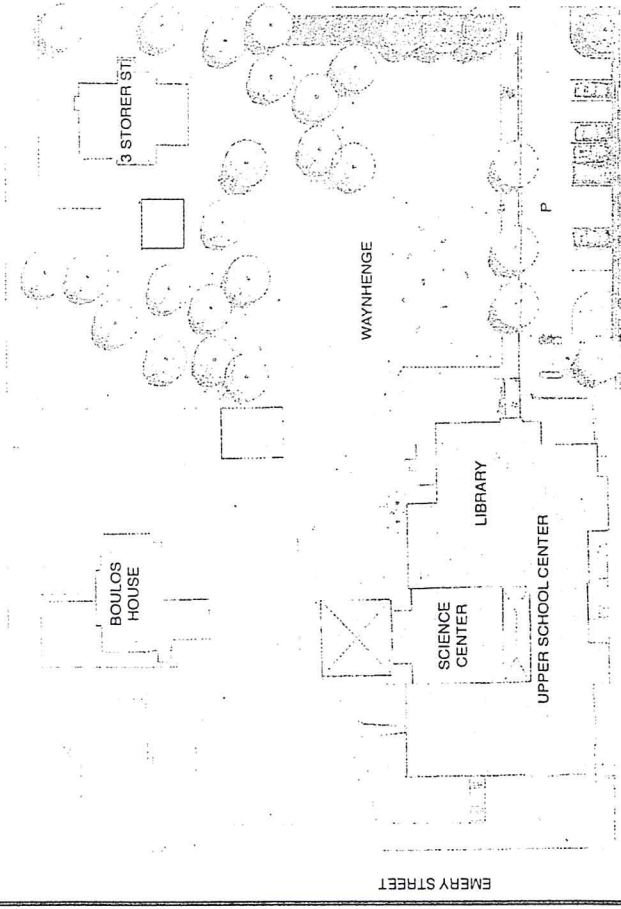
Sincerely,

Geoffrey Wagg
Head of School

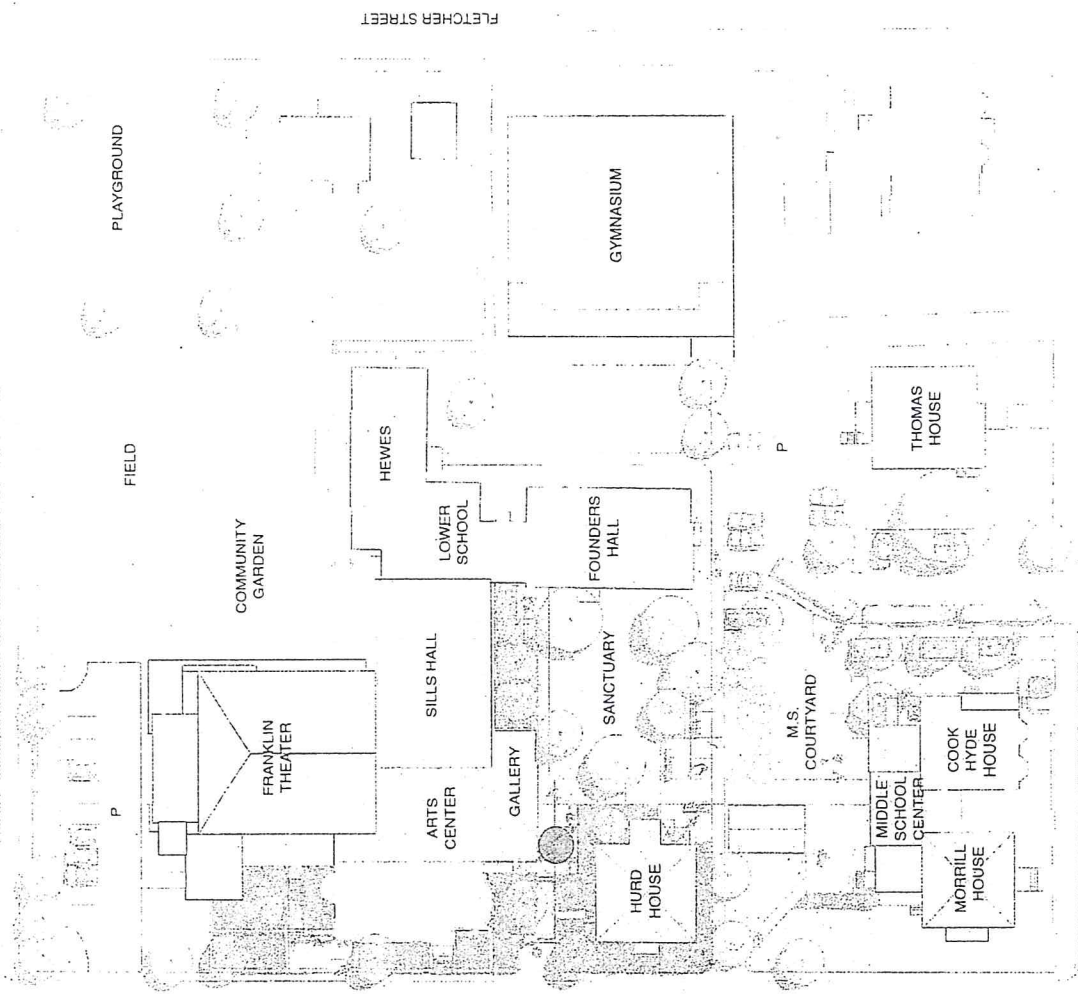
Note: Under Section 14-32(C) and 14-524(a)d of the City Code of Ordinances, an applicant for a Level III development, subdivision of over five lots/units, or zone change is required to hold a neighborhood meeting within 30 days of submitting a preliminary application or 21 days of submitting a final site plan application, if a preliminary plans was not submitted. The neighborhood meeting must be held at least seven days prior to the Planning Board public hearing on the proposal. Should you wish to offer additional comments on this proposed development, you may contact the Planning Division at 874-8721 or send written correspondence to the Planning and Urban Development

Department, Planning Division 4th Floor, 389 Congress Street Portland, ME 04101 or by email: to bab@portlandmaine.gov

DANFORTH STREET



EMERY STREET



FLETCHER STREET

SPRING STREET

WAYNFLETE SCHOOL CAMPUS MAP

Sign In

Waynflete Neighborhood Meeting 3/14/2016

Date: _____

Print Name	Address (optional)	Phone # (optional)	Email Address (optional)
1. H.W. Kunkel			
2. Jeremy Morton			
3. Alice Wagy			
4. Nicholas Wagy			
5. Christa Vail	308 Danforth St	508-320-9510	christa.vail@gmail.com
6. Elizabeth Mcbuddy			
7. Jim Ohannes			
8. Deborah Shinn	15 Thomas		
9. Anna Spaf	28 Richard St.		
10. SETH SPARDE	28 " "		
11. Sarah Daiguel	350 Danforth		
12. Doug Welch	12 Grayhurst Pt		
13. Jane & Elsie Phillips	374 Spring		
14. ANNE PLUNK	44 NEA St	774-0437	anneyoung@maine.rr.com
15. Georgia Bancroft	322 Spring St	828-3742	gbancroft@maine.rr.com
16. John Bancroft	" "	" "	" "
17. GINA SHEVENEU	270 B DANFORTH ST.	646.373.2015	gcianciotta@hotmail.com
18. Emily Bulowski-Pall	155 Western Promenade		Sawyerfam@gmail.com

Sign In

Waynflete Neighborhood Meeting 3/14/2016--Page 2

Date: _____

Print Name	Address (optional)	Phone # (optional)	Email Address (optional)
19. Patricia Voss	366 Spring St Rtd.		
20. Lyle Voss	" " "		
21. Barak Olins	2 Taylor St.	409-0117	
22. Matthew Poor	15 VAUGHAN ST	917-208-8529	
23.			
24.			
25.			
26.			
27.			
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32.			
33.			
34.			
35.			
36.			

Waynflete

Waynflete School Neighborhood Meeting

Date: Monday, March 14, 2016
Time: 6:30-7:30pm
Location: Arts Center Music Room, 1st Floor, Daveis Arts Center, Waynflete Campus
Invitations Mailed: March 1, 2016
Invited: Abutters within 1000 feet of property (labels provided by the City of Portland)
Attending: Geoff Wagg, Head of School
Anne Hagstrom, Director of Finance and Operations
Heather Isherwood, Executive Assistant to the Head of School
Scott Simons, Principal, Scott Simons Architects
22 Neighbors (attendance taken and sheets attached)

MINUTES

Head of School Geoff Wagg opened the meeting at 6:40pm and thanked the neighbors for attending.

Geoff first explained that the parking lot adjacent to the Arts Center at the intersection of Danforth and Storer Streets was designated as a temporary location by the Historic Preservation and Planning Boards as a condition of approval of the Art Center, to be re-considered as part of the School's next major project needing City approval. Waynflete will be asking the City to designate the existing parking lot as a permanent location. Geoff explained that the lot brings employee cars off the neighborhood streets and provides overnight parking to neighbors during parking bans. He reported that he had spoken to Sonia Robertson, who lives directly across the street from the parking lot, and that she is in favor of the lot becoming permanent. Geoff then asked for feedback from the neighbors in the room. Lyle Voss asked how many parking spots were in the lot, to which Director of Finance and Operations Anne Hagstrom replied eleven. Geoff asked if there were any objections to leaving the parking lot in its current location and no objections were raised.

Geoff then introduced the proposed Lower School and Gymnasium projects. He reported that the School has previously spoken with direct abutters on at least two occasions to ask for feedback, which resulted in changes to the Gym design and landscaping. He explained that the Lower School renovations have been needed since the late 1980's and the faculty had been asking for better facilities for the last three decades. The proposed design would double current square footage of the facility and bring Waynflete's Lower School facility more in alignment with current state elementary school standards for new buildings. He explained that the primary focus is to design and construct a Lower School that meets program needs and is environmentally sustainable, noting that the Lower School is designed to meet Passive House standards, a high efficiency energy standard.

Geoff then turned to the topic of the proposed new Gymnasium, which is planned to meet at least LEED GOLD, as Passive House standards are not compatible in that type of space. He reported that the current Gym was built in early 1970's to the standards of that time with small locker rooms, limited spectator seating, and short court runoff areas. With the designs from Scott Simons Architects, the space would be better suited for basketball games, visiting teams, spectators, and other school events such as all-school assemblies for grades EC-12, and possibly, Commencement. Geoff added that the sound coming from the new Gym would have less of an impact on the neighborhood.

Scott Simons, Principal for Scott Simons Architects, projected renditions of the proposed Lower School. Scott showed aerial and street views of the current interior and exterior of the Lower School. He noted that Founders Hall was the original building with two additions built later. He then showed the design of the new building with before and after external views and interior classroom spaces. He explained the purpose behind the window designs, with some windows that will open to provide natural ventilation and some for daylighting as part of the Passive House standards, which will reduce energy use by 70-80 percent of code compliant standards. He also shared renderings of the new Lower School Library with wall panels that slide for flexibility of use.

Scott's presentation then turned to the proposed Gymnasium. He explained that although the footprint is limited, more program space is attained by pushing the floor down, and extending the gym approximately two feet to the north and 14 feet in width. The entrance will be in the same location, there will be bleachers that pull out and retract, public restrooms on both levels, and a future underground connection with Lower School for more efficient transitions for students and space for programming.

Scott explained that the Gym's building setbacks are dictated by the average of setbacks from buildings along Spring and Fletcher Streets and that the height of the building is slightly lower than the current Gym. During construction, the existing hemlock trees would be removed, but in their place a mix of evergreens would be planted. There was a question from a neighbor about the existing power transformer, which Scott explained will be replaced with a new one. He noted that the windows on the side along Fletcher Street are designed to be more in character with the neighborhood buildings vs. a solid brick wall, similar to what is there now.

Scott's concluded his presentation by showing examples of the materials proposed for the exterior of the proposed new buildings including a brick base similar to the Daveis Arts Center, ashlar patterned cementitious siding, and treated wood paneling and detailing, and showed the before and after views from various locations – down Fletcher and Orchard Streets towards the Gym and down the Loop Road entrance toward the Gym and Lower School.

The meeting was then opened up for comments. Patty Voss commented that she felt the proposed Gym was a massive building in a residential neighborhood. In her opinion, the older gym looked nice with a roof that was built to fit in with the other houses and reflect the sky. She felt that the windows wouldn't be helpful to neighbors with lights on at night and suggested frosted glass. Sarah Daignault suggested that the School take into consideration that when the Gym lights are on, clear glass windows will flood light into the neighborhood at night. The School was agreeable to installing window shades. Scott added that his understanding of the Historic Preservation Board's opinion of windows in urban design is that they are preferable to blank brick walls because they are more in character with the residential neighborhood.

Mrs. Voss recalled that it took 15 years for Waynflete to plant the trees when the current Gym was built and that the School should consider planting conifers, have more green spaces and create a bigger setback. Geoff noted that the depiction of trees in the slides shown were "as planted," and not fully grown, and that the landscape design is still in process. Mrs. Voss added that she liked the design of Lower School and that the Gym design was good, but in the wrong place, which Mr. Voss echoed by commenting on its proximity to Fletcher Street.

Barak Olins suggested that the School should be mindful of how walking paths connect so that Lower School students could be better connected with Middle and Upper School students and that we consider planning more activities in the green space near Founders Hall (aka the Sanctuary.) Geoff mentioned that the Sanctuary is occasionally used for gatherings and classroom projects, and that it is a philosophical choice to be preserved primarily as a quiet space.

A neighbor asked for information on the timeline of the projects and Geoff responded that if all plans align well, the School would begin the project in May/June 2017 and finish in August 2018 with construction and staging contained primarily on campus with access from Danforth and Storer Streets as much as possible. Geoff also responded to the question of where classes will take place during the construction noting that the School is exploring options for temporary relocation of the Lower School program.

With no other business, the meeting adjourned at 7:40pm.

Respectfully submitted,

Heather Isherwood
Executive Assistant to the Head of School

WAYNFLETE SCHOOL

Campus Master Plan

Approved by the Board of Trustees
March 15, 2005

The Campus Master Plan Committee

David Brown
Taffy Field
Anne Hagstrom
Peter Hamblin
Cinda Joyce
Mark Lickus
Alan McIlhenny, chair
Cynthia Orcutt
Scott Simons

With the assistance of:

Jane Begert
Peter Brewitt
Molly MacAuslan
John Orcutt
Mark Segar

Waynflete School
Campus Master Plan

Achievements of the past decade:

Waynflete invested millions of dollars to improve its facilities over the past decade, and the improvements are evident everywhere.

Upper School:

- Construction of the Science Wing
- Complete renovation of the Emery building
- Improvements to the café and basement work and storage areas

Middle School:

- Construction of the addition linking Morrill and Cook-Hyde
- Complete renovation of Morrill, Cook-Hyde and Hurd
- Creation of the Academic Support Center in Hurd
- Creation of the archives space in Morrill
- Locker room created in the garage building
- Play area improvement

Lower School:

- Creation of the 2-3 classroom in Hewes
- Renovation of the Early Childhood classrooms
- Lower playground improvements and expansion

The Arts Center:

- Completion of Phase 1 the gallery and studios
- Renovation of Daveis House

Gymnasium:

- Construction of the locker room addition

Administration:

- Creation of the faculty workroom and mailroom
- Office renovations

Outdoors:

- Improved pathways and lighting
- The Loop Road around Thomas House
- Fore River Fields:
 - tennis courts
 - baseball diamond

New Properties:

- 305 Danforth Street – The Headmaster’s House
- 3 Storer Street
- Several small parcels adjacent to the Fore River Fields

Maintenance:

- Everywhere, with more always needed

Guiding Assumptions and Principles

Several important assumptions underlie the 2005 Campus Master Plan:

- Waynflete will remain on its campus in Portland’s West End, and its athletic facilities will remain at the Fore River Fields off Osgood Street
- The size of the school will remain at its current level of approximately 540 students
- The relative sizes and age-ranges of the three school divisions will remain the same: Lower School EC (3 and 4 year olds) – 5th grade (165 students); Middle School 6th – 8th grades (140 students); Upper School 9th – 12th (235 students)
- Continuity will be maintained in the School’s mission and programs

And several guiding principles underlie our deliberations and recommendations:

- Enhance safety
- Promote accessibility
- Preserve open space
- Preserve the historic character and distinctive appeal of the school campus and buildings
- Consider environmental issues of energy efficiency and green design
- Create welcoming points of access to the campus and to the school divisions
- Invest in the maintenance of all of the buildings – endow this if possible

Methodology

This is an updating of the 1994 Campus Master Plan rather than an attempt to start from scratch. Where the earlier document relied on extensive interviews with stakeholders throughout the school, we have relied on interviews with the heads of the school's three divisions – Lower, Middle and Upper – and with those in charge of specific facilities or functions, such as the library, the café and the athletic department. An extensive questionnaire was prepared by the committee to help those interviewed assess their respective facility needs, and many used the questionnaire to solicit the input of their division faculty or co-workers. The principal respondents were asked to dream – a little – with the understanding that their dreams would face stiff competition for limited financial resources. The committee thanks all who helped us gather the information that went into this report.

The process we followed included the following elements:

- Establishment of our Guiding Principles
- Identification of Existing Conditions on the Campus
 - Site
 - Building Use
 - Open Space and Landscape
 - Circulation and Parking
 - Buildings
 - Useable square footage
 - Identification of storage areas and condition
- Identification of future physical needs through the interview and questionnaire process described above
- Charrettes to explore alternative ideas for future improvements
- Refinement of a preferred Final Plan to be used as a starting point by decision makers preparing funding and construction plans

Waynflete School Campus Master Plan

Priorities and Recommendations for Future Planning

March 15, 2005

The Board of Trustees established the Campus Master Planning Committee (CMP) in the fall of 2003 as a subcommittee of Buildings and Grounds to recommend revisions to the 1994 Waynflete Campus Master Plan. The revised Plan summarized below also addresses the fourth goal of the 2002 Strategic Plan to “improve facilities to meet program needs”. The subcommittee consisted of trustees, faculty, staff, parents, and architects.

In June of 2004, the Board of Trustees approved fundraising and construction design for the Theater and Gymnasium Project which is the School’s first priority for current new construction. The proposed revisions to the Campus Master Plan assume that this facility will be built.

The CMP recommended that the next priorities for Waynflete should be a New Lower School and an Athletic Fieldhouse & Additional Playing Fields in that order. Other projects considered as having a high level of importance, and which would greatly enhance the program and campus are listed in Tier II in alphabetical order; these have not been prioritized. The third section is a list of other important needs and considerations identified in the planning process, some of which could be addressed through the completion of other projects.

I. Tier I Campus Master Plan Priorities.

1. **New Lower School.** The first priority for future investment is the creation of a New Lower School. While this would not involve the construction of a new building, the addition of new spaces and renovation of existing areas would result in a transformation so complete that, in effect, the Lower School would seem entirely new. Although there have been some improvements to the Lower School as part of the prior Campus Master Plan (creation of the 2-3 classroom, renovation of Early Childhood spaces, and playground improvements and expansion), classrooms for K-1, 2-3, and 4-5 continue to be overcrowded, there is little quiet space anywhere in the building, no entry or central gathering place, no library space, a crowded art studio space, no space for academic tutorials, no dedicated space for the Afterschool Program¹, an inadequate and out-of-date playground for the youngest children, and no handicapped access to the 2-3 program.² Further, storage for curriculum materials is

¹ One possibility for creating dedicated space for Afterschool as well as additional meeting rooms and storage areas would be to purchase and renovate the house at 11 Fletcher Street, known as the Webber House. There would be many factors to consider (cost of purchase and renovations, availability for actual use given zoning and land use restrictions), but its location within the natural footprint of the Waynflete campus and proximity to the Lower School suggest that it could be a viable solution.

² Handicapped access to the 2-3 classroom will be addressed in the spring of 2005 at least as a temporary solution. A long-term solution may also be possible with the completion of the Theater and Gymnasium Project.

consigned to damp and markedly substandard basement areas and the heating system is old, unreliable, and inefficiently zoned.

Since the original Campus Master Plan was adopted by the Board, the Middle and Upper Schools have each undergone a transformation involving both the addition of new spaces and renovations. The effect of these transformations on the students, faculty and program cannot be overstated. A similar transformation of the Lower School is long overdue. Lower School should be housed in a state-of-the-art facility that better supports its already excellent programs.

2. **Athletic Fieldhouse & Fields**. The second priority for future investment is the construction of a Fieldhouse and the addition of more playing fields at the Fore River Fields Complex. A Fieldhouse and new fields would greatly expand Waynflete's capability to meet the athletic needs of its middle and upper school students and could contain many attractive features depending on cost and available resources. Preliminary designs reviewed by the Committee suggested at least two possibilities for siting of a Fieldhouse that could contain up to three basketball courts, suspended track, weight room and fitness center, aerobic exercise room, training room, locker rooms, offices as well as ample parking and storage. A Fieldhouse would address many of the scheduling and use limitations that currently exist with only one gym on campus, and would provide an admissions advantage for middle and upper school students considering Waynflete. Although some of these limitations will be addressed with the conversion of Waldron Auditorium to lower and middle school recreational space as part of the Theater and Gymnasium Project, the current gym will still not meet the needs of competitive athletics for students in grades 7-12; it has only one playing surface, limited spectator seating, inadequate locker room space, an inadequate weight room, and no storage. Other uses for a fieldhouse could include an environmental classroom and meeting spaces.

Additional soccer and lacrosse fields and a softball field could be created depending on the siting of a fieldhouse and the possible acquisition of additional properties adjoining the Fore River Fields. With up to ten teams vying for two fields in the fall and spring, additional playing fields are sorely needed. A field with an artificial surface would allow teams to begin practices earlier in mud season.

As the area at the Fore River Fields is further developed, it will be important to preserve undeveloped space in the woods and along the waterfront for outdoor classrooms and environmental studies.

Tier II. Campus Master Plan Projects (in alphabetical order)

➤ **Completion of Arts Center**. The Arts Center was originally conceived as being built in three phases, the last of which would include large music classrooms and art studio space. The Theater and Gymnasium Project which currently (2005) is the primary focus for fundraising and construction will add a state-of-the-art auditorium and recreational space for lower and middle schools. The project, originally Phase II, was re-designed to provide additional spaces to support the music and theater and programs including a Jazz room, set building areas, dressing rooms and storage. However, it does not complete the original

vision of the Arts Center and there will still be a need for larger classrooms and art studio spaces in the future.

➤ Library and Technology Center. The existing Library in the Emery Building is an active, bright and welcoming space, typically crowded with students. Although used most intensively by Upper School students, it serves the library needs of the whole school. The offices for technology staff are currently located in Cook-Hyde and storage for equipment (CD's, slides, computers, DVD's, tapes, etc.) is in various places across campus. Both Middle and Upper schools have a computer room for student use, although the Middle School would benefit from having a larger classroom that could hold more computers.

Additional space for books, research, work areas for library staff and students, and storage is increasingly necessary. Storage for technology equipment should be centralized and offices for technology staff should be in closer proximity to the Library. There could also be spaces dedicated to more advanced technology uses such as a media center.

The Committee looked at the possibility of adding a floor to the top of the current library, expanding the library down the eastern slope or building a new building on campus. A new building could possibly be located in the area of the current Storer parking lot, but this siting would reduce the amount of play/open space on campus which, as noted below is also a significant need. A new building would, however, have a ripple effect across the campus in opening up additional space in Emery and Ruth Cook Hyde. A two-story building in either location or an expansion of the current facility could have exciting possibilities for library services by providing browsing/fiction on one level with a centralized open circulation desk and a second level for reference/quiet study and computer work stations. Technology staff could be housed in that building along with storage. The possibility of demonstration classrooms or a media center could also be explored.

➤ Play Space and Open Space. Play space on campus is severely limited for all three schools. Although Middle School play areas improved dramatically with the completion of the Loop Road/MS Playground Project, there is still limited space for games involving throwing or distance such as football and lacrosse. The Sanctuary is an area reserved for quiet conversations or reflection and is not used for active games. The Lower School field along Danforth Street is limited in size due to construction activity, parking, and is used heavily by Lower School students. Any new construction on campus should keep in mind the importance of maintaining or adding to play space.

Preservation of open space is important both for the School and the neighborhood. The School has improved the feeling of open space on campus with the completion of the Loop Road Project and the creation of pathways linking Emery, Daveis, Hurd House, and the sanctuary.

➤ Waynflete Front Door. The "Front Door" refers to the first impression that visitors have when they come to Waynflete, whether in Thomas House or Lower, Middle or Upper School. This impression is important for current and prospective families, alumni, candidates for employment, and other visitors. The goal is for the School to be physically organized and staffed in a way that it is warm, welcoming, and easy to navigate for everyone who comes.

The current offices for Administration (Admissions, Business, Development and Head of School) do not meet those goals due to the layout of Thomas House which has limited waiting areas, separation of departments on more than one floor or in more than one building, no handicapped access, and a lack of gathering/meeting spaces for parent volunteers and alumni. The entry areas of each School are also not designed in a way that welcomes students or families. One solution would be to create spaces which serve as central reception areas located on a ground floor or with handicap access, with administrators located near the central area. The Campus Master Plan Committee was confident that there are several options to create a better “Front Door” for the Admissions, Business Office, Development, and Head of School using existing buildings including the possible renovation and use of the Storer Street House (if allowed by the City).

III. Ongoing Projects, Needs, and Considerations. This section identifies additional space needs, some of which could be accomplished through completion of projects listed above. The creation of new library/technology space, for example, could result in additional classroom space in Middle School. Also listed in this section are considerations that should be taken into account in any project – accessibility, storage, and parking.

➤ Academic Support. The current space in the basement of Hurd House provides little privacy and quiet for academic support faculty to work with students. The space is also dark and too hot in the winter months. Ideally, Academic Support would have a large central office, private rooms for tutors to work with students, a director’s office and a gathering space.

➤ Accessibility. Accessibility is an issue in several areas of the School – Thomas House, 3rd floor of Ruth Cook Hyde and Morrill Houses, and the 2-3 classroom.

➤ Adjoining Properties. There are several properties adjoining the main campus and the athletic fields that could be of future use by the School. The “Webber House” located on Fletcher Street borders the Lower School and is within the natural footprint of the School. Students walk in to school daily along the north side of the house and play along the south side of the house. There is nearly constant activity around 3/4 of the property. Conversion of this property (if the building were purchased by the School and a partial change of use permitted by the City) could significantly alleviate Lower School needs for dedicated space for Afterschool, storage, and meeting areas. Several properties adjacent to the Fore River Fields could also be purchased to expand playing fields and parking.

➤ Middle School: The Middle School would benefit from at least three more spacious classrooms for up to 16 students, a larger computer room space, and gathering spaces to accommodate each grade and advising faculty. A larger and more accessible location for student lockers would be a significant improvement.

➤ College Counseling. College counseling is currently run by three people out of the Dean of Studies office and other spaces in the Middle School. A dedicated space, with private offices for counselors to meet with students, a small library of college catalogues,

materials and tables for students to use to research opportunities would provide welcome support for this important aspect of the Upper School.

➤ Faculty Housing. Short or long term faculty housing could assist new faculty/staff moving to the Portland area and other faculty/staff faced with high housing costs. The availability of on-campus or near-campus housing could also help alleviate the housing shortage in Portland.

➤ Parking. The possibility of additional on-campus parking should be considered whenever possible as part of the School's ongoing efforts to improve safety and reduce the impact of parking in the neighborhood.

➤ Storage. The need for more storage across the School is critical. Some of the projects in Tiers I and II include a storage component as well. Any current storage space that is converted to other uses should have an accompanying storage plan elsewhere on campus.

➤ Upper School: The primary unmet need in the Upper School is for gathering spaces for large groups of up to 65 people.

P r o g r a m S u m m a r y

Project: Waynflete Master Plan – Programming

Re: Summary of Programming Interview Sheets for Tier I and II
Projects

Waynflete School Program			
Space Name	Existing SF	Proposed SF	Remarks
Lower School	11,100 SF 0 SF 600 SF 0 SF 500 SF <u>3,800 SF</u> 16,000 SF	3,050 SF 1,350 SF 800 SF 1,250 SF 800 SF <u>4,300 SF</u> 11,550 SF	Classroom space Lower School Library Art Studio First Floor of Webber House Offices Storage, Lobby, 30% planning factor Sub-total for Lower School
Fieldhouse	9,500 SF	30,000 SF 43,300 SF	Option #1 – 2-court Gym Option #2 – 3-court mini Field House
Library/Technology	2,800 SF 270 SF	2,800 SF 800 SF	Note: Proposed Library for LS is included in the LS proposed SF Technology
Front Door/Administration	1,200 SF 2,100 SF 500 SF 1,000 SF <u>1,800 SF</u> 8,700 SF	540 SF 175 SF 500 SF 200 SF <u>650 SF</u> 4,865 SF	Headmaster and Admissions Development and Business College Counseling/Registrar Maintenance Storage/Garage Sub-total for Administration

C o s t S u m m a r y

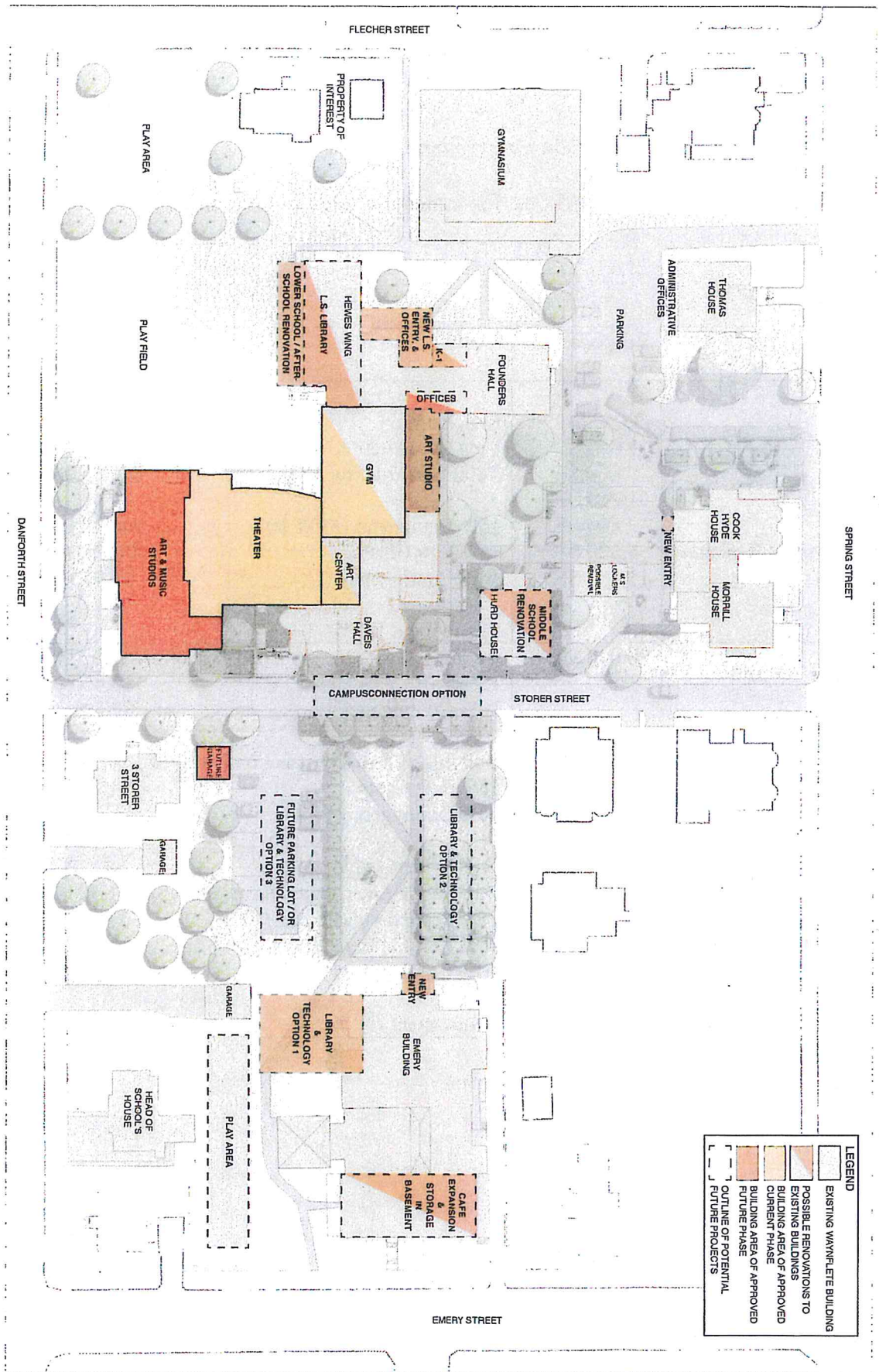
Project: Waynflete Master Plan – Programming

Re: Summary of Cost Estimates for Selected Projects as of January, 2005³

Waynflete School Program			
Space Name	Proposed SF	Costs	Remarks
Lower School			
Classrooms	3,050 SF	Renovation 3850 SF @ \$95/SF = \$370,000	Assume 1/3 of project
Library	1,350 SF	New Construction 7700 SF @ \$125/SF = \$965,000	Assume 2/3 of project
Art Studio	800 SF	Total Construction \$1,335,000	
Afterschool	1,250 SF		
Offices	800 SF	15% Equipment (FF & E) \$1,540,000	
Storage, Lobby, 30% planning	4,300 SF	15% Soft Costs \$1,770,000	
	11,550 SF	10% Contingency \$1,950,000	
		Endowment @? %	
Fieldhouse	30,000 SF	Building & Site Construction (\$100/SF) \$3,000,000	2-court Gym
		15% Soft Costs \$3,450,000	
		10% Contingency \$3,800,000	
	43,300 SF	Building & Site Construction (\$100/SF) \$4,300,000	3-court mini Field Ho
		15% Soft Costs \$4,950,000	
		10% Contingency \$5,500,000	
		Endowment @? %	
New Library/Technology	12,000 SF	Building & Site Construction (\$130/SF) \$1,560,000	
Library – MS & US		15% Equipment (FF & E) \$1,800,000	
Technology dept./classes		15% Soft Costs \$2,070,000	
Storage		10% Contingency \$2,300,000	
		Endowment @? %	

³ Costs have been estimated only on the basis of square footage and are very rough estimates.

Waynflete School Master Plan Update



(For inclusion in the updated 2008-2009 Waynflete Campus Master Plan)

Guiding Assumptions and Principles

Several important assumptions and guiding principles underlie the 2008-2009 Updated Campus Master Plan:

- Waynflete will maintain its campuses in Portland's West End and at the Fore River Fields off Osgood Street.
- Waynflete will aim for an average enrollment of 552 students, recognizing the normal fluctuations of enrollment (approx. 5%).
- Subject to demographic and market conditions, the relative sizes and age-ranges of the three school divisions will remain proportionally the same: Lower School EC (3 and 4 year olds) – 5th grade 35%; Middle School 6th – 8th grades (25%); Upper School 9th – 12th (40%)
- The School's Mission will continue to inform and guide the development of programs.
- Facilities will be developed and maintained to meet evolving program needs.
- Safety and accessibility will be important considerations in all campus development
- Open space will be valued for students' play and their connections to natural spaces.
- Preserving the character and distinctive appeal of the school campus and buildings will continue to be an important priority.
- Environmental issues of energy efficiency, reduction of carbon footprint, and green design, will be important considerations for all facilities development.
- Waynflete will continue to develop welcoming points of access to the campus recognizing that the School is part of larger neighborhoods in the City of Portland.

Waynflete School Mission Statement

Waynflete's mission is to engage the imagination and intellect of our students, to guide them toward self-governance and self-knowledge, and to encourage their responsible and caring participation in the world.

Our aim is to provide a program that combines security with challenge, playful exploration with rigorous expectation, and range of experience with depth of inquiry.

Waynflete School Master Plan Update

Revised Space Program: April 13, 2009

Administration:

From 2004 Master Plan	4,865 NSF	
Development: one more office space than identified in 2004 Master Plan	150 NSF	
Subtotal: Interior Space	5,015 NSF	
Net to Gross Ratio @ 30%	1,505 NSF	
Total Interior Space	6,520 GSF	(4,525 Existing)

All-School:

General storage	1,000 NSF	
Storage for facilities operations	1,000 NSF	
Technology Studios (robotics, engineering, etc): 2 @ 2,000 SF	4,000 NSF	
Spaces for academic support, parent resource center	400 NSF	
Space for archives	250 NSF	
Subtotal Interior Space	6,650 NSF	
Net to Gross Ratio @ 30%	1,995 NSF	
Total Interior Space	8,645 GSF	(16,300 Existing)

Lower School: (see 2004 MP and 50% Schematic Design drawings)

From 2006 Lower School Schematic Design	9,000 NSF	
Additional Space identified since 2006 SD:		
Shop space	500 NSF	
Foreign language classroom,	250 NSF	
Additional meeting spaces: 2 @ 250 SF	500 NSF	
Flexible office space for psychological consultant and/or other consultants here on part-time basis (such as speech/language pathologist)	150 NSF	
Adult bathroom	50 NSF	
Subtotal Interior Space	10,450 NSF	
Net to Gross Ratio @ 30%	3,135 NSF	
Total Interior Space	13,585 GSF	(20,700 Existing)
Exterior Space	No Additional NSF	

Middle School:

Decentralize MS lockers	500 NSF	
Faculty offices: 5 @ 150 SF	750 NSF	
Create new space or reconfigure larger classrooms to make gathering spaces for 50-55 people: 2 @ 800 SF	1,600 NSF	
Increase size of play space/green space/garden space	4,000 NSF	
Subtotal Interior Space	3,850 NSF	
Net to Gross Ratio @ 30%	1,140 NSF	
Total Interior Space	4,990 GSF	(15,400 Existing)
Exterior Space	4,000 NSF	

Upper School:

Three more classrooms @ 500 SF	1,500 NSF	
Dedicated teacher workspace	250 NSF	
Better sick bay (larger, more privacy)	150 NSF	
Language Learning Laboratory: 1 @ 500 SF	500 NSF	
Expanded library (same as 2004 MP)	3,600 NSF	
College counseling center	500 NSF	
More active play area, garden space, more green/open space	8,000 NSF	
Subtotal Interior Space	6,500 NSF	
Net to Gross Ratio @ 30%	1,950 NSF	
Total Interior Space	8,450 GSF	(17,600 Existing)
Exterior Space	8,000 NSF	

Arts Center:

Phase Three	6,000 NSF	
Net to Gross Ratio @ 30%	1,800 NSF	
Total Interior Space	7,800 GSF	(32,523 Existing)

Grand Total Interior Space	49,990 GSF	(107,048 Existing)
Exterior Space	12,000 NSF	

Parking:

Existing Spaces	TH (21) US (11) MS (2) AC(11)	45 Spaces
Required New Spaces		approx. 10 Spaces

WAYNFLETE GYMNASIUM & LOWER SCHOOL

Waynflete School, 360 Spring Street, Portland, Maine 04102
PLANNING BOARD SUBMISSION
16 FEBRUARY 2016

PROJECT TEAM

OWNER Waynflete School 360 Spring Street Portland, ME 04102 207.774.5721 x227 Anne Hagstrom, Director of Finance and Operations ahagstrom@waynflete.org	ARCHITECT Scott Simons Architects 75 York Street Portland, ME 04101 207.772.4656 Austin Smith, AIA, RLA, LEED AP austin@simonsarchitects.com
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CIVIL ENGINEER Woodard & Curran 41 Hutchins Drive Portland, ME 04102 207.774.2112 David Senus dsenus@woodardcurran.com	SUSTAINABILITY Thornton Tomasetti 386 Fore Street, Suite 401 Portland, ME 04101 207.245.6070 Michael Pulaski mpulaski@thorntontomasetti.com
SPECIFICATIONS Lowell Specifications, Inc. 34 Marc Avenue Topsham, ME 04085 207.406.4001 Keith Lowell keith@lowellspecs.com	

SYMBOLS

DESCRIPTION	EXISTING	PROPOSED
SANITARY SEWER MANHOLE		
CLEANOUT		
STORM DRAIN MANHOLE		
CATCH BASIN		
UTILITY POLE W/GUY		
UTILITY POLE		
GAS VALVE		
WATER VALVE		
HYDRANT		
SIGN		
CONIFEROUS TREE		
DECIDUOUS TREE		
BORING		
SPOT ELEVATION		
BITUMINOUS PAVEMENT		
CONCRETE SIDEWALK		
BRICK SIDEWALK		

LINE TYPES

DESCRIPTION	EXISTING	DESCRIPTION	PROPOSED
CONTOUR (1' INTERVAL)		CONTOUR (1' INTERVAL)	
CONTOUR (INDEX)		CONTOUR (INDEX)	
SANITARY SEWER		SANITARY SEWER	
STORM DRAIN		STORM DRAIN	
UNDERDRAIN		UNDERDRAIN	
WATER MAIN		WATER MAIN	
UNDERGROUND ELECTRIC		UNDERGROUND ELECTRIC	
UNDERGROUND TELEPHONE		GAS LINE	
GAS LINE		FENCE	
OVERHEAD ELECTRIC		RETAINING WALL	
PROPERTY LINE		EDGE OF PAVEMENT	
RIGHT OF WAY		LIMIT OF WORK	
EDGE OF VEGETATION		CURB	
FENCE		SAWCUT	
CURB		EROSION CONTROL BARRIER	
EDGE OF PAVEMENT			
STONE RETAINING WALL			

DRAWING LIST

GENERAL	
G001	COVER SHEET
SURVEY	
S1	STANDARD BOUNDARY SURVEY
S2	EXISTING CONDITIONS SURVEY - WAYNFLETE SCHOOL
CIVIL	
C-001	EXISTING CONDITIONS PLAN
C-002	SITE DEMOLITION PLAN
C-100	SITE PLAN
C-101	GRADING & DRAINAGE PLAN
C-102	UTILITY PLAN
C-103	SPRING STREET CONNECTION PLAN
D-200	CIVIL DETAILS - 1
D-201	CIVIL DETAILS - 2
D-202	CIVIL DETAILS - 3
D-203	CIVIL DETAILS - 4
D-204	CIVIL DETAILS - 5
PRE	PRE DEVELOPMENT DRAINAGE AREA PLAN
POST	POST DEVELOPMENT DRAINAGE AREA PLAN
LANDSCAPE	
L-1.0	SITE PLAN
L-2.0	MATERIALS AND LAYOUT PLAN
L-2.1	LAYOUT & MATERIALS PLAN
L-4.0	PLANTING PLAN
L-4.1	PLANTING PLAN
L-6.0	CONSTRUCTION DETAILS
L-6.1	CONSTRUCTION DETAILS
L-6.2	CONSTRUCTION DETAILS
ARCHITECTURAL - GYM	
G002	LIFE SAFETY PLAN + CODE SUMMARY
A101	LOWER AND MEZZANINE LEVEL FLOOR PLAN
A102	ROOF PLAN
ARCHITECTURAL - LOWER SCHOOL	
G002	LIFE SAFETY PLAN + CODE SUMMARY
A101	LOWER LEVEL FLOOR PLAN
A102	MAIN LEVEL FLOOR PLAN
A103	UPPER LEVEL FLOOR PLAN
A201	EXTERIOR ELEVATIONS
A202	EXTERIOR ELEVATIONS

ABBREVIATIONS

&	AND	NO.	NUMBER
AD	AREA DRAIN	NR	NO REFUSAL
A.G.	ABOVE GROUND	N.T.S.	NOT TO SCALE
B	BORING	O.U.	OUTSIDE DIAMETER
BIT.	BITUMINOUS	OE	OVERHEAD ELECTRIC
BM	BENCHMARK	OH	OVERHEAD
CB	CATCH BASIN	±	PLUS OR MINUS
CMP	CORRUGATED METAL PIPE	PLS	PROFESSIONAL LAND SURVEYOR
COMM	COMMUNICATION	PVC	POLYVINYL CHLORIDE
CONC	CONCRETE		
COND.	CONDUIT		
DI	DUCTILE IRON	R.O.W.	RIGHT-OF-WAY
DIA.	DIAMETER	RCP	REINFORCED CONCRETE PIPE
DMH	DRAIN MANHOLE	REINF.	REINFORCED
DS	DOWN-SPOUT	REQ'D	REQUIRED
		RET	RETAINING
		RLS	REGISTERED LAND SURVEYOR
		RTE	ROUTE
E	UNDERGROUND ELECTRICAL	S	SLOPE
EL.	ELEVATION	SEWER	SEWER
EMBED.	EMBEDDMENT	SD	STORM DRAIN
EX.	EXISTING	SMH	SEWER MANHOLE
		SCH	SCHEDULE
FF	FINISH FLOOR	SDR	STANDARD DIMENSION RATIO
FIN.	FLOOR	STA.	STATION
FT	FOOT/FEET		
GALV.	GALVANIZED	TYP.	TYPICAL
GRAN.	GRANITE		
		UC	UNDERGROUND CABLE
HDPE	HIGH DENSITY POLYETHYLENE	U.N.O.	UNLESS NOTED OTHERWISE
HWY	HIGHWAY		
HYD	HYDRANT	W	WEST
		W/	WITH
IN	INCH	WV	WATER VALVE
INV.	INVERT	WWM	WELDED WIRE MESH
LP	LIGHT POST		
LF	LINEAR FEET		
MAX.	MAXIMUM		
MIN.	MINIMUM		
MON	MONUMENT		

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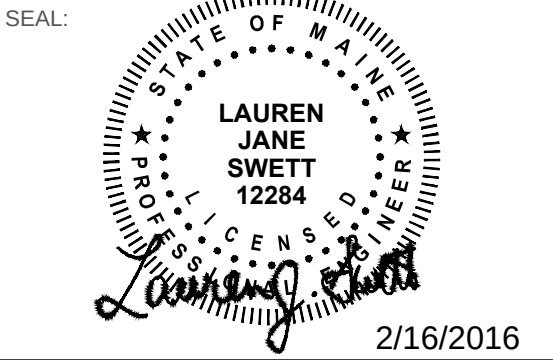
COMMITMENT & INTEGRITY DRIVE RESULTS

PROJECT NAME:

WAYNFLETE
GYM + LOWER SCHOOL

NEW CONSTRUCTION

WAYNFLETE SCHOOL
360 SPRING STREET
PORTLAND, MAINE 04102



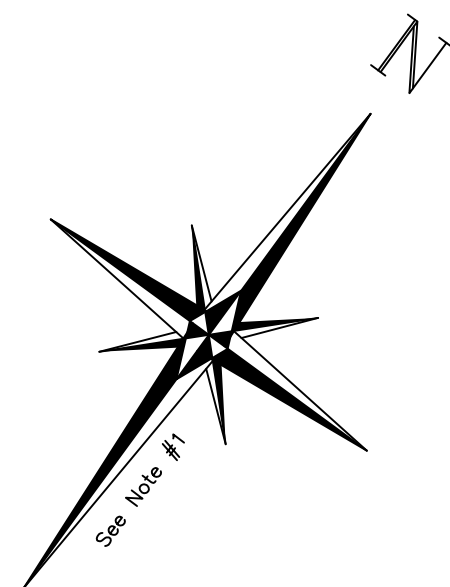
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REVISED PER CITY OF PORTLAND COMMENTS	3/31/16
1	DATE
2	DATE
3	DATE
4	DATE
5	DATE
6	DATE

DATE OF ISSUE:	FEBRUARY 2016
PROJECT NUMBER:	229423
STATUS:	PLANNING BOARD SUBMISSION

COVER SHEET

G-001



DESCRIPTION OF MONUMENTS

- 1) 8"x8" Granite with brass plug, 5" below sidewalk
- 2) Drill hole in brick.
- 3) 8"x8" Granite with brass plug at grade.
- 4) 8"x8" Granite with Drill hole, at grade
- 5) 8"x8" Granite with brass plug, at grade
- 6) Stone post 3' above grade, inside corner.
- 7) 10"x11" Granite with "M", at grade, inside corner
- 8) 9"x11" Granite with "M" at grade, inside corner
- 9) 10"x11" Granite with "M" at grade, inside corner
- 10) 8"x8" Granite with brass plug, 1" above grade
- 11) capped iron rod, PLS #466, at grade
- 12) 8"x8" Granite with brass plug 1" above grade
- 13) 9"x5" Granite with "M", 5" below grade, inside corner
- 14) 6"x6" Granite with brass plug at grade
- 15) City of Portland survey disk, PLS#2230
- 16) 8"x8" Granite 1" above grade inside corner
- 17) 8"x10" Granite with "M", at grade inside corner
- 18) 3/4" pipe, at grade
- 19) Capped iron rod, PLS #284
- 20) 1" pipe, 4" below grade
- 21) 1" pipe, at grade
- 22) Capped iron rod, PLS #466, at grade
- 23) Capped iron rod, PLS #466, at grade
- 24) 3/4" Pipe, at grade
- 25) 3/4" Pipe, 2" below grade

ABUTTERS

- F-1 Cherle Wendelken and James E. Brooks 29634/284
F-9 Justin C. Webber 32416/100
G-5 Heather M. McCargo and Brian P. McNiff 31560/82
G-7 Port Resources Inc. 4581/75
G-14 James C. Pulia and Jane M. Pulia 30744/53
G-15 Daniel D. Skwire 12605/15
G-17 Jeffrey S. Troiano Abby Jane Dubay-Troiano 29910/63
G-19 Douglas Welch and Caitlin Guthrie 22485/250

NOTES

- 1) Bearings are referenced to the True North as determined by astronomic observation.
- 2) Deed and Plan Book references are to the Cumberland County Registry of deeds.
- 3) Pipe sizes shown are inside diameter (i.d.).
- 4) Street lines for Storer and Fletcher Streets are based on building ties shown in the field notes for Reference #5 and #6. Street lines for Spring, Emery, and Danforth Streets are based on monuments as shown.

PLAN REFERENCES

- 1) Plan of land at Emery and Danforth Streets, from a copy by M.C. Pingree recorded November 6, 1871 recorded in Plan Book 3 Page 27.
- 2) "Plan of lot on Emery Street Owned by Charles S. Fobes" by W.A. Goodwin, C.E., dated May 11, 1874, and recorded in Plan Book 3 Page 26.
- 3) "Plan of Division of Land Belonging to Jerseys, Porleys & Cram". By E.C. Jordan, C.E., dated July 28, 1886 and recorded in Plan Book 6 Page 12.
- 4) City of Portland monument maps, dated 1925, on file at the City of Portland Department of Public Works.
- 5) Plan of Fletcher Street, dated December 13, 1934, on file at the City of Portland Department of Public Works.
- 6) Plan of Storer Street, undated, on file at the City of Portland Department of Public Works.
- 7) "Plan of Property ... made for John W. Gordon" by H.I. & E.C. Jordan dated September 28, 1959.
- 8) Plan of Danforth, Salem, May, School, and Briggs Streets by Owen Haskell Inc., dated December 4 1974.
- 9) Standard Boundary Survey ... made for Christopher M. Harte " by Titcomb Associates Inc. dated February 4, 1997.
- 10) Standard Boundary Survey made for The Waynflete School by Titcomb Associates Inc. dated April 26, 1999.

EASEMENTS OF RECORD

- 1) "The right to use the way before named as a driveway" granted to George P. Westcott by Abby D. Hersey et al. by deed dated June 10, 1886, and recorded in Book 529 Page 21.
- 2) Pole easement granted to Central Maine Power Co. by Waynflete School by deed dated August 16, 1955, and Recorded in Book 2276 Page 253.
- 3) Driveway easement granted to Monty Q. Hagen and James H. Harrison by Waynflete School by deed dated March 10, 2000, and Recorded in Book 15361 Page 261.
- 4) Sidewalk Easement Agreement between Helen A. Webber and Waynflete School by deed dated September 25, 2006 and recorded in Book 24399 Page 338.

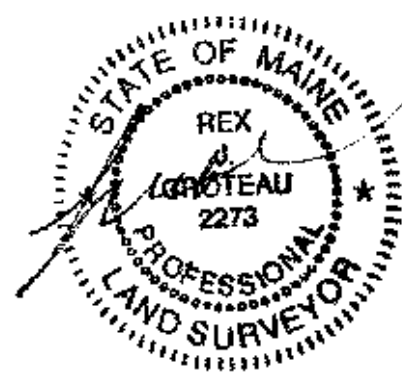
OWNER OF RECORD / AREA

Parcel 'A' --- The Waynflete School
Area: 156,374 sq ft = 3.59 Acres
Parcel 'B' --- The Waynflete School
Area: 80,272 sq ft = 1.84 Acres
Parcel 'C' --- The Waynflete School
Area: 7,594 sq ft = 0.17 Acres
Total Area: 244,240 sq ft = 5.60 Acres

CERTIFICATION

This survey conforms to the current standards of practice set forth by the Maine State Board of Licensure for Land Surveyors.

Rex J. Croteau, P.L.S. #2273



50 0 50 100
SCALE IN FEET

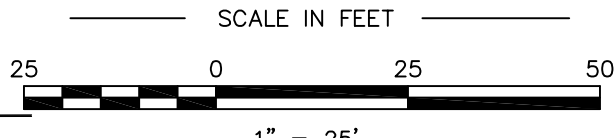
Standard Boundary Survey

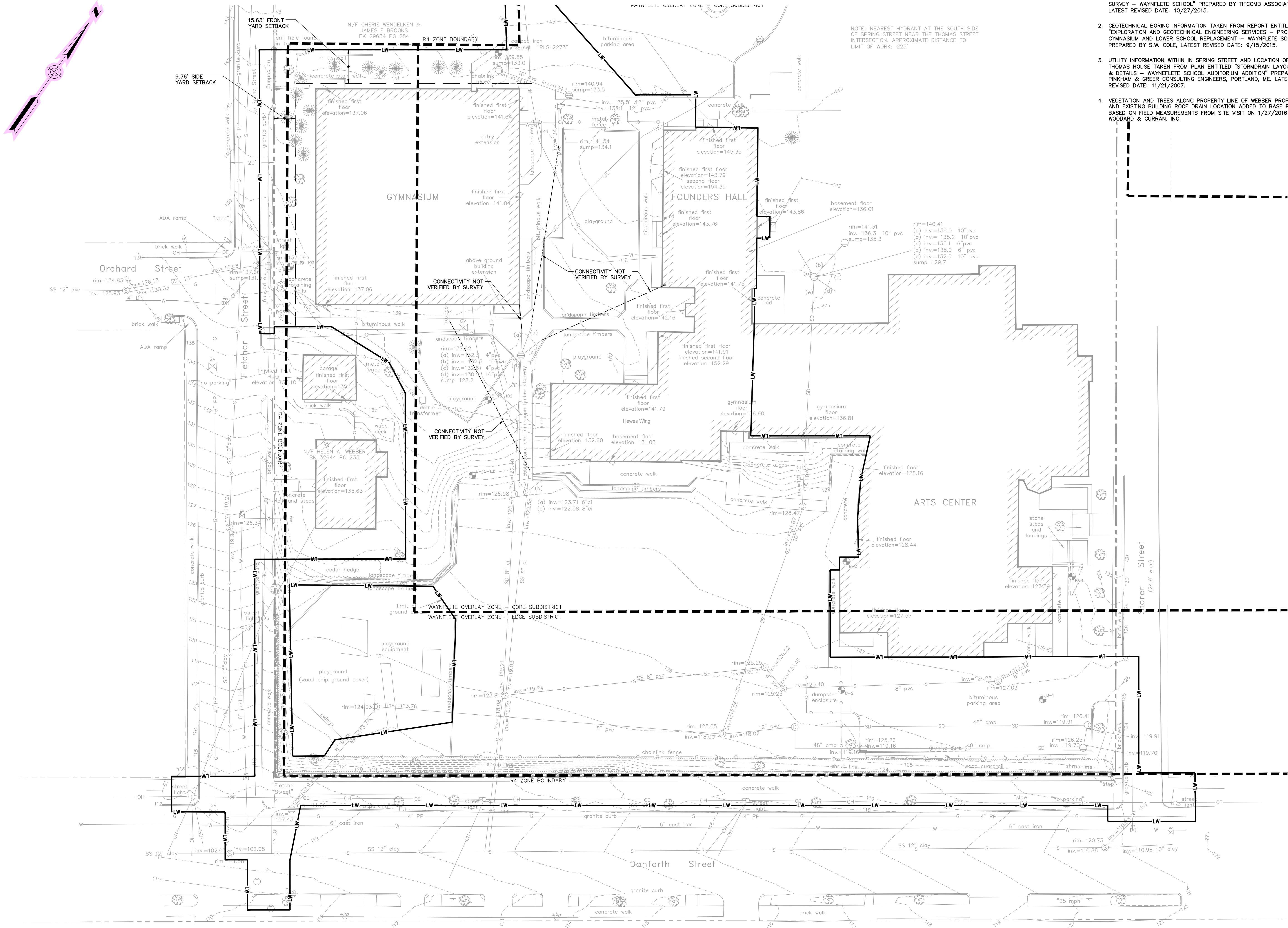
Spring, Emery, Danforth, Fletcher, & Storer Streets Portland, Maine

made for
The Waynflete School
360 Spring Street Portland, Maine

JOB#	93093	DATE:	August 13, 2015	SCALE:	1" = 50'
BOOK#	532				
DISC#	380				
FILE#	6831				

Titcomb Associates
133 Gray Road, Falmouth, Maine 04105
(207)797-9199 www.titcombsurvey.com





PLAN NOTES

- 1. SURVEY INFORMATION TAKEN FROM PLAN ENTITLED "EXISTING CONDITIONS SURVEY - WAYNFLETE SCHOOL" PREPARED BY TITCOMB ASSOCIATES, LATEST REVISED DATE: 10/27/2015.
- 2. GEOTECHNICAL BORING INFORMATION TAKEN FROM REPORT ENTITLED "EXPLORATION AND GEOTECHNICAL ENGINEERING SERVICES - PROPOSED GYMNASIUM AND LOWER SCHOOL REPLACEMENT - WAYNFLETE SCHOOL" PREPARED BY S.W. COLE, LATEST REVISED DATE: 9/15/2015.
- 3. UTILITY INFORMATION WITHIN IN SPRING STREET AND LOCATION OF THOMAS HOUSE TAKEN FROM PLAN ENTITLED "STORMDRAIN LAYOUT PLAN & DETAILS - WAYNFLETE SCHOOL AUDITORIUM ADDITION" PREPARED BY PINKHAM & GREER CONSULTING ENGINEERS, PORTLAND, ME. LATEST REVISED DATE: 11/21/2007.
- 4. VEGETATION AND TREES ALONG PROPERTY LINE OF WEBBER PROPERTY AND EXISTING BUILDING ROOF DRAIN LOCATION ADDED TO BASE PLAN BASED ON FIELD MEASUREMENTS FROM SITE VISIT ON 1/27/2016 BY WOODARD & CURRAN, INC.

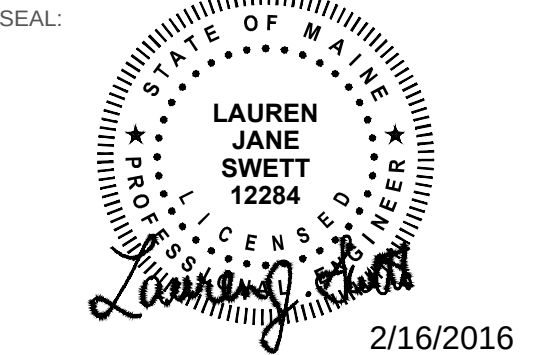


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41 Hutchins Drive
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COMMITMENT & INTEGRITY DRIVE RESULTS

PROJECT NAME:
**WAYNFLETE
GYM + LOWER SCHOOL**
NEW CONSTRUCTION
WAYNFLETE SCHOOL
360 SPRING STREET
PORTLAND, MAINE 04102



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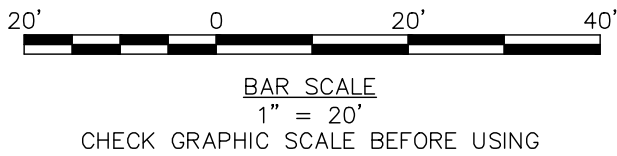
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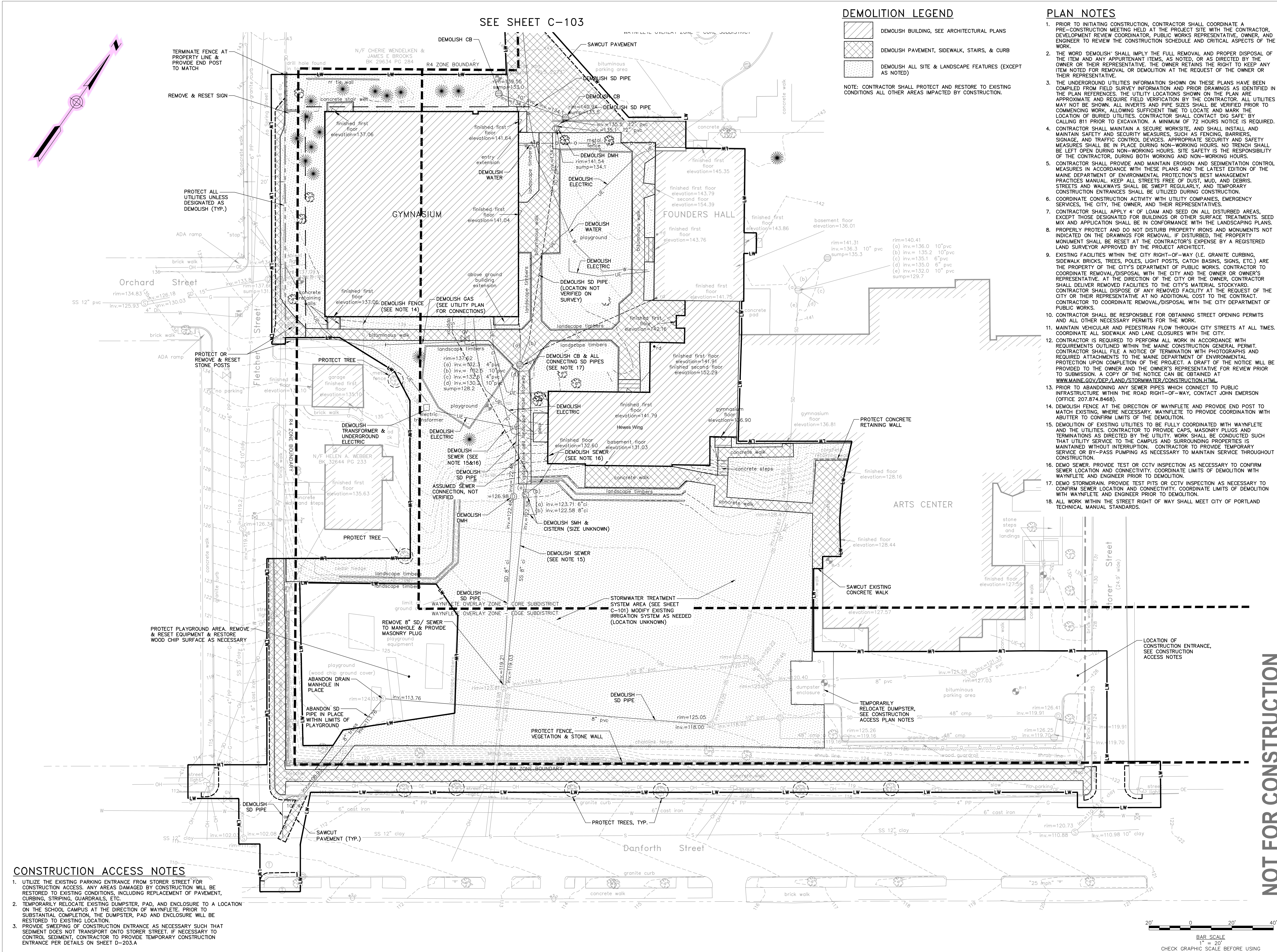
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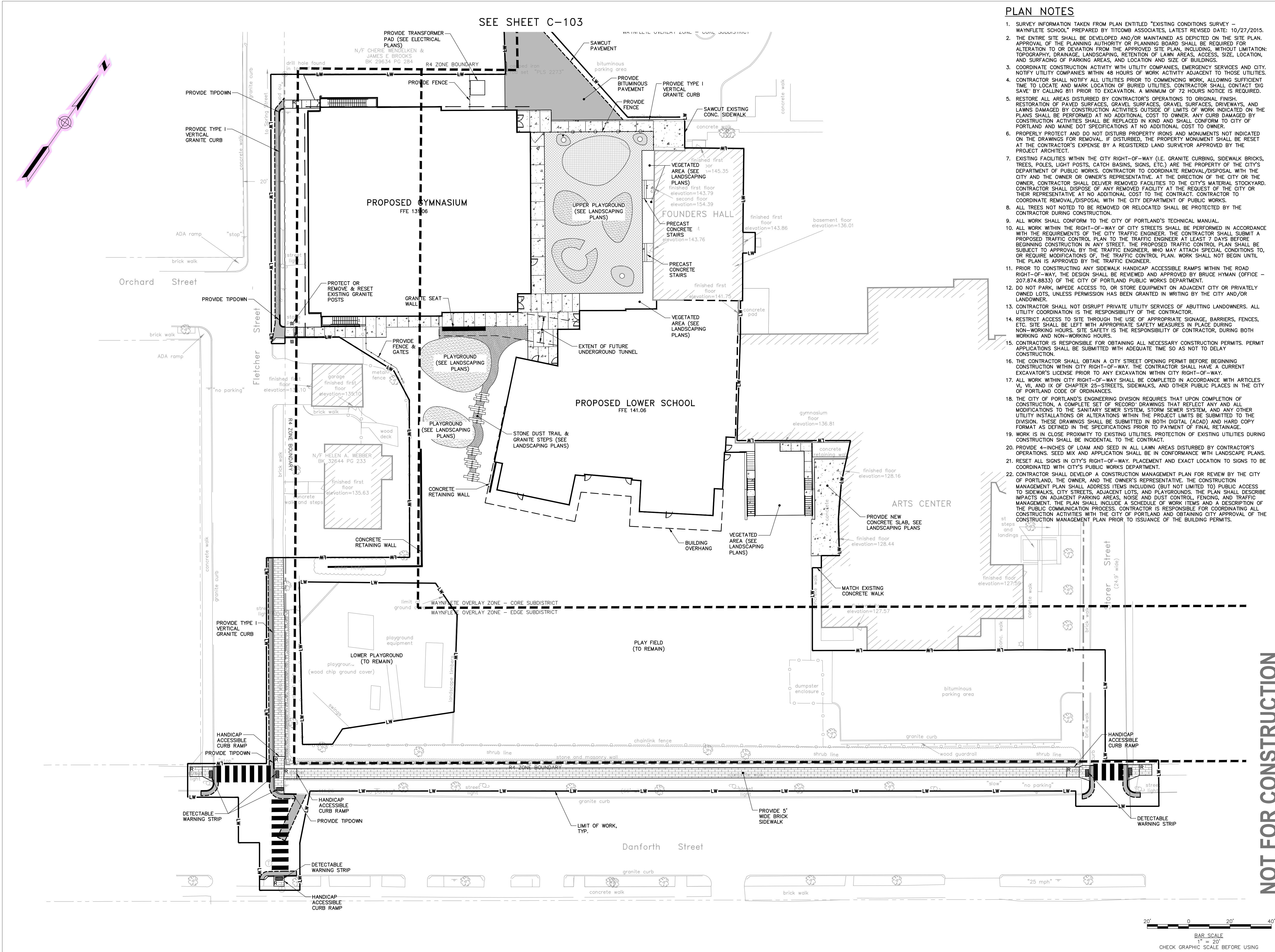
EXISTING
CONDITIONS PLAN

C-001

NOT FOR CONSTRUCTION







- PLAN NOTES
1. SURVEY INFORMATION TAKEN FROM PLAN ENTITLED "EXISTING CONDITIONS SURVEY - WAYNFLETE SCHOOL" PREPARED BY TITCOMB ASSOCIATES, LATEST REVISED DATE: 10/27/2015.
 2. THE ENTIRE SITE SHALL BE DEVELOPED AND/OR MAINTAINED AS DEPICTED ON THE SITE PLAN. APPROVAL OF THE PLANNING AUTHORITY OR PLANNING BOARD SHALL BE REQUIRED FOR ALTERATION TO OR DEVIATION FROM THE APPROVED SITE PLAN, INCLUDING, WITHOUT LIMITATION: TOPOGRAPHY, DRAINAGE, LANDSCAPING, RETENTION OF LAWN AREAS, ACCESS, SIZE, LOCATION, AND SURFACING OF PARKING AREAS, AND LOCATION AND SIZE OF BUILDINGS.
 3. COORDINATE CONSTRUCTION ACTIVITY WITH UTILITY COMPANIES, EMERGENCY SERVICES AND CITY. NOTIFY UTILITY COMPANIES WITHIN 48 HOURS OF WORK ACTIVITY ADJACENT TO THOSE UTILITIES.
 4. CONTRACTOR SHALL NOTIFY ALL UTILITIES PRIOR TO COMMENCING WORK, ALLOWING SUFFICIENT TIME TO LOCATE AND MARK LOCATION OF BURIED UTILITIES. CONTRACTOR SHALL CONTACT DIG SAVE BY CALLING 811 PRIOR TO EXCAVATION. A MINIMUM OF 72 HOURS NOTICE IS REQUIRED.
 5. RESTORE ALL AREAS DISTURBED BY CONTRACTOR'S OPERATIONS TO ORIGINAL FINISH. RESTORATION OF PAVED SURFACES, GRAVEL SURFACES, DRIVEWAYS, AND LAWNS DAMAGED BY CONSTRUCTION ACTIVITIES OUTSIDE OF LIMITS OF WORK INDICATED ON THE PLANS SHALL BE PERFORMED AT NO ADDITIONAL COST TO OWNER. ANY CURB DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE REPLACED IN KIND AND SHALL CONFORM TO CITY OF PORTLAND AND MAINE DOT SPECIFICATIONS AT NO ADDITIONAL COST TO OWNER.
 6. PROPERLY PROTECT AND DO NOT DISTURB PROPERTY IRONS AND MONUMENTS NOT INDICATED ON THE DRAWINGS FOR REMOVAL. IF DISTURBED, THE PROPERTY MONUMENT SHALL BE RESET AT THE CONTRACTOR'S EXPENSE BY A REGISTERED LAND SURVEYOR APPROVED BY THE PROJECT ARCHITECT.
 7. EXISTING FACILITIES WITHIN THE CITY RIGHT-OF-WAY (I.E. GRANITE CURBING, SIDEWALK BRICKS, TREES, POLES, LIGHT POSTS, CATCH BASINS, SIGNS, ETC.) ARE THE PROPERTY OF THE CITY'S DEPARTMENT OF PUBLIC WORKS. CONTRACTOR TO COORDINATE REMOVAL/DISPOSAL WITH THE CITY AND THE OWNER OR OWNER'S REPRESENTATIVE. AT THE DIRECTION OF THE CITY OR THE OWNER, CONTRACTOR SHALL DELIVER REMOVED FACILITIES TO THE CITY'S MATERIAL STOCKYARD. CONTRACTOR SHALL DISPOSE OF ANY REMOVED FACILITY AT THE REQUEST OF THE CITY OR THEIR REPRESENTATIVE AT NO ADDITIONAL COST TO THE CONTRACT. CONTRACTOR TO COORDINATE REMOVAL/DISPOSAL WITH THE CITY DEPARTMENT OF PUBLIC WORKS.
 8. ALL TREES NOT NOTED TO BE REMOVED OR RELOCATED SHALL BE PROTECTED BY THE CONTRACTOR DURING CONSTRUCTION.
 9. ALL WORK SHALL CONFORM TO THE CITY OF PORTLAND'S TECHNICAL MANUAL.
 10. ALL WORK WITHIN THE RIGHT-OF-WAY OF CITY STREETS SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY TRAFFIC ENGINEER. THE CONTRACTOR SHALL SUBMIT A PROPOSED TRAFFIC CONTROL PLAN TO THE TRAFFIC ENGINEER AT LEAST 7 DAYS BEFORE BEGINNING CONSTRUCTION IN ANY STREET. THE PROPOSED TRAFFIC CONTROL PLAN SHALL BE SUBJECT TO APPROVAL BY THE TRAFFIC ENGINEER, WHO MAY ATTACH SPECIAL CONDITIONS TO, OR REQUIRE MODIFICATIONS OF, THE TRAFFIC CONTROL PLAN. WORK SHALL NOT BEGIN UNTIL THE PLAN IS APPROVED BY THE TRAFFIC ENGINEER.
 11. PRIOR TO CONSTRUCTING ANY SIDEWALK HANDICAP ACCESSIBLE RAMPS WITHIN THE ROAD RIGHT-OF-WAY, THE DESIGN SHALL BE REVIEWED AND APPROVED BY BRUCE HYMAN (OFFICE - 207.874.8833) OF THE CITY OF PORTLAND PUBLIC WORKS DEPARTMENT.
 12. DO NOT PARK, IMPEDE ACCESS TO, OR STORE EQUIPMENT ON ADJACENT CITY OR PRIVATELY OWNED LOTS, UNLESS PERMISSION HAS BEEN GRANTED IN WRITING BY THE CITY AND/OR LANDOWNER.
 13. CONTRACTOR SHALL NOT DISRUPT PRIVATE UTILITY SERVICES OF ADJUTING LANDOWNERS. ALL UTILITY COORDINATION IS THE RESPONSIBILITY OF THE CONTRACTOR.
 14. RESTRICT ACCESS TO SITE THROUGH THE USE OF APPROPRIATE SIGNAGE, BARRIERS, FENCES, ETC. SITE SHALL BE LEFT WITH APPROPRIATE SAFETY MEASURES IN PLACE DURING NON-WORKING HOURS. SITE SAFETY IS THE RESPONSIBILITY OF CONTRACTOR, DURING BOTH WORKING AND NON-WORKING HOURS.
 15. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY CONSTRUCTION PERMITS. PERMIT APPLICATIONS SHALL BE SUBMITTED WITH ADEQUATE TIME SO AS NOT TO DELAY CONSTRUCTION.
 16. THE CONTRACTOR SHALL OBTAIN A CITY STREET OPENING PERMIT BEFORE BEGINNING CONSTRUCTION WITHIN CITY RIGHT-OF-WAY. THE CONTRACTOR SHALL HAVE A CURRENT EXCAVATOR'S LICENSE PRIOR TO ANY EXCAVATION WITHIN CITY RIGHT-OF-WAY.
 17. ALL WORK WITHIN CITY RIGHT-OF-WAY SHALL BE COMPLETED IN ACCORDANCE WITH ARTICLES VI, VII, AND IX OF CHAPTER 25-STREETS, SIDEWALKS, AND OTHER PUBLIC PLACES IN THE CITY OF PORTLAND CODE OF ORDINANCES.
 18. THE CITY OF PORTLAND'S ENGINEERING DIVISION REQUIRES THAT UPON COMPLETION OF CONSTRUCTION, A COMPLETE SET OF 'RECORD' DRAWINGS THAT REFLECT ANY AND ALL MODIFICATIONS TO THE SANITARY SEWER SYSTEM, STORM SEWER SYSTEM, AND ANY OTHER UTILITY INSTALLATIONS OR ALTERATIONS WITHIN THE PROJECT LIMITS BE SUBMITTED TO THE DIVISION. THESE DRAWINGS SHALL BE SUBMITTED IN BOTH DIGITAL (ACAD) AND HARD COPY FORMAT AS DEFINED IN THE SPECIFICATIONS PRIOR TO PAYMENT OF FINAL RETAINAGE.
 19. WORK IS IN CLOSE PROXIMITY TO EXISTING UTILITIES. PROTECTION OF EXISTING UTILITIES DURING CONSTRUCTION SHALL BE INCIDENTAL TO THE CONTRACT.
 20. PROVIDE 4-INCHES OF LOAM AND SEED IN ALL LAWN AREAS DISTURBED BY CONTRACTOR'S OPERATIONS. SEED MIX AND APPLICATION SHALL BE IN CONFORMANCE WITH LANDSCAPE PLANS.
 21. RESET ALL SIGNS IN CITY'S RIGHT-OF-WAY. PLACEMENT AND EXACT LOCATION TO SIGNS TO BE COORDINATED WITH CITY'S PUBLIC WORKS DEPARTMENT.
 22. CONTRACTOR SHALL DEVELOP A CONSTRUCTION MANAGEMENT PLAN FOR REVIEW BY THE CITY OF PORTLAND, THE OWNER, AND THE OWNER'S REPRESENTATIVE. THE CONSTRUCTION MANAGEMENT PLAN SHALL ADDRESS ITEMS INCLUDING (BUT NOT LIMITED TO) PUBLIC ACCESS TO SIDEWALKS, CITY STREETS, ADJACENT LOTS, AND PLAYGROUNDS. THE PLAN SHALL DESCRIBE IMPACTS ON ADJACENT PARKING AREAS, NOISE AND DUST CONTROL, FENCING, AND TRAFFIC MANAGEMENT. THE PLAN SHALL INCLUDE A SCHEDULE OF WORK ITEMS AND A DESCRIPTION OF THE PUBLIC COMMUNICATION STRATEGY. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL CONSTRUCTION ACTIVITIES WITH THE CITY OF PORTLAND AND OBTAINING CITY APPROVAL OF THE CONSTRUCTION MANAGEMENT PLAN PRIOR TO ISSUANCE OF THE BUILDING PERMITS.



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PROJECT NAME:
**WAYNFLETE
GYM + LOWER SCHOOL**

NEW CONSTRUCTION

WAYNFLETE SCHOOL
360 SPRING STREET
PORTLAND, MAINE 04102

SEAL:

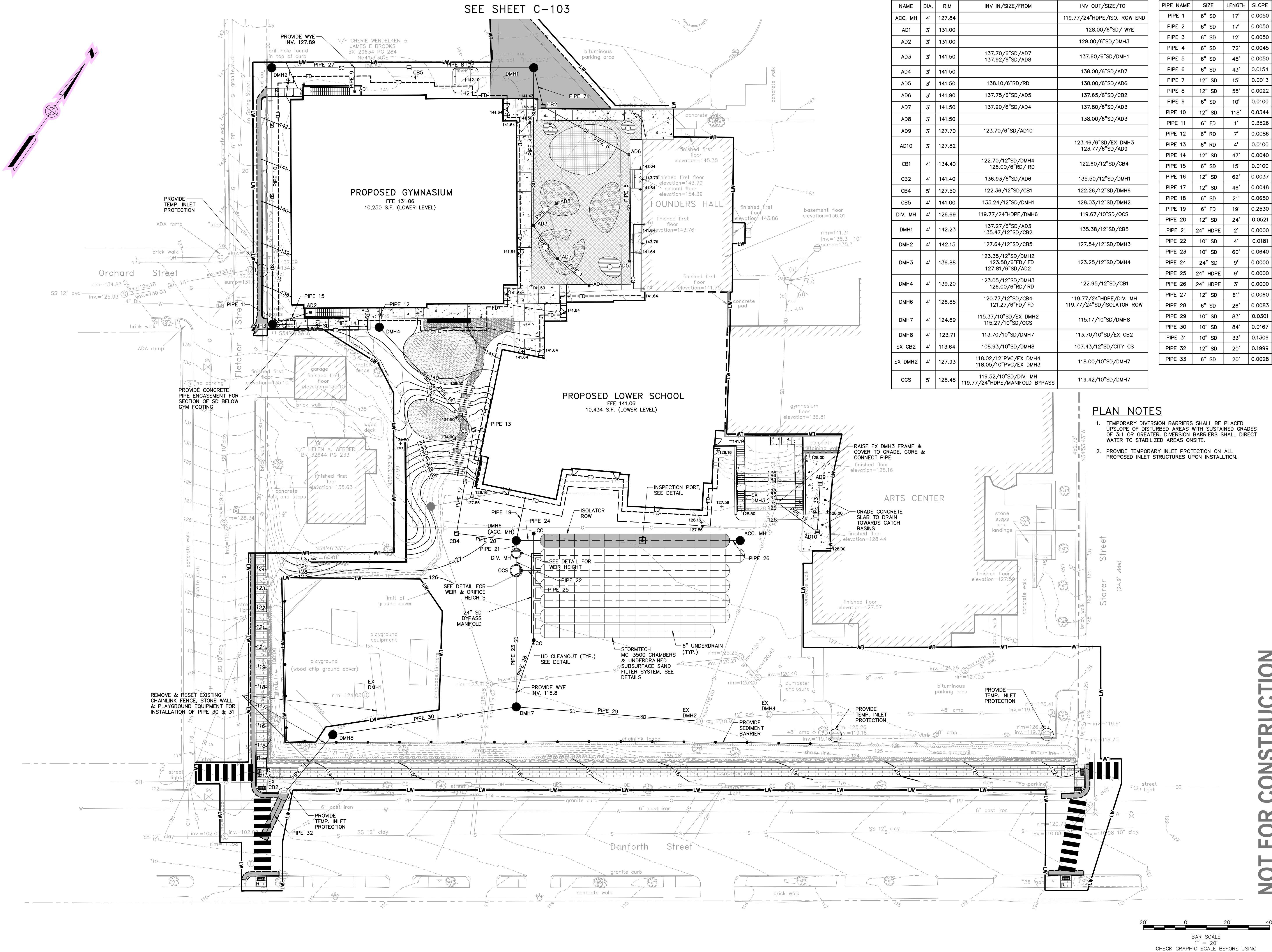
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DATE OF ISSUE: FEBRUARY 2016
PROJECT NUMBER: 229423
STATUS: PLANNING BOARD SUBMISSION

SITE PLAN

C-100



STRUCTURE TABLE				
NAME	DIA.	RIM	INV IN/SIZE/FROM	INV OUT/SIZE/TO
ACC. MH	4'	127.84		119.77/24"HDPE/ISO. ROW END
AD1	3'	131.00		128.00/6"SD/ WYE
AD2	3'	131.00		128.00/6"SD/DMH3
AD3	3'	141.50	137.70/6"SD/AD7 137.92/6"SD/AD8	137.60/6"SD/DMH1
AD4	3'	141.50		138.00/6"SD/AD7
AD5	3'	141.50	138.10/6"RD/RD	138.00/6"SD/AD6
AD6	3'	141.90	137.75/6"SD/AD5	137.65/6"SD/CB2
AD7	3'	141.50	137.90/6"SD/AD4	137.80/6"SD/AD3
AD8	3'	141.50		138.00/6"SD/AD3
AD9	3'	127.70	123.70/6"SD/AD10	
AD10	3'	127.82		123.46/6"SD/EX DMH3 123.77/6"SD/AD9
CB1	4'	134.40	122.70/12"SD/DMH4 126.00/6"RD/ RD	122.60/12"SD/CB4
CB2	4'	141.40	136.93/6"SD/AD6	135.50/12"SD/DMH1
CB4	5'	127.50	122.36/12"SD/CB1	122.26/12"SD/DMH6
CB5	4'	141.00	135.24/12"SD/DMH1	128.03/12"SD/DMH2
DIV. MH	4'	126.69	119.77/24"HDPE/DMH6	119.67/10"SD/OCS
DMH1	4'	142.23	137.27/6"SD/AD3 135.47/12"SD/CB2	135.38/12"SD/CB5
DMH2	4'	142.15	127.64/12"SD/CB5	127.54/12"SD/DMH3
DMH3	4'	136.88	123.35/12"SD/DMH2 123.50/6"FD/ FD 127.81/6"SD/AD2	123.25/12"SD/DMH4
DMH4	4'	139.20	123.05/12"SD/DMH3 126.00/6"RD/ RD	122.95/12"SD/CB1
DMH6	4'	126.85	120.77/12"SD/CB4 121.27/6"FD/ FD	119.77/24"HDPE/DIV. MH 119.77/24"SD/ISOLATOR ROW
DMH7	4'	124.69	115.37/10"SD/EX DMH2 115.27/10"SD/OCS	115.17/10"SD/DMH8
DMH8	4'	123.71	113.70/10"SD/DMH7	113.70/10"SD/EX CB2
EX CB2	4'	113.64	108.93/10"SD/DMH8	107.43/12"SD/ITY CS
EX DMH2	4'	127.93	118.02/12"PVC/EX DMH4 118.05/10"PVC/EX DMH3	118.00/10"SD/DMH7
OCS	5'	126.48	119.52/10"SD/DIV. MH 119.77/24"HDPE/MANFOLD BYPASS	119.42/10"SD/DMH7

PIPE TABLE			
PIPE NAME	SIZE	LENGTH	SLOPE
PIPE 1	6" SD	17'	0.0050
PIPE 2	6" SD	17'	0.0050
PIPE 3	6" SD	12'	0.0050
PIPE 4	6" SD	72'	0.0045
PIPE 5	6" SD	48'	0.0050
PIPE 6	6" SD	43'	0.0154
PIPE 7	12" SD	15'	0.0013
PIPE 8	12" SD	55'	0.0022
PIPE 9	6" SD	10'	0.0100
PIPE 10	12" SD	118'	0.0344
PIPE 11	6" FD	1'	0.3526
PIPE 12	6" RD	7'	0.0086
PIPE 13	6" RD	4'	0.0100
PIPE 14	12" SD	47'	0.0040
PIPE 15	6" SD	15'	0.0100
PIPE 16	12" SD	62'	0.0037
PIPE 17	12" SD	46'	0.0048
PIPE 18	6" SD	21'	0.0650
PIPE 19	6" FD	19'	0.2530
PIPE 20	12" SD	24'	0.0521
PIPE 21	24" HDPE	2'	0.0000
PIPE 22	10" SD	4'	0.0181
PIPE 23	10" SD	60'	0.0640
PIPE 24	24" SD	9'	0.0000
PIPE 25	24" HDPE	9'	0.0000
PIPE 26	24" HDPE	3'	0.0000
PIPE 27	12" SD	61'	0.0060
PIPE 28	6" SD	26'	0.0083
PIPE 29	10" SD	83'	0.0301
PIPE 30	10" SD	84'	0.0167
PIPE 31	10" SD	33'	0.1306
PIPE 32	12" SD	20'	0.1999
PIPE 33	6" SD	20'	0.0028

PLAN NOTES

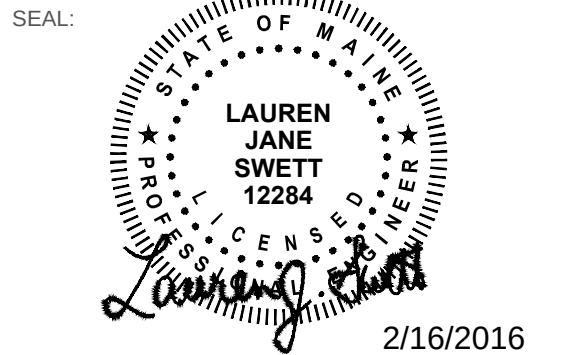
1. TEMPORARY DIVERSION BARRIERS SHALL BE PLACED UPSLOPE OF DISTURBED AREAS WITH SUSTAINED GRADES OF 3:1 OR GREATER. DIVERSION BARRIERS SHALL DIRECT WATER TO STABILIZED AREAS ON SITE.
2. PROVIDE TEMPORARY INLET PROTECTION ON ALL PROPOSED INLET STRUCTURES UPON INSTALLATION.



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PROJECT NAME:
WAYNFLETE GYM + LOWER SCHOOL
NEW CONSTRUCTION
WAYNFLETE SCHOOL
380 SPRING STREET
PORTLAND, MAINE 04102



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GRADING & DRAINAGE PLAN

C-101

SEE SHEET C-103

STRUCTURE TABLE				
NAME	DIA.	RIM	INV IN/SIZE/FROM	INV OUT/SIZE/TO
SMH1	4'	131.57	122.19/6"S/GYM 121.79/6"S/LS	121.69/6"S/EX SMH

SEE SHEET C-101 FOR STORM DRAINAGE STRUCTURE & PIPE INFORMATION.

PIPE TABLE			
PIPE NAME	SIZE	LENGTH	SLOPE
PIPE S1	6" S	94'	0.0707
PIPE S2	6" S	86'	0.0299
PIPE S3	6" S	37'	0.0204

PLAN NOTES

1. THE UTILITY LOCATIONS SHOWN ON PLAN ARE APPROXIMATE AND REQUIRE FIELD VERIFICATION BY THE CONTRACTOR. CONTACT THE OWNER AND THE OWNER'S REPRESENTATIVE IMMEDIATELY UPON DISCOVERING ANY CONFLICTS WITH EXISTING AND PROPOSED UTILITY LOCATIONS. NOT ALL EXISTING UTILITIES ARE SHOWN ON PLANS.
2. CLEAN AND/OR FLUSH ALL MANHOLES, CATCH BASINS, AND ASSOCIATED PIPING AFTER THE WORK HAS BEEN COMPLETED.
3. ALL SEWER CONSTRUCTION IN THE PUBLIC WAY SHALL BE COMPLETED IN ACCORDANCE WITH ARTICLE II OF CHAPTER 24-SEWERS OF THE CITY OF PORTLAND CODE OF ORDINANCES.
4. ALL WATER LINE (MAINS, SERVICES, HYDRANTS, ETC.) CONSTRUCTION SHALL BE COMPLETED IN ACCORDANCE WITH THE PORTLAND WATER DISTRICT TECHNICAL SPECIFICATIONS, LATEST EDITION. PORTLAND WATER DISTRICT TECHNICAL SPECIFICATIONS, LATEST EDITION SHALL GOVERN IN THE CASE OF ANY AND ALL CONFLICTS IN THE PROJECT CONSTRUCTION DOCUMENTS AT NO ADDITIONAL COST TO OWNER.
5. ALL GAS LINE (MAINS, SERVICES, HYDRANTS, ETC.) CONSTRUCTION SHALL BE COMPLETED IN ACCORDANCE WITH UNITL'S TECHNICAL SPECIFICATIONS, LATEST EDITION. UNITL'S TECHNICAL SPECIFICATIONS, LATEST EDITION SHALL GOVERN IN THE CASE OF ANY AND ALL CONFLICTS IN THE PROJECT CONSTRUCTION DOCUMENTS AT NO ADDITIONAL COST TO OWNER.
6. FOR TEST PIT LOCATIONS SHOWN ON PLANS, FIELD VERIFY UTILITY EXCAVATIONS PRIOR TO ORDERING CATCH BASIN AND MANHOLE STRUCTURES. NOTIFY OWNER AND OWNER'S REPRESENTATIVE OF ANY CONFLICTS.

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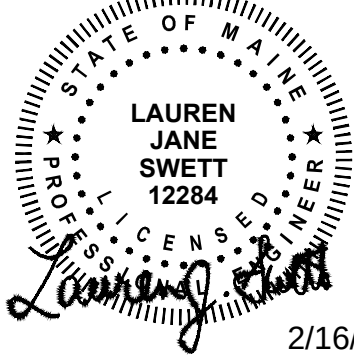
PROJECT NAME:

**WAYNFLETE
GYM + LOWER SCHOOL**

NEW CONSTRUCTION

WAYNFLETE SCHOOL
360 SPRING STREET
PORTLAND, MAINE 04102

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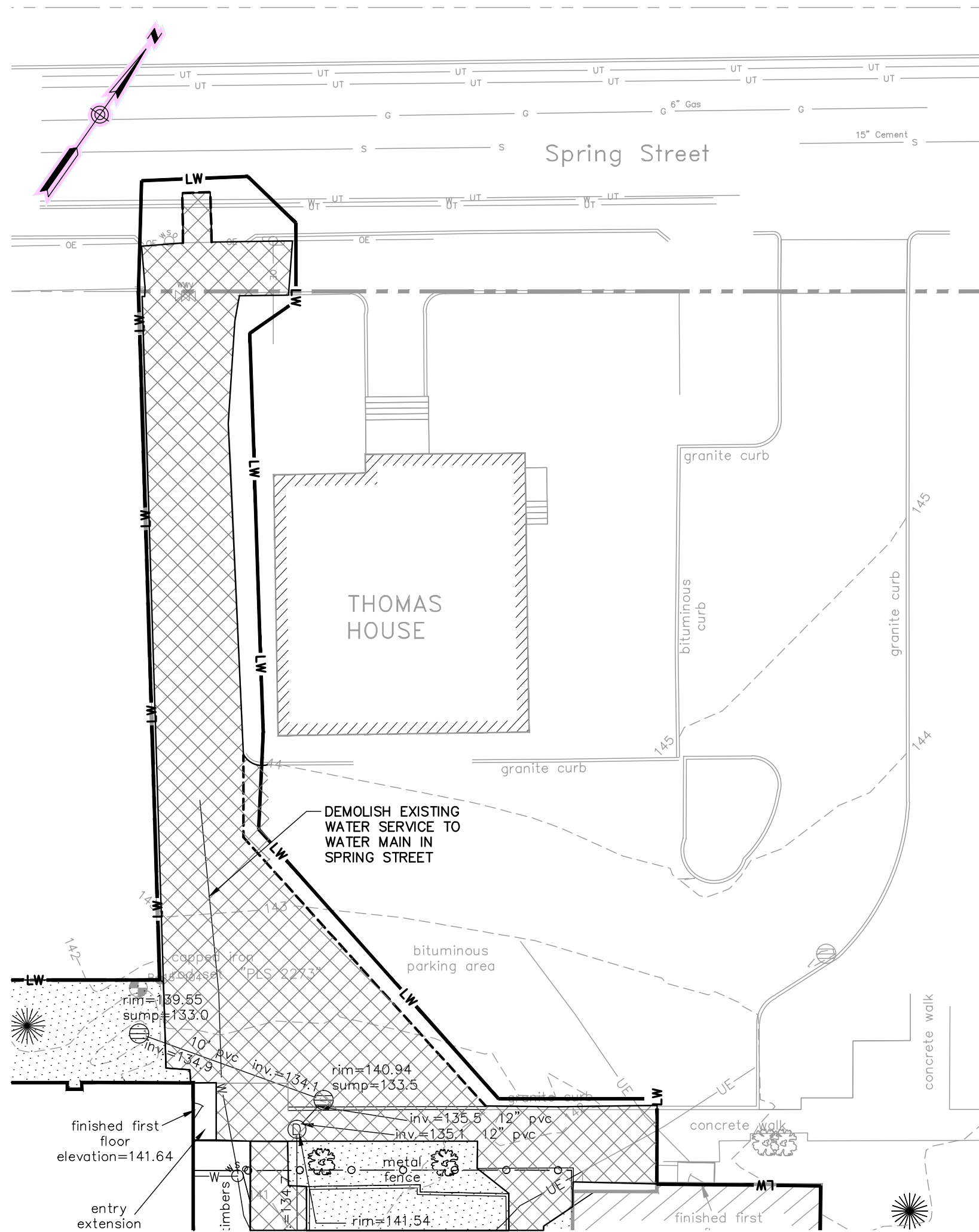
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UTILITY PLAN

C-102

NOT FOR CONSTRUCTION

20' 0 20' 40'
BAR SCALE
1" = 20'
CHECK GRAPHIC SCALE BEFORE USING

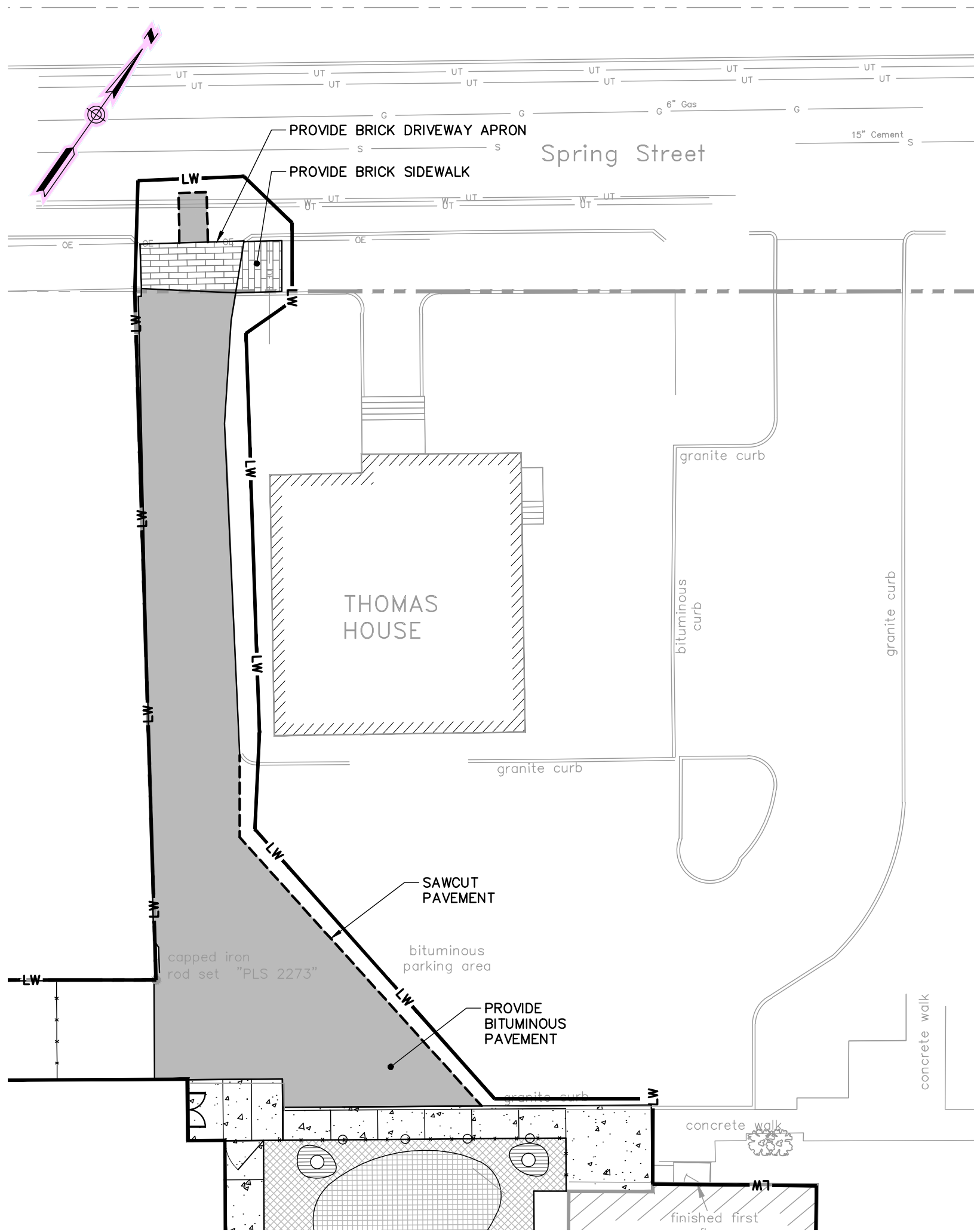


SPRING ST. CONNECTION
DEMO PLAN
SCALE: 1"=20'

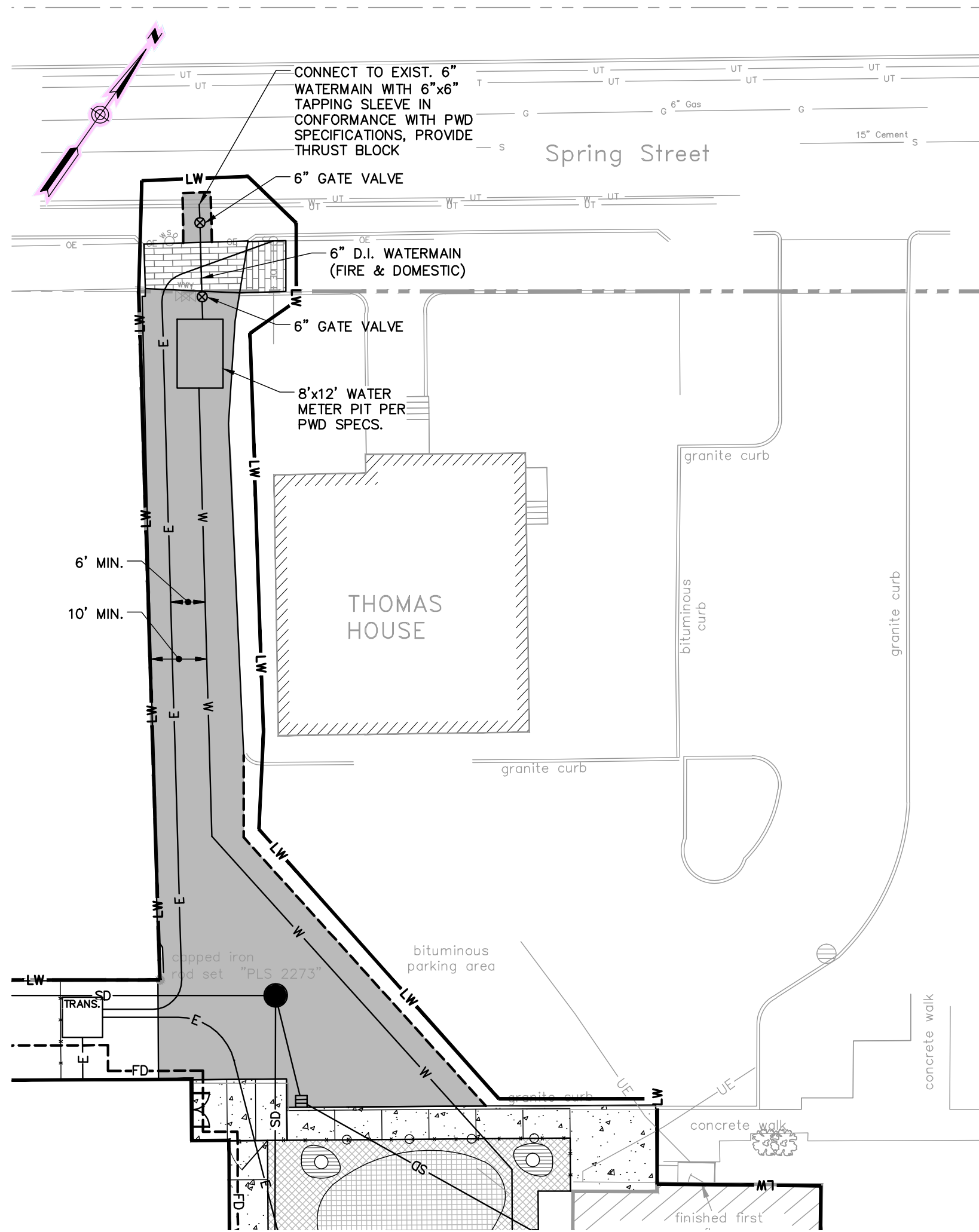
DEMOLITION LEGEND

- DEMOLISH BUILDING, SEE ARCHITECTURAL PLANS
- DEMOLISH PAVEMENT, SIDEWALK, STAIRS, & CURB
- DEMOLISH ALL SITE & LANDSCAPE FEATURES (EXCEPT AS NOTED)

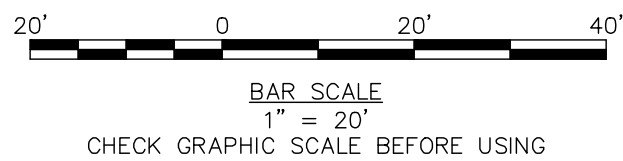
NOTE: CONTRACTOR SHALL PROTECT AND RESTORE TO EXISTING CONDITIONS ALL OTHER AREAS IMPACTED BY CONSTRUCTION.



SPRING ST. CONNECTION
SITE PLAN
SCALE: 1"=20'



SPRING ST. CONNECTION
GRADING, DRAINAGE &
UTILITY PLAN
SCALE: 1"=20'



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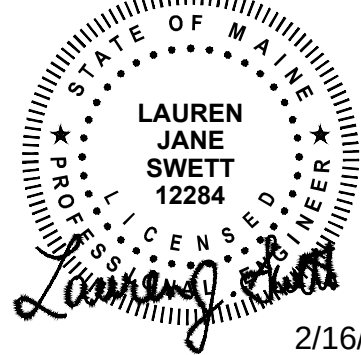
PROJECT NAME:

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NEW CONSTRUCTION

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360 SPRING STREET
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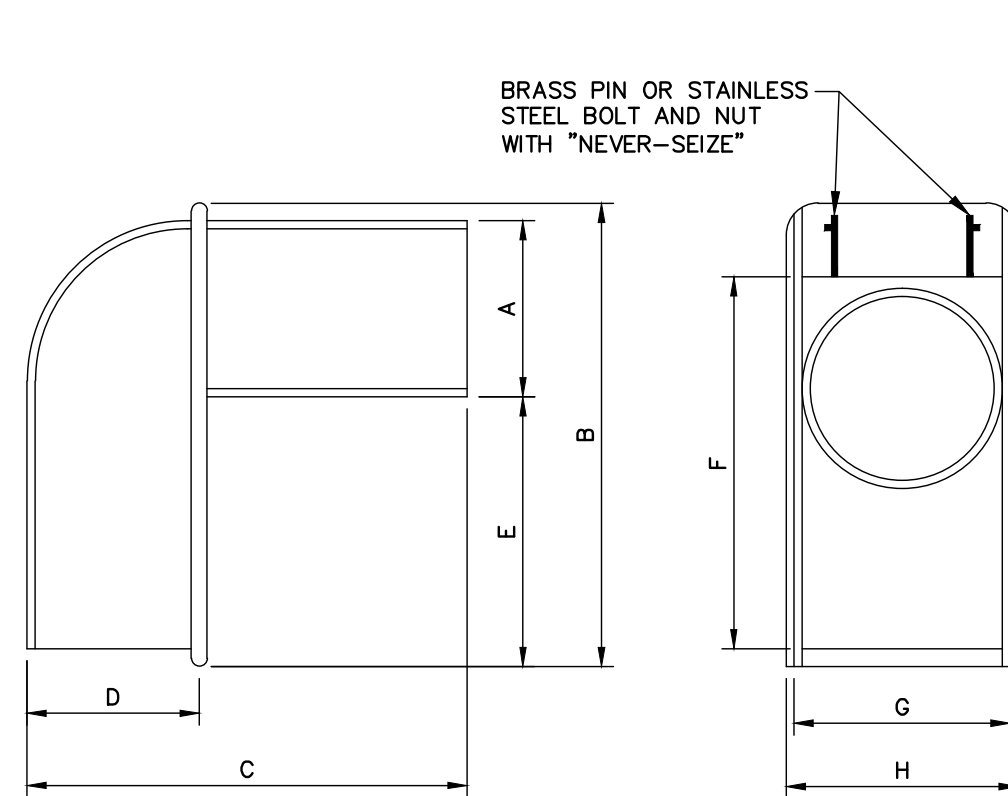
DATE OF ISSUE: FEBRUARY 2016

PROJECT NUMBER: 229423

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SPRING STREET
CONNECTION PLAN

C-103



CASCO TRAP DETAIL

INTEGRATED DUCTILE IRON FRAME & GRATE TO MATCH BASIN OUTER DIAMETER. IF REDUCER IS PROPOSED, REFER TO MANUFACTURER'S DETAILS FOR GRATE AND REDUCER SIZES.

FINISHED GRADE

VARIABLE INVERT HEIGHTS AVAILABLE (RANGING TO PLANS/TIME OFF)

MINIMUM PIPE BURIAL DEPTH PER PIPE MANUFACTURER RECOMMENDATION

ADAPTER ANGLES VARIABLE 0° - 360° ACCORDING TO PLANS

18" MIN. WIDTH GUIDELINE

8" MIN. THICKNESS GUIDELINE

VARIABLE (MIN. 6")

APPROVED COMPACTED SUBGRADE

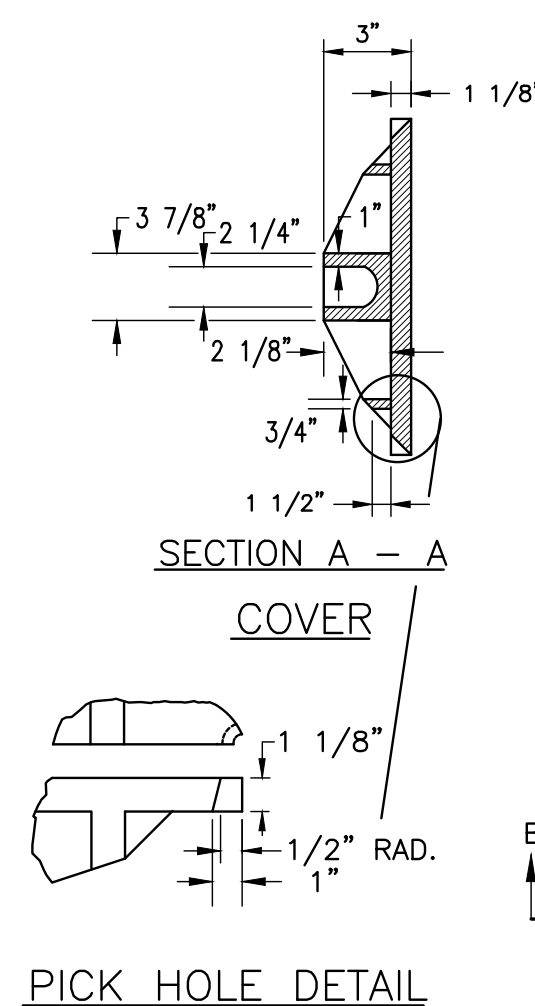
8" THICK APPROVED COMPACTED 3/4" CRUSHED STONE FOUNDATION COURSE

VARIOUS TYPES OF INLET & OUTLET ADAPTERS AVAILABLE: 4" - 24" FOR CORRUGATED HDPE (ADS N-12, ADS SINGLE WALL, HANCOR DUAL WALL), SDR 35, SCH 40 DW, CORRUGATED & RIBBED PVC

WATERTIGHT JOINT (CORRUGATED HDPE SHOWN)

1. INSTALL BASIN IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS
2. PRODUCT SHALL BE NYLOPLAST DRAIN BASIN MANUFACTURED BY ADVANCED DRAINAGE SYSTEMS (ADS) OR APPROVED EQUAL.
3. GRATES/SOLID COVER SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
4. FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
5. DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTORATIONS.
6. DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS & HANCOR DUAL WALL) & SDR 35 PVC.
7. ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°.

N.T.S.

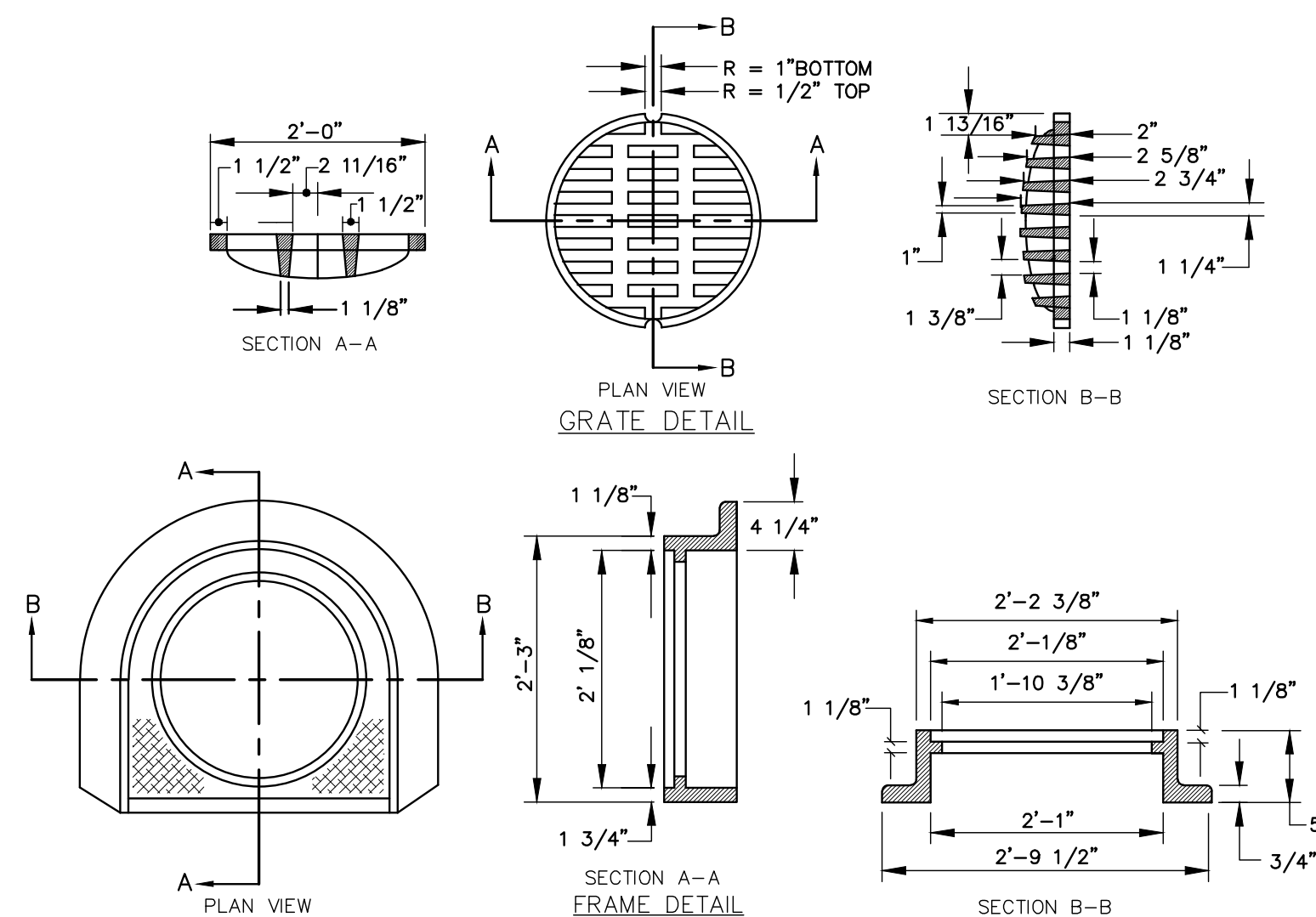


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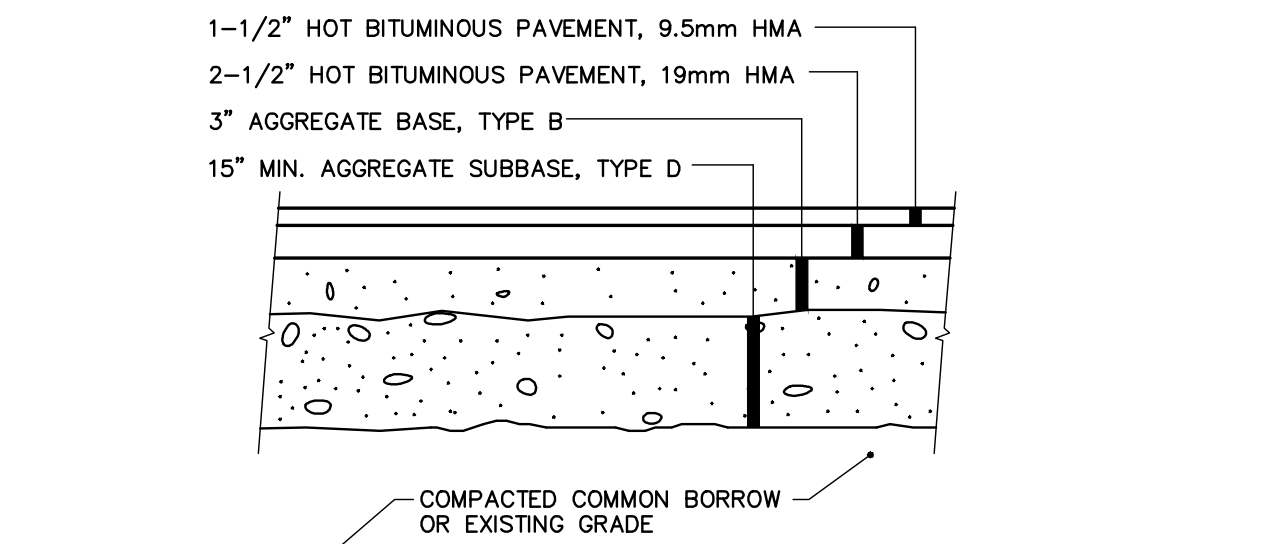
1. ALL CONCRETE SHALL BE CLASS "A" AND HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 4000 LBS. PER SQ. INCH AT THE END OF 28 DAYS, UNLESS OTHERWISE NOTED.
2. PRECAST REINFORCED CONE BARREL MANUFACTURED PER ASTM SPEC. C-478.
3. ALL MANHOLES SHALL HAVE A BITUMINOUS WATERPROOFING APPLIED TO THE EXTERIOR SURFACE. IF CONSTRUCTED OF BRICK MASONRY, SURFACE SHALL BE PLASTERED WITH A SMOOTH MORTAR FINISH 3/8" THICK. AFTER THE MORTAR HAS SET, THE SURFACE SHALL BE WATERPROOFED AS REQUIRED BY SUPPLEMENTAL SPECIFICATIONS SECTION 604.
4. CASTINGS SHALL CONFORM TO ASTM DESIGNATION A48-CLASS 35. ALL PARTS OF CASTINGS, EXCEPT FINISHED SURFACE, SHALL RECEIVE A COAT OF GUN TAR PITCH VARNISH OR ASPHALTUM PAINT WHICH SHALL BE SMOOTH AND TOUGH BUT NOT BRITTLE.
5. MANHOLES MAY BE CONSTRUCTED OF MASONRY, PRECAST REINFORCED CONCRETE, OR CAST IN PLACE.
6. CONTRACTOR SHALL SUBMIT ANTI-FLOATATION CALCULATIONS FOR ALL MANHOLE AND CATCH BASIN STRUCTURES.
7. ALL PRECAST MANHOLES AND CATCH BASINS SHALL BE IDENTIFIED BY STATION, OFFSET, AND STRUCTURE ID. PAINTED ON THE SIDE OF THE STRUCTURE BY THE MANUFACTURER.
8. STORM AND SEWER MANHOLES SHALL HAVE SOLID COVERS WITH ONE DRILLED PILE HOLE.
9. EXISTING MANHOLES, CATCH BASINS, FRAMES, AND COVERS SHALL BE SALVAGED BY THE CONTRACTOR, AND SHALL REMAIN THE PROPERTY OF THE CITY OF PORTLAND.
10. WHEN THE FLOW CHANGES DIRECTION IN A MANHOLE, THE CHANNEL ALIGNMENT SHALL FOLLOW A SMOOTH RADIUS. CHANNELS SHALL BE FORMED TO ACCEPT ALL INLET PIPES.
11. ON STORM AND SEWER MANHOLES, THE SHELF AND CHANNEL SHALL BE FORMED BY BRICK SET IN CEMENT MORTAR OR BY FACTORY PRE-CAST CONCRETE. SUCH PRE-CAST CONCRETE SHALL BE PROXY COATED WITH A SHELF SHALL HAVE A PERMANENT NON-SKID SURFACE.



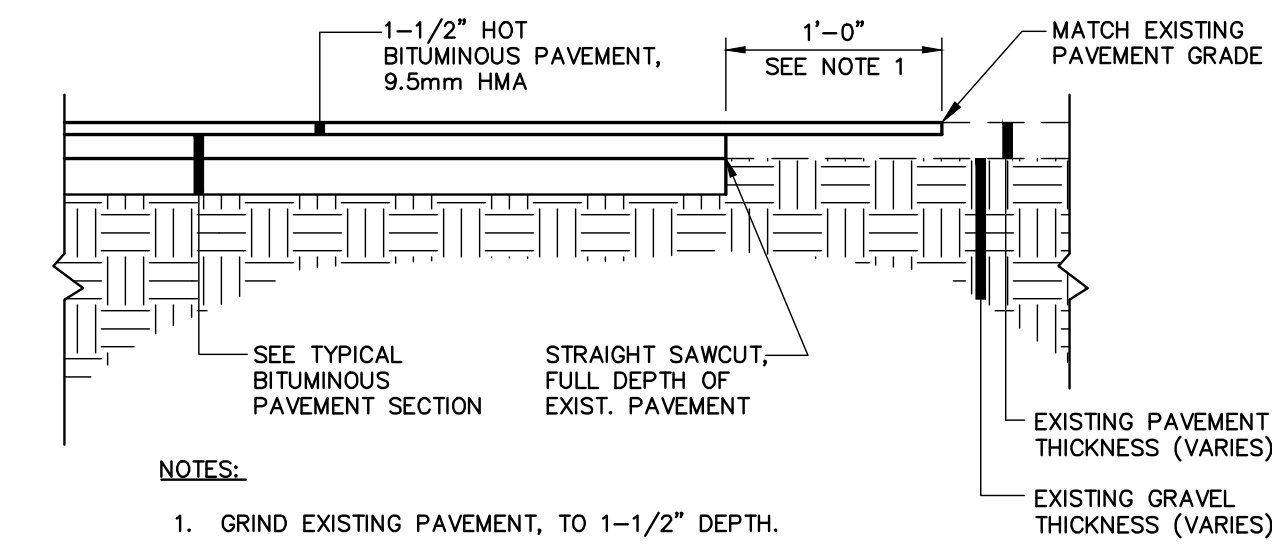
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N.T.S.

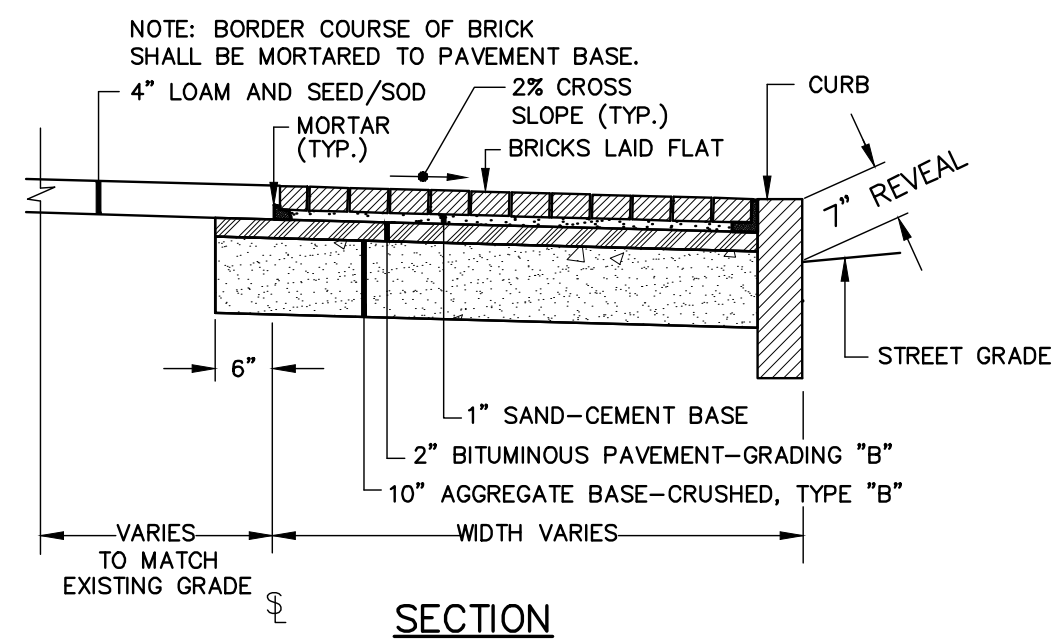


TYPICAL BITUMINOUS PAVEMENT SECTION - PARKING & STREETS
N.T.S.

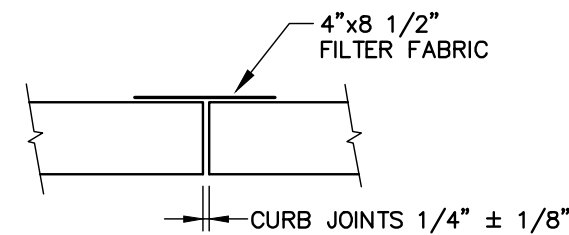


- NOTES:
1. GRIND EXISTING PAVEMENT, TO 1-1/2" DEPTH.
 2. PROVIDE BITUMINOUS TACK COAT ON VERTICAL AND HORIZONTAL SURFACES PRIOR TO PAVING.
 3. DETAIL APPLICABLE TO PAVEMENT BUTT JOINTS AT ROADWAY WORK LIMITS. REFER TO PIPE INSTALLATION DTL. OR PAVED ROAD SECTION DTLs. FOR TRENCH REPAIR REQUIREMENTS.

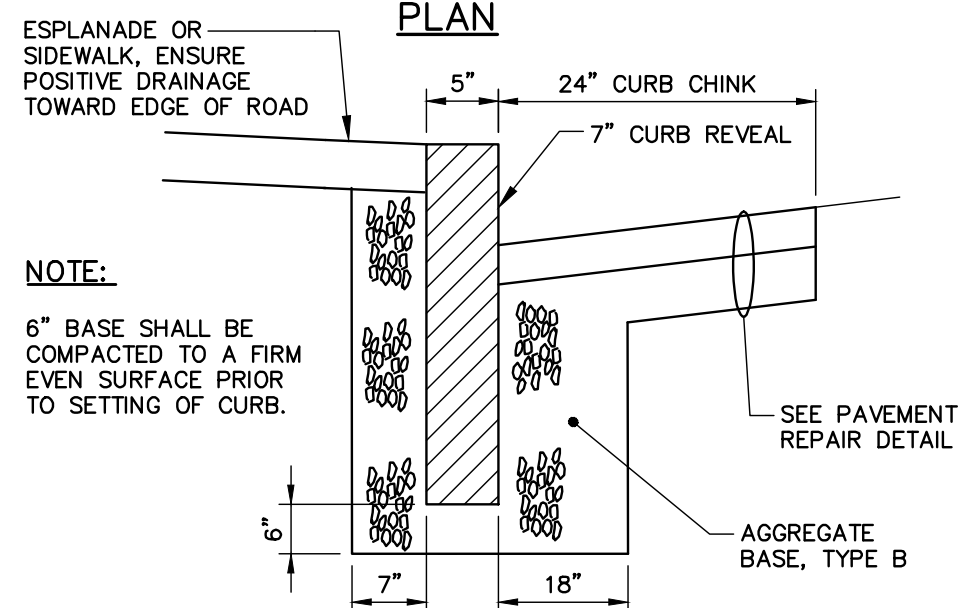
PAVEMENT BUTT JOINT DETAIL
N.T.S.



BRICK SIDEWALK DETAIL
N.T.S.



PLAN

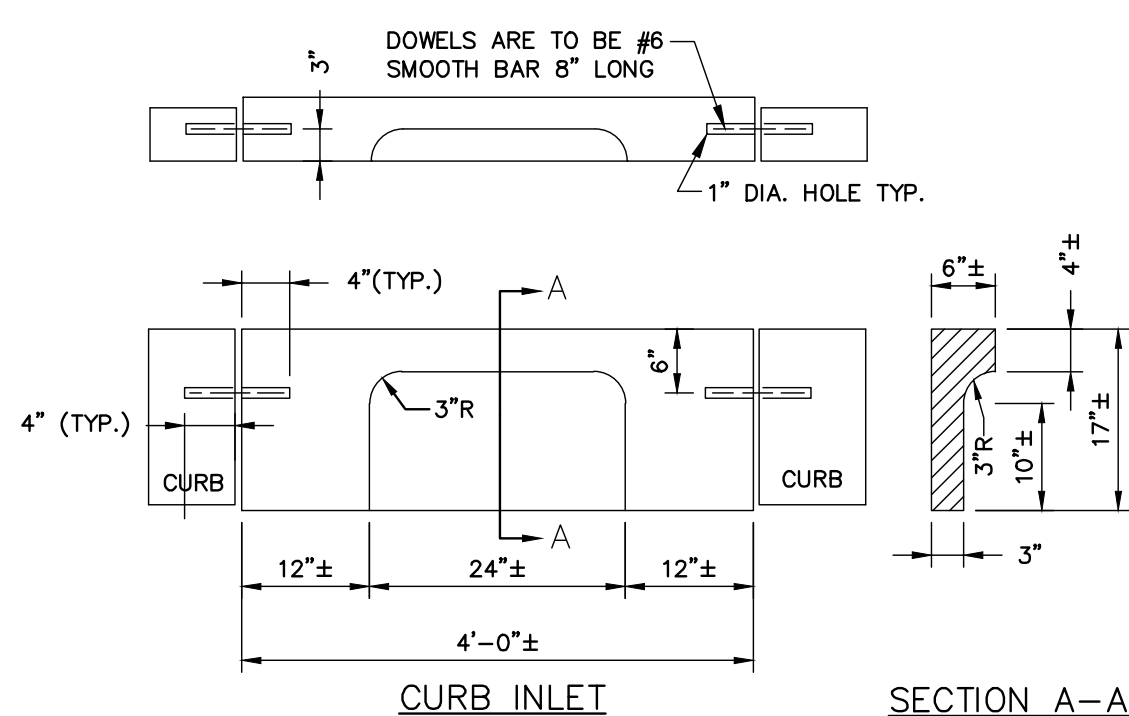


SECTION

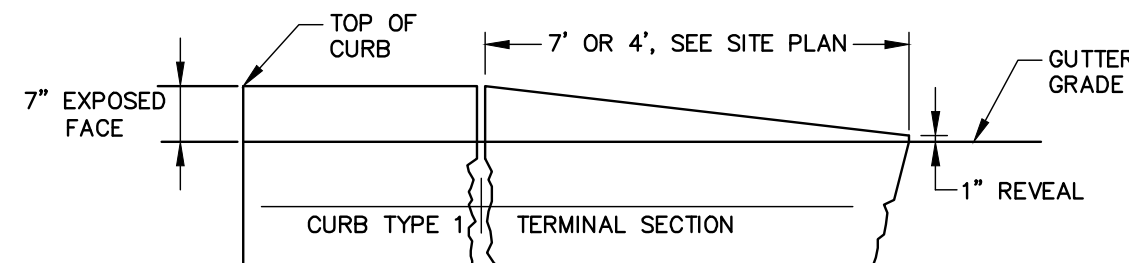
CURB TYPE 1 ON CURVES			
TYPE	RADIUS OF CURVE	LENGTH	STONE IS CUT OR CAST
1	0' TO 60' INCL.	4' MIN.	ARC TO FIT CURVE
	OVER 60' TO 160'	4' TO 6'	STRAIGHT PIECES

TYPICAL NEW AND RESET CURB INSTALLATION
N.T.S.

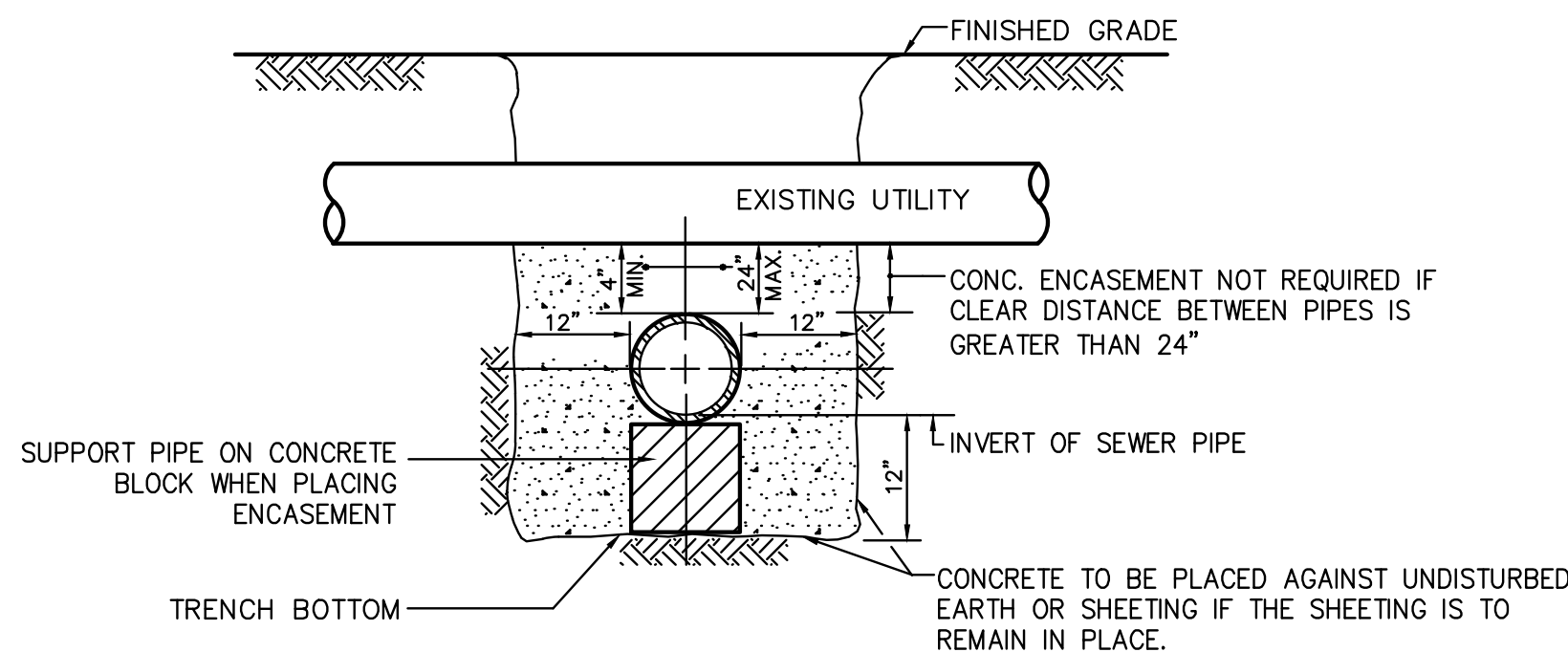
NOTE: AGGREGATE TYPES PER MDT SECTION 304.02



TYPE 1 GRANITE CURB INLET
N.T.S.

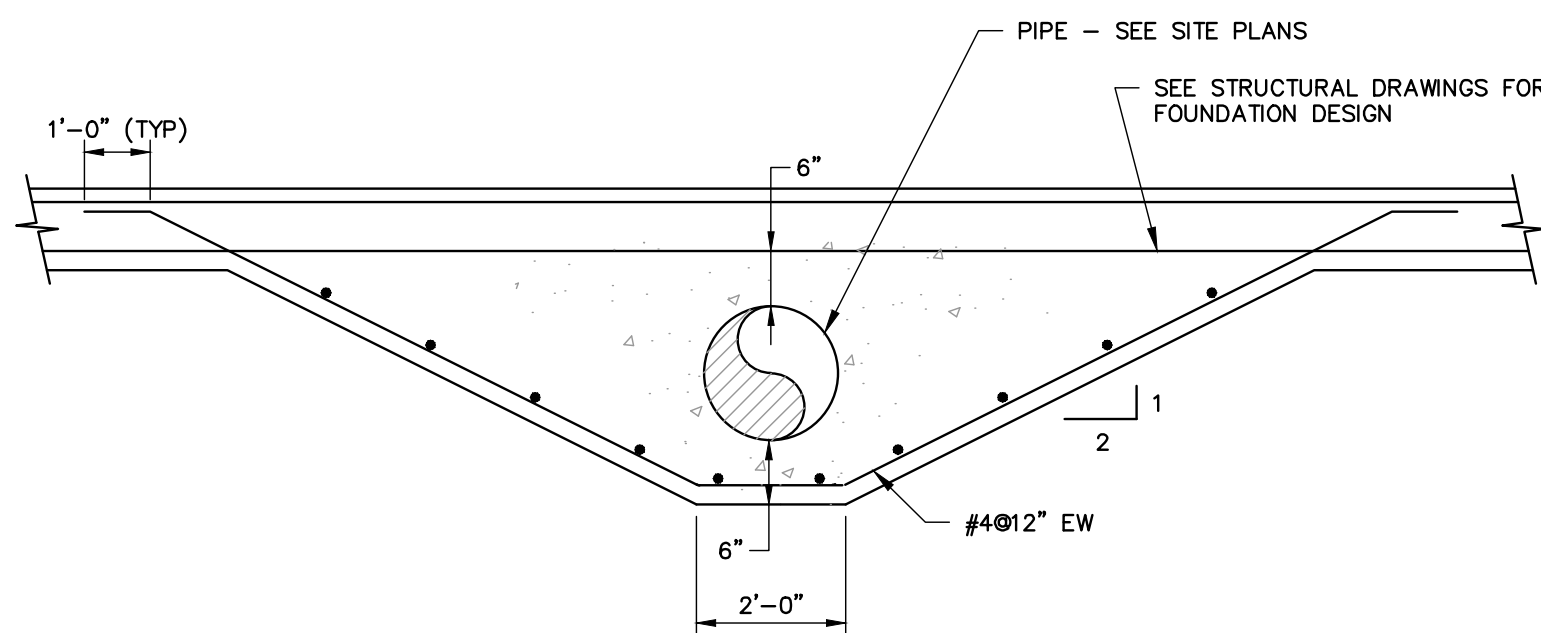


TERMINAL CURB SECTION
N.T.S.

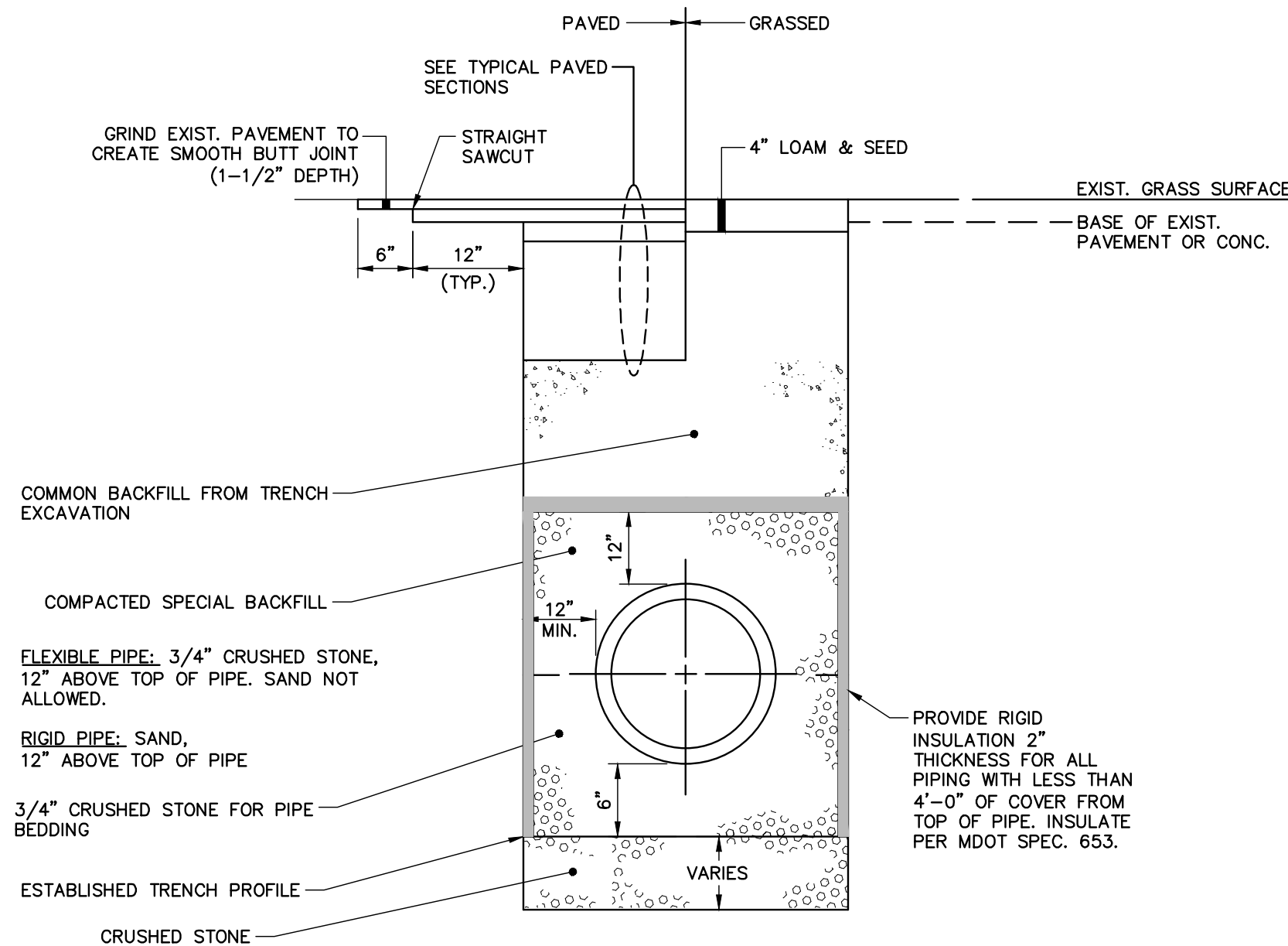


NOTE:
PIPE MUST BE BRACED VERTICALLY & HORIZONTALLY TO PREVENT FLOATATION DURING PLACEMENT OF CONC.

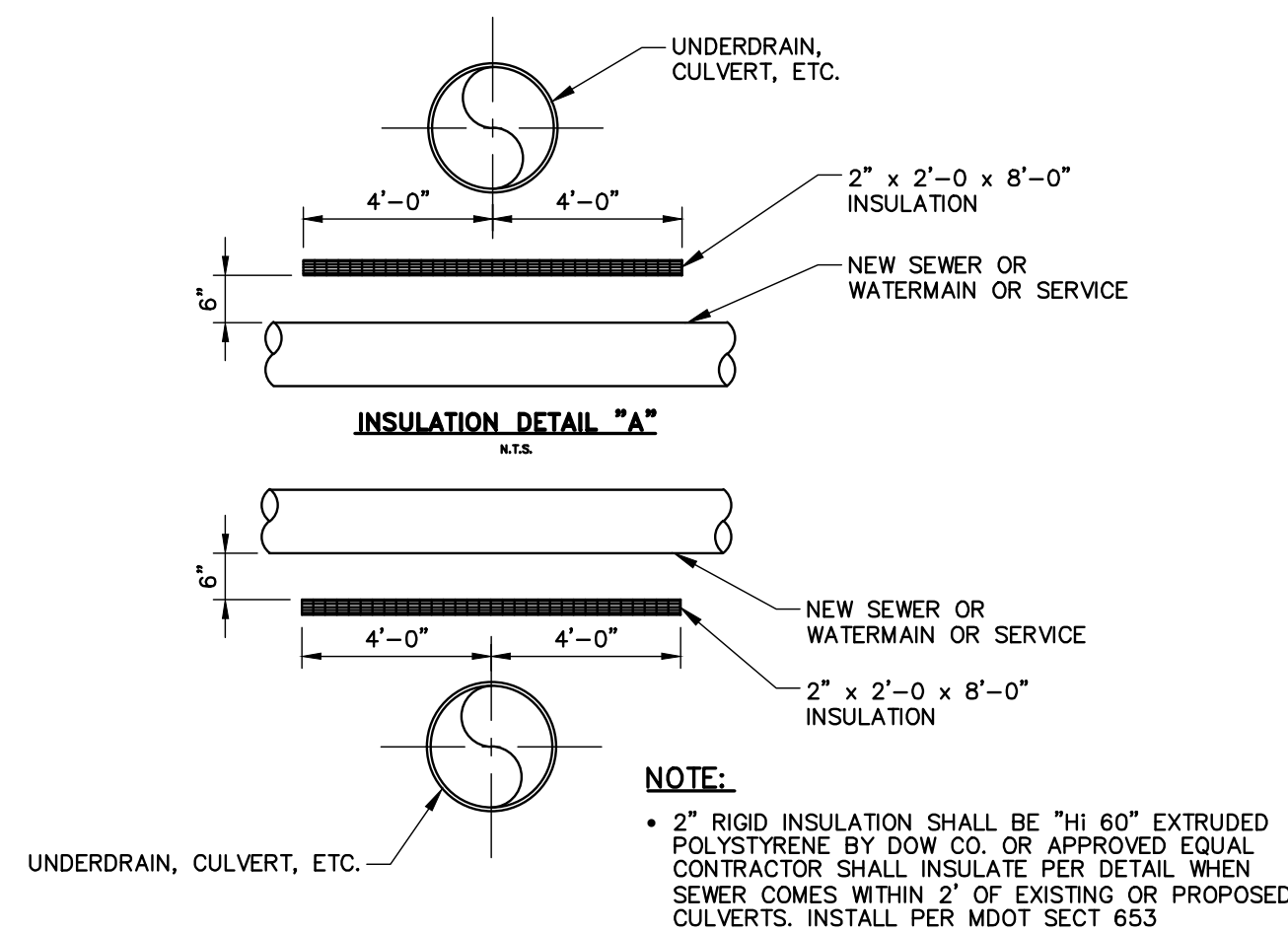
UTILITY CROSSING LESS THAN 24" CLEARANCE
N.T.S.



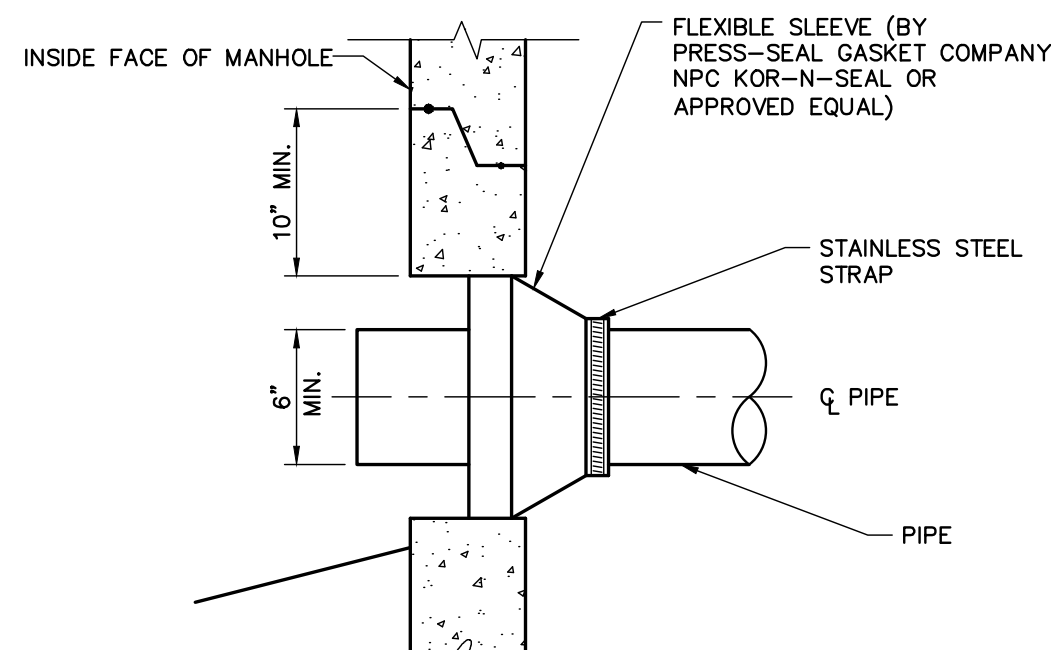
PIPE ENCASEMENT DETAIL
N.T.S.



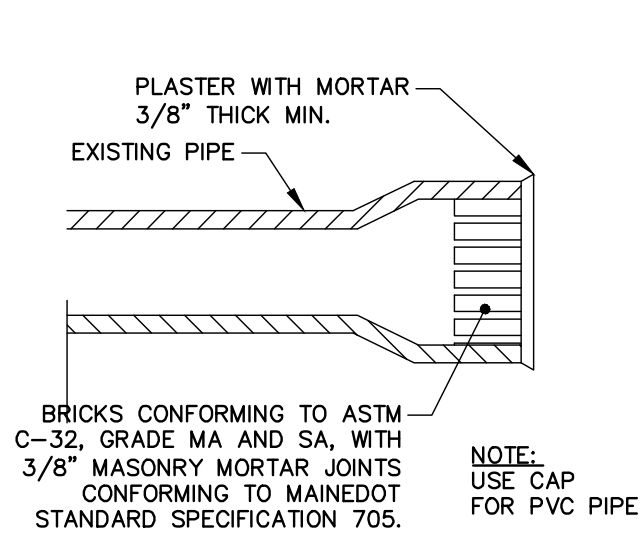
PIPE INSTALLATION DETAIL
N.T.S.



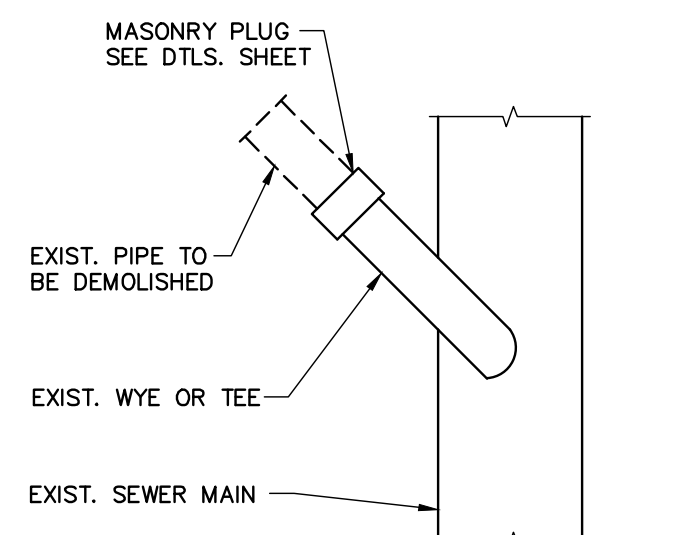
UTILITY CROSSING
N.T.S.



NEW PIPE TO NEW STRUCTURE CONNECTION DETAIL
N.T.S.



MASONRY PLUG DETAIL
N.T.S.



MASONRY PLUG @ MAIN
N.T.S.

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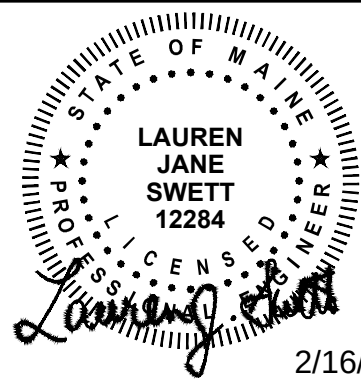
PROJECT NAME:

WAYNFLETE
GYM + LOWER SCHOOL

NEW CONSTRUCTION

WAYNFLETE SCHOOL
360 SPRING STREET
PORTLAND, MAINE 04102

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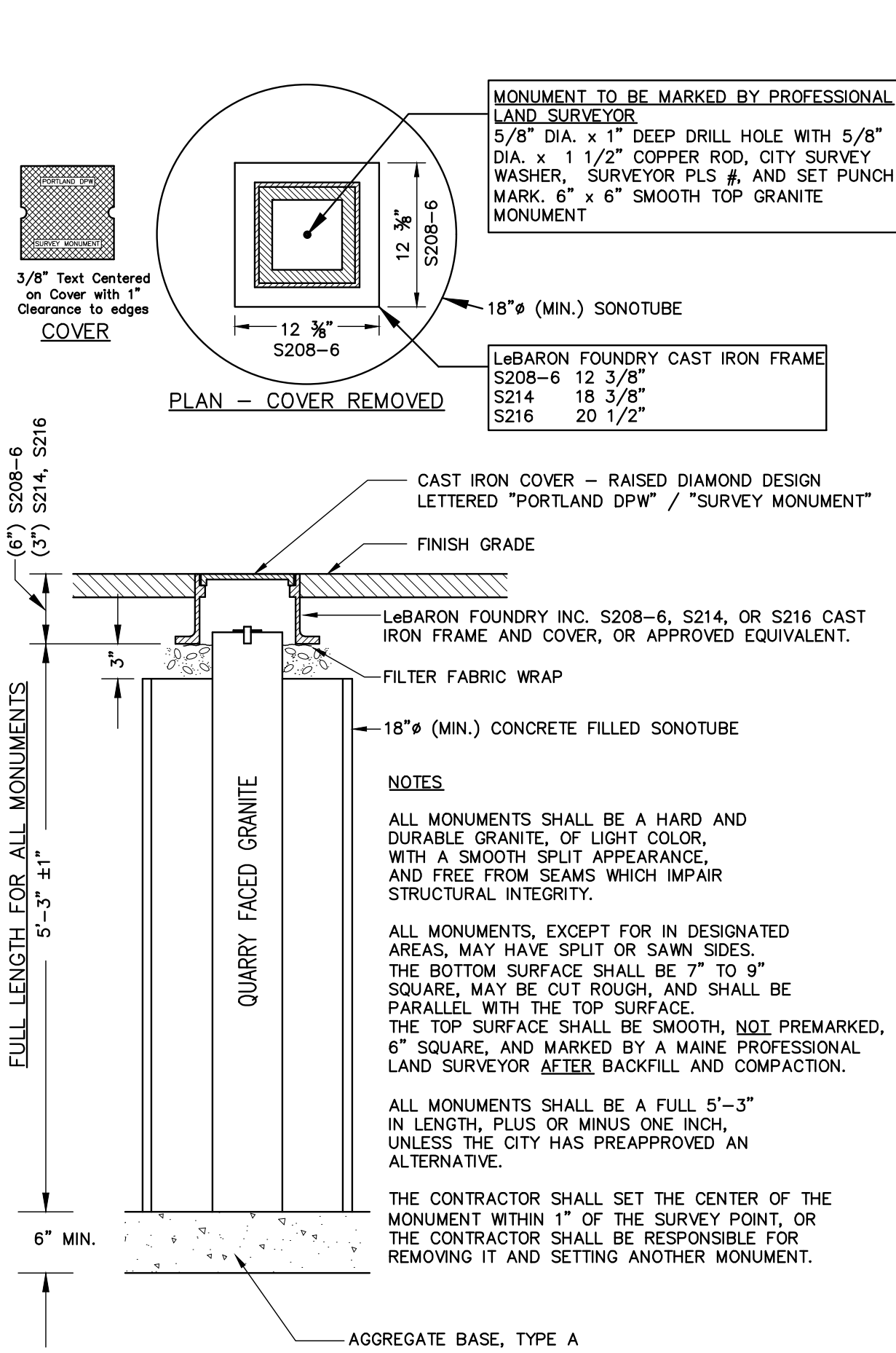
DATE OF ISSUE: FEBRUARY 2016

PROJECT NUMBER: 229423

STATUS: PLANNING BOARD SUBMISSION

CIVIL DETAILS - 2

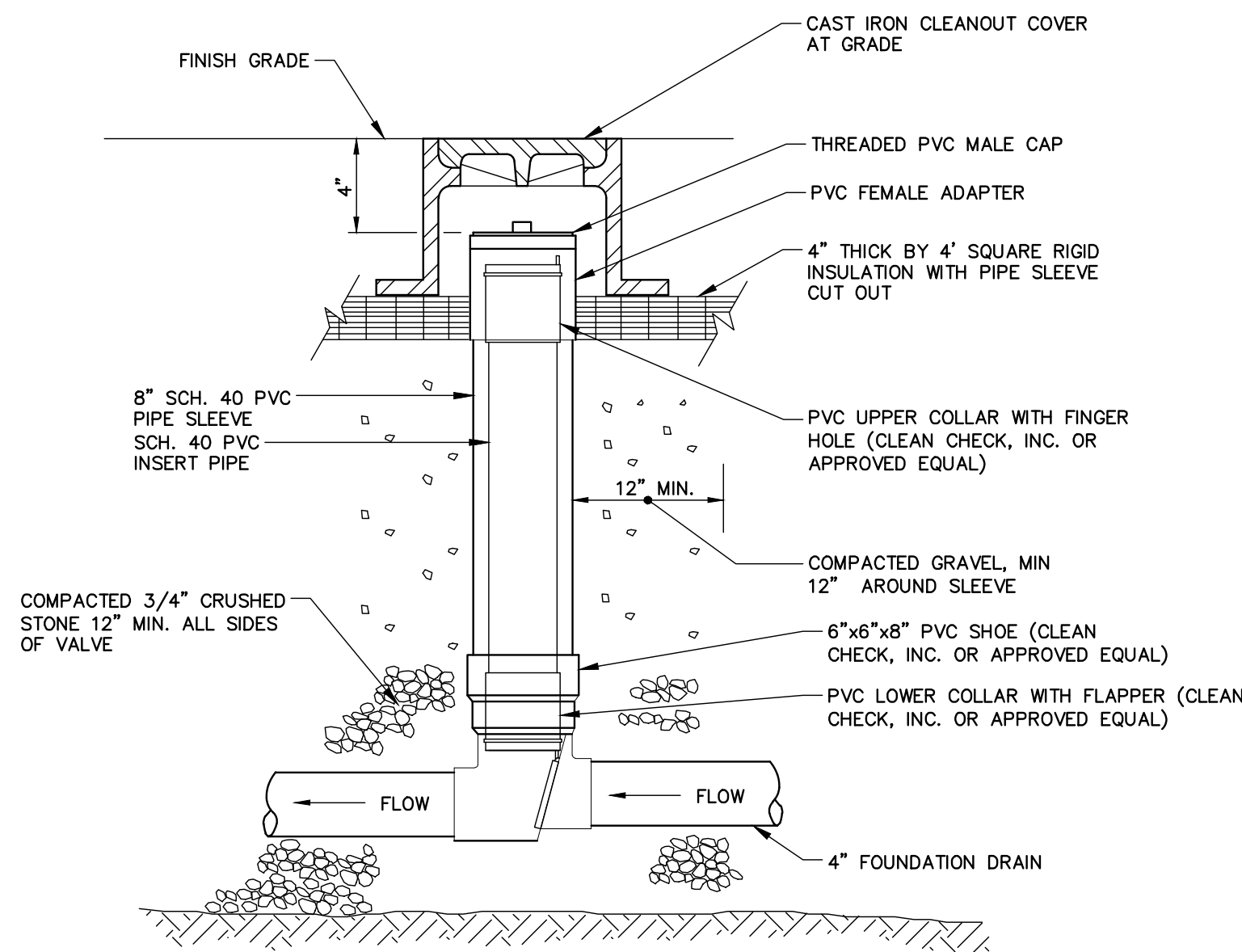
D-201



GRANITE STREET MONUMENT

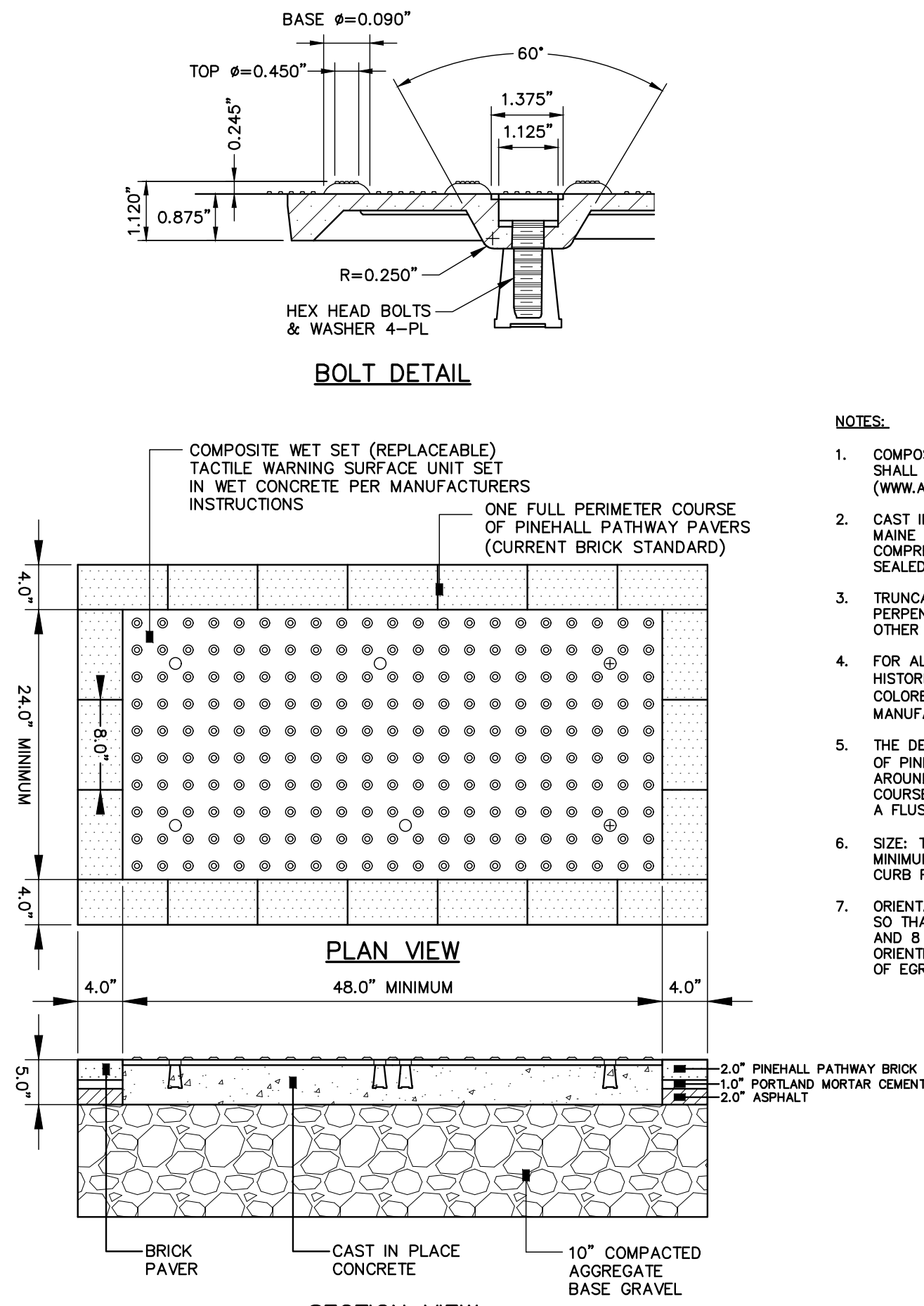
N.T.S.

NOTE: AGGREGATE TYPES PER MDT SECTION 304.02



BACKFLOW PREVENTER

N.T.S.

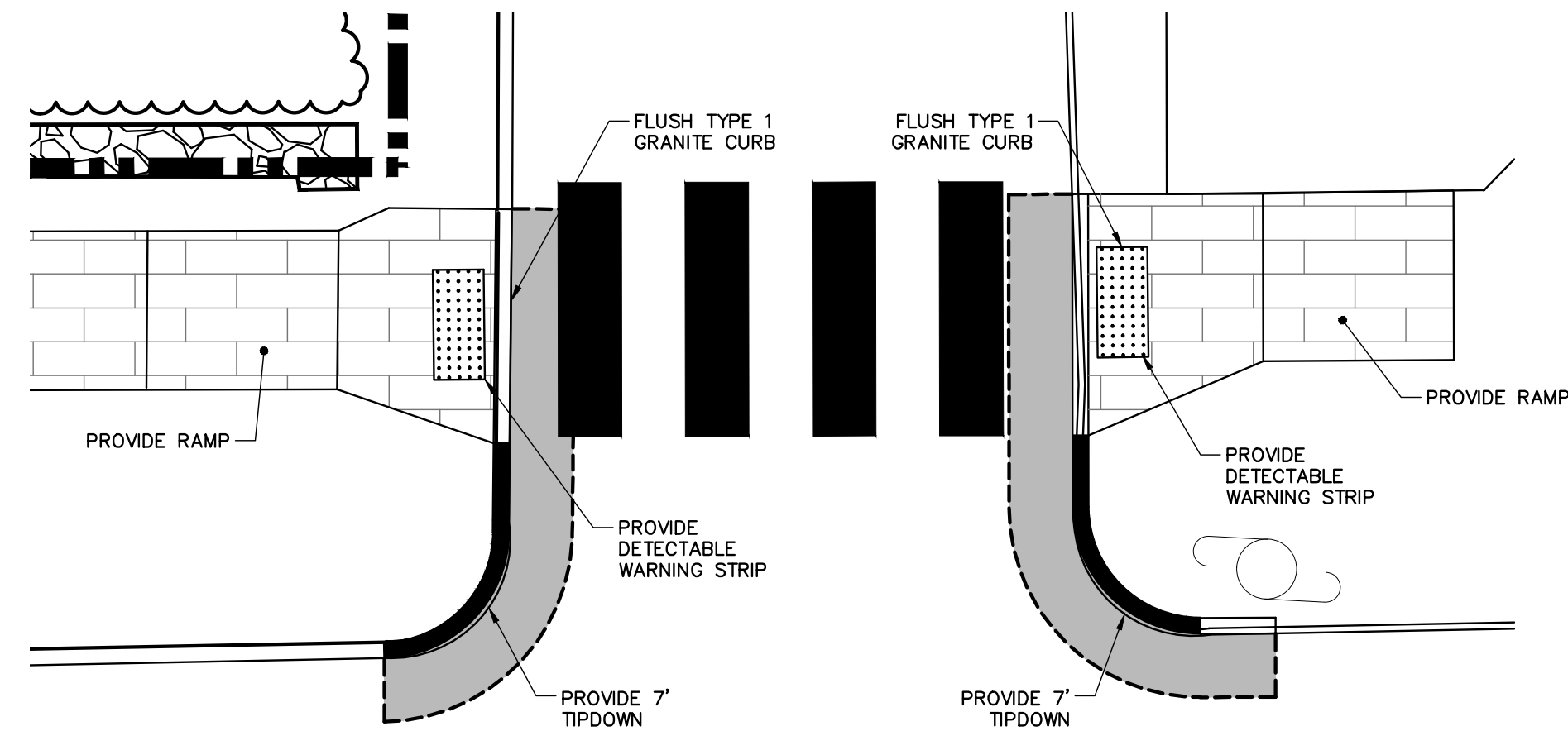


SIDEWALK RAMP DETECTABLE WARNING

N.T.S.

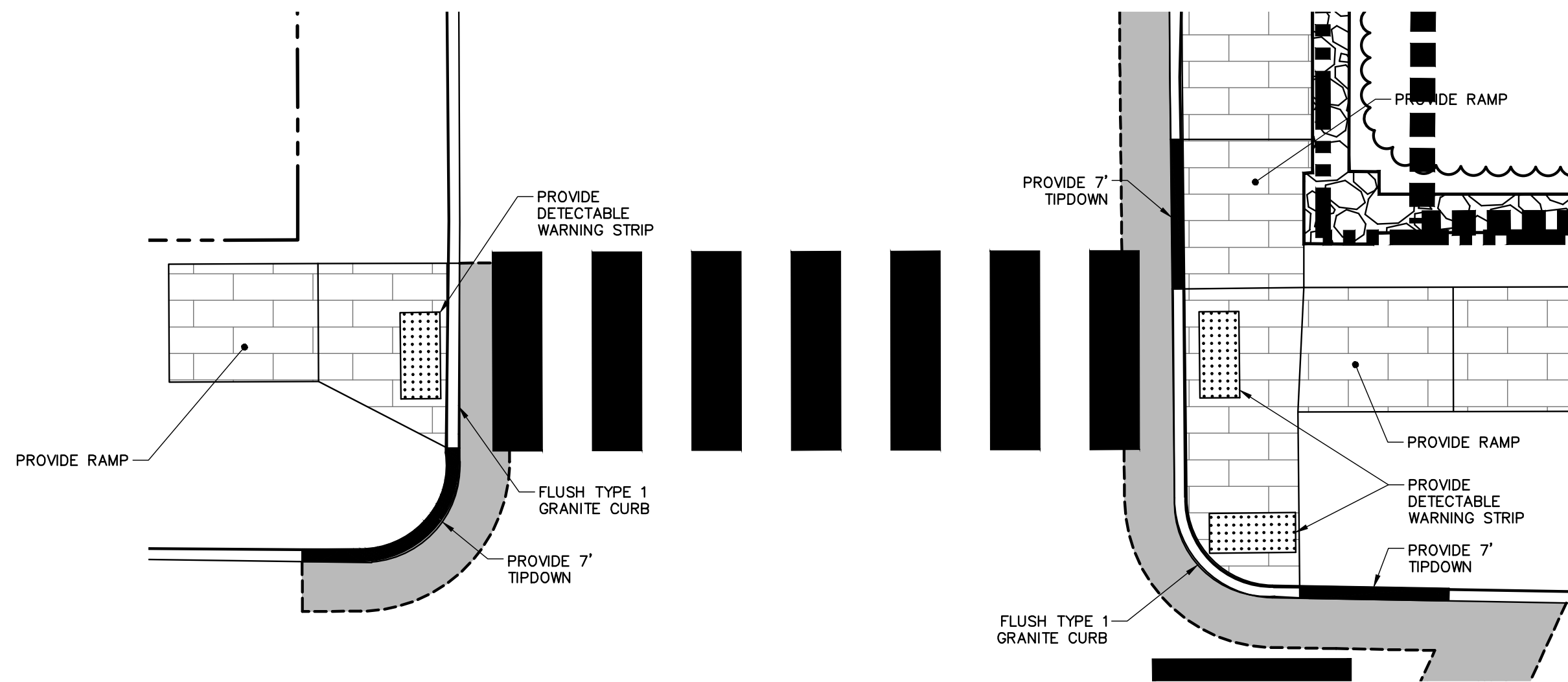
NOTES:

- COMPOSITE WET SET (REPLACEABLE) DETECTABLE WARNING PANELS SHALL BE AS MANUFACTURED BY ADA SOLUTIONS, INC. (WWW.ADATILE.COM), OR APPROVED EQUAL.
- CAST IN PLACE CONCRETE SHALL MEET SPECIFICATIONS FOR MAINE D.O.T. CLASS A STRUCTURAL CONCRETE, MINIMUM COMPRESSIVE STRENGTH 4,000 PSI. THE CONCRETE SHALL BE SEALED PRIOR TO SETTING PANELS.
- TRUNCATED DOMES SHALL BE ALIGNED IN ROWS, PARALLEL AND PERPENDICULAR TO THE PREDOMINANT DIRECTION OF TRAVEL. NO OTHER DETECTABLE WARNING DESIGN OR CONFIGURATION IS ALLOWED.
- FOR ALL DETECTABLE WARNING PANELS, WITHIN OR ABUTTING HISTORIC DISTRICTS AND HISTORIC LANDSCAPES, "DARK GRAY" COLORED (#36118) PANELS SHALL BE USED. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION.
- THE DETECTABLE WARNING PANEL SHALL HAVE ONE FULL COURSE OF PINEHALL PATHWAY PAVERS (THE CURRENT BRICK STANDARD) AROUND THE FULL PERIMETER OF THE PANEL. THIS PERIMETER COURSE SHALL BE SET USING PORTLAND MORTAR CEMENT TO CREATE A FLUSH SURFACE BETWEEN THE BRICK AND THE PANEL.
- SIZE: THE DETECTABLE WARNING PANEL(S) SHALL EXTEND 24 INCHES MINIMUM IN THE DIRECTION OF TRAVEL AND THE FULL WIDTH OF THE CURB RAMP, LANDING, OR BLENDED TRANSITION TO THE STREET.
- ORIENTATION: THE DETECTABLE WARNING PANEL SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS 6 INCHES MINIMUM AND 8 INCHES MAXIMUM FROM THE CURB LINE. THE PANEL SHALL BE ORIENTED TO THE DIRECTION OF TRAVEL AS IDENTIFIED BY THE POINT OF EGRESS.



ADA RAMP AT STORER & DANFORTH INTERSECTION

SCALE: 1"=5'



ADA RAMP AT FLETCHER & DANFORTH INTERSECTION

SCALE: 1"=5'

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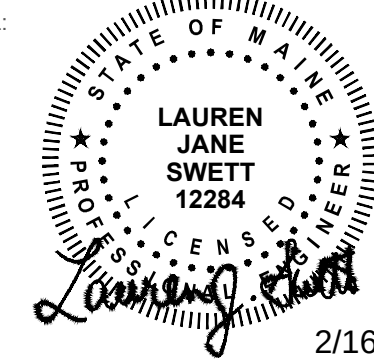
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WAYNFLETE SCHOOL
360 SPRING STREET
PORTLAND, MAINE 04102

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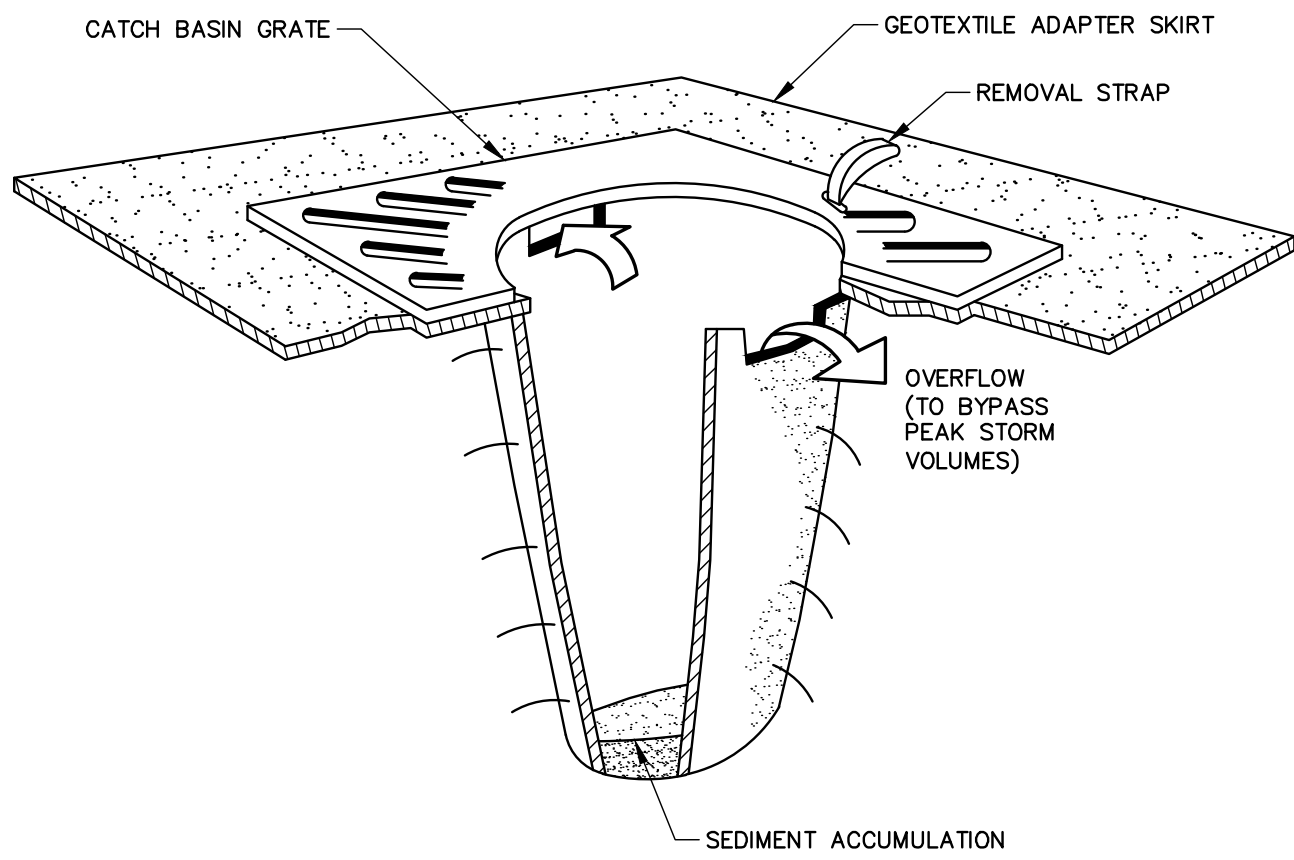
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DATE OF ISSUE: FEBRUARY 2016
PROJECT NUMBER: 229423
STATUS: PLANNING BOARD SUBMISSION

CIVIL DETAILS - 3

D-202



NOTES:

CATCH BASIN PROTECTION TO BE "SILTSACK" (BY ACF ENVIRONMENTAL) OR "STREAM GUARD" (BY FOSS ENVIRONMENTAL SERVICES).

INSERT TO BE EMPTIED IN AN APPROVED MANNER WHEN IT IS 1/2 FULL OF SEDIMENT.

INSPECT INSERT AFTER ALL RAINFALL EVENTS, REPAIR AND MAINTAIN AS REQUIRED.

TEMPORARY INLET PROTECTION

N.T.S.

EROSION AND SEDIMENT CONTROL NOTES

Temporary Erosion Control

Contractor shall prepare and submit a soil erosion and water pollution control plan to engineer in accordance with section 656.

Measure	Dates For Use	Timing, Activity, and Location
Sedimentation Barrier	ALL	Before soil disturbance, install downhill of areas to be disturbed and around material stockpiles.
Up-slope Diversion	ALL	Before soil disturbance, install uphill of areas to be disturbed and material stockpiles.
Catch Basin Protection	ALL	Before soil or pavement disturbance, install ACF Environmental, Inc. High Flow Siltsack, Siltcover Inlet Filter, or equal, installed per manufacturer's requirements.
Dust Control	ALL	During dry weather, apply water and calcium chloride to control dust.
Temporary Seeding	April 15 to Oct. 1	Soil stockpiles that are not covered and disturbed areas that will not be disturbed again within 14 days. If grass growth provides less than 95% soil coverage by Nov. 1, apply mulch and anchor with erosion control blanket.
Mulch	April 15 to Sept. 15	On all areas of exposed soil prior to rain events or every days, apply 100-150 lbs (2.5 bales) per 1,000 sq ft. by mechanical blower.
Winter Mulch	Sept. 16 to Oct. 31 Nov. 1 to April 14	On all areas of exposed soil prior to precipitation or every days, apply 150 to 170 lbs. mulch (4 bales) per 1,000 sq. ft. by mechanical blower. Erosion control blanket may be used as a substitute for winter mulch.
Inspections	Until site is permanently stabilized	Inspect the erosion and sedimentation control measures daily, and maintain and repair as necessary.

Permanent Erosion Control:

Measure	Dates For Use	Timing, Activity, and Location
Pavement - Base Course - Final Course	When no frost is in ground	Install only in areas shown on the plan, shortly after pavement base is brought to final grade. Install near completion of project.
Permanent Seeding	April 15 to Sept. 15	On final grade areas, within 7 days of grade preparation, prepare topsoil, followed by seed and mulch application.
Dormant Seeding	Sept. 16 to April 15	On final grade areas, with prepared topsoil. Apply seed at double the specified rate on bare soil, and follow with an application of winter mulch.
Ground Cover, Trees, Shrubs	April 15 to Nov. 1	Install with final landscaping.
Permanent Mulch	ALL	Install with final landscaping.

Inspections:

Regular inspections of all erosion and sedimentation controls shall be made at least weekly and prior to and following storm events. Minimum inspections shall be made as listed in the table below.

Inspected Item	Look For
Mulched Surfaces	Thin mulch or inadequate application. Wind movement.
Seeded Surfaces	Poor seed germination. Loss of mulch. Development of rivalets.
Sediment Barrier	Sediment build-up to one half the height of the barrier. Undermining of the barrier. Supporting stakes loose, toppled, or unmarked. Breaks in barrier.
Perimeter Diversion	Discharge is to stabilized area. Erosion or breaks in barrier. Supporting stakes loose, toppled or unmarked.
Catch Basin Protection	Sediment build-up and structure blockages. Slow flow/Ponding water. Breaks in fabric or voids in barrier.
Dewatering Filter	Breaks in fabric or supporting structure. Slow flow, indicating high sediment build-up.
Construction Entrance	Sedimentation of roadways. Off-site dust complaints.

EROSION AND SEDIMENTATION CONTROL NOTES

TEMPORARY EROSION CONTROL MEASURES MAY INCLUDE THE USE OF STABILIZED CONSTRUCTION ENTRANCES, HYDRAULIC MULCH, HAY AND STRAW MULCH, EROSION CONTROL BLANKET, TURF REINFORCED MATTING, RIPRAP AND TEMPORARY SEEDING. TEMPORARY SEDIMENT CONTROL MEASURES INCLUDE THE USE OF SILT FENCE, EROSION CONTROL MIX BERM, PLUNGE POOLS, CHECK DAMS, SEDIMENT TRAPS, CATCHBASIN SEDIMENT COLLECTION BAGS AND GEOTEXTILE FILTER BAGS. PERMANENT MEASURES INCLUDE THE USE OF RIPRAP AT EXPOSED STORMDRAIN AND CULVERT INLETS AND OUTLETS, ARMORED SWALES AND SLOPES AND PERMANENT VEGETATION.

GENERAL

- THE PROJECT SHALL CONFORM WITH THE STANDARDS OF THE MAINE CONSTRUCTION GENERAL PERMIT, IF APPLICABLE.
- ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MAINE EROSION AND SEDIMENT CONTROL BMPS HANDBOOK PUBLISHED BY THE MAINE DEP UNLESS OTHERWISE NOTED IN THESE PLANS. [HTTP://MAINE.GOV/DEP/BLWQ/DOCSTAND/ESCBMPS/](http://MAINE.GOV/DEP/BLWQ/DOCSTAND/ESCBMPS/)
- ANY ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES DEEMED NECESSARY BY THE OWNER'S REPRESENTATIVE, DEPARTMENT OF ENVIRONMENTAL PROTECTION, AND/OR MUNICIPAL OFFICIALS SHALL BE INSTALLED BY THE CONTRACTOR.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL FINES RESULTING FROM EROSION OR SEDIMENTATION FROM THE SITE TO SURROUNDING PROPERTIES, WATER BODIES, OR WETLANDS AS A RESULT OF THIS PROJECT.
- THE CONTRACTOR SHALL MINIMIZE DISTURBANCE TO THE SITE WHENEVER POSSIBLE WHILE ALLOWING PROPER SITE DEVELOPMENT.
- CONSTRUCTION STAGING SHALL BE CONDUCTED IN A WAY TO MINIMIZE THE POTENTIAL FOR STORMWATER RUN-ON TO DISTURBED AREAS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR/REPLACEMENT/MAINTENANCE OF ALL EROSION CONTROL MEASURES UNTIL ALL ARE STABILIZED TO THE SATISFACTION OF THE ABOVE PERSONNEL. DESCRIPTIONS OF PERMANENT STABILIZATION FOR VARIOUS COVER TYPES FOLLOWS:
 - FOR SEEDED AREAS, PERMANENT STABILIZATION MEANS THAT 90% OF THE DISTURBED AREA IS COVERED WITH REASONABLY THICK UNIFORM STAND OF PERMANENT GRASS SPECIES, FREE FROM SIZABLE THIN OR BARE SPOTS.
 - FOR SODDED AREAS, PERMANENT STABILIZATION MEANS THAT COMPLETE BINDING OF THE SOD ROOTS INTO THE UNDERLYING SOIL WITH NO SLUMPING OF THE SOD OR DIE OFF.
 - FOR MULCHED AREAS, PERMANENT STABILIZATION MEANS TOTAL COVERAGE OF THE EXPOSED AREA WITH AN APPROVED MULCH MATERIAL.
 - FOR AREAS STABILIZED WITH RIPRAP, PERMANENT STABILIZATION MEANS THAT SLOPES STABILIZED WITH RIPRAP HAVE AN APPROPRIATE BACKING OF A WELL-GRADED GRAVEL OR APPROVED GEOTEXTILE. STONE MUST BE SIZED APPROPRIATELY AND IN ACCORDANCE WITH SECTION E-6 OF THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL.
 - FOR PAVED AREAS, PERMANENT STABILIZATION MEANS THE PLACEMENT OF THE ASPHALT BINDER COURSE.
 - FOR OPEN CHANNELS, LEVEL SPREADERS, ENGINEERED BUFFERS OR OTHER DESIGNED STORMWATER CONVEYANCE STRUCTURE, PERMANENT STABILIZATION MEANS THE CHANNELIZED AREA(S) IS STABILIZED WITH MATURE VEGETATION AT LEAST THREE INCHES IN HEIGHT, WITH APPROVED RIPRAP, OR WITH OTHER NON-EROSIVE LINING CAPABLE OF WITHSTANDING THE ANTICIPATED FLOW VELOCITIES AND FLOW DEPTHS WITHOUT RELIANCE ON CHECK DAMS TO SLOW FLOW. THERE SHALL BE NO EVIDENCE OF SLUMPING, UNDERCUTTING OR DOWNCUTTING OF THE DESIGNED CHANNEL.
- IF THE AREA WILL REMAIN UNWORKED FOR MORE THAN ONE YEAR OR HAS BEEN BROUGHT TO FINAL GRADE, AND WILL NOT BE BUILT ON, THEN IMMEDIATELY PROVIDE PERMANENT STABILIZATION USING VEGETATION THROUGH PLANTING, SEEDING, SOD OR THROUGH THE USE OF PERMANENT MULCH OR RIPRAP. IF USING VEGETATION FOR STABILIZATION, SELECT THE PROPER VEGETATION FOR THE LIGHT, MOISTURE, AND SOIL CONDITIONS. AMEND AREAS OF DISTURBED, OVERLY-COMPACTED SUBSOIL WITH TOPSOIL OR COMPOST AND LIGHTLY TILL 2-3" OF SOIL AMENDMENTS INTO THE TOP 8" OF SOIL.
- PERMANENT SEEDING: SEED MIXES AND APPLICATION ARE SPECIFIED ON THE LANDSCAPING PLANS.
- PROTECT ALL SEEDED AREAS WITH MULCH OR EROSION CONTROL BLANKET IN AREAS OF SHEET OR CONCENTRATED FLOWS. MULCH ALL AREAS SO THAT SOIL IS NOT VISIBLE THROUGH THE MULCH REGARDLESS OF THE APPLICATION RATE. SCHEDULE SEEDING OR SODDING TO AVOID FAILURE DUE TO SUMMER DROUGHT AND FALL FROST. NEWLY SEEDED AREAS SHOULD BE PROTECTED FROM VEHICLE TRAFFIC, PEDESTRIAN TRAFFIC AND CONCENTRATED RUNOFF UNTIL THE VEGETATION IS WELL ESTABLISHED. AREAS MUST BE REWORKED AND RESTABILIZED IF GERMINATION IS SPARSE OR SURFACE EROSION IS EVIDENT.
- DITCH LININGS AND RIPRAP INLET AND OUTLET PROTECTION SHALL BE INSTALLED WITHIN 48 HOURS OF COMPLETING THE GRADING OF THAT SECTION OF DITCH OR INSTALLATION OF THE CULVERT.
- EROSION CONTROL BLANKET SHALL BE INSTALLED ON ALL PERMANENT SLOPES STEEPER THAN 3:1, IN THE BASE OF DITCHES AND ANY DISTURBED AREAS WITHIN 100 FEET OF A PROTECTED NATURAL RESOURCE (WETLANDS AND WATER RESOURCES). EROSION CONTROL BLANKET SHALL BE NORTH AMERICAN GREEN S150BN OR APPROVED EQUAL. EROSION CONTROL BLANKET SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL TEMPORARY EROSION CONTROL MEASURE UPON STABILIZATION OF PROJECT AREA & COST SHALL BE INCIDENTAL TO CONTRACT.

WINTER CONDITIONS

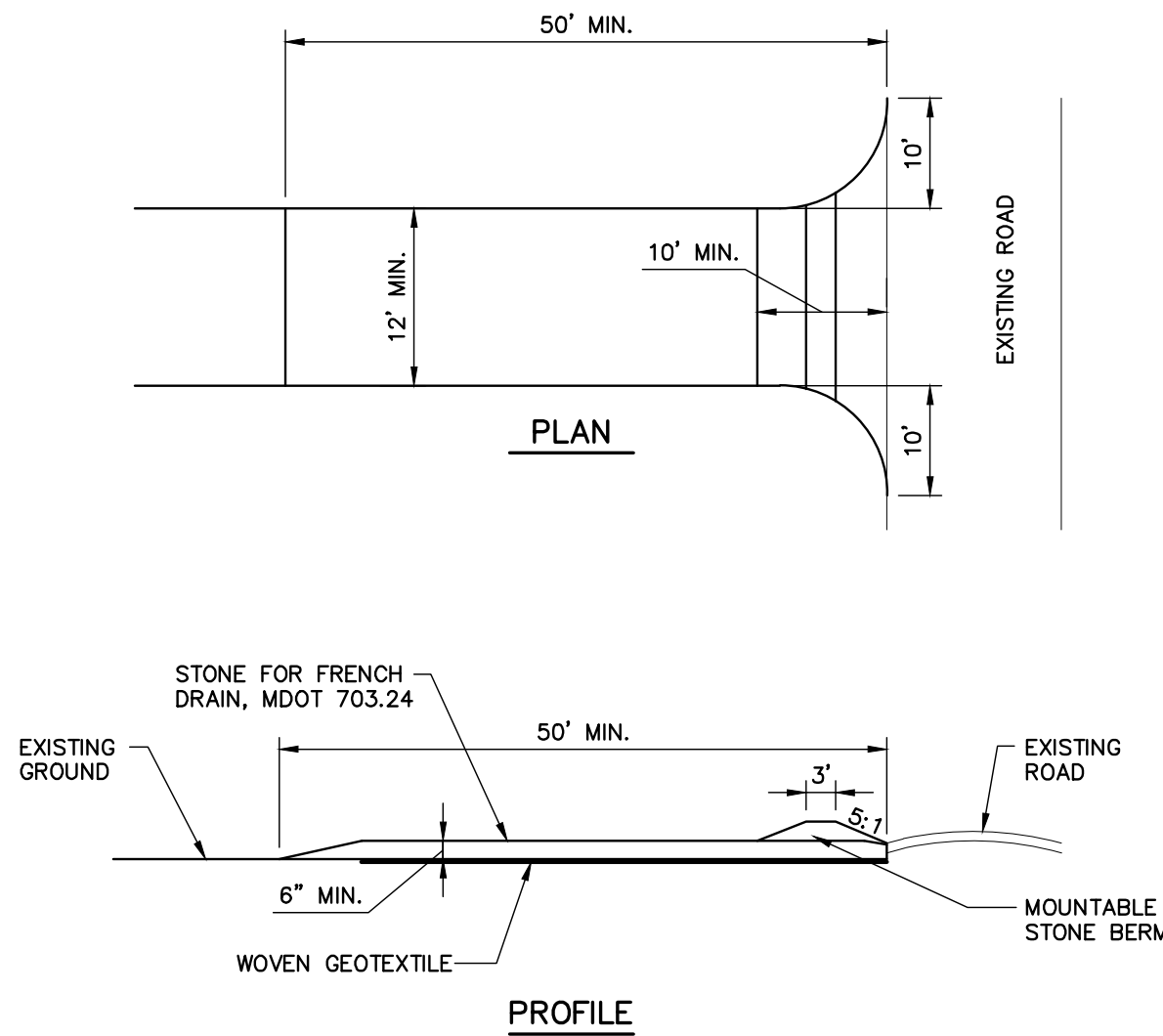
- WINTER CONSTRUCTION IS CONSTRUCTION ACTIVITY PERFORMED DURING THE PERIOD FROM NOVEMBER 1 THROUGH APRIL 1. IF AREAS WITHIN THE CONSTRUCTION AREA ARE NOT STABILIZED WITH TEMPORARY OR PERMANENT MEASURES OUTLINED ABOVE BY NOVEMBER 15 THEN THE SITE MUST BE PROTECTED WITH ADDITIONAL STABILIZATION MEASURES THAT ARE SPECIFIC TO WINTER CONDITIONS.

GOOD HOUSEKEEPING AND POLLUTION PREVENTION

- SPILL PREVENTION CONTROLS MUST BE USED TO PREVENT POLLUTANTS FROM BEING DISCHARGED FROM MATERIALS ON SITE, INCLUDING STORAGE PRACTICES TO MINIMIZE EXPOSURE OF THE MATERIALS TO STORMWATER RUNOFF AND APPROPRIATE SPILL PREVENTION, CONTAINMENT AND RESPONSE PLANNING AND IMPLEMENTATION.
- DURING CONSTRUCTION, PETROLEUM PRODUCTS AND OTHER HAZARDOUS MATERIALS WITH THE POTENTIAL TO CONTAMINATE GROUND OR SURFACE WATERS MAY NOT BE STORED OR HANDLED IN AREAS OF THE SITE DRAINING TO INFILTRATION AREAS. AN "INFILTRATION AREA" IS ANY ARE OF THE SITE THAT BY DESIGN, OR AS A RESULTS OF SOIL AND TOPOGRAPHY, ACCUMULATES RUNOFF THAT INFILTRATES IN THE SOIL. DIKES, BERMS, SUMPS AND OTHER FORMS OF TEMPORARY SECONDARY CONTAINMENT THAT PREVENT DISCHARGE TO GROUNDWATER MAY BE USED TO ISOLATE PORTIONS OF THE SITE FOR THE PURPOSES OF STORAGE AND HANDLING OF THESE MATERIALS.
- LOCATE ALL MATERIAL STOCKPILES WITH CONSIDERATION FOR STORMWATER DRAINAGE PATTERNS AND INFRASTRUCTURE.
- TAKE ALL REASONABLE MEASURES TO MINIMIZE DUST RESULTING FROM THE PROJECT. OIL MAY NOT BE USED FOR DUST CONTROL.
- LOCATE ALL LITTER, CONSTRUCTION DEBRIS AND CONSTRUCTION CHEMICALS WITH CONSIDERATION FOR STORMWATER DRAINAGE PATTERNS AND INFRASTRUCTURE.
- TRENCH OR FOUNDATION DE-WATERING MUST BE SPREAD THROUGH SUFFICIENT NATURAL BUFFERS THAT HAVE CAPACITY TO INFILTRATE THE PUMPED WATER OR SHOULD BE PUMPED TO DESIGNED CONSTRUCTION DEWATERING DEVICES AS DESCRIBED IN THE MAINE EROSION AND SEDIMENT CONTROL BMPS HANDBOOK.
- SEDIMENTS AND SOIL MATERIALS SHOULD BE SWEEP FROM PAVED SURFACES AT THE END OF EACH WORKDAY OR PRIOR TO RAIN EVENTS, WHENEVER POSSIBLE.

INSPECTION AND MAINTENANCE

- A PERSON WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROLS, INCLUDING THE STANDARDS IN THE MAINE CONSTRUCTION GENERAL PERMIT, THE MAINE EROSION AND SEDIMENT CONTROL BMPS HANDBOOK OR ANY MUNICIPAL REQUIREMENTS MUST CONDUCT THE INSPECTION. THIS PERSON MUST BE IDENTIFIED IN THE INSPECTION LOG. IF ADDITIONAL BMPS OR MODIFICATIONS TO BMPS ARE NECESSARY, THE MODIFICATIONS MUST BE IMPLEMENTED WITH CALENDAR DAYS OR PRIOR TO ANY PRECIPITATION EVENT. ALL MEASURES MUST BE MAINTAINED IN EFFECTIVE OPERATING CONDITION UNTIL AREAS ARE PERMANENTLY STABILIZED.
- AN INSPECTION AND MAINTENANCE LOG MUST BE KEPT BY THE CONTRACTOR, SUMMARIZING THE SCOPE OF THE INSPECTION, DATE, AND MAJOR OBSERVATIONS RELATING TO THE OPERATION OF EROSION AND SEDIMENT CONTROL BMPS, MATERIAL STORAGE AREAS, AND VEHICLE ACCESS POINTS TO THE CONSTRUCTION AREA. THE INSPECTION LOG SHOULD BE DELIVERED TO THE PROPERTY OWNER OR RESPONSIBLE CONTRACTING ENTITY UPON COMPLETION OF THE PROJECT.



NOTES:

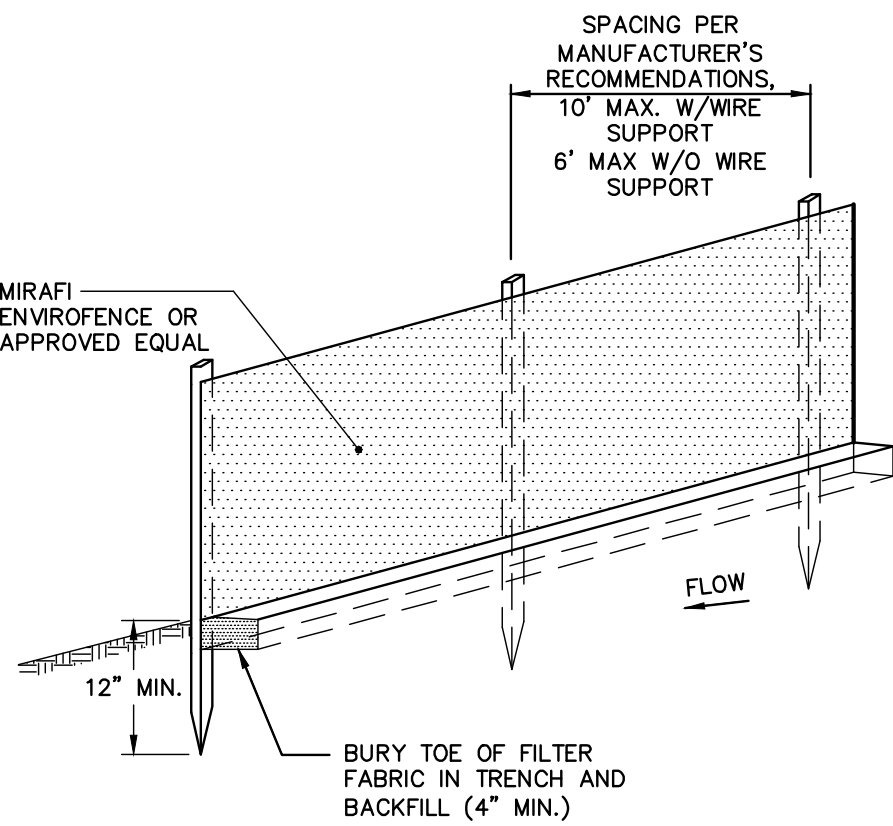
- CONSTRUCTION ENTRANCES MAY BE RELOCATED AS CONSTRUCTION PROGRESSES.
- WHEEL WASH PITS MAY ALSO BE USED, IF APPROVED.

MAINTENANCE: INSPECT FOR EFFECTIVE REMOVAL OF SOIL FROM VEHICLES PRIOR TO LEAVING THE SITE. SWEEP ANY SOIL FROM ADJACENT ROADWAYS.

REMOVAL: AT LEAST ONE CONSTRUCTION ENTRANCE SHALL BE MAINTAINED UNTIL ALL AREAS OF THE SITE ARE STABILIZED.

STABILIZED CONSTRUCTION ENTRANCE DETAIL

N.T.S.



NOTES:

- INSTALL FABRIC ON UPHILL SIDE OF SUPPORT POSTS
- INSTALL SILT FENCE ACROSS SLOPES
- SILT FENCE SHALL NOT BE USED IN DRAINAGE WAYS

MAINTENANCE: INSPECT FOR TEARS IN THE FABRIC OR DAMAGE TO SUPPORTS. REPAIR AS NECESSARY. REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES A DEPTH OF SIX-INCHES OR LESS.

REMOVAL: WHEN UPSLOPE AREAS ARE STABILIZED, THE STRUCTURE AND ANY ACCUMULATED SEDIMENT WILL BE REMOVED.

SEDIMENT BARRIER - SILTATION FENCE DETAIL

N.T.S.

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COMMITMENT & INTEGRITY DRIVE RESULTS

PROJECT NAME:

WAYNFLETE
GYM + LOWER SCHOOL

NEW CONSTRUCTION

WAYNFLETE SCHOOL
360 SPRING STREET
PORTLAND, MAINE 04102

SEAL:



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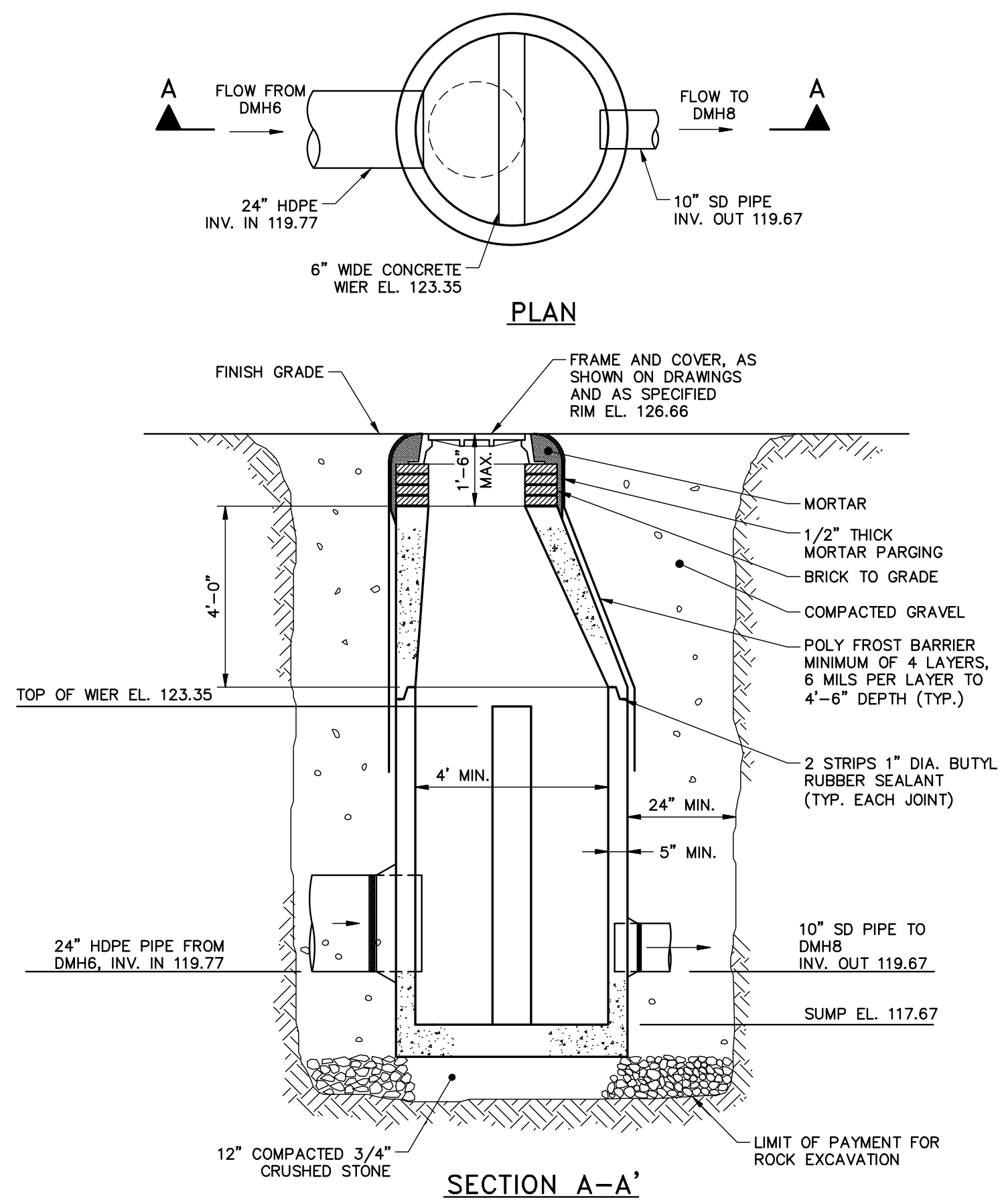
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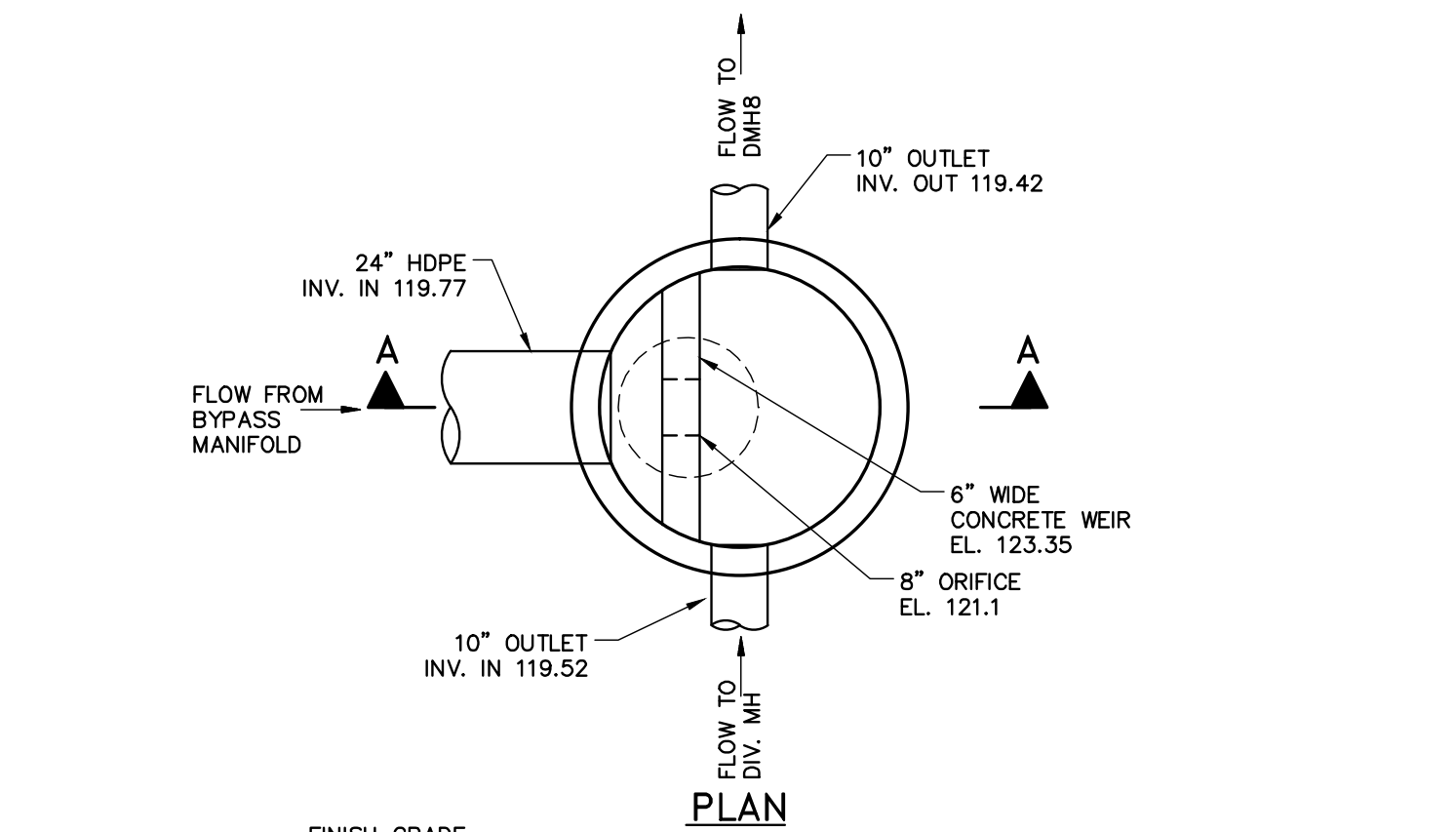
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PROJECT NUMBER:	229423
STATUS:	PLANNING BOARD SUBMISSION

CIVIL DETAILS - 4

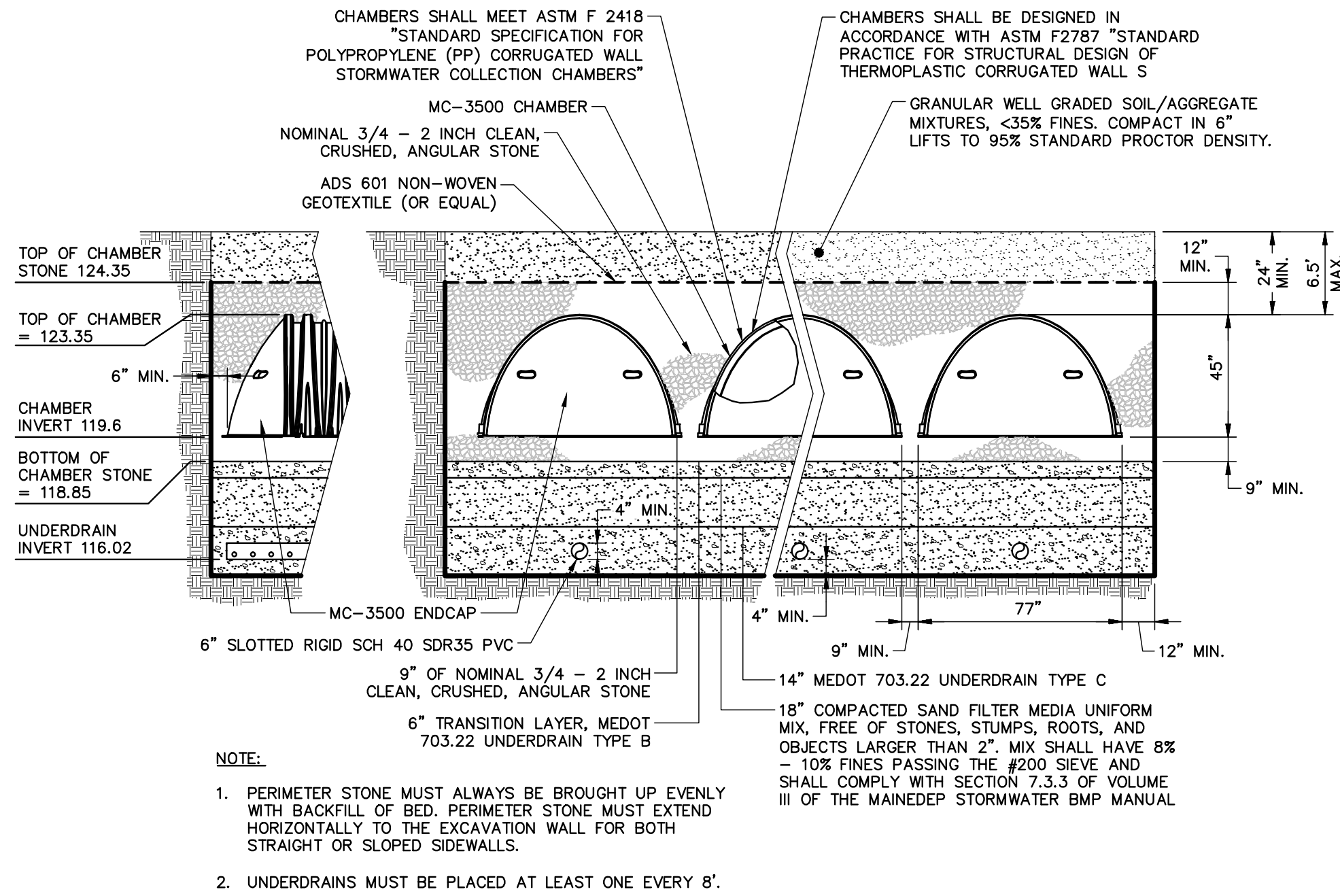
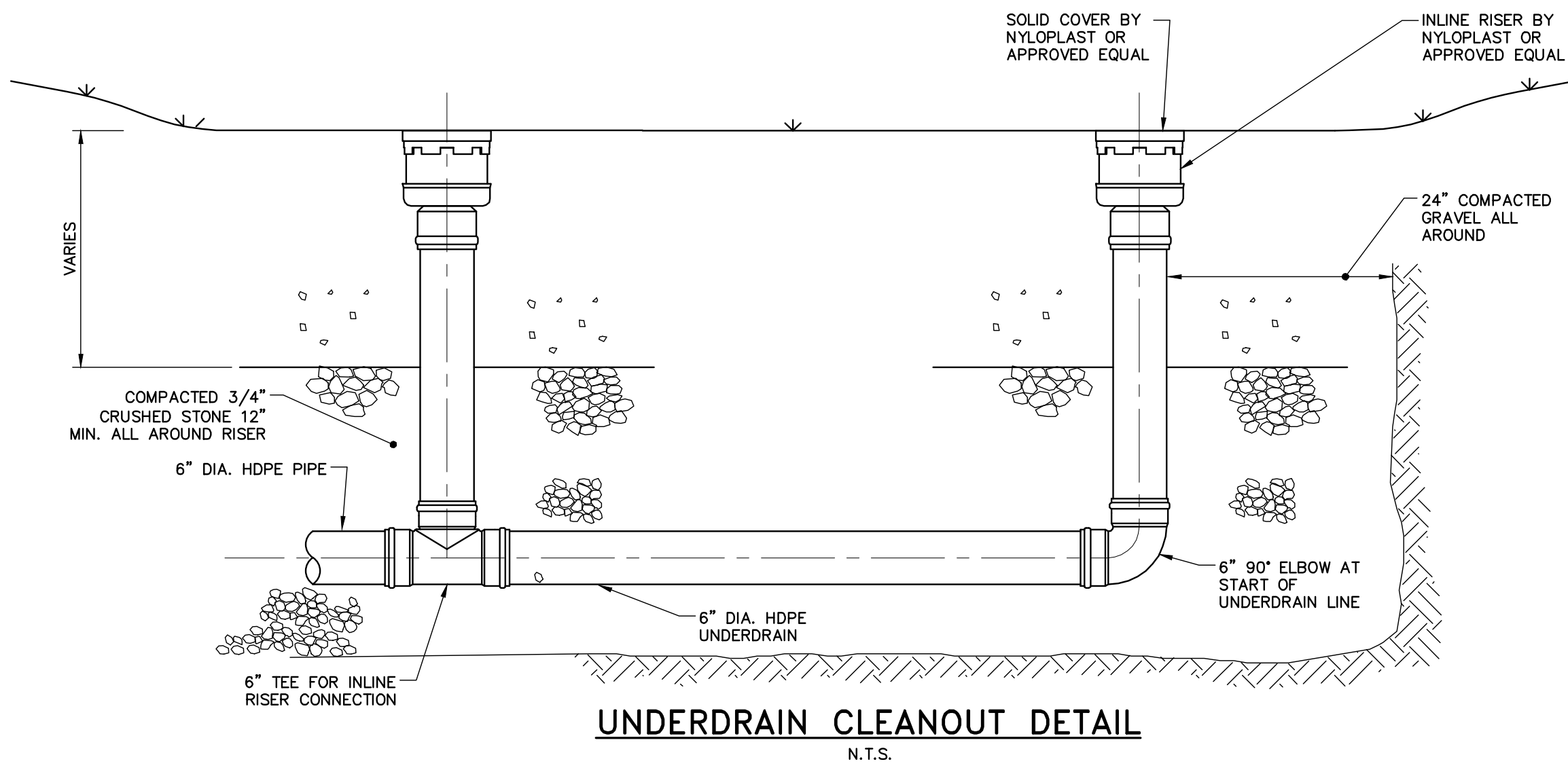
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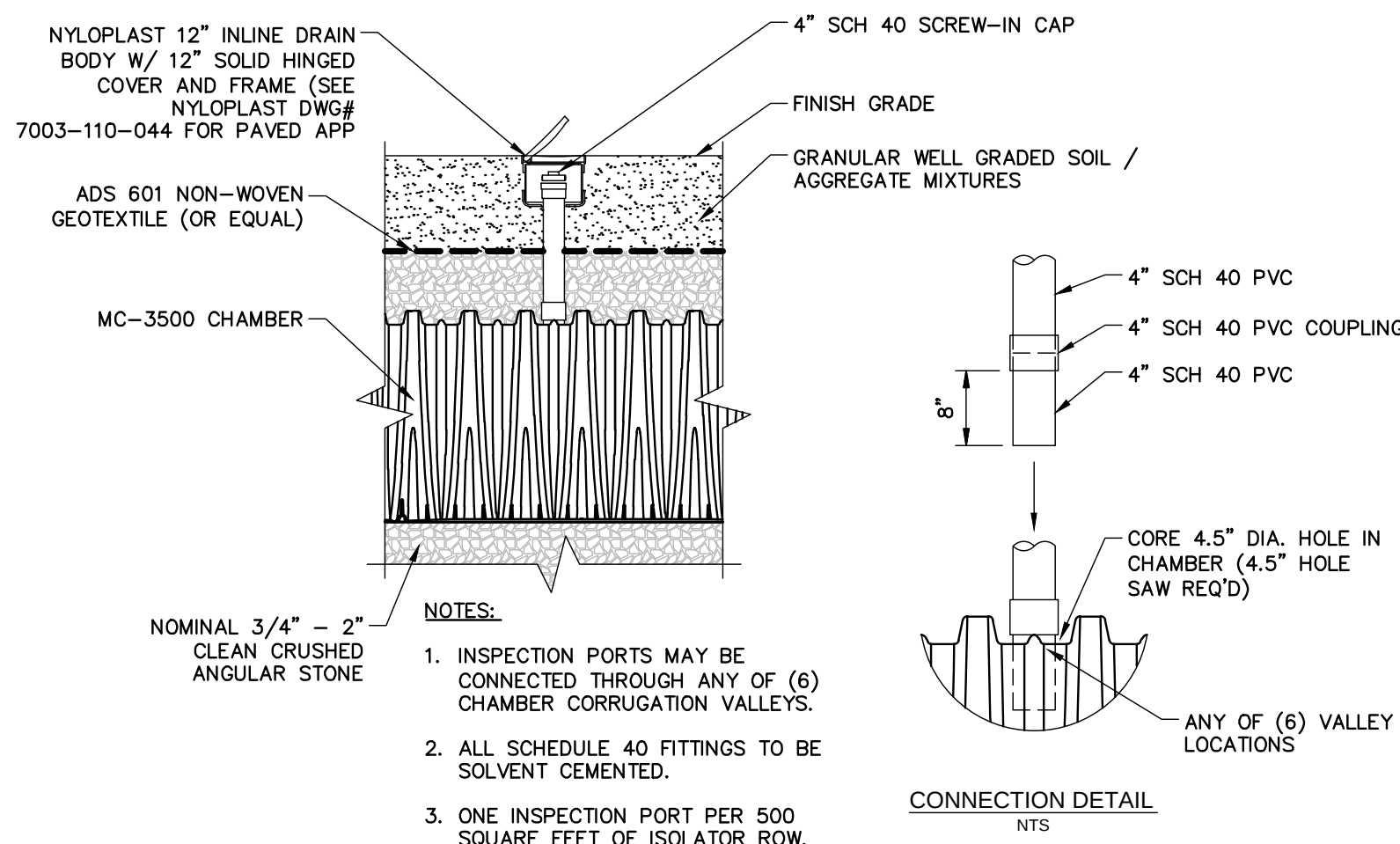
DIVERSION MANHOLE DETAIL
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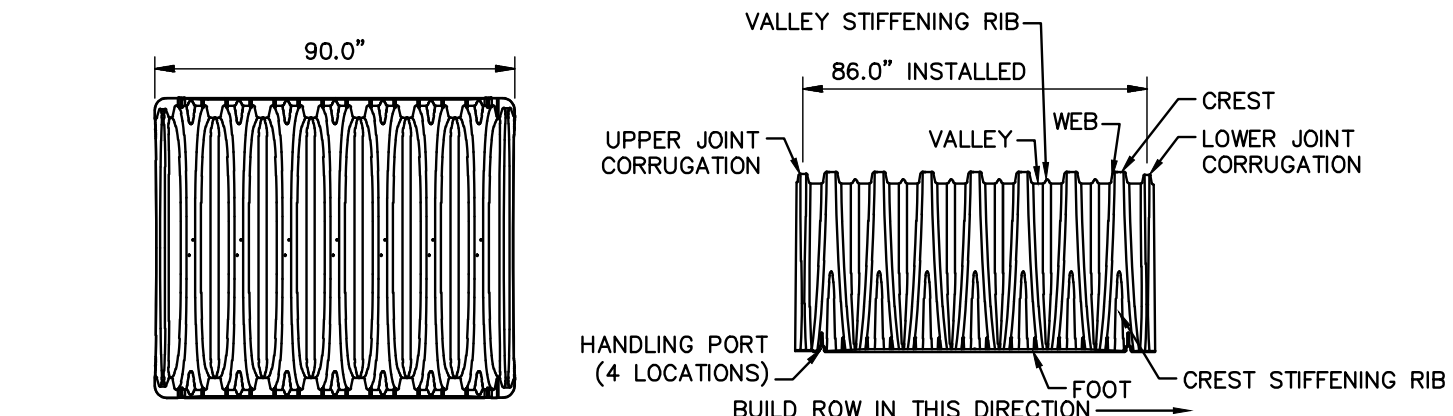
OUTLET CONTROL STRUCTURE (OCS) DETAIL
N.T.S.



STORMTECH MC-3500 AND UNDERDRAINED SUBSURFACE SAND FILTER TYPICAL SECTION
N.T.S.



STORMTECH MC-3500 INSPECTION PORT DETAIL
N.T.S.

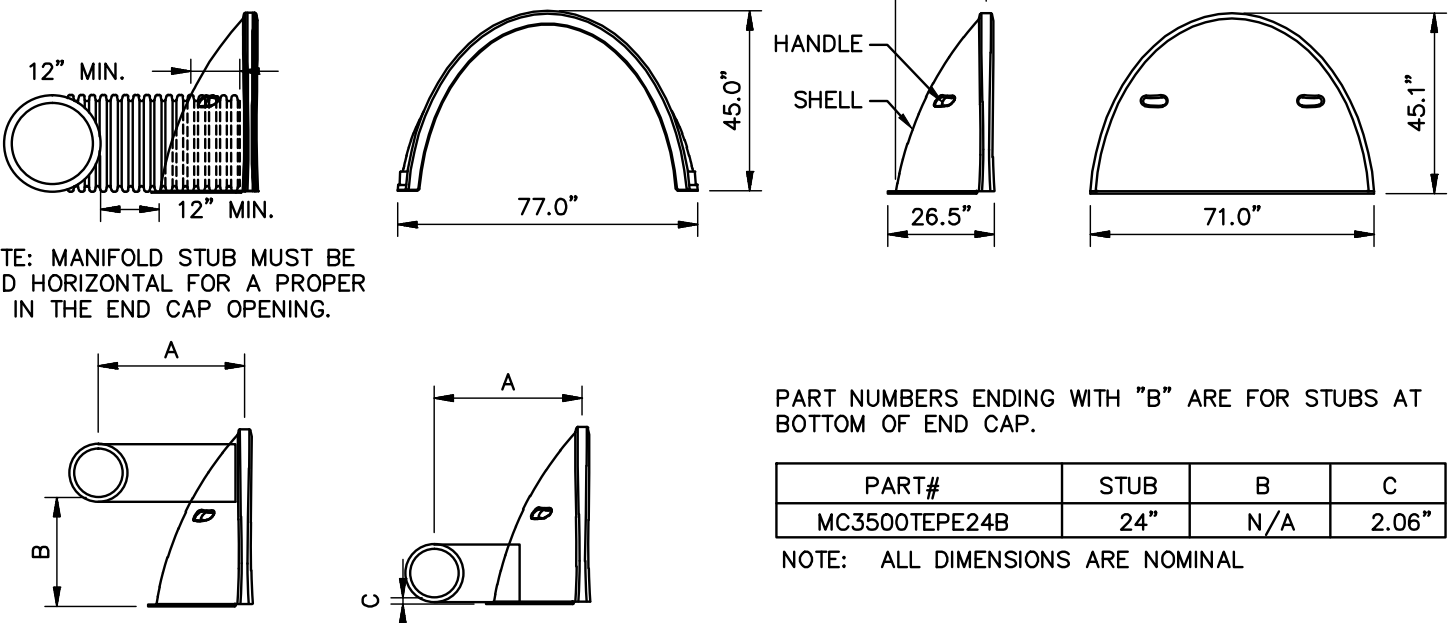


NOMINAL MC-3500 CHAMBER SPECIFICATIONS

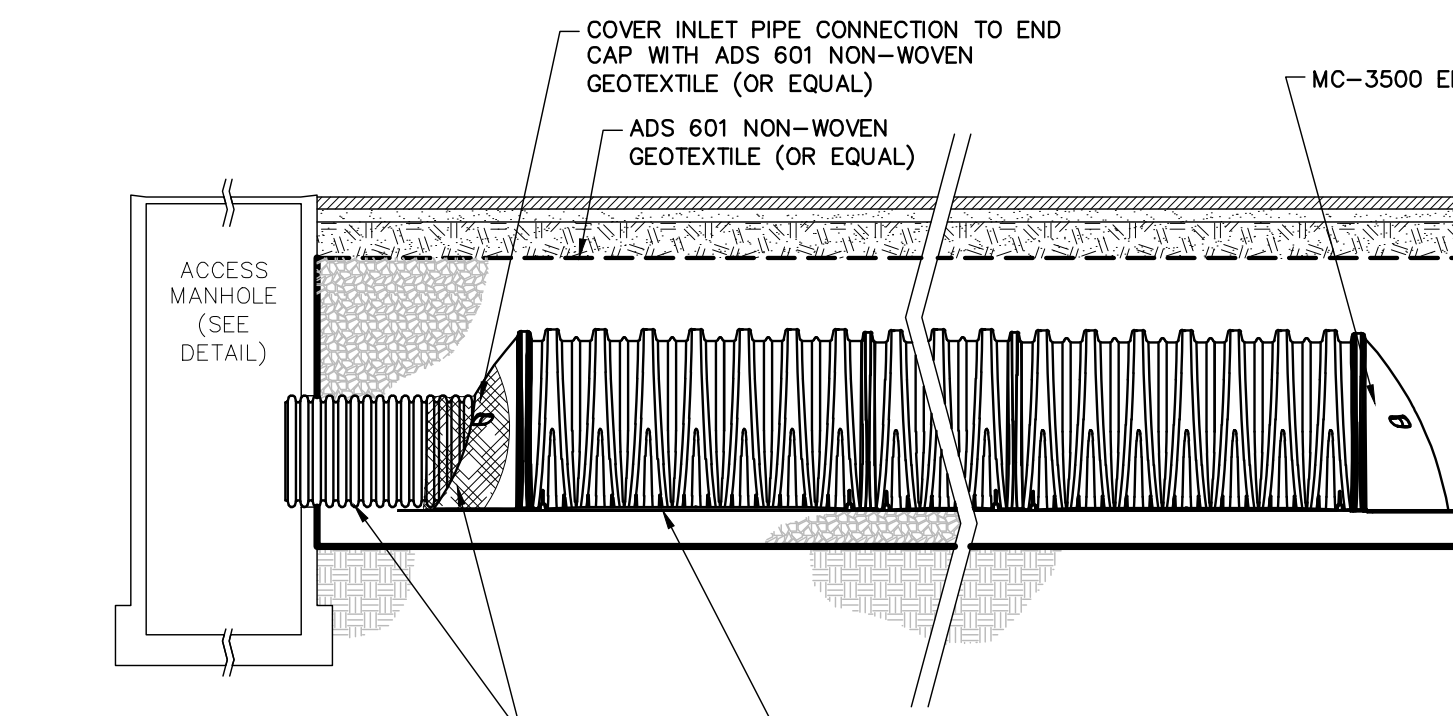
SIZE (L x W x H)	90" x 77" x 45"
CHAMBER STORAGE	109.9 ft ³
MINIMUM INSTALLED STORAGE	178.9 ft ³
WEIGHT	134 lbs.

NOMINAL MC-3500 END CAP SPECIFICATIONS

SIZE (L x W x H)	26.5" x 71" x 45.1"
ENDCAP STORAGE	15.6 ft ³
MINIMUM INSTALLED STORAGE	46.9 ft ³
WEIGHT	43 lbs.



STORMTECH MC-3500 TECHNICAL SPECIFICATIONS
N.T.S.



STORMTECH MC-3500 ISOLATOR ROW PROFILE
N.T.S.

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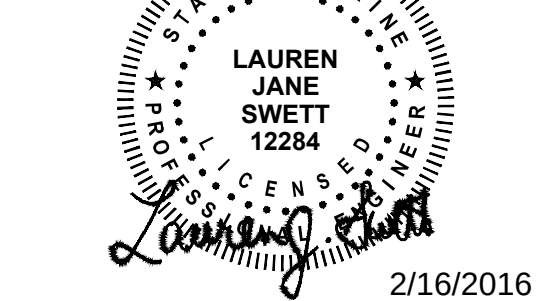
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WAYNFLETE GYM + LOWER SCHOOL

NEW CONSTRUCTION

WAYNFLETE SCHOOL
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PORTLAND, MAINE 04102

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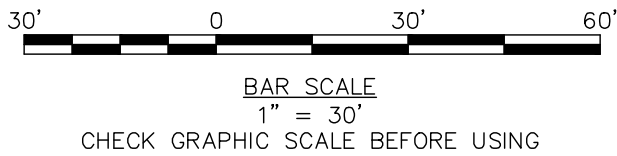
CIVIL DETAILS - 5

D-204



STORMWATER LEGEND

- 1X SUBCATCHMENT AREAS
- TIME OF CONCENTRATION (Tc) FLOW LINE
- LIMIT OF SUBCATCHMENT AREA
- SP1 STUDY POINT



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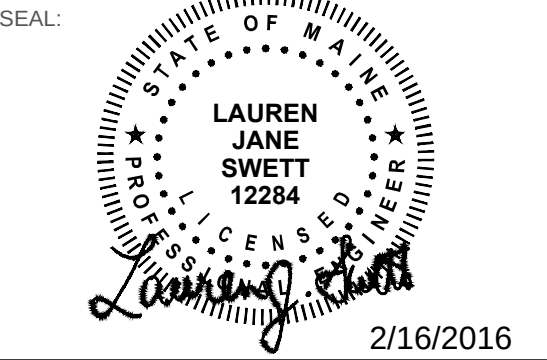
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PRE
DEVELOPMENT
DRAINAGE AREA
PLAN

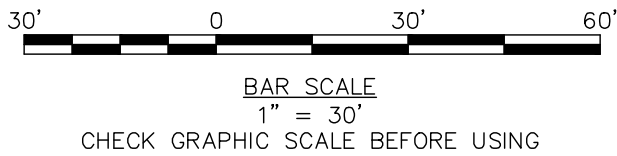
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STORMWATER LEGEND

- 1S SUBCATCHMENT AREAS
- TIME OF CONCENTRATION (Tc)
FLOW LINE
- LIMIT OF SUBCATCHMENT AREA
- SP1 STUDY POINT



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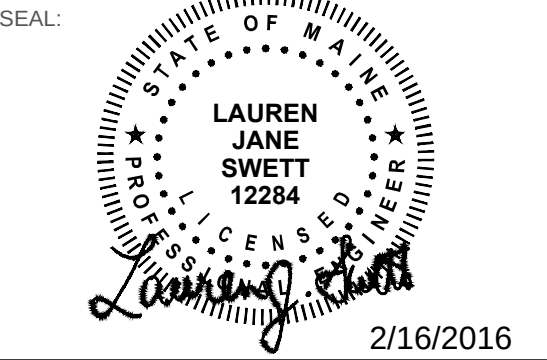
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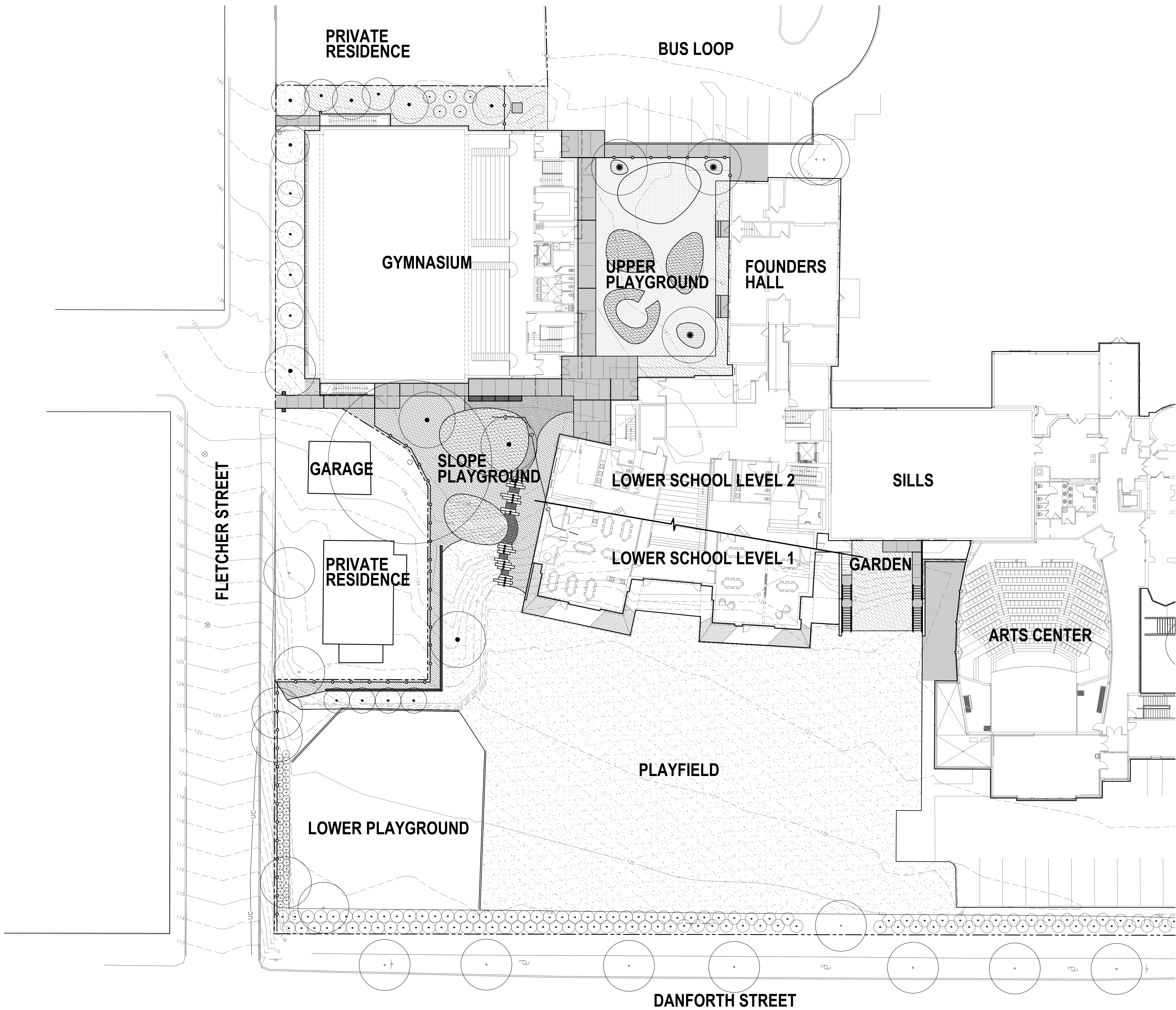
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POST
DEVELOPMENT
DRAINAGE AREA
PLAN

POST

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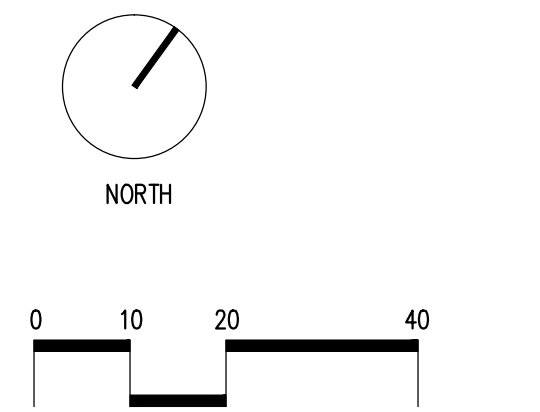
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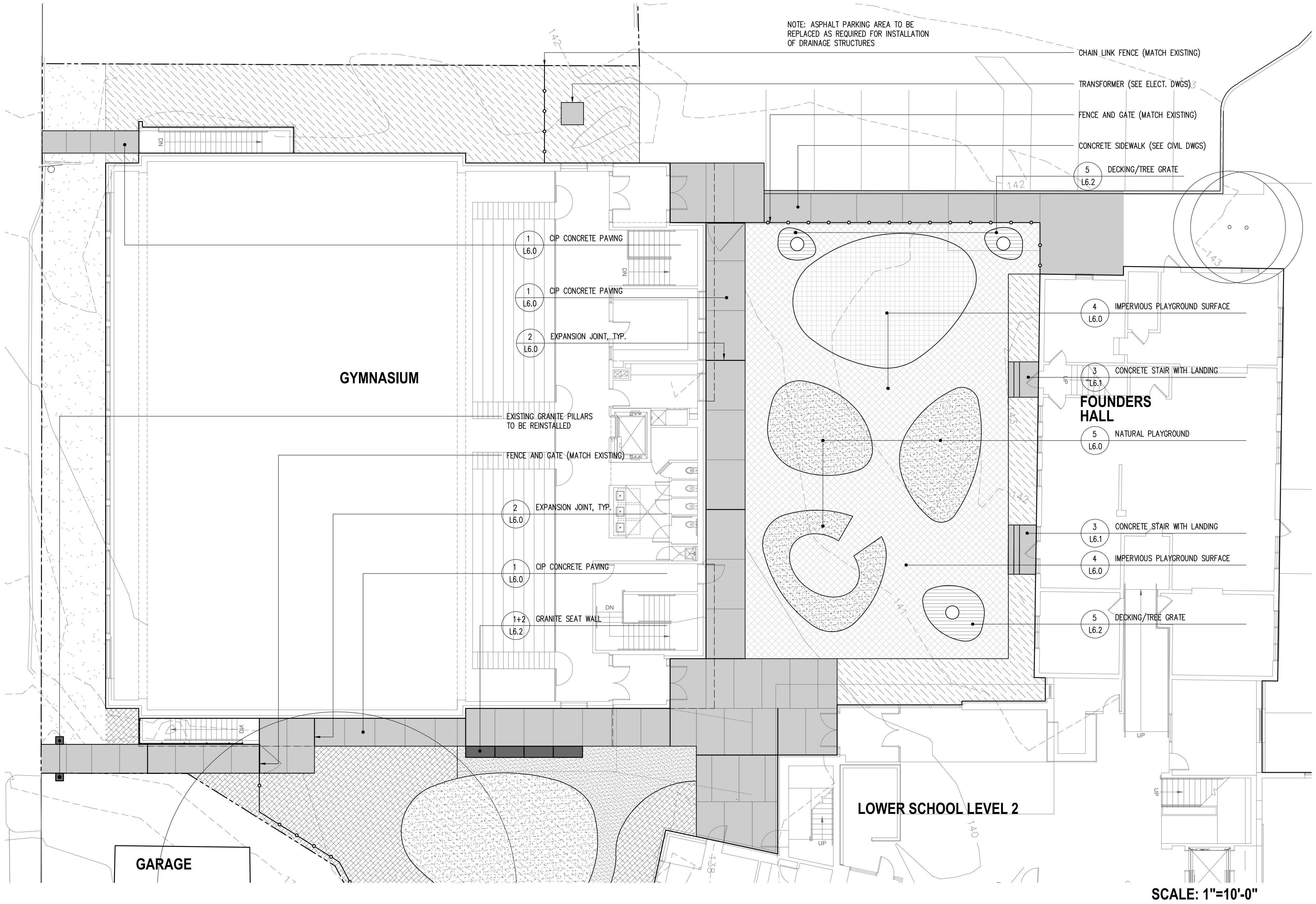
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2013-0050

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SITE PLAN

L-1.0



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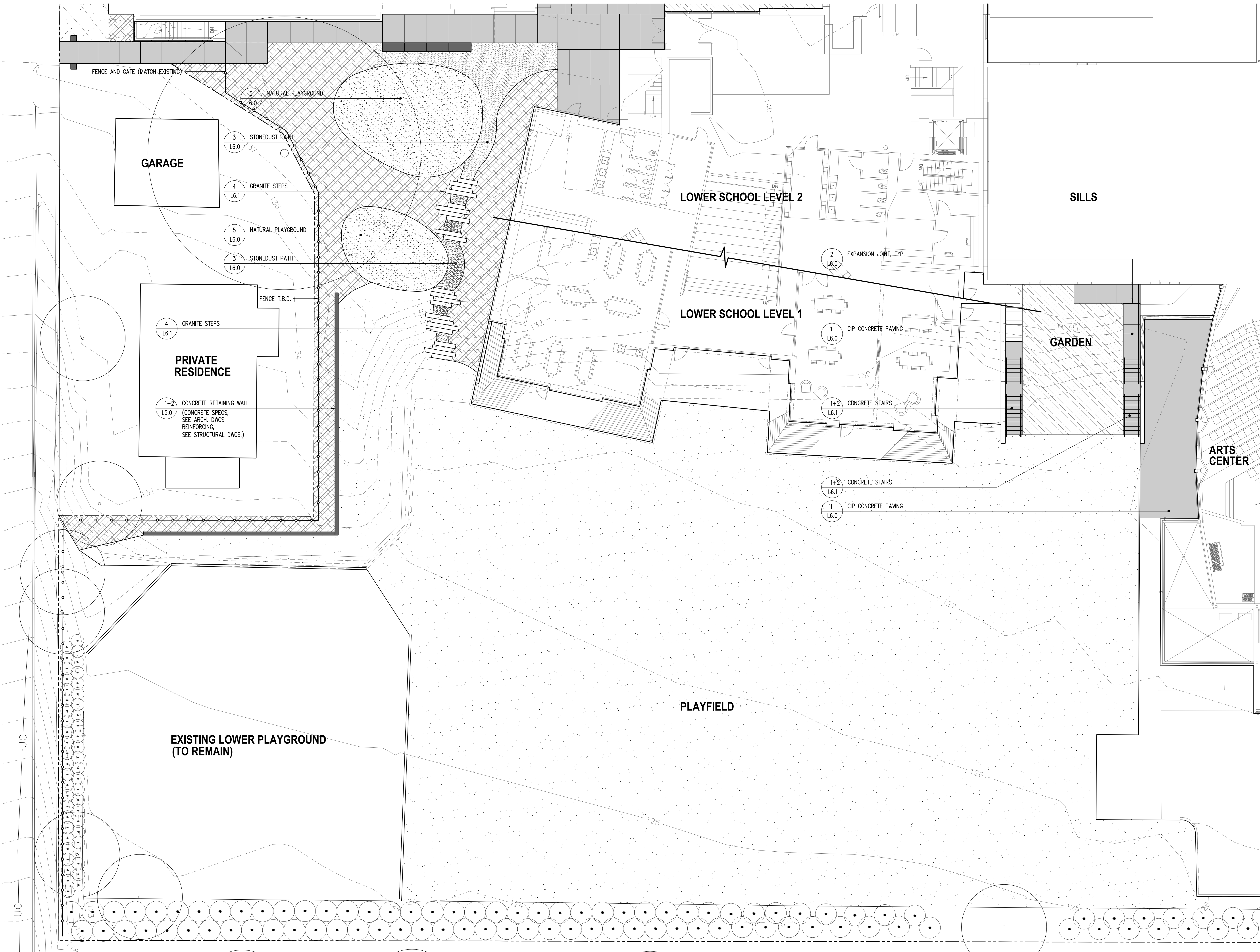
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MATERIALS AND
LAYOUT PLAN N.

L-2.0



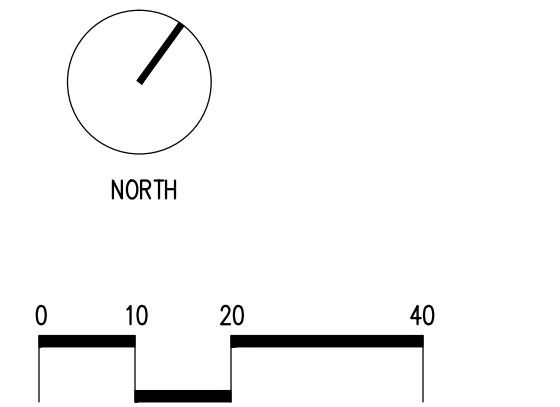
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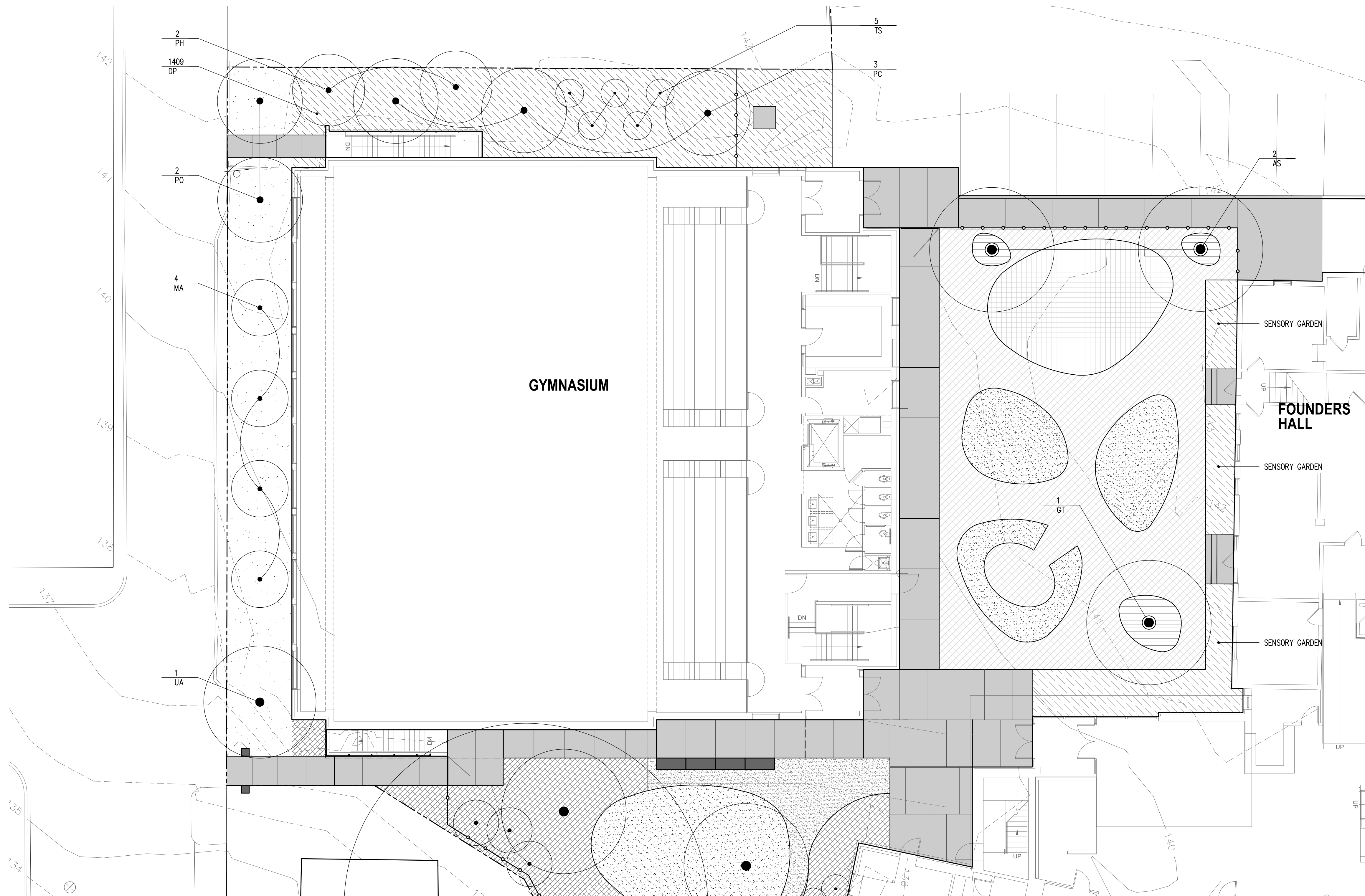
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**LAYOUT &
MATERIALS PLAN S.**

L-2.1



SEE L4.1 FOR PLANT SCHEDULE

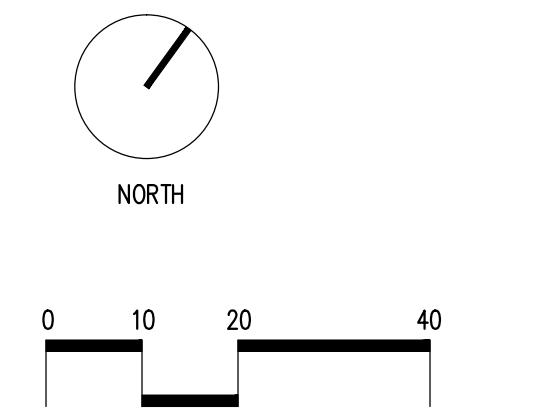
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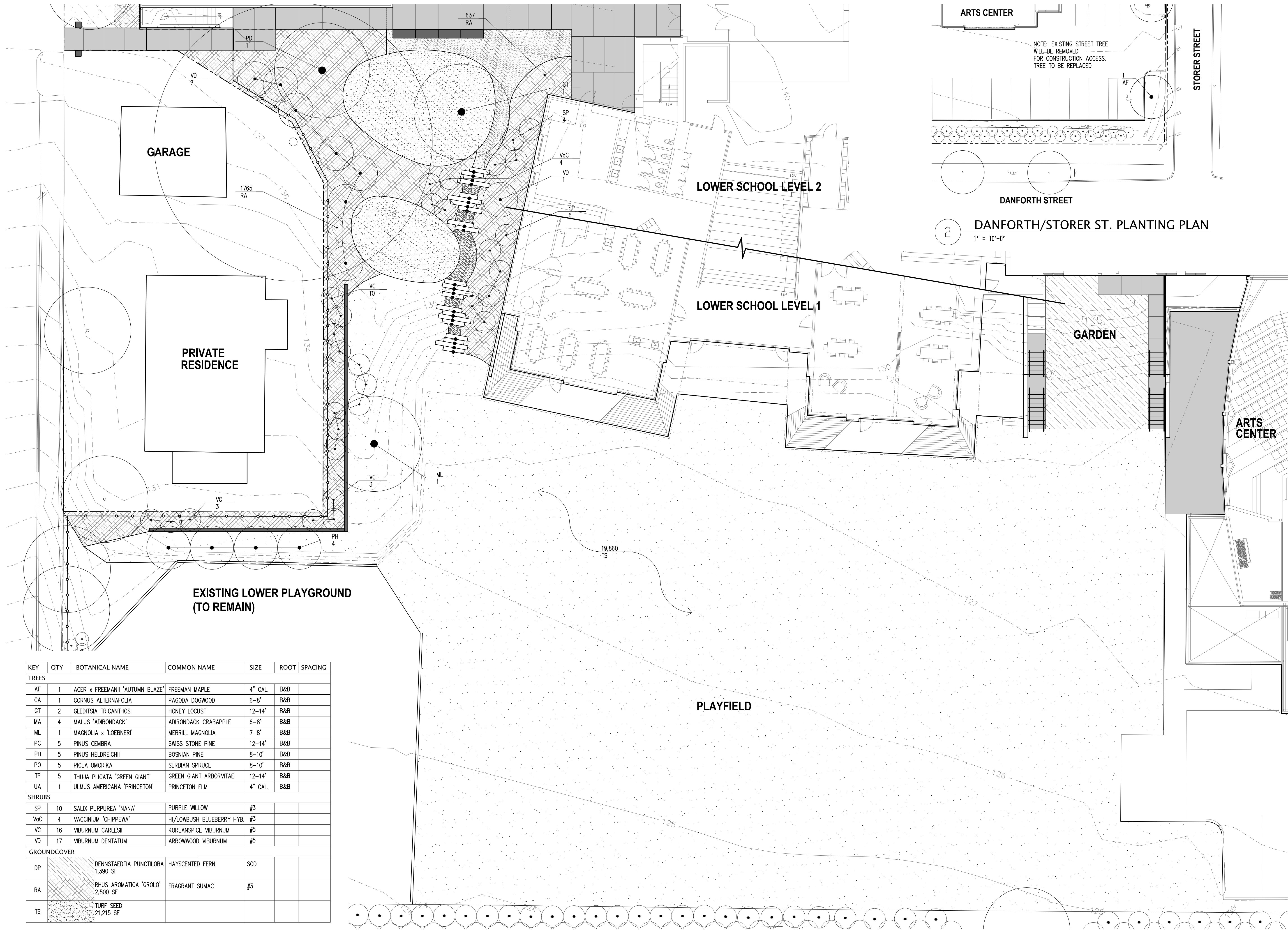
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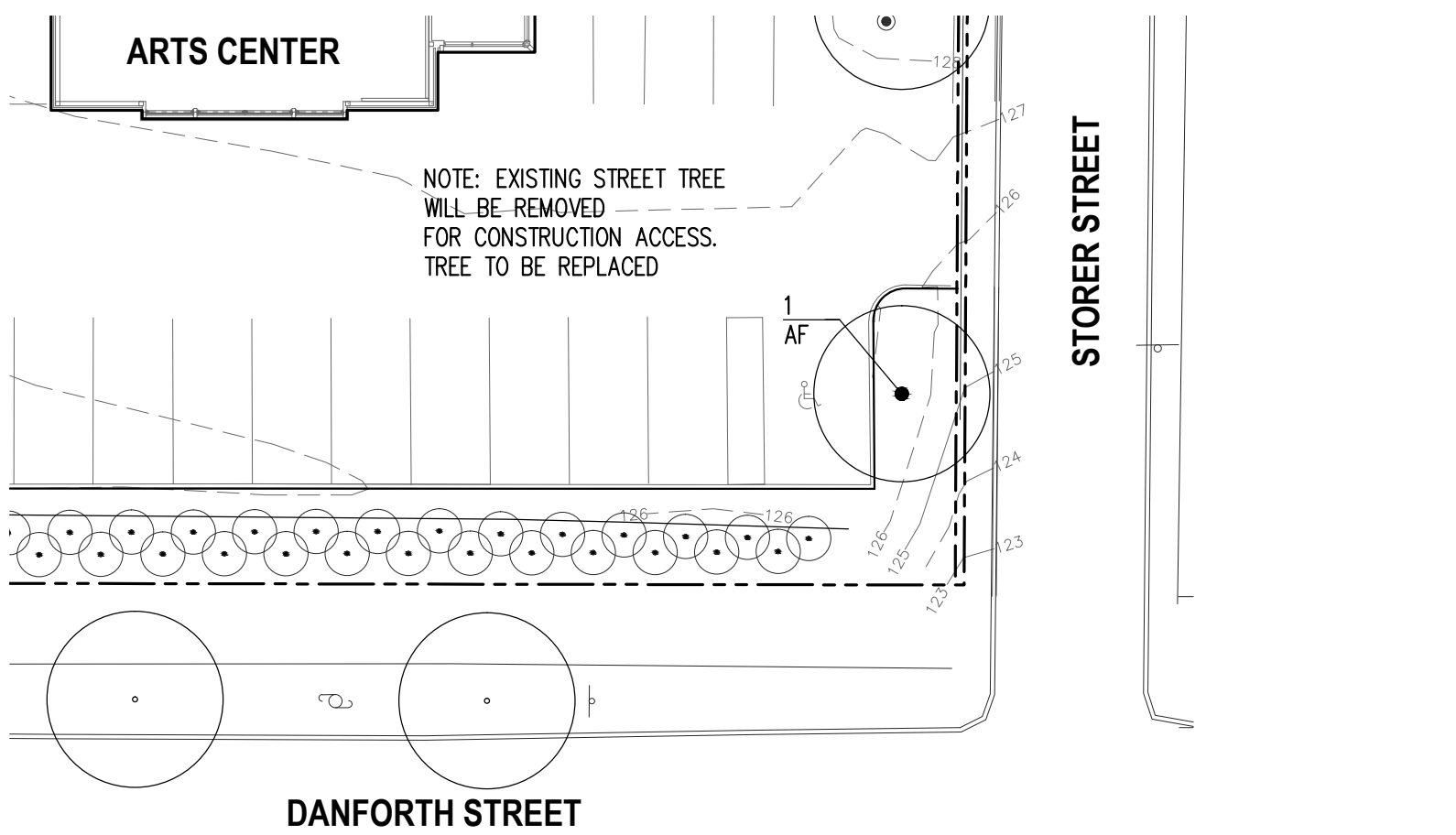
PLANTING PLAN N.

L-4.0



KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	SPACING
TREES						
AF	1	ACER x FREEMANII 'AUTUMN BLAZE'	FREEMAN MAPLE	4" CAL.	B&B	
CA	1	CORNUS ALTERNAFOLIA	PAGODA DOGWOOD	6-8'	B&B	
GT	2	GLEDTISIA TRICANTHOS	HONEY LOCUST	12-14'	B&B	
MA	4	MALUS 'ADIRONDACK'	ADIRONDACK CRABAPPLE	6-8'	B&B	
ML	1	MAGNOLIA x 'LOEBNERI'	MERRILL MAGNOLIA	7-8'	B&B	
PC	5	PINUS CEMBRA	SWISS STONE PINE	12-14'	B&B	
PH	5	PINUS HELDREICHII	BOSNIAN PINE	8-10'	B&B	
PO	5	PICEA OMORIKA	SERBIAN SPRUCE	8-10'	B&B	
TP	5	THUJA PLICATA 'GREEN GIANT'	GREEN GIANT ARBORVITAE	12-14'	B&B	
UA	1	ULMUS AMERICANA 'PRINCETON'	PRINCETON ELM	4" CAL.	B&B	
SHRUBS						
SP	10	SALIX PURPUREA 'NANA'	PURPLE WILLOW	#3		
VaC	4	VACCINIUM 'CHIPPEWA'	HI/LOWBUSH BLUEBERRY HYB.	#3		
VC	16	VIBURNUM CARLESII	KOREANSPICE VIBURNUM	#5		
VD	17	VIBURNUM DENTATUM	ARROWWOOD VIBURNUM	#5		
GROUND COVER						
DP		DENNSTAEDTIA PUNCTILOBA 1,390 SF	HAYSCENTED FERN	SOD		
RA		RHUS AROMATICA 'GROLO' 2,500 SF	FRAGRANT SUMAC	#3		
TS		TURF SEED 21,215 SF				

1 PLANTING PLAN SOUTH
1' = 10'-0"



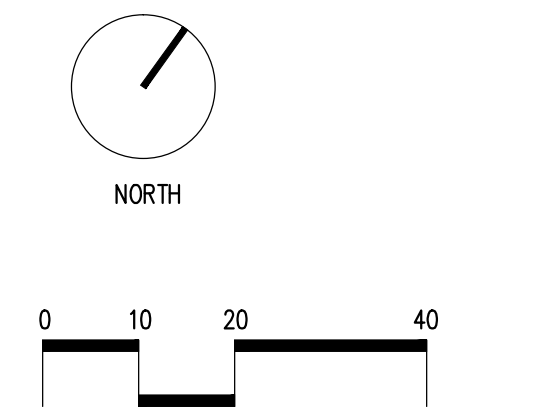
2 DANFORTH/STORER ST. PLANTING PLAN
1' = 10'-0"



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WAYNFLETE
GYM + LOWER SCHOOL
NEW CONSTRUCTION
WAYNFLETE SCHOOL
360 SPRING STREET
PORTLAND, MAINE 04102

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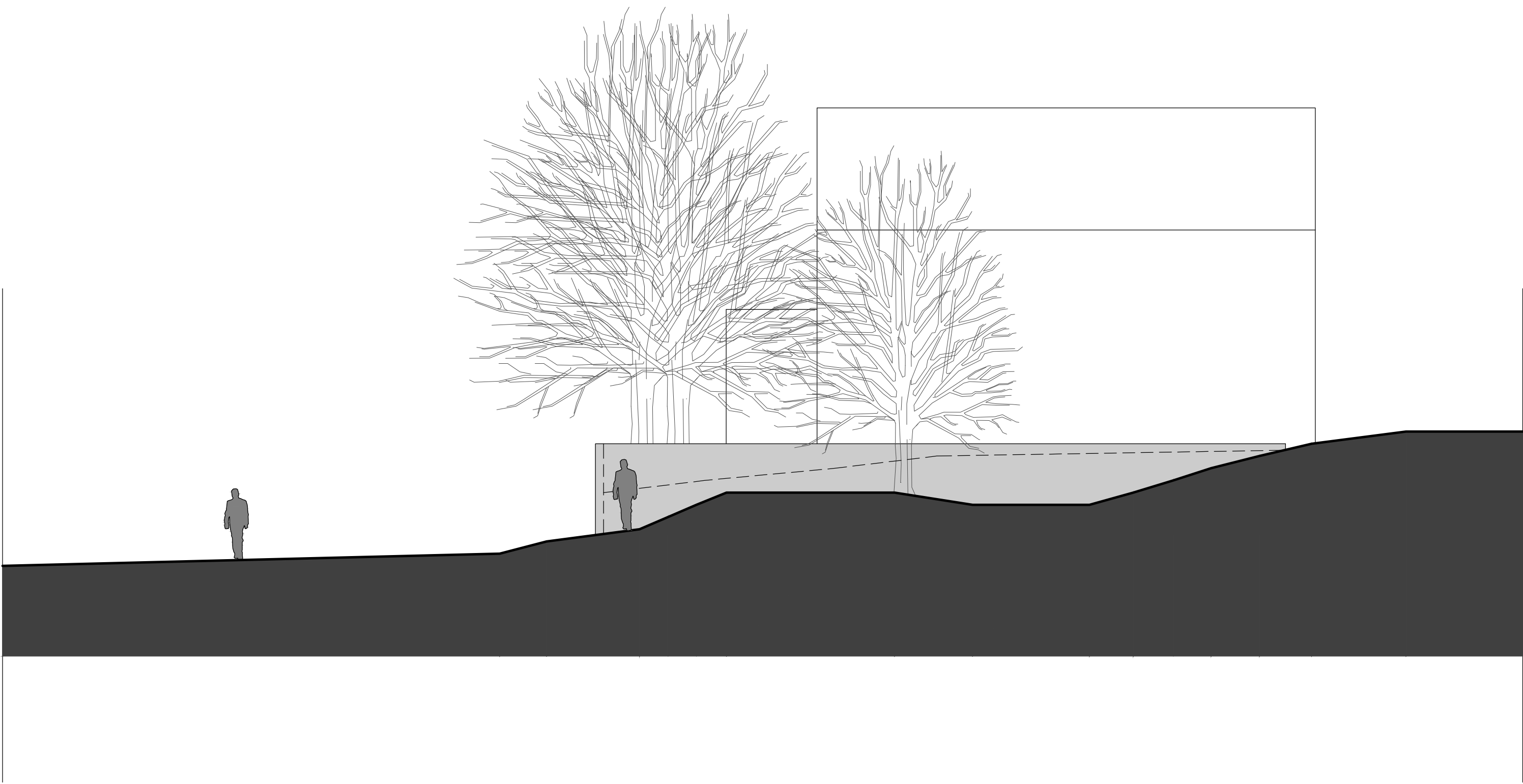
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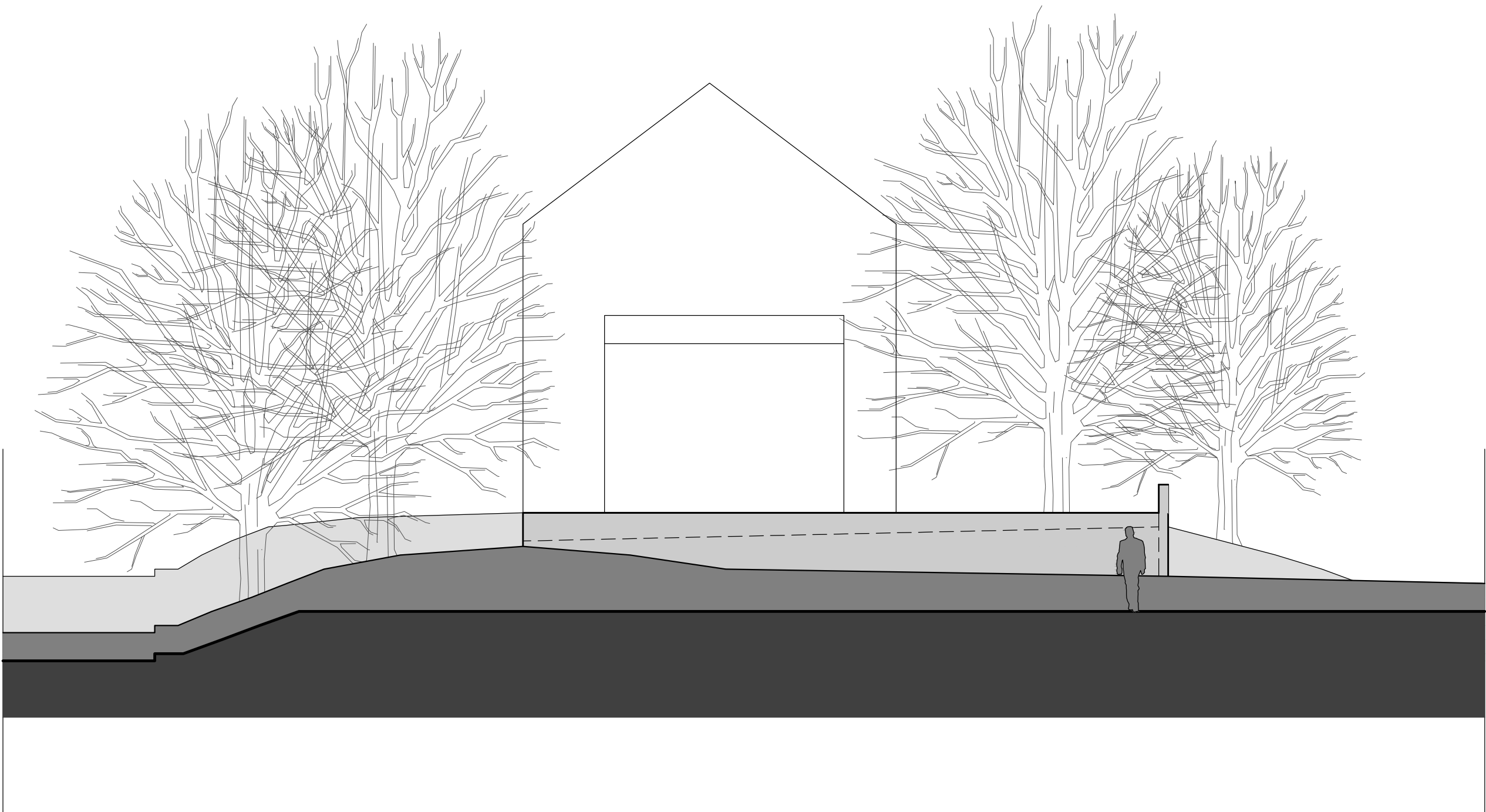
12 APRIL 2016
2013-0050
PLANNING BOARD SUBMISSION

PLANTING PLAN S.

L-4.1



1 WALL ELEVATION, NORTH
1/8" = 1'-0"



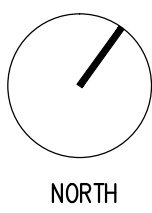
2 WALL ELEVATION, EAST
1/8" = 1'-0"

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WAYNFLETE GYM + LOWER SCHOOL

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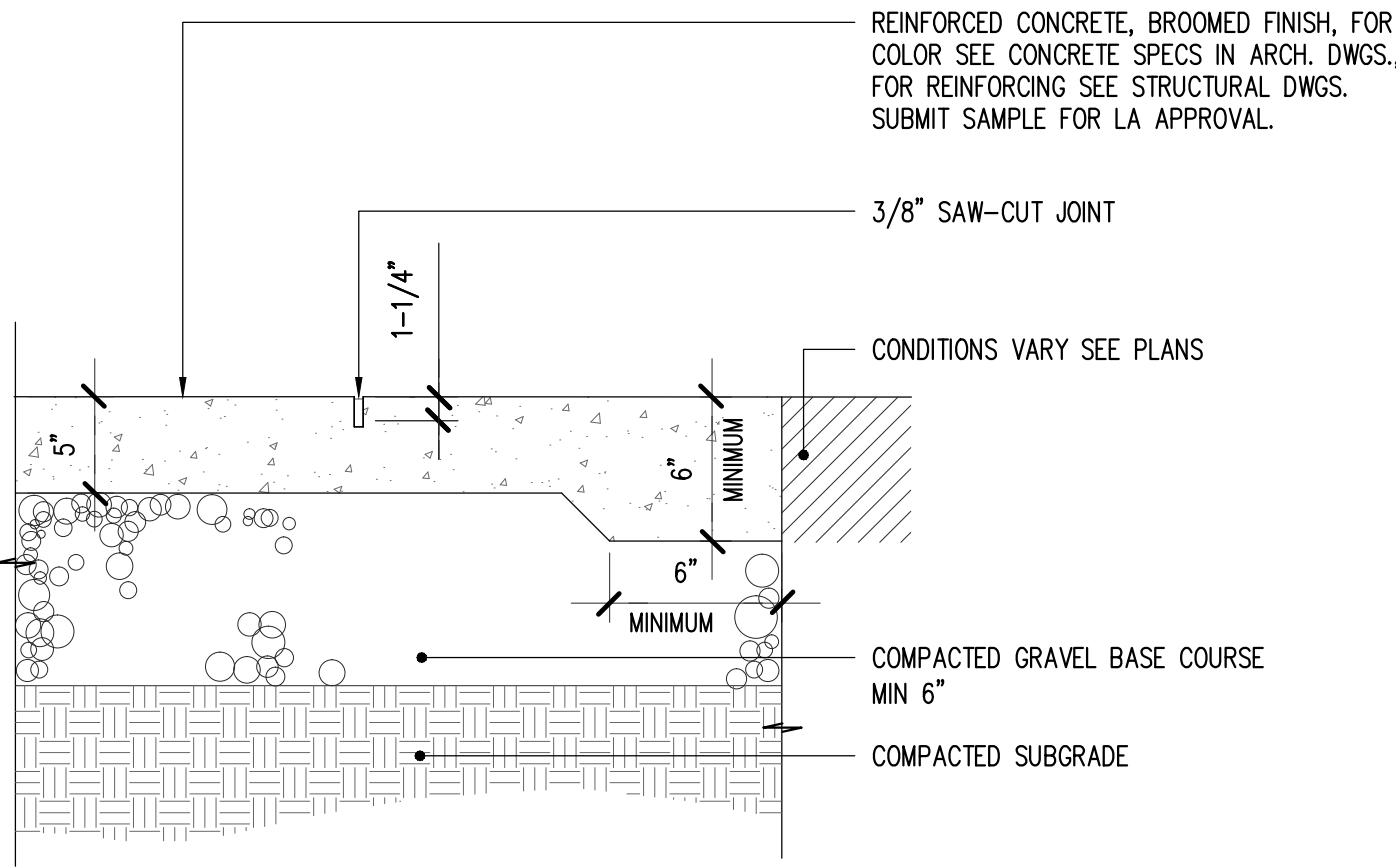
12 APRIL 2016

2013-0059

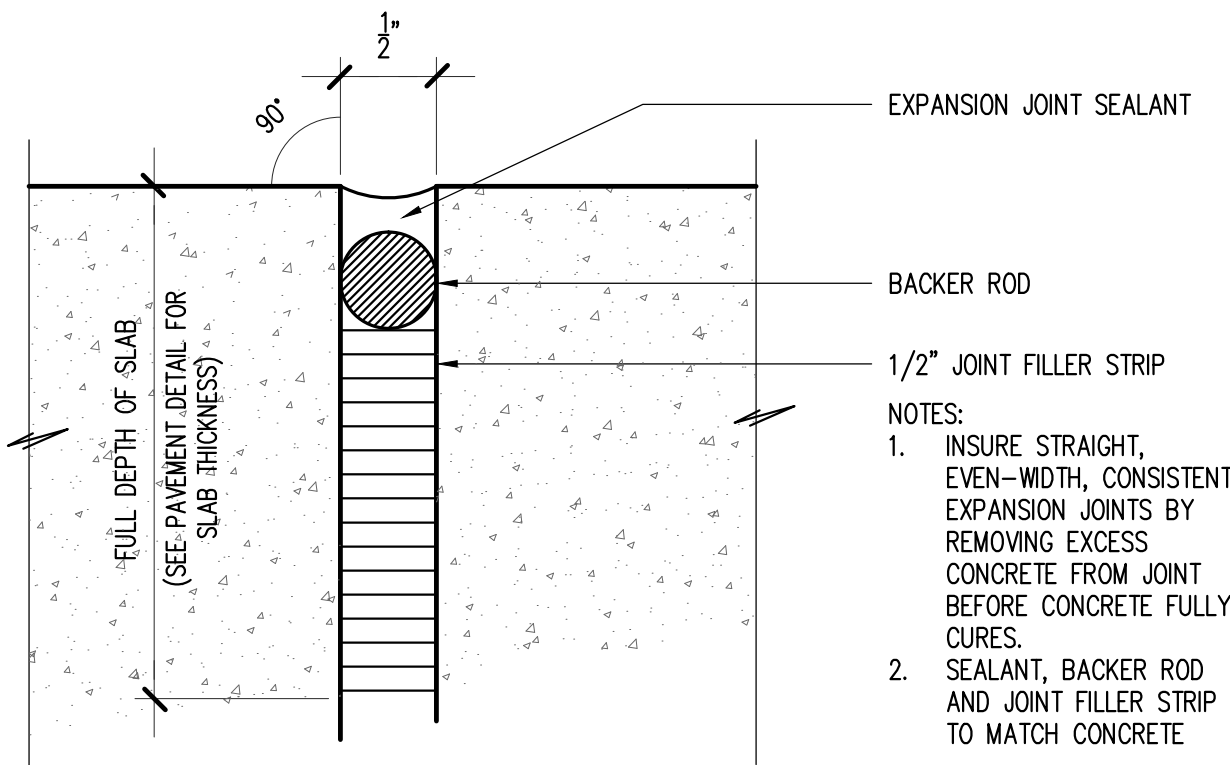
PLANNING BOARD SUBMISSION

WALL ELEVATIONS

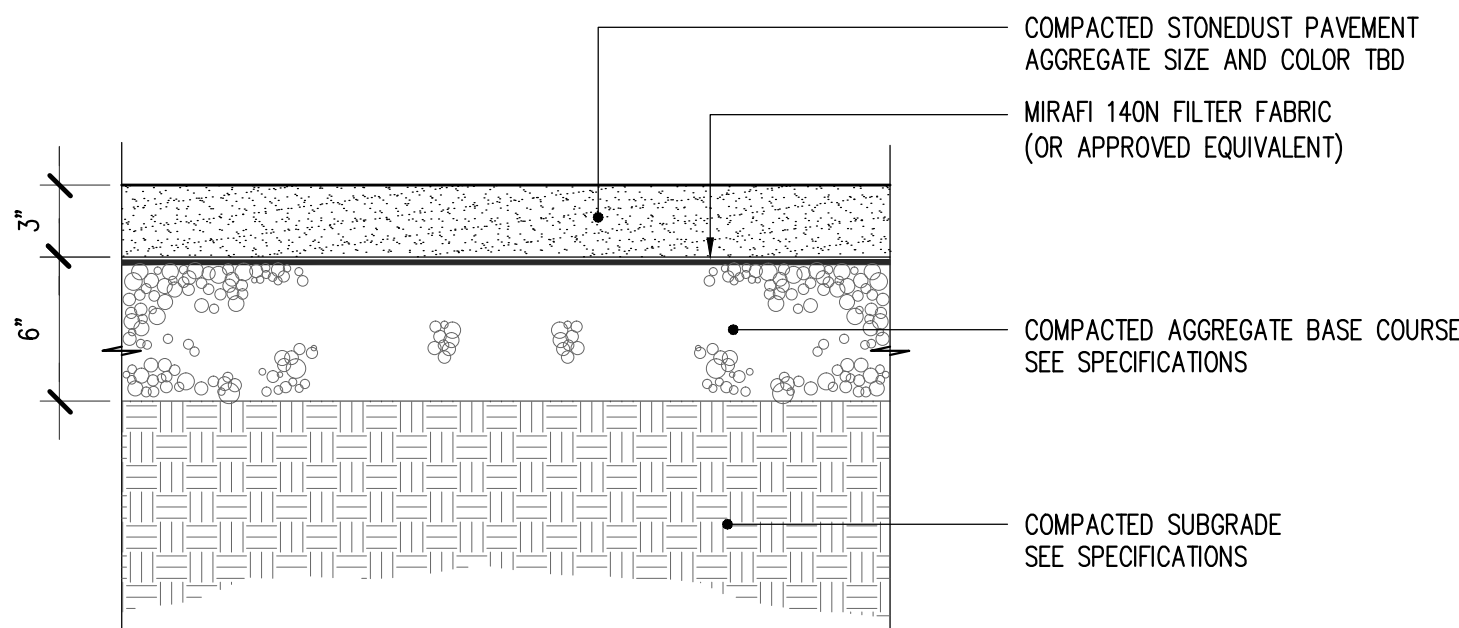
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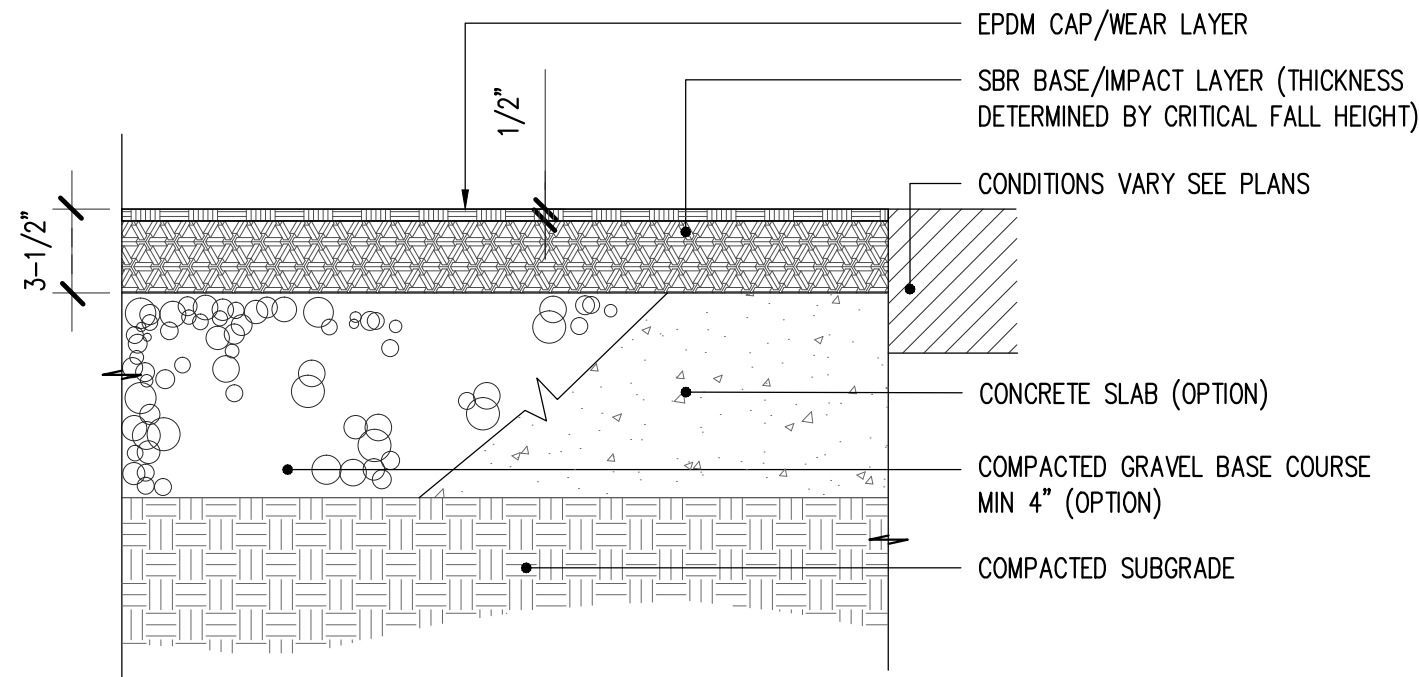
1 C.I.P. CONCRETE PAVING
1-1/2"=1'-0"



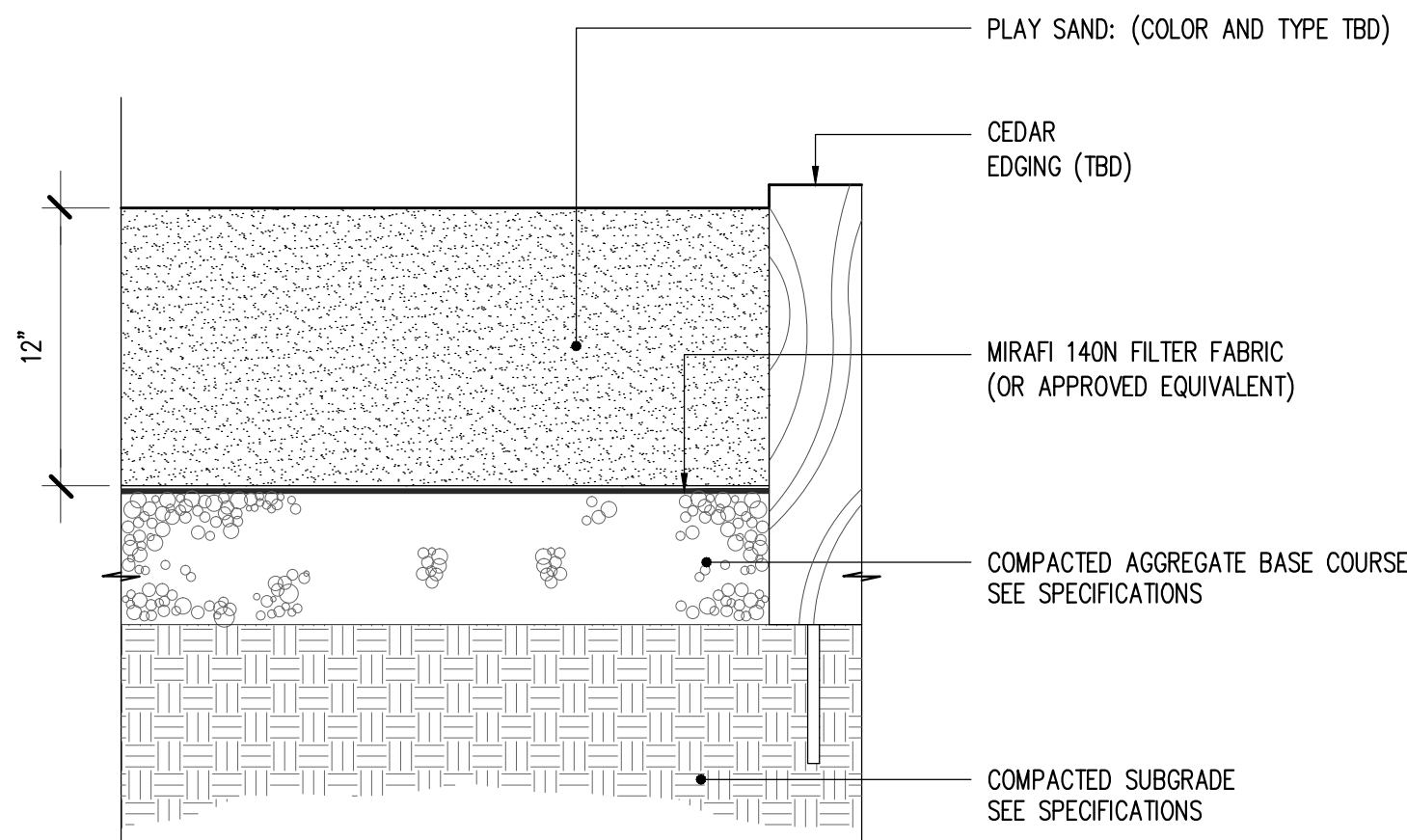
2 EXPANSION JOINT
1"-0" = 1'-0"



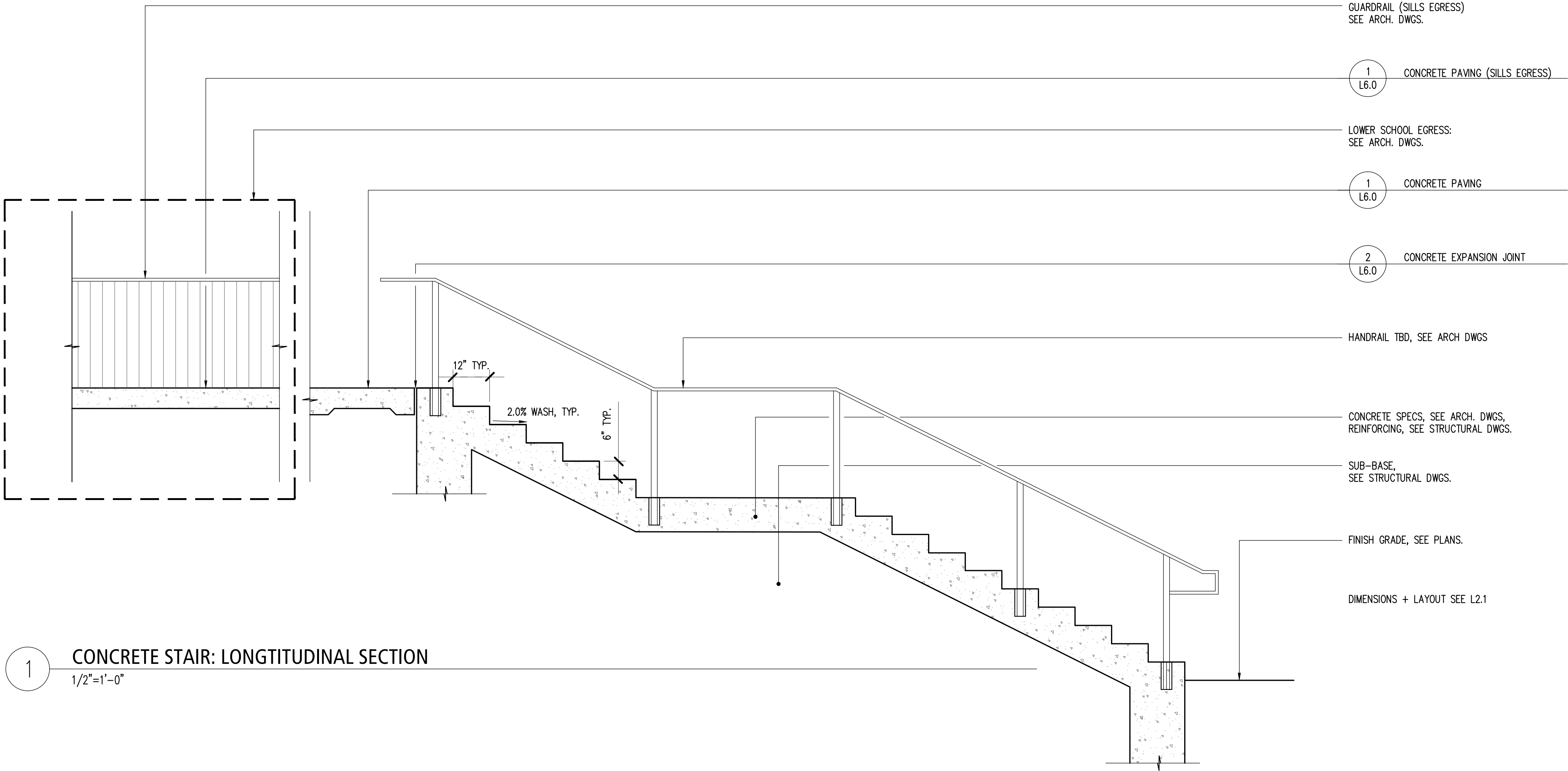
3 STONE DUST PATH
1-1/2"=1'-0"



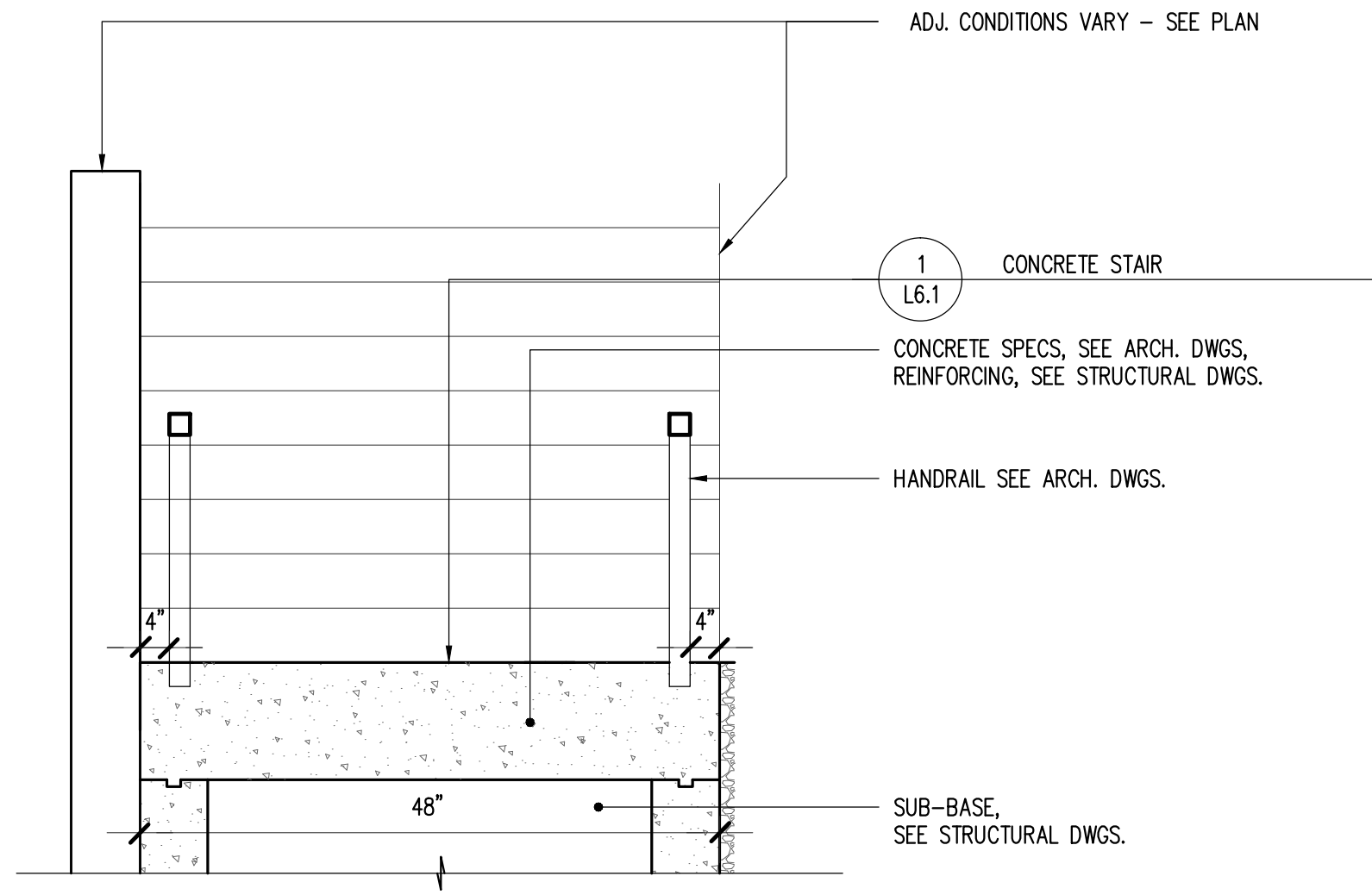
4 IMPERVIOUS PLAYGROUND SURFACE: (POURED IN PLACE RUBBER OPTION)
1-1/2"=1'-0"



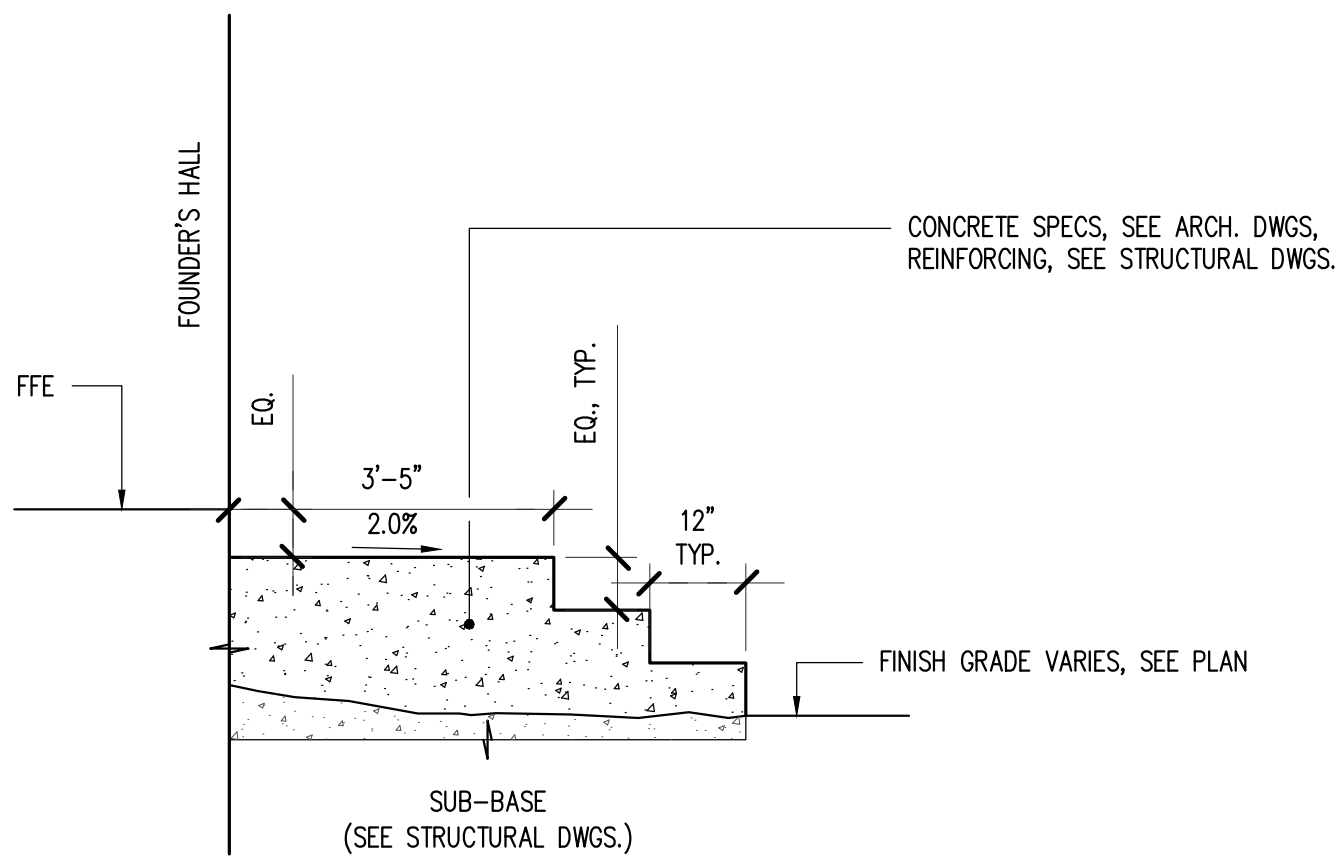
5 NATURAL PLAYGROUND
1-1/2"=1'-0"



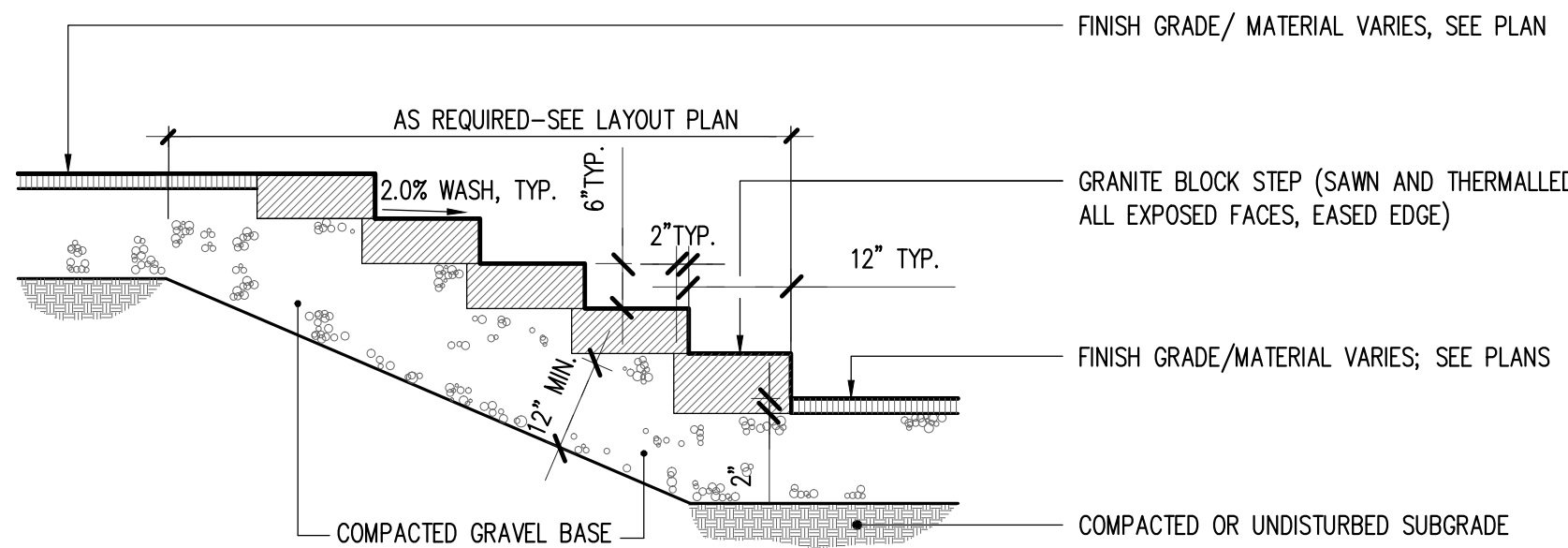
1 CONCRETE STAIR: LONGTITUDINAL SECTION
1/2"=1'-0"



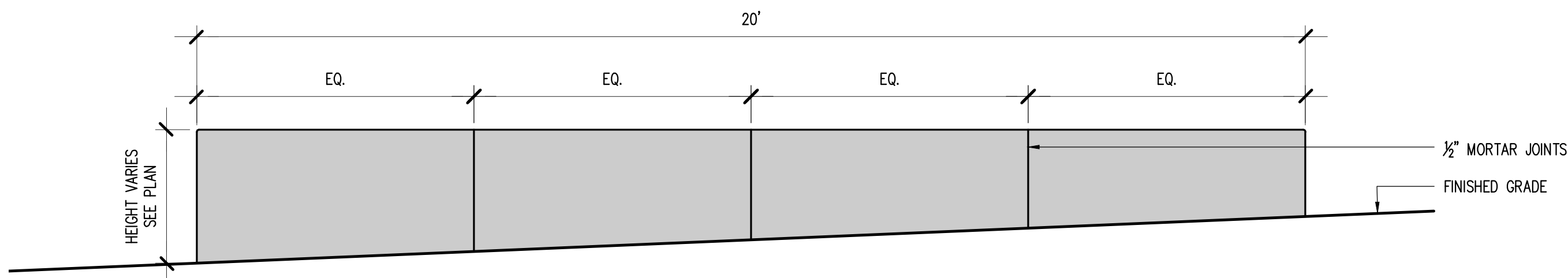
2 CONCRETE STAIR: LATERAL SECTION
1/2"=1'-0"



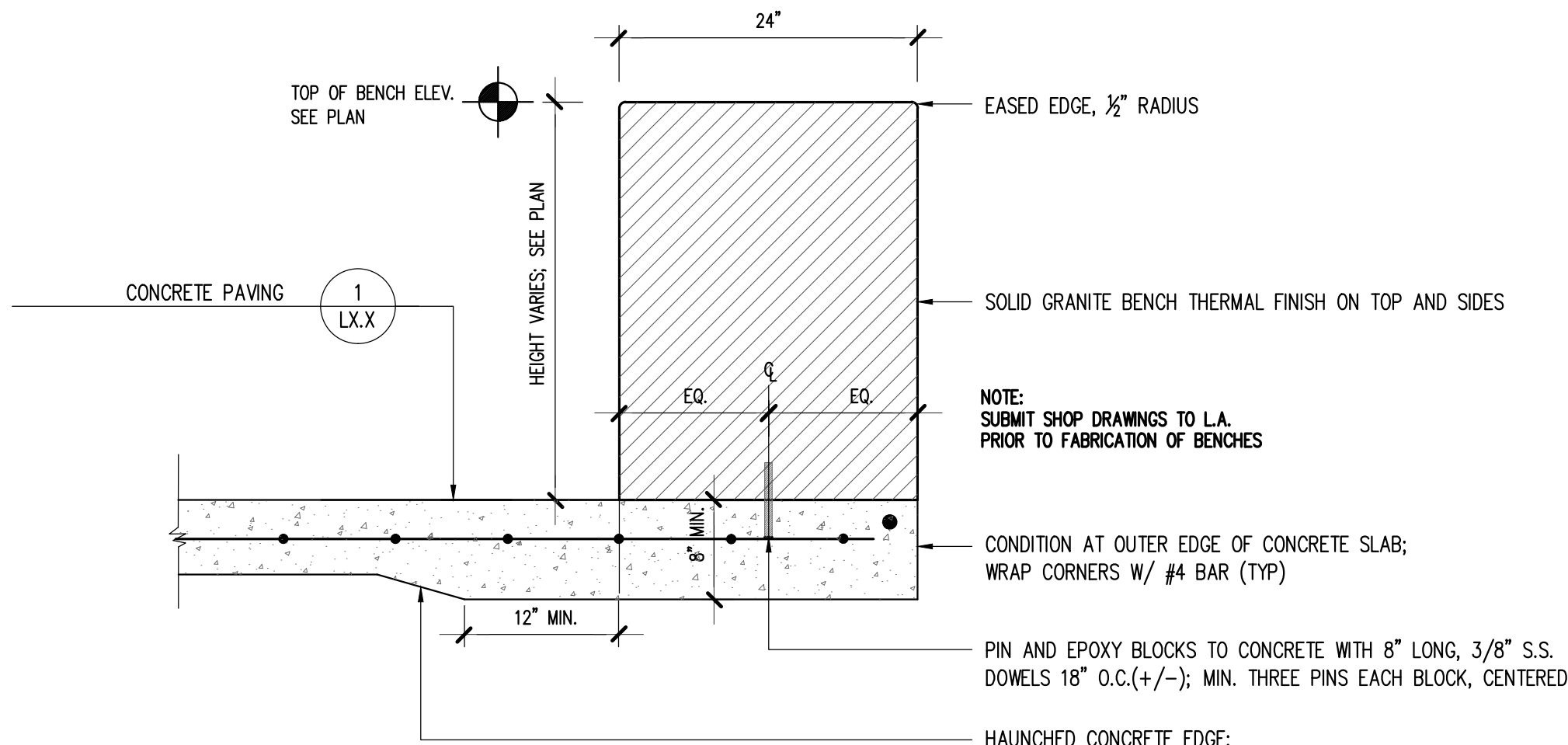
3 CONCRETE STAIR: LATERAL SECTION
1/2"=1'-0"



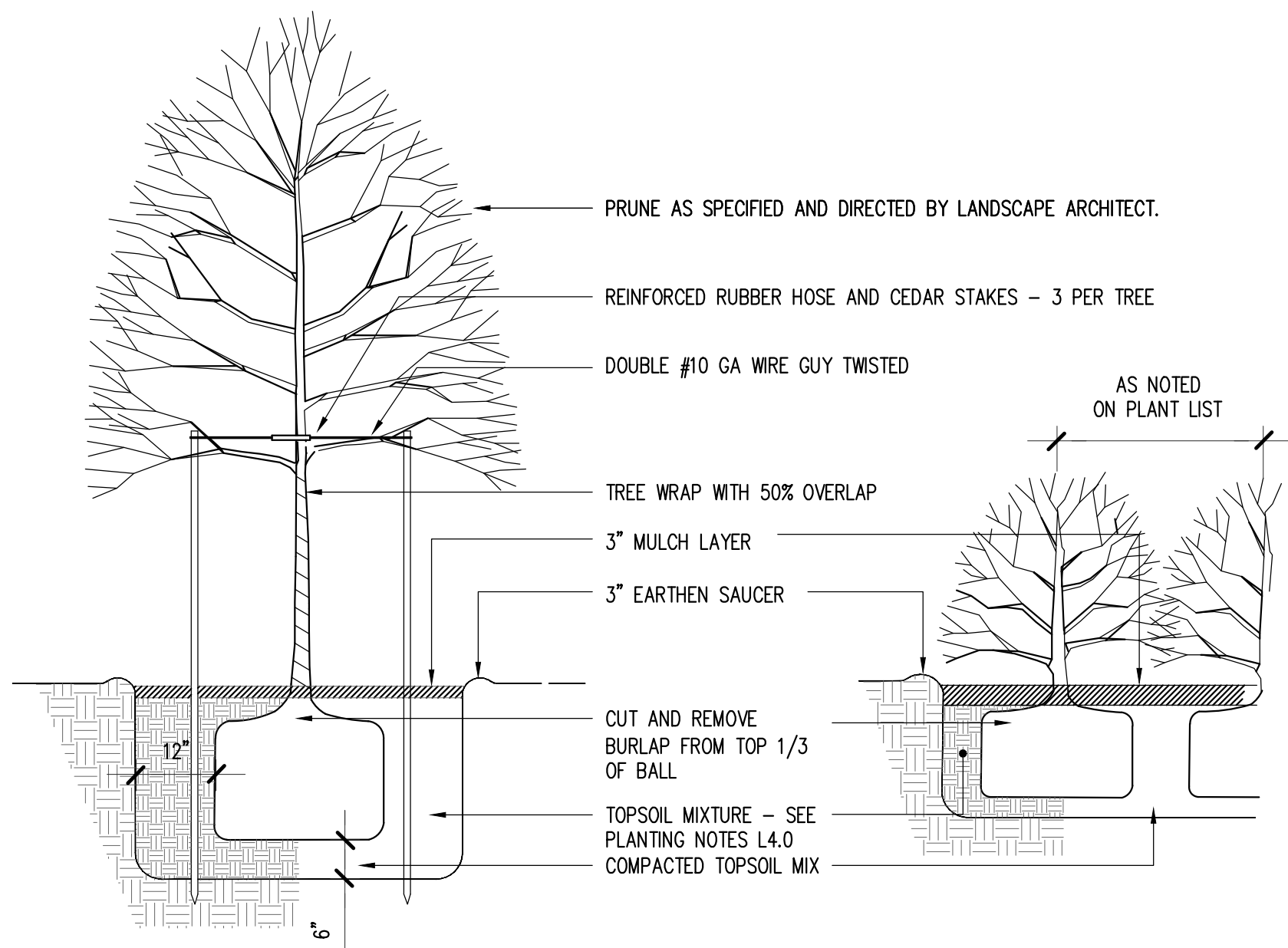
4 GRANITE STEPS-DRYLAI
1/2"=1'-0"



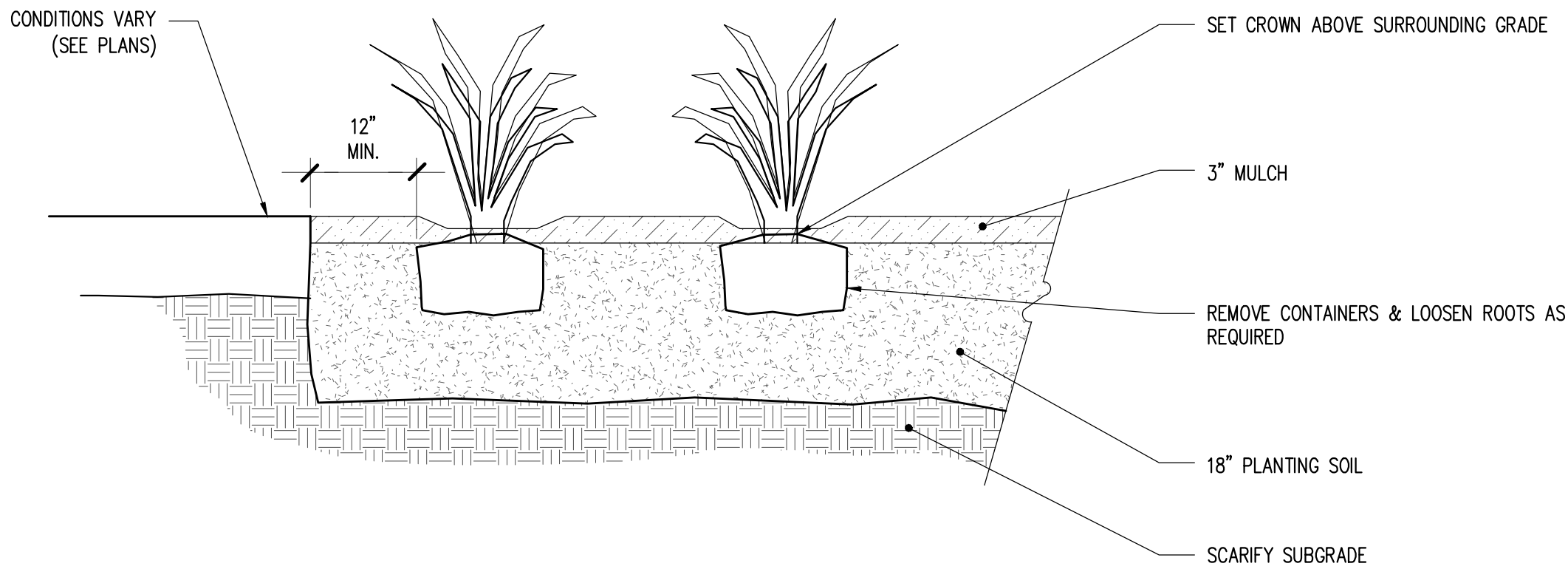
1 GRANITE SEAT WALL: SE ELEVATION
1/2"=1'-0"



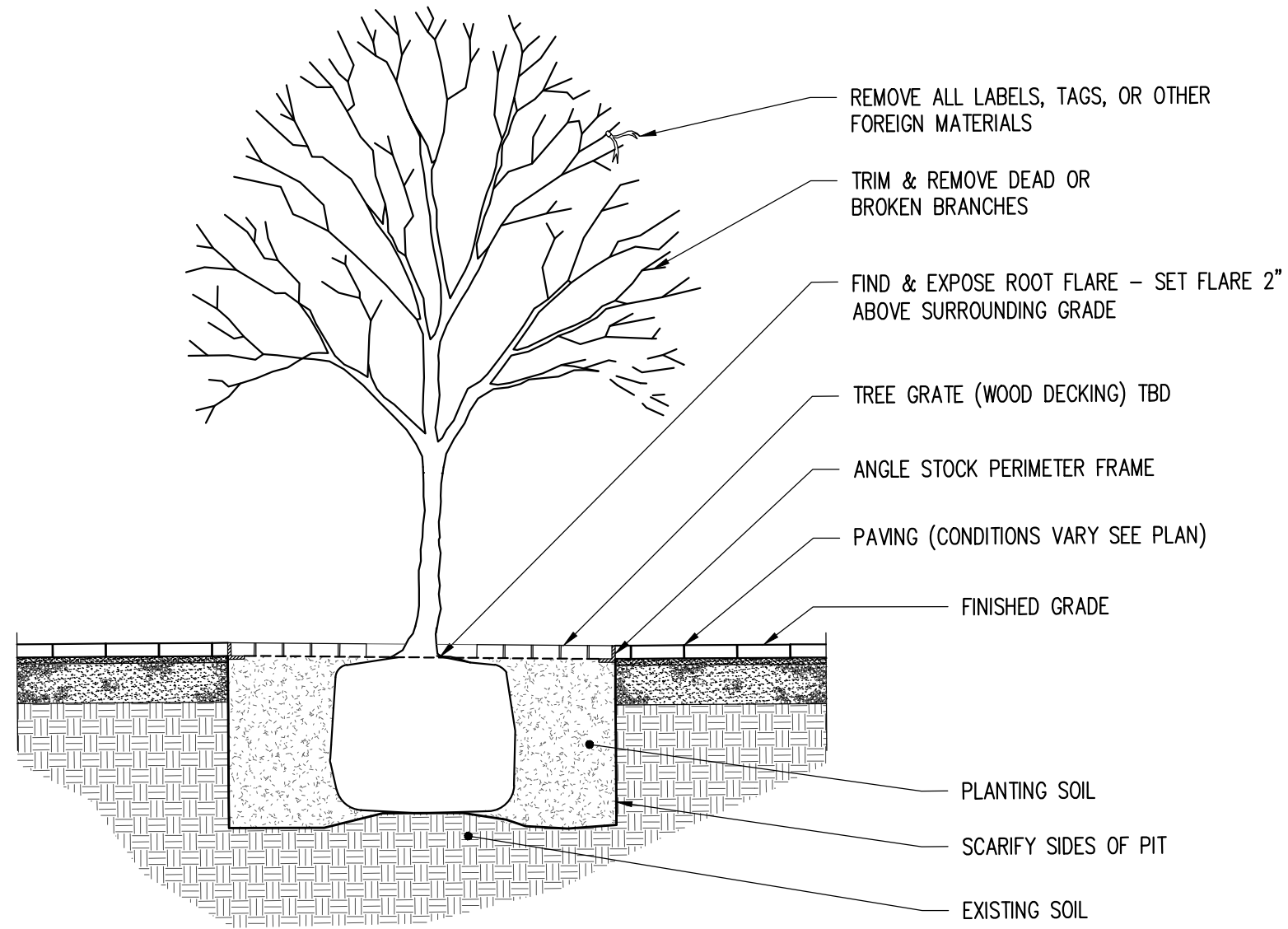
2 GRANITE SEAT WALL: SECTION
1"=1'-0"



3 TREE + SHRUB PLANTING DETAIL
NTS



4 GROUNDCOVER PLANTING DETAIL
NTS



- NOTES:
1. TREE TO BE SET PLUMB.
 2. SECURE TREE AS MAY BE REQUIRED ACCORDING TO TREE SIZE, LOCATION, & WIND/WEATHER CONDITIONS.
 3. IF USING ROOTBALL STABILIZATION, FOLLOW MANUFACTURER'S RECOMMENDATIONS.

5 TREE PIT WITH WOODEN TREE GRATE DETAIL
NTS



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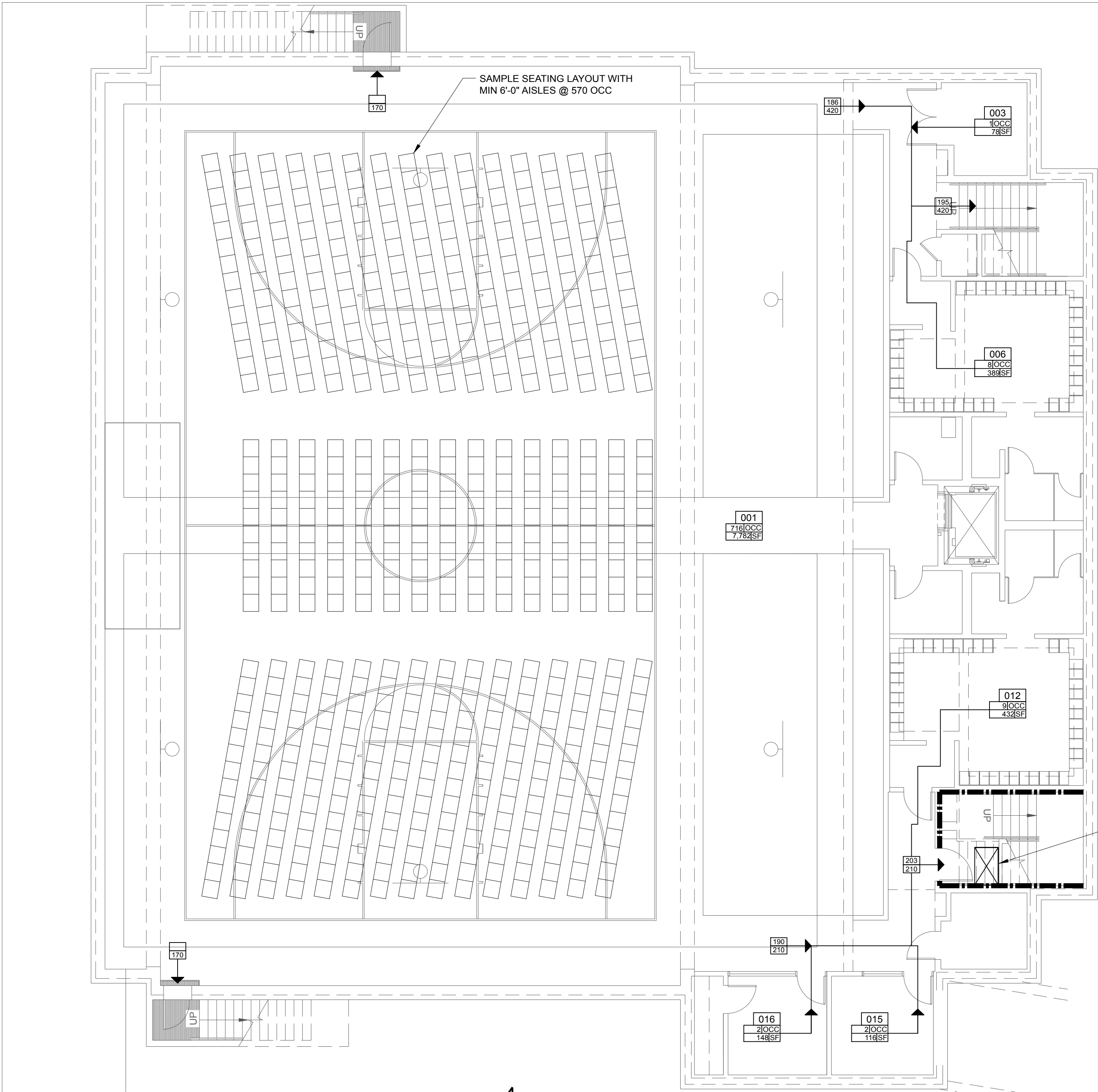
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16 FEBRUARY 2016
PLANNING BOARD SUBMISSION

CONSTRUCTION DETAILS

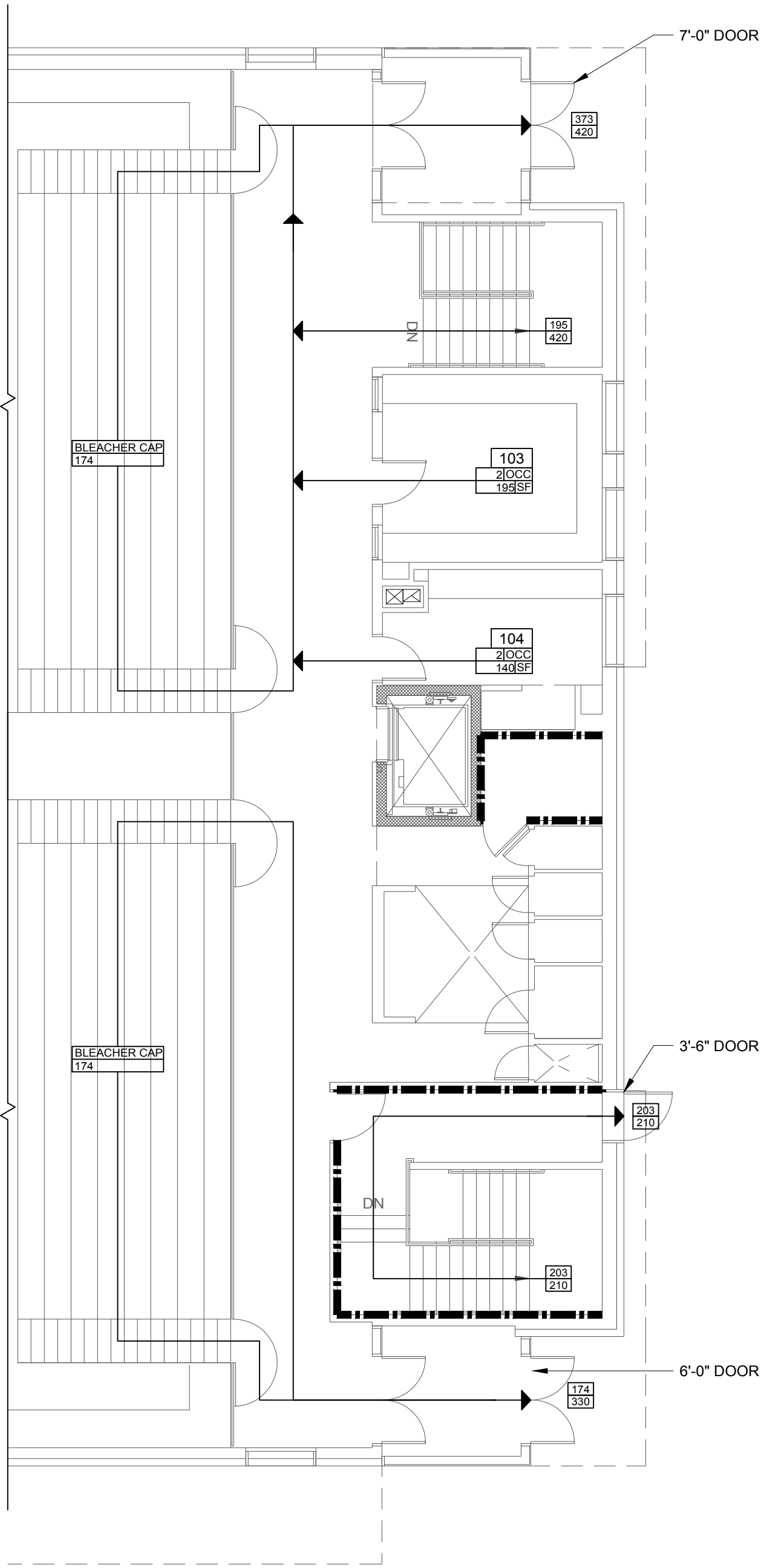
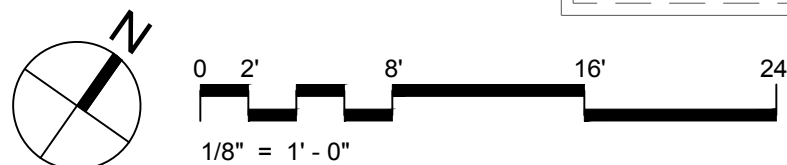
L-6.2

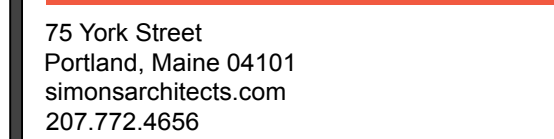


GYMNASIUM OCCUPANCY CALCULATIONS:
OPTION A:
TOTAL OCCUPIABLE GYM AREA WITH
BLEACHERS CLOSED: 7782 SF
7782 / 7 SF = 1111 OCC
OPTION B:
TOTAL OCCUPIABLE GYM AREA WITH
BLEACHERS OPEN: 6542 SF
6542 / 7 SF = 934 OCC
BLEACHER CAPACITY: 348 OCC
TOTAL OCCUPANTS: 1282 OCC

30'x48" AREA
OF REFUGE

1 LOWER LEVEL LIFE SAFETY PLAN
SCALE: 1/8" = 1'-0"





PROJECT NAME: _____

NEW CONSTRUCTION

SEAL: _____

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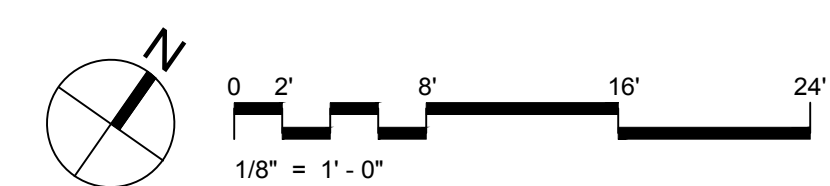
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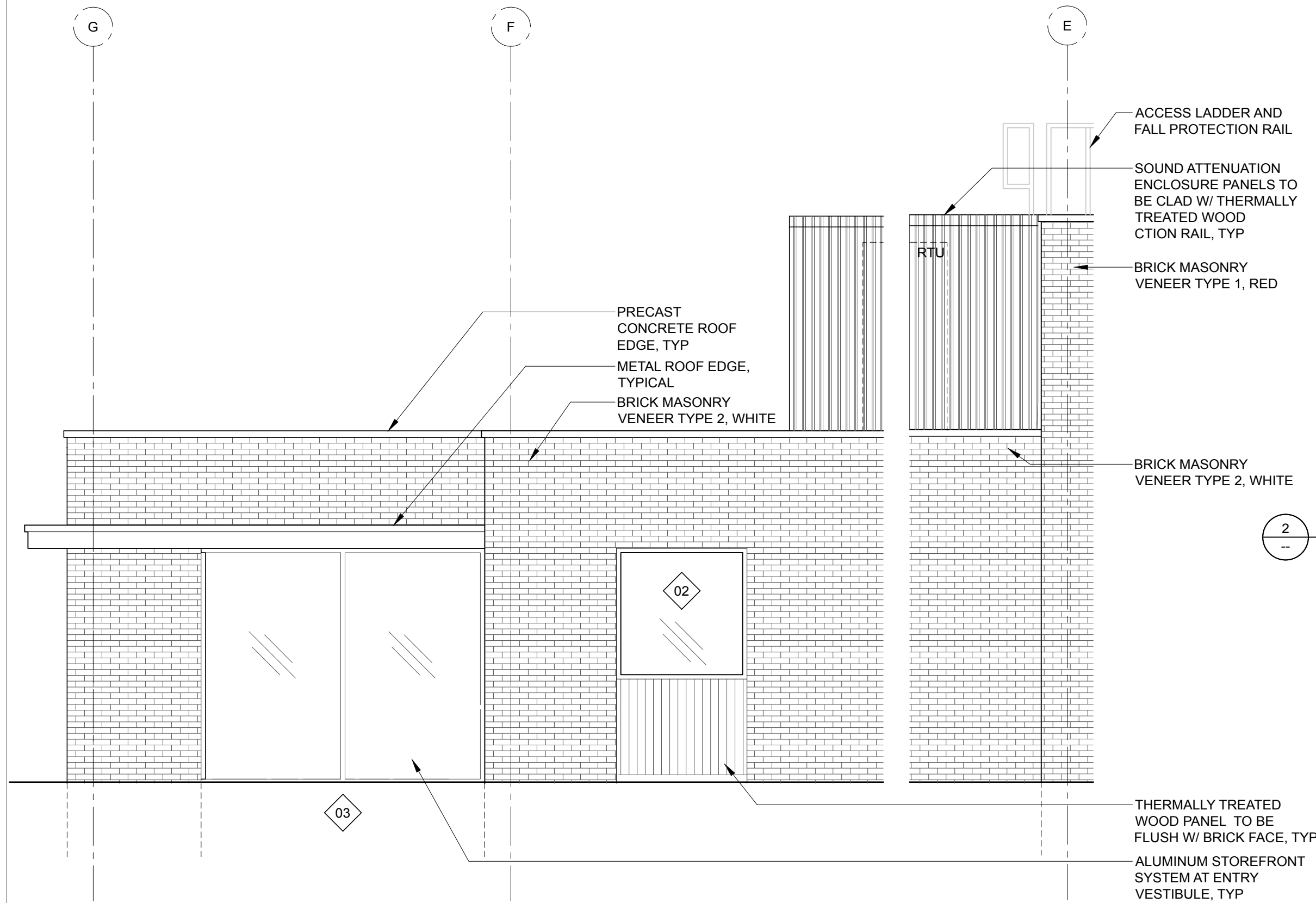
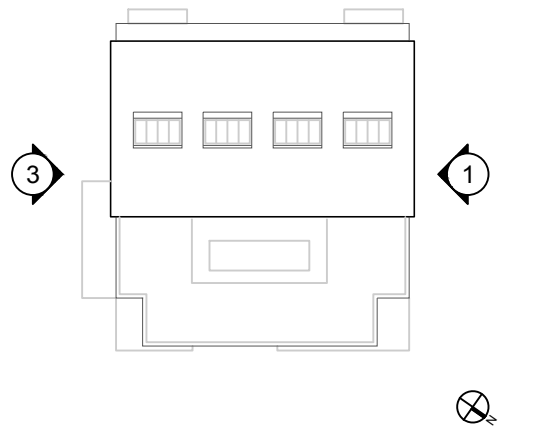
STATUS: PLANNING BOARD SUBMISSION

A101

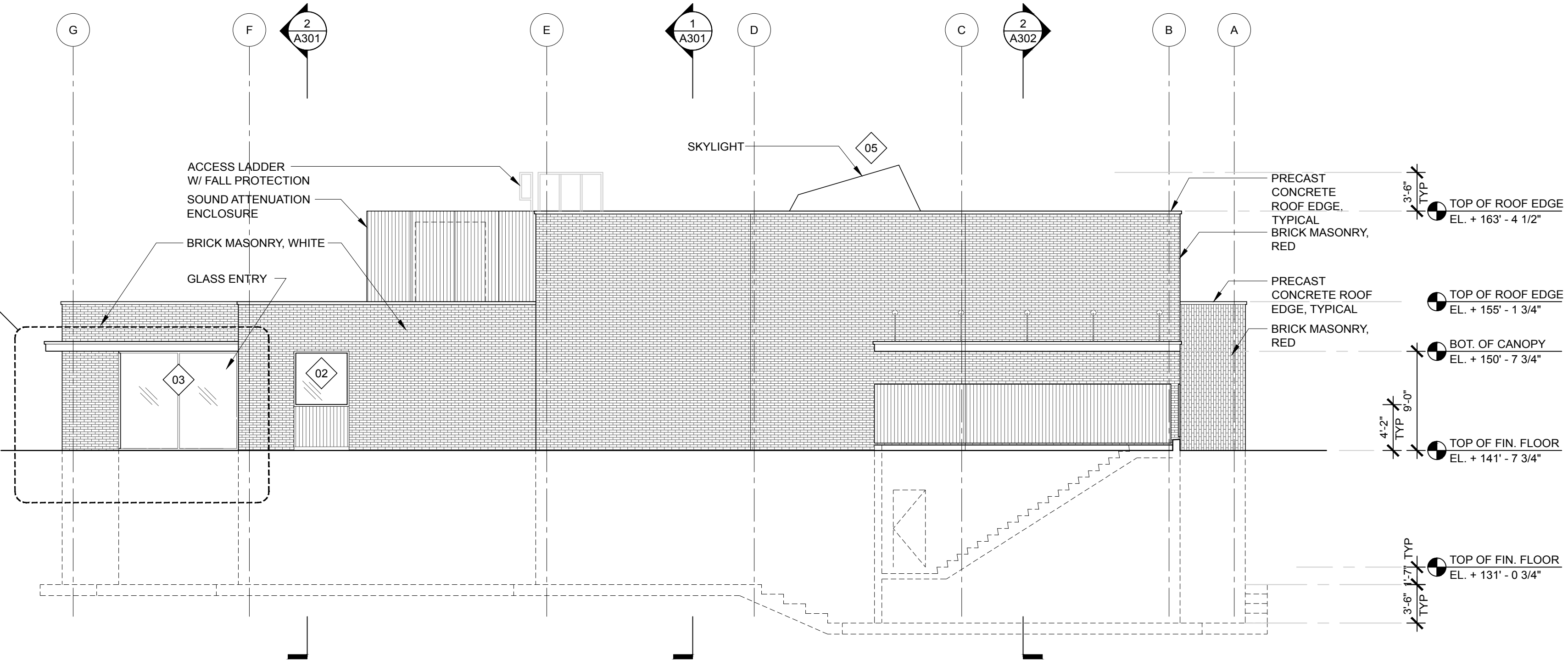


PARTITION TYPES					
M4 01	1/2" ARBUSE-RESISTANT GWB BOTH SIDES ACOUSTICAL BATT INSULATION 3 1/2" METAL FRAMING @ 16" OC NOTE: EXTEND TO UNDERSIDE OF DECK ABOVE	M2 01	1/2" MOISTURE RESISTANCE GWB MINERAL WOOL INSULATION 1 1/2" METAL FRAMING @ 16" OC CONCRETE FOUNDATION WALL	C6 01	6" GROUND FACE CMU BLOCK
UL# --- RATING --- -- MINS		UL# --- RATING --- -- MINS		UL# --- RATING --- -- MINS	
M4 02	1/2" TYPE X GWB BOTH SIDES 3 1/2" METAL FRAMING @ 16" OC NOTE: EXTEND TO UNDERSIDE OF DECK ABOVE, FIRE SEAL ALL JOINTS AND PENETRATIONS	M2 02	1/2" GWB 1 1/2" METAL FURRING CHANNELS @ 16" OC MASONRY WALL, VARIES	M2 03	1/2" CLEAR FINISH HWD VENEER PLYWOOD 2" METAL FURRING @ 16" OC 2" RIGID INSULATION CONCRETE FOUNDATION WALL NOTE: SHIM AS REQUIRED
UL# U30S RATING --- 60 MINS		UL# --- RATING --- -- MINS		UL# --- RATING --- -- MINS	

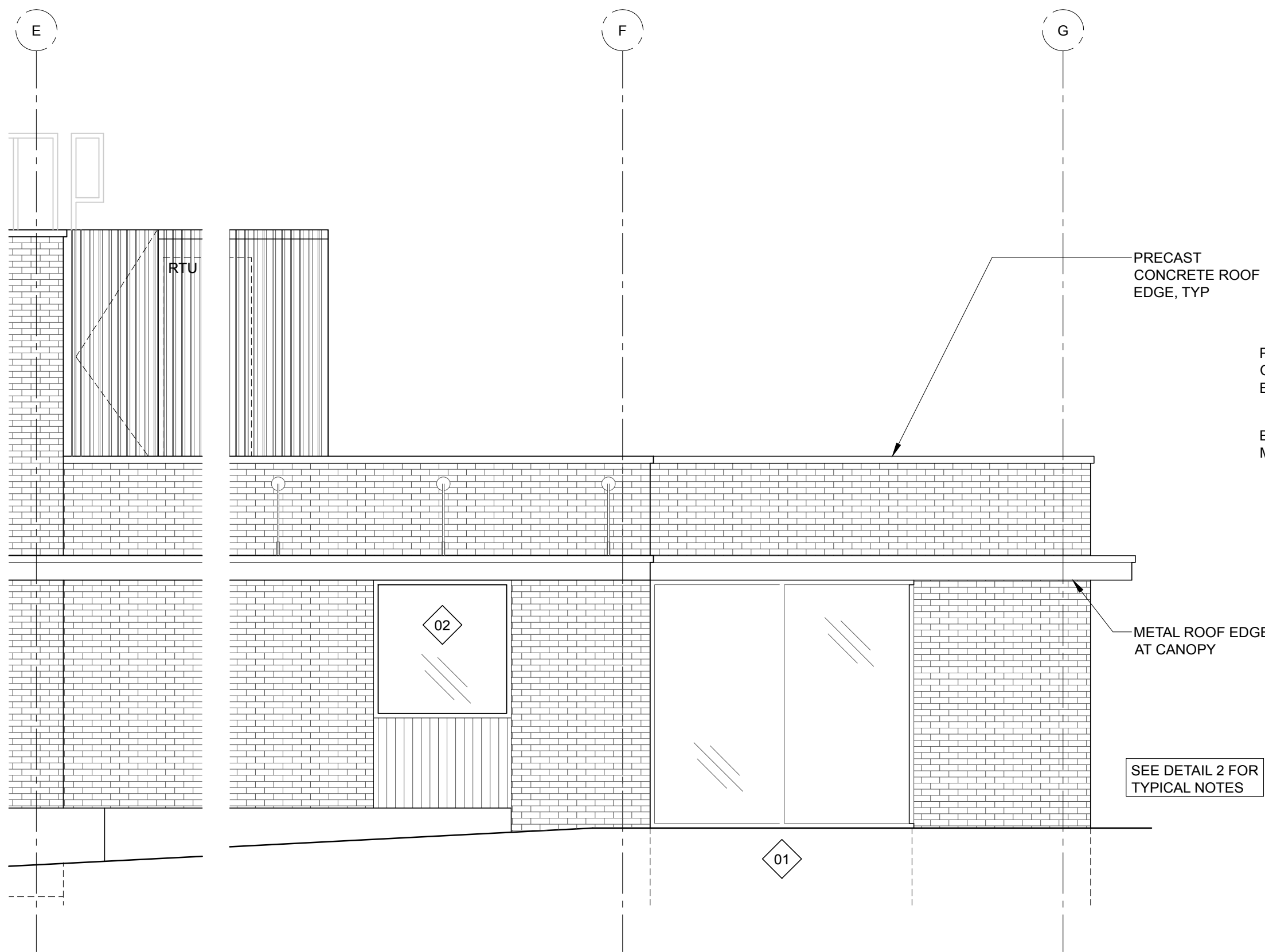




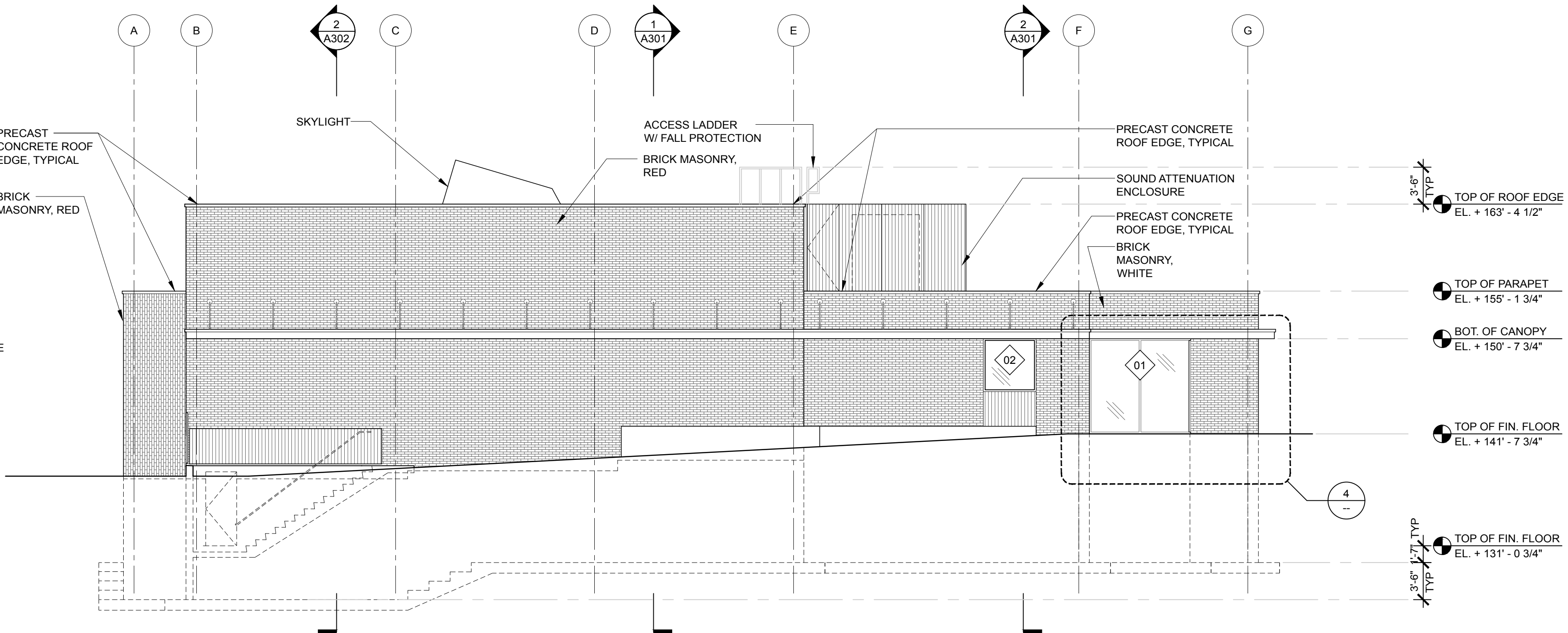
2 ENLARGED ELEVATION - NORTH VESTIBULE
SCALE: 1/4" = 1'-0"



1 NORTH ELEVATION
SCALE: 1/8" = 1'-0"



4 ENLARGED ELEVATION - SOUTH VESTIBULE
SCALE: 1/4" = 1'-0"



3 SOUTH ELEVATION
SCALE: 1/8" = 1'-0"



PROJECT NAME:

WAYNFLETE
GYM

NEW CONSTRUCTION

WAYNFLETE SCHOOL
360 SPRING STREET
PORTLAND, MAINE 04102

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PROJECT NUMBER: 2014-0080

STATUS: PLANNING BOARD SUBMISSION

ELEVATIONS

A202

PROJECT NAME:
**WAYNFLETE
LOWER SCHOOL
ADDITION & RENOVATIONS**

WAYNFLETE SCHOOL
360 SPRING STREET
PORTLAND, MAINE 04102

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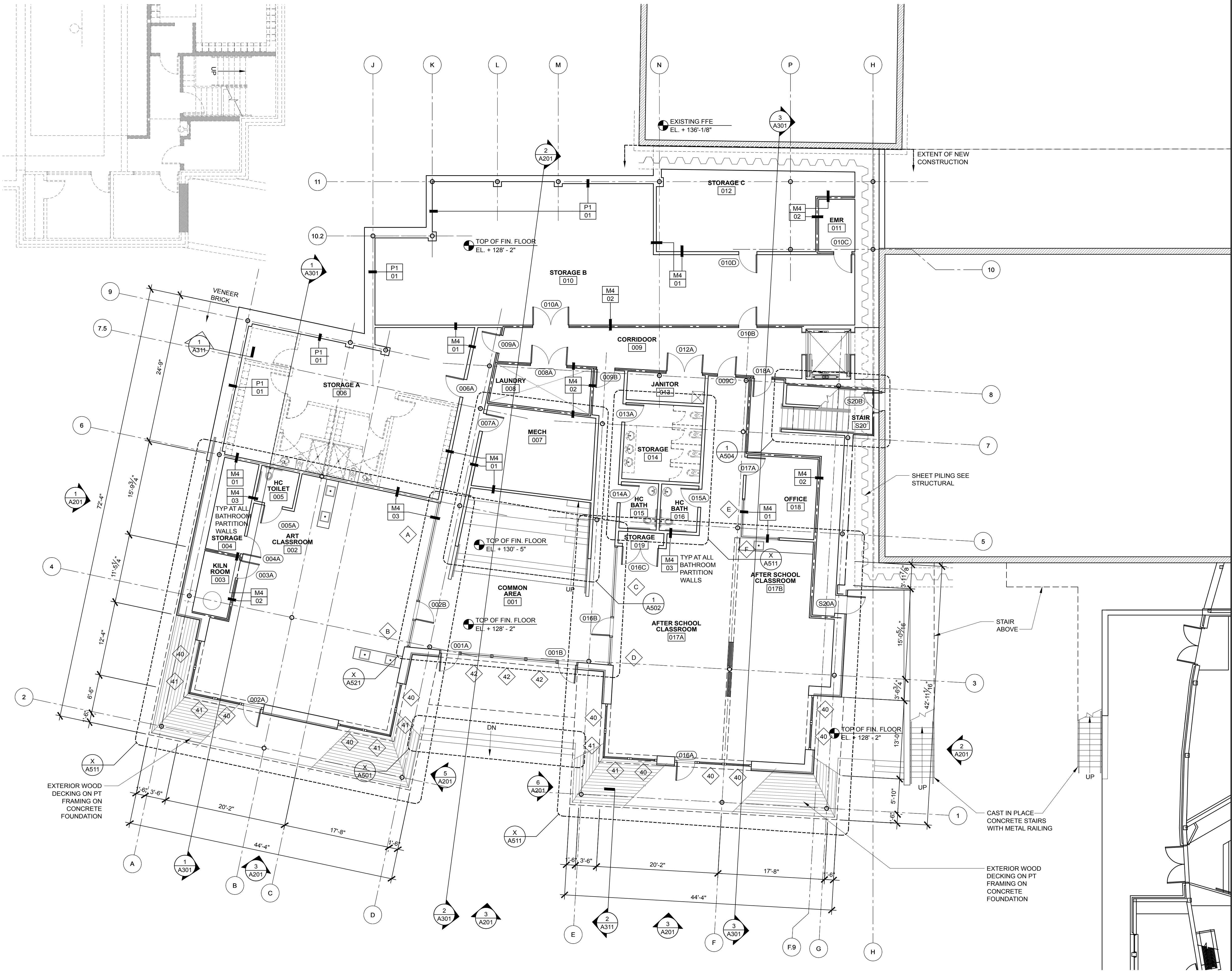
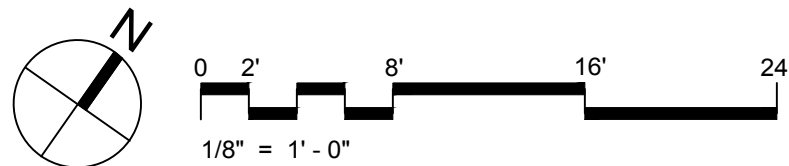
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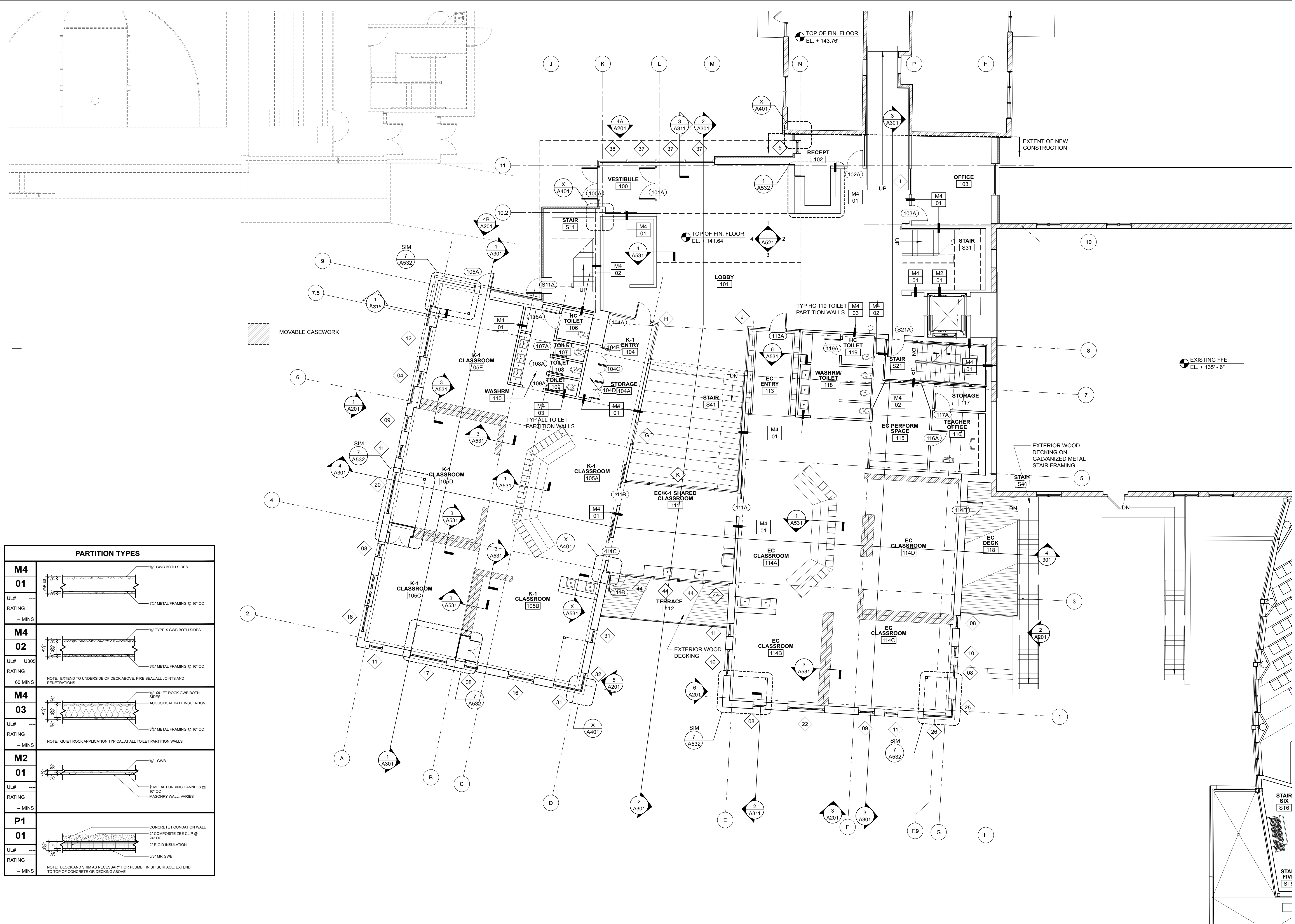
**LOWER LEVEL
FLOOR PLAN**

A101

PARTITION TYPES	
M4 01	1/2" GWB BOTH SIDES
UL#	VARIES
RATING	3/2" METAL FRAMING @ 16" OC
— MINS	
M4 02	1/2" TYPE X GWB BOTH SIDES
UL#	U305
RATING	60 MINS
— MINS	NOTE: EXTEND TO UNDERSIDE OF DECK ABOVE. FIRE SEAL ALL JOINTS AND PENETRATIONS
M4 03	1/2" QUIET ROCK GWB BOTH SIDES
UL#	VARIES
RATING	60 MINS
— MINS	NOTE: QUIET ROCK APPLICATION TYPICAL AT ALL TOILET PARTITION WALLS
M2 01	1/2" GWB
UL#	VARIES
RATING	— MINS
— MINS	2" METAL FURRING CHANNELS @ 16" OC MASONRY WALL, VARIES
P1 01	CONCRETE FOUNDATION WALL
UL#	VARIES
RATING	— MINS
— MINS	2" COMPOSITE ZEE CLIP @ 24" OC 2" RIGID INSULATION 5/8" MR GWB
— MINS	NOTE: BLOCK AND SHIM AS NECESSARY FOR PLUMB FINISH SURFACE. EXTEND TO TOP OF CONCRETE OR DECKING ABOVE

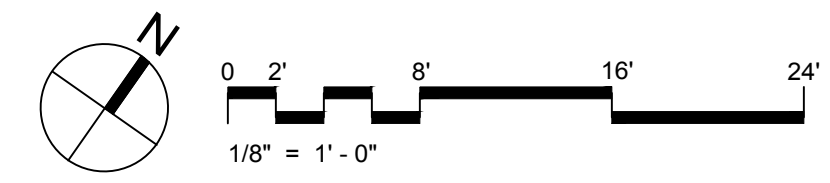
1 LOWER LEVEL FLOOR PLAN
SCALE: 1/8" = 1'-0"





PARTITION TYPES	
M4 01	1/2" GWB BOTH SIDES
UL#	VARIES
RATING	— MINS
M4 02	1/2" TYPE X GWB BOTH SIDES
UL#	U305
RATING	60 MINS
M4 03	1/2" QUIET ROCK GWB BOTH SIDES ACOUSTICAL BATT INSULATION
UL#	VARIES
RATING	— MINS
M2 01	1/2" GWB
UL#	VARIES
RATING	— MINS
P1 01	CONCRETE FOUNDATION WALL 2" COMPOSITE ZEE CLIP @ 24" OC 2" RIGID INSULATION 5/8" MR GWB
UL#	VARIES
RATING	— MINS

1 MAIN LEVEL FLOOR PLAN
SCALE: 1/8" = 1'-0"



PROJECT NAME:
**WAYNFLETE
LOWER SCHOOL**
ADDITION & RENOVATIONS

WAYNFLETE SCHOOL
360 SPRING STREET
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**MAIN LEVEL
FLOOR PLAN**

A102

PROJECT NAME:
**WAYNFLETE
LOWER SCHOOL**
ADDITION & RENOVATIONS

WAYNFLETE SCHOOL
360 SPRING STREET
PORTLAND, MAINE 04102

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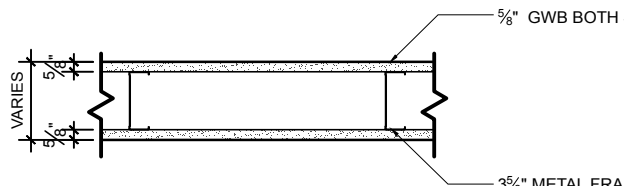
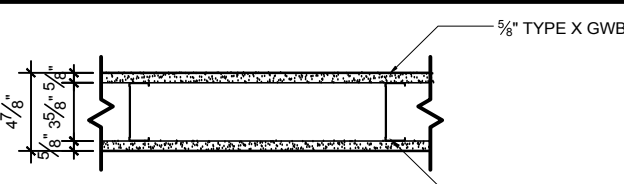
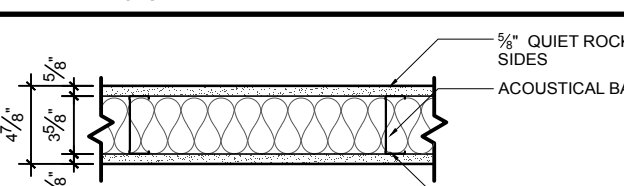
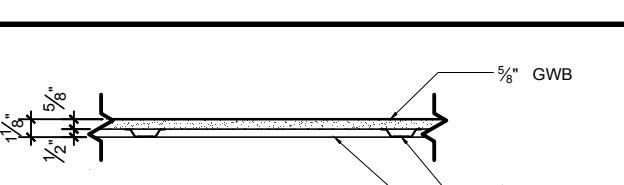
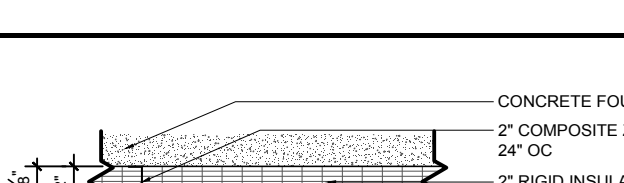
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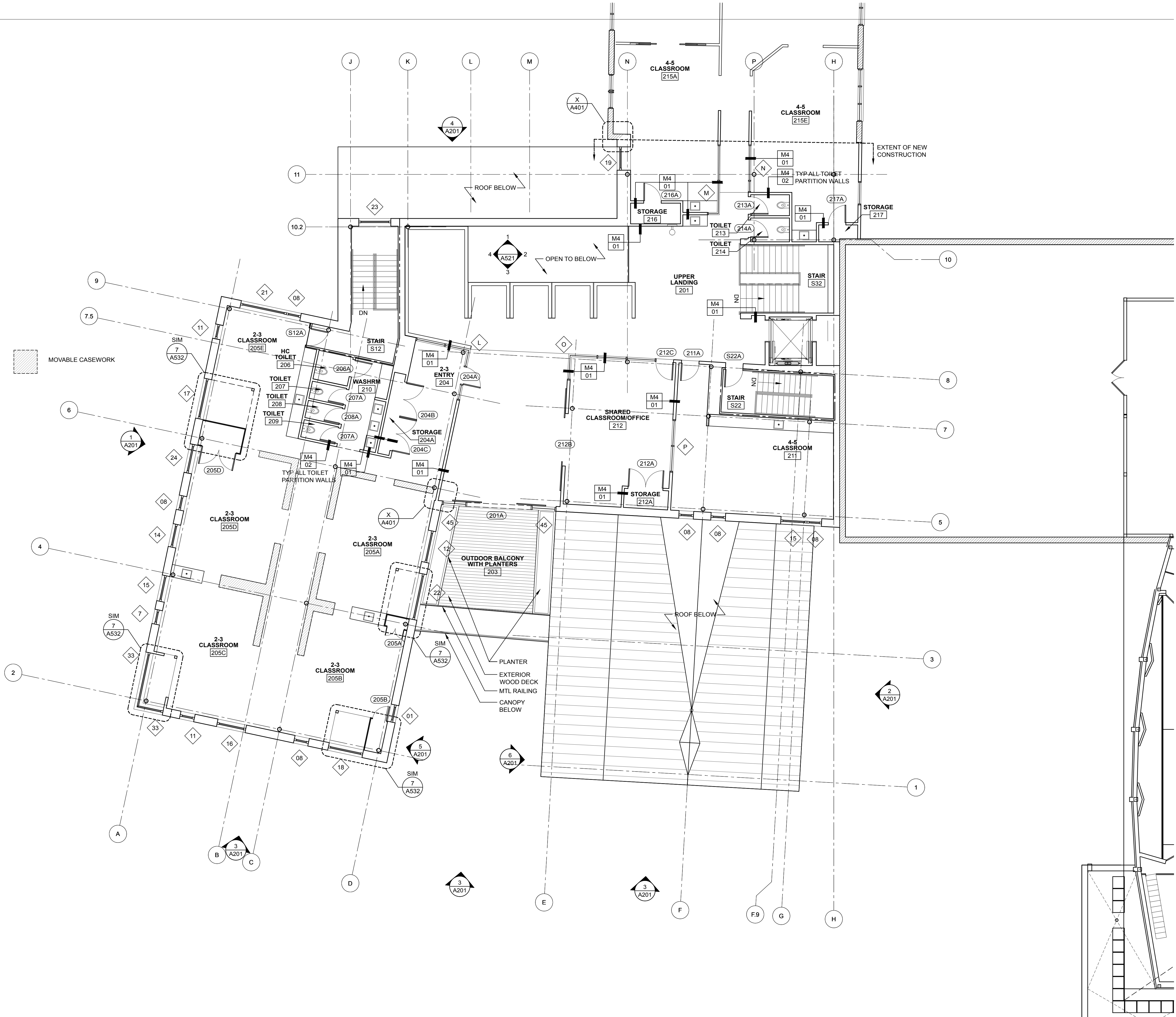
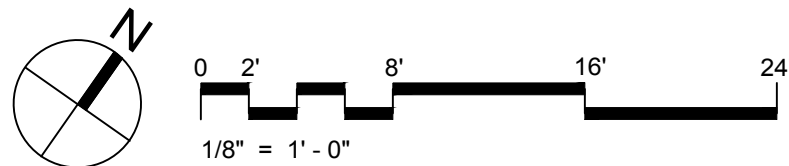
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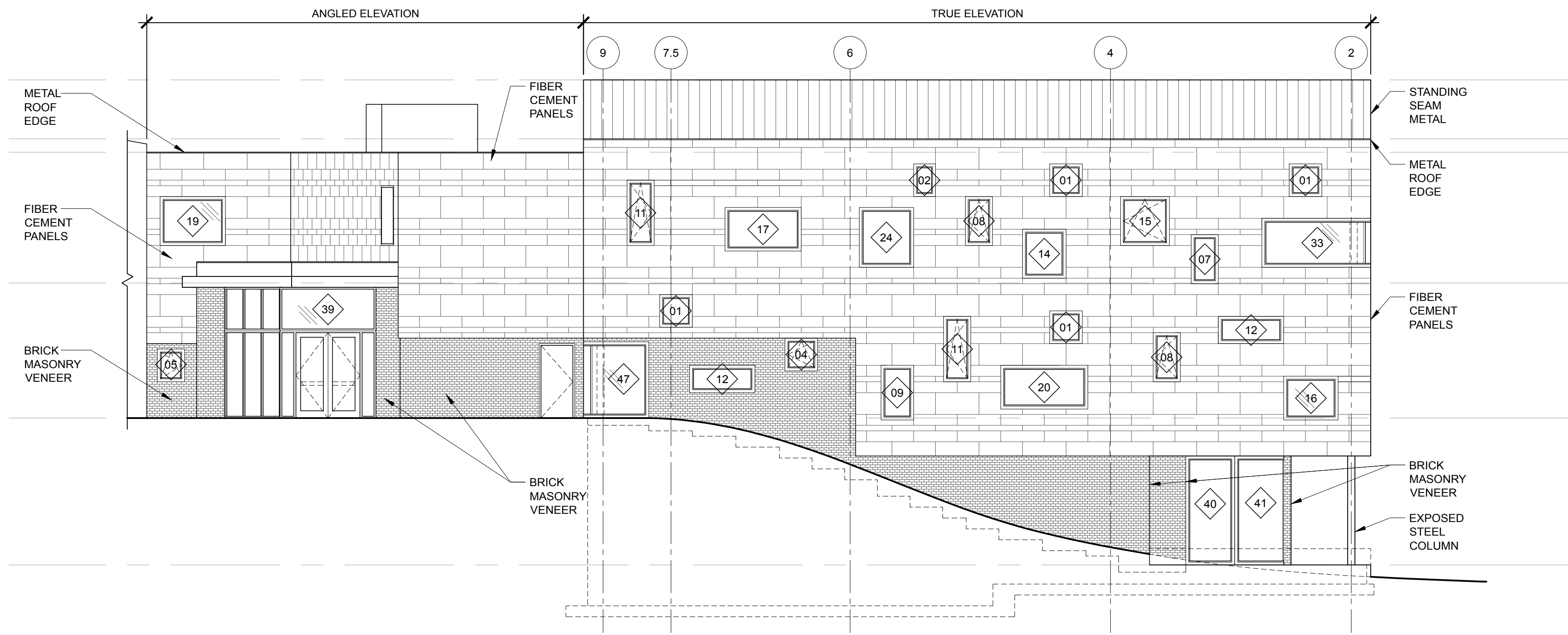
**UPPER LEVEL
FLOOR PLAN**

A103

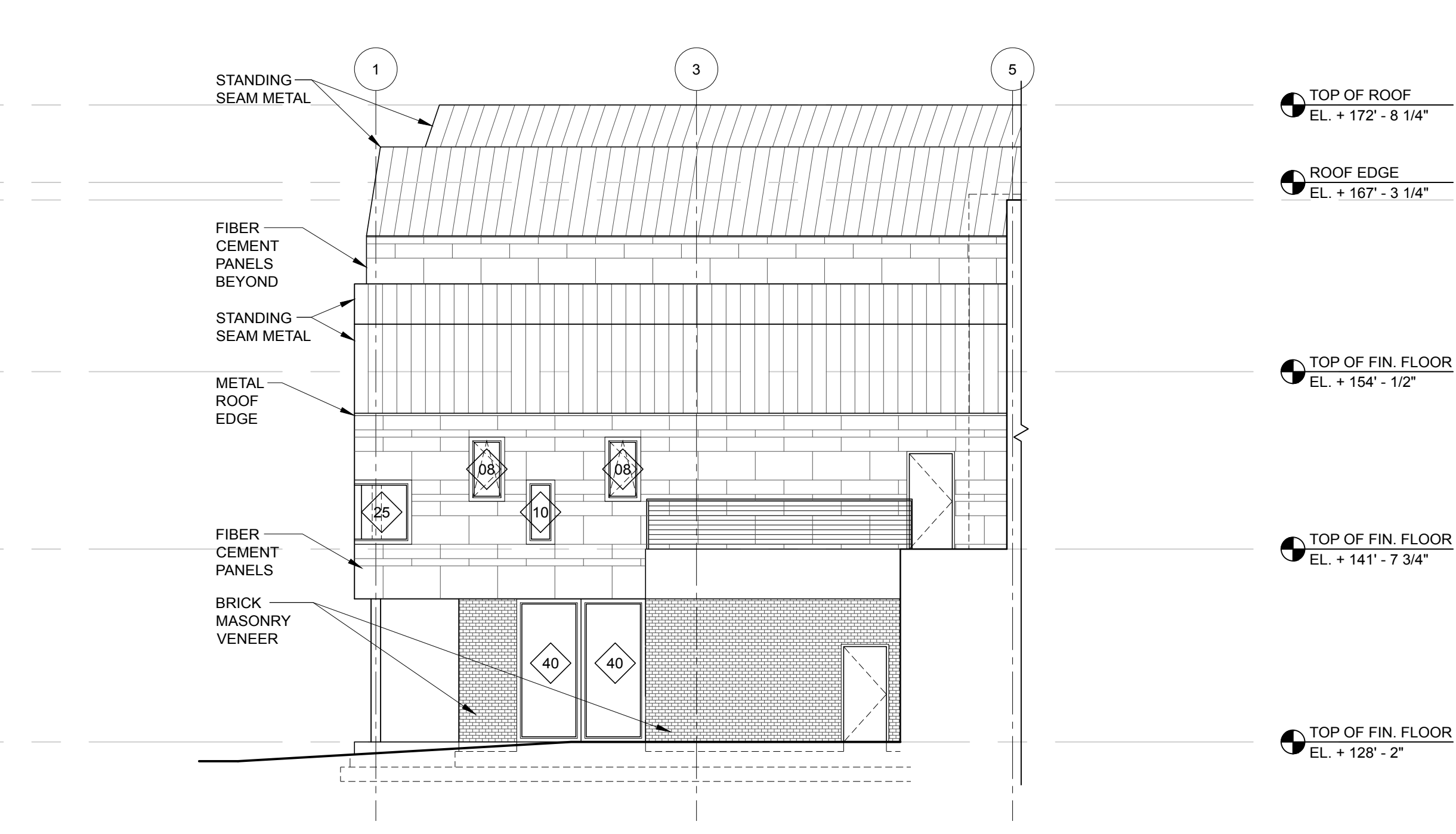
PARTITION TYPES	
M4 01	
UL#	VARIES
RATING	— MINS
M4 02	
UL#	U305
RATING	60 MINS
NOTE: EXTEND TO UNDERSIDE OF DECK ABOVE. FIRE SEAL ALL JOINTS AND PENETRATIONS	
M4 03	
UL#	VARIES
RATING	— MINS
NOTE: QUIET ROCK APPLICATION TYPICAL AT ALL TOILET PARTITION WALLS	
M2 01	
UL#	VARIES
RATING	— MINS
P1 01	
UL#	VARIES
RATING	— MINS
NOTE: BLOCK AND SHIM AS NECESSARY FOR PLUMB FINISH SURFACE. EXTEND TO TOP OF CONCRETE OR DECKING ABOVE	

1 UPPER LEVEL FLOOR PLAN
SCALE: 1/8" = 1'-0"

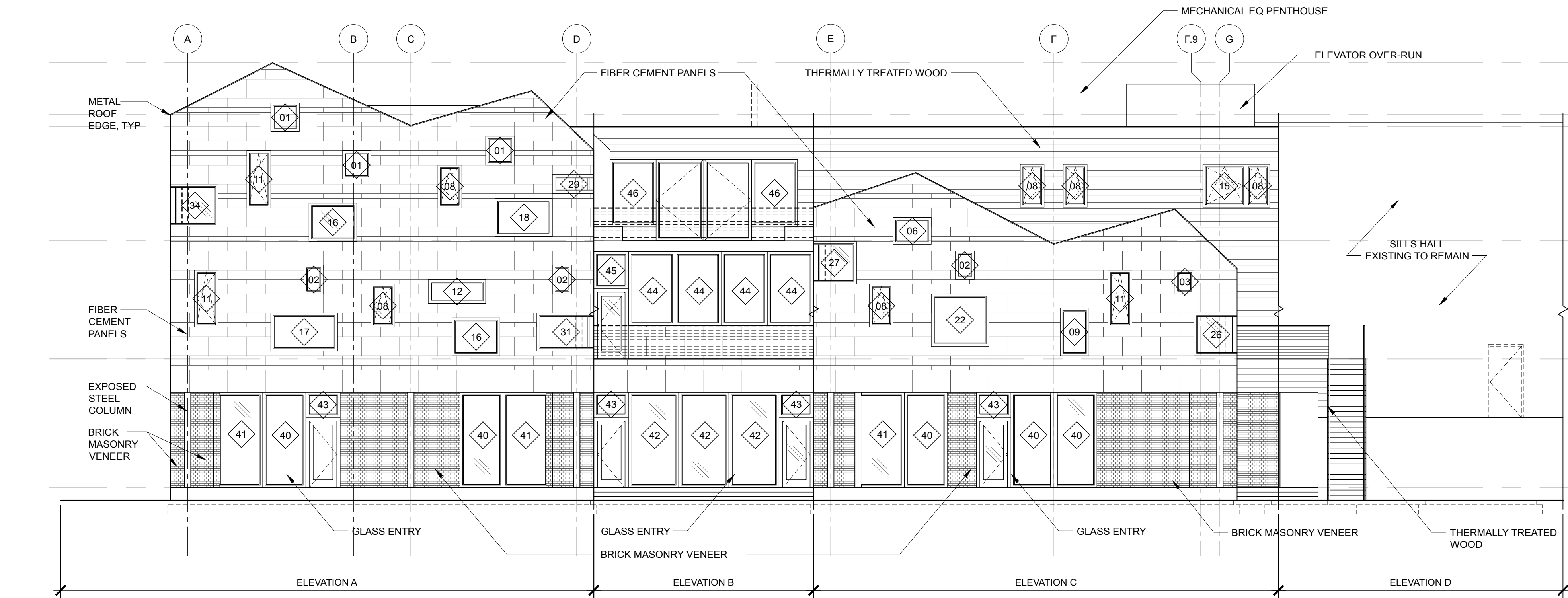




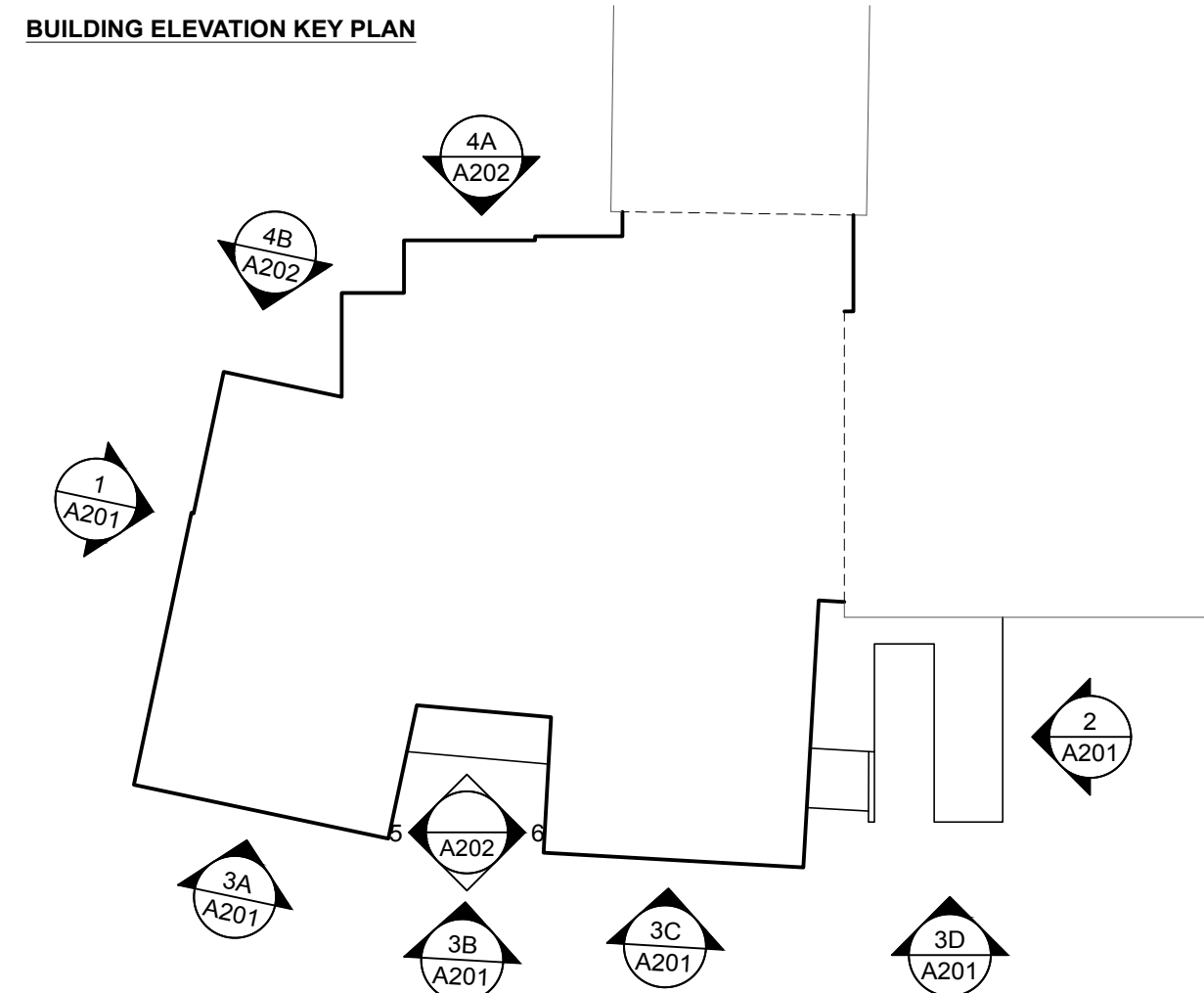
1 WEST ELEVATION
SCALE: 1/8" = 1'-0"



2 EAST ELEVATION
SCALE: 1/8" = 1'-0"



3 SOUTH ELEVATION
SCALE: 1/8" = 1'-0" NOTE: DRAWN ORTHOGONAL TO SHEET



TOP OF ROOF
EL. + 172' - 8 1/4"

ROOF EDGE
EL. + 167' - 3 1/4"

TOP OF FIN. FLOOR
EL. + 154' - 1/2"

TOP OF FIN. FLOOR
EL. + 141' - 7 3/4"

TOP OF FIN. FLOOR
EL. + 128' - 2"

TOP OF ROOF
EL. + 172' - 8 1/4"

ROOF EDGE
EL. + 167' - 3 1/4"

TOP OF FIN. FLOOR
EL. + 154' - 1/2"

TOP OF FIN. FLOOR
EL. + 141' - 7 3/4"

TOP OF FIN. FLOOR
EL. + 128' - 2"



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PROJECT NAME:
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360 SPRING STREET
PORTLAND, MAINE 04102

SEAL:
**NOT FOR
CONSTRUCTION**

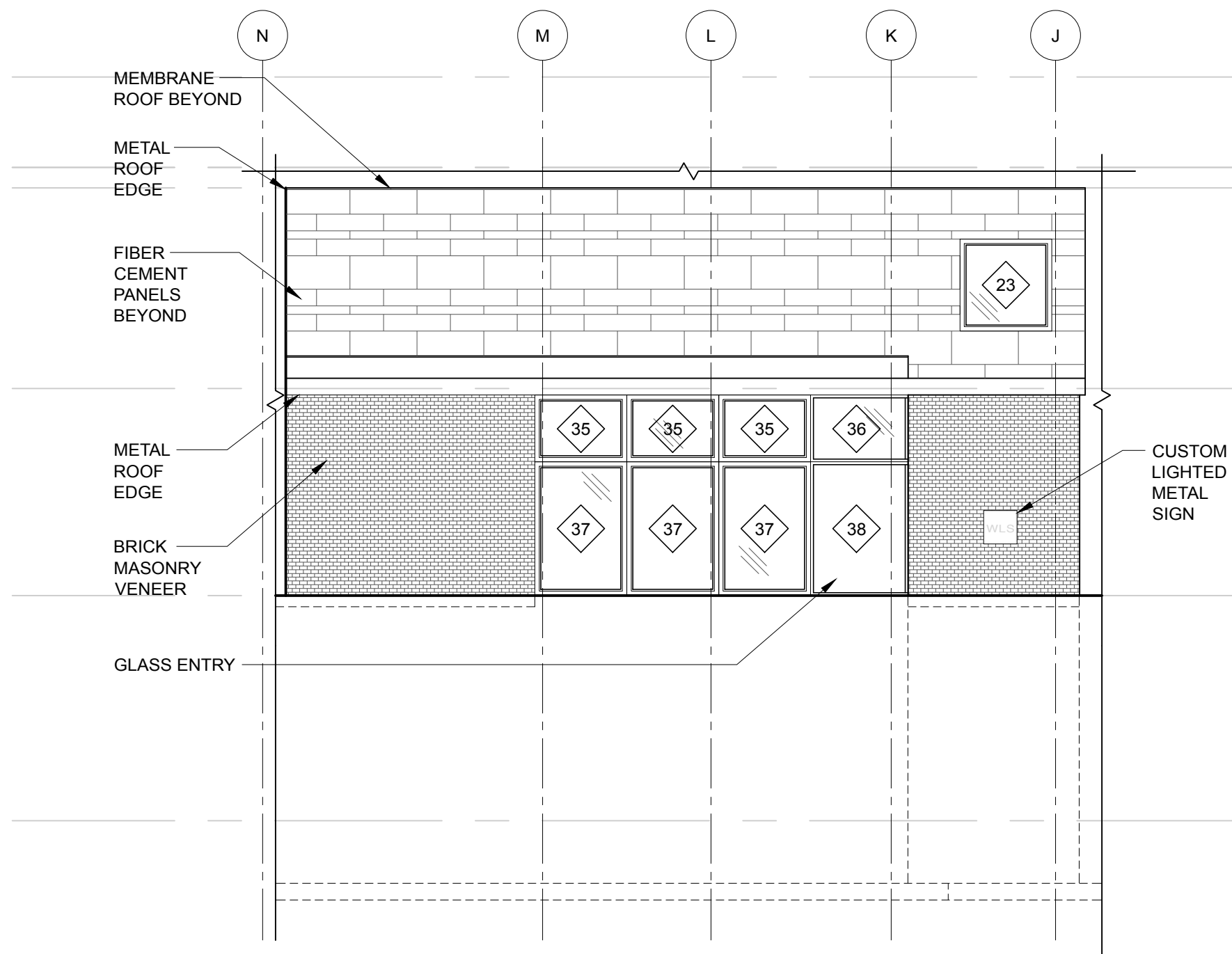
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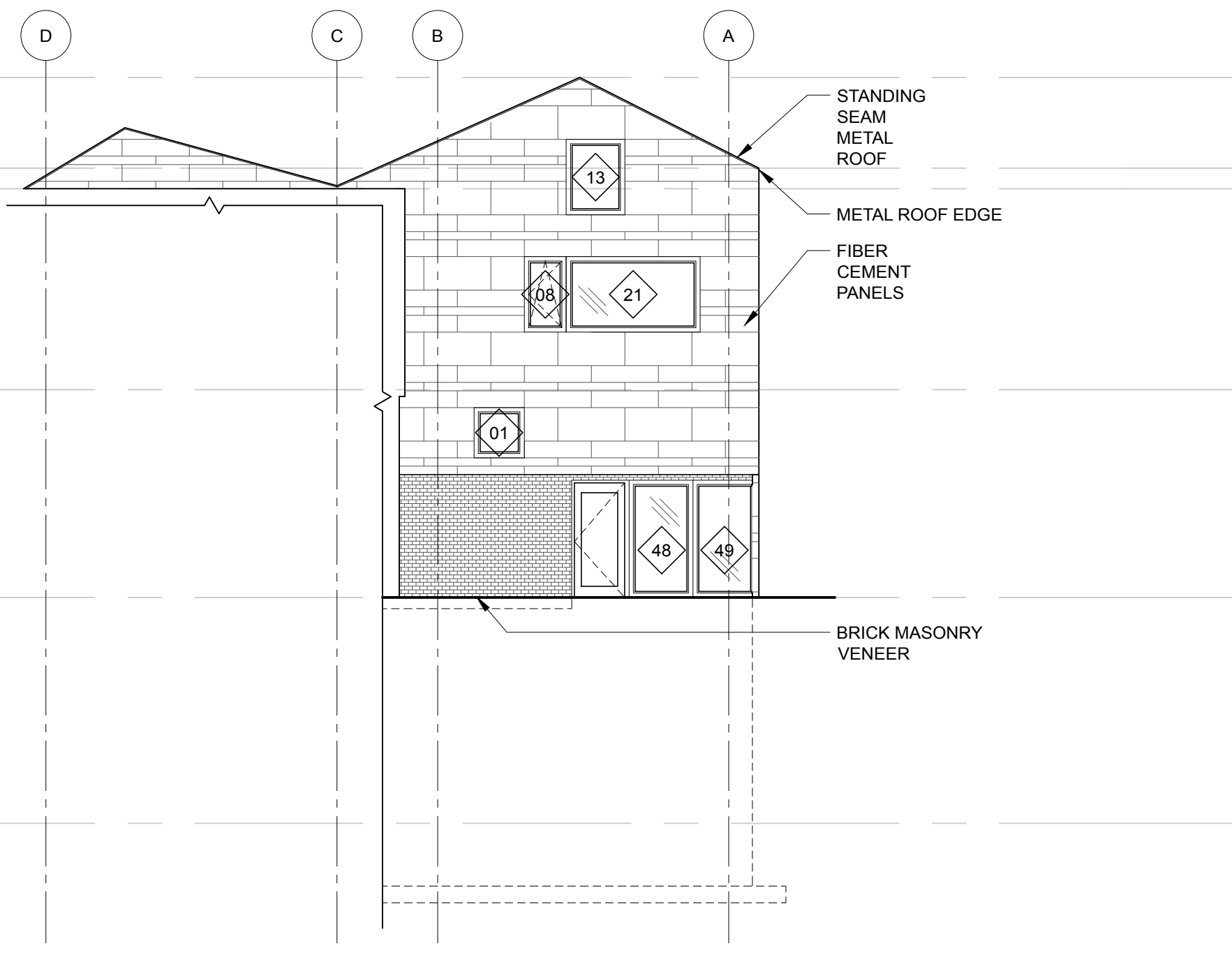
DATE OF ISSUE: 16 FEBRUARY 2016
PROJECT NUMBER: 2013-0050
STATUS: PLANNING BOARD SUBMISSION

**EXTERIOR
ELEVATIONS**

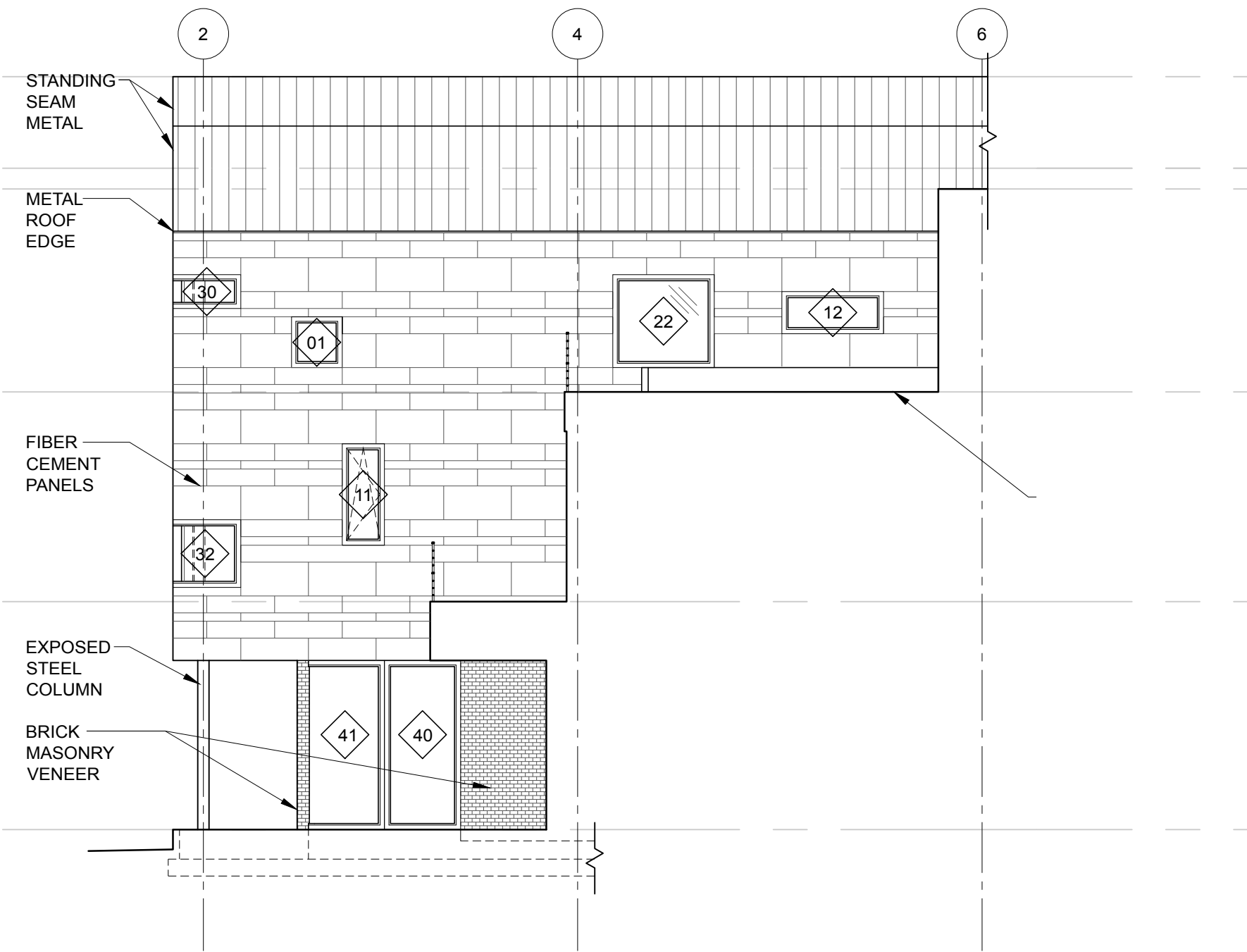
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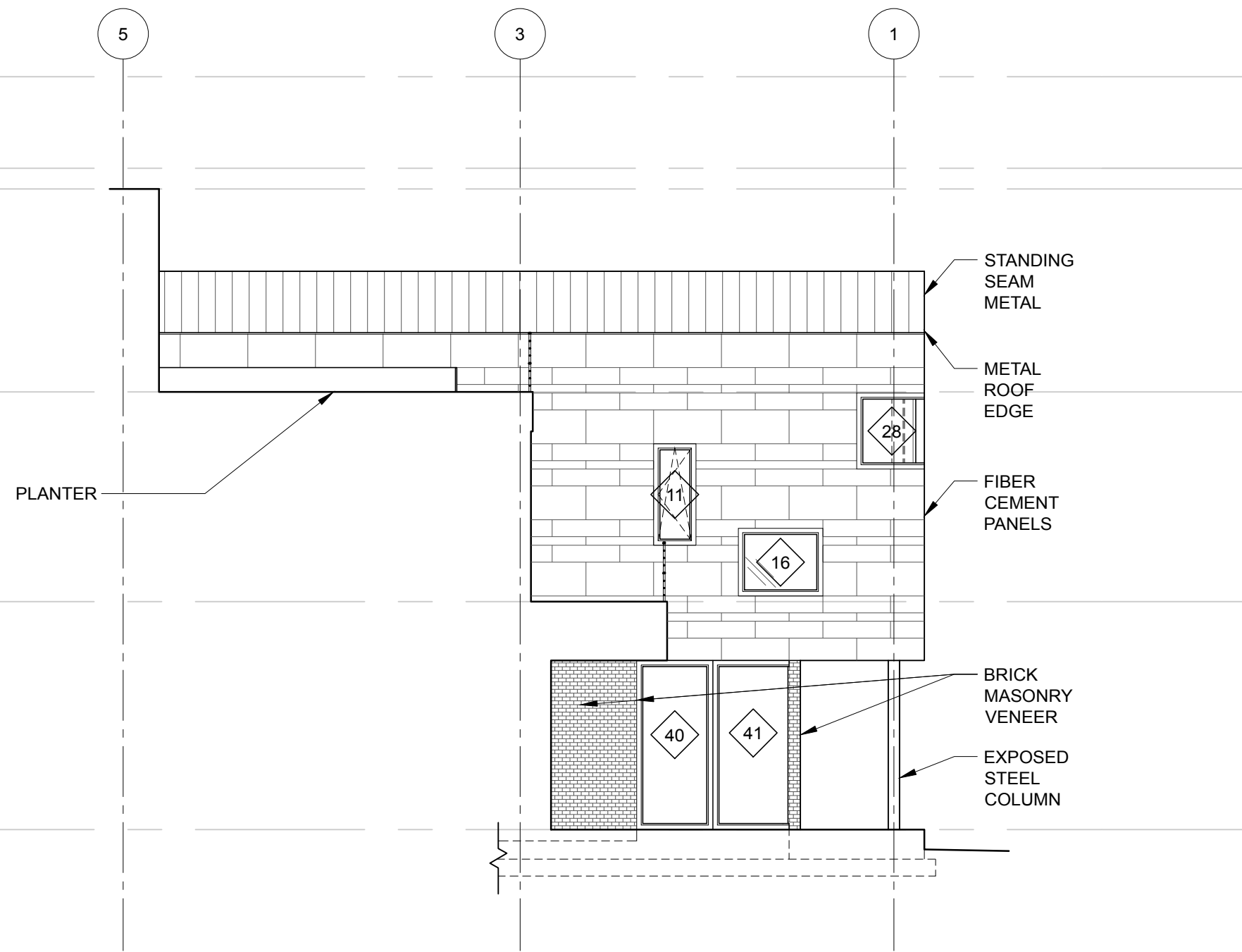
4A NORTH ELEVATION
SCALE: 1/8" = 1'-0"



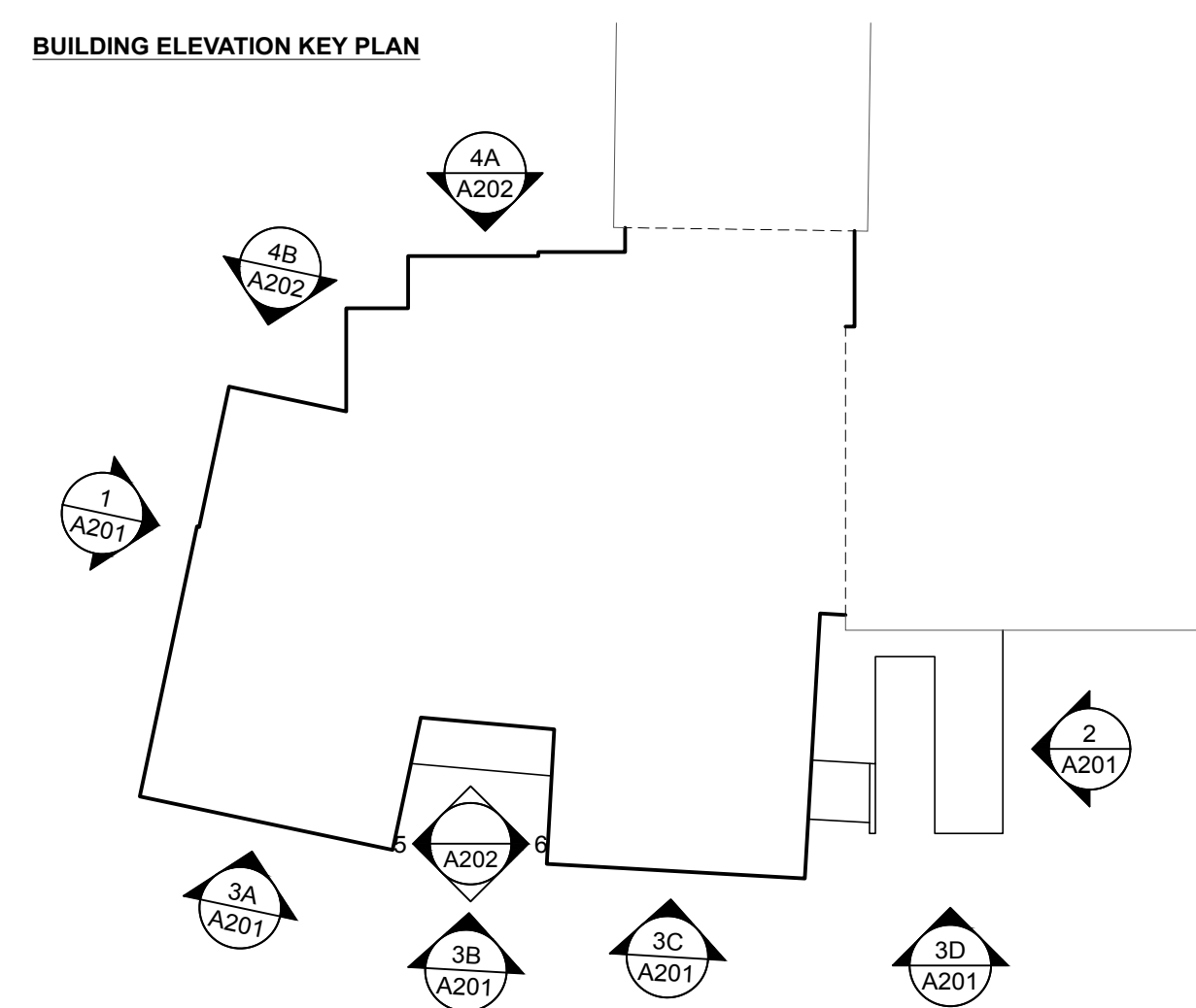
4B NORTH ELEVATION
SCALE: 1/8" = 1'-0"



5 INSET EAST ELEVATION
SCALE: 1/8" = 1'-0"



6 INSET WEST ELEVATION
SCALE: 1/8" = 1'-0"



- TOP OF ROOF
EL. + 172' - 8 1/4"
- ROOF EDGE
EL. + 167' - 3 1/4"
- TOP OF FIN. FLOOR
EL. + 154' - 1/2"
- TOP OF FIN. FLOOR
EL. + 141' - 7 3/4"
- TOP OF FIN. FLOOR
EL. + 128' - 2"

- TOP OF ROOF
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EL. + 154' - 1/2"
- TOP OF FIN. FLOOR
EL. + 141' - 7 3/4"
- TOP OF FIN. FLOOR
EL. + 128' - 2"



75 York Street
Portland, Maine 04101
simonsarchitects.com
207.772.4656

PROJECT NAME:
**WAYNFLETE
LOWER SCHOOL
ADDITION & RENOVATIONS**

WAYNFLETE SCHOOL
360 SPRING STREET
PORTLAND, MAINE 04102

SEAL:

**NOT FOR
CONSTRUCTION**

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**EXTERIOR
ELEVATIONS**

A202



PLANNING BOARD REPORT PORTLAND, MAINE

Recommendation of Historic Preservation Board to Expand India Street Historic District

Submitted to: Portland Planning Board
Public Hearing Date: April 12, 2016

Prepared by: Deborah Andrews, HP Program Mngr.
Date: March 30, 2016

I. Introduction

The Historic Preservation Board is recommending that the western boundary of the recently-designated India Street Historic District be extended to include three additional properties on the south side of Federal Street, at the intersection of Hampshire Street. The properties in question are 88, 96 and 100 Federal Street. The Historic Preservation Board's recommendation is pursuant to a request by Dan Black, representing M & D Federal LLC. M & D Federal LLC owns the buildings at 96 and 100 Federal. The building at 100 Federal is owned by the Catholic Diocese of Maine.



Area proposed to be added to district shown in pink. Current district boundary shown in orange.



St. Peter's Church, shown at far left, marks the current western edge of the India Street Historic District. As proposed, the district would extend in a westerly direction, adding 88, 96 and 100 Federal Street to the district.

II. Background – Impetus for Request

In February, Dan Black submitted a formal letter of request to the City on behalf of M & D Federal LLC. to extend the western boundary of the India Street Historic District to include three additional properties adjacent to the intersection of Federal and Hampshire Streets. Properties proposed for annexation include 88, 96 and 100 Federal. The request was prompted by M & D Federal LLC's desire to take advantage of historic tax credits for the rehabilitation of 96 Federal Street, a three story brick apartment building at the southwest corner of Federal and Hampshire. See letter from Mr. Black—**Attachment 2**.

Recognizing that the building is located outside the boundaries of the recently-adopted India Street Historic District, the property owner contacted the Maine Historic Preservation Commission (MHPC) about individually listing the building in the National Register of Historic Places. Individual NR listing would be the alternative avenue to qualify for historic tax credits. According to MHPC staff, however, the building is not individually eligible for National Register listing, as the threshold of significance for individual listing is higher than that for buildings located within historic districts. MHPC advised Mr. Black that if the building were included in a certified local historic district and classified as a "contributing" structure within the district, the owners would be in a position to take advantage of state and federal historic tax credits.

Following consultation with the Maine Historic Preservation Commission, Mr. Black contacted Portland's historic preservation office to inquire about the feasibility of expanding the India Street Historic District. Staff then pursued the question of expansion with MHPC, specifically the question of what buildings, at a minimum, would need to be added to the local India Street Historic District to meet MHPC and National Park Service requirements. The rationale for the specific scope of expansion is discussed in Sec. IV of this report.

III. Current Status of Subject Structures

The three structures proposed to be added to the India Street Historic District are located immediately west of the India Street Historic District boundary on Federal Street. (The westernmost building in the district on Federal Street is St. Peter's Church.) The three buildings were documented as part of a comprehensive architectural survey of the India Street neighborhood conducted at the start of the India Street neighborhood planning process in 2013. The survey forms, which include a brief history and architectural description of each structure, are provided in **Attachment 4**. Note that each form also includes a classification (contributing/noncontributing) assigned by the surveyor as part of the architectural inventory process.

As members of the Board will recall, the final India Street Historic District proposal recommended to the City Council for designation represented a geographic area considerably smaller than the area initially considered by the Historic Preservation Board. The preliminary district proposal included a number of interior, mostly residential blocks, as well as the major corridors (India, Congress and Middle) that were ultimately designated. The final proposal eliminated most of the residential blocks from the district. Removal of these blocks from the district was in response to opposition from several residential property owners in the neighborhood as well as concerns of the Planning Board. Given the "spotty" nature of some of the blocks, with historic structures separated by undeveloped parcels and/or noncontributing buildings, the Planning Board questioned their inclusion in the district and expressed the view that the new Form-Based Code was adequate to regulate development on these blocks. During discussion of a contracted district, one Planning Board member noted that if an owner of a historic structure outside the district boundary wished to take advantage of historic tax credits, they had the option of pursuing individual National Register designation.

As Mr. Black's experience has shown, getting a property individually listed in the National Register of Historic Places is not as straightforward as might have been assumed.

IV. Scope of Proposed District Expansion

Although Mr. Black's initial interest was in finding a designation solution for 96 Federal only, adding it to the India Street Historic District required consideration of the buildings in its immediate vicinity, especially since 96 Federal does not immediately abut the district boundary. Separating the current boundary and 96 Federal is a one-story structure at 88 Federal owned by the Catholic Diocese of Maine. 88 Federal, built circa 1965, was identified as a "noncontributing" structure in the architectural survey of the neighborhood. Although 88 Federal would be classified as a noncontributing structure in a reconfigured India Street district, it needs to be included in the expansion nonetheless in order to avoid a non-contiguous historic district. (The National Park Service does not allow for non-contiguous historic districts except under very specific circumstances.)

Maine Historic Preservation Commission staff also indicated that based on their evaluation, the residential structure on the west side of 96 Federal would also need to be included in any district expansion. Although 100 Federal Street, a triple decker, has lost some of its architectural character due to previous renovations, it is representative of the vernacular housing that characterized much of the India Street neighborhood and retains its essential form and key architectural features. Its alterations are readily reversible (see 1924 photo) and it is the westernmost extant historic structure on the south side of its Federal Street block. In consideration of all these factors, MHPC expressed the view that the building

would also need to be included in order for the expanded district to be certified by the National Park Service.

Current and 1924 views of each of the three affected structures as well as architectural descriptions and historical information is provided in **Attachment 4**.

As shown on the proposed amended district map (see **Attachment 1**), each of the buildings has been assigned a classification (contributing/noncontributing), consistent with classification of all buildings within the historic district boundaries. 96 and 100 Federal Street are proposed to be classified as contributing structures. 88 Federal is classified as noncontributing. Note that 88 Federal's noncontributing status means that the building can be demolished as of right, but that any new construction on the property would be subject to Historic Preservation Board review and approval. The consequences of including the property in the district is fairly limited, as any new construction of the site would require advisory HP review in any event. This is due to the fact that under the site plan ordinance's "100-foot" rule, proposed developments abutting landmark structures require advisory review by the HP Board. St. Peter's Church, a designated landmark, immediately abuts 88 Federal.

V. Role of the Planning Board, Consistency with Comprehensive Plan

Consideration of amendments to existing historic districts follows the same review process as prescribed for designating new historic districts. The Historic Preservation Board is required to review the requested amendment for consistency with the historic preservation ordinance's designation criteria and forward its recommendation to the Planning Board. The Planning Board, in turn, confirms that the recommended amendment meets the threshold designation criteria as outlined in the historic preservation ordinance and also considers the effect of the amended district on other aspects of the Comprehensive Plan.

The Historic Preservation Board's recommendation to expand the district as requested by M & D Federal LLC is based on findings that the expanded district meets the designation criteria set forth in Article IX, Sec. 4-610 (a) and Sec. 14-611. Given the fact that all of the buildings proposed for addition to the district had already been documented and evaluated for their relative significance within the neighborhood and had been included in earlier draft boundary proposals, the Historic Preservation Board's review process was fairly straightforward. As noted above, although the most limited possible expansion of the district—to retain the contiguous nature of the district-- would be to add 88 and 96 Federal only, the Maine Historic Preservation Commission has indicated that in order for the expansion to be certified for purposes of gaining access to tax credits, 100 Federal Street must be included in the expansion as well.

As the Planning Board takes up the Historic Preservation Board's recommendation, it should consider whether the proposed district expansion is generally consistent with the goals of the recently adopted India Street Sustainable Neighborhood Plan. The Board might have questions about the inclusion of 100 Federal in the expansion, given the fact that the current property includes an undeveloped area closest to Franklin Street. Although it is conceivable that the 100 Federal Street property could be redeveloped in the future, Board members will recall there is an easement across this portion of the property held by the owners of the Luminato property to provide access to the Luminato development. It is likely that the easement would constrain redevelopment options for the 100 Federal Street property more than its inclusion in the historic district boundary.

Note that staff has drawn the proposed district boundary to follow the western edge of the building at 100 Federal, rather than the property line—see Map. This would be the most conservative expansion option. It is customary, however, for historic district boundaries to follow property lines. The Board may wish to consider the option of extending the new boundary to the western edge of the property.

VI. Applicable Review Standards

As noted above, the Planning Board must find that the proposed expansion meets designation criteria under Sec. 14-610 (a) (b) and Sec. 14-611 of the historic preservation ordinance. See Attachment – for applicable standards.

VII. Motion for Consideration

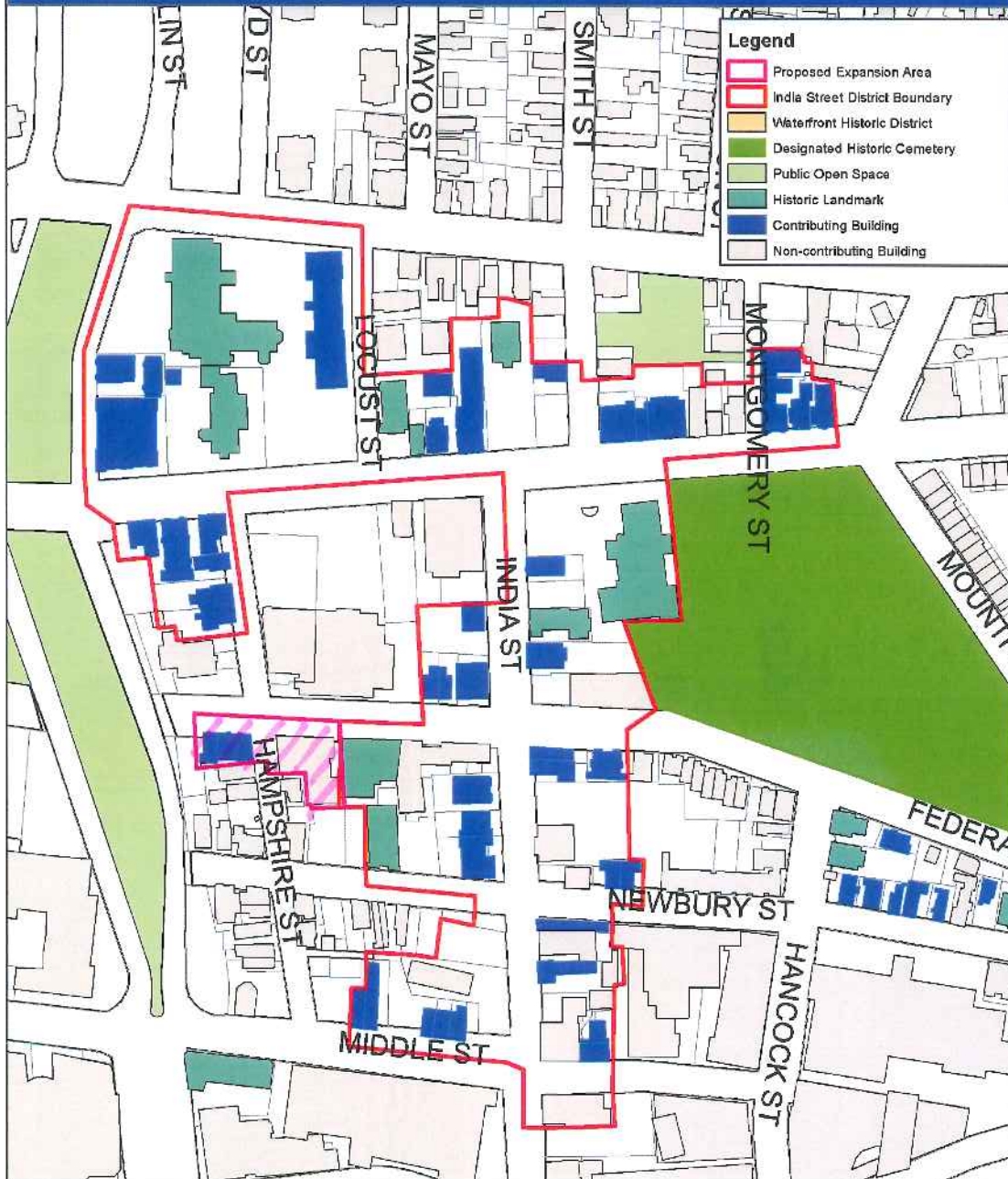
Based upon the recommendation of the Historic Preservation Board and information included in the April 12, 2016 staff report and public comment received at the April 12, 2016 public hearing, the Planning Board finds:

- that the proposed expansion of the India Street Historic District **meets/does not meet** the historic preservation ordinance's minimum criteria for designation as set forth in Sec. 14-610 (a) (specifically Criteria 1, 3, 5 and 6) and Sec. 14-610 (b), as well as the integrity criterion in Sec. 14-611; and that designation of the India Street Historic District **is/is not consistent** with the Comprehensive Plan, including the January 2015 *India Street Sustainable Neighborhood Plan* recommended for adoption as part of the Comprehensive Plan ; and
- **recommends/does not recommend** to the City Council that the proposed India Street Historic District be designated a local historic district subject to the provisions of Article IX of the Land Use Code.

VIII. Attachments

1. Map of India Street Historic District showing proposed expansion area
2. Letter of request for expansion from Dan Black, representing owner of 96 and 100 Federal Street
3. Applicable designation criteria under Article IX, Division 3 Categories and Criteria for Designation
4. Inventory forms with current and 1924 views of affected properties

INDIA STREET HISTORIC DISTRICT



Proposed Expansion of India Street Historic District

Classifications of Added Properties:

- 88 Federal – Noncontributing
- 96 Federal – Contributing
- 100 Federal - Contributing

Att. 2

Daniel Black
M&D Federal LLC
11 Cleeve Street, Apt. 1
Portland, Maine 04101

March 31, 2016

Elizabeth Boepple
Chairwoman
Planning Board
City of Portland
389 Congress Street
Portland, Maine 04101

Dear Chairwoman Boepple & the Planning Board,

We are writing to request an expansion in the India Street Historic District along Federal Street on the south side of the street, in an easterly direction, to encompass properties up to and including 100 Federal Street.

We, M&D Federal LLC, are the new owners of 96 and 100 Federal and have spent the last four months, hiring consultants, working on research and negotiations with MHPC, trying to get 96 Federal individually listed to no avail. We are eager to begin the restoration of these properties and are interested in pursuing Federal and State Historic Tax Credits for 96 Federal to make the project feasible. There is also a possibility that we would pursue credits for 100 Federal Street at a future time as well.

Please consider our request and be in touch with any questions.

Sincerely,



Daniel Black
Managing Partner
M&D Federal LLC

- (s) To annually report to the council with respect to the following matters:

Att. 3

1. Survey work in progress or completed;
 2. The number of projects reviewed (by type);
 3. How many certificates of each type were issued.
- (Ord. No. 235-90, 2-26-90; Ord. No. 165-08/09, 3-16-09)

DIVISION 3. CATEGORIES AND CRITERIA FOR DESIGNATION

Sec. 14-610. Minimum criteria for designation.

(a) The historic preservation board shall limit its consideration to the following criteria in making a determination on a proposed nomination of an area, site, structure or object for designation by ordinance as a landmark or district:

- (1) Its value as a significant example of the cultural, historic, architectural, archeological or related aspect of the heritage of the City of Portland, State of Maine, New England region, or the United States;
- (2) Its location as a site of a significant historic or prehistoric event or activity which may have taken place within or which involved the use of any existing structure on the property;
- (3) Its identification with a person or persons who significantly contributed to the cultural, historic, architectural, archeological or related aspect of the development of the City of Portland, State of Maine, New England region, or the United States;
- (4) Its exemplification of a significant architectural type, style or design distinguished by innovation, rarity, uniqueness or overall quality of design, detail, materials or craftsmanship;
- (5) Its identification as the work of an architect, designer, engineer or builder whose individual work is significant in the history or development of the City of Portland, the State of Maine, the New England region, or the United States; or
- (6) Its representation of a significant cultural, historic,

architectural, archeological or related theme expressed through distinctive areas, sites, structures or objects that may or may not be contiguous.

(b) In the case of a nominated historic district, the historic preservation board shall also determine whether a substantial number of the properties, sites, structures or objects have a high degree of cultural, historic, architectural or archeological significance and integrity, many of which may qualify as landmarks, and which may also have within its boundaries other properties, sites, structures or objects which, while not of such cultural, historic, architectural or archeological significance to qualify as landmarks, nevertheless contribute to the overall visual characteristics of the significant properties, sites, structures or objects located within it.

(c) In the case of a nominated historic landscape district, the historic preservation board shall also consider its significance as a geologic, natural or man-made landscape feature associated with the development, heritage or culture of the City of Portland, State of Maine, New England region, or the United States.

(d) The planning board and council shall apply the criteria of subsections (a), (b) and (c) but shall also consider the effect of such designation on other aspects of the comprehensive plan of the city.

(Ord. No. 235-90, 2-26-90)

Sec. 14-611. Integrity of landmarks and historic districts.

Any area, structure or object that meets the criteria in section 14-610 must also have sufficient integrity of location, design, condition, materials and workmanship to make it worthy of preservation or restoration.

(Ord. No. 235-90, 2-26-90)

Sec. 14-612. Designation of historic landscape districts.

An historic landscape district may be nominated and considered for designation only if the entire area of the district is owned by a unit of federal, state or local government, or any combination of such ownership.

(Ord. No. 235-90, 2-26-90; Ord. No. 220-93, § 2, 5-17-93)

Sec. 14-613. Reserved.

DIVISION 4. NOMINATION, CONSIDERATION AND DESIGNATION

88 Federal Street
Noncontributing

Taliento's Federal Street Supermarket, ca. 1965



Architectural Description

The building at 88 Federal Street is a simple utilitarian one story box. The foundation is irregular in plan and abuts the sidewalk along both Federal and Hampshire Streets. A three foot tall length of concrete foundation appears along the length of the Federal Street facade while no foundation material is visible along Hampshire Street. The building appears to be clad in painted stucco, perhaps over concrete block walls. The Federal Street facade is six bays with a deeply recessed flush metal door at the first bay; a separated pair of one-over-one metal double hung windows at the second, third and fourth bays; an oversized, garage-door-like punched opening which has been infilled at the fifth bay and a narrow, vertically proportioned single pane fixed metal window at the sixth bay. The secondary Hampshire Street elevation has four one-over-one double hung metal windows positioned near the rear. The facades are capped with a wide band of painted metal roof flashing.

Historical Narrative

The City of Portland assessment records indicate this commercial building was built 1951. In the 1950s, Dominic Taliento owned several three-story buildings on the site that he altered to accommodate his grocery store. After 1964, the existing masonry building was constructed. It is occupied in 2013 by Pine Tree Legal Assistance.

96 Federal Street
Contributing

Josiah Duran Block, 1867 (3rd story added 1909 – 1924)



Architectural Description

The three story, seven bay apartment building at 96 Federal Street rests on a rectangular brick foundation that abuts the sidewalk along Federal and Hampshire. The building is separated from its neighbor at 100 Federal by one foot. The entry appears at the central bay and is accessed by two brick stairs. The original, Italianate hood remains with its elaborately carved brackets. The entry door is slightly recessed in an alcove that has brick returns and a shallow arched ceiling. A modern wood replacement door with two small lights at the top and four panels below sits within a flat stock surround with an infilled transom panel above. To either side of the entry at bays two, three, five and six, a pair of original two-over-one wood double hung windows appears on center with a two story bay window above. Each of these four, separate windows sits within its own narrow masonry opening with a three course corbelled shallow arched lintel and projecting wooden sill. The windows retain their painted wood casings and brick mouldings. The upper two levels are five bays wide with a two story bay window appearing at the second and fourth bays. These bays retain all of their original fabric including large central two-over-one wood double hung windows, narrow one-over-one wood double hungs at the flanking walls, wood panels beneath all the windows and large, built-up frieze at the top. All remaining bays at each level contain a single two-over-one wood double hung set within the same masonry opening with decorative lintel. The original projecting cornice remains and is capped with the metal flashing that terminates the roofing system. The flat roof is likely clad in a membrane.

Historical Narrative

Josiah Duran was a grocer who, at the time of the 1880 census, suffered from paralysis. This is what would eventually kill him in 1887, at the ripe old age of 75.

In 1895, Frederick A. Lord, a furniture painter, lived in the house with his wife Lucy. They moved out sometime between 1905 and 1910, relocating to Neal Street. Frederick died in 1914.

Third story added between 1909 and 1924. By 1912, the building housed six families. In 1920, one of those families was that of Abram Schwartz, the building's owner and a shoemaker with "U.S. Fortification" (1920 Census). The Schwartzes lived in the building until the late 1920s.

Another family living there in 1920 was that of George Cady, a fireman with the Fire Department. Living with him and his wife were a son, a sailor on a steamboat, a daughter, and her husband, also a

fireman. Young Samuel Rubinoff, age 25, and his wife Rose, also lived in one of the apartments with their two babies. Samuel owned a picture framing shop. The couple immigrated from Lithuania in 1914. Frederick Ledou also lived in the building. He had immigrated from France in about 1890 and worked as a laborer in a shoe factory to support his family of five. Daughter Irene, 21, clerked in a department store to help out.

In 1930, tenants included Eli Lerman, a truckman for a furniture store, and his family. Hyman Lerman, an iron collector, and Benny Brenerman, a laborer in an iron shop. All three men hailed from Russia and had immigrated in the early 20th century.

Hyman Lerman was still living in the apartment in 1940. Another family was that of Mary Marotto, widow, and her six children. Mary worked as a stitcher in a pants factory (Kadish Brothers on Middle Street) along with one of her daughters, Virginia DePalmer.

1950, residents included Wilma Libby (who married Sam Ricci in 1953; the couple moved to Hancock Street), Antonio Morotto, and Hyman Lerman, who lived here and had a junk business on the premises.



96/96

100 Federal Street

William H. Swett House, 1867 (Altered 1909 – 1924)



Architectural Description

The three bay, side entry, triple-decker residential building at 100 Federal Street rests on a rectangular brick foundation that abuts the sidewalk. The building is separated from its neighbor at 96 Federal by one foot. The entry appears at the first bay and is accessed by two wooden stairs. The original, diminutive hood remains with its carved brackets. The door is a modern embossed metal replacement with six embossed panels and the door surround is painted flat stock wood with the original single pane transom. The second and third bay are one-over-one vinyl replacement double hung windows with vinyl casings and sills. The second and third level of the building are two bays with a two story, elevated bay appearing to the right. The two story bay features a large one-over-one vinyl double hung at the center with two flanking, smaller vinyl double hung window at each of its two levels. The corner bay boards of the bay windows are clad in metal. The first bay at the second and third floor levels are slightly out of alignment with the entry and each contain a single one-over-one vinyl double hung. The side elevation facing west is six bays deep with five equally spaced windows and a door at the sixth bay. These secondary doors access the three story attached wooden deck. Walls are clad with vinyl siding. The original cornice profile appears to be retained under metal cap flashing. The flat roof is likely clad in a membrane.

Historical Narrative

William H. Swett was a hack driver who died in 1883. His widow, Mary, lived in the house until 1904 when she died at the age of 89.

Altered between 1909 and 1924. In 1920, there were three apartments in the house. The heads of each household were John. J. Golding, Rev. Myer Levinson, and Hyman Finkelman. Myer Levinson was a clergyman in the synagogue and worked in a slaughterhouse. He and his wife Rachel lived in their apartment here until 1923. Hyman Finkelman was a junk dealer. He owned the building in 1920, along with several others in the city, including the building on Pearl Street that the Hebrew School purchased from him in 1919 for the sum of \$11,500.¹ He had immigrated from Russia in 1907, bringing his family (wife Bessie, and

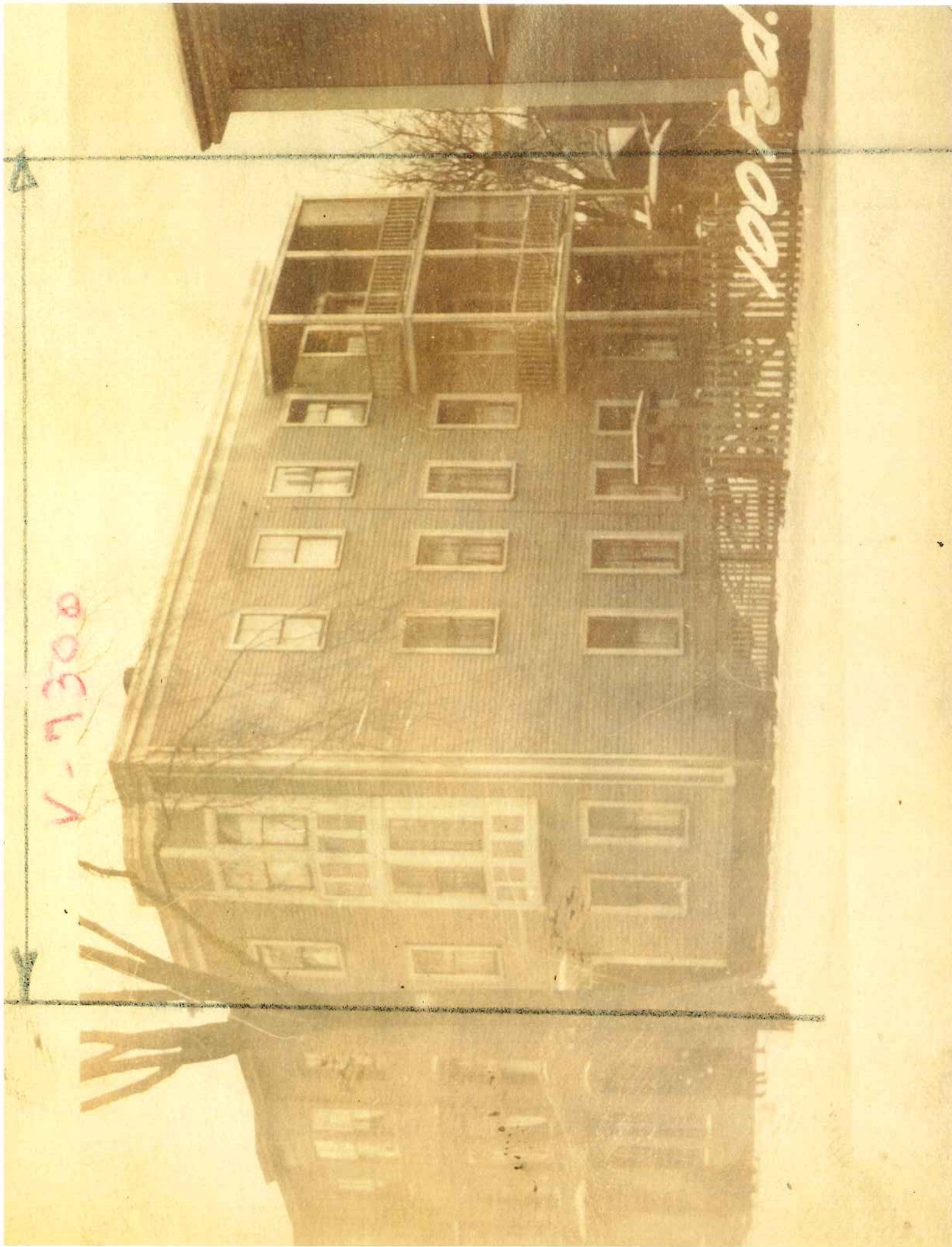
¹ Benjamin Band, *Portland Jewry: Its Growth and Development* (Portland, ME: Jewish Historical Society, 1955), 28.

their two children at the time, Samuel and Esther) over in 1913. Golding owned a tailor shop. All three families were Yiddish speakers.

In 1930, residents included Lewis Litowsky, his Yiddish-speaking, Scottish wife Rita (or Rina), and their three children. Lewis owned a bakery and his son David worked there as a clerk. Hyman Norken and his family lived in another of the apartments. He taught at the Hebrew School.

Hyman and Celia Norken still lived in their apartment in 1940 and Hyman still taught Hebrew. Frank Quinto of Spain, a janitor at a dress factory, lived in another apartment with his wife Victoria of Italy, a stitcher in a dress factory. They had two young daughters.

In 1950, Antonette Piscopo lived here and worked out of her home as a dressmaker.



V-7300

100 Feet.



Memorandum
Planning and Urban Development Department
Planning Division

To: Elizabeth Boepple, Chair and Members of the Portland Planning Board

From: Stuart O'Brien, Planning Director

Date: April 8, 2016

Re: **Postpone Workshop– Zoning Text Amendments for B-2b Zone, City of Portland, Applicant.**

The Planning Authority is postponing the discussion of potential zoning text amendments for the B-2b zone.