

CITY OF PORTLAND, MAINE

PLANNING BOARD



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

AGENDA PORTLAND PLANNING BOARD MEETING

The Planning Board will hold a remote meeting on Tuesday, May 26, 2020, 4:30 p.m. This meeting will take place using Zoom.

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

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

ZOOM MEETING INSTRUCTIONS

You are invited to a Zoom webinar.

When: May 26, 2020 04:30 PM Eastern Time (US and Canada)

Topic: Planning Board Workshop and Public Hearing

Please click the link below to join the webinar: <https://us02web.zoom.us/j/89567669425>

Or iPhone one-tap:

US: +19292056099,,89567669425# or +13017158592,,89567669425#

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Webinar ID: 895 6766 9425

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

WORKSHOP - 4:30 PM

- i. Level III Site Plan; 126 and 128 North Street; Upright Properties, LLC., and Josh Wojcik, Co-Applicants. (estimated time 4:30 p.m. – 6:30 p.m.) The Planning Board will hold a remote workshop on a proposal to develop a 3-story, 6-unit apartment building at 126 North Street and a 4-story, 6-unit condominium building with ground floor parking at 128 North Street. Two workforce housing units would be provided within the proposed development. The development site is located within an R-6 zone and the Munjoy Hill Neighborhood Conservation Overlay District.

PUBLIC HEARING - 6:30 PM

1. ROLL CALL AND DECLARATION OF QUORUM

2. COMMUNICATION AND REPORTS

Retirement of Jean Fraser, Planner

3. REPORT OF ATTENDANCE AT THE MEETING HELD ON MAY 19, 2020

Afternoon Workshop

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

4. REPORTS OF DECISIONS AT THE MEETING HELD ON MAY 19, 2020

- i. There were no public hearing items to report on.

5. NEW BUSINESS

- i. Level III Site Plan; 44 Bedford Street; The University of Southern Maine, Applicant. (estimated time 6:30 p.m.) The Planning Board will hold a remote public hearing on the development of a 214 space surface parking lot. The subject property is 63,200 square feet in size, is zoned R-5 and B-2 and is located within the USM Overlay District.



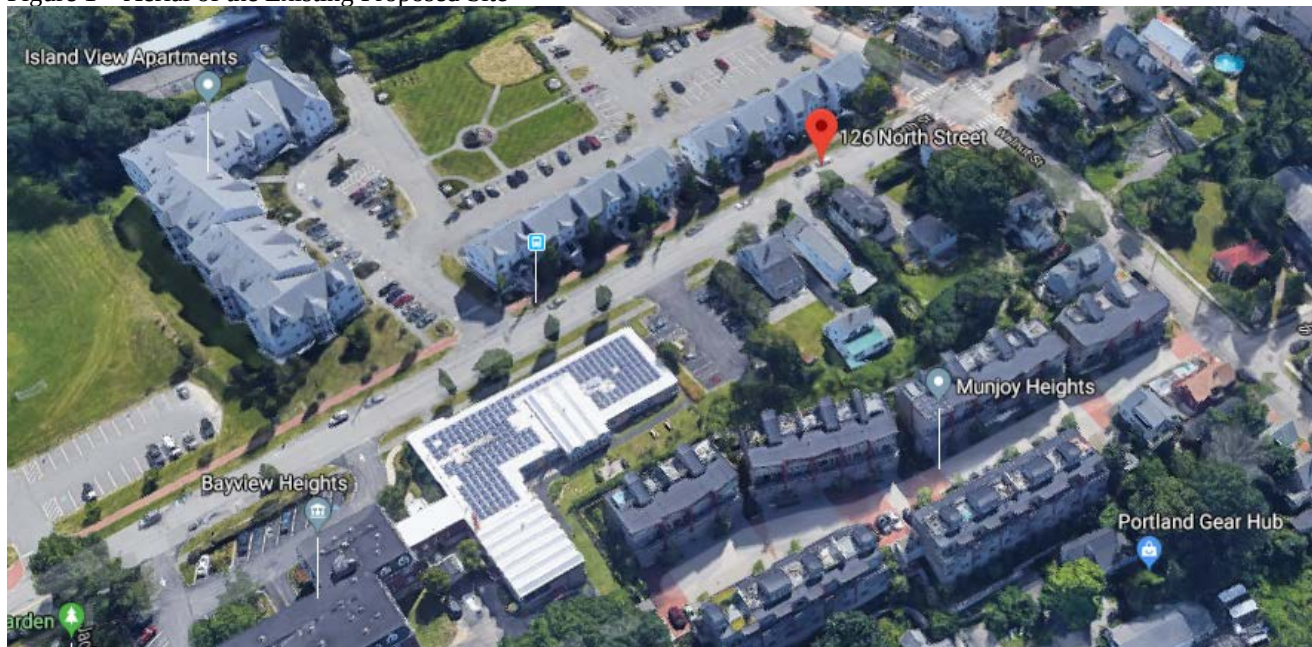
Memorandum
Planning and Urban Development Department
Planning Division

To: Sean Dundon, Chair and Members of the Portland Planning Board
From: Shukria Wiar, Planner
Date: May 22, 2020
Re: 126 and 128R North Street, Upright Properties, LLC and Josh Wojcik
Project #: PL-000791-2019 CBL: 012 H009 and 012 H014
Meeting Date: May 26, 2020

I. INTRODUCTION

This is the second workshop for the Upright Properties, LLC application for a three-story, six-unit residential building at 126 North Street and a four-story, six-unit condominium building at 128R North Street, for a total of twelve residential units. The project site is located in the R-6 zone and is within the Munjoy Hill Neighborhood Conservation Overlay. This redevelopment project includes the demolition of the existing structures on the sites and construction of two structures with a six-unit condominium and a six-unit rental, both with on-site parking – a mix of surface and structured. The project will house six parking spaces at 128R and two spaces at 126 North Street. The project is proposed to be a phased development; Phase One is the structure at 128R North Street and Phase Two is the building at 126 North Street.

Figure 1 – Aerial of the Existing Proposed Site



The 128R building will contain condominiums and will be owner-occupied. It includes a first-floor workforce housing unit, in order to get a height bonus, and all of the units will be FHA compliant. The 126 residential building will house six apartments for rent. No roof top decks are proposed and none of the roof-mounted condensers will be visible from the street.

This is a second workshop for the applicant; the first one was held on January 28, 2020. The Planning Board will review the application for compliance with the site plan and subdivision standards. As the project is over ten units, it will be required to meet the standards of the Inclusionary Zoning ordinance. The applicant is proposing an affordable unit at 126 North Street.

Applicant: Upright Properties, LLC
Consultants: Will Savage, PE, Acorn Engineering, Inc.
Tracie Reed, Architect, Dextrous Creative

II. REQUIRED REVIEWS

Waiver Requests	Applicable Standards
Request: To reduce the parking stall 18' dimension to 16.5'	Technical Manual, <i>Section 1.14</i> , requiring that standard parking space to be 9 feet wide by 18 feet long
Review	Applicable Standards
Site Plan	Section 14-526
Subdivision	Section 14-497
Inclusionary Zoning (IZ)	Section 14-474, Section 14-487
Other Potential Reviews	
Munjoy Hill Neighborhood Conservation Overlay District	Sec. 14-140.5
R-6 Small Infill Development Design Principles & Standards	Appendix 7 of the Design Manual

III. PROJECT DATA

Existing Zoning	Residential R-6, MHNC overlay	
Existing Use	Residential	
Proposed Use	Residential	
- Bedroom Mix	126 – Five 2-BR, one 1-BR	128R – Three 1-BR; Two 2-BR; One 4-BR
Parcel Size	126 - 3,645 SF	128R - 6,142 SF

	Existing		Proposed		Net Change	
	126	128R	126	128R	126	128R
Building Footprint	1,885 SF	1,404 SF	1,670 SF	3,380 SF	-215 SF	+1,976 SF
Building Floor Area	4,360 SF	0 SF	4,820 SF	11,441 SF	+460 SF	+11,441 SF
Impervious Surface Area	82.4%	27.5%	80%	60%	-2.4%	+52.5%
Parking Spaces	3	0	2	6	-1	+6
Bicycle Parking Spaces	0	0	2	2	2	+2
Estimated Cost of Project	\$3,000,000					

I. EXISTING CONDITIONS and BACKGROUND

The proposed project site is located at 126 and 128R North Street. The two lots are under related, but separate ownership and will remain separate lots. 126 North Street has frontage on North Street, whereas 128R North Street is a rear lot immediately adjacent to Bayview Heights senior apartments and across the street from the Island View Apartment complex. The existing buildings on both lots will be demolition - the 126 North Street parcel currently contains a four-unit residential building and the rear lot, 128R, previously housed a single-family home and is now vacant. Both properties are currently accessed by bituminous driveways off North Street.

The 128R site currently shares a driveway with the neighboring property under different ownership. To the west, the parcel abuts Munjoy Heights Condominiums, where the site slopes down significantly and runs towards a concrete block retaining wall constructed as part of a condominium project from 2015. There is a 10' maintenance easement along the rear property line which would provide future access for the Munjoy Heights property to repair or replace the wall when necessary.

Figure 2 - Existing 126 and 128R (at rear) North Street



The building at 126 North Street was determined to be “preferably preserved” according to the MHNC overlay demolition criteria. In that circumstance, the applicant may either go through design review of 126 North Street with the Historic Preservation Board according to the R-6 Alternative Design Review criteria, or wait for a demolition delay of one year to expire before receiving building permits for 126 North Street. In the latter option, which this application has pursued, the building design must meet the R-6 MHNC zoning and the R-6 Design Standards as determined by the Planning Board in the course of their application review. The project application includes two phases:

- Phase One includes the new six-unit condominium building at 128R, the new widened 16’ driveway access using the existing curb cut, and demolition of the building at 126 North Street in order to create the 16’ driveway. The existing single-family home has already been demolished.
- Phase Two includes the redevelopment of 126 into a three-story building with six rental units and two surface parking spaces using a separate driveway. This phase will take place at least one year after the November 2019 determination of a demolition delay.

The overall phased project will have a net increase of seven dwelling units. Additionally, 126 would grant 128R a five-foot-wide easement to provide a 16-foot-wide access way, providing greater emergency access for three properties.

As part of the project development, a single-family home was demolished last year at 128R and five additional units will be demolished at 126 North Street. This triggers City’s Housing Preservation and Replacement ordinance and the guaranty must be paid prior to issuance of demo permit, see standard below:

Section 14-483 (j). Performance Guaranty/Letter of Credit. Owners or affiliates must post a performance guaranty in the form of a letter of credit, or other security acceptable to the city attorney, in the amount equivalent to the amount the applicant would have been required to contribute to the City’s Housing Trust Fund if the applicant had chosen that option pursuant to sub-section g. Such a performance guaranty shall be valid for no more than three years, after which the full amount due shall be provided to the City’s Housing Trust Fund if replacement units satisfying the conditions of this Division 29 do not have Certificates of Occupancy.

There is a precedence that all units are counted cumulatively across buildings being demolished for one site plan application.

At the January 28, 2020 workshop, the Board members has concerns regarding the setbacks, shared-driveway, housing replacement requirements, and the design of the rear building. Since the workshop, staff and the applicant met to address the concerns of the Planning Board. The following are changes since the last workshop:

a. 128R North

- Screening at rear of garage illustrated in perspectives and elevations
- New rendering from interior of Munjoy Heights unit
- Section from Washington Avenue to North Street illustrating sight-lines
- Review of all setbacks for compliance with zoning administrator complete, and building updated:
 - Upper decks now meet 10’-0” maintenance easement at rear
 - Upper deck at rear corner pulled in to eliminate side-setback intrusion
- Screening of head lights provided by fencing/lattice at rear and sides of garage
- One workforce housing unit (one-bedroom unit)
- HOA Docs limiting vehicle idling and prohibiting short-term rentals
- Estimated Project Schedule

b. 126 North

- Entry from building shifted to at-grade porch. Entry is now visible from street
- First floor windows translucent on lower sash to provide visual privacy below 48”
- Two first-floor units are FHA compliant and both entries are compliant
- Under-building parking replaced with additional unit per Section 14-488 (g) 25 & density bonus.
- Tandem parking along-side building allows for ADA-aisle under porch. This design-solution has been vetted with IBC and access-design specialists for compliance.

- Building features (1) one-bedroom unit, and (5) two-bedroom units, including a 2-bedroom workforce housing unit.

II. PROPOSED DEVELOPMENT

The development project is for a three-story, six-unit residential building at 126 North Street and a four-story, six-unit condominium building at 128R North Street. The three-story building will have five two-bedroom apartments, one one-bedroom accessible unit, and two off-street, tandem parking spaces. The condominium building will have six units; one is a workforce housing unit on the ground floor and five units serviced via an elevator on upper floors and six parking spaces. A workforce housing unit is proposed in order to obtain the height bonus for the 128R North Street building. The existing curb cuts/driveways will continue to provide access for the two buildings.

The applicant is proposing a phased development, with the construction of the rear building at 128R as the first phase and the front building at 126 as the second phase. Approval of the project will need to ensure proper sequencing of these phases to allow for adequate access to the rear development site. The new building at 126 will now be directly accessed by pedestrians from the sidewalk rather than using the shared driveway. The applicant states that this new driveway to 128R will *“improve access for vehicles and increases visibility for pedestrians and cyclists visiting 128R and 126 via a brick walkway leading from North Street”*.

Figure 4 – Proposed Site Plan

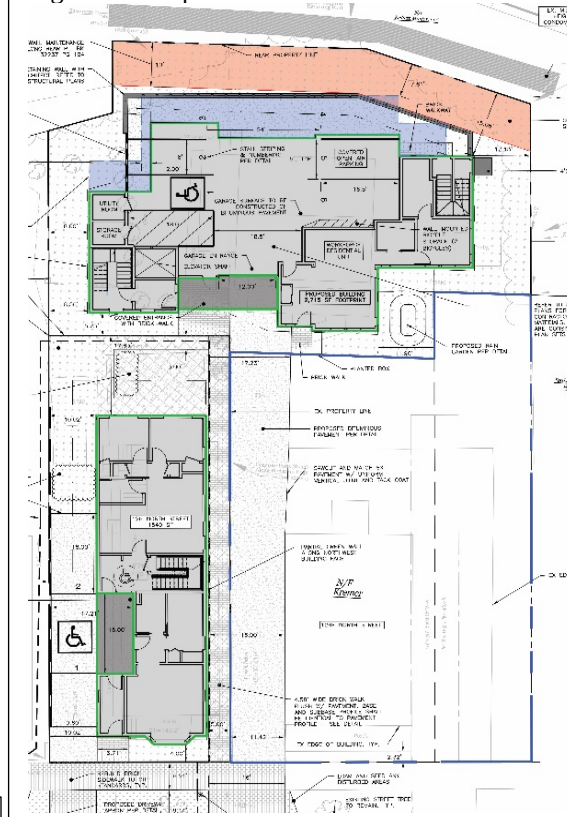


Figure 5 - Rendering of 128R North Street



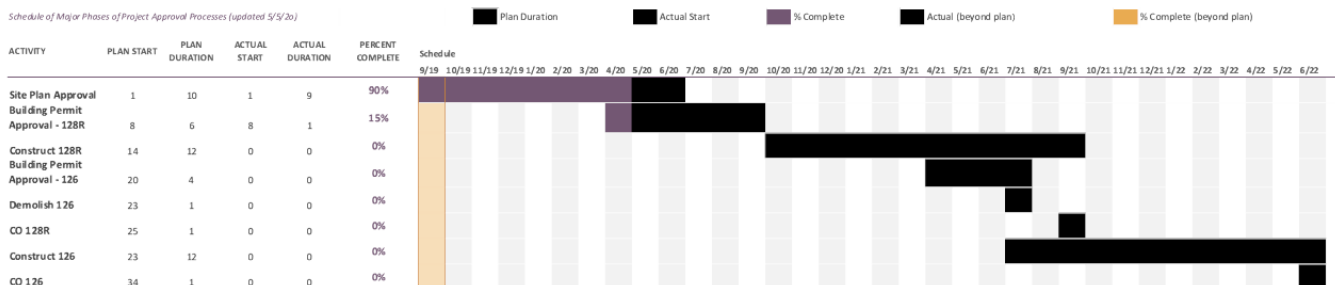
Figure 6 – Elevation of 126 North Street in the front and 128R at the Rear



During the first workshop, Board members had questions about the development schedule. The applicant has provided a timeline of the project from the site plan and subdivision application to the final certificate of occupancy, see below

128R & 126 North St

Schedule of Major Phases of Project Approval Processes (updated 5/5/20)



NOTE: This schedule is for planning purposes only. This schedule carries with it the same inherent uncertainties involved in any project schedule relying on multiple parties and spanning 3+ months. Factors including (but not limited to) the following may affect the schedule: Timings of City approvals and inspections; Availabilities of sub-contractors and materials; Labor shortages; Weather - specifically the severity of winter, which varies widely in Portland from year to year.

III. PUBLIC COMMENT AND NEIGHBORHOOD MEETING

A legal ad for the Board workshop was posted on the City's web page and appeared in the *Portland Press Herald* on May 17th and 18th, 2020. Notices were also sent to 215 property owners within 500 feet of the site and to the interested citizen list.

The project team held two neighborhood meetings to introduce the proposed buildings to the neighbors on September 18, 2019 and January 16, 2020. Nineteen attendees signed in at the meeting. Questions generally focused on the design of the building, vehicular parking, and emergency vehicles access (see Attachment U - DD for the Neighborhood Meeting minutes). Two additional public comments have been received since the January workshop (Attachment PC25- PC27). Neighbors reiterated concerns about the building design and scale.

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

The owner of the property for 126 North Street is Joshua Wojcik, and the owner for 128R North Street is Upright Properties, LLC. The applicant has provided a copy of a quitclaim deed, recorded at the Cumberland County Registry of Deeds (Book 34890 Page 304), which demonstrates their right, title and interest in the property. The estimated cost of the development is \$3,000,000. The applicant has submitted a letter from Bangor Savings Bank, dated June 25, 2019, for 128R and a second letter, dated October 22, 2019, for 126 as a demonstration of their financial capacity to complete the proposed development.

V. ZONING ANALYSIS

A. DIMENSIONAL AND USE REQUIREMENTS

The proposed twelve (12) residential units are a permitted use in the Residential R-6 zone, which allows multi-family dwellings. Ann Machado, Zoning Administrator, has reviewed the development for zoning requirements and states all of the dimensional requirements are being met under the R-6 zone:

Based on the Plan C-10 Revised 3/17/20, the proposed building at 128 R North St. meets the dimensional requirements of the R-6 Zone and the MHNCD. The height of the elevator overrun will need to be confirmed when the shell of the building is built to ensure that it does not go above 45 feet since it scales at approximately 44'.

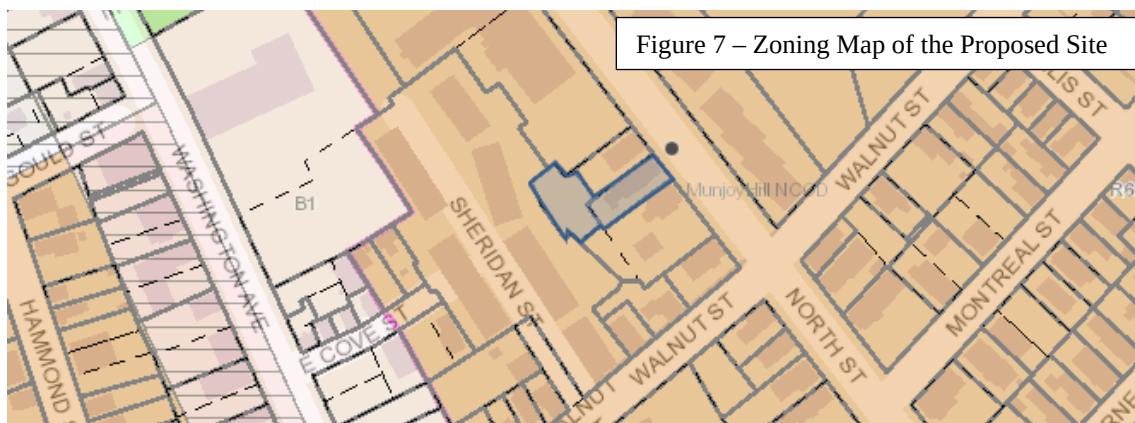
The table below contains the relevant dimensional standards for the project.

	Required	Proposed	
		126	128R
Lot Size	2,000 SF	3,645 SF	6,142 SF
Area Per Dwelling Unit	725 SF	6 units	6 Units
Minimum Street Frontage	20'	38'	n/a
Front Yard Minimum	5' ^	4' (average)	5.25'
Rear Yard	10'; Buildings more than 35': 15'	17.82'	15.08'
Yard Right	5'; Buildings more than 35': 10'	10'	12.14'
Yard Left	5'; Buildings more than 35': 10'	5'	10.10'

Maximum Lot Coverage	60%	47%	57%
Maximum Height	35' *	33.32'	44.61' *
Open Space	20%	20%	40%
Off-Street Parking	1 space/unit after first 3 units = 3	2	6
* Height bonus for 128R North Street - 45' for developments of 3 units or more on lots over 2000 sf. that include at least one "workforce housing unit for rent" or "workforce housing unit for sale". Applicant is providing a workforce housing unit. ^or the average of the depth of adjacent front yards			

A 10' maintenance easement runs along the rear property line a concrete block retaining wall constructed as part of the Munjoy Heights project in 2015, which provide future access for the Munjoy Heights Homeowner's Association to repair or replace the retaining wall when necessary. Ann. Machado also reviewed the easement in regard to setbacks and states:

The existing ten-foot maintenance easement along the rear of the lot for the abutting property is being maintained. The concrete wall surrounding the parking area is not considered a structure except where it is serving as a foundation for the rear decks. Where it serves as a foundation, the minimum 7.5' setback for rear decks and porches is being met.



B. CONDITIONAL USE – INCLUSIONARY ZONING

As required by the City's Inclusionary Zoning Ordinance, residential developments with ten (10) or more units are required to provide a minimum of ten percent (10%) of the dwelling units as Workforce Housing units, and the units themselves must contain in total, ten percent (10%) of the total bedroom count for the entire development. The City's Housing Program Manager, Victoria Volent, has reviewed the application and offers the following comments (Attachment 5):

The development located at 126 and 128R North Street proposes to demolish the existing rental unit at 126 North and has already demolished the single family dwelling unit at 128R North Street and will replace 126 North with a six (6) unit rental building and will replace 128R North with a six (6) condominium unit building. As the construction of 128R North is conditioned upon the demolition of 126 North Street, this project is determined to be one development project. According to Section 14-487 e 1, "projects shall not be segmented or phased to avoid compliance with these provisions."

The six (6) dwelling units of rental housing at 126 North Street would consist of five (5) two-bedroom units and one (1) one-bedroom unit. The six (6) condominium units at 128R North Street would consist of three (3) one-bedroom units, two (2) two-bedroom units, and one (1) four-bedroom unit. The applicant may determine the location of the workforce unit (126 or 128R North Street). The unit must be a minimum of two-bedrooms. Per my conversation with the applicant, the workforce unit would be located 126 North Street. As a dwelling unit for rent, the designated Workforce Unit will be restricted to a household earning up to 100% of Area Median Income (AMI). Based on the requirements outlined in Section 14-487, the applicant is required to either; provide a minimum of one (1) workforce unit consisting of a total of two (2) bedrooms and pay a fractional fee-in-lieu of \$21,757 (.2 X \$108,757) or, pay a fee-in-lieu for 1.2 units (or \$130,543). The Applicant has elected to provide one (1) two-bedroom workforce unit on-site, and pay a fractional fee-in-lieu of \$21,757 to satisfy the ordinance's minimum requirements. As such, the project has met the minimum requirements set forth in Section 14-487.

Section 14-140.5 c,

Section 14-140.5 c, Munjoy Hill Neighborhood Conservation Overlay District- height bonus, requires developments of three or more units on lots over 2000 sf, with a building height of greater than 35' to a maximum of 45' in height, include at least one workforce housing unit for rent or for sale. The Workforce unit shall be no smaller than 50% of the average size of the other units in the development and only be sold or rented to a household at or below the applicable income levels. The workforce unit shall be deed restricted for affordability for the longest term possible under the state and federal law.

The development at 128R North Street proposes the creation of a building that allows the maximum height within the Munjoy Hill Neighborhood Conservation Overlay District. Based on the requirements outlined in Section 14-140.5 c, the Applicant is required to create a housing unit that is no smaller than 50% of the average size of the other units (or 672 sf). The Applicant has elected to provide the first-floor unit, a one (1) one-bedroom unit that is 672 sf. As such, the project has met the minimum requirements set forth in Section 14-140.5.

As mentioned above, the applicant has provided a workforce housing unit provided at 128R in order to get a height bonus. They are also providing an affordable unit onsite within 126 North Street as well to meet the requirement of Inclusionary Zoning Ordinance. Therefore, the project is eligible for the 25% density increase per Section 14-488 (g) that states:

(g) Projects under 14-487. Projects that are subject to 14-487 that choose to provide the required workforce housing units on site are eligible for a 25% increase in total permitted units. If an eligible project is also subject to 14- 487, the applicant shall have the option of utilizing either this bonus or any bonuses they are eligible for under 14-488.1 but not both.

VI. DEVELOPMENT REVIEW**A. SITE PLAN SUBMISSION REQUIREMENTS (Section 14-527) and SUBDIVISION PLAT AND RECORDING PLAT REQUIREMENTS (Section 14-496)**

The applicant has submitted recording plats for the two phases of the development. The final review of the plat details is pending and any changes required before filing will be coordinated between staff and the applicant.

B. SUBDIVISION (Section 14-496)

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

1. Will Not Result in Undue Water and Air Pollution (Section 14-497 (a) 1), and Will Not Result in Undue Soil Erosion (Section 14-497 (a) 4)
Lauren Swett, P.E. with Woodard and Curran Engineering, has reviewed the erosion and sediment control plan and states the applicant has provided plans, notes, and details have been that erosion and sediment control requirements and inspection and maintenance requirements.
2. Sufficient Water Available (Section 14-497 (a) 2 and 3)
The project will be served by new water service located in North Street. Confirmation of ability to serve sewer from Portland Water District should be forwarded to the Planning Authority upon receipt.
3. Will Not Cause Unreasonable Traffic Congestion (Section 14-497 (a) 5)
The site will be accessed by an existing curb cut on North Street. The proposed project is not anticipated to cause unreasonable traffic congestion. Mike Tremblay, Senior Engineer at Department of Public Works, reviewed the proposal's details including the access, parking, and vehicle circulation, below are his comments (Attachment 1):
 - Space 5 in the 128R North Street parking lot is not a sufficient size to be considered a legal parking space under the city's zoning. Its dimensions are below what the city considers to be a compact space (8x15'). While the space is about 16.7 feet long, it narrows to less than 8.0 feet after about 10 feet. As requested previously, this space should not be shown as a marked parking space.

- The 11x20' turnaround provided in the site plan is required for vehicles to turn around and exit the site facing forward. As such, this area may not be used as parking or for extensive snow storage and this will need to be noted on the final plan set.
 - The drive aisle accessing 128R North Street is sufficient. DPW defers to FPD with regard to drive aisle clear width within the Technical Manual's standards. The drive aisle plus 5-foot walkway combine to a 16-foot clear area sufficient for emergency vehicles. The full width of this area should remain clear of obstructions.
4. Will Provide for Adequate Sanitary Sewer and Stormwater Disposal (Section 14-497 (a) 6), and Will Not Cause an Unreasonable Burden on Municipal Solid Waste and Sewage (Section 14-497 (a) 7)
There is an existing sewer lateral in North Street that will be serve the new project. Ms. Swett has reviewed the plans and finds the plans acceptable.
 5. Will not have an undue adverse effect on the scenic or natural beauty of the area, aesthetics, historic sites, significant wildlife habitat (Section 14-497 (a) 8)
The proposal site is not within an historic district. It is in an urban neighborhood surrounded by a variety of residential building types. The proposed building does not impact the natural beauty of the area or adversely affect any significant wildlife habitat, rare or irreplaceable natural areas, or any public access to the shoreline. The staff finds the proposal in conformance with this standard.
 6. Comprehensive Plan (Section 14-497 (a) 9)
The staff has identified the following goals and policies which are relevant to the proposed housing development and finds the proposal in conformance with the Comprehensive Plan.

The central vision of Portland's Plan 2030 is represented by the venn diagram demonstrating the integral interrelation of the community's core belief that Portland is equitable, sustainable, connected, dynamic, authentic and secure. The vision conveys the message of the City's need to balance many competing needs to assure the advance of the vision as a unified concept. In this instance, that the City's goals for job growth and transforming Portland through orderly growth and development be balanced with needs for connectivity of the street grid, sustainability of infrastructure and the ability to maintain that infrastructure, and security in the sense of public safety.



Housing: A Livable City

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

Local Goals:

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

Goals from Future Strategies:

9. Adopt Affordable Housing

- Pursue new opportunities for increased energy efficiency, increased densities, mixed incomes, and greater connectivity to surrounding neighborhoods.
7. Adequate financial and technical capacity (Section 14-497 (a) 10)
The estimated cost of the development is \$3,000,000. The applicant has submitted a letter from Bangor Savings Bank, dated June 25, 2019, as a demonstration of their financial capacity to complete the proposed development. The Applicant has also provided a financial capacity letter for 126 North Street dated October 22, 2019.

B. SITE PLAN STANDARDS (Section 14-526)

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

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

See Subdivision, Paragraph IX (B) (3), above.

a. Sidewalks

The applicant is proposing to install new brick sidewalk along their frontage on North Street, as well as internal walkway for pedestrian access to 128R North Street.

b. Parking

Division 20 of the land use ordinance requires one parking space/unit for residential development located on the peninsula (*Section 14-332(a)3*) and Section 14-332.1 (k) states “for residential development on the peninsula and in the R-6 and R-6A Zones, including new construction, the parking requirement is one space per dwelling unit, the first three units are exempt from providing parking”. Therefore, applicant is proposing six parking spaces at 128R and two surface parking spaces. Ann Machado, Zoning Administrator, has reviewed the parking requirement and states:

The building at 126 North Street only has two parking spaces, where the 128R is providing six (maybe 5 if one is removed). They have to provide one more parking space for 126 North Street. 126 North Street could utilize one of the spaces in 128R North Street but at the workshop, the applicant stated that 126 North Street does not have rights in the access easement for 128R North Street.

The Planning Board may establish a parking ratio that is less than one per unit as part of the final review. Section 14-332.2 (b) of Division 20, Incentives for affordable housing- parking reductions allow the Planning Board to determine the number of parking spaces for affordable housing:

For each low-income or workforce housing unit for rent or sale within an eligible project under the Affordable Housing Ordinance established in Division 30 of this article, no more than one (1) parking space shall be required. The planning board may establish a parking requirement for affordable housing units for rent or sale within an eligible project that is less than one (1) parking space per affordable housing unit, regardless of the size of the structure.

Mr. Tremblay has reviewed the parking on site and his comments are stated in Subdivision, Paragraph IX (B) (3), above.

c. Bicycle Parking

The development proposes interior bicycle storage room in each building. This will allow a minimum of two bicycles on each site to be parked in a secure location, with the potential for additional storage within each owner's individual unit.

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

There are no known significant natural features on the site.

2. Landscaping and Landscape Preservation

The site will have a green wall along the sides of the building at 126 North Street as well landscaping at the front and rear of the building. Trellises and screens are proposed to enhance visual interest along the pedestrian walkway. The 128R North Street will have a rain garden, trees and shrubs, and a fence at the westerly side of the property that will have English ivy planted on it.

The street tree requirement would be one tree per unit, or twelve street trees, in or near the ROW. There are two existing street trees on North Street that is proposed to remain. Due to the limited frontage for both parcels, the Applicant will pay a contribution to the Portland Tree Fund will be made per City requirement.

Jeff Tarling, City Arborist, has reviewed the landscaping plan and offers the following recommendation:

The North Street project should include some type of landscape treatment, after looking at the site they may want to consider smaller scale trees / shrubs like Amelanchier, which can be a

small tree or shrub depending on the cultivar selected. Lilacs or viburnums could also work. Plantings can be in groves or along the property line. We can suggest types, sizes and spacing.

Finalization of the landscaping plan will be pursued with the applicant prior to the public hearing.

3. Water Quality, Storm Water Management and Erosion Control

Under Section 5 of the City of Portland Technical Manual, a Level III development project is required to submit a stormwater management plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules, including conformance with the Basic, General, and Flooding Standards. A rain garden at the northerly corner of the site will catch stormwater from the roof drains, gutters, and a downspout, the entirety of the roof and deck runoff (which is essentially the extent of the 128R parking). The runoff generated by the building and driveway at 126 will be routed to a catch basin and storm drain lateral directed to the sewer main.

Lauren Swett, P.E. with Woodard and Curran Engineering, has reviewed the drainage plan and stormwater report, and states that the “applicant has addressed all of my prior comments on erosion control and stormwater management and I have no additional comments”.

c) Public Infrastructure and Community Safety Standards

1. Consistency with City Master Plans

See Subdivision, Paragraph IX (B) (6), above.

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

The Crime Prevention through Environmental Design (CPTED) standards in the site plan ordinance address the principles of natural surveillance, access control and territorial reinforcement so that the design of developments enhance the security of public and private spaces and reduce the potential for crime.

Jason Grant, Life Safety CEO/ Plan Reviewer, reviewed the plans on behalf of the Fire Department, and stated:

The Fire Department approves the site plan for 128 North Street with the following condition:
The construction of the rear unit may begin and be completed with the existing site access. However, before the Certificate of Occupancy for the rear unit is issued, the existing unit shall be demolished and the proposed access lane (driveway) for the rear unit shall be completed.

3. Availability and Adequate Capacity of Public Utilities

The project will be served by the Portland Water District, City Department of Public Works, and underground power/cable/communications. The applicant shall submit an ability to serve letter from the Department of Public Works and Portland Water District to the Planning Authority upon receipt. Ms. Swett reviewed the utility plans and states that “*Consideration should be made for landscaping conflicts with utilities. In particular, consider the oak and blue point juniper proposed to the southeast of the southern building. These trees are located over a bank of proposed subsurface utility lines*”.

d) Site Design Standards

1. Snow and Ice Loading

Snow storage areas are shown on the site plan. Additional snow removal measures will likely need to be taken after heavy storms. Proposed snow storage areas will be on the green spaces around the buildings.

2. View Corridors

This site is not within a Protected View Corridor as per the “View Corridor Protection Plan” approved by the Portland City Council in 2001.

3. Historic Resources

The site is not in a historic district or within 100 feet of a historic district; therefore, the project does not have to be reviewed by Historic Preservation.

4. Exterior Lighting

The applicant has submitted a lighting and photometric plan that shows all the proposed lighting fixtures and photometrics on site. Catalog cuts of the proposed lighting fixtures were submitted and reviewed by staff and meets standards.

5. Noise and Vibration

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

6. Signage and Wayfinding

No signage or wayfinding is proposed.

7. Zoning Related Design Standards

A design review according to the *City of Portland Design Manual* Standards was performed for the new construction of multi-family dwellings at 126 and 128R North Street. The review was performed by Caitlin Cameron, Urban Designer, Shukria Wiar, Planner, and Deb Andrews, Historic Preservation Program Manager. The project was reviewed against the *R-6 Small Infill Development Design Principles & Standards* (Appendix 7 of the Design Manual).

The proposed designs meet the criteria of the R-6 Design Standards with the exception of remaining comments related to the entrance design at 126 North Street, below. Please refer Attachment 6 and 6a for a complete design analysis:

- A-3 Relationship to the Street: The project is slightly set back from the street, more so than the neighboring buildings – staff suggest that the applicant use the average of the two setbacks to establish the setback line and bring the building more in alignment with the neighboring facades.
- B-4 Roof Pitch: Roof pitch on the elevations meet the zoning requirement.
- C-1 Entrances: The main entry was revised to include a porch-like entrance oriented towards the street. This approach unifies the entry point and makes more legible the building entrances from the street. **More emphasis could be provided with different treatment of the support posts, material change, building number, lighting.**
- C-2 Visual Privacy: The ground floor living spaces are at grade and the windows are not raised at least 48" above grade. **The applicant proposes to meet this standard by provided frosted glass at grade – Planning Board is asked to consider whether this adequately meets the intent for visual privacy.**
- C-3 Transition Spaces: There is a transition from the sidewalk to the building entrance through the front-yard setback/landscape buffer. **The revised entry creates transition to the entrances from the at-grade entry point with a porch extending to the side entries.**
- F-6 Main Entries: The entrance is adequately integrated into the overall design. Whereas in the context, the entry is raised above the grade and includes a stoop or porch that visually relates to the elements of the façade. This project differs from the traditional buildings in that the ground floor is not elevated above grade. This creates an entry condition that is slightly anomalous from what is nearby. The "porch" extends to the street-facing façade providing a common entry point. **Since the entry is not indicated with steps to an elevated porch, a little more emphasis to this entry could be achieved by differentiating the columns/supports, providing some kind of material or color differentiation, building numbers, lighting.**
- F-7 Articulation Elements: The rake of the roof meets the 6" requirement; trim must be at least 4"; offsets in the principal façade are at least 12", cornice line is pronounced.

VII. **NEXT STEPS**

- Board feedback on the proposed revisions
- Address any additional information requested by the Planning Board
- Schedule a public hearing

XIII. ATTACHMENTS**PLANNING BOARD REPORT ATTACHMENTS**

1. DPW Engineer Review 3.13.2020
2. Civic Engineer Review 05.20.2020
3. City Arborist Review 01.21.2020
4. Fire Department Review 05.20.2020
5. Urban Designer Comments - 128 North R-6 Design Review (Final)
 - a. 126 North R-6 Design Review (Preliminary)
6. 126 and 128 North Street IZ memo for PB

PUBLIC COMMENT

PC1 Betty Lorber 9-16-19
 PC2 Eldon Mayer 9-22-19
 PC3 Ann Casady and Peter Pitegoff 9-22-19
 PC4 Richard Marino 9-23-19
 PC5 Leslie Hart 9-26-19
 PC6 Kevin Schochat 9-26-19
 PC7 Liz Hays 9-27-18
 PC8 Sue Robins 9-30-19
 PC9 Deborah Cole 10-4-19
 PC10 Nancy Machesney 10-9-19
 PC11 Annette and Steven Frye 10-16-19
 PC12 Pete Roehrig 10-31-19
 PC13 Elizabeth Helming 10-30-19
 PC14 Frances Savage

PC15 Katharine Wojcik 10-31-19
 PC16 Meagan Sway & Sage Friedman
 PC17 Lindsay Mann 9-10-19
 PC18 Deborah Cole 1-22-20
 PC19 Ann Casady & Peter Pitegoff 1-23-20
 PC20 Vana Carmona 1-24-20
 PC21 Lindsay Mann 1-24-20
 PC22 Leslie Hart 1-24-20
 PC23 Kevin Schochat 1-24-20
 PC24 Tracy Davis & Michael Kennedy 1-24-20
 PC25 David Machesney 1-24-20
 PC26 Richard Marino 1-28-20
 PC27 Tom Federle 2-10-2020

APPLICANT'S SUBMITTALS

- A. Cover Letter
- B. Application Form
- C. Right, Title & Interest
- D. Zoning Assessment
- E. Easements
- F. Waivers
- G. Financial Capacity
- H. Technical Capacity
- I. Conformity with Land Use Ordinance
- J. Stormwater Management Report
- K. Erosion and Sedimentation Control Report
- L. Fire Department Letter
- M. Wastewater Capacity
- N. Lighting
- O. Architectural Design Narrative
- P. Utility Cover
- Q. Construction Management Report

- R. Solid Waste Disposal
- S. Parking Analysis
- T. Neighborhood Study & Project Renderings
- U. Neighborhood Meeting Invitation
- V. Certification Letter
- W. Neighborhood Meeting Minutes
- X. Sign-in Sheet
- Y. Neighborhood Presentation
- Z. Comment Response Letter
- AA. Neighborhood Invitation 2
- BB. Certification Letter 2
- CC. Meeting Minutes 2
- DD. Sign-In Sheet 2
- EE. Comment Response Letter II
- FF. Draft Condo Docs
- GG. Project Schedule
- HH. Comment Response Letter III

PLANS

- Plan 1. Cover Sheet
- Plan 2. General Notes
- Plan 3. Survey
- Plan 4. Construction Management Plan
- Plan 5. Site Plan
- Plan 6. Landscape Plan
- Plan 7. Utility Plan
- Plan 8. Grading & Drainage Plan

- Plan 9. Site Details I
- Plan 10. Site Details II
- Plan 11. Landscape Details
- Plan 12. Utility Details I
- Plan 13. Utility Details II
- Plan 14. Drainage Details
- Plan 15. Focal Point Rain Garden Details

Plan 16.	Erosion & Sedimentation Control Notes	Plan 27.	Perspectives – A
Plan 17.	Basement Plan	Plan 28.	Perspectives – B
Plan 18.	First Floor Plan	Plan 29.	Subdivision Plat
Plan 19.	Second and Third Floor Plan	Plan 30.	Subdivision Plat - Phase 2
Plan 20.	Fourth Floor Plan	Plan 31.	Phase 2 Plans
Plan 21.	Roof Plan	Plan 32.	Phase 2 Perspectives – A
Plan 22.	Basement Plan	Plan 33.	Phase 2 Perspectives – B
Plan 23.	Front and Back Elevations – A	Plan 34.	Front and Back Elevations - Phase 2
Plan 24.	Front and Back Elevations – B	Plan 35.	Side Elevations - Phase 2
Plan 25.	Side Elevations – A	Plan 36.	Site Section
Plan 26.	Side Elevations – B	Plan 37.	Color Site Plan
		Plan 38.	Civil 2-13-20-Color - Site



Shukria Wiar <shukriaw@portlandmaine.gov>

128 North Street

Mike Tremblay <mtremblay@portlandmaine.gov>

Fri, Mar 13, 2020 at 2:25 PM

To: Shukria Wiar <shukriaw@portlandmaine.gov>

Shukria,

Here are my comments on 126 + 128 North Street:

- Space 5 in the 128R North Street is not a sufficient size to be considered a legal parking space under the city's zoning. Its dimensions are below what the city considers to be a compact space (8x15'). While the space is about 16.7 feet long, it narrows to less than 8.0 feet after about 10 feet. As requested previously, this space should not be shown as a marked parking space.

- The newest proposed site plan has 6 units in each of the two buildings, for a total of 12 units. Seven sufficiently-sized parking spaces are required. As a whole, the project's parking supply is sufficient on the assumption that each building (not the lot as a whole) is exempt from providing the first three parking spaces, with a 1:1 ratio required thereafter. However, the lopsidedness in the parking supply may not be acceptable based on the easements with the adjacent property. The Applicant has previously stated that vehicles associated with 126 North Street may not be permitted to use the access easement associated with 128R North Street. If this is the case, then only two parking spaces are being provided for 126 North Street, possibly in violation of zoning. Zoning should review determine whether a conflict exists, and if so, the applicant should revisit the site plan, providing the correct number of parking spaces at each address.

- The 11x20' turnaround provided in the site plan is required for vehicles to turn around and exit the site facing forward. As such, this area may not be used as parking or for extensive snow storage.

- The drive aisle accessing 128R North Street is sufficient. DPW defers to FPD with regard to drive aisle clear width within the Technical Manual's standards. The drive aisle plus 5-foot walkway combine to a 16-foot clear area sufficient for emergency vehicles. The full width of this clear area should remain clear of obstructions.

- Snow storage areas are shown on the site plan. Additional snow removal measures will likely need to be taken after heavy storms.

Thank you,
Mike

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



[Quoted text hidden]



Shukria Wiar <shukriaw@portlandmaine.gov>

126 and 128R North Street

Lauren Swett <lswett@woodardcurran.com>
To: Shukria Wiar <shukriaw@portlandmaine.gov>

Wed, May 20, 2020 at 8:36 AM

Good morning Shukria.

The Applicant has addressed all of my prior comments on erosion control and stormwater management and I have no additional comments.

Thanks!

Lauren

[Quoted text hidden]

Notice: Under Maine law, documents - including e-mails - in the possession of public officials or city employees about government business may be classified as public records. There are very few exceptions. As a result, please be advised that what is written in an e-mail could be released to the public and/or the media if requested.



Shukria Wiar <shukriaw@portlandmaine.gov>

North Street

Jeff Tarling <jst@portlandmaine.gov>

Tue, Jan 21, 2020 at 7:10 PM

To: Shukria Wiar <shukriaw@portlandmaine.gov>

Hi Shukria -

The North Street project should include some type of landscape treatment, after looking at the site they may want to consider smaller scale trees / shrubs like Amelanchier, which can be a small tree or shrub depending on the cultivar selected. Lilacs or viburnums could also work. Plantings can be in groves or along the property line.

We can suggest types, sizes and spacing.

Thanks

Jeff

Jeff Tarling
City Arborist - City of Portland Maine
Parks, Recreation & Facilities Department
Forestry & Horticulture
[212 Canco Road](#)
[Portland, ME. 04103](#)
(207) 808-5446
jst@portlandmaine.gov



Shukria Wiar <shukriaw@portlandmaine.gov>

128 North Street PL-000791-2019

Jason Grant <jgrant@portlandmaine.gov>

Wed, May 20, 2020 at 1:08 PM

To: Shukria Wiar <shukriaw@portlandmaine.gov>

The Fire Department approves the site plan for 128 North Street with the following condition. The construction of the rear unit may begin and be completed with the existing site access. However before the Certificate of Occupancy for the rear unit is issued, the existing unit shall be demolished and the proposed access lane (driveway) for the rear unit shall be completed.

Jason Grant CFI-2, CFPE
Life Safety CEO / Plan Reviewer
Permitting and Inspections Department
City of Portland
[389 Congress Street Rm 315](#)
[Portland, Maine 04101](#)
Phone:(207) 756-8187

Planning and Urban Development Department Planning Division



Subject: R-6 Small Infill/Multi-family Design Review – 128R North Street

Written by: Caitlin Cameron, Urban Designer

Date of Review: Wednesday, December 4, 2019

A design review according to the *City of Portland Design Manual* Standards was performed for the revised proposal for new construction of a multi-family dwelling at 128 North Street. The review was performed by Caitlin Cameron, Urban Designer, Shukria Wiar, Planner, and Deb Andrews, Historic Preservation Program Manager. The project was reviewed against the *R-6 Small Infill Development Design Principles & Standards* (Appendix 7 of the Design Manual).

Findings of the Design Review:

The proposed design **passes** all of the criteria of the R6 Design Standards.

- The predominant characteristics of the neighborhood include simple forms, material selection and placement, and limited window types and articulation methods used consistently throughout the building with regular rhythm of patterns. Multi-family buildings typically have a vertically proportioned façade with a flat roof line, massing variation with bay windows or stacked porches integrated into the form.
- This project has massing that is more complex and larger in footprint and scale than the neighborhood context and especially as it relates to the adjacent residential buildings. Therefore, in order to be contextual, massing variation, scale, and other design elements must break the building into proportions and scales that relate to the multi-family context nearby.
- The building should be treated like one building with attention to being consistent, cohesive, but also recessive.
- Because the building is a rear lot, the relationship to the street and neighboring buildings is evaluated differently given the anomalous and less visible context.

Design Review Comments (*red text denotes principles or standards that are not met*):

Appendix 7: R-6 Infill Development

Principle A Overall Context –Met – see below.

- *A-1 Scale and Form:* The context is predominantly single and two-family buildings with simple forms, one and a half to two and half stories in height, vertical proportions, and masonry bases with clapboard siding. Larger multi-family buildings typically are 3 stories, use balconies or bay windows, flat roofs, and vertical proportions. In those rare instances where a larger scale, wider building has been built, the scale is mitigated by keeping setbacks as a buffer and through massing variation with elements such as bay windows and porches, and scaling elements such as canopies, material variation, and balconies. The overall building scale and form is larger and more complex than those found in the context. Some scale mitigation has been achieved by varying the massing at the front, maintaining a flat roof, and varying materials. The design creates façade

compositions reminiscent of triple-deckers at the corners of the building to create a relatable scale and form. In this situation, a building is found to meet the standard because the massing is manipulated to relate to the context buildings and create perceived massing and scale that relate. Staff find that the current iteration of massing relationships and proportions are now related enough to the context buildings to mitigate the scale and complexity. This is especially the case given the rear lot relationship to the street and the mitigation of scale and width being set back from the street and behind other residential buildings.

- *A-2 Composition of Principal Facades:* The façade composition in some ways relates to those in context – staff find it appropriate as a large, rear lot building, to be quiet, recessive and simple in the façade composition. The facade is treated with a consistent language but with color and massing variation to create positive scale and proportional relationships. The fenestration patterns, roof lines, materials are consistent throughout with a cohesive façade with a single roof line, consistent window type and placement, integration of balconies, and simple material placement. Predominantly, traditional façade compositions include vertical proportions and narrower buildings – the massing variation and façade composition were revised to better reflect these patterns. The façade composition is also impacted by placement of circulation at the front façade and the overall width of the building, which is much wider than the buildings with which it shares the streetscape.
- *A-3 Relationship to the Street:* The project has an anomalous relationship with the street as a rear lot and is not expected to directly relate to the street in the same way as a project with frontage. The building orients to the street and has visible entrances.

Principle B Massing – Met – The building is larger in scale than what is found in the context in both height and width of the building. In that situation, projects must use massing variation to elicit references to the proportions, forms, and massing found in traditional multi-family buildings and to mitigate the scale impact of this larger building adjacent to small, single family buildings. In this case, the building massing results in perceived masses that relate to the context in the scale, proportion, and relationships found in the triple-decker buildings.

- *B-1 Massing:* The proposed massing is complex in a context where buildings have simple form and massing. The scale and massing of this new project is taller, wider and more complex than the residential context – in order to be considered to meet the standard to be harmonious with the massing of existing buildings, the proposed massing variation breaks down the perceived scale and relates in proportion. In this case, the balconies, three-story flat roof, massing variations define portions of the building into smaller, vertical proportions that are harmonious with the massing of the existing buildings.
- *B-2 Roof Forms:* The proposed flat roof form is in keeping with the traditional multi-family building types found in the context. This form is emphasized with a strong, overhanging cornice line.
- *B-3 Main Roofs and Subsidiary Roofs:* The roof was revised to have one main roof form.
- *B-4 Roof Pitch:* The roof is flat.
- *B-5 Façade Articulation:* The project employs a covered entry, balconies.
- *B-6 Garages:* The garage is attached with living space above, door is recessed from facade.

Principle C Orientation to the Street – Met – This project has an anomalous relationship to the street as a rear lot. The building is oriented towards the street with street-oriented entrances

though the building is set back from the street and the lot does not have a direct relationship with the sidewalk.

- *C-1 Entrances:* The main entries are oriented towards the street and are emphasized by special materials, canopy. The hierarchy of the entrances was addressed by bringing more emphasis to the “main” entrance and down-playing the single unit entrance.
- *C-2 Visual Privacy:* Visual privacy is adequately addressed; all living spaces are elevated or set back from the street.
- *C-3 Transition Spaces:* The transition from the sidewalk to the building entrance is significant given the rear lot placement of the building.

Principle D Proportion and Scale – Met – The proportion and massing of the front façade was revised to feel more cohesive and consistent with proportions that reference the traditional multi-family buildings in the context. The individual building elements are human-scaled.

- *D-1 Windows:* The majority of windows are rectangular and have a vertical proportion. The proportional relationship of the fenestration to the façade is appropriate to the context.
- *D-2 Fenestration:* The project appears to meet the 12% fenestration requirement and appropriately scaled to the massing of the building. Appropriately scaled openings are provided on all sides of the building.
- *D-3 Porches:* The balconies meet the size requirement.

Principle E Balance – Met – The façade uses local symmetry and alignment as described in the standards below, the overall project with an overall sense of balance with the massing, façade proportions, and fenestration patterns. As a rear lot, the front façade is not viewed from the front and is best treated to be recessive.

- *E-1 Window and Door Height:* The majority of window and door head heights align along a common horizontal datum.
- *E-2 Window and Door Alignment:* The majority of windows shall stack so that centerlines of windows are in vertical alignment.
- *E-3 Symmetry:* Primary window compositions are arranged symmetrically around discernable vertical axes.

Principle F Articulation –

- *F-1 Articulation:* The design uses balconies, a strong roof line, and the texture of the material to provide surface articulation and visual interest.
- *F-2 Window Types:* Two window types are used with consistency with the window types, rhythm, and placement.
- *F-3 Visual Cohesion:* The visual cohesion of the façade was improved with simple materials, limited window types, consistent roofline. The massing variation and proportions were revised to be referential to the triple-decker proportions, massing relationships, and stacked balcony treatment. The project, though a different footprint and scale than the traditional triple-deckers, creates visual cohesion – material selection, placement, consistent details and window patterns throughout.
- *F-4 Delineation between Floors:* The balconies provide the most apparent floor delineation. The entry canopy also makes this distinction.
- *F-5 Porches, etc.:* The entrances were revised to integrate into the overall design. The articulation methods used – change in material, canopy, landscape wall – signify the entrances while keeping within the language of the overall building. The balconies now

have a more appropriate railing and the stacked porches are better integrated into the overall façade design and use the railings as an opportunity to introduce articulation detail.

- *F-6 Main Entries:* There are many entries – legibility of the entrances was improved. The main entry is visible from the street approach, emphasized with a canopy, material change, landscape wall, glazing. The single unit entry is now down-played as secondary but still includes planters and a canopy to signify the entrance.
- *F-7 Articulation Elements:* The rake of the roof meets the 6" requirement; no trim; offsets in the principal façade are at least 12", cornice line is pronounced.

Principle G Materials – Met – The material choice of clapboard is contextual and fine-grained. Material variation is appropriate at the entrances to assist with legibility and emphasis. Otherwise, material placement should be simple and consistent throughout the building.

- *G-1 Materials:* The residential context is predominantly clapboards with occasional shingle or brick. The clapboard is a fine-grain materials in keeping with the context. The residential entry is differentiated appropriately with an accent material.
- *G-2 Material and Façade Design:* The materials are appropriately placed according to their nature.
- *G-3 Chimneys:* Not applicable.
- *G-4 Window Types:* Two window types are used on the front façade. Where the building is predominantly circulation space, the windows could be a recessive but consistent pattern similar to the side elevations of neighborhood multi-family buildings. Detailing is consistent throughout.
- *G-5 Patios and Plazas:* n/a

Planning and Urban Development Department

Planning Division



Subject: R-6 Small Infill/Multi-family Design Review – 126 North Street
Written by: Caitlin Cameron, Urban Designer
Date of Review: Monday, March 23, 2020

A design review according to the *City of Portland Design Manual* Standards was performed for the new construction of a multi-family dwelling at 126 North Street. The review was performed by Caitlin Cameron, Urban Designer, Shukria Wiar, Planner, and Deb Andrews, Historic Preservation Program Manager. The project was reviewed against the *R-6 Small Infill Development Design Principles & Standards* (Appendix 7 of the Design Manual).

Findings of the Design Review:

The proposed design passes all of the criteria of the R6 Design Standards – please refer to comments below and the attached illustrative comments. Staff believe with some revision, the project will be able to meet all the design standards.

- The predominant characteristics of the neighborhood include simple forms, material selection and placement, and limited window types and articulation methods used consistently throughout the building with regular rhythm of patterns. Multi-family buildings typically have a vertically proportioned façade with a flat roof line.
- This project sits at grade with living space and entries directly accessible from grade.

Design Review Comments (*red text denotes principles or standards that are not met*):

Appendix 7: R-6 Infill Development

Principle A Overall Context –Met – see below.

- *A-1 Scale and Form:* The context is predominantly single and two-family buildings with simple forms, one and a half to two and half stories in height, vertical proportions, and masonry bases with clapboard siding. Larger multi-family buildings typically are 3 stories, use balconies or bay windows, flat roofs, and vertical proportions. The design uses a form and proportions that relate to the neighborhood context. The scale is a story taller than typical multi-family buildings but staff find one story to be within an acceptable tolerance to meet the standard. The building uses a front-end gable rather than a flat roof which reduces the perceived scale. The building sits at grade which also minimizes the overall scale of the building.
- *A-2 Composition of Principal Facades:* The façade composition closely relates to those in context with a two-bay composition with a multi-story bay window. There is overall and local symmetry and vertical proportioned elements.
- *A-3 Relationship to the Street:* The project is slightly set back from the street, more so than the neighboring buildings – staff suggest that the applicant use the average of the two setbacks to establish the setback line and bring the building more in alignment with the neighboring facades.

Principle B Massing – Met – The building is one story taller than the typical multi-family triple-decker building – staff find this scale difference to be compatible and harmonious with the surrounding scale especially given the contextual proportions and roof form with the massing variation provided by the bay window. The front-end gable roof, vertical proportions, and bay window reinforce the traditional building character of the neighborhood.

- *B-1 Massing:* The proposed massing is simple and reflects the forms, building width, footprint, and proportions found in the context to which this building relates.
- *B-2 Roof Forms:* The proposed front-end gable roof form meets the zoning standard and is referential to traditional, simple roof forms.
- *B-3 Main Roofs and Subsidiary Roofs:* There is a clear primary roof form.
- *B-4 Roof Pitch:* Roof pitch on the elevations meets zoning requirements.
- *B-5 Façade Articulation:* The project employs a covered entry porch, bay window.
- *B-6 Garages:* The garage is attached but to the side and not visible from the street.

Principle C Orientation to the Street – Met – The building is oriented towards the street with one street-oriented entrance. However, the building is at grade which is anomalous with the traditional residential building relationship to the street – this might be considered to meet the principle if more is done to create a transition and relationship to the street similar to context (transition at the entry, visual privacy).

- *C-1 Entrances:* The main entry was revised to include a porch-like entrance oriented towards the street. This approach unifies the entry point and makes more legible the building entrances from the street. **More emphasis could be provided with different treatment of the support posts, material change, building number, lighting.**
- *C-2 Visual Privacy:* The ground floor living spaces are at grade and the windows are not raised at least 48" above grade. **The applicant proposes to meet this standard by provided frosted glass at grade – Planning Board is asked to consider whether this adequately meets the intent for visual privacy.**
- *C-3 Transition Spaces:* There is a transition from the sidewalk to the building entrance through the front-yard setback/landscape buffer. The revised entry creates transition to the entrances from the at-grade entry point with a porch extending to the side entries.

Principle D Proportion and Scale – Met – The proportion and massing of the front façade is harmonious. The individual building elements are human-scaled.

- *D-1 Windows:* The majority of windows are rectangular and have a vertical proportion. The proportional relationship of the fenestration to the façade is appropriate to the context.
- *D-2 Fenestration:* The project appears to meet the 12% fenestration requirement and appropriately scaled to the massing of the building. Appropriately scaled openings are provided on all sides of the building.
- *D-3 Porches:* Currently no porches – however, a porch may resolve some of the concerns raised in other standards about the prominence and integration of the main entrance.

Principle E Balance – Met – The façade uses local symmetry and alignment as described in the standards below. The overall project creates a sense of balance with the massing, façade proportions, and fenestration patterns – the result is cohesion and balance to the overall project composition similar to the traditional buildings nearby.

- *E-1 Window and Door Height:* The majority of window and door head heights align along a common horizontal datum.
- *E-2 Window and Door Alignment:* The majority of windows shall stack so that centerlines of windows are in vertical alignment.
- *E-3 Symmetricality:* Primary window compositions are arranged symmetrically around discernable vertical axes.

Principle F Articulation – Met

- *F-1 Articulation:* The design uses a bay window, a strong roof line, and the texture of the material to provide surface articulation and visual interest.
- *F-2 Window Types:* Two window types are used with consistent placement, rhythm.
- *F-3 Visual Cohesion:* The visual cohesion of the façade is good with simple design.
- *F-4 Delineation between Floors:* The window alignment provide the most apparent floor delineation. The entry canopy also makes this distinction.
- *F-5 Porches, etc.:* The entrance was revised to be more integrated with the overall design and provide common entry point accessible from the street. A covered entry “porch” was introduced extending to the street and accessing the side-facing entries.
- *F-6 Main Entries:* The entrance is adequately integrated into the overall design. Whereas in the context, the entry is raised above the grade and includes a stoop or porch that visually relates to the elements of the façade. This project differs from the traditional buildings in that the ground floor is not elevated above grade. This creates an entry condition that is slightly anomalous from what is nearby. The “porch” extends to the street-facing façade providing a common entry point. **Since the entry is not indicated with steps to an elevated porch, a little more emphasis to this entry could be achieved by differentiating the columns/supports, providing some kind of material or color differentiation, building numbers, lighting.**
- *F-7 Articulation Elements:* The rake of the roof meets the 6” requirement; trim must be at least 4”; offsets in the principal façade are at least 12”, cornice line is pronounced.

Principle G Materials – Met – The material choice of clapboard is contextual and fine-grained. Material variation is appropriate at the entrances to assist with legibility and emphasis. Otherwise, material placement should be simple and consistent throughout the building.

- *G-1 Materials:* The residential context is predominantly clapboards with occasional shingle or brick. The clapboard is a fine-grain materials in keeping with the context.
- *G-2 Material and Façade Design:* The materials are appropriately placed according to their nature.
- *G-3 Chimneys:* Not applicable.
- *G-4 Window Types:* Two window types are used on the front façade. Detailing is consistent throughout.
- *G-5 Patios and Plazas:* n/a



To: Shukria Wiar, Planner, Planning & Urban Development Department

From: Victoria Volent, Housing Program Manager, Housing & Community Development Division

Date: May 19, 2020

Subject: 126 and 128R North Street– Inclusionary Zoning Conditional Use and Munjoy Hill Neighborhood Conservation Overlay District

All developments of ten (10) units or more are conditional uses subject to Planning Board review on the condition that they comply with the requirements set forth in Division 30, Section 14-487 of the Zoning Ordinance.

Division 30, Section 14-487

Division 30, Section 14-487, Ensuring Workforce Housing, requires at least ten percent (10%) of the dwelling units in the development shall meet the definition of Workforce Housing units for sale or for rent. A fractional fee-in-lieu would result when the calculation of a project's inclusionary obligation results in a fractional unit. The fractional unit obligation will be provided in the form of a proportional fee-in-lieu. The in-lieu fee shall be calculated and paid into the Housing Trust Fund as defined in Sec. 14-489, on or before the date upon which a certificate of occupancy is issued. The ordinance under Section 14-487 e 3 also requires the number of bedrooms in the Workforce units shall be at least 10% of the total number of bedrooms made available as part of the development.

The development located at 126 and 128R North Street proposes to demolish the existing rental unit at 126 North and has already demolished the single family dwelling unit at 128R North Street and will replace 126 North with a six (6) unit rental building and will replace 128R North with a six (6) condominium unit building. As the construction of 128R North is conditioned upon the demolition of 126 North Street, this project is determined to be one development project. According to Section 14-487 e 1, "projects shall not be segmented or phased to avoid compliance with these provisions."

The six (6) dwelling units of rental housing at 126 North Street would consist of five (5) two-bedroom units and one (1) one-bedroom unit. The six (6) condominium units at 128R North Street would consist of three (3) one-bedroom units, two (2) two-bedroom units, and one (1) four-bedroom unit. The applicant may determine the location of the workforce unit (126 or 128R North Street). The unit must be a minimum of two-bedrooms. Per my conversation with the applicant, the workforce unit would be located 126 North Street. As a dwelling unit for rent,



the designated Workforce Unit will be restricted to a household earning up to 100% of Area Median Income (AMI). Based on the requirements outlined in Section 14-487, the applicant is required to either; provide a minimum of one (1) workforce unit consisting of a total of two (2) bedrooms and pay a fractional fee-in-lieu of \$21,757 (.2 X \$108,757) or, pay a fee-in-lieu for 1.2 units (or \$130,543). The Applicant has elected to provide one (1) two-bedroom workforce unit on-site, and pay a fractional fee-in-lieu of \$21,757 to satisfy the ordinance's minimum requirements. As such, the project has met the minimum requirements set forth in Section 14-487.

Section 14-140.5 c.

Section 14-140.5 c, Munjoy Hill Neighborhood Conservation Overlay District- height bonus, requires developments of three or more units on lots over 2000 sf, with a building height of greater than 35' to a maximum of 45' in height, include at least one workforce housing unit for rent or for sale. The Workforce unit shall be no smaller than 50% of the average size of the other units in the development and only be sold or rented to a household at or below the applicable income levels. The workforce unit shall be deed restricted for affordability for the longest term possible under the state and federal law.

The development at 128R North Street proposes the creation of a building that triggers the maximum height requirement within the Munjoy Hill Neighborhood Conservation Overlay District. Based on the requirements outlined in Section 14-140.5 c, the Applicant is required to create a housing unit that is no smaller than 50% of the average size of the other units (or 672 sf). The Applicant has elected to provide the first floor unit, a one (1) one-bedroom unit that is 672 sf. As such, the project has met the minimum requirements set forth in Section 14-140.5.

Staff Recommendation

Staff recommends the Board Approve the Inclusionary Zoning Conditional Use (Division 30, Section 14-487) provided the Applicant and the City enter into an Affordable Housing Agreement (AHA) for a two-bedroom workforce unit located at 126 North Street before a Building Permit may be issued.

Staff recommends, should the Board Approve the Munjoy Hill Neighborhood Conservation Overlay District height density bonus, the Board require the Applicant and the City to enter into an Affordable Housing Agreement (AHA) for the first floor unit located at 128R North Street before a Building Permit may be issued.

Portland, Maine



Yes. Life's good here.

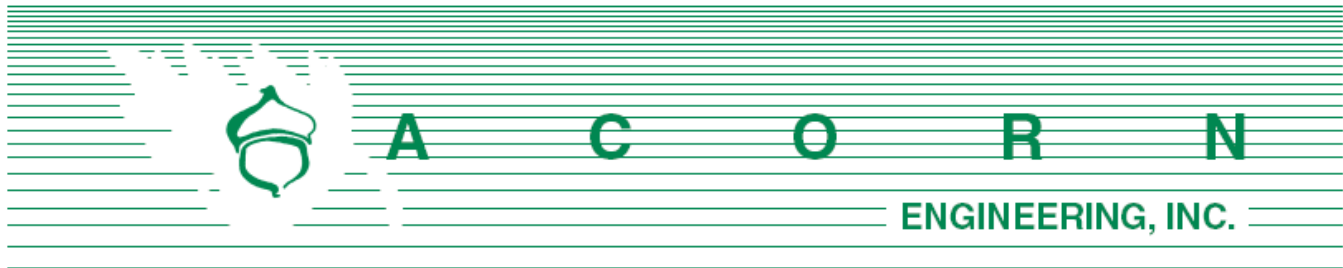
Planning & Urban Development Department

The Affordable Housing Agreement(s) will outline the details of the affordability restrictions placed on the workforce units and will be filed as a covenant to the 126 and 128R North Street property deeds with the Cumberland County Registry of Deeds before a certificate of occupancy may be issued.

Staff recommends the agreed upon fee-in-lieu of \$21,757 be paid into the City's Housing Trust Fund prior to issuance of the certificate of occupancy for 126 North Street.

Sincerely,

Victoria Volent
Housing Program Manager



Planning Division
Attn: Shukria Wiar
City of Portland, Maine
389 Congress Street, 4th Floor
Portland, ME 04101

August 2, 2019
Rev. October 29, 2019

Subject: Level III Final Site Plan/Subdivision Application – 126/128 North Street

Dear Shukria Wiar:

On behalf of Upright Properties, LLC, we are pleased to submit the accompanying package of submission materials related to the proposed redevelopment at 126 and 128R North Street. Based upon the discussions at the September 27th, 2019 meeting with you, Chief Thompson, the Applicant and design team the project was updated to include the future plans for 126 North St. As such the proposal has been updated as a phased project where Phase 1 would include the redevelopment of 128R into a four-story building with six condominiums and covered parking on the ground level. Phase 2 would include the redevelopment of 126 into a three-story building with five rental units. Overall, the phased project will result in a net increase of six dwelling units. The project site is located within the City's R-6 Zoning District as well as the Munjoy Hill Conservation Overlay District. This application package is intended to meet the City's Submission Requirements as outlined in the Level III Site Plan/Subdivision Application procedures.

The 128R site currently shares a driveway with the abutting 128F North Street property, achieving a public policy goal of the City's. Additionally, 126 would grant 128R an access easement to provide a 16'-wide access way, providing greater emergency access for three properties. We are pleased to submit this application which will increase the available housing stock by six units including one workforce unit on site and will also improve the area's stormwater management by implementing a high-flow rain garden and storm infrastructure resulting in a reduction in runoff.

The 128R infill lot is largely hidden from the public right-of-way; however, the building design has incorporated strategies to help the structure blend in with the surrounding character of the neighborhood. Prior to this formal application, the project architect has held extensive conversations with the City's Urban Planner to strategize on ways the building can fit into the neighborhood and provide an active front façade. Furthermore, the proposed 126 building features a three-story gable roof structure which compliments the neighboring 128F multi-family building.

If you have any questions regarding these materials or the completeness of the application materials, please contact us within the next five (5) days.

Sincerely,

William H. Savage, P.E.
Project Manager
Acorn Engineering, Inc.

The following documents and drawings will be uploaded onto the City's electronic submission site per the procedure outlined in the application:

Documents:

- Section A: Cover Letter
- Section B: Level III Final Site Plan Application & Checklist
- Section C: Right, Title, Interest
- Section D: Zoning Assessment
- Section E: Easements
- Section F: Waivers
- Section G: Financial Capacity
- Section H: Technical Capacity
- Section I: Conformity with Land Use Ordinance
- Section J: Stormwater Management Report
- Section K: Erosion & Sedimentation Control Report
- Section L: Fire Department Letter
- Section M: Wastewater Capacity Letter
- Section N: Lighting
- Section O: Architectural Design Narrative
- Section P: Utility Cover
- Section Q: Construction Management Plan
- Section R: Solid Waste
- Section S: Parking Analysis
- Section T: Neighborhood Study & Project Renderings

Drawings:

- Civil Site Plan Set, Dated 10/29/19
- Architectural Plan Set, Dated 10/29/19



Dear Neighbor:

January 3, 2020

On behalf Upright Properties LLC and the families who will live in the residences, we are pleased to invite you to a second neighborhood meeting to discuss our revised plans for the proposed project at 128R and 126 North Street, which are located within the R-6 zoning (Munjoy Hill Overlay) district. The project includes a phased approach with first phase the redevelopment of the 128R lot into a 6 unit, 4-story residential building and the second phase the reconstruction of the 126 lot into a 3-story, 5 unit rental property. Ground-level parking at both locations will allow us to reduce the amount of parking spaces used on the street and storage space for bicycle parking will be provided as well. Both buildings will include modern fire/life safety systems and will exceed the state's energy efficiency requirements. Both buildings are designed to fair housing accessibility standards, providing 7 fully adaptable housing units. In addition to providing improved housing, the sidewalk will be rebuilt to City technical standards.

Meeting Location: The Root Cellar – 94 Washington Ave., Portland, ME 04101
Meeting Date: Thursday, January 16, 2020
Meeting Time: 5:30 p.m.

This notification supersedes the postcard dated December 27, 2019. There is no longer a meeting on January 9, 2020. This notification is being sent to all residents within 500 feet of the proposed development as well as those residents on the “interested parties list.” A sign-in sheet will be circulated and minutes of the meeting will be taken. Both the sign-in sheet and minutes will be submitted to the Planning Board. If you have any questions regarding the neighborhood meeting, please don’t hesitate to call me at 207-749-9656.

Sincerely,

Joshua Wojcik
Project Builder and Future Resident of 128R North St.

Portland, Maine



Yes. Life's good here.

Planning & Urban Development Department

LEVEL II and LEVEL III APPLICATION SUBMISSION CHECKLIST

Please submit each document as a separate PDF file.

Please confirm by electronically checking the boxes to the left

General Application Documents

Checklist	Items to be Provided
Yes NA Plan ☒ ☐ ☐	PROJECT DESCRIPTION Cover Letter with detailed project description
Yes NA Plan ☒ ☐ ☐	COMPLETED CHECKLIST – LEVEL III APPLICATION
Yes NA Plan ☒ ☐ ☐	RIGHT, TITLE AND INTEREST Deeds, leases, or purchase and sales agreements
Yes NA Plan ☐ ☒ ☐	EVIDENCE OF STATE OR FEDERAL APPROVALS, if applicable Permits or letters of non-jurisdiction, if applicable
Yes NA Plan ☒ ☐ ☐	ZONING ASSESSMENT Table listing required and proposed uses and dimensional standards Zoning Assessment Table
Yes NA Plan ☒ ☐ ☐	EXISTING &/OR PROPOSED EASEMENTS OR COVENANTS, if applicable Evidence of existing easements and any proposed easements
Yes NA Plan ☒ ☐ ☐	WAIVER REQUESTS Written request for waiver describing request and reason. Waiver Table
Yes NA Plan ☒ ☐ ☐	FINANCIAL CAPABILITY Letter or evidence from a financial institution or third party verifying financial capacity to undertake project
Yes NA Plan ☒ ☐ ☐	TECHNICAL CAPABILITY Evidence of technical capability of applicant and consultants – resumes and/or examples of past projects

LEVEL II AND LEVEL III SITE PLAN STANDARDS AND SUBMISSION CHECKLIST

Provide assessment of compliance with standards and include supplemental documentation, as applicable.

Please submit each document as a separate PDF file.

TRANSPORTATION

Check list	Assess/Provide/Document:
Yes NA Plan ☐ ☒ ☐	Transportation Analysis- Traffic Impact (14-526 (a) 1) - Provisions for pedestrian, bicycle, vehicle, and loading circulation and incremental volume of traffic impacts - Traffic Impact Study (Technical Manual, Section 1) if applicable
Yes NA Plan ☒ ☐ ☐	Access and Circulation (14-526 (a) 2 a) - Access and internal circulation, addressing ADA access - Access and egress impacts on traffic flows - Description and use of drive-up features, if applicable
Yes NA Plan ☐ ☒ ☐	Loading and Servicing (14-526 (a) 2 b) - Loading and servicing needs, route and travel way geometrics for deliveries - Turning templates for delivery vehicles, if applicable
Yes NA Plan ☒ ☐ ☐	Sidewalks (14-526 (a) 2 c) - Sidewalks and condition along street frontages and internal walkways - Engineered details for ADA ramps and public sidewalk details meeting sidewalk materials policy and ADA ramp construction details as applicable (Technical Manual, Section 1)
Yes NA Plan ☐ ☒ ☐	Public Transit (14-526 (a) 3), if applicable - Existing available transit services - Proposed site plan design details, such as easement, pad base, and shelter
Yes NA Plan ☒ ☐ ☐	Off-Street Parking: Vehicle & Motorcycle/Scooter) (14-526 (a) 4 a and c) - Expected parking demand, proposed parking supply, ADA parking, and applicable Zoning Requirements - Address Technical Manual standards (Section 1) for curb cut separation and parking lot layout and locate on site plan
Yes NA Plan ☒ ☐ ☐	Bicycle Parking (14-526 (a) 4 b) - Address bicycle parking requirements and identify locations on-site - Construction details for bike racks (Technical Manual, Section 1)
Yes NA Plan ☒ ☐ ☐	Snow Storage (14-526 (a) 4 d) Management plan for snow removal and locate snow storage areas on plan
Yes NA Plan ☐ ☒ ☐	Traffic Demand Management (TDM) (14-526 (a) 5), if applicable Develop TDM with Trip Reduction Targets and Strategies

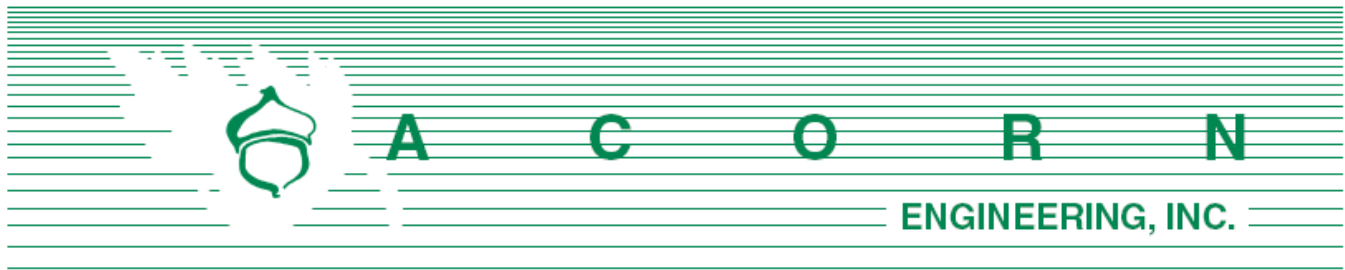
ENVIRONMENTAL AND LANDSCAPE FEATURES			
Check list			Assess/Provide/Document:
Yes	NA	Plan	Preservation of Significant Natural Features (14-526 (b) 1), if applicable • Trees, plants, habitats listed on State or Federal list of endangered or threatened • High and moderate value waterfowl and wading habitat • Aquifers on Casco Bay Islands • Waterbodies (including wetlands, watercourses, significant vernal pools and floodplains) • Proposed preservation areas and protection measures • Documentation from environmental consultants, determinations from applicable state agencies Landscaping and Landscape Preservation (14-526 (b) 2 a) • Preservation of trees and preservation within required zoning setbacks (Technical Manual, Section 4) • Protection measures of existing vegetation during construction • Protection measures within Shoreland Zone, if applicable Site Landscaping (14-526 (b) 2 b) • Screening and buffering of service areas and between non-residential and residential uses • Planting plans with plant schedule and sizes (Technical Manual, Section 4) Parking Lot Landscaping (14-526 (b) 2 b ii), if applicable • Landscaped islands within parking areas (Technical Manual, Section 4) Street Trees (14-526 (b) 2 b iii) • Existing Heritage or Feature Trees on site and measures to preserve • Identify street trees on the plan meeting the site plan and Technical Manual standards (Section 4) or identify alternative measures, if applicable
☐	☒	☐	
☒	☐	☐	
☒	☐	☐	
☐	☒	☐	
☒	☐	☐	
ENVIRONMENTAL AND STORMWATER			
Check list			Assess/Provide/Document:
Yes	NA	Plan	Water Quality, Stormwater Management and Erosion Control (14-526 (b) 3 a) • Stormwater report in compliance with Section 5 of Technical Manual and DEP Chapter 500 stormwater for basic, general and flooding standards, as applicable • Erosion control plan and measures • Evidence of compliance with Urban Impaired Stream Standards pursuant to DEP Chapter 500 stormwater, as applicable • Subsurface sanitary sewage disposal and groundwater protection
☒	☐	☐	
☐	☐	☐	
☐	☐	☐	
☐	☐	☐	

PUBLIC INFRASTRUCTURE AND SAFETY			
Check list		Assess/Provide/Document:	
Yes	NA	Plan	Consistency with City Master Plans (14-526 (c) 1) - Identify consistency with master plans - Proposed easements, rights and improvements to connect or continue off-premises public infrastructure, as applicable
☒	☐	☐	
Yes	NA	Plan	Public Safety and Fire Prevention (14-526 (c)) - Address Crime Prevention through Environmental Design (CPTED) (Technical Manual, Section 3) - Emergency vehicle access - Address consistency with public safety standards (Technical Manual, Section 3) - Submit a code summary referring NFPA 1 and all Fire Department standards (Technical Manual, Section 3) – Fire Checklist
☒	☐	☐	
Yes	NA	Plan	Availability and Adequacy of Public Utilities (14-526 (c) 3) (Technical Manual, Sections 2 & 9) - Electrical services, including providing underground services - Identify existing and proposed connections for public utilities and required public utility upgrades - Sewer line connections are required, if there is a main within 200 feet - Proposed solid waste management facilities on-site and management for the site - Written evidence of the ability to serve from utility companies, as applicable
☒	☐	☐	
SITE DESIGN			
Check list		Assess/Provide/Document:	
Yes	NA	Plan	Massing, Ventilations and Wind Impact (14-526 (d) 1) - Wind and ventilation impacts on adjoining structures and/or adjacent public spaces. Wind study, if applicable - Bulk, location or height impacts on adjoining structures - Identify and locate HVAC equipment and venting away from public spaces and residential properties - Identify screening and manufacturing specifications for noise, if applicable
☐	☒	☐	
Yes	NA	Plan	Shadows (14-526 (d) 2), if applicable Shadow analysis of impacts on publicly accessible open space (Technical Manual, Section 11)
☐	☒	☐	
Yes	NA	Plan	Snow and Ice Loading (14-526 (d) 3) Building design to prevent snow and ice from loading or falling onto adjacent properties or public ways
☒	☐	☐	
Yes	NA	Plan	View Corridors (14-526 (d) 4), if applicable Protection of designated view corridors (Portland Design Manual, Appendix 1)
☐	☒	☐	

Yes NA Plan ☐ ☒ ☐	Historic Resources (14-526 (d) 5), if applicable • Identify developments within Historic Districts or affecting Designated Landmarks • Certificate of Appropriateness or other evidence • Identify Developments within 100 feet of Historic Districts or affecting Designated Landmarks. Advisory HP review may be required • Address preservation and documentation of Archaeological Resources
Yes NA Plan ☒ ☐ ☐	Exterior Lighting (14-526 (d) 6) • Cut sheets of on-site light fixtures and any architectural or specialty lights (Technical Manual, Section 12) • Engineered details for any lights proposed in street right-of-way (Technical Manual, Section 10)
Yes NA Plan ☐ ☒ ☐	Noise and Vibration (14-526 (d) 7) • Evidence of noise levels for equipment, such as equipment specifications, to demonstrate consistency with zoning requirements
Yes NA Plan ☐ ☒ ☐	Signage and Wayfinding (14-526 (d) 8), if applicable • Signage plan showing the location, dimensions, height and setback of all existing and proposed signs. Signs in Historic Districts are reviewed by Historic Preservation staff • Proposed commercial and directional signage on site
Yes NA Plan ☒ ☐ ☐	Zone Related Design Standards (14-526 (d) 5) • Address Historic Preservation Design Review, if applicable • Address any applicable design review standards by zone • Address submission requirements from Design Manual, page 1, addressing neighborhood context • Description of exterior materials, color, finish, and samples
Construction Management Plan	
Check list	
Yes NA Plan ☒ ☐ ☐	Construction Management Plan • Construction Management Document and Plan

Level II and Level III Site Plan Checklist Please upload the following drawings with the listed details into e-Plan as separate pdfs.	
✖ RECENT BOUNDARY SURVEY (stamped by Maine Licensed Surveyor)	
Must be in compliance with Technical Manual, Section 13	
SITE PLAN(s) (stamped by Maine Licensed Engineer) including:	
✖ Existing Conditions • Approximate location of structures on abutting property • Topography • Locate water courses • Delineate wetlands • Zone lines	
✖ Proposed Site Plan • Ground floor area, and grade elevations for all buildings	
✖ Access, Circulation, and Parking • Streets and intersections adjacent to site , any proposed geometric modifications • Location, dimensions and materials of all existing and proposed driveways, vehicle, bicycle, & pedestrian access ways with corresponding curb lines • Engineered specifications/cross-sections for proposed driveways, sidewalks & paved areas • Location and dimensions of proposed loading areas • Existing and proposed transit infrastructure with dimensions/ engineering specifications • Location of vehicle and bicycle parking with dimensions and engineering specifications	
✖ Site Considerations • Identify snow storage areas • Location of fire hydrants • Location of solid waste management facilities	
✖ UTILITY PLAN including:	
• Existing utilities on site and within public streets • Location, sizing, and directional flows of all existing and proposed utilities • Location and dimensions of off-premises public or publicly accessible infrastructure adjacent to site • Electric utility infrastructure	

✕ GRADING and DRAINAGE PLAN including:
- Existing grades and drainage - Proposed grades - Proposed stormwater management meeting Technical Manual (Section 5) standards - Location and proposed alteration of a water course - Preservation or alteration of wetlands
✕ EROSION CONTROL
Must be in compliance with Technical Manual, Section 5
✕ LANDSCAPE PLAN including:
- Existing vegetation to be preserved and preservation measures - Proposed landscaping and buffers - Planting schedule
Δ RECORDING PLAT, if applicable
IF SUBDIVISION: Must be in compliance with requirements of Section 14-496 (b)
✕ ARCHITECTURAL PLANS & RENDERINGS including:
- Exterior building elevations, color renderings, illustrations of all sides - Location and dimensions of all existing & proposed HVAC & mechanical equipment, all proposed screening - Provide context drawings, if applicable (Design Manual, page 1) - Floor plans



Planning Division
City of Portland, Maine
389 Congress Street, 4th Floor
Portland, ME 04101

January 16, 2020

Subject: 126/128R North Street Neighborhood Meeting #2

I, Will Savage, hereby certify that a neighborhood meeting was held on January 16, 2020 at the Root Cellar at 5:30 pm.

I also certify that on January 6, 2020, invitations were mailed to the following:

1. All addresses on the mailing list provided by the Planning Division which includes property owners within 500 feet of the proposed development.
2. Residents on the "interested parties" list.

Sincerely,

A handwritten signature in black ink, appearing to read "Will Savage", is written over a light blue horizontal line.

Date: 1/16/20

William H. Savage, P.E.
Principal - Project Manager
Acorn Engineering, Inc.

Included with this certification are:

1. Copy of the invitation sent
2. Sign-in sheet
3. Meeting minutes

Section C

Right, Title, Interest



QUITCLAIM DEED WITH COVENANT

MARY ROY, of Portland, County of Cumberland and State of Maine, for consideration paid, grants to UPRIGHT PROPERTIES, LLC, a Maine limited liability company with its principal place of business in Portland, County of Cumberland and State of Maine and having a mailing address of P.O. Box 833, Wilton, Maine 04294, WITH QUITCLAIM COVENANT, a certain lot or parcel of land situated southwesterly of, but not adjacent to, the southwesterly sideline of North Street, in the City of Portland, County of Cumberland, and State of Maine, being more particularly bounded and described as follows:

Beginning at the northerly corner of the herein described parcel on the southwesterly line of land described in a deed from Gregory D. Kesich and Gail D. Kesich to Raymond T. Wojcik, Zetta A. Wojcik, and Joshua T. Wojcik, dated August 24, 2007 and recorded at the Cumberland County Registry of Deeds (CCRD) in Book 25418, Page 226, being S35°14'21"E along said land of Wojcik, a distance of twenty-four and fifty-six hundredths (24.56') feet from the westerly corner of said land of Wojcik;

Thence S52°38'46"W along land described in a deed from Redfern Munjoy, LLC to Upright Properties, LLC, dated January 31, 2014, recorded in CCRD Book 31318, Page 270, a distance of thirty-seven and eighty hundredths (37.80') feet to the westerly corner of the herein described parcel at land described in a deed from Raymond C. Maxwell to Redfern Munjoy, LLC, dated January 31, 2014, recorded in CCRD Book 31317, Page 116;

Thence S53°48'37"E along said land of Redfern Munjoy, LLC, a distance of fourteen (14') feet, more or less, to the southwesterly extension of the southeasterly sideline of said land of Wojcik;

Thence N52°38'46"E along remaining land of the herein grantor on the southwesterly extension of the southeasterly sideline of said land of Wojcik, a distance of thirty-three (33') feet, more or less, to the southerly corner of said land of Wojcik, and the westerly corner of land described in a deed from Hazel Brenerman to Peter J. DeTroy, III and Mary Roy (the herein grantor), dated November 21, 2003 and recorded in CCRD Book 20592, Page 111;

Thence N35°14'21"W along said land of Wojcik, a distance of thirteen and a half (13 1/2') feet, more or less, to the point of beginning.

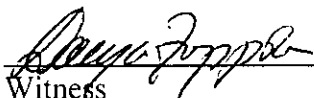
Total area of the herein described parcel equals 480 square feet, more or less. The bearings in this description are based on Grid North, MSPC NAD83, 1802 (West Zone).

The herein described property is depicted on "*Exhibit Sketch For Proposed Conveyance*", prepared by Nadeau Land Surveys, Job #2181902, dated May 29, 2018, attached to and made part of this deed. Meaning and intending to convey a portion of land described in a deed from Redfern Munjoy, LLC to Peter J. DeTroy, III and Mary Roy, dated January 31, 2014, recorded at the Cumberland County Registry of Deeds in Book 31318, Page 267.

MAINE REAL ESTATE TAX PAID

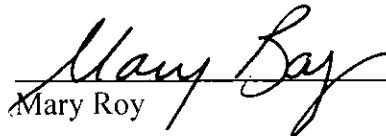
Mary Roy derived her sole title to this property by being the surviving joint tenant of her late spouse, Peter J. DeTroy, III. Peter J. DeTroy, III died on May 28, 2016, a resident of Portland, Cumberland County, Maine. Reference is made to a Certificate and Abstract N-121, dated June 16, 2016 and recorded at the Cumberland County Registry of Deeds in Book 33213, Page 100.

Witness my hand and seal this 5 day of June, 2018.



Witness

Darya I. Zappia

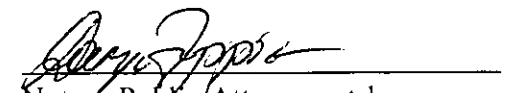


Mary Roy

STATE OF MAINE
Cumberland, ss.

June 5, 2018

Personally appeared the above-named MARY ROY and acknowledged the foregoing instrument to be her free act and deed. Before me,



Notary Public/Attorney-at-law
Printed Name: DARYA I. ZAPPIA
My Commission Exp.: Bar No 4717

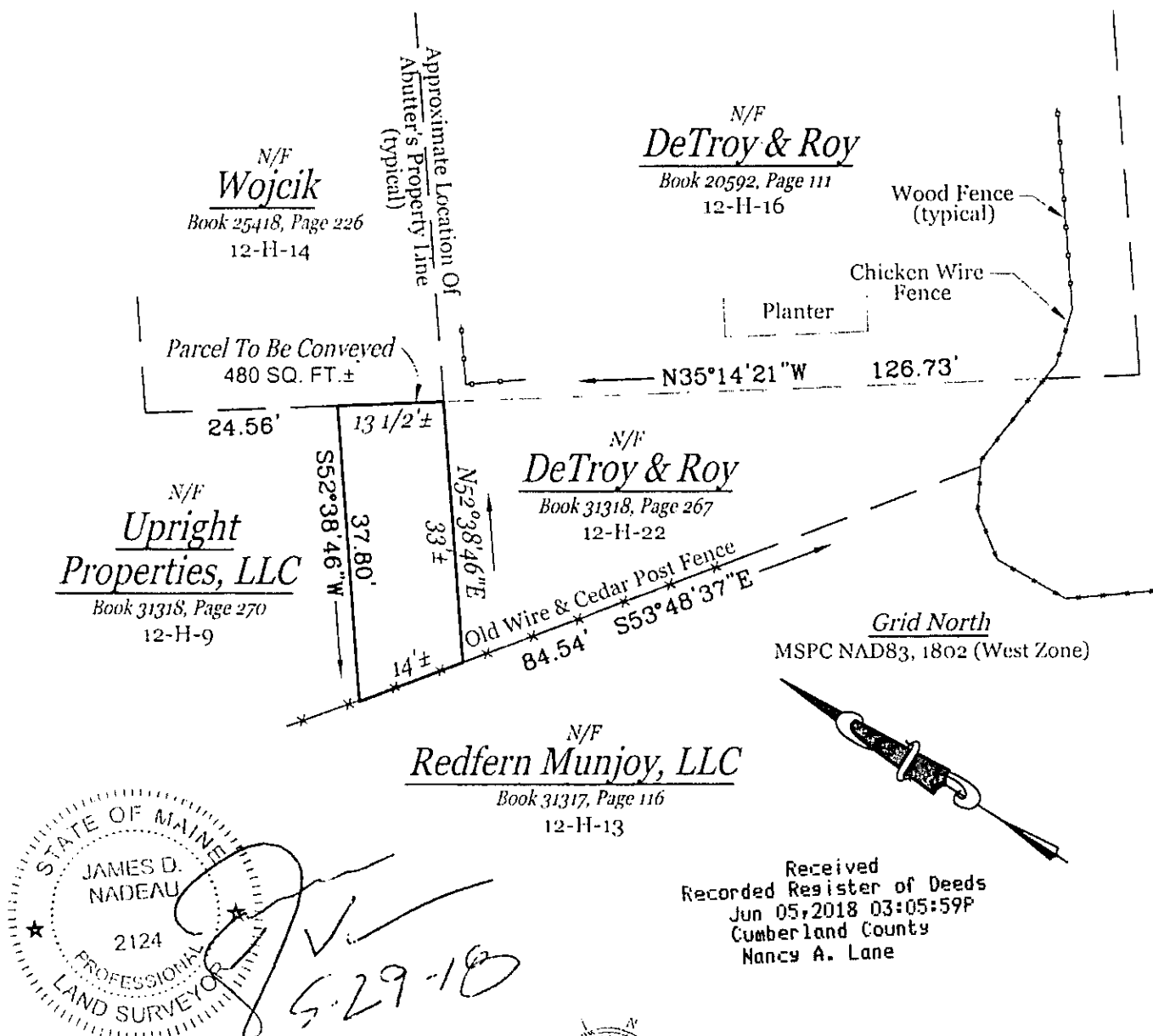
Nadeau Land Surveys

Professional Land Surveyors
Certified Floodplain Managers

Exhibit Sketch For Proposed Conveyance

Mary Roy to Upright Properties, LLC
Between Sheridan Street & North Street, Portland, Maine
1" = 20' May 29, 2018 Job #2181902

Boundary lines based on "Exhibit Sketch For Proposed Conveyance", dated November 27, 2013, recorded in CCRD Book 31318, Page 267, and "Condominium Plat, Munjoy Heights, A Condominium, Sheridan Street, East Cove Street, And Walnut Street, Portland, Maine", dated April 21, 2015 by Nadeau Land Surveys, Portland, Maine, recorded in CCRD Plan Book 215, Page 143.



Received
Recorded Register of Deeds
Jun 05, 2018 03:05:59P
Cumberland County
Nancy A. Lane

Know all Men by these Presents, That

I, Elmore W. Ramsdell of Portland in the County of Cumberland and State of Maine,

in consideration of one dollar and other valuable considerations, paid by
Claire Bowden of said Portland,

the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said Claire Bowden, her heirs and assigns forever, a certain lot or parcel of land on the easterly side of Sheridan Street, beginning at a point on said easterly side of Sheridan Street which point marks the southwesterly corner of land conveyed by A. J. Bernstein to Elmore W. Ramsdell by deed dated May 28, 1923, and recorded in Cumberland County Registry of Deeds in Book 1133, Page 466; thence running northerly by said easterly side line of Sheridan Street sixty-three and five tenths (63.5) feet, more or less, to the northwesterly corner of said land conveyed to Ramsdell as aforesaid; thence running easterly along the northerly line of said land one hundred and four and sixty-two one hundredths (104.62) feet to the northwest corner of land conveyed by said A. J. Bernstein to Joseph R. Murphy by deed dated May 28, 1923, recorded in Cumberland County Registry of Deeds, Book 1133, Page 465; thence running southerly by the westerly line of said Murphy land twenty and thirty-one one hundredths (20.31) feet to the southwesterly corner of said Murphy land; thence running easterly along the southerly line of said Murphy land fifteen (15) feet to a point; thence southerly in a line parallel with and fifteen (15) feet distant easterly from said westerly side line of said Murphy land extended southerly, about forty-three (43) feet to the southerly line of land first above mentioned as conveyed by Bernstein to Ramsdell, at a point ninety-one and ninety-three one hundredths (91.93) feet westerly from the westerly side line of North Street; thence running westerly by said southerly side line of said Ramsdell land about one hundred twenty-one and ninety-five one hundredths (121.95) feet to Sheridan Street and the point of beginning.

Being a part of land conveyed by Abraham J. Bernstein to me by deed dated May 28, 1923, recorded in Cumberland County Registry of Deeds, Book 1133, Page 466.
Together with a right of way across my land from the lot hereby conveyed to North Street.
Twelve words blotted out before signing. D.W.P.

On Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof to the said Claire Bowden, her heirs and assigns, to her and their use and behoof forever. And I do covenant with the said Grantee, her heirs and assigns, that I am lawfully seized in fee of the premises; that they are free of all incumbrances; except as aforesaid; 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, her heirs and assigns forever, against the lawful claims and demands of all persons. except as aforesaid.

U.S.I.R.
\$2.00
E.W.R.
7/25/23

In Witness Whereof, I, the said Elmore W. Ramsdell, and I, Amy S. Ramsdell, wife of the said Elmore W. Ramsdell, joining in this deed as Grantor, and relinquishing and conveying my right by descent and all other rights in the above described premises

my hand- and seal -this 25th, day of July have hereunto set
one thousand nine hundred and twenty-three. in the year of our Lord
Signed, Sealed and Delivered
in presence of

D. W. Philbrick Elmore W. Ramsdell Seal
Everett W. Fowler Amy S. Ramsdell Seal

State of Maine, CUMBERLAND, ss. July 25, 1923. Personally appeared
the above named Elmore W. Ramsdell
and acknowledged the above instrument to be his free act and deed.
Before me, Donald W. Philbrick Justice of the Peace.
Received July 27, 1923, at 9 o'clock 40 m. A. M., and recorded according to the original.

EXHIBIT A

RELEASE AND EASEMENT AGREEMENT

This Release and Easement Agreement (the “Agreement”) is by and between **REDFERN MUNJOY, LLC**, a Maine limited liability company (“Redfern”), with a place of business in Portland, Maine and a mailing address of PO Box 8816, Portland, Maine 04104, owner of premises (the “Redfern Land”) described in deeds recorded in the Cumberland County Registry of Deeds set forth on Exhibit A attached hereto and made a part hereof, and **UPRIGHT PROPERTIES, LLC** (“Upright”), a Maine limited liability company with a mailing address of PO Box 833, Wilton, Maine 04294, owner of premises (the “Upright Parcel”) conveyed by corrective deed from Redfern dated January 31, 2014 and recorded in said Registry in Book 31318, Page 270 (the “Upright Deed”).

Whereas, in the Upright Deed, Redfern reserved Easement Rights in the Easement Area, all as defined and more fully described therein, which Easement Rights are for the benefit of portions of the Redfern Land that Redfern is developing as residential condominium/subdivision (“Munjoy Heights”).

Whereas, the conditions of the Easement Area requires modifications that were not anticipated at the time the Upright Deed was delivered.

Whereas, Upright and Redfern desire to amend the Easement Rights and reduce the square footage of the Easement Area and to clarify their respective ownership rights and easement rights.

Now Therefore, Redfern and Upright, for one dollar and other sufficient consideration paid and received including the grants and covenants hereinafter set forth, do hereby make the following grants of real property interests and agreements, which agreements are intended to run with the land that is Munjoy Heights and the Upright Parcel:

1. Redfern releases to Upright all interest in the easterly portion of the Easement Area, being a strip of land ten (10) feet wide more particularly bounded and described as follows:

Commencing at a #5 steel rebar with survey cap #2124 to be set at the southerly corner of the Upright Parcel;

Thence N 52° 38' 46" E along the Redfern Land, a distance of ten and one one-hundredth (10.01) feet to the southerly corner of the land to be released from the Easement Area and the Point of Beginning;

Thence from said Point of Beginning N 52° 38' 46" E along the Redfern Land and land conveyed to Peter J. DeTroy, III and Mary Roy by corrective deed dated January 31, 2014 and recorded in the Cumberland County Registry of Deeds in Book 31318, Page 267, a distance of ten and one hundredth (10.01) feet;

Thence N 35° 18' 27" W through the Upright Parcel, a distance of forty-nine and sixty-nine hundredths (49.69) feet;

Thence N 17° 29' 52" W continuing through the Upright Parcel, a distance of forty and sixty-one hundredths (40.61) feet to the northwesterly line of the Upright Parcel at the Redfern Land;

Thence S 52° 38' 46" W along the Redfern Land a distance of ten and sixty-three hundredths (10.63) feet;

Thence S 17° 29' 52" E a distance of thirty-eight and fifty-seven hundredths (38.57) feet;

Thence S 35° 18' 27" E a distance of fifty-one and sixty-two hundredths (51.62) feet to the Point of Beginning.

Total area of the herein described parcel equals 902 square feet (0.02 acre). The bearings in this description are based on Grid North, MSPC NAD83, 1802 (West Zone).

2. The Revised Easement Area is a strip of land ten (10) feet wide, being more particularly bounded and described over the following portion of the property:

Beginning at a #5 steel rebar with survey cap #2124 to be set at the southerly corner of the Upright Parcel;

Thence N 52° 38' 46" E along the Redfern Land a distance of ten and one hundredth (10.01) feet to the southerly corner of the land to be released from the Easement Area;

Thence N 35° 18' 27" W along a line ten (10) feet easterly of the Redfern Land, a distance of fifty-one and sixty-two hundredths (51.62) feet;

Thence N 17° 29' 52" W along a line ten (10) feet easterly of the Redfern Land, a distance of thirty-eight and fifty-seven hundredths (38.57) feet to the northwesterly line of the Upright Parcel at the Redfern Land;

Thence S 52° 38' 46" W along the Redfern Land, a distance of ten and sixty-three hundredths (10.63) feet to a #5 steel rebar with survey cap #2124 to be set at the westerly corner of the Upright Parcel;

Thence S 17° 29' 52" E continuing along the Redfern Land, a distance of thirty-six and fifty-three hundredths (36.53) feet to a #5 steel rebar with survey cap #2124 to be set;

Thence S 35° 18' 27" E continuing along the Redfern Land, a distance of fifty-three and fifty-four hundredths (53.54') feet to the point of beginning.

Total area of the herein described parcel equals 901 square feet (0.02 acre). The bearings in this description are based on Grid North, MSPC NAD83, 1802 (West Zone).

3. The Easement Rights are hereby amended as follows and the description of the rights and obligations herein supersede and replace the Easement Rights reserved in the Upright Deed:

Upright grants to Redfern, its successors and assigns, the right and easement to enter upon the Revised Easement Area with at least 120 days of advance notice (except in the case of emergency) to the Grantee, its successors and assigns, with men and equipment, including heavy equipment, to maintain, repair, shore-up and replace a retaining wall between the adjacent properties of the Grantor and the Grantee (the "Revised Easement Rights"), provided that in the exercise of the Revised Easement Rights Grantor, its successor and assigns, shall (a) ensure all work is done properly and promptly; (b) ensure that no vehicles or construction equipment whatsoever are left overnight or otherwise stored within the Easement Area except when easement work is underway; (c) exercise best efforts to limit any inconvenience to the Grantee, its successors and assigns, or to any other lawful occupier of the Upright Parcel; (d) promptly and reasonably restore the Revised Easement Area to its former condition before the exercise of the Revised Easement Rights; and (e) defend and indemnify the Grantee, its successors and assign, of and from all losses, damages and expenses arising from the exercise of the Revised Easement Rights, including all losses, damages and expenses (including death) arising from the exercise of the Revised Easement Rights for which any third parties seek to hold the Grantee, its successors and assigns, liable.

4. The terms of this Agreement, including all obligations and rights of the parties hereto, are intended to run with ownership of the Upright Parcel and the Redfern Land (the "Affected Lands"). The acceptance of a deed or mortgage to any portion of the Affected Lands, or the entering into a lease or other occupancy of any such portion shall constitute an agreement that the covenants and restrictions set forth in this Agreement are accepted and ratified by such grantee, mortgagee, tenant, or occupant. All of such provisions shall be covenants running with the land and shall bind any persons having at any time any

interest or estate in the Affected Lands or any portion thereof as though such provisions were recited and stipulated at length in each and every deed, conveyance, mortgage or lease thereof.

5. Each owner of all or any portion of the Affected Lands and its heirs, successors and assigns shall be liable for the performance of all covenants, obligations and undertakings set forth in this Agreement, but only to the extent such covenants, obligations or undertakings accrue during the period in which such party owns the affected lands or any portion thereof.
6. Invalidation of any of the provisions contained in this Agreement, or of the application thereof to any person by judgment or court order shall in no way affect any of the other provisions hereof or the application thereof to any other person and the same shall remain in full force and effect.

(Signature Pages follow this page)

IN WITNESS WHEREOF, the said Redfern Munjoy, LLC has caused this instrument to be executed by Jonathan Culley, its Manager, hereunto duly authorized, as of the 30th day of April, 2015.

Redfern Munjoy, LLC, a Maine limited liability company

Witness: Mary Lea Clifford

By:



Jonathan Culley
Its Manager

STATE OF MAINE
COUNTY OF CUMBERLAND

4/30, 2015

Then personally appeared Jonathan Culley, Manager of Redfern Munjoy, LLC, and acknowledged the foregoing instrument to be his free act in his said capacity and the free act and deed of the limited liability company.

Before me,

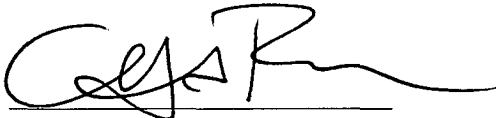
Mary Lea Clifford
Notary Public/Attorney at Law

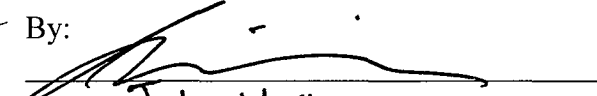
MARY LEA CLIFFORD
Notary Public, Maine
My Commission Expires February 5, 2016

SEAL

IN WITNESS WHEREOF, the said Upright Properties, LLC has caused this instrument to be executed by Joshua Wojcik, its Manager, hereunto duly authorized, as of the 30 day of April, 2015.

Upright Properties, LLC, a Maine limited liability company

Witness: 
Cliff Ruprecht

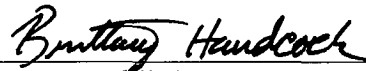
By: 
Joshua Wojcik
Its Manager

STATE OF MAINE
COUNTY OF CUMBERLAND

April 30, 2015

Then personally appeared Joshua Wojcik, Manager of Upright Properties, LLC, and acknowledged the foregoing instrument to be his free act in his said capacity and the free act and deed of the limited liability company.

Before me,


Notary Public/~~Attorney at Law~~



SEAL

Exhibit A
Source Deeds for Redfern Munjoy LLC
The Redfern Land

1. Deed from Four Sills LLC to Redfern Munjoy, LLC dated December 4, 2013 and recorded in the Cumberland County Registry of Deeds in Book 31207, Page 48.
2. Deed from Francis O'Connor and Nelson Nadeau to Redfern Munjoy, LLC dated December 4, 2013 and recorded in the Cumberland County Registry of Deeds in Book 31207, Page 50.
3. Deed from Craig G. Coffin, Trustee of the North Street Realty Trust to Redfern Munjoy, LLC dated December 11, 2013 and recorded in the Cumberland County Registry of Deeds in Book 31222, Page 224.
4. Deed from Katherine P. Richman and Nikki Lee Green to Redfern Munjoy, LLC dated December 30, 2013 and recorded in the Cumberland County Registry of Deeds in Book 31262, Page 266.
5. Deed from Dennis E. Lovejoy and Gladys A. Lovejoy to Redfern Munjoy, LLC dated January 10, 2014 and recorded in the Cumberland County Registry of Deeds in Book 31281, Page 281.
6. Deed from Raymond C. Maxwell to Redfern Munjoy, LLC dated January 31, 2014 and recorded in the Cumberland County Registry of Deeds in Book 31317, Page 116.
7. Deed from Raymond H. Waterhouse and Alina Waterhouse to Redfern Munjoy, LLC dated January 23, 2014 and recorded in the Cumberland County Registry of Deeds in Book 31302, Page 177.

Received
Recorded Register of Deeds
Apr 30, 2015 01:41:03P
Cumberland County
Nancy A. Lane

M E M O R A N D U M
O F
U N D E R S T A N D I N G

Redevelopment of 126 & 128R North Street

This Memorandum of Understanding ("MOU") is entered into as of October 21, 2019 by Joshua T. Wojcik, an individual residing in Portland, Maine ("Wojcik"), and Upright Properties, LLC, a Maine limited liability Company ("Upright").

WHEREAS, Wojcik is the owner of record of 126 North Street, Portland, Maine ("126 North"); and

WHEREAS, Upright is the owner of record of 128R North Street, Portland, Maine ("128R North"); and

WHEREAS, Upright and Wojcik are submitting a joint application to the Planning and Urban Development Department of the City of Portland proposing the redevelopment of 126 North and 128R North.

IT IS THEREFORE UNDERSTOOD AND AGREED that:

- A. Wojcik shall, upon the request of Upright, and provided all appropriate permits have been issued by all relevant State and City authorities, reconstruct the existing building located at 126 North prior to the substantial completion of the building to be built at 128R North.
- B. Wojcik shall situate any structure at 126 North such that a sixteen foot (16') access corridor is available to accommodate pedestrian and vehicular traffic between 128R North and the nearest public way (North Street).
- C. Wojcik shall execute and deliver to Upright, prior to the commencement of any reconstruction at 126 North or earlier upon the request of Upright, a deed implementing the terms of this MOU as an easement appurtenant and delineating the pedestrian and vehicular access rights to be provided in perpetuity to 128R North as the dominant estate.

IN WITNESS WHEREOF, Joshua T. Wojcik and Upright Properties, LLC, have executed this MOU and thereby bind themselves to the conditions set forth within this MOU on the day and year first above written.

UPRIGHT PROPERTIES, LLC



Joshua T. Wojcik
126 North Street
Portland, Maine

By: 

Joshua T. Wojcik
Its Manager
128R North Street
Portland, Maine

128R & 126 North St Neighborhood Meeting Notes (Second Meeting) 1/16/2020 5:30pm at the Root Cellar on Washington Ave, Portland, ME.

Applicant Joshua Wojcik thanked everyone for attending, introduced the two development projects and the design team including civil engineer Will Savage from Acorn Engineering and architect Tracie Reed from Dextrous Creative.

Will Savage's Presentation covered the following:

- Notification that the planning board workshop for the two projects had been tentatively set for January 28th, 2020. All attendees were encouraged to go to the workshop;
- The purpose of the second meeting was to cover the various changes to the plan;
- The reason two development projects were being submitted under one application was to provide transparency to all parties and to avoid confusion;
- The zoning context of the project is R-6, Munjoy Hill Overlay;
- Site plan for both properties was presented;
- Site is fairly flat, with 126 sloping slightly towards the street and 128R sloping towards Munjoy Heights;
- Parking plan: 6 covered spaces at 128R; 2 covered parking spaces at 126. Each includes an ADA space and access lane;
- The plan for plantings;
- The plan for underground utilities;
- The storm water plan, including collection and storage systems and highlighted the point that less storm water will runoff towards Munjoy Heights as a result of this project;
- Clarified that the same engineering team (civil, geotechnical and structural) was being used for these projects as was used for the Munjoy Heights development project in order to ensure continuity of analysis and approach to make sure the retaining wall was fully understood and protected during all phases of the project.

Tracie Reed's Presentation covered the following:

- A description of the neighborhood;
- A discussion of the changes that were made to the rear building;
- A discussion of the changes that are being proposed for the 126 property;
- Presentation of revised renderings showing 128R as well as new renderings showing 126;
- Discussion of locations of compressors for heating/cooling systems;
- Described size and width and heights of both buildings;

Questions and Comments from the Public Attendees:

Questions about the timelines for both projects were raised. It was explained that each project will take approximately 12+ months to substantial completion and that 128R will be first. It was noted that 126 will be demolished after 128R is substantially completed, but before the CO for 128R is issued. It was explained that the order of the project was for several reasons, including that two of the prospective owners at 128R are currently residents of 126 North but also from a construction management perspective that it makes the most sense to “build your way out of a job site.”

Questions were raised several times about how it was possible the storm water runoff towards Munjoy Heights would be reduced. The storm water plan was explained in greater detail, including how both the proposed development and Munjoy Heights stormwater system had been designed for a 100 year storm event. The snow removal and storage plan for both properties was also described.

Questions were raised about whether the garage could be enclosed to protect the residents of Munjoy Heights from having to look at parked cars and to shield them from the fumes that may result from the parking garage. It was explained that the zoning ordinance requires parking to be located in the rear of all properties to provide for an activated frontage. Difference in the zoning setbacks for buildings vs parking areas vs. decks meant that fully enclosing the garage was not possible. Examples of extruded metal screen that will be used at the rear of the garage to support vine growth was requested and the design team agreed to bring images to the planning board workshop. It was also questioned whether additional plantings could be installed between the garage and Munjoy Heights. The team noted that the root structure of plantings in the 10’ strip between the garage and the property line could jeopardize the integrity of the retaining wall. It was questioned whether anything else could be done to reduce the potential for idling of vehicles within the garage that residents of Munjoy Heights believe would impact them. The design team agreed to explore ideas.

The idea of an underground parking garage was proposed by an attendee. It was explained that this would conflict with fair housing accessibility requirements and that it would present numerous engineering problems both to the retaining wall and to surrounding buildings.

A rendering from Sheridan Street taken at a small opening of the Munjoy Heights buildings looking up towards the retaining wall was requested. The team noted that renderings take significant time and resources to complete and a view from this area would not be possible before the workshop.

A question was raised about what would happen if the owner of 126 decided to not re-develop his property once the building was demo’d. It was explained that he would have to pay a significant fine to cover the elimination of housing units. It was emphasized that the owners of

both properties are very much interested in helping the City address its housing crisis by adding units. It was questioned what the rental prices will be for the units at 126 North St. It was explained that these units would be relatively affordable (rental prices from \$1850 - \$2,000) compared to other two bedroom units in the market, since the units were modest in size. Attendees didn't feel like those were affordable prices. It was explained that the current price of a two bedroom Work Force unit was about \$1,860. An attendee commented that she thought that number was unaffordable.

Concerns was raised that emergency vehicles wouldn't be able to reach the rear property. The team noted that the building would have a 16' wide fire lane for emergency vehicles in addition to the sprinkler and fire alarm system.

Questions were raised about the front, side and rear setbacks. Several attendees commented that they felt like the zoning setbacks were too small. The neighbors who live next to the proposed projects feel like the side setback is too small. The neighbors who live in Munjoy Heights feel like the rear setbacks are too small.

It was asked whether a shadow / shading analysis was done by a Munjoy Heights resident. The team confirmed this is not required for the application but noted that Munjoy Heights is to the south and west of the property, which means the building will have a minimal impact on the amount of sun shining on Munjoy Heights.

It was asked whether this would be the tallest building visible from I-295. It was explained that Promenade East Condominiums will remain visibly taller.

It was clarified that 126 North St does not have a 4th floor. The window above the third floor is an attic window. It was further explained that the stairwell inside will not reach the attic.

A few attendees commented that the building is too large.

One attendee commented that he believed the project would reduce property values.

With no further questions raised or comments offered, the team thanked attendees for their time and thoughtful comments and the meeting was closed at 7pm.

Meeting minutes by Joshua Wojcik & Reviewed by Will Savage and Tracie Reed.

Section D

Zoning Assessment



ZONING ANALYSIS

Relevant Zone: R-6

All Projects:

	Required	Proposed – 128R
Lot Size	2,000 sf	6,142 sf
Area Per Dwelling Unit	725 sf	1,024 sf
Minimum Street Frontage	20'	N/A
Front Yard Minimum	5'	5.25'
Front Yard Maximum	N/A	N/A
Rear Yard	15'	15.11'
Yard Right	5'	11.90'
Yard Left	5'	8.56'
Side Street Setback	N/A	N/A
Step Back	10' @ 35'	> 10'
Maximum Lot Coverage	60%	57%
Minimum Lot Coverage	N/A	N/A
Maximum Height	45'	44.6'
Open Space	20%	40%
Maximum Impervious Area	80%	60%
Pavement Setback	N/A	N/A
Floor Area Ratio	N/A	N/A
Off Street Parking Spaces	3	6
Loading Bays		
Other 1		
Other 2		
Other 3		

	Required	Proposed – 126
Lot Size	2,000 sf	3,645 sf
Area Per Dwelling Unit	725 sf*	607 sf*
Minimum Street Frontage	20'	38'
Front Yard Minimum	3.7'	4'
Front Yard Maximum	N/A	N/A
Rear Yard	15'	16.49'
Yard Right	5'	5'
Yard Left	5'	9.76'
Side Street Setback	N/A	N/A
Step Back	10' @ 35'	> 10'
Maximum Lot Coverage	60%	47%
Minimum Lot Coverage	N/A	N/A
Maximum Height	45'	33.3'
Open Space	20%	20%
Maximum Impervious Area	80%	80%
Pavement Setback	N/A	N/A
Floor Area Ratio	N/A	N/A
Off Street Parking Spaces	2	2
Loading Bays		
Other 1		
*25% density bonus allowed per Section 14-488		

126 & 128R North Street

Neighborhood Meeting

January 16, 2020

[illegible]

126 & 128R North Street

Neighborhood Meeting

January 16, 2020

Name	Organization	Address	Phone	Email
Liz Hays		107 North St.		lizchays@gmail.com
ANN CASADY		205 Sheridan		anncasady@yahoo.com
Peter Pitegoff		205 Sheridan		ppitegoff@gmail.com
Betty Lober		225 Sheridan St		Betty.lobner@gmail.com
Pam Kaufman		137 North St.		
Andrew Kaufman		137 NORTH ST		kaufmanandrew1@gmail.com
Leslie Hart		215 Sheridan		blestiehart@gmail.com
Kevin Schochat		215 Sheridan		kevinkevinchochat.com
Sue Robins		206 Sheridan		suerobins@twc.com
Richard Marino		226 Sheridan		RMARINO0402@Yahoo
Trace J Rand	Dext. center	27 Numbury		
Joshua Wojcik	Upright Properties	PO Box 833 Wither, ME		JWojcik@UprightFrameworks.com
Will Savage	Acorn Engineering	65 Hanover St. Portland, ME		WSAVAGE@Acorn-engineering.com

E. Summary of Written Easements

Existing

There are two easements as identified by the Surveyor:

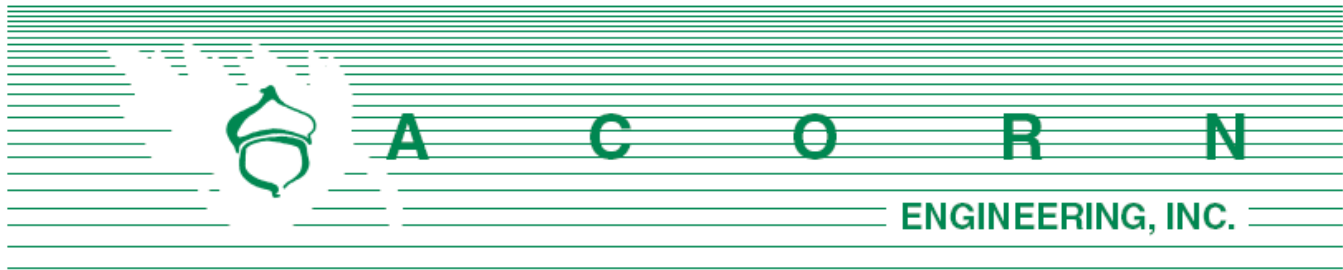
- Permanent right-of-way with 128F North Street (includes the rights to use the corridor for utilities). Reference CCRD Bk 1143, Pg 307.
- Permanent retaining wall maintenance easement with Munjoy Heights. Reference CCRD Bk 32237, Page 104.

Proposed

There is currently one proposed easement.

- Access/Utility easement from 126 to 128R (includes rights to use the 4.58' brick walkway for access/utilities and the turnaround)





Shukria Wiar – City Planner
 Planning Division, City of Portland
 389 Congress Street
 Portland, ME 04101

February 24, 2020

Subject: Comment Response Letter 2
 126/128R North Street Redevelopment – Portland, Maine

Shukria:

In response to the Planning Board workshop held on January 28th, a meeting between the development team and Planning Department held on February 4th, and the City Staff comments within the planning memo, we have developed this response letter which also outlines the notable changes within the application, which include:

- Removal of the 126 North Street covered parking area and addition of a 6th unit to the building as allowed within Section 14-488 (g) of the City's ordinance for a density bonus based upon on-site workforce housing.
- Addition of project renderings including new perspectives, clarification of the screening at the back of the site, and a section view between Washington Avenue and North Street to illustrate the topography and spatial relationships between neighboring properties.
- Addition of documents such as the draft condo docs and an approximate overall project schedule.

Please see below for responses to the second round of comments. Also included within this submission is the architectural response letter from Dextrous Creative.

Mike Tremblay, DPW

Comment – *The Applicant did not implement the suggested shared driveway treatment between the two properties. One of the stated reasons is that no easement currently exists for 126 North Street to access and use the driveway. It should be noted that such an easement could be created if desired, as the two properties are currently under common ownership.*

Response – The two properties are not under common ownership. The owner of 128F North St., who is unaffiliated with this project, owns the existing driveway and is not willing to grant an access easement to 126 North St. 128R has an existing access and utility easement over the driveway, making it the only parcel that has rights to use the driveway (besides 128F).

Comment – *The Applicant does not have a standard width driveway accessing the parking spaces at 126 North Street. They have alleviated this by providing a wider-than-required parking space so*

that vehicles can more easily maneuver into the parking space. However, AutoTURN runs provided show that it is still very difficult for a vehicle to exit this space, coming very close to the wall of the building, the wall along the edge of the driveway, and the adjacent handicap parking space. This configuration likely requires that vehicles back into the driveway; it does not look possible for a vehicle to pull into the driveway and eventually exit head-out. While this configuration may be suitable assuming the occupants of 126 North Street do not have overly large vehicles, always back into the driveway, and have the skill and acuity to maneuver a vehicle into and out of the parking spaces. This may not always be the case however. This configuration requires a waiver for parking area drive aisle.

Response – The 126 North covered parking area has been eliminated and the driveway revised to accommodate tandem parking for two vehicles (including one for an ADA van space) as encouraged within the Munjoy Hill Overlay District.

Comment – *The handicap space in 126 North Street does not need to be marked as such, as it is located in a parking area with 4 spaces or less. The space must be accessible (as designed), but anyone can park there. The applicant may choose to keep it marked as a handicap space if they choose.*

Response – Signage is not proposed in the new scheme, but the ADA compliance has remained part of the plan.

Comment – *Space 4 in 128 North Street does not appear to meet the dimensional requirements for a compact space (8x15), and therefore should not be counted as a parking space for the purposes of meeting zoning requirements. Since only 3 spaces are required per zoning, this is acceptable; however, this space should not be shown as a parking space in the site plan.*

Response – Based upon our AutoTurn analysis and associated dimensional limitations set forth in the Site Plan and condominium docs, Space #4 is functional for the defined vehicle. Given that this space will be deeded to a homeowner within the condo association, the familiarity with the parking space paired with the vehicle size restrictions will result in a usable parking space, despite the fact that the length is less than 15' for a portion of the space. We would also note the drive aisle is 24 ft wide adjacent to all spaces including Space #4.

Comment – *Space 2, Space 5, and Space 6 in 128 North Street are compact spaces. The Applicant requires a waiver for the proportion of parking spaces (67%, assuming Space 4 is retained as an allowable compact space, vs 20% allowed).*

Response – As is customary in small residential infill projects such as this, we are requesting a waiver to provide over 20% compact spaces. Vehicle limitations have been set for maximum wheelbase, turning radius, etc. and homeowners will be accustomed to the maneuvering in and out of the parking area. We have updated the waiver table within this submission to reflect this request. We would also note the drive aisle is 24 ft wide adjacent to all the spaces within 128R.

Lauren Swett, 3rd Party Civil Engineering Review

Comment – *The Applicant has provided erosion and sedimentation control locations, details, and a written plan in accordance with the Basic Standards. The erosion and sedimentation control*



measures have been shown on the Construction Management Plan. It is suggested that perimeter erosion controls also be shown on the grading and drainage plan, for clarity during construction on this very tight site.

Response – We have added the erosion control barrier to the Grading & Drainage Plan.

Comment – *The Applicant is proposing a Focal Point rain garden system to provide treatment in accordance with the General Standards. Focal Point details have been provided. The actual Focal Point system components should be drawn on the grading plan, including the R-tanks. It is not clear on the plan as shown what the extent of the subsurface system will be. The system is in close proximity to the property line as well as the proposed building, so clear extents should be provided to ensure that the system can be constructed properly.*

Response – Please refer to the grading and drainage plan, sheet C-30. Within the inset, the extents of the stone perimeter are shown. We have since added an offset to represent the chambers within the stone for clarity.

Comment – *The Applicant has noted that flows will not be increasing, in accordance with the Flooding Standard. It is noted, however, that the project will be redirecting flows, and stormwater flow to the rear of the site will be reduced, but stormwater flow to the combined sewer in North Street will be increasing in the 10-year and 25-year storm events. The acceptability of this increase to the combined sewer will need to be verified by the Department of Public Works.*

Response – A 3.25" orifice has been added to the plans and hydrocad model such that the peak 10 and 25 year flowrates to North Street will remain the same down to the hundredth of a cubic foot per second. The overall runoff leaving the site will be notably lower than the existing conditions.

Comment – *Additional information should be provided on snow storage. The snow storage area currently shown overlaps with a landscaped area. Snow storage should be considered for both driveways.*

Response – The existing driveway currently functions in a similar manner as the proposed condition. Landscaped areas are generally acceptable locations for snow storage as long as a stormwater system does not exist within this space. During large or prolonged storms without any thaw, snow may need to be removed from the site as is customary on tight urban projects such as this.

Comment – *Consideration should be made for landscaping conflicts with utilities. In particular, consider the oak and blue point juniper proposed to the southeast of the southern building. These trees are located over a bank of proposed subsurface utility lines.*

Response – We have removed the proposed woody vegetation from the utility areas and relocated less root-intensive shrubs on the property line to maintain a buffer.

Jeff Tarling, City Arborist

Comment – *The North Street project should include some type of landscape treatment, after looking at the site they may want to consider smaller scale trees / shrubs like Amelanchier, which*



can be a small tree or shrub depending on the cultivar selected. Lilacs or viburnums could also work. Plantings can be in groves or along the property line.

Response – We have added an Amelanchier to the proposed Landscape Plan. In general, the project has aimed to provide as much landscaping as possible. Certain site conditions such as utility lines and the existing retaining wall maintenance area have restricted areas from otherwise being fully landscaped.

Bill Scott, Chief Surveyor

Comment – *Various comments on the subdivision plat, utility plan, and grading & drainage plan per 2/12/2020 list of comments.*

Response – All comments have been resolved/revised within the plan set. Please note that two subdivision plats were created because of the phased approach. The properties are under distinct ownership (128R will result in a Homeowner's Association and 126 will result in multifamily rentals); however, the project is being reviewed/designed as one to create a cohesive and well-planned project.

Please let us know if you have any additional questions or comments.

Sincerely,



Samuel J. Lebel, E.I.
Project Engineer
Acorn Engineering, Inc.



William H. Savage, P.E.
Principal
Acorn Engineering, Inc.





February 20, 2019

Caitlin Cameron, AICP, Associate AIA, LEED AP
Urban Designer
Planning & Urban Development Department
389 Congress Street
Portland, ME 04101

Re: 128R and 126 North Street

Caitlin, Attached, please find revised submission materials as a result of feedback from neighbors, board members and staff at the planning workshop last month.

The following is a summary of changes made to our designs and their intent:

- As the result of feedback from neighbors, the board and staff concerning the location of 126's primary entrance we revised our floorplan to create an entrance directly off North Street. We have maintained the existing drive, providing two tandem off-street parking spots for the building, including an accessible space with recessed access aisle integrated under our structure.
- The new recessed access aisle, level with the driveway also functions as a covered entry for the building's central stair. We have confirmed with technical experts at the International Code Council and Access Design that this solution is an acceptable means of providing a parking aisle for the building.
- On sheet A-1.6 you will note that we have added another housing unit, bringing the total for 126 North to six units. The new two-bedroom rear unit allows us to help alleviate Portland's housing crisis and better-meet section 14-487. As a result of the new front hall and access aisle the front unit on the building's first floor will become a one-bedroom unit.
- 126 North been brought closer to North Street to better meet A-3 'Relationship to the Street'. The building's roof pitch (B-4) does meet zoning requirements.
- In reworking the first floor plan of 126 North we have sought to improve upon the design as it relates to elements in 'Section C, orientation to the street.' Our building now has its principal entrance along North Street (C-1), with a small canopy. The building's windows have been switched to double-hung windows. This allows us to meet (C-2), the visual privacy design guidelines on the first floor by frosting the lower sash while maintaining the building's accessibility.
- Changing the building's entrance also helps the building better meet Section F 'Articulation'. Note that our trim detail is greater than 4" (F-7) and we have sought to

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provide a transition space at the front of the building utilizing vegetation and brick pavers while maintaining the accessibility of the entrance as required by ICC Chapter 11 and Fair Housing.

- The floor plan of 128R North remains unchanged. However, the lattice previously mentioned in the planning board workshop is now included in the model as is the wheel stop in the first-floor parking area. This wall has been raised to provide screening of car headlights. Screening is also provided via the extruded metal lattice. On the building sides a similar lattice would be utilized taking the form of fencing to continue the pattern and provide screening along the sides of the parking area.
- The parking area at 128R North is required per ASHRAE standards to be mechanically ventilated. Exhaust from the garage would be directed mechanically up through the roof of the building in accordance with best engineering practices. The mechanical components of the system is equivalent in size to a heat pump compressor, likely to be roof-mounted.
- Also included in our packet is a new sheet, A-3.2 Site Section. As requested by the board, this section spans approximately 610'-0" in length from North Street to Washington Avenue. The site section was developed with spot elevations along Washington Avenue taken from ongoing construction projects, our site survey, Portland's GIS system, the Assessor's database (which provides rough widths of building's), and Google Street view. The section is cut facing the back of buildings at East Cove Street. Our project features many of the same design professionals as the Munjoy Heights project along Sheridan Street, who provided a site section of their project. Based on the spot elevations along Washington Avenue and the elevation of our site, taken from our survey, the building is minimally visible when viewed at the far sidewalk of Washington Avenue.

This vantage is 435'-0" to our site and in areas without vegetation may render the top 9'-4" of our building visible. This said, based on my photos of the site there are treetops along East Cove Street which may obscure the building. The same is true further down Washington Avenue near Northern Burner Supply where trees planted between Washington and Munjoy Heights extend above their project's roofline. The Northern Burner Supply photo is included on page 26 of my neighborhood survey submitted in August 2019 and a view from Cove Street was included in my slides at the planning board workshop in January.

- While the distance between the back of 128R and Munjoy Heights varies the narrowest gap between the structures is 25'-0" to 32'-0" from the face of their building to the outermost part of the back deck. As noted on the drawing the distance between the buildings at the location of the section from face-to-face is 28'-0".
- On sheet A-5.2 you will note a new perspective line drawing. This drawing illustrates the view of an individual inside a private unit within the Munjoy Heights complex looking

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towards 128R North. Clearly, providing renderings from within private dwelling units is not required and the voluntary inclusion of one does give me pause especially considering the value of those units. Do we let those with significant resources make demands otherwise not required of applicants? None-the-less we have included the perspective to clarify concerns and comments, understanding the unease of having construction nearby. Note that we chose to provide a rendering from the building's fourth floor window because the complex's third floor window views our project through a chain-link fence owned by their association and the second-floor windows look out directly onto their retaining wall.

Thank you, Shukria and Deb for your thoughtful and thorough design review. We look forward to presenting our revised plans to you and the board at another workshop soon.

Regards,

A handwritten signature in black ink that reads "Tracie J. Reed". The signature is fluid and cursive, with the first name "Tracie" and last name "Reed" clearly distinguishable.

Tracie J. Reed, Maine Licensed Architect, LEED AP, NCARB
Principal

CC: William Savage, P.E, and Sam Lebel, Acorn Engineering
Josh Wojcik, Upright Properties

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Section F

Request For Waivers



Standard to be Waived: Cite Ordinance or Technical Manual Standard	Cite Standard Language: Cite specific language of applicable Ordinance or Technical Manual Standard	Waiver Being Sought: Describe waiver being sought. Ex. – We are requesting a two-way parking lot drive aisle width of 20' feet.	Justification for Waiver: Address specific waiver criteria, if applicable, and document reasons for the waiver request.
Technical Manual 1.14	20% Compact Space allowance	We are requesting that 50% of the proposed 8 parking space be compact.	Due to the constrained space on site and the nature of residential ownership, the parking spaces have been tailored to site with set dimensional vehicle limitations. All spaces are functional and will be familiar low turnover spaces.
Technical Manual I-27	Standard parking = 18' in length	To reduce the 18' dimension to 16.5'	Given the site constraints, the waiver is necessary to facilitate parking.

BY-LAWS

RIFUGIO CONDOMINIUM OWNERS ASSOCIATION

BY-LAWS
RIFUGIO CONDOMINIUM OWNERS ASSOCIATION

ARTICLE I
Introductory Provisions

1.1. Unit Ownership. The land located at 128R North Street, Portland, Cumberland County, Maine known or to be known as Rifugio, a Condominium, together with all improvements constructed thereon, as described in the Declaration of Rifugio, a Condominium (the “Declaration”) dated _____, 2020 and recorded in the Cumberland County Registry of Deeds in Book _____, Page _____, has been submitted to the provisions of the Maine Condominium Act, Chapter 31 of Title 33 of the Maine Revised Statutes of 1964, as amended (the “Act”), by said Declaration and declared as a condominium to be known as Rifugio, a Condominium (the “Condominium”). These By-Laws have been adopted as required by Section 1603-106 of the Act to govern the Unit Owner’s Association of the Condominium (the “Association”).

1.2. Name. The name of this Association is RIFUGIO CONDOMINIUM OWNERS ASSOCIATION.

1.3. Applicability of By-Laws. The provisions of these By-Laws are applicable to the Association and the Condominium and to the use and occupancy thereof. All present and future Unit owners, Mortgagees, lessees and occupants of the Units and their employees and any other persons who may use the facilities of the Condominium in any manner are subject to these By-Laws, the Declaration and to the Rules and Regulations established by the Executive Board as hereinafter set forth.

1.4. Office. The principal office of the Association and the Executive Board shall be located at 128R North Street, Portland, ME 04101, or at such other location as the Executive Board may designate from time to time.

1.5. Corporation Law. Except as otherwise expressly provided herein, in the Declaration, or in the Act, the Association shall be governed by the provisions of the Maine Nonprofit Corporation Act, Title 13-B of the Maine Revised Statutes of 1964, as amended (the “Nonprofit Corporation Act”).

1.6. Nonprofit Status. The Association is not organized for profit and no property or profit thereof shall inure to the benefit of any person except in furtherance of the nonprofit-making purposes of the Association or in the course of acquiring, constructing or providing management, maintenance or care of the Condominium.

1.7. Declaration Controlling. The Declaration shall control and govern these By-Laws. In the event of any conflict or discrepancy between these By-Laws and the Declaration, the provisions of the Declaration shall control and govern.

1.8. Definitions. Capitalized terms used herein without definition shall have the meanings specified for such terms in said Declaration to which these By-Laws pertain or, if not defined therein, the meanings specified or used for such terms in the Act.

ARTICLE II The Association

2.1. Composition. The Association has been organized prior to the date hereof as a nonprofit corporation pursuant to the Nonprofit Corporation Act. The Association shall consist of all of the Unit Owners acting as a group in accordance with the Act, the Declaration and these By-Laws. The membership of the Association shall consist of all the Unit Owners of the Condominium or, following any termination of the Condominium as provided in Section 1602-118 of the Act, of all former Unit Owners entitled to distributions of proceeds under said Section 1602-118, or their heirs, successors or assigns, but shall not include persons having an interest in a Unit solely as security for an obligation. The terms “member” and “Unit Owner” appearing in these By-Laws are interchangeable.

2.2. Nontransferability of Interests. Except as provided herein or in the Declaration, membership shall not be transferable. The membership of each Unit Owner shall terminate upon a sale, transfer or other disposition, other than by mortgage, of the ownership interest of such Unit Owner in the Property, accomplished in accordance with the provisions of the Declaration, and thereupon the membership and any interest in the Reserve and Capital Funds, as hereinafter defined, and other common funds shall automatically transfer to and be vested in the next Owner or Owner succeeding to such ownership interest.

2.3. Powers and Duties. Subject to the Declaration, the Association shall have the purposes, duties and powers to: (a) adopt and amend By-Laws and Rules and Regulations for the operation of the Association and Condominium, provided that the initial Executive Board shall have the power to adopt these By-Laws; (b) adopt and amend budgets for revenues, expenditures and reserves and collect assessments for Common Expenses from Unit owners; (c) hire and terminate managing agents and other employees, agents and independent contractors; (d) institute, defend or intervene in litigation or administrative proceedings in its own name on behalf of itself or two or more Unit Owners on matters affecting the Condominium; (e) make contracts and incur liabilities relating to the

purposes of the Association stated in these By-Laws and the Declaration; (f) regulate the use, maintenance, repair, replacement and modification of the Common Elements; (g) cause additional improvements to be made as a part of the Common Elements; (h) acquire, hold, encumber and convey in its own name any right, title or interest to real or personal property, provided that Common Elements may be conveyed or subjected to a security interest only pursuant to Section 1603-112 of the Act; (i) grant easements, leases, licenses and concessions through or over the Common Elements; (j) impose and receive any payments, fees or charges for the use, rental or operation of the Common Elements (other than Limited Common Elements) and for services provided to Unit Owners; (k) impose charges for late payment of assessments and, after notice and an opportunity to be heard, levy reasonable fines for violations of the Declaration and of these By-Laws and Rules and Regulations of the Association; (l) impose reasonable charges for the preparation and recordation of amendments to the Declaration, resale certificates required by Section 1604-108 and statements of unpaid assessments; (m) provide for the indemnification of its officers and Executive Board and maintain directors' and officers' liability insurance; (n) assign its right to future income; (o) lease as lessee any real or personal property, accept assignments of leases of real or personal property, cause improvements to be made as a part of such leased property, regulate the use, maintenance and repair of such leased property, and impose and receive any payments, fees or charges for the use, rental or operation of such leased property; (p) exercise any other powers conferred to it by the Declaration; (q) exercise all other powers that may be exercised in the State of Maine by corporations organized pursuant to the Nonprofit Corporation Act, as the same or its equivalent may be amended or modified from time to time; and (r) exercise any other powers necessary and proper for the governance and operation of the Condominium by the Association.

The foregoing responsibilities shall be performed by the Executive Board or managing agent as more particularly set forth in these By-Laws.

2.4. Meeting of Members. Meetings of the membership shall be held at the principal office of the Association or at such other place as may be specified in the notice of the meeting.

2.5. Annual Meetings. The annual meetings of the members shall be held each year on a date no later than thirty (30) days, and no earlier than sixty (60) days, before the beginning of each fiscal year. In the event that the day for which an annual meeting is scheduled is a legal holiday, then the meeting shall be held on the first day thereafter which is not a legal holiday. At such meetings there shall be elected by ballot of the members an Executive Board in accordance with the provisions of Article III. The members shall also transact such other business as may properly come before them.

2.6. Special Meetings. The Secretary shall call a special meeting of the Association if so directed by resolution of the Executive Board or upon a petition signed and presented to the Secretary by Unit Owners of the Units to which are allocated not less than thirty percent (30%) of the Votes in the Association. The notice of any special meeting shall state the time, place and purpose thereof. Such meeting shall be held no earlier than ten (10) days and no later than forty-five (45) days after receipt by the President of said resolution or petition; provided, however, if the purpose includes the approval and ratification of a budget or further assessment pursuant to subparagraph 5.2.2. or Paragraphs 5.6. or 5.8., such meeting must be held within the time frames provided in subparagraph 5.2.2. for an annual budget and in Paragraph 5.8. for a revised budget or further assessment. No business shall be transacted at a special meeting, except as stated in the said notice, unless with the consent of no less than sixty-five (65%) percent of the Votes in the Association, subject, however, to the provisions of paragraph 2.12 hereof.

2.7. Notice of Meeting. It shall be the duty of the Secretary, or upon his or her failure or neglect then of any other officer, to give notice of each annual or special meeting, the time and place of the meeting, and the items on the agenda for that meeting, including the general nature of any proposed amendment to the Declaration or these By-Laws, any budget changes and any proposal to remove a member of the Executive Board or officer, to each member of record and to each Eligible Mortgage Holder as long as it is the record holder of a first Mortgage of a Unit. With respect to any annual or special meeting such notice shall be so mailed at least ten (10) days but no more than forty-five (45) days prior to the date so set for the meeting.

2.8. Quorum. The presence, either in person or by proxy, of the Owners of the Units to which are allocated at least sixty-six percent (66%) of the Votes in the Association shall be requisite for and shall constitute a quorum for the transaction of business at all meetings of members.

2.9. Adjournment of Meetings. If at any meeting of members a quorum shall not be in attendance, those members who are present may adjourn the meeting to a time not less than forty-eight (48) hours from the time at which the original meeting was called.

2.10. Votes in Association. The Votes in the Association allocated to each Unit are listed in Schedule B to the Declaration. The voting right of each member is equivalent to the Votes allocated to his Unit.

2.11. Voting. The Votes in the Association allocated to a Unit can only be cast as a unit and cannot be split. If a Unit is owned of record by one person, that Unit owner's right to cast all the Votes allocated to that Unit shall be established by the record title to

the Unit, provided, however, that such person's spouse may cast the Votes allocated to such Unit if authorized to do so in a certificate executed by the Unit Owner and filed with the Secretary of the Association, which certificate shall be valid until revoked by a subsequent certificate similarly executed and filed with the Secretary of the Association. If ownership of a Unit is in more than one person, the person who shall be entitled to cast all the Votes allocated to that Unit shall be the person named in a certificate executed by all of the Owners of such Unit and filed with the Secretary of the Association. If ownership of a Unit is in a corporation, partnership, limited liability company, limited liability partnership, trust or estate, the officer or employee of that corporation, general partner of that partnership, member of that limited liability company, or partner of that limited liability partnership, trustee of that trust, or agent of that estate, entitled to cast for the corporation, partnership, limited liability company, limited liability partnership, trust or estate the Votes allocated to such Unit shall be designated in a certificate for that purpose executed by the president or a vice president of that corporation, and attested to by the secretary, assistant secretary or clerk of that corporation, executed by all the general partners of that partnership, executed by all the managing members or members with sufficient authority of that limited liability company, executed by the managing partner or partners with sufficient authority of that limited liability partnership, executed by all the trustees of that trust, or executed by either all the devisees of that estate or by order of the probate court and filed with the Secretary of the Association. Such certificates of multiple owners, corporations, partnerships, limited liability companies, limited liability partnerships, trusts or estates shall be valid until revoked by a subsequent certificate similarly executed and filed with the Secretary of the Association. Wherever the vote, approval or disapproval of a Unit Owner is required by this Declaration or the Act, such vote, approval or disapproval shall be made only by the person who would be entitled pursuant to such certificate to cast at any meeting of the Association the Votes allocated to such Unit. If the person named or designated in said certificate for a particular Unit shall be absent from a meeting of the Association, no person may cast the Votes allocated to that Unit at the meeting although the presence at the meeting of a non-named or non-designated co-Owner or member, officer, employee, agent or designee of such Owner shall be counted in determining whether a quorum is present. If a multiple Owner of a Unit that is not a corporation, partnership, limited liability company, limited liability partnership, trust or estate has failed to file said certificate with the Secretary of the Association and only one of the multiple Owners is present at a meeting of the Association, he shall be entitled to cast at the meeting all the Votes allocated to that Unit without establishing the concurrence of the absent Owners just as though that person were the sole Owner of the Unit. If a multiple Owner of a Unit that is not a corporation, partnership, limited liability company, limited liability partnership, trust or estate has failed to file said certificate with the Secretary and if more than one Owner of that Unit is present at the meeting, the Votes allocated to that Unit may be cast only in accordance with the agreement of a majority of the multiple Owners present at the meeting. Such

majority agreement shall be conclusively presumed if any one of those multiple Owners shall cast the Votes allocated to the Unit without protest being promptly made to the person presiding over the meeting by any other Owners of that Unit. No Votes allocated to a Unit owned by the Association may be cast.

2.12. Vote Required. Unless by express provisions of the Act, these By-Laws or the Declaration a different vote is required, each question presented at a meeting of the Association shall be determined by the affirmative vote of Owners of Units to which are allocated no less than sixty-six percent (66%) of the Votes in the Association. Provided, however, that notwithstanding any provision to the contrary contained in these By-Laws or the Declaration, the affirmative vote of one hundred percent (100%) of all of the Unit Owners shall be required for the Association to act on any of the following matters: Termination of the Condominium pursuant to Section 1602-118 of the Act; merger or consolidation of the Condominium with another condominium; conveyance or subjection to a security interest of any portion of the Common Elements; use of any proceeds of insurance required to be maintained by the Association pursuant to the Declaration or any eminent domain awards or proceeds for purposes other than repair and restoration of the damaged Property in accordance with the Condominium Documents, the original elevation thereof and the original building plans and specifications therefor; and amendments to the Condominium Documents which govern or regulate (a) voting, (b) assessments, assessment liens or subordination of such liens, (c) reserves for replacement, repair and replacement of the Common Elements or Units, if applicable, (d) insurance or fidelity bonds, (e) responsibility for maintenance and repair of the Common Elements and the Units, (f) leasing of Units, (g) imposition of any right of first refusal or similar restriction on the right of a Unit Owner to sell, transfer, or otherwise convey or lease an owner's Unit.

2.13. Informal Action. Subject to the Declaration, any action required or permitted to be taken at any meeting of the members may be taken without a meeting if a written consent thereto is signed by all the members. The Secretary shall file such written consent with the records of the meetings of the members and such consent shall be treated as a unanimous vote of members for all purposes.

2.14. Proxies. A vote may be cast in person or by proxy. If a Unit is owned by more than one person, each Owner of the Unit may vote or register protest to the casting of Votes by the other Owners of the Unit through a duly executed proxy. Proxies shall be duly executed in writing and must be filed with the Secretary before the appointed time of the meeting. Such proxy shall be deemed revoked only upon actual receipt by the person presiding over the meeting of written notice of revocation from the grantor(s) of the proxy. No proxy shall be valid for a period in excess of eleven (11) months after the

execution thereof unless it specifies a shorter term. A proxy is void if it is not dated or purports to be revocable without notice.

2.15. Order of Business. The order of business at all meetings of the members shall be as follows:

- (a) Roll call;
- (b) Proof of notice of meeting;
- (c) Reading of minutes of preceding meeting for approval of same;
- (d) Reports of Executive Board or of officers or of the manager or managing agent;
- (e) Reports of committees, if any;
- (f) Fix number of members of Executive Board (when so required);
- (g) Election of inspectors of election (when so required);
- (h) Election of members of the Executive Board (when so required);
- (i) Unfinished business;
- (j) New business.

At all meetings of the Association or of the Executive Board, Robert's Rules of Order, as then amended, shall be followed, except in the event of conflict in which these By-Laws or the Declaration, as the case may be, shall prevail.

ARTICLE III Executive Board

3.1. Number and Qualification. The affairs of the Association shall be governed by an Executive Board composed of three (3) natural persons, all of whom shall be Unit owners or spouses of Unit Owners or in the case of a Unit Owner which is a corporation, partnership, limited liability company, trust or estate, a designated agent thereof. The initial Executive Board shall be elected by the incorporator of the Association and shall serve until the earlier of (i) at least two (2) units have been sold, or (ii) the third annual meeting.

3.2. Election and Term of Office. Except as provided in Paragraph 3.1. regarding election of the initial Executive Board, the members of the Executive Board shall be elected as follows:

3.2.1. At the annual meetings of the Association the election of members of the Executive Board shall be held. The term of office of any Executive Board member to be elected (except as set forth in Paragraphs 3.6. and 3.7.) shall be fixed at three (3) years. The members of the Executive Board shall hold office until the

earlier to occur of the election of their respective successors or their death, adjudication of incompetency, removal or resignation. Any Executive Board member may serve an unlimited number of terms to succeed himself or herself.

3.2.2. Persons qualified to be members of the Executive Board may be nominated for election only as follows:

3.2.2.1. Any Unit Owner may submit to the Secretary at least three (3) days before the meeting at which the election is to be held a nominating petition signed by that Unit Owner and a statement that the person nominated is willing to serve on the Executive Board. The Secretary shall mail or hand deliver the submitted items to every Unit owner along with the notice of such meeting;

3.2.2.2. Nominations may be submitted from the floor at the meeting at which the election is held for each vacancy on the Executive Board.

3.3. Vote Required for Election to Executive Board. No person shall be elected to the Executive Board who does not receive the affirmative vote of Unit Owners holding in the aggregate no less than fifty percent (50%) of the Votes in the Association.

3.4. Powers and Duties. Subject to the provisions of the Declaration, the Executive Board shall have the powers and duties necessary for the administration of the affairs of the Association and shall have all powers and duties referred to in the Declaration and the statutes of the State of Maine pertaining to corporations without capital stock, as amended from time to time, and may do all such other acts and things provided from time to time by the Act to be done by an Executive Board or by the Unit Owners collectively except such acts or things as are by law or by these By-Laws or by the Declaration directed to be exercised and done by the Unit Owners individually. Subject to the provisions of the Declaration, the powers and duties of the Executive Board shall include but not be limited to the following:

3.4.1. The power and duty to determine the Common Expenses of the Condominium and the assessments to each Unit for the Common Expenses.

3.4.2. The power and duty to make assessments against Unit Owners to defray the costs and expenses of the Condominium, establish the means and methods of collecting such assessments from the Unit Owners and establish the period of the installment payment of annual assessments for Common Expenses.

3.4.3. The power and duty to provide for the operation, care, upkeep, maintenance and repair (structural or otherwise) of all of the Common Elements and the other Property and services of the Condominium.

3.4.4. The power and duty to designate, hire and dismiss the personnel necessary for the maintenance, operation, repair and replacement of the Common Elements and provide services for the Property and, where appropriate, provide for the compensation of such personnel and for the purchase of equipment, supplies and material to be used by such personnel in the performance of their duties.

3.4.5. The power and duty to collect the assessments for Common Expenses against the Unit Owners, deposit the proceeds thereof in any bank depositories or money market funds designated by the Executive Board and use the proceeds to carry out the administration of the Property.

3.4.6. The power to make and amend Rules and Regulations covering the details of the operation and use of the Property.

3.4.7. The power to open bank accounts on behalf of the Association and designate the signatories thereon.

3.4.8. The power and duty to make, or contract for the making of, repairs, additions and improvements to or alterations of the Property, and repairs to and restoration of the Property, in accordance with the Declaration, after damage or destruction by fire or other casualty, or as a result of condemnation or eminent domain proceedings.

3.4.9. The power to enforce by legal means the provisions of the Declaration, these By-Laws and the Rules and Regulations and duty and power to act on behalf of the Unit owners with respect to all matters arising out of any eminent domain proceeding.

3.4.10. The power and duty to obtain and carry insurance against casualties and liabilities, as provided in the Declaration, pay the premiums therefor and adjust and settle any claims thereunder.

3.4.11. The power and duty to pay the cost of all authorized services rendered to the Association and not billed to Unit Owners of individual Units.

3.4.12. The power to notify an Eligible Mortgage Holder of any default hereunder or under the Declaration by the Unit owner of the Unit subject to the

Mortgage of such Holder, in the event such default continues for a period exceeding sixty (60) days.

3.4.13. The power to borrow money on behalf of the Condominium when required in connection with any one instance relating to the operation, care, upkeep, maintenance and repair (structural or otherwise) of the Common Elements.

3.4.14. The power to acquire, hold and dispose of Units and mortgage the same on behalf of the Unit Owners.

3.4.15. The power and duty to furnish statements as required by Section 1603-116(h) of the Act and certificates as required by Section 1604-108(b) of the Act.

3.4.16. The power to invest and reinvest funds of the Association and to take all actions necessary and proper in connection therewith, and for any year in which the Executive Board exercises this power to invest and reinvest funds of the Association, the Executive Board shall have the duty to invest the funds of the Association subject to any investment policy that the Executive Board may adopt which reflects the basic investment objectives of safety, liquidity and income return. At least annually, the Executive Board shall disclose to the members a listing on an itemized basis as to amount, type and rate of return, of the instruments, funds, money market accounts, investments and accounts in which the funds of the Association are invested or deposited.

3.4.17. The power to do such other things and acts not inconsistent with the Act or the Declaration which the Executive Board may be authorized to do by a resolution of the Association.

3.5. Delegation of Powers: Managing Agent. The Executive Board may employ for the Condominium a "Managing Agent" or "Manager" at a compensation established by the Executive Board. The Managing Agent shall perform such duties and services as the Executive Board shall delegate or authorize the Managing Agent to perform, including, but not limited to, all of the duties of the Executive Board and officers of the Association listed in the Act, the Declaration and these By-Laws; provided, however, where a Managing Agent does not have the power to act under the Act, the Declaration or these By-Laws, such duties shall be performed as advisory to the Executive Board. The Executive Board may delegate to the Managing Agent all of the powers granted to the Executive Board by the Act, the Declaration and these By-Laws other than the powers: (a) to adopt the annual budget and any amendment thereto or to

assess any Common Expenses; (b) to adopt, repeal or amend Rules and Regulations of the Association; (c) to designate signatories on Association bank accounts; (d) to borrow money on behalf of the Association; (e) to invest and reinvest funds of the Association; (f) to acquire and mortgage Units.

Any employment contract between the Managing Agent and the Association must provide that it may be terminated with cause on no more than thirty (30) days' written notice and without cause on no more than ninety (90) days' written notice.

3.6. Removal or Resignation of Members of the Executive Board. At any regular or special meeting of the Association duly called, any one or more of the members of the Executive Board may be removed with or without cause by Unit Owners entitled to cast at least sixty-six percent (66%) of all the Votes in the Association and a successor may then and there be elected to fill the vacancy thus created. Any Unit Owner proposing removal of a Board member shall give notice thereof to the Secretary. Any member whose removal has been proposed by a Unit Owner shall be given at least ten (10) days' notice by the Secretary of the time, place and purpose of the meeting and shall be given an opportunity to be heard at the meeting. A member of the Executive Board may resign at any time and shall be deemed to have resigned upon transfer of title to his Unit.

3.7. Vacancies. Vacancies in the Executive Board caused by any reason other than the removal of a member by a vote of the Unit Owners shall be filled by a vote of a majority of the remaining members at a special meeting of the Executive Board held for such purpose promptly after the occurrence of any such vacancy, even though the members present at such meeting may constitute less than a quorum. Each person so elected shall be a member of the Executive Board for the remainder of the term of the member being replaced and until a successor shall be elected at the next annual meeting of the Association at which such seat is to be filled upon expiration of the term of his predecessor. In the case of multiple vacancies, the member receiving the greatest number of Votes shall be elected for the longest term.

3.8. Organizational Meeting. The first meeting of the Executive Board following each annual meeting of the Association shall be held within ten (10) days thereafter at such time and place as shall be fixed by the President (even if he is the outgoing President) at the meeting at which such Executive Board shall have been elected, and no notice shall be necessary to the newly elected members of the Executive Board in order legally to constitute such meeting, if a majority of the Executive Board members shall be Present at such meeting.

3.9. Regular Meetings. Regular meetings of the Executive Board may be held at such time and place as shall be determined from time to time by a majority of the

members, but such meeting shall be held at least twice each fiscal year. Notice of regular meetings of the Executive Board shall be given to each member by the Secretary in the manner provided in the Declaration for service of notice upon Unit Owners, at least ten (10) business days prior to the day named for such meeting.

3.10. Special Meetings. Special meetings of the Executive Board may be called by the President on at least three (3) business days' notice by the Secretary to each member and Eligible Mortgage Holder, given by mail, telegraph or hand delivery, securing a receipt therefor, which notice shall state the time, place and purpose of the meeting. Special meetings of the Executive Board shall be called by the President or Secretary in like manner and on like notice on the written request of at least two (2) members of the Executive Board.

3.11. Waiver of Notice. Any member may at any time, in writing, waive notice of any meeting of the Executive Board, and such waiver shall be deemed equivalent to the giving of such notice. Attendance by a member of any meeting of the Executive Board shall constitute a waiver of notice by him of the time, place and purpose of such meeting unless the sole purpose of the member's attendance is to protest the holding of the meeting. If all members are present at any meeting of the Executive Board, no notice shall be required and any business may be transacted at such meeting.

3.12. Quorum of the Executive Board. At all meetings of the Executive Board, a majority of the members present shall constitute a quorum for the transaction of business, and the vote of a majority of the members present at the meeting at which a quorum is present shall constitute the decision of the Executive Board. If at any meeting of the Executive Board there shall be less than a quorum present, a majority of those present may adjourn the meeting from time to time. At any such adjourned meeting at which a quorum is present, any business, which might have been transacted at the meeting originally called, may be transacted without further notice. One or more members of the Executive Board may participate in and be counted for quorum purposes at any meeting by means of conference telephone or similar communication equipment by means of which all persons participating in the meeting can hear each other.

3.13. Compensation. No member of the Executive Board shall receive any compensation from the Association for acting as such, but may be reimbursed for any expenses incurred in the performance of his duties.

3.14. Conduct of Meetings. The President shall preside over all meetings of the Executive Board and the Secretary shall keep a minute book of the Executive Board meetings, recording therein all resolutions adopted by the Executive Board and a record of all transactions and proceedings occurring at such meetings. The then current edition

of Robert's Rules of Order shall govern the conduct of the meetings of the Executive Board if and to the extent not in conflict with the Declaration, these By-Laws or the Act.

3.15. Voting. The act of a majority of the members of the Executive Board present at a meeting at which a quorum is present shall be deemed the act of the Executive Board.

3.16. Action Without Meeting. Any action by the Executive Board required or permitted to be taken at any meeting may be taken without a meeting if all of the members of the Executive Board shall individually or collectively consent in writing to such action. Any such written consent shall be filed with the minutes of the proceedings of the Executive Board.

3.17. Validity of Contracts with Interested Executive Board Members. No contract or other transaction between the Association and one or more of its Board of Director members or between the Association and any corporation, firm or association in which one or more of the Board of Director members are directors or officers, or are financially interested, shall be void or voidable because such Executive Board member or members are present at any meeting of the Executive Board which authorized or approved the contract or transaction or because his or their votes are counted, if the circumstances specified in either of the following subparagraphs exists:

3.17.1. The fact that a Board of Director member is also such a director or officer or has such financial interest is disclosed or known to the Executive Board and is noted in the minutes thereof, and the Executive Board authorizes, approves or ratifies the contract or transaction in good faith by a vote sufficient for the purpose without counting the vote or votes of such Executive Board member or members;

3.17.2. The contract or transaction is made in good faith and is not unconscionable to the Association at the time it is authorized, approved or ratified.

3.18. Inclusion of Interested Executive Board Members in the Quorum. Any Executive Board member holding such director or officer position or having such financial interest in another corporation, firm or association may be counted in determining the presence of a quorum at a meeting of the Executive Board or a committee thereof which authorizes, approves or ratifies a contract or transaction of the type described in Paragraph 3.17.

ARTICLE IV

Officers

4.1. Designation. The principal officers of the Association shall be the President, the Secretary and the Treasurer, all of whom shall be elected by the Executive Board. The President shall be a Unit Owner and a member of the Executive Board. Any other officers may, but need not, be Unit Owners or members of the Executive Board. An officer other than the President may hold more than one office.

4.2. Election of Officers. The officers of the Association shall be elected annually by the Executive Board at the annual meeting of the Board and shall hold office at the pleasure of the Executive Board.

4.3. Removal and Replacement of Officers. Upon the affirmative vote of a majority of all members of the Executive Board, any officer may be removed, either with or without cause, and a successor may be elected at any meeting of the Executive Board called for such purpose.

4.4. President. The President shall be the chief executive officer of the Association, preside at all meetings of the Association and of the Executive Board and have all of the general powers and duties which are incident to the office of president of a nonprofit corporation organized under the laws of the State of Maine including without limitation the power to appoint committees from among the Unit Owners from time to time as the President may in his discretion decide is appropriate to assist in the conduct of the affairs of the Association. The President shall cease holding such office at such time a. he ceases to be a member of the Executive Board.

4.5. Secretary. The Secretary shall keep the minutes of all meetings of the Association and of the Executive Board, have charge of such books and papers as the Executive Board may direct, maintain a register setting forth the place to which all notices to Unit Owners and Eligible Mortgage Holders hereunder and pursuant to this Declaration shall be delivered and, in general, perform all the duties incident to the office of secretary of a nonprofit corporation organized under the laws of the State of Maine. The Secretary shall, within ten (10) days after receipt of request, provide any person, or cause to be provided to any person, entitled thereto at the expense of the person requesting the same a written statement or certification of the information required to be provided by the Association pursuant to Sections 1603-116(h) and 1604-108(b) of the Act.

4.6. Treasurer. The Treasurer shall have the responsibility for the safekeeping of Association funds and securities, be responsible for keeping full and accurate financial records and books of account showing all receipts and disbursements, and for the preparation of all required financial data, be responsible for providing to the Secretary the financial and budgetary information necessary for the Secretary to provide the

certifications required by Paragraph 4.5. and be responsible for the deposit of all monies in the name of the Executive Board, the Association or the Managing Agent, in such depositories as may from time to time be designated by the Executive Board and, in general, perform all the duties incident to the office of treasurer of a nonprofit corporation organized under the laws of the State of Maine.

4.7. Execution of Documents. Except as provided in Paragraph 8.6., all agreements, contracts, deeds, leases, checks and other instruments of the Association for expenditures or obligations not in excess of, or authorized pursuant to, the budget approved by the members may be executed by any one officer of the Association or such other person or employee as the Executive Board may designate in writing.

4.8 Compensation of Officers. No officer who is also a member of the Executive Board shall receive any compensation from the Association for acting as such officer, but may be reimbursed for any out-of-pocket expenses incurred in performing his duties; provided, however, the Secretary and Treasurer may be compensated for their services if the Executive Board determines such compensation to be appropriate.

ARTICLE V Operation of the Property

5.1. Fiscal Year. The fiscal year of the Association shall begin on such date as shall be established by the Executive Board, except for the first fiscal year of the Association, which shall begin at the date of incorporation of the Association. The commencement date of the fiscal year so established shall be subject to change by the Executive Board.

5.2. Preparation and Approval of Budget:

5.2.1. On or before ninety days (90) before the beginning of the fiscal year for which a Common Expense assessment is made, the Executive Board shall adopt an annual budget for the Association containing an estimate of the total amount of the Common Expenses considered necessary to pay the cost of maintenance, management, operation, repair and replacement of the Common Elements and those parts of the Units as to which it is the responsibility of the Association to maintain, repair and replace, and the cost of wages, materials, insurance premiums, services, supplies and other expenses that may be declared to be Common Expenses by the Act, the Condominium Documents or a resolution of the Association and which will be required during the ensuing fiscal year for the administration, operation, maintenance and repair of the Property and the rendering to the Unit Owners of all related services. The budget shall include such

amounts as the Executive Board shall consider necessary to provide working capital, a general operating reserve fund for current Common Expenses, and a reserve fund for contingencies, replacements, capital improvements, and other items which cannot be expected to occur on a regular basis. The budget shall also reflect the separate assessment of Limited Common Expenses.

5.2.2. On or before the thirtieth (30) day after the adoption of an annual budget as provided in subparagraph 5.2.1. the Executive Board shall make such budget available for inspection during business hours by any Unit Owner or Mortgagee at the office of the Association and the Manager or Managing Agent, if any, and the Secretary shall provide to the Unit Owners and Eligible Mortgage Holders a summary of that budget in reasonably itemized form setting forth the separate amounts of the Common Expenses and Limited Common Expenses and shall set a date for a special meeting of the Unit Owners and Eligible Mortgage Holders to consider approval and ratification of such budget no less than fourteen (14) days nor more than thirty (30) days after mailing of such summary of budget accompanied by notice of the meeting to each Unit Owner and Eligible Mortgage Holder. The Executive Board shall endeavor to schedule the date for consideration of the budget to coincide with the date of the annual meeting of the Association. Unless at the meeting sixty-six percent (66%) in voting interest of all of the Unit Owners approve and ratify the proposed budget, that budget is rejected. In the event such budget shall be rejected at the meeting, the budget last ratified with respect to the period covered by the proposed budget shall be continued as the budget for the Condominium until such time as the Unit Owners approve and ratify a subsequent budget proposed by the Executive Board upon the same conditions as are provided in this subparagraph with respect to the original budget.

5.2.3. Subject to subparagraph 5.2.2., the budget adopted pursuant to this Paragraph shall constitute the basis for determining each Unit Owner's assessments for Common Expenses and Limited Common Expenses and shall automatically take effect at the beginning of the fiscal year for which it is adopted.

5.3. Assessment of Common Expenses. The total amount of the estimated funds for Common Expenses required from assessments for the operation of the Property as described in subparagraph 5.2.1. and set forth in the budget adopted by the Executive Board shall be assessed on an annual basis against each Unit Owner in proportion to his respective Common Expense Liability as provided in subparagraph 8.1.1. and Schedule B of the Declaration, except for Limited Common Expenses which shall be assessed against each Unit benefited as provided in subparagraph 8.1.2. of the Declaration.

5.4. End of Fiscal Year. Within ninety (90) days after the end of each fiscal year for which a Common Expense assessment was made, the Executive Board shall prepare and deliver to all Unit Owners and Eligible Mortgage Holders, and to each Mortgagee requesting in writing the same, an itemized accounting of the Common Expenses for such fiscal year actually incurred and paid, together with a tabulation of the amounts collected pursuant to the budget adopted by the Executive Board for such fiscal year, and showing the net amount over or short of the actual expenditures plus reserves. Any net shortage with regard to Common Expenses that are not Limited Common Expenses, after application of such reserves as the Executive Board may determine, shall be assessed promptly against the Unit Owners in accordance with their Common Expense Liabilities and shall be payable either (i) in full with payment of the next monthly assessment due, or (ii) in one or more monthly assessments, as the Executive Board may determine. Any net shortage with regard to Limited Common Expenses, after application of such reserve as the Executive Board may determine, shall be assessed promptly against the Unit Owners obligated to pay those Limited Common Expenses and if those Limited Common Expenses benefit more than a single Unit that Limited Common Expenses shall be assessed against the Owners of the Units benefited in accordance with their relative Common Expense Liabilities as between themselves, any and all of which Limited Common Expenses shall be payable either (i) in full with payment of the next monthly assessment or (ii) in one or more monthly assessments, as the Executive Board may determine.

5.5. Reserves. The Executive Board shall build up and maintain reasonable reserves for working capital including a general operating reserve fund for current Common Expenses (the "Working Capital Fund") and a reserve fund for contingencies, replacements, capital improvements, expenses of repair and replacement in the amount of the applicable deductible on property insurance carried by the Association, and other items which cannot be expected to occur on a regular basis (the "Reserve Fund"). However, nothing contained herein shall limit, preclude or impair the establishment of additional funds by the Association so long as the amounts credited to, and debited from any such additional funds are earmarked for specified purposes authorized by the Condominium Documents. The Working Capital Fund, Reserve Fund and such other funds shall be conclusively deemed to be common funds of the Association and shall be deposited in a special account with a lending institution, the accounts of which are insured by an agency of the United States of America unless otherwise invested pursuant to subparagraphs 3.4.5. or 3.4.16. Neither the Executive Board nor the Treasurer shall commingle in the books and records of the Association any amounts deposited into the Reserve Fund, the Working Capital Fund or such other funds. Extraordinary expenditures not originally included in the annual budget, which may become necessary during the year shall be charged first against such reserves. If the reserves are deemed by the Executive Board to be inadequate for any reason, including nonpayment of any Unit Owner's

assessment, the Executive Board may at any time levy a further assessment which, depending on whether the reserve is for the benefit of all the Units or fewer than all the Units, shall be assessed against all the Unit owners according to their respective Common Expense Liabilities or only against the Unit owners benefited according to their respective Common Expense Liabilities as between themselves, and which may be payable in a lump sum or in installments as the Board may determine.

5.6. Further Assessments. Subject to Paragraph 5.8., the Executive Board shall give notice to all Unit Owners and Eligible Mortgage Holders of any further assessments on Unit Owners for Common Expenses or Limited Common Expenses accompanied by a statement in writing giving the amount and reasons therefor, and such further assessment shall, unless otherwise specified in a notice, and subject to Paragraph 5.8., become effective, as provided in Paragraph 5.13., on the first day of the next month which begins more than ten (10) days after the delivery of such notice of further assessment. All Unit Owners so notified shall be obligated to pay the adjusted monthly amount at the times provided for in Paragraph 5.11. Such assessment shall be a lien as set forth in Paragraph 5.13.

5.7. Effect of Failure to Prepare or Adopt Budget. The failure or delay of the Executive Board to prepare or adopt a budget for any fiscal year shall not constitute a waiver or release in any manner of a Unit Owner's obligation to pay his allocable share of the Common Expenses as herein provided whenever the same shall be determined and, in the absence of any annual budget or adjusted budget, each Unit Owner shall continue to pay each monthly installment at the monthly rate established for the previous fiscal year until the new annual or adjusted budget shall have been adopted.

5.8. Rejection of Budget: Limitation on Expenditures. Subject to Paragraph 5.9., but anything else herein to the contrary notwithstanding, within thirty (30) days after adoption by the Executive Board of any revised budget for the Condominium (or adoption of a further assessment pursuant to Paragraph 5.6.) the Executive Board shall provide a summary of that revised budget in a reasonably itemized form or, if appropriate, the notice of any further assessment pursuant to Paragraph 5.6., to each Unit Owner and Eligible Mortgage Holder. The Executive Board shall set a date for a meeting of the Unit Owners and Eligible Mortgage Holders to consider approval and ratification of such revised budget, or further assessment, no less than fourteen (14) days nor more than thirty (30) days after the mailing of said summary of budget or notice. Unless at that meeting sixty-six percent (66%) in voting interest of all of the Unit Owners approve and ratify the revised budget, or further assessment, that budget or assessment is rejected. In the event such revised budget or assessment shall be rejected at the meeting, the budget last ratified with respect to the period covered by the proposed budget or revised budget, or further assessment shall be continued as the budget for the Condominium until such time as the

Unit Owners approve and ratify a subsequent revised budget, or further assessment, proposed by the Executive Board upon the conditions as are provided with respect to the original review of the budget or further assessment.

5.9. Limitations on Borrowing; Emergency Expenditures. The power of the Executive Board to borrow money on behalf of the Association is subject to the requirement that the consent of the Owners of Units to which are allocated at least sixty-six percent (66%) of the Votes in the Association shall be required to borrow in any fiscal year any sum in excess of fifteen percent (15%) of the current annual operating budget. Any provision of limitation on expenditures contained in these By-Laws to the contrary notwithstanding, the Executive Board or the Manager may, on behalf of the Association and the Owners without prior notice or consent, expend any amount, or incur a contractual obligation in any amount, required to deal with emergency conditions which may involve a danger to life or property or may threaten the safety of the Condominium or the owners or occupants of Units or may threaten the suspension of any necessary service to the Condominium or may involve the immediate damage to or destruction of the Common Elements. Where such action was taken to respond to a situation created by the negligence, wrongful action, or omission of a Unit Owner (or its employees, agents, clients, visitors or guests) the expenditure, contractual obligation and expenses shall be charged as a Limited Common Expense to such Unit Owner.

5.10. Accounts: Audits. All sums collected by the Executive Board with respect to assessments against the Unit Owners or from any other source may be commingled in a single fund or held for each Unit Owner in accordance with his respective Common Expense Liability notwithstanding that the Reserve Fund, Working Capital Fund, and such other funds shall not and may not be commingled in the books and records of the Association and that unless otherwise invested pursuant to subparagraphs 3.4.5. or 3.4.16. such funds must be deposited with a lending institution, the accounts of which are insured by an agency of the United States of America. All books and records of the Association shall be kept under the direction of the Treasurer or the Manager and in accordance with customary accounting principles and practices. Any Eligible Mortgage Holder shall have the right to give written notice to the Association and cause the records and books of the Association to be audited and have an audited financial statement of the financial position of the Association prepared each at the expense of such Eligible Mortgage Holder.

5.11. Payment Obligations. Each Unit Owner shall pay to the Association or its authorized representative (1) on the first day of each month, or on such other date that the Association may determine in writing, one-twelfth (1/12th) of the Common Expenses including Limited Common Expenses, and revised Common Expenses including revised Limited Common Expenses, assessed on an annual basis against his Unit in the proportions required in Paragraph 8.1. of the Declaration and (2) all special assessments,

any other sums duly levied against the Unit pursuant to the Declaration, these By-Laws or the Act, including Limited Common Expenses assessed against Unit Owners for maintenance, repair or replacement of a Limited Common Element pursuant to Paragraph 8.4. of the Declaration, all interest thereon and charges for late payment thereof and legal fees and other costs of collection thereof, and fines, penalties and fees as provided by the Declaration, these By-Laws or the Act, on the first day of the next month which begins more than ten (10) days after delivery to the Unit Owner of notice of such special assessment or levy. If for any reason the Association shall revise the annual budget of the Association in accordance with these By-Laws, whereby the Common Expenses or any component thereof may be increased, and subject to Paragraph 5.8., then commencing on the first day of the first month subsequent to the adoption of such revised budget each Unit Owner shall pay to the Association or its authorized representative such revised annual Common Expenses including Limited Common Expenses assessed against his Unit in the proportions required in Paragraph 8.1. of the Declaration.

5.12. Interest: Acceleration. In the event of a default by an Unit Owner in paying any sum assessed against his Unit which continues for a period in excess of thirty (30) days, interest shall be imposed on the principal amount unpaid from the date when due until paid at a rate of interest to be established annually by the Executive Board which shall not exceed the lower of the maximum interest rate allowed by law which may be charged by the Association at such time or eighteen percent (18%) per annum. If the Executive Board shall fail to set such rate, it shall be deemed to have been set at the rate of eighteen percent (18%) per annum. The Association shall have the right to establish and impose charges for late payment of assessments. In any case where an assessment against a Unit Owner is payable in installments, upon a default by such Unit Owner in the timely payment of any two consecutive installments, the maturity of the remaining total of the unpaid installments of such assessments may be accelerated at the option of the Executive Board, and the entire balance of the assessment may be declared due and payable in full by the service of notice to such effect upon the defaulting Unit Owner by the Executive Board or its representative.

5.13. Lien for Assessments. The total annual assessment levied against each Unit for Common Expenses including Limited Common Expenses, revised Common Expenses including revised Limited Common Expenses, or any special assessment, and any other sums duly levied against the Unit pursuant to the Declaration, these By-Laws or the Act, including Limited Common Expenses assessed against Unit Owners for maintenance, repair or replacement of a Limited Common Element pursuant to Paragraph 8.4. of the Declaration, all interest thereon and charges for late payment thereof and legal fees and other costs of collection thereof, and fines, penalties and fees as provided in the Declaration or these By-Laws shall, until fully paid, constitute a lien against the Unit in favor of the Association as provided in Section 1603-116 of the Act. Such lien shall, with

respect to annual assessments and revised annual assessments, be effective on the first day of each fiscal year of the Association as to the full amount of the annual assessment or revised annual assessments, and, as to special assessments and other sums duly levied including Limited Common Expenses assessed against Unit Owners for maintenance, repair or replacement of a Limited Common Element pursuant to Paragraph 8.4. of the Declaration, interest, charges for late payments, legal fees, costs of collection, fines, penalties and fees as described in Paragraph 5.12., on the first day of the next month which begins more than ten (10) days after delivery to the Unit Owner of notice of such special assessment or levy. Such lien is prior to all other liens and encumbrances on a Unit except (a) liens and encumbrances recorded before the recordation of this Declaration, (b) a first Mortgage recorded before or after the date which the assessment sought to be enforced becomes delinquent, and (c) liens for real estate taxes and other governmental assessments or charges against the Units; provided, however, that such lien is not subject to the provisions of 14 M.R.S.A. Section 4651 and 18-A M.R.S.A. Section 201, et seq., as they or their equivalents may be amended or modified from time to time.

5.14. Enforcement. The lien for assessments described in Paragraph 5.13. may be enforced and foreclosed by the Association in like manner as a mortgage on real estate as provided in Section 1603-116(a) of the Act or by any other means presently or hereafter provided by law or in equity. A suit to recover a money judgment for unpaid assessments, interest, penalties, and costs of collection may be maintained against the Unit Owner personally without foreclosing or waiving the lien securing such assessments and a foreclosure may be maintained notwithstanding the pendency of any suit to recover a money judgment. During the pendency of any such suit, the Unit Owner shall be required to pay a reasonable rental for the unit for any period prior to sale pursuant to any judgment or order of any Court having jurisdiction over such sale.

5.15. Exemption From Expenses by Waiver of Use of Common Elements or Unit Elements. Subject to Paragraph 15.5. of the Declaration, no Unit Owner may exempt himself from Common Expense Liability with respect to the payment of assessments for Common Expenses by waiver of the enjoyment of the right to use any of the Common Elements or by abandonment of his Unit or otherwise. Subject to Paragraph 15.5. of the Declaration, the obligation to pay assessments for Common Expenses is absolute and unconditional and shall not be subject to set-offs or counterclaims.

5.16. Collection of Assessments. The Executive Board or the Managing Agent, at the request of the Executive Board, shall take prompt action to collect any assessment for Common Expenses due from any Unit Owner which remains unpaid for more than thirty (30) days from the due date for payment thereof together with any interest thereon and charges for late payment as provided in Paragraphs 5.11. and 5.12.

5.17. Statement of Common Expense. The Association shall promptly provide to any Unit Owner, contract purchaser or Mortgagee so requesting the same in writing with a statement setting forth the amount of unpaid assessments currently levied against the Unit of such Unit Owner as provided in Section 1603-116(h) of the Act. The Association shall also promptly provided to any Unit Owner or contract purchaser so requesting the same with a certificate containing the information described in Section 1604-108(a) of the Act enabling such Unit Owner to comply with the provisions of Section 1604-108 of the Act. The Association shall have the right to impose a reasonable charge for the preparation of such statement or information to cover the costs of preparation thereof against the Unit Owner requesting the same.

5.18. Reallocation of Allocated Interests. If Common Expense Liabilities are reallocated for any reason, assessments for Common Expenses and any installments thereof not yet due shall be recalculated in accordance with the reallocation Common Expense Liabilities. Within thirty (30) days after the reallocation of the Common Expense Liabilities, the Executive Board shall revise the budget to reflect changes in Common Expenses and Limited Common Expenses resulting from such reallocation of Common Expense Liabilities to reflect the proportionate liability of all the Units for such Common Expenses and Limited Common Expenses for the remainder of the fiscal year in which such events occur. The amount of assessments attributable to each Unit thereafter shall be the amount specified in the adjusted budget, until a new budget shall have been adopted by the Executive Board subject to the Condominium Documents.

5.19. Taxation.

5.19.1 Separate Taxation. If there is any Unit Owner other than the Declarant, each Unit and its Allocated Interests shall be deemed to be a separate tax parcel and shall be separately taxed and assessed by the City of Portland. Neither the Building, the Property nor any of the Common Elements shall be deemed to be or assessed as a separate tax parcel.

5.19.2. Units Not Yet Separately Assessed. In the event that for any year real estate taxes assessed by the City of Portland are not separately taxed and assessed to each separate Unit Owner but are taxed on the Property as a whole, then each Unit Owner shall pay his proportionate share thereof in accordance with his respective Common Expense Liabilities.

ARTICLE VI

Repair and Reconstruction After Fire or Other Casualty

6.1. When Repair and Reconstruction are Required. In the event of damage to or destruction of all or any part of the Property as a result of fire, other casualty or the exercise of the power of eminent domain, the Executive Board on behalf of the Association shall promptly arrange for and supervise the prompt repair, replacement and restoration thereof, including any damaged Units (including the unfinished floor slab or basement floor, as the case may be, roof and roof rafters, wall studs, joists, columns, studs or beams, and all exterior windows and doors; but not including the plaster or sheetrock forming the perimeter walls of the Units, any floorcovering (such as tile; wood flooring and carpeting) and any wallcovering (such as paint, wallpaper, paneling or tiles), furniture, fixtures (such as cabinets, built-in closets or bookshelves, vanities, lamps and chandeliers) furnishings, appliances or other personal property owned by Unit Owners) (the "Unit Owner Property") substantially in accordance with the Declaration, the Plat and Plans, these By-Laws, the original elevation thereof and the original plans and specifications therefor unless, subject to Paragraph 9.3. of the Declaration, (a) the Condominium is terminated, or (b) repair, replacement or restoration would be illegal under any state or local health, safety, land-use or environmental statute, code or ordinance, or (c) one hundred percent (100%) of the Unit Owners and at least sixty percent (60%) of the Eligible Mortgage Holders vote not to repair, restore or replace the damaged or destroyed Property, and such decision is approved by every Owner of a Unit or assigned or allocated Limited Common Element, which will not be repaired, replaced or restored, and by all Eligible Mortgage Holders of all Mortgages thereon. Each Unit owner shall supervise the repair, replacement and restoration of its Unit Owner Property.

6.2. Procedure for Reconstruction and Repair. Subject to Paragraph 9.3. of the Declaration, if repair, replacement or restoration (of non-Unit Owner Property) shall be required pursuant to Paragraph 6.1.:

6.2.1. Cost Estimates. The Executive Board shall promptly obtain reliable and detailed estimates of the cost of repairing and restoring such portion including any damaged Units (and the fixtures, service machinery and other apparatus, but not including any Unit Owner Property in the Unit) substantially in accordance with this Declaration, the Plat and Plans, the original elevation thereof and original building plans and specifications therefor unless other action is approved by one hundred percent (100%) in voting interest of the Unit Owners and at least sixty percent (60%) of the Eligible Mortgage Holders. Such costs may also include professional fees and premiums for such bonds as the Insurance Trustee may determine to be necessary.

6.2.2. Assessments. If the net proceeds of insurance, eminent domain awards, and any appropriate reserve for replacement funds, if any, are not sufficient to defray such estimated costs of reconstruction, repair, and replacement,

or if upon completion of reconstruction and repair the funds for the payment of the costs thereof are insufficient, any such costs in excess of insurance proceeds, any eminent domain awards, and reserves shall be deemed a Common Expense and a special assessment therefor shall be levied by the Association.

6.2.3. Construction Fund and Disbursement. The proceeds of insurance collected on account of the casualty, any eminent domain awards, and any appropriate reserve for replacement funds, and the sums received by the Association from collections of assessments against Unit Owners pursuant to subparagraph 6.2.2. on account of any such casualty or taking, shall constitute a construction fund which shall be held in trust by the Insurance Trustee or Association as provided in Paragraph 14.3. of the Declaration and disbursed in payment of the costs of reconstruction and repair in the following manner:

6.2.3.1. If the estimated cost of reconstruction and repair is less than Fifty-Thousand Dollars (\$50,000), then the construction fund shall be disbursed in appropriate progress payments, or payment of such costs upon order of the Executive Board; provided, however, that upon request of sixty percent (60%) of the Eligible Mortgage Holders, such funds shall be disbursed pursuant to subparagraph 6.2.3.2.

6.2.3.2. If the estimated cost of reconstruction and repair is Fifty Thousand Dollars (\$50,000.00) or more, then the construction fund shall be disbursed in payment of such costs upon approval of an architect qualified to practice in the State of Maine employed by the Association or Insurance Trustee or of such other qualified person acceptable to no less than sixty percent (60%) of the Eligible Mortgage Holders and to the Owners of the Units to which are allocated no less than sixty-six percent (66%) of the Votes in the Association (generically, the "Architect"), to supervise such work, payment to be made from time to time as the work progresses. The Architect shall be required to furnish a certificate giving a brief description of the services and materials furnished by various contractors, subcontractors, materialmen, the Architect and other persons who have rendered services or furnished materials in connection with the work stating that: (a) the sums requested by them in payment are justly due and owing and that such sums do not exceed the value of the services and materials furnished; (b) there is no other outstanding indebtedness known to the Architect for the services and materials described; and (c) the cost as estimated by the Architect for the work remaining to be done subsequent to the date of such certificate does not exceed the amount of the construction fund remaining after payment of the sum so requested.

6.2.3.3. Common Elements. When the damage is to both Common Elements and Units, the insurance proceeds or eminent domain proceeds shall be applied first to the cost of repairing those portions of the Common Elements which enclose and service the Unit, then to the costs of repairing the other Common Elements and then to the costs of repairing the Units.

6.2.3.4. Distribution After Payment. The first monies disbursed in payment of the cost of reconstruction and repair shall be from any insurance proceeds or eminent domain awards and, if there is a balance in the construction fund after the payment of all of the costs of the reconstruction and repair for which the fund is established, such balance shall be distributed among all Unit Owners, Mortgage holders and lien holders, as their respective interests may appear, in proportion to their respective Common Element Interests or the Common Element Interests of the Units to which their respective Mortgages or liens are subject.

6.3. Damage or Destruction: No Repair or Replacement. If the entire Condominium is not repaired or replaced:

6.3.1. The insurance proceeds and any eminent domain awards attributable to the damaged Common Elements shall be used to restore the damaged area to a condition compatible with the remainder of the condominium as determined by the Executive Board or Architect;

6.3.2. The insurance proceeds and any eminent domain awards attributable to Units and Limited Common Elements which are not rebuilt shall be distributed to the Owners and Mortgagees of those Units as their insurable interests may appear and the Owners and Mortgagees of the Units to which those Limited Common Elements were assigned or allocated, as their insurable interests may appear; and

6.3.3. The remainder of the insurance proceeds and any eminent domain awards shall be distributed to all the Unit Owners and Mortgagees, as their insurable interest may appear, in proportion to their respective Common Element Interests or the Common Element Interests subject to their respective Mortgages.

6.3.4. If the Unit Owners and their Mortgagees vote not to rebuild any Unit, that Unit's entire Allocated Interests shall be automatically reallocated upon said vote as if the Unit had been condemned under Section 1601-107(a) of the Act and the Association shall prepare, execute and record an amendment to the

Declaration reflecting the reallocations. Notwithstanding any provision of this Article VI to the contrary, Section 1602-118 of the Act governs the distribution of insurance proceeds and any eminent domain awards if the Condominium is terminated.

6.4. Mortgagee Priority. No provision of the Condominium Documents shall be deemed or construed to give a Unit Owner, or any other person, priority over the rights of any Eligible Mortgage Holder pursuant to its Mortgage in the case of a distribution to Unit Owners of insurance proceeds or eminent domain awards for losses to or a taking of Units, Common Elements, or both.

ARTICLE VII Records of Information

7.1. Title. Every Unit Owner shall promptly cause to be duly recorded the deed, assignment, or other conveyance to him of his Unit or other evidence of his title thereto and file such evidence of his title with the Executive Board through the Secretary or Manager. The Secretary shall maintain such information in the record of ownership of the Association.

7.2. Availability of Information. The Association shall make available to Unit owners, lenders and the holders, insurers and guarantors of the first Mortgage on any Unit, for inspection at the office of the Association or the Manager, if any, current copies of the Declaration, these By-Laws and the Rules and Regulations governing the Property and other books, records and financial statements of the Association. The Association shall also make available to Eligible Mortgage Holders, Unit Owners and prospective purchasers at the cost of the person requesting the same current copies of the Declaration, these By-Laws and the Rules and Regulations governing the Property. "Available" means available for inspection or receipt upon request, during normal business hours or under other reasonable circumstances.

ARTICLE VIII Amendments

Subject to the provisions of Article XII of the Declaration governing the amendment of the Declaration, and subject also to Article XI of the Declaration governing the rights of Mortgagees, and subject to the other provisions of the Declaration including, but not limited to, Paragraphs 9.3. thereof, these By-Laws and of the Act, these By-Laws may be amended as follows:

8.1. Notice. Notice of the subject matter of a proposed amendment shall be included in the notice of any meeting of the Executive Board or Association in which a proposed amendment is considered, and shall be served upon all Unit Owners and Eligible Mortgage Holders.

8.2. Resolution. An amendment may be proposed by either the Executive Board or by Unit Owners holding in the aggregate no less than thirty percent (30%) of the Votes in the Association. No resolution of the Executive Board adopting a proposed amendment or the proposed amendment itself shall be effective unless it has been adopted at a meeting of the Association duly called and held in accordance with these By-Laws by the affirmative vote of at least sixty-six percent (66%) in voting interest of all of the Unit Owners and then executed as Provided in Paragraph 8.5.

8.3. Agreement. In the alternative, an amendment may be made by an agreement signed by the record Owners of Units to which are allocated at least one hundred percent (100%) of the Votes in the Association, in which case such amendment shall become effective when signed by such Unit Owners.

8.4. Proviso. Provided, however, that except as otherwise permitted by the Act and provided in the Declaration, no amendment may increase the number of Units or change the boundaries of any Unit, the Allocated Interests allocated to a Unit, or the uses to which any Unit is restricted without the unanimous consent of the Unit owners and the consent of at least Sixty Percent (60%) of the Eligible Mortgage Holders.

8.5. Execution. A copy of each amendment shall be attached to or included with a certificate, certifying that the amendment was duly adopted, which certificate shall be executed by the President or Treasurer and attested by the Secretary. The amendment shall be effective when such certificate and copy of the amendment are executed and certified.

8.6. Amendments to Declaration; Designation of Officers. In accordance with § 12.2.5 of the Declaration, either the President or Treasurer may be designated to prepare, execute and record, and the Secretary shall certify on behalf of the Association any amendments to the Declaration which have been approved under Article XII of the Declaration.

ARTICLE IX

Standards and Control of Condominium

9.1. Establishment of Rules and Regulations. The Executive Board shall have the power to adopt, amend and enforce compliance with such reasonable Rules and

Regulations relative to the operation, use and occupancy of the Units and the Common Elements consistent with the provisions of the Condominium Documents and the Act and the enactment and enforcement of such enforcement procedures and penalties for violations as they shall deem appropriate. Any such Rules and Regulations shall be adopted or amended from time to time by means of appropriate resolutions duly approved by the Executive Board in accordance with these By-Laws and the Declaration. The Executive Board shall have the right to establish various rules and procedures governing the operation and administration of the appeal and hearing process and the enforcement of the Condominium Documents and Rules and Regulations. A copy of all such policy guidelines, rules, procedures and regulations and copies of any amendments thereto shall be delivered or mailed to each Owner or occupant of a Unit promptly after the adoption thereof and shall become binding upon all Owners, their successors in title and assigns, and occupants.

9.2. Additions, Alterations or Improvements by the Executive Board. Whenever in the judgment of the Executive Board the Common Elements shall require additions, alterations or improvements costing in excess of Ten Thousand Dollars (\$10,000.00) which are not included within the approved budget for the fiscal year(s) in which the additions, alterations or improvements will be made, the making of such additions, alterations or improvements requires a vote of one hundred percent (100%) of the Unit Owners, and the Executive Board shall assess all Unit Owners benefited for the cost thereof as a Common Expense (or Limited Common Expense). Any additions, alterations or improvements costing less than Ten Thousand Dollars (\$10,000.00) may be made by the Executive Board without approval of the Unit Owners and the cost thereof shall constitute a Common Expense or Limited Common Expense, depending on the nature of the additions, alterations or improvements. Notwithstanding the foregoing, if, in the opinion of no less than two-thirds (2/3) of the members of the Executive Board, such additions, alterations or improvements are exclusively or substantially exclusively for the benefit of the Unit Owners requesting the same, such requesting Unit Owners shall be assessed therefor as a Limited Common Expense in such proportion as they jointly approve or, if they are unable to agree thereon, in such proportion as may be determined by the members of the Executive Board.

9.3. Additions, Alterations or Improvements by the Unit Owners. Subject to any applicable provisions of the Declaration, these By-Laws or rules or regulations of the Association, a Unit Owner may make nonstructural improvements and alterations to the interior of his Unit but no Unit Owner may make any improvements or alterations or do any work whatsoever which would impair the structural integrity or mechanical systems of the Building or of a Unit owned by another Unit Owner, lessen the support of any portion of the Condominium, or jeopardize the soundness or safety of the Property, or reduce the fire rating of any walls or violate any building fire codes. No Unit Owner shall

alter any of the Common Element, or paint or otherwise change the appearance of the Common Elements (including the Limited Common Elements) or paint or otherwise change the exterior appearance of his Unit (including, but not limited to, the exterior surface of doors) or any other portion of the Condominium without the prior written approval of the Executive Board.

9.4. Residential Restriction; Prohibition on Short Term Rentals. All Units are restricted to residential use, which shall not preclude leasing or rental, subject, however, to the requirement that rentals or leases of any nature (including, without limitation, any rentals facilitated through any third-party/online services such as Airbnb, Homeaway.com or VRBO) shall comply with the provisions of these By-Laws, the Declaration, and the Rules & Regulations of the Association.

ARTICLE X
Corporate Seal

10.1. Seal. The Association shall have a seal in circular form having within its circumference the words:

RIFUGIO
CONDOMINIUM
OWNERS
ASSOCIATION
2020
MAINE

ARTICLE XI
Third Parties Protected

11.1. Protection of Third Parties. With respect to a third person dealing with a member of the Executive Board, an officer of the Association or the Managing Agent employed by the Executive Board pursuant to Paragraph 3.5. (each hereinafter collectively referred to as a “Representative”) acting on behalf of the Executive Board of the Association, the third person is not bound to inquire whether the Representative has power to act in its purported capacity or is properly exercising the powers granted to the Representative. Such third person, without actual knowledge that the Representative is exceeding or improperly exercising its powers, is fully protected in dealing with the Representative as if it possessed and properly exercised the powers it purports to exercise.

ARTICLE XII
Miscellaneous

12.1. Remedies Cumulative. All rights, remedies and privileges granted to the Executive Board or a Unit Owner pursuant to any terms, provisions, covenants or conditions of the Condominium Documents shall be deemed to be cumulative, and the exercise of any one or more shall not be deemed to constitute an election of remedies nor shall it preclude the party thus exercising the same from exercising such other and additional rights, remedies, or privileges as may be granted to such party hereunder or by any instruments or documents incorporated herein by reference or at law or in equity.

12.2. Captions. The headings in these By-Laws are for purposes of reference only and shall not limit or otherwise affect the meaning hereof. Any tables of contents or indices attached to these By-Laws are for purposes of reference and convenience only and shall neither limit nor otherwise affect the meaning hereof nor be deemed as part of these By-Laws. References in these By-Laws to Articles, Paragraphs, subparagraphs and Schedules without references to the document in which they are contained are references to these By-Laws. Any Exhibits are attached to these By-Laws for purposes of identification only and shall not be deemed as part of these ByLaws.

12.3. Gender; Number; Etc. The use of the singular number in these By-Laws shall be deemed to include the plural, the plural the singular, and the use of any one gender shall be deemed applicable to all gender.

12.4. Severability. The invalidity of any provisions of these By-Laws shall not be deemed to impair or affect in any manner the validity, enforceability or effect of the remainder of these By-Laws, and in such event, all of the other provisions of these By-Laws shall continue in full force and effect as if such invalid provision had never been included herein.

-END-

DECLARATION OF CONDOMINIUM

of

**RIFUGIO, A CONDOMINIUM
Portland, Maine**

**Upright Properties, LLC
Portland, Maine
Declarant**

Recorded: Cumberland County Registry of Deeds

Book _____, Page _____ - Date: _____, 2020

DECLARATION
RIFUGIO, A CONDOMINIUM

THIS DECLARATION (the “Declaration”) is executed by Upright Properties, LLC (the “Declarant”), pursuant to the Maine Condominium Act, Chapter 31 of Title 33 of the Maine Revised Statutes, as amended (the “Act”).

ARTICLE I
CREATION OF CONDOMINIUM; DEFINED TERMS

1.1. Declaration of Property. The Declarant, owner of that certain lot or parcel of land situated at 128R North Street, Portland, Cumberland County, Maine, more particularly described in Schedule A, and of all buildings and improvements constructed thereon and all easements, rights, privileges and appurtenances related thereto (collectively the “Property”) hereby submits the Property to the provisions of the Act and creates with respect to the Property a condominium under the Act (the “Condominium”). The name of the Condominium is Rifugio, a Condominium, and its address is 128R North Street, Portland, Maine 04101. The name of the Association is Rifugio Condominium Owners Association and its address is 128R North Street, Portland, Maine 04101.

The Property is depicted on a plat of said land entitled “Condominium Plat, Rifugio, a Condominium,” dated _____, by _____, and on floor plans of such buildings and improvements constructed thereon, entitled “Horizontal & Vertical Boundaries, Rifugio, a Condominium,” dated _____, by _____, (collectively, the “Plans” or “Plats and Plans”), which Plans are recorded in the Cumberland County Registry of Deeds, Plan Book ___, Pages ___ through ___.

1.2. Defined Terms. As provided in Section 1601-103 of the Act, capitalized terms not otherwise defined in this Declaration, as it may be amended from time to time, or on the Plat and Plans, shall have the same meanings as specified in the Act. The following terms which are not otherwise defined in this Declaration shall have the following specific meanings in this Declaration.

1.2.1. “Allocated Interests” mean (a) the Common Element Interest, and (b) the Common Expense Liability, allocated to each Unit pursuant to this Declaration.

1.2.2. “Association” means the association of the Unit Owners of the Condominium organized pursuant to Section 1603-101 of the Act as a nonprofit corporation under the Maine Non Profit Corporation Act. The name of the Association is Rifugio Condominium Owners Association.

1.2.3. “Building” means the building erected on the Property shown on the Plat and Plans containing four (4) levels (including the parking level) and six (6) units. Unit 1 occupies the first floor of the Building, except for parking area, common entrances, halls, elevator and stairs as shown on the Plans. Unit 2 and Unit 3 occupy the second floor of the Building, except for the common halls, elevator and stairs as shown on the Plans. Unit 4 and Unit 5 occupy the third floor of the Building, except for the common halls, elevator and stairs as shown on the Plans. Unit 6 occupies the fourth floor of the Building, except for the common halls, elevator and stairs as shown on the Plans. The travel lanes of the parking area and bike storage on the first floor, as shown on the Plans, is a Common Element. The decks located off of Units 2, 3, 4, 5, and 6 are allocated to such units as Limited Common Elements.

1.2.4. “By-Laws” means such governing regulations for the Association as are adopted pursuant to the Act and this Declaration for the regulation and management of the Condominium, including such amendments thereof as may be adopted from time to time.

1.2.5. “Common Elements” mean all portions of the Condominium other than the Units and shall further include, without limitation, the outside walls and roof of the Building, the land, walkways, chimneys, elevator, other common facilities or equipment, common porches, stairways or hallways, landscaping, pipes, wires, conduits, foundation, columns, girders, beams, concrete joists, supports, exterior walls, and any central installations and equipment for power, light, air conditioning, heating, ventilation, elevator, door bells and electronic door opener/intercom system (if any), and other service and utility lines which are not defined as a part of the Units. The Common Elements are sometimes referred to as the “Common Areas”.

1.2.6. “Common Element Interest” means the percentage of undivided interest in the Common Elements appurtenant to each Unit.

1.2.7. “Common Expenses” mean and include, but are not limited to, (a) the cost of maintenance, management, operation, repair, renovation, restoration and replacement of the Common Elements and such Limited Common Elements and such parts of the Units as to which pursuant to this Declaration it is the responsibility of the Association to maintain, repair and replace; (b) the cost of all insurance premiums on all policies of insurance required to be or which have been obtained by the Executive Board pursuant to the provisions of this Declaration; (c) such amounts as the Executive Board may deem necessary to provide for general operating reserve funds, reserve funds for replacements and contingencies, reserve funds in the amount of the applicable deductibles on property insurance policies carried by the Association, and such other reserve funds as may be required by the By-Laws or as the Executive Board may periodically establish; (d) sums that the Executive Board may deem necessary to compensate for any deficits in

receipts over expenses for the previous fiscal year; (e) the charges and fees for energy, electricity, heat, water, gas and sewer services, and all other utilities furnished to the Condominium to the extent not separately metered to individual Units and charged to individual Unit Owners; (f) costs and fees for legal and accounting services for the Condominium procured by the Association; and (g) such other costs and expenses that may be declared by the Act, this Declaration, the By-Laws, or resolution or agreement by the Executive Board, to be Common Expenses of the administration, operation, maintenance and repair of the Condominium and Property and the rendering to Unit Owners of all related services.

1.2.8. “Common Expense Liability” means the allocation to each Unit of the respective liability for Common Expenses. The Common Expense Liability allocated to the Unit is a percentage equal to the Common Element Interest appurtenant to the respective Unit.

1.2.9. “Condominium Documents” mean this Declaration, the Plans, the By-Laws and any Rules and Regulations adopted pursuant thereto by the Executive Board, and all amendments to each of the same.

1.2.10. “Eligible Mortgage Holder” means the holder of record of a recorded first Mortgage encumbering a Unit in the Condominium which has delivered written notice to the Association by prepaid United States Mail, return receipt requested, or by delivery in hand securing a receipt therefor, stating the name and address of the said holder of the Mortgage, the name and address of the Owner of the Unit encumbered by such Mortgage, the identifying number of such Unit, and containing a statement that such Mortgage is a recorded first Mortgage.

1.2.11. “Limited Common Elements” mean those portions of the Common Elements the exclusive use of which is reserved as an appurtenance to one or more, but fewer than all, of the Units as indicated and allocated pursuant to this Declaration.

1.2.12. “Limited Common Expenses” include (a) the Common Expenses associated with the maintenance, repair or replacement of a Limited Common Element which shall be assessed exclusively against the Units to which that Limited common Element is assigned in proportion to the relative Common Expense Liabilities of such Units as between themselves, as the Executive Board may periodically determine, and (b) the Common Expenses for services benefiting fewer than all the Units, which are assessed exclusively against the Units benefited in accordance with the use of such services as permitted by Section 1603-115(c) of the Act.

1.2.13. “Mortgage” means a recorded mortgage or deed of trust encumbering a Unit in the Condominium held by a Mortgagee or an Eligible Mortgage Holder.

1.2.14. “Mortgagee” means the holder of a Mortgage.

1.2.15. “Recorded” means that an instrument has been duly entered of record in the Registry of Deeds in and for Cumberland County, Maine.

1.2.16. “Rules and Regulations” mean such Rules and Regulations as may be adopted by the Executive Board pursuant to Article 9.1 of the By-Laws.

1.2.17. “Unit” means a part of the Property designated for any type of separate ownership or occupancy, which has a direct exit to a public street or way, or to a Common Element or Common Elements leading to a public street or way, the boundaries of which Unit are established in Article III.

1.2.18. “Votes” mean the Votes in the Association allocated to the Units set forth in Schedule B.

1.3. Interpretation. In the event of any conflict or discrepancy between this Declaration, the By-Laws, and the Plans, the provisions of this Declaration shall govern the By-Laws and the Plans.

ARTICLE II DESCRIPTION OF PROPERTY

2.1. Description of the property. A legally sufficient description of the Property included in the Condominium is set forth in Schedule A and the location and dimensions of the Property included in the Condominium are depicted on the Plans referred to in Paragraph 1.1. All easements, licenses, rights or encumbrances, if any, to which the Condominium shall be subject to are described in Exhibit A.

2.2. Location and Dimensions of Building. The location and dimensions of the Building and improvements erected on the Property, and of the Common Elements, are depicted on the Plans.

2.3 Driveways. The Building is served by a driveway from North Street approaching from the northeasterly side of the Building, which serves the parking area. The driveway is a Common Element, and the Unit Owner’s share of the cost of maintenance (including snow removal), repair and replacement of the driveway is a Common Expense.

2.4 Stormwater Maintenance System. The Stormwater Maintenance System shall include the culverts, drains, pipes, focal point gardens, and other systems necessary to meet the drainage and stormwater management needs of the Condominium as documented in the Stormwater Maintenance Agreement, dated _____, 2020, and attached hereto as Exhibit B.

ARTICLE III DESCRIPTION OF UNITS, ETC.

3.1. Number of Units. The Declarant has created pursuant to this Declaration the six (6) Units identified in Schedule B.

3.2. Creation of Units. Reference is made to Schedule B for the identifying number of each Unit created by this Declaration and to the Plans for a description of each Unit created by this Declaration including each Unit's identifying number, the locations and dimensions of the vertical boundaries and horizontal boundaries of each Unit, the Common Elements to which the Unit has direct access, the Limited Common Elements which serve each Unit, and any other information necessary to identify the Unit.

3.2.1 Unit Subject to Eligibility Restrictions. In accordance with Division 30 of Chapter 14 of the City of Portland's Code of Ordinances, Unit 1 (the "Workforce Unit") shall be designated as Workforce Housing Unit for Sale, as that term is defined at Section 14-485. Therefore, the Workforce Unit shall be (i) sold at a purchase price which is affordable to a household earning 120% or less of average median income ("AMI") for greater Portland; (ii) sold only to a household earning 120% or less of AMI; and (iii) these restrictions shall be recorded in the deed from Declarant conveying the Workforce Unit and/or in other legally binding agreements, as may be required by the City of Portland, including the Affordable Housing Agreement, dated _____, 2020. Declarant and the Association shall cooperate with the City of Portland's verification processes, and shall, together with any prospective buyer, provide the City with sufficient information to determine any prospective buyer's eligibility, as well as meet any additional requirements as put forth in the Affordable Housing Agreement.

3.3. Unit Boundaries. The boundaries of each Unit created pursuant to this Declaration are situated as shown on the Plans and shall consist of:

3.3.1. Upper and Lower (horizontal) Boundaries: The upper and lower boundaries of each Unit shall be the following boundaries extended to an intersection with the vertical (perimetric) boundaries:

3.3.1.1. Upper Boundary: The planes formed by the bottom side of the ceiling rafter stud line.

3.3.1.2. Lower Boundary: The horizontal plane of the top surface of the structural flooring of the Unit.

3.3.2. Vertical (perimetric) Boundaries: The vertical boundaries of each Unit are the vertical planes, extended to intersections with each other and with the Unit's upper and lower boundaries, of the inner or Unit side surface of the studs which support the dry wall, plaster, wallboard or other materials forming the perimeter walls bounding the Unit. Boundary lines shall also be the exterior surfaces of doors, windows and glass walls, and their frames, sills and thresholds, where applicable.

3.3.3. The Unit shall include the following items exclusively serving the Unit, whether or not located within the boundaries of the Unit: heating, hot water, solar panels, gas lines, telecommunications wiring and components, electrical and air conditioning components and apparatus, and all partitions which are wholly contained within the Unit including interior doors, door frames, hardware, electrical outlets and wiring, and devices in such partitions serving only the Unit.

3.3.4. The Unit shall include all lath, furring, wallboard, wall materials, plasterboard, plaster, paneling, tiles, wallpaper, paint, finished flooring and any other materials constituting any part of the finished surfaces thereon located within the boundaries of the Unit.

3.3.5. Subject to the provisions of subparagraphs 3.3.3 and 3.3.4 above, if any chute, flue, duct, wire, conduit, bearing wall, bearing column, stairway, or any other fixture lies partially within and partially outside the designated boundaries of a Unit, any portion thereof serving only that Unit is a Limited Common Element allocated solely to that Unit, and any portion thereof serving more than one Unit or any portion of the Common Elements is a part of the Common Elements.

3.3.6. Subject to the provisions of subparagraphs 3.3.3, 3.3.4 and 3.3.5 above, all spaces, interior partitions and other fixtures and improvements within the boundaries of a Unit are a part of the Unit.

3.4. Allocated Interests. The Allocated Interests allocated to each Unit are listed and allocated to the Units in Schedule B.

3.5. Relocation of Unit Boundaries. Subject to applicable provisions of this Declaration and the By-Laws, and deed restrictions affecting the Property, and of law and environmental and land-use ordinances and regulations, the subdivision of Units

horizontally or vertically and the relocation of horizontal and vertical boundaries between Units will be permitted at the expense of the Unit Owners of the Unit or Units to be so subdivided and the boundaries of which are to be so relocated, subject to compliance with the provisions therefor stated in Section 1602-112 and Section 1602-113 of the Act.

3.6. Alteration of Partitions. Subject to applicable provisions of this Declaration and the By-Laws, and any deed restrictions affecting the Property, and of law, ordinances and land-use regulations, a Unit Owner may, after acquiring a vertically or horizontally adjoining Unit or adjoining part of a vertically or horizontally adjoining Unit, remove or alter any intervening partition or create apertures therein, even if the partition in whole or in part is a Common Element, if such acts do not impair the structural integrity or mechanical systems of the Building or lessen the support of any portion of the Property. Removal of partitions or creation of apertures under this subparagraph is not alteration of boundaries.

3.7. Alterations by Unit Owner. Subject to any applicable provisions of this Declaration, the By-Laws or Rules and Regulations of the Association, a Unit owner may make nonstructural improvements and alterations to the interior of such owner's Unit but no Unit Owner may make any improvements or alterations or do any work whatsoever which would impair the structural integrity or mechanical systems of the Building or of a Unit owned by another Unit Owner, lessen the support of any portion of the Condominium, jeopardize the soundness or safety of the Property, or reduce the fire rating of any walls or violate any building or fire codes. Except as provided in this Declaration, no Unit Owner shall alter any of the Common Elements or paint or otherwise change the appearance of the Common Elements (including Limited Common Elements) or paint or otherwise change the exterior appearance of such owner's Unit (including, but not limited to, the exterior surface of doors) or any other portion of the Condominium without the prior written approval of the Executive Board.

3.8 Utilities. The utilities serving the Units and Common Areas of the Condominium are as follows:

3.8.1 Each Unit is separately metered for electricity.

3.8.2 Each Unit is served by its own separately metered natural gas line, and each unit owner is responsible for any cost related to the use thereof.

3.8.3 Each Unit shall be served by one or more heating or heating and cooling systems. Each unit owner is responsible for their own heating costs, including operating costs, repair, maintenance and replacement costs, if necessary, of heating and cooling systems serving such unit owner's Unit.

3.8.4 Each Unit shall be served by a heat-recovery ventilation system. Each unit owner is responsible for their own use of the heat-recovery ventilation system including operating costs, repair, maintenance and replacement costs, if necessary.

3.8.5 There is a separate electric meter for all Common Area lighting and other common area electric usage, including any central heating or ventilation systems.

3.8.6 There is a single shared water meter for the condominium. Water and sewer charges shall be shared by the Units based on the allocations of shared expenses defined in Schedule B.

ARTICLE IV
COMMON ELEMENTS, LIMITED COMMON ELEMENTS
AND APPLICABLE PROVISIONS

4.1. Common Elements. The Common Elements are shown on the Plans.

4.2. Allocation of Limited Common Elements. The location and dimensions of the Limited Common Elements, except for the portions of the Property described as Limited Common Elements pursuant to Sections 1602-102(2) and (4) of the Act, and the identification of the Unit or Units to which the Limited Common Elements are hereby allocated, are described in this Paragraph 4.2, and on the Plat and Plans. The allocation of Limited Common Elements to the Units cannot be altered except in compliance with Section 1602-108(b) of the Act at the expense of the Owners of the Units involved and with the written consent of the Owners and Eligible Mortgage Holders of record of the Units affected by the reallocation of Limited Common Elements. The following portions of the Common Elements serving fewer than all the Units, but located outside those Units' boundaries, are each allocated as a Limited Common Element to the Unit or Units which it serves:

4.2.1. The storage area depicted on the Plans as Limited Common Elements to the respective Unit served.

4.2.2. Any hallways, stairways, landings and doorways, waiting areas or reception areas, storage spaces, porches and decks depicted on the Plat and Plans as Limited Common Elements to the respective Unit served.

4.2.3. Doors leading from the Unit to the Common Elements or Limited Common Elements and any associated door paneling, frames, glassware, buck, trim, sills and hardware including lock, hinges and closure but not including the interior surface of the doors, which are part of the Unit.

4.2.4. Windows and any shutters, awnings, decorative grating and window boxes designed to serve the Unit.

4.3. Common Elements to Remain Undivided. The Common Element Interest of a Unit shall be inseparable from each Unit, and any conveyance, lease, devise or other disposition or mortgage or other encumbrance of any Unit shall extend to and include the Common Element Interest, whether or not expressly referred to in the instrument effecting such transfer. The Common Elements shall remain undivided and no action for partition or division of any part thereof shall be permitted, unless otherwise provided by law and permitted by this Declaration.

4.4. Use of Common Elements. Except as their use may otherwise be limited by this Declaration or the By-Laws or otherwise by the Executive Board pursuant to its powers, each Unit Owner, tenant and occupant of a Unit, and the guests, customers, clients, agents and employees of such Unit Owner, tenant and occupant, may use the Common Elements in common with all other Unit Owners and tenants or occupants of other Units, and their respective guests, customers, clients, agents and employees, in accordance with the purposes for which they are intended, without hindering or encroaching upon the lawful rights of the other Unit Owners, upon the following terms:

4.4.1. No signs of any character shall be erected, posted or displayed upon, in, from or about any Unit or Common Element without the prior written approval of the Executive Board.

4.4.2. No Unit Owner shall obstruct any of the Common Elements nor shall any Unit Owner place or cause anything to be placed on or in any of the Common Elements (except those areas designated for such storage by the Condominium Documents or the Executive Board) without the approval of the Executive Board.

4.4.3. The Executive Board, the Association and any Unit Owner shall not be considered a bailee of any personal property stored on the Common Elements, whether or not exclusive possession of the particular area is given to a Unit Owner, and shall not be responsible for the security of such personal property or for any loss or damage thereto, whether or not due to negligence, except to the extent covered by insurance in excess of any applicable deductible.

4.5 Stormwater Maintenance System. Notwithstanding anything else in this Declaration the individual components of the Stormwater Maintenance System are a Common Element.

ARTICLE V
EASEMENTS; RIGHTS OF WAY AND LICENSES; PARKING; STORMWATER
MAINTENANCE

5.1. Recorded Easements and Licenses. The Condominium benefits from the following recorded easements and licenses:

5.1.1 A right of way and utility easement across 128 North Street granted by Elmore W. Ramsdell to Claire Bowden, dated July 25, 1923, and recorded in the Cumberland County Registry of Deeds at Book 1143, Page 307.

5.1.2 A right of way easement across 126 North Street granted by Joshua T. Wojcik to the Declarant, dated _____, and recorded in the Cumberland County Registry of Deeds at Book ___, Page ___.

5.2 Parking; ADA Compliant Parking. The Condominium includes six (6) parking spaces for Unit Owners with one space assigned to Units 2-5, and two spaces assigned to Unit 6 as a Limited Common Element. "On-street" parking may also be available on the public streets nearby in accordance with the City of Portland ordinances, rules and regulations.

A limited common element parking space, including the parking spaces which are designed to meet accessibility needs under the American's with Disabilities Act, may be reassigned by an amendment to this Declaration in accordance with section 1602-108(b) of the Act. Any owner wishing to reassign a limited common element parking space shall submit to the Association the language of a proposed amendment and such additional details as the Association may reasonably require. The proposed amendment must be approved by vote or agreement of the owner of each unit particularly affected, and the owners of the units to which 70% of the votes of the association are allocated. If approved by unit owners, the amendment shall be recorded in the registry of deeds. The Association shall determine which unit or units are "particularly affected". Unit owners seeking approval under this paragraph shall pay a fee of \$500 and all costs incurred by the Association in connection with the application, including preparation of the amendment, recording costs and attorney's fees. The Association shall approve any amendment submitted to reassign a van accessible, ADA compliant, parking space from a person without a physical disability to a person with a condition or impairment that substantially limits his or her mobility who requires such an ADA compliant space. No fee shall be charged under such circumstances, but legal fees and other expenses shall be the responsibility of the applicant.

5.2.1 Parking Space Assignment; Vehicle Restrictions. The parking spaces are subject to the following restrictions and assigned to the following Units as limited common elements:

#	Maximum Vehicle Characteristics			Unit	Notes
	Wheel Base	Length	Width		
1	9.3'	16.5'	6.5'	6	ADA Compliant
2	8.6'	15.8'	6'	2	Mid-Size
3	8.5'	15.8'	6'	4	Mid-Size
4	8.5'	14.5	5.8'	6	Compact
5	9.3'	16.5'	6.5'	3	Full-Size/SUV
6	9.3'	16.5'	6.5'	5	Full-Size/SUV

5.3 Stormwater Maintenance Agreement. The Association shall maintain the Stormwater Maintenance System and shall undertake as common expenses all costs necessary to meet the obligations of the Stormwater Maintenance Agreement, dated _____, 2020, and attached hereto as Exhibit B.

ARTICLE VI NOTICES TO UNIT OWNERS BY ASSOCIATION, ETC.

6.1. To Unit Owners. All notices, demands, bills, statements or other communications affecting the Condominium given to Unit Owners by the Association shall be in writing and shall be deemed to have been duly given if delivered personally securing a receipt therefor or sent by United States mail, postage prepaid, or if such notification is of a default or lien, sent by registered or certified United States mail, return receipt requested, postage prepaid, addressed to the Unit Owner at the address which the Unit Owner shall designate in writing and file with the Secretary of the Association or managing agent, or if no such address is so designated, the address of the Unit of such Unit Owner who is the record owner thereof.

6.2. To the Association. All notices, demands, statements or other communications affecting the Condominium given by the Unit Owners to the Association shall be in writing and shall be deemed to have been duly given to the Association if delivered personally securing a receipt therefor, or sent by United States mail, postage prepaid, return receipt requested, addressed to the Association at the principal office of the managing agent, or if there shall be no managing agent, then to the Secretary of the Association at the address of the Unit of which the Secretary is the record Unit Owner.

6.3. To Eligible Mortgage Holder. All notices, demands, statements or other communications affecting the Condominium given by the Association to any Eligible

Mortgage Holder shall be in writing and shall be deemed to have been duly given by the Association if delivered personally securing a receipt therefor, or sent by United States mail, postage prepaid, addressed to the Eligible Mortgage Holder at the address identified pursuant to subparagraph 1.2.10 by virtue of which it became an Eligible Mortgage Holder.

ARTICLE VII EASEMENTS

The following easements and rights are hereby granted or reserved:

7.1. Utilities, Pipes and Conduits. Each Unit Owner shall have an easement in common with all other Unit Owners to use all pipes, wires, ducts, cables, conduits, public utility lines and other Common Elements serving such owner's Unit and located in any of the other Units. Each Unit shall be subject to an easement in favor of all other Unit Owners to use the pipes, ducts, cables, wires, conduits, public utility lines and other Common Elements serving such other Units and located in such Unit. The Association acting through its Executive Board shall have the right to grant to third parties additional permits, licenses and easements over and through the Common Elements for utilities, and other purposes reasonably necessary or useful for the proper maintenance and operation of the Condominium.

7.2. Ingress and Egress. Each Unit Owner, and the partners, guests, employees, tenants, sub-tenants, invitees, agents, contractors and licensees of the Unit Owner, shall have an easement, subject to the provisions of the Declaration and any Rules and Regulations established by the Executive Board, in common with all other Unit Owners, to use the entrances, exits, Common Element corridors, elevator, and hallways, Common Element stairways and other Common Elements as a means of ingress and egress to and from the Property and the adjoining public streets.

7.3. Condominium Association and Executive Board Access. The Association and its Executive Board, officers, agents and employees, and the managing agent and every other person authorized by the Executive Board shall have the irrevocable right and easement to have access to each Unit as provided in Section 1603-107(a) of the Act as may be necessary for the inspection, maintenance, repair or replacement of any of the Common Elements and Limited Common Elements therein or accessible therefrom for the making of any additions or improvements thereto, or to make repairs to any Unit, Common Elements or the Limited Common Elements if such repairs are reasonably necessary for public safety or to prevent damage to any other Unit or Units, the Common Elements or Limited Common Elements, or to abate any violation of law, orders, rules or regulations of the Association or of any governmental authorities having jurisdiction

thereof. In case of an emergency, such right of entry shall be immediate whether or not the Unit Owner is present at that time.

7.4. Encroachments. Each Unit shall have an easement to the extent necessary for structural and subjacent support over every other Unit and over the Common Elements, and each Unit and the Common Elements shall be subject to an easement for structural and lateral support in favor of every other Unit. If any portion of the Common Elements or Limited Common Elements hereafter encroaches upon any Unit, or if any Unit hereafter encroaches upon any other Unit or upon any portion of the Common Elements or Limited Common Elements, as a result of settling or shifting of the Building or otherwise than as a result of the purposeful or negligent act or omission of the Owner of the encroaching Unit, or of the Association in the case of encroachments by the common Elements or Limited Common Elements, a valid easement appurtenant to the encroaching Units, Common Elements or Limited Common Elements for the encroachment and for the maintenance of the same shall exist for so long as the encroachment shall exist. In the event that the Building shall be partially destroyed as a result of fire or other casualty or as a result of a taking by the power of, or in the nature of, eminent domain or by an action or deed in lieu of condemnation, and then is rebuilt, encroachments of a portion or portions of the Common Elements or Limited Common Elements upon any Unit or of any Unit upon any other Unit or upon any portion of the Common Elements or Limited Common Elements, due to such rebuilding, shall be permitted, and valid easements appurtenant to the encroaching Units, Common Elements or Limited Common Elements for such encroachments and the maintenance thereof shall exist so long as the Building as so rebuilt shall stand.

7.5. Common Elements Easement in Favor of Unit Owners.

The Common Elements (including, but not limited to, the Limited Common Elements) shall be and are hereby made subject to the following easements in favor of the Units benefited:

7.5.1. For the installation, repair, maintenance, use, removal and/or replacement of pipes, ducts, heating and air conditioning systems, electrical, telephone and other wiring and cables for communication, intelligence, information storage, retrieval or processing, computer operations, and word processing and all other utility lines and conduits which are a part of or serve any Unit and which pass across or through a portion of the Common Elements.

7.5.2. For the installation, repair, maintenance, use, removal and/or replacement of lighting fixtures, electrical receptacles, panel boards and other electrical installations which are a part of or serve any Unit but which encroach into a part of the Common Elements adjacent to such Unit; provided that the installation, repair

maintenance, use, removal or replacement of any such item does not unreasonably interfere with the common use of any part of the Common Elements, adversely affect either the thermal or acoustical character of the Building or impair or structurally weaken the Building.

7.5.3. For driving and removing nails, screws, bolts and other attachment devices into the Unit side surface of the studs which support the dry wall or other perimeter walls bounding the Unit, the bottom surface of floor joists above the Unit and the top surface of the floor joists below the Unit to the extent such nails, screws, bolts and other attachment devices may encroach into a part of the Common Elements adjacent to such Unit; provided that any such action will not unreasonably interfere with the common use of any part of the Common Elements, adversely affect either the thermal, aesthetic or acoustical character of the Building or impair or structurally weaken the Building.

ARTICLE VIII ASSESSMENTS FOR COMMON EXPENSES AND MAINTENANCE OF PROPERTY

8.1. Allocation and payment of Assessments of Common Expenses. The total amount of Common Expenses shall be assessed against the Units in the following proportions:

8.1.1. The Common Expenses that are not assessed as Limited Common Expenses shall be assessed against all the Units in proportion to the relative Common Expense Liabilities of all the Units.

8.1.2. (a) If a Limited Common Expense benefits more than a single Unit, that Limited Common Expense shall be assessed solely against all the Units benefited in proportion to the relative Common Expense Liabilities of such Units as between themselves, as the Executive Board shall periodically determine, (b) if a Limited Common Expense only benefits a single Unit, that Limited Common Expense shall be assessed solely against the Unit benefited, as the Executive Board shall periodically determine, (c) to the extent that utilities are not separately metered to the Units and notwithstanding anything to the contrary contained herein or in the By-Laws, the costs of utilities may be assessed against the Units in proportion to usage as the Executive Board may periodically determine, and (d) any additional costs of insurance shall be assessed against Units as a Limited Common Expense on the basis of any additional premiums charged due to the contents, characteristics or features of a particular Unit as more particularly provided in Paragraph 14.2., which additional costs the Executive Board shall periodically determine on the basis of the advice of the insurance company described in Paragraph 14.2., provided, however, (e) if a Limited Common Expense is associated with

the maintenance, repair or replacement of a Limited Common Element, that Limited Common Expense shall be assessed solely against all the Units to which that Limited Common Element is allocated in proportion to the relative Common Expense Liabilities of such Units as between themselves, as the Executive Board shall determine.

8.1.3. The cost of utilities serving the Condominium not individually metered to a Unit shall be Common Expenses or Limited Common Expenses assessed pursuant to subparagraphs 8.1.1. and 8.1.2.

8.2. Payment of and Lien for Assessments.

8.2.1. Commencing no later than sixty (60) days after the first unit is conveyed, each unit owner, including the Declarant, shall pay to the Association or its authorized representative (1) on the first day of each month, or on such other date that the Association may determine in writing, one-twelfth (1/12th) of the Common Expenses including Limited Common Expenses, and revised Common Expenses including revised Limited Common Expenses, assessed on an annual basis against such owner's Unit in the proportions required in Paragraph 8.1. and (2) all special assessments, any other sum duly levied against the Unit pursuant to this Declaration, the By-Laws or the Act, including Limited Common Expenses assessed against Unit Owners for maintenance, repair or replacement of a Limited Common Element pursuant to Paragraph 8.4., all interest thereon and charges for late payment thereof and legal fees and other costs of collection thereof, and fines, penalties and fees as provided by this Declaration, the By-Laws or the Act, on the first day of the next month which begins more than ten (10) days after delivery to the Unit Owner of notice of such special assessment or levy or on such other date that the Association may determine in writing. If for any reason the Association shall revise the annual budget of the Association whereby the Common Expenses or any component thereof may be increased, then commencing on the first day of the first month subsequent to the adoption of such revised budget each Unit Owner shall pay to the Association or its authorized representative such revised annual Common Expenses including Limited Common Expenses assessed against his Unit in the proportions required in Paragraph 8.1.

8.2.2. The total annual assessment levied against each Unit for Common Expenses including Limited Common Expenses, revised Common Expenses including revised Limited Common Expenses, or any special assessment, and any other sums duly levied against the Unit pursuant to this Declaration, the By-Laws, or the Act, including Limited Common Expenses assessed against Units for maintenance, repair or replacement of a Limited Common Element pursuant to Paragraph 8.4., all interest thereon and charges for late payment thereof, legal fees and other costs of collection thereof, and fines, penalties and fees as provided in this Declaration or the By-Laws shall constitute the personal liability of the Owner of the Unit so assessed and also shall, until fully paid,

constitute a lien against the Unit in favor of the Association as provided in Section 1603-116 of the Act. Such lien shall, with respect to annual assessments and revised annual assessments, be effective on the first day of each fiscal year of the Association as to the full amount of the annual assessment or revised annual assessment, and, as to special assessments and other sums duly levied including Limited Common Expenses assessed against a Unit Owner for maintenance, repair or replacement of a Limited Common Element pursuant to Paragraph 8.4., interest, charges for late payment, legal fees, costs of collection, fines, penalties and fees as described in subparagraph 8.2.1., on the first day of the next month which begins more than ten (10) days after delivery to the Unit Owner of notice of such special assessment or levy. In any case where an assessment against a Unit Owner is payable in installments, upon a default by such Unit Owner in the timely payment of any two consecutive installments, the maturity of the remaining total of the unpaid installments of such assessments may be accelerated at the option of the Executive Board, and the entire balance of the assessment may be declared due and payable in full by the service of notice to such effect upon the defaulting Unit Owner by the Executive Board or its representative. Such lien is prior to all other liens and encumbrances on a Unit except (a) liens and encumbrances recorded before the recordation of this Declaration, (b) a first Mortgage recorded before or after the date which the assessment sought to be enforced becomes delinquent, and (c) liens for real estate taxes and other governmental assessments or charges against the Units; provided, however, that such lien is not subject to the provisions of 14 M.R.S.A. Section 4651 or 4651-A and 18-A M.R.S.A. Section 2-201, et seq., as they or their equivalents may be amended or modified from time to time.

8.2.3. The lien for assessments described in subparagraph 8.2.2. may be enforced and foreclosed by the Association in like manner as a mortgage on real estate as provided in Section 1603-116(a) of the Act or by any other means presently or hereafter provided by law or in equity. A suit to recover a money judgment for unpaid assessments, interest, penalties, and costs of collection may be maintained against the Unit Owner personally without foreclosing or waiving the lien securing such assessments and a foreclosure may be maintained notwithstanding the pendency of any suit to recover a money judgment. During the pendency of any such suit, the Unit Owner shall be required to pay a reasonable rental for the Unit for any period prior to sale pursuant to any judgment or order of any court having jurisdiction over such sale.

8.2.4 In addition to the regular monthly payments of Common Expenses as set forth herein, each purchaser of a Unit from the Declarant shall pay to the Association a special assessment at the time of closing equal to two (2) times the estimated monthly assessment to provide a working capital reserve fund for the Association.

8.3. Reduction of Expenses and Surplus Funds. All receipts from payments, fees or charges for the use, rental or operation of any and all Common Elements shall be

applied first to reduce the Common Expense relating to the use of that Common Element giving rise to such Common Expense and any excess thereof shall be applied to Common Expenses generally; and all receipts from any assessments for Limited Common Expenses shall be applied first to reduce the Limited Common Expense relating to the service afforded to the Unit benefited and any excess shall then be applied to reduce until exhausted the subsequent monthly installments of Common Expenses assessed against the Unit benefited. Any amounts accumulated from assessments for Common Expenses, income from interest on reserves, and income from the operation of the Common Elements to which such Common Expenses pertain in excess of the amount required for actual Common Expenses and provision for Common Expenses and any payment of reserves shall be credited to each Unit Owner in proportion to their respective Common Expense Liabilities to reduce until exhausted the next monthly installments due from Unit Owners.

8.4. Limited Common Elements, Maintenance. Each Unit Owner shall be solely responsible for the maintenance and repair of the portion of the Building allocated to such Unit Owner's Unit as a Limited Common Element, including without limitation the respective portions of the basement, storage areas and garage. Notwithstanding the foregoing, the Association may maintain, repair and replace any Limited Common Elements if the Association determines such repair and replacement is necessary to maintain the safety, integrity and value of the Building and the Units. In such event, the Association shall assess as a Limited Common Expense expenses associated with the maintenance, repair or replacement of such Limited Common Element against the Units to which the Limited Common Element is assigned or appurtenant in proportion to the relative Common Expense Liabilities of such Units as between themselves, provided that the Association shall also have the right to assess an individual Unit for Limited Common Expenses associated with said purposes applicable to such Unit if the Limited Common Expense shall be incurred due to the negligence, neglect or misconduct of the Owner of such Unit or if the item giving rise to the expense shall be for the benefit of that Unit only.

8.5. Maintenance of Common Elements. The Association shall be responsible for the maintenance, repair and replacement (unless, if in the opinion of the Executive Board such expense was necessitated by the negligence, misuse or neglect of a Unit Owner) of all of the Common Elements (subject to Paragraph 8.4. regarding the Limited Common Elements) whether located inside or outside of the Units, the cost of which shall be charged to the Unit Owners as a Common Expense except as otherwise provided in Paragraph 8.4. with regards to Limited Common Elements. The maintenance, repair and replacement of Common Elements located within a Unit, or for which the Unit Owner is otherwise responsible, to the extent required for the functioning of or for connecting utilities to the Property and Units shall be furnished by the Association as part of the Common Expenses or, if fewer than all of the Units are benefited, the Limited Common

Expenses. Any Unit Owner permitted by the Executive Board to use a specific portion of the Common Elements for storage is responsible for the maintenance and care of such portion and shall use the same in a safe and sanitary manner.

8.6. Maintenance of Unit. Each Unit Owner shall keep and maintain such unit owner's Unit and the Limited Common Elements allocated to each Unit Owner's Unit, if any, and its equipment, appliances and appurtenances in good order, condition and repair and in a clean and sanitary condition, whether such maintenance and repair shall be structural or nonstructural, ordinary or extraordinary, and shall do all redecorating, painting and varnishing which may at any time be necessary to maintain the good appearance and condition of the Unit or such Limited Common Element, provided, however, no Unit Owner shall change the appearance of the exterior of the Building without the prior written consent of the Executive Board. The Unit Owner shall maintain the interior surfaces of windows in the Units including periodic washing. No Unit Owner shall sweep or throw, or permit to be swept or thrown, from the Unit any dirt, debris or other substance. In addition, each Unit Owner shall be responsible for all damage to any other Units or to the Common Elements resulting from such owner's failure or negligence to make any of the repairs required by this Article. Each Unit Owner shall perform such owner's responsibility in such manner as shall not unreasonably disturb or interfere with the other Unit Owners. Each Unit Owner shall promptly report to the Executive Board or the managing agent any defect or need for repairs for which the Association is responsible.

8.7. Liability of Owner. Each Unit Owner shall be liable, and the Association shall have a lien against such Owner's Unit for, the expense of maintenance, repair or replacement of any damage to the Common Elements including Limited Common Elements or of another Unit caused by such Unit Owner's act, neglect or carelessness or by that of such Unit Owner's guests, employees, agents, or lessees which the Association shall have the right to cure, correct, maintain, repair or replace. Such liability shall include any increase in fire insurance rates occasioned by use, misuse, occupancy, or abandonment of any Unit or its appurtenances. Nothing herein contained, however, shall be construed so as to modify any waiver by insurance companies of rights of subrogation against such Unit Owner.

8.8. Maintenance Responsibilities. Notwithstanding the ownership of the various portions of the Common Elements and the Units by virtue of the descriptions of the boundaries of Units provided in this Declaration, the Units and Common Elements shall be maintained and repaired by each Unit Owner and the Association in accordance with the provisions of Section 1603-107(a) of the Act, except as expressly set forth to the contrary in this Declaration.

ARTICLE IX
ASSOCIATION OF UNIT OWNERS; VOTING

9.1. The Association, Powers. The membership of the Association at all times shall consist exclusively of all Unit Owners, or, following any termination of the Condominium as provided in Section 1602-118 of the Act, of all former Unit Owners entitled to distributions of proceeds under said Section 1602-118, or their heirs, successors or assigns, but shall not include persons having an interest in a Unit solely as security for an obligation. Each Unit Owner shall automatically become and be a member of the Association as long as such owner continues as a Unit Owner and upon the termination of the interest of the Unit Owner in the Condominium such owner's membership and any interest in the common funds of the Association shall thereupon automatically terminate and transfer and inure to the next Unit Owner or Owners succeeding in interest. Except as otherwise provided in Section 1603-103(b) of the Act, the Association shall have all the powers granted pursuant to Section 1603-102 of the Act.

9.2. Executive Board. The affairs of the Association shall be governed by an Executive Board composed of three (3) natural persons, all of whom shall be Unit owners or spouses of Unit Owners or in the case of a Unit Owner which is a corporation, partnership, limited liability company, trust or estate, a designated agent thereof. The initial Executive Board shall be elected by the incorporator of the Association and shall serve until the earlier of (i) at least two (2) units have been sold, or (ii) the third annual meeting.

9.3. Votes. The Votes in the Association allocated to each Unit are stated in Schedule B. Unless by express provisions of the Act, the By-Laws or this Declaration a different vote is required, each question presented at a meeting of the Association shall be determined by the affirmative vote of Owners of Units to which are allocated no less than sixty-six percent (66%) of the Votes in the Association. Provided, however, that notwithstanding any provision to the contrary contained in the By-Laws or this Declaration, the affirmative vote of one hundred percent (100%) of all of the Unit Owners shall be required for the Association to act on any of the following matters: termination of the Condominium pursuant to Section 1602-118 of the Act; merger or consolidation of the Condominium with another condominium; conveyance or subjection to a security interest of any portion of the Common Elements; use of any proceeds of insurance required to be maintained by the Association pursuant this Declaration or any eminent domain awards or proceeds for purposes other than repair and restoration of the damaged Property in accordance with the Condominium Documents, the original elevation thereof and the original building plans and specifications therefor; and amendments to the Condominium Documents which govern or regulate (a) voting, (b) assessments, assessment liens or subordination of such liens, (c) reserves for replacement,

repair and replacement of the Common Elements or Units, if applicable, (d) insurance or fidelity bonds, (e) responsibility for maintenance and repair of the Common Elements and the Units, (f) leasing of Units, or (g) imposition of any right of first refusal or similar restriction on the right of a Unit Owner to sell, transfer, or otherwise convey or lease an owner's Unit.

9.4. Voting. The Votes in the Association allocated to a Unit can only be cast as a unit and cannot be split. If a Unit is owned of record by one person, that Unit owner's right to cast all the Votes allocated to that Unit shall be established by the record title to the Unit, provided, however, that such person's spouse or designated agent may cast the Votes allocated to such Unit if authorized to do so in a certificate executed by the Unit Owner and filed with the Secretary of the Association, which certificate shall be valid until revoked by a subsequent certificate similarly executed and filed with the Secretary of the Association. If ownership of a Unit is in more than one person, the person who shall be entitled to cast all the Votes allocated to that Unit shall be the person named in a certificate executed by all of the Owners of such Unit and filed with the Secretary of the Association. If ownership of a Unit is in a corporation, partnership, limited liability company, limited liability partnership, trust or estate, the officer or employee of that corporation, general partner of that partnership, member of that limited liability company, or partner of that limited liability partnership, trustee of that trust, or agent of that estate, entitled to cast for the corporation, partnership, limited liability company, limited liability partnership, trust or estate the Votes allocated to such Unit shall be designated in a certificate for that purpose executed by the president or a vice president of that corporation, and attested to by the secretary, assistant secretary or clerk of that corporation, executed by all the general partners of that partnership, executed by all the managing members or members with sufficient authority of that limited liability company, executed by the managing partner or partners with sufficient authority of that limited liability partnership, executed by all the trustees of that trust, or executed by either all the devisees of that estate or by order of the probate court and filed with the Secretary of the Association. Such certificates of multiple owners, corporations, partnerships, limited liability companies, limited liability partnerships, trusts or estates shall be valid until revoked by a subsequent certificate similarly executed and filed with the Secretary of the Association. Wherever the vote, approval or disapproval of a Unit Owner is required by this Declaration or the Act, such vote, approval or disapproval shall be made only by the person who would be entitled pursuant to such certificate to cast at any meeting of the Association the Votes allocated to such Unit. If the person named or designated in said certificate for a particular Unit shall be absent from a meeting of the Association, no person may cast the Votes allocated to that Unit at the meeting although the presence at the meeting of a non-named or non-designated co-Owner or member, officer, employee, agent or designee of such Owner shall be counted in determining whether a quorum is present. If a multiple Owner of a Unit that is not a corporation, partnership, limited liability company, limited liability partnership, trust or estate has failed to file said

certificate with the Secretary of the Association and only one of the multiple Owners is present at a meeting of the Association, he shall be entitled to cast at the meeting all the Votes allocated to that Unit without establishing the concurrence of the absent Owners just as though that person were the sole Owner of the Unit. If a multiple Owner of a Unit that is not a corporation, partnership, limited liability company, limited liability partnership, trust or estate has failed to file said certificate with the Secretary and if more than one Owner of that Unit is present at the meeting, the Votes allocated to that Unit may be cast only in accordance with the agreement of a majority of the multiple Owners present at the meeting. Such majority agreement shall be conclusively presumed if any one of those multiple Owners shall cast the Votes allocated to the Unit without protest being promptly made to the person presiding over the meeting by any other Owners of that Unit. No Votes allocated to a Unit owned by the Association may be cast.

ARTICLE X

RESTRICTIONS ON USE, OCCUPANCY AND ALIENATION OF UNITS

10.1. Use and Occupancy Restrictions on Units. Each Unit shall be occupied and used subject to the following restrictions:

10.1.1. All Units are restricted to residential use, which shall not preclude leasing or rental, subject, however, to the requirement that rentals or leases of any nature (including, without limitation, any rentals facilitated through any third-party/online services such as Airbnb, Homeaway.com or VRBO) shall comply with the restrictions contained in this Declaration, the By-Laws of the Association, and any Rules & Regulations promulgated by the Association in accordance with its By-Laws.

10.1.2. Nothing shall be done or kept in any Unit or in the Common Elements which will increase the rate of insurance for the Property or any part thereof without the prior written consent of the Executive Board. No Unit Owner shall permit anything to be done or kept in such Owner's Unit or in the Common Elements which will result in the cancellation of insurance on the Property or any part thereof or which would be in violation of any law, regulation or administrative ruling. No waste will be committed on the Common Elements.

10.1.3. No Unit shall be used so as to create a nuisance or an unreasonable interference with the peaceful possession and occupation or proper use of any other Unit or the Common Elements.

10.1.4. No Owner or occupant of any Unit shall carry on, or permit to be carried on, any practice which unreasonably interferes with the quiet enjoyment and proper use of another Unit or the Common Elements by the Owner or occupant of any other Unit, or which creates or results in a hazard or nuisance on the Property.

10.1.5. The Association shall have the power to regulate the keeping of pets and animals in such manner as may be prescribed from time to time in any Rules and Regulations established by the Executive Board.

10.1.6. No Unit Owner shall remove any of the acoustical, sound-deadening, or fire-resistant material from the walls, floors or ceilings of such owner's Unit without replacing the same with acoustical, sound-deadening, or fire resistant materials of equal or greater sound-deadening or fire-resistant ratings or qualities. No Unit Owner shall remove any of the acoustical, sound-deadening, or fire-resistant materials from the Common Elements surrounding such owner's Unit without the prior written consent of the Executive Board.

10.1.7. Trash, garbage and other waste shall be kept only in sanitary containers and shall be disposed of in such manner as may be prescribed from time to time in any Rules and Regulations established by the Executive Board.

10.1.8. No Unit Owner shall overload the electrical wiring in the Building or operate any machinery, appliances, accessories or equipment in such a manner as to cause, in the reasonable judgment of the Executive Board, any unreasonable disturbance or make any alterations, repairs or modifications to or connections with the electrical or plumbing systems without the prior written consent of the Executive Board.

10.1.9. Each Unit Owner shall maintain sufficient heat inside his Unit to prevent the pipes running through the Unit from freezing or cracking from the effects of cold weather. The Unit Owner shall be liable to the Association for the costs and expenses of repairing all damage inflicted on another Unit or the Common Elements due to freezing, breaking, or cracking of pipes caused by the Unit Owner's failure to comply with the requirements of this subparagraph.

10.2. Leasing Restrictions. No Unit Owner shall lease a Unit other than on written form of lease requiring the lessee to comply with the Condominium Documents. The Owner of a Unit shall, promptly following the execution of any lease of that Unit, notify the Association in writing of the name of the tenant and the term of the lease and any options in the lease to renew extend or purchase.

10.3. Voluntary Resale of Units. The following provisions apply to the sales of Units:

10.3.1. No Unit Owner shall be liable for the payment of any part of the Common Expenses assessed against such owner's Unit subsequent to the date of recordation of a conveyance in fee of such Unit by the Owner. In a voluntary transfer of a

Unit, the grantee of the Unit shall be jointly and severally liable with the grantor for all unpaid assessments and special assessments for Common Expenses made by the Executive Board against the latter up to the time of the recordation of grantor's transfer, without prejudice to the grantee's right to recover from the grantor the amounts paid by the grantee therefor. However, any person who shall have entered into an agreement to purchase a Unit from a Unit Owner shall be entitled to a certificate from the Executive Board as provided by Section 1604-108(b) of the Act prepared at the expense of the person so requesting the same, and the grantee shall not be liable for, nor shall the Unit conveyed be subject to a lien for, any assessments or unpaid special assessments made by the Executive Board against the grantor for Common Expenses in excess of those disclosed on such certificate. A voluntary transfer for the purpose of this subparagraph 10.3.1. shall be considered any sale, lease, gift, testate or intestate distribution, or the transfer of ownership of a corporation owning a Unit.

10.3.1. In contemplating and executing any voluntary resale or transfer of the Workforce Unit (Unit 1), the owner of the Workforce Unit and the Association will cooperate with the City of Portland to ensure compliance with the eligibility restrictions imposed on the Workforce Unit, as well as to comply with the City's implementing regulation for income verification and any additional terms contained in the Affordable Housing Agreement between the City and the Declarant dated _____, 2020.

ARTICLE XI

MORTGAGES OF UNITS; RIGHTS OF MORTGAGEES

11.1. Right to Mortgage. Each Unit Owner shall have the right to mortgage or encumber such owner's Unit together with its appurtenant Allocated Interests. Except as otherwise permitted by Section 1603-112 of the Act and subject to this Declaration, no Unit Owner shall have the right or authority to mortgage or otherwise encumber in any manner whatsoever the Common Elements or any part thereof.

11.2. Identification of Mortgagee. A Unit Owner who mortgages his Unit shall notify the Executive Board in writing of the name and address of such owner's Mortgagee(s). Failure to provide such notice, however, shall not affect in any way any Mortgage or the validity or enforceability thereof.

11.3. Mortgage Foreclosure. Any Mortgagee holding a recorded first Mortgage on a Unit that obtains title to the Unit pursuant to the remedies provided in the Mortgage, or through a completed foreclosure of the Mortgage, or through deed (or assignment) in lieu of foreclosure, shall take the Unit with the Allocated Interests appurtenant thereto free of any claims or liens for unpaid assessments for Common Expenses, interest and costs levied against such Unit which accrue prior to the acquisition of title to such Unit by

the Mortgagee, other than the proportionate share of the Common Expenses which become due and payable from and after the date on which the Mortgagee shall acquire title to the Unit through a completed foreclosure or deed (or assignment) in lieu of foreclosure.

11.4. Notices to Eligible Mortgage Holder. The Association shall send reasonable prior written notice by prepaid United States mail to each Eligible Mortgage Holder of the following proposed actions or events either within a reasonable period prior to the taking of any of such proposed actions or at the time that notice thereof is given to the Unit Owner or Owners:

11.4.1. The termination of the Condominium pursuant to Section 1602-118 of the Act.

11.4.2. A change in the Allocated Interests of a Unit, or a change in the boundaries of a Unit or a subdivision of a Unit;

11.4.3. The merger or consolidation of the Condominium with another condominium;

11.4.4. The conveyance or subjection to a security interest of any portion of the Common Elements;

11.4.5. The proposed use of any proceeds of hazard insurance required to be maintained by the Association pursuant to the Declaration or the By-Laws for purposes other than the repair or restoration of the damaged property;

11.4.6. Any default in the performance or payment by a Unit Owner of any obligations under the Declaration or By-Laws, including, without limitation, default in the payment of Common Expense Liability, which default continues for a period exceeding sixty (60) days;

11.4.7. Any condemnation or casualty loss that affects either a material portion of the Condominium or the Unit securing the Mortgage;

11.4.8. A lapse, cancellation or material modification of any insurance policy or fidelity bond maintained by the Association, and

11.4.9. Any proposed action that requires the consent of a specified percentage of the Eligible Mortgage Holders as specified in Paragraph 11.5.

In the event of any proposed actions described in subparagraphs 1, 2, 3, 4, or 5 above, an Eligible Mortgage Holder shall have the right, but not the obligation, in place of the Unit Owner, to cast the Votes allocated to that Unit or give or withhold any consent required of the Unit Owner for such action by delivering written notice to the Association with a copy to the Unit Owner prior to or at the time of the taking of the proposed action, which notice shall be sent by prepaid United States mail, return receipt requested, or by delivery in hand. Failure of the Eligible Mortgage Holder to so exercise such rights shall constitute a waiver thereof and shall not preclude the Unit Owner from exercising such right. In the event of any default described in subparagraph 6 above, the Eligible Mortgage Holder shall have the right, but not the obligation, to cure such default.

In addition, an Eligible Mortgage Holder or its representative shall have the right to attend Association and Executive Board meetings for the purposes of discussing the matters described in subparagraphs 1 through 5 above.

11.5. Mortgagee Approval Rights. Except as may be otherwise set forth in this Declaration or in the By-Laws, where approval by a specified percentage of Eligible Mortgage Holders is required, such approval shall be based upon one (1) vote for each Unit on which a Mortgage is held.

11.5.1. The prior written approval of sixty (60%) percent of the Eligible Mortgage Holders shall be required to: (a) terminate or abandon the Condominium for reasons other than substantial destruction or condemnation of the Condominium and (b) abandon, partition, subdivide, encumber, sell or transfer any of the Common Elements (except for granting easements for utilities or other public purposes consistent with the intended use of the Common Elements) by act or omission.

11.5.2. The prior written approval of at least sixty (60%) percent of the Eligible Mortgage Holders shall be required for the termination or abandonment of the Condominium as a result of condemnation or substantial loss to the Units, Common Elements, or both.

11.5.3. The prior written approval of at least sixty (60%) percent of the Eligible Mortgage Holders shall be required to use property insurance and eminent domain proceeds for losses to any Condominium Property (whether to Units or to Common Elements) for other than the repair, replacement restoration of the Property substantially in accordance with this Declaration, the By-Laws, the Plat and Plans, and the original elevation thereof and the original building plans and specifications.

11.5.4. The prior written approval of at least sixty percent (60%) of the Eligible Mortgage Holders shall be required to add or amend any material provisions of

the Declaration or the By-Laws which establish, provide for, govern or regulate any of the following:

- (a) Voting rights;
- (b) Assessments, assessment liens or the priority of assessment liens;
- (c) Reserves for maintenance, repair and replacement of Common Elements;
- (d) Responsibility for maintenance and repairs;
- (e) Reallocation of interests in the Common Elements or Limited Common Elements, or rights to their use;
- (f) Redefinition of any Unit boundaries;
- (g) Convertibility of Units into Common Elements or common Elements into Units;
- (h) Expansion or contraction of the Condominium, or the addition, annexation or withdrawal of property to or from the Condominium;
- (i) Insurance or fidelity bonds;
- (j) Leasing of Units;
- (k) Imposition of any restrictions on a Unit Owner's right to sell or transfer his Unit;
- (l) A decision by the Association to establish self-management when professional management had been required previously by the Declaration or the By-laws;
- (m) Restoration or repair of the Condominium (after a hazard damage or partial condemnation) in a manner other than as specified in the Declaration or the By-laws;
- (n) Any action to terminate the legal status of the Condominium after substantial destruction or condemnation occurs; or
- (o) Any provisions that expressly benefit Eligible Mortgage Holders.

An addition or amendment to the Declaration or the by-laws shall not be considered material if it is for the purpose of correcting technical errors.

An Eligible Mortgage Holder who receives a written request to approve additions or amendments to the Declaration or the By-Laws who does not deliver to the requesting party a negative response within thirty (30) days after the giving of notice shall be deemed to have approved such request in writing provided written notice of this provision is included in any such request.

11.6. Rights of First Refusal. Notwithstanding anything to the contrary elsewhere contained in this Declaration, the By-Laws or any Rules and Regulations of the Association, in the event that this Declaration or the By-Laws contain, or the Unit owners in the future amend the Condominium Documents to adopt any right of first refusal in the case of the sale of any Unit, such right of first refusal shall not impair the right of any Mortgagee to: (a) foreclose or take title to the Unit pursuant to the remedies provided in the Mortgage; (b) accept a deed (or assignment) in lieu of foreclosure in the event of a default by a mortgagor; or (c) sell or lease a Unit acquired by the procedures hereinabove set forth.

11.7. Mortgagee Priority. No provision of the Condominium Documents shall be deemed or construed to give a Unit owner, or any other person, priority over the rights of any Eligible Mortgage Holder pursuant to its Mortgage in the case of a distribution to Unit Owners of insurance proceeds or condemnation awards for losses to or a taking of Units, Common Elements, or both.

11.8. Books and Records. The Association shall maintain current copies of the Condominium Documents as well as its books, records and financial statements available during normal business hours for inspection and copying by Eligible Mortgage Holders upon reasonable prior written request and payment by such Eligible Mortgage Holder of any costs associated therewith. The Association, upon reasonable prior written request of any Eligible Mortgage Holder, shall furnish such Eligible Mortgage Holder with a financial statement of the Association for the preceding fiscal year, provided that any costs associated with the preparation and furnishing of such statement shall be paid by such Eligible Mortgage Holder.

ARTICLE XII AMENDMENTS

Except in cases of amendments to this Declaration that may be unilaterally executed and recorded by the Association as described in Sections 1601-107, Eminent

Domain, 1602-108(c), Allocation of Limited Common Elements, Section 1602-112(a), Relocation of Boundaries Between Adjoining Units, Section 1602-113, Subdivision of Units, and 1602-117(a), Amendment of Declaration, of the Act and cases of amendments to this Declaration by certain Unit Owners, as described in Sections 1602-108(b), Reallocation of Limited Common Elements, Section 1602-112(a), Relocation of Boundaries Between Adjoining Units, Section 1602-113, Subdivision of Units, or 1602-118(b), Termination of Condominium, and subject to the other provisions of this Declaration including, but not limited to, Paragraph 9.3, and of the Act, this Declaration and the Plat and Plans may be amended as follows:

12.1. Before Any Conveyance. Prior to the conveyance of any Unit by the Declarant to a Unit Owner other than as security for an obligation, the Declarant shall have the right to amend and reamend this Declaration in any manner that the Declarant may deem appropriate.

12.2. After First Conveyance. After the first conveyance of a Unit by a Declarant as contemplated in the preceding Paragraph, the terms of the following subparagraphs shall apply to the amendment of this Declaration:

12.2.1. Notice. Notice of the subject matter of a proposed amendment shall be included in the notice of any meeting of the Executive Board or Association in which a proposed amendment is considered, and shall be served upon all Unit Owners and upon all Eligible Mortgage Holders.

12.2.2. Resolution. An amendment may be proposed by either the Executive Board or by Unit Owners holding in the aggregate no less than thirty percent (30%) of the Votes in the Association. No resolution of the Executive Board adopting a proposed amendment or the proposed amendment itself shall be effective unless it has been adopted at a meeting of the Association duly called and held in accordance with the By-Laws by the affirmative vote of at least sixty-six percent (66%) in voting interest of all of the Unit Owners and then executed and recorded as provided in subparagraph 12.2.5.

12.2.3. Agreement. In the alternative, an amendment may be made by an agreement signed by the record Owners of Units to which are allocated one hundred percent (100%) of the Votes in the Association in the manner required for the execution of a deed and acknowledged by at least one of them, and such amendment shall be effective when certified and recorded as provided in subparagraph 12.2.5.

12.2.4. Proviso. Provided, however, that except as otherwise permitted by the Act and provided in this Declaration, no amendment may increase the number of Units or change the boundaries of any Unit, the Allocated Interests allocated to a Unit, or

the uses to which any Unit is restricted without the unanimous consent of the Unit Owners and the consent of at least sixty percent (60%) of the Eligible Mortgage Holders.

12.2.5. Execution and Recording. A copy of each amendment shall be attached to or included with a certificate, certifying that the amendment was duly adopted, which certificate shall be executed and acknowledged by such officer or officers of the Association and/or member or members of the Executive Board designated for that purpose by the By-Laws. The amendment shall be effective when such certificate and copy of the amendment are recorded.

12.2.6. Notice and Challenge. No action to challenge the validity of an amendment to this Declaration adopted by the Association pursuant to this Article may be brought more than one year after such amendment is recorded. After each amendment to this Declaration adopted pursuant to this Article has been recorded, notice thereof shall be sent to all Unit Owners and to all Eligible Mortgage Holders at the address last furnished to the Executive Board, but failure to send such notices shall not affect the validity of such amendment.

ARTICLE XIII TERMINATION OF CONDOMINIUM

13.1. Termination. The Condominium shall not be terminated except as provided in, and subject to, Section 1602-118 of the Act, by agreement of Unit Owners of Units to which one hundred percent (100%) of the Votes in the Association are allocated and of the percentage of Eligible Mortgage Holders provided in Paragraph 11.5. Termination provided for in Section 1602-118 of the Act shall not bar the subsequent re-creation of the Condominium or another condominium with respect to the Property.

ARTICLE XIV INSURANCE

14.1. Policies. Commencing no later than the time of the first conveyance of a Unit other than as security for an obligation to a person other than the Declarant, the Executive Board on behalf of the Association shall obtain, or cause to be obtained, and shall maintain as a Common Expense, the policies of insurance described in Paragraphs 14.2., 14.4. and 14.5. to the extent such policies shall be reasonably available from reputable insurance companies. To the extent that said insurance described in Paragraphs 14.2., 14.4. and 14.5. is not reasonably available as described in the preceding sentence, the Executive Board on behalf of the Association shall give written notice of that fact to the Unit Owners and the Eligible Mortgage Holders of Mortgages of their Units by hand delivery securing a receipt therefor, or by prepaid United States mail, return receipt requested. To the extent that any of the insurance described in Paragraphs 14.2., 14.4. and

14.5. shall become in the future no longer available, the Association shall obtain in substitution therefor such comparable insurance as shall then be available. The Executive Board is hereby irrevocably appointed as attorney-in-fact for each Unit Owner and for each Mortgagee and Eligible Mortgage Holder and for each owner of any other interest in the Property for the purpose of purchasing and maintaining the insurance described in Paragraphs 14.2., 14.4. and 14.5., the collection and appropriate disposition of the proceeds thereof as trustee for all Unit Owners and their Mortgagees as their respective interests may appear to hold any insurance proceeds in trust for disbursement as provided in Paragraph 14.3. and subparagraphs 14.2.4., the By-Laws and Section 1603-113(e) of the Act, the negotiation of losses and execution of releases of liability, and the execution of all documents, and the performance of all other acts necessary to accomplish such purposes.

14.2. Property Insurance. The Executive Board shall obtain and maintain as a Common Expense a blanket-type or master standard form of "all-risk" fire insurance policy with extended coverage, vandalism, malicious mischief, windstorm, sprinkler leakage (if applicable), debris removal, cost of demolition endorsements in a reasonable amount and a water damage endorsement issued by an insurance company authorized to do business in the State of Maine insuring as a single entity the entire Property (exclusive of land, foundations, excavations, and other similar items customarily excluded from property insurance policies), including the Units (including the unfinished floor slab or basement floor, as the case may be, roof and roof rafters, wall studs, joists, columns, studs or beams, and all exterior windows and doors; but not including the sheetrock forming the perimeter walls of the Units, any floorcovering (such as tile; wood flooring and carpeting) and any wallcovering (such as paint, wallpaper, paneling or tiles), furniture, fixtures (such as cabinets, built-in closets or bookshelves, vanities, lamps and chandeliers) furnishings, appliances or other personal property owned by Unit Owners), Limited Common Elements and other Common Elements together with all service equipment and machinery contained in the Property and the fixtures, supplies and common personal property belonging to the Association and covering the interests of and naming as named insured, the Association, the Executive Board and all Unit Owners and their Mortgagees and their Mortgagees' successors and assigns, as their insurable interests may appear. Such blanket or master policy shall be in an amount equal to one hundred percent (100%) of the then current full replacement cost of the Property (exclusive of the land, excavations, foundations and other similar items customarily excluded from such coverage), without deduction for depreciation (such amount to be predetermined annually by the Executive Board with the assistance of the insurance company affording such coverage) and shall contain a standard Maine Mortgage Clause in favor of each Mortgagee of a Unit whether or not named therein with provisions that the proceeds of loss, if any, shall first be payable to each Mortgagee, its successors and assigns, as its insurable interest may appear, subject, however, to the loss payment and adjustment provisions in favor of the Association contained in Paragraph 14.3., subparagraph 14.2.3, the By-Laws and Section

1603-113(e) of the Act. Since subparagraph 8.1.2., clause (d), requires that additional costs of insurance shall be assessed against each Unit as a Limited Common Expense in an amount equivalent to the additional premiums charged due to the particular contents, characteristics or features of that Unit which are insured pursuant to this Paragraph, the Executive Board shall obtain annually from the insurance company affording such coverage its opinion as to the monetary amounts by which the costs of insuring that Unit pursuant to this Paragraph are higher than the costs of insuring a Unit of comparable “size” which does not contain or have those particular contents, characteristics or features and the identification of those contents; characteristics or features and the identification of those contents, characteristics and features. The Executive Board shall use this opinion as the basis for its computation of Limited Common Expense assessments against the Unit for additional costs of insurance. This blanket or master hazard insurance policy may, at the option of the Executive Board, contain such “deductible” as the Executive Board shall reasonably deem appropriate, but not exceeding the lesser of Ten Thousand Dollars (\$10,000.00) or one percent (1%) of the face amount of the policy, and shall also contain the following provisions:

14.2.1. The following endorsements (or their equivalent): (a) “no control” (to the effect that coverage shall not be prejudiced by any act or neglect of any occupant or Unit Owner or their agents when such act or neglect is not within the control of the insured, or the Unit Owners collectively; nor by any failure of the insured, or the Unit Owners collectively, to comply with any warranty or condition with regard to any portion of the Condominium over which the insured, or the Unit Owners collectively, have no control); (b) “Construction Code Endorsement”, “increased cost of construction”, (c) “agreed amount” or “limitation of co-insurance clause”; and

14.2.2. That any “no other insurance” clause expressly exclude individual Unit Owners' policies from its operation so that the physical damage policy purchased by the Executive Board shall be deemed primary coverage and any individual Unit Owners' policies shall be deemed excess coverage, and in no event shall the insurance coverage obtained and maintained by the Executive Board hereunder provide for or be brought into contribution with insurance purchased by individual Unit Owners or their Mortgagees.

14.3. Losses; Adjustment and Payment. Any loss covered by the insurance policy described in Paragraph 14.2. shall be adjusted with the Association by its Executive Board, and the insurance proceeds for said loss shall be payable to the Association, and not to any Mortgagee. The Association shall hold any insurance proceeds in trust for Unit Owners, Mortgagees and other lien holders as their interests may appear. Subject to the Provisions of this Paragraph, the By-Laws and Section 1603 113(e) of the Act, the proceeds shall be disbursed first for the repair or restoration of the damage to the Property, and Unit Owners, Mortgagees and other lien holders are not entitled to receive payment of any portion of the proceeds unless there is a surplus of proceeds after the

damaged Common Elements and Units have been repaired or restored, the decision has been made not to repair or restore the damage as provided in Section 1603-113(h) of the Act, or the Condominium is terminated.

14.4. Liability Insurance. The Executive Board shall obtain and maintain as a Common Expense comprehensive general public liability insurance (including medical payments insurance) and property damage insurance in such limits as the Board may from time to time determine, insuring each Executive Board member, the managing agent, and each Unit Owner against any liability to the public or to the Unit Owners (and their invitees, agents and employees) covering all occurrences commonly insured against for death, bodily injury or property damage arising out of, or incident to, the maintenance, ownership or use of the Common Elements and/or relating to any legal liability resulting from suits or actions related to employment contracts to which the Association is a party. Such insurance shall be issued on a comprehensive liability basis and shall contain: (a) a cross liability endorsement under which the rights of a named insured under the policy shall not be prejudiced with respect to his action against another named insured; (b) a "Severability of interest" endorsement which shall preclude the insurer from denying liability to a Unit Owner because of negligent acts of the Association or of another Unit Owner. The Executive Board shall review such limits once each year, but in no event shall such insurance be less than one million dollars (\$1,000,000.00) covering all claims for bodily injury or property damage arising out of one occurrence.

14.5. Other Insurance. The Executive Board shall obtain and maintain as a Common Expense:

14.5.1. Workmen's compensation insurance if and to the extent necessary to meet the requirements of law;

14.5.2. Adequate fidelity coverage to protect against dishonest acts on the part of officers, members of the Executive Board, trustees and employees of the Association, and all others who handle, or are responsible for handling, funds of the Association, including the managing agent. Such fidelity bonds shall: (a) name the Association as an obligee; (b) be written in an amount not less than the greater of (i) one-quarter of the total annual assessments for Common Expenses plus the Association's reserve funds for the fiscal year or (ii) the maximum funds in the custody of such persons handling the funds of the Association; and (c) contain waivers of any defense based upon the exclusion of persons who serve without compensation from the definition of "employee" or similar expression; and

14.5.3. Such other insurance as the Executive Board may determine or as may be requested from time to time by a Unit Owners holding in the aggregate no less than sixty-six percent (66%) voting interest in the Association including, to the extent

available, directors' and officers' liability insurance to satisfy indemnification obligations of the Association provided in Paragraph 17.2.

14.6. Memoranda; Cancellation; Additional Required Provisions. All insurers that shall issue an insurance policy or policies under this Article shall issue certificates or memoranda of insurance to the Association, and, upon request, to any Unit owner or Mortgagee. All such insurers issuing the policy may not cancel (including cancellation for non-payment of premium), substantially modify or refuse to renew such policy or policies until twenty (20) days after notice of the proposed cancellation or non-renewal has been mailed to the Association, the managing agent, each Unit Owner and each Mortgagee to whom a certificate or memorandum of insurance has been issued at their respective last known addresses. All policies under Paragraph 14.2 and 14.4 shall in addition contain the following Provisions or features:

14.6.1. The insurer waives any right to claim by way of subrogation against the Declarant, the Association, the Executive Board, the managing agent or the Unit Owners, and their respective agents, employees, guests and, in the case of the Unit Owners, the members of their households;

14.6.2. Each Unit Owner is an insured person under the policy with respect to liability arising out of his ownership of an undivided interest in the Common Elements or membership in the Association;

14.6.3. The insurer waives its right to subrogation under the policy against any Unit Owner of the Condominium;

14.6.4. No act or omission by any Unit owner, unless acting within the scope of his authority on behalf of the Association, will void the policy or be a condition to recovery under the policy; and

14.6.5. If, at the time of a loss under the policy, there is other insurance in the name of a Unit Owner covering the same risk covered by the policy, the Association's policy Provides primary insurance.

14.7. Separate Insurance. Each Unit Owner shall have the right, at the owner's own expense, to obtain insurance for the owner's Unit and for the owner's own benefit and to obtain insurance coverage upon the owner's personal property and for the owner's personal liability as well as upon any improvements made by the owner's to the owner's Unit under coverage normally called "improvements and betterment's coverage" and for such other risks as are normally insured against, provided, however, that no Unit Owner shall be entitled to exercise its right to acquire or maintain such insurance coverage so as to decrease the amount which the Executive Board, on behalf of all Unit Owners, may

realize under any insurance policy maintained by the Board or to cause any insurance coverage maintained by the Board to be brought into contribution with insurance coverage obtained by a Unit Owner. All such policies shall contain waivers of subrogation. Any Unit Owner which obtains an individual insurance policy covering any portion of the Condominium, other than improvements and betterment's made by such Owner at its expense and personal property belonging to such Owner, shall file a copy of such individual policy or policies with the Executive Board within thirty (30) days after the purchase of such insurance. Such Unit Owner shall also promptly notify the Executive Board in writing in the event such policy is canceled. Each Unit owner shall notify the Executive Board in writing of all structural improvements made by the Unit Owner to the owner's Unit; provided, however, that this sentence shall not be construed as an authorization to Unit Owners to make structural improvements to Units otherwise than in accordance with this Declaration, the By-Laws and Rules and Regulations promulgated by the Executive Board. Any premium increase caused by such improvements may be assessed to the Owner of the improved Unit.

ARTICLE XV
APPLICABILITY: COMPLIANCE AND DEFAULT; ARBITRATION;
EMINENT DOMAIN; SELF HELP

15.1. Applicability. This Declaration shall be applicable to the Condominium. All present and future Owners and tenants, their guests, licensees, servants, agents, employees and any other person or persons that shall be permitted to use the Common Elements shall be subject to this Declaration, the By-Laws and to such Rules and Regulations as may be issued by the Executive Board from time to time to govern the conduct of its members and the use and occupancy of the Property. Ownership, rental or occupancy of any of the Units in the Condominium shall be conclusively deemed to mean that said Owner, tenant or occupant has accepted and ratified this Declaration, the By-Laws and the rules and regulations of the Association and will comply with them. The acceptance of a deed or conveyance (other than as security) or the entering into of a lease or the entering into of occupancy of any Unit (other than possession by a Mortgagee prior to either of the completion of foreclosure or the acceptance of a deed to the Unit subject to the Mortgage held by such Mortgagee) shall signify that the provisions of this Declaration and the by-laws, the Rules and Regulations of the Association and the decisions of the Executive Board are accepted and ratified by such Owner, tenant or occupant, and all of such provisions shall be deemed and taken to be covenants running with the land and shall bind any person having at any time any interest or estate in such Unit, as though such provisions were recited and stipulated at length in each and every deed or conveyance or lease thereof.

15.2. Compliance and Governance:

15.2.1. Each Unit Owner shall be governed by and shall comply strictly with the terms, covenants, conditions and restrictions of this Declaration, the By-Laws and the Rules and Regulations adopted pursuant thereto, and the same as they may be amended from time to time.

15.2.2. The Executive Board shall have the power to adopt, amend and enforce compliance with, such reasonable Rules and Regulations relative to the operation, use and occupancy of the Units and the Common Elements consistent with the provisions of this Declaration and the Act, including, but not limited to the appointment of such committees and the enactment and enforcement of such enforcement procedures and penalties for violations as the Executive Board shall deem appropriate. Any such Rules and Regulations shall be adopted or amended, from time to time, by means of appropriate resolutions duly approved by the Executive Board in accordance with this Declaration and the By-Laws. A copy of such Rules and Regulations and copies of any amendments thereto shall be delivered or mailed to each Owner or occupant of a Unit promptly after the adoption thereof and shall become binding upon all Owners, their successors in title and assigns, and occupants.

15.2.3. The failure of the Declarant, or the Executive Board, or any Unit Owner to enforce any covenant, restriction or other provision of the Act, the Condominium Documents or the Rules and Regulations adopted pursuant thereto, shall not constitute a waiver of the right to do so thereafter.

15.3. Arbitration:

15.3.1. All claims, disputes, controversies and other matters in question between the Association or any Unit Owners, on one hand, and a Unit Owner, on the other hand, arising out of or relating to the Condominium, the Condominium Documents or the deed to any Unit, shall be decided and settled by private arbitration in Portland, Maine, in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association then obtaining unless the parties mutually agree otherwise. This agreement to arbitrate shall be specifically enforceable under the prevailing arbitration law.

15.3.2. A party requesting arbitration shall do so by written notice to the other party. The arbitration shall be conducted by a private three person arbitration panel chosen as follows: each party shall designate an arbitrator and the two designated arbitrators shall select a third arbitrator. The decision shall then be rendered by a majority vote of the panel. Any dispute brought to arbitration must be decided by the arbitrators within ninety (90) days from the date of notice from one party to the other party

requesting the arbitration and the decision of the panel shall be final and binding and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

15.3.3. Each party shall be responsible for the cost of its own arbitrator and for one-half (1/2) of the cost of the jointly selected arbitrator, unless the arbitration panel rules to the contrary.

15.3.4. Notwithstanding anything in Sections 15.3.1., 15.3.2. and 15.3.3. to the contrary, in the event that the Unit owners and/or Association either (i) are unable to agree upon the expenses, budget or the performance of the maintenance, repair and replacement of the common elements in accordance with the standards specified herein, which deadlock continues for 30 days after a Unit Owner and/or Director of the Association sends written notice to the other parties in interest indicating the decisions and dispute, or (ii) are so divided with respect to maintenance and upkeep of the Property that the Property is suffering or will suffer irreparable injury, in either such event, the Association shall elect in accordance with the provisions of the Bylaws an independent professional property manager to handle such duties in dispute. If the Association is unable to agree on the selection of such a property manager, the issue on selection of a professional manager shall be referred to, decided and settled by private arbitration as set forth in Paragraphs 15.3.1, 15.3.2. and 15.3.3. above.

15.4. Eminent Domain. If all or part of the Common Elements shall be taken or condemned by any authority having the power of eminent domain, the Association shall notify the Owners and Eligible Mortgage Holders of the Units affected and shall represent the Unit Owners in any condemnation proceedings or in negotiations, settlements and agreements with the condemning authority, and the award shall be paid to the Association for the use and benefit of the Unit Owners and their Mortgagees as their interests may appear. The Association shall divide any portion of the award not used for any restoration or repair among the Unit Owners and their Mortgagees, as their interests may appear, in proportion to their Allocated Interests in the Common Elements prior to such taking or condemnation, but the portion of the award attributable to the acquisition of any Limited Common Element shall be equally divided among the Owners of the Units to which such Limited Common Element was allocated at the time of such taking or condemnation and their Mortgagees, as their interests may appear. Each Unit Owner appoints the Association as attorney-in-fact for the purposes described in this paragraph. Notwithstanding anything to the contrary in this Paragraph 15.4., lien holders on any Unit, Common Element or Limited Common Element, shall have a lien on any such awards in order of priority of their respective liens.

15.5. Self Help. If the Association shall default in its obligations to maintain, repair, and replace the portions of the Limited Common Elements or Common Elements

appurtenant to or serving any Unit, or the portions of any Unit as to which pursuant to this Declaration it is the responsibility of the Association to maintain, repair and replace, and such failure or default is not cured within thirty (30) days after notice from the Owner of that Unit to the Association specifying the default, or the Association shall not within said period commence to cure the default and thereafter prosecute the curing of such default to completion with due diligence, the owner of said Unit may, at the owner's option, without waiving any claims for breach, at any time thereafter cure such default for the account of the Association and shall be entitled to set off against subsequent assessments for Common Expenses the amounts paid and expenses or contractual liabilities incurred in an amount that shall not exceed two (2) months' installments of assessments against that Unit for Common Expenses; provided, however, that such Unit Owner may cure any such defaults as aforesaid prior to the expiration of said waiting period after notice to the Association if it is necessary to protect his Unit or its appurtenant Limited Common Elements or other interests, or to prevent injury or damage to persons or property. The Unit Owner that cures such default shall have the benefit of the rights and easements reserved to the Association pursuant to Paragraph 7.3. to enable it to cure the defaults. The rights provided Unit Owners in this Paragraph 11.5. shall extend to Eligible Mortgage Holders.

ARTICLE XVI LIMITATION OF LIABILITY

16.1. Limited Liability of the Executive Board. The Executive Board, and its members in their capacity as members, officers and employees:

16.1.1. Shall not be liable for the failure of any service to be obtained by the Executive Board and paid for by the Association, or for injury or damage to persons or property caused by the elements or by another Unit Owner or person on the Property, or resulting from electricity, gas, water, rain, dust or sand which may leak or flow from the outside or from any part of the Buildings, or from any of its pipes, drains, conduits, appliances, or equipment, or from any other place unless in each such instance such injury or damage has been caused by the willful misconduct or gross negligence of the Association or the Executive Board;

16.1.2. Shall not be liable to the Unit Owners as a result of the performance of the Executive Board members' duties for any mistake of judgment, negligence or otherwise, except for the Executive Board members' own willful misconduct or gross negligence;

16.1.3. Shall have no personal liability in contract to a Unit Owner or any other person or entity under any agreement, check, contract, deed, lease, mortgage, instru-

ment or transaction entered into by them on behalf of the Executive Board or the Association in the performance of the Executive Board members' duties;

16.1.4. Shall not be liable to a Unit Owner, or such Unit Owner's tenants, employees, agents, customers or guests, for loss or damage caused by theft of or damage to personal property left by such Unit Owner or his tenants, employees, agents, customers or guests in a Unit, or in or on the Common Elements or Limited Common Elements, except for the Executive Board members' own willful misconduct or gross negligence;

16.1.5. Shall have no personal liability in tort to a Unit Owner or any other person or entity, direct or imputed, by virtue of acts performed by or for them, except for the Executive Board members' own willful misconduct or gross negligence in the performance of their duties; and

16.1.6. Shall have no personal liability arising out of the use, misuse or condition of the Building, or which might in any other way be assessed against or imputed to the Executive Board members as a result of or by virtue of their performance of their duties, except for the Executive Board members' own willful misconduct or gross negligence.

16.2. Indemnification. Each member of the Executive Board, in his or her capacity as an Executive Board member, officer or both, shall be indemnified by the Association against all expenses and liabilities, including attorney's fees, reasonably incurred by or imposed upon him or her in connection with any proceeding in which he or she may become involved by reason of being or having been a member and/or officer of the Executive Board, or any settlement of any such proceeding, whether or not he or she is an Executive Board member, officer or both at the time such expenses are incurred, except in such cases wherein such Executive Board member and/or officer is adjudged guilty of willful misconduct or gross negligence in the performance of duties; provided that indemnification hereunder with respect to any criminal action or proceeding is permitted only if such Executive Board member and/or officer had no reasonable cause to believe his or her conduct was unlawful. The indemnification by the Unit Owners set forth in this Paragraph shall be paid by the Association on behalf of the Unit Owners and shall constitute a Common Expense and shall be assessed and collectible as such. Such right of indemnification shall not be deemed exclusive of any other rights to which such Executive Board member and/or officer may be entitled as a matter of law or agreement or by vote of the Unit Owners or otherwise.

16.3. Defense of Claims. Complaints brought against the Association, the Executive Board or the officers, employees or agents thereof in their respective capacities as such, or the Condominium as a whole, shall be directed to the Executive Board of the Association, which shall promptly give written notice thereof to the Unit Owners and the

Eligible Mortgage Holders, and such complaints shall be defended by the Association. The Unit Owners shall have no right to participate in such defense other than through the Association.

ARTICLE XVII
GENERAL PROVISIONS

17.1. Captions. The headings in this Declaration are for purposes of reference only and shall not limit or otherwise affect the meaning hereof. Any tables of contents or indices attached to this Declaration are for purposes of reference and convenience only and shall neither limit nor otherwise affect the meaning hereof nor be deemed as part of this Declaration. References in this Declaration to Articles, Paragraphs, subparagraphs and Schedules without references to the document in which they are contained are references to this Declaration. Schedules are attached to and incorporated by reference into this Declaration and are an integral part of this Declaration.

17.2. Gender Number. Etc. The use of the singular number in this Declaration shall be deemed to include the plural, the plural the singular, and the use of any one gender shall be deemed applicable to all gender.

17.3. Severability. The invalidity of any provisions of this Declaration shall not be deemed to impair or affect in any manner the validity, enforceability or effect of the remainder of this Declaration, and in such event, all of the other provisions of this Declaration shall continue in full force and effect as if such invalid Provision had never been included herein.

{Remainder of page intentionally left blank. Signatures follow.}

IN WITNESS WHEREOF, Declarant has caused this Declaration to be executed
this ____ day of _____, 2020.

UPRIGHT PROPERTIES, LLC

By: _____
Joshua Wojcik, Manager

STATE OF MAINE
CUMBERLAND, SS.

_____, 2020

Personally appeared the above-named, Joshua Wojcik, who acknowledged the
foregoing instrument to be his free act and deed.

Before me,

Notary Public/Attorney at Law

Print Name

**SCHEDULE A
TO
DECLARATION OF CONDOMINIUM
OF
RIFUGIO, A CONDOMINIUM**

PROPERTY DESCRIPTION

[METES AND BOUNDS DESCRIPTION TO BE INSERTED]

**SCHEDULE B
TO
DECLARATION OF CONDOMINIUM
FOR
RIFUGIO, A CONDOMINIUM**

<u>Unit Number</u>	Share of Common Expense Interest and Common <u>Expense Liability</u>	<u>Votes in Association</u>
Unit 1 (Workforce, 1 bedroom)	8.00%	1
Unit 2 (1 bedroom)	12.00%	1
Unit 3 (2 bedroom)	17.00%	2
Unit 4 (1 bedroom)	13.00%	1
Unit 5 (2 bedroom)	18.00%	2
Unit 6 (3 bedroom)	<u>32.00%</u>	<u>3</u>
	1 (100%)	10

**EXHIBIT A
TO
DECLARATION OF CONDOMINIUM
FOR
RIFUGIO, A CONDOMINIUM
EASEMENTS**

[EASEMENT INFORMATION TO BE INSERTED]

**EXHIBIT B
TO
DECLARATION OF CONDOMINIUM
FOR
RIFUGIO, A CONDOMINIUM**

STORMWATER MAINTENANCE AGREEMENT

[ATTACH STORMWATER MAINTENANCE AGREEMENT]

RIFUGIO, A CONDOMINIUM **RULES AND REGULATIONS**

General

It should be understood by all unit owners that the exteriors of the buildings and all the land area and facilities outside the individual units are common property. Certain parts of the common property, including decks and parking areas, are “limited common areas” reserved for the exclusive use of the associated unit owners. The maintenance, alteration, improvement, general appearance and use of the common property, including the limited common areas, are under the control of the Association through its Executive Board. Attention is called to the Declaration of Rifugio, a Condominium (the “Declaration”) and to the By-Laws of the Rifugio Condominium Owners Association (the “By-Laws”) for specific definition of the common property and for the general responsibilities of unit owners with respect to the common property and to their units.

As provided in the Declaration and the By-Laws, in order to assure the peaceful and orderly use and enjoyment of the buildings and common area and facilities, the following Rules and Regulations have been adopted.

Use and Occupancy

A) COMMON AREAS

Use, maintenance and operation of common areas shall not be obstructed, damaged or subject to interference by any unit owner.

B) UNIT USE AND MAINTENANCE

1. Each owner shall maintain his or her unit in good condition, good order and repair at their own expense as specified in the Declaration.
2. No noxious or offensive activity shall be carried on in any Unit or on the Common Elements, nor shall anything be done therein which may be or become an annoyance or nuisance to the other Unit owners and occupants. No Unit owner shall make or permit any disturbing noises in the building or do or permit anything which will interfere with the rights, comforts or convenience of other Unit owners. All Unit owners shall keep the volume of any radio, television or musical instrument in their Units sufficiently limited at all times so as not to disturb other Unit owners.

3. Commercial Activity - No commercial activity of any nature shall be permitted in or about any unit. Notwithstanding the foregoing, a home office is allowed provided such home office use does not create a nuisance or an unreasonable interference with the peaceful possession and occupation or proper use of any other Unit or the Common Elements.
4. Parking; Snow Removal - The parking areas consist of six covered spaces which are Limited Common Elements to be used only by the assigned Unit Owners. The parking areas are for licensed and fully operable vehicles only. Motor homes, boats and trailers shall not be left in the parking area. Members, their family, lessees and guests shall cooperate, as directed by the Association or its chosen snow removal contractor/vendor, to move their cars from the parking spaces to facilitate timely snow removal. Vehicles in violation of these provisions are subject to towing at the owner's expense.
5. Decks; Snow Removal - Unit owners shall maintain their decks in good condition and shall avoid using their decks for unsightly storage. If owners remove snow from their decks they shall do so in a manner that avoids pushing the snow onto any other owner's decks, and any snow removed shall be shoveled delicately towards the sides of Rifugio's property, not towards Munjoy Heights or its retaining wall.
6. Garbage, Trash and Recycling - Trash, garbage and other waste shall be kept only in sanitary covered containers as provided by the Association or the City of Portland. All trash left for pick up on the appropriate day must be properly divided between the container provided for recyclable materials and all other trash must be placed in mandated City of Portland Trash Bags.
7. Personal Property - Articles of personal property belonging to any unit owner or his/her guest may be stored in the unit's designated storage area. All personal property placed in any portion of the building or any place appurtenant thereto, including, but without limitation, the storage areas, shall be at the sole risk of the unit owners, and the Association shall in no event be liable for the loss, destruction, theft or damage to such property.
8. Hazardous Materials - No gasoline or other flammable substances, explosives, or toxic material may be kept in any unit or any storage area designated to any unit.
9. No Smoking in Common Areas - Smoking of tobacco, cannabis, or any other consumable flammable material is not permitted within the common interior areas of the Condominium.

C) ALTERATIONS OR IMPROVEMENTS

1. General - Alterations or modifications in the limited common areas, which involve structural change, additions or painting shall not be undertaken by the unit owner, and such alterations or modifications shall be done by the Association, unless otherwise approved in writing. This includes walls, driveways, porches, etc. Permanently installed play equipment is not permitted without the written consent of all the owners.
2. Screen and Storm Windows - Only those types approved by the Board are allowed. Approval for each installation shall be requested in writing and must receive prior written Board approval.
3. Unit Integrity - No unit owner shall do or have done any work which may jeopardize the soundness or safety of the property, reduce the value thereof or impair any easement, rights, appurtenances or other hereditament consisting of common elements without the unanimous written consent of all other unit owners.
4. Propane Storage Tanks - No propane tanks shall be allowed at the property, except small propane tanks for exterior gas grills which must be used and stored in accordance to the applicable section of the City of Portland, Maine, Code of Ordinances.

D) LANDSCAPING

1. Approval and Responsibility - Any change or addition to plantings (shrubs and bushes) must receive written Board approval, and shall be subject to City of Portland approval, if applicable. Care and maintenance thereafter is the responsibility of the Association.
2. Special Restrictions - Landscaping must not impede mowing or the placement of snow removed from driveways and walks.

E) PETS

1. Pets are either dogs or cats. Any other species must receive written approval of the Board. Pets over forty-five (45) pounds in weight must receive written approval of the Board.
2. Total Number of Indoor/Outdoor Pets - Not more than two pets per unit.
3. Small Indoor Pets such as caged birds, hamsters, turtles, fish, etc., will not count as part of the pet quota.

4. Dogs are not allowed outside of their unit except on a leash or under control of a responsible person. Pet owners are responsible for any property damage, injury or disturbance their pets may cause or inflict. No animal shall be permitted to bark, howl, or make other loud noises for such time as disturbs neighbors' rest or peaceful enjoyment of their unit and adjacent common areas. No breeding of animals is allowed. Pet owners are responsible for the removal and proper disposal of animal wastes in all areas – both limited and common.

F) MISCELLANEOUS

1. Garage Sales - No unit owner shall hold a garage sale or any other type of outside sale without the prior written consent of the Board.
2. Clotheslines – Clotheslines are allowed in designated areas, as provided by the Board.
3. Exterior Lights - No additional spotlights or floodlights are permitted on the exterior of any unit.
4. Leasing - Members who lease must obtain a signed, written lease agreement from their tenant including provisions requiring the tenant to abide by all restrictions and obligations contained in the Condominium's Declaration, the Association's By-Laws, and all Rules & Regulations adopted by the Board. Such agreement must provide for termination of the lease on fourteen (14) days notice from the Board for failure to comply. A copy of the lease also must be filed with the Board within seven (7) days of its execution. A lease or other rental, including, without limitation, any rentals facilitated through any third-party/online services such as Airbnb, Homeaway.com or VRBO, shall be for a minimum of three (3) months.
5. Occupancy - A unit may be occupied by any number of individuals related by blood, marriage, adoption or domestic partnership. Unless the occupancy is governed by a written lease, a unit may be occupied by no more than two non-family members as roommates of the unit owner, provided that the unit owner is one of the other adult occupants. All occupants of the units shall be subject to the restrictions and obligations contained in the Condominium's Declaration, the Association's By-Laws, and all Rules & Regulations adopted by the Board, and shall execute a written agreement to such effect to be filed with the Board.
7. Periods of Absence – Members shall be responsible for ensuring that their units, and all equipment serving their unit, function properly during any extended period of absence, especially during winter months, to reduce the possibility of damage to any other units or common areas of the building. Members shall arrange for their

units to be checked regularly during their absence, and shall provide emergency contact information to the Board.

8. Vehicle Idling – Members, their tenants and invitees, shall take reasonable care to limit vehicle idling in the parking area. Signage shall be provided in the parking area to discourage idling.

G) COMPLAINTS, REMEDIES & CONCLUSION

1. All Complaints or Suggestions regarding maintenance, nuisances or general welfare must be submitted in writing to the Executive Board together with, if desired, a request for a hearing. If the matter is too urgent for this procedure to be practical, a member of the Board should be advised by telephone. Any group of unit owners wishing to make a complaint or suggestion may follow the above procedure nominating one or two spokespersons to represent it.

Rifugio, a Condominium, Fines Schedule & Policy

Goal of Rules and Fines -The goal of rules and fines is to promote the quality of life in the Condominium. Rules and fines should help to encourage harmony among Unit Owners and Board Members.

Unit Owners' Rights Regarding Fines -With the exception of monthly assessments, unit owners will be given oral notice of a violation. The owner has ten (10) days in which to request a hearing. If the infraction persists, written notice will be sent. The unit owner will be provided an opportunity to be heard at a specific time and place if he/she requests it. The owner's defense and any mitigating circumstances will be given a fair hearing by the Board.

Unit Owners' Grace Period - A fine will not be imposed until after a minimum of ten (10) days from the time of a hearing if one is scheduled. If no hearing is requested, the fine shall be imposed only after ten (10) days from postmark date of written notice.

Legal Status of Fines - Under the Maine Condominium Act, any fines imposed by the Board of Directors represent a lien on the unit owner's property. By law, the Board shall establish the fine schedule and impose fines for any new rules.

Schedule of Fines

1. General - A fine of \$50.00 will be levied for violations of all Rules from A through F, and \$5.00 per diem is added until the infraction is corrected.

2. Monthly Assessments - A charge of \$20.00 will be levied if the monthly assessment is not postmarked by the tenth (10th) day of the month in which it is due.

If the monthly assessment remains unpaid, interest at the rate of eighteen (18%) percent per annum will accrue on the unpaid amount.

Any money received on delinquent accounts will be applied to the oldest unpaid assessment.

There will be a \$25.00 charge for a returned check.

After 60 days of unpaid assessments, a lien will be placed on the property.

Other Types of Penalties - When necessary and appropriate, the Board of Directors may choose another type of penalty (such as removal of an obstacle), as provided in the Declaration.

G. Financial Capacity

A letter from the Applicant's bank confirming financial capacity is attached to this section.





06/25/2019

The proposed terms and conditions are provided for discussion purposes only and do not constitute an offer, agreement, or commitment to lend. The actual terms and conditions upon which the Bank might extend credit to the Borrower are subject to the satisfactory completion of due diligence, formal credit approval, satisfactory review of documentation and such other terms and conditions as are determined by the Bank.

This Term Sheet (including summary and terms) and the contents hereof and thereof are confidential and, except for disclosure hereof or thereof on a confidential basis to your accountants, attorneys, City of Portland Planning Board or any individual directly involved in the review process, and other professional advisors retained by you in connection with this loan or as otherwise required by law, may not be disclosed in whole or in part to any person or entity without our prior written consent.

Borrower: Upright Properties, LLC

Guarantors:

Loan Facility: Commercial Construction Loan

Amount:

Purpose: To provide a construction line of credit for the development of a new, 6-unit residential building located at 128R North Street, Portland, ME.

Term: Twenty-four (24) months

Rate: Wall Street Journal Prime Rate plus 0.50%,
adjusting monthly.

Repayment: The Loan shall be repayable in monthly payments of accrued interest with principal payments due upon the sale of each unit. Principal payments shall be equal to the net proceeds received from the sale of each unit. Any remaining principal and interest at loan maturity shall be due and payable at the loan maturity date.

Late Charge:

Default Rate:

Advances: Advances under the construction loan will be made monthly in accordance with standard construction documentation requirements including requisition forms, lien waivers and engineer's certificates (as applicable) from an engineer acceptable to the Bank.

Collateral: Collateral will consist of the following:

1. First mortgage on property located at 128R North Street, Portland, ME.
2. Assignment of leases and rents at 128R North Street, Portland, ME.
3. First priority security interest in all construction materials, supplies and equipment owned by Borrower and used in connection with the construction of the subject property.
4. Assignment of all contracts including, but not limited to, property management agreements.
5. Assignment of architectural, construction, and engineering contracts, as well as any permits, approvals, surveys, plans and specs.

Loan Fee:

[REDACTED]

[REDACTED]

Discharge Fee: Bank shall be paid a release fee of [REDACTED] as units are sold until such time as the Bank loan is paid in full.

Financial Reporting: The Bank will require the following financial reporting:

[REDACTED]

Appraisal:

[REDACTED]

Other Conditions:

[REDACTED]

Notice: The Federal Equal Credit Opportunity Act prohibits creditors from discriminating against credit applicants on the basis of race, color, religion, national origin, sex, marital status, age (provided the applicant has the capacity to enter into a binding contract); because all or part of the applicant's income derives from any public assistance program; or because the applicant has in good faith exercised any right under the Consumer Credit Protection Act. The Federal agency that administers compliance with this law concerning this creditor is FDIC Consumer Response Center, 1100 Walnut Street, Box#11, Kansas City, MO 64106.

Borrower shall comply with all normal construction guidelines as required by the Bank and outlined in a Construction Loan Agreement to be executed by Borrower and Bank

Project shall be subject to satisfactory review of project plans, specifications, and construction contract by an independent construction professional selected and engaged by the Bank along with monthly inspection and disbursement review during construction.

The Borrower shall provide Bank with the following prior to any loan disbursements:

[REDACTED]

Environmental:

[REDACTED]

Insurance Requirements:

Borrower will maintain hazard, liability and flood insurances (if applicable) with financially sound and reputable insurers in such amounts and for such coverages satisfactory in all respects to Bank.

[REDACTED]

Upon Bangor Savings Bank providing the Borrower with a formal written commitment letter which is accepted by the Borrower, the Borrower shall be responsible for all fees, including but not limited to legal, appraisal, and environmental fees associated with this transaction.

Notice: The Federal Equal Credit Opportunity Act prohibits creditors from discriminating against credit applicants on the basis of race, color, religion, national origin, sex, marital status, age (provided the applicant has the capacity to enter into a binding contract); because all or part of the applicant's income derives from any public assistance program; or because the applicant has in good faith exercised any right under the Consumer Credit Protection Act. The Federal agency that administers compliance with this law concerning this creditor is FDIC Consumer Response Center, 1100 Walnut Street, Box#11, Kansas City, MO 64106.

I look forward to discussing this proposal with you further, and again appreciate the opportunity to review your financing request.

Sincerely,

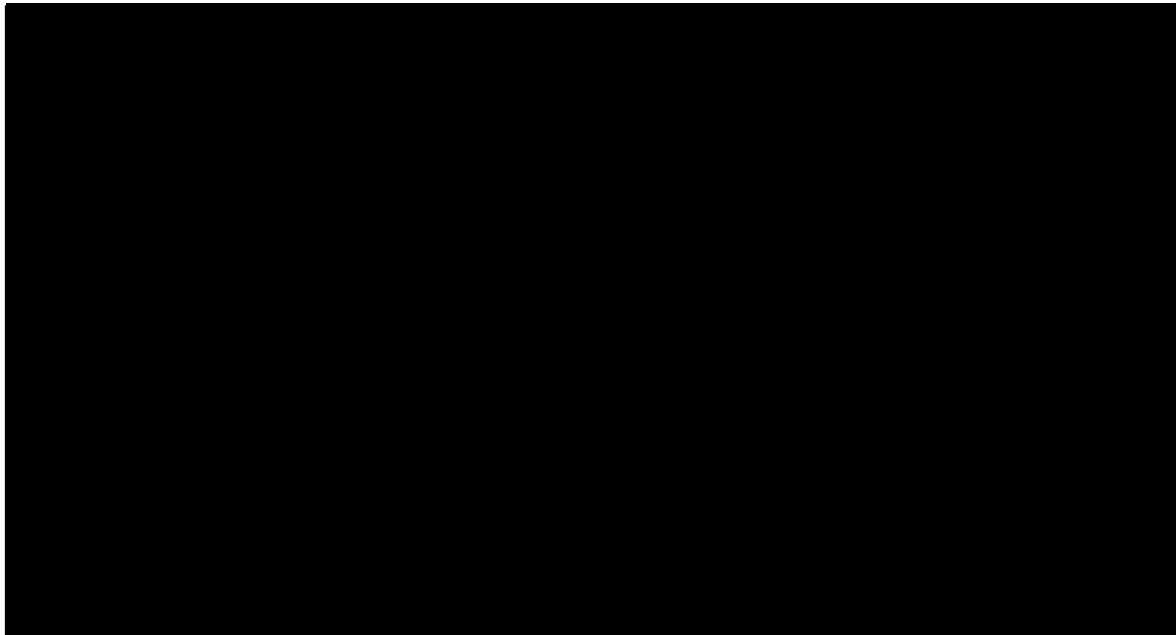
A handwritten signature in black ink, appearing to be "J. [unclear]", written over a black rectangular redaction box.

ACKNOWLEDGED AND AGREED TO BY:

By signing below, I am duly authorized to execute and enter into this application for the Borrower and authorize the Bank to initiate formal underwriting of this loan request. I agree to repay the Bank for any expenses incurred during the underwriting process including but not limited to appraisal and legal fees, whether or not the transaction is approved or closed.

BORROWER:

Upright Properties, LLC

A large black rectangular redaction box covering the signature area of the borrower.

Notice: The Federal Equal Credit Opportunity Act prohibits creditors from discriminating against credit applicants on the basis of race, color, religion, national origin, sex, marital status, age (provided the applicant has the capacity to enter into a binding contract); because all or part of the applicant's income derives from any public assistance program; or because the applicant has in good faith exercised any right under the Consumer Credit Protection Act. The Federal agency that administers compliance with this law concerning this creditor is FDIC Consumer Response Center, 1100 Walnut Street, Box#11, Kansas City, MO 64106.



October 22, 2019

City of Portland, Planning Division
389 Congress Street, 4th Floor
Portland, ME 04101

RE: 126 North St.

To Whom It May Concern:

Josh Wojcik, Upright Properties and its affiliates are well known to Bangor Savings Bank. We have worked with Josh for over 10 years and have been directly involved in the financing of numerous successful projects. All accounts have been handled as agreed.

Bangor Savings Bank is providing financing for 128 R North St. The Bank is interested in entertaining financing for 126 North St. Josh has the financial capacity to successfully complete the proposed project. We are looking forward to more substantive conversations as this project materializes.

Please feel free to contact me should you need any additional information. I can be reached at (207) 974-4154; rick.fournier@bangor.com.

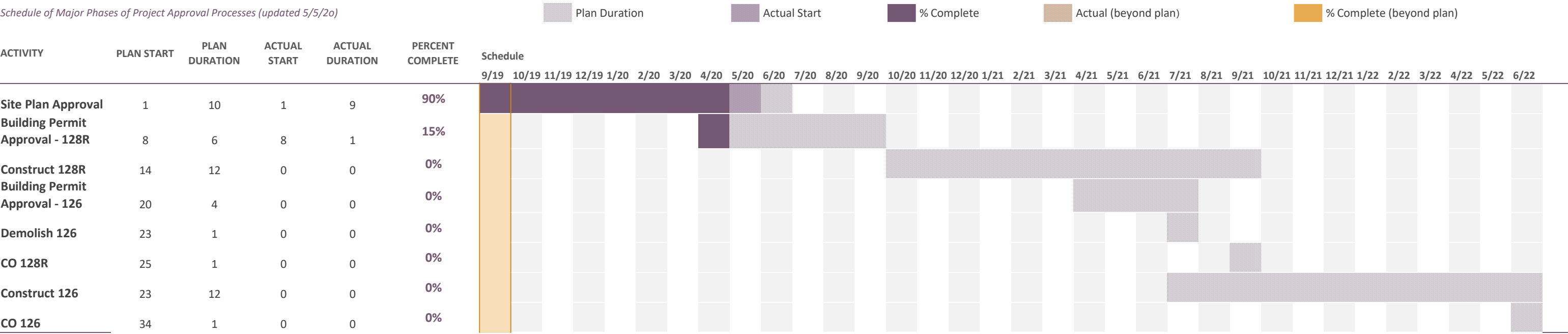
Sincerely,

A handwritten signature in black ink, appearing to read "Rick Fournier", written over a series of horizontal lines.

Richard L. Fournier, II
Vice President

128R & 126 North St

Schedule of Major Phases of Project Approval Processes (updated 5/5/2o)



NOTE: This schedule is for planning purposes only. This schedules carries with it the same inherent uncertainties involved in any project schedule relying on multiple parties and spanning 34 months. Factors including (but not limited to) the following may impact the actual timeline: Timings of City approvals and inspections; Availabilities of sub-contractors and materials; Labor shortages; Weather - specifically the severity of winter, which varies widely in Portland from year to year.

Section H

Technical Capacity

H. Technical Capacity

Acorn Engineering, Inc. has successfully permitted and engineered over 15 level II/III projects in Portland in the past 5 years, many of which have been constructed. Some examples include:

- Eldredge Lumber Expansion
- 127 York Street – Harborview Townhomes
- Munjoy Heights
- 89 Anderson St. – East Bayside Lofts
- 667 Congress St – The Hiawatha
- 121 Washington Ave Redevelopment
- 31 Fore Street Condominiums

Additionally, the rest of the design team is outlined below.

- Dextrous Creative (Architect – Tracie Reed) – Tracie Reed is a Maine Licensed, LEED AP and NCARB certified architect based in Portland. Her work encompasses a wide variety of commercial, residential and construction builds. In addition, she performs field work for High Performance Building Model Assessments in accordance with ASHRAE Level 2 Energy Audits guidelines, with the aim of reducing energy and water consumption. Tracie has received awards from the American Institute of Architects and has appeared in publications for the Journal of Green Building and Young Architect Forum Connection.





March 10, 2020

Caitlin Cameron, AICP, Associate AIA, LEED AP
Urban Designer
Planning & Urban Development Department
389 Congress Street
Portland, ME 04101

Re: 128R North Street Deck

Caitlin, Yesterday Civil Engineer Will Savage, our client Joshua Wojcik and I met with Shukria Wiar and Ann Machado. At the meeting we discussed Ann's zoning analysis of the site plan with a new color-coded site plan that makes the dimensioned setbacks easier to read.

To summarize our discussion:

- Based on our December 2018 pre-application meeting with city staff, our team was told that our project is required to meet all of the same conditions as front lots because the current overlay language does not distinguish between front and rear lots. It is for this reason that we revised our plans to comply with the 50% active street front provisions at that time. This is also why we have proposed offset side setbacks, which are largely prevalent in the neighborhood. It is this built-pattern flexibility that we seek to keep the back-deck side setback in this 4'-7" area at 8'-6". This still maintains the cumulative 20'-0" setback required in zoning. It also allows us to align the decks with the edge of our building, maintaining more traditional massing than offsetting the deck from the edge of the building by 2'-0". The area in question is bubbled on sheet A/A-1.1 to clarify.
- While our client's attorney notes that the maintenance easement does not address air rights we agreed to align upper decks with the 10'-0" maintenance easement with Munjoy Heights.
- In keeping with the built pattern at the street we pushed the circulation tower (stair/elevator) at the front of 128R North so it aligns with 126 North. The building was pushed 1.64' East which now makes the side setback in that area 10.2'
- Ann agreed that the 2'-0" eave at the second level is allowable under zoning to extend into the side setback. During the meeting she noted our team had been measuring the side setback along the diagonal to the face of our building incorrectly. She noted that we should have taken the measurement to the side of our building in a perpendicular line which means the face of our building as drawn is more than 10'-0" from the property line. The only area that is under 10'-0" (drawn at a 8.5' setback) is at the rear deck where the site narrows. This condition exists for approximately 4'-7".
- Note that elevations have been renamed in the attached set.
- We also shared the site section that was submitted as part of our revised packet.

Dextrous Creative
dextrouscreative.com
traciereed@dextrouscreative.com
Portland, ME 04101

We look forward to discussing the deck side setback with you and sharing our design revisions with the Planning Board on April 14th.

Regards,

A handwritten signature in black ink that reads "Tracie J. Reed". The signature is fluid and cursive, with the first name "Tracie" and last name "Reed" clearly legible.

Tracie J. Reed, Maine Licensed Architect, LEED AP, NCARB
Principal

CC: William Savage, P.E, and Sam Lebel, Acorn Engineering
Josh Wojcik, Upright Properties
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Shukria Wair, Planner

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Portland, ME 04101

I. Conformity with Land Use Ordinance

The following outline is made in accordance with the City of Portland Code of Ordinances, Chapter 14 Land Use, Article V Section 14-526.

OVERVIEW

The proposed project includes a two-phase approach where Phase 1 would include the redevelopment of 128R into a four-story building with six condominiums and covered parking on the ground level. Phase 2 would include the redevelopment of 126 into a three-story building with six rental units. The demolition of 126 would occur prior to occupancy of 128R to allow for 16' wide of vehicular access to 128R as requested by the Fire Department.

(a) Transportation Standards

1. Impact on Surrounding Street Systems:

The site is located at 126 and 128R North Street. North Street is classified as a local street and currently supports a low traffic volume. A negligible traffic increase along North Street is expected for this project due to the low turnover of the proposed land use.

2. Access and Circulation:

a. Site Access and Circulation:

- (i) The development will provide safe access and internal circulation for both pedestrians and vehicles as seen on the Site Plan.
- (ii) The proposed driveways will be in the same location as the existing driveways. Turning movements and traffic flows will not be conflicted.
- (iii) The site does not feature drive up services as mentioned in this requirement.

b. Loading and Servicing:

- (i) There are no anticipated loading and servicing needs.

c. Sidewalks:

- (i) An existing bituminous sidewalk exists on the westerly side of North Street.
- (ii) The small portion of sidewalk along the driveway will be rebuilt per the City's latest detail and specifications on driveway aprons and sidewalks.
- (iii) An internal sidewalk from the public ROW to the proposed site of 128R North Street will be constructed as seen on the Site Plan. The sidewalk would be subject to an access easement, providing pedestrian access for both sites.

3. Public Transit Access:

- a. Not applicable.



- b. Not applicable.
 - c. Not applicable.
4. Parking:
- a. Location and Required Number of Vehicle Parking Spaces:
 - (i) The proposed project on 126 & 128R North Street will provide 2 & 6 parking spaces respectively, which meets the requirement.
 - (ii) A parking study is not required.
 - (iii) The amount of parking exceeds the minimum requirement by more than 10% on 128R North Street. The proposed 6 spaces exceed the requirement by 3 spaces. This is to provide one space per unit which is the industry standard for condominiums. Given the recent development boom and an overall higher demand for on-street parking, decreasing the demand for on-street parking will benefit the end users as well as the entire neighborhood. For more information, please refer to section S. Parking Analysis.
 - (iv) A waiver has been requested to reduce the required stall length of 18' to 16.5' on 128R North Street.
 - (v) The driveways and parking areas will be constructed with bituminous pavement which will drain water without eroding.
 - b. Location and Required Number of Bicycle Parking Spaces:
 - (i) The site plan includes interior bicycle storage room. This will allow for the minimum storage of 2 bicycles on each site to be parked in a secure location, with the potential for additional storage within each owner's individual unit.
 - c. Motorcycles and Scooter Parking:
 - (i) There are no areas designated for motorcycles or scooters at this time; however, adequate room exists for the storage of these motor vehicles should an owner decided to use his/her deeded space for motorcycles or scooters.
 - d. Snow Storage:
 - (i) Given the parking areas will be covered in their entirety, snow removal is not required. In general, snow will be stored in green space. Snow storage for 126 North Street will be located on the southeast edge of the lot. See site plan C-10.
 - (ii) The snow storage has not been located where it will adversely impact the functionality of any part of the site.
5. Transportation Demand Management (TDM):
- a. A TDM plan is not required for this project.
 - b. A TDM plan is not required for this project.
 - c. A TDM plan is not required for this project.



(b) Environmental Quality Standards

1. Preservation of Significant Natural Features:
 - a. Not applicable.
 - b. Not applicable.
2. Landscaping and Landscaping Preservation:
 - a. Landscape Preservation.
 - (i) The disturbance of trees and vegetation that are not proposed to be removed as part of the project will be limited as much as possible – namely along the side and rear property lines.
 - (ii) There are no trees 10 inches DBH or greater identified by the Surveyor within the setbacks.
 - (iii) It is not anticipated that the project will necessitate any tree protection.
 - (iv) A waiver is not requested.
 - (v) Not applicable.
 - b. Site Landscaping.
 - (i) Landscaped Buffers:
 - a. Solid waste will be handled internally and out of site from the public ROW.
 - b. The project at 128R has 0 linear feet of frontage along North Street; however, a multitude of plantings will be provided on site as outlined on the Landscape Plan. The 126 site also meets the landscaping requirement based on its minimal street frontage.
 - c. Not applicable.
 - d. Screening has been provided as outlined in the Landscape Plan.
 - (ii) Parking Lot Landscaping:
 - a. Not applicable – all parking is covered.
 - b. There is no proposed area with greater than 40 parking spaces without interrupted pavement.
 - c. Not applicable.
 - d. Not applicable.
 - e. Not applicable.
 - f. Not applicable.



(iii) Street Trees:

- a. The two existing street trees are proposed to remain. Given the minimal street frontage and existing trees, the Applicant will pay into the tree fund for the net deficit of nine street trees.
- b. Not applicable.

3. Water Quality, Stormwater Management and Erosion Control:

a. Stormwater:

- (i) The site drainage will not be directed to flow or pond onto adjacent lots. The drainage patterns will be altered to intercept the roof runoff as well as the driveway runoff, with the addition of stormwater best management practices to attenuate the flows.
 - (ii) Any stormwater that flows onto adjacent lots will not exceed the pre-development flows.
 - (iii) The runoff from the site into the City property will not increase from the pre-development condition.
 - (iv) Not applicable.
- b. A site-specific Stormwater Management Plan has been developed for the project to show compliance with Section 5 of the Technical Manual, including the basic standards of MEDEP Chapter 500. Please refer to sections J and K, the Stormwater Management and Erosion & Sedimentation Control Plans, respectively, for more information.
 - c. The project is not located in a watershed of an urban impaired stream as listed by the MEDEP.
 - d. Not applicable.
 - e. The development is not anticipated to pose a contamination risk to groundwater during or after construction. The project will be serviced by a public wastewater system.
 - f. The development will provide for adequate and sanitary disposal of sewage in accordance with Section 2 of the Technical Manual.

(c) Public Infrastructure and Community Safety Standards

1. Consistency with City Master Plans:

- a. The project has been designed to be consistent with the City's Zoning Ordinance and off-site infrastructure.
- b. Not applicable.

2. Public Safety and Fire Prevention:

- a. The site has been designed to promote safe and inviting public access.



- b. Access is available to both buildings via the proposed 16' entrance to 128R North Street which will be constructed in Phase 1. The building will be sprinkled with a full NFPA 13 system.
 - c. A fire hydrant is located about 215' away located on 146 North street in front of the Island View Apartments. Another fire hydrant is located approximately 175' away on the corner of Walnut Street and North Street.
3. Availability and Adequate Capacity of Public Utilities:
- a. Public utilities in the vicinity of the site have capacity to serve the project. Ability to Serve letters have been sent to the respective companies. Responses have been included in the submission and any remaining responses will be submitted upon receipt.
 - b. The electrical service will be wired underground.
 - c. The new sewer and stormwater infrastructure will meet the provisions of the Technical Manual.
 - d. The projects will be served by connection to the public sewer system within North Street.
 - e. The sanitary sewer collection system meets all applicable sections of the Technical Manual. The stormwater management system is designed to meet the standards of Chapter 500.
 - f. Although not required, the project anticipates providing internal solid waste storage with private hauling of the waste.

(d) Site Design Standards

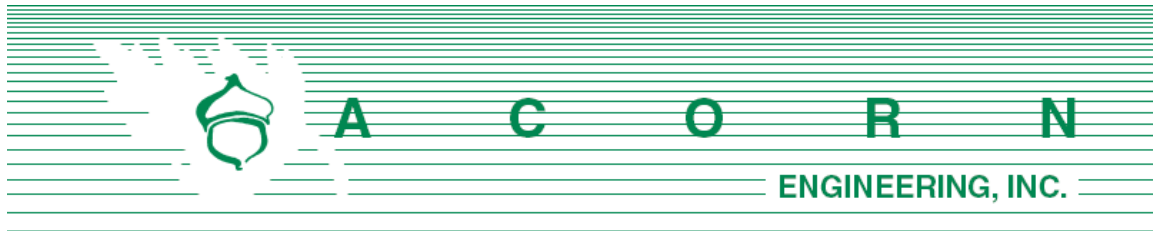
1. Massing, Ventilation and Wind Impact:
- a. Not applicable.
 - b. Not applicable.
 - c. Not applicable.
2. Shadows:
- a. The shadows created by the building will not influence public open spaces.
3. Snow and Ice Loading:
- a. The structures will not distribute snow and ice onto adjacent properties.
4. View Corridors:
- a. The project site is located outside the Downtown Vision View Corridor Protection Plan.
5. Historic Resources:
- a. The development is not located in a historic district, historic landscape district or City designated landmark.
 - b. The development is not located adjacent to designated landmarks, historic district, or historic



landscape district. The pending Munjoy Hill historic district may abut the project in the future.

- c. There are no known archaeological resources on the site.
6. Exterior Lighting:
- a. Site Lighting.
 - (i) Exterior lighting will be designed to meet the requirements of Section 12 of the Technical Manual. A photometric plan has been included with this submission.
 - (ii) Any lighting that may adversely impact the abutting residential properties will feature house-side shielding.
 - b. Architectural and Specialty Lighting.
 - (i) No architectural or specialty lighting is proposed.
 - (ii) No up-lighting is proposed.
 - c. Street Lighting.
 - (i) No new street lights are proposed.
7. Noise and Vibration:
- a. The HVAC system will meet the applicable state and federal emissions requirements and will also be screened and directed away from abutters.
8. Signage and Wayfinding:
- a. All street and wayfinding signage shall meet the requirements of the Manual on Uniform Traffic Devices (MUTCD) and Division 22 of the City Code.
 - (i) The project is not located in a historic district or subject to Article IX.
 - (ii) Not applicable.
 - (iii) All street and wayfinding signage shall meet the requirements of the Manual on Uniform Traffic Devices (MUTCD) and Division 22 of the City Code.
9. Zoning Related Design Standards:
- a. The project has been designed to meet the standards set forth in the R-6 zone. Please refer to the Site Plan for more information on the Space & Bulk Standards.





STORMWATER MANAGEMENT **REPORT**

Prepared For:

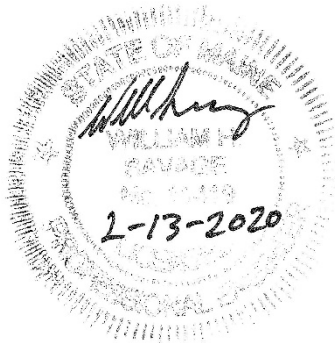
Upright Properties, LLC

Prepared By:

Acorn Engineering, Inc.

P.O. Box 3372

65 Hanover Street Portland, Maine 04101



December 2019
Rev. October 2019
Rev. February 2020

INTRODUCTION

Acorn Engineering, Inc., has been retained by Upright Properties, LLC to provide civil engineering services for the proposed development at 126 and 128R North Street. The existing structures would be demolished and replaced with a six-unit condominium and a six-unit rental. The project will increase the site's impervious area by greater than 1,000 square feet and as such is subject to water quality standards.

A stormwater analysis has been prepared to demonstrate that the project will meet the following requirements of the City of Portland (the City):

- City of Portland Land Use Ordinance Chapter 14, Article V. Site Plan Section 14-523. Required Approvals and Applicability (F) Level III Site Plan Review.
- City of Portland Technical Manual – Section 5 – Portland Stormwater Management Standards and Maine DEP Chapter 500 Stormwater Management.

EXISTING CONDITIONS

The proposed project site is located at 126/128R North Street. A boundary plan has been prepared by Nadeau Land Surveys from Portland, Maine dated August 22, 2018. All abutting uses are residential.

Both properties are currently accessed by bituminous driveways off North Street. The majority of the subject parcel's impervious area is attributed to the main structure and the driveway. Smaller areas are made up of walkways and a shed. The site slopes down significantly towards the southwest. The steep slope runs towards a concrete block retaining wall constructed as part of the Munjoy Heights project in 2015. A 10' maintenance easement runs along the rear property line which would provide future access for the Munjoy Heights Homeowner's Association to repair or replace the wall when necessary. Approximately half of the single-family's roof runoff is directed toward this wall and site.

The project team is not aware of the presence of any existing significant natural features located on the site. Given the urban setting, existing free-draining soils and steep slopes a field inventory of significant natural feature was not undertaken. The project is not located within a watershed classified as an Urban Impaired Stream.

PROPOSED DEVELOPMENT

The proposed redevelopment includes the demolition of the existing structures and construction of two structures, both with open-air/covered parking. A series of impermeable decks supported by columns will protrude from the rear of the structure. The columns on 128R will be placed on piers set below the angle of influence to the downgradient retaining wall. Furthermore, a proposed cast-in-place retaining wall up to 5' is proposed on the subject parcel to facilitate the parking. The wall will be designed and constructed in conjunction with the main structure's foundation as well as the supporting columns.

Through a series of roof drains, gutters, and a downspout, the entirety of the roof and deck runoff (which is essentially the extent of the 128R parking) are proposed to be routed to a



proprietary high-flow media rain garden at the northerly corner of the site. The design is based off a Focal Point system manufactured by ACF Environmental. The footprint of the filter media is 21 square feet and has an infiltration rate of 100 inches per hour. Below the media, 48 maintenance modules will sit above crushed stone to provide storage of the filtered water before being collected by the underdrain and piped to the street. To provide further attenuation and reduce peak flowrates to North Street, a 3.25" orifice will be provided on the outlet of the 4" underdrain.

Above the media, the garden will allow for 6 inches of ponding before overflowing into an overflow beehive grate which bypasses the filter media. The runoff generated by the building and driveway at 126 will be routed to a catch basin and storm drain lateral directed to the sewer main.

The development will be served by the Portland Water District, underground power/cable/communications, natural gas and the municipal sewer system. The project anticipates incorporating Maine DEP approved stormwater Best Management Practices (BMP) to meet the General and Flooding Standards.

GENERAL STANDARDS - WATER QUALITY

The development shall provide water quality treatment for no less than 95% of the new impervious area and 80% of the developed area. The project includes the redevelopment of existing impervious area including rooftops, asphalt driveways, and walkways. Water quality treatment shall be provided through the use of a proprietary high-flow filter media rain garden. The proposed system is a Focal Point rain garden with maintenance modules. This system is manufactured by ACF Environmental.

The system was sized to meet or exceed the requirements set forth within the MDEP Volume III: BMPs Technical Design Manual Section 7. Filtration BMPs have been shown to be very effective at removing a wide range of pollutants from stormwater runoff. Stormwater runoff from the roofs and decks will be collected by roof drains and gutters before being piped to the rain garden. A downspout will outlet onto a splash stone before entering the BMP.

The treatment of the impervious surface is as follows:

Table 1 – Impervious Treatment Area Table				
Existing Impervious Area (SF)	Total Proposed Impervious Area (SF)	New Impervious Area (SF)	Proposed Impervious Area with Treatment (SF)	Overall New Imp. Area Treated
5,705*	7,713*	2,008	3,558	177%

*Areas include shared driveway

As shown above, the project anticipates meeting and exceeding the required treatment for new impervious surfaces and developed area.

Furthermore, the minimum 80% treatment of new developed area is exceeded as ample stormwater treatment is being provided while the proposed development footprint is negligibly larger than the existing development footprint.



Regarding the water quality volume, this requirement is met by sizing the system to store 1 inch of runoff from the impervious tributary area and 0.4 inches of runoff from the landscaped tributary area.

Table 2 – Water Quality Volume			
Tributary Impervious Area (SF)	Tributary Pervious Area (SF)	Water Quality Volume Required (CF)	System Storage Volume Provided (CF)
3,558	223	304	319

Furthermore, the system is able to pass a 0.95” rainfall without overflowing into the beehive bypass drain as required by Chapter 7 Appendix B.

FLOODING STANDARD – WATER QUANTITY

The proposed project was modeled using HydroCAD to verify that the post-development conditions do not exceed the pre-development conditions. A 24-hour SCS Type III storm distribution for the 2, 10, and 25-year storm events were used. The corresponding rainfall amounts for these storms are 3.10”, 4.60”, and 5.80” respectively.

Due to the numerous variables, and inherent inaccuracies with the modeling program used to calculate stormwater runoff it is custom at Acorn Engineering, Inc. to round to the nearest whole number. However due to the small size of the project and the minimal existing flows, the stormwater runoff shall be rounded to the nearest tenth of a cubic feet per second (cfs).

Time of Concentration (T_c)

Within the pre-development, calculating a T_c using site specific flow paths yielded less than 5 minutes. A consistent time of concentration (T_c) of 5 minutes was applied to each subcatchment for both the pre and post-development conditions.

Pre-development Calculations

The pre-development model was broken into two separate subcatchments.

- Subcatchment 1 – This tributary includes the front half of the 128R pitched roof, a portion of the concrete walk, the driveway between the existing house and North St., and green space., 126 North structure and driveway.
- Subcatchment 2 – This tributary includes the rear half of the pitched roof, the shed, a portion of the concrete walk, and the embankment upgradient of the Munjoy Heights retaining wall.

A pre-development watershed map developed for this project can be viewed in Attachment A and a copy of the HydroCAD calculations is included within Attachment C, of this report.

Peak flow rates for the storm events are as follows:



Table 3 – Pre-Development Peak Stormwater Flows			
Drainage Area	2 – Year Storm Event (cfs)	10 – Year Storm Event (cfs)	25 – Year Storm Event (cfs)
Total Runoff	0.5	0.9	1.2

Post-development Calculations:

The post-development model was broken into three separate subcatchments.

- Subcatchment 1.1 – This tributary includes the entirety of the 128 R roof, the decks, and a small amount of green space all flowing to the high-flow rain garden.
- Subcatchment 1 – This tributary includes green space on both properties flowing to field inlets and a catch basin, the brick walkways, the proposed 126 structure, and the two driveways.
- Subcatchment 2 – This tributary includes a portion of the proposed retaining wall as well as green space and the embankment upgradient of the existing retaining wall on the Munjoy Heights site.

A post-development Watershed Map developed for this project can be viewed in Attachment B and a copy of the HydroCAD calculations is included within Attachment C, of this report.

It should be noted that the existing driveway was modeled in both the pre and post conditions. Despite the property lines, it is functionally part of the site and tributary to North Street along with a portion of the subject parcel. Therefore, its hydrology and contribution to stormwater runoff was included within both models.

The post-development calculations include changes to the land use, and the compensation provided by the stormwater BMP. The following table represents comparison of pre-development and post-development condition peak runoff rates for the proposed development and tributary area.

Table 4 – Comparison of Peak Flows						
Drainage Area	2 – Year Storm Event (cfs)		10 – Year Storm Event (cfs)		25 – Year Storm Event (cfs)	
Total Runoff	Pre	Post	Pre	Post	Pre	Post
	0.5	0.4	0.9	0.6	1.2	0.8

As shown in Table 4 the net impact of the post development peak flows will remain at or below the predevelopment levels. A post-development watershed map developed for this project can be viewed in Attachment B, and a copy of the HydroCAD calculations is included within Attachment C of this report.

SOILS

Onsite soil information includes the following:

➤ Soil Conservation Service Medium Intensity Soil Survey for Cumberland County

Given the soils information, listed above, no onsite wastewater is proposed, deep fills/cuts the applicant does not intend to perform a more intense hydric soil boundary delineation because of the waiver requirements set forth in the City of Portland Technical Manual – Section 7 – Soil Survey, Rev. 6/17/12 are met.

The area within and surrounding the project includes soils types listed in the table below. The susceptibility of soils to erosion is indicated on a relative “K” scale of values over a range of 0.02 to 0.69. Higher “K” values indicate more erodible soils.

Table 5 - “K” Value		
Soils Type	Subsurface	Substratum
Hinckley	.17	.17

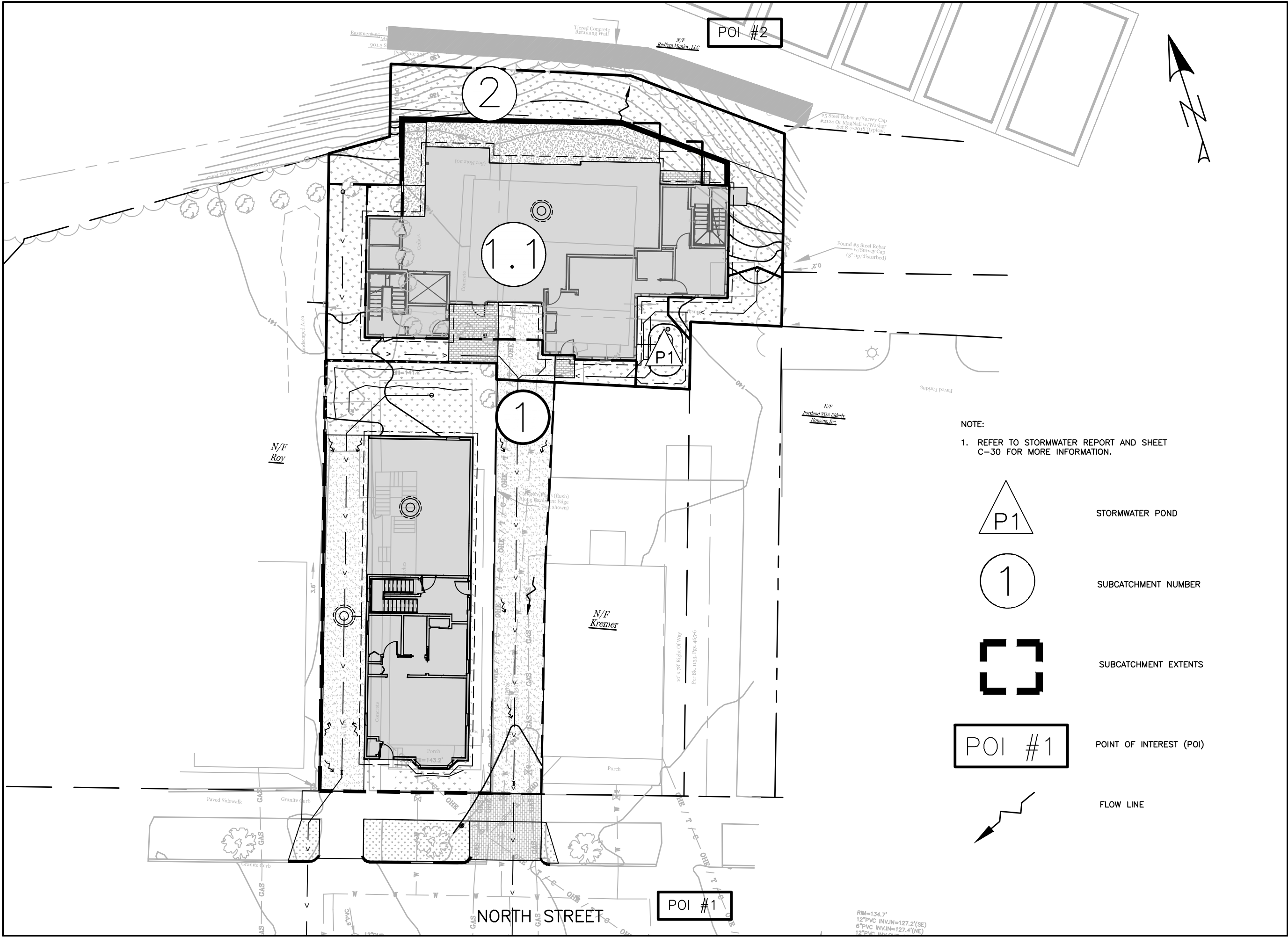
The soil “K” values for the soils, listed above, show a low susceptibility to erosion. The site’s susceptibility to erosion is from the Soil Conservation Service Medium Intensity Soil Survey for Cumberland County. Although soil “K” values for the soils show a low susceptibility to erosion, implementation of the proposed Erosion & Sedimentation Measures by the contractor will be of the utmost importance, given the embankment and downhill retaining wall.

Conclusion

The proposed development was designed to meet the requirements implemented by the MDEP under the Stormwater Management Statute (38 M.R.S.A. § 420-D) as well as the City of Portland Technical Manual – Section 5 – Portland Stormwater Management Standards. As a result, the design of the proposed development and stormwater system, the project does not anticipate to create erosion, drainage or runoff problems either in the development or with respect to adjoining properties. The existing flows will be maintained, but redirected to the stormwater system through LID techniques rather than the abutting property.

Attachments

Attachment A: Pre Development Watershed Map
Attachment B: Post Development Watershed Map
Attachment C: HydroCAD Calculations



ISSUED FOR	BY DATE
FINAL APP.	WHS 6/7/19
PHASE II UPDATE	WHS 10/29/19
REVISION	REV. DATE

DRAWING NAME:	POST-DEVELOPMENT WATERSHED MAP
PROJECT NAME:	128R NORTH STREET
CLIENT:	UPRIGHT FRAMEWORKS, LLC PORTLAND, ME



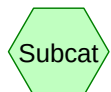
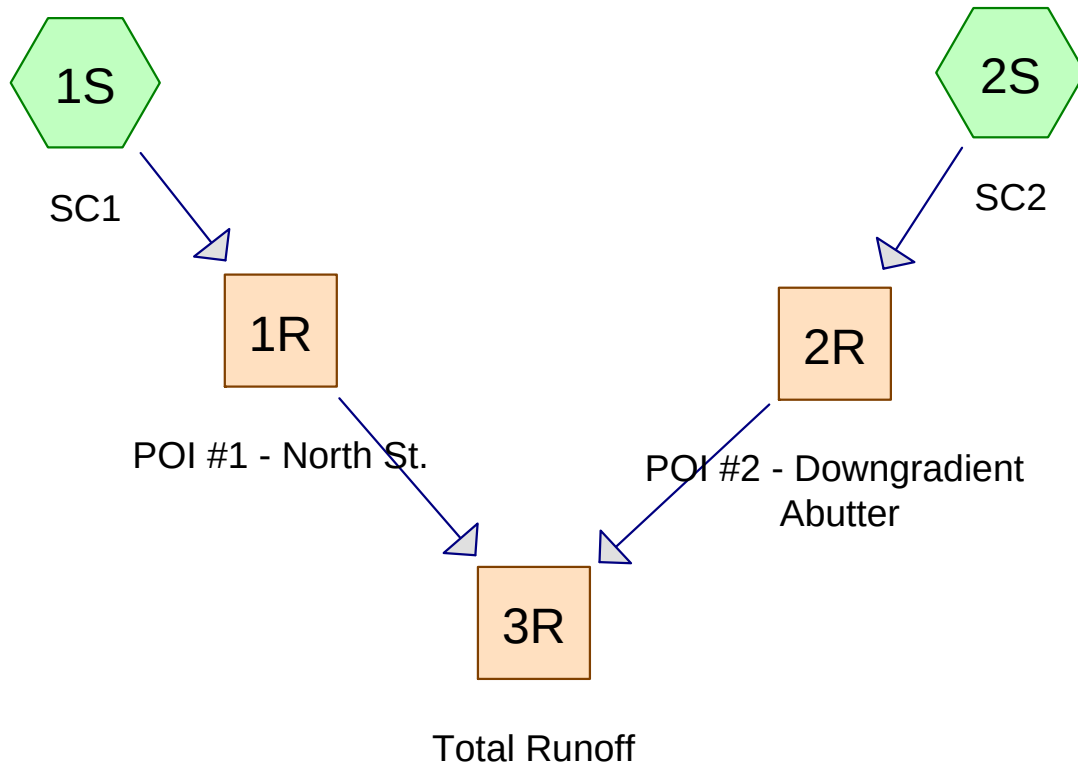
ACORN
ENGINEERING, INC.

65 HANOVER ST PORTLAND,
MAINE 04101
(207) 775-2655

FILE:	1116_CIVIL
JN:	1116
SCALE:	1"=20'
DESIGN BY:	SJL
DRAWN BY:	SJL
CHECKED BY:	WHS

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

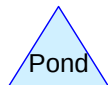
DRAWING NO.
POST



Subcat



Reach



Pond



Link

Routing Diagram for Pre Development 10-29

Prepared by Acorn Eng, Printed 10/29/2019

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Pre Development 10-29

Prepared by Acorn Eng

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.016	98	(2S)
0.118	74	>75% Grass cover, Good, HSG C (1S, 2S)
0.090	98	Pavement, roof, concrete (1S)
0.025	98	shared driveway (1S)
0.249	87	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.118	HSG C	1S, 2S
0.000	HSG D	
0.131	Other	1S, 2S
0.249		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.000	0.016	0.016		2S
0.000	0.000	0.118	0.000	0.000	0.118	>75% Grass cover, Good	1S, 2S
0.000	0.000	0.000	0.000	0.090	0.090	Pavement, roof, concrete	1S
0.000	0.000	0.000	0.000	0.025	0.025	shared driveway	1S
0.000	0.000	0.118	0.000	0.131	0.249	TOTAL AREA	

Pre Development 10-29

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

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Time span=1.00-36.00 hrs, dt=0.01 hrs, 3501 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: SC1

Runoff Area=6,051 sf 82.73% Impervious Runoff Depth=2.45"

Tc=5.0 min CN=94 Runoff=0.40 cfs 0.028 af

Subcatchment2S: SC2

Runoff Area=4,811 sf 14.53% Impervious Runoff Depth=1.14"

Tc=5.0 min CN=77 Runoff=0.15 cfs 0.011 af

Reach 1R: POI #1 - North St.

Inflow=0.40 cfs 0.028 af

Outflow=0.40 cfs 0.028 af

Reach 2R: POI #2 - Downgradient Abutter

Inflow=0.15 cfs 0.011 af

Outflow=0.15 cfs 0.011 af

Reach 3R: Total Runoff

Inflow=0.54 cfs 0.039 af

Outflow=0.54 cfs 0.039 af

Total Runoff Area = 0.249 ac Runoff Volume = 0.039 af Average Runoff Depth = 1.87"
47.48% Pervious = 0.118 ac 52.52% Impervious = 0.131 ac

Pre Development 10-29

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

Printed 10/29/2019

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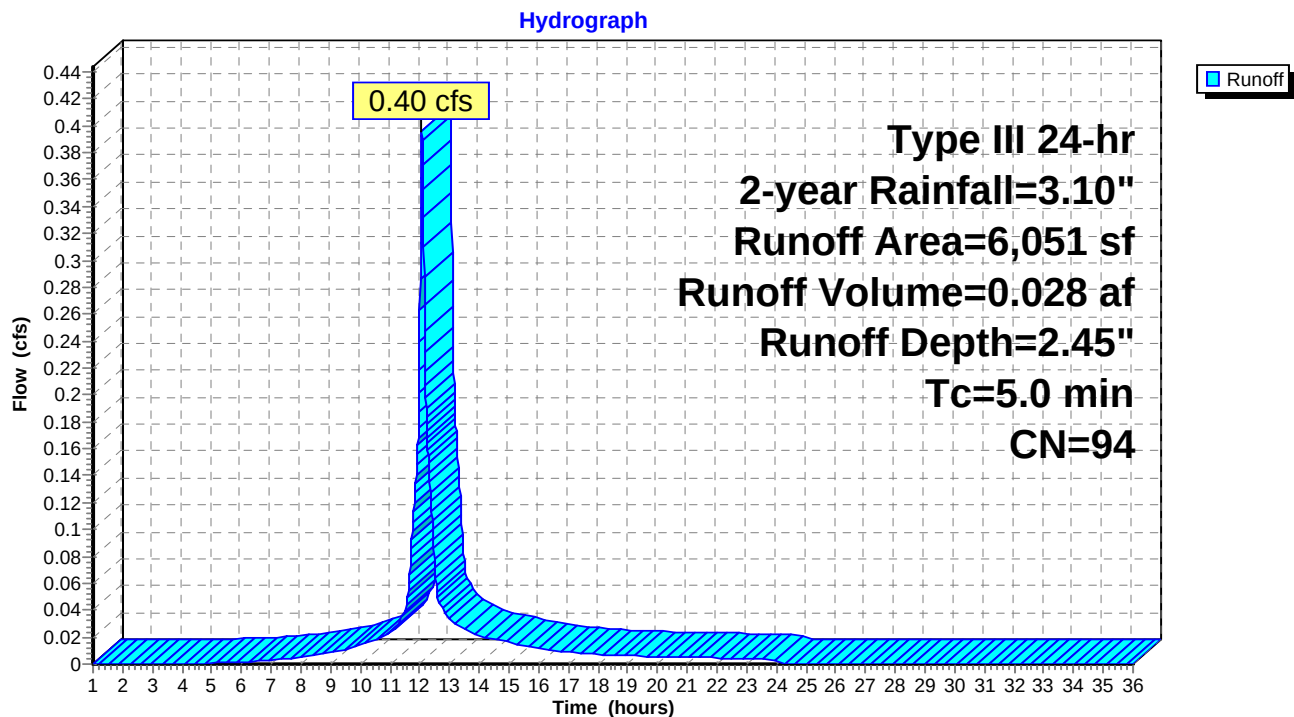
Summary for Subcatchment 1S: SC1

Runoff = 0.40 cfs @ 12.07 hrs, Volume= 0.028 af, Depth= 2.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
	1,045	74	>75% Grass cover, Good, HSG C
*	3,929	98	Pavement, roof, concrete
*	1,077	98	shared driveway
	6,051	94	Weighted Average
	1,045		17.27% Pervious Area
	5,006		82.73% Impervious Area

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

Subcatchment 1S: SC1

Pre Development 10-29

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

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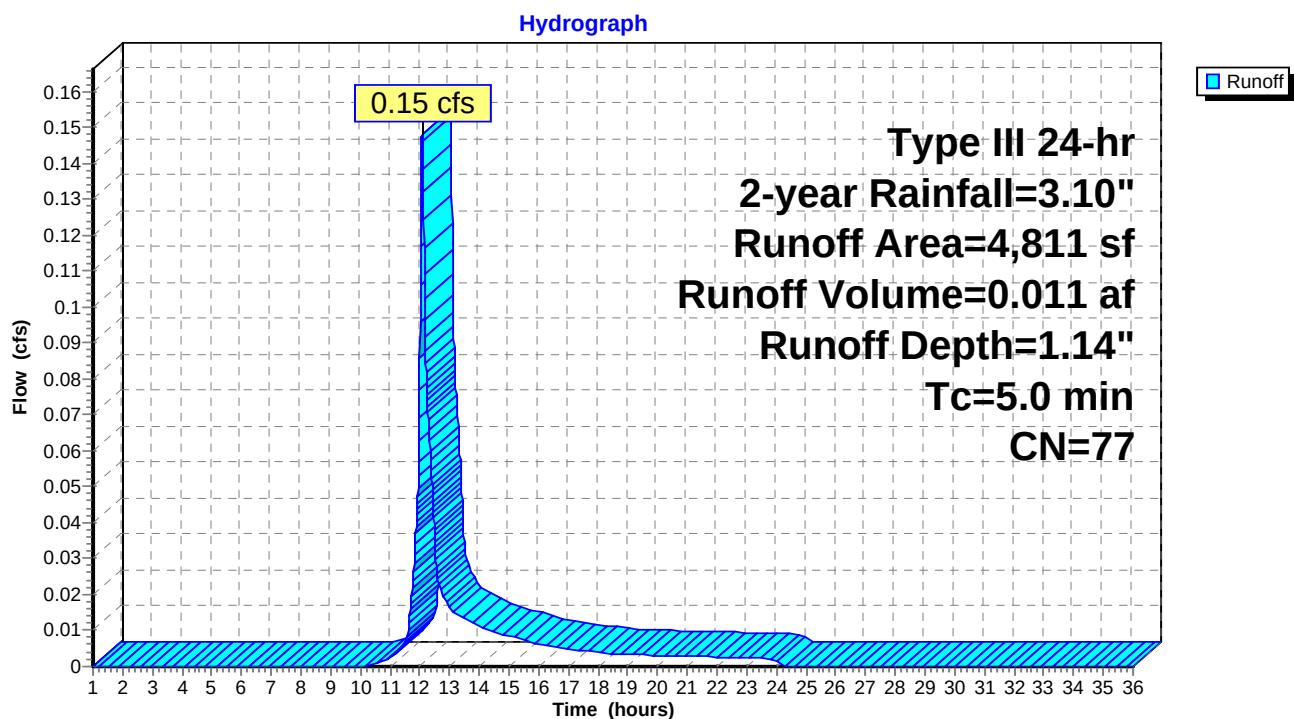
Summary for Subcatchment 2S: SC2

Runoff = 0.15 cfs @ 12.08 hrs, Volume= 0.011 af, Depth= 1.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	699	98	
	4,112	74	>75% Grass cover, Good, HSG C
	4,811	77	Weighted Average
	4,112		85.47% Pervious Area
	699		14.53% Impervious Area

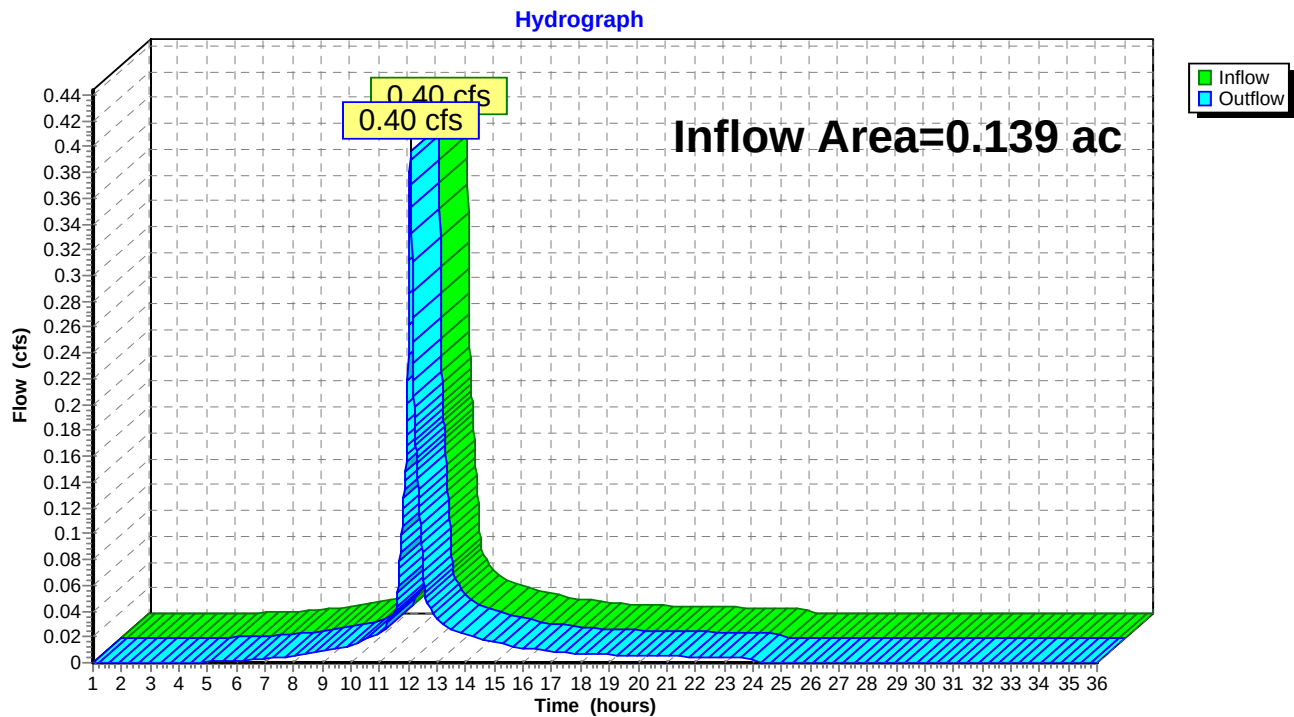
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct Urban Environment

Subcatchment 2S: SC2

Summary for Reach 1R: POI #1 - North St.

Inflow Area = 0.139 ac, 82.73% Impervious, Inflow Depth = 2.45" for 2-year event
Inflow = 0.40 cfs @ 12.07 hrs, Volume= 0.028 af
Outflow = 0.40 cfs @ 12.07 hrs, Volume= 0.028 af, Atten= 0%, Lag= 0.0 min

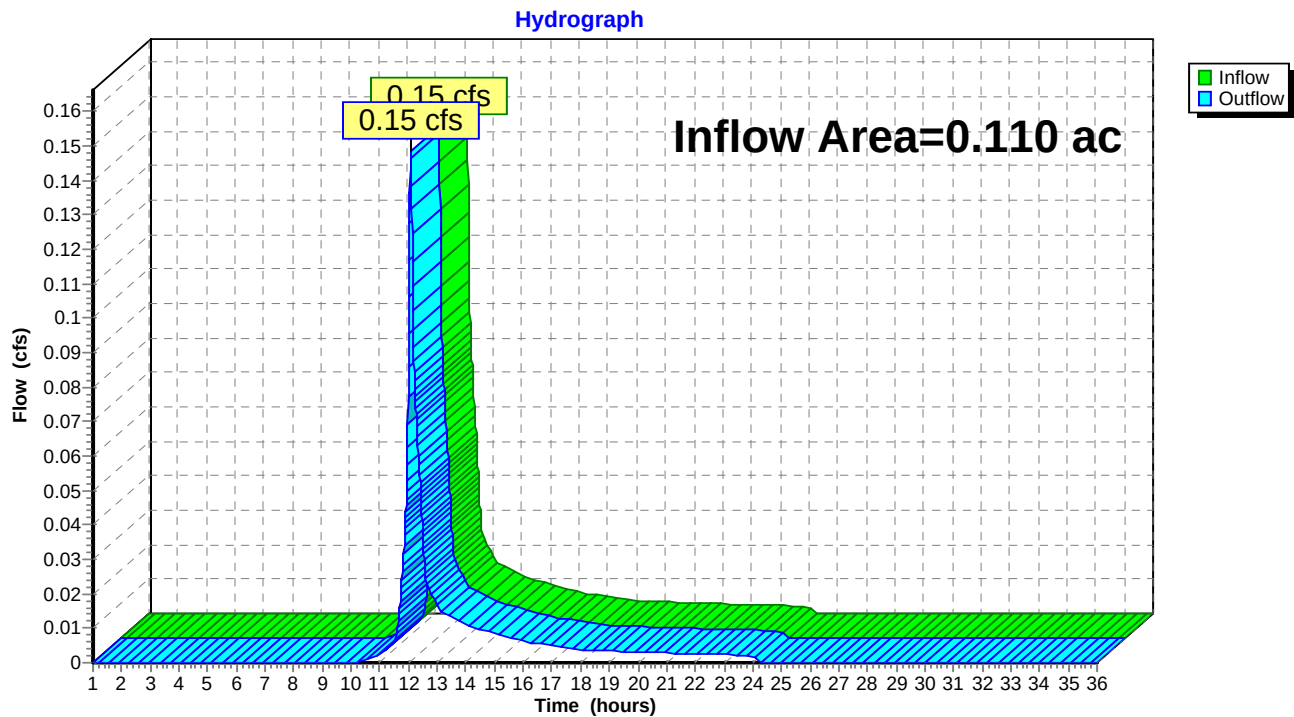
Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Reach 1R: POI #1 - North St.

Summary for Reach 2R: POI #2 - Downgradient Abutter

Inflow Area = 0.110 ac, 14.53% Impervious, Inflow Depth = 1.14" for 2-year event
Inflow = 0.15 cfs @ 12.08 hrs, Volume= 0.011 af
Outflow = 0.15 cfs @ 12.08 hrs, Volume= 0.011 af, Atten= 0%, Lag= 0.0 min

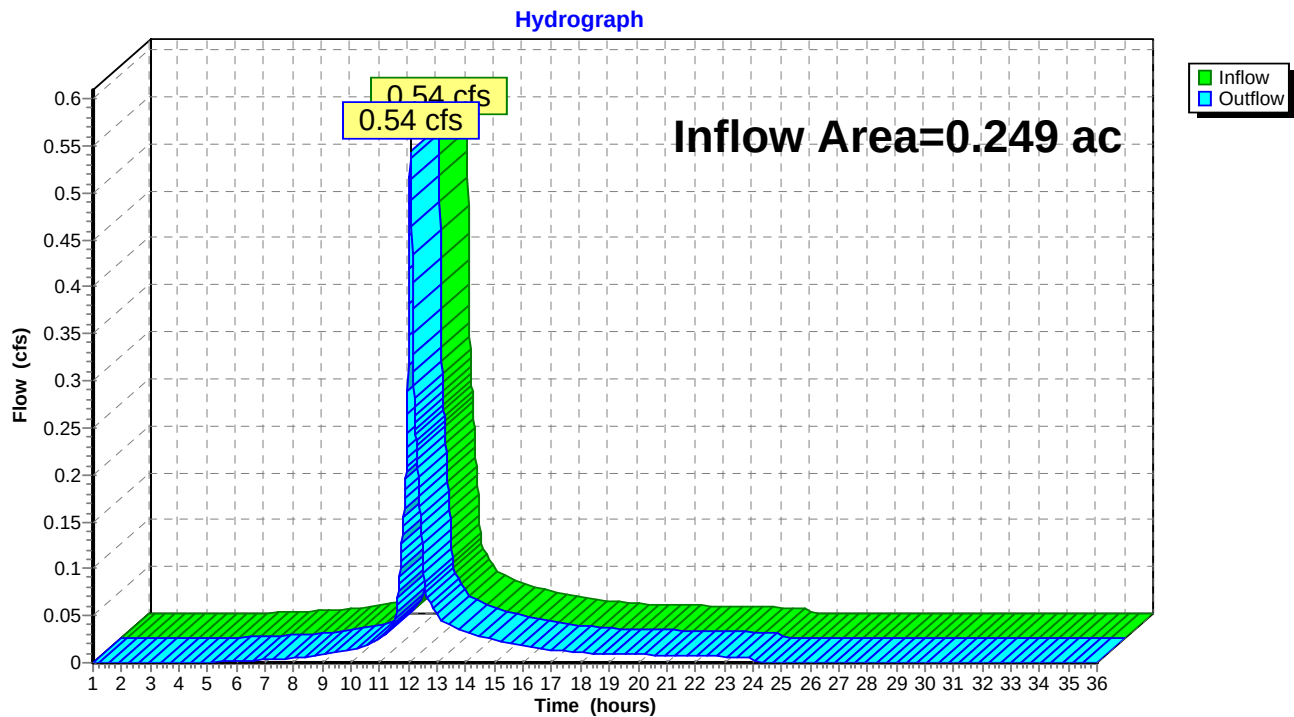
Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Reach 2R: POI #2 - Downgradient Abutter

Summary for Reach 3R: Total Runoff

Inflow Area = 0.249 ac, 52.52% Impervious, Inflow Depth = 1.87" for 2-year event
Inflow = 0.54 cfs @ 12.07 hrs, Volume= 0.039 af
Outflow = 0.54 cfs @ 12.07 hrs, Volume= 0.039 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Reach 3R: Total Runoff

Pre Development 10-29*Type III 24-hr 10-year Rainfall=4.60"*

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Time span=1.00-36.00 hrs, dt=0.01 hrs, 3501 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: SC1

Runoff Area=6,051 sf 82.73% Impervious Runoff Depth=3.91"

Tc=5.0 min CN=94 Runoff=0.62 cfs 0.045 af

Subcatchment2S: SC2

Runoff Area=4,811 sf 14.53% Impervious Runoff Depth=2.29"

Tc=5.0 min CN=77 Runoff=0.31 cfs 0.021 af

Reach 1R: POI #1 - North St.

Inflow=0.62 cfs 0.045 af

Outflow=0.62 cfs 0.045 af

Reach 2R: POI #2 - Downgradient Abutter

Inflow=0.31 cfs 0.021 af

Outflow=0.31 cfs 0.021 af

Reach 3R: Total Runoff

Inflow=0.92 cfs 0.066 af

Outflow=0.92 cfs 0.066 af

Total Runoff Area = 0.249 ac Runoff Volume = 0.066 af Average Runoff Depth = 3.20"
47.48% Pervious = 0.118 ac 52.52% Impervious = 0.131 ac

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

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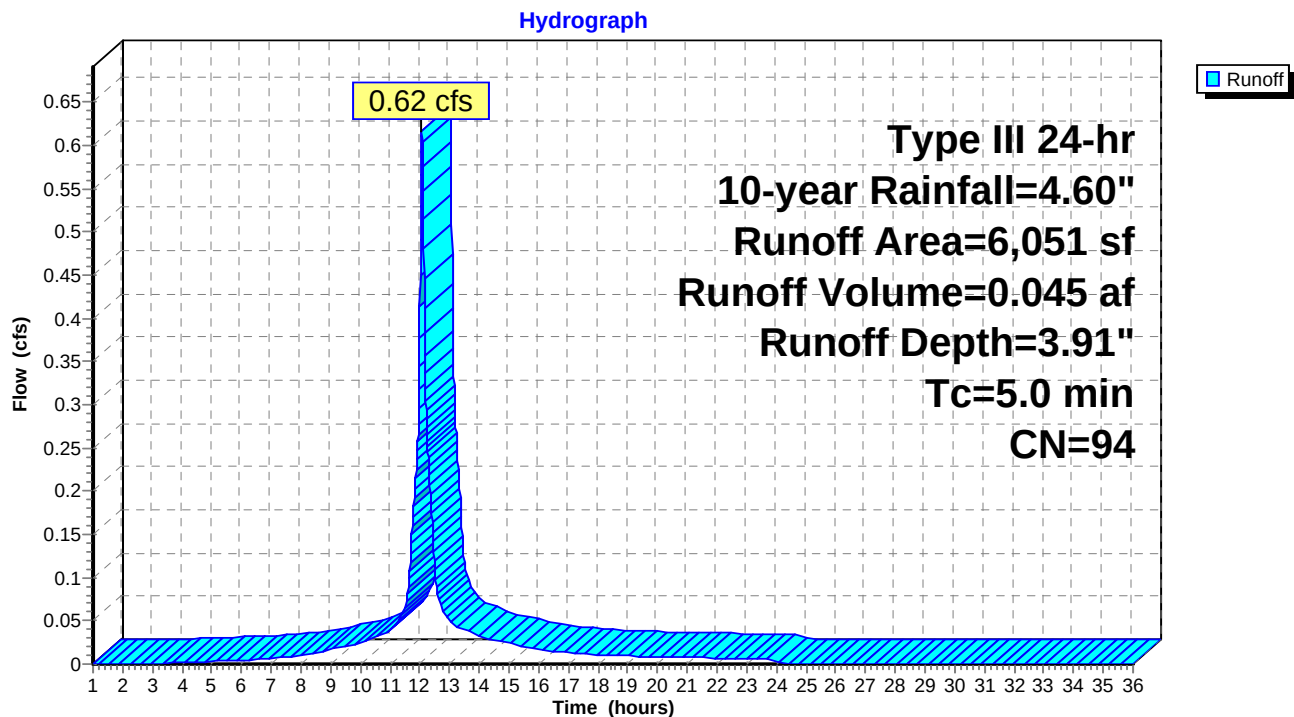
Summary for Subcatchment 1S: SC1

Runoff = 0.62 cfs @ 12.07 hrs, Volume= 0.045 af, Depth= 3.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
	1,045	74	>75% Grass cover, Good, HSG C
*	3,929	98	Pavement, roof, concrete
*	1,077	98	shared driveway
	6,051	94	Weighted Average
	1,045		17.27% Pervious Area
	5,006		82.73% Impervious Area

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

Subcatchment 1S: SC1

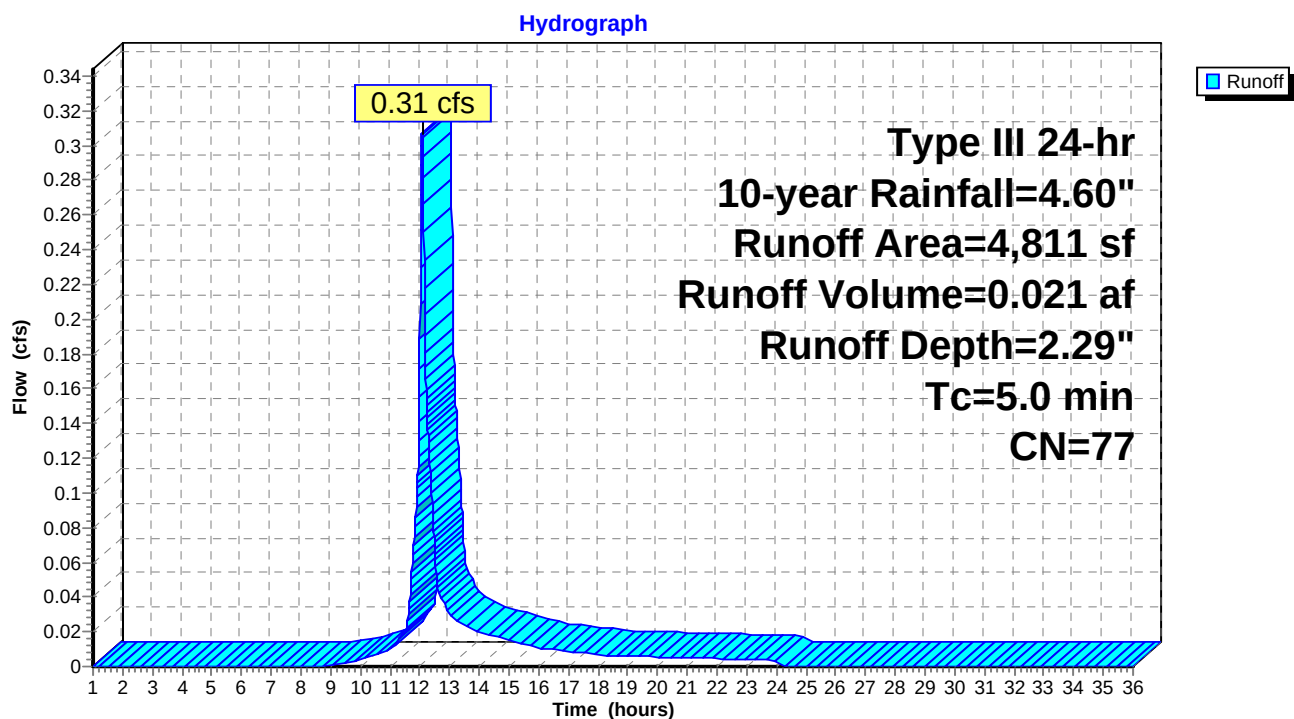
Summary for Subcatchment 2S: SC2

Runoff = 0.31 cfs @ 12.08 hrs, Volume= 0.021 af, Depth= 2.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
*	699	98	
	4,112	74	>75% Grass cover, Good, HSG C
	4,811	77	Weighted Average
	4,112		85.47% Pervious Area
	699		14.53% Impervious Area

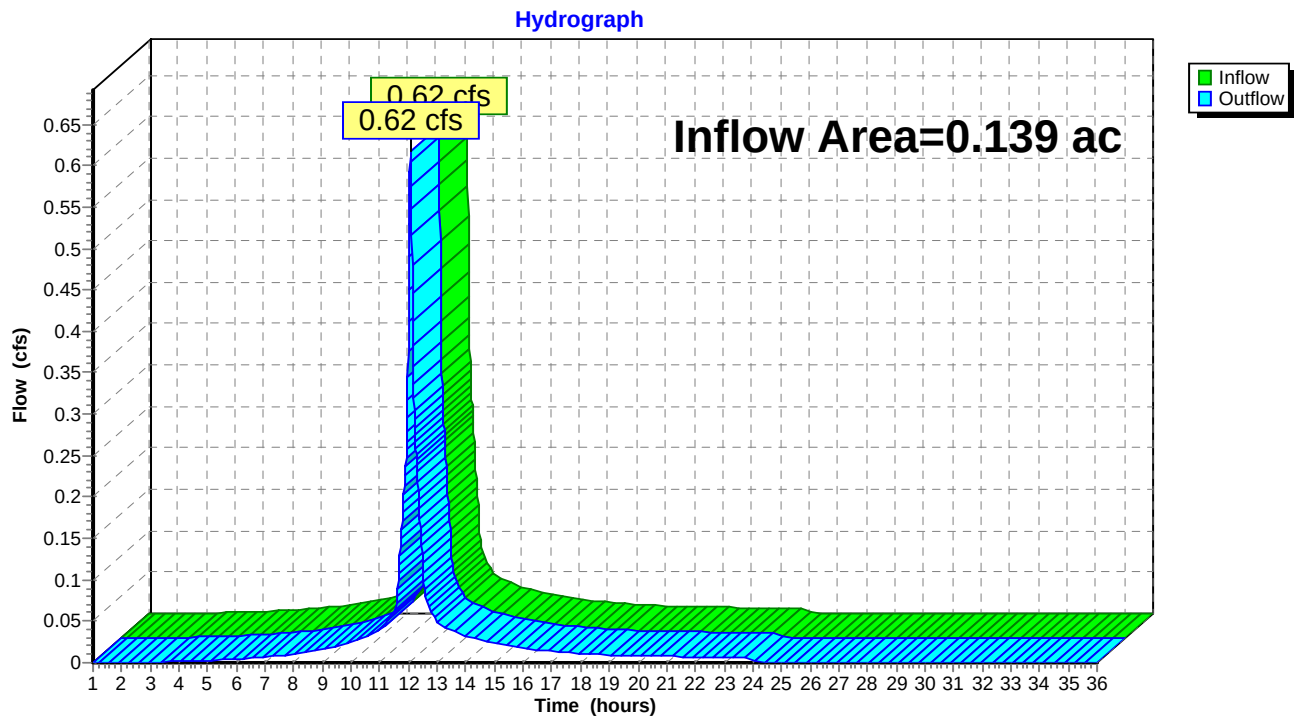
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct Urban Environment

Subcatchment 2S: SC2

Summary for Reach 1R: POI #1 - North St.

Inflow Area = 0.139 ac, 82.73% Impervious, Inflow Depth = 3.91" for 10-year event
Inflow = 0.62 cfs @ 12.07 hrs, Volume= 0.045 af
Outflow = 0.62 cfs @ 12.07 hrs, Volume= 0.045 af, Atten= 0%, Lag= 0.0 min

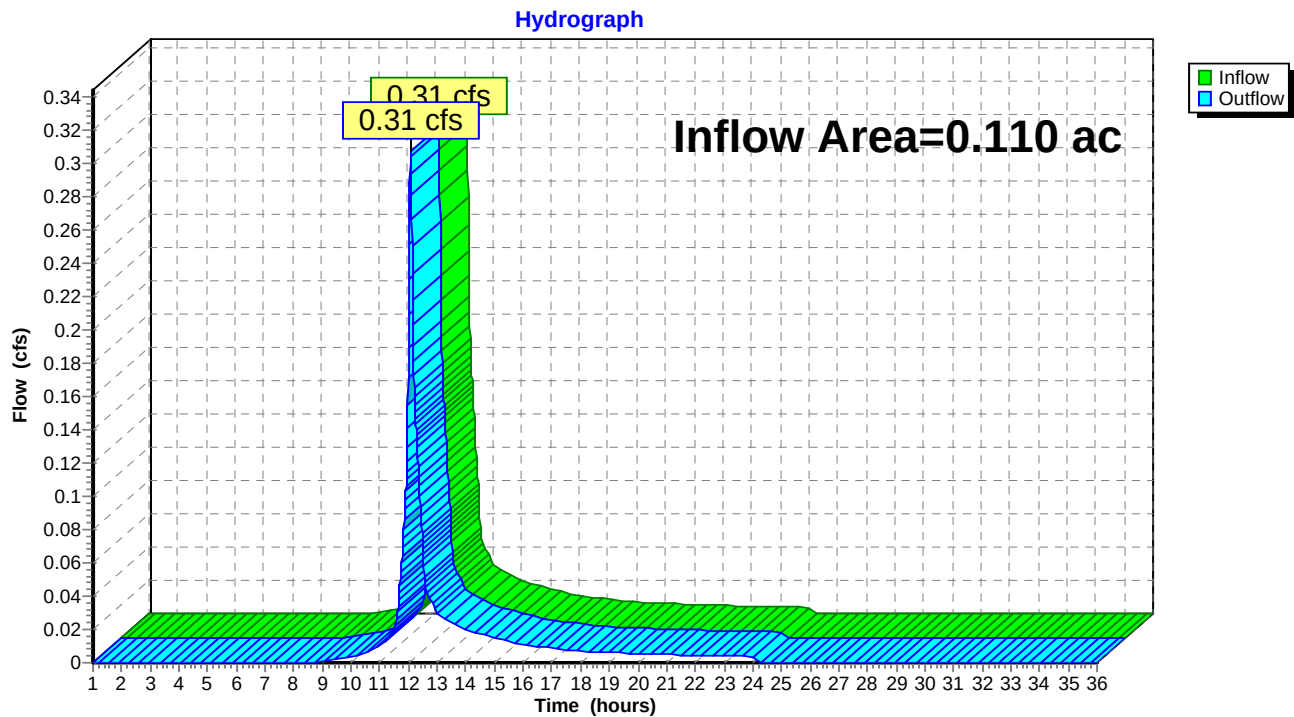
Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Reach 1R: POI #1 - North St.

Summary for Reach 2R: POI #2 - Downgradient Abutter

Inflow Area = 0.110 ac, 14.53% Impervious, Inflow Depth = 2.29" for 10-year event
Inflow = 0.31 cfs @ 12.08 hrs, Volume= 0.021 af
Outflow = 0.31 cfs @ 12.08 hrs, Volume= 0.021 af, Atten= 0%, Lag= 0.0 min

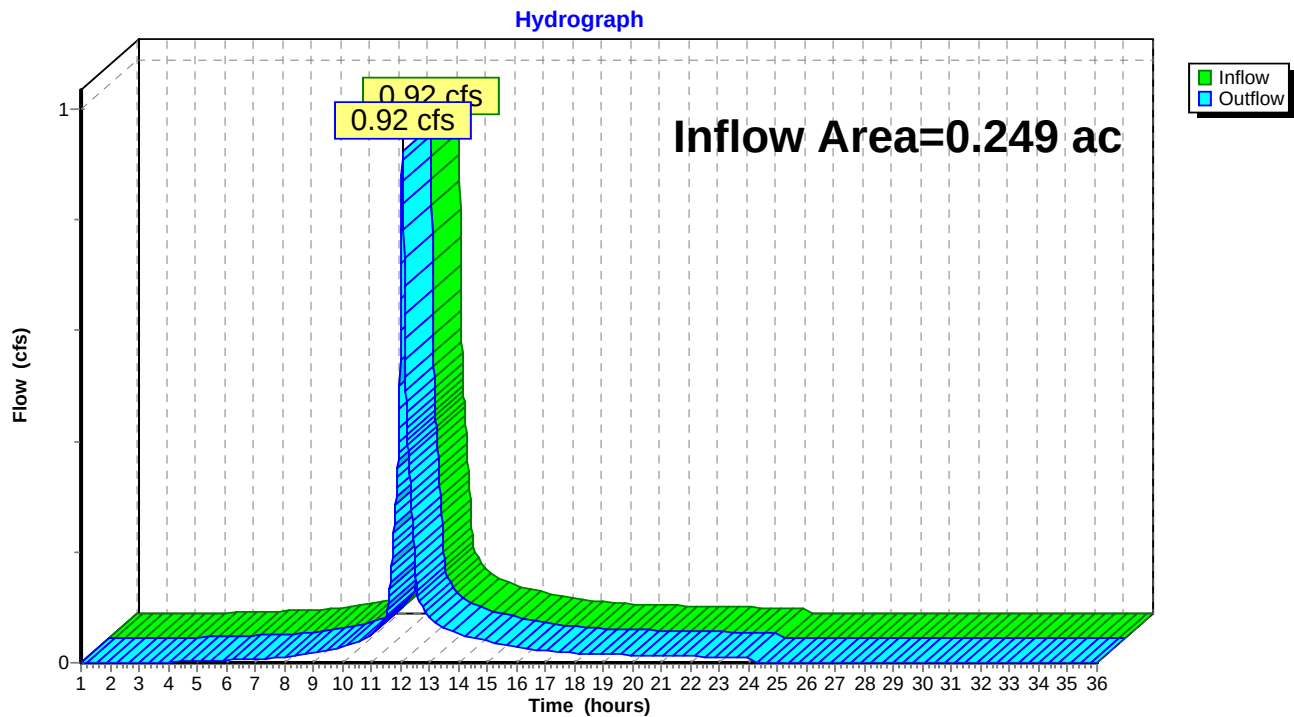
Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Reach 2R: POI #2 - Downgradient Abutter

Summary for Reach 3R: Total Runoff

Inflow Area = 0.249 ac, 52.52% Impervious, Inflow Depth = 3.20" for 10-year event
Inflow = 0.92 cfs @ 12.07 hrs, Volume= 0.066 af
Outflow = 0.92 cfs @ 12.07 hrs, Volume= 0.066 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Reach 3R: Total Runoff

Pre Development 10-29*Type III 24-hr 25-year Rainfall=5.80"*

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Time span=1.00-36.00 hrs, dt=0.01 hrs, 3501 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: SC1

Runoff Area=6,051 sf 82.73% Impervious Runoff Depth=5.10"

Tc=5.0 min CN=94 Runoff=0.79 cfs 0.059 af

Subcatchment2S: SC2

Runoff Area=4,811 sf 14.53% Impervious Runoff Depth=3.31"

Tc=5.0 min CN=77 Runoff=0.44 cfs 0.030 af

Reach 1R: POI #1 - North St.

Inflow=0.79 cfs 0.059 af

Outflow=0.79 cfs 0.059 af

Reach 2R: POI #2 - Downgradient Abutter

Inflow=0.44 cfs 0.030 af

Outflow=0.44 cfs 0.030 af

Reach 3R: Total Runoff

Inflow=1.24 cfs 0.089 af

Outflow=1.24 cfs 0.089 af

Total Runoff Area = 0.249 ac Runoff Volume = 0.089 af Average Runoff Depth = 4.30"
47.48% Pervious = 0.118 ac 52.52% Impervious = 0.131 ac

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

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Summary for Subcatchment 1S: SC1

Runoff = 0.79 cfs @ 12.07 hrs, Volume= 0.059 af, Depth= 5.10"

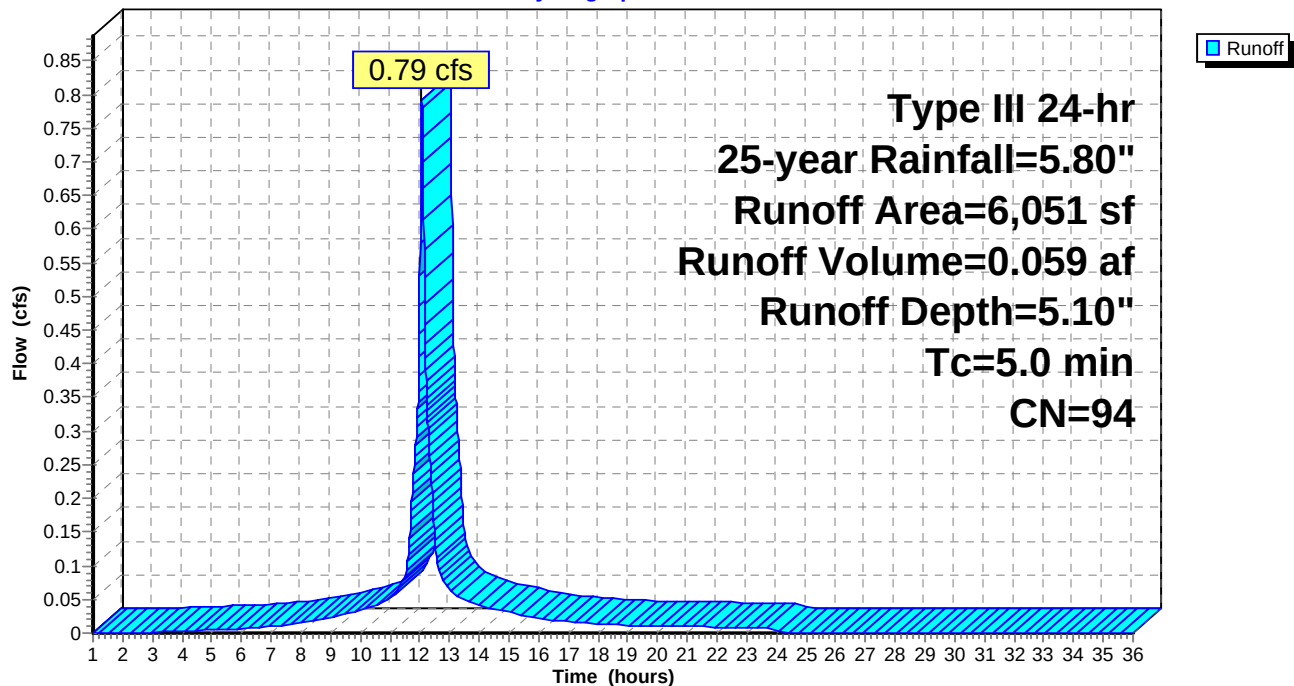
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

	Area (sf)	CN	Description
	1,045	74	>75% Grass cover, Good, HSG C
*	3,929	98	Pavement, roof, concrete
*	1,077	98	shared driveway
	6,051	94	Weighted Average
	1,045		17.27% Pervious Area
	5,006		82.73% Impervious Area

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

Subcatchment 1S: SC1

Hydrograph



Summary for Subcatchment 2S: SC2

Runoff = 0.44 cfs @ 12.07 hrs, Volume= 0.030 af, Depth= 3.31"

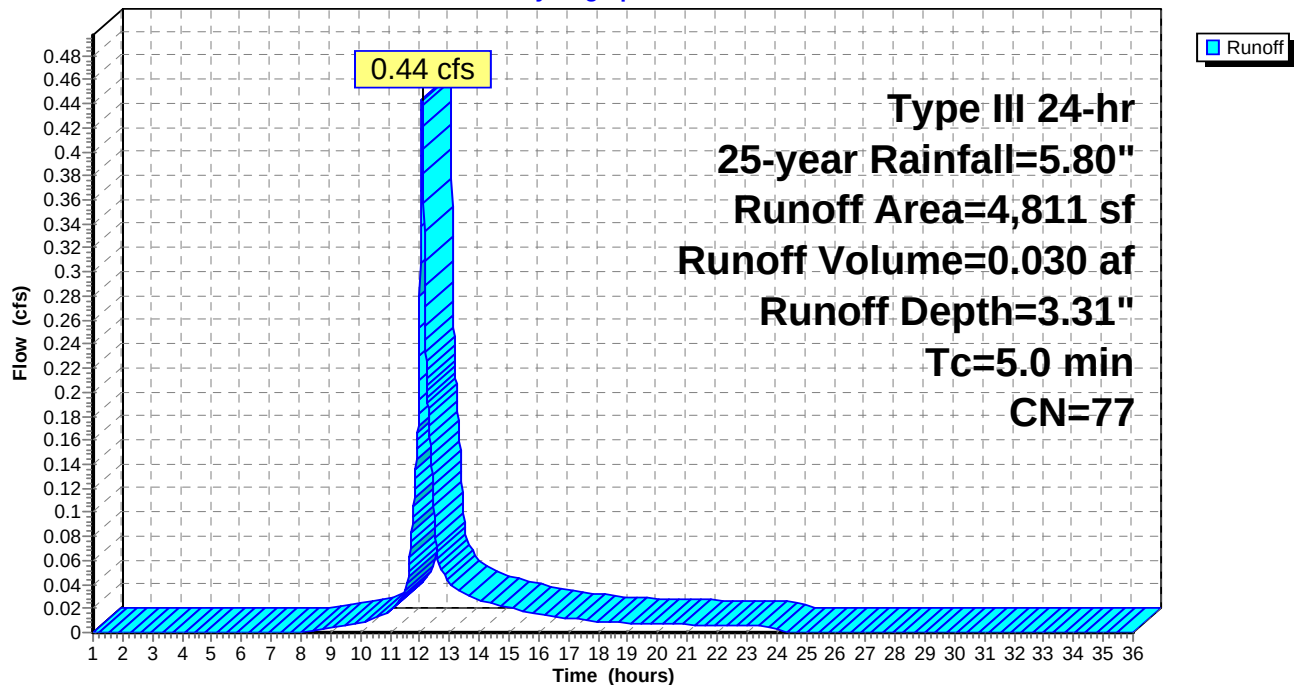
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

	Area (sf)	CN	Description
*	699	98	
	4,112	74	>75% Grass cover, Good, HSG C
	4,811	77	Weighted Average
	4,112		85.47% Pervious Area
	699		14.53% Impervious Area

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

Subcatchment 2S: SC2

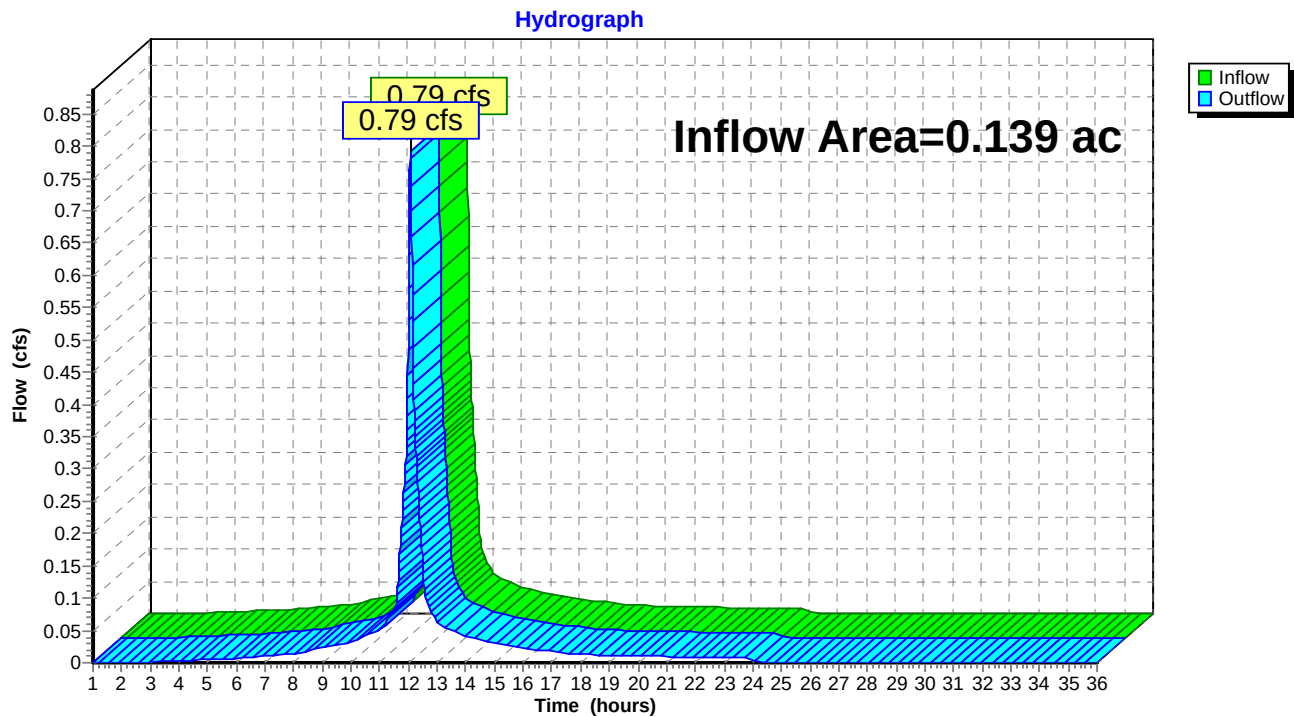
Hydrograph



Summary for Reach 1R: POI #1 - North St.

Inflow Area = 0.139 ac, 82.73% Impervious, Inflow Depth = 5.10" for 25-year event
Inflow = 0.79 cfs @ 12.07 hrs, Volume= 0.059 af
Outflow = 0.79 cfs @ 12.07 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min

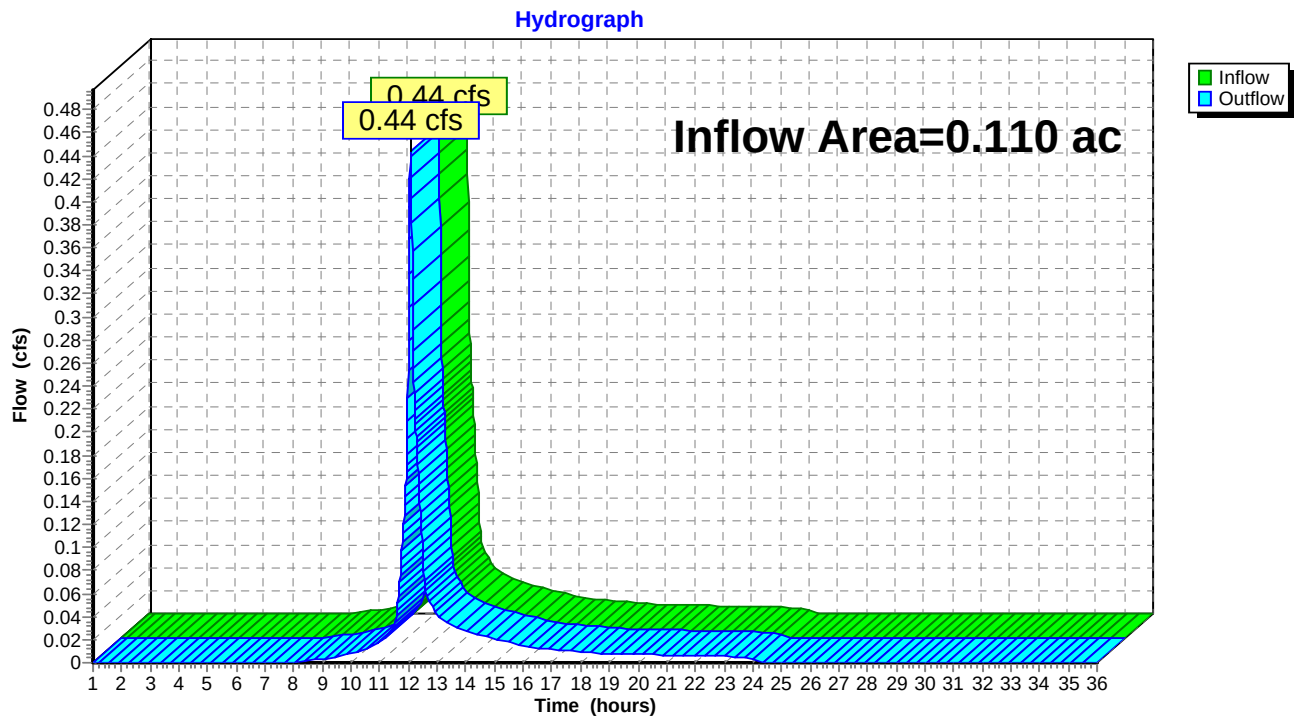
Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Reach 1R: POI #1 - North St.

Summary for Reach 2R: POI #2 - Downgradient Abutter

Inflow Area = 0.110 ac, 14.53% Impervious, Inflow Depth = 3.31" for 25-year event
Inflow = 0.44 cfs @ 12.07 hrs, Volume= 0.030 af
Outflow = 0.44 cfs @ 12.07 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.0 min

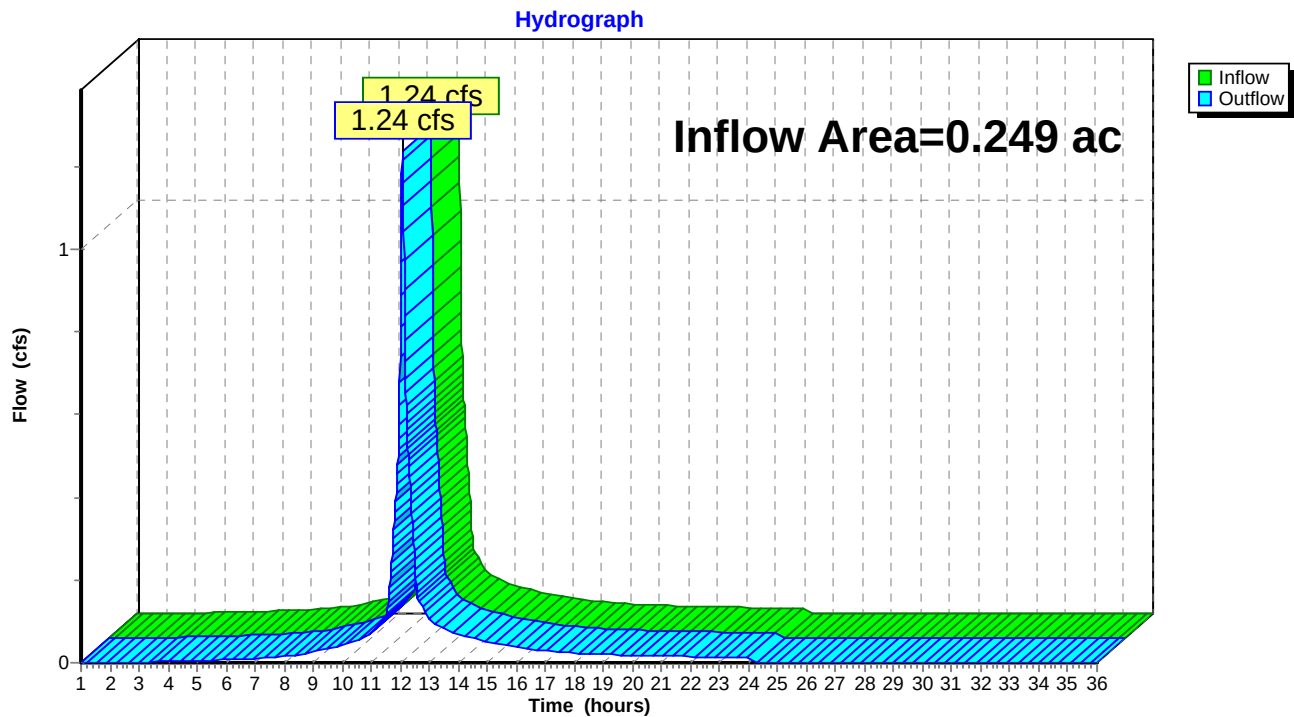
Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

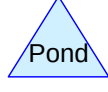
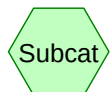
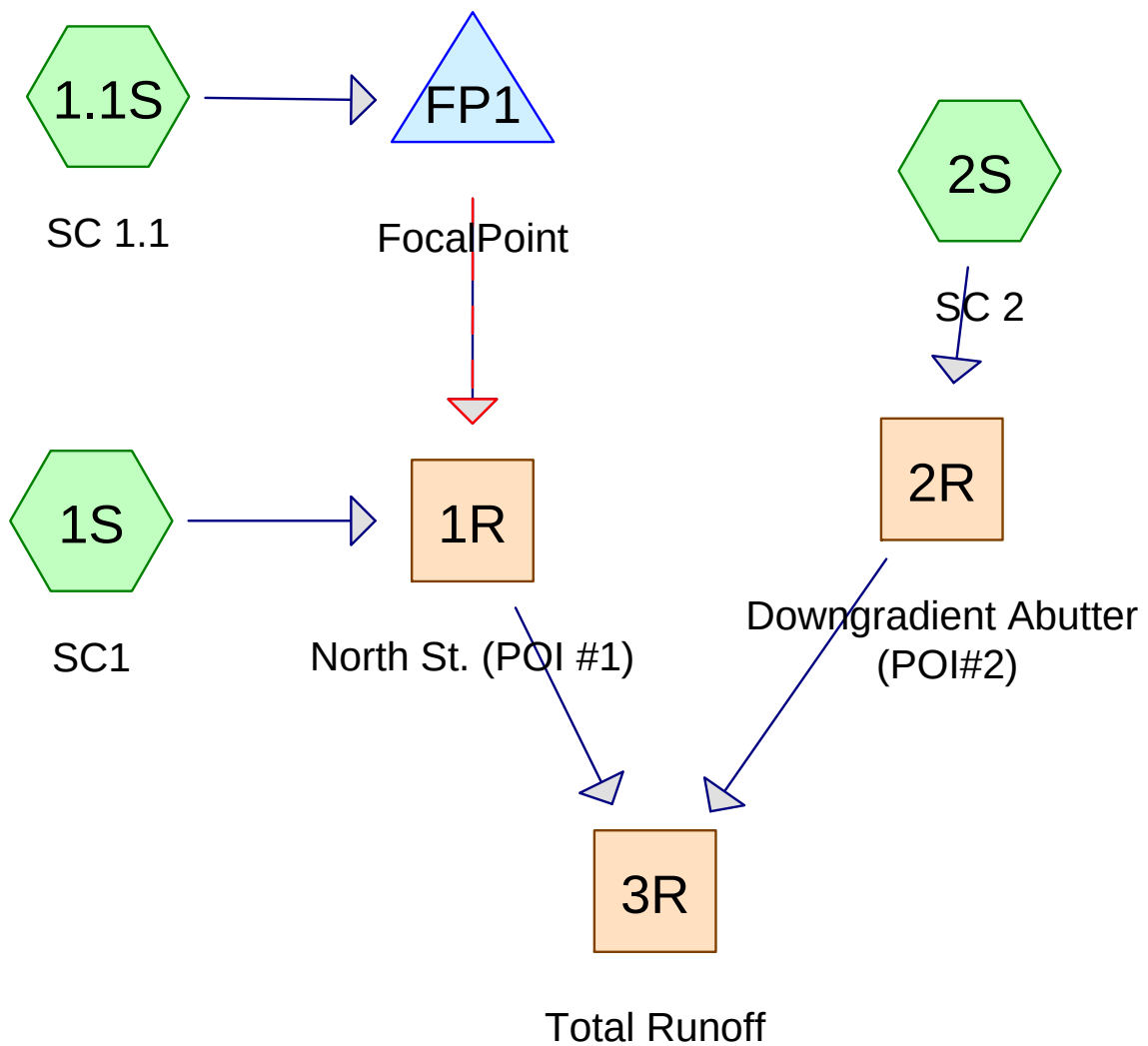
Reach 2R: POI #2 - Downgradient Abutter

Summary for Reach 3R: Total Runoff

Inflow Area = 0.249 ac, 52.52% Impervious, Inflow Depth = 4.30" for 25-year event
Inflow = 1.24 cfs @ 12.07 hrs, Volume= 0.089 af
Outflow = 1.24 cfs @ 12.07 hrs, Volume= 0.089 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Reach 3R: Total Runoff



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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.067	98	126 roof,walk,drive (1S)
0.003	98	128R walk/drive (1S)
0.037	39	>75% Grass cover, Good, HSG A (1.1S, 2S)
0.035	39	Field inlets trib/landscaping (1S)
0.001	98	Misc impervious (2S)
0.082	98	Roof, decks (1.1S)
0.025	98	shared drive (1S)
0.249	81	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.037	HSG A	1.1S, 2S
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.212	Other	1.1S, 1S, 2S
0.249		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.000	0.067	0.067	126 roof,walk,drive	1S
0.000	0.000	0.000	0.000	0.003	0.003	128R walk/drive	1S
0.037	0.000	0.000	0.000	0.000	0.037	>75% Grass cover, Good	1.1S, 2S
0.000	0.000	0.000	0.000	0.035	0.035	Field inlets trib/landscaping	1S
0.000	0.000	0.000	0.000	0.001	0.001	Misc impervious	2S
0.000	0.000	0.000	0.000	0.082	0.082	Roof, decks	1.1S
0.000	0.000	0.000	0.000	0.025	0.025	shared drive	1S
0.037	0.000	0.000	0.000	0.212	0.249	TOTAL AREA	

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Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	FP1	133.70	132.70	150.0	0.0067	0.010	3.3	0.0	0.0

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

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Time span=1.00-50.00 hrs, dt=0.01 hrs, 4901 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1.1S: SC 1.1Runoff Area=3,781 sf 94.10% Impervious Runoff Depth=2.55"
Tc=5.0 min CN=95 Runoff=0.25 cfs 0.018 af**Subcatchment1S: SC1**Runoff Area=5,648 sf 72.98% Impervious Runoff Depth=1.46"
Tc=5.0 min CN=82 Runoff=0.23 cfs 0.016 af**Subcatchment2S: SC 2**Runoff Area=1,433 sf 2.30% Impervious Runoff Depth=0.00"
Tc=5.0 min CN=40 Runoff=0.00 cfs 0.000 af**Reach 1R: North St. (POI #1)**Inflow=0.36 cfs 0.034 af
Outflow=0.36 cfs 0.034 af**Reach 2R: Downgradient Abutter (POI#2)**Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af**Reach 3R: Total Runoff**Inflow=0.36 cfs 0.034 af
Outflow=0.36 cfs 0.034 af**Pond FP1: FocalPoint**Peak Elev=134.84' Storage=80 cf Inflow=0.25 cfs 0.018 af
Outflow=0.15 cfs 0.018 af**Total Runoff Area = 0.249 ac Runoff Volume = 0.034 af Average Runoff Depth = 1.64"**
28.99% Pervious = 0.072 ac 71.01% Impervious = 0.177 ac

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

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Summary for Subcatchment 1.1S: SC 1.1

Runoff = 0.25 cfs @ 12.07 hrs, Volume= 0.018 af, Depth= 2.55"

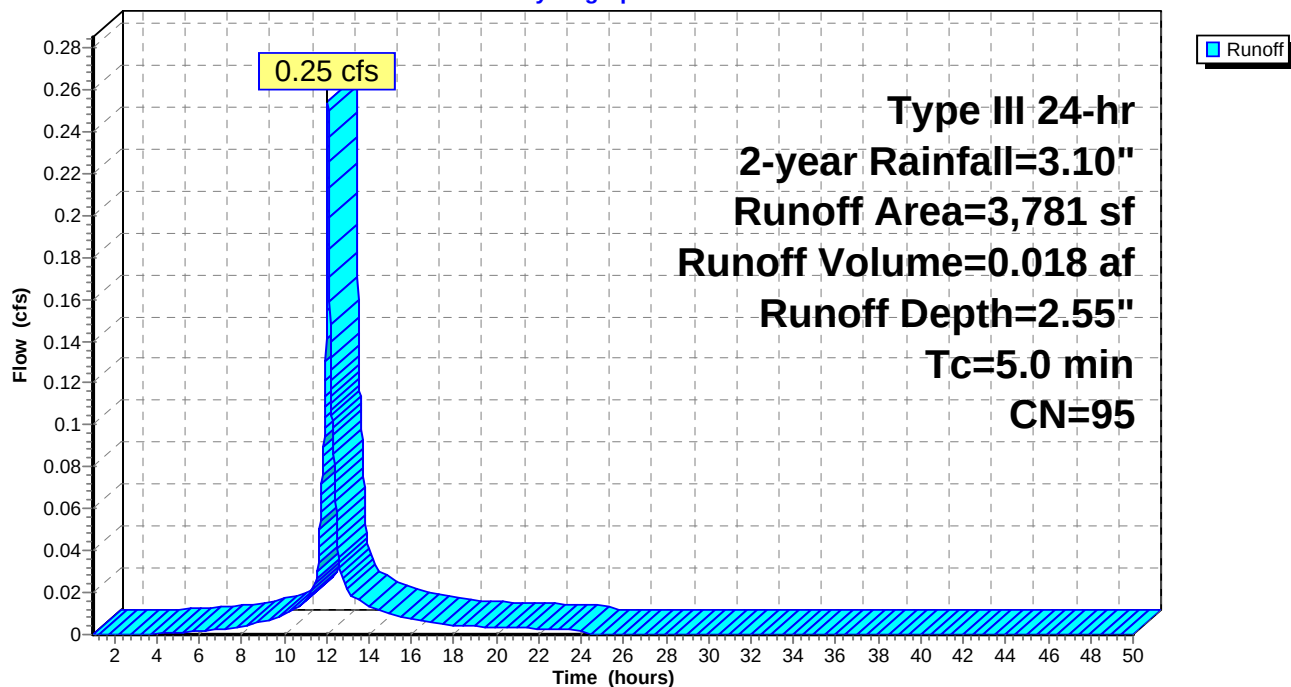
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	3,558	98	Roof, decks
	223	39	>75% Grass cover, Good, HSG A
	3,781	95	Weighted Average
	223		5.90% Pervious Area
	3,558		94.10% Impervious Area

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

Subcatchment 1.1S: SC 1.1

Hydrograph



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

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Summary for Subcatchment 1S: SC1

Runoff = 0.23 cfs @ 12.08 hrs, Volume= 0.016 af, Depth= 1.46"

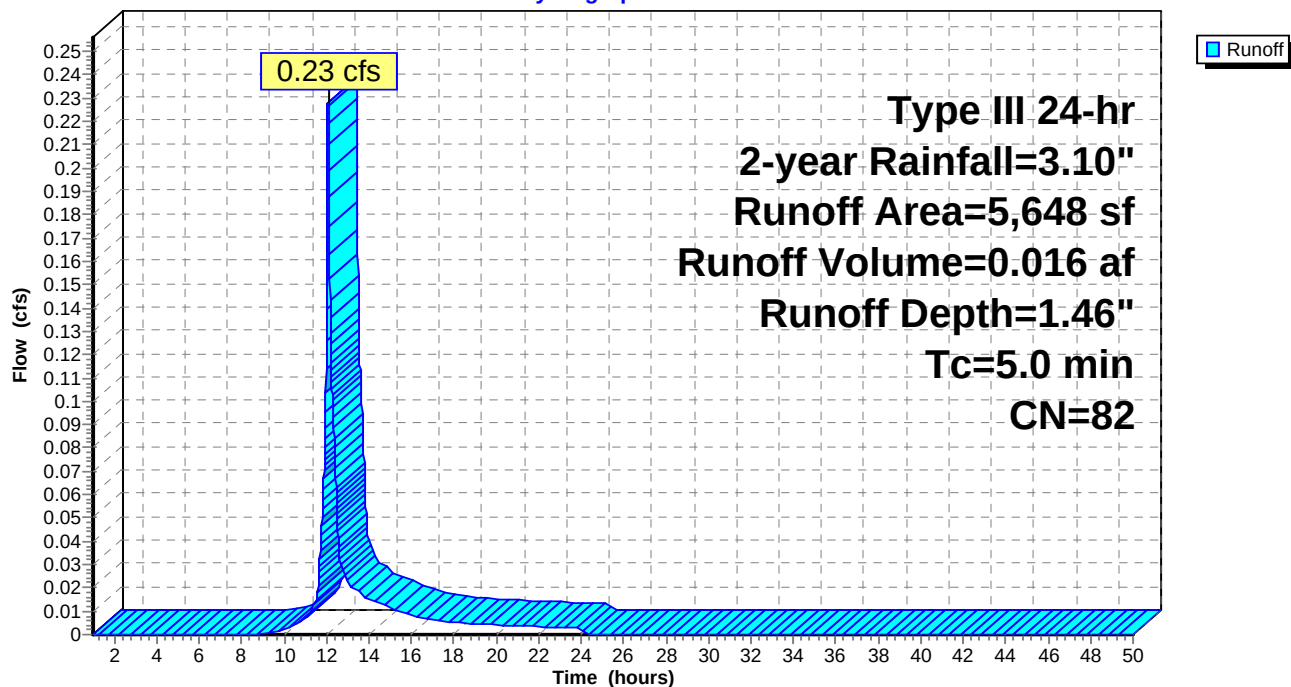
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	1,526	39	Field inlets trib/landscaping
*	122	98	128R walk/drive
*	1,077	98	shared drive
*	2,923	98	126 roof,walk,drive
	5,648	82	Weighted Average
	1,526		27.02% Pervious Area
	4,122		72.98% Impervious Area

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

Subcatchment 1S: SC1

Hydrograph



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

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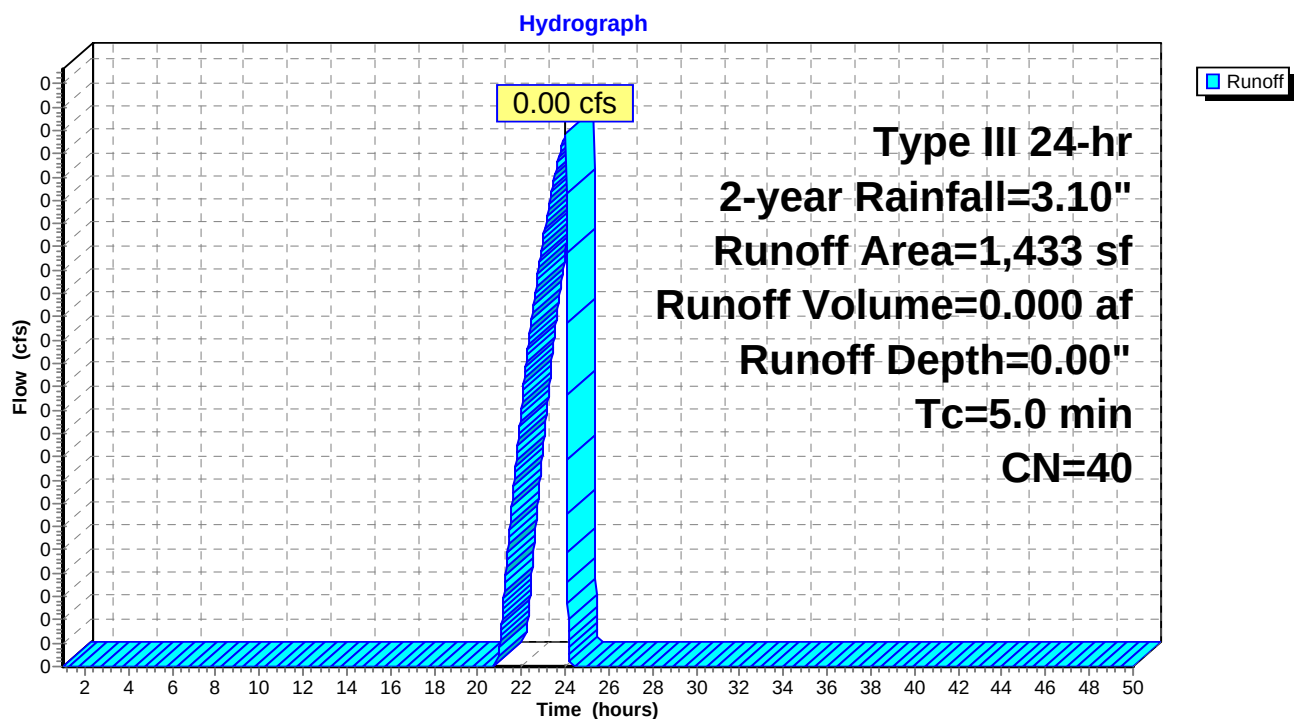
Summary for Subcatchment 2S: SC 2

Runoff = 0.00 cfs @ 24.01 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

Area (sf)	CN	Description
1,400	39	>75% Grass cover, Good, HSG A
* 33	98	Misc impervious
1,433	40	Weighted Average
1,400		97.70% Pervious Area
33		2.30% Impervious Area

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

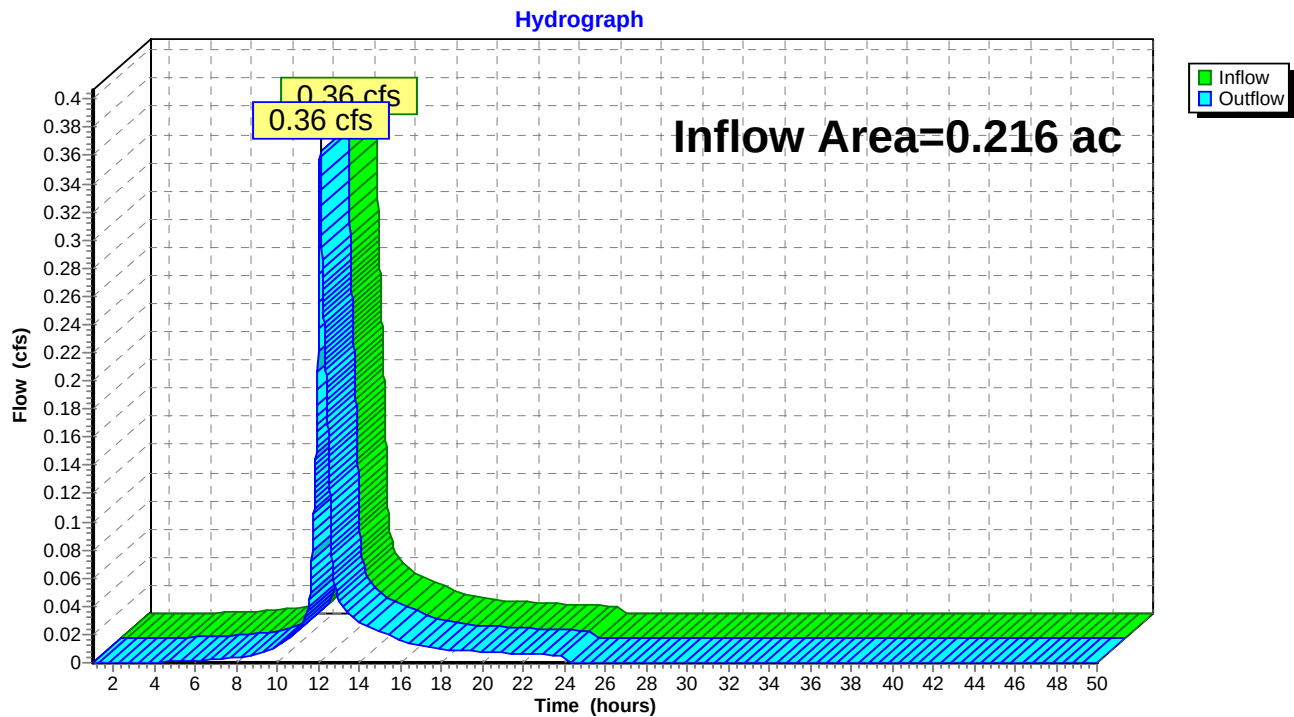
Subcatchment 2S: SC 2

Summary for Reach 1R: North St. (POI #1)

Inflow Area = 0.216 ac, 81.45% Impervious, Inflow Depth = 1.89" for 2-year event
 Inflow = 0.36 cfs @ 12.09 hrs, Volume= 0.034 af
 Outflow = 0.36 cfs @ 12.09 hrs, Volume= 0.034 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-50.00 hrs, dt= 0.01 hrs

Reach 1R: North St. (POI #1)

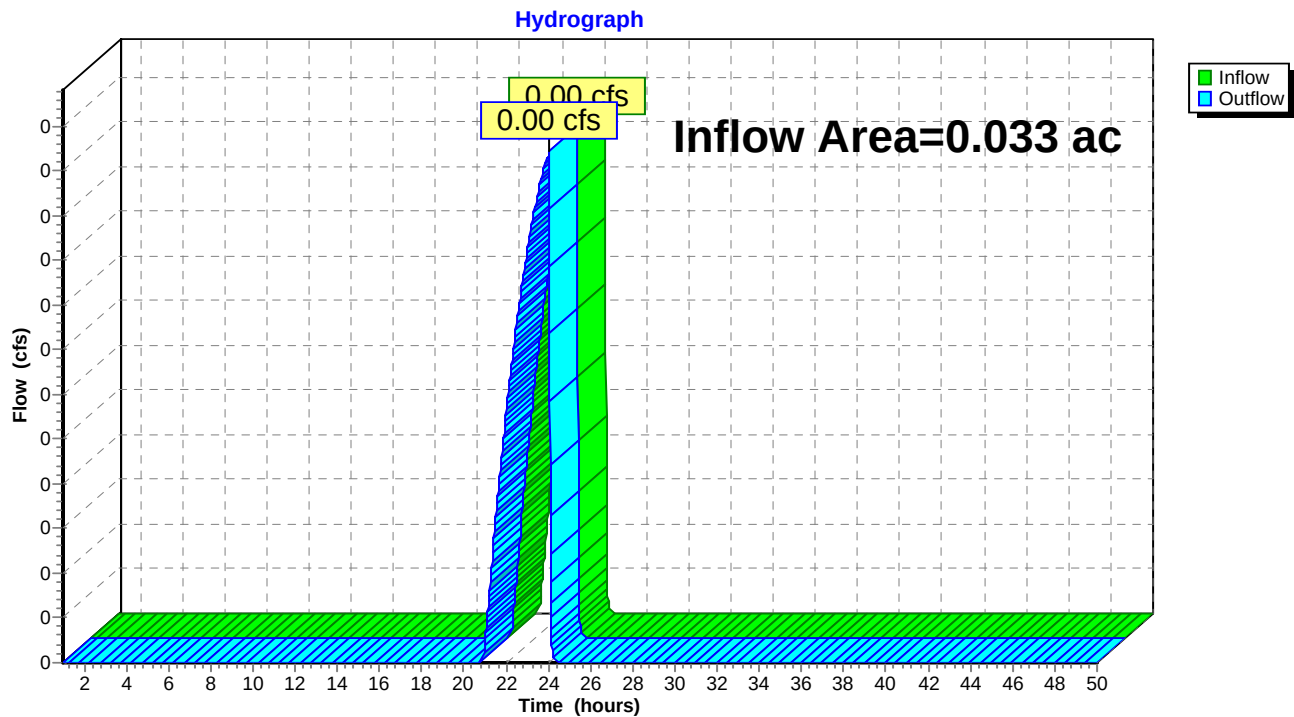


Summary for Reach 2R: Downgradient Abutter (POI#2)

Inflow Area = 0.033 ac, 2.30% Impervious, Inflow Depth = 0.00" for 2-year event
 Inflow = 0.00 cfs @ 24.01 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 24.01 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-50.00 hrs, dt= 0.01 hrs

Reach 2R: Downgradient Abutter (POI#2)

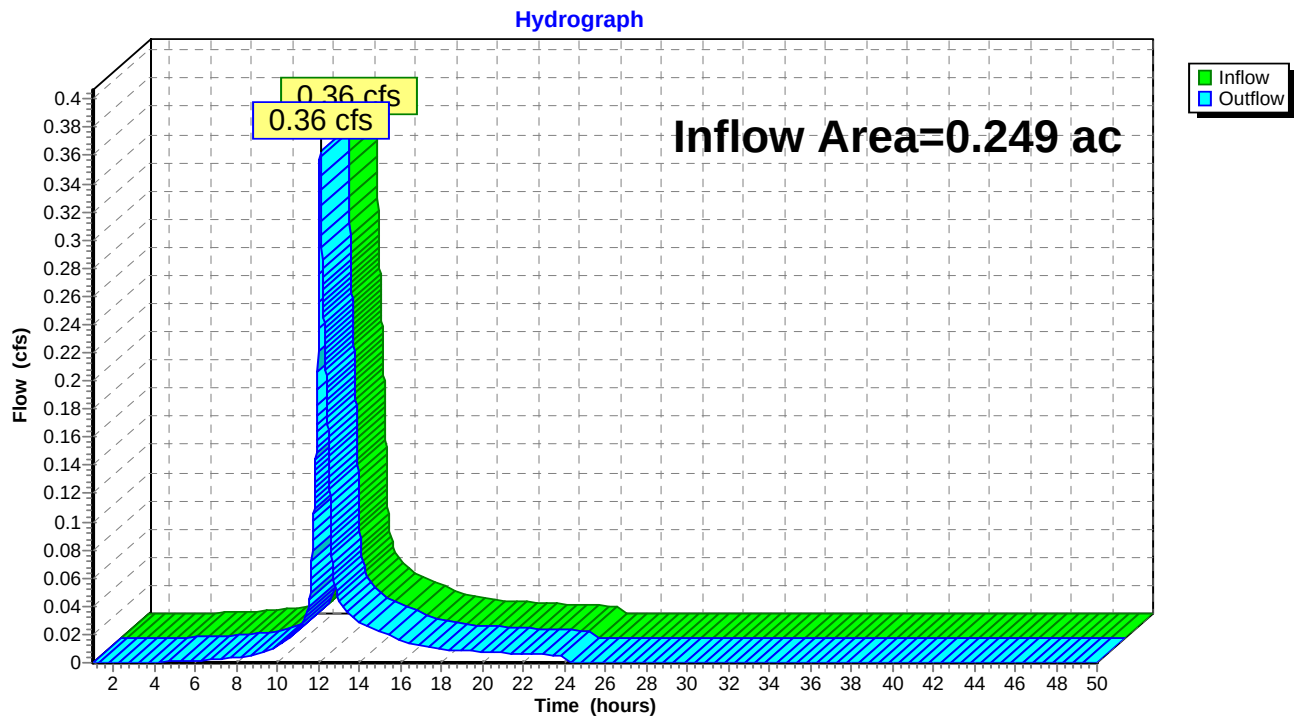


Summary for Reach 3R: Total Runoff

Inflow Area = 0.249 ac, 71.01% Impervious, Inflow Depth = 1.64" for 2-year event
 Inflow = 0.36 cfs @ 12.09 hrs, Volume= 0.034 af
 Outflow = 0.36 cfs @ 12.09 hrs, Volume= 0.034 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-50.00 hrs, dt= 0.01 hrs

Reach 3R: Total Runoff



Post Development1-2-20

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

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Summary for Pond FP1: FocalPoint

Inflow Area = 0.087 ac, 94.10% Impervious, Inflow Depth = 2.55" for 2-year event
 Inflow = 0.25 cfs @ 12.07 hrs, Volume= 0.018 af
 Outflow = 0.15 cfs @ 12.17 hrs, Volume= 0.018 af, Atten= 41%, Lag= 5.8 min
 Primary = 0.15 cfs @ 12.17 hrs, Volume= 0.018 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-50.00 hrs, dt= 0.01 hrs
 Peak Elev= 134.84' @ 12.17 hrs Surf.Area= 116 sf Storage= 80 cf

Plug-Flow detention time= 4.3 min calculated for 0.018 af (100% of inflow)
 Center-of-Mass det. time= 4.3 min (785.3 - 781.0)

Volume	Invert	Avail.Storage	Storage Description
#1	133.75'	89 cf	3/4 Stone (Prismatic) Listed below (Recalc) 435 cf Overall - 213 cf Embedded = 222 cf x 40.0% Voids
#2	134.12'	202 cf	1.31'W x 2.35'L x 2.88'H Tanks x 24 Inside #1 213 cf Overall x 95.0% Voids
#3	137.00'	9 cf	3.00'W x 7.00'L x 2.25'H FocalPoint 47 cf Overall x 20.0% Voids
#4	139.25'	61 cf	Custom Stage Data (Prismatic) Listed below (Recalc) -Impervious
		362 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
133.75	116	0	0
137.50	116	435	435

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
139.25	21	0	0
139.50	37	7	7
139.75	55	12	19
140.00	85	18	36
140.25	115	25	61

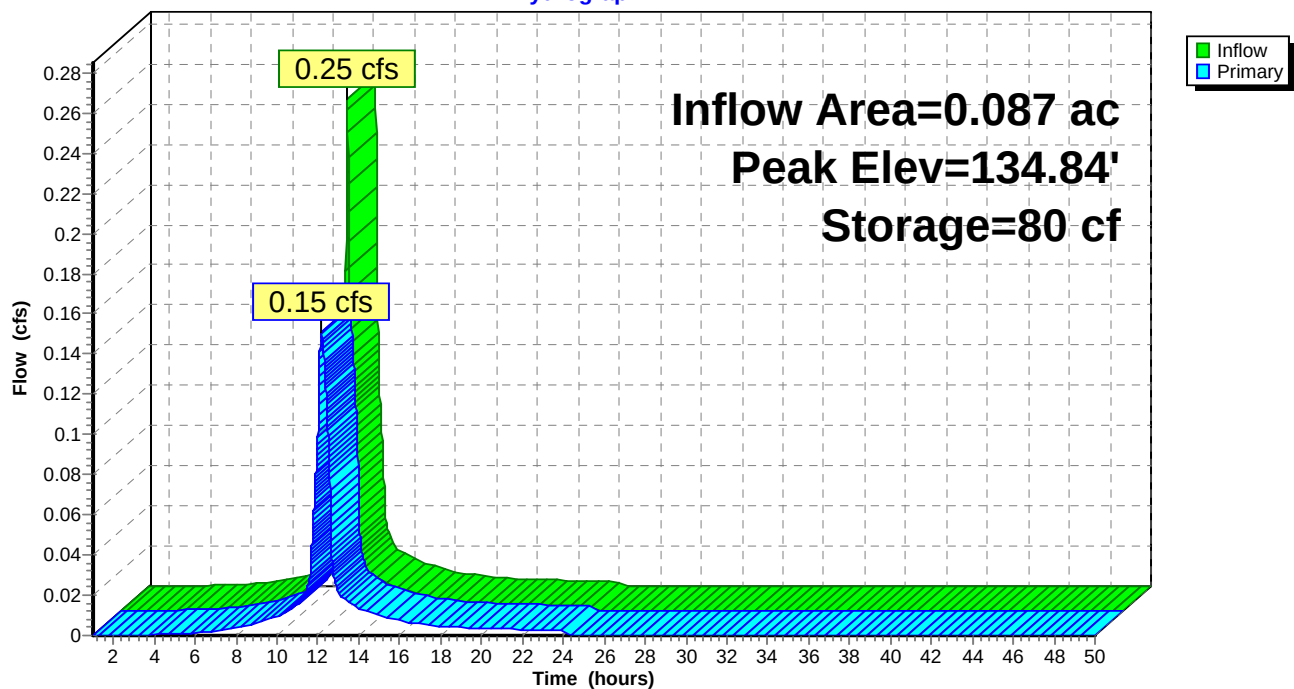
Device	Routing	Invert	Outlet Devices
#1	Primary	133.70'	3.3" Round 4" UD w/ orifice L= 150.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 133.70' / 132.70' S= 0.0067 ' / Cc= 0.600 n= 0.010 PVC, smooth interior, Flow Area= 0.06 sf
#2	Device 1	133.75'	100.000 in/hr Exfiltration over Surface area Phase-In= 0.10'
#3	Device 1	139.75'	8.0" Horiz. Overflow Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.15 cfs @ 12.17 hrs HW=134.84' TW=0.00' (Dynamic Tailwater)

1=4" UD w/ orifice (Inlet Controls 0.15 cfs @ 2.54 fps)
 2=Exfiltration (Passes 0.15 cfs of 0.27 cfs potential flow)
 3=Overflow Grate (Controls 0.00 cfs)

Pond FP1: FocalPoint

Hydrograph



Post Development1-2-20*Type III 24-hr 10-year Rainfall=4.60"*

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Time span=1.00-50.00 hrs, dt=0.01 hrs, 4901 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1.1S: SC 1.1Runoff Area=3,781 sf 94.10% Impervious Runoff Depth=4.02"
Tc=5.0 min CN=95 Runoff=0.39 cfs 0.029 af**Subcatchment1S: SC1**Runoff Area=5,648 sf 72.98% Impervious Runoff Depth=2.72"
Tc=5.0 min CN=82 Runoff=0.43 cfs 0.029 af**Subcatchment2S: SC 2**Runoff Area=1,433 sf 2.30% Impervious Runoff Depth=0.15"
Tc=5.0 min CN=40 Runoff=0.00 cfs 0.000 af**Reach 1R: North St. (POI #1)**Inflow=0.60 cfs 0.059 af
Outflow=0.60 cfs 0.059 af**Reach 2R: Downgradient Abutter (POI#2)**Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af**Reach 3R: Total Runoff**Inflow=0.60 cfs 0.059 af
Outflow=0.60 cfs 0.059 af**Pond FP1: FocalPoint**Peak Elev=135.77' Storage=160 cf Inflow=0.39 cfs 0.029 af
Outflow=0.19 cfs 0.029 af**Total Runoff Area = 0.249 ac Runoff Volume = 0.059 af Average Runoff Depth = 2.84"**
28.99% Pervious = 0.072 ac 71.01% Impervious = 0.177 ac

Post Development1-2-20

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

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Summary for Subcatchment 1.1S: SC 1.1

Runoff = 0.39 cfs @ 12.07 hrs, Volume= 0.029 af, Depth= 4.02"

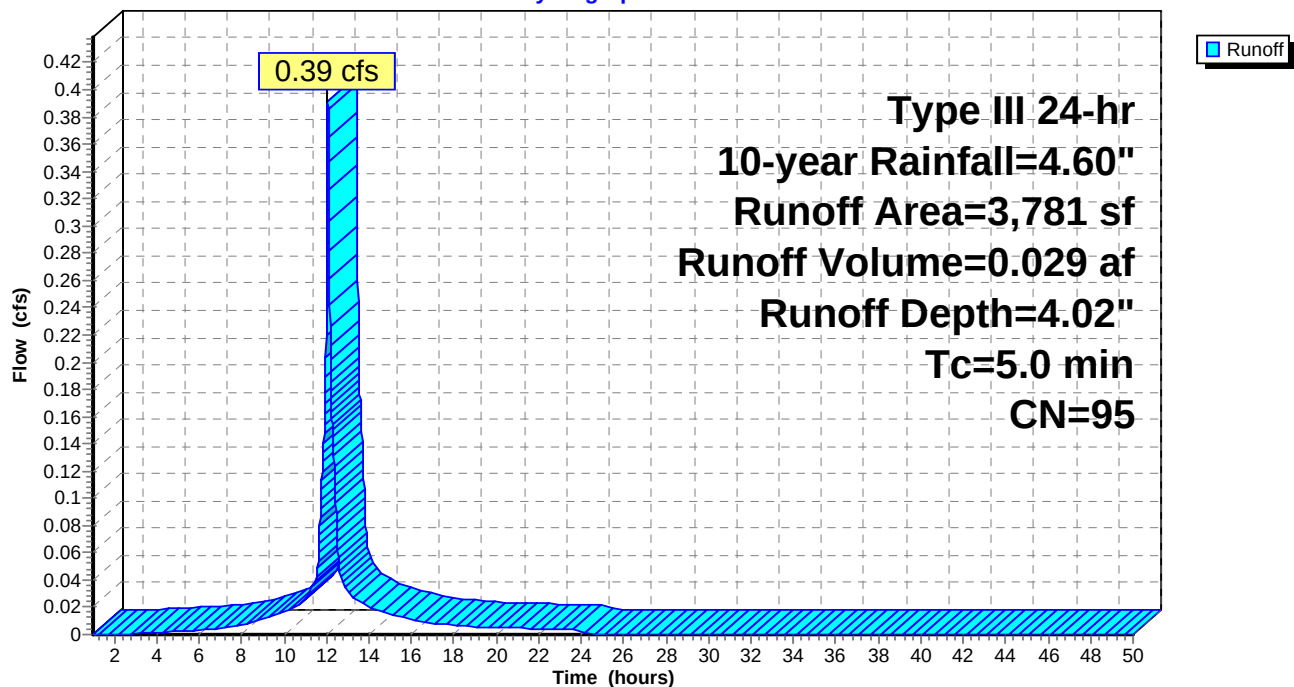
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
*	3,558	98	Roof, decks
	223	39	>75% Grass cover, Good, HSG A
	3,781	95	Weighted Average
	223		5.90% Pervious Area
	3,558		94.10% Impervious Area

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

Subcatchment 1.1S: SC 1.1

Hydrograph



Post Development1-2-20

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

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Summary for Subcatchment 1S: SC1

Runoff = 0.43 cfs @ 12.07 hrs, Volume= 0.029 af, Depth= 2.72"

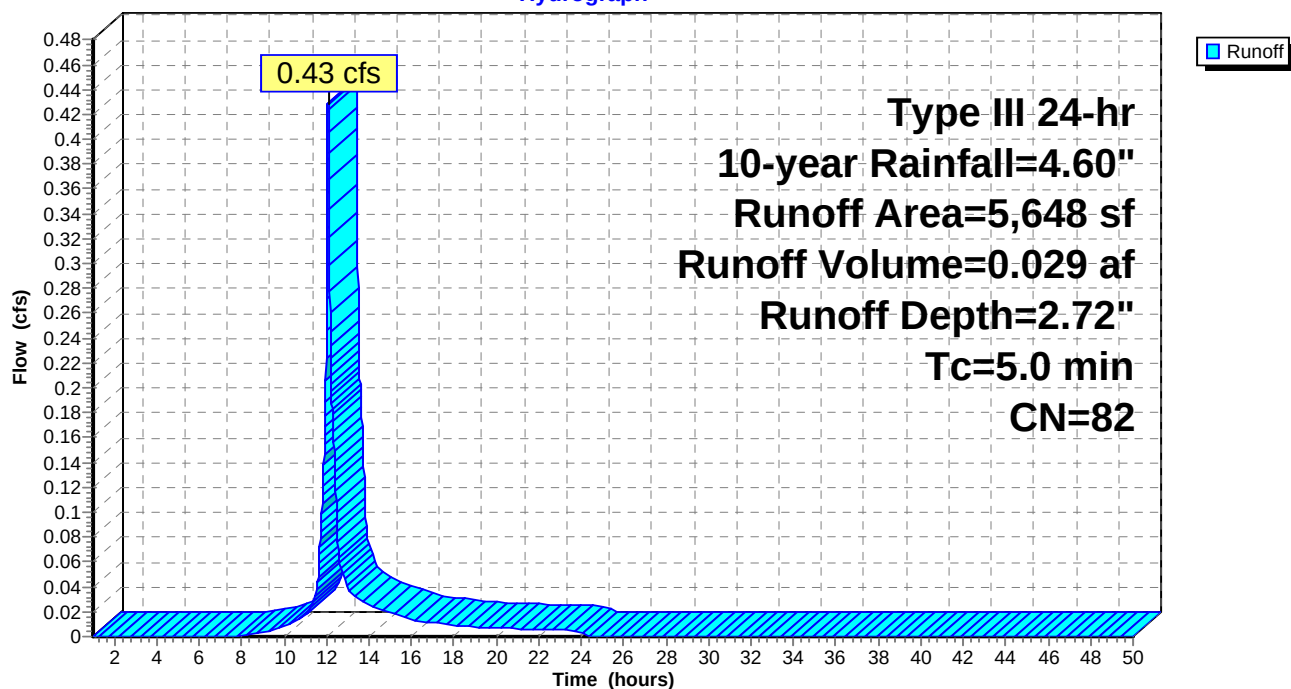
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
*	1,526	39	Field inlets trib/landscaping
*	122	98	128R walk/drive
*	1,077	98	shared drive
*	2,923	98	126 roof,walk,drive
	5,648	82	Weighted Average
	1,526		27.02% Pervious Area
	4,122		72.98% Impervious Area

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

Subcatchment 1S: SC1

Hydrograph



Post Development1-2-20

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

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Summary for Subcatchment 2S: SC 2

Runoff = 0.00 cfs @ 13.66 hrs, Volume= 0.000 af, Depth= 0.15"

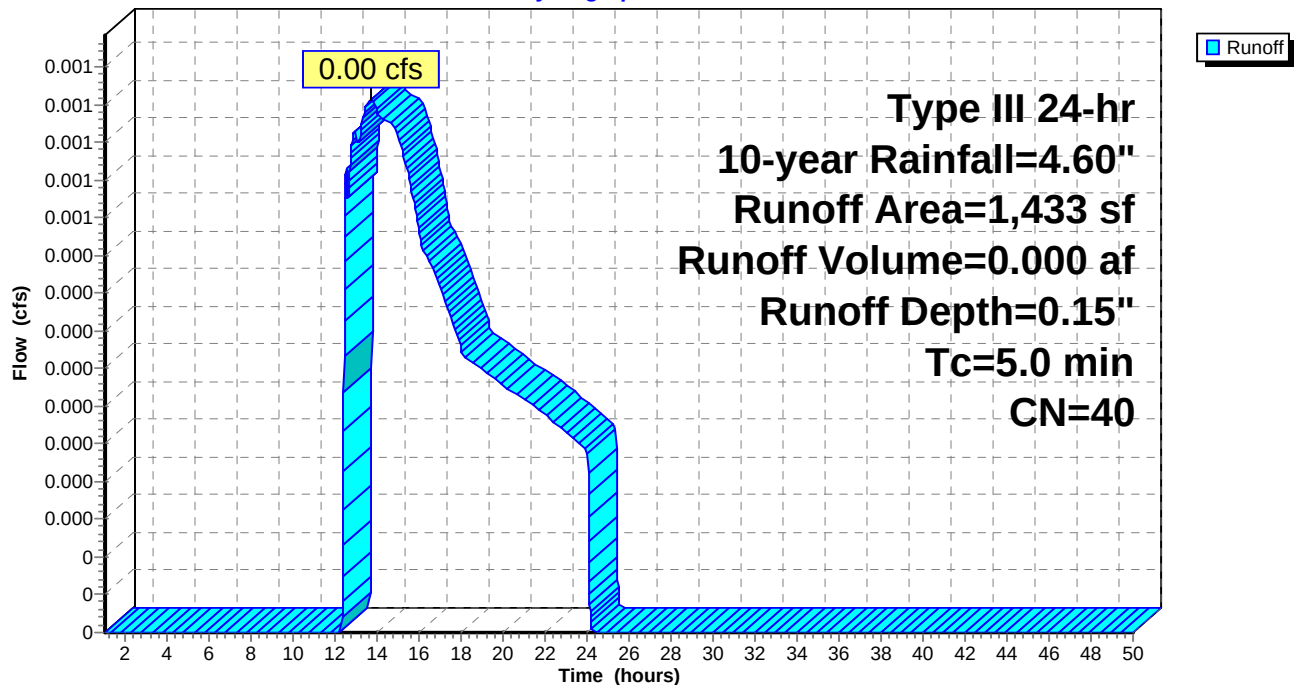
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
1,400	39	>75% Grass cover, Good, HSG A
* 33	98	Misc impervious
1,433	40	Weighted Average
1,400		97.70% Pervious Area
33		2.30% Impervious Area

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

Subcatchment 2S: SC 2

Hydrograph

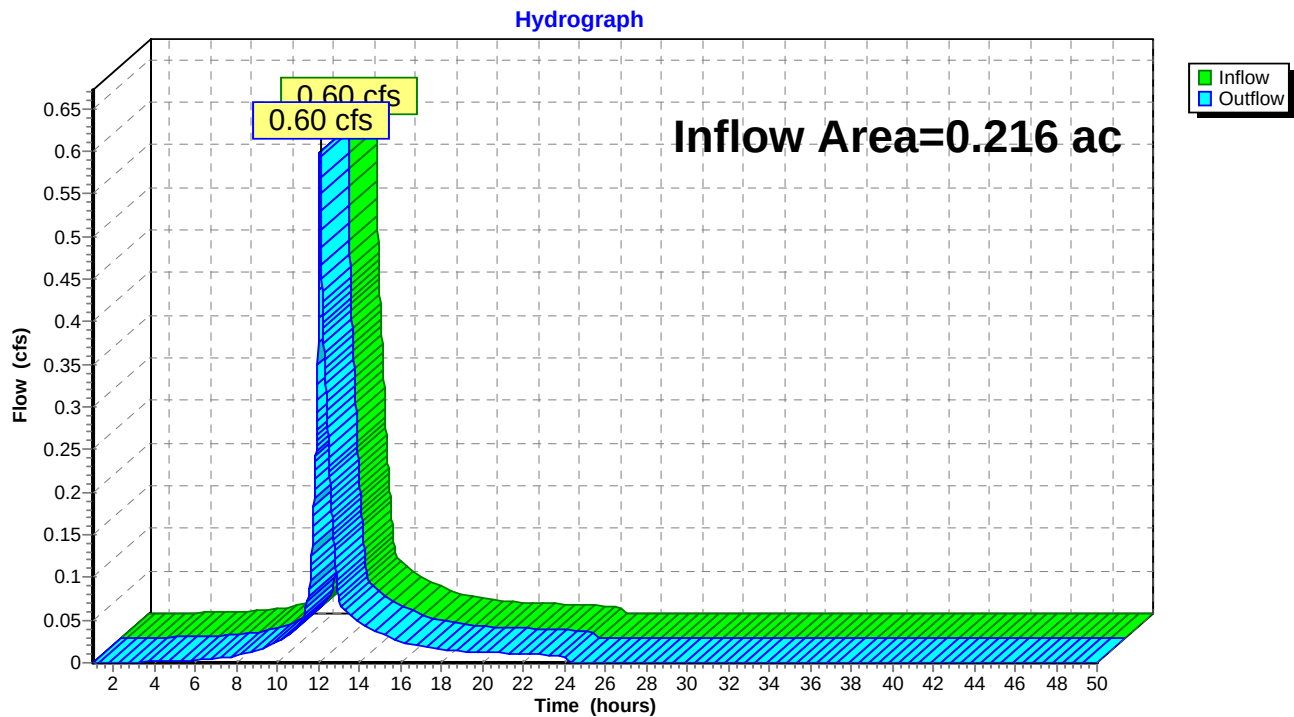


Summary for Reach 1R: North St. (POI #1)

Inflow Area = 0.216 ac, 81.45% Impervious, Inflow Depth = 3.25" for 10-year event
 Inflow = 0.60 cfs @ 12.08 hrs, Volume= 0.059 af
 Outflow = 0.60 cfs @ 12.08 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-50.00 hrs, dt= 0.01 hrs

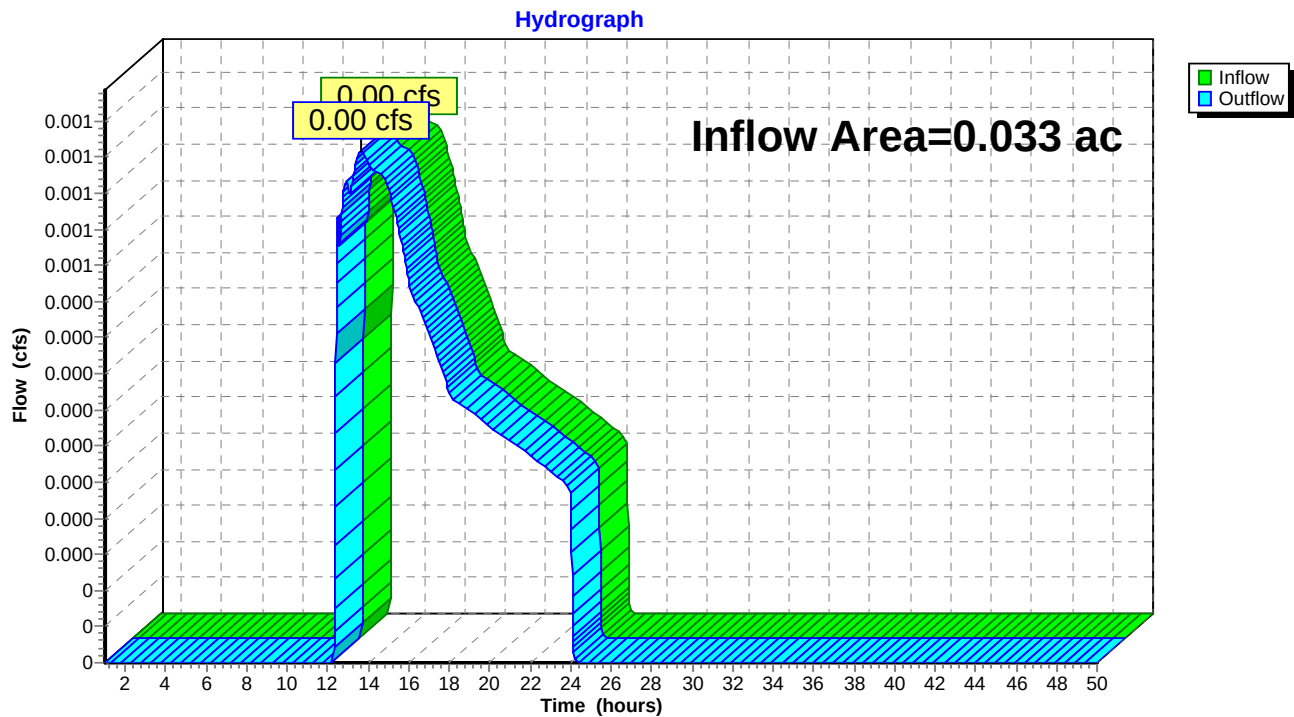
Reach 1R: North St. (POI #1)



Summary for Reach 2R: Downgradient Abutter (POI#2)

Inflow Area = 0.033 ac, 2.30% Impervious, Inflow Depth = 0.15" for 10-year event
Inflow = 0.00 cfs @ 13.66 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 13.66 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-50.00 hrs, dt= 0.01 hrs

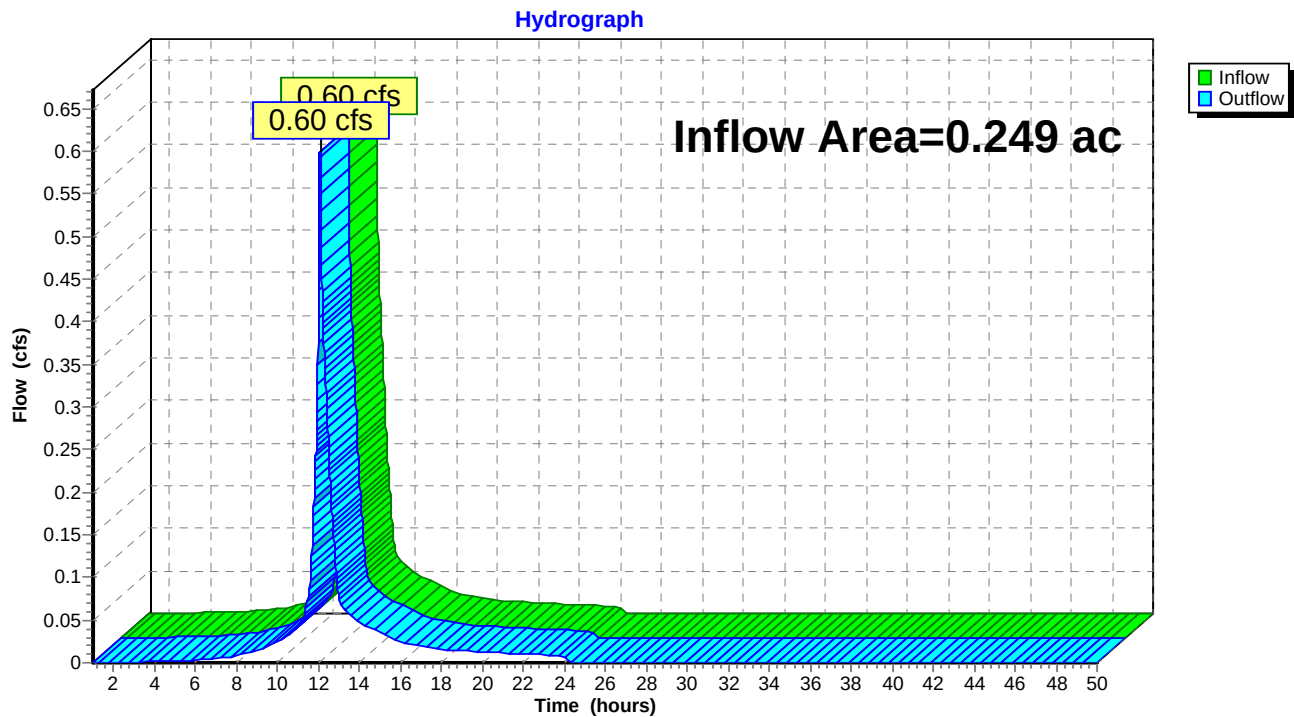
Reach 2R: Downgradient Abutter (POI#2)

Summary for Reach 3R: Total Runoff

Inflow Area = 0.249 ac, 71.01% Impervious, Inflow Depth = 2.84" for 10-year event
 Inflow = 0.60 cfs @ 12.08 hrs, Volume= 0.059 af
 Outflow = 0.60 cfs @ 12.08 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-50.00 hrs, dt= 0.01 hrs

Reach 3R: Total Runoff



Post Development1-2-20

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

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Summary for Pond FP1: FocalPoint

Inflow Area = 0.087 ac, 94.10% Impervious, Inflow Depth = 4.02" for 10-year event
 Inflow = 0.39 cfs @ 12.07 hrs, Volume= 0.029 af
 Outflow = 0.19 cfs @ 12.20 hrs, Volume= 0.029 af, Atten= 51%, Lag= 8.0 min
 Primary = 0.19 cfs @ 12.20 hrs, Volume= 0.029 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-50.00 hrs, dt= 0.01 hrs
 Peak Elev= 135.77' @ 12.20 hrs Surf.Area= 116 sf Storage= 160 cf

Plug-Flow detention time= 6.0 min calculated for 0.029 af (100% of inflow)
 Center-of-Mass det. time= 6.0 min (775.6 - 769.5)

Volume	Invert	Avail.Storage	Storage Description
#1	133.75'	89 cf	3/4 Stone (Prismatic) Listed below (Recalc) 435 cf Overall - 213 cf Embedded = 222 cf x 40.0% Voids
#2	134.12'	202 cf	1.31'W x 2.35'L x 2.88'H Tanks x 24 Inside #1 213 cf Overall x 95.0% Voids
#3	137.00'	9 cf	3.00'W x 7.00'L x 2.25'H FocalPoint 47 cf Overall x 20.0% Voids
#4	139.25'	61 cf	Custom Stage Data (Prismatic) Listed below (Recalc) -Impervious
		362 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
133.75	116	0	0
137.50	116	435	435

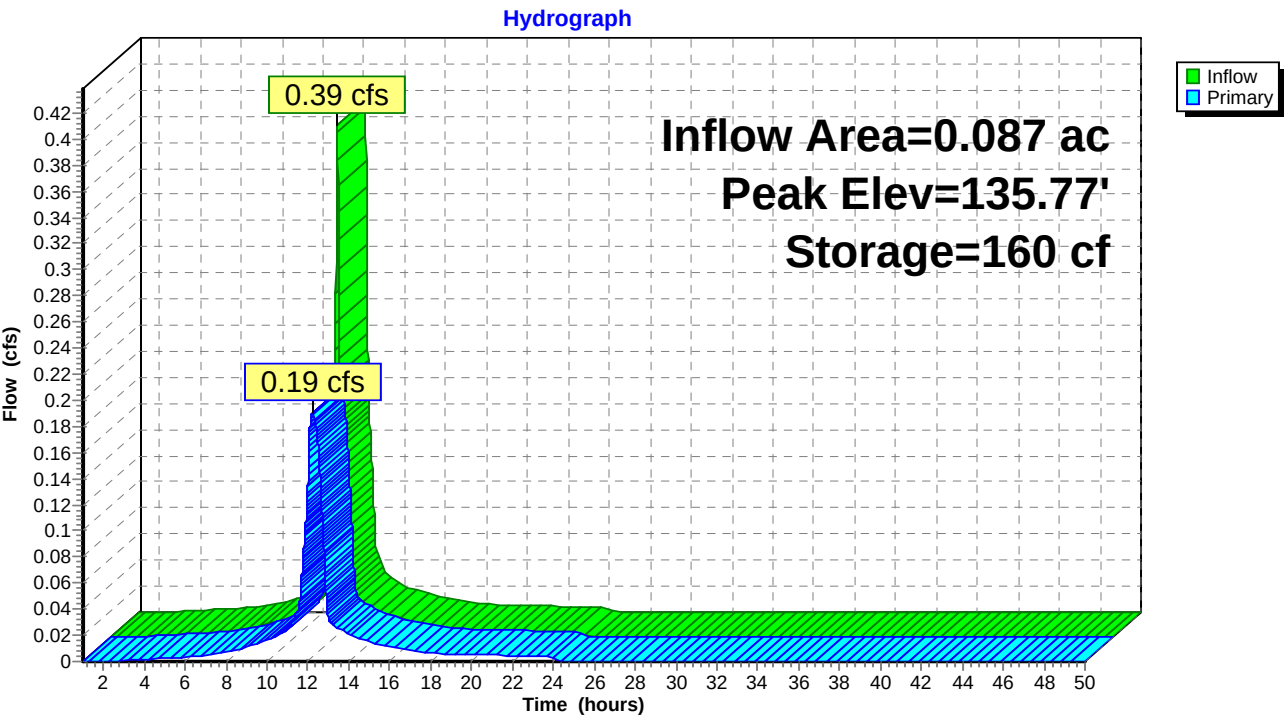
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
139.25	21	0	0
139.50	37	7	7
139.75	55	12	19
140.00	85	18	36
140.25	115	25	61

Device	Routing	Invert	Outlet Devices
#1	Primary	133.70'	3.3" Round 4" UD w/ orifice L= 150.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 133.70' / 132.70' S= 0.0067 ' / Cc= 0.600 n= 0.010 PVC, smooth interior, Flow Area= 0.06 sf
#2	Device 1	133.75'	100.000 in/hr Exfiltration over Surface area Phase-In= 0.10'
#3	Device 1	139.75'	8.0" Horiz. Overflow Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.19 cfs @ 12.20 hrs HW=135.77' TW=0.00' (Dynamic Tailwater)

1=4" UD w/ orifice (Barrel Controls 0.19 cfs @ 3.21 fps)
 2=Exfiltration (Passes 0.19 cfs of 0.27 cfs potential flow)
 3=Overflow Grate (Controls 0.00 cfs)

Pond FP1: FocalPoint



Post Development1-2-20*Type III 24-hr 25-year Rainfall=5.80"*

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Time span=1.00-50.00 hrs, dt=0.01 hrs, 4901 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1.1S: SC 1.1

Runoff Area=3,781 sf 94.10% Impervious Runoff Depth=5.21"
Tc=5.0 min CN=95 Runoff=0.50 cfs 0.038 af

Subcatchment1S: SC1

Runoff Area=5,648 sf 72.98% Impervious Runoff Depth=3.80"
Tc=5.0 min CN=82 Runoff=0.59 cfs 0.041 af

Subcatchment2S: SC 2

Runoff Area=1,433 sf 2.30% Impervious Runoff Depth=0.44"
Tc=5.0 min CN=40 Runoff=0.01 cfs 0.001 af

Reach 1R: North St. (POI #1)

Inflow=0.79 cfs 0.079 af
Outflow=0.79 cfs 0.079 af

Reach 2R: Downgradient Abutter (POI#2)

Inflow=0.01 cfs 0.001 af
Outflow=0.01 cfs 0.001 af

Reach 3R: Total Runoff

Inflow=0.79 cfs 0.080 af
Outflow=0.79 cfs 0.080 af

Pond FP1: FocalPoint

Peak Elev=136.64' Storage=236 cf Inflow=0.50 cfs 0.038 af
Outflow=0.22 cfs 0.038 af

Total Runoff Area = 0.249 ac Runoff Volume = 0.080 af Average Runoff Depth = 3.85"
28.99% Pervious = 0.072 ac 71.01% Impervious = 0.177 ac

Post Development1-2-20

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

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Summary for Subcatchment 1.1S: SC 1.1

Runoff = 0.50 cfs @ 12.07 hrs, Volume= 0.038 af, Depth= 5.21"

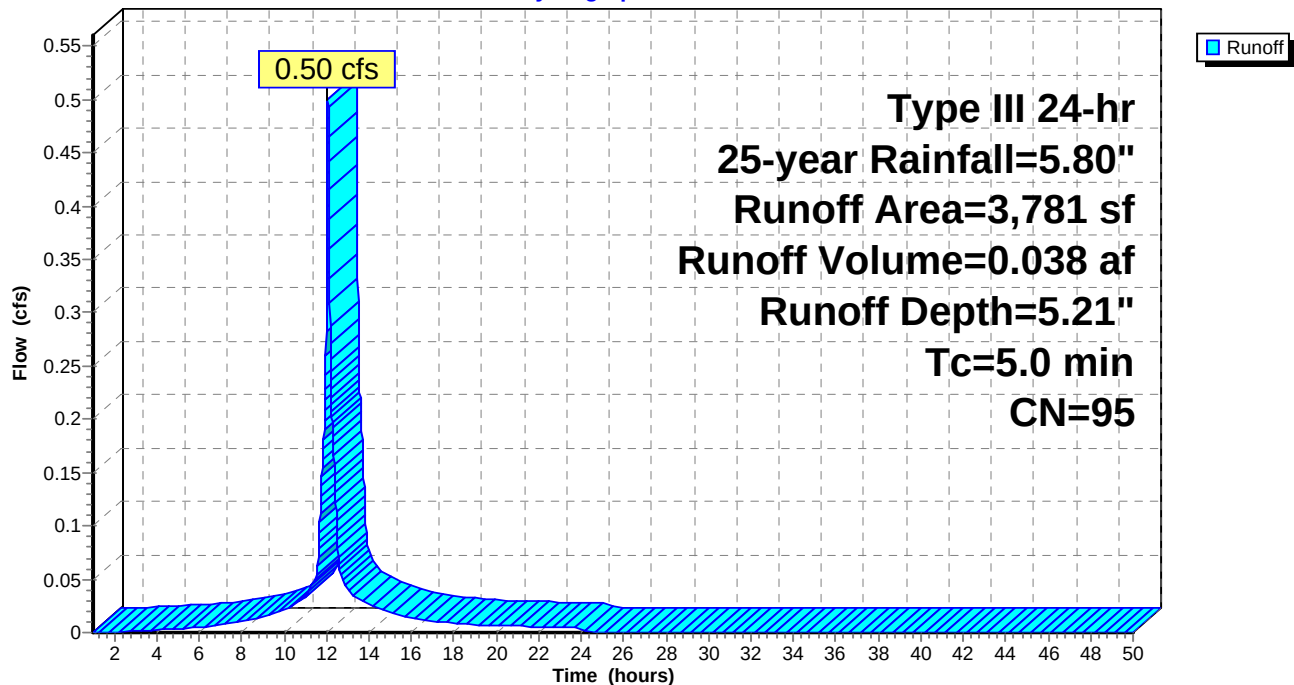
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

	Area (sf)	CN	Description
*	3,558	98	Roof, decks
	223	39	>75% Grass cover, Good, HSG A
	3,781	95	Weighted Average
	223		5.90% Pervious Area
	3,558		94.10% Impervious Area

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

Subcatchment 1.1S: SC 1.1

Hydrograph



Post Development1-2-20

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

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Summary for Subcatchment 1S: SC1

Runoff = 0.59 cfs @ 12.07 hrs, Volume= 0.041 af, Depth= 3.80"

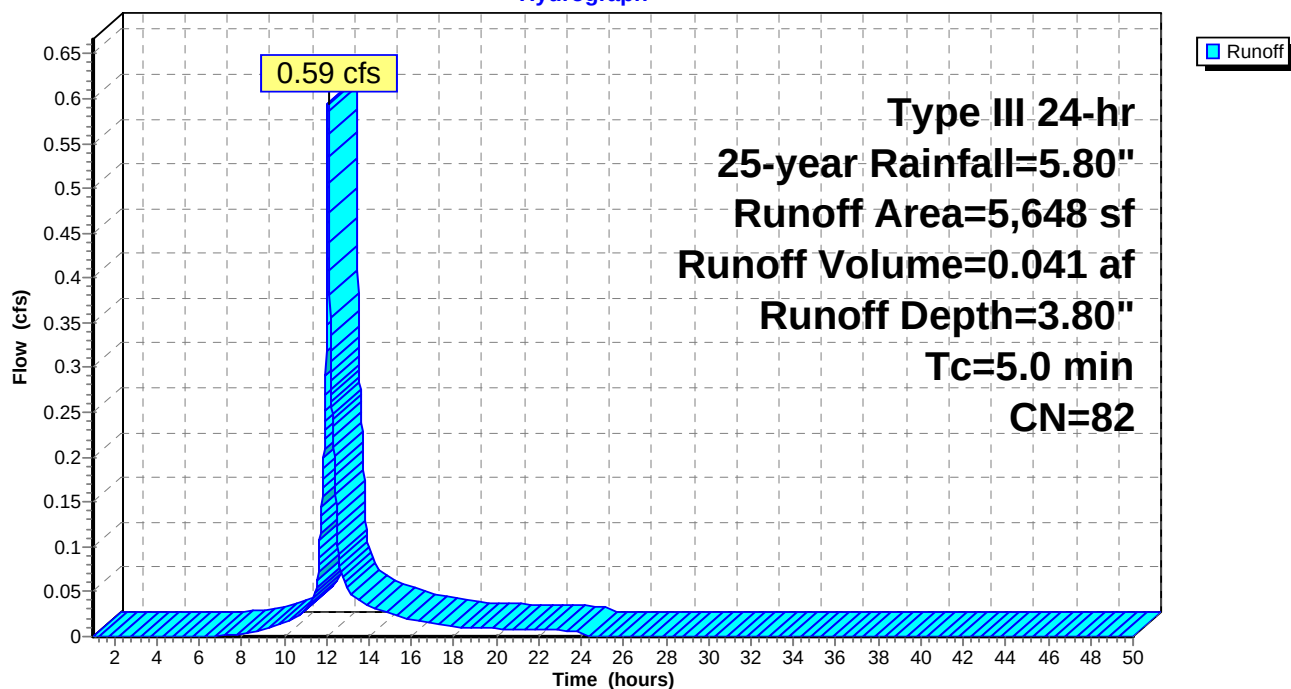
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

	Area (sf)	CN	Description
*	1,526	39	Field inlets trib/landscaping
*	122	98	128R walk/drive
*	1,077	98	shared drive
*	2,923	98	126 roof,walk,drive
	5,648	82	Weighted Average
	1,526		27.02% Pervious Area
	4,122		72.98% Impervious Area

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

Subcatchment 1S: SC1

Hydrograph



Post Development1-2-20

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

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Summary for Subcatchment 2S: SC 2

Runoff = 0.01 cfs @ 12.32 hrs, Volume= 0.001 af, Depth= 0.44"

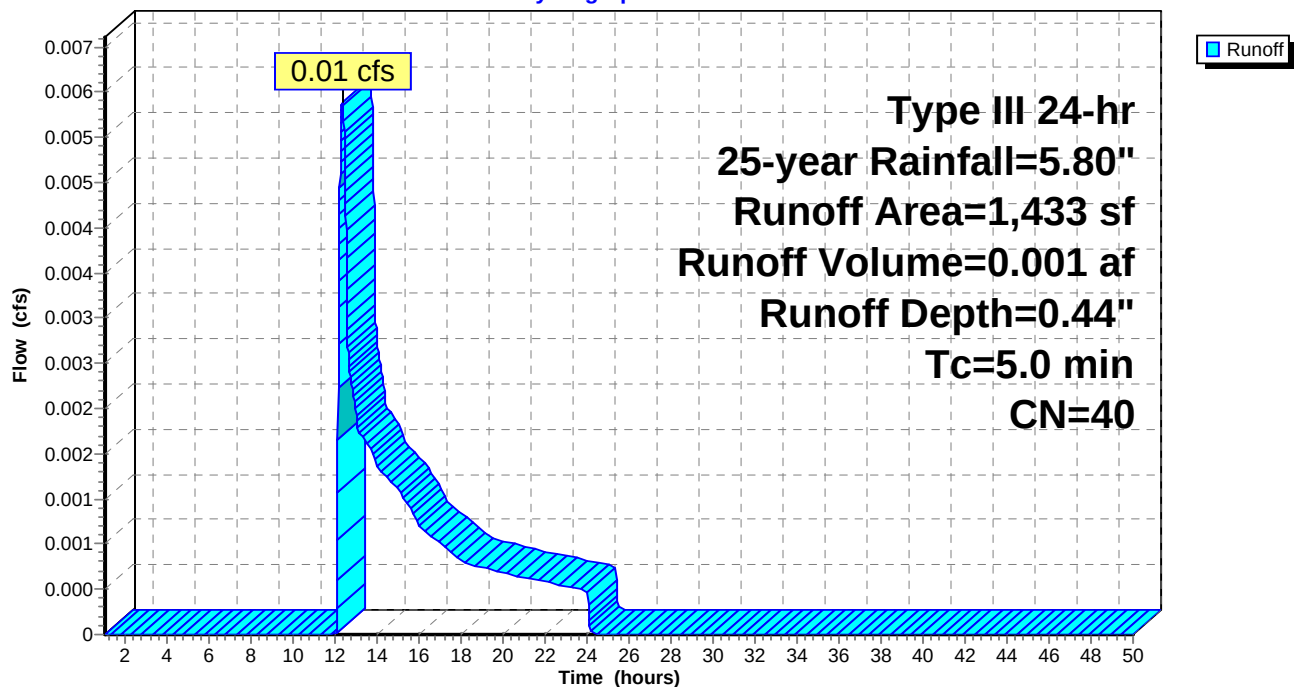
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

Area (sf)	CN	Description
1,400	39	>75% Grass cover, Good, HSG A
* 33	98	Misc impervious
1,433	40	Weighted Average
1,400		97.70% Pervious Area
33		2.30% Impervious Area

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

Subcatchment 2S: SC 2

Hydrograph

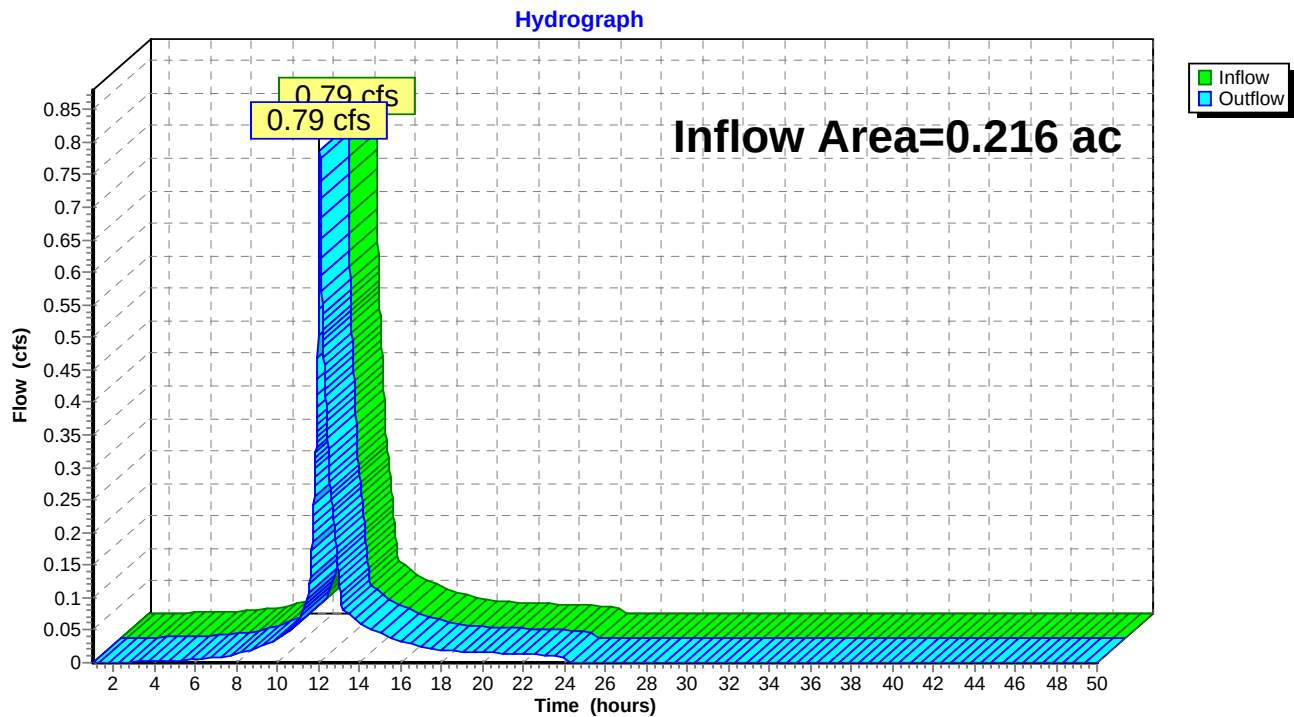


Summary for Reach 1R: North St. (POI #1)

Inflow Area = 0.216 ac, 81.45% Impervious, Inflow Depth = 4.37" for 25-year event
 Inflow = 0.79 cfs @ 12.08 hrs, Volume= 0.079 af
 Outflow = 0.79 cfs @ 12.08 hrs, Volume= 0.079 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-50.00 hrs, dt= 0.01 hrs

Reach 1R: North St. (POI #1)

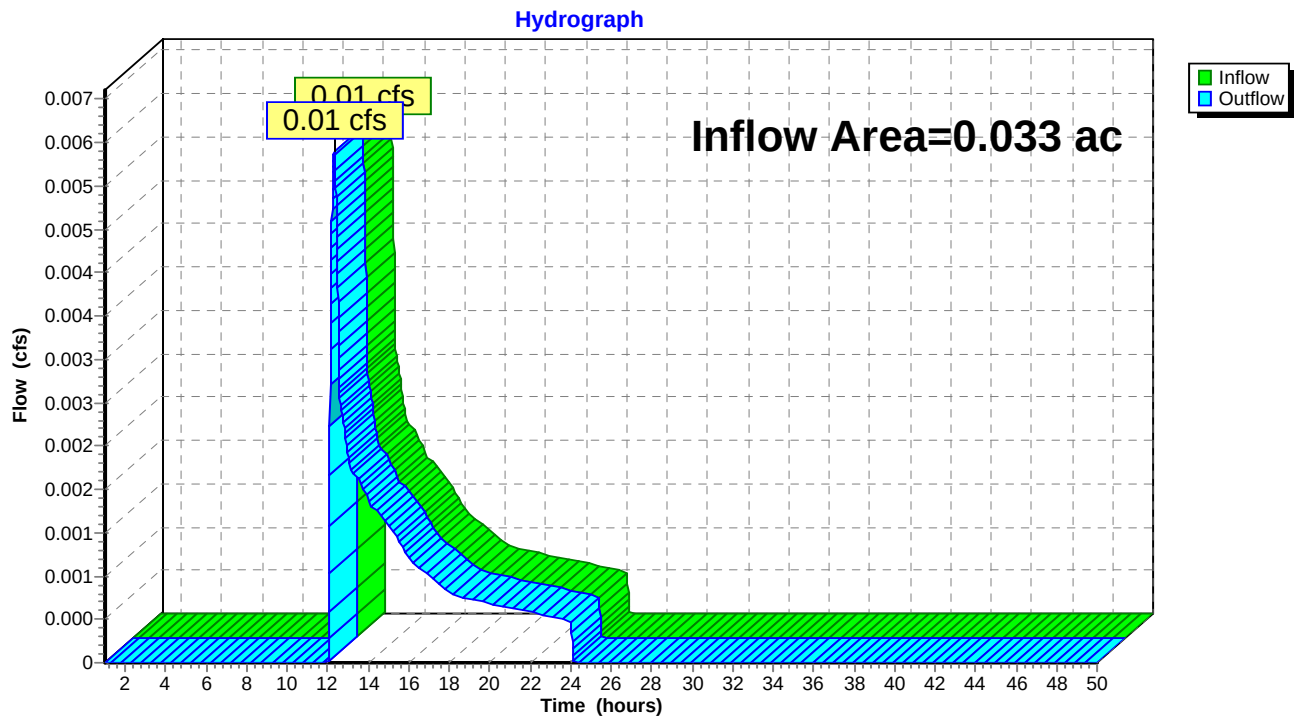


Summary for Reach 2R: Downgradient Abutter (POI#2)

Inflow Area = 0.033 ac, 2.30% Impervious, Inflow Depth = 0.44" for 25-year event
 Inflow = 0.01 cfs @ 12.32 hrs, Volume= 0.001 af
 Outflow = 0.01 cfs @ 12.32 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-50.00 hrs, dt= 0.01 hrs

Reach 2R: Downgradient Abutter (POI#2)

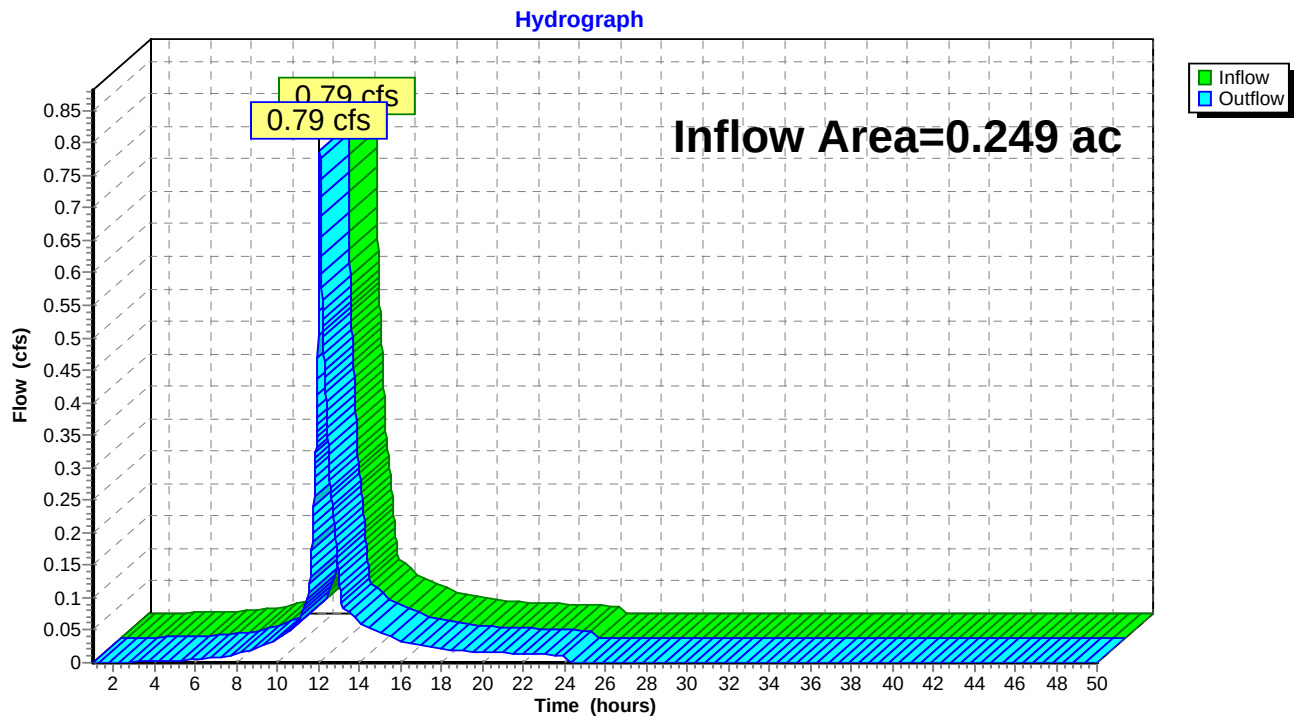


Summary for Reach 3R: Total Runoff

Inflow Area = 0.249 ac, 71.01% Impervious, Inflow Depth = 3.85" for 25-year event
 Inflow = 0.79 cfs @ 12.08 hrs, Volume= 0.080 af
 Outflow = 0.79 cfs @ 12.08 hrs, Volume= 0.080 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-50.00 hrs, dt= 0.01 hrs

Reach 3R: Total Runoff



Post Development1-2-20

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

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Summary for Pond FP1: FocalPoint

Inflow Area = 0.087 ac, 94.10% Impervious, Inflow Depth = 5.21" for 25-year event
 Inflow = 0.50 cfs @ 12.07 hrs, Volume= 0.038 af
 Outflow = 0.22 cfs @ 12.23 hrs, Volume= 0.038 af, Atten= 56%, Lag= 9.8 min
 Primary = 0.22 cfs @ 12.23 hrs, Volume= 0.038 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-50.00 hrs, dt= 0.01 hrs
 Peak Elev= 136.64' @ 12.23 hrs Surf.Area= 116 sf Storage= 236 cf

Plug-Flow detention time= 7.5 min calculated for 0.038 af (100% of inflow)
 Center-of-Mass det. time= 7.5 min (771.0 - 763.5)

Volume	Invert	Avail.Storage	Storage Description
#1	133.75'	89 cf	3/4 Stone (Prismatic) Listed below (Recalc) 435 cf Overall - 213 cf Embedded = 222 cf x 40.0% Voids
#2	134.12'	202 cf	1.31'W x 2.35'L x 2.88'H Tanks x 24 Inside #1 213 cf Overall x 95.0% Voids
#3	137.00'	9 cf	3.00'W x 7.00'L x 2.25'H FocalPoint 47 cf Overall x 20.0% Voids
#4	139.25'	61 cf	Custom Stage Data (Prismatic) Listed below (Recalc) -Impervious
		362 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
133.75	116	0	0
137.50	116	435	435

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
139.25	21	0	0
139.50	37	7	7
139.75	55	12	19
140.00	85	18	36
140.25	115	25	61

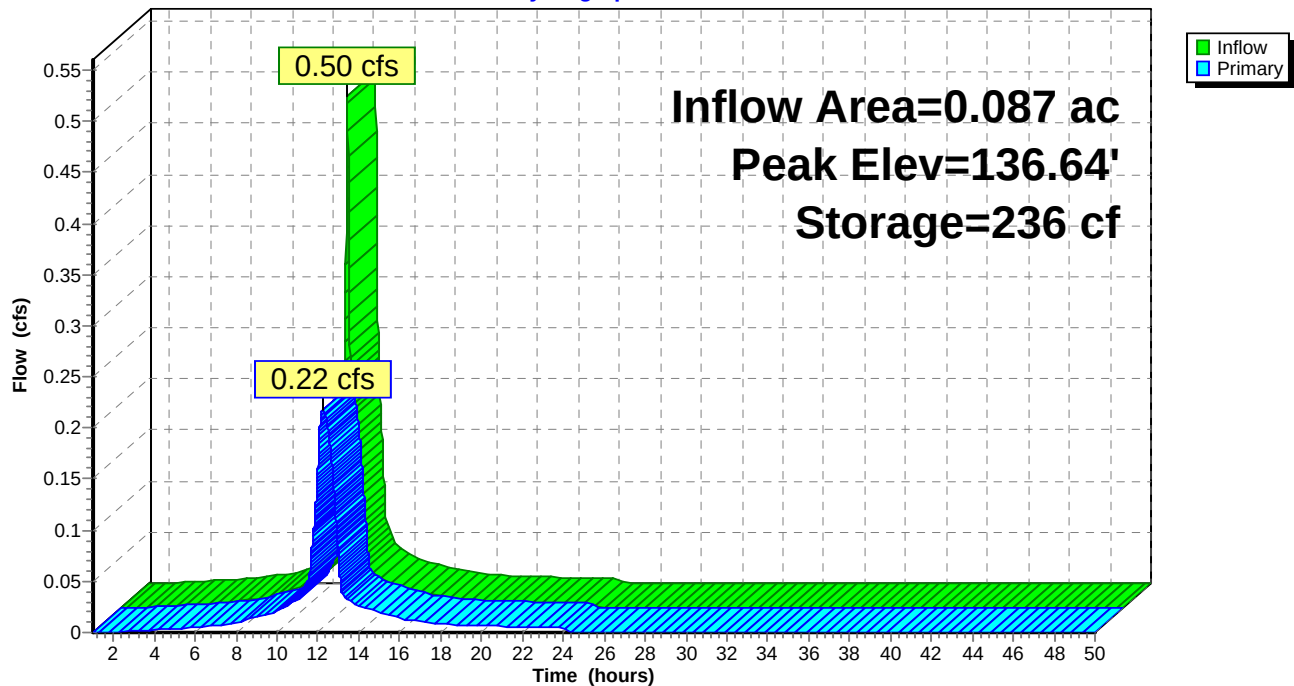
Device	Routing	Invert	Outlet Devices
#1	Primary	133.70'	3.3" Round 4" UD w/ orifice L= 150.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 133.70' / 132.70' S= 0.0067 ' / Cc= 0.600 n= 0.010 PVC, smooth interior, Flow Area= 0.06 sf
#2	Device 1	133.75'	100.000 in/hr Exfiltration over Surface area Phase-In= 0.10'
#3	Device 1	139.75'	8.0" Horiz. Overflow Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.22 cfs @ 12.23 hrs HW=136.64' TW=0.00' (Dynamic Tailwater)

1=4" UD w/ orifice (Barrel Controls 0.22 cfs @ 3.67 fps)
 2=Exfiltration (Passes 0.22 cfs of 0.27 cfs potential flow)
 3=Overflow Grate (Controls 0.00 cfs)

Pond FP1: FocalPoint

Hydrograph



Post Development1-2-20*Type III 24-hr Custom Rainfall=0.95"*

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Time span=1.00-50.00 hrs, dt=0.01 hrs, 4901 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1.1S: SC 1.1Runoff Area=3,781 sf 94.10% Impervious Runoff Depth=0.52"
Tc=5.0 min CN=95 Runoff=0.05 cfs 0.004 af**Subcatchment1S: SC1**Runoff Area=5,648 sf 72.98% Impervious Runoff Depth=0.10"
Tc=5.0 min CN=82 Runoff=0.01 cfs 0.001 af**Subcatchment2S: SC 2**Runoff Area=1,433 sf 2.30% Impervious Runoff Depth=0.00"
Tc=5.0 min CN=40 Runoff=0.00 cfs 0.000 af**Reach 1R: North St. (POI #1)**Inflow=0.06 cfs 0.005 af
Outflow=0.06 cfs 0.005 af**Reach 2R: Downgradient Abutter (POI#2)**Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af**Reach 3R: Total Runoff**Inflow=0.06 cfs 0.005 af
Outflow=0.06 cfs 0.005 af**Pond FP1: FocalPoint**Peak Elev=133.94' Storage=9 cf Inflow=0.05 cfs 0.004 af
Outflow=0.05 cfs 0.004 af**Total Runoff Area = 0.249 ac Runoff Volume = 0.005 af Average Runoff Depth = 0.23"**
28.99% Pervious = 0.072 ac 71.01% Impervious = 0.177 ac

Summary for Subcatchment 1.1S: SC 1.1

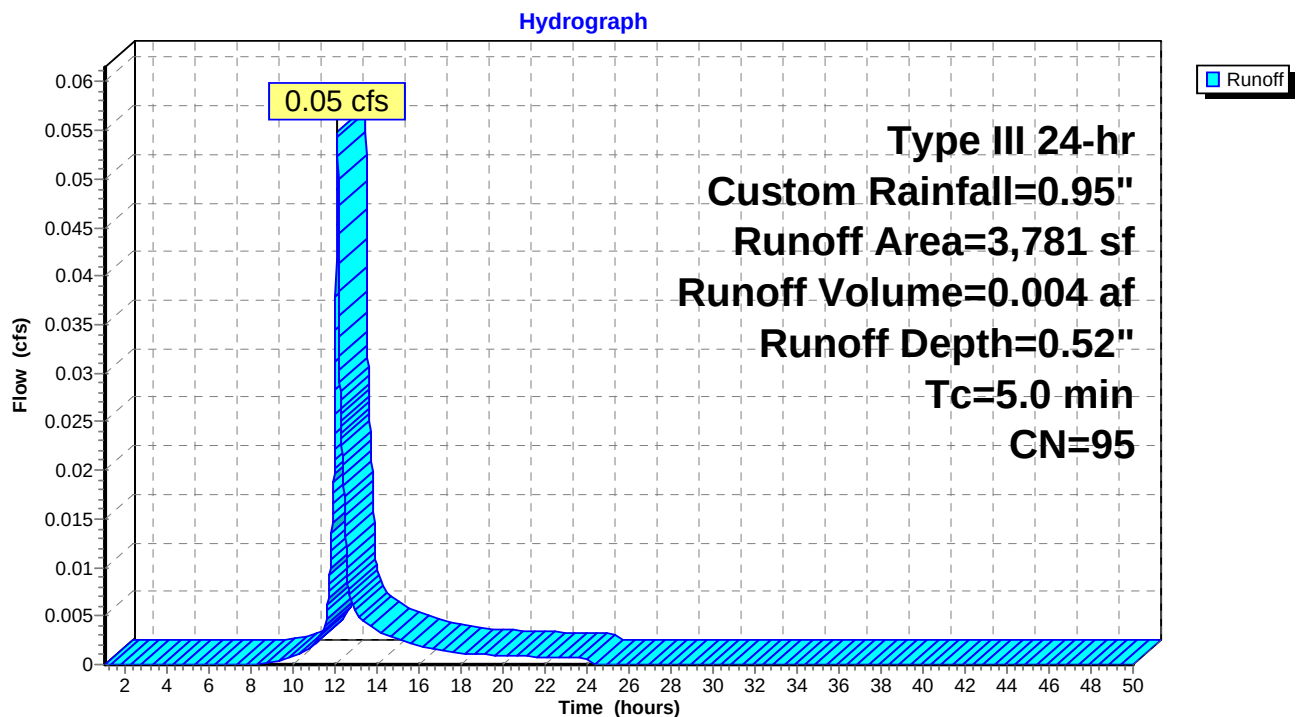
Runoff = 0.05 cfs @ 12.08 hrs, Volume= 0.004 af, Depth= 0.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr Custom Rainfall=0.95"

	Area (sf)	CN	Description
*	3,558	98	Roof, decks
	223	39	>75% Grass cover, Good, HSG A
	3,781	95	Weighted Average
	223		5.90% Pervious Area
	3,558		94.10% Impervious Area

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

Subcatchment 1.1S: SC 1.1



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Type III 24-hr Custom Rainfall=0.95"

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Summary for Subcatchment 1S: SC1

Runoff = 0.01 cfs @ 12.13 hrs, Volume= 0.001 af, Depth= 0.10"

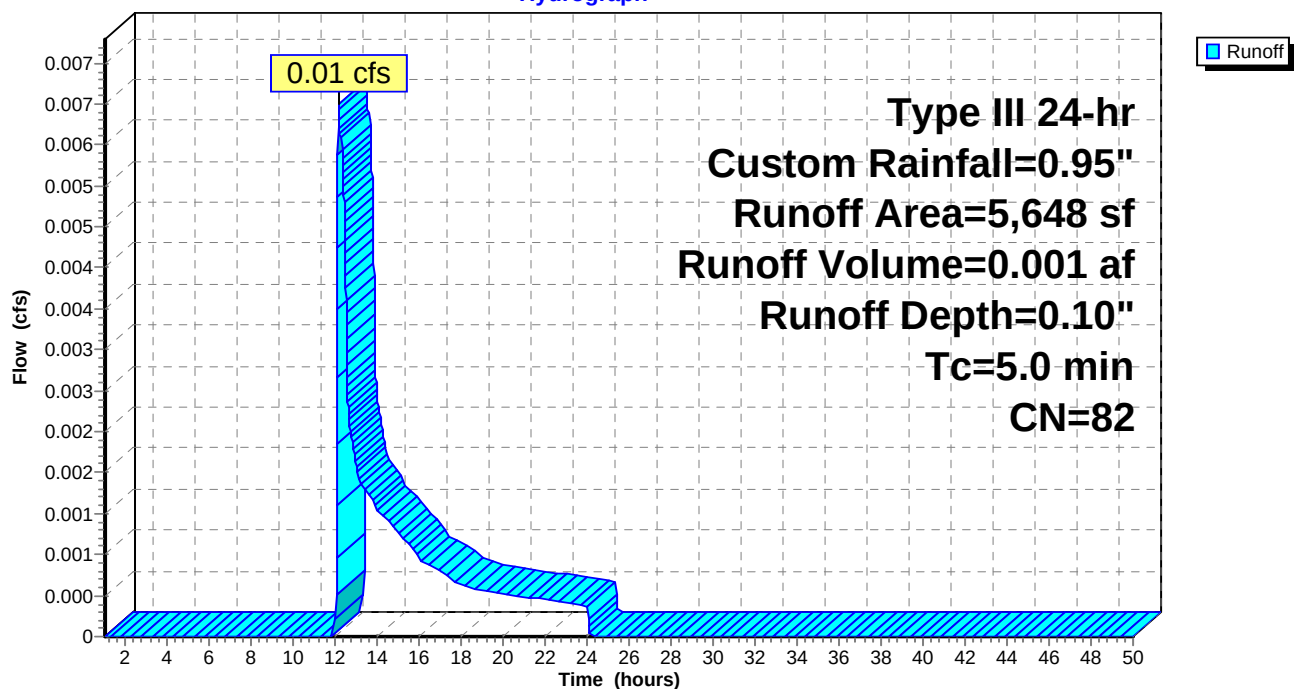
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr Custom Rainfall=0.95"

	Area (sf)	CN	Description
*	1,526	39	Field inlets trib/landscaping
*	122	98	128R walk/drive
*	1,077	98	shared drive
*	2,923	98	126 roof,walk,drive
	5,648	82	Weighted Average
	1,526		27.02% Pervious Area
	4,122		72.98% Impervious Area

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

Subcatchment 1S: SC1

Hydrograph



Summary for Subcatchment 2S: SC 2

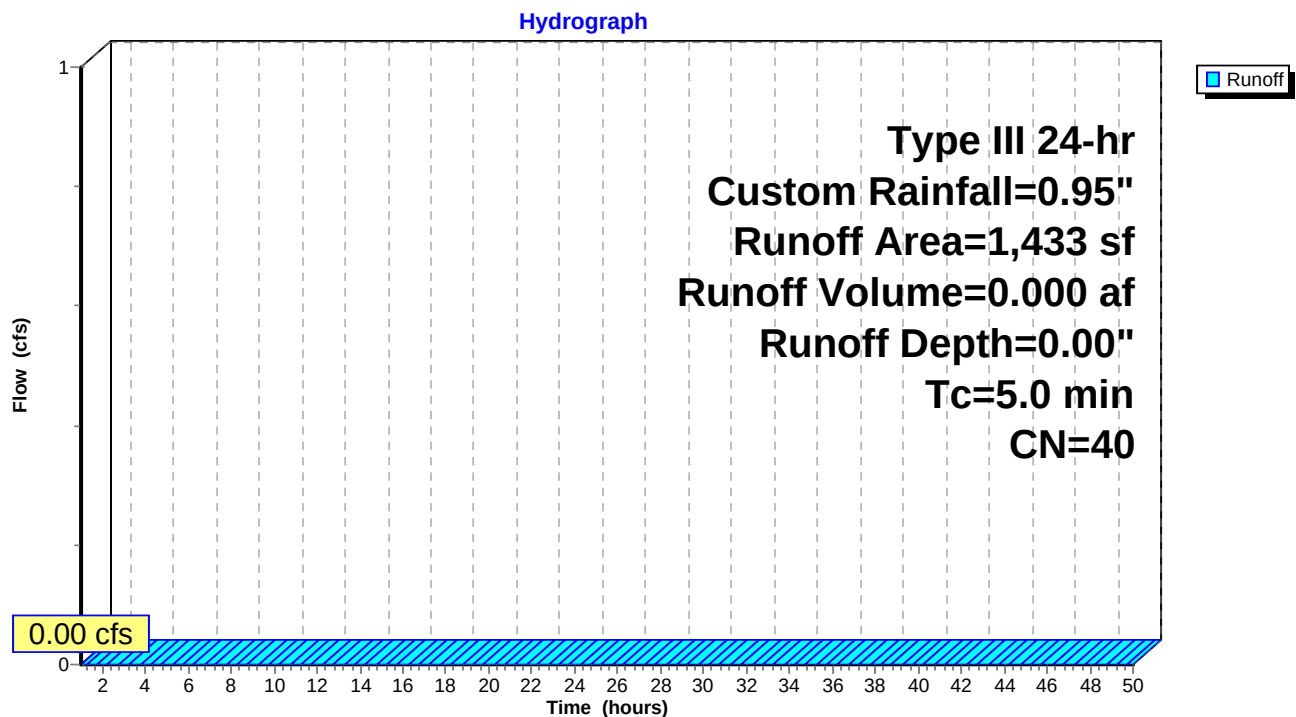
Runoff = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr Custom Rainfall=0.95"

Area (sf)	CN	Description
1,400	39	>75% Grass cover, Good, HSG A
* 33	98	Misc impervious
1,433	40	Weighted Average
1,400		97.70% Pervious Area
33		2.30% Impervious Area

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

Subcatchment 2S: SC 2

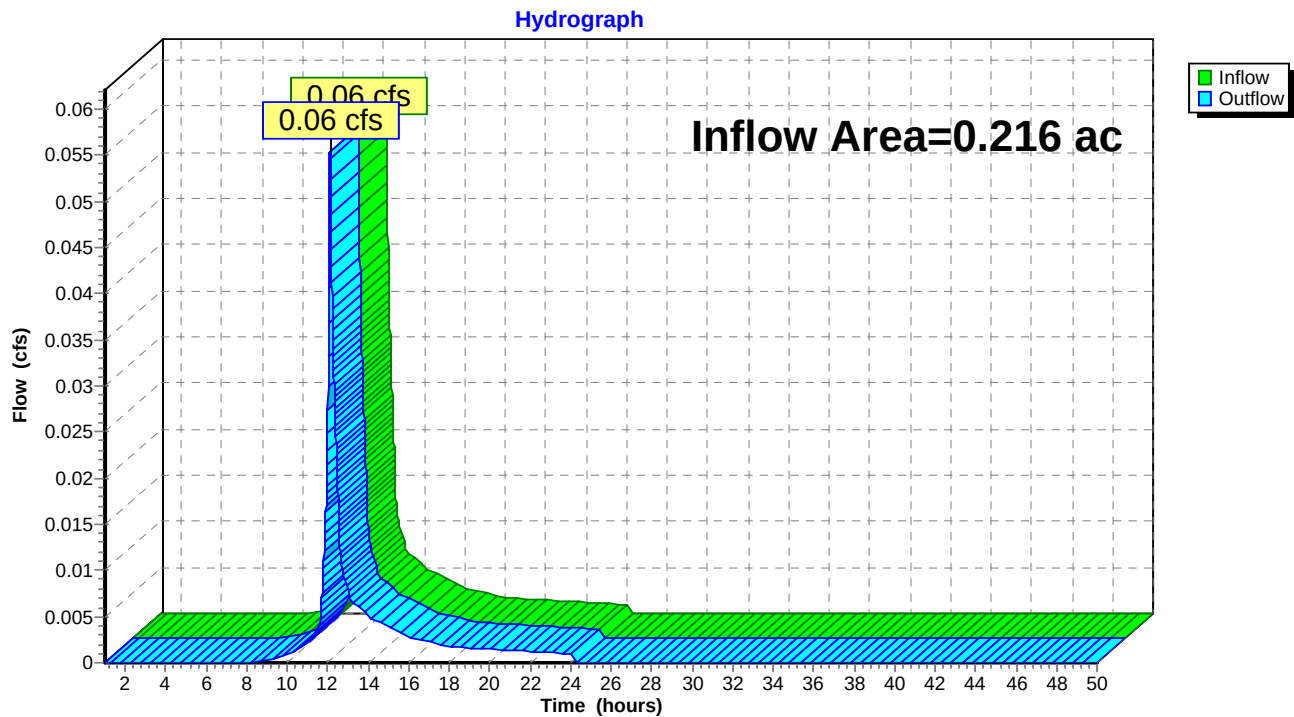


Summary for Reach 1R: North St. (POI #1)

Inflow Area = 0.216 ac, 81.45% Impervious, Inflow Depth = 0.27" for Custom event
 Inflow = 0.06 cfs @ 12.12 hrs, Volume= 0.005 af
 Outflow = 0.06 cfs @ 12.12 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-50.00 hrs, dt= 0.01 hrs

Reach 1R: North St. (POI #1)

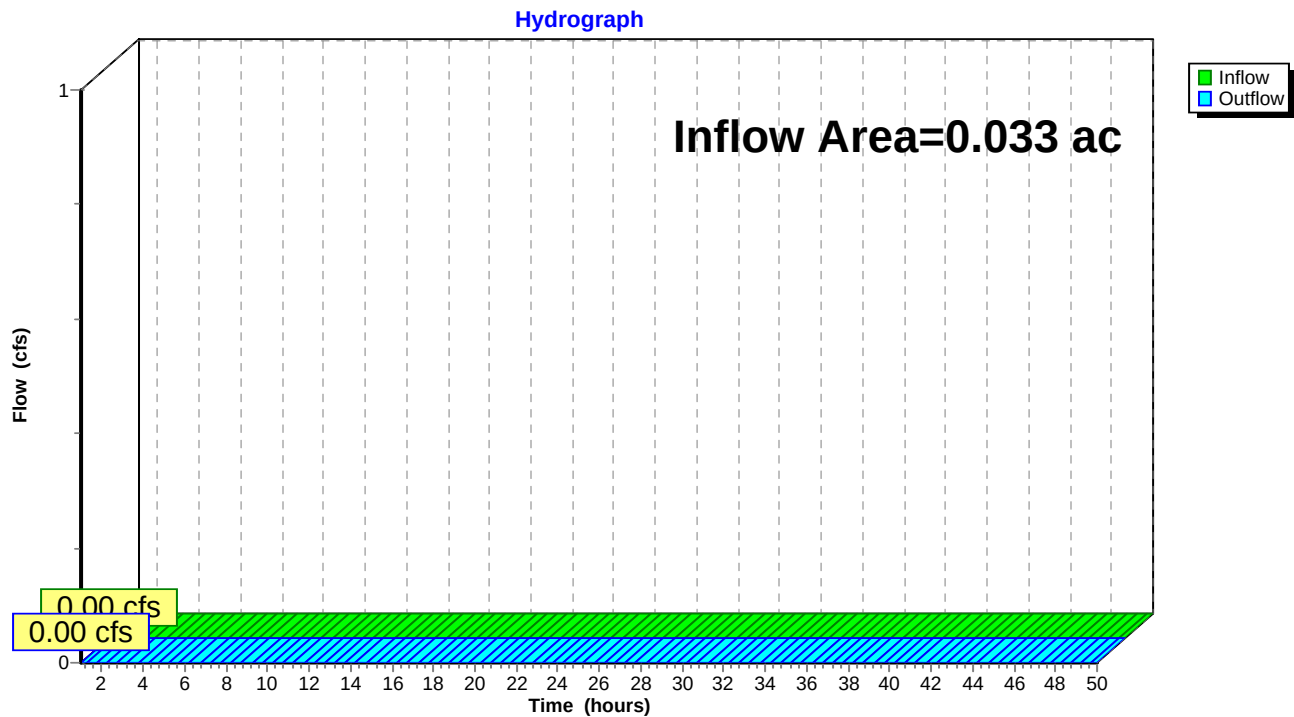


Summary for Reach 2R: Downgradient Abutter (POI#2)

Inflow Area = 0.033 ac, 2.30% Impervious, Inflow Depth = 0.00" for Custom event
 Inflow = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-50.00 hrs, dt= 0.01 hrs

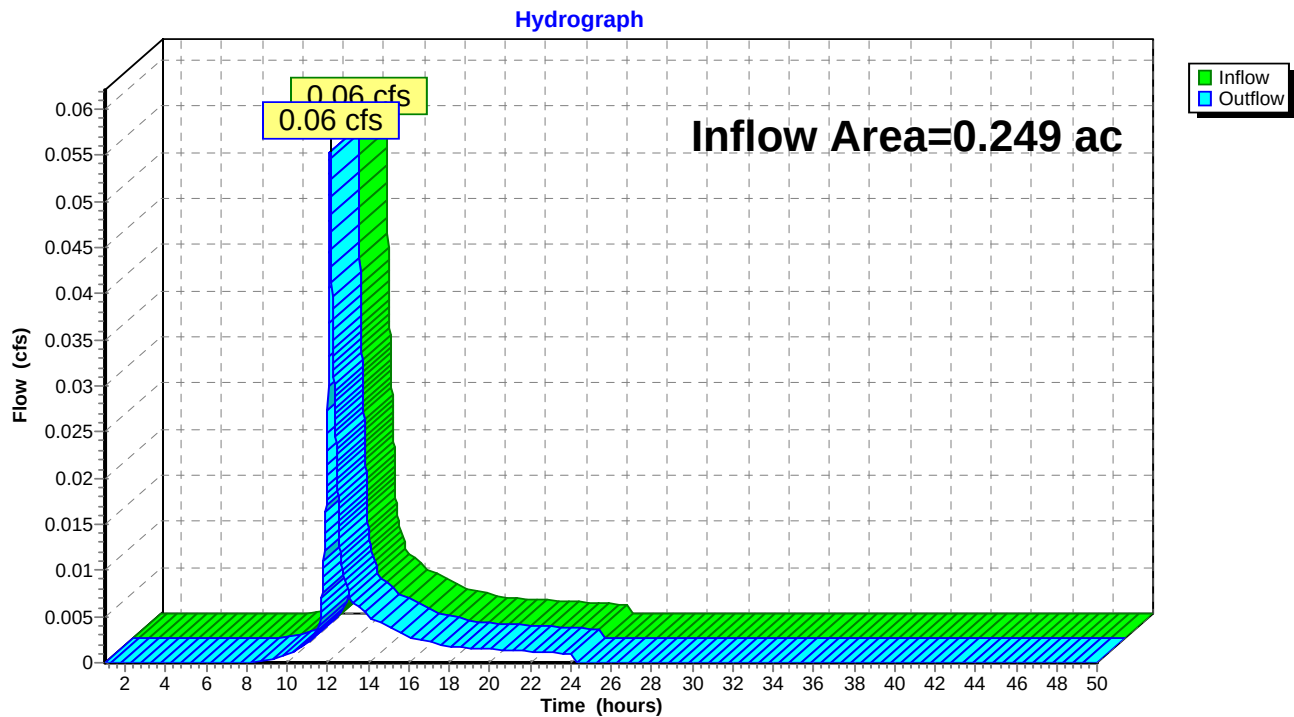
Reach 2R: Downgradient Abutter (POI#2)



Summary for Reach 3R: Total Runoff

Inflow Area = 0.249 ac, 71.01% Impervious, Inflow Depth = 0.23" for Custom event
Inflow = 0.06 cfs @ 12.12 hrs, Volume= 0.005 af
Outflow = 0.06 cfs @ 12.12 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-50.00 hrs, dt= 0.01 hrs

Reach 3R: Total Runoff

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Type III 24-hr Custom Rainfall=0.95"

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Summary for Pond FP1: FocalPoint

Inflow Area = 0.087 ac, 94.10% Impervious, Inflow Depth = 0.52" for Custom event
 Inflow = 0.05 cfs @ 12.08 hrs, Volume= 0.004 af
 Outflow = 0.05 cfs @ 12.11 hrs, Volume= 0.004 af, Atten= 11%, Lag= 2.3 min
 Primary = 0.05 cfs @ 12.11 hrs, Volume= 0.004 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-50.00 hrs, dt= 0.01 hrs
 Peak Elev= 133.94' @ 12.11 hrs Surf.Area= 116 sf Storage= 9 cf

Plug-Flow detention time= 2.0 min calculated for 0.004 af (100% of inflow)
 Center-of-Mass det. time= 2.0 min (827.4 - 825.4)

Volume	Invert	Avail.Storage	Storage Description
#1	133.75'	89 cf	3/4 Stone (Prismatic) Listed below (Recalc) 435 cf Overall - 213 cf Embedded = 222 cf x 40.0% Voids
#2	134.12'	202 cf	1.31'W x 2.35'L x 2.88'H Tanks x 24 Inside #1 213 cf Overall x 95.0% Voids
#3	137.00'	9 cf	3.00'W x 7.00'L x 2.25'H FocalPoint 47 cf Overall x 20.0% Voids
#4	139.25'	61 cf	Custom Stage Data (Prismatic) Listed below (Recalc) -Impervious
		362 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
133.75	116	0	0
137.50	116	435	435

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
139.25	21	0	0
139.50	37	7	7
139.75	55	12	19
140.00	85	18	36
140.25	115	25	61

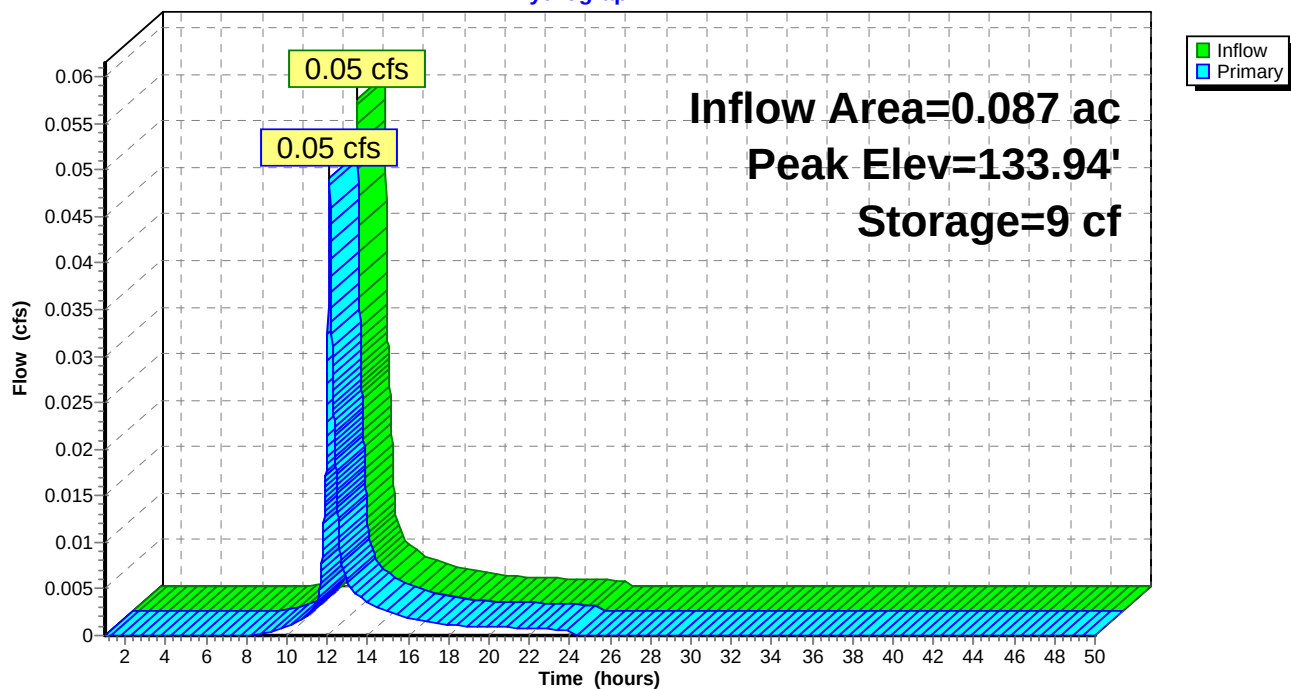
Device	Routing	Invert	Outlet Devices
#1	Primary	133.70'	3.3" Round 4" UD w/ orifice L= 150.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 133.70' / 132.70' S= 0.0067 ' / Cc= 0.600 n= 0.010 PVC, smooth interior, Flow Area= 0.06 sf
#2	Device 1	133.75'	100.000 in/hr Exfiltration over Surface area Phase-In= 0.10'
#3	Device 1	139.75'	8.0" Horiz. Overflow Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.05 cfs @ 12.11 hrs HW=133.94' TW=0.00' (Dynamic Tailwater)

1=4" UD w/ orifice (Inlet Controls 0.05 cfs @ 0.88 fps)
 2=Exfiltration (Passes 0.05 cfs of 0.27 cfs potential flow)
 3=Overflow Grate (Controls 0.00 cfs)

Pond FP1: FocalPoint

Hydrograph



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Type III 24-hr WQ Rainfall=1.00"

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Time span=1.00-50.00 hrs, dt=0.01 hrs, 4901 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1.1S: SC 1.1Runoff Area=3,781 sf 94.10% Impervious Runoff Depth=0.56"
Tc=5.0 min CN=95 Runoff=0.06 cfs 0.004 af**Subcatchment1S: SC1**Runoff Area=5,648 sf 72.98% Impervious Runoff Depth=0.11"
Tc=5.0 min CN=82 Runoff=0.01 cfs 0.001 af**Subcatchment2S: SC 2**Runoff Area=1,433 sf 2.30% Impervious Runoff Depth=0.00"
Tc=5.0 min CN=40 Runoff=0.00 cfs 0.000 af**Reach 1R: North St. (POI #1)**Inflow=0.06 cfs 0.005 af
Outflow=0.06 cfs 0.005 af**Reach 2R: Downgradient Abutter (POI#2)**Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af**Reach 3R: Total Runoff**Inflow=0.06 cfs 0.005 af
Outflow=0.06 cfs 0.005 af**Pond FP1: FocalPoint**Peak Elev=133.96' Storage=10 cf Inflow=0.06 cfs 0.004 af
Outflow=0.05 cfs 0.004 af**Total Runoff Area = 0.249 ac Runoff Volume = 0.005 af Average Runoff Depth = 0.26"**
28.99% Pervious = 0.072 ac 71.01% Impervious = 0.177 ac

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Type III 24-hr WQ Rainfall=1.00"

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Summary for Subcatchment 1.1S: SC 1.1

Runoff = 0.06 cfs @ 12.07 hrs, Volume= 0.004 af, Depth= 0.56"

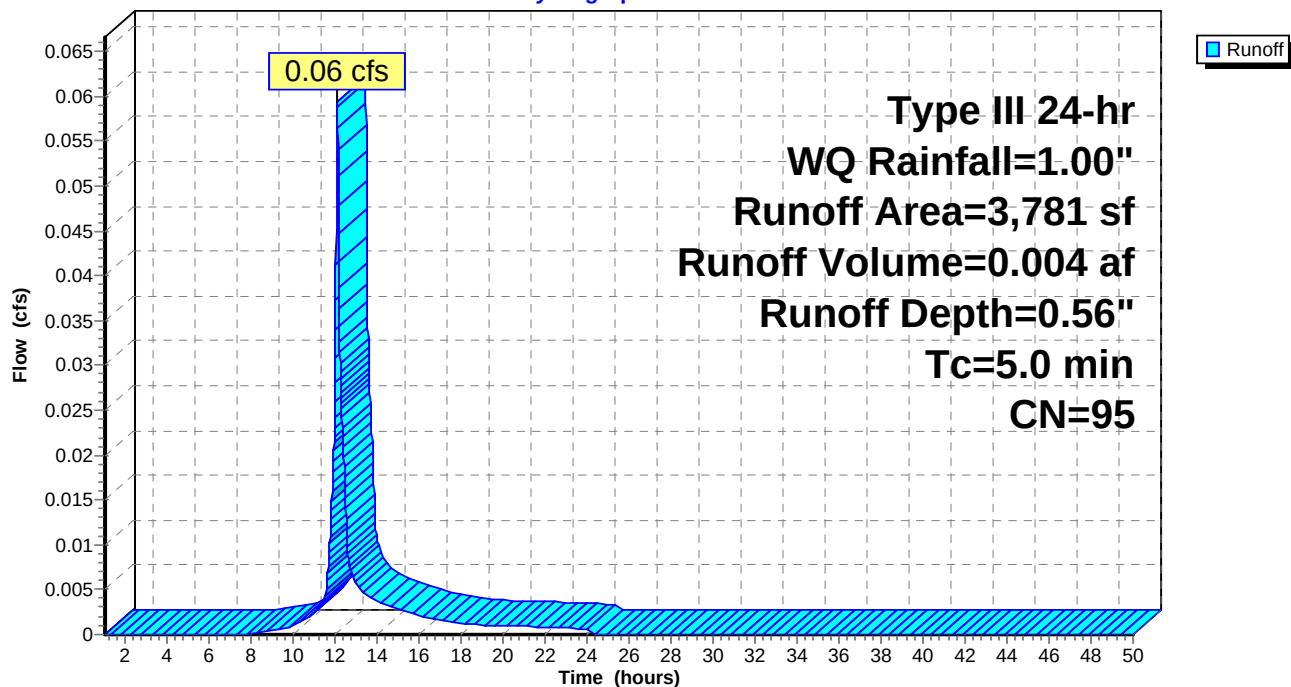
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr WQ Rainfall=1.00"

	Area (sf)	CN	Description
*	3,558	98	Roof, decks
	223	39	>75% Grass cover, Good, HSG A
	3,781	95	Weighted Average
	223		5.90% Pervious Area
	3,558		94.10% Impervious Area

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

Subcatchment 1.1S: SC 1.1

Hydrograph



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Type III 24-hr WQ Rainfall=1.00"

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Summary for Subcatchment 1S: SC1

Runoff = 0.01 cfs @ 12.12 hrs, Volume= 0.001 af, Depth= 0.11"

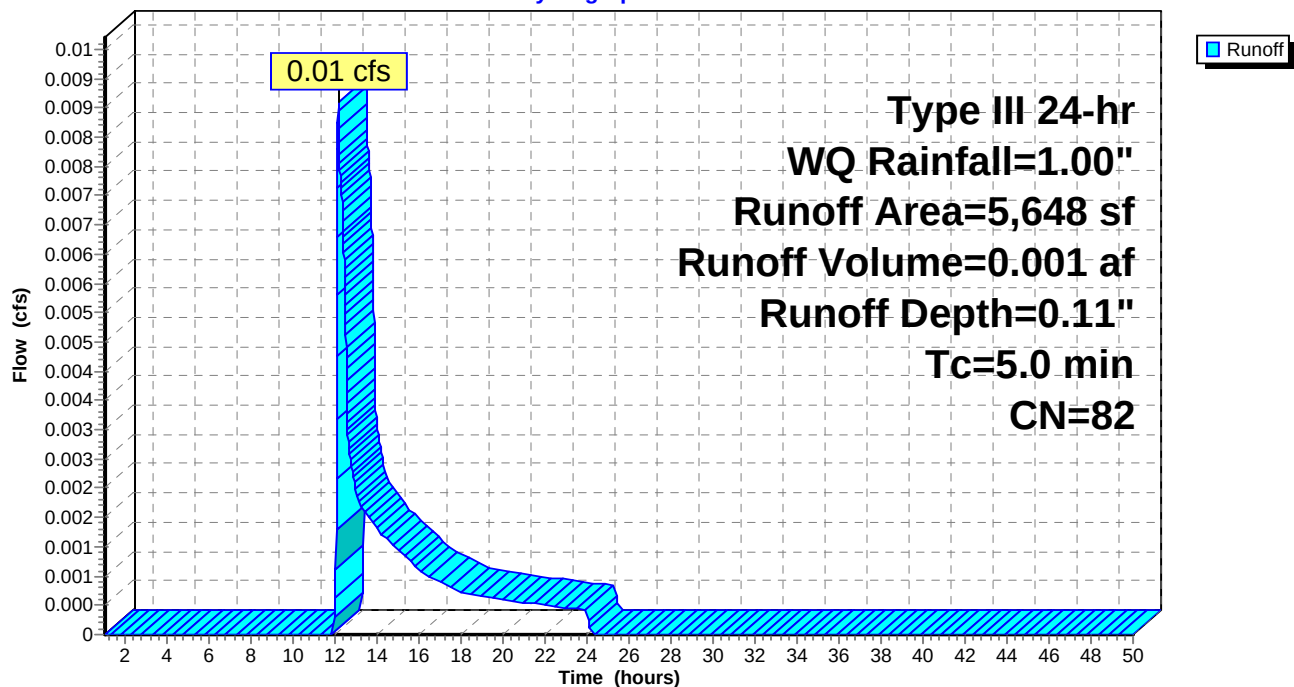
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr WQ Rainfall=1.00"

	Area (sf)	CN	Description
*	1,526	39	Field inlets trib/landscaping
*	122	98	128R walk/drive
*	1,077	98	shared drive
*	2,923	98	126 roof,walk,drive
	5,648	82	Weighted Average
	1,526		27.02% Pervious Area
	4,122		72.98% Impervious Area

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

Subcatchment 1S: SC1

Hydrograph



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Type III 24-hr WQ Rainfall=1.00"

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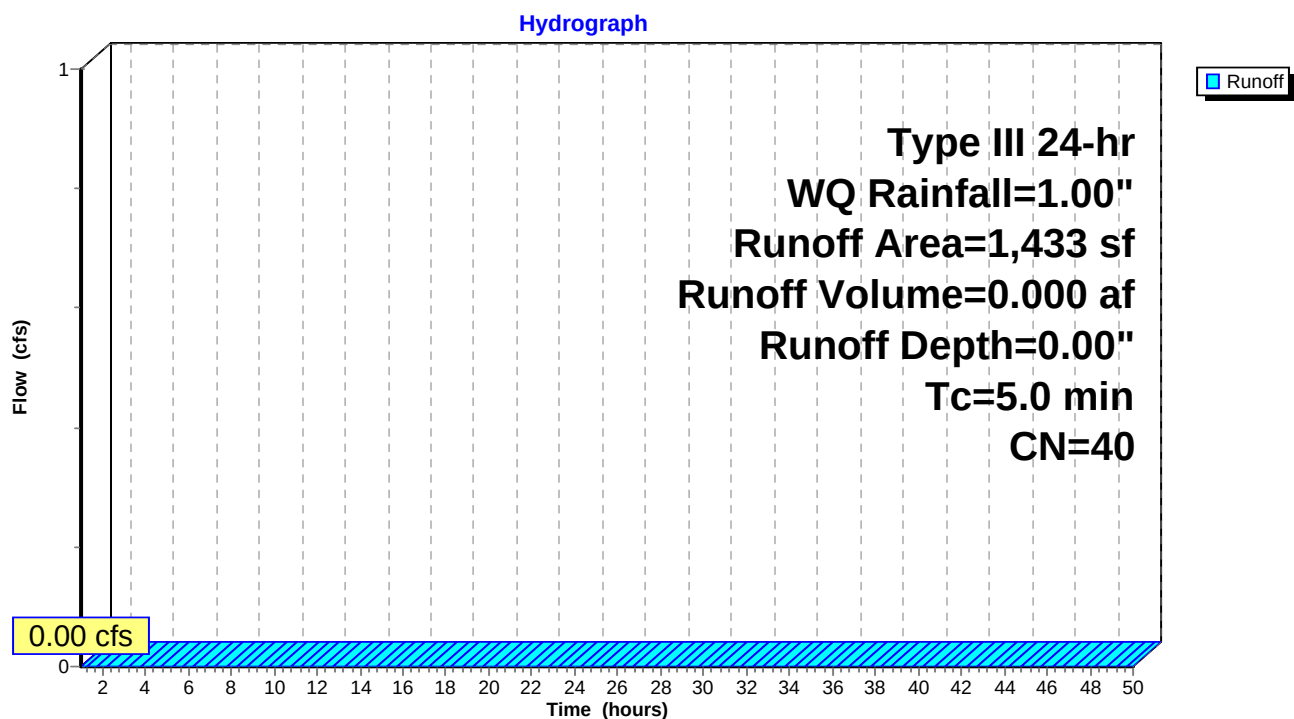
Summary for Subcatchment 2S: SC 2

Runoff = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr WQ Rainfall=1.00"

Area (sf)	CN	Description
1,400	39	>75% Grass cover, Good, HSG A
* 33	98	Misc impervious
1,433	40	Weighted Average
1,400		97.70% Pervious Area
33		2.30% Impervious Area

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

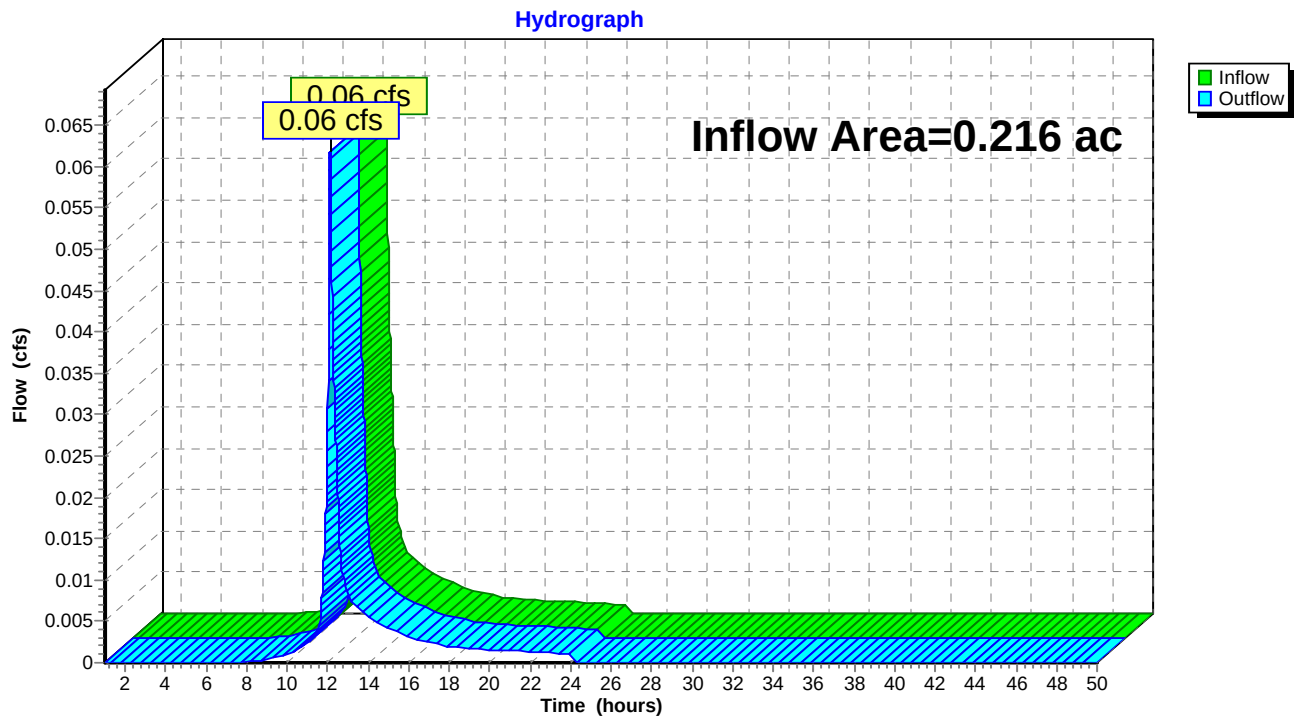
Subcatchment 2S: SC 2

Summary for Reach 1R: North St. (POI #1)

Inflow Area = 0.216 ac, 81.45% Impervious, Inflow Depth = 0.29" for WQ event
 Inflow = 0.06 cfs @ 12.12 hrs, Volume= 0.005 af
 Outflow = 0.06 cfs @ 12.12 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-50.00 hrs, dt= 0.01 hrs

Reach 1R: North St. (POI #1)

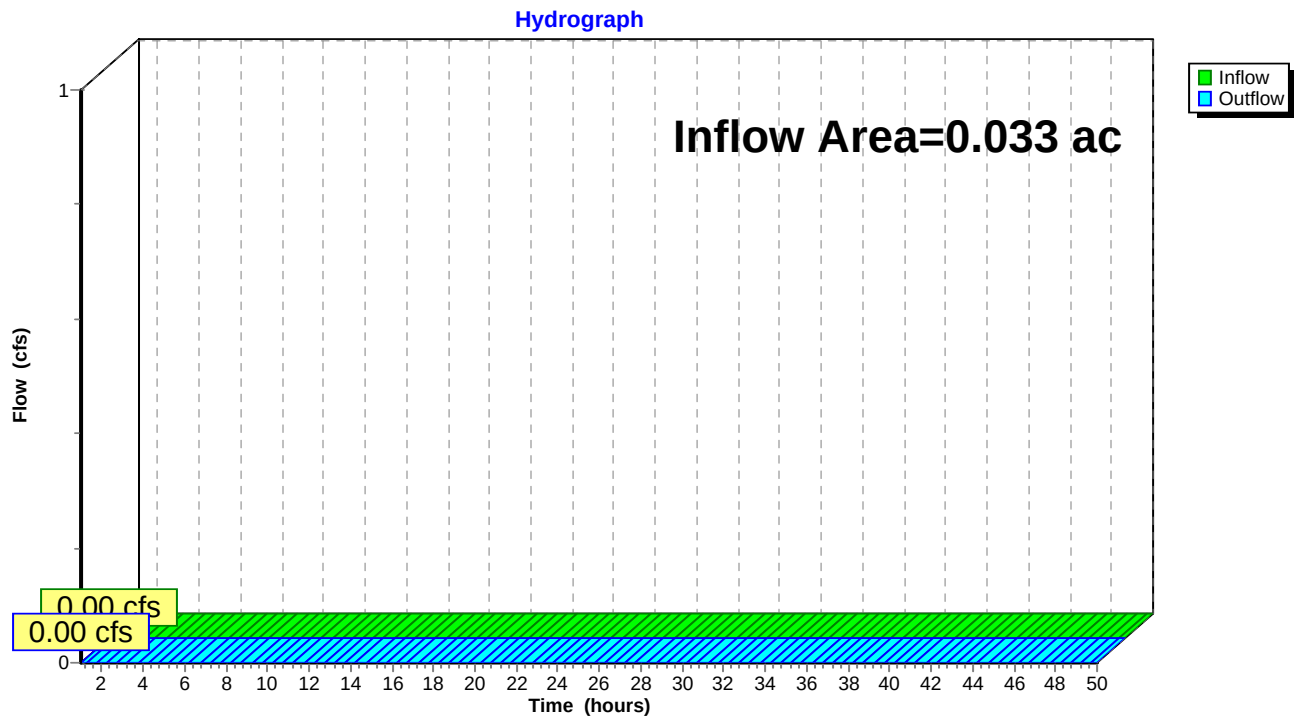


Summary for Reach 2R: Downgradient Abutter (POI#2)

Inflow Area = 0.033 ac, 2.30% Impervious, Inflow Depth = 0.00" for WQ event
 Inflow = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-50.00 hrs, dt= 0.01 hrs

Reach 2R: Downgradient Abutter (POI#2)

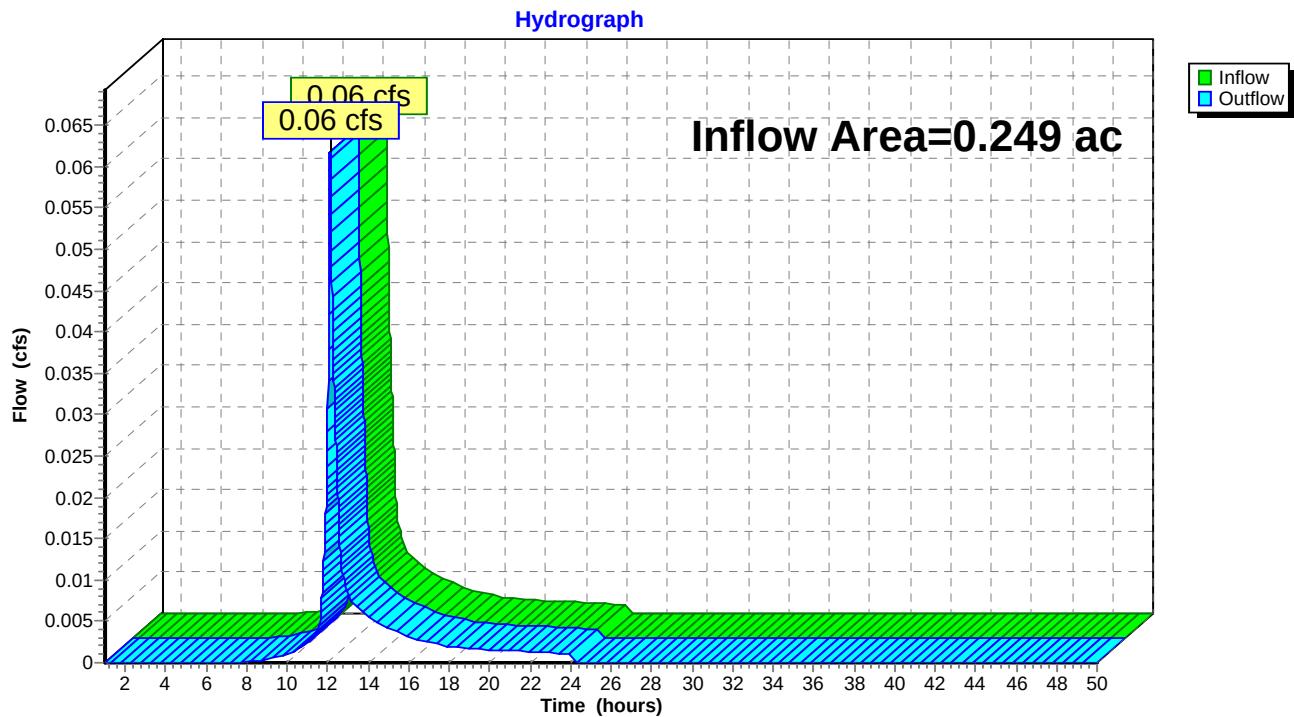


Summary for Reach 3R: Total Runoff

Inflow Area = 0.249 ac, 71.01% Impervious, Inflow Depth = 0.26" for WQ event
 Inflow = 0.06 cfs @ 12.12 hrs, Volume= 0.005 af
 Outflow = 0.06 cfs @ 12.12 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-50.00 hrs, dt= 0.01 hrs

Reach 3R: Total Runoff



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Type III 24-hr WQ Rainfall=1.00"

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Summary for Pond FP1: FocalPoint

Inflow Area = 0.087 ac, 94.10% Impervious, Inflow Depth = 0.56" for WQ event
 Inflow = 0.06 cfs @ 12.07 hrs, Volume= 0.004 af
 Outflow = 0.05 cfs @ 12.11 hrs, Volume= 0.004 af, Atten= 11%, Lag= 2.4 min
 Primary = 0.05 cfs @ 12.11 hrs, Volume= 0.004 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-50.00 hrs, dt= 0.01 hrs
 Peak Elev= 133.96' @ 12.11 hrs Surf.Area= 116 sf Storage= 10 cf

Plug-Flow detention time= 2.1 min calculated for 0.004 af (100% of inflow)
 Center-of-Mass det. time= 2.1 min (825.2 - 823.1)

Volume	Invert	Avail.Storage	Storage Description
#1	133.75'	89 cf	3/4 Stone (Prismatic) Listed below (Recalc) 435 cf Overall - 213 cf Embedded = 222 cf x 40.0% Voids
#2	134.12'	202 cf	1.31'W x 2.35'L x 2.88'H Tanks x 24 Inside #1 213 cf Overall x 95.0% Voids
#3	137.00'	9 cf	3.00'W x 7.00'L x 2.25'H FocalPoint 47 cf Overall x 20.0% Voids
#4	139.25'	61 cf	Custom Stage Data (Prismatic) Listed below (Recalc) -Impervious
		362 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
133.75	116	0	0
137.50	116	435	435

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
139.25	21	0	0
139.50	37	7	7
139.75	55	12	19
140.00	85	18	36
140.25	115	25	61

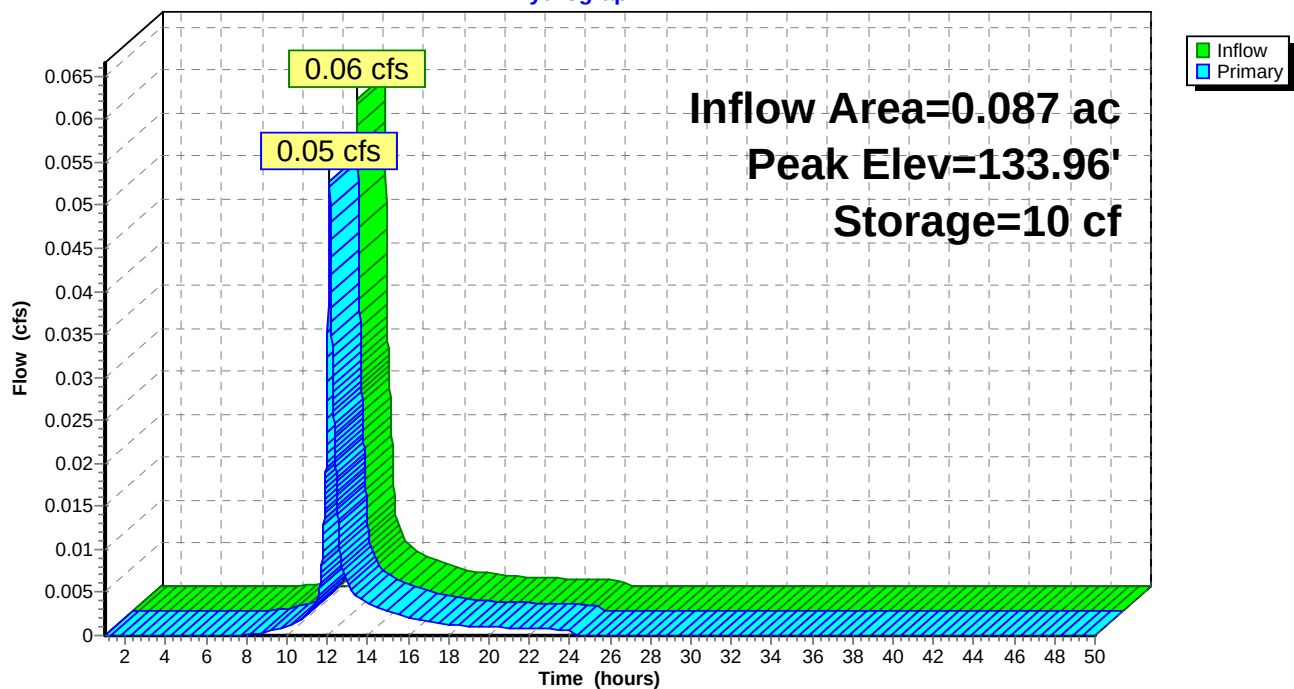
Device	Routing	Invert	Outlet Devices
#1	Primary	133.70'	3.3" Round 4" UD w/ orifice L= 150.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 133.70' / 132.70' S= 0.0067 ' Cc= 0.600 n= 0.010 PVC, smooth interior, Flow Area= 0.06 sf
#2	Device 1	133.75'	100.000 in/hr Exfiltration over Surface area Phase-In= 0.10'
#3	Device 1	139.75'	8.0" Horiz. Overflow Grate C= 0.600 Limited to weir flow at low heads

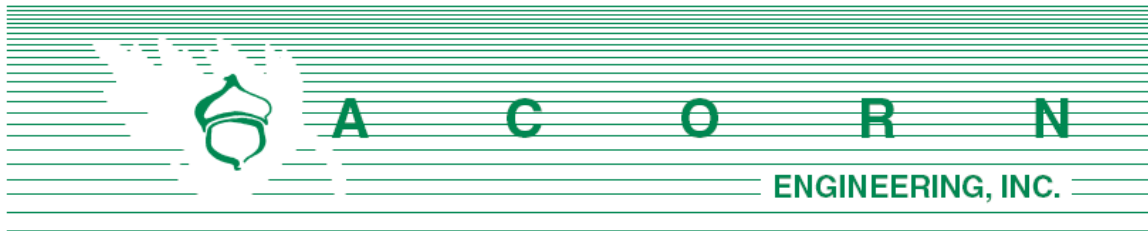
Primary OutFlow Max=0.05 cfs @ 12.11 hrs HW=133.96' TW=0.00' (Dynamic Tailwater)

1=4" UD w/ orifice (Inlet Controls 0.05 cfs @ 0.91 fps)
 2=Exfiltration (Passes 0.05 cfs of 0.27 cfs potential flow)
 3=Overflow Grate (Controls 0.00 cfs)

Pond FP1: FocalPoint

Hydrograph





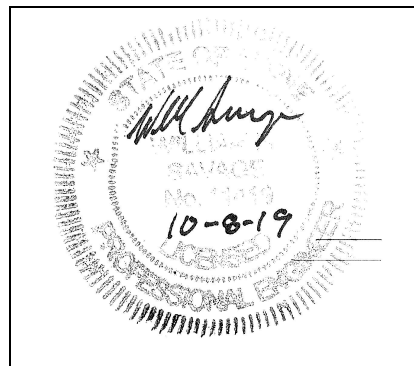
K. EROSION & SEDIMENTATION **CONTROL REPORT**

Prepared For:

**Upright Properties, LLC
Portland, ME 04101
PO Box 833 Wilton, ME 04294**

Prepared By:

**Acorn Engineering, Inc.
65 Hanover Street
Portland, Maine 04101**



**March 2019
Rev. October 2019**

INTRODUCTION

Acorn Engineering, Inc. has been retained by Upright Properties, LLC to provide civil engineering services for the proposed redevelopment of 126 & 128R North Street. The proposed project includes a two-phase approach where Phase 1 would include the redevelopment of 128R into a four-story building with six condominiums and covered parking on the ground level. Phase 2 would include the redevelopment of 126 into a three-story building with five rental units.

The following Erosion and Sedimentation Control Report was developed in accordance with the City of Portland Technical Manual – Section 5 – Portland Stormwater Management Standards and the Maine DEP Chapter 500 Stormwater Management Appendix A and B (1), Amended August 12, 2015. This narrative also meets the standards required in the Maine DEP's Erosion & Sediment Control BMP's Manual, revised in 2016.

1.0 EXISTING CONDITIONS

The proposed project site is located on North Street. A boundary plan has been prepared by Nadeau Land Surveys; Maine dated August 22, 2018.

Abutting Uses:

- | | |
|------------------|--------------------------|
| ➤ North R-6 Zone | Two-Unit Residential |
| ➤ East R-6 Zone | Multi Family Residential |
| ➤ South R-6 Zone | Multi Family Residential |
| ➤ West R-6 Zone | Multi Family Residential |

The site is currently occupied by a two-story single-family house. The South side of the lot has slopes that range from 15 to 25 percent toward the abutting condominium associations of Munjoy Heights.

1.1 Existing Soils

Onsite soil information includes the following:

- Soil Conservation Service Medium Intensity Soil Survey for Cumberland County
- United States Department of Agriculture Web Soil Survey

Given the soils information, listed above, no onsite wastewater is proposed; the applicant does not intend to perform a more intense hydric soil boundary delineation because the waiver requirements set forth in the City of Portland Technical Manual – Section 7 – Soil Survey, Rev. 6/17/11 are met.

The area within and surrounding the project includes soil types listed in the table below. The susceptibility of soils to erosion is indicated on a relative “K” scale of values over a range of 0.02 to 0.69. Higher “K” values indicate more erodible soils.



Table 1 - "K" Value		
Soils Type	Subsurface	Substratum
Hinckley Loamy Sand	0.17	0.17

The soil "K" values for the soils, listed above, show a low susceptibility to erosion. The site's susceptibility to erosion is from the Soil Conservation Service Medium Intensity Soil Survey for Cumberland County. Although soil "K" values for the soils show a low susceptibility to erosion, implementation of the proposed Erosion & Sedimentation Measures by the contractor will be of the utmost importance given the sustained slope throughout the site.

1.2 Existing Erosion Problems

There are no signs of erosion.

1.3 Critical Areas

The south side of the 128R lot has slopes that can range from 15 to 25 percent.

1.4 Protected Natural Resource

The client is not aware of the presence of any existing significant natural features located on the site as listed in Section 14-526 (b) 1. of the Land Use Code. The project is not located within a watershed classified as an Urban Impaired Stream by the Maine DEP.

1.5 Previous Construction Activity (5 years)

Acorn Engineering, Inc. is not aware of any construction related activities within the project limits within the past 5 years.

1.6 Timber Harvesting

Acorn Engineering, Inc. is not aware of any timber harvesting within the past five years.

2.0 EROSION CONTROL MEASURES AND SITE STABILIZATION

As part of the site development, the following temporary and permanent erosion and sedimentation control devices shall be implemented. Devices shall be installed as described in this report or within the plan set. See the Maine Erosion and Sediment Control Handbook for Construction: Best Management Practices for further reference.

2.1 Temporary Erosion Control Measures



The following temporary erosion and sedimentation control measures are planned for the project's construction period:

- 2.1.1 Crushed stone stabilized construction entrances shall be placed at all access points to the project site where there are disturbed areas. The following specifications shall be followed at a minimum:
 - Stone size shall be 2-3 inches, or reclaimed or recycled concrete equivalent.
 - The thickness of the entrance stone layer shall be no less than 6 inches.
 - The entrance shall not be less than 20 feet wide unless not feasible, however not less than the full width of points where ingress or egress occurs. The length shall not be less than 50 feet in length.
 - Geotextile fabric (woven or non-woven) shall be placed over the entire entrance area.
 - The entrance/exit shall be maintained to the extent that it will prevent the tracking of sediment onto public roadways.
- 2.1.2 Siltation fence or erosion control berm shall be installed down gradient of any disturbed areas to trap runoff borne sediments until permanent stabilization is achieved. The silt fence or erosion control berm shall be installed per the details provided in the plan set and inspected before and immediately after each rainfall and at least daily during prolonged rainfall. Repairs shall be made if there are any signs of erosion or sedimentation below the fence line or berm. If there are signs of undercutting at the center or the edges, or impounding of large volumes of water behind the fence or berm, the barrier shall be replaced with a stone check dam.
- 2.1.3 Hay mulch including hydro seeding is intended to provide cover for denuded or seeded areas until revegetation is established. Mulch placed between April 15th and November 1st on slopes of less than 15 percent shall be covered by fabric netting and anchored with staples in accordance with the manufacturer's recommendation. Mulch placed between November 1st and April 15th on slopes equal to or steeper than 8 percent and equal to or flatter than 2:1 shall use mats or fabric netting and anchored with staples in accordance with the manufacturer's recommendation.
- 2.1.4 At any time of the year, all slopes greater than 3:1 shall be stabilized with Double Net Erosion Control Blanket Bionet SC150BN by North American Green or Approved Equal, or Erosion Control Mix Slope Protection as detailed within the plans.
- 2.1.5 North Street shall be swept to control mud and dust from the construction site as necessary. Add additional stone to the stabilized construction entrance to minimize the tracking of material off the site and onto the surrounding roadways.



- 2.1.6 During demolition, clearing and grubbing operations, stone check dams shall be installed at any areas of concentrated flow. The maximum height of the check dam shall not exceed 2 feet. The center of the check dam shall be 6 inches below the outer edges of the dam. The contractor shall mulch the side slopes and install stone check dams for all newly excavated ditch lines within 24 hours of their creation.
- 2.1.7 Silt fence stake spacing shall not exceed 6 feet unless the fence is supported with 14-gauge wire in which case the maximum spacing shall not exceed 10 feet. The silt fence shall be “toed” into the ground.
- 2.1.8 Storm drain inlet protection shall be provided to storm drains using any of the following: hay bale drop inlet structures, silt fence drop inlet sediment filter, gravel and wire mesh drop inlet sediment filter, or curb inlet sediment filter. Barriers shall be inspected after every rainfall event and repaired as necessary. Sediments shall be removed when accumulation has reached $\frac{1}{2}$ the design height.
- 2.1.9 Dust control shall be accomplished using any of the following: water, calcium chloride, stone, or an approved MDEP product. Dust control shall be applied as needed to accomplish dust control.
- 2.1.10 Temporary loam, seed, and mulching shall be used in areas where no other erosion control measure is used. Application rates for seeding are provided at the end of this report.
- 2.1.11 Stockpiles shall be stabilized within 7 days of formation unless a scheduled rain event occurs prior to the 7-day window, in which case the stockpile shall be stabilized prior to the rain event. Methods of stabilization shall be mulch, erosion control mix, or erosion control blankets/mats. Silt fence or a wood waste compost filter berm shall be placed downhill of any soil stockpile location.
- 2.1.12 For disturbance between November 1 and April 15, please refer to winter stabilization plan in this report and the Maine Erosion and Sediment Control BMP manual for further information.
- 2.1.13 It is of the utmost importance that stormwater runoff and potential sediment from the construction site be diverted around the proposed underdrains until the trench is backfilled.

2.2 Permanent Erosion Control Measures

The following permanent erosion control measures are intended for post disturbance areas of the project.

- 2.2.1 All disturbed areas during construction, not subject to other proposed conditions, shall receive a minimum 4” of loam, limed, and mulched. Erosion



control blankets or mats shall be placed over the mulch in areas noted in paragraph 4.1 of this report.

2.2.2 All stormwater devices shall be installed and tributary areas stabilized prior receiving stormwater.

2.2.3 Refer to the Maine Erosion and Sediment Control BMP manual for additional information.

3.0 EROSION AND SEDIMENTATION CONTROL PLAN

3.1 The Erosion and Sedimentation Control Plan is included within the plan set.

4.0 DETAILS AND SPECIFICATIONS

4.1 Erosion Control Details and Specifications are included in the plan set.

5.0 STABILIZATION PLAN FOR WINTER CONSTRUCTION

Winter Construction consists of earthwork disturbance between the dates of November 1 and April 15. If a construction site is not stabilized with pavement, a road gravel base, 75% mature vegetation cover or riprap by November 15, then the site shall be protected with over-winter stabilization. Any area not stabilized with pavement, vegetation, mulching, erosion control mix, erosion control mats, riprap, or gravel base on a road shall be considered open.

The contractor shall limit the work area to areas that work will occur in during the subsequent 15 days and so that it can be mulched one day prior to a snow event. The contractor shall stabilize work areas prior to opening additional work areas to minimize areas without erosion control measures.

The following measures shall be implemented during winter construction periods:

5.1 Sediment Barriers

During frozen conditions, sediment barriers may consist of erosion control mix berms or any other recognized sediment barriers as frozen soil prevents the proper installation of hay bales or silt fences.

5.2 Mulching

All areas shall be considered to be denuded until seeded and mulched. Hay and straw mulch shall be applied at a rate of 150 lb. per 1,000 square feet or 3 tons/acre (twice the normal accepted rate of 75-lbs./1,000 s.f. or 1.5 tons/acre) and shall be properly anchored. Erosion control mix must be applied with a minimum 4-inch thickness. Mulch shall not be spread on top of snow. The snow shall be removed down to a one-inch depth or less prior to application. After each day of final grading, the area shall be properly stabilized with anchored hay or straw or erosion control



matting. An area shall be considered to have been stabilized when exposed surfaces have been either mulched or adequately anchored so that ground surface is not visible through the mulch. Between the dates of November 1 and April 15, all mulch shall be anchored by either mulch netting, tracking or wood cellulose fiber. The cover will be considered sufficient when the ground surface is not visible through the mulch. After November 1st, mulch and anchoring of all exposed soil shall occur at the end of each final grading workday.

5.3 Soil Stockpiling

Stockpiles of soil or subsoil shall be mulched for over winter protection with hay or straw at twice the normal rate or with a four-inch layer of erosion control mix. This shall be done within 24 hours of stocking and re-established prior to any rainfall or snowfall.

5.4 Seeding

Between the dates of October 15th and April 1st, loam or seed shall not be required. During periods of above freezing temperatures finished areas shall be fine graded and either protected with mulch or temporarily seeded and mulched until the final treatment can be applied. If the date is after November 1st and if the exposed area has not been loamed, final grading with a uniform surface, then the area may be dormant seeded at a rate of 3 times higher than specified for permanent seed and then mulched.

Dormant seeding may be placed prior to the placement of mulch or erosion control blankets. If dormant seeding is used for the site, all disturbed areas shall receive 4" of loam and seed at an application rate of 5 lbs./1,000 s.f. All areas seeded during the winter shall be inspected in the spring for adequate catch. All areas insufficiently vegetated (less than 75% catch) shall be revegetated by replacing loam, seed and mulch. If dormant seeding is not used for the site, all disturbed areas shall be revegetated in the spring.

5.5 Over winter stabilization of disturbed soils

By September 15th, all disturbed soils on areas having a slope less than 15% shall be seeded and mulched. If the disturbed areas are not stabilized by this date, then one of the following actions shall be taken to stabilize the soil for late fall and winter:

- Stabilize the soil with temporary vegetation – By October 1st, seed the disturbed soil with winter rye at a seeding rate of 3lbs per 1,000 s.f., lightly mulch the seeded soil with hay or straw at 75 lbs per 1,000 s.f., and anchor the mulch with plastic netting. Monitor growth of the rye over the next 30 days. If the rye fails to grow at least three inches or fails to cover at least 75% of the disturbed soil before November 1st, then mulch the area for over-winter protection.
- Stabilize the soil with sod – Stabilize the disturbed soil with properly installed sod by October 1st. Proper installation includes pinning the sod onto the soil with



wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil.

- Stabilize the soil with mulch – By November 15th, mulch the disturbed soil by spreading hay or straw at a rate of at least 150 lbs per 1,000 s.f. on the area so that no soil is visible through the mulch. Immediately after applying the mulch, anchor the mulch with plastic netting to prevent wind from moving the mulch off the disturbed soil.

5.6 Over winter stabilization of disturbed slopes

All stone-covered slopes shall be constructed and stabilized by November 15th. All slopes to be vegetated shall be seeded and mulched by September 1st. A slope is considered a grade greater than 15%. If a slope to be vegetated is not stabilized by September 1st, then one of the following action shall be taken to stabilize the slope for late fall and winter:

- Stabilize the soil with temporary vegetation and erosion control mats – By October 1st the disturbed slope shall be seeded with winter rye at a seeding rate of 3 lbs per 1,000 s.f. and then install erosion control mats or anchored mulch over the seeding. If the rye fails to grow at least three inches or fails to cover at least 75% of the slope by November 1st, then the contractor shall cover the slope with a layer of erosion control mix or with stone riprap.
- Stabilize the soil with sod – The disturbed slope shall be stabilized with properly installed sod by October 1st. Proper installation includes the contractor pinning the sod onto the slope with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil. The contractor shall not use late-season sod installation to stabilize slopes having a grade greater than 3H:1V or having groundwater seeps on the slope face.
- Stabilize the soil with erosion control mix – Erosion control mix shall be properly installed by November 15th. The contractor shall not use erosion control mix to stabilize slopes having grades greater than 2H:1V or having groundwater seeps on the slope face.
- Stabilize the soil with stone riprap – Place a layer of stone riprap on the slope by November 15th. A registered professional engineer shall be hired to determine the stone size needed for stability on the slope and to design a filter layer for underneath the riprap.

6.0 INSPECTION AND MAINTENANCE

A person with knowledge of erosion and stormwater control, including the standards and conditions in the permit, shall conduct periodic visual inspections of installed erosion control measures. The frequency of inspection shall occur at least once every two weeks, as well as after a “storm event”. A “storm event” shall consist 0.5 inches of rain within a 24-



hour period. The following Erosion and Sediment Control - Best Management Practices (BMP's) shall inspected in the manner as described.

6.1 Sediment Barriers

Hay bale barriers, silt fences and filter berms shall be inspected and repaired for the following if there are any signs of erosion or sedimentation below them. If there are signs of undercutting at the center or the edges of the barrier, or impounding of large volumes of water behind them, sediment barriers shall be replaced with a temporary check dam. Should the fabric on a silt fence or filter barrier decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, the fabric shall be replaced promptly. Sediment deposits should be removed when deposits reach approximately one-half the height of the barrier. Filter berms should be reshaped as needed. Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required should be dressed to conform to the existing grade, prepared and seeded.

6.2 Stabilized Stone Construction Entrances

The exit shall be maintained in a condition that will prevent tracking of sediment onto public rights-of-way. When the control pad becomes ineffective, the stone shall be removed along with the collected soil material and redistributed on site in a stable manner. The entrance should then be reconstructed. The contractor shall sweep or wash pavement at exits, which have experienced mud-tracking on to the pavement or traveled way. When washing is required, it shall be done on an area stabilized with aggregate, which drains into an approved sediment trapping device. All sediment shall be prevented from entering storm drains, ditches, or waterways.

6.3 Mulched Areas

All mulches must be inspected periodically, in particular after rainstorms, to check for rill erosion. If less than 90% of the soil surface is covered by mulch, additional mulch shall be immediately applied. Nets must be inspected after rain events for dislocation or failure. If washouts or breakage occur, re-install the nets as necessary after repairing damage to the slope. Where mulch is used in conjunction with ornamental plantings, inspect periodically throughout the year to determine if mulch is maintaining coverage of the soil surface. Repair as needed.

6.4 Dust Control

When temporary dust control measures are used, repetitive treatment shall be applied as needed to accomplish control.

6.5 Stormwater Appurtenances

All underdrains, storm drains, and catch basins need to be operating effectively and free of debris.



6.6 Erosion and Sedimentation Control Inspections:

Acorn Engineering has personnel qualified to conduct Erosion and Sedimentation Control Inspections. For further information, contact:

Contact: Will Savage, PE
Telephone: (207) 775-2655

Qualifications:

- Maine Professional Engineering License #11419
- Maine DEP - Certified in Maintenance & Inspection of Stormwater BMP's Cert #14
- Certified Erosion, Sediment and Storm Water Inspector (CESSWI) Cert #0293
- Certified Professional in Erosion and Sediment Control (CPESC) Cert. #4620

The Contractor has sole responsibility for complying with the Erosion and Sedimentation Report/Plan, including control of fugitive dust. The Contractor shall be responsible for any monetary penalties resulting from failure to comply with these standards.



7.0 IMPLEMENTATION SCHEDULE

The following implementation sequence is intended to maximize the effectiveness of the above described erosion control measures. Contractors should avoid overexposing disturbed areas and limit the amount of stabilization area.

1. Install a stabilized construction entrance in all locations where construction traffic will enter and exit the site.
2. Install perimeter erosion control berm.
3. Commence installation of drainage infrastructure.
4. Install all other erosion control devices as necessary throughout the remainder of this schedule.
5. Commence earthwork operations, associated with the roadway construction.
6. Commence installation of utilities.
7. Continue earthwork and grading to subgrade as necessary for construction.
8. Complete installation of drainage infrastructure, as well as other utility work.
9. Complete remaining earthwork operations.
10. Install sub-base and base gravels in paved areas.
11. Install paving, curbing and brickwork.
12. Loam, lime, fertilize, seed and mulch disturbed areas and complete all landscaping.
13. Once the site is stabilized, 90% catch of grass has been obtained, or mulching of landscape areas is complete, remove all temporary erosion control measures.
14. Touch up areas without a vigorous catch of grass with loam and seed.
15. Complete site signage and striping.
16. Execute proper maintenance of all temporary and permanent erosion control measures throughout the project.

The above implementation sequence should be generally followed by the site contractor. However, the contractor may construct several items simultaneously. The contractor shall submit to the owner a schedule of the completion of the work. If the contractor is to commence the construction of more than one item above, they shall limit the amount of exposed areas to those areas in which work is expected to be undertaken during the following 30 days.

The contractor shall re-vegetate disturbed areas as rapidly as possible. All areas shall be permanently stabilized within 7 days of final grading or before a storm event. The contractor shall incorporate planned inlets and drainage systems as early as possible into the construction phase.

8.0 CONCLUSION

The above erosion control narrative is intended to minimize the development impact by implementing temporary and permanent erosion control measures. The contractor shall also refer to the Maine Erosion and Sediment Control BMP manual for additional information.

9.0 ATTACHMENTS



- Temporary Seeding Plan
- Permanent Seeding Plan



TEMPORARY SEEDING PLAN

Site Preparation

The seeded areas shall be feasibly graded out to provide the use of equipment for seedbed preparation, seeding, mulch application, and mulch anchoring. If necessary, the site may require additional temporary erosion control measures outlined in the Erosion Control report.

Seedbed Preparation

Fertilizer shall be applied to the site at a rate of 13.8 pounds per 1,000 square feet. The composition of the fertilizer shall be 10-10-10 (N-P₂O₅-K₂O) or equivalent.

Limestone shall be applied to the site at a rate of 138 pounds per 1,000 square feet.

Seeding

The composition and amount of temporary seed applied to a site shall be determined by the following table:

Seed	Pounds / 1,000 S.F.	Recommended Seeding Dates
Winter Rye	2.57	Aug-15 to Oct-1
Oats	1.84	Apr-1 to Jul-1 Aug-15 to Sep-15
Annual Ryegrass	0.92	Apr-1 to Jul-1
Sudangrass	0.92	May-15 to Aug-15
Perennial	0.92	Aug-15 to Sep-15

Mulching

Mulch shall be applied at a rate of 70 lbs – 90 lbs per 1,000 square feet. The mulch shall be installed at a minimum depth of 4 inches. The seeded area shall be mulched immediately after seed is applied. Mulching during the winter season shall be double the normal amount.

Conclusion

Please refer to the Maine Erosion and Sediment Control BMP manual for additional information pertaining to temporary seeding and mulching.



PERMANENT SEEDING PLAN

Site Preparation

The seeded areas shall be feasibly graded out to provide the use of equipment for seedbed preparation, seeding, mulch application, and mulch anchoring. If necessary, the site may require additional temporary erosion control measures outlined in the Erosion Control report.

Seedbed Preparation

Fertilizer shall be applied to the site at a rate of 13.8 pounds per 1,000 square feet. The composition of the fertilizer shall be 10-10-10 (N-P₂O₅-K₂O) or equivalent.

Limestone shall be applied to the site at a rate of 138 pounds per 1,000 square feet.

Seeding

The composition and amount of permanent seed applied to a site shall be determined by the following table:

Seed	Pounds / 1,000 S.F.
Kentucky Bluegrass	0.46
Creeping Red Fescue	0.46
Perennial Ryegrass	0.11
Total	1.03

Mulching

Mulch shall be applied at a rate of 70 lbs – 90 lbs per 1,000 square feet. The mulch shall be installed at a minimum depth of 4 inches. The seeded area shall be mulched immediately after seed is applied. Mulching during the winter season shall be double the normal amount.

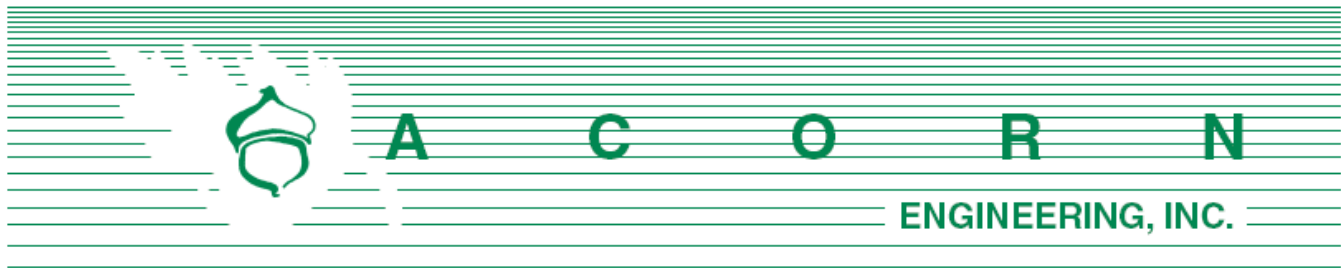
Recommendations

Permanent seeding is recommended to be completed in the spring. Later summer seeding is allowed if completed prior to September 1st. If seeding cannot be accomplished during the periods recommended for permanent seeding, then the contractor shall perform temporary seeding per the temporary seeding plan.

Conclusion

Please refer to the Maine Erosion and Sediment Control BMP manual for additional information pertaining to permanent seeding and mulching.





Chief Mike Thompson
 City of Portland Fire Department
 380 Congress St.
 Portland, ME 04101

August 7, 2019
 Rev. October 29, 2019

Subject: 126 & 128R North Street – Fire Department Checklist
 Section L of Application

On behalf of Upright Properties, LLC, the design team is pleased to respond to the Portland Fire Department Site Review Checklist.

1. Name, address, telephone number of applicant

Upright Properties, LLC
 PO Box 833
 Wilton, ME 04294
 207-749-9656

2. Name address, telephone number of architect

Tracie Reed, Dextrous Creative Architecture
 traciereed@dextrouscreative.com
 Portland, Maine 04101
 207-409-0459

3. Proposed uses of any structures [NFPA and IBC classification]

NFPA: Apartments / IBC: R-6

4. Square footage of all structures, including decks [total and per story]

Existing Building – 128 R		
Total	1,448	sf

Proposed Building		
Basement	700	sf
1 st Floor	1,003	sf
2 nd Floor	2,370	sf
3 rd Floor	2,370	sf
4 th Floor	2,593	sf
Total	9,036	sf

Existing Building – 126		
Total	2,510	sf

Proposed Building		
1 st Floor	1,403	sf
2 nd Floor	1,403	sf
3 rd Floor	1,403	sf
Total	4,209	sf

5. Elevation of all structures

Based upon the average grade plane defined by the IBC, the proposed building height for 126 & 128R are 33.3' and 44.6' respectively. The height of each building is below the allowable limit in the R-6 zone. Please refer to the building elevations provided by the Architect for additional information.

6. Proposed fire protection of all structures

The buildings will each have a sprinkler system with additional protection per code. Fire flows and requirements for system storage or booster pumping are subject to the fire designer which will be performed prior the request for a building permit.

7. Hydrant locations

An existing hydrant is located approximately 175 ft southeast of the property at the corner of North Street and Walnut Street. Hydrant flow data from the Portland Water District once received may be made available to the Fire Department upon request.

8. Water main size and location

The 128R redevelopment will be serviced by a new 6" sprinkler line and 1.5" domestic water line. The sprinkler line will be tapped from an existing 12" ductile iron main within North Street. A 6" fire service line will extend from the water main to the building fire suppression system. The building is expected to have internal sprinkler risers and a Fire Department pump connection on the street side of the building.

The 126 redevelopment will be serviced by a 4" sprinkler line off the 12" ductile iron main water main within North Street. A 1.5" domestic line is proposed to branch off the proposed sprinkler line.

9. Access to all structures [min. 2 sides]

Access to the structure is provided directly on North Street. Additionally, Phase I of the project will implement a 16' drive aisle to 128R North Street which will provide access for fire/emergency vehicles. The drive aisle will be developed by demolishing the 126 building prior to the certificate of occupancy at 128R.



10. The Architect has provided a code summary (attached).

NFPA 1 – Chapter 18 Fire Department Access and Water Supply

18.2 Fire Department Access:

The project site is located in a developed area and is fronted by a public street. The following pavement street width is currently available:

- North Street: 34 feet

Per NFPA 1 – Chapter 18.2.3.3.1, there will be public street access within 50 feet of at least one exterior door. Per NFPA 1 – Chapter 18.2.3.2.2.1, all first story floors shall be located not more than 450 feet from a Fire Department access road.

City of Portland Technical Manual – Section 3 Public Safety

3.4.1 Every dead-end roadway more than one hundred fifty (150') feet in length shall provide a turnaround at the closed end. Turnarounds shall be designed to facilitate future street connectivity and shall always be designed to the right (refer to Figure I-5).

Response: Not applicable

3.4.2 Where possible, developments shall provide access for Fire Department vehicles to at least two sides of all structures. Access may be from streets, access roads, emergency access lanes, or parking areas.

Response: As depicted on the site plan, the proposed building layout provides a minimum of two paved access points to the structure: from North Street directly and one from the driveway.

3.4.3 Building setbacks, where required by zoning, shall be adequate to allow for emergency vehicle access and related emergency response activities and shall be evaluated based on the following factors:

- *Building Height.*
- *Building Occupancy.*
- *Construction Type.*
- *Impediments to the Structures.*
- *Safety Features Provided.*

Response: The proposed development layout has contemplated and altered the plans for emergency access conditions and provides for safe and efficient access along the public street for emergency vehicles.

3.4.4. Fire Dept. access roads shall extend to within 50' of an exterior door providing access to the interior of the structure.



Response: The buildings will be provided with exterior doors that will be within 50' of a Fire Department access route, namely North Street.

3.4.5. Site access shall provide a minimum of nine (9) feet clearance height to accommodate ambulance access.

Response: Site access and driveway is clear of vertical obstructions.

3.4.6. Elevators shall be sized to accommodate an 80 x 24-inch stretcher.

Response: The elevators will be sized to accommodate an 80 x 24 stretcher, per the Architect's designs.

3.4.7. All structures are required to display the assigned street number. Numbers shall be clearly visible from the public right of way.

Response: The applicant will work with the City's Public Works Division to assign street addresses and numbering to meet City Standards.

Thank you for your review. Please let me know if you have any additional questions or comments.

Sincerely,



William H. Savage, P.E.
Principal
Acorn Engineering, Inc.



CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

Portland Dept. of Public Works -
Water Resources
55 Portland Street,
Portland, Maine 04101-2991



Bradley Roland, P.E.
Water Resources Division
Department of Public Works
55 Portland Street
Portland, ME 04103

Date: 3/16/2020

1. Please, Submit Utility, Site, and Locus Plans.

Site Address: 128R & 126 North Street, Portland, ME 04101

Chart Block Lot Number: 12 - H - 9

Proposed Use: Multi-Family Residential

Previous Use: Single-Family Residential

Existing Sanitary Flows: 1,110 GPD

Existing Process Flows: 0 GPD

Description and location of City sewer that is to
receive the proposed building sewer lateral.

Combined 12" sewer main in North Street

Site Category	Commercial (see part 4 below)	☐
	Industrial (complete part 5 below)	☐
	Governmental	☐
	Residential	☒
	Other (specify)	☐

Clearly, indicate the proposed connections, on the submitted plans.

2. Please, Submit Contact Information.

City Planner's Name: TBD Phone: 207-874-8719

Owner/Developer Name: Upright Properties, LLC

Owner/Developer Address: PO Box 833 Wilton, ME 04294

Phone: 207-749-9656 Fax: _____ E-mail: jwojcik@uprightframeworks.com

Engineering Consultant Name: Acorn Engineering

Engineering Consultant Address: 65 Hanover Portland, ME 04101

Phone: 207-317-1884 Fax: _____ E-mail: wsavage@acorn-engineering.com

Note: Consultants and Developers should allow +/- 15 days, for capacity status, prior to Planning Board Review.

3. Please, Submit Domestic Wastewater Design Flow Calculations.

Estimated Domestic Wastewater Flow Generated: 2,100 GPD

Peaking Factor/ Peak Times: Diurnal

Specify the source of design guidelines: (i.e. "Handbook of Subsurface Wastewater Disposal in Maine,"
"Plumbers and Pipe Fitters Calculation Manual," Portland Water District Records, Other (specify)
Handbook of Subsurface Wastewater Disposal in Maine

Note: Please submit calculations showing the derivation of your design flows, either on the following page, in the space provided, or attached, as a separate sheet.

4. Please, Submit External Grease Interceptor Calculations.

Total Drainage Fixture Unit (DFU) Values: N/A
Size of External Grease Interceptor: _____
Retention Time: _____
Peaking Factor/ Peak Times: _____

Note: In determining your restaurant process water flows, and the size of your external grease interceptor, please use The Uniform Plumbing Code. Note: In determining the retention time, sixty (60) minutes is the minimum retention time. Note: Please submit detailed calculations showing the derivation of your restaurant process water design flows, and please submit detailed calculations showing the derivation of the size of your external grease interceptor, either in the space provided below, or attached, as a separate sheet.

5. Please, Submit Industrial Process Wastewater Flow Calculations

Estimated Industrial Process Wastewater Flows Generated: 0 GPD
Do you currently hold Federal or State discharge permits? Yes ☐ No ☐
Is the process wastewater termed categorical under CFR 40? Yes ☐ No ☐
OSHA Standard Industrial Code (SIC): _____
(<http://www.osha.gov/oshstats/sicser.html>)
Peaking Factor/Peak Process Times: _____

Note: On the submitted plans, please show where the building's domestic sanitary sewer laterals, as well as the building's industrial-commercial process wastewater sewer laterals exits the facility. Also, show where these building sewer laterals enter the city's sewer. Finally, show the location of the wet wells, control manholes, or other access points; and, the locations of filters, strainers, or grease traps.

Note: Please submit detailed calculations showing the derivation of your design flows, either in the space provided, or attached, as a separate sheet.

M. Calculation of Wastewater Flowrate for 126 & 128R North Street Redevelopment

The proposed project includes a two-phase approach where Phase 1 would include the redevelopment of 128R into a four-story building with six condominiums and covered parking on the ground level. Phase 2 would include the redevelopment of 126 into a three-story building with six rental units. Based upon the Section 4 of the Maine Subsurface Wastewater Disposal Rules, the project anticipates the following daily flows:

Estimate of Anticipated Daily Flows – 128R North Street				
Development	Unit Size	Number of Units	Gallons per Day per Unit	Total Gallons per Day
Existing Flow				
Single-Family Unit	3-Bedroom	1	270	270
Total Gallons per Day (Existing)				270
Proposed Flow				
Residential Units	1-Bedroom	3	120	360
Residential Units	2-Bedroom	2	180	360
Residential Units	4-Bedroom	1	360	360
Total Gallons per Day (Proposed)				1080
Net Change				+810 GPD
*Values based on STATE OF MAINE: SUBSURFACE WASTEWATER DISPOSAL RULES, most recent edition				

Based upon the table above, the 128R site is anticipated to increase its wastewater flows by nearly 810 gallons per day.

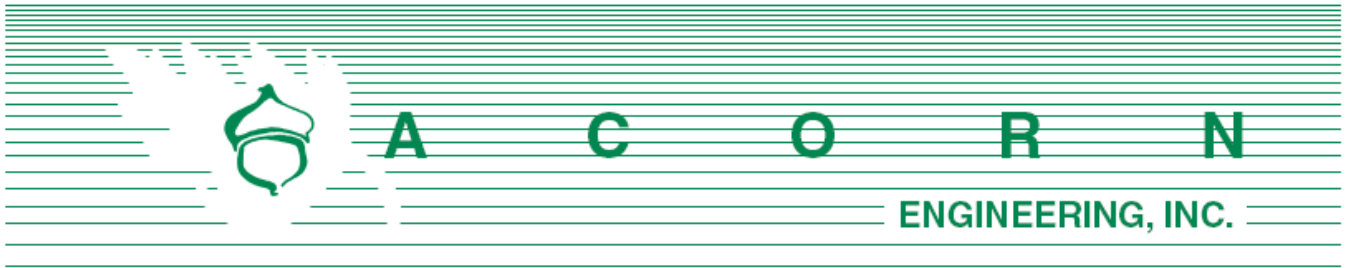


Estimate of Anticipated Daily Flows – 126 North Street				
Development	Unit Size	Number of Units	Gallons per Day per Unit	Total Gallons per Day
Existing Flow				
Multifamily	2-Bedroom	4	180	720
Total Gallons per Day (Existing)				720
Proposed Flow				
Multifamily	2-Bedroom	5	180	900
Multifamily	1-Bedroom	1	120	120
Total Gallons per Day (Proposed)				1,020
Net Change				+300 GPD
*Values based on STATE OF MAINE: SUBSURFACE WASTEWATER DISPOSAL RULES, most recent edition				

Based upon the table above, the 126 site is anticipated to increase its wastewater flows by nearly 300 gallons per day.

The total increase for the project's wastewater flows is 1,110 gallons per day. This will largely be offset during wet weather events, because the stormwater management on site will improve considerably and provide separate stubs for when the separated storm system extends to this part of North Street.





N. Lighting

Please find attached the photometric plans and cut sheets.



Date: Aug 19, 2019

Swaney Lighting
PO Box 1597
Scarborough ME 04070
Phone: (207) 883-7100
Fax: (207) 885-9606

Job Name
128R NORTH STREET
SLA19-42917
WILTON ME

Bid Date
Aug 19, 2019

Submittal Date
Aug 19, 2019

Distributor:
SWANEY LIGHTING
15 PLEASANT HILL ROAD
SCARBOROUGH ME 04074



Transmittal

Swaney Lighting

PO Box 1597

Scarborough ME 04070

Phone: (207) 883-7100

From: Therese "TC" Freeman X-103

Project 128R NORTH STREET**Quote#** SLA19-42917**Location** WILTON ME

Contact:

ATTACHED WE ARE SENDING YOU 1 COPY OF THE FOLLOWING ITEM:

- | | | |
|-----------------------------------|--|--------|
| ☐ Drawings | ☐ Specifications | Other: |
| ☐ Prints | ☐ Information | |
| ☐ Plans | ☒ Submittals | |

THESE ARE TRANSMITTED FOR:

- | | | |
|--|---|---------------------------------|
| ☒ Prior Approval | ☐ Resubmittal for Approval | ☐ Record |
| ☐ Approval | ☐ Corrections | Bids due on: |
| ☐ Approval as Submitted | ☐ Your Use | Other: |
| ☐ Approval as Noted | ☐ Review and Comment | |

Type

WP

CY

CL

MFG

BEACON PRODUCTS

Architectural Area Lighting

PRESCOLITE

Part[TRV-D/24L-27/3K7/4/UNV/**](#)[CY1-15-4K7-1-WG-UNV-**-R-FPP](#)[LC6SL / 6LCSL18L35K8](#)

**Job Name:**

128R NORTH STREET
Distributor: SWANEY LIGHTING
(SCARBOROUGH)

Catalog Number:

TRV-D/24L-27/3K7/4/UNV/**

Type:**WP****Notes:**

SLA19-42917

TRAVERSE SERIES

SURFACE/CEILING/GARAGE

Cat.#

Job

Type

Approvals


BEACON
design - performance - technology
SPECIFICATIONS**Intended Use:**

The Traverse luminaire is a wall surface mounted luminaire with a field replaceable LED light engine & optical bezel system. Internal components are totally enclosed in rain-tight and corrosion-resistant die cast aluminum housing. The TRV Luminaire is suitable for wet locations when ordered as a downlight.

Construction:

- Traverse luminaire consists of a die cast aluminum two-piece housing.
- Die cast main (thermal) housing provides direct heat exchange between the LED light engine and the cool outdoor.
- LED drivers are thermally isolated from the main housing, mechanically attached and heat sunk to the rear housing.
- Shape of the main housing is designed to prevent debris accumulation and as a bird nesting deterrent. The back and main housings are designed to hinge open for easy mounting and easy access.

LED/Optics:

- Optical one piece cartridge system consisting of an LED engine, LED lamps, optics, gasket and stainless steel bezel.
- Cartridge is held together with internal brass standoffs soldered to the board so that it can be field replaced as a one piece optical system.
- A die cut silicone foam gasket ensures a weather-proof seal around each individual LED.
- Optics are held in place without the use of adhesives.
- Cartridge assembly is available in various lighting distributions using TIR designed acrylic optical lenses over each LED.

Electrical:

- 100V through 277V, 50 Hz to 60 Hz (UNV, 347/480V).
- Dimming drivers are standard, but must contact factory to request wiring leads for purpose of external dimming controls.
- Component-to-component wiring within the luminaire may carry no more than 80% of rated load and is certified by UL for use at 600 VAC at 50°C or higher.
- Plug disconnects are certified by UL for use at 600 VAC, 13A or higher. 13A rating applies to primary (AC) side only.
- Surge protection - 20kA

Controls/Options:

- Traverse is available with an optional passive infrared (PIR) motion sensor capable of detecting motion 360° around the luminaire. When no motion is detected for the specified time, the Motion Response system reduces the wattage down to a factory preset level, reducing light level accordingly. When motion is detected, the luminaire returns to full wattage and full light output. Please contact Beacon Products if project requirements vary from the standard configurations.
- Available with Energeni for optional set dimming, timed dimming with simple delay, or timed dimming based on time of night (see Energeni product page for more details www.beaconproducts.com/products/energeni).

- In addition, Traverse can be specified with SiteSync™ wireless control system for reduction in energy and maintenance cost while optimizing light quality 24/7. See ordering information or visit for more details: www.hubbellautomation.com/products/sitesync/

Installation:

- Rear housing (back plate) is designed with various bolt patterns for direct wall mounting or mounting to a recessed junction box.
- Rear housing has three integral 3/4" NPT power feed locations (bottom and each side) for surface mounted conduit applications.
- After mounting the rear housing to the wall or junction box, the main housing is designed to attach and hinge closed after connecting the male and female quick connectors.
- Mounting design permits a simple retrofit to existing wall luminaires that utilize or recessed junction boxes.

Finish:

- IFS polyester powder-coat electrostatically applied and thermocured.
- IFS finish consists of a five stage iron phosphate chemical pretreatment regimen with a polymer primer sealer, oven dry off, and top coated with a thermoset super TGIC polyester powder coat finish.
- The finish meets the AAMA 2604 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D522 and resists surface impacts of up to 160 inch-pounds.

Listings:

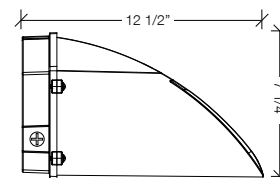
- The luminaire shall bear a CSA label and be marked suitable for wet locations (standard).
- This product is approved by the Florida Fish and Wildlife Conservation Commission. Separate spec available at: <http://www.beaconproducts.com/products/traverse>

Warranty:

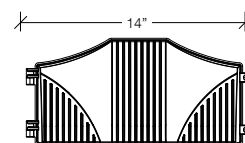
Five year limited warranty for more information visit: www.hubbellighting.com/resources/warranty

PRODUCT IMAGE(S)

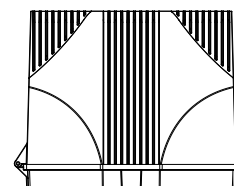
Shown with SiteSync™

DIMENSIONS

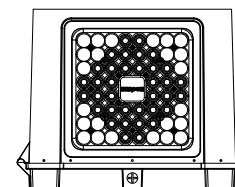
Side View



Front View



Top View



Bottom View

CERTIFICATIONS/LISTINGS

*3000K and warmer CCTs only



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Submitted by Swaney Lighting	Job Name: 128R NORTH STREET Distributor: SWANEY LIGHTING (SCARBOROUGH)	Catalog Number: TRV-D/24L-27/3K7/4/UNV/**	Type: WP
		Notes:	SLA19-42917

ORDERING INFORMATION ORDERING EXAMPLE: TRV-D/60L-136/5K7/5R/UNV/GENIXX/PEC-208/BL

SERIES	ENGINE-WATTS	CCT/CRI ¹¹	OPTICS	CONTROL OPTIONS	FINISH
TRV-D Traverse Down Light	24L-27 27 Watts - LED array	3K7 3000K, 70 CRI	2 Type II	GENI-XX ⁶ Energeni	BL Black textured
TRV-U ¹ Traverse Up Light (lens req.)	24L-55 55 Watts - LED array	4K7 4000K, 70 CRI	3 Type III	SWP ^{7,8} SiteSync Wireless Pre-Commission	DB Dark bronze
	36L-80 80 Watts - LED array	5K7 5000K, 70 CRI	4 Type IV	SWPM ^{7,9} SiteSync Wireless Pre-Commission w/ Occupancy Sensor	GYS Light gray smooth
	48L-110 110 Watts - LED array		5R Type V, rectangular		PS Platinum silver
	60L-136 136 Watts - LED array		2X2 Narrow spot flood		WH White textured
			5X5 Medium flood		Specify standard finish
					ELECTRICAL OPTIONS
					PEC-120 photocell, button 120V
					PEC-208 photocell, button 208V
					PEC-240 photocell, button 240V
					PEC-277 photocell, button 277V
					2PF ^{2,3,10} Dual power feed
					BPC ⁴ Cold weather battery pack
					SENSOR OPTIONS
				MOB ^{3,5,7,9} Occupancy Sensor (33% or 50% dimming)	
					VOLTAGE
					UNV 120-277V
					347 347V
					480 480V

¹ Indoor use only

² Not available on 24L-27

³ Not available @ 347V or 480V input

⁴ 36L-80 only, not available with SWP or SWPM control options

⁵ Not available on 48L-110 or 60L-136

⁶ When ordering Energeni, specify the routine setting code (example GENI-04). See Energeni brochure and instructions for setting table and options. Not available with sensor options.

⁷ Not available with other control or sensor options. PEC is available with MOB.

⁸ Specify group and zone. See SiteSync product page www.hubbell-lighting.com/products/sitesync/ for more details.

⁹ Specify time delay; dimming level and mounting height.

¹⁰ Not available with SWP or SWPM control options.

¹¹ This product is approved by the Florida Fish and Wildlife Conservation Commission. Separate spec available at: http://cdn.beaconproducts.com/content/products/specs/specs_files/Traverse_LED_turtle_spec_sheet.pdf

PRECOMMISSIONED SITESYNC ORDERING INFORMATION: When ordering a fixture with the SiteSync lighting control option, additional information will be required to complete the order. The SiteSync Commissioning Form or alternate schedule information must be completed. This form includes Project location, Group information, and Operating schedules. For more detailed information please visit www.hubbell-lighting.com/products/sitesync/ or contact Hubbell Lighting tech support at (800) 345-4928.

SiteSync fixtures with occupancy sensor (SWPM) require the mounting height of the fixture for selection of the lens.

Examples: TRV/24L-55/5K7/3/UNV/SWP/BL
TRV/24L-55/5K7/3/UNV/SWPM-20F/BL

SiteSync only
SiteSync with Occupancy Sensor

MOB ORDERING INFORMATION: When ordering a fixture with a dimming occupancy sensor option (MOB), please specify the appropriate information. These settings are specified in the ordering as shown in the example below.

TRV/24L-55/5K7/3/UNV/MOB - 1 to 30 min. - 33% or 50% - ?? / BL

High to Dim Delay Low Level Mounting Height (ft.)

Accessories and Services (Ordered Separately)

Catalog Number	Description
SWUSB*	SiteSync loaded on USB flash drive (Windows based only)
SWTAB*	SiteSync Windows Tablet
SWBRG*	SiteSync Wireless Bridge Node

*When ordering with SiteSync, one of the following interface options must be chosen and ordered separately. Each option contains the SiteSync License, GUI and Bridge Node.

+ If needed, an additional Bridge Node can be ordered.



SiteSync Lighting Control is available from our most popular brands in a broad range of award-winning product families.



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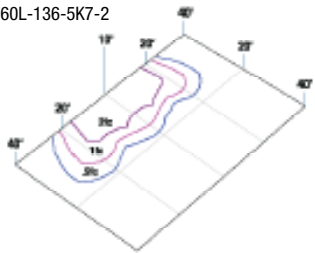
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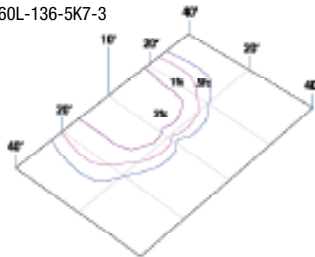
Submitted by Swaney Lighting	Job Name: 128R NORTH STREET Distributor: SWANEY LIGHTING (SCARBOROUGH)	Catalog Number: TRV-D/24L-27/3K7/4/UNV/** Notes:	Type: WP SLA19-42917
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PHOTOMETRICS

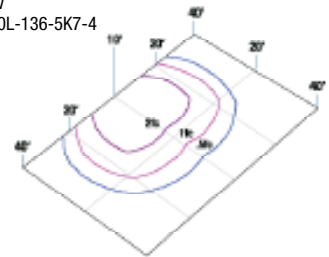
Type II
TRV-60L-136-5K7-2



Type III
TRV-60L-136-5K7-3



Type IV
TRV-60L-136-5K7-4



PERFORMANCE DATA

# LED'S	DRIVE CURRENT	SYSTEM WATTS 120-277V	DISTRIBUTION TYPE	5K (5000K nominal, 67 CRI)					4K (4000K nominal, 70 CRI)					3K (3000K nominal, 80 CRI)				
				LUMENS	LPW'	B	U	G	LUMENS	LPW'	B	U	G	LUMENS	LPW'	B	U	G
24	700mA	27W	2	3746	139	1	0	1	3783	142	1	0	1	3413	126	1	0	1
			3	3723	138	1	0	1	3760	141	1	0	1	3392	126	1	0	1
			4	3753	139	0	0	1	3791	142	0	0	1	2850	106	0	0	1
			4W	3689	137	1	0	1	3726	140	1	0	1	3360	124	1	0	1
			5R	3809	141	2	0	1	3847	144	2	0	2	3470	129	2	0	1
			5X5	3815	141	N/A	N/A	N/A	3854	144	N/A	N/A	N/A	3476	129	N/A	N/A	N/A
			2X2	4086	151	N/A	N/A	N/A	4127	155	N/A	N/A	N/A	3723	138	N/A	N/A	N/A
24	700mA	55W	2	6243	108	1	0	1	6306	109	1	0	2	5688	98	1	0	1
			3	6204	107	1	0	2	6267	108	1	0	2	5653	98	1	0	2
			4	6273	108	3	0	1	6336	109	3	0	1	5715	99	3	0	1
			4W	6148	106	1	0	2	6210	107	1	0	2	6501	97	1	0	2
			5R	6348	110	3	0	1	6412	111	3	0	1	5784	100	3	0	1
			5X5	6359	110	N/A	N/A	N/A	6423	111	N/A	N/A	N/A	5793	100	N/A	N/A	N/A
			2X2	6810	118	N/A	N/A	N/A	6879	119	N/A	N/A	N/A	6205	107	N/A	N/A	N/A
36	700mA	80W	2	9364	110	1	0	2	9458	111	1	0	2	8531	100	1	0	2
			3	9307	109	1	0	2	9401	110	1	0	3	8480	99	1	0	2
			4	9409	110	3	0	2	9504	111	3	0	2	8573	100	3	0	2
			4W	9221	108	1	0	2	9315	109	1	0	2	8402	98	1	0	2
			5R	9522	111	3	0	2	9618	113	3	0	2	8676	102	3	0	1
			5X5	9538	112	N/A	N/A	N/A	9635	113	N/A	N/A	N/A	8690	102	N/A	N/A	N/A
			2X2	10215	120	N/A	N/A	N/A	10319	121	N/A	N/A	N/A	9308	109	N/A	N/A	N/A
48	700mA	110W	2	12485	114	2	0	2	12611	115	2	0	2	11375	104	2	0	2
			3	12409	113	1	0	3	12534	114	1	0	3	11306	103	1	0	3
			4	12546	114	4	0	2	12672	116	4	0	2	11430	104	4	0	2
			4W	12295	112	2	0	3	12419	113	2	0	3	11202	102	1	0	3
			5R	12696	116	4	0	2	12824	117	4	0	2	11568	105	3	0	2
			5X5	12717	116	N/A	N/A	N/A	12846	117	N/A	N/A	N/A	11587	106	N/A	N/A	N/A
			2X2	13620	124	N/A	N/A	N/A	13758	125	N/A	N/A	N/A	12410	113	N/A	N/A	N/A
60	700mA	136W	2	15606	114	2	0	2	15764	116	2	0	2	14219	104	2	0	2
			3	15511	114	2	0	3	15668	115	2	0	3	14133	104	2	0	3
			4	15682	115	4	0	2	15840	116	4	0	2	14288	105	4	0	2
			4W	15369	113	2	0	3	15524	114	2	0	3	14003	103	2	0	3
			5R	15870	116	4	0	2	16030	117	4	0	2	14459	106	4	0	2
			5X5	15897	116	N/A	N/A	N/A	16058	118	N/A	N/A	N/A	14484	106	N/A	N/A	N/A
			2X2	17026	125	N/A	N/A	N/A	17198	126	N/A	N/A	N/A	15512	114	N/A	N/A	N/A

*Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown. Actual performance may differ as a result of end-user environment and application.



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Submitted by Swaney Lighting 	Job Name: 128R NORTH STREET Distributor: SWANEY LIGHTING (SCARBOROUGH)	Catalog Number: TRV-D/24L-27/3K7/4/UNV/** Notes:	Type: WP SLA19-42917
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PROJECTED LUMEN MAINTENANCE

AMBIENT TEMP.	0	25,000	50,000	TM-21-11 60,000	100,000	Calculated L70 (HOURS)
25°C / 77°F	1.00	0.97	0.96	0.95	0.93	>560,000

¹ Projected per IESNA TM-21-11

Data references the extrapolated performance projections for the base model in a 40°C ambient, based on 10,000 hours of LED testing per IESNA LM-80-08.

ELECTRICAL DATA

# OF LEDS	NUMBER OF DRIVERS	DRIVE CURRENT (mA)	INPUT VOLTAGE (V)	OPER. CURRENT (Amps)	SYSTEM POWER (Watts)
24	1	(350mA)	120	0.27	27.0
			277	0.12	
24	2	(700mA)	120	0.55	55.0
			277	0.24	
36	1	(700mA)	120	0.80	80.0
			277	0.35	
48	1	(700mA)	120	1.10	110.0
			277	0.48	
60	1	(700mA)	120	1.36	136.0
			277	0.59	

AMBIENT TEMPERATURE		LUMEN MULTIPLIER
0°C	32°F	1.02
10°C	50°F	1.01
20°C	68°F	1.00
25°C	77°F	1.00
30°C	86°F	1.00
40°C	104°F	0.99
50°C	122°F	0.98

Use these factors to determine relative lumen output for average ambient temperatures from 0-50°C (32-122°F).



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**Job Name:**128R NORTH STREET
Distributor: SWANEY LIGHTING
(SCARBOROUGH)**Catalog Number:**

CY1-15-4K7-1-WG-UNV-**-R-FPP

Notes:**Type:**

CY

SLA19-42917

Cypher™ – CY1 Accent Scale

TYPE

FEATURES

- Integral Battery Backup Option
- 360° Light Distribution
- RGBW or Static White Luminous Front Option
- IES Type I, II, III & IV Distributions
- Wall Graze, Spot and Pencil Distributions
- Multiple Fascia Options and Finishes
- 0-10V dimming
- IP-66 Housing & Optical System
- 120-277V
- 3000K, 4000K & 5000K CCT
- 10kA Surge Protection
- Fascia Forms F, E and T are ADA compliant for use in low mounting height applications (80 inches or less)
- IDA approved, downlight only, 3000K and warmer CCTs

**ORDERING CODE**

1	2	3	4	5	6	7	8	9	10	11	12
Series-Output	CCT/CRI	Model	Main Distribution	Secondary Distribution	Voltage	Housing Finish	Fascia Form	Luminous Front	Fascia Panel	Control Options	Options

SERIES-OUTPUT (Base)

CY1-15	15w, 1500 nominal lumens
CY1-25	25w, 2500 nominal lumens

CCT-CRI

27K8	2700K, 80CRI
3K7	3000K, 70CRI
3K8	3000K, 80CRI
4K7	4000K, 70CRI
4K8	4000K, 80CRI
5K7	5000K, 70CRI

MODEL (Light Engine)

1	DownLight Only
2	50/50 Down/Up, Down/Up distributions must match
3	90/10 Down/Up
4	25/25/25/25 Split, Down/Up/Side distributions must match
5	70/10/10/10 Split, Top/Side distributions must match

Contact factory for custom distributions,
See Distribution Matrix on page 2 for restrictions.

MAIN DISTRIBUTION (Down)

1	IES Type I
2	IES Type II
3	IES Type III
4	IES Type IV
SP	15° Spot/Column
WG	60° Wall Graze
1D	Type 1 Diffused
2D	Type 2 Diffused
3D	Type 3 Diffused
4D	Type 4 Diffused

SECONDARY DISTRIBUTION (Up, Sides)

1	IES Type I
2	IES Type II
3	IES Type III
4	IES Type IV
SP	15° Spot/Column
WG	60° Wall Graze
PB*	Pencil Beam
1D	Type 1 Diffused
2D	Type 2 Diffused
3D	Type 3 Diffused
4D	Type 4 Diffused

* PB distribution is available for 90/10 and 70/10/10/10 models only. Not all combinations are recommended.
See Distribution Matrix on page 2 for restrictions.

VOLTAGE

UNV	120-277V
-----	----------

BASE HOUSING FINISH**Standard Colors**

AGN	Antique Green
BL	Black
BLT	Matte Black
CRT	Corten
DB	Dark Bronze
DGN	Dark Green
GT	Graphite
LG	Light Grey
MAL	Matte Aluminum
MDB	Metallic Bronze
MG	Medium Grey
TT	Titanium
VBU	Verde Blue
WDB	Weathered Bronze
WH	Arctic White

Specify standard finish**Premium Colors**

SFM	Seafoam
SHK	Shamrock
SPP	Salt and Pepper
WCP	Weathered Copper
RAL	Provide a RAL 4 digit color number
CUSTOM COLOR	Please provide color chip for matching

FASCIA FORM

F	Flat
R	Radius/Curved
T	Triangle/Wedge
E	Rounded Edge
C	Circle/Curved
CB	Cylinder Balanced
CT	Cylinder Tall
CBM	Custom Building Material Mount Ghost Fascia

LUMINOUS FRONT

BLANK	Standard None
RGBW	RGBW Luminous Front
LFSW	Static White Luminous Front

RGBW and LFSW luminous fronts are only available with open, four square and perforated fascia panels

FASCIA PANEL

FPP	Full Panel Painted
FPS	Full Panel Stainless Steel
FPC	Full Panel Copper
OPP	Open Panel Painted
OPS	Open Panel Stainless Steel
OPC	Open Panel Copper
4PP	4-Square Panel Painted
4PS	4-Square Panel Stainless Steel
4PC	4-Square Panel Copper
PPP	Perforated Panel Painted
PPS	Perforated Panel Stainless Steel
PPC	Perforated Panel Copper

Flat and Radius Fascia forms only. Painted panels by default match base housing finish/color. Consult factory for custom panel finishes.

CONTROL OPTIONS

PCU	Universal Button Photocell (120-277V)
-----	---------------------------------------

OPTIONS

EM	Battery Backup Unit -20°C
SF	Single Fuse (120, 277)
DF	Double Fuse (208, 240)

Battery Backup not available with Triangle and Rounded Edge Fascia Forms.



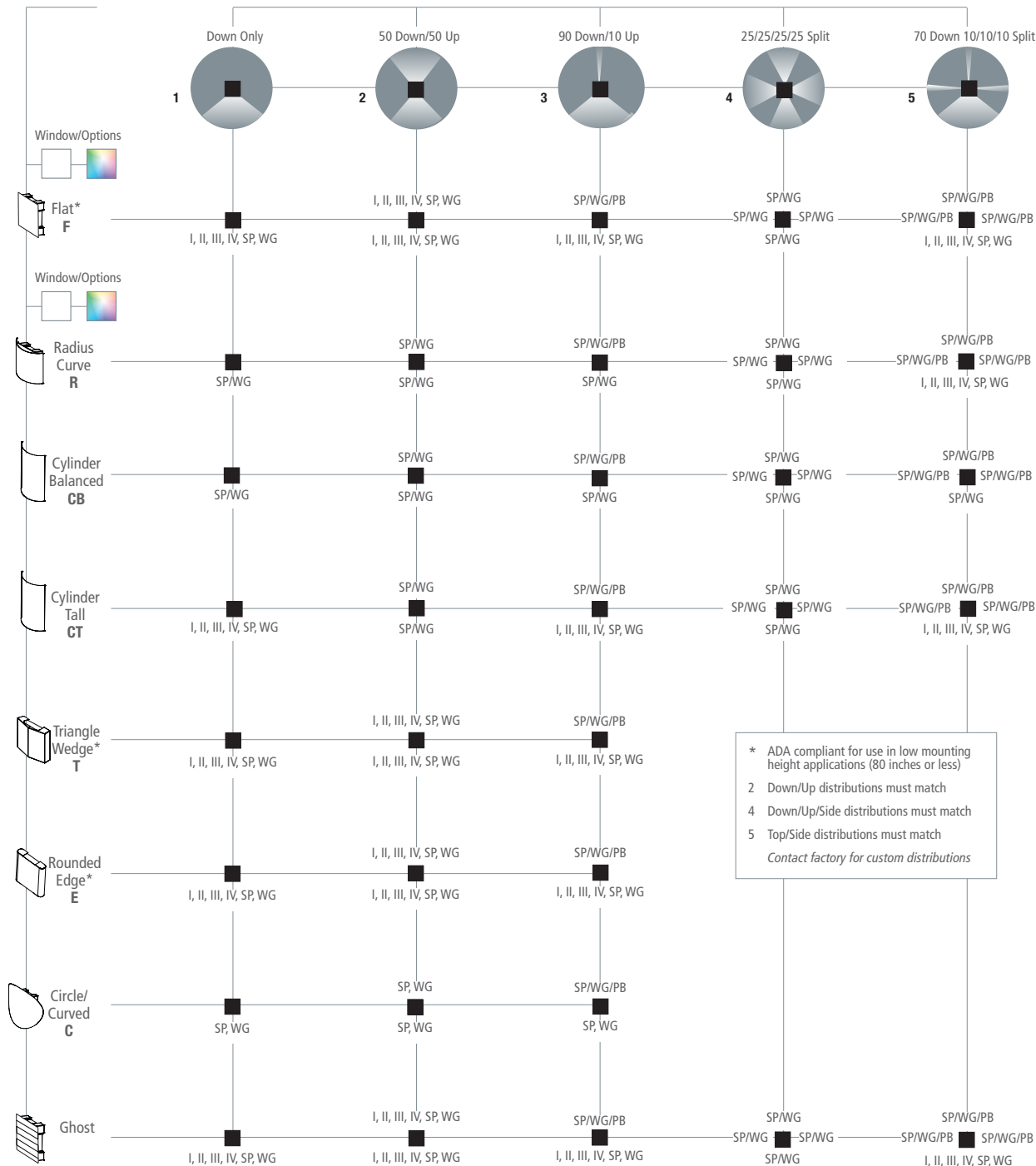
ARCHITECTURAL AREA LIGHTING
17760 Rowland Street | City of Industry | CA 91748
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JOB

TYPE

NOTES

TYPE



- * ADA compliant for use in low mounting height applications (80 inches or less)
- 2 Down/Up distributions must match
- 4 Down/Up/Side distributions must match
- 5 Top/Side distributions must match

Contact factory for custom distributions

**Job Name:**128R NORTH STREET
Distributor: SWANEY LIGHTING
(SCARBOROUGH)**Catalog Number:**

CY1-15-4K7-1-WG-UNV-**-R-FPP

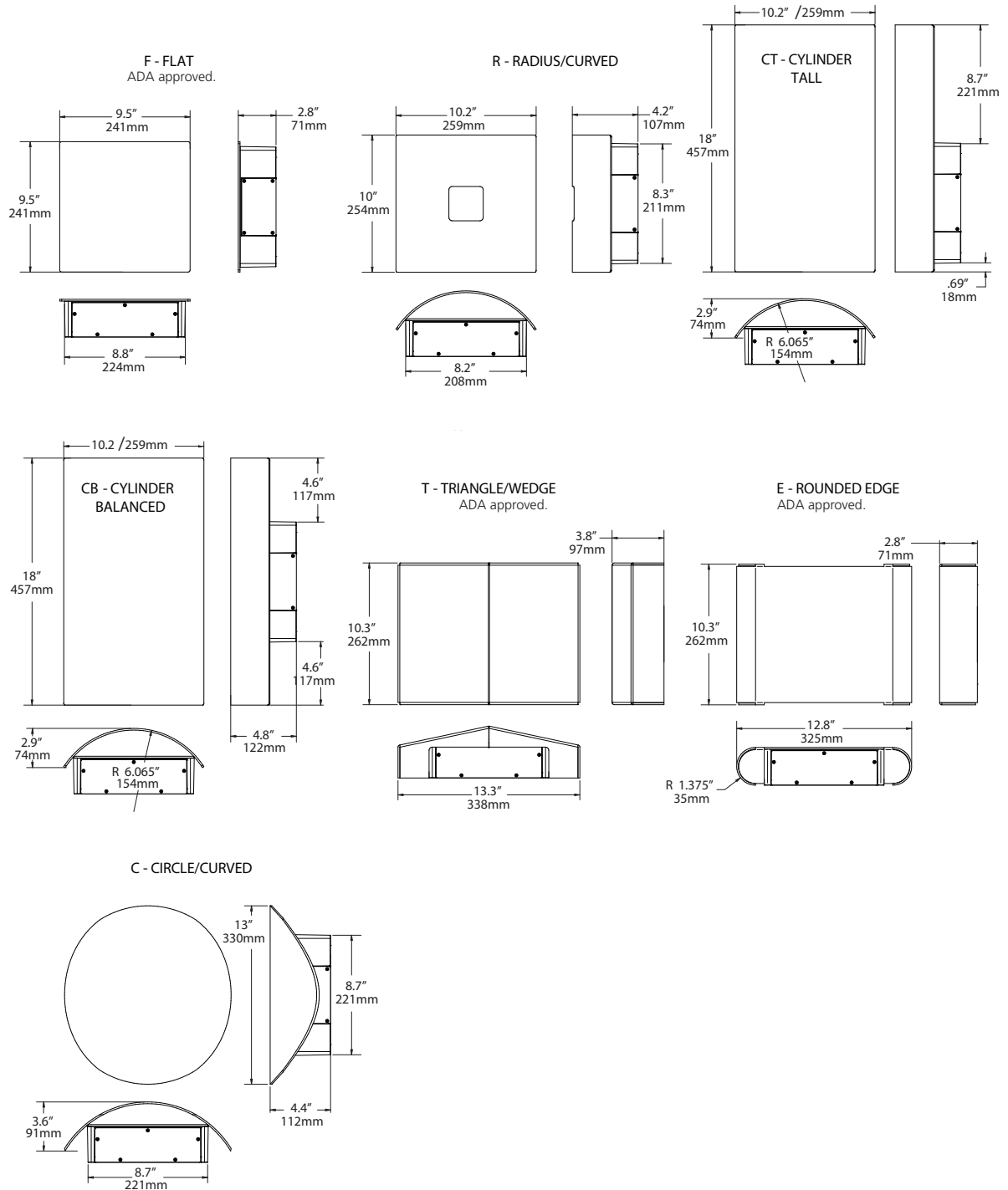
Notes:

Type:**CY**

SLA19-42917

Cypher™ – CY1 Accent Scale

TYPE

Drawings

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JOB _____
TYPE _____
NOTES _____

| 3 |



Job Name:
128R NORTH STREET
Distributor: SWANEY LIGHTING
(SCARBOROUGH)

Catalog Number:
CY1-15-4K7-1-WG-UNV-**-R-FPP

Notes:

Type:

CY

SLA19-42917

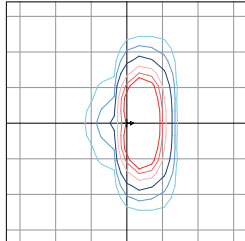
Cypher™ – CY1 Accent Scale

TYPE

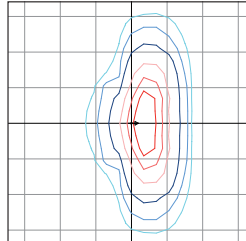
LUMINAIRE PERFORMANCE

Downlight only			Configuration														
Nominal Output (Lm)	Average System Wattage	Distribution	Bright White (5000K)					Neutral White (4000K)					Warm White (3000K)				
			Delivered Lumens	Efficacy (Lm/W)	BUG Rating	Delivered Lumens	Efficacy (Lm/W)	BUG Rating	Delivered Lumens	Efficacy (Lm/W)	BUG Rating						
				B	U	G		B	U	G		B	U	G			
			5000K 70 CRI				4000K 70 CRI				3000K 70 CRI						
1,500	17	Type 1	1923	113	0	0	0	1928	113	0	0	0	1825	107	0	0	0
		Type 2	1726	102	0	0	0	1730	102	0	0	0	1638	96	0	0	0
		Type 3	1750	100	0	0	1	1755	103	0	0	1	1661	98	0	0	1
		Type 4	1757	103	0	0	0	1762	104	0	0	0	1668	98	0	0	0
		Wall Graze	1971	114	1	0	0	1976	116	1	0	0	1871	110	1	0	0
		Spot/Column	1792	103	2	0	0	1797	106	2	0	0	1701	100	2	0	0
		Type 1 Diffused	1629	96	1	0	0	1634	96	1	0	0	1547	91	1	0	0
		Type 2 Diffused	1573	93	1	0	1	1577	93	1	0	0	1493	88	1	0	0
		Type 3 Diffused	1425	84	1	0	0	1429	84	1	0	0	1353	80	1	0	0
		Type 4 Diffused	1602	94	1	0	1	1607	95	1	0	0	1521	89	1	0	0
			5000K 70 CRI				4000K 70 CRI				3000K 70 CRI						
2,500	26	Type 1	2517	96	0	0	0	2524	97	0	0	0	2390	92	0	0	0
		Type 2	2233	85	1	0	1	2239	86	1	0	1	2120	82	1	0	1
		Type 3	2229	85	1	0	1	2236	85	1	0	1	2117	80	1	0	1
		Type 4	2319	88	1	0	1	2325	89	1	0	1	2201	85	1	0	1
		Wall Graze	2744	104	2	0	0	2752	106	2	0	0	2605	100	2	0	0
		Spot/Column	2471	94	2	0	0	2478	95	2	0	0	2346	90	2	0	0
		Type 1 Diffused	2344	89	1	0	1	2350	90	1	0	1	2225	86	1	0	1
		Type 2 Diffused	2062	79	1	0	1	2068	80	1	0	1	1958	75	1	0	1
		Type 3 Diffused	2050	78	1	0	1	2056	79	1	0	1	1946	75	1	0	1
		Type 4 Diffused	2123	80	1	0	1	2129	82	1	0	1	2016	78	1	0	1

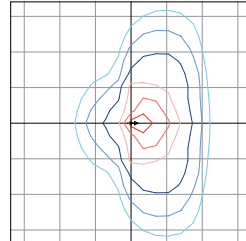
ISOLINE TEMPLATES 10' Mounting Height, 10' Grid Spacing



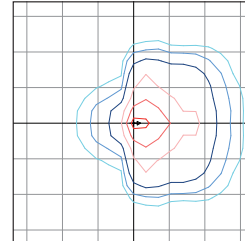
CY1-25-1-1



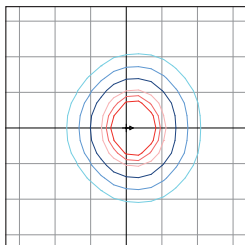
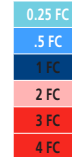
CY1-25-1-2



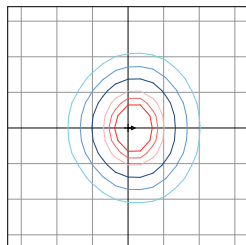
CY1-25-1-3



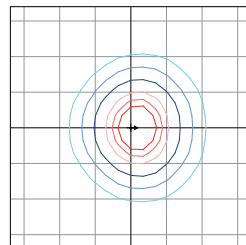
CY1-25-1-4



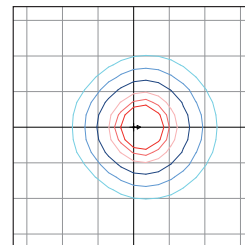
CY1-25-1-1D



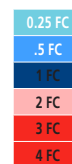
CY1-25-1-2D



CY1-25-1-3D



CY1-25-1-4D



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JOB _____
TYPE _____
NOTES _____

| 4 |

**Job Name:**

128R NORTH STREET
Distributor: SWANEY LIGHTING
(SCARBOROUGH)

Catalog Number:

CY1-15-4K7-1-WG-UNV-**-R-FPP

Notes:

Type:**CY**

SLA19-42917

Cypher™ – CY1 Accent Scale

TYPE

ELECTRICAL CHARACTERISTICS

Lumen Package	System Wattage (W)	Line Voltage		Input				Min. Power Factor	Max THD (%)	Dimming Range	Source/Sink Current (mA)		Absolute voltage range on 0-10v (+) Purple	
		VAC	Hz	120	277	347	480				Min.	Max.	Min.	Max.
1,500	17	120	50/60	0.1	0.1	0.0	0.0	>0.9	20	10% to 100%	0 mA	1 mA	0V	10V
2,500	26			0.2	0.1	0.1	0.1							

TM-21 LIFETIME CALCULATION (500mA)

Lumen Package	Ambient Environment °C	Projected Lumen Maintenance (Khrs)						Reported L70
		15	25	50	60 (TM-21)	100		
2,500	25	98%	97%	94%	92%	87%		>60Khrs.
	40	95%	93%	89%	87%	80%		



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JOB _____
TYPE _____
NOTES _____

Submitted by Swaney Lighting	Job Name: 128R NORTH STREET Distributor: SWANEY LIGHTING (SCARBOROUGH)	Catalog Number: CY1-15-4K7-1-WG-UNV-**-R-FPP	Type: CY SLA19-42917
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Cypher™ – CY1 Accent Scale

TYPE

SPECIFICATIONS

HOUSING

- Main housing shroud shall be of fabricated 5052-H32 aluminum alloy
- Housing mounting interface shall have a stamped silicone gasket.
- Luminaire housing shall be free of any visible heat fins, hardware or fasteners.
- Bracketry and hardware shall be stainless steel.

OPTICAL ARRAY

- LEDs shall be mounted to a metal printed circuit board assembly (MCPCB) with a uniform conformal coating over the panel surface and electrical features.
- Optical lenses shall be clear injection molded PMMA acrylic.
- Optical array shall be recessed in order to shield each LED optic across the length of the aperture.
- Optical array shall be sealed for IP66 rating.
- Secondary lens is impact resistant 5/32" tempered glass.

ELECTRICAL

- Drivers shall be in direct contact with the die-cast aluminum housing across the entire surface area of the widest face for maximum thermal transfer.
- "Thermal Shield", primary side, thermister provides protection for the sustainable life of LED module and electronic components.
- Drivers shall have greater than a 0.9 power factor, less than 20% harmonic distortion, and be suitable for operation in -40°C to 40°C ambient environments
- Luminaires shall have integral surge protection that shall be U.L. recognized and have a surge current rating of 10,000 Amps using the industry standard 8/20uSec wave and surge rating of 372J. Surge protection device shall be wired in series.
- Drivers shall be U.L. recognized.
- Drivers shall not be compatible with current sourcing dimmers, consult factory for current list of known compatible dimming systems approved dimmers include Lutron Diva AVTV, Lutron Nova NDTV and NTFTV.
- Integral battery backup provides emergency path of egress lighting for the required 90 minutes for -20°C ambient environments.

SPECIFICATIONS

- Luminaire shall be capable of operating at 100% brightness in a 40°C environment. Both driver and optical array shall have integral thermal protection that will dim the luminaire upon detection of temperatures in excess of 85°C.
- Luminaires not configured with a control system shall be provided with 0-10 purple and gray dimming leads.



CONTROLS

- Button photocontrol for dusk to dawn energy savings
- PC12 for 120V, PC20 for 208V, PC24 for 240V, PC27 for 277V
- Photocell is factory installed inside the housing with a fully gasketed sensor on the side wall. For multiple fixture mountings, one fixture is supplied with a photocell to operate the others.

BLUETOOTH®

- RGBW option includes integral Bluetooth module, built into driver, that permits the adjustment of luminous front color when paired with Hubbell Remote App via cellular/tablet device.
- Bluetooth Low Energy (BLE) or Bluetooth Smart compatible for both iOS (iOS8 and forward) and Android (Gingerbread and forward) handheld software applications. Compatible with phones and tablets.
- Free Bluetooth Apps are available for Apple iOS and Google Android mobile devices and are downloadable via the internet at Apple App Store or Google Play.

MOUNTING AND INSTALLATION

- JUNCTION BOX: Standard with zinc-plated, quick-mount junction box plate that mounts directly to 4" J-Box
- Mounting plate features a one-piece EPDM gasket on back side of plate to firmly seal fixture to wall surface, forbidding entry of moisture and particulates.
- Fixture attaches by two Allen-head hidden fasteners for tamper resistance.
- Optional mounting arrangements utilize a die-cast mounting adaptor to allow for surface conduit and through branch wiring.

SERVICING

- Housing shall be able to hang freely in an open service position for inspection of internal wire connections. Once in service position, the housing shall be able to be removed for service by lifting the assembly up off the rear mounting plate and disconnecting the wiring plugs.
- Driver assembly shall be mounted to a prewired internal tray with quick disconnects for removal.

FINISH

- Luminaire finish shall consist of a five stage pretreatment regimen with a polymer primer sealer, oven dry off, and top coated with a thermoset super TGIC polyester powder coat finish.
- Luminaire finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance.

CERTIFICATION

- Luminaire shall be listed with UL for outdoor, wet location use, UL1598, UL 8750 and Canadian CSA Std. C22.2 no.250.
- IP66 rated assembly
- IDA approved, 3000K and warmer CCTs only.
- DesignLights Consortium® (DLC) qualified. Please refer to the DLC website for specific product qualifications at www.designlights.org.
- ANSI C136.31-2010 4G Vibration tested and compliant.
- Complies with "Americans with Disabilities Act" or "ADA" on select versions for low mounting height applications (fixtures extend maximum of 4 inches from wall for mounting heights of 80 inches or less).

WARRANTY / TERMS AND CONDITIONS OF SALE

Download:
[Five year limited warranty \(for more information visit: http://www.hubbellighting.com/resources/warranty/\)](http://www.hubbellighting.com/resources/warranty/)

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JOB _____
 TYPE _____
 NOTES _____

**Job Name:**128R NORTH STREET
Distributor: SWANEY LIGHTING
(SCARBOROUGH)**Catalog Number:**

LC6SL / 6LCSL18L35K8

Notes:**Type:****CL**

SLA19-42917

**6" LED Downlight****LC6SL**1000/1400/1800 Lumens
120V-277V, 347V
0-10V Dimming**APPLICATIONS:**

LiteFrame Commercial LC6SL is a 6" commercial grade LED downlight with available outputs between 1000-1800 lumens. This is suitable to replace most CFL downlighting applications, while realizing substantial energy and maintenance savings. Rated for a minimum of 50,000 hours life (70% lumen maintenance) with ambient plenum temperatures up to 35°C. Free Air Flow around the fixture is required for optimal life performance. This product is not recommended for use with 3rd party "FIREHAT" or insulation barriers.

HOUSING:

One-piece 22 gauge non-corrosive steel platform. Pre-wired J-box with snap-on cover for easy access. Snap-in connection from driver compartment allows easy installation of light engine/trim assembly and can be upgraded to accommodate technology improvements. Approved for 8 (4 in/4 out) No. 12 AWG conductors rated for 90°C through wiring.

REFLECTOR:

High purity aluminum, Alzak, iridescence suppressed, semi-diffuse reflector. Self-trim standard. Painted white self-trim (WT) available as option.

LED LIGHT ENGINE:

The LC6SL uses mid power Nichia LEDs, specifically mixed to provide a minimum of 80 CRI with 3 SDCM color consistency. The use of multiple mid power LEDs allows for optimal thermal management by effectively spreading the heat over a larger area and eliminating hot spots on the LEDs. A diffuse, yet highly transmissive lens obscures the view of the LEDs and creates a smooth, even look from below. The light engine is available in multiple Kelvin temperatures and the system is designed to provide optimal life and lumen maintenance (50,000 hours at 70% lumen maintenance). The reflector/light engine assembly is mechanically retained to the housing.

LED DRIVER:

The LC6SL utilizes a constant current LED driver. This same driver is capable of running all three different lumen outputs, resulting in a reduction of housing skus and simplified specification. The driver is UL8750, Class II compliant and universal 120V-277V.

DIMMING:

Comes standard with flicker-free 0-10V dimming to 10%. 0-10V to 1% dimming option is also available. See list of compatible dimmers on page (4). For the sizing of the control circuit, the dimming circuit may require up to 2mA of sink current.

INSTALLATION:

Light commercial bar hangers included (not with WWCP option). Universal adjustable mounting brackets also accept 1/2" EMT conduit or 1 1/2" or 3/4" lathing channel (by others) or Prescolite 24" bar hangers (B24 or B6). Wall wash orientation may be field adjusted in 90° increments to housing.

CERTIFICATIONS:

CSA certified to US and Canadian safety standards. Suitable for wet locations (EM, EMR and WW damp location). ENERGY STAR qualified.

WARRANTY:

5 year warranty. See www.prescolite.com for details.

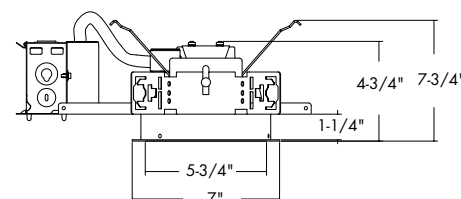
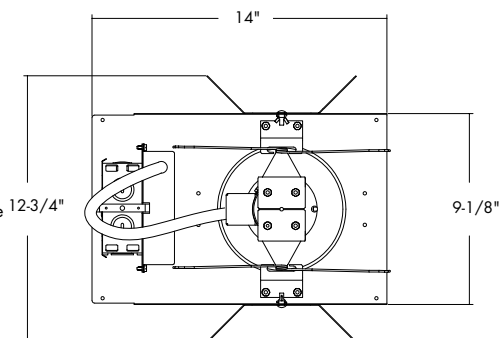
DATE: _____ TYPE: _____

FIRM NAME: _____

PROJECT: _____

LiteFrame

Ceiling Cutout: 6 1/4"
Maximum Ceiling Thickness 1 1/4"
For conversion to millimeters,
multiply inches by 25.4
Not to Scale

**LC6SL 10L & 14L**

*See page 4 for LC6SL 18L line art

*See page 4 for LC6SL EM line art

*See page 4 for LC6SL CP line art

*See page 4 for LC6SL WWCP line art

Order housing, reflector, and accessories separately

CATALOG NUMBER:

EXAMPLE: LC6SL-6LCSL14L35K9WT

HOUSING	DRIVER OPTIONS	VOLTAGE	HOUSING OPTIONS	TRIM APERTURE	OUTPUT	KELVIN	CRI	REF. FINISH/ COLOR OPTION	REFLECTOR OPTIONS	ACCESSORIES
☐ LC6SL Standard Lumen 0-10V Dimming to 10% 120V-277V	☐ Standard 0-10V ☐ 10% Dimming ☐ DM1 0-10V 1% Dimming	☐ Standard 120V-277V ☐ 347V ☐ 347V ^{3,7,10}	☐ EM^{2,4,8} Integral Battery Pack ☐ EMR⁴ Remote Battery Pack ☐ CP^{3,6,8} Chicago Plenum ☐ WWCP^{3,9} Wall Wash Chicago Plenum Housing	☐ 6LCSL Standard Lumen Clear Alzak Reflector	☐ 10L 1000 Lumen ☐ 14L 1400 Lumen ☐ 18L 1800 Lumen	☐ 27K 2700 Kelvin ☐ 30K 3000 Kelvin ☐ 35K 3500 Kelvin ☐ 40K 4000 Kelvin ☐ 50K 5000 Kelvin	☐ 80+ CRI ☐ 90+ CRI	☐ Standard Semi-Diffuse Clear Alzak ☐ WH Painted Matte White Reflector and Flange	☐ WT Painted White Flange Only ☐ WF Wide Flange ☐ WW^{4,5,7} Wall Wash ☐ EM^{2,4,8} Integral Battery Pack ☐ CP^{3,6} Chicago Plenum	☐ B24 Set of two(2) 24" bar hangers for T-bar ceilings ☐ B6 Set of two (2) bar hangers for ceiling joist up to 24" centers ☐ SCA6D Sloped ceiling adapter (see note on page 4) ☐ LiteGear¹ Inverter, single phase central lighting, 125VA-250VA ☐ LPS Series¹ LitePower micro-inverter, 20VA- 55VA

¹ See Central Inverter compatibility note and web links on page 4.
² EM must be selected on both the housing and the trim.
³ Not compatible with EM or EMR
⁴ Damp location only
⁵ Compatible with EMR only
⁶ CP must be selected on both the housing and the trim
⁷ Not compatible with CP
⁸ Not available with WW option
⁹ WW must be selected on trim
¹⁰ Not compatible with WWCP



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In a continuing effort to offer the best product possible we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product.
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LFR-LED-041

**Job Name:**128R NORTH STREET
Distributor: SWANEY LIGHTING
(SCARBOROUGH)**Catalog Number:**

LC6SL / 6LCSL18L35K8

Type:**CL****Notes:**

SLA19-42917

PHOTOMETRIC DATA

LiteFrame - 6" LC6SL Downlight

DRIVER DATA	6LCSL10Lxxx	6LCSL14Lxxx	6LCSL18Lxxx
Input Voltage	120-277V	120-277V	120-277V
Input Frequency	50/60 Hz	50/60 Hz	50/60 Hz
Input Current	0.111 (120v)	0.148 (120v)	0.185 (120v)
	0.048 (277v)	0.064 (277v)	0.080 (277v)
Input Power	13.4W	17.8W	22.2W
Constant Current Output	700mA	700mA	700mA
Power Factor	≥0.90	≥0.90	≥0.90
THD	<25%	<20%	<20%
EMI Filtering	FCC 47CFR	FCC 47CFR	FCC 47CFR
	Part 15, Class A	Part 15, Class A	Part 15, Class A
Operating Temperature	-30°C to +35°C	-30°C to +28°C	-30°C to +25°C
Dimming	0-10V	0-10V	0-10V

Over-voltage, over-current, short-circuit protected

When operating in EM mode, the fixture will deliver approximately 30% of the published full lumen output.

Lumen Multiplier Table

Photometrics for the LC6SL are published below at a nominal 3500 Kelvin temperature. This table may be used to approximate the lumen values at different Kelvin temperatures. Power consumption would stay the same.

5000 Kelvin	1.09
4000 Kelvin	1.00
3500 Kelvin	1.00
3000 Kelvin	0.99
2700 Kelvin	0.96

LC6SL 6LCSL18L35K8

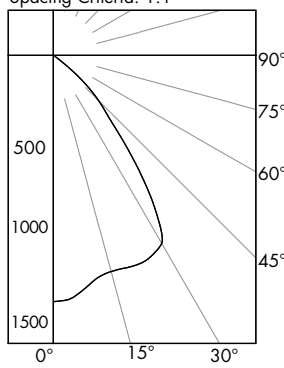
LED Light Engine: 3500K, 80+ CRI

System Wattage: 22.3W

Fixture Delivered Lumens: 1941

Fixture Efficacy: 87.0

Spacing Criteria: 1.1

**CANDELA DISTRIBUTION****DEG CANDELA**

0	1368
5	1345
15	1243
25	1247
35	923
45	357
55	27
65	5
75	1
85	0
90	0

Test No. 16.03178

Tested at 25°C Ambient in accordance to IESNA LM-79-2008

ZONAL LUMEN SUMMARY

ZONE	LUMENS	%LUMINAIRE
0-60	1935	99.7
0-90	1941	100.0
90-180	0	0.0
0-180	1941	100.0

LUMINANCE DATA IN CANDELA/SQ. METER

Angle in Vertical	Average
45°	27667
55°	2580
65°	648
75°	212
85°	0

COEFFICIENTS OF UTILIZATION Zonal Cavity Method

Room Cavity Ratio	% Effective Ceiling Cavity Reflectance											
	80%		70%		50%		30%		10%			
	20% Effective Floor Cavity Reflectance											
	% Wall Reflectance											
	70	50	30	10	70	50	30	10	70	50	30	10
1	113	110	107	105	110	108	105	103	104	102	100	97
2	106	101	97	93	104	99	95	92	96	93	90	88
3	100	93	87	83	98	92	86	82	89	85	83	81
4	94	86	79	75	92	84	79	74	82	77	73	72
5	89	79	73	68	87	78	72	67	76	70	66	65
6	83	73	66	62	82	72	66	61	71	65	61	60
7	78	68	61	56	77	67	61	56	66	59	55	55
8	74	63	56	52	72	62	56	52	61	55	51	51
9	70	59	52	48	68	58	52	48	57	51	47	47
10	66	55	48	44	65	54	48	44	54	48	44	44

LC6SL 6LCSL18L35K8

Test No. 16.03178

LC6SL 6LCSL14L35K8

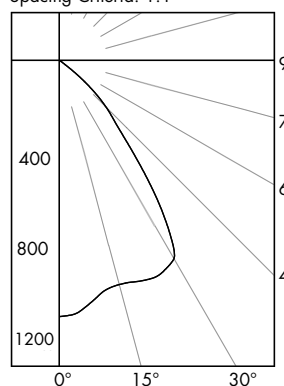
LED Light Engine: 3500K, 80+ CRI

System Wattage: 17.9W

Fixture Delivered Lumens: 1520

Fixture Efficacy: 84.9

Spacing Criteria: 1.1

**CANDELA DISTRIBUTION****DEG CANDELA**

0	1072
5	1050
15	971
25	990
35	721
45	277
55	20
65	4
75	1
85	0
90	0

Test No. 16.03177

Tested at 25°C Ambient in accordance to IESNA LM-79-2008

ZONAL LUMEN SUMMARY

ZONE	LUMENS	%LUMINAIRE
0-60	1515	99.7
0-90	1520	100.0
90-180	0	0.0
0-180	1520	100.0

LUMINANCE DATA IN CANDELA/SQ. METER

Angle in Vertical	Average
45°	21467
55°	1911
65°	519
75°	212
85°	0

COEFFICIENTS OF UTILIZATION Zonal Cavity Method

Room Cavity Ratio	% Effective Ceiling Cavity Reflectance									
	80%		70%		50%		30%		10%	
	20% Effective Floor Cavity Reflectance									
	% Wall Reflectance									
	100	75	50	30	10	100	75	50	30	10
1	113	110	107	105	103	104	102	100	98	97
2	106	101	97	93	89	95	91	87	83	80
3	100	93	87	83	79	86	82	78	74	71
4	94	86	80	75	72	82	77	73	69	66
5	89	79	73	68	67	76	71	67	64	70
6	83	73	66	62	61	71	65	61	64	64
7	78	68	61	56	56	66	60	55	59	58
8	74	63	56	52	52	61	56	51	59	54
9	70	59	52	48	48	57	52	47	55	51
10	66	55	48	44	44	54	49	44	53	48

LC6SL 6LCSL14L35K8

Test No. 16.03177

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Lighting, Inc.



Job Name:
128R NORTH STREET
Distributor: SWANEY LIGHTING
(SCARBOROUGH)

Catalog Number:
LC6SL / 6LCSL18L35K8

Notes:

Type:

CL

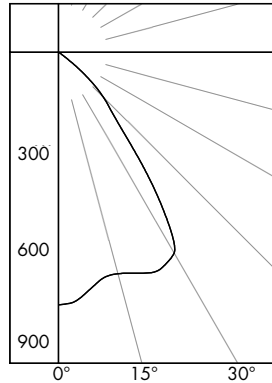
SLA19-42917

PHOTOMETRIC DATA

LiteFrame - 6" LC6SL Downlight

LC6SL 6LCSL10L35K8

LED Light Engine: 3500K, 80+ CRI
System Wattage: 13.5W
Fixture Delivered Lumens: 1106
Fixture Efficacy: 81.9
Spacing Criteria: 1.1



CANDELA DISTRIBUTION

DEG	CANDELA
0	780
5	762
15	708
25	740
35	518
45	196
55	15
65	3
75	1
85	0
90	0

Test No. 16.03179

Tested at 25°C Ambient in accordance to IESNA LM-79-2008

ZONAL LUMEN SUMMARY

ZONE	LUMENS	%LUMINAIRE
0-60	1103	99.7
0-90	1106	100.0
90-180	0	0.0
0-180	1106	100.0

LUMINANCE DATA IN CANDELA/SQ. METER

Angle in Vertical	Average
45°	15190
55°	1433
65°	389
75°	212
85°	0

COEFFICIENTS OF UTILIZATION Zonal Cavity Method

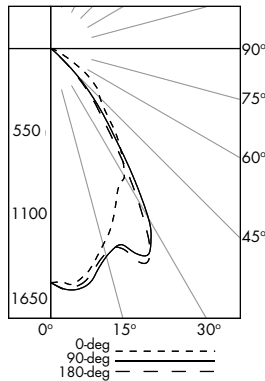
Room Cavity Ratio	% Effective Ceiling Cavity Reflectance										% Effective Floor Cavity Reflectance										% Wall Reflectance										
	80%					70%					50%					30%					10%										
	20% Effective Floor Cavity Reflectance																														
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	70	50	30	10	50	30	10	70	50	30	10
1	113	110	107	105	110	108	105	103	104	102	100	100	98	97	96	95	94														
2	107	101	97	93	104	99	95	92	96	93	90	93	90	88	90	88	86														
3	100	93	88	83	98	92	87	82	89	85	81	86	83	80	84	81	79														
4	94	86	80	75	92	85	79	74	82	77	74	80	76	73	78	75	72														
5	89	79	73	68	87	78	72	68	76	71	67	75	70	66	73	69	66														
6	83	73	67	62	82	73	66	62	71	65	61	69	65	61	68	64	60														
7	78	68	61	57	77	67	61	56	66	60	56	65	60	56	64	59	55														
8	74	63	57	52	73	63	56	52	61	56	52	60	55	51	59	55	51														
9	70	59	52	48	69	58	52	48	57	52	48	57	51	47	56	51	47														
10	66	55	49	44	65	55	48	44	54	48	44	53	48	44	52	47	44														

LC6SL 6LCSL10L35K8

Test No. 16.03179

LC6SL 6LCSL18L35K8 WW

LED Light Engine: 3500K, 80+ CRI
System Wattage: 22.2W
Fixture Delivered Lumens: 1938
Fixture Efficacy: 87.3



CANDELA DISTRIBUTION

DEG	0	90	180
0	1527	1527	1527
5	1545	1581	1565
15	1324	1404	1383
25	1030	1489	1517
35	792	780	670
45	454	219	189
55	273	8	8
65	64	2	2
75	9	1	1
85	0	0	0
90	0	0	0

Test No. 16.03309

Tested at 25°C Ambient in accordance to IESNA LM-79-2008

LUMINANCE DATA IN CANDELA/SQ. METER

Angle in Vertical	0 DEG	90 DEG	180 DEG
45°	38311	18480	15949
55°	28400	832	832
65°	9036	282	282
75°	2075	231	231
85°	0	0	0

MULTIPLE UNITS									
1'	2'	3'	4'	5'	6'	7'	8'	9'	10'

2' DISTANCE FIXTURE MOUNTED OUT FROM WALLS FOOTCANDLE DISTRIBUTION ON WALL SURFACE (DIRECT ONLY)

DISTANCE FROM CEILING IN FEET	15	11	6	2	1	15	5	15	15	1	15
	40	36	26	13	5	41	27	41	40	10	40
	36	35	28	18	11	41	36	41	36	22	36
	22	22	22	19	13	33	39	33	25	27	25
	14	14	14	14	13	27	30	27	20	25	20
	10	10	9	9	9	24	22	24	16	19	16
	7	7	6	6	6	19	18	19	14	14	14
	5	5	5	4	4	15	15	15	12	11	12
	4	4	3	3	3	12	13	12	10	9	10

LC6SL 6LCSL18L35K8 WW

Test No. 16.03309



Web: www.prescolite.com • Tech Support: (888) 777-4832
701 Millennium Boulevard • Greenville, SC 29607 U.S.A. • Phone (864) 678-1000
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Specifications subject to change without notice. • Printed in U.S.A. • LFRLED-041 • 3/15/17



HUBBELL
Lighting, Inc.



PHOTOMETRIC DATA

LiteFrame - 6" LC6SL Downlight

Dimming Compatibility Table

Dimming Ballast	Manufacturer	Web Link
DM/DM1	Lutron DTV	http://bit.ly/11jSvZg
DM/DM1	Leviton AWRMG-7xx, AWSMG-7xx, AWSMT-7xx	http://bit.ly/1BJn2R9

Central Inverters

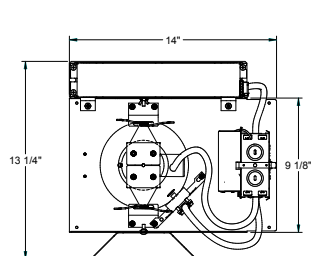
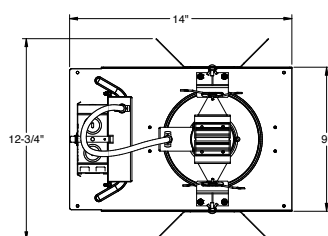
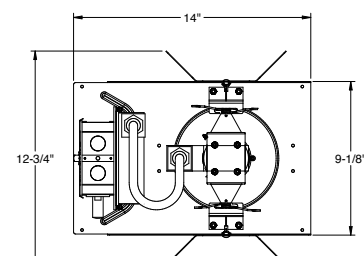
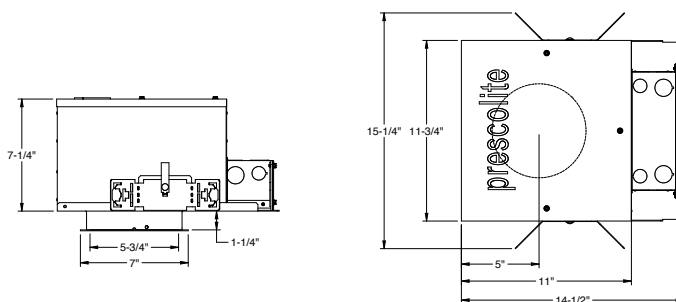
For full fixture output in back-up mode, we recommend you visit www.dual-lite.com for your Central Lighting Inverter options. Please contact your local Hubbell representative for any assistance with proper sizing and loading of your inverter selection. Central lighting inverters must be ordered separately.

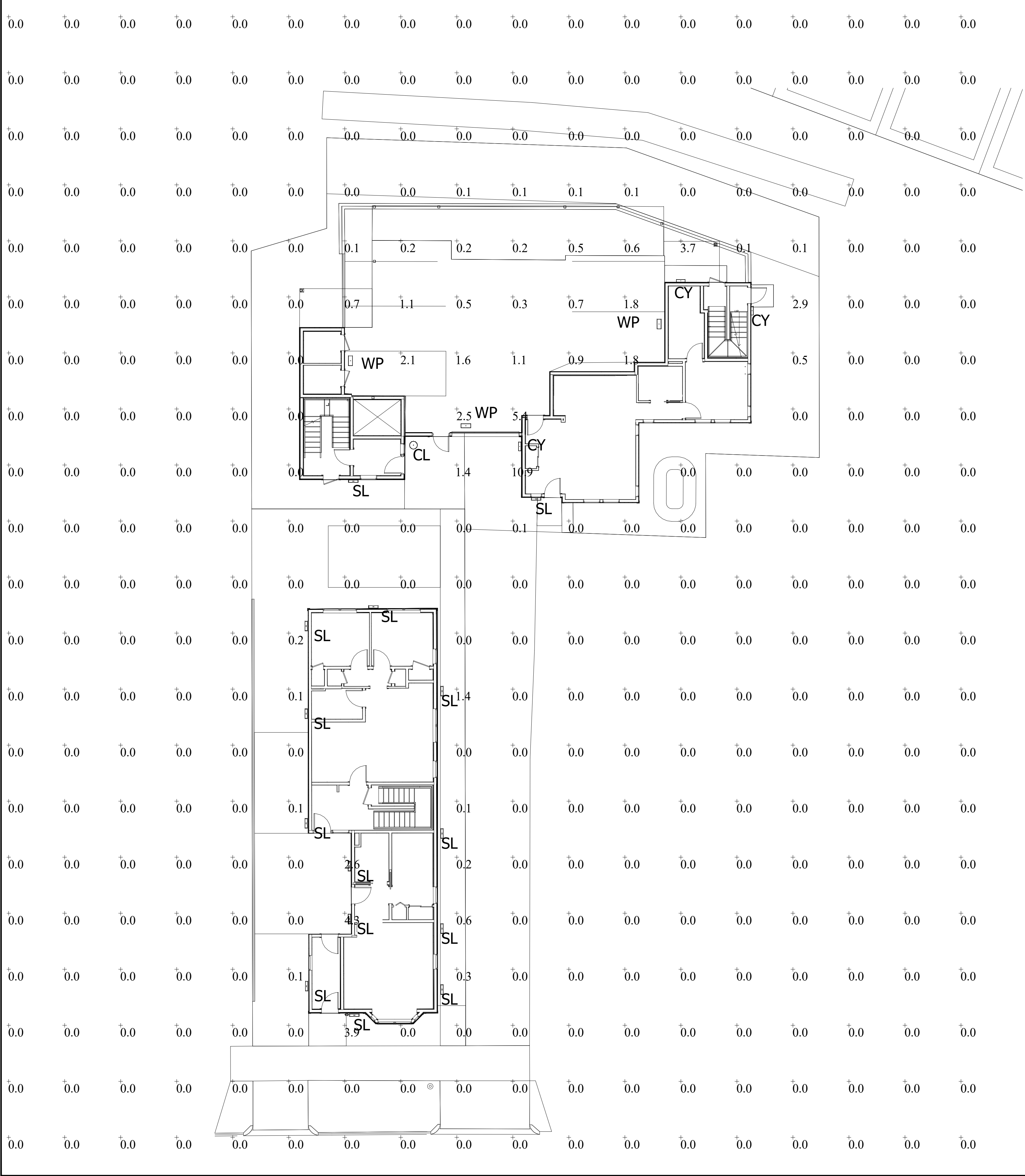
LiteGear: www.dual-lite.com/products/litegear_lg_series

LPS Series: www.dual-lite.com/products/lps

SCA6D

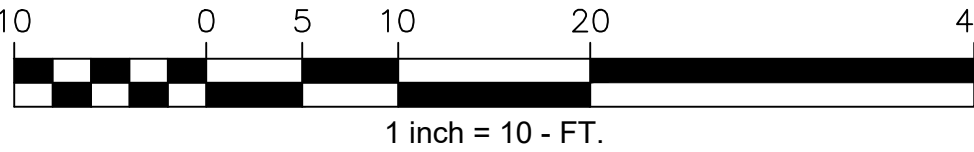
When ordering a sloped ceiling adapter, specify the degree of slope in 1° increments, maximum of 35°. For a more precise degree or wet ceiling applications, please contact factory. Sloped ceiling adapter and housing must be installed at the same time.


LC6SL EM

LC6SL 18L

LC6SL CP

LC6SL WWCP

Luminaire Schedule							
Symbol	Qty	Label	Mounting Height	LLF	Lum. Lumens	Lum. Watts	Description
⌚	3	WP	8' - 0" AFG	0.900	849	13	LNC-5LU-3K-4-X
⌚	3	CY	8' - 0" AFG	0.900	1970	15	CY1-15-4K7-1-WG-WHT-R
⊙	1	CL	9' - 0" AFG	0.900	1938	23	LC6SLPH-6LCSL18L35K8WW
⌚	14	SL	2' - 0" AFG	0.900	64	5	EL807_3L3K_UNV

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Overall Site	Illuminance	Fc	0.13	10.9	0.0	N.A.	N.A.
Property Line	Illuminance	Fc	0.01	0.1	0.0	N.A.	N.A.



1. THIS LIGHTING DESIGN IS BASED ON LIMITED INFORMATION SUPPLIED BY OTHERS TO HUBBELL LIGHTING. SITE DETAILS PROVIDED HEREON ARE REPRODUCED ONLY AS A VISUALIZATION AID. FIELD DEVIATIONS MAY SIGNIFICANTLY AFFECT PREDICTED PERFORMANCE. PRIOR TO INSTALLATION, CRITICAL SITE INFORMATION (POLE LOCATIONS, ORIENTATION, MOUNTING HEIGHT, ETC.) SHOULD BE COORDINATED WITH THE CONTRACTOR AND/OR SPECIFIER RESPONSIBLE FOR THE PROJECT.

2. LUMINAIRE DATA IS TESTED TO INDUSTRY STANDARDS UNDER LABORATORY CONDITIONS. OPERATING VOLTAGE AND NORMAL MANUFACTURING TOLERANCES OF LAMP, BALLAST, AND LUMINAIRE MAY AFFECT FIELD RESULTS.

3. CONFORMANCE TO FACILITY CODE AND OTHER LOCAL REQUIREMENTS IS THE RESPONSIBILITY OF THE OWNER AND/OR THE OWNER'S REPRESENTATIVE.

TITLE:

128R NORTH STREET
WILTON, ME
PARKING AREA LIGHTING PLAN

REVISED FROM DRAWING NUMBER(S):

R1: 08/13/19R2: 08/16/19R3: 08/20/19R4: 08/21/19R5: 08/22/19R6: 10/31/19R7: 11/04/19R8: 02/28/20



Hubbell Lighting, Inc.
701 MILLENIUM BLVD.
GREENVILLE, SC 29607

DN BY:
DHK

REV BY:
DHK

QUOTE:
N/A

DATE:
08/12/19

DATE:
02/28/20

DRAWING / DESIGN NO:
1924759R9

CHK BY:
N/A

SCALE:
AS NOTED

O. Architectural Design Narrative

Please find attached the design narrative completed by Dexterous Creative.





October 29, 2019

Shukria Wiar
Planner
City of Portland Maine
389 Congress Street
Portland, Maine 04101

Re: 128R and 126 North Street

In Summer 2018 our team submitted an application for a four-story, six-unit condominium building at 128R North Street. The project features a workforce housing unit on the ground floor, five-FHA compliant units serviced via an elevator on upper floors and six parking spaces. This rear lot, previously housed a single-family home. The site is immediately adjacent to Bayview Heights senior apartments and is across the street from the Island View Apartment complex. In September our team held a neighborhood meeting to introduce this building to neighbors.

As a result of neighborhood feedback and staff comments, our team elected to add a plan to develop the front lot, 126 North Street, in addition to 128R North. This three-story building features five, two-bedroom apartments and two off-street parking spaces. The first-floor unit will be FHA compliant.

Development will begin with construction of the rear building at 128R. Prior to substantial completion the existing four-unit building at 126 will be demolished to allow for widening of the walk and driveway to this lot. The new building at 126 will share a pedestrian entrance with 128R with vehicles entering via the existing curb cut at 126. This widened driveway to 128R improves access for vehicles and increases visibility for pedestrians and cyclists visiting 128R and 126 via a brick walkway leading from North Street (walkway to be flush with drive).

In addition to improving access to 128R North, the three-story form of 126 is used to mitigate massing of the four-story building at 128R North when viewed from the streetscape. The three-story building creates a gradual stepping of roof-lines between the two-story building at 122 North, the 1 1/2 story building at 128 North (front lot) and the proposed four-story building at 128R North.

The building at 128R is minimally visible from the public way due to its position as a rear lot, 100'-0" from the street-front, and unique topography of the surrounding area, which includes a steep elevation change. This means that the four-story, six-unit building will only be visible from across the Bayview Heights parking lot, as viewed through a mature row of Pine Trees and at the driveway entrance to the site, viewed at a distance of 100'-0". The impact of this elevation change on building visibility is best illustrated on Washington Avenue looking up at the Munjoy Heights complex. Due to the elevation change the rear buildings of that four-story complex are not visible, except at a gap between the buildings (see photo on page 26).

Neighboring Munjoy Heights represents a recent example of a dense, four-story inner/rear lot re-development that increases density within the city, via a new access driveway off Sheridin Street. The footprint of 128R North is smaller than one of the six, four-story buildings of the Munjoy Heights complex providing precedent such density

within the neighborhood. A prominent feature between the 128R and Munjoy Heights site is a retaining wall designed by our team. Sensitivity to that wall is a major reason the civil, geotechnical and structural engineering team from Munjoy Heights was retained for our project. Additionally, the Island View Apartment complex across North Street and Bayview Heights complexes represent much larger and more complex masses than the proposed building at 128R North.

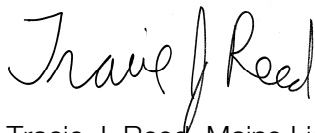
To break up the width of the 128R facade, the siding color is changed at the central extrusion. Both 126 and 128R feature two window types along front facades in a consistent pattern and rhythm. A difference in color/cladding at the main entrances of both buildings is utilized to improve way-finding.

The architectural styles of buildings immediately adjacent to and in immediate blocks surrounding the project are diverse, in scale, materiality and massing. There is little continuity amongst the structures which range from single-story flat-roofed masonry buildings, gable-roof structures with horizontal siding (clapboard, vinyl, composite and aluminum) to four-story masonry buildings with mansard roofs.

Neither proposed building features rooftop deck. Roof-mounted condensers are not visible from the street at 128R North. Mechanicals in 126 will be housed in the basement or mounted to the rear facade of the building. The elevator overrun on 128R is minimally visible from the public way. To reduce complexity of the massing at 128R the roof eave is consistent except for this element. Deck rails at the front of the building at 128R have been modified from previously submitted editions to minimize their presence/bulk.

These two projects will result in a net increase of six much-needed housing units for the city, including a work-force unit, and seven FHA compliant units increasing housing options for prospective residents of all mobility levels, housing that is sorely needed in our city and aging state.

Regards,

A handwritten signature in black ink that reads "Tracie J. Reed". The signature is fluid and cursive, with the first letters of each name being capitalized and prominent.

Tracie J. Reed, Maine Licensed Architect
Dextrous Creative, LLC

Dextrous Creative, LLC
Portland, Maine
traciereed@dextrouscreative.com
(207) 409-0459

P. Utilities

The proposed project will include installation of multiple utility services to the new buildings.

Water:

The existing 128R water service will be retired as part of this project. It is proposed to tap a 6" service line off the water main within North Street. The 6" line will serve as the sprinkler line with a 1.5" child connection for a domestic service.

For the project located at 126 North Street the existing water service will be retired as part of this project. It is proposed to tap a 4" service line off the water main within North Street. The 4" line will serve as the sprinkler line with a 1.5" child connection for a domestic service.

Sewer:

The existing sewer laterals are to be retired and plugged. A new 6" lateral for each site is proposed to accept the wastewater from each unit, and the garage sewer (after draining from the oil-water separator). The garage and elevator sump at 128R may be pumped internally to meet with the wastewater lines from the living levels before being fed via gravity to the sewer main within North Street.

Stormwater:

There is currently no drainage infrastructure on either site. The proposed measures to handle runoff include foundation drains and field inlets for both sites and a high-flow rain garden on 128R North Street. These systems will connect to a separated 6" storm drain line that ties in to the existing 12" combined sewer main within North Street. Please see the Stormwater Management Report for more information.

UGE/T/C:

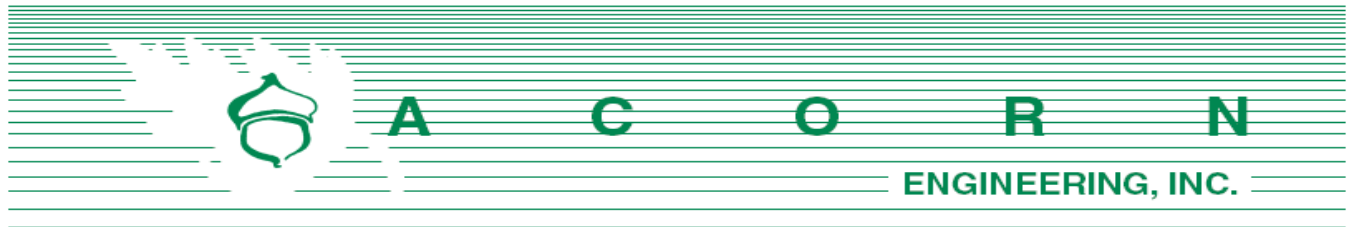
The sites are currently served by aerial services. These services are proposed to be routed underground from a proposed utility pole on North Street which will convey 3-phase power from an existing utility pole across North Street east.

Gas:

It is proposed to retire the existing services install new taps off the existing main in North Street for each site as seen on the Utility Plan, Sheet C-20. The 128R service will be coordinated with 128F North Street such that a branch can be spliced off the proposed service and routed to the neighboring property.

Ability to serve letters were sent out to the respective utility companies on July 1, 2019 in accordance with the City of Portland Code of Ordinances Chapter 14 Land Use, Section 14-527(g)(7). Responses from the utility companies can be found attached to this section.





Charter Communications
Attn: Mr. Mark Pelletier
118 Johnson Road
Portland, Maine 04102

July 1, 2019

Subject: 128R North Street Redevelopment
Re: Ability to Serve

Dear Mr. Pelletier:

On behalf of Upright Properties, LLC, we are pleased to submit the following request for Charter's ability to serve the proposed development. The proposed project is located along 128R North Street, tax map 12-H-9 within the R-6 Residential Zoning District in Portland, Maine. The lot will be redeveloped into a four-story, six-unit residential building with an open-air ground level for parking. The site currently serves as two story single-family home.

It is proposed that a new underground conduit be dropped from the existing utility pole adjacent to the access drive off North Street.

On behalf of the client, we are requesting the following information:

1. Any additional information, such as utility mapping within North Street.
2. Any easements for overhead services currently crossing the proposed development.
3. Alternative connection locations from the property to the existing communication system.
4. Charter's proposed infrastructure improvements within the project vicinity.
5. Charter's ability to serve the project.

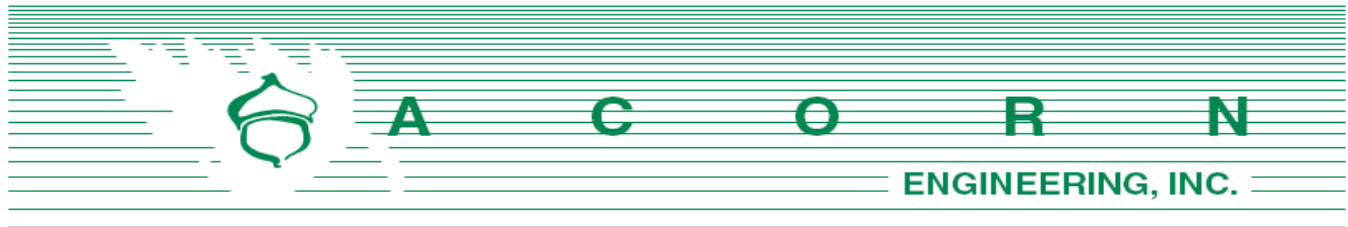
I have attached an existing conditions plan created by Nadeau Land Surveys from June 2018 as well as the proposed preliminary utility plan from our office to facilitate your review. Please do not hesitate to contact me or the office for any questions or clarifications.

Sincerely,

Sam Lebel, E.I.
Project Engineer
Acorn Engineering, Inc.



A C O R N Engineering, Inc. • www.acorn-engineering.com
207-775-2655 • PO Box 3372 • Portland • Maine • 04104



Portland Water District
Attn: MEANS Department
225 Douglass Street
Portland, Maine 04104

July 1, 2019

Subject: 128R North Street Redevelopment
Re: Ability to Serve

To Whom It May Concern:

On behalf of Upright Properties, LLC, we are pleased to submit the following request for Portland Water District's (PWD) ability to serve the proposed development. The proposed project is located along 128R North Street, tax map 12-H-9 within the R-6 Residential Zoning District in Portland, Maine. The existing single-family structure will be demolished and the lot will be redeveloped into a four-story, six-unit residential building with the ground level serving as an open-air parking space.

The existing water service will be removed as part of the redevelopment. It is proposed to tap a 6" sprinkler line off the water main within North Street. A 2" domestic line is proposed to branch off the sprinkler line. Based upon Section 4 of the Maine Subsurface Wastewater Disposal Rules, the project anticipates the following design flows:

Estimate of Anticipated Daily Flows				
Development	Unit Size	Number of Units	Gallons per Day per Unit	Total Gallons per Day
Existing Flow				
Single Family Dwelling	3-Bedroom	1	270	270
Total Gallons per Day (Existing)				270 GPD
Proposed Flow				
Residential Units	1-Bedroom	3	120	360
Residential Units	2-Bedroom	2	180	360
Residential Units	3-Bedroom	1	270	270
Total Gallons per Day (Proposed)				990 GPD



Net Change	+720 GPD
*Values based on STATE OF MAINE: SUBSURFACE WASTEWATER DISPOSAL RULES, most recent edition	

The proposed project is anticipated to increase the net flow by approximately 720 gallons per day (GPD). It should be noted that these values were developed using conservative estimates from the State of Maine Subsurface Wastewater Disposal Rules.

On behalf of the client, we are requesting the following information:

1. Any additional information, such as utility mapping within North Street and confirmation of the location and size of the services to the existing property and the size and material of the water main.
2. Alternative connection locations from the property to the existing system.
3. PWD's proposed infrastructure improvements within the project vicinity.
4. Flow data for adjacent hydrant.
5. PWD's ability to serve the project.

I have attached a fixture count, an existing conditions plan created by Nadeau Land Surveys from June 2018, and the proposed preliminary utility plan from our office to facilitate your review. Please do not hesitate to contact me or the office for any questions or clarifications.

Sincerely,



Sam Lebel, E.I.
Project Engineer
Acorn Engineering, Inc.



November 27, 2019

Sam Lebel, E.I
Acorn Engineering, Inc.
PO Box 3372
Portland, ME 04104

Re: 128R North Street, PO
REVISED - Ability to Serve with PWD Water

Dear Mr. Lebel:

The Portland Water District has received your request for an Ability to Serve Determination for the noted site submitted on October 30, 2019. Based on the information provided, we can confirm that the District will be able to serve the proposed project as further described in this letter. **Please note that this letter constitutes approval of the water system as currently designed. Any changes affecting the approved water system will require further review and approval by PWD.**

Conditions of Service

The following conditions of service apply:

- A new 6-inch fire service (parent) and 1.5-inch domestic service (child) with a 1-inch meter may be installed from the water main in North Street to serve **128R North Street**. The services should enter through the properties frontage on North Street at least 10-feet from any side property lines. An approved backflow prevention device must be installed on each service line directly after the meter/entrance to the building prior to service activation. Please note that only one meter and one bill will be associated to each domestic service line. This one master meter would be located in a common space that all tenants could gain access to if necessary.
- A new 4-inch fire service (parent) and 1.5-inch domestic service (child) with a 1-inch meter may be installed from the water main in North Street to serve **126 North Street**. The services should enter through the properties frontage on North Street at least 10-feet from any side property lines. An approved backflow prevention device must be installed on each service line directly after the meter/entrance to the building prior to service activation. Please note that only one meter and one bill will be associated to each domestic service line. This one master meter would be located in a common space that all tenants could gain access to if necessary.
- The Portland Water District does not have record of any other existing infrastructure in public roads and recommends a survey and test pitting be performed by the development team prior to construction. **Any conflicts that arise during construction are at the risk of the developer and may result in job shutdown until new plans are submitted by the developer and reviewed and approved by PWD.**



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

Existing Site Service

According to District records, the project site does currently have existing water service. A 1-inch diameter copper domestic service line provides water service to the site. Please refer to the “Conditions of Service” section of this letter for requirements related to the use of this service.

Water System Characteristics

According to District records, there is a 12-inch diameter ductile iron water main in North Street and a public fire hydrant located approximately 200 feet from the site. The most recent static pressure reading was 48 psi on August 5, 2019.

Public Fire Protection

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

Domestic Water Needs

The data noted above indicates there should be adequate pressure and volume of water to serve the domestic water needs of your proposed project.

Private Fire Protection Water Needs

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

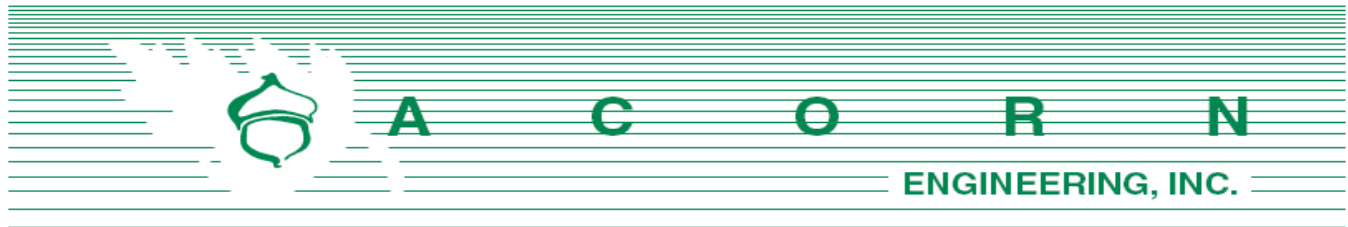
Should you disagree with this determination, you may request a review by the District’s Internal Review Team. Your request for review must be in writing and state the reason for your disagreement with the determination. The request must be sent to MEANS@PWD.org or mailed to 225 Douglass Street, Portland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

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

Sincerely,
Portland Water District



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



Unitil Service Corp.
Attn: Bridget Harmon
376 Riverside Industrial Parkway
Portland, Maine 04103

July 1, 2019

Subject: 128R North Street Redevelopment
Re: Ability to Serve

Dear Ms. Harmon:

On behalf of Upright Properties, LLC, we are pleased to submit the following request for Unitil's ability to serve the proposed development. The proposed project is located along 128R North Street, tax map 12-H-9 within the R-6 Residential Zoning District in Portland, Maine. The lot will be redeveloped into a four-story, six-unit residential building with the first level including a parking area. The site currently serves as two story single-family home.

We are not aware of any existing gas services to the property. The new gas line is proposed to tap off the main and run parallel to an abutting gas line. Modifications are proposed to the neighbor's gas line to facilitate the redevelopment. The Owner will be responsible for coordinating with the landowner of 128F North Street as well as Unitil and Neuco.

On behalf of the client, we are requesting the following information:

1. Any additional utility mapping such as gas lines within North Street.
2. Unitil's proposed infrastructure improvements within the project vicinity.
3. Unitil's ability to serve the project.

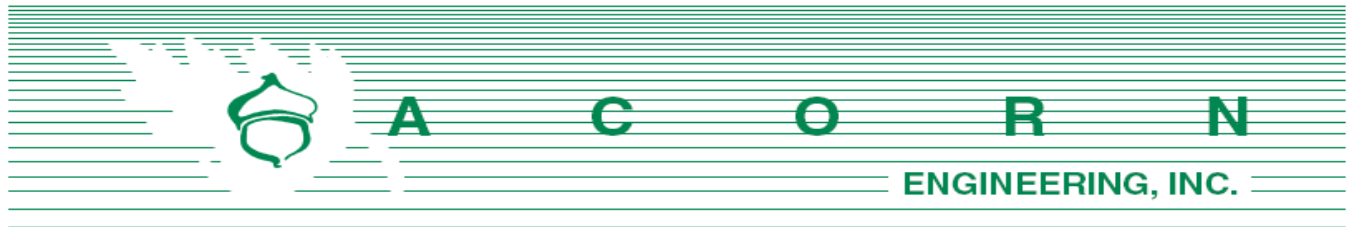
I have attached an existing conditions plan created by Nadeau Land Surveys from June 2018, and the proposed preliminary utility plan from our office to facilitate your review. Please do not hesitate to contact me or the office for any questions or clarifications.

Sincerely,

Sam Lebel, E.I.
Project Engineer
Acorn Engineering, Inc.



ACORN Engineering, Inc. • www.acorn-engineering.com
207-775-2655 • PO Box 3372 • Portland • Maine • 04104



Central Maine Power Company
Attn: Mr. Paul DuPerre
162 Canco Road
Portland, Maine 04103

July 1, 2019

Subject: 128R North Street Redevelopment
Re: Ability to Serve

Mr. DuPerre:

On behalf of Upright Properties, LLC, we are pleased to submit the following request for Central Maine Power's (CMP) ability to serve the proposed development. The proposed project is located along 128R North Street, tax map 12-H-9 within the R-6 Residential Zoning District in Portland, Maine. The lot will be redeveloped into a four-story, six-unit residential building with the first level including a parking area. The site currently serves as two story single-family home.

It is proposed that a new underground conduit be dropped from the existing utility pole along North Street with the potential for a pole-mounted transformer to be installed on this pole. 3-phase power appears to be available from the pole across the street. I look forward to our July 10th on-site meeting to discuss options for serving this redevelopment.

On behalf of the client, we are also requesting the following information:

1. Any easements for overhead services currently crossing the proposed development.
2. Alternative connection locations from the development to the existing system.
3. CMP's proposed infrastructure improvements within the project vicinity.
4. CMP's ability to serve the project.
5. Access requirements to the CMP meters.

I have attached an existing conditions plan created by Nadeau Land Surveys from June 2018 as well as the proposed preliminary utility plan from our office to facilitate your review. Please do not hesitate to contact me or the office for any questions or clarifications.

Sincerely,

Sam Lebel, E.I.
Project Engineer
Acorn Engineering, Inc.



ACORN Engineering, Inc. • www.acorn-engineering.com
207-775-2655 • PO Box 3372 • Portland • Maine • 04104



July 5, 2019

Acorn Engineering, Inc.
C/O Mr. Sam Lebel, E.I.
PO Box 3372
Portland, Maine 04104

RE: 128R North Street, Portland, Maine

Dear Mr. Lebel,

This letter is to advise you Central Maine Power has sufficient three phase electrical capacity in the area to serve the subject project.

Once the project is accepted by the City of Portland, the owner will need to call our Customer Service Center at 1-800-565-3181 to sign up for a New Account and a SAP Work Request Order so we may provide an actual cost.

If you have any questions please feel free to call me at 629-1487.

Sincerely,

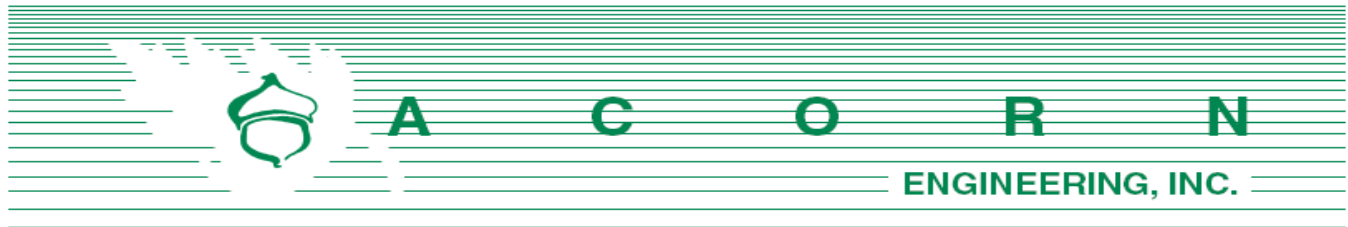
Paul DuPerre
Energy Service Specialist

162 Canco Road, Portland, ME 04103
Telephone 800.750.4000, Fax 207.791.1026
cmpco.com



An equal opportunity employer





Charter Communications
Attn: Mr. Mark Pelletier
118 Johnson Road
Portland, Maine 04102

October 29, 2019

Subject: 126 North Street Redevelopment
Re: Ability to Serve

Dear Mr. Pelletier:

On behalf of Joshua Wojcik, we are pleased to submit the following request for Charter's ability to serve the proposed development. The proposed project is located along 126 North Street, tax map 12-H-14 within the R-6 Residential Zoning District in Portland, Maine. The existing four-unit structure will be demolished, and the lot will be redeveloped into a three-story, five-unit residential building with the ground level serving as an open-air parking space.

It is proposed that a new underground conduit be dropped from the utility pole adjacent to the access drive off North Street. The utility pole is proposed to be replaced as part of this project.

On behalf of the client, we are requesting the following information:

1. Any additional information, such as utility mapping within North Street.
2. Any easements for overhead services currently crossing the proposed development.
3. Alternative connection locations from the property to the existing communication system.
4. Charter's proposed infrastructure improvements within the project vicinity.
5. Charter's ability to serve the project.

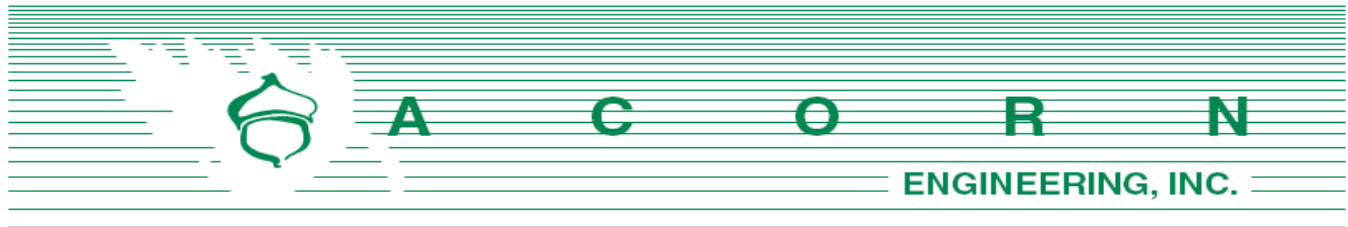
I have attached an existing conditions plan created by Nadeau Land Surveys from June 2018 as well as the proposed preliminary utility plan from our office to facilitate your review. Please do not hesitate to contact me or the office for any questions or clarifications.

Sincerely,

Sam Lebel, E.I.
Project Engineer
Acorn Engineering, Inc.



A C O R N Engineering, Inc. • www.acorn-engineering.com
207-775-2655 • PO Box 3372 • Portland • Maine • 04104



Portland Water District
Attn: MEANS Department
225 Douglass Street
Portland, Maine 04104

October 21, 2019

Subject: 126 North Street Redevelopment
Re: Ability to Serve

To Whom It May Concern:

On behalf of Joshua Wojcik, we are pleased to submit the following request for Portland Water District's (PWD) ability to serve the proposed development. The proposed project is located along 126 North Street, tax map 12-H-14 within the R-6 Residential Zoning District in Portland, Maine. The existing four-family structure at 126 will be demolished to facilitate construction of the related project at 128R North Street. The 126 lot will then be redeveloped into a three-story, five-unit residential building.

The existing water service will be removed as part of the redevelopment. It is proposed to tap a 4" sprinkler line off the water main within North Street. A 1.5" domestic line is proposed to branch off the sprinkler line. Based upon Section 4 of the Maine Subsurface Wastewater Disposal Rules, the project anticipates the following design flows:

Estimate of Anticipated Daily Flows				
Development	Unit Size	Number of Units	Gallons per Day per Unit	Total Gallons per Day
Existing Flow				
Multifamily	2-Bedroom	4	180	720
Total Gallons per Day (Existing)				720 GPD
Proposed Flow				
Multifamily	2-Bedroom	5	180	900
Total Gallons per Day (Proposed)				900 GPD
Net Change				+180 GPD
*Values based on STATE OF MAINE: SUBSURFACE WASTEWATER DISPOSAL RULES, most recent edition				

The proposed project is anticipated to increase the net flow by approximately 180 gallons per day (GPD). It should be noted that these values were developed using conservative estimates from the State of Maine Subsurface Wastewater Disposal Rules.

On behalf of the client, we are requesting the following information:

1. Any additional information, such as utility mapping within North Street and confirmation of the location and size of the services to the existing property and the size and material of the water main.
2. Alternative connection locations from the property to the existing system.
3. PWD's proposed infrastructure improvements within the project vicinity.
4. Flow data for adjacent hydrant.
5. PWD's ability to serve the project.

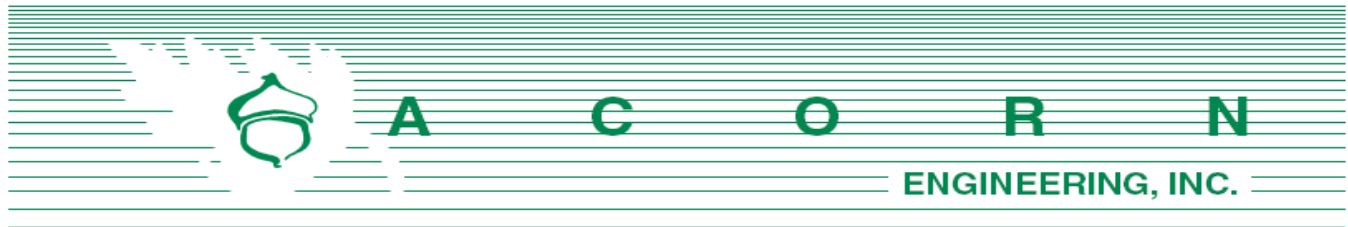
I have attached a fixture count, an existing conditions plan created by Nadeau Land Surveys from June 2018, and the proposed preliminary utility plan from our office to facilitate your review. Please do not hesitate to contact me or the office for any questions or clarifications.

Sincerely,



Sam Lebel, E.I.
Project Engineer
Acorn Engineering, Inc.





Unitil Service Corp.
Attn: Bridget Harmon
376 Riverside Industrial Parkway
Portland, Maine 04103

October 29, 2019

Subject: 126 North Street Redevelopment
Re: Ability to Serve

Dear Ms. Harmon:

On behalf of Joshua Wojcik, we are pleased to submit the following request for Unitil's ability to serve the proposed development. The proposed project is located along 126 North Street, tax map 12-H-14 within the R-6 Residential Zoning District in Portland, Maine. The existing four-unit structure will be demolished, and the lot will be redeveloped into a three-story, five-unit residential building with the ground level serving as an open-air parking space.

We are not aware of any existing gas services to the property. The new gas line is proposed to tap off the main and run underneath the proposed driveway of 126 North Street.

On behalf of the client, we are requesting the following information:

1. Any additional utility mapping such as gas lines within North Street.
2. Unitil's proposed infrastructure improvements within the project vicinity.
3. Unitil's ability to serve the project.

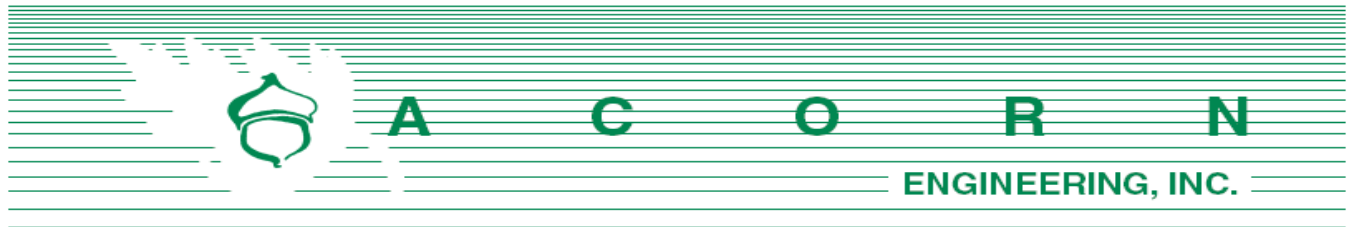
I have attached an existing conditions plan created by Nadeau Land Surveys from June 2018, and the proposed preliminary utility plan from our office to facilitate your review. Please do not hesitate to contact me or the office for any questions or clarifications.

Sincerely,

Sam Lebel, E.I.
Project Engineer
Acorn Engineering, Inc.



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207-775-2655 • PO Box 3372 • Portland • Maine • 04104



Central Maine Power Company
Attn: Mr. Paul DuPerre
162 Canco Road
Portland, Maine 04103

October 29, 2019

Subject: 126 North Street Redevelopment
Re: Ability to Serve

Mr. DuPerre:

On behalf of Joshua Wojcik, we are pleased to submit the following request for Central Maine Power's (CMP) ability to serve the proposed development. The proposed project is located along 126 North Street, tax map 12-H-14 within the R-6 Residential Zoning District in Portland, Maine. The existing four-unit structure will be demolished, and the lot will be redeveloped into a three-story, five-unit residential building with the ground level serving as an open-air parking space.

It is proposed that a new underground conduit be dropped from the utility pole that is proposed to be replaced in front of the existing 126 North Street structure. This pole would provide underground connections to both 126 and 128R.

On behalf of the client, we are also requesting the following information:

1. Any easements for overhead services currently crossing the proposed development.
2. Alternative connection locations from the development to the existing system.
3. CMP's proposed infrastructure improvements within the project vicinity.
4. CMP's ability to serve the project.
5. Access requirements to the CMP meters.

I have attached an existing conditions plan created by Nadeau Land Surveys from June 2018 as well as the proposed preliminary utility plan from our office to facilitate your review. Please do not hesitate to contact me or the office for any questions or clarifications.

Sincerely,

Sam Lebel, E.I.
Project Engineer
Acorn Engineering, Inc.

Q. Construction Management Plan

Project Address: 126 & 128R North Street

Project Description:

The proposed project includes a two-phase approach where Phase 1 would include the redevelopment of 128R into a four-story building with six condominiums and covered parking on the ground level. Phase 2 would include the redevelopment of 126 into a three-story building with six rental units. Phase 2 would include the demolition of 126 prior to the certificate of occupancy of 128R such that the proposed 16' driveway can be built.

Project Team Summary:

Owner:	Upright Properties, LLC
General Contractor:	TBD
Civil Engineer:	Acorn Engineering, Inc.
Architect:	Dextrous Creative
Structural Engineer:	Structural Integrity Consulting Engineers, Inc.

The Owner/GC and all subcontractors will work with the City of Portland and adjacent landowners to minimize any project impacts.

The GC will remain responsible for enforcement of all compliance with 1) all contract plans and specifications in their scope of work and 2) all site working conditions and safety requirements, day and night, for both persons and property, in each case for the duration of their work. These include OSHA, NIOSH, U.S. EPA, local ordinance and any other applicable governmental regulations. Both the Owner/GC and any subcontractors will remain responsible for safeguarding the general public.

The GC shall review all permits and conditions associated with the project. Refer to the Civil/Site Plan Set, Sheet C-03 Construction Management Plan for visual representation of the measures to be taken during construction.

The following outline has been developed in accordance with the City of Portland Construction Management Plan General Template and shall be referenced by the GC during construction.

A. Construction Management Principles

The control of noise, vibrations, ground movement, truck traffic, and other construction related factors will be of utmost importance. Care shall be taken to minimize these effects in the best interest of neighbors and the general public. GC to ensure that work hours conform to the City of Portland's Ordinance.

B. Development Review of Construction Management Plan

Logistics and safety program shall be submitted at or prior to the preconstruction meeting by the GC with all pertinent information required by the Maine Department of



Transportation's Traffic Control Plan Standard Specification 652.3.3.

C. Performance Guarantees, Inspection Fees, Preconstruction Meeting, and Permits

Guarantees and fees will be paid at the time of the respective application. Sections 14-530 and 13-532 will be complied with all necessary permits will be obtained prior to work.

1. Street Opening and Street Occupancy Permits:

Required permits regarding street opening and occupancy will be obtained from the Department of Public Works. The requests shall conform to the approved Construction Management Plan.

2. Blasting:

Although not anticipated, if blasting occurs, it shall conform to Article VIII. In Chapter 14 of the City Code and Section 3.7 in the City's Technical Manual.

3. Building Code:

Employ the best practices, as applicable, of Chapter 33 Safeguards During Construction, from the 2009 International Building Code.

D. Construction Administration and Communication

The Contractor will work closely with adjacent abutters, businesses, and all parties informed, as far in advance as possible, of scheduled work, particularly work anticipated to cause significant noise, vibrations, or dust. Communication in order to comply with all agreements, ordinances, and special permits will be of the utmost importance. Contractor contact information shall be posted on a sign on the construction fence along the North Street frontage. Additional signage necessary for communication shall be provided, but will be temporary and removed upon completion of the project. The contract information for the project personnel is:

Josh Wojcik
Upright Properties, LLC
(207)-749-9656

GC and Subcontractor information will be posted along the North Street frontage once contracted.

E. Construction Schedule

The GC shall submit a construction timeline at or prior to the preconstruction meeting. Construction may occur during the daytime hours as defined in Section 17-18 of the Construction Activities for Building permit and City Code Section 25-129, Noise, dust and debris. Between September 1 and May 31, the following year, no person shall engage in construction activities generating noise exceeding 50 decibels, between the hours of 7 pm and 7 am of the following day within 500 feet of any buildings. From June 1 to August 31,



construction activity may continue until 8 pm. No construction activity shall begin before 8 am on a Saturday, Sunday, or legal holiday. Extended hours or night work may be requested for special circumstances and street utility work if needed. These requests will be subject to approval by the Public Works Authority.

Due to the limited space within the project parcel, deliveries will need to be stored in an alternate location or deliveries must be small enough to fit within the property. Deliveries will be scheduled between 7 am and 5 pm.

The estimated timeframe of the proposed project is outlined below:

<u>128R Project Start:</u>	Fall 2020
<u>126 Project Start:</u>	Summer 2021
<u>Project End Date:</u>	Summer 2022

A more detailed work schedule shall be provided by the GC at or before the pre-construction meeting with the City. In the interim, a more in depth of an approximate timeframe has been provided within the application materials by the Applicant.

F. Security

1. The Construction Management Plan, Sheet C-03, depicts all proposed fencing and other barriers, with the intent of separating pedestrian and vehicle circulation from the construction site. Construction entrances per detail shall be installed.
2. Structures undergoing construction, alteration, or demolition operations, including those in underground locations, shall comply with NFPA 1 Chapter 16. *Safeguarding Construction, Alteration, and Demolition Operations*.
3. Fire Safety Program: Prior to construction, an overall construction and demolition fire safety program shall be developed. Essential items to be emphasized include the following:
 - o Good Housekeeping
 - o On-site security
 - o Installation of new fire protection systems as construction progresses
 - o Preservation of existing systems during demolition
 - o Organization and training of an on-site fire brigade
 - o Development of a pre-fire plan with the local fire department
 - o Rapid communication
 - o Consideration of special hazards resulting from previous occupancies
 - o Protection of existing structures and equipment from exposure fires resulting from construction, alteration, and demolition operations.
4. Blasting, if required, shall conform with all measures of Article VIII. Regulation of Explosives in the Land Use Code and Section 3.7 Standards for Blasting and Regulation of Explosives in Portland's Technical Manual.
5. Temporary security lighting shall be shown on the Construction Management Plan, and all fixtures shall be full cutoffs.



G. Construction Permitting and Traffic Control Plans

1. Construction Activity in Public Streets

Construction activity in the public right-of-way shall be compliant with Chapter 25 Article VII of the City Code. At no time will it be permissible for construction activity including delivery vehicle to close or block streets or affect public safety access without prior notice and approval of the Department of Public Works.

2. Sewer and Stormwater

Sewer and stormwater system connections are controlled by Chapters 24 and 32 of the City code of Ordinance. Required permits for new connections and/or abandonment of existing connections are available through the Street Opening Clerk at the Department of Public Works. Rules and Regulations for these utility systems are available through the City Engineer's office of the Department of Public Works and in Section II of the Technical Manual. This will apply to the new connections within North Street.

3. Traffic Control Plans

Construction activity that impacts the existing public street system must be controlled to protect the safety of the construction workers and all modes of the traveling public. The contractor shall submit a satisfactory "Maintenance of Traffic" (MOT) plan prior to any street opening permit approval. This document shall contain all pertinent information from the Maine Department of Transportation's Traffic Control Plan Standard Specification 652.3.3.

The MOT will address the work required for utility connections in North Street. Traffic will be channelized utilizing drums and cones. Proper signage will be installed prior to the through work zone. Alternating traffic will be controlled with flaggers. Trenches will be patched with pavement daily.

The MOT plan shall provide for the safe passage of the public through or along the construction work zone. It may be permissible to close a portion of North Street during utility connections and/or detour a mode of traffic when absolutely necessary for safety. All requests shall be subject to City approval. MOT plans shall employ the appropriate techniques and devices as called for in the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). In addition:

- Construction speed signing may be used as needed to slow traffic.
- Traffic Control signs shall not be placed where they would create any obstructions to bicycles or pedestrians.
- Flaggers will be utilized when necessary.

All existing modes of travel in the work zone area shall be accommodated if impacted by the activity. The safe passage of pedestrians, bicyclists, transit providers, and motorists are of equal importance when planning and laying out the work zone; no pre-existing travel mode may be eliminated without the express approval of the Department of Public Works. The MOT should also address on-street parking impacts, including deliveries and parking for adjoining businesses and property owners, analysis of



roadway capacity or diversion capacity if street closure or change to roadway capacity is required, and coordination with other on-going or future construction or utility projects in the vicinity.

- Traffic control bicycle and pedestrian facilities or routes through work zones shall be maintained until the bicycle and pedestrian facilities or routes are ready for safe operation. Traffic control will not be removed to allow auto travel at the expense of bicycle and pedestrians.
- Barrier systems utilized to separate the construction activity from the public street and /or sidewalk shall not inhibit sight distances, particularly for visibility of pedestrians and bicyclists.
- ADA compliance in all capacities shall be maintained.

The blockage of any portion of sidewalk for the purpose of construction activity shall require an occupancy permit and appropriate fee as assessed by the Department of Public Works.

H. Site Management and Controls

1. Regular trash and debris shall be managed appropriately and its removal shall comply with all local, state, and federal regulations.
2. Street cleaning and sweeping shall be followed as outlined in the erosion and sedimentation control notes and report. Damage to the street shall be avoided and shall be the responsibility of the contractor.
3. Dust shall be controlled and shall comply with Section 25-129 and the erosion and sedimentation control notes, plan, and details.
4. Noise shall be controlled and shall comply with Section 17-18 and Section 25-129.
5. Rodent Control shall be provided, if applicable, by a professional exterminator and shall be consistent with Chapter 22 of the City Code.
6. Snow and Ice Removal shall be provided. Pursuant to Section 25-173, the Contractor shall ensure a safe means of travel within the work zone by the following steps:
 - a. Snow/ice removal or commence automatically from 1" or greater of snow or ice
 - b. Remove snow as needed within the work zone, including parking spaces. Driveways and site lines shall not be blocked by piles of snow.
 - c. Clear all walks and ramps within the work zone
 - d. Sand or salt as needed
 - e. Clear all basin or drainage to help snow melt
 - f. The above steps shall be carried out Sunday-Saturday including holidays.

I. Erosion & Sedimentation Control

1. The Contractor shall install all erosion and sedimentation controls as depicted on the approved Construction Management Plan, C-03, and the approved erosion and sedimentation control report, prior to the pre-construction meeting for inspection by the City. The Contractor shall regularly inspect the control measures, no less than weekly



and after storm events (0.5" or more in 24 hours). Additionally, temporary or permanent stormwater management systems shall be inspected and maintained to ensure working order. The Contractor shall document all inspection activities and corrective actions and be prepared to provide these documents for inspection by the City, Maine Department of Environmental Protection (MDEP) or the U.S. Environmental Protection Agency (EPA) upon request.

2. Due to the existing sparse landscaping on site, no protection during construction will be necessary.
3. Stored materials shall be identified and avoid being located under/near trees.

J. Construction Staging Area

1. The Contractor shall submit a plan with locations depicted for the location of material staging areas, the location of on-site temporary construction trailers, the location of on-site truck delivery holding areas, the location of on-site truck washing stations, masonry mixing stations, the general location of the construction security fence and the general location of temporary construction dumpsters. This plan shall be submitted at or prior to the pre-construction meeting. Any open storage areas shall be shown on the plan.
2. Delivery Truck Holding Areas On-Site: The majority of materials delivered to the site will be scheduled such that they are able to be off-loaded immediately. On days when the construction activities require multiple truck deliveries, these deliveries will be carefully scheduled so that there is always adequate on-site area for the holding of trucks until they can be unloaded. Once at the site all vehicles will be brought within the fence line and will make every attempt to avoid queuing on public streets. If, for any reason, on-site holding of trucks is not feasible, an off-site location must be designated and shown on the submitted plan referenced above in J.1.
3. All deliveries for materials shall comply with the City's noise requirements.

K. Parking During Construction

1. Adequate parking for construction workers shall be provided along North Street or arrangements for off-street parking at an off-site location shall be provided.
2. Truck Routes and Volumes: The following quantities are estimated as part of the reconstruction:
 - Gravel & Stone – 350 CY. Earthwork subcontractor(s) pit to project site.
 - Hot Mix Asphalt – 115 tons. Paving subcontractor(s) pit to project site.

L. Special Measures as Necessary

No special measures are necessary for the proposed reconstruction.

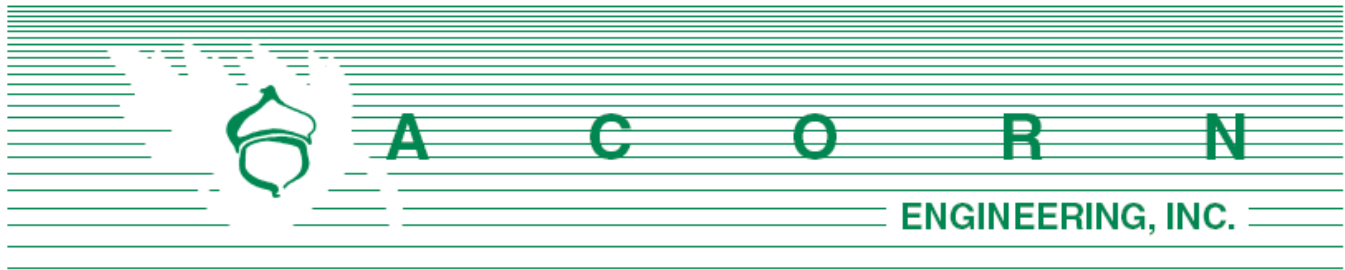


R. Solid Waste Disposal

The property management company or Owner shall be responsible for locating the solid waste and recyclable material to the space allocated for solid waste storage determined by the Property Manager.

The solid waste containers will be fully enclosed and screened from the public view on both properties.





S. Parking Analysis

The proposed project at 128R North Street proposes to utilize the existing shared driveway, build 6 condominium units, and provide one open air parking space per unit on the ground level of the structure. This proposal accomplishes a public policy goal of the City in that the proposed driveway will allow off-street parking for the new development as well as existing neighboring properties.

The 6 parking spaces exceed the required 3 by more than 10%. We see off street parking as an advantage for the neighborhood which is experiencing an increase in development activity. The industry standard for condominium units is to provide a 1:1 ratio for parking, which is a common occurrence in the R-6. This project proposes a 1:1 ratio of spaces to units which will free up space on North Street and the surrounding street network for others to park on-street.

The proposed project at 126 North Street proposes to reutilize the existing driveway, build 6 rental units, and provide two surface parking spaces on the ground level which meets the City of Portland Land Use requirements. Furthermore, the tandem parking approach is “strongly preferred” within the Munjoy Hill Conservation Overlay District by the City of Portland.

Overall, 8 parking spaces will be provided for the 12 units. Of the 8 proposed parking spaces, 6 spaces will be constructed as part of the Phase 1 condominium (6 units) portion of the project at 128R. In Phase II, during the construction of the Phase 2 rental (6 units) portion of the project, 2 parking spaces will be constructed.



December 23, 2019

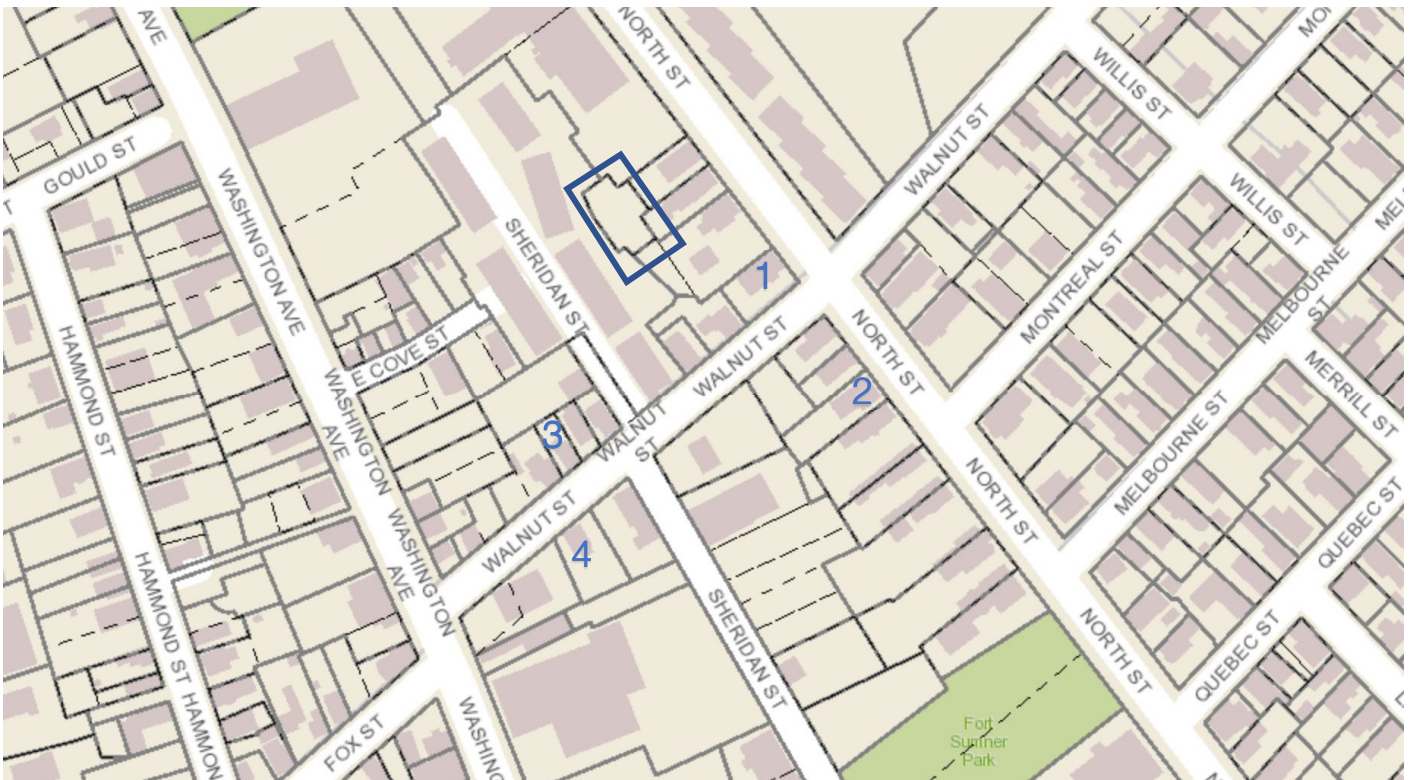
Re: Side setback 128R North Street

Buildings in the vicinity of 126 and 128R North Street feature side setbacks that predominantly are shifted towards one side. The proposed building at 128R North features a setback that is 8.56' on one side and 12.13' on the opposite side providing the required 20'-0" cumulative setback required.

The pattern supports vehicular traffic and off-street parking, which our projects do as well. The wider setback was also positioned in our project to provide a larger buffer to the single-family houses on the South side of our project.

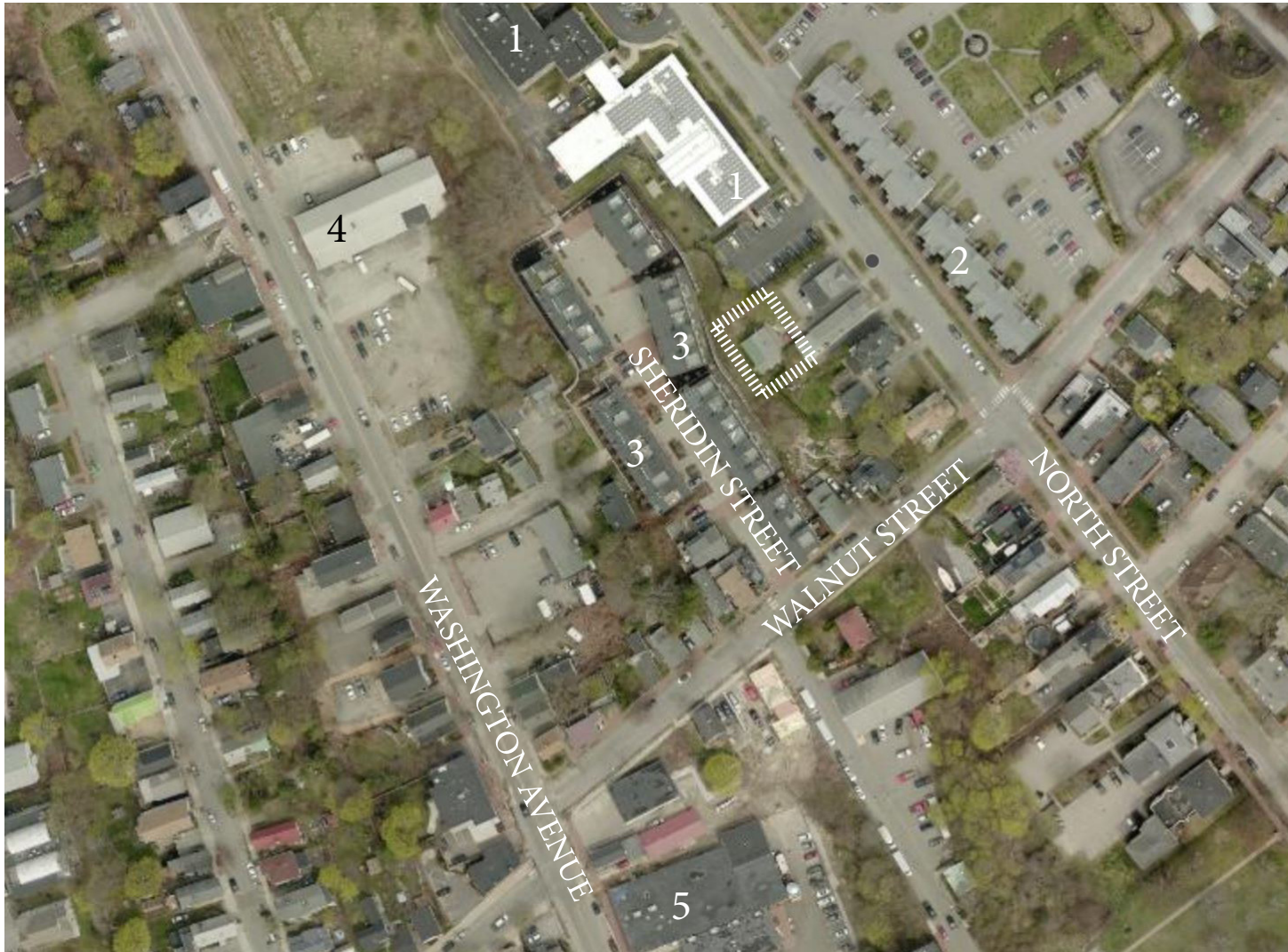
Neighborhood examples of this development pattern include:

- 1) 116 North Street: approximate 5'-0" setback on one side and 15'-0"* on the opposite (facing Walnut Street).
- 2) 104 North Street: approximately 4'-6" setback on one side and 12'-0" on the opposite
- 3) 91 Walnut Street: approximately 3'-0" setback on one side and 9'-0" on the opposite
- 4) 94 Walnut Street: approximately 13'-0" setback on one side and 17'-0" on the opposite



City of Portland GIS Map of Neighborhood (128R North is outlined in blue)

*Setbacks are estimated using the 'measuring tape' tool in the Portland GIS database with satellite image and parcel boundaries as underlays. For visual clarity the satellite image was not used on the map above.



- 1: Bayview Heights (60 units)
- 2: Island View Apartments (70 units)
- 3: Munjoy Heights (29 units)
- 4: Northern Burner Supply
- 5: Forage Market

North Street represents the high point on Munjoy Hill. Sheridan Street, below is approximately 30'-0" lower than North Street. Washington Avenue is approximately 50'-0" lower than North Street. As a result even the upper section of Munjoy Heights is not visible from Washington Avenue.

The only vantages the site is visible from are from the Bayview Heights parking lot to the North of the site and the end of the driveway leading to the rear lot. A row of mature pine trees acts as a buffer between the site and Bayview Heights parking lot.

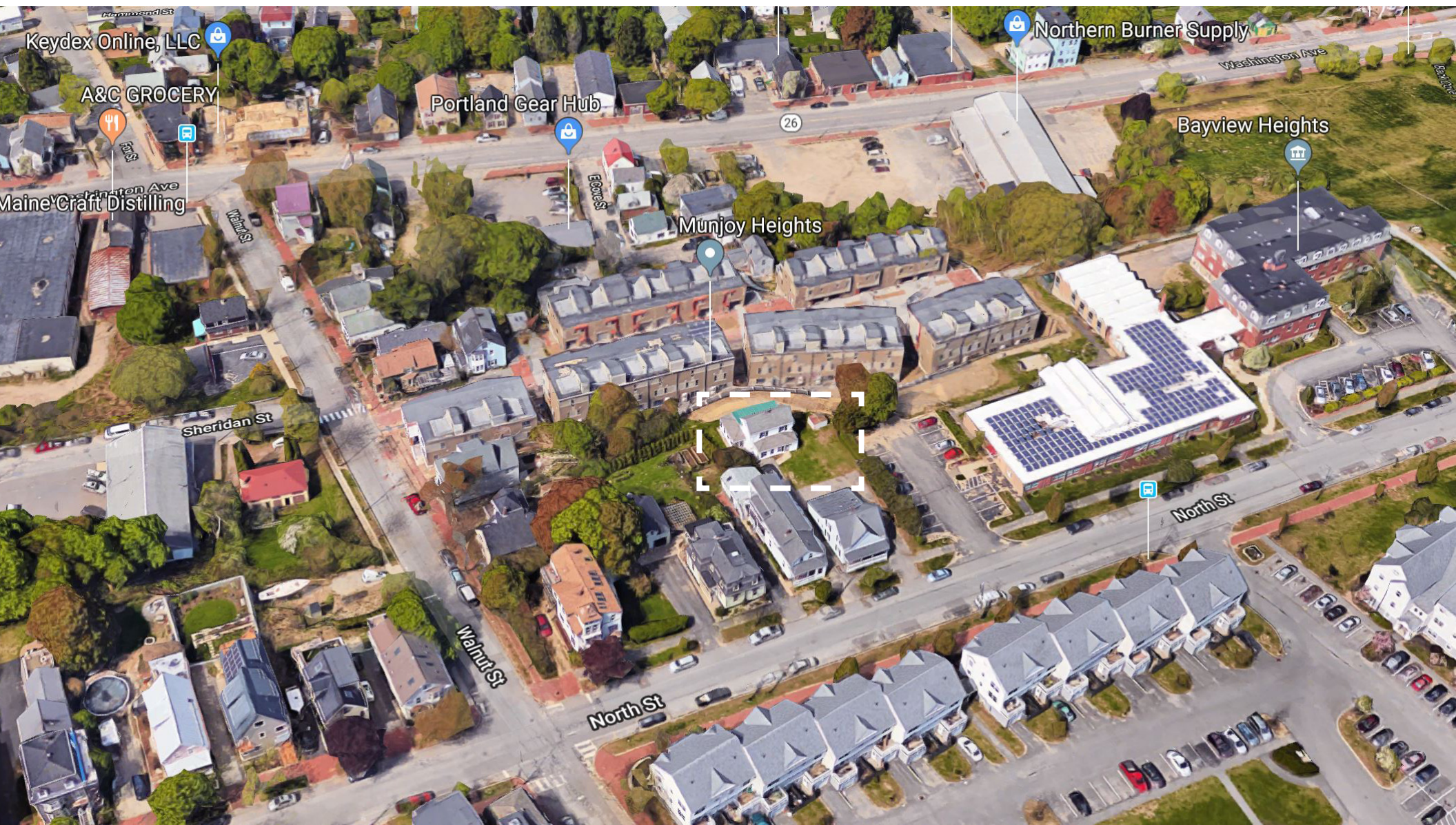
128R North Street

is a rear lot immediately adjacent to Bayview Heights senior apartments and across the street from the Island View Apartment complex. To the West the parcel is bounded by Munjoy Heights Condominium project.

The unique topography of the surrounding area, with steep elevation change means the proposed four-story, six-unit building will only be visible from across the Bayview Heights parking lot, as viewed through a mature row of Pine Trees and at the driveway entrance to the site, viewed at a distance of 100'-0".

The project will house six condominiums and six parking spaces. The building includes a first floor workforce housing unit. All units will be FHA compliant. The owner-occupied building has several pre-buyers (long-time friends) and Munjoy Hill residents who are looking forward to calling this building home.

No rooftop decks are proposed and none of the roof-mounted condensers are visible from the street.



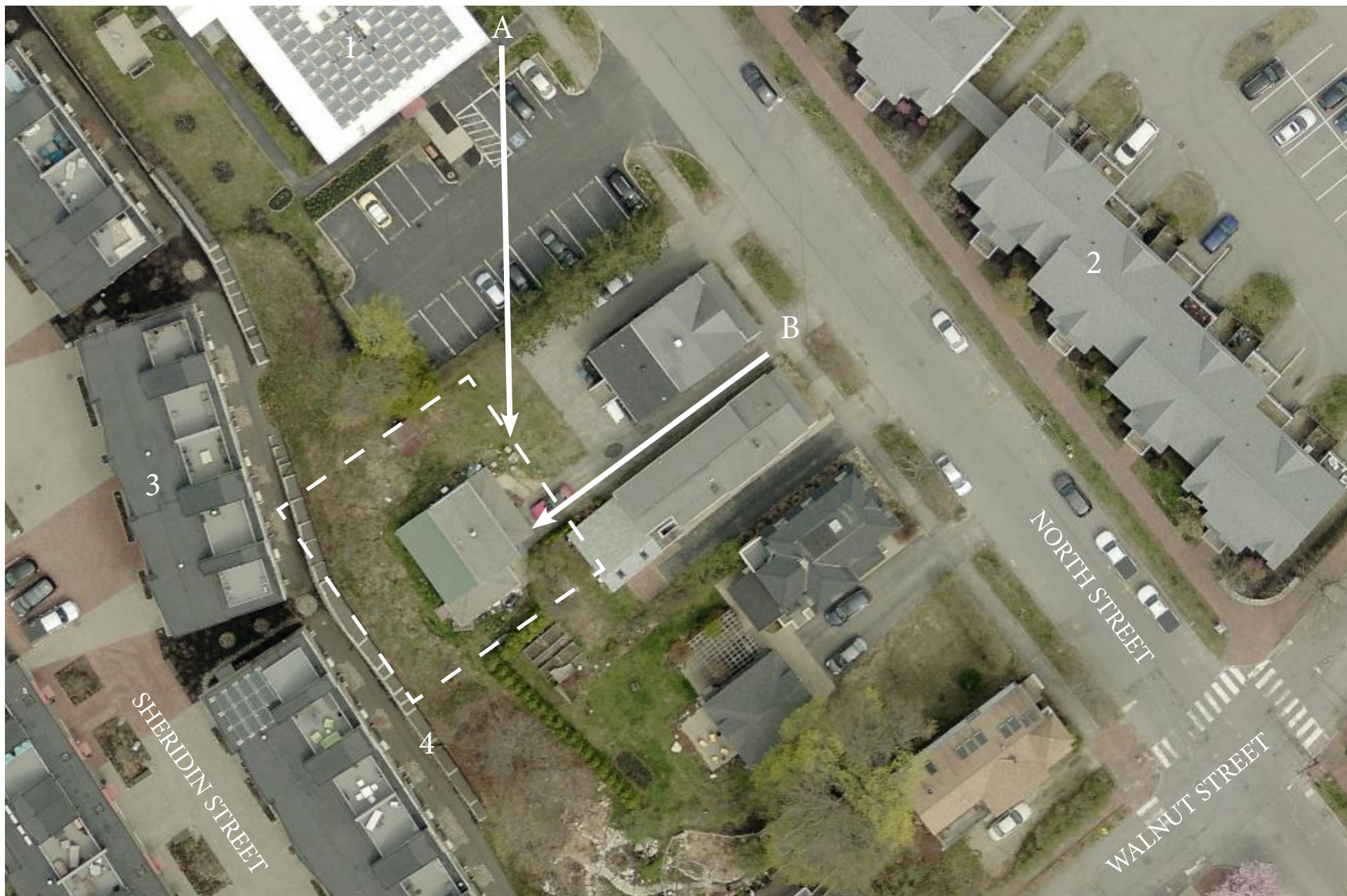
Bird's eye view of site looking towards Back Cove. Bayview Heights at right, Island View Apartments at bottom and Munjoy Heights at center.



Bird's eye view of site looking towards Falmouth. Munjoy Heights at Center, Bayview Heights at top and Island Avenue at top right.



Bird's eye view of site with Washington Avenue at bottom, Bayview Heights at top left, Island View Apartments at top center and Munjoy Heights at center.



A: Rendering location at sidewalk
B: Rendering location at driveway

- 1: Bayview Heights (60 units)
- 2: Island View Apartments (70 units)
- 3: Munjoy Heights (29 units)
- 4: Retaining Wall



126 North Street (left) also owned by applicant driveway at center to be utilized for accessing rear lot. Existing two-story building on rear parcel (128R North). 128 North at right.



Rendering Location B: 128R North parcel as viewed from existing/proposed driveway



Rendering Location A: sidewalk adjacent to Bayview Heights senior housing parking lot. Note existing Pine Tree buffer is not on applicants parcel.



128R North Street as viewed from within parking lot at Bayview Terrace. Note Munjoy Heights extending above the retaining wall past the smoking area at right.



Munjoy Heights as viewed from parcel



A section of Island View Apartments across the street. The complex has a mixture of single and mulled windows and is clad in clapboard-style lap siding. Parts of the complex are three stories high and some sections are four stories.



Bayview Heights Apartments, immediately adjacent to the site, features buildings that are four-stories high with a mansard roof and a one-story section adjacent to the parcel with a flat roof.



Two houses on the corner of North Street and Walnut showing the character of the neighborhood. The fascia and frieze board of the house, at right, inspired the design of our project.





The window trim, corner board, frieze and eave detail of the house on North Street (at left) were utilized as sources that inspired the trim details on our project. At right, the triple-decker on Walnut Street has a broad eave, flat roof and corner boards similar to that utilized in our project.



A three-story building with small punched openings on North Street and triple-decker with lap siding and flat roof, also along North Street.



Two adjacent buildings on Walnut Street, a triple decker with flat roof and clapboard lap siding and a two-story building with gable roof.



Elevated flat-roofed building at left and Munjoy Heights complex as seen from Walnut Street on right.



Munjoy Heights at Right at Sheridan Street entrance illustrating steep grade change



Munjoy Heights which borders the site to the West



New flat-roofed four-story building along Washington Avenue (at right) and new three story building along Walnut Street.

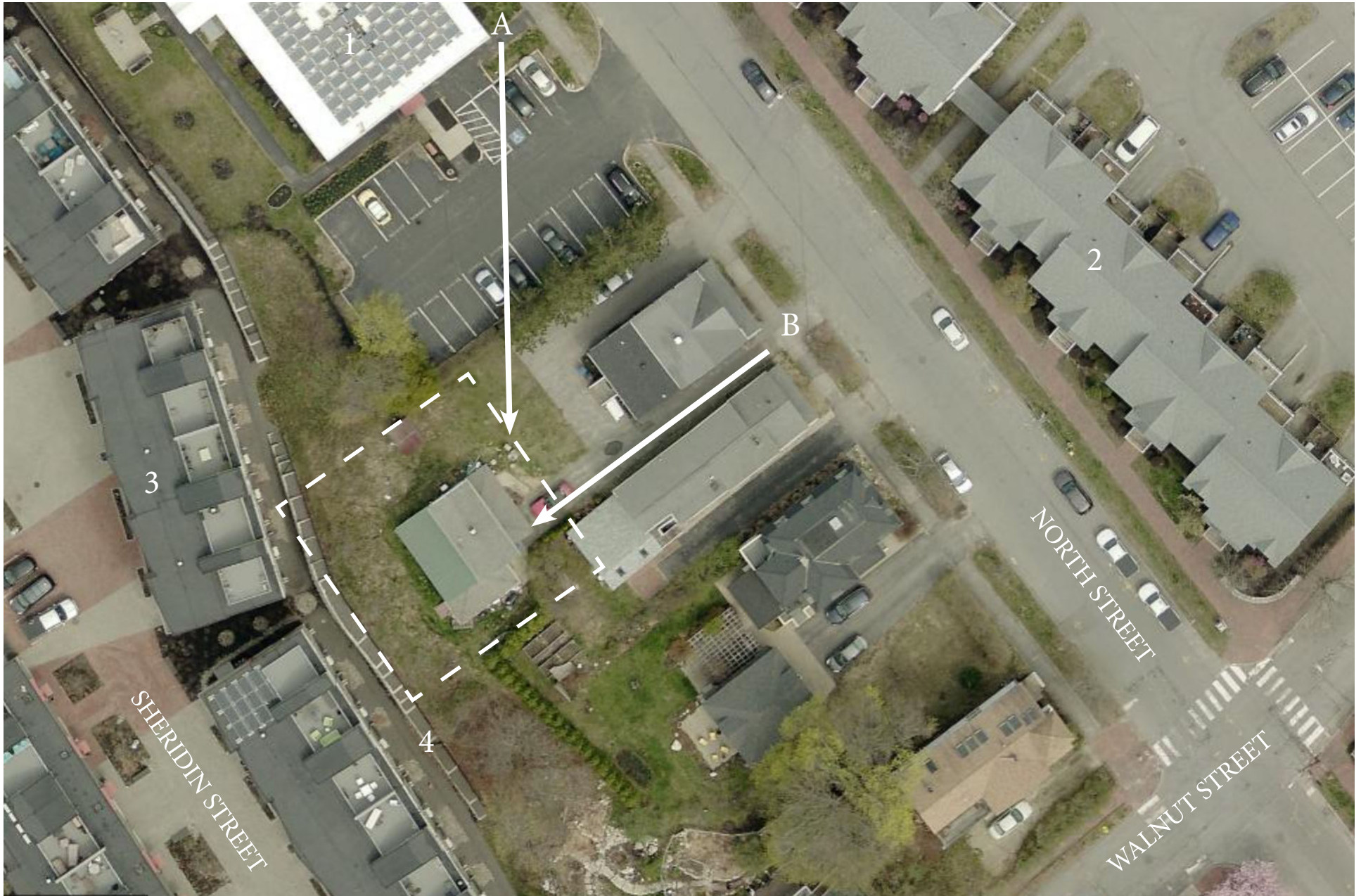


Looking towards site from corner of Walnut and North Street.



Looking up towards Munjoy Heights from Washington Avenue near the Northern Burner Supply parking lot. Houses along North Street are not visible due to the elevation change.

[Intentionally blank]



A: Rendering location at sidewalk
B: Rendering location at driveway

1: Bayview Heights (60 units)
2: Island View Apartments (70 units)
3: Munjoy Heights (29 units)
4: Retaining Wall













Dear Neighbor:

September 7, 2019

On behalf of Upright Properties LLC and the families who will live in the residences, I am pleased to invite you to a neighborhood meeting to discuss our plans for the proposed project at 128R North Street within the R-6 zoning (Munjoy Hill Overlay) district. The project includes the redevelopment of this rear lot into a 4-story residential building. As this is primarily a project to provide housing for 5 known households, the Developer has elected to only build 6 units, instead of the allowable 8. Moreover, 90% of the building will be substantially shorter than the allowable maximum height and over 40% of the site will be dedicated to greenspace and gardens. A ground-level parking garage will allow for one parking space per unit with additional storage space for bicycle parking. Because the site sits about 100 feet from the street, the building will have a minimal impact on the streetscape but the entrance will be re-built, improving the sidewalk to City standards.

Meeting Location: The Root Cellar – 94 Washington Ave., Portland, ME 04101
Meeting Date: Wednesday, September 18, 2019
Meeting Time: 5:30 p.m.

The 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. A sign-in sheet will be circulated and minutes of the meeting will be taken. Both the sign-in sheet and minutes will be submitted to the Planning Board. If you have any questions regarding the neighborhood meeting, please don’t hesitate to call me at 207-749-9656.

Sincerely,
Joshua Wojcik
Project Builder and (Future Resident of 128R North St)



Planning Division
City of Portland, Maine
389 Congress Street, 4th Floor
Portland, ME 04101

September 20, 2019

Subject: 128R North Street Neighborhood Meeting

I, Tracie Reed, hereby certify that a neighborhood meeting was held on September 18, 2019 at the Root Cellar at 5:30 p.m.

I also certify that on Friday, September 6th invitations were mailed to the following:

1. All addresses on the mailing list provided by the Planning Division which includes property owners within 500 feet of the proposed development.
2. Residents on the "interested parties" list.
3. A digital copy of the notice was also provided to the Planning Division (jmy@portlandmaine.gov and ldobson@portlandmaine.gov) and the assigned planner to be forwarded to those on the interested citizen list who receive e-mail notices.

Sincerely,

A handwritten signature in black ink that reads "Tracie J. Reed". The signature is fluid and cursive, with the first name "Tracie" being more prominent than the last name "Reed".

Tracie J. Reed, Maine Licensed Architect, NCARB
Project Architect
Dextrous Creative, LLC

Attached to this certification are:

1. Copy of the invitation sent
2. Sign-in sheet
3. Meeting minutes
4. Presentation materials

**128R North Street
Neighborhood Meeting Minutes**

Date: September 18, 2019

Time: 5:30-8:15 p.m.

Location: Root Cellar

Attachments: Presentation materials and attendance sign-in sheet

The Meeting started at approximately 5:35 p.m.

Applicant Josh Wojcik of Upright Properties welcomed neighbors and introduced his family and project architect, Tracie Reed. Josh provided an overview of the project for neighbors, introducing them to pre-sale buyers, a history of the site and project goals of pooling the family's resources together to develop an energy-efficient building in the neighborhood the applicants currently reside.

The presentation was frequently interrupted by neighbors who posed a variety of questions, expressed concerns about the specific project and general land use policies in the neighborhood.

-A neighbor on North Street expressed uncertainty with the boundary of the proposed historic preservation district and its implication on the project review.

-Neighbors asked for details regarding membership of the LLC which owns and will develop the property. Josh clarified that the LLC only owns 128R North Street. He declined to provide specific details as to the owners out of respect for their privacy. The LLC will build the properties, the five friends are pre-sale buyers who are prequalified to purchase the units. Architect Tracie Reed explained to neighbors that the planning board applicants are required to demonstrate financial capacity as part of their application.

-Neighbors expressed concerns the group may not be able to complete the project financially if unexpected expenses occur such as damage to the retaining wall during construction. Architect Tracie Reed explained that the project's design team included the geotechnical, civil and structural engineers who designed the wall. If the wall is damaged during excavation or construction the wall will be repaired. Reed explained that the city has a list of pre-qualified excavators who are able to do work in the city. The team has conducted geotechnical borings and analyzed bearing on the wall as part of the project's feasibility. Josh explained that the project budget includes contingency funds. Without them the bank would not have offered terms.

-Numerous participants expressed concerns over the height of the building. Several Munjoy Hill residents are concerned about views from their roof decks and kitchen windows. They expressed concerns that units may sell and the pre-sale buyers introduced may eventually move, leaving neighbors they may not like. Josh and Tracie explained that due to the recently passed Munjoy Hill Overlay the side setback is increased by 10'-0" overall which allows the fourth floor, and that the building includes a work force unit as required by the new regulations. The 13'-0" elevator overrun is the only section of the building that reaches the 45'-0" maximum in the zone.

-A North Street neighbor expressed disapproval that the existing building was being demolished. She recommended that the applicant instead renovate the front of 126 North St, a building owned by Wojcik, without altering the exterior and build a two-unit on the rear site. The neighbor also noted that she felt the building is too big for the site, that it is out of proportion with neighboring buildings and should be smaller with outside parking similar to that of other Munjoy Hill residents. She questioned whether the building received special variances due to being a rear lot to which the applicant clarified it still met and was required to meet all the requirements of front lots in the overlay including the 50% active

**128R North Street
Neighborhood Meeting Minutes**

living space requirement added last year by the overlay language. Tracie clarified that if the building had surface parking it would be required to be at the back of the building facing Munjoy Heights and would be difficult to screen due to easement restrictions. Neighbors from Munjoy Heights expressed that they do not want to look out the rear of their building at parked cars.

-Several participants suggested the applicant consider underground parking so the building would appear to be three stories from the street.

-Josh clarified that a decorative screen to support climbing vegetation at the rear of the building is intended to screen vehicles parked under the building from Munjoy Heights. Josh showed a possible concept for screening the garage level and several of the participants from Munjoy Heights noted the screening improved the concept. Tracie clarified that the 10'-0" maintenance easement existing between Munjoy Heights and the property prohibits any structures or plantings like shrubs or trees with roots that may damage the retaining wall's integrity.

-Several neighbors were concerned that shrubs on the property will be removed as part of construction and are highly valued by Munjoy Heights residents who overlook that section of the property. Other neighbors pointed out that pointed out that most of the larger trees behind Munjoy Heights would not be impacted by the project, since the rear of the property is currently mostly clear of trees. Tracie explained that the project would be planting new trees as required by the city, and that our vegetation plan would be reviewed by the city's horticulturist as part of our application. She reminded residents that restrictions by the neighbors own easement prohibits many plant types in the rearmost 10'-0" of the property to protect the structural integrity of their retaining wall. Neighbors asked for a current satellite image of the site that would clearly delineate which shrubs would be removed. The satellite image underlay shows the Munjoy Heights complex nearing the end of construction and seeding has not occurred at this time. Josh reminded neighbors that any plants installed after construction would be quite young and should not be within the easement.

-Neighbors inquired about lot coverage. Josh explained that coverage is 57% leaving 43% open space, more than the 20% requirement in the zone.

-Some neighbors expressed disappointment that the application was not for a two-story home. Many had made the assumption when they first heard about the project that it was going to be a single-family residence and only realized the property was a six-family after receiving the postcard. Josh stated that he met with or repeatedly tried to schedule meetings with all adjacent individual homeowners and the Munjoy Heights Condo Association. Some neighbors declined the opportunity and some in Munjoy Heights neighbors were unable to attend the organized site walk with their Association. A neighbor clarified that, after receiving the demolition notification letter, he had called Josh and that Josh had been clear that the project was going to be possibly be a 5 or 6-unit building.

-Neighbors asked where trash would be stored. Josh clarified that it would be under the building and screened from view.

-Adjacent neighbors on North Street are concerned about windows overlooking their yard and asked how many in the stair/elevator tower would face their property. Josh explained that no windows in the stair tower face their yard and asked if they wanted any to face their yard. Their response was "no." Munjoy Heights residents expressed concerns over residents of the condo being able to look at their roof decks. Munjoy Heights neighbors expressed concern over not wanting to view a solar array if one was added in the future from their roof decks or property. Tracie explained that

**128R North Street
Neighborhood Meeting Minutes**

they would not be able to see them from their buildings due to their proximity and OSHA requirements that the panels be located 10'-0" from the roof edge (to avoid fall protection screening) if added at a future date.

-Munjoy Heights residents were interested in a comparison to the height of their roof decks relative to the building. Josh clarified that the roof decks of the Munjoy Heights complex will be approximately at the second-floor level of the proposed project. It was also explained that their buildings ground floor is 30 feet lower, due to the sloping topography.

-Residents challenged the architect's assertion that the building is minimally visible, if at all, from the corner of Walnut and North Street and not visible from Washington Avenue due to the long distances and elevation changes. She did note that it is likely visible from some points in Bayside or driving along I-295. She clarified that photos taken from Washington Avenue illustrated that the second tier of Munjoy Heights is not even visible and the photo was included in the planning packet. A photo of the Walnut Street intersection was also included.

-A new resident of Portland and Munjoy Heights was upset that a rear infill project of the scale is being proposed and asked the applicant to provide examples of this in the city. The architect said she had done a three-story, single-family home on a rear lot in the zone. Josh suggested that although he wasn't certain, Munjoy Heights was possibly the most recent infill project that was mostly sited in the rear of other properties. The Munjoy Heights neighbors did not agree that this was comparable.

-Several Munjoy Heights residents expressed concern that the building would completely shade their units and block sunlight. Other neighbor participants noted that minimal shading should occur based on the sun's path.

-Neighbors recognized that the meeting was emotional for all with Josh and his family excited about their project and neighbors concerned about changes to their neighborhood.

-Josh thanked everyone for taking the time to attend the meeting and for their feedback. He apologized for any confusion about the number of units.

Meeting concluded at approximately 8:15 pm.

The above-mentioned material was as interpreted and recorded from handwritten notes. Please note and relay any discrepancies or disputed information in the recorded minutes to the below address so that they can be reviewed, revised, and resubmitted as necessary.

Recorded by:



Tracie J. Reed, Maine Licensed Architect, NCARB
Project Architect
Dextrous Creative
traciereed@dextrouscreative.com

128 R North Street

Neighborhood Meeting
September 18, 2019

Name	Organization	Address	Phone	Email
Terry Robins	Murphy Heights	206 Sheridan	424-333-5443	trobins2023@gmail.com
Kevin Schoch	"	215 "	917.587.4154	kevin@kevin.schoch.com
Leslie Hart	"	215 Sheridan	917 364 3682	blesliehart@gmail.com
Peter Back	"	199 SHERRIDAN	207-318-0792	petrobac1@gmail.com
Martha Emerson		340 E.P.	207-871-8900	
Munira Dargui	"	203 Sheridan	207-838-1267	mo - -
Africa Bae	"	199 Sheridan	207.253.5156	PTBAC@SMITH.COM
A-NAELI	"	203 Sheridan St.	207-838-8740	SMITH.COM
Yama Cannon		105 North	207 420-6962	vanacannon@gmail.com
Bethy Forber	Murphy Heights	225 Sheridan		bettyforber@gmail.com
Bud Pollak	Murphy Heights	225 Sheridan	203-984-1833	BPollak64@yahoo.com
Paul Marino	Truro H.	226		marino OY102@yahoo.com
Peter A. Davis	Murphy Hts	201		PDavis@murphy-hts.com
Michael Kennedy	"	201	917-940-2509	Michael.Kennedy@buckin.com
Anna		22 North		lindsaymearns@buckin.com

Save
Page
Fredman MPM
47 Lafayette #2
207-233 5858
St Medman
@mpm.com
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@mpm.com
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207-233 5858
St Medman
@mpm.com

128R

128R North Street

Once upon a time

there was a group of friends who wanted to figure out a way to live an affordable life on Munjoy Hill.



Some had known
each other for
decades.



Others were
more recent
additions.



Munjoy Hill had gotten so expensive

that this group quickly realized the only way to make their dream work was to pool their resources. By doing so, they could create a home together that would be enjoyable and that would have minimal, **predictable** operating costs.

This second part is especially important to those in the group who are on a **fixed income.**

To Buy or Build?

Buy

Accomplishing **Net Zero** with a large existing structure would be **prohibitively expensive**.

Build

Super Insulated Building
+ Energy Efficient Heating and Cooling
+ Space on Roof for PVs
= **Net Zero Capable Building**

Some place a high value on the aesthetic flourishes of the Victorian style;
This group highly values **energy efficiency** and a **small carbon footprint**.



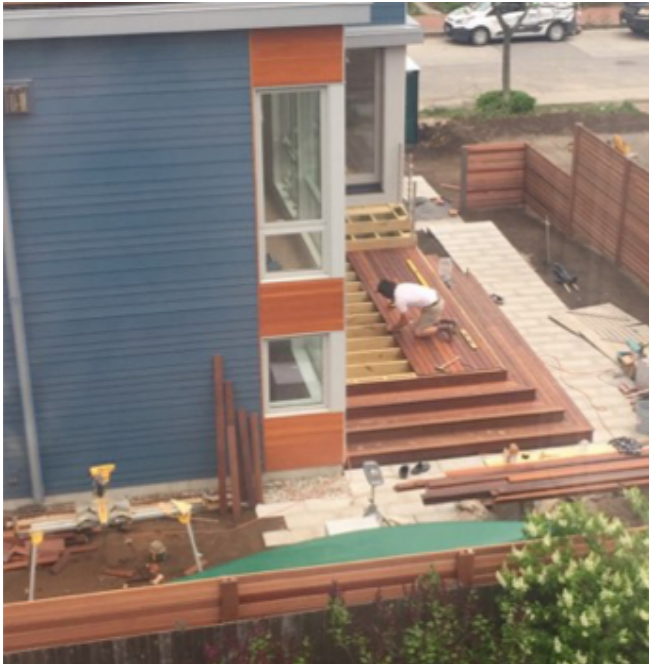
So they found

a property that was on the edge of the neighborhood, away from the proposed historic district, and which was set back far enough from the street that their building would be quite hard to see from most vantage points.



They were aware

that many in the neighborhood were tired of deep-pocketed developers changing the neighborhood and causing a racket.



And, having lived through the construction of such projects in their own back yards, they understood these concerns only too well...

And they came up with a design that fits them all, which is actually shorter than many of the existing homes on the street.



And given how far from the street it will sit, their new space will appear smaller than most of the buildings on North Street.

We hope you like it!





The Design

pulls inspiration
from the
surrounding
buildings in the
neighborhood.

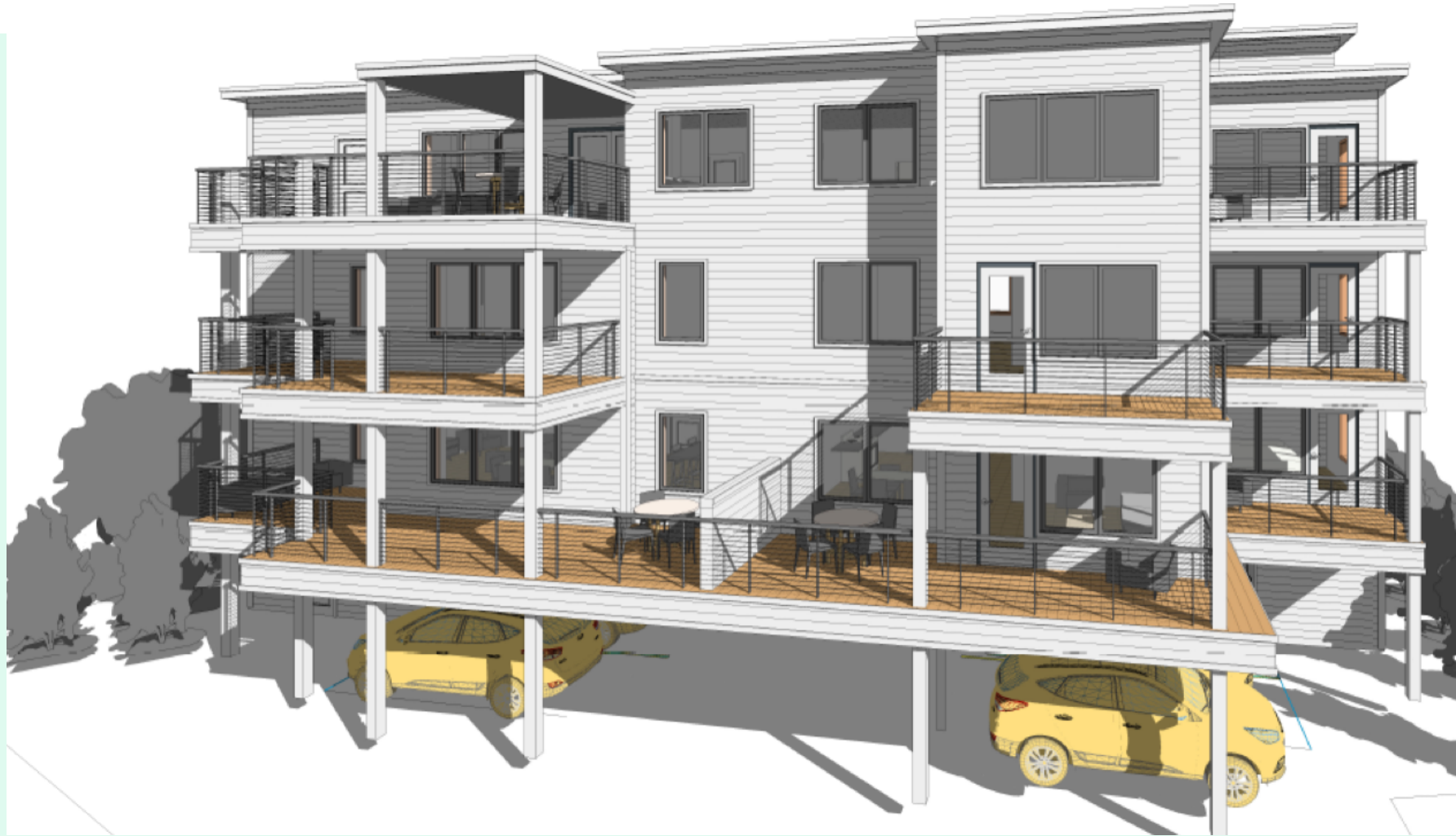


The Design

features street-facing decks, which will help keep eyes on the street.

The Design

features on-site parking for each unit to help minimize congestion on the streets.



We are working with the City
to determine the most appropriate color scheme.

1



2



But dark colors tend
to make buildings look smaller.



White clapboards are prevalent
in the neighborhood.

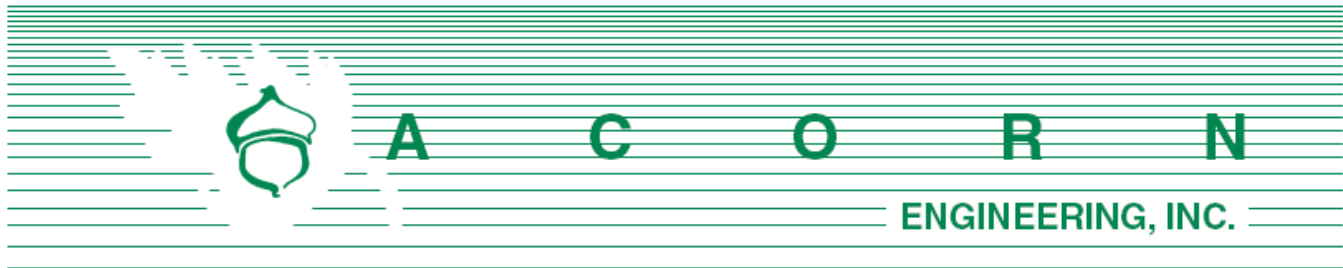




We think both look attractive,
but we appreciate your input, too.

This is the only perspective
from which you can see most of the building from the street.





Shukria Wiar – City Planner
Planning Division, City of Portland
389 Congress Street
Portland, ME 04101

December 18, 2019

Subject: Comment Response Letter
126/128R North Street Redevelopment – Portland, Maine

On behalf of Upright Properties, LLC we are pleased to respond to the comments that we've received thus far.

Shukria Wiar, Planning Comments

Comment – *The applicant will need to submit a copy of the actual easements for the ones below to establish what restrictions (if any) as it impacts scope for site plan standards to be addressed:*

- *Permanent right-of-way with 128F North Street (includes the rights to use the corridor for utilities). Reference CCRD Bk 1143, Pg 307.*
- *Permanent retaining wall maintenance easement with Munjoy Heights. Reference CCRD Bk 32237, Page 104.*

Response – Please refer to Document C for this information.

Comment – *Evidence of utilities' capacity to serve the development.*

Response – Please refer to Document P for this information which includes the updated ability to serve letter from Portland Water District.

Comment – *Manufacturer's verification that HVAC and manufacturing equipment meets applicable state and federal emissions requirements - Show locations of HVAC and mechanical equipment.*

Response – The architect will provide this information once a model is selected. The selected model will comply with the applicable state and federal emissions requirements.

Comment – *Is the project utilizing heat pumps, and if so, where will you be locating the compressors?*

Response – Yes, the project will utilize heat pumps for the 128R building at a minimum. The compressors will be located on the roof (set back from the street towards the middle of the building) and under the rear decks.

Comment – *Provide cut sheets and photometric plan for all proposed exterior lights.*

Response – Please refer to Document N for this information that was included with the updated Site Plan submission.

Comment – *Minimum Side Yard Setback (8.59 on the easterly side of the property). Please document how it is being met: Buildings more than 35': 10' for all side yards, except that a side yard no less than 5' is permitted when used to continue a documented built pattern of the surrounding streetscape, in which case a proportional increase in another side yard must be provided.*

Response – The cumulative side setbacks are a minimum of 20' as required. One side setback is less than 10' due to the documented built pattern of the neighborhood. Please refer to the revised Document T. for further analysis.

Comment – *Condo Docs need to be submitted.*

Response – Because the condo docs are partially contingent on how the project progresses through the first workshop, the draft condo docs are anticipated to be submitted prior to the Final Hearing.

Chief Mike Thompson, Fire Department Comments/Recommendations

Comment – *A sixteen-foot (16") access road, capable of supporting fire apparatus, shall be required to provide emergency vehicle access to this building (See additional comment added 11/27/2019)*

Response – A sixteen-foot (16') access road, capable of supporting fire apparatus has been provided within the revised plan set.

Comment – *The Fire Department approves the site plan as shown in: Site Plan.pdf V3*

Response – Thank you for your review and approval.

Victoria Violent, Housing Program Manager

Comment – *It appears that both buildings will be greater than the maximum allowable height of 35', subsequently both buildings trigger Section 14-140.5 (c) Munjoy Hill Neighborhood Conservation District maximum height dimensional standards.*

Response – The proposed 126 North St. property is below the 35' height threshold. Please refer to sheet C-30 for these calculations which show the building height at 33.3'.

Comment – *Based on the floor plans provided for 128 R North, the workforce unit meets the requirements of Section 14-140.5 (c).*

Response – Thank you for your review.

Comment – *Has the applicant submitted floor plans for Phase II (126 North Street)? As a separate building, 126 North also needs to meet the requirements of Section 14-140.5 (c).*



Response – The 126 North Street building is not anticipated to provide a workforce unit given its height is below the 35' threshold and the unit count is less than 10'.

Mike Tremblay, DPW

Comment – *The driveway serving 126 North Street is unacceptably narrow in the vicinity of the parking spaces. There is only 14 feet of maneuvering room behind the parking spaces, which would likely require multiple maneuvers to enter and exit. The Applicant should explore providing access to these parking spaces via the driveway serving 128 North Street; turning this driveway into a shared driveway and allowing 16+ feet of maneuvering space for vehicles. This would allow the driveway serving 126 North Street to be closed, which is desirable. It may also allow additional options for the design of 126 North Street, including (but not necessarily limited to) shifting the building eastward, allowing for a wider shared driveway.*

Response – Please refer to the attached AutoTurn analyses. Because of the extra width provided for the parking spaces, the drive aisle is sufficient for the typical architectural design vehicle to cleanly pull in and out without the need for multi-point turns.

Comment – *While closure of the 126 North Street driveway is not required, as it exists today, the spacing between the 126 North Street and 128 North Street driveways are not optimal. As there is not enough separation to achieve a legal parking space, since parking is restricted within 5 feet of any driveway. Closure of the 126 North Street driveway could, therefore, add two additional legal on-street parking spaces.*

Response – The project as designed maintains the typical built pattern and rhythm along North Street of driveway, structure, driveway, structure while providing the requested 16'+ feet of emergency access width to the 128R building, therefore no change to the historical built pattern is proposed.

Furthermore, 126 North Street does not have an existing access easement across 128F North Street.

Comment – *The accessible parking space in the 126 North Street parking area should be designed as 11 feet wide with a 5-foot clear area, or 8 feet wide with an 8-foot clear area, in order to accommodate a van as required by ADA. As such, the accessible space should be shifted toward the back of the building at least 3 feet, in order to provide 8 feet of clear width adjacent to the main entrance.*

Response – We have revised the Site Plan to provide 16' of width for an accessible van space.

Comment – *There are a significant number of service connections. Trench repair for these services should be conducted as one. Storm drain, sewer, and water connections should be repaired as one, uniformly extending all the way to the centerline of the roadway. Gas service trenches should be repaired as one, extending for the full curb-to-curb width of the roadway. I have attached a rough sketch of this.*

Response – We have revised the proposed pavement cut to provide more continuity in the



patching; however, the separation of pavement cuts between phases has been maintained due to various utility companies' requirements, phasing requirements and existing utility easements.

Comment – *The Applicant proposes an overhead electric/telecom service across North Street from a proposed utility pole #17H, before converting to underground at an existing-to-be-replaced pole #18.1. While an underground service to the development sites is desirable, the Applicant should explore moving these utilities underground before crossing North Street, rather than proposing a new overhead crossing of North Street. Applicant should confirm whether the existing overhead connection will be removed.*

Response – We will explore this option with CMP; however certain horizontal separations may not be feasible. The existing overhead lines will be removed prior to demolition of each respective building.

Comment – *Confirm that the reconstructed sidewalk along the frontage is designed to a 1.5% cross slope (2% maximum). One set of spot grades appears to confirm that this is the case, but additional spot grades at the bottom and top of driveway and back of sidewalk may be helpful.*

Response – We have added additional spot grades to further illustrate the proposed cross slope of 1.5%.

Comment – *The electric meter for 126 North is proposed for the front of the house. This should be relocated to the side if at all possible.*

Response – The meters have been relocated to the side of the building.

Please let us know if you have any additional questions or comments.

Sincerely,

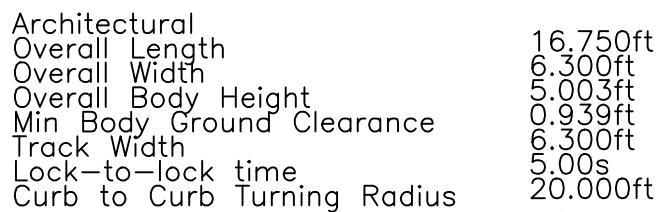


Samuel J. Lebel, E.I.
Project Engineer
Acorn Engineering, Inc.



William H. Savage, P.E.
Principal
Acorn Engineering, Inc.





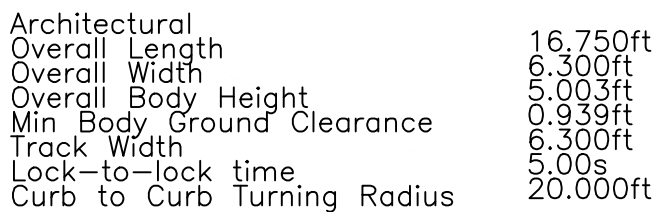
N/F
Roy

N/F
Kremer

10' x 78' Right Of Way

Per Bk. 1133, Pgs. 465-6

ISSUED FOR	BY
COMMENT	DATE
RESPONSE	WHS
	11/26/19
	REV.
	DATE



N/F
Roy

N/F
Kremer

10' x 78' Right Of Way
Per Bk. 1133, Pgs. 465-6

FILE:	1116_CIVIL
DATE:	12/17/19
JN:	1116
SCALE:	AS NOTED
DESIGN BY:	SJL
DRAWN BY:	ZMS
CHECKED BY:	WHS



DRAWING NAME:
INTERNAL PARKING EXHIBIT
PROJECT NAME:
126 NORTH STREET REDEVELOPMENT
CLIENT:
UPRIGHT FRAMEWORKS, LLC
PORTLAND, MAINE 04101

ISSUED FOR	BY
COMMENT	DATE
RESPONSE	WHS
	11/26/19
	REV.
	DATE



December 17, 2019

Caitlin Cameron, AICP, Associate AIA, LEED AP
Urban Designer
Planning & Urban Development Department
389 Congress Street
Portland, ME 04101

Re: 128R and 126 North Street

Caitlin,

Below please find comments in response to the design reviews dated December 4, 2019 for 128R North and December 16, 2019 for 126 North.

Many of the comments below relate to 126 North's entrance reflect a larger policy issue outlined in the city's Design Manual that suggest design principals in conflict with best practices for inclusive design. We understand these guidelines are beyond the purview of this review but wish to bring the issue to staff and the board's attention.

Guidelines in the city's manual for the R-6 zone, on page 109 under C-2, state suggested guidelines for creating visual privacy on first floors. A suggested means for creating this privacy includes elevating a building's first floor to at least 24" above grade, and articulating it with porches. This characteristic is also emphasized in the IS-FBC zone on page 120 of the manual.

Page 120 includes an illustrative illustration of an 'exemplary streetscape' designers should emulate. However, the illustration includes no visible curb-cuts and the multi-family residences depicted clearly do not meet both IBC 2015 Chapter 11 (accessibility) and Federal Fair Housing Standards which require accessible building entrances at the streetscape. Both buildings depicted show multiple steps, an impossible moat for someone using a rollator, wheelchair and even difficult for a young parent pushing a stroller. To further emphasize the barrier as acceptable; bullet three of this page states 'entry is emphasized with stair and canopy.'

Our team feels these images are contrary to the City's objectives in creating housing for all Portlanders, regardless of mobility impairments, and urge the City to address this issue. Violation of Fair Housing Standards and IBC puts clients, the city and designers at risk for discrimination suits and fails our most vulnerable residents.

Dextrous Creative
dextrouscreative.com
traciereed@dextrouscreative.com
Portland, ME 04101

128R Design Review Comments

Memo notes that the design passes all design standards. Thanks for your review.

126 Design Review Comments

A-3 Relationship to the Street: My client is happy to pull the building closer to the street using the average of the two adjacent side setbacks which, according to Acorn Engineering, will result in a 3.7' front setback. Acorn has suggested a revised site plan showing a 4'-0" setback to reflect this change.

B-4 Roof Pitch: The roof pitch meets the Portland Land Use Ordinance for the Munjoy Hill Overlay which articulates that a front-end gable pitch should be between 10:12 and 12:12 per 14-140.5(d). The proposed front-end gable roof is 11:12. The height of a building per the ordinance is measured from the mid-point of the gable roof which puts the height of the building at 33'-6" as measured on drawing A/A-2.3.

C-1 Entrances: Our building seeks to meet the active streetscape requirements of the Munjoy Hill Overlay as articulated in 14.140.5(h). The main entrance for our first-floor unit is located along North Street, satisfying this requirement. Our unique site has a sidewalk shared with 128R North Street along the length of the building. The entrance to upper units will be situated along this walkway providing an increased to the streetscape with the rear parcel, 128R North.

C-2 Visual Privacy: The ground floor living spaces are at grade to satisfy IBC 2015 1104.1 'Site arrival points' which require the entrance of our Type B accessible unit to be accessible from the public sidewalk. This project is required to meet both IBC 2015 and Fair Housing requirements since it contains four-or-more units. Elevating the building would expose my client, the city and our design team to a housing discrimination suit. Relegating mobility-impaired residents or visitors to a secondary 'back door' entrance is considered discriminatory according to HUD'. Our team feels strongly that the city should take strides to create expanded housing opportunities for all Portlanders, including the elderly and those with mobility impairments who many-times have difficulty finding accessible housing. We believe the city should re-examine and revise the design standard C-2 to avoid such liability. It currently reads:

'Ensure the visual privacy of occupants of dwellings through such means as placing the window sill at least 48" above the adjoining sidewalk grade; providing the finished floor elevation of a residence at a minimum of 24" above the sidewalk elevation; incorporating porches along the front side of the building façade design; or other measures.'

On a narrow lot such as are predominant in-town fitting an approximately 34'-0" long ramp (including bottom and top landing) would be impracticable. Instead, our team will provide double-hung windows with first floor translucent glazing on the bottom pane, below 48". This will allow our team to meet the intensions of visual privacy without creating 34'-0" of icy ramps to traverse or exposing us all to a discrimination suit.

Dextrous Creative
dextrouscreative.com
traciereed@dextrouscreative.com
Portland, ME 04101

C-3 Transitional Spaces: See above response to C-2. Our project is required to meet both IBC chapter 11 and Fair Housing which requires our entrances from the sidewalk to be at grade. We have provided a covered entry at both entrances.

F-6 Porches, etc.: See response to C-2.

F-6 Main Entries: See response to C-2. Raising the porch above grade would put my client and the city at risk for a housing discrimination suit.

F-7 Articulation: The rake of the roof will be over 6" and the rake trim detail is over 9" in depth overall.

Sincerely,

A handwritten signature in black ink that reads "Tracie J. Reed". The signature is written in a cursive, flowing style.

Tracie J. Reed, Maine Licensed Architect, LEED AP, NCARB
Principal

CC: William Savage, P.E., Acorn Engineering
Sam Lebel, Acorn Engineering
Josh Wojcik, Upright Properties
Jill S. Johanning, AIA
Jeanie Bourke, Plan Review Team Leader, City of Portland Maine Building Inspections

¹ HUD provided design commentary on its site arrival points standard, noting: "HUD requires that an accessible route not be hidden, remote, circuitous or require people with disabilities to travel long distances. It also requires that use of an accessible route not place requirements, like a special key, an attendant, or additional waiting periods, on people with disabilities. Providing an accessible route that has different and less favorable conditions for people with disabilities than for people without disabilities may violate the Fair Housing Act because it amounts to a difference in terms and conditions of housing based on disability." <https://www.fairhousingfirst.org/faq/accessibleroutes.html>

126/128R NORTH STREET REDEVELOPMENT

UPRIGHT PROPERTIES, LLC

PORTLAND, MAINE

ISSUED FOR

BY

DATE

LEVEL III SITE PLAN

WHS

8/7/19

PHASE II UPDATE

WHS

10/29/19

COMMENT RESPONSE

WHS

12/18/19

COMMENT RESPONSE 2

WHS

7/24/2020

COVER SHEET & LEGEND

128R NORTH STREET REDEVELOPMENT

UPRIGHT PROPERTIES, LLC

PO BOX 833 WILTON, ME 04294

ACORN ENGINEERING, INC.

ENGINEERING, INC.

65 HANOVER ST. PORTLAND MAINE 04101

(207) 775-2655

FILE:

1116_CIVIL

JN:

1116

SCALE:

NTS

DESIGNED BY:

SJL

DRAWN BY:

ZMS

CHECKED BY:

WHS

STATE OF MAINE

PROFESSIONAL ENGINEER

WILLIAM F. HARRIS

NO. 11419

EXPIRATION DATE 12-31-2020

DRAWING NO.

C-01

LEGEND

EXISTING

REFER TO THE EXISTING CONDITIONS PLAN FOR ADD'L INFO



PROPOSED

- UNDERDRAIN
- UTILITY PAVEMENT CUTS
- RETAINING WALL
- SEDIMENTATION BARRIER
- EDGE OF PAVEMENT
- CURB
- SIGN
- LAMP OR LIGHT POLE
- UTILITY POLE
- GUY WIRE
- WATER VALVE
- FIRE HYDRANT
- SEWER MANHOLE
- CATCH BASIN/FIELD INLET
- UNDERGROUND ELECTRIC LINE
- UNDERGROUND WATER LINE
- MINOR CONTOURS (1 FT)
- MAJOR CONTOURS (5 FT)
- GAS LINE
- UNDERDRAIN
- STORM DRAIN LINE
- SEWER LINE
- EXISTING/PROPOSED BUILDING
- OVERHEAD ELECTRICAL/TELEPHONE/CABLE
- PROPERTY LINE
- SETBACKS



UTILITIES

SEWER:

DEPARTMENT OF PUBLIC WORKS (DPW)
250 CANCO ROAD
PORTLAND, MAINE 04103
CONTACT: KEITH GRAY, P.E.
(207) 874-8834

WATER:

PORTLAND WATER DISTRICT
225 DOUGLASS STREET
PO BOX 3553
PORTLAND, MAINE 04104
ATTN: MEANS DIVISION
(207) 774-5961

ELECTRIC:

CENTRAL MAINE POWER COMPANY (CMP)
162 CANCO ROAD
PORTLAND, MAINE 04103
CONTACT: PAUL DUPERRE
(207) 828-2882

TELEPHONE:

CONSOLIDATED COMMUNICATIONS
5 DAVIS FARM ROAD
PORTLAND, MAINE 04103
CONTACT: PAT MORRISON
(207) 745-9363

CABLE:

SPECTRUM CABLE
22 INDUSTRIAL PARK ROAD
SACO MAINE, 04072
CONTACT: MARK PELLETIER
(877) 546-0962

NATURAL GAS:

UNITIL SERVICE CORP
1075 FOREST AVENUE
PORTLAND, ME 04103
CONTACT: BRIDGET HARMON
(207) 541-2536

PROJECT TEAM

DEVELOPER:

UPRIGHT FRAMEWORKS, LLC
PORTLAND MAINE
CONTACT: JOSH WOJCIK
(207) 749-9656

ARCHITECT:

DEXTRIOUS CREATIVE
PORTLAND, MAINE
CONTACT: TRACIE REED, R.A.
(207) 409-0459

SURVEYOR:

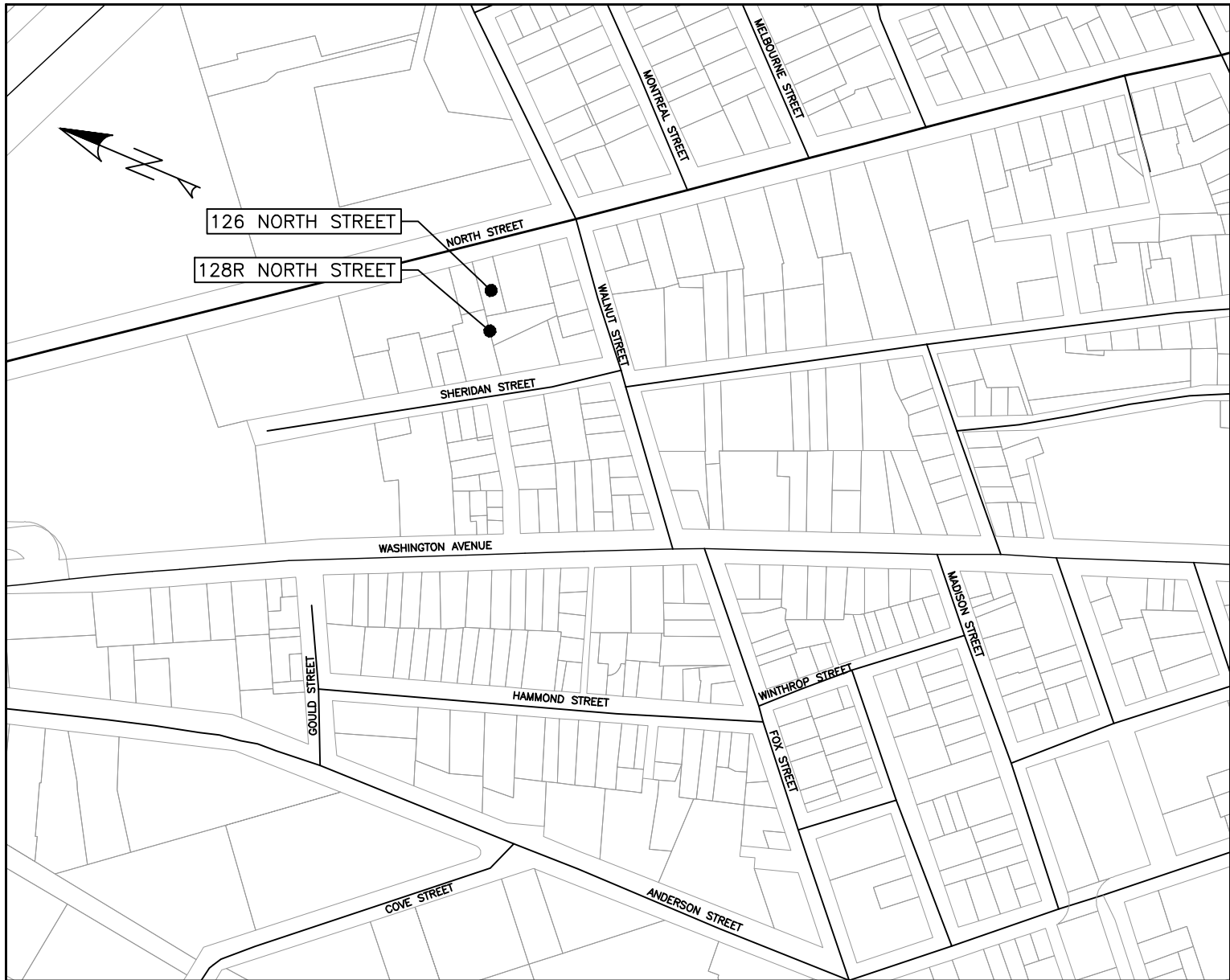
NADEAU LAND SURVEYS
PORTLAND, MAINE
CONTACT: JAMES NADEAU, P.L.S.
(207) 878-7870

STRUCTURAL ENGINEER:

STRUCTURAL INTEGRITY CONSULTING ENGINEERS, INC.
PORTLAND, MAINE
CONTACT: AARON JONES, P.E.
(207) 774-4614

GEOTECHNICAL ENGINEER:

SUMMIT GEOENGINEERING SERVICES
LEWISTON, MAINE
CONTACT: BILL PETERLEIN, P.E.
(207) 318-7761



VICINITY MAP
NOT TO SCALE

ABBREVIATIONS

PARTIAL LIST OF ABBREVIATIONS AND THEIR CORRESPONDING MEANING. PLEASE CONTACT THE ENGINEER FOR ANY CLARIFICATION

APPROX.	APPROXIMATE
BC	BOTTOM OF CURB
BMP	BEST MANAGEMENT PRACTICE
BOT.	BOTTOM
CAD	COMPUTER AIDED DESIGN
CB	CATCH BASIN
CF	CUBIC FOOT
CIP	CAST IN PLACE
CM	CONSTRUCTION MANAGER
CMP	CENTRAL MAINE POWER
CONC.	CONCRETE
CY	CUBIC YARD
DIP	DUCTILE IRON PIPE
DIA.	DIAMETER
DIM.	DIMENSION
EA.	EACH
ELEC.	ELECTRICAL
ELEV.	ELEVATION
EQUIV.	EQUIVALENT
EST.	ESTIMATE
EX.	EXISTING
FFE	FINISH FLOOR ELEVATION
FT.	FEET
GAL.	GALVANIZED
I.B.C.	INTERNATIONAL BUILDING CODE
ID	INNER DIAMETER
IN.	INCH
INV.	INVERT
IZ	INCLUSIONARY ZONING
L	LENGTH
MAX.	MAXIMUM
M.E.P.	MECHANICAL, ELECTRICAL, PLUMBING DESIGNER
MDOT	MAINE DEPARTMENT OF TRANSPORTATION
MFG.	MANUFACTURED
MH	MANHOLE
MIN.	MINIMUM
O.C.	ON CENTER
OD	OUTSIDE DIAMETER
OHE/T/C	OVERHEAD ELECTRIC/TELEPHONE/CABLE
PC	PRECAST
PE	PROFESSIONAL ENGINEER
PL	PROPERTY LINE
PLS	PROFESSIONAL LAND SURVEYOR
PROP.	PROPOSED
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
PWD	PORTLAND WATER DISTRICT
R	RADIUS
RD	ROOF DRAIN
RET.	RETAINING
ROW	RIGHT OF WAY
S	SLOPE
SD	STORM DRAIN
SDR	STANDARD DRAINAGE RATIO
SF	SQUARE FEET
SMH	SEWER MANHOLE
SPEC.	SPECIFICATION
TC	TOP OF CURB
TW	TOP OF WALL
TYP.	TYPICAL
UD	UNDERDRAIN
UGE	UNDERGROUND ELECTRIC
DCVA	DOUBLE-CHECK VALVE ASSEMBLY

INDEX

- C-01 COVER SHEET & LEGEND
- C-02 GENERAL NOTES
- EX EXISTING CONDITIONS PLAN – BY NADEAU LAND SURVEYS
- C-03 DEMOLITION & CONSTRUCTION MANAGEMENT PLAN
- C-10 MASTER SITE PLAN
- L-1 LANDSCAPE PLAN
- C-20 UTILITY PLAN
- C-30 GRADING & DRAINAGE PLAN
- C-40 SITE DETAILS – 1
- C-41 SITE DETAILS – 2
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- C-45 DRAINAGE DETAILS
- C-46 FOCAL POINT DETAILS
- C-47 EROSION CONTROL DETAILS & NOTES

CALL BEFORE YOU DIG
1-888-DIG-SAFE
1-888-344-7233

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

THE CONTRACTOR SHALL CALL THE APPROPRIATE UTILITY COMPANIES AND DIG SAFE AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION FOR UTILITIES. OTHERWISE IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF UNDERGROUND UTILITIES AND LOCATE ANY POTENTIAL CONFLICTS WITH THE APPROVED PLANS PRIOR TO CONSTRUCTION.

- THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF ALL EROSION CONTROL MEASURES SHOWN ON THE PLAN. IF DEEMED NECESSARY BY THE OWNER OR OWNER'S REPRESENTATIVE, ADDITIONAL EROSION CONTROL MEASURES SHALL BE INSTALLED AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL PREPARE THEIR OWN MATERIAL SCHEDULE BASED ON THE PLANS AND FIELD VERIFICATION BY THE CONTRACTOR. ALL MATERIAL SCHEDULES SHOWN WITHIN THE PLAN SET ARE FOR GENERAL INFORMATION ONLY.
- ALL CONSTRUCTION METHODS, TESTING AND MATERIALS SHALL CONFORM TO THE MAINE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS, THE CITY OF PORTLAND AND SERVICING UTILITY REQUIREMENTS, IF ANY. IN CASES WHERE THESE CONFLICT THE MOST STRINGENT SPECIFICATION SHALL APPLY AT NO ADDITIONAL COST TO THE OWNER.
- THE SITE CONTRACTOR SHALL MAINTAIN A SET OF PAPER AND CAD DRAWINGS WHICH SHALL RECORD THE ACTUAL LOCATION, DIMENSIONS, ELEVATIONS, MATERIALS OF THEIR WORK, INDICATING THEREON ALL VARIATIONS FROM THE CONTRACT DRAWINGS. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH ONE COMPLETE SET OF REPRODUCIBLE RECORD DRAWINGS, IN .DWG FORMAT AND PAPER, STAMPED "AS-BUILT". IF AUTOCAD NOT AVAILABLE EXCLUDE FROM BID IN WRITING.
- THE CONTRACTOR WILL REMAIN SOLELY AND COMPLETELY RESPONSIBLE FOR ENFORCEMENT OF AND COMPLIANCE WITH 1) ALL CONTRACT PLANS AND SPECIFICATIONS, 2) APPLICABLE INTERNATIONAL BUILDING CODE REQUIREMENTS, AND 3) ALL SITE WORKING CONDITIONS AND SAFETY REQUIREMENTS, DAY AND NIGHT, FOR BOTH PERSONS AND PROPERTY, IN EACH CASE BOTH BY THE CONTRACTOR AND ITS SUBCONTRACTORS. THESE INCLUDE ALL OSHA, NIOSH, U.S. EPA AND ANY OTHER APPLICABLE GOVERNMENTAL REGULATIONS.
- EXISTING CONDITIONS, BOUNDARY SURVEY, AND TOPOGRAPHY FROM THE PLAN TITLED "PLAN DEPICTING THE RESULTS OF A BOUNDARY SURVEY & EXISTING CONDITIONS SURVEY" (JOB NO. 2181902BTR1) BY NADEAU LAND SURVEYS DATED 8/22/2018 AND REVISED 5/1/2019.
- THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ACCESS TO THE SITE AT ALL TIMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY MARKINGS, SIGNAGE AND INCIDENTALS TO MAINTAIN A SAFE VEHICLE AND PEDESTRIAN ACCESS THROUGH THE LIFE OF THE PROJECT. THE CONTRACTOR SHALL NOTIFY THE PORTLAND PUBLIC SAFETY DIVISION ROUTINELY REGARDING TEMPORARY IMPACTS OR CHANGES TO SITE ACCESS CONDITIONS.
- CONSTRUCTION MANAGEMENT PLAN BY ACORN ENGINEERING SHALL BE REFERRED TO FOR ANTICIPATED PROJECT SCHEDULE AND CLOSURES. TRAFFIC CONTROL SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- CONTRACTOR TO DETERMINE SOIL CLASSIFICATION INDEPENDENTLY FOR TRENCH, SHORING, AND OTHER SIMILAR CONSTRUCTION MEANS AND METHODS APPLICATIONS.
- NO HOLES, TRENCHES, OR STRUCTURES SHALL BE LEFT OPEN OR UNATTENDED OVERNIGHT IN ANY AREA ACCESSIBLE TO THE PUBLIC OR WITHIN THE PUBLIC RIGHT-OF-WAY.
- THE CONTRACTOR SHALL CONDUCT A PRE-CONSTRUCTION SURVEY OF INTERIOR SUBGRADE AND ABOVE GRADE ACCESSIBLE WALLS, CEILINGS, FLOORS, ROOF AND VISIBLE EXTERIOR AS VIEWED FROM THE GRADE LEVEL. THIS SHALL BE COMPLETED AT A MINIMUM FOR ADJACENT STRUCTURES. A COPY OF THE SURVEY SHOULD BE PROVIDED TO THE OWNER. DOCUMENT WITH PICTURES AT A MINIMUM.
- THE CONTRACTOR SHALL SURVEY ROCK SURFACE PRIOR TO EXCAVATION AND DEVELOP VOLUME CALCULATIONS TO SHARE WITH ACORN ENGINEERING, IF ANY.

CIVIL SITE NOTES:

- THE CONTRACTOR SHALL SUBMIT IN WRITING ANY REQUESTS TO MODIFY THE CONTRACT DOCUMENTS.
- ALL SHOP AND ERECTION DRAWINGS SHALL BE CHECKED AND STAMPED BY THE CONTRACTOR PRIOR TO SUBMISSION FOR ENGINEER'S REVIEW. ANY UNCHECKED OR NON-STAMPED SUBMITTALS WILL BE RETURNED WITHOUT REVIEW.
- CONTRACTOR SHALL THOROUGHLY INSPECT AND SURVEY EXISTING STRUCTURES AND SITE TO VERIFY CONDITIONS THAT AFFECT THE WORK SHOWN ON THE DRAWINGS. CONTRACTOR TO NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO PROCEEDING.
- DETAILS SHOWN APPLY TO ALL SIMILAR CONDITIONS UNLESS OTHERWISE INDICATED.
- ALTHOUGH ALL DUE DILIGENCE HAS BEEN APPLIED TO MAKE THE DRAWINGS AS COMPLETE AS POSSIBLE, NOT ALL DETAILS ARE ILLUSTRATED, NOR IS EVERY EXCEPTIONAL CONDITION ADDRESSED WITHIN THE CONTRACT DOCUMENTS.
- ALL PROPRIETARY CONNECTIONS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF ALL WORK, INCLUDING DIMENSION AND LAYOUT VERIFICATION, MATERIALS COORDINATION, SHOP DRAWING REVIEW, AND THE WORK OF ANY SUBCONTRACTORS.
- UNLESS OTHERWISE SPECIFICALLY INDICATED, THE DRAWINGS DO NOT DESCRIBE OR DIRECT MEANS OR METHODS OF CONSTRUCTION.
- THE CONTRACTOR, IN THE PROPER SEQUENCE, SHALL PERFORM OR SUPERVISE ALL WORK NECESSARY TO ACHIEVE THE FINAL COMPLETED STRUCTURE, AND TO PROTECT THE STRUCTURE, WORKMEN, AND OTHERS DURING THE CONSTRUCTION. SUCH WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR CONSTRUCTION EQUIPMENT, SHORING FOR EXCAVATION, FORMWORK, SCAFFOLDING, SAFETY DEVICES AND PROGRAMS OF ALL KINDS, SUPPORT AND BRACING FOR CRANES AND OTHER ERECTION EQUIPMENT.
- DO NOT BACKFILL AGAINST RETAINING WALLS UNTIL SUPPORTING SLABS AND FLOOR FRAMING ARE IN PLACE AND SECURELY ANCHORED, UNLESS ADEQUATE BRACING IS PROVIDED. CONCRETE SHALL ALSO BE CURED FOR 28 DAYS PRIOR TO BACKFILLING.
- TEMPORARY BRACING SHALL REMAIN IN PLACE UNTIL ALL FLOORS, WALLS, ROOFS AND OTHER SUPPORTING ELEMENTS ARE IN PLACE.
- ALL PAVEMENT JOINTS SHALL BE SAWCUT AND APPLIED WITH TACK COAT PRIOR TO PAVING TO PROVIDE A DURABLE AND UNIFORM JOINT.
- THE ENGINEER BEARS NO RESPONSIBILITY FOR THE ABOVE ITEMS, AND OBSERVATION VISITS TO THE SITE DO NOT IN ANY WAY INCLUDE INSPECTION OF THEM.

SPECIAL INSPECTION NOTES:

- ALL SITE SOILS-RELATED WORK AND FOOTING EXCAVATIONS PRIOR TO PLACING FORMS SHALL BE REVIEWED BY THE GEOTECHNICAL ENGINEER.
- SITE DRAINAGE SHALL BE REVIEWED BY THE PROJECT ENGINEER.
- NORMAL REVIEWS WILL BE CONDUCTED BY LOCAL BUILDING DEPARTMENT.
- NOTIFY 48 HOURS PRIOR TO REQUIRED REVIEW.
- REQUIRED SPECIAL INSPECTIONS PER I.B.C. SECTION 1705.6 BY AN APPROVED SPECIAL INSPECTOR RETAINED BY OWNER. CONTRACTOR TO COORDINATE SPECIAL INSPECTIONS.
- SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.
- DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPECTOR SHALL BE TO OBSERVE AND/OR TEST THE WORK ASSIGNED AND OUTLINED ABOVE FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS, ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION.
- THE SPECIAL INSPECTOR SHALL FURNISH REGULAR REPORTS TO THE BUILDING OFFICIAL, THE ARCHITECT AND ENGINEER OF RECORD, AND OTHER DESIGNATED PERSONS. PROGRESS REPORTS FOR CONTINUOUS INSPECTION SHALL BE FURNISHED WEEKLY. INDIVIDUAL REPORTS OF PERIODIC INSPECTIONS SHALL BE FURNISHED WITHIN ONE WEEK OF INSPECTION DATES. THE REPORTS SHALL NOTE UNCORRECTED DEFICIENCIES, AND CHANGES TO THE APPROVED CONSTRUCTION DOCUMENTS AUTHORIZED BY THE ENGINEER OF RECORD.
- THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT WITHIN TEN DAYS OF THE FINAL INSPECTION STATING WHETHER

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND ELEVATION OF THE EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED UPON RECORDS OF VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO TEST PIT TO DETERMINE THE EXACT LOCATION AND ELEVATION OF UTILITIES TO COORDINATE WITH THE PROPOSED CONNECTIONS OR CROSSING. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE CIVIL ENGINEER FOR FURTHER DIRECTIONS BEFORE ANY ADDITIONAL WORK PROCEEDS.
2. CONTRACTOR SHALL, AT NO ADDITIONAL COST TO THE OWNER, CONDUCT EXPLORATORY EXCAVATIONS AT LOCATIONS WHERE PROPOSED EXCAVATION WILL INTERSECT WITH EXISTING UTILITIES, PRIOR TO THE ORDERING OF STRUCTURES.
3. ALL NEW SANITARY MANHOLES SHALL BE VACUUM TESTED BEFORE BACKFILLING. TESTING SHALL BE COMPLETED IN ACCORDANCE WITH TECHNICAL REPORT #16 (TR-16): GUIDES FOR THE DESIGN OF WASTEWATER TREATMENT WORKS, PREPARED BY THE NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION.
4. SEWER MANHOLES SHALL BE 4' ID UNLESS OTHERWISE STATED ON THE PLANS.
5. CONTRACTOR TO PROVIDE 5' OF COVER FROM TOP OF PIPE TO FINISH GRADE FOR WATER MAINS.

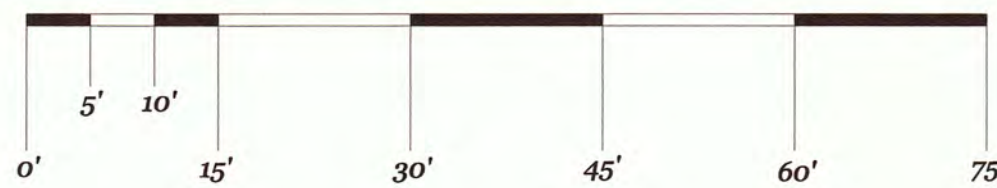
3. THE CLIENT HAS NOT REQUESTED NOR HAS ACORN ENGINEERING COMPLETED A PHASE I - ENVIRONMENTAL SITE ASSESSMENT FOR THE PROPERTY.

[illegible]

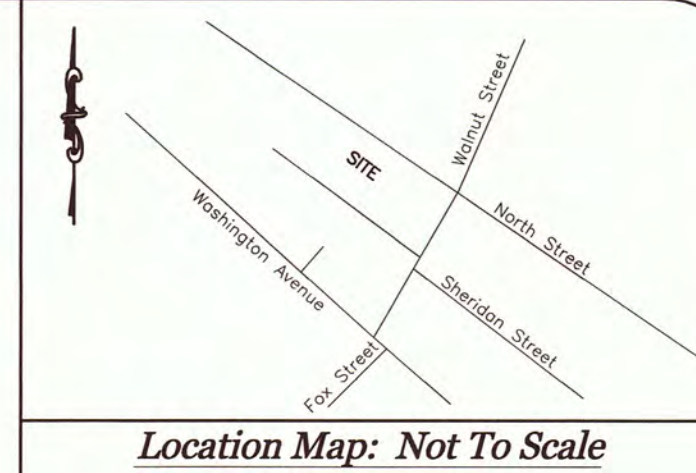
Plan References:

- Subdivision Of Lot #1 On Mountjoy's Neck For Little, Weeks, And Moody, dated February 17, 1802 and recorded March 24, 1802 in CCRD Book 36, Page 247.
- Re-Survey Of Plan Reference 1, dated June 1876 by E.C. Jordan, C.E., City Plan 370/6 and 386/28.
- Subdivision Of Elijah Kellogg Lot, dated April 10, 1802 and recorded February 18, 1807 in CCRD Book 51, Page 297, and traced 1925 for City Plan 406/78.
- City Of Portland Revaluation Plans, Sheets 10 & 12, dated 1882 by William A. Goodwin, City Engineer, recorded October 24, 1884 in CCRD Plan Book 5, Pages 10 & 12.
- Plan Of Lot At Terminus Of Sheridan Street, dated 1928 on file at Owen Haskell, Inc.
- "Property In Portland Me. Surveyed For The Jewish Home For Aged", dated August 1928 by E.C. Jordan & Co. on file at Owen Haskell, Inc.
- "General Plan And Profile, Department Of Parks And Public Works, City Of Portland, Maine, Reconstruction Of Walnut St., North St. To Washington Ave.", dated May 17, 1984 by Herbert P. Gray, Consulting Engineer, Portland, Maine, City Plan 302/7.
- "Standard Boundary Survey, Plan Of Property In County Of Cumberland, City Of Portland, Maine For Jewish Home For Aged", dated December 20, 1985 (Working Plan) by Morton & Rose Associates, Limerick, Maine on file at Maine Boundary Consultants.
- "City Of Portland, Maine Parks And Public Works Department Engineering Division, North Street Plan And Profile Sta. 11+00 To 16+50", Sheet 8 of 14, dated August 1985 by Woodward & Curran Inc. Consulting Engineers, Gorham, Maine, City Plan 925/1.
- "City Of Portland, Maine Parks And Public Works Department Engineering Division, Sheridan Street Plan And Profile Sta. 9+00N To 13+50N", Sheet 5 of 25, dated June 1987 by Woodward & Curran Inc. Consulting Engineers, Portland, Maine, City Plan 913/10.
- "Plan Of Property In Portland, Maine Made For Nicole D'Entremont (Standard Boundary Survey)", dated July 15, 1991 by Robert J. Cyr, RLS 955, South Portland, Maine, dated July 16, 1991 in CCRD Plan Book 191, Page 43.
- "Division Of Land For Nicki Lee Green & Katherine P. Richmond, 79 Walnut Street, Portland, Maine", dated April 2006 by Andrew E. Bradford Land Surveying, Inc., Kennebunk, Maine.
- "Plan Of Property Of W.H. Baxter, Esq.", dated July 1866 by Anderson Bonnell & Co., recorded July 1, 1866 in CCRD Plan Book 2, Page 54.
- Richards Standard Atlas Of The City Of Portland, Plate 2, dated 1914.
- Insurance Maps Of Portland, Maine, Volume One, Published By The Sanborn Map Company, Plate 1, dated 1909, last corrected April 1952.
- City Of Portland Atlas, Plate 48A, dated 1875.
- "Exhibit Sketch For Proposed Conveyance, Mary Roy To Upright Properties, LLC Between Sheridan Street & North Street, Portland, Maine", dated May 29, 2018 by Nadeau Land Surveys, Portland, Maine, recorded June 5, 2018 at the Cumberland County Registry of Deeds in Book 34890, Page 304.
- "Plan Depicting The Results Of A Boundary Survey & Existing Conditions Survey Made For Redfern Properties LLC, Sheridan Street And East Cove Street, Portland, Maine", dated November 11, 2013, revised November 25, 2013 by Nadeau Land Surveys, Portland, Maine.
- "Plan Depicting A Proposed Subdivision Made For Redfern Munjoy LLC, P.O. Box 8816, Portland, ME 04104, Munjoy Heights, Sheridan Street, East Cove Street, And Walnut Street, Portland, Maine", dated December 6, 2013, last revised February 10, 2014 by Nadeau Land Surveys, Portland, Maine, recorded February 21, 2014 at the Cumberland County Registry of Deeds in Plan Book 214, Page 48.
- "Condominium Plat, Munjoy Heights, A Condominium, Sheridan Street, East Cove Street, And Walnut Street, Portland, Maine", dated April 21, 2015 by Nadeau Land Surveys, Portland, Maine, recorded April 30, 2015 at the Cumberland County Registry of Deeds in Plan Book 215, Page 143.
- "City Of Portland, Maine Parks And Public Works Department Engineering Division, North Street, Plan And Profile Sta. 11+00 To 16+50", Sheet 8 of 14, dated August 15, 1985, City Plan 925/1.
- "Portland Water District, Portland Sewer System Infiltration-Inflow Analysis, System Base Mapping, Study Area IV", Sheet IV-11, dated 1981, last revised March 22, 1999 by Hunter-Bailley Associates, Falmouth, Maine, City Plan 905/1.

Graphic Scale:



Project Benchmark:
(See Note 15)



General Notes:

- This plan is not intended to depict limits or extent of fee title ownership. An opinion of title should be rendered by a title attorney.
- This office reserves the right to be held harmless by all 3rd party claims.
- This survey does not purport to reflect any of the following:
 - assessments other than those that are visible or specifically stated in the referenced documents.
 - building setback compliance or restrictive covenants.
 - zoning or other land use regulations.
 - the location of any underground utilities or structures.
- This office reserves the right to be held harmless for unknown or unobtainable private records which could affect the results of this survey.
- Reference is made to "Letter Of Agreement" dated May 23, 2018 between Nadeau Land Surveys and the below listed client(s), which shall be considered an integral part of this survey.
- N/F is an abbreviation for Now or Formerly.
- Locus Parcels are located in the R-6 Residential Zone:
Minimum Lot Size = 2,000 S.F.
Minimum Lot Area / Dwelling Unit = 725 S.F.
Minimum Street Frontage = 20 feet
Minimum Lot Width = 20 feet
Maximum Lot Coverage = 60%
Minimum Front Yard Setback = 5 feet, or average depth of adjacent front yards
Minimum Side Yard Setback = 5 feet
Minimum Rear Yard Setback = 10 feet
A City of Portland Code Enforcement Officer should be consulted for confirmation of all applicable space & bulk requirements for Locus Parcels.
- Locus Parcel A is shown on the City of Portland Assessor's Map 12, Block H, as Lot 14, and is listed as 126 North Street. Locus Parcel B is shown on the City of Portland Assessor's Map 12, Block H, as parts of Lots 9 & 22, and is listed as 128R North Street.
- Area of Locus Parcel A is 4,105.0 square feet (0.09 acre). Area of Locus Parcel B is 5,682.0 square feet (0.13 acre).
- The apparent right of way lines depicted on this plan are based on the Plan References listed hereon and monumentation found in the field, and City of Portland Engineering Street Notes.
- The Locus Parcels do not scale in a Special Flood Hazard Area per FEMA Flood Insurance Rate Map Community-Panel Number 230051 0014B, index dated December 8, 1998. The parcels scale in Zone C.
- All building corner offsets to boundary lines are from cornerboards and not building foundation, unless noted.
- Call 1-888-DIGSAFE at least three business days before performing ANY excavation.
- Vertical Datum is NGVD29. Benchmark is City Monument T112-18-107, elevation = 145.08'.
- See CCRD Book 1143, Page 307, dated July 25, 1923, from Elmore W. Ramsdell to Claire Bowden, for right of way to North Street.
- Per City of Portland Records Vol. 1, Page 184, North Street was accepted March 20, 1795 as 4 rods (66 feet) wide.
- See CCRD Book 14149, Page 281, dated September 10, 1998, for City of Portland's License to erect a fence across Poplar Street partially intruding on land N/F Maxwell.
- See CCRD Book 31326, Page 331, dated February 3, 2014, from the City of Portland to Raymond C. Maxwell, for Termination of License recorded in Book 14149, Page 281.
- Existing bulkhead is allowed to encroach setback window per City of Portland Zoning Ordinance Section 14-425.
- See Notice for vacated portions of Sheridan Street and East Cove Street, dated March 5, 2015 and recorded in CCRD Book 32118, Page 145.
- The underground utilities shown have been located from field survey information and existing drawings. This office makes no guarantee that the underground utilities shown comprise all such utilities in the area, either in-service or abandoned. The underground utilities shown are approximate location and are located as accurately as possible from information available. This office has not physically located the underground utilities.
- See CCRD Book 32237, Page 104, dated April 30, 2015, for Release And Easement Agreement between Redfern Munjoy, LLC and Upright Properties, LLC.
- The coordinates depicted on our plan are for municipal requirements only and should not be used for construction layout. This office assumes no liability and/or responsibility if used for construction purposes.
- Spot grades, sill and rim elevations are for engineering purposes only, and shall not be used as project benchmarks. This office assumes no liability and/or responsibility if used for construction purposes.
- No records research or site evaluation has been performed since the original date of this survey. The survey plan was revised solely to depict additional utility information.

Locus Deed References:

- Locus Parcel A**
Gregory D. Kesich and Gail D. Kesich
To
Raymond T. Wojcik, Zetta A. Wojcik and Joshua T. Wojcik
dated August 24, 2007 and recorded August 27, 2007 at the
Cumberland County Registry of Deeds in Book 25418, Page 226.
- Locus Parcel B**
Redfern Munjoy, LLC
To
Upright Properties, LLC
dated January 31, 2014 and recorded February 3, 2014 at the
Cumberland County Registry of Deeds in Book 31317, Page 118,
corrected on same date in Book 31318, Page 270.
- Mary Roy
To
Upright Properties, LLC
dated and recorded June 5, 2018 at the Cumberland
County Registry of Deeds in Book 34890, Page 304.

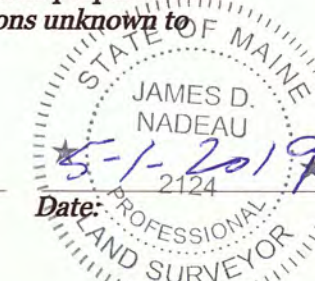
N/F
Redfern Munjoy, LLC
Book 31317, Page 116
Book 31207, Page 48
(See Plan References 18,19,20)

Surveyor's Statement:

Nadeau Land Surveys hereby states exclusively to the client listed hereon, that this plan is based on, and the result of, an on the ground field survey and that to the best of our knowledge, information, and belief, it conforms to the Maine Board of Licensure For Professional Land Surveyors rules and regulations.

This plan is not valid without the signature and stamp of the below listed Professional Land Surveyor who prepared this plan as it may contain unauthorized alterations unknown to this office.

Nadeau Land Surveys
James D. Nadeau, P.L.S. #2124 (agent)



Revised 5-1-2019: Added Sewer and Water information, Plan References 21 & 22, Note 26, and PB 409.

Plan Depicting The Results Of A Boundary Survey
& Existing Conditions Survey Made For
Joshua T. Wojcik
Southwesterly Sideline Of North Street
Portland, Maine

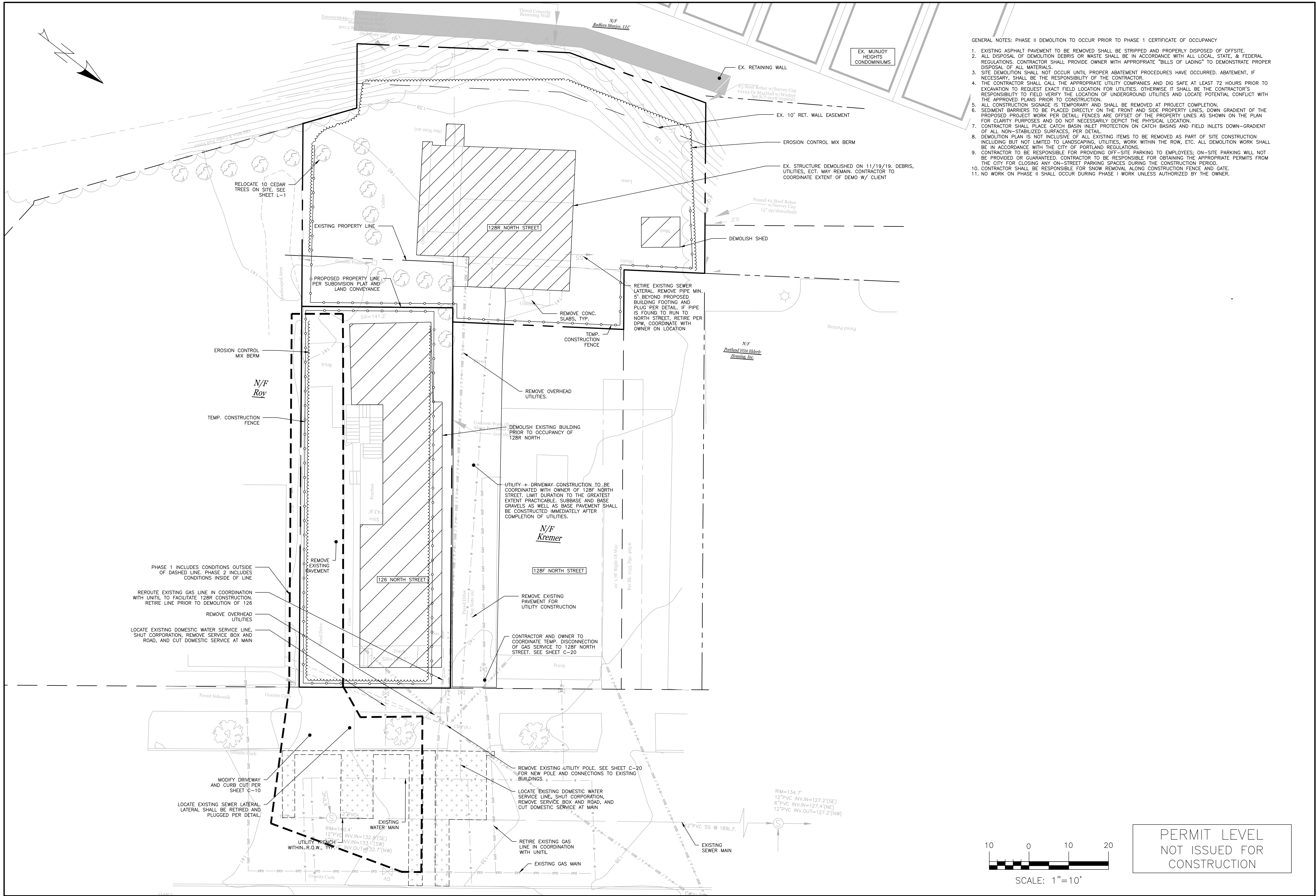
PREPARED BY:

918 BRIGHTON AVENUE
PORTLAND, ME 04102

Nadeau Land Surveys
Professional Land Surveyors
Certified Floodplain Managers

PH. (207) 878-7870
FAX (207) 878-7871

RECORD OWNER: Joshua T. Wojcik, et al. Upright Properties, LLC 47 Lafayette St. #1 Portland, ME 04101	DRAWN BY: TPB	PLAN DATE: 8/22/2018
INSTR. Topcon DS-205AC	CHECKED BY: JDN/MLC	SURVEY DATE: June 2018
JOB No: 2181902BTR1	SCALE: 1" = 15'	SHEET No: 1 of 1
FIELD BOOK: FB 407 & 409 & Topcon Tesla		



- GENERAL NOTES: PHASE II DEMOLITION TO OCCUR PRIOR TO PHASE I CERTIFICATE OF OCCUPANCY
- EXISTING ASPHALT PAVEMENT TO BE REMOVED SHALL BE STRIPPED AND PROPERLY DISPOSED OF OFFSITE.
 - ALL DISPOSAL OF DEMOLITION DEBRIS OR WASTE SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE, & FEDERAL REGULATIONS. CONTRACTOR SHALL PROVIDE OWNER WITH APPROPRIATE "BILLS OF LADING" TO DEMONSTRATE PROPER DISPOSAL OF ALL MATERIALS.
 - SITE DEMOLITION SHALL NOT OCCUR UNTIL PROPER ABATEMENT PROCEDURES HAVE OCCURRED. ABATEMENT, IF NECESSARY, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
 - THE CONTRACTOR SHALL CALL THE APPROPRIATE UTILITY COMPANIES AND DIG SAFE AT LEAST 72 HOURS PRIOR TO EXCAVATION TO REQUEST EXACT FIELD LOCATION FOR UTILITIES. OTHERWISE IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF UNDERGROUND UTILITIES AND LOCATE POTENTIAL CONFLICT WITH THE APPROVED PLANS PRIOR TO CONSTRUCTION.
 - ALL CONSTRUCTION SIGNAGE IS TEMPORARY AND SHALL BE REMOVED AT PROJECT COMPLETION.
 - SEDIMENT BARRIERS TO BE PLACED DIRECTLY ON THE FRONT AND SIDE PROPERTY LINES, DOWN GRADIENT OF THE PROPOSED PROJECT WORK PER DETAIL; FENCES ARE OFFSET OF THE PROPERTY LINES AS SHOWN ON THE PLAN FOR CLARITY PURPOSES AND DO NOT NECESSARILY DEPICT THE PHYSICAL LOCATION.
 - CONTRACTOR SHALL PLACE CATCH BASIN INLET PROTECTION ON CATCH BASINS AND FIELD INLETS DOWN-GRADIENT OF ALL NON-STABILIZED SURFACES, PER DETAIL.
 - DEMOLITION PLAN IS NOT INCLUSIVE OF ALL EXISTING ITEMS TO BE REMOVED AS PART OF SITE CONSTRUCTION INCLUDING BUT NOT LIMITED TO LANDSCAPING, UTILITIES, WORK WITHIN THE ROW, ETC. ALL DEMOLITION WORK SHALL BE IN ACCORDANCE WITH THE CITY OF PORTLAND REGULATIONS.
 - CONTRACTOR TO BE RESPONSIBLE FOR PROVIDING OFF-SITE PARKING TO EMPLOYEES; ON-SITE PARKING WILL NOT BE PROVIDED OR GUARANTEED. CONTRACTOR TO BE RESPONSIBLE FOR OBTAINING THE APPROPRIATE PERMITS FROM THE CITY FOR CLOSING ANY ON-STREET PARKING SPACES DURING THE CONSTRUCTION PERIOD.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR SNOW REMOVAL ALONG CONSTRUCTION FENCE AND GATE.
 - NO WORK ON PHASE II SHALL OCCUR DURING PHASE I WORK UNLESS AUTHORIZED BY THE OWNER.

ISSUED FOR	BY
LEVEL III SITE PLAN	WHS
DATE	4/7/19
PHASE II UPDATE	WHS
DATE	10/29/19
COMMENT RESPONSE	WHS
DATE	12/18/19
COMMENT RESPONSE 2	WHS
DATE	2/24/2020

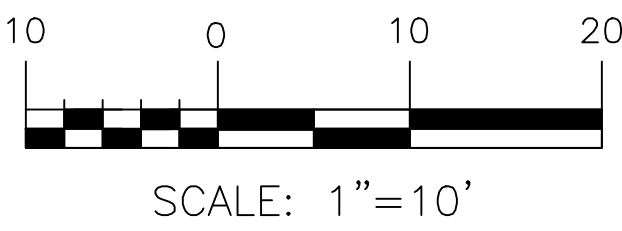
DRAWING NAME DEMOLITION & CONSTRUCTION MANAGEMENT PLAN	
PROJECT NAME 126/128R NORTH STREET REDEVELOPMENT	
CLIENT UPRIGHT PROPERTIES, LLC PO BOX 833 WILTON, ME 04294	

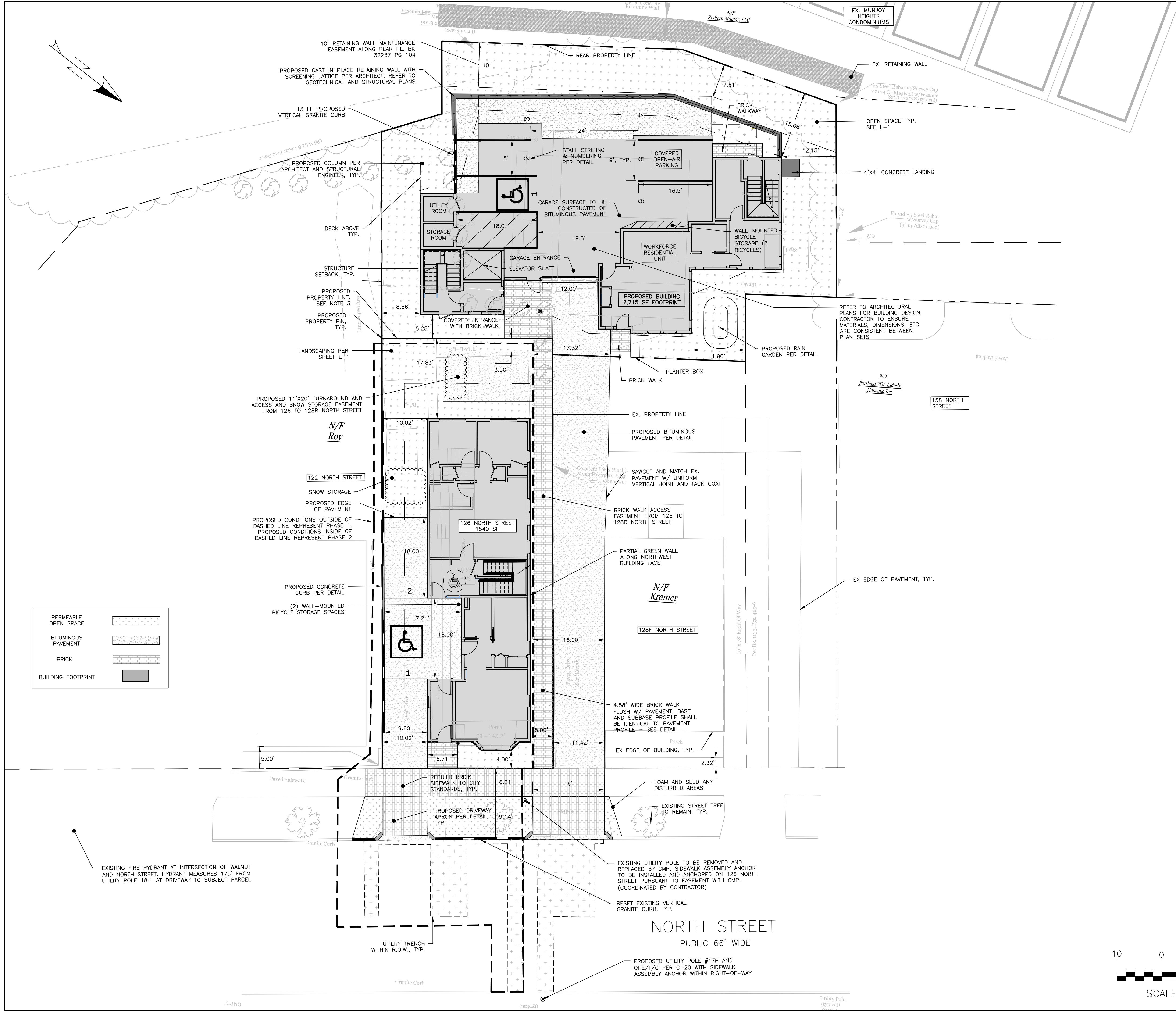
ACORN ENGINEERING, INC. 65 HANOVER ST, PORTLAND, MAINE 04101 (207) 775-2655	
REGISTERED PROFESSIONAL ENGINEER STATE OF MAINE No. 11419 2-13-2020	

FILE:	1116_CIVIL
JN:	1116
SCALE:	1"=10'
DESIGNED BY:	SJL
DRAWN BY:	ZMS
CHECKED BY:	WHS

DRAWING NO.
C-03

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION





- GENERAL NOTES:
1. STRIPING AS INDICATED ON SITE PLAN SHALL BE WHITE AND 4" WIDE.
 2. EXISTING CONDITIONS PROVIDED BY MADEAU LAND SURVEYS ON A PLAN ENTITLED 'BOUNDARY & EXISTING CONDITIONS SURVEY AT NORTH STREET MADE FOR JOSH T. WOJCIK (JOB NO. 2181902BTR1). PLAN IS DATED AUG. 22, 2018 WITH A MOST RECENT REVISION DATE OF MAY 1, 2019.
 3. REFER TO LEGAL DESCRIPTION AND ACCOMPANYING EXHIBIT IN BK _____ PG _____ FOR CONVEYANCE OF LAND FROM 126 NORTH STREET TO 128 NORTH STREET.
 4. SOLID GREY HATCH DEPICTS ENCLOSED LIVING SPACE AT THE GROUND LEVEL OR ABOVE.
 5. NO WORK ON PHASE II SHALL OCCUR DURING PHASE I WORK UNLESS AUTHORIZED BY THE OWNER.

PHASE I		
SPACE AND BULK STANDARDS - 128R NORTH		
ZONE: R6 - MHNCD0	REQUIRED	PROPOSED
MINIMUM LOT SIZE	2,000 SF	6,142 SF
MINIMUM STREET FRONTAGE	20'	N/A
MINIMUM FRONT YARD SETBACK	5'	5.25'
MINIMUM SIDE YARD SETBACK (LEFT)	8.15' *	8.56'
MINIMUM SIDE YARD SETBACK (RIGHT)	11.85' *	11.90'
MINIMUM DECK SETBACK	7.5'	7.61'
MINIMUM REAR YARD SETBACK	15'	15.08'
MAXIMUM LOT COVERAGE	60%	57%
MINIMUM LOT WIDTH	20'	101'
MAXIMUM BUILDING HEIGHT	45'	44.61'
MINIMUM LANDSCAPED OPEN AREA	20%	40%
MAXIMUM NUMBER OF DWELLING UNITS	725 SF/UNIT = 8	6
RESIDENTIAL PARKING	1 SPACE PER UNIT AFTER 3 UNITS = 3 SPACES	6
MINIMUM INTERNAL RESIDENT BICYCLE STORAGE SPACES	2 SPACES/5 D.U. = 2	2

PERMISSIBLE VEHICLE SUMMARY - 128R			
SPACES	MAX WHEEL BASE	MAX LENGTH	MAX WIDTH
1,5,6	9.3'	16.5'	6.5'
2,3	8.6'	15.8'	6'
4	8.5'	14.5'	5.8'

PARKING SUMMARY - 128R	
DIMENSIONS	# PARKING SPACES
9'x16.5'	4
8'x16.5'	1
8'x18'	1
TOTAL PROPOSED SPACES	6

PHASE II		
SPACE AND BULK STANDARDS - 126 NORTH		
ZONE: R6 - MHNCD0	REQUIRED	PROPOSED
MINIMUM LOT SIZE	2,000 SF	3,645 SF
MINIMUM STREET FRONTAGE	20'	38'
MINIMUM FRONT YARD SETBACK	3.7' AVG	4'
MINIMUM SIDE YARD SETBACK (LEFT)	5'	10.02'
MINIMUM SIDE YARD SETBACK (RIGHT)	5'	5'
MINIMUM DECK SETBACK	7.5'	N/A
MINIMUM REAR YARD SETBACK	10'	17.83'
MAXIMUM LOT COVERAGE	60%	47%
MINIMUM LOT WIDTH	20'	38'
MAXIMUM BUILDING HEIGHT	35'	33.32'
MINIMUM LANDSCAPED OPEN AREA	20%	20%
MAXIMUM NUMBER OF DWELLING UNITS	725 SF/UNIT = 5*	6
RESIDENTIAL PARKING	1 SPACE PER UNIT AFTER 3 UNITS = 2 SPACES	2
MINIMUM INTERNAL RESIDENT BICYCLE STORAGE SPACES	2 SPACES/5 D.U. = 2	2

*SECTION 14-488 STATES "THAT PROVIDING BOTH WORKFORCE AND AFFORDABLE HOUSING UNITS, THE APPLICANT SHALL HAVE THE OPTION OF UTILIZING APPLICABLE INCENTIVES". IN THIS CASE THE INCENTIVE RESULTS IN 6 UNITS.

PARKING SUMMARY - 126	
DIMENSIONS	# PARKING SPACES
9'x18'	1
8'x18' (ADA)	1
TOTAL PROPOSED SPACES	2

ISSUED FOR

BY

DATE

LEVEL III SITE PLAN

WHS

8/7/19

PHASE II UPDATE

WHS

10/29/19

COMMENT RESPONSE

WHS

12/18/19

COMMENT RESPONSE 2

WHS

2/24/2020

MASTER SITE PLAN

126/128 NORTH STREET REDEVELOPMENT

UPRIGHT PROPERTIES, LLC

PO BOX 833 WILTON, ME 04294

ACORN ENGINEERING, INC.

65 HANOVER ST. PORTLAND MAINE 04101

(207) 775-2655

FILE:

1116_CIVIL

JN:

1116

SCALE:

1"=10'

DESIGNED BY:

SJL

DRAWN BY:

ZMS

CHECKED BY:

WHS

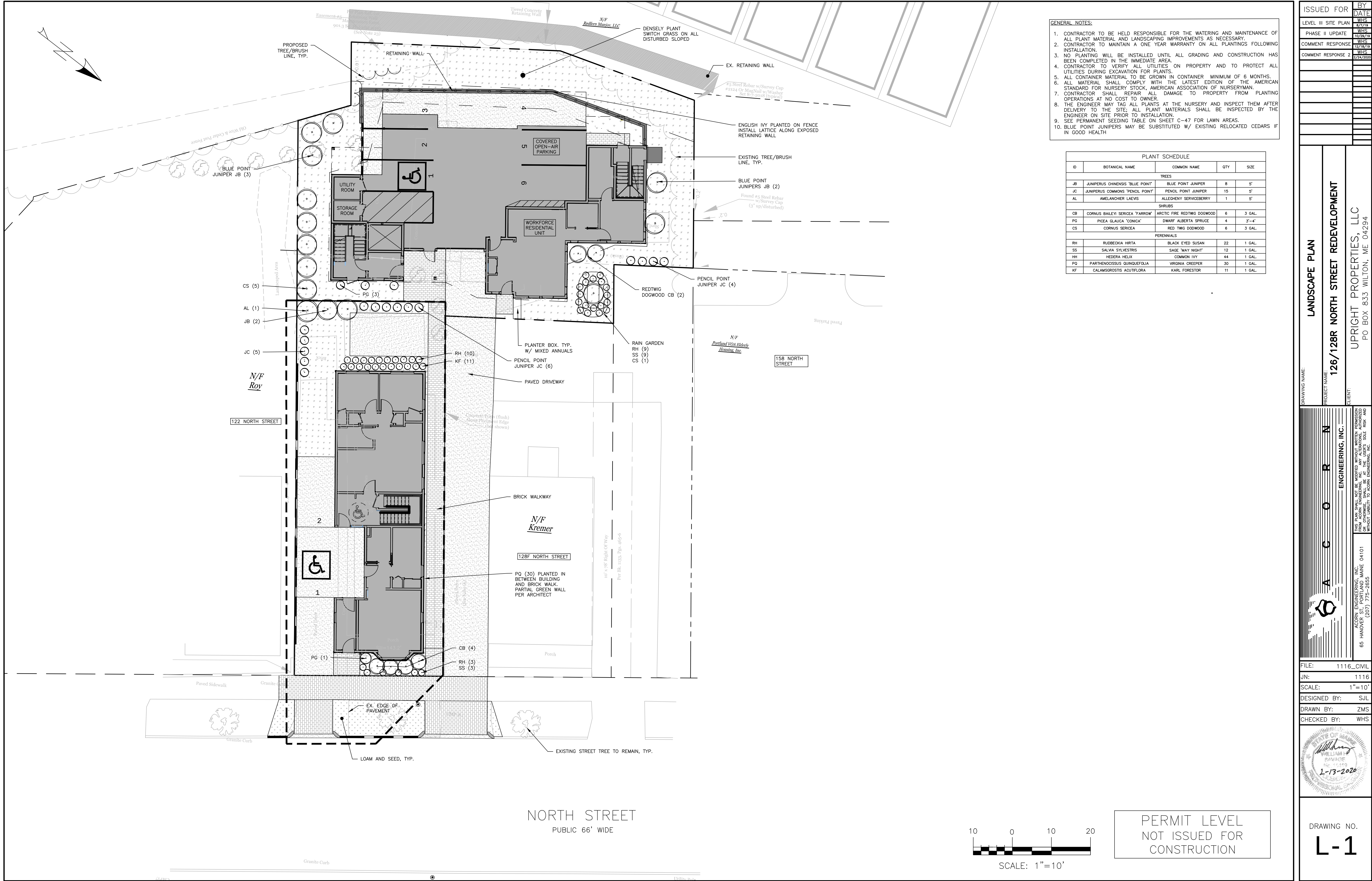
PERMIT LEVEL

NOT ISSUED FOR

CONSTRUCTION

DRAWING NO.

C-10



- GENERAL NOTES:
1. CONTRACTOR TO BE HELD RESPONSIBLE FOR THE WATERING AND MAINTENANCE OF ALL PLANT MATERIAL AND LANDSCAPING IMPROVEMENTS AS NECESSARY.
 2. CONTRACTOR TO MAINTAIN A ONE YEAR WARRANTY ON ALL PLANTINGS FOLLOWING INSTALLATION.
 3. NO PLANTING WILL BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA.
 4. CONTRACTOR TO VERIFY ALL UTILITIES ON PROPERTY AND TO PROTECT ALL UTILITIES DURING EXCAVATION FOR PLANTS.
 5. ALL CONTAINER MATERIAL TO BE GROWN IN CONTAINER MINIMUM OF 6 MONTHS.
 6. ALL MATERIAL SHALL COMPLY WITH THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, AMERICAN ASSOCIATION OF NURSERYMAN.
 7. CONTRACTOR SHALL REPAIR ALL DAMAGE TO PROPERTY FROM PLANTING OPERATIONS AT NO COST TO OWNER.
 8. THE ENGINEER MAY TAG ALL PLANTS AT THE NURSERY AND INSPECT THEM AFTER DELIVERY TO THE SITE; ALL PLANT MATERIALS SHALL BE INSPECTED BY THE ENGINEER ON SITE PRIOR TO INSTALLATION.
 9. SEE PERMANENT SEEDING TABLE ON SHEET C-47 FOR LAWN AREAS.
 10. BLUE POINT JUNIPERS MAY BE SUBSTITUTED W/ EXISTING RELOCATED CEDARS IF IN GOOD HEALTH

PLANT SCHEDULE				
ID	BOTANICAL NAME	COMMON NAME	QTY	SIZE
TREES				
JB	JUNIPERUS CHINENSIS 'BLUE POINT'	BLUE POINT JUNIPER	8	5'
JC	JUNIPERUS COMMONS 'PENCIL POINT'	PENCIL POINT JUNIPER	15	5'
AL	AMELANCHIER LAEVIS	ALLEGHENY SERVICEBERRY	1	5'
SHRUBS				
CB	CORNUS BAILEYI 'SERICEA 'FARROW'	ARCTIC FIRE REDTWIG DOGWOOD	6	3 GAL.
PG	PICEA GLAUCA 'CONICA'	DWARF ALBERTA SPRUCE	4	3'-4'
CS	CORNUS SERICEA	RED TWIG DOGWOOD	6	3 GAL.
PERENNIALS				
RH	RUDEBECKIA HIRTA	BLACK EYED SUSAN	22	1 GAL.
SS	SALVIA SYLVESTRIS	SAGE 'MAY NIGHT'	12	1 GAL.
HH	HEDERA HELIX	COMMON IVY	44	1 GAL.
PQ	PARTHENDOCISSUS QUINQUEFOJIA	VIRGINIA CREEPER	30	1 GAL.
KF	CALAMAGROSTIS ACUTIFLORA	KARL FORESTOR	11	1 GAL.

ISSUED FOR

BY

DATE

LEVEL III SITE PLAN

WHS

4/7/19

PHASE II UPDATE

WHS

10/29/19

COMMENT RESPONSE

WHS

12/18/19

COMMENT RESPONSE 2

WHS

2/24/2020

DRAWING NAME

LANDSCAPE PLAN

PROJECT NAME

126/128 NORTH STREET REDEVELOPMENT

CLIENT

UPRIGHT PROPERTIES, LLC

PO BOX 833 WILTON, ME 04294

ACORN ENGINEERING, INC.

65 HANOVER ST. PORTLAND, MAINE 04101

(207) 775-2655

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FILE:

1116_CIVIL

JN:

1116

SCALE:

1"=10'

DESIGNED BY:

SJL

DRAWN BY:

ZMS

CHECKED BY:

WHS

STATE OF MAINE

PROFESSIONAL SEAL

WILLIAM J. LAMORE

NO. 11419

2-13-2020

DRAWING NO.

L-1

1. ALL WORK WITHIN THE CITY STREET RIGHT OF WAY SHALL MEET CITY OF PORTLAND TECHNICAL MANUAL STANDARDS.
2. CONTRACTOR SHALL SUBMIT PLANS FOR FOUNDATION REQUIREMENTS, DESIGN OF ADDITIONAL TEMPORARY SOIL RESTRAINT MEASURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR IF NECESSARY FOR CONSTRUCTION.
3. ALL EXCAVATIONS SHALL BE PROTECTED BY SHIELDING AND BRACINGS ARE CONSTRUCTED WITH POSITIVE OUTLET TO PROPOSED CONNECTIONS.
4. INSTALL BACKFLOW PREVENTION WITHIN PROPERTY ON ANY CONNECTION TO BE CONNECTED.
5. COORDINATE ROOF LEADERS, GUTTERS, DOWNSPOUTS, ETC. WITH THE ARCHITECT.
6. CONTRACTOR SHALL BE PROVIDED AT ALL 90-DEGREE BENDS IN FOUNDATION DRAIN.
7. CLEANOUT CONNECTION.
8. ANY SIGNIFICANT DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER.

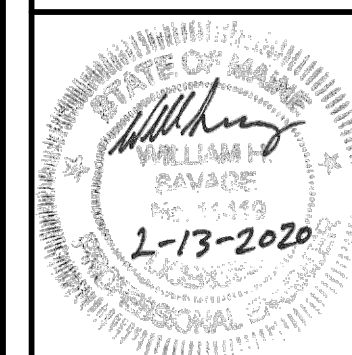
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DRAWING NAME: GRADING & DRAINAGE PLAN

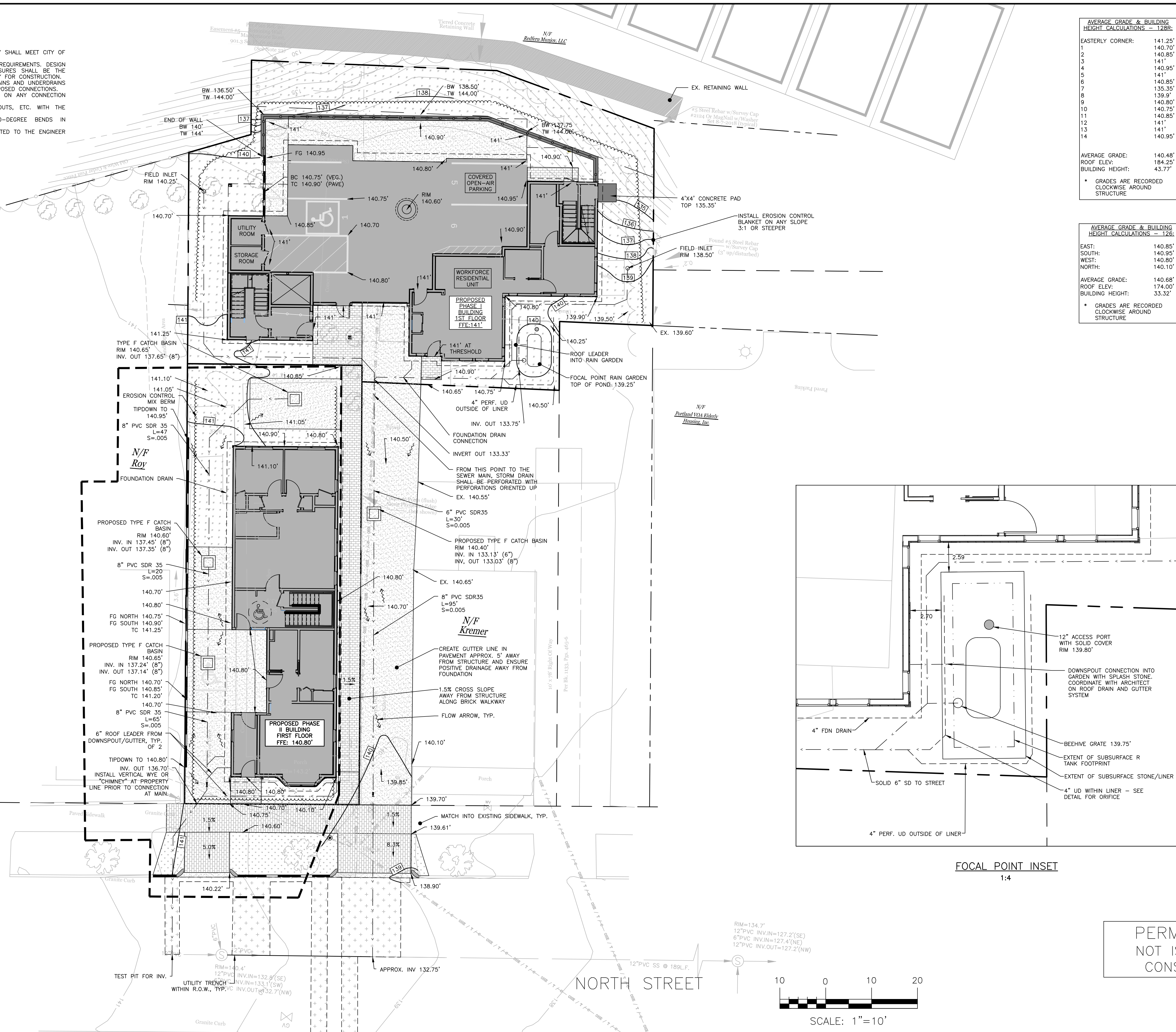
PROJECT NAME: 126/128R NORTH STREET REDEVELOPMENT

CLIENT: UPRIGHT PROPERTIES, LLC
300 DOV. ST. WILTON, ME 04094

FILE:	1116_CIV
JN:	111
SCALE:	1"=10'
DESIGNED BY:	SA
DRAWN BY:	ZM
CHECKED BY:	WH

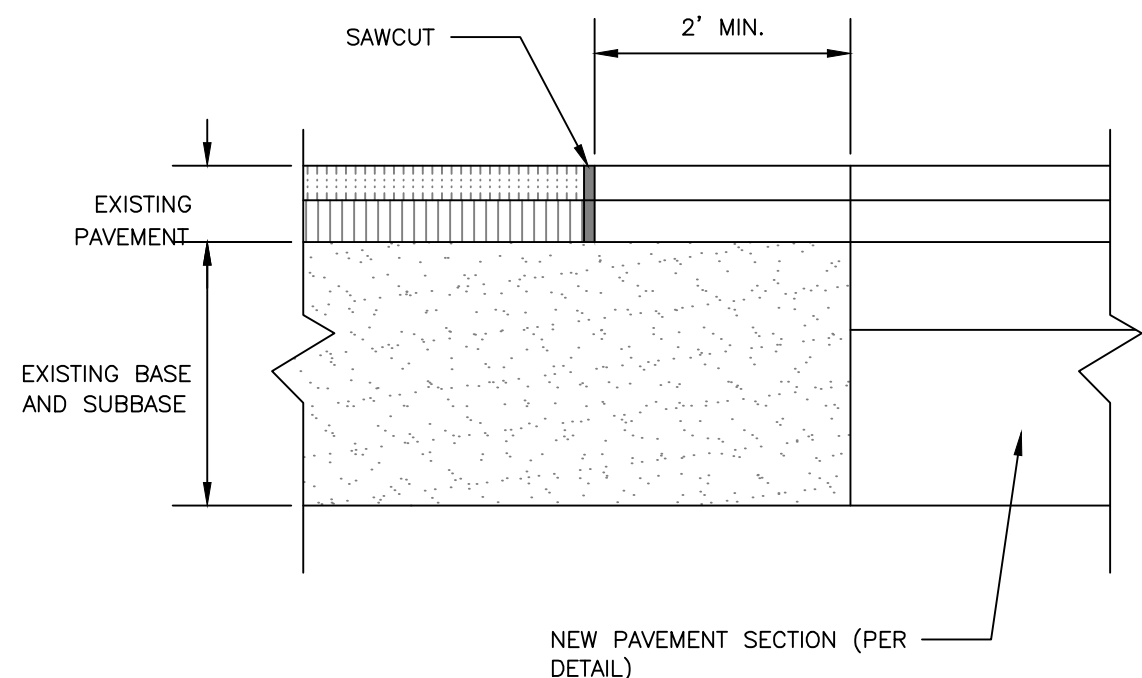


DRAWING NO.
C-30



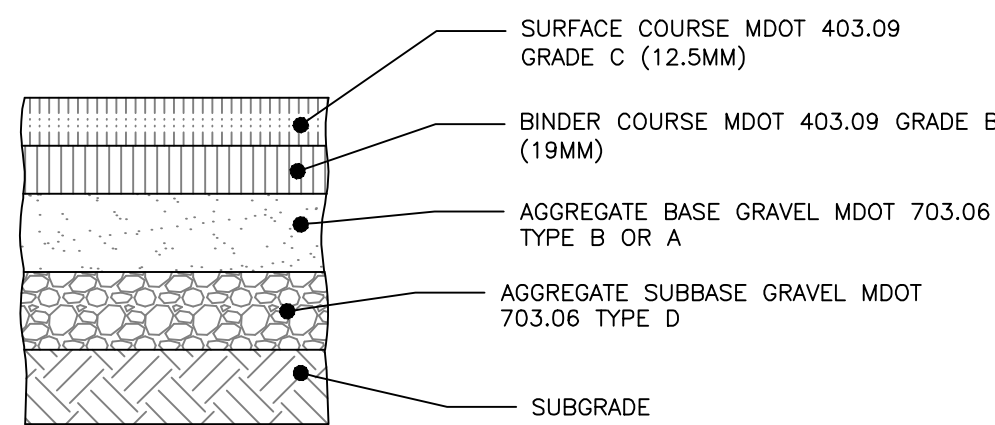
NOTES:

1. SAWCUT EXISTING PAVEMENT AND REMOVE 2' STRIP OF EXISTING PAVEMENT. APPLY BITUMINOUS TACK COAT PRIOR TO PLACEMENT OF NEW BITUMINOUS PAVEMENT.
2. THE NEW PAVEMENT SECTION SHALL MEET THE CITY OF PORTLAND ARTERIAL BITUMINOUS PAVEMENT SECTION DETAIL AT A MINIMUM OR THE THE EXISTING PAVEMENT AND AGGREGATE BASE AND SUBBASE DEPTH WHICHEVER IS GREATER.



PAVEMENT SAWCUT DETAIL

NOT TO SCALE

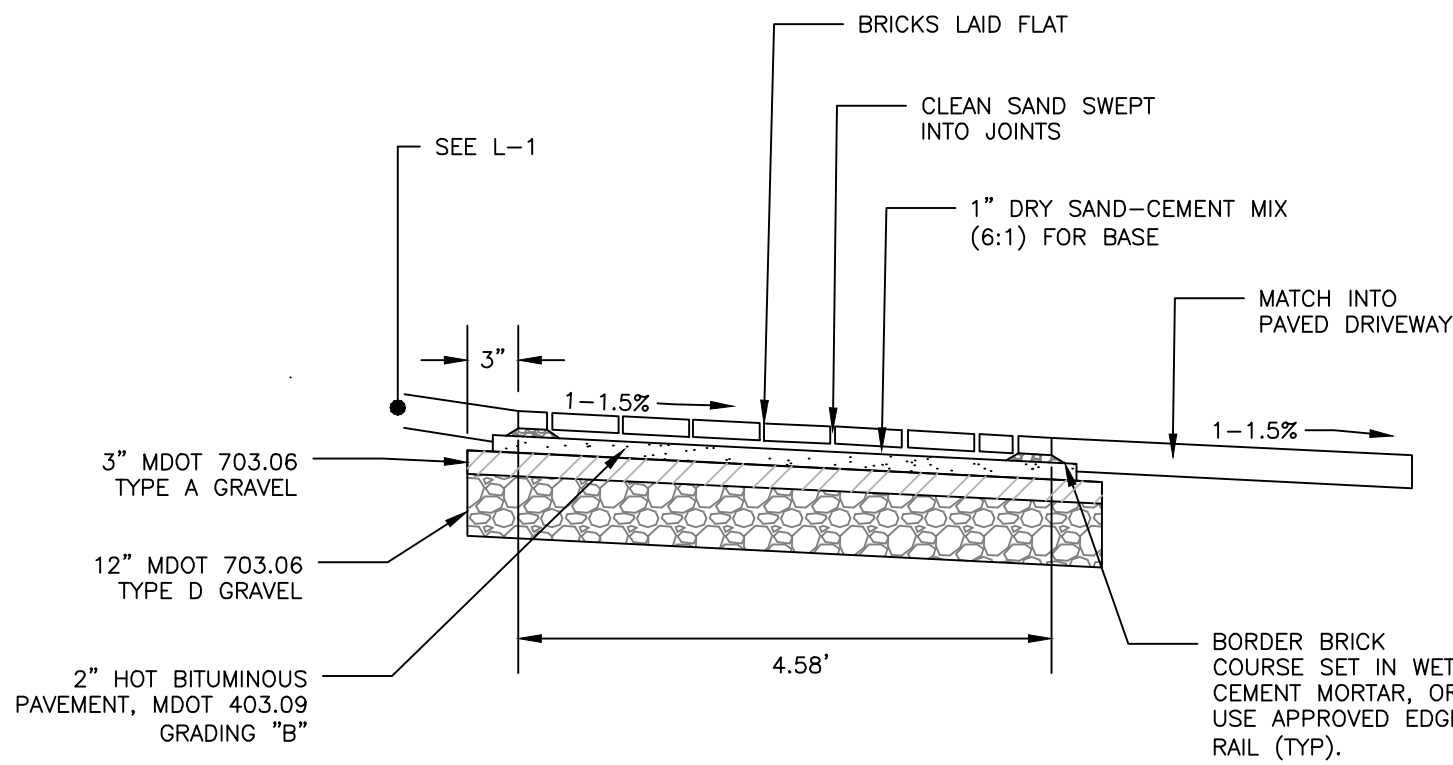


NOTE:
COMPACT SUBGRADE TO 95% MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D-1557

THICKNESS OF LAYERS	
STANDARD	LAYERS
1-1/2"	SURFACE COURSE MDOT 403.09 GRADE C (12.5mm)
2"	BINDER COURSE MDOT 403.09 GRADE B (19mm)
3"	AGGREGATE BASE GRAVEL MDOT 703.06 TYPE B OR A
15"	AGGREGATE SUBBASE GRAVEL MDOT 703.06 TYPE D

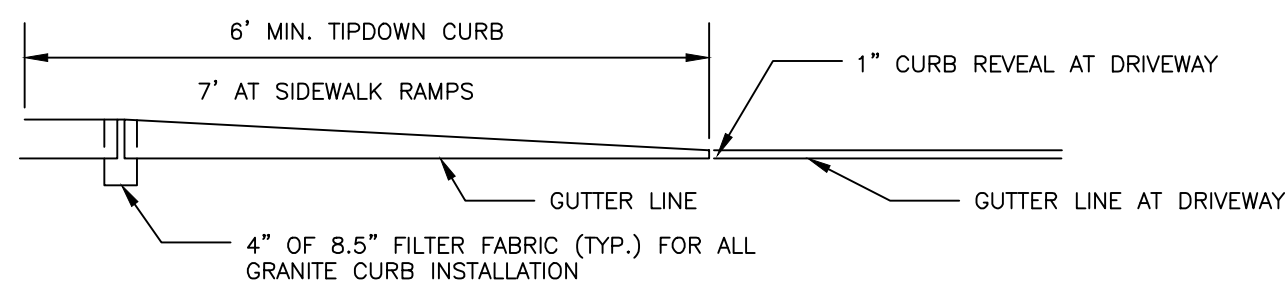
BITUMINOUS PAVEMENT PROFILE

NOT TO SCALE

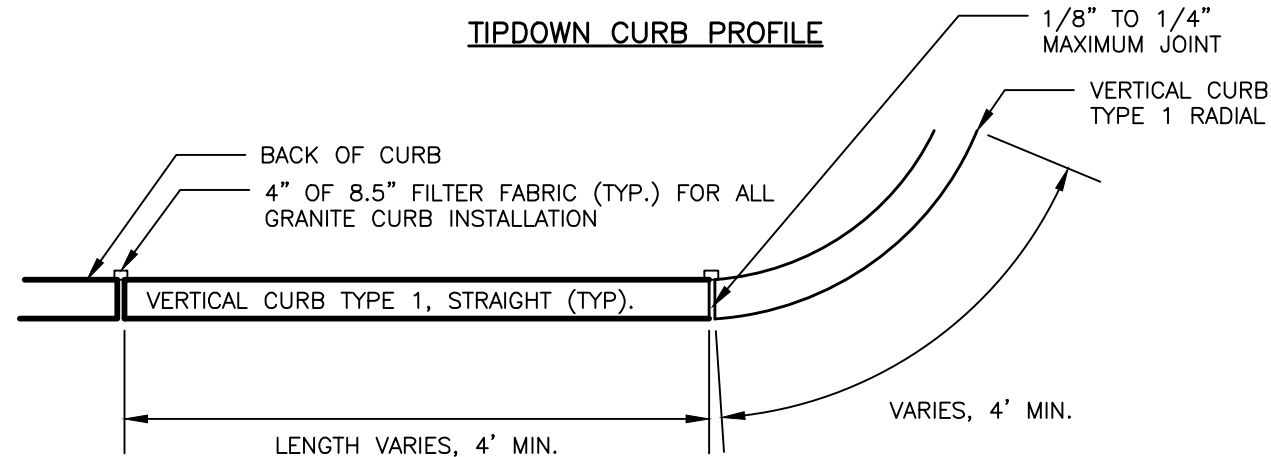


INTERNAL BRICK PEDESTRIAN SIDEWALK ON VEHICULAR WAY

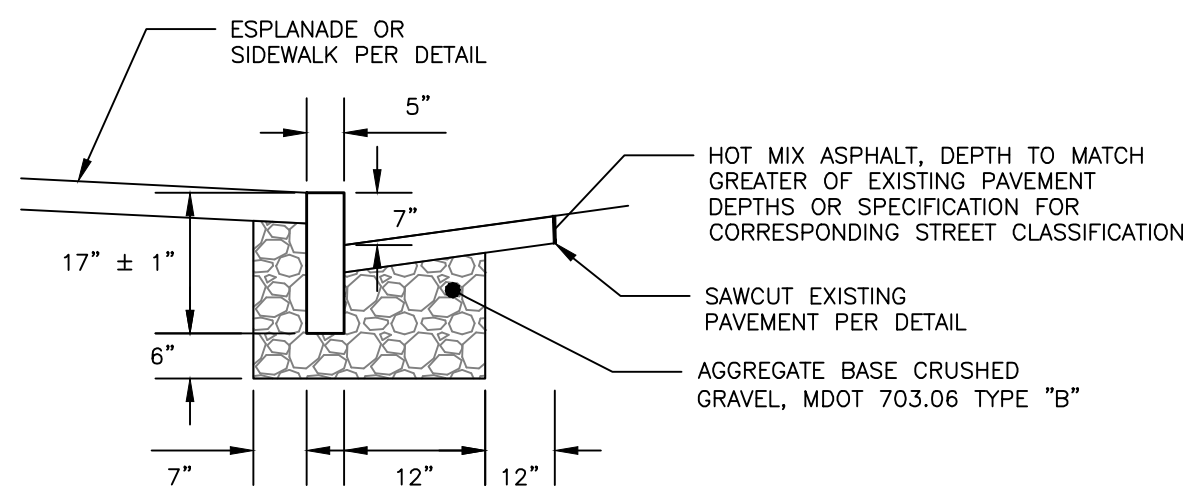
NOT TO SCALE



TIPDOWN CURB PROFILE



VERTICAL GRANITE CURB PLAN VIEW



VERTICAL GRANITE CURB CROSS SECTION

NOTES:

1. CURB SHALL BE RESET IN ACCORDANCE WITH MDOT 609.08 WITH THE EXCEPTION OF CURB SPACING TO BE INSTALLED PER DETAIL.

VERTICAL GRANITE CURB AND TIPDOWN INSTALLATION IN EXISTING STREETS DETAIL

NOT TO SCALE

NOTES:

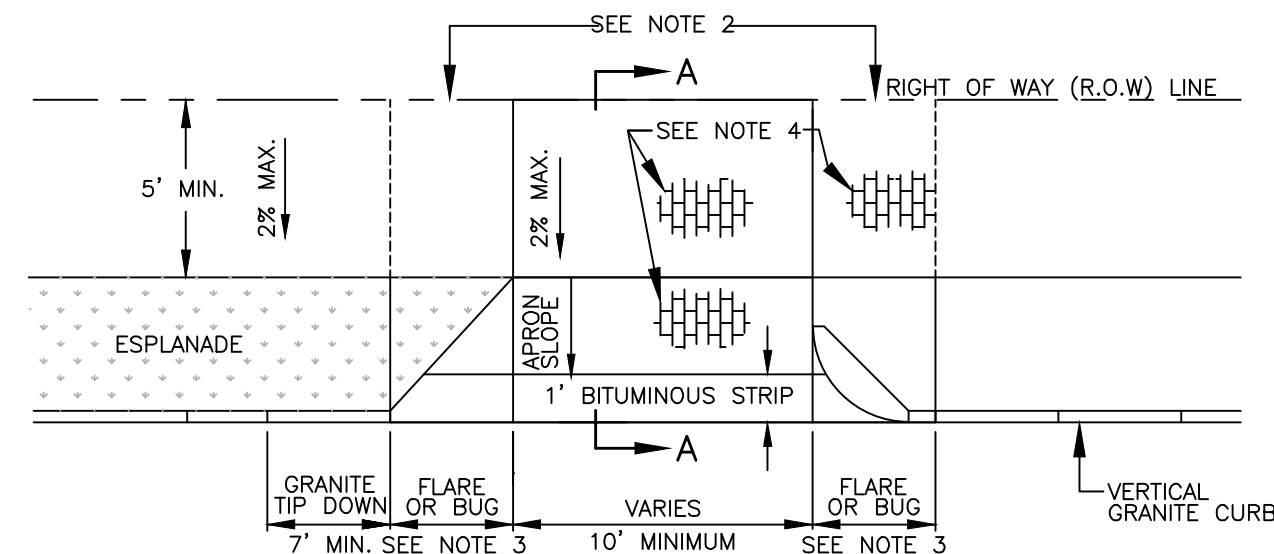
1. BRICKS TO BE USED:

NEW CONSTRUCTION:

4"x8" PINE HALL PATHWAY PAVEMENT BRICK; MFG. BY PINE HALL BRICK CO., MADISON, NORTH CAROLINA. LACHANCE ITEM #193623; PINE HALL PATHWAY PAVEMENT BRICK.

REPAIR/MAINTENANCE TO EXISTING BRICK SIDEWALKS:
VERMONT BACKER SUPPLIED BY GAGNE AND SONS
SPECIFICATION NUMBER: "VERMONT PAVEMENT BRICK", ITEM NUMBER #VBBB

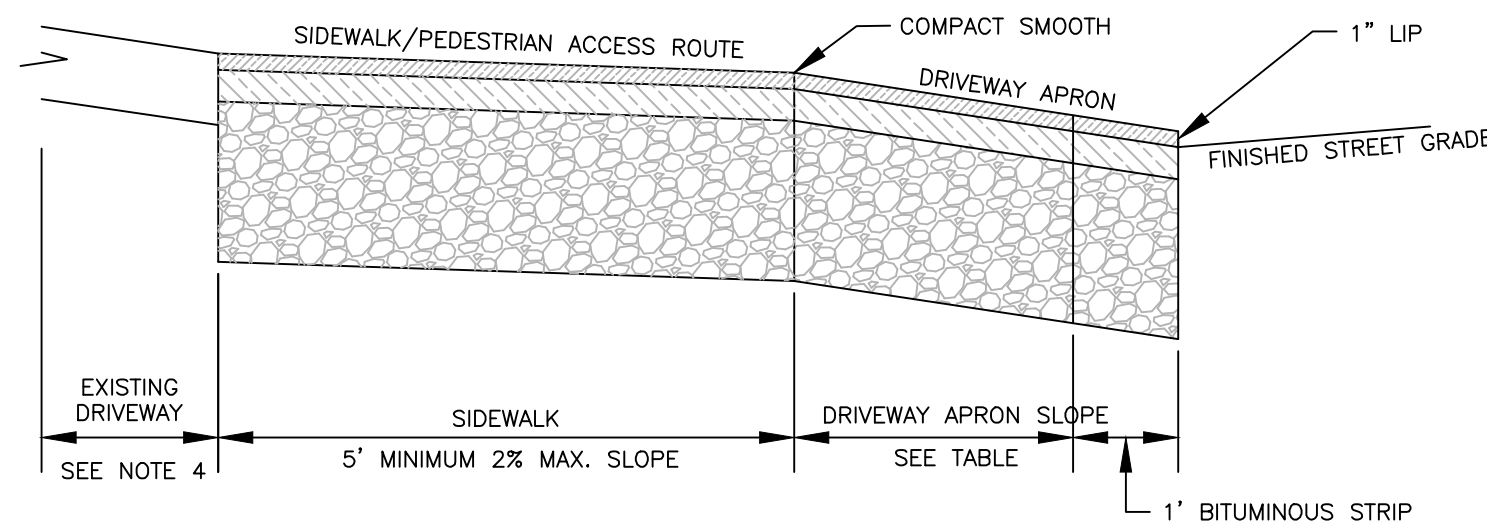
2. INSTALL BRICK FLUSH UP TO BUILDING, PAVEMENT, STAIRS, CONCRETE SURFACES, CURB OR LANDSCAPED AREAS.



APRON SLOPE TABLE	
LAND USE	MAXIMUM RECOMMENDED GRADE CHANGE AT STREET(%)
RESIDENTIAL WITH <9 PARKING SPACES	14%
ALL OTHER DRIVEWAYS	10%

NOTES:

1. MATCH EXISTING GRADE AT R.O.W. LINE, WHERE REQUIRED TO MEET A.D.A. AND DRIVEWAY APRON SLOPE REQUIREMENTS, A CONSTRUCTION EASEMENT MAY BE REQUIRED.
2. IF MATCHING THE EXISTING GRADE AT ROW CAUSES APRON SLOPE TO EXCEED RECOMMENDED %, SIDEWALK TRANSITION AREAS MAY BE ADDED, BUT SHALL NOT EXCEED 8.33%.
3. TWO-FOOT RADIUS CORNER GRANITE PIECES ("BUGS") ARE REQUIRED AT LOW-VOLUME DRIVEWAYS UNLESS OTHERWISE DIRECTED BY DPW. AT OTHER DRIVEWAYS, STANDARD FLARE/TIPDOWN TREATMENTS SHALL BE USED.
4. ALL MATERIALS TO COMPLY WITH CITY'S SIDEWALK & DRIVEWAY MATERIAL POLICY. BRICK IN DRIVEWAY APRONS, WHERE APPLICABLE, SHALL BE ORIENTED IN THE SAME WAY AS THE ADJACENT BRICK SIDEWALK.



DRIVEWAY APRON

NOT TO SCALE

NOTES:

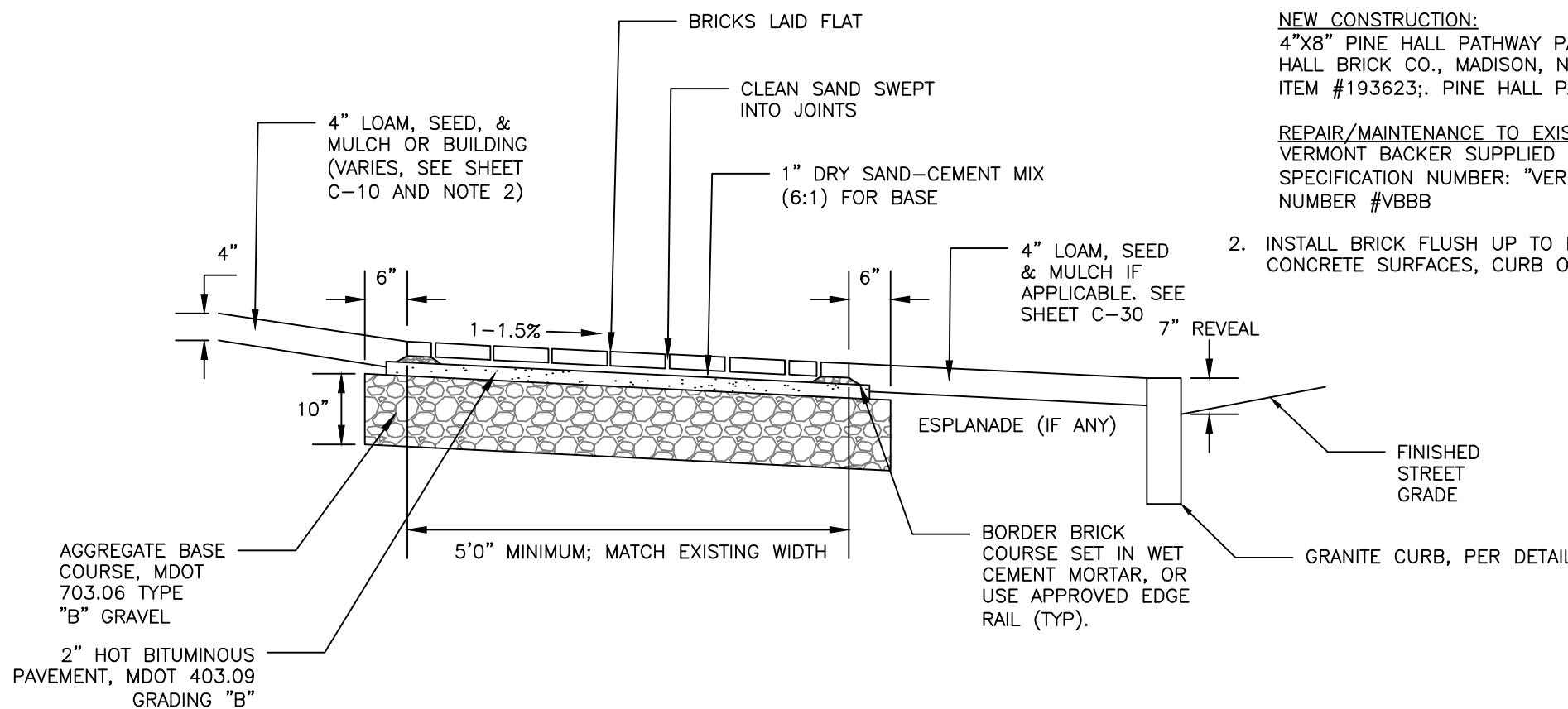
1. BRICKS TO BE USED:

NEW CONSTRUCTION:

4"x8" PINE HALL PATHWAY PAVEMENT BRICK; MFG. BY PINE HALL BRICK CO., MADISON, NORTH CAROLINA. LACHANCE ITEM #193623; PINE HALL PATHWAY PAVEMENT BRICK.

REPAIR/MAINTENANCE TO EXISTING BRICK SIDEWALKS:
VERMONT BACKER SUPPLIED BY GAGNE AND SONS
SPECIFICATION NUMBER: "VERMONT PAVEMENT BRICK", ITEM NUMBER #VBBB

2. INSTALL BRICK FLUSH UP TO BUILDING, PAVEMENT, STAIRS, CONCRETE SURFACES, CURB OR LANDSCAPED AREAS.



BRICK SIDEWALK WITH BITUMINOUS BASE DETAIL - RIGHT OF WAY AND INTERNAL NON-VEHICULAR WALKS

NOT TO SCALE

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

ISSUED FOR	BY
LEVEL III SITE PLAN	WHS
PHASE II UPDATE	WHS
COMMENT RESPONSE 2	WHS

SITE DETAILS - 1

128R NORTH STREET REDEVELOPMENT

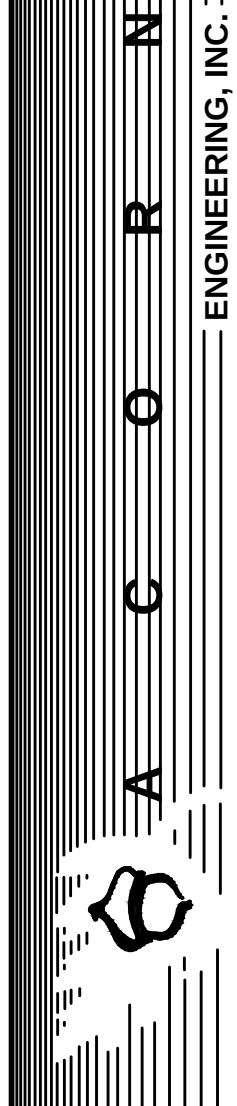
UPRIGHT PROPERTIES, LLC

PO BOX 833 WILTON, ME 04294

DRAWING NAME

PROJECT NAME

CLIENT



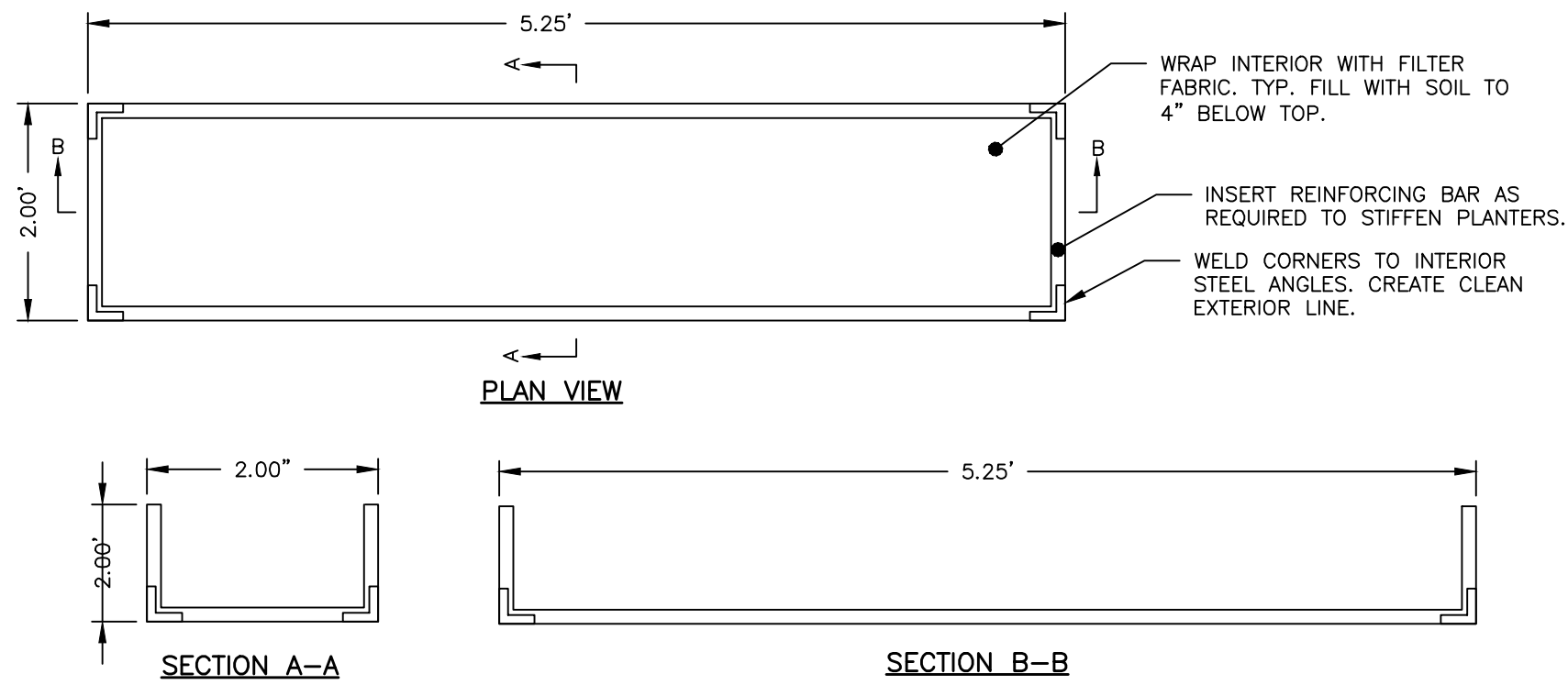
ACCORD ENGINEERING, INC.
65 HANOVER ST. PORTLAND, MAINE 04101
(207) 775-2655
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FILE:	1116_CIVIL
JN:	1116
SCALE:	NTS
DESIGNED BY:	SUL
DRAWN BY:	ZMS
CHECKED BY:	WHS



DRAWING NO.

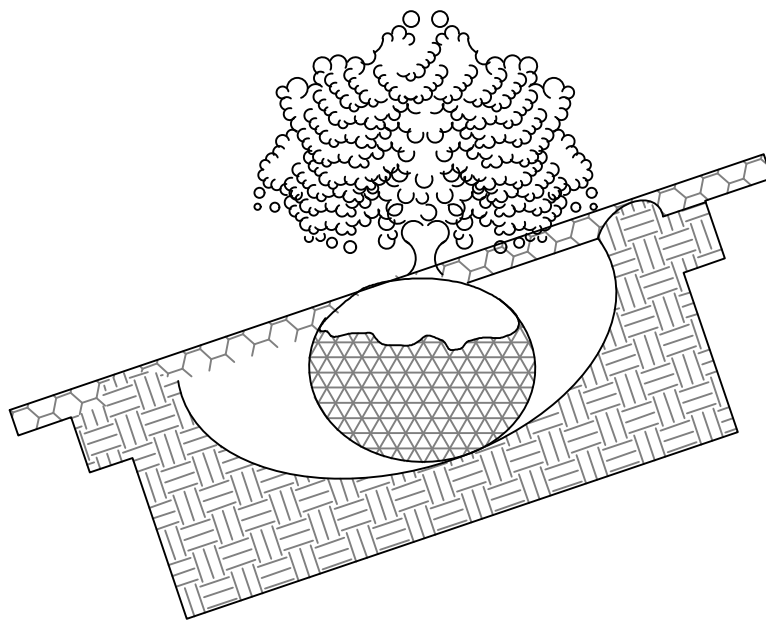
C-40



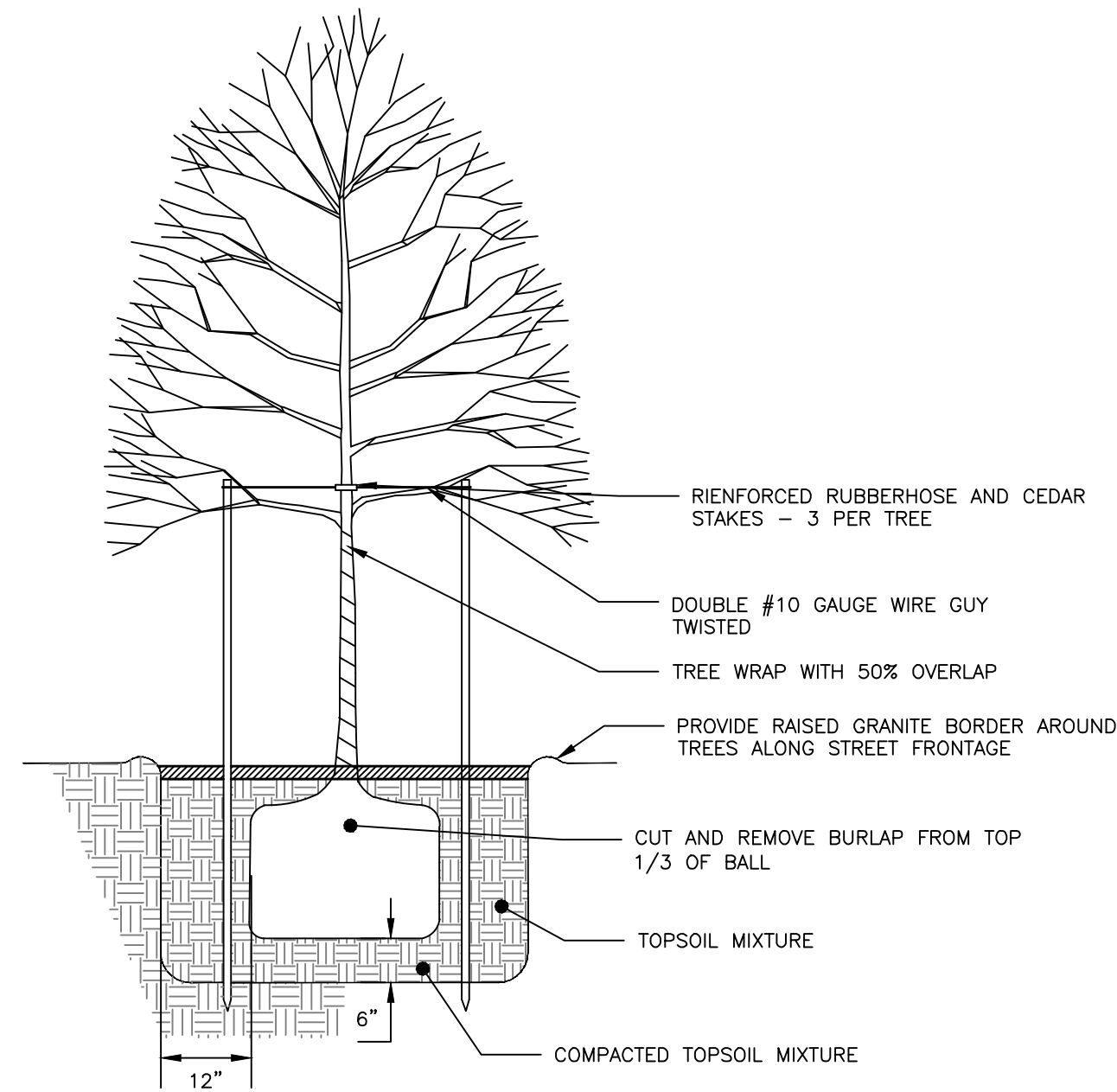
WEATHERING STEEL PLANTER BOX
NOT TO SCALE

NOTES:

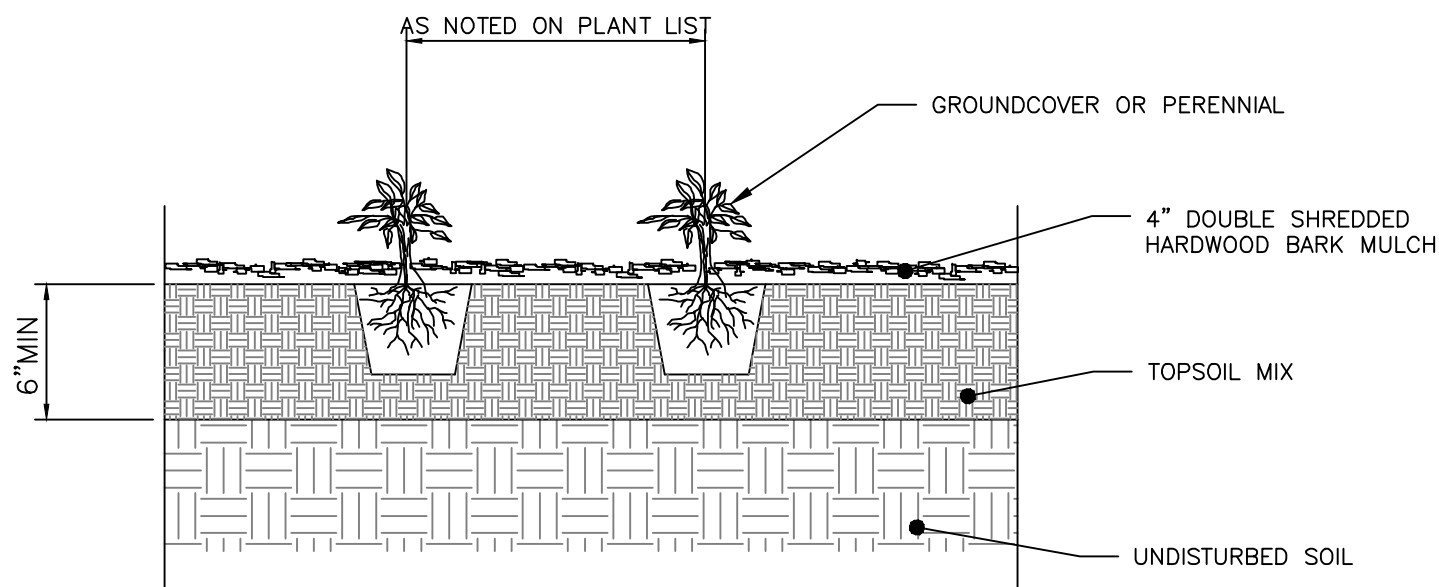
1. DIG HOLE AT LEAST 2 TIMES THE DIAMETER OF THE ROOT BALL AND AS DEEP AS THE ROOT BALL (NO DEEPER). SET ROOT BALL CENTERED, WITH THE TOP AT DOWNHILL EDGE OF THE HOLE.
2. TOPSOIL BACKFILL SHALL BE NATURAL FRABLE, FERTILE, FINE LOAMY SOIL POSSESSING THE CHARACTERISTICS OF TOPSOIL IN THE VICINITY WHICH PRODUCE A HEAVY GROWTH. TOPSOIL SHALL CONTAIN NOT LESS THAN 6% NOR MORE THAN 20% ORGANIC MATTER. TOP SOIL SHALL HAVE A pH VALUE OF NOT LESS THAN 5.5 NOR MORE THAN 7.0.
3. CONTAINER GROWN STOCK – REMOVE CONTAINER PROTECTING THE ROOT BALL. GENTLY COMB OUT THE ROOTS. PRUNE DAMAGED ROOTS.
4. BACKFILL THE HOLE WITH TOPSOIL TO A DEPTH NOT TO EXCEED 8" THEN WATER SUFFICIENTLY TO SETTLE TOPSOIL. REPEAT SOIL BACKFILL, WATER, DRAIN. TOPSOIL SHALL BE TAMPED UNDER EDGES OF THE BALLED PLANTS. BACKFILL TO FINISH GRADE AND CREATE AN EARTHEN SAUCER. SOAK PLANTS TWICE WITHIN THE FIRST TWENTY-FOUR HOURS OF PLANTING.



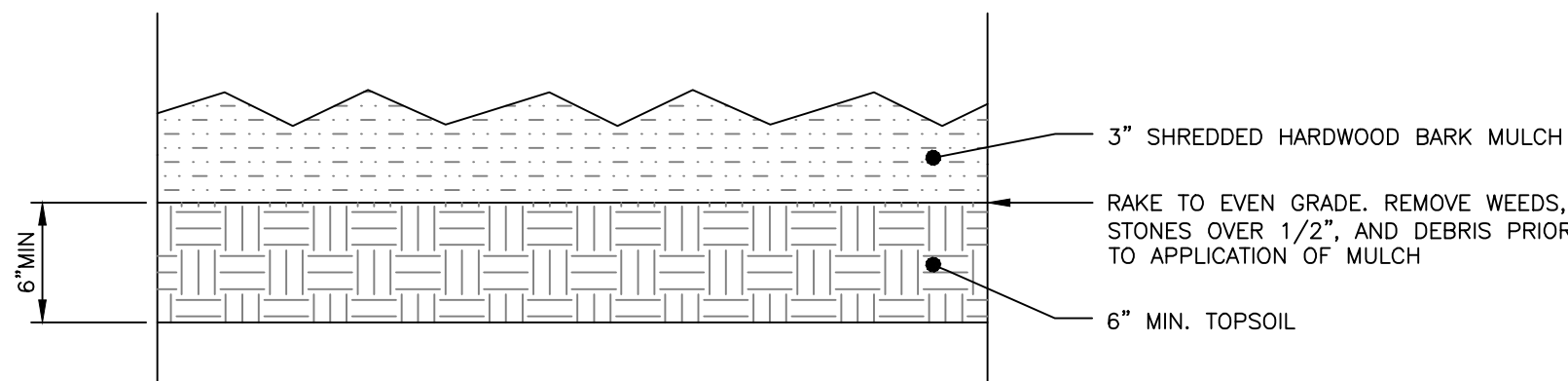
TYPICAL PLANTING
NOT TO SCALE



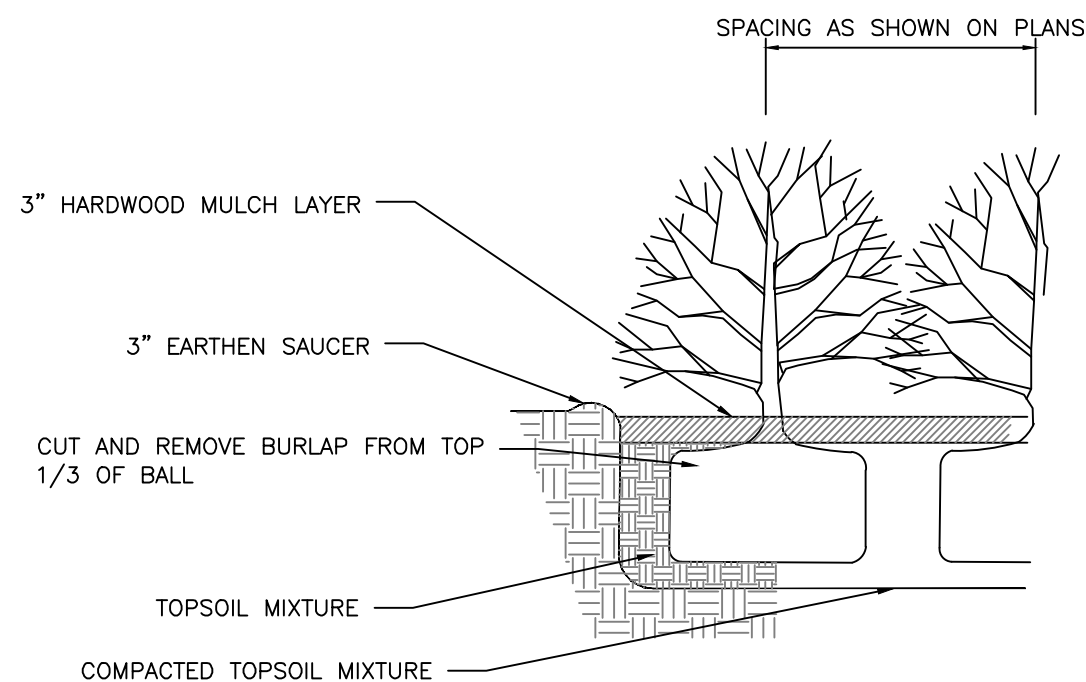
TREE PLANTING DETAIL
NOT TO SCALE



PERENNIAL PLANTING DETAIL
NOT TO SCALE



BARK MULCH DETAIL
NOT TO SCALE



SHRUB PLANTING DETAIL
NOT TO SCALE

PLANTING NOTES:

1. ALL PLANT SELECTION AND INSTALLATION WILL BE IN COMPLIANCE WILL THE CITY OF PORTLAND TECHNICAL MANUAL (SECTION 4).
2. CONTRACTOR TO VERIFY ALL UTILITIES ON PROPERTY AND TO PROTECT ALL UTILITIES DURING EXCAVATION FOR PLANTS.
3. IF THERE IS A DISCREPANCY BETWEEN THE NUMBER OF PLANTS SHOWN ON THE PLAN AND THE NUMBER OF PLANTS SHOWN IN PLANT LIST (IF ANY), THE NUMBER OF PLANTS SHOWN ON PLAN WILL TAKE PRECEDENCE.
4. ALL MATERIAL SHALL COMPLY WITH THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, AMERICAN ASSOCIATION OF NURSERYMAN.
5. ALL DISTURBED AREAS NOT TO BE PAVED OR PLANTED SHALL BE LOAMED AND SEEDED AS SHOWN. THE SEED MIX SPECIFICATIONS ARE AS FOLLOWS: LESCO FINE FESCUE LINKS BLEND OF 35% HARD FESCUE, 35% CREEPING RED FESCUE, 20% CHEWINGS FESCUE AND 10% SHEEP FESCUE. ADD 5% LITTLE BLUESTEM AND 5% NORTHEAST WILDFLOWER SEED MIXTURE BY WEIGHT TO THE LINKS BLEND.
6. FOR PRICING PURPOSES, PROVIDE A PER TREE UNIT COST FOR STAKING AND GUYING. IF STAKING AND GUYING IS REQUIRED, REMOVE TREE WRAP, STAKES, AND GUY WIRES AT END OF FIRST GROWING SEASON.
7. FOR TREE PLANTING IN LAWN AREAS, ANY DISTURBED LAWN SHALL BE LOAMED AND SEEDED AS NECESSARY.
8. NEW TREES TO BE INSTALLED WITH A SLOW RELEASE WATERING BAG.
9. CONTRACTOR TO BE HELD RESPONSIBLE FOR THE WATERING AND MAINTENANCE OF ALL PLANT MATERIAL AND LANDSCAPING IMPROVEMENTS FOR AT LEAST 30 DAYS FOLLOWING INSTALLATION. FOLLOWING THIS PERIOD, THE LANDOWNER OR PROPERTY MANAGEMENT SHALL BE RESPONSIBLE FOR CONTINUED WATERING AND MAINTENANCE. CONTRACTOR TO MAINTAIN A ONE YEAR WARRANTY ON ALL PLANTINGS FOLLOWING FINAL INSTALLATION.
10. ALL PROPOSED PLANTS SHALL BE LOCATED AS SHOWN ON THE PLANS. CONTRACTOR TO NOTIFY ENGINEER WHEN PLANTINGS HAVE BEEN MOBILIZED ON SITE. ENGINEER TO INSPECT AND ACCEPT OR REJECT ANY SPECIMENS ON THE BASIS OF APPARENT HEALTH, HARDINESS, AND CONFORMANCE WITH THE PLANTING SCHEDULE. REJECTED SPECIMENS ARE TO BE REPLACED BY THE CONTRACTOR AT NO ADDED COST TO THE OWNER. ACCEPTANCE DOES NOT WAIVE THE REQUIRED ONE YEAR PLANTING WARRANTY.

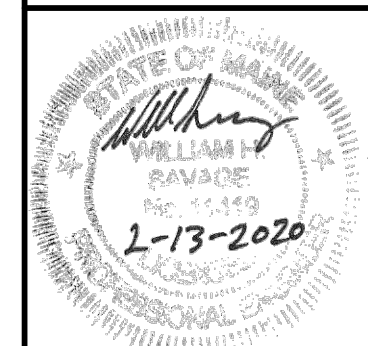
PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

ISSUED FOR	BY
LEVEL III SITE PLAN	WHS
PHASE II UPDATE	WHS
COMMENT RESPONSE 2	WHS

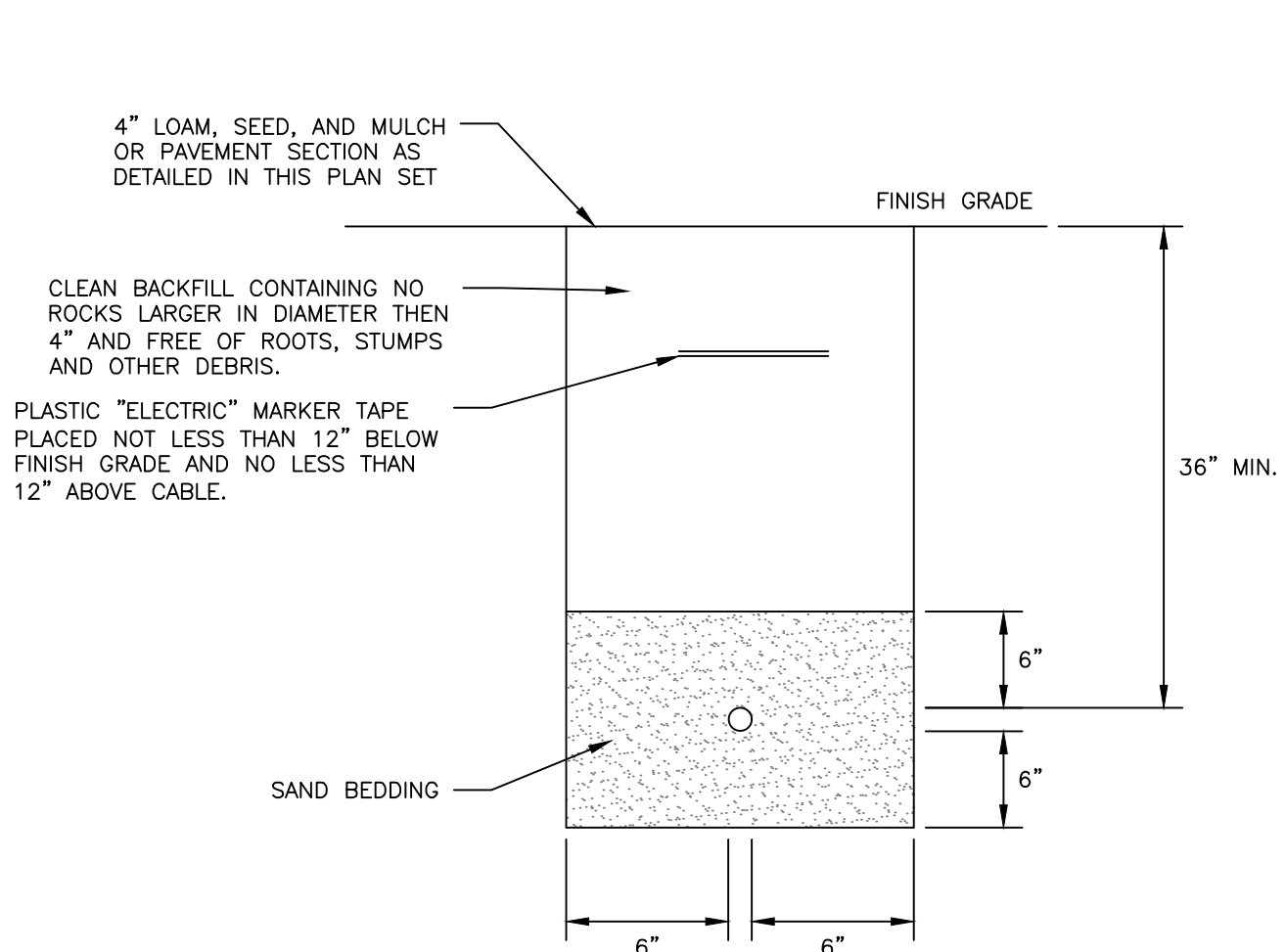
LANDSCAPING DETAILS	128R NORTH STREET REDEVELOPMENT	UPRIGHT PROPERTIES, LLC
DRAWING NAME:	PROJECT NAME:	CLIENT:
		PO BOX 833 WILTON, ME 04294

ACORN ENGINEERING, INC.	ENGINEERING, INC.
65 HANOVER ST, PORTLAND MAINE 04101	(207) 775-2655

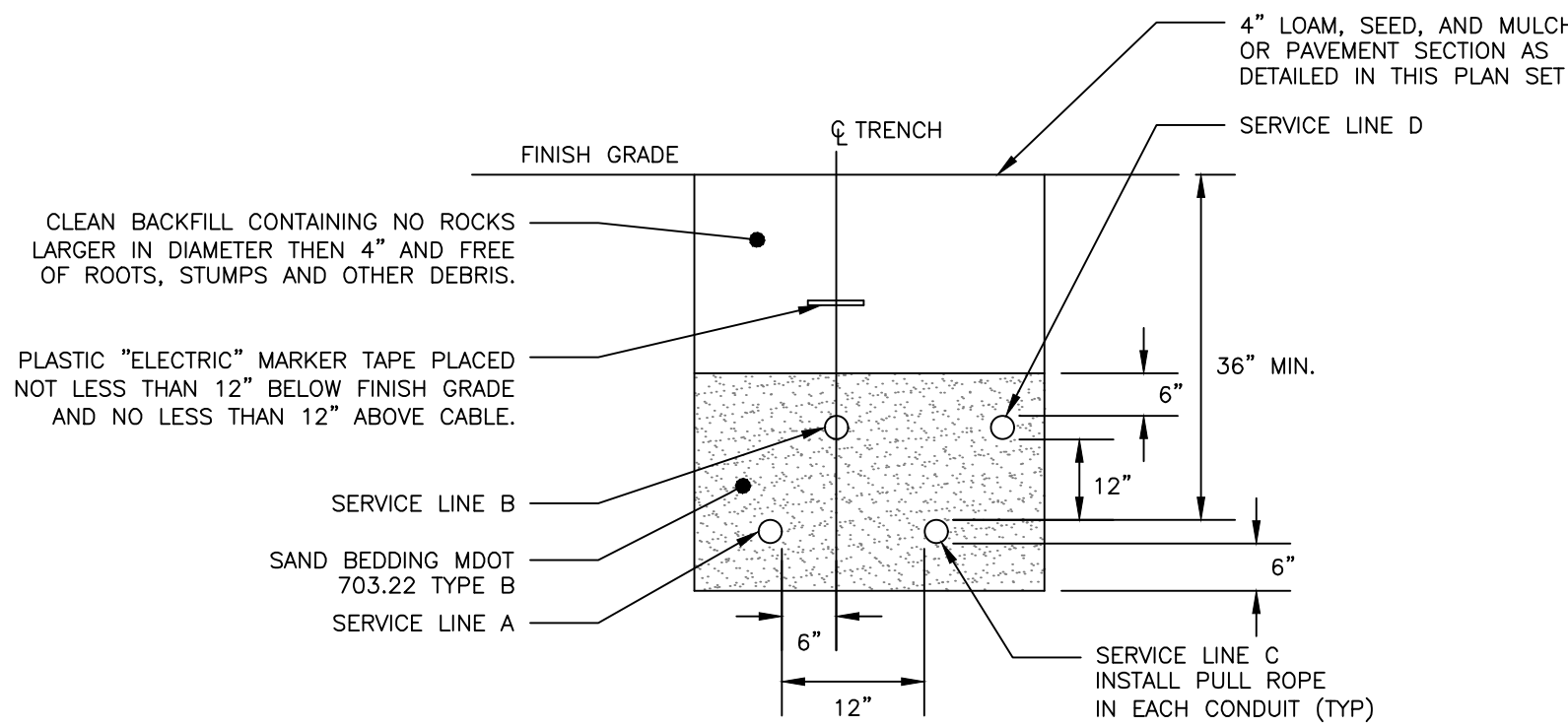
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JN:	1116
SCALE:	NTS
DESIGNED BY:	SUL
DRAWN BY:	ZMS
CHECKED BY:	WHS



DRAWING NO.
C-42



SECONDARY ELECTRICAL TRENCH
NOT TO SCALE

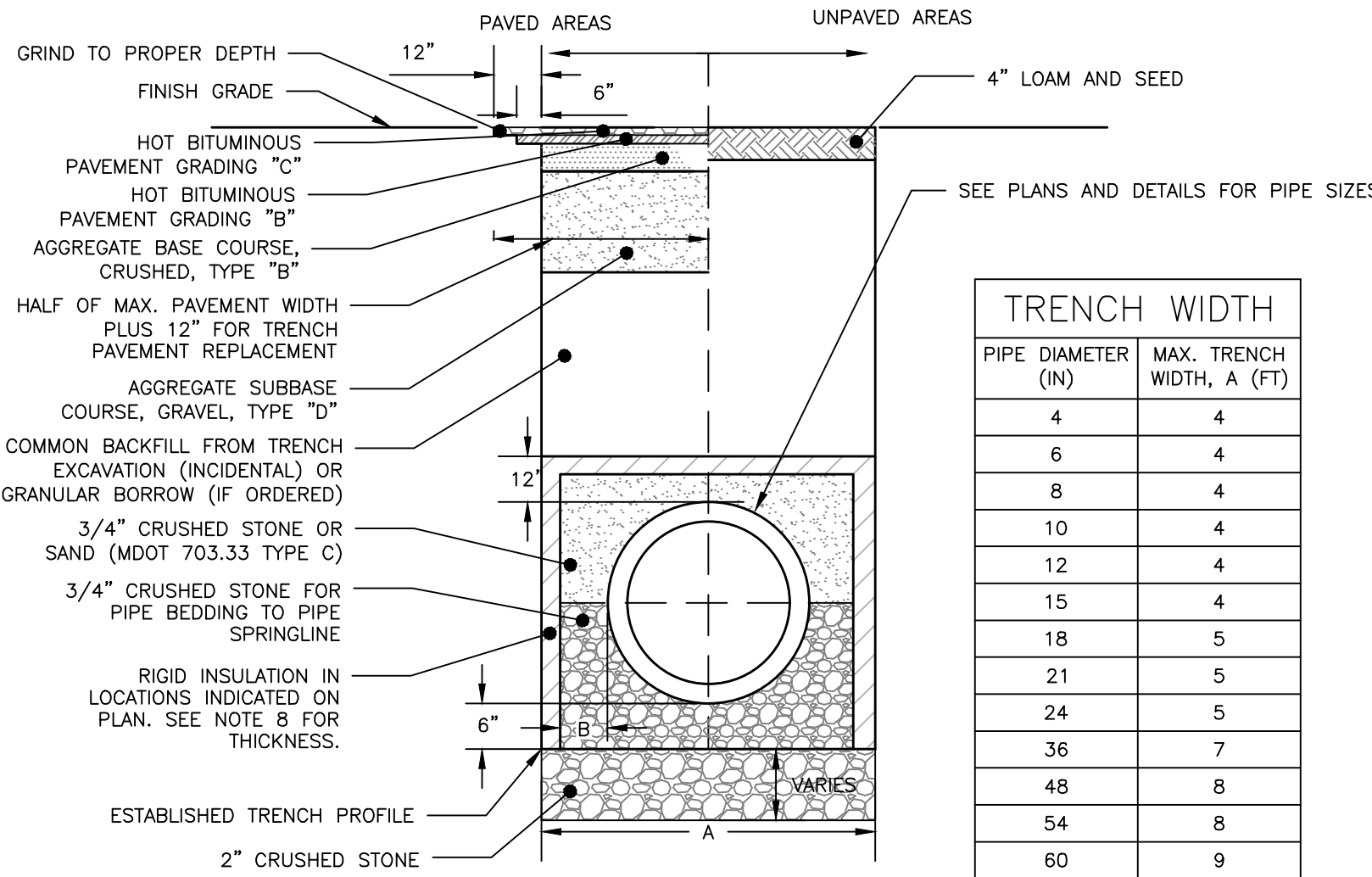


CONDUIT TYPE				
SERVICE	CONDUIT SIZE	GRASS AND PAVED AREAS	UTILITY	REMARKS
A	2-5"	SCHEDULE 40 PVC ELECTRICAL GRADE	PRIMARY POWER	SEE NOTE 1
B	2-4"	SCHEDULE 40 PVC	COMMUNICATION	-
C	2-4"	SCHEDULE 40 PVC ELECTRICAL GRADE	SPARE	IF REQUIRED
D	2-4"	SCHEDULE 40 PVC	CABLE	-

- NOTES:
- ONE CONDUIT CAPPED FOR SPARE, PROVIDE GALVANIZED STEEL LONG SWEEP AT RISER POLE AND EXTEND GALVANIZED CONDUIT TO 10" ABOVE GRADE AT POLE WITH STAND-OFF BRACKETS.
 - MINIMUM SEPARATION OF 24 INCHES BETWEEN PRIMARY CABLE/CONDUIT AND GAS LINES SHALL BE MAINTAINED.
 - CONDUITS WITHIN THE CITY RIGHT-OF-WAY SHALL BE ENCASED IN CONCRETE.

UTILITY TRENCH – PRIMARY AND SECONDARY POWER, TELEPHONE, AND CABLE
NOT TO SCALE

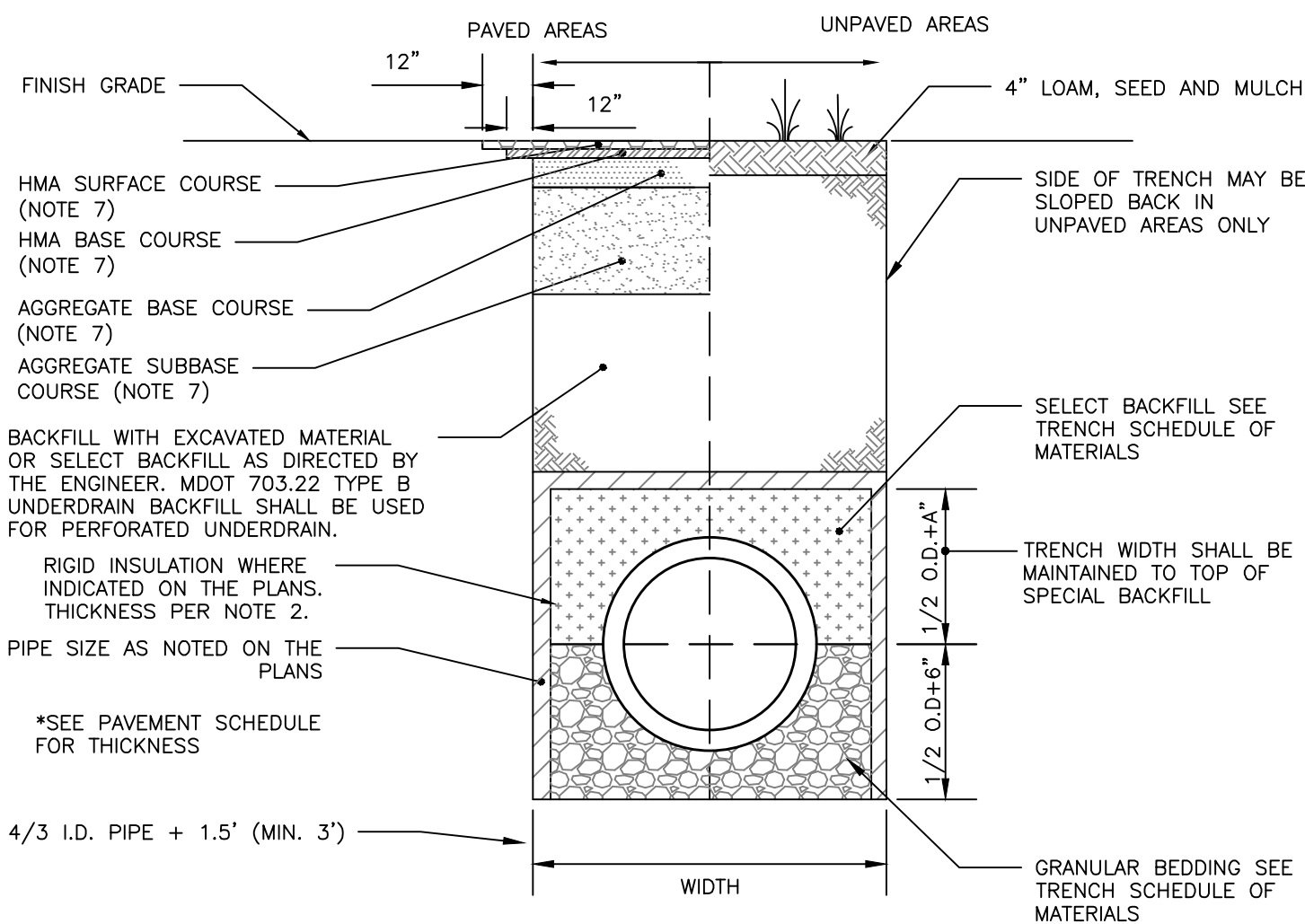
- DESIGN NOTES:
- ANY ALTERNATE TRENCHING METHODS SHALL BE APPROVED IN ADVANCE BY THE CITY.
 - ALL CONSTRUCTION METHODS SHALL CONFORM TO THE CITY OF PORTLAND TECHNICAL STANDARDS FIGURE II-2.
 - BRACING & SHEETING OR OTHER TRENCH PROTECTION TO BE PROVIDED TO MEET APPLICABLE STATE AND O.S.H.A. SAFETY STANDARDS. ALL SUCH TRENCH PROTECTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
 - WHERE APPLICABLE, PERFORATIONS IN STORM DRAIN (PERF. SD) SHALL BE ORIENTED UP.
 - ALL STORM DRAINS SHALL BE PVC SDR 35 MIN PS-46 RATING OR IN ACCORDANCE WITH CITY OF PORTLAND TECHNICAL MANUAL, SECTION 2 – SANITARY SEWER AND STORM DRAIN – PART 2.5.2
 - IN PAVED AREAS, DEPTHS OF GRAVEL AND HOT MIX ASPHALT PAVEMENT SHALL MATCH THE GREATER OF EXISTING CONDITIONS OR THE REQUIREMENTS FOR THE CORRESPONDING STREET CLASSIFICATION.
 - THIS DETAIL SHALL BE APPLIED ONLY TO PIPE TRENCHES WITHIN OF THE CITY OF PORTLAND R.O.W.
 - STORM DRAIN COVER BETWEEN 2' AND 3' SHALL INCLUDE 4" OF RIGID INSULATION. COVER BETWEEN 3' AND 4' SHALL INCLUDE 2" RIGID INSULATION. OTHER UTILITIES: ADD 2" OF RIGID INSULATION FOR EACH FOOT ABOVE MINIMUM DEPTH.
 - DEPTH OF BITUMINOUS PAVEMENT AND AGGREGATE COURSES SHALL BE DETERMINED BY STREET CLASSIFICATION.
 - DIMENSION B SHALL BE SUFFICIENT TO ALLOW CRUSHED STONE BEDDING TO BE PLACED AND COMPACTED UNDER THE HAUNCHES OF THE PIPE, BUT IN ALL CASES DIMENSION B SHALL BE AT LEAST 9".
 - DIMENSION A IS THE MAXIMUM WIDTH ALLOWED FOR CALCULATING PAY QUANTITIES UNDER GRANULAR BORROW, CRUSHED STONE, STRUCTURAL EARTH EXCAVATION, AND STRUCTURAL ROCK EXCAVATION. DIMENSION A SHALL BE BASED ON PIPE DIAMETER D, AS SET FORTH IN THE TABLE BELOW.



TRENCH WIDTH	
PIPE DIAMETER (IN)	MAX. TRENCH WIDTH, A (FT)
4	4
6	4
8	4
10	4
12	4
15	4
18	5
21	5
24	5
36	7
48	8
54	8
60	9

- ALLOWABLE PIPE MATERIALS:
- REINFORCED CONCRETE PIPE (RCP) MIN. STRENGTH OF CLASS III
 - PVC RING TYPE SEWER (SDR 35) OR EQUIVALENT, MIN PS-46 RATING
 - PVC RING TYPE SEWER PIPE MEETING ASTM F 789
 - DUCTILE IRON PIPE (DIP)
 - ADS N-12 HP TRIPLE-WALL MIN PS-46 RATING
 - ADS SANITITE HP MIN. PS-46

CITY OF PORTLAND TYPICAL PIPE TRENCH DETAIL
NOT TO SCALE

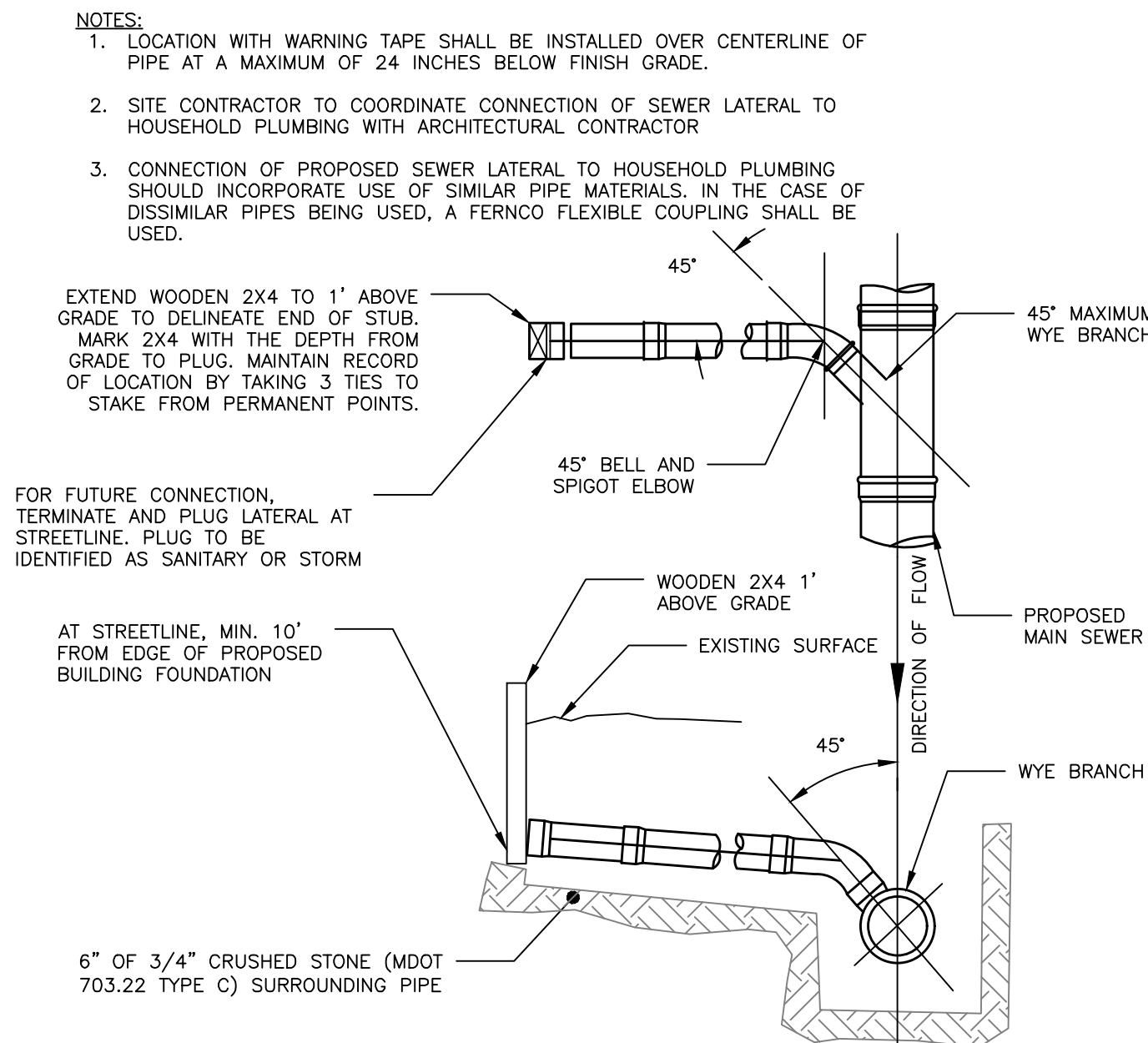


- ALLOWABLE PIPE MATERIALS:
- REINFORCED CONCRETE PIPE (RCP) MIN. STRENGTH OF CLASS III
 - PVC RING TYPE SEWER (SDR 35) OR EQUIVALENT, MIN PS-46 RATING
 - PVC RING TYPE SEWER PIPE MEETING ASTM F 789
 - DUCTILE IRON PIPE (DIP)
 - ADS N-12 HP TRIPLE-WALL MIN PS-46 RATING
 - ADS SANITITE HP MIN. PS-46

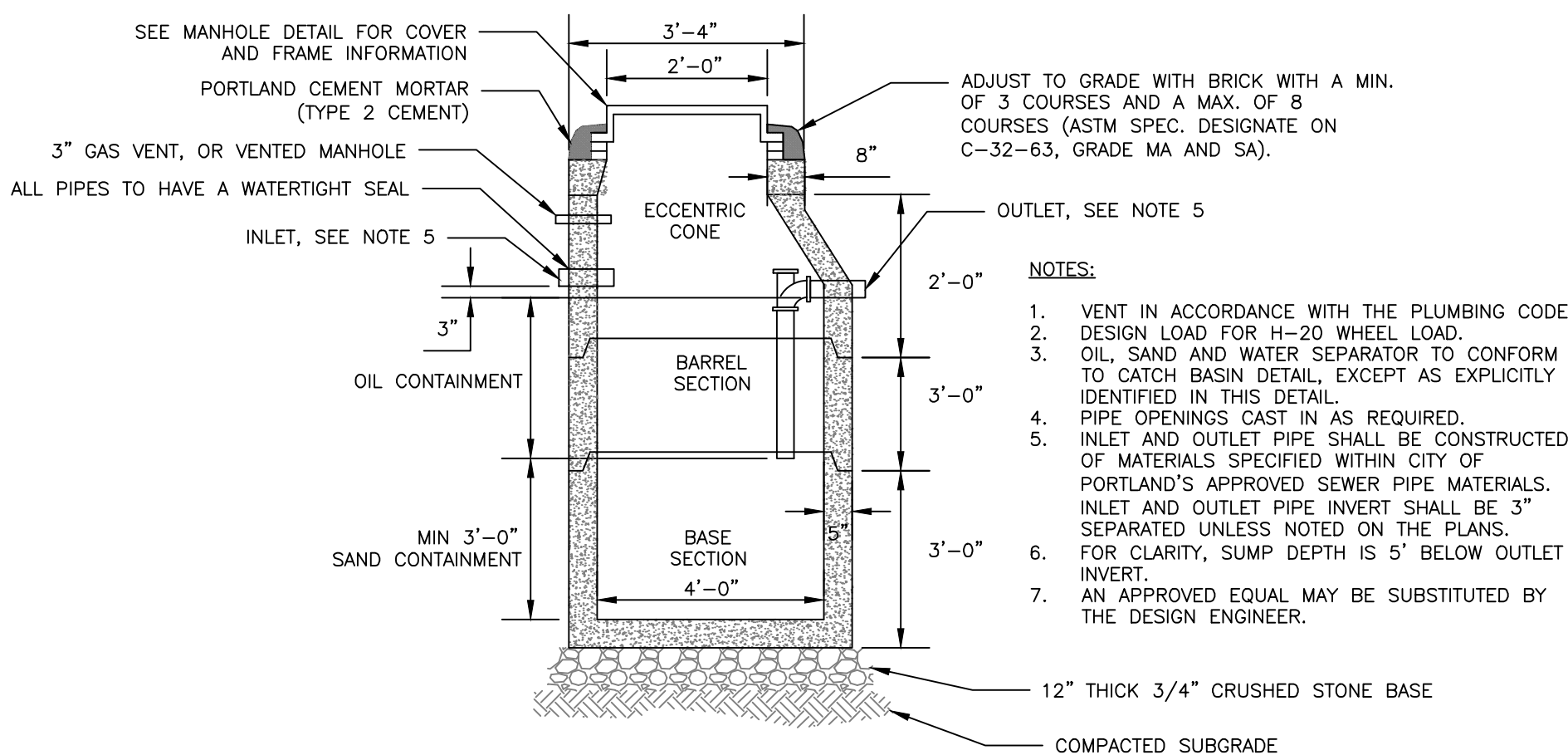
INTERNAL STORM DRAIN AND SEWER TYPICAL TRENCH SECTION
NOT TO SCALE

SCHEDULE OF MATERIALS		
TYPE OF PIPE	GRANULAR BEDDING	SELECT BACKFILL
CMP DUCTILE IRON RCP	MDOT 703.22 TYPE B UD BACKFILL	MDOT 703.22 TYPE B UD BACKFILL
PVC/HDPE	MDOT 703.22 TYPE C 3/4" CRUSHED STONE	MDOT 703.22 TYPE B UD BACKFILL
CMP	MDOT 703.22 TYPE C 3/4" CRUSHED STONE	MDOT 703.22 TYPE C 3/4" CRUSHED STONE

- NOTES:
- BRACING AND SHEETING OR OTHER TRENCH PROTECTION TO BE PROVIDED TO MEET APPLICABLE STATE AND O.S.H.A. SAFETY STANDARDS. ALL SUCH TRENCH PROTECTION TO BE THE RESPONSIBILITY OF THE CONTRACTOR.
 - STORM DRAIN COVER BETWEEN 2' AND 3' SHALL INCLUDE 4" OF RIGID INSULATION. COVER BETWEEN 3' AND 4' SHALL INCLUDE 2" RIGID INSULATION. OTHER UTILITIES: ADD 2" OF RIGID INSULATION FOR EACH FOOT ABOVE MINIMUM DEPTH.
 - INSTALL WARNING TAPE DIRECTLY ABOVE UTILITIES AT THE TOP OF SUBGRADE.
 - MINIMUM COVER
 - 2'-0" – STORM DRAIN
 - 5'-0" – SEWER
 - NO TREES SHALL BE PLANTED WITHIN 5' OF A SEWER PIPE OR SERVICE
 - THIS DETAIL SHALL BE APPLIED ONLY TO DRAINAGE PIPE TRENCHES OUTSIDE OF THE CITY OF PORTLAND R.O.W.
 - THICKNESS AS NOTED BY SURFACE DETAILS



SEWER TEE/WYE CONNECTION DETAIL
NOT TO SCALE



4'-0" DIAMETER PRECAST OIL AND WATER SEPARATOR
NOT TO SCALE

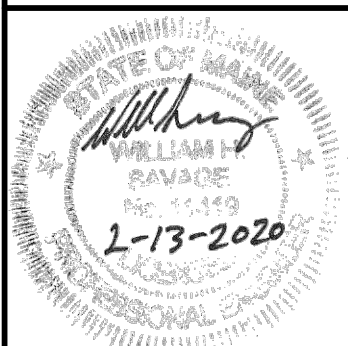
PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

ISSUED FOR	BY
LEVEL III SITE PLAN	WHS
PHASE II UPDATE	WHS
COMMENT RESPONSE 2	WHS

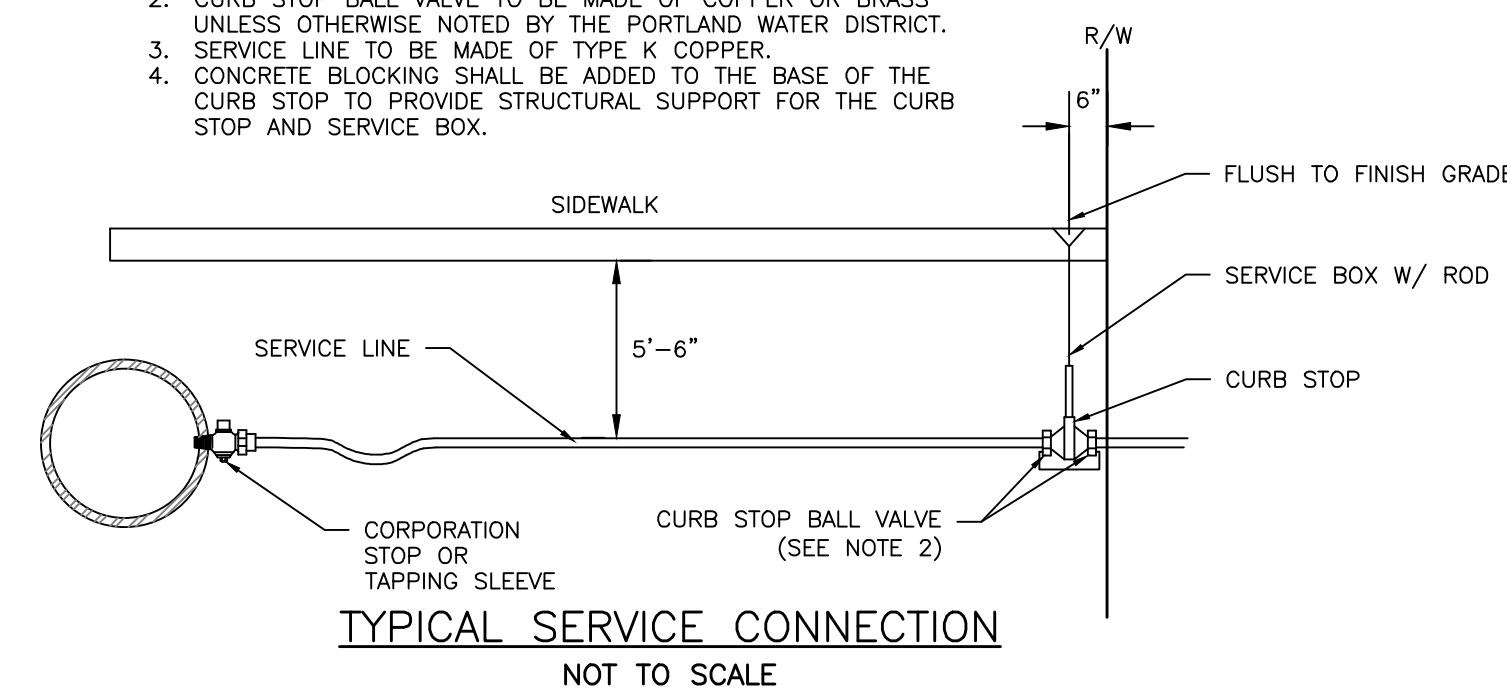
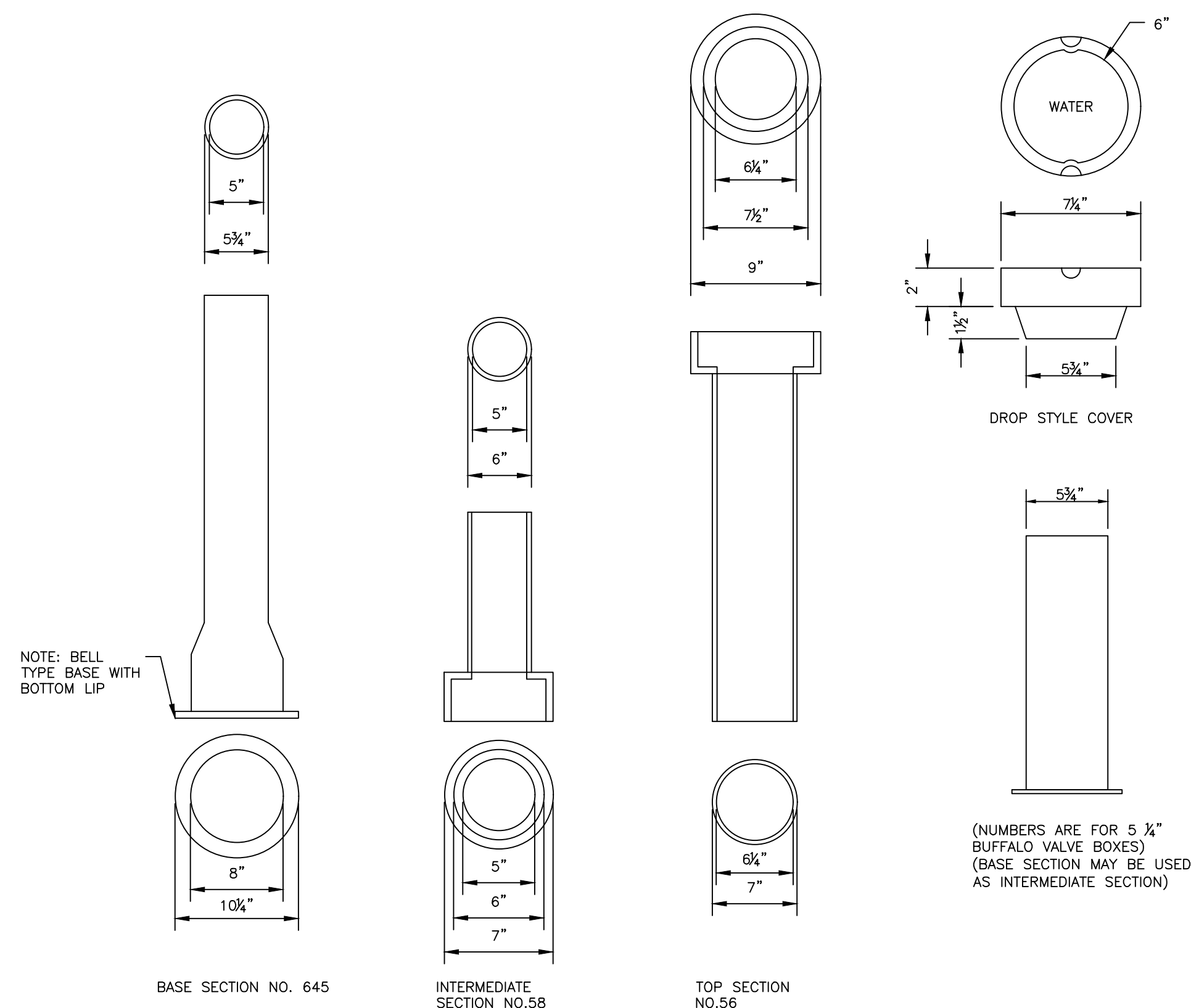
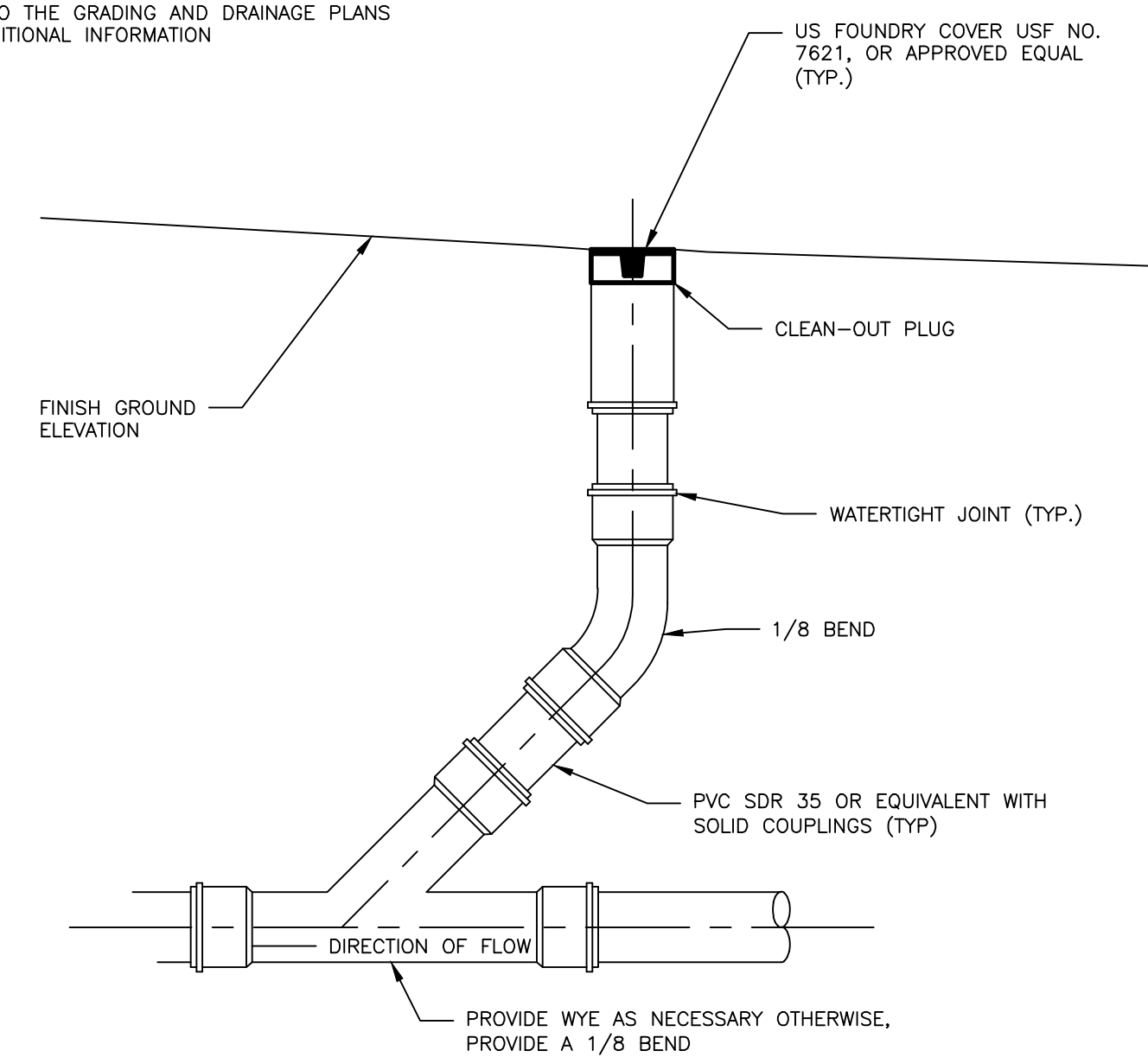
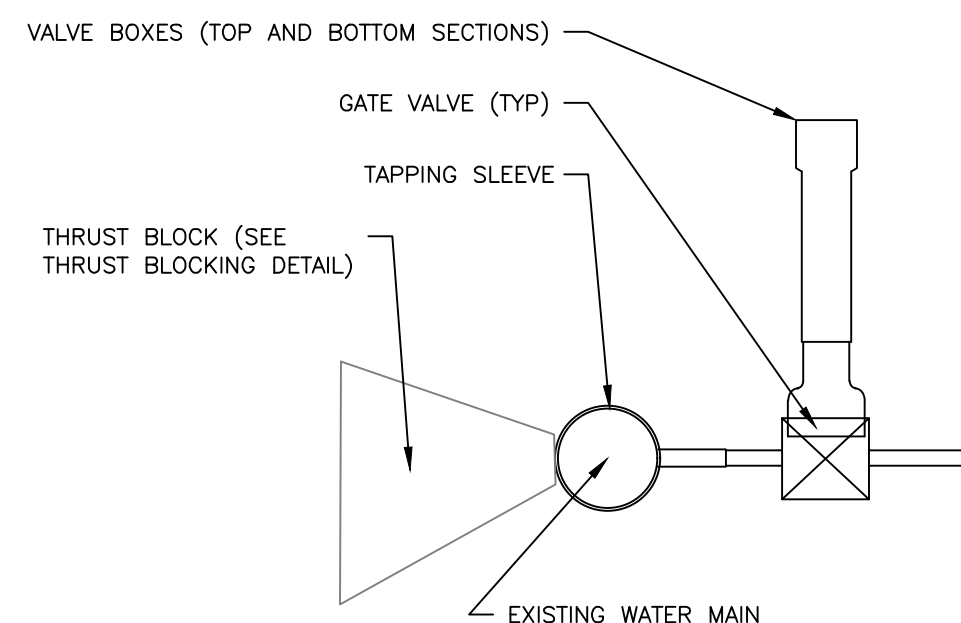
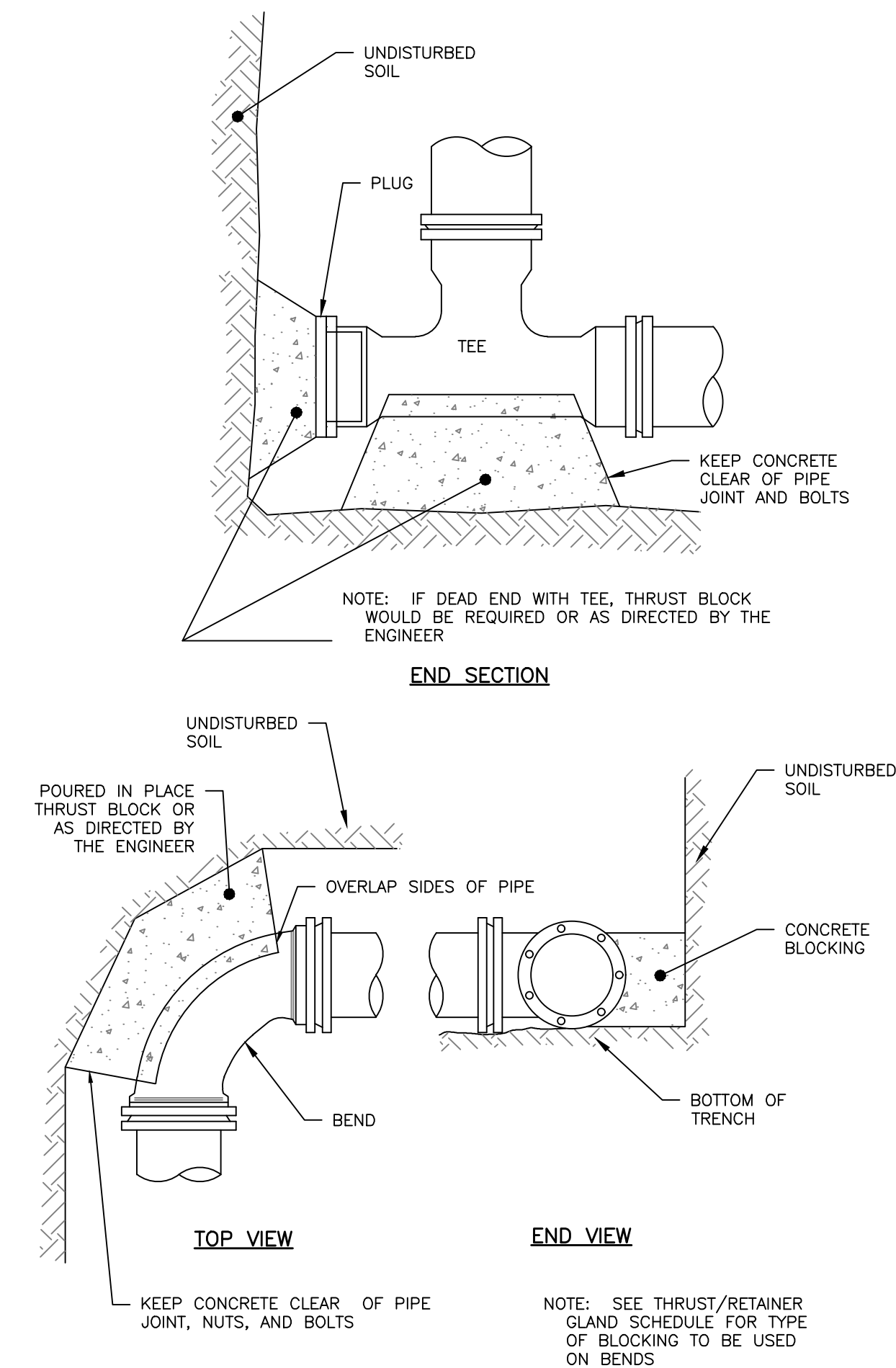
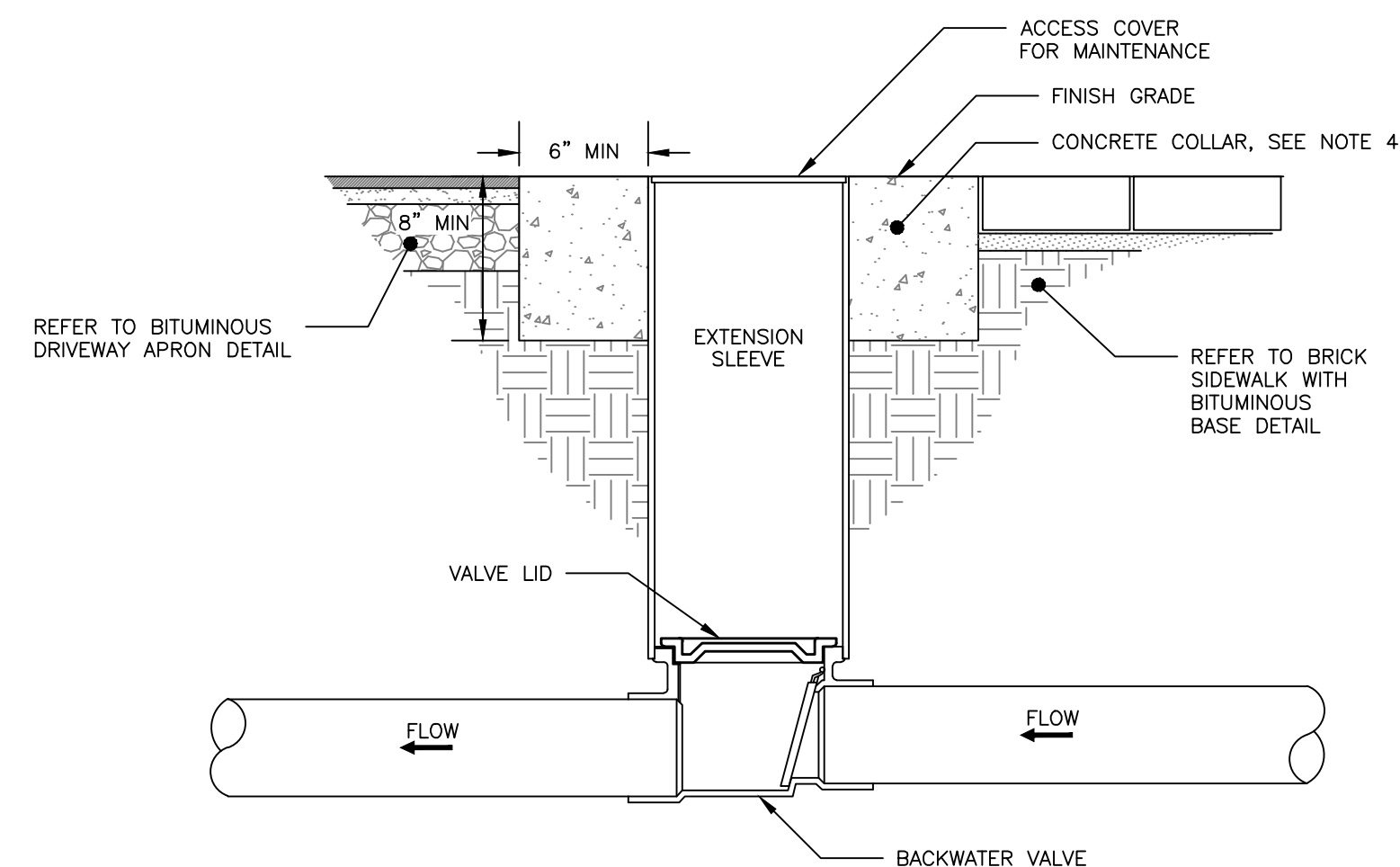
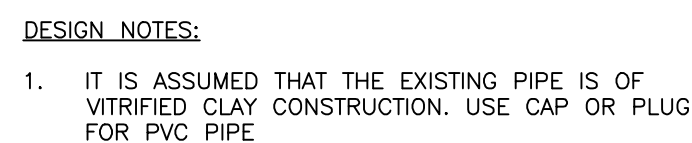
UTILITY DETAILS – 1
128R NORTH STREET REDEVELOPMENT
UPRIGHT PROPERTIES, LLC
PO BOX 833 WILTON, ME 04294

ACORN ENGINEERING, INC.
65 HANOVER ST., PORTLAND, MAINE 04101
(207) 775-2655

FILE: 1116_CIVIL
JN: 1116
SCALE: NTS
DESIGNED BY: SUL
DRAWN BY: ZMS
CHECKED BY: WHS



DRAWING NO.
C-43



	ISSUED FOR	BY DATE
LEVEL III SITE PLAN		WHS 8/7/19
PHASE II UPDATE		WHS 10/6/20
COMMENT RESPONSE 2		WHS 5/24/202
DRAWING NAME:	UTILITY DETAILS - 2	
PROJECT NAME:	128R NORTH STREET REDEVELOPMENT	
CLIENT:	UPRIGHT PROPERTIES, LLC PO BOX 833 WILTON, ME 04294	

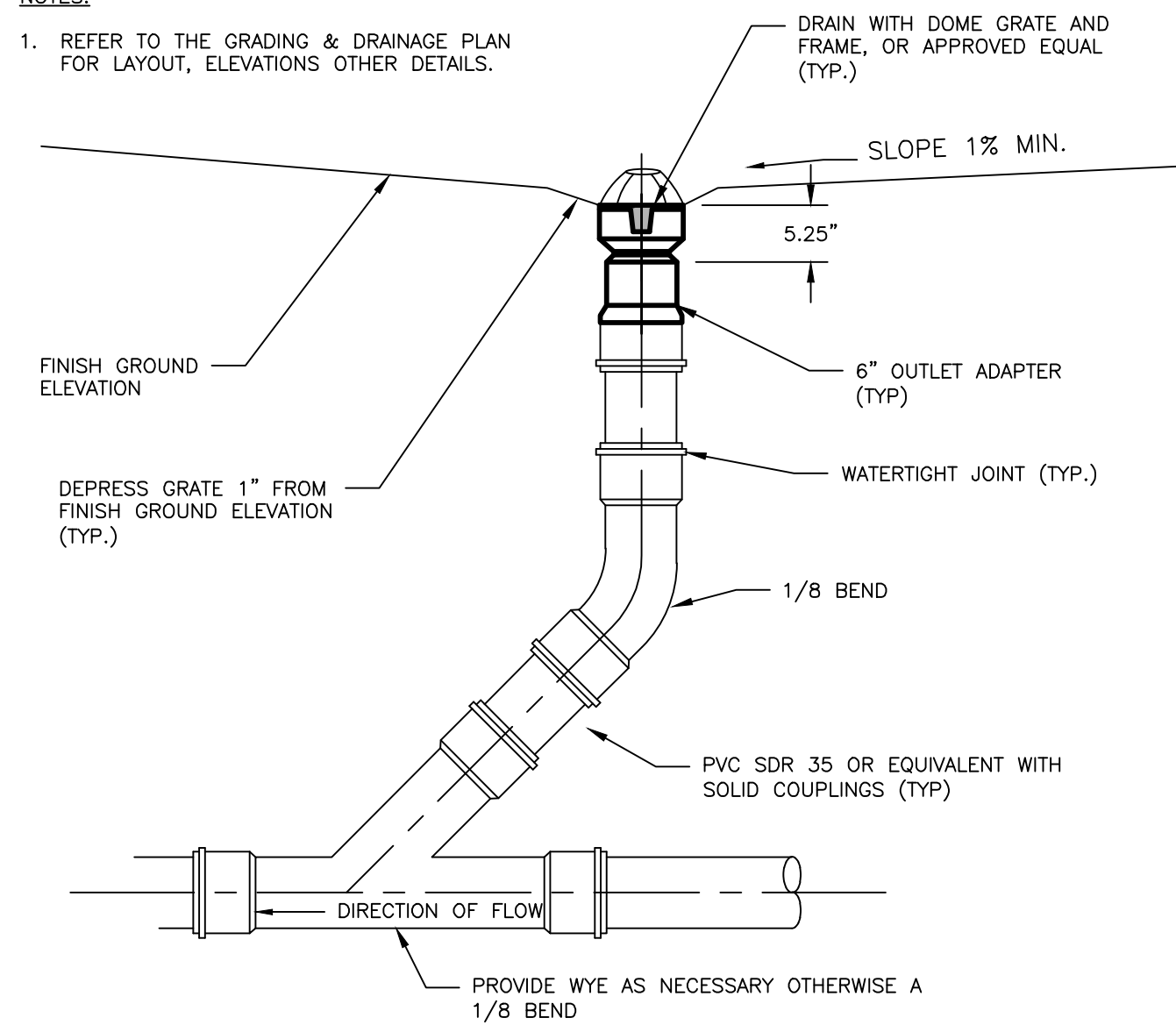
A C O R N — ENGINEERING, INC.

ACORN ENGINEERING, INC. 65 HANOVER ST., SUITE 04101 PORTLAND, ME 04101 (207) 775-3655	I HEREBY CERTIFY THAT THE ABOVE REPRESENTS MY PERSONAL DESIGN OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND NO LIABILITY OF ANY KIND WILL BE ASSUMED BY THIS FIRM OR ITS EMPLOYEES OR AGENTS AUTHORIZED TO SIGN SUCH DOCUMENTS.
FILE:	1116_CIVIL
JN:	1116
SCALE:	NTS
DESIGNED BY:	SJL
DRAWN BY:	ZMS
CHECKED BY:	WHS

DRAWING NO.
C-44

NOTES:

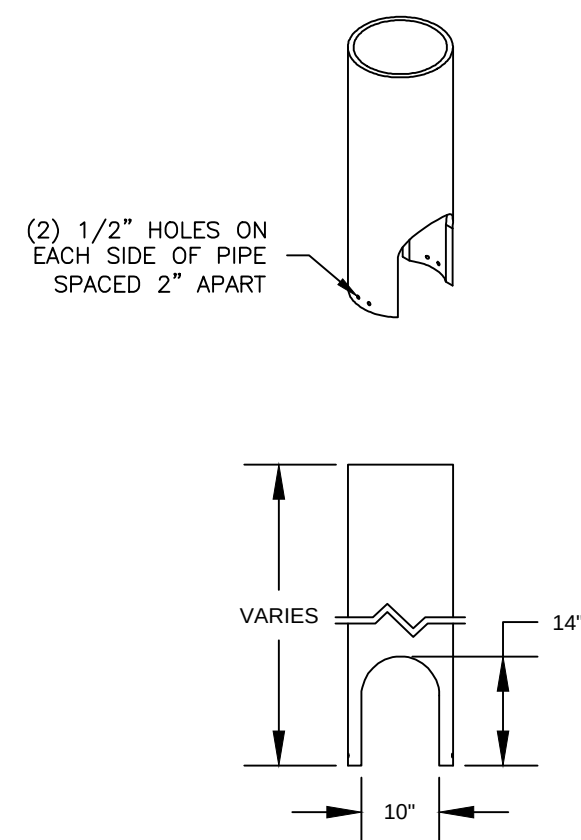
1. REFER TO THE GRADING & DRAINAGE PLAN FOR LAYOUT, ELEVATIONS OTHER DETAILS.



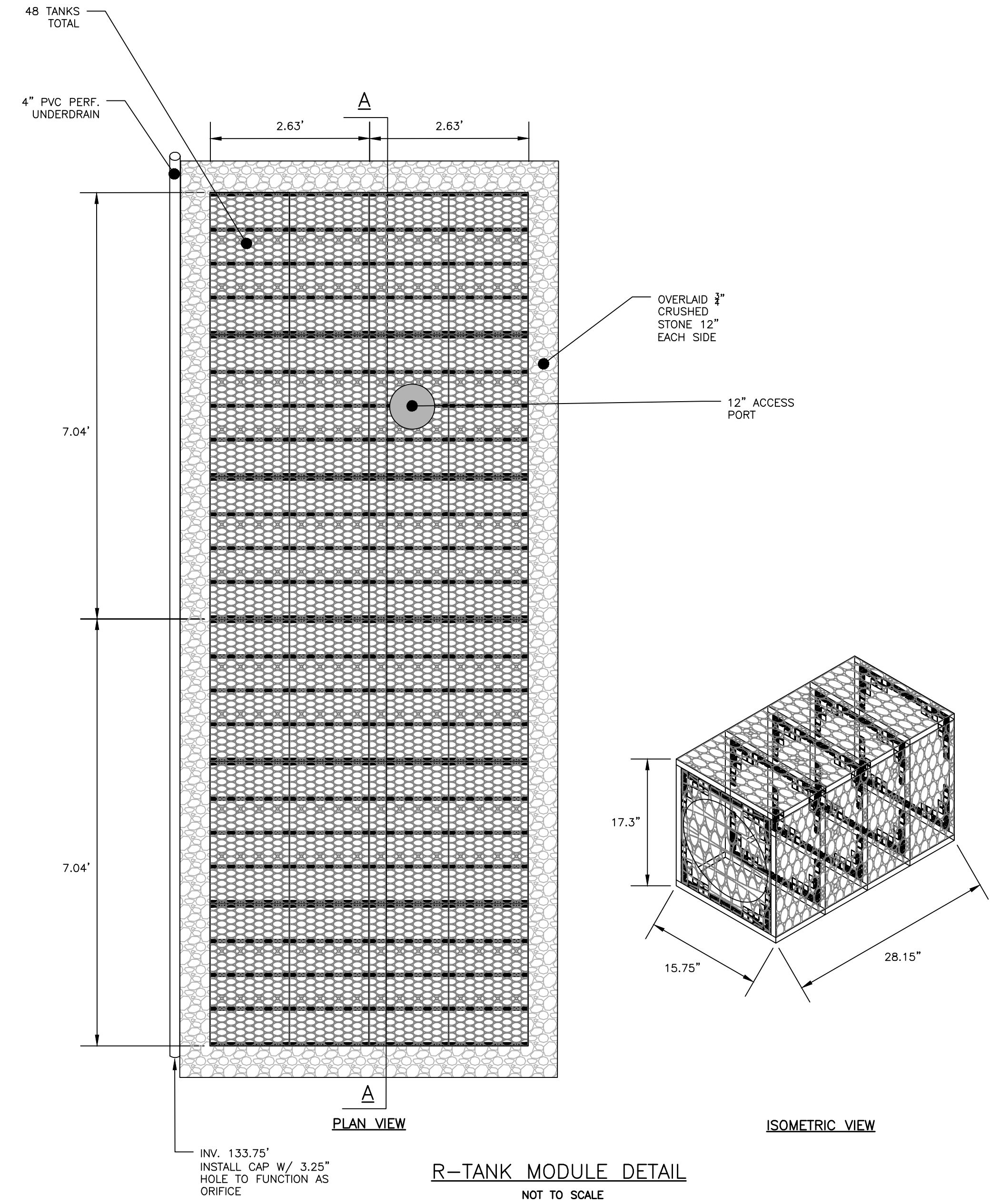
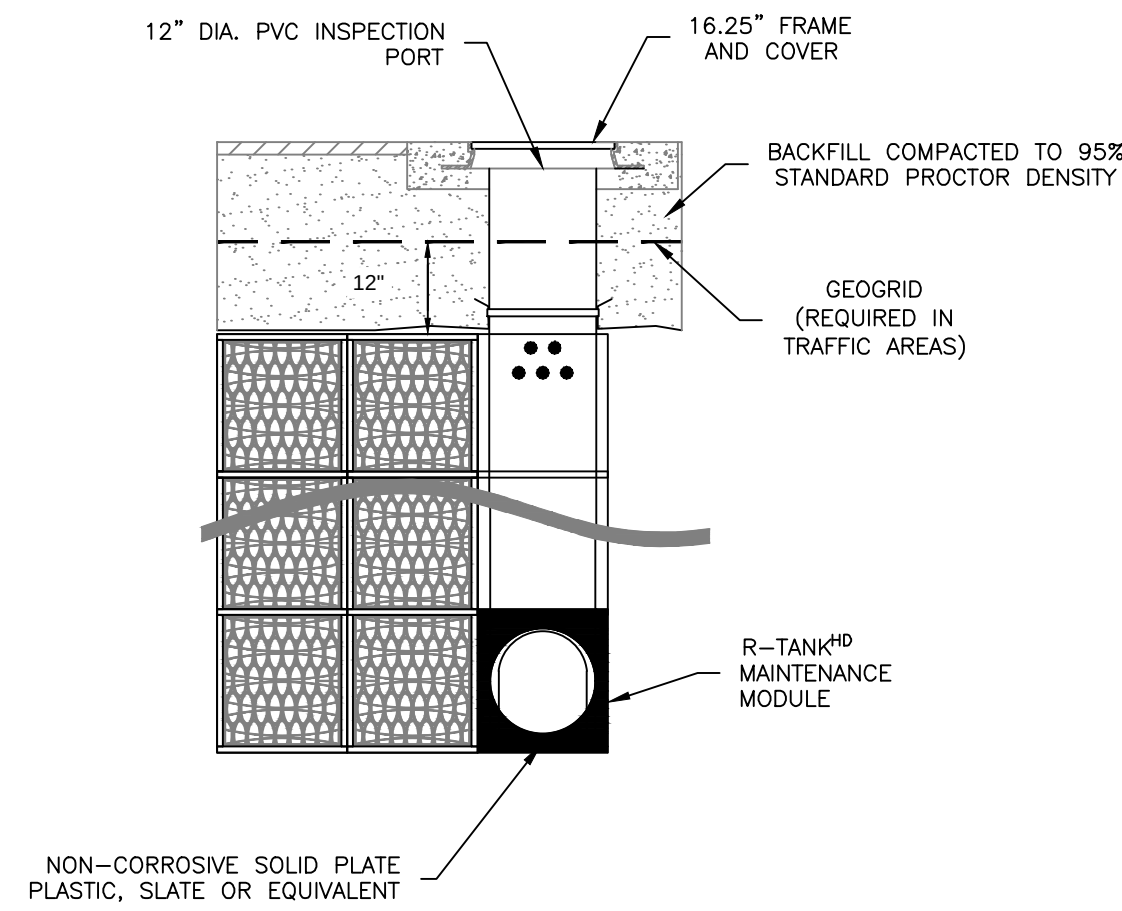
OVERFLOW BEEHIVE DRAIN

NOTES

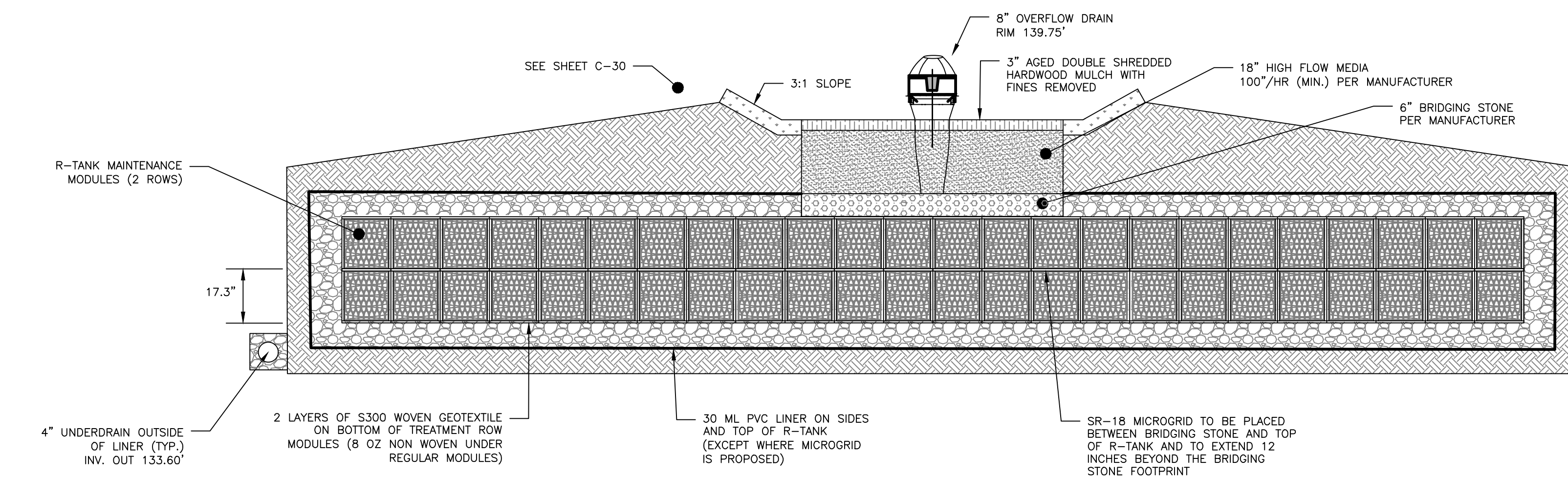
1. THE INSPECTION PORT IS USED IN THE MAINTENANCE MODULE TO INSPECT THE LEVEL OF SEDIMENT ACCUMULATION.
2. MINIMUM REQUIRED MAINTENANCE INCLUDES A QUARTERLY INSPECTION DURING THE FIRST YEAR OF OPERATION AND A YEARLY INSPECTION THEREAFTER. FLUSH MAINTENANCE ROW VIA THE ACCESS STRUCTURE FROM EITHER END AS NEEDED.
3. SEE TRAFFIC LOADING DETAIL FOR MINIMUM & MAXIMUM COVER REQUIREMENTS.



ACCESS PORT WITH SOLID COVER
NOT TO SCALE



R-TANK MODULE DETAIL
NOT TO SCALE



SECTION A-A

FOCAL POINT RAIN GARDEN WITH R-TANK TREATMENT ROW
NOT TO SCALE

- TOP OF MULCH: 139.25'
TOP OF BRIDGING STONE + 3/4" CR/ STONE: 137.50'
TOP OF R-TANK: 137.00'

BOTTOM OF R-TANK: 134.12'
BOTTOM OF 3/4" CR. STONE: 133.5'

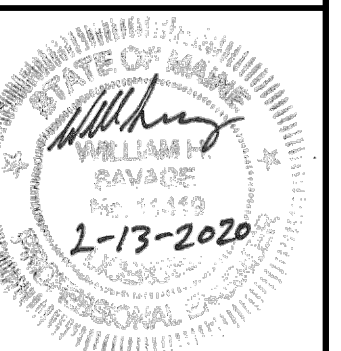
PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

ISSUED FOR	BY
LEVEL III SITE PLAN	WHS
PHASE II UPDATE	WHS
COMMENT RESPONSE 1	WHS
COMMENT RESPONSE 2	WHS

DRAWING NAME: FOCAL POINT RAIN GARDEN DETAILS
PROJECT NAME: 128R NORTH STREET REDEVELOPMENT
CLIENT: UPRIGHT PROPERTIES, LLC
PO BOX 833 WILTON, ME 04294

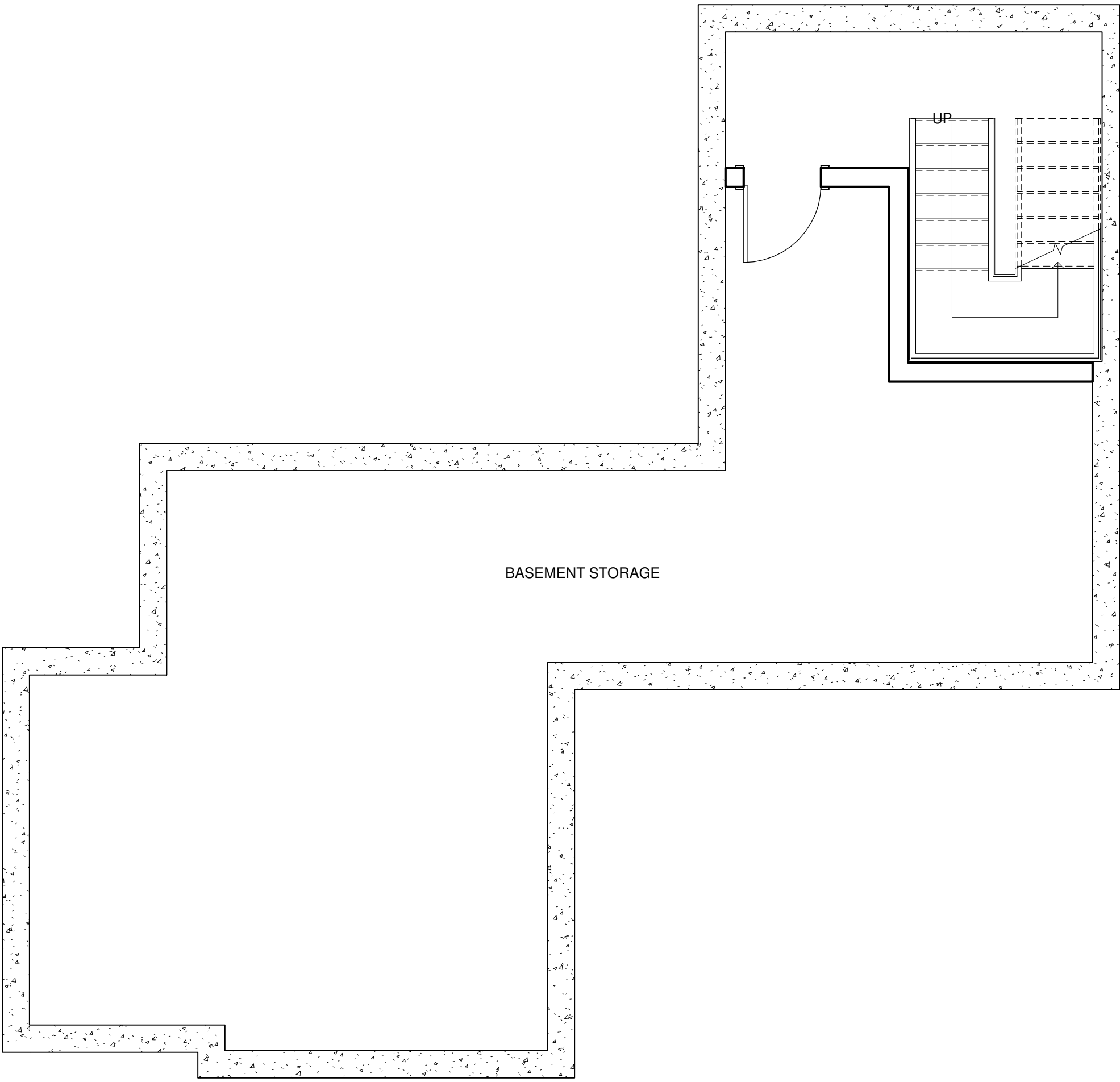
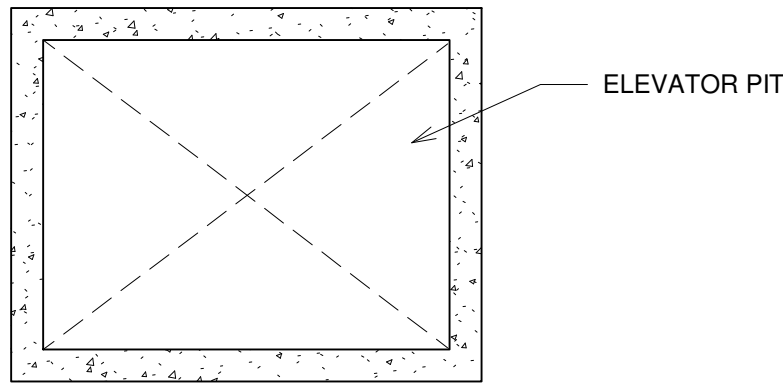
ACORN ENGINEERING, INC.
65 HANOVER ST. PORTLAND MAINE 04101
(207) 775-2655
THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY ALTERATIONS, AUTHORIZED BY THE CLIENT, SHALL BE THE RESPONSIBILITY OF THE CLIENT AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

FILE: 1116_CIVIL
JN: 1116
SCALE: NTS
DESIGNED BY: SJL
DRAWN BY: ZMS
CHECKED BY: WHS



DRAWING NO.
C-46

A Basement Plan
1/4" = 1'-0"



128R North
Street
NEW CONSTRUCTION

OWNER
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UPRIGHT FRAMEWORKS LLC
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jwojck@uprightframeworks.com



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PROJECT TEAM

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Acorn Engineering, Inc
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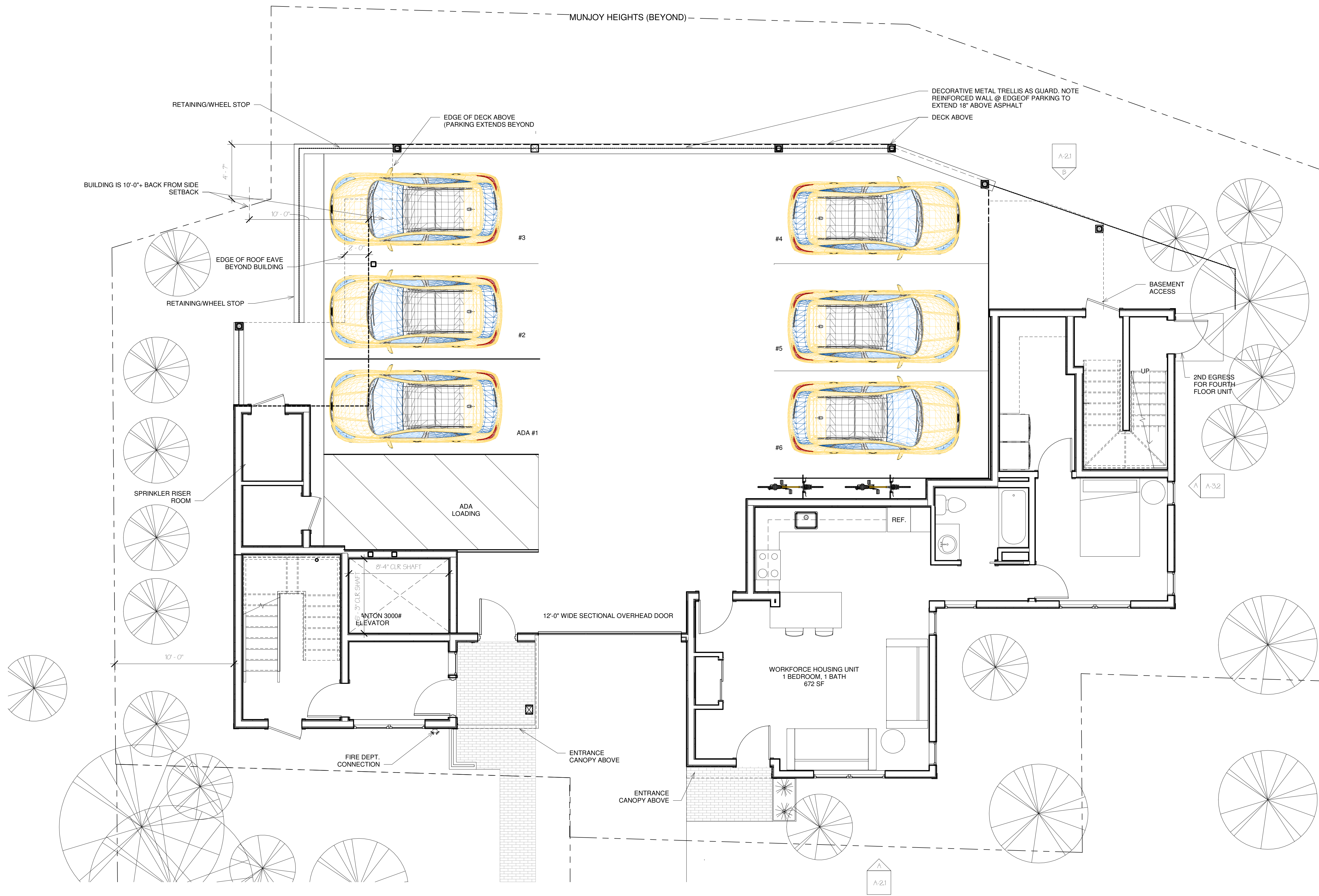
STRUCTURAL ENGINEER
Aaron C. Jones, P.E.
Structural Integrity Consulting Engineers, Inc.
46 Forest Ave
Portland, ME 04101
(207) 774-4614

No.	Description	Date

**BASEMENT
PLAN**

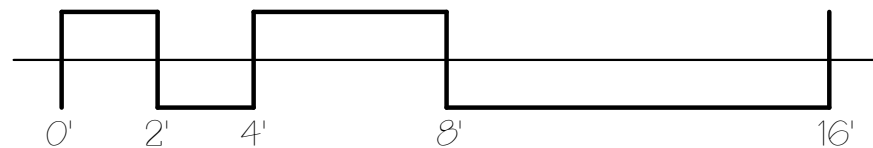
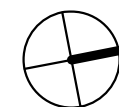
Project number	18-16_128R North
Date	11.19.18
Drawn by	Author
Checked by	Checker

A-1.6	
Scale	1/4" = 1'-0"



A First Floor
1/4" = 1'-0"

[DESIGN DEVELOPMENT NOT FOR CONSTRUCTION]



126 & 128R North Street

NEW CONSTRUCTION

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WILTON ME 04294
jwojck@uprightframeworks.com



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STRUCTURAL ENGINEER
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Structural Integrity Consulting Engineers, Inc.
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Portland, ME 04101
(207) 774-4614

No.	Description	Date

FIRST FLOOR PLAN

Project number 18-16_128R North

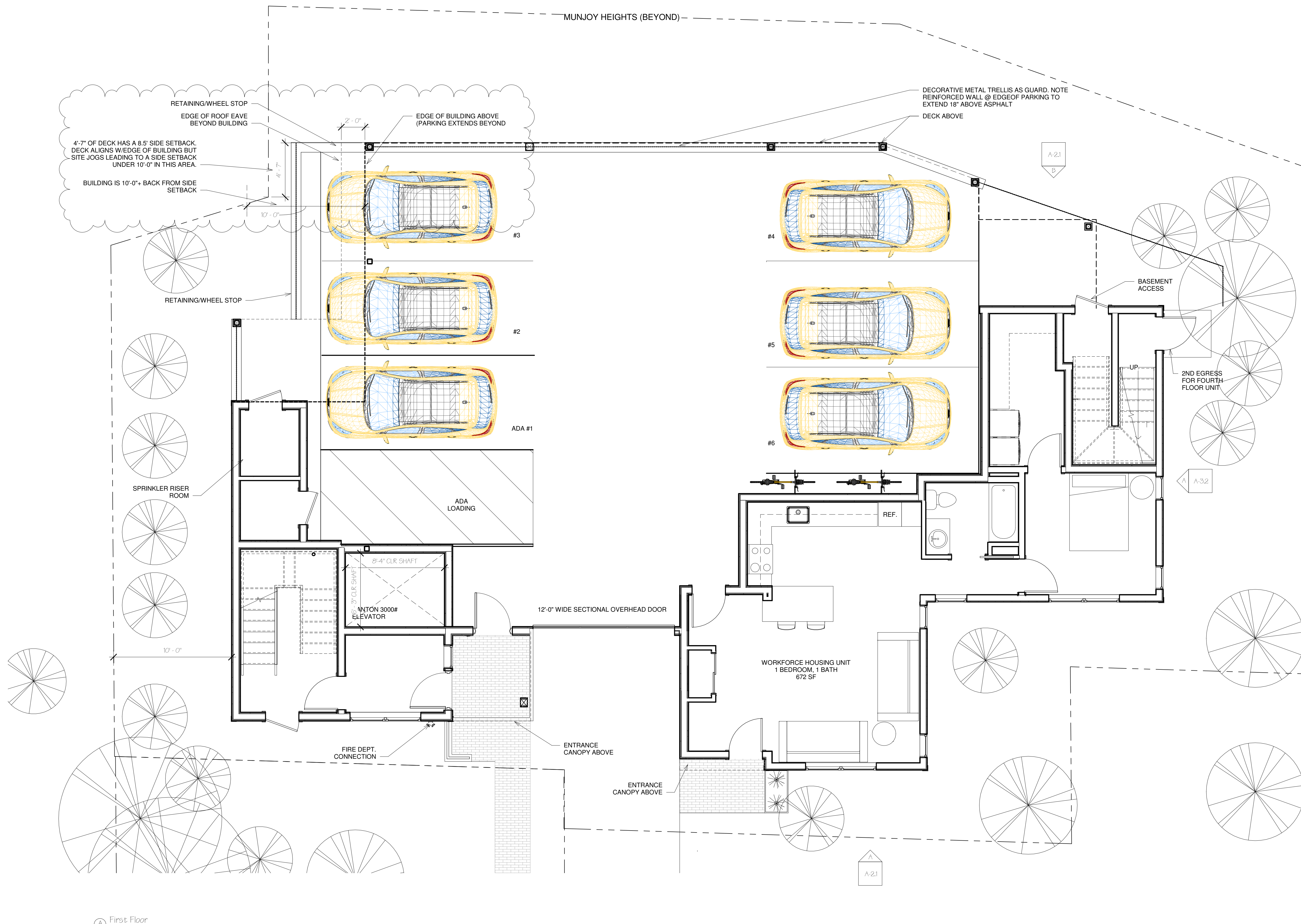
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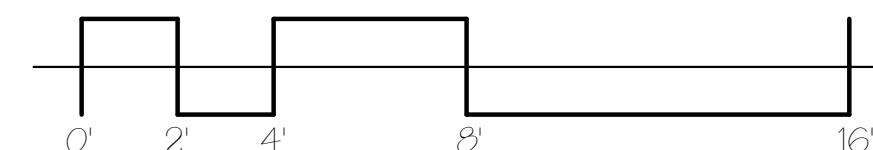
A-1.1

Scale 1/4" = 1'-0"



A First Floor
1/4" = 1'-0"

[DESIGN DEVELOPMENT NOT FOR CONSTRUCTION]



126 & 128R North Street

NEW CONSTRUCTION

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UPRIGHT FRAMEWORKS LLC
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WILTON ME 04294
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**DEXTROUS
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No.	Description	Date
1	Revision 1	Date 1

FIRST FLOOR PLAN

Project number 18-16_128R North

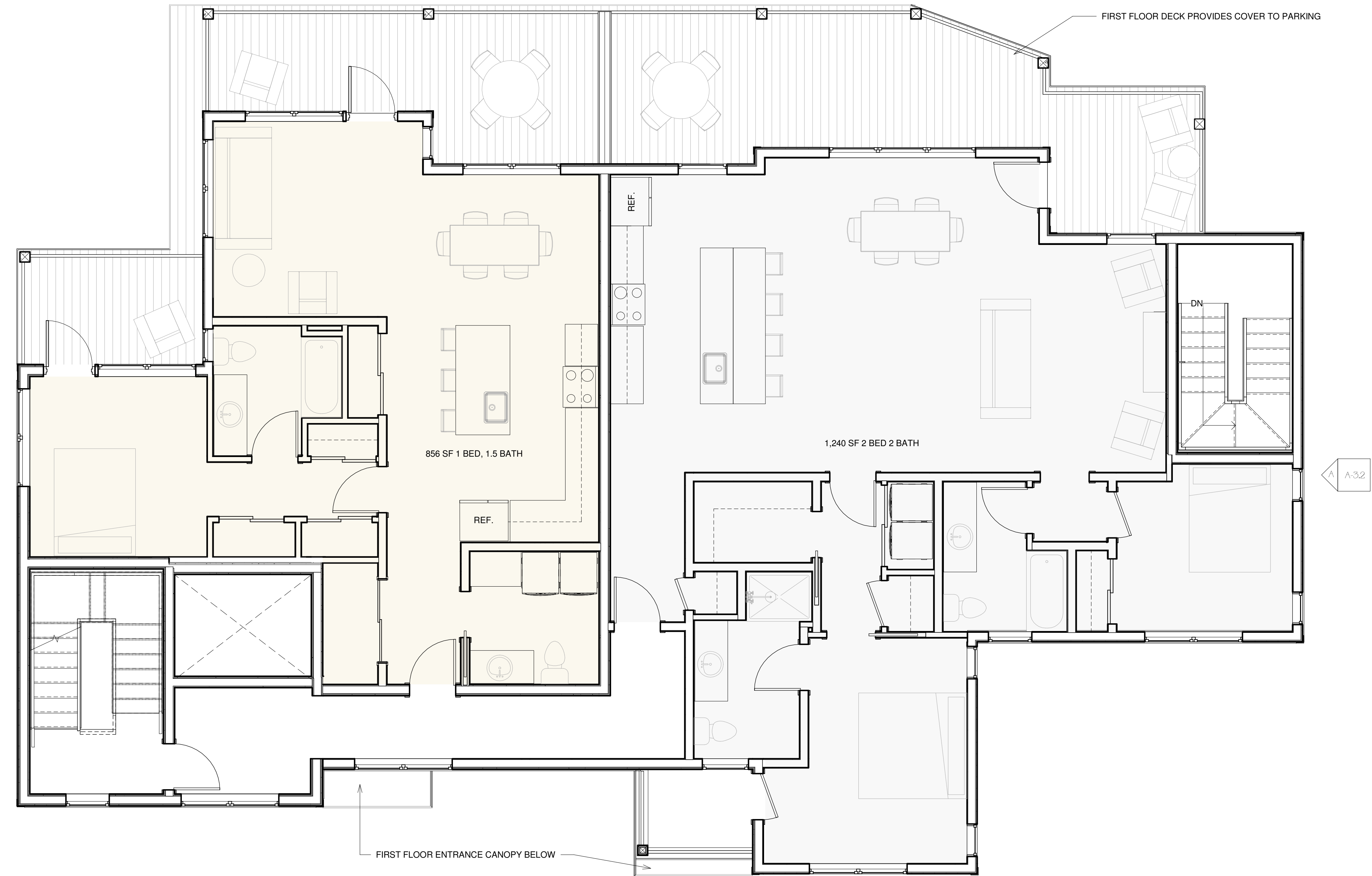
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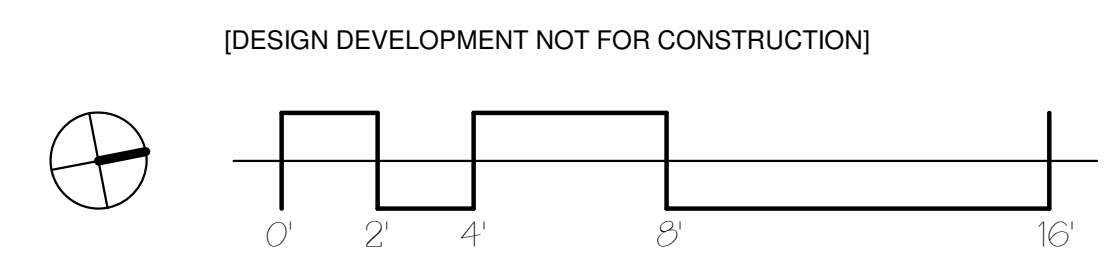
Checked by TJR

A-1.1

Scale 1/4" = 1'-0"



Ⓐ Second Floor
1/4" = 1'-0"



126 & 128R North Street

NEW CONSTRUCTION

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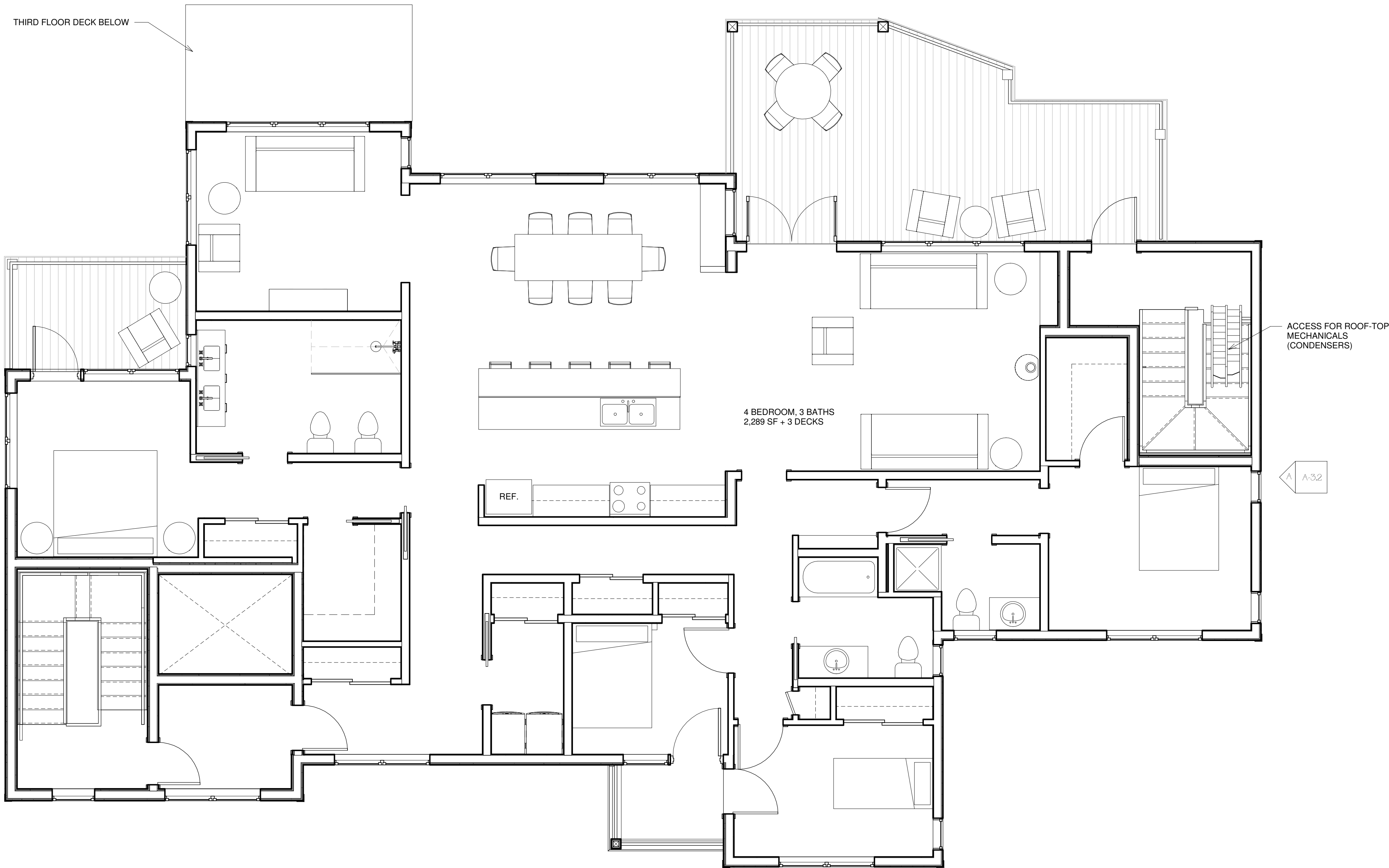
STRUCTURAL ENGINEER
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Portland, ME 04101
(207) 774-4614

No.	Description	Date

SECOND & THIRD FLOOR PLAN

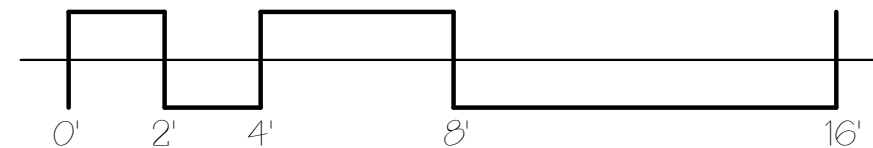
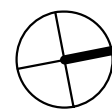
Project number	18-16_128R North
Date	11.19.18
Drawn by	TJR
Checked by	TJR

A-1.2
Scale: 1/4" = 1'-0"



A Fourth Floor
1/4" = 1'-0"

[DESIGN DEVELOPMENT NOT FOR CONSTRUCTION]



126 & 128R North Street

NEW CONSTRUCTION

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No.	Description	Date

FOURTH FLOOR

Project number 18-16_128R North

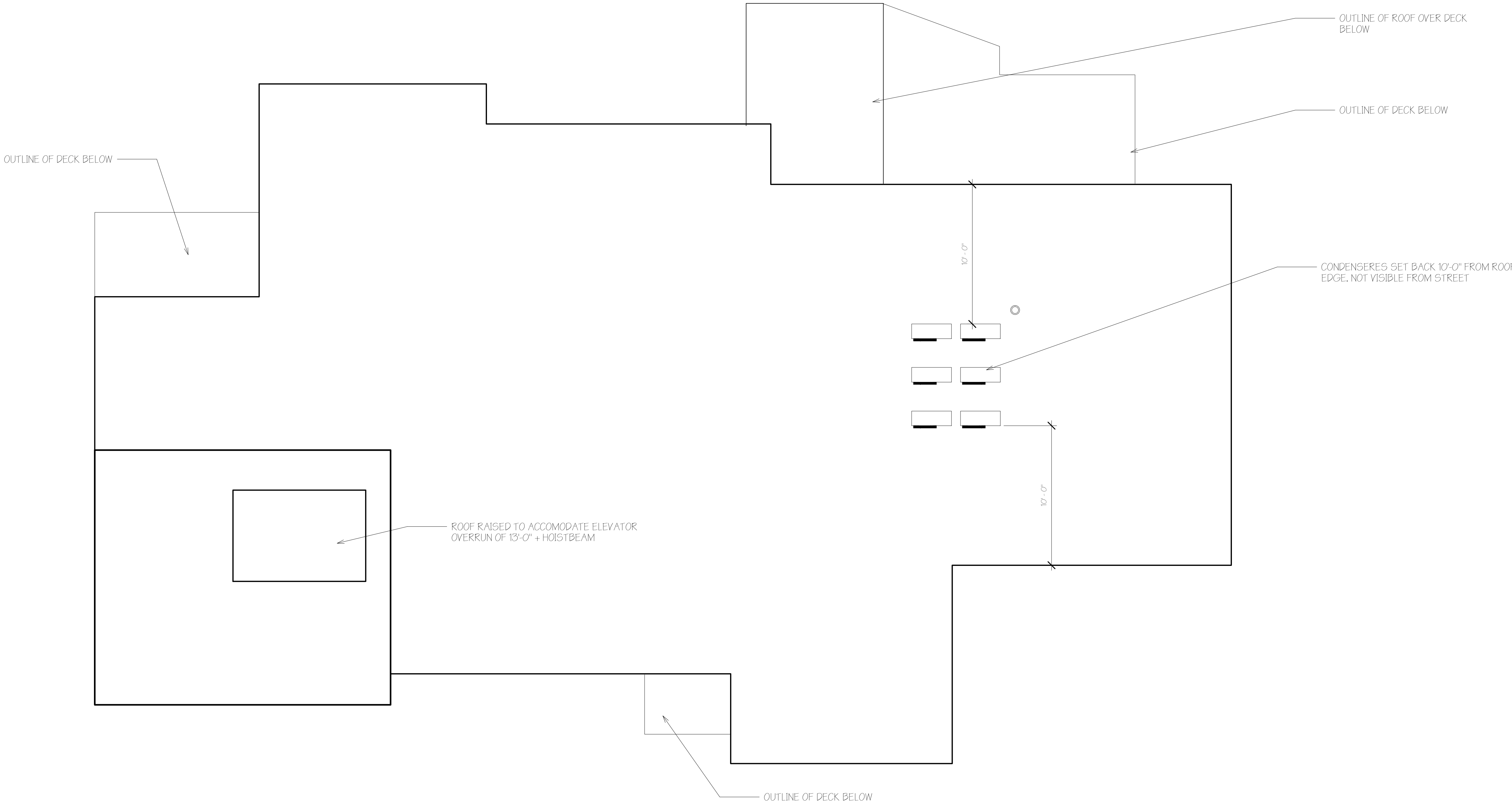
Date 11.19.18

Drawn by TJR

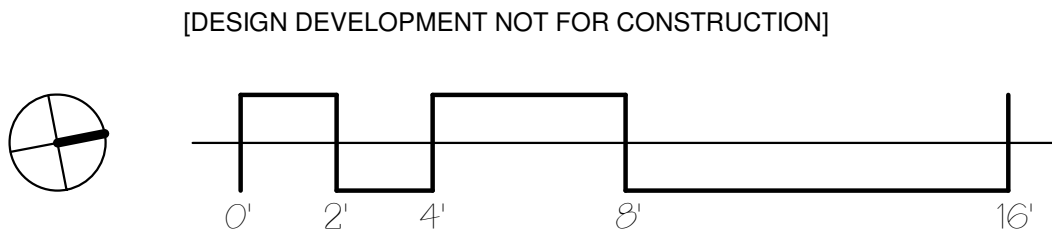
Checked by TJR

A-1.4

Scale 1/4" = 1'-0"



Ⓐ Roof
1/4" = 1'-0"



**126 & 128R
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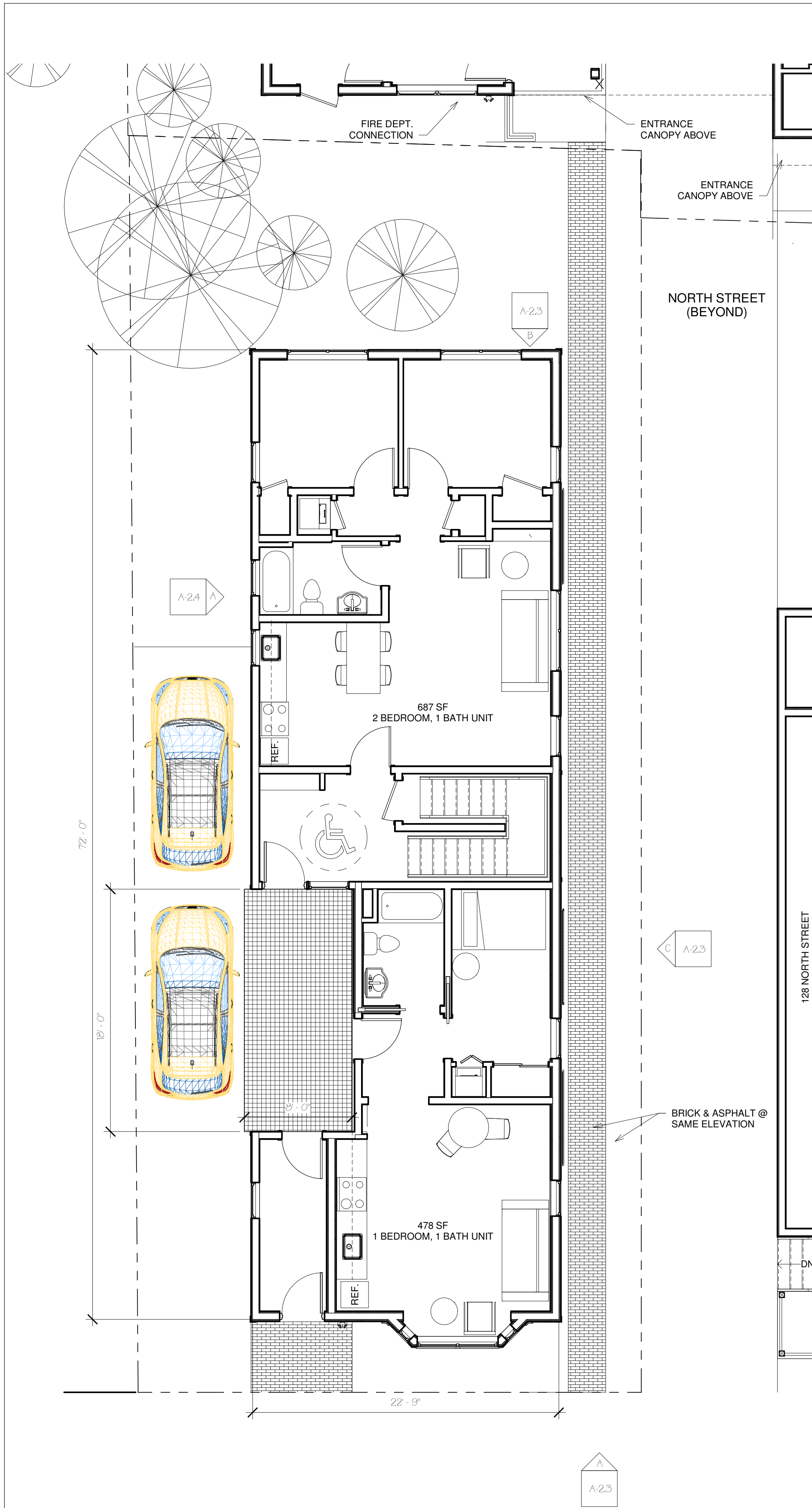
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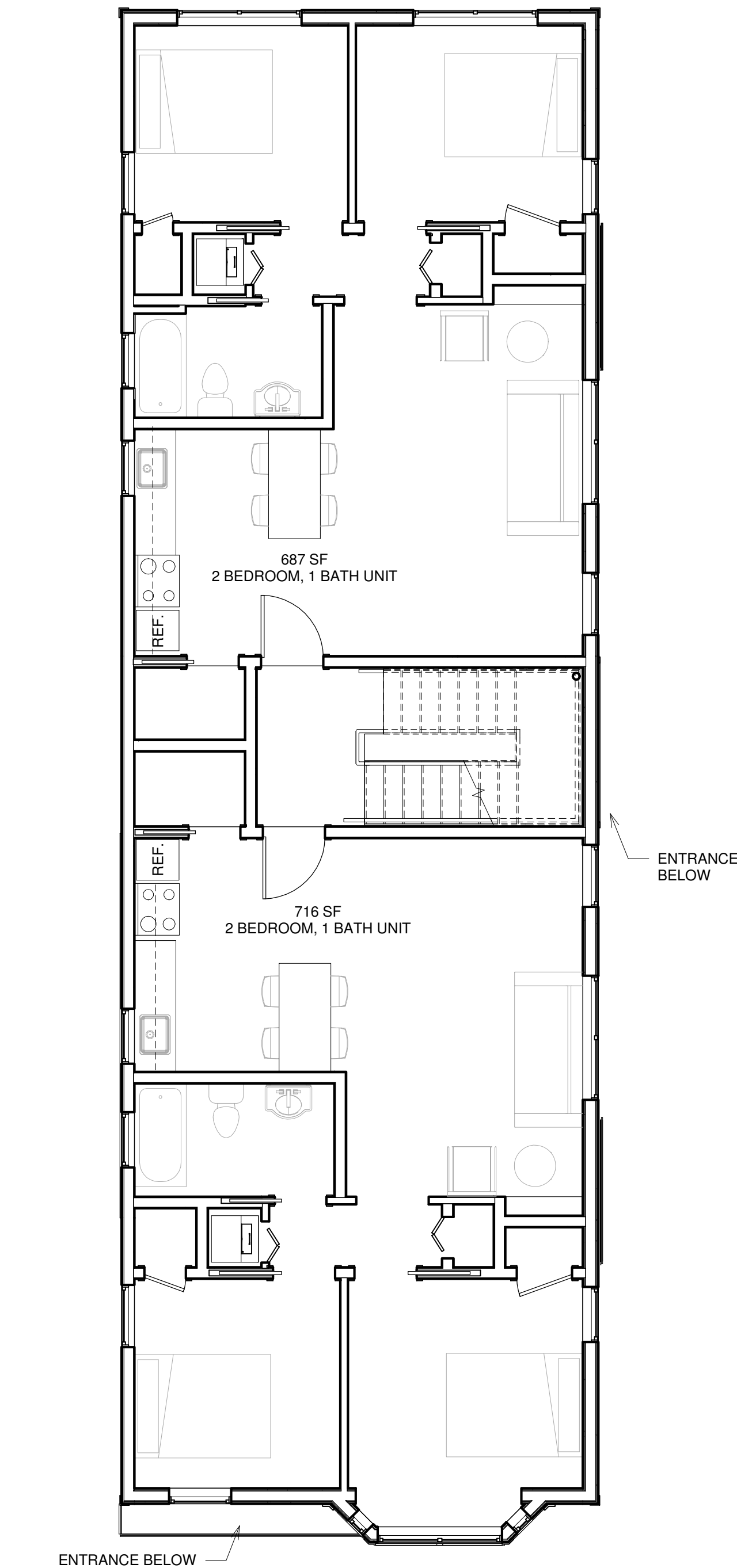
No.	Description	Date

ROOF PLAN

Project number	18-16_128R North
Date	11.19.18
Drawn by	Author
Checked by	Checker
A-1.5	
Scale	1/4" = 1'-0"



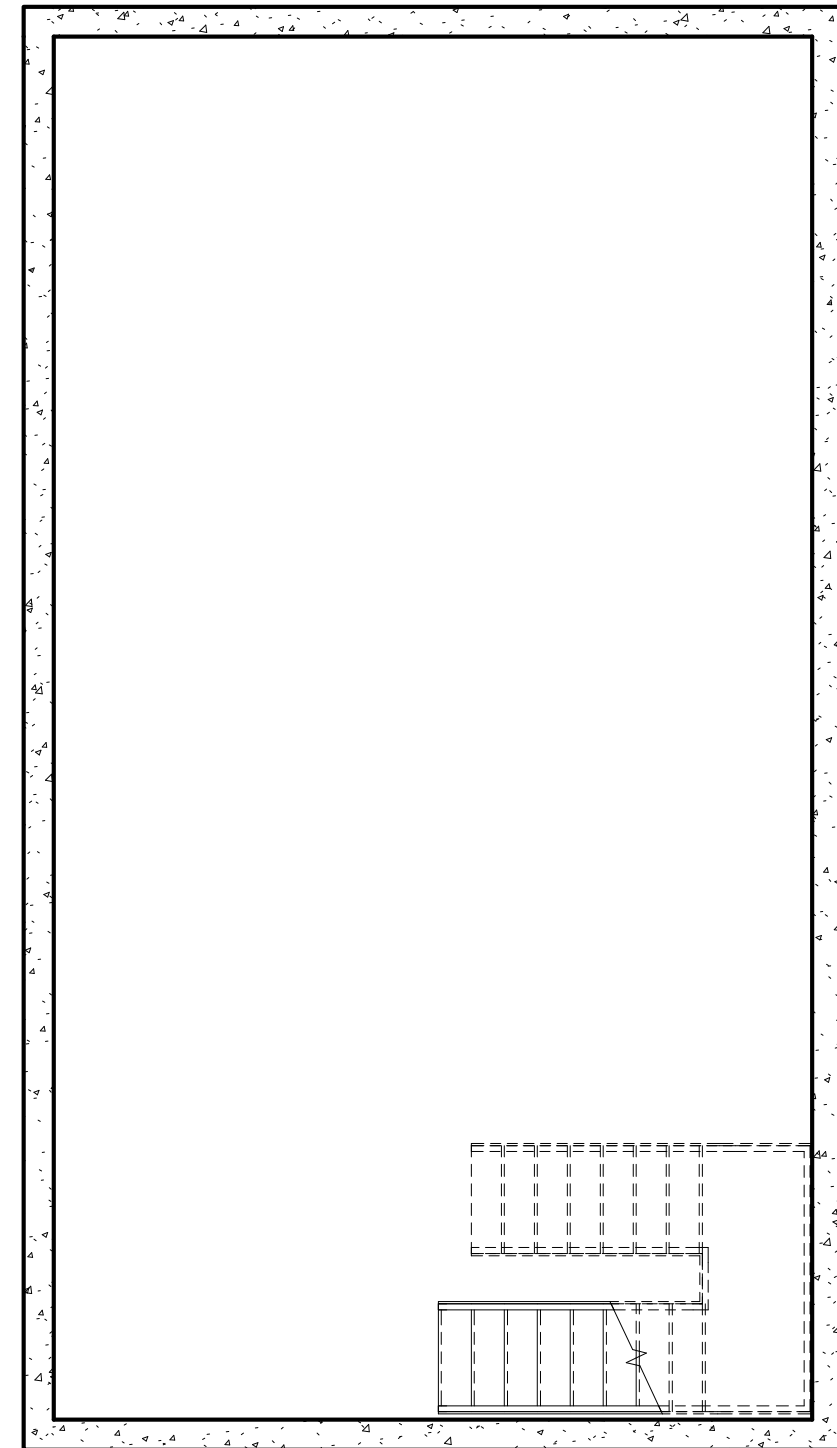
A First Floor 126
3/16" = 1'-0"



B Second & Third Floors 126
3/16" = 1'-0"



C Roof 126
3/16" = 1'-0"



D Basement
3/16" = 1'-0"

126 & 128R North Street NEW CONSTRUCTION

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No.	Description	Date

PHASE 2 PLANS

Project number	18-16_128R North
Date	11.19.18
Drawn by	Author
Checked by	Checker

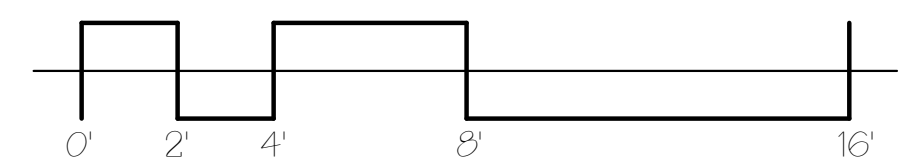
A-1.6 126
Scale: 3/16" = 1'-0"



Ⓐ North Elevation
3/16" = 1'-0"



Ⓑ South Elevation
3/16" = 1'-0"



126 & 128R North Street

NEW CONSTRUCTION

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No.	Description	Date

SOUTH & NORTH ELEVATIONS

Project number	18-16_128R North
Date	11.19.18
Drawn by	Author
Checked by	Checker
A-2.1	
Scale	3/16" = 1'-0"



(A) East Elevation
3/16" = 1'-0"



(B) West Elevation
3/16" = 1'-0"

**126 & 128R
North Street**
NEW CONSTRUCTION

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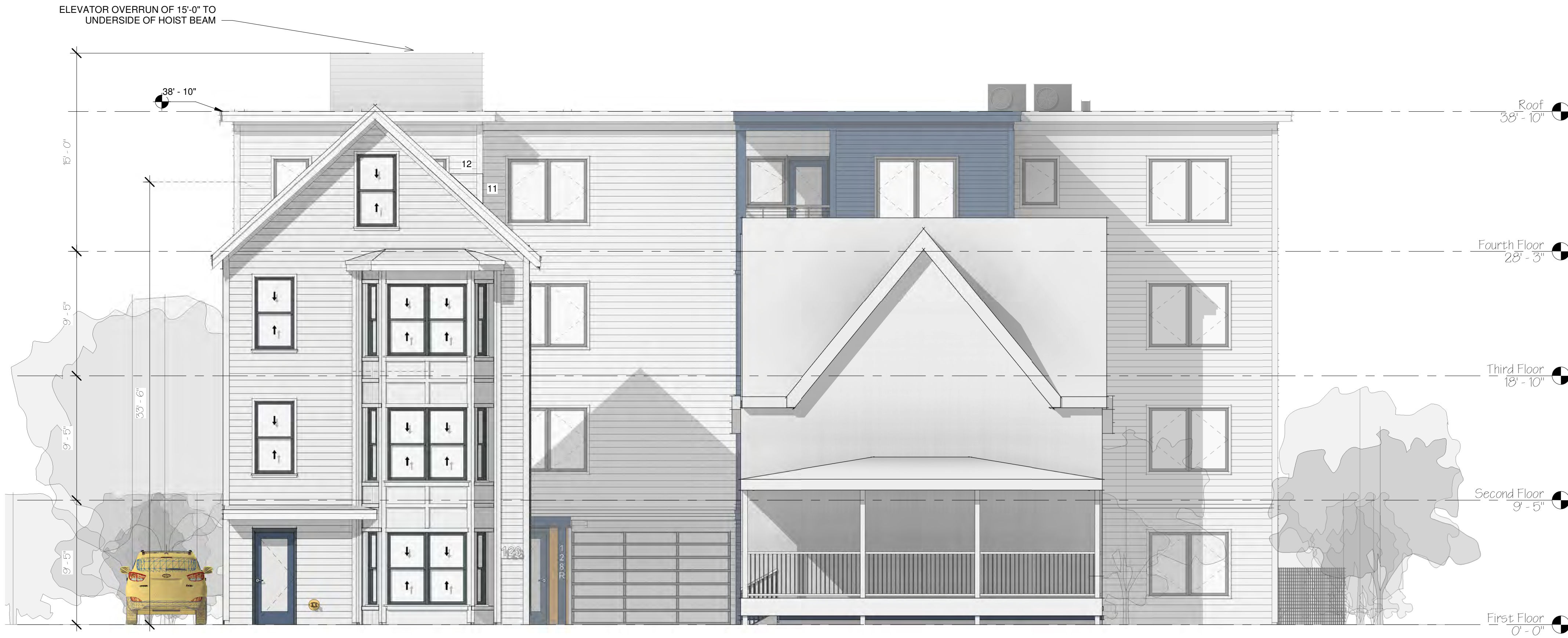
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No.	Description	Date

**EAST &
WEST
ELEVATIONS**

Project number	18-16_128R North
Date	11.19.18
Drawn by	Author
Checked by	Checker

A-2.2
Scale: 3/16" = 1'-0"



A South Elevation 126 & 128
3/16" = 1'-0"



B North Elevation 126 North
3/16" = 1'-0"



C East Elevation 126 North
3/16" = 1'-0"

126 & 128R North Street NEW CONSTRUCTION

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No.	Description	Date

SOUTH, NORTH & EAST 126

Project number 18-16_128R North
Date 11.19.18
Drawn by Author
Checked by Checker

A-2.3

Scale 3/16" = 1'-0"



**126 & 128R
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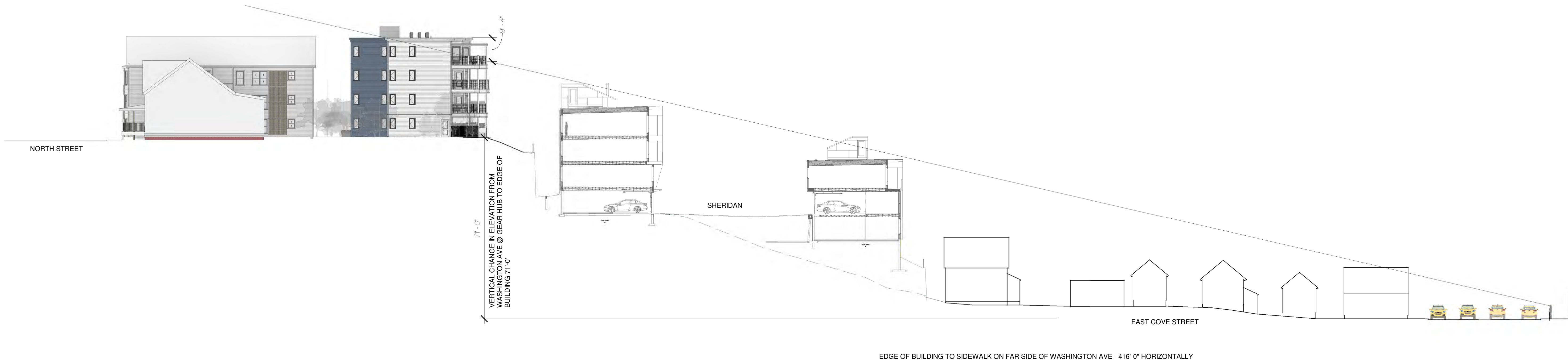
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No.	Description	Date

**WEST
ELEVATION
126**

Project number	18-16_128R North
Date	11.19.18
Drawn by	Author
Checked by	Checker

A-2.4	
Scale	3/16" = 1'-0"



SITE SECTION NORTH STREET TO
WASHINGTON AVENUE
1" = 20'-0"

ENTOURAGE 'FLORENCE' IS 5'-6" TALL. IF FLORENCE WERE TO STAND ON THE FAR SIDEWALK OF WASHINGTON AVENUE AND LOOK UP TOWARDS NORTH STREET THEY WOULD BE ABLE TO SEE THE TOP OF THE DECK RAIL AT 128R NORTH AND THE ELEVATION BEYOND AT A DISTANCE OF 435'-0" (HYPOTENUSE). THE REAR FACE OF THE BUILDING WOULD BE 418'-0" FROM HER HORIZONTALLY AND 71'-0" VERTICALLY*. THE MAJORITY OF THEIR SITE LINE WOULD BE CONSUMED BY THE MUNJOY HEIGHTS PROJECT (ALONG SHERIDAN STREET). THE DASHED LINE SHOWS THE CHANGE IN TOPOGRAPHY CREATED BY THE MUNJOY HEIGHTS PROJECT. THE ENTOURAGE IS ALSO SHOWN WITHIN THE FOURTH FLOOR OF THE MUNJOY HEIGHTS PROJECT LOOKING AT THE BACK OF 128R. THIS INDIVIDUAL IS 31'-0" AWAY FROM THE FACE OF DECK AND THEIR EYES WOULD BE 5'-0" ABOVE THE GRADE OF PARKING. THE PERSPECTIVE SEEN BY THIS PERSON IS SHOWN ON B/A-5.2. NOTE THAT THE MUNJOY HEIGHTS PROJECT. NOTE THAT THE BUILDINGS IN THE MUNJOY HEIGHTS PROJECT ARE SITUATED ALONG A SPLINE AND VARY IN DISTANCE FROM THE REAR FACE OF 128R BUILDING. AT THE CLOSEST POINT THE EXTERIOR FACE OF THE MUNJOY HEIGHTS BUILDING TO THE FACE OF DECK IS 25'-0" AND AT THE WIDEST POINT IT IS 32'-0". AT THE POINT OF THIS SECTION THE BUILDING IS MODELED AT 28'-0" SEPARATION.

*BASED ON ACORN ENGINEERING SITE ELEVATIONS POINTS AT THE EDGE OF BUILDING ON 128R NORTH STREET AND PROJECTS CURRENTLY UNDER CONSTRUCTION ALONG WASHINGTON AVENUE. SITE SECTION THROUGH MUNJOY HEIGHTS OBTAINED FROM ENGINEER. EAST COVE STREET HOUSES WERE SITED USING A COMBIATION OF PORTLAND GIS DATA, ASSESSING DEPARTMENT MEASUREMENTS AND GOOGLE STREET VIEW IMAGES

126 & 128R
North Street
NEW CONSTRUCTION

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No.	Description	Date

SITE
SECTION

Project number18-16_128R North

Date11.19.18

Drawn byAuthor

Checked byChecker

A-3.2

Scale1" = 20'-0"



F Northeast Perspective



B Bird's Eye View of North Street Facade



I Main Entrance 128R



D View from Driveway



E Entrance View

126 & 128R North Street

NEW CONSTRUCTION

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No.	Description	Date

PERSPECTIVES 128R

Project number	18-16_128R North
Date	11.19.18
Drawn by	Author
Checked by	Checker
Scale	A-5.1



(A) Northwest Perspective



(B) 4th floor Munjoy Heights View

THIS PERSPECTIVE IS TAKEN FROM THE FOURTH FLOOR AT MUNJOY HEIGHTS FROM JUST WITHIN THE UNIT. ELEVATION OF THE CAMERA (EYES) IS TAKEN AT 5'-0" ABOVE THE FLOOR AS SHOWN ON THE SITE SECTION A/A-3.2. THE DISTANCE OF THIS PERSON IS STANDING (INSIDE THEIR UNIT) IS 31'-0" FROM THE FACE OF THE SECOND FLOOR DECK. THE MUNJOY HEIGHTS BUILDINGS VARY IN DISTANCE FROM 128R NORTH BASED ON THEIR PROJECT'S SPLINE. THAT SAID, THE DISTANCE FROM THE EXTERIOR FACE OF THEIR BUILDINGS TO THE EXTERIOR FACE OF THE SECOND FLOOR DECKS RANGES FROM 25'-0" AT THE CLOSEST SECTION TO 32'-0". IN THE SITE SECTION SHOWN ON PAGE A-3.2 THE BUILDINGS ARE SHOWN AT 28'-0" APART.

126 & 128R North Street

NEW CONSTRUCTION

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No.	Description	Date

PERSPECTIVES 128R

Project number 18-16_128R North

Date 11.19.18

Drawn by Author

Checked by Checker

A-5.2

Scale:



A View for Walnut Street Rendering



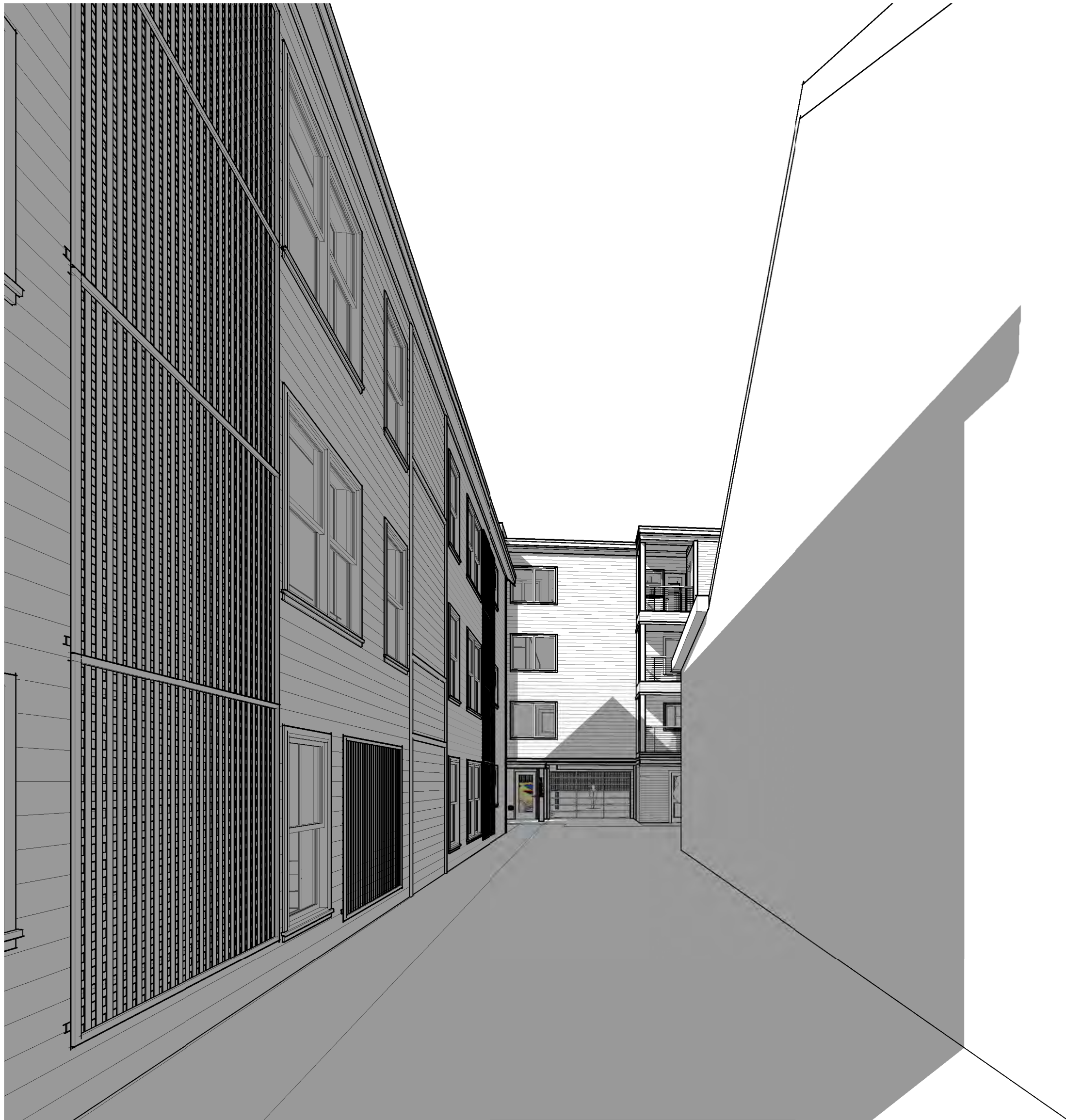
D View from Senior Housing for Rendering Copy 1



B View 126 + 128R North (elevation 176")



C Street View 126 + 128R North (Eye at 5'-0")



E View from North Street Sidewalk 126 & 128R

126 & 128R North Street NEW CONSTRUCTION

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No.	Description	Date

PERSPECTIVES 126

Project number 18-16_128R North

Date 11.19.18

Drawn by Author

Checked by Checker

A-5.3

Scale:



A North Street View Showing Entrances



B Main Entrance 126

126 & 128R
North Street
NEW CONSTRUCTION

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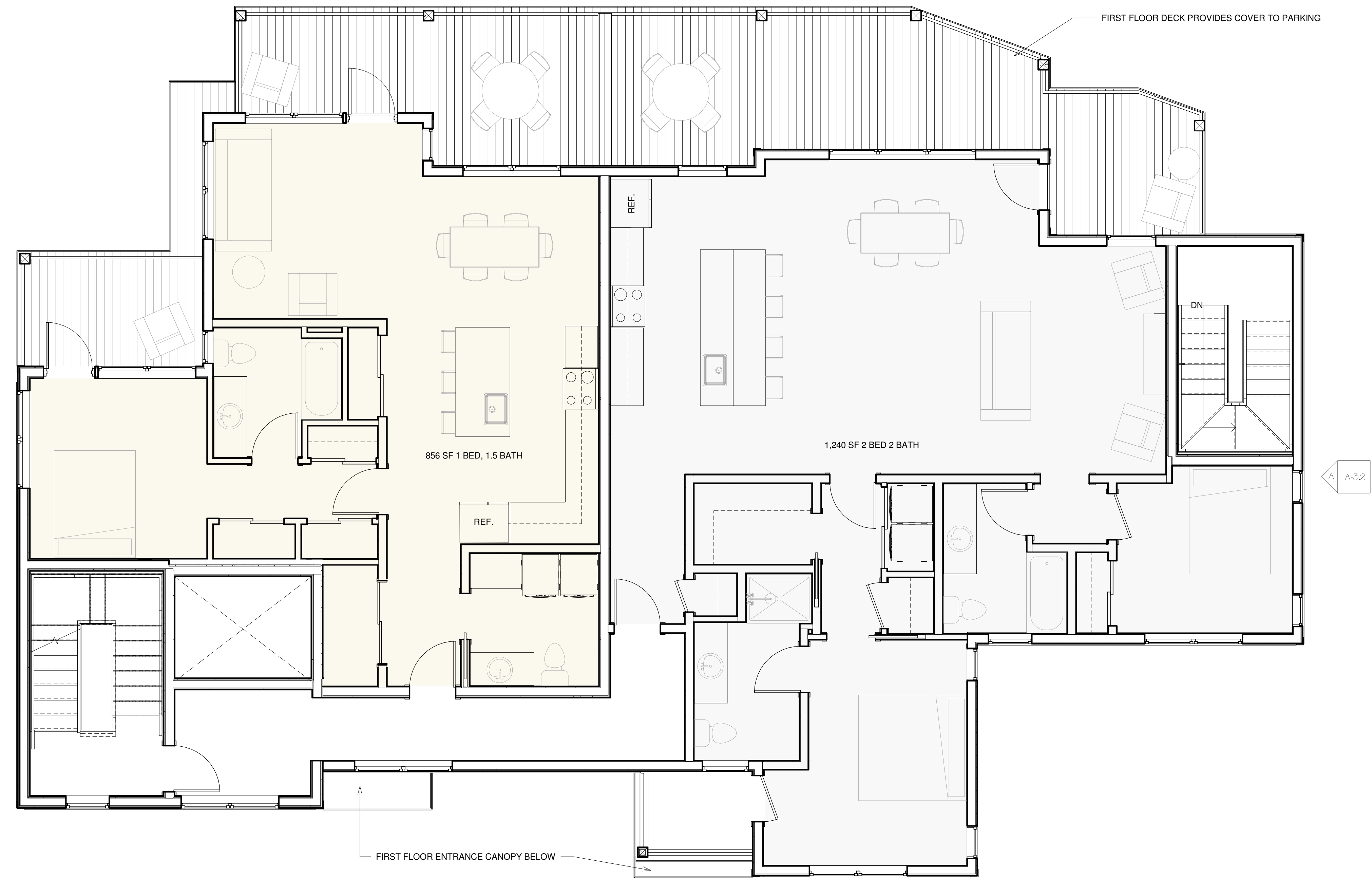
No.	Description	Date

PERSPECTIVES
126

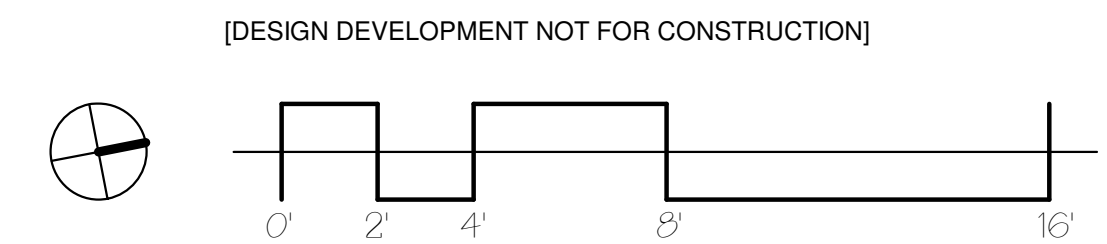
Project number	18-16_128R North
Date	11.19.18
Drawn by	Author
Checked by	Checker

A-5.4

Scale



Ⓐ Second Floor
1/4" = 1'-0"



126 & 128R North Street

NEW CONSTRUCTION

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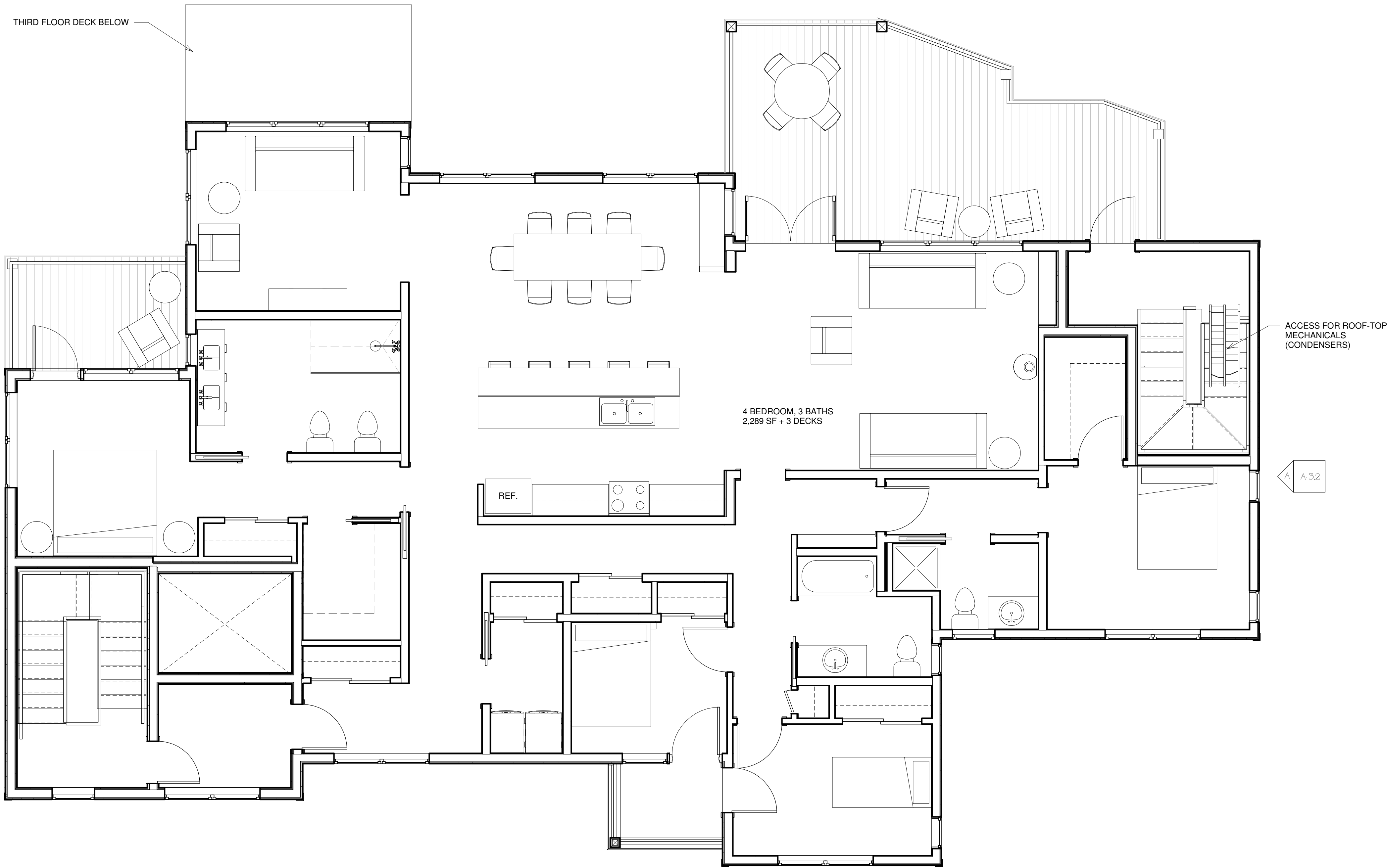
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No.	Description	Date

SECOND & THIRD FLOOR PLAN

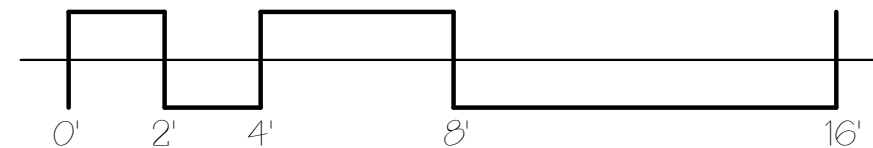
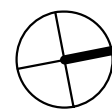
Project number	18-16_128R North
Date	04.16.20
Drawn by	TJR
Checked by	TJR
Scale	1/4" = 1'-0"

A-1.2



A Fourth Floor
1/4" = 1'-0"

[DESIGN DEVELOPMENT NOT FOR CONSTRUCTION]



126 & 128R North Street

NEW CONSTRUCTION

OWNER
JOSHUA WOJCIK
UPRIGHT FRAMEWORKS LLC
PO BOX 833
WILTON ME 04294
jwojck@uprightframeworks.com



**DEXTROUS
CREATIVE**

PORTLAND, ME 04102
TRACIE REED, ARCHITECT
NCARB, AIA, LEED AP BD+C
traciereed@dextrouscreative.com
207.403.0453 (cell)

PROJECT TEAM

SURVEYOR

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Nadeau Land Surveyors
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STRUCTURAL ENGINEER

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Portland, ME 04101
(207) 774-4614

No.	Description	Date

FOURTH FLOOR

Project number 18-16_128R North

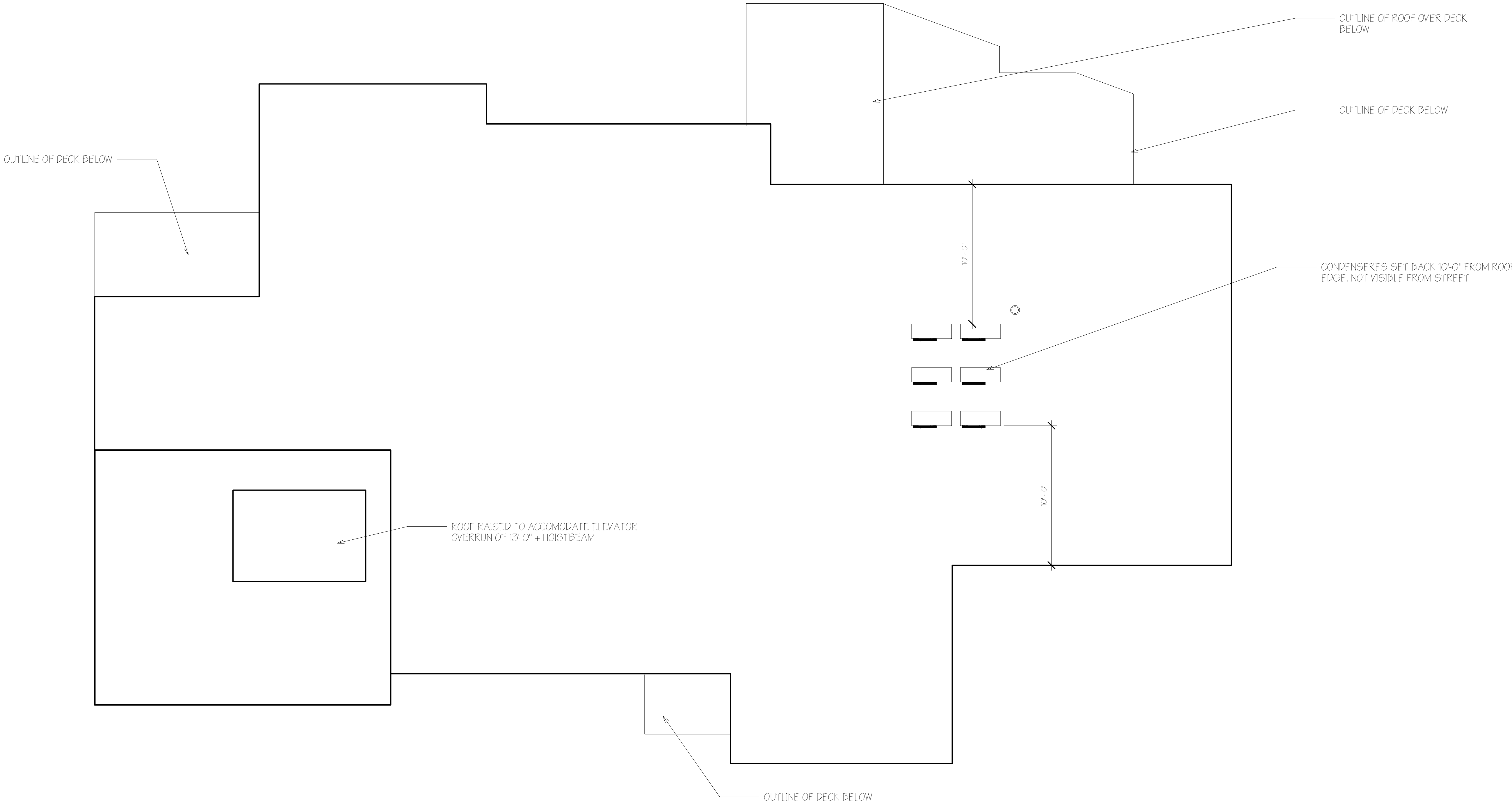
Date 04.16.20

Drawn by TJR

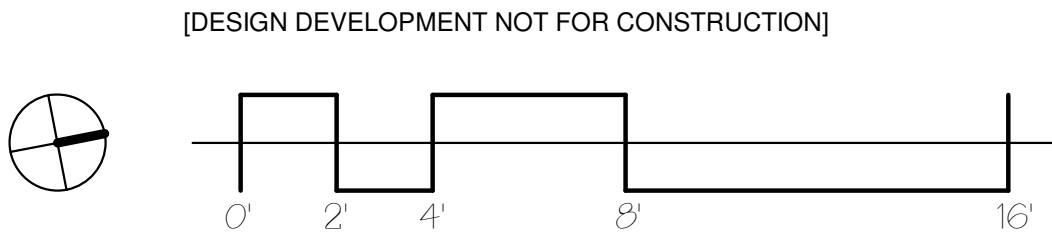
Checked by TJR

A-1.4

Scale 1/4" = 1'-0"



(A) Roof
1/4" = 1'-0"



**126 & 128R
North Street**
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No.	Description	Date

ROOF PLAN

Project number 18-16_128R North

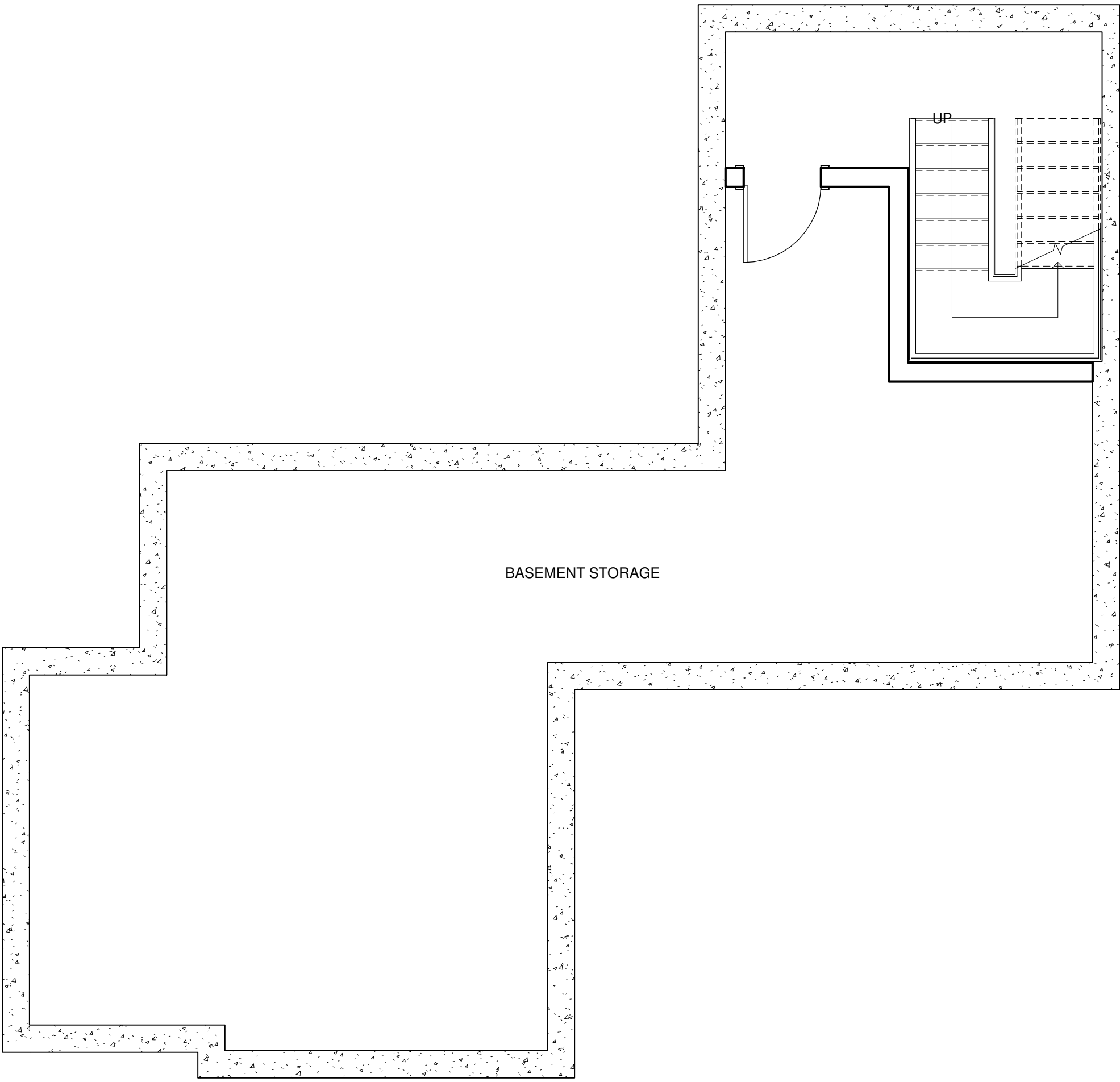
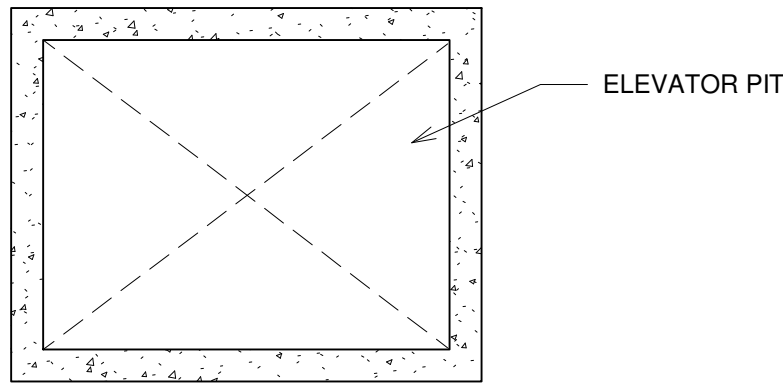
Date 04.16.20

Drawn by Author

Checked by Checker

A-1.5
Scale 1/4" = 1'-0"

A Basement Plan
1/4" = 1'-0"



128R North
Street
NEW CONSTRUCTION

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No.	Description	Date

**BASEMENT
PLAN**

Project number	18-16_128R North
Date	11.19.18
Drawn by	Author
Checked by	Checker

A-1.6

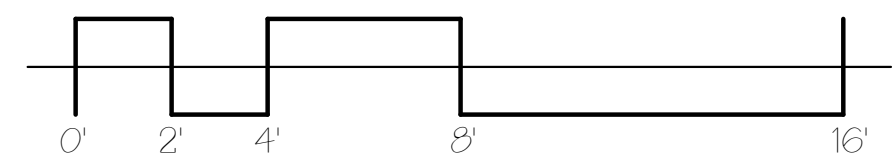
Scale	1/4" = 1'-0"
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Ⓐ North Elevation
3/16" = 1'-0"



Ⓑ South Elevation
3/16" = 1'-0"



126 & 128R North Street

NEW CONSTRUCTION

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No.	Description	Date

SOUTH & NORTH ELEVATIONS

Project number	18-16_128R North
Date	04.16.20
Drawn by	Author
Checked by	Checker

A-2.1

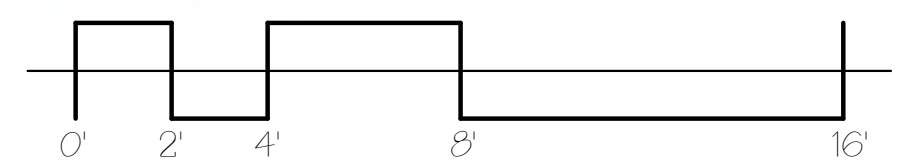
Scale: 3/16" = 1'-0"



A South Elevation
3/16" = 1'-0"



B North Elevation
1/4" = 1'-0"



128R North Street

NEW CONSTRUCTION

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No.	Description	Date

SOUTH & NORTH ELEVATIONS

Project number	18-16_128R North
Date	11.19.18
Drawn by	Author
Checked by	Checker
Scale	As indicated

A-2.1



(A) East Elevation
3/16" = 1'-0"



(B) West Elevation
3/16" = 1'-0"

**126 & 128R
North Street**
NEW CONSTRUCTION

OWNER
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No.	Description	Date

**EAST &
WEST
ELEVATIONS**

Project number	18-16_128R North
Date	04.16.20
Drawn by	Author
Checked by	Checker

A-2.2
Scale: 3/16" = 1'-0"



Ⓐ East Elevation
3/16" = 1'-0"



Ⓑ West Elevation
3/16" = 1'-0"

128R North Street
NEW CONSTRUCTION

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No.	Description	Date

EAST & WEST ELEVATIONS

Project number 18-16_128R North

Date 11.19.18

Drawn by Author

Checked by Checker

A-2.2

Scale 3/16" = 1'-0"



F Northeast Perspective



B Bird's Eye View of North Street Facade



I Main Entrance 128R



D View from Driveway



E Entrance View

126 & 128R North Street NEW CONSTRUCTION

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No.	Description	Date

PERSPECTIVES 128R

Project number	18-16_128R North
Date	04.16.20
Drawn by	Author
Checked by	Checker
A-5.1	
Scale	



(A) Northwest Perspective



(B) 4th floor Munjoy Heights View

THIS PERSPECTIVE IS TAKEN FROM THE FOURTH FLOOR AT MUNJOY HEIGHTS FROM JUST WITHIN THE UNIT. ELEVATION OF THE CAMERA (EYES) IS TAKEN AT 5'-0" ABOVE THE FLOOR AS SHOWN ON THE SITE SECTION A/A-3.2. THE DISTANCE OF THIS PERSON IS STANDING (INSIDE THEIR UNIT) IS 31'-0" FROM THE FACE OF THE SECOND FLOOR DECK. THE MUNJOY HEIGHTS BUILDINGS VARY IN DISTANCE FROM 128R NORTH BASED ON THEIR PROJECT'S SPLINE. THAT SAID, THE DISTANCE FROM THE EXTERIOR FACE OF THEIR BUILDINGS TO THE EXTERIOR FACE OF THE SECOND FLOOR DECKS RANGES FROM 25'-0" AT THE CLOSEST SECTION TO 32'-0". IN THE SITE SECTION SHOWN ON PAGE A-3.2 THE BUILDINGS ARE SHOWN AT 28'-0" APART.

126 & 128R North Street

NEW CONSTRUCTION

OWNER
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jwojck@uprightframeworks.com



**DEXTROUS
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PROJECT TEAM

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(207) 774-4614

No.	Description	Date

PERSPECTIVES 128R

Project number 18-16_128R North

Date 04.16.20

Drawn by Author

Checked by Checker

A-5.2

Scale:



OWNER:

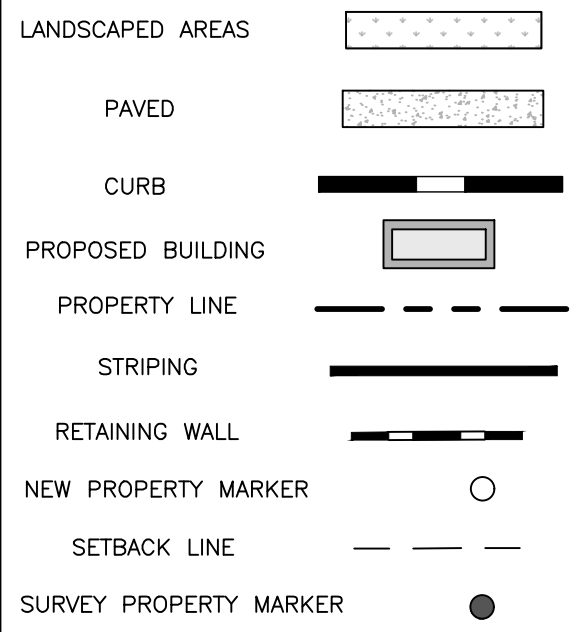
UPRIGHT PROPERTIES, LLC
PORTLAND, MAINE
CONTACT: JOSH WOJCIK
PO BOX 833 WILTON, ME 04294

CIVIL/SITE ENGINEER:

ACORN ENGINEERING, INC.
PORTLAND, MAINE
CONTACT: WILL SAVAGE, P.E.
65 HANOVER STREET, PORTLAND, ME 04101

SURVEYOR

NADEAU LAND SURVEYS
PORTLAND, MAINE
CONTACT: JAMES D. NADEAU, P.L.S.
918 BRIGHTON AVE, PORTLAND, ME 04102



UNIT NUMBER	SIZE (SF)*
1A	672
2A	1,240
2B	870
3A	1,240
3B	870
4A	2,289

*UNIT AREA MEASURED FROM OUTSIDE OF EXTERIOR WALLS TO THE CENTER OF SHARED WALLS

PARKING SUMMARY – 128R	
DIMENSIONS	# PARKING SPACES
9'x16.5'	4
8'x16.5'	1
8'x18'	1
TOTAL PROPOSED SPACES	6

RECORDING INFORMATION
STATE OF MAINE, CUMBERLAND
COUNTY REGISTRY OF DEEDS

RECEIVED: _____

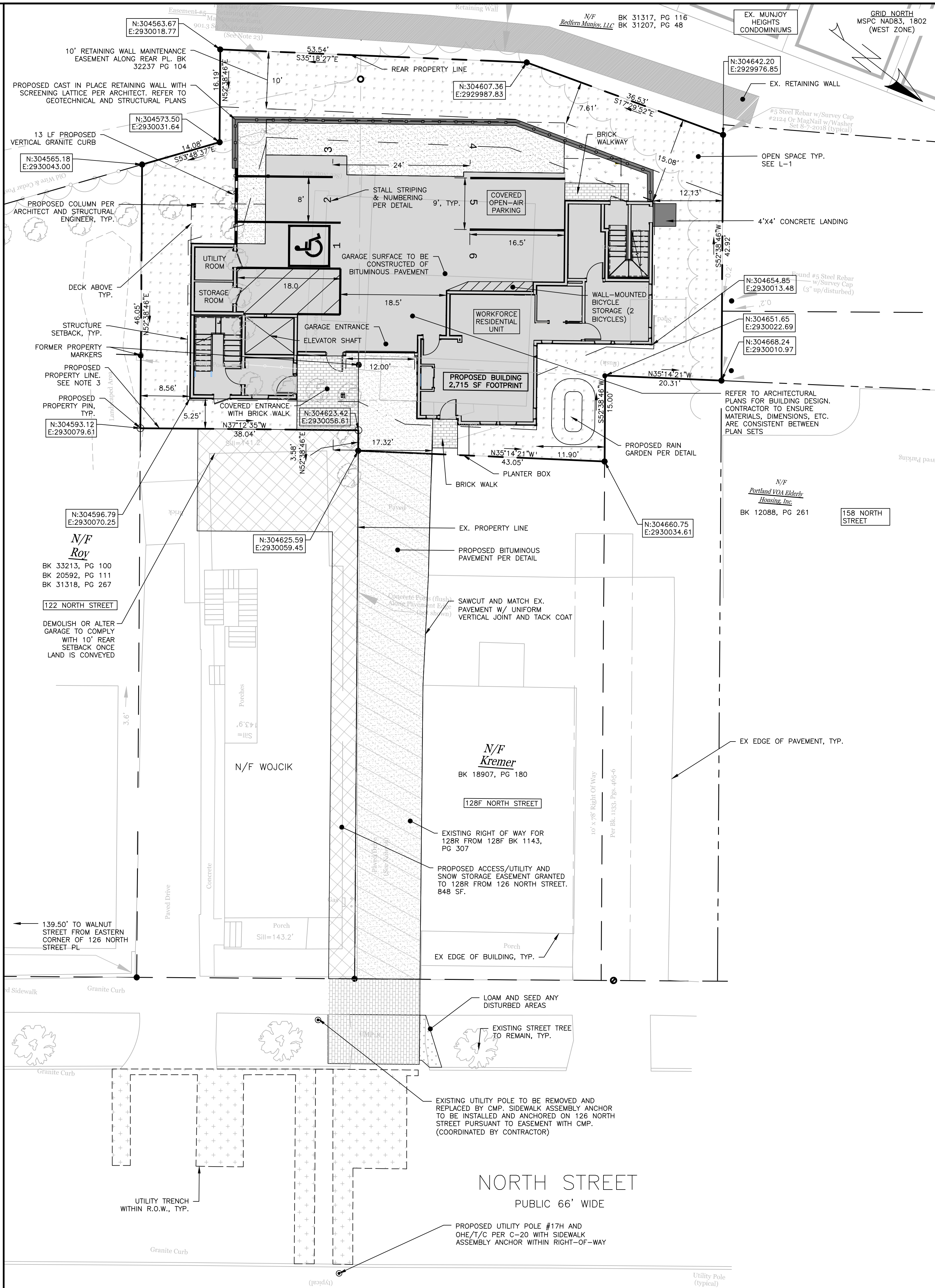
RECORDED IN _____

ATTEST: _____

JAMES D. NADEAU, MAINE P.L.S. #2124

NADEAU LAND SURVEYS

DATE:



GENERAL NOTES:

2. FOR INFORMATION REGARDING THE PROPOSED SITE, REFER TO THE SITE PLAN, C-10, MOST RECENT VERSION.
3. FOR INFORMATION REGARDING PROPOSED UTILITIES, REFER TO THE UTILITY PLAN, SHEET C-20, MOST RECENT VERSION.
4. FOR INFORMATION REGARDING PROPOSED GRADING AND STORMWATER, REFER TO THE GRADING & DRAINAGE PLAN, SHEET C-30, MOST RECENT VERSION.
5. UTILITY TUNNELATION PROVIDED BY DEXTROUS CREATIVE, REFER TO ARCHITECTURAL PLANS FOR FLOOR PLANS AND BUILDING HEIGHTS.
6. TOTAL SITE AREA INCLUDES 0.14 ACRES (6,142 S.F.). R.O.W. WIDTH FOR NORTH STREET IS 50 FEET PER BOUNDARY SURVEY & TOPOGRAPHICAL MAP WITH EXISTING CONDITIONS COMPLETED BY NADEAU LAND SURVEYS DATED 8/22/2018 (JOB #2181902BTR1).
7. SITE BOUNDARY PER BOUNDARY SURVEY & TOPOGRAPHICAL MAP WITH EXISTING CONDITIONS COMPLETED BY NADEAU LAND SURVEYS ASSOCIATED DATED 8/22/2018 (JOB #2181902BTR1).
8. PROPERTY PLANS TO BE SET BY PROFESSIONAL LAND SURVEYOR
9. AS OF 5/7/2019, THE SITE IS BOUNDED BY THE R-6 ZONE ON EAST, WEST, SOUTH, AND NORTH SIDES OF THE CITY OF PORTLAND GIS WEBSITE.
10. LOCUS MAP IS SHOWN ON THE CITY OF PORTLAND ASSESSOR'S MAP 12, BLOCK 4, LOT 9
11. LOCUS PARCEL DOES NOT FALL IN A SPECIAL FLOOD HAZARD AREA PER FEMA FLOOD INSURANCE RATE MAP COMMUNITY-PANEL NUMBER 2300501004B, INDEX DATED 7/17/1986.
12. THE FORMER BUILDING FOUNDATION OF THE EXISTING BUILDING FOUNDATION, UNLESS OTHERWISE NOTED.
13. THIS SHEET IS THE SUBDIVISION PLAN FOR THE CREATION OF UP TO SIX (6) DWELLING UNITS ON THE EXISTING SUBSIDIARY PROPERTY.
14. THE CONDOMINIUM DOCUMENTS ARE TO OUTLINE THE MAINTENANCE AND MANAGEMENT OF DRIVEWAYS, SIDEWALKS, RETAINING WALLS, STORMWATER DEVICES, SITE LIGHTING, TRASH REMOVAL, AND SNOW REMOVAL AS THE RESPONSIBILITY OF THE OWNER.
15. THE HOMEOWNER'S ASSOCIATION SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND MANAGEMENT OF DRIVEWAYS, SIDEWALKS, RETAINING WALLS, STORMWATER DEVICES, SITE LIGHTING, TRASH REMOVAL, AND SNOW REMOVAL.
16. THE HOMEOWNER'S ASSOCIATION SHALL BE RESPONSIBLE FOR COMPLYING WITH THE CONDITIONS OF CHAPTER 32 STORMWATER INCLUDING ARTICLE III, POST-CONSTRUCTION STORMWATER MANAGEMENT AGREEMENT, WHICH SPECIFIES ANNUAL INSPECTIONS AND REPORTING REQUIREMENTS AT A MINIMUM. IN ADDITION, THE OWNER SHALL BE RESPONSIBLE FOR COMPLYING WITH THE CONDITIONS OF THE COMMITTED STORMWATER MANAGEMENT PLAN AND THE APPROVED PLANS, AND MEET CITY STANDARDS AND STATE GUIDELINES.

SURVEY NOTES:

1. THIS PLAN IS NOT INTENDED TO DEPICT LIMITS OR EXTENT OF FEED TITLE OWNERSHIP. AN OPINION OF THIS PLAN SHOULD BE RENDERED BY A TITLE ATTORNEY.
2. THE OFFICE RESERVES THE RIGHT TO BE HELD HARMLESS BY ALL 3RD PARTY CLAIMS.
3. THIS SURVEY DOES NOT PURPORT TO REFLECT ANY OF THE FOLLOWING:
- 3.1. EASEMENTS OTHER THAN THOSE THAT ARE VISIBLE OR SPECIFICALLY STATED IN THE REFERENCED DOCUMENTS.
- 3.2. BUILDING SETBACK COMPLIANCE OR RESTRICTIVE COVENANTS.
- 3.3. ZONING OR OTHER LAND USE REGULATIONS.
- 3.4. THE LOCATION OF ANY UNDERGROUND UTILITIES OR STRUCTURES.
- 3.5. THIS OFFICE RESERVES THE RIGHT TO BE HELD HARMLESS FOR UNKNOWN OR UNOBTAINABLE PRIVATE RECORDS WHICH COULD AFFECT THE RESULTS OF THIS SURVEY.
4. REFERENCE IS MADE TO "LETTER OF AGREEMENT" DATED MAY 23, 2018 BETWEEN NADÉAU LAND SURVEYS AND THE CUMBERLAND COUNTY REGISTERED PROFESSIONAL ENGINEER, WHICH IS CONSIDERED AN INTEGRAL PART OF THIS SURVEY.
5. N/E IS AN ABBREVIATION FOR NOW OR FORMERLY.
6. ALL DEEDS REFERENCED ON THIS PLAN ARE RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS (CCRD).
7. LOCUS PARCELS ARE LOCATED IN THE R-6 RESIDENTIAL ZONE: (AS OF 8/22/18)
- 8.1. MINIMUM LOT SIZE = 200 S.F.
- 8.2. MINIMUM LOT AREA / DWELLING UNIT = 725 S.F.
- 8.3. MINIMUM STREET FRONTAGE = 20 FEET
- 8.4. MINIMUM LOT WIDTH = 20 FEET
- 8.5. MAXIMUM LOT COVERAGE = 60%
- 8.6. MINIMUM FRONT YARD SETBACK = 5 FEET, OR AVERAGE DEPTH OF ADJACENT FRONT YARDS
- 8.7. MINIMUM SIDE YARD SETBACK = 10 FEET
- 8.8. MINIMUM REAR YARD SETBACK = 15 FEET
9. LOCUS PARCEL A IS SHOWN ON THE CITY OF PORTLAND ASSESSOR'S MAP 12, BLOCK H, AS LOT 14, AND IS LISTED AS 128 NORTH STREET, LOCUS PARCEL B IS SHOWN ON THE CITY OF PORTLAND ASSESSOR'S MAP 12, BLOCK H, AS LOT 15, AND IS LISTED AS 128B NORTH STREET.
10. AREA OF LOCUS PARCEL A IS 4,105.0 SQUARE FEET (0.09 ACRE), AREA OF LOCUS PARCEL B IS 5,682.0 SQUARE FEET (0.13 ACRES)
11. THE APPARENT RIGHT OF WAY LINES DEPICTED ON THIS PLAN ARE BASED ON THE PLAN REFERENCES LISTED HEREON. MONUMENTATION FOUND IN THE FIELD, AND CITY OF PORTLAND ENGINEERING STREET NOTES.
12. THE LOCUS PARCELS DO NOT SCALE IN A SPECIAL FLOOD HAZARD AREA PER FEMA FLOOD INSURANCE RATE MAP COMMUNITY-PANEL NUMBER 230051 00148, INDEX DATED DECEMBER 8, 1998, THE PARCELS SCALE IN ZONE C.
13. ALL BUILDING CORNER OFFSETS TO BOUNDARY LINES ARE FROM CORNER BOARDS AND NOT BUILDING CORNERS.
14. CALL 1-888-DIGSAFE AT LEAST THREE BUSINESS DAYS BEFORE PERFORMING ANY EXCAVATION.
15. VERTICAL DATUM IS NGVD29. BENCHMARK IS CITY MONUMENT 112-18=107, ELEVATION = 145.08'
16. SEE CCRD BOOK 1143, PAGE 307, DATED JULY 25, 1923, FROM ELMORE V. RAMSDALL TO CLAIRE N/OF FOR CORNER TO NORTH SIDE OF N/OF.
17. PER CITY OF PORTLAND RECORDS, VOL. 1, PAGE 184, NORTH STREET WAS ACCEPTED MARCH 20, 1795 AS 4 RODS (66 FEET) WIDE.
18. SEE CCRD BOOK 14149, PAGE 281, DATED SEPTEMBER 10, 1998, FOR CITY OF PORTLAND'S LICENSE TO CONSTRUCT A FENCE ALONG POPLAR STREET PARTIALLY INTRUDING ON LAND N/F MAXWELL.
19. SEE CCRD BOOK 31326, PAGE 331, DATED FEBRUARY 3, 2014, FROM THE CITY OF PORTLAND TO RAYMOND C. MAXWELL, FOR TERMINATION OF LICENSE RECORDED IN BOOK 14149, PAGE 281.
20. DISTRICT ENGINEER IS ALLOWED TO ENCRoACH SETBACK WINDOW PER CITY OF PORTLAND ZONING ORDINANCE SECTION 14-425.
21. SEE NOTICE FOR VACATED PORTIONS OF SHERIDAN STREET AND EAST COVE STREET, DATED MARCH 5, 2014, FOR RECORDING INFORMATION.
22. THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THIS OFFICE MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN-SERVICE OR ABANDONED. THE UNDERGROUND UTILITIES SHOWN ARE APPROXIMATELY LOCATED AND NOT EXACTLY LOCATED. INFORMATION FROM INFORMATION AVAILABLE. THIS OFFICE HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.
23. SEE CCRD BOOK 32237, PAGE 104, DATED APRIL 30, 2015, FOR RELEASE AND EASEMENT AGREEMENT BETWEEN CUMBERLAND COUNTY AND UPRIGHT PROPERTY LLC.
24. THE COORDINATES DEPICTED ON OUR PLAN ARE FOR MUNICIPAL REQUIREMENTS ONLY AND SHOULD NOT BE USED FOR CONSTRUCTION LAYOUT. THIS OFFICE ASSUMES NO LIABILITY AND/OR RESPONSIBILITY IF USED AS PROJECT BENCHMARKS. THIS OFFICE ASSUMES NO LIABILITY AND/OR RESPONSIBILITY IS USED FOR CONSTRUCTION PURPOSES.
26. NO RECORDS REVIEWED FOR THIS EVALUATION HAS BEEN PERFORMED SINCE THE ORIGINAL DATE OF THIS SURVEY. THIS SURVEY PLAN WAS REVISED SOLELY TO DEPICT ADDITIONAL UTILITY INFORMATION

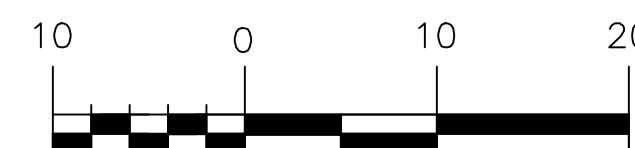
EASEMENTS:

1. PERMANENT RIGHT-OF-WAY WITH 128F NORTH STREET. REFERENCE CCRD BK 1143, PG 307.

1. JOSHUA WOJCIK (126 NORTH STREET) GRANTS UPRIGHT PROPERTIES LLC (128R NORTH STREET) AN ACCESS/UTILITY AND SNOW STORAGE EASEMENT OVER 848 SF OF LAND ABUTTING THE NORTHERN AND EASTERN SIDE PROPERTY LINES. REFERENCE CCRD BK _____ PG _____.

WAIVERS & CONDITIONS OF APPROVAL:

TBD

[illegible]

SCALE: 1"=10'

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

[illegible]

SION PLAT - PHASE I (128R NORTH STREET)

26/128R NORTH STREET REDEVELOPMENT

UPRIGHT PROPERTIES, LLC

PO BOX 833 WILTON, ME 04294

DRAWING NAME:



A C O R ENGINEERING, INC.

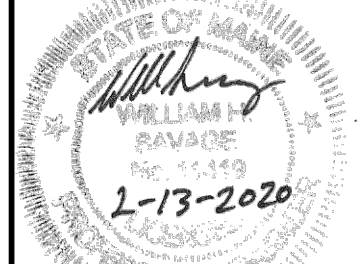
FILE: 1116 CIVIL

JN: 1116

SCALE: 1"=10'

DESIGNED BY:	USE
DESIGNED BY:	USE

CHECKED BY: WHS



DRAWING NO.

PLAT



PHASE II		
SPACE AND BULK STANDARDS – 126 NORTH		
ZONE: R6 – MHNCDO	REQUIRED	PROPOSED
MINIMUM LOT SIZE	2,000 SF	3,645 SF
MINIMUM STREET FRONTAGE	20'	38'
MINIMUM FRONT YARD SETBACK	3.7' AVG	4'
MINIMUM SIDE YARD SETBACK (LEFT)	5'	10.02'
MINIMUM SIDE YARD SETBACK (RIGHT)	5'	5'
MINIMUM DECK SETBACK	7.5'	N/A
MINIMUM REAR YARD SETBACK	10'	17.83'
MAXIMUM LOT COVERAGE	60%	47%
MINIMUM LOT WIDTH	20'	38'
MAXIMUM BUILDING HEIGHT	35'	33.32'
MINIMUM LANDSCAPED OPEN AREA	20%	20%
MAXIMUM NUMBER OF DWELLING UNITS	725 SF/UNIT = 5*	6
RESIDENTIAL PARKING	1 SPACE PER UNIT AFTER 3 UNITS = 2 SPACES	2
MINIMUM INTERNAL RESIDENT BICYCLE STORAGE SPACES	2 SPACES/5 D.U. = 2	2

*SECTION 14-488 STATES "THAT PROVIDING BOTH WORKFORCE AND AFFORDABLE HOUSING UNITS, THE APPLICANT HAS THE OPTION OF UTILIZING APPLICABLE INCENTIVES". IN THIS CASE THE INCENTIVE RESULTS IN 6 UNITS.

JOSH WOJCIK
PO BOX 833 WILTON, ME 04294

ACORN ENGINEERING, INC.
PORTLAND, MAINE
CONTACT: WILL SAVAGE, P.E.
65 HANOVER STREET, PORTLAND, ME 04101

NADEAU LAND SURVEYS
PORTLAND, MAINE
CONTACT: JAMES D. NADEAU, P.L.S.
918 BRIGHTON AVE, PORTLAND, ME 04102

LANDSCAPED AREAS	
PAVED	
CURB	
PROPOSED BUILDING	
PROPERTY LINE	
STRIPING	
RETAINING WALL	
NEW PROPERTY MARKER	
SETBACK LINE	
SURVEY PROPERTY MARKER	

PARKING SUMMARY – 126	
DIMENSIONS	# PARKING SPACES
10'x18'	1
8'x18' (ADA)	1
TOTAL PROPOSED SPACES	2

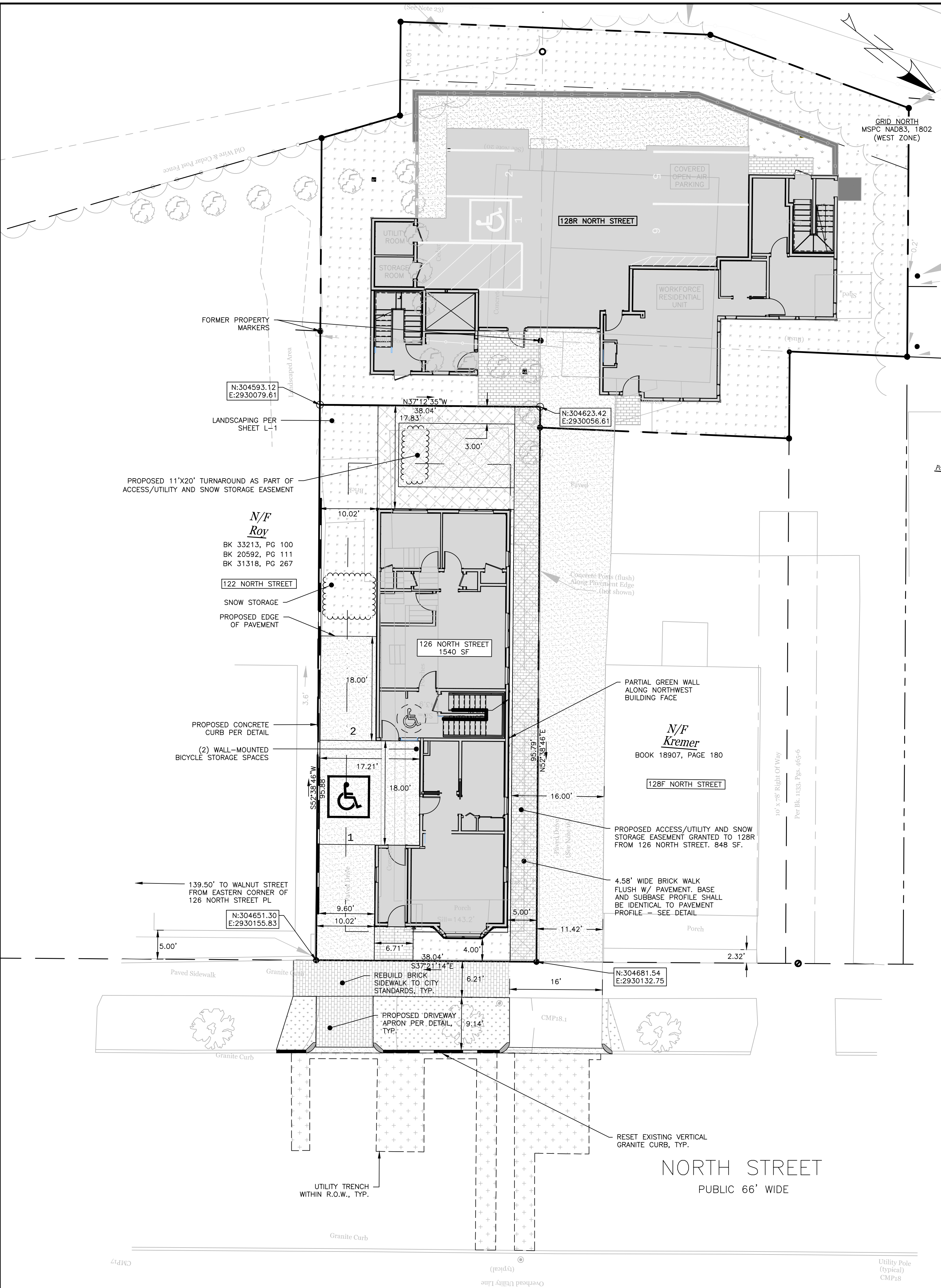
UNIT TABULATION – 126	
UNIT NUMBER	SIZE (SF)*
1A	680
2A	687
2B	716
3A	687
3B	716

*UNIT AREA MEASURED FROM OUTSIDE OF EXTERIOR WALLS TO THE CENTER OF SHARED WALLS

JAMES D. NADEAU, MAINE P.L.S. #2124

NADEAU LAND SURVEYS

DATE:



1. FOR INFORMATION REGARDING THE PROPOSED SITE, REFER TO THE SITE PLAN, C-10, MOST RECENT VERSION.
2. FOR INFORMATION REGARDING PROPOSED UTILITIES, REFER TO THE UTILITY PLAN, SHEET C-20, MOST RECENT VERSION.
3. FOR INFORMATION REGARDING PROPOSED GRADING AND STORMWATER, REFER TO THE GRADING & DRAINAGE PLAN, SHEET C-21, MOST RECENT VERSION.
4. UNIT INFORMATION PROVIDED BY DEXTRIOUS CREATIVE; REFER TO ARCHITECTURAL PLANS FOR FLOOR PLANS AND BUILDING HEIGHTS.
5. THE SITE AREA INCLUDES 0.084 ACRES (3,645 S.F.). R.O.W. WIDTH FOR NORTH STREET IS 50 FEET PER BOUNDARY SURVEY & TOPOGRAPHICAL MAP WITH EXISTING CONDITIONS COMPLETED BY NADEAU LAND SURVEYS DATED 8/22/2018 (JOB #2181902BTR1).
6. SITE BOUNDARIES PER BOUNDARY SURVEY & TOPOGRAPHICAL MAP WITH EXISTING CONDITIONS COMPLETED BY NADEAU LAND SURVEYS ASSOCIATED DATED 8/22/2018 (JOB #2181902BTR1).
7. PROPERTY PLANS TO BE SET BY PROFESSIONAL LAND SURVEYOR.
8. AS OF 5/7/2019, THE SITE IS BOUNDED BY THE R-6 ZONE ON EAST, WEST, SOUTH, AND NORTH SIDES OF THE CITY OF PORTLAND GIS WEBSITE.
9. THE PARCELS SHOWN ON THE CITY OF PORTLAND ASSESSOR'S MAP 12, BLOCK H, LOT 14.
10. LOCUS PARCEL DOES NOT FALL IN A SPECIAL FLOOD HAZARD AREA PER FEMA FLOOD INSURANCE RATE MAP COMMUNITY-PANEL NUMBER 23005100148, INDEX DATED 7/17/1986.
11. ALL BUILDING CORNER OFFSETS TO BOUNDARY LINES ARE FROM THE BUILDING FOUNDATION, UNLESS OTHERWISE NOTED.
12. THIS SHEET IS THE SUBDIVISION PLAT FOR THE CREATION OF UP TO SIX (6) DWELLING UNITS ON THE EXISTING SUBCUT PROPERTY.
13. THE OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND MANAGEMENT OF DRIVEWAYS, SIDEWALKS, STORMWATER DEVICES, SITE LIGHTING, TRASH REMOVAL, RETAINING WALLS, AND REMOVAL OF EXISTING UTILITIES.
14. THE OWNER SHALL BE RESPONSIBLE FOR THE CONDITION OF THE CITY OF PORTLAND CHAPTER 32 STORMWATER INCLUDING ARTICLE III, POST-CONSTRUCTION STORMWATER MANAGEMENT AGREEMENT, WHICH SPECIFIES ANNUAL INSPECTIONS AND REPORTING REQUIREMENTS AT A MINIMUM. IN ADDITION, THE OWNER SHALL BE RESPONSIBLE FOR COMPLYING WITH THE CITY OF PORTLAND'S SUBMITTED STORMWATER MANAGEMENT PLAN AND THE APPROVED PLANS, AND MEET CITY STANDARDS AND STATE GUIDELINES.

THIS PLAN IS NOT INTENDED TO DEPICT LIMITS OR EXTENT OF FEE TITLE OWNERSHIP. AN OPINION OF TITLE SHOULD BE RENDERED BY A TITLE ATTORNEY.

2. THE OFFICE HEREBY RESERVES THE RIGHT TO BE HELD HARMLESS BY ALL 3RD PARTY CLAIMS.

3. THIS SURVEY DOES NOT PURPORT TO REFLECT ANY OF THE FOLLOWING:

- 3.1. EASEMENTS OTHER THAN THOSE THAT ARE VISIBLE OR SPECIALLY STATED IN THE REFERENCED DOCUMENTS.
- 3.2. BUILDING SETBACK COMPLIANCE OR RESTRICTIVE COVENANTS.
- 3.3. ZONING OR OTHER LAND USE REGULATIONS.
- 3.4. THE LOCATION OF ANY UNDERGROUND UTILITIES OR STRUCTURES.

4. THIS OFFICE RESERVES THE RIGHT TO BE HELD HARMLESS FOR UNKNOWN OR UNOBTAINABLE PRIVATE RECORDS WHICH COULD AFFECT THE RESULTS OF THIS SURVEY.

5. REFERENCE IS MADE TO "LETTER OF AGREEMENT" DATED MAY 23, 2018 BETWEEN NADEAU LAND SURVEYORS AND THE BELOW LISTED CLIENTS, WHICH SHALL BE CONSIDERED AN INTEGRAL PART OF THIS SURVEY.

6. ALL DEEDS REFERENCED ON THIS PLAN ARE RECORDED AT THE CUMBERLAND COUNTRY REGISTRY OF DEEDS (CCRD).

7. LOCUS PARCELS ARE LOCATED IN THE R-6 RESIDENTIAL ZONE: (AS OF 8/22/18)

- 8.1. MINIMUM LOT SIZE = 200.5'.
- 8.2. MINIMUM LOT AREA / DWELLING UNIT = 725.5'.
- 8.3. MINIMUM STREET FRONTAGE = 20 FEET
- 8.4. MINIMUM LOT WIDTH = 20 FEET
- 8.5. MAXIMUM LOT COVERAGE = 60%
- 8.6. MINIMUM FRONT YARD SETBACK = 5 FEET, OR AVERAGE DEPTH OF ADJACENT FRONT YARDS
- 8.7. MINIMUM SIDE YARD SETBACK = 5 FEET
- 8.8. MINIMUM REAR YARD SETBACK = 10 FEET

9. LOCUS PARCEL A IS SHOWN ON THE CITY OF PORTLAND ASSESSOR'S MAP 12, BLOCK H, AS LOT 14, AND IS LISTED AS 126 NORTH STREET. LOCUS PARCEL B IS SHOWN ON THE CITY OF PORTLAND ASSESSOR'S MAP 12, BLOCK H, AS LOT 15, AND IS LISTED AS 128 NORTH STREET.

10. AREA OF LOCUS PARCEL A IS 4.1050 SQUARE FEET (0.09 ACRES). AREA OF LOCUS PARCEL B IS 5.6820 SQUARE FEET (0.13 ACRES)

11. THE APPARENT RIGHT OF WAY LINES DEFINED ON THIS PLAN ARE BASED ON THE PLAN REFERENCES TO THE HERBERT MONUMENTATION FOUND IN THE FIELD, AND THE CITY OF PORTLAND ENGINEERING STUDY NOTES.

12. THE LOCUS PARCELS DO NOT SCALE IN A SPECIAL FLOOD HAZARD AREA PER FEMA FLOOD INSURANCE RATE MAP COMMUNITY-PANEL NUMBER 230051 00148, INDEX DATED DECEMBER 8, 1998. THE PARCELS SCALE IN ZONE C.

13. ALL BUILDING CORNER OFFSETS TO BOUNDARY LINES ARE FROM CORNER BOARDS AND NOT BUILDING FOOTINGS.

14. CALL 1-888-DISAST AT LEAST THREE BUSINESS DAYS BEFORE PERFORMING ANY EXCAVATION.

15. VERTICAL DATUM: 11429.29. BENCHMARK IS CITY MONUMENT 112-18-107, ELEVATION = 145.08'

16. SEE CCRD BOOK N163, PAGE 307, DATED JULY 25, 1923, FROM ELMORE W. RAMSDALE TO CLARENCE W. FLETCHER, FOR TERMINATION OF ENCROACHMENT SETBACK WINDOW PER CITY OF PORTLAND ZONING ORDINANCE SECTION 14-4-025.

17. PER CITY OF PORTLAND RECORDS, VOL. 1, PAGE 184, NORTH STREET WAS ACCEPTED MARCH 20, 1795 AS 4 RODS (66 FEET) WIDE.

18. SEE CCRD BOOK 14149, PAGE 281, DATED SEPTEMBER 10, 1998, FOR CITY OF PORTLAND'S LICENSE TO ERECT A FENCE ACROSS POPLAR STREET PARTIALLY INTRUDING ON LAND N/F MAXWELL.

19. SEE CCRD BOOK 31526, PAGE 331, DATED FEBRUARY 3, 2014, FROM THE CITY OF PORTLAND TO RAYMOND C. MAXWELL, FOR TERMINATION OF ENCROACHMENT RECORD IN BOOK 14149, PAGE 281.

20. EXISTING CITY OF PORTLAND ZONING ORDINANCE SECTION 14-4-025.

21. SEE NOTICE FOR VACATED PORTIONS OF SHERIDAN STREET AND EAST COVE STREET, DATED MARCH 5, 2015, FOR THE CITY OF PORTLAND.

22. THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THIS OFFICE MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN-SERVICE OR ABANDONED. THE UNDERGROUND UTILITIES SHOWN ARE NOT GUARANTEED TO BE ACCURATE, AND ARE LOCATED AS ACCURATE AS POSSIBLE FROM INFORMATION AVAILABLE. THIS OFFICE HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

23. SEE CCRD BOOK 32237, PAGE 104, DATED APRIL 30, 2015, FOR RELEASE AND EASEMENT AGREEMENT BETWEEN THE CITY OF PORTLAND AND THE CITY OF SEASIDE.

24. THE COORDINATES DEPICTED ON OUR PLAN ARE FOR MUNICIPAL REFERENCES ONLY AND SHOULD NOT BE USED FOR CONSTRUCTION LAYOUT. THIS OFFICE ASSUMES NO LIABILITY AND/OR RESPONSIBILITY IF ANY CONSTRUCTION LAYOUT IS MADE FROM THESE COORDINATES.

25. SPOT GRADES, SILL AND RIM ELEVATIONS ARE FOR ENGINEERING PURPOSED ONLY. AND SHALL NOT BE USED AS PROJECT BENCHMARKS. THIS OFFICE ASSUMES NO LIABILITY AND/OR RESPONSIBILITY IS USED FOR CONSTRUCTION PURPOSES.

26. NO REVISIONS TO THIS FIELD EVALUATION HAVE BEEN PERFORMED SINCE THE ORIGINAL DATE OF THIS SURVEY. THIS SURVEY PLAN WAS REVISED SOLEY TO DEPICT ADDITIONAL UTILITY INFORMATION

THERE ARE NO EXISTING EASEMENTS IDENTIFIED BY THE SURVEYOR PERTAINING TO 126 NORTH STREET

1. JOSHUA WOJCIK (126 NORTH STREET) GRANTS UPRIGHT PROPERTIES LLC (128R NORTH STREET) AN ACCESS/UTILITY AND SNOW STORAGE EASEMENT OVER 848 SF OF LAND ABUTTING THE NORTHERN AND EASTERN SIDE PROPERTY LINES. REFERENCE CCRD BK _____ PG _____.

N/A

[illegible]

SCALE: 1"=10'

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

[illegible]

DRAWING NAME: SUBDIVISION PLAT - PHASE II (126 NORTH STREET)

126/128R NORTH STREET REDEVELOPMENT

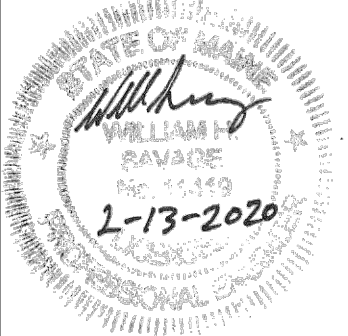
JOSHUA WOJCIK

PO BOX 833 WILTON, ME 04294



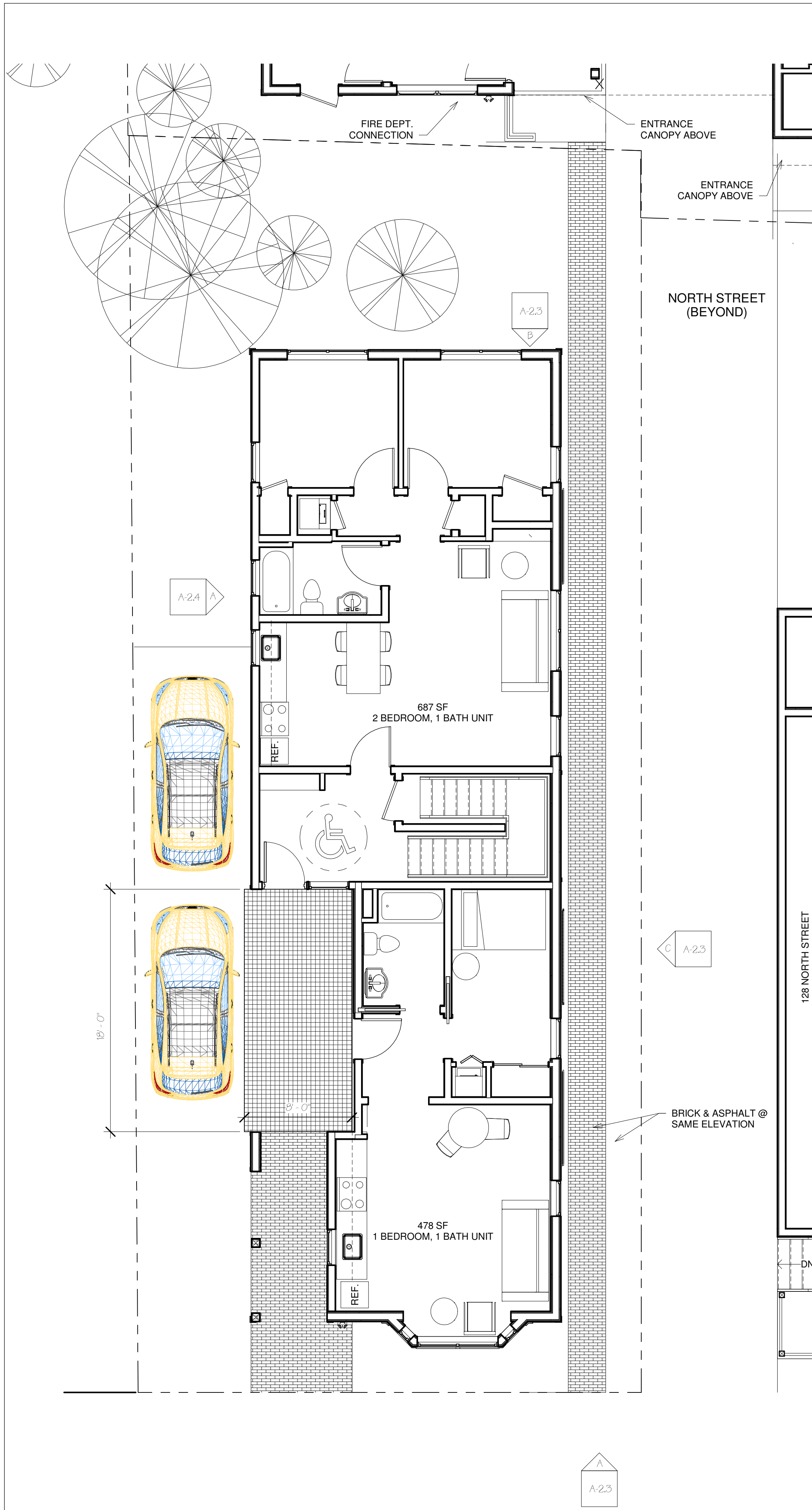
A C O R N
ENGINEERING, INC.

FILE:	1116_CIVIL
JN:	1116
SCALE:	1"=10'
DESIGNED BY:	SJL
DRAWN BY:	ZMS
CHECKED BY:	WHS

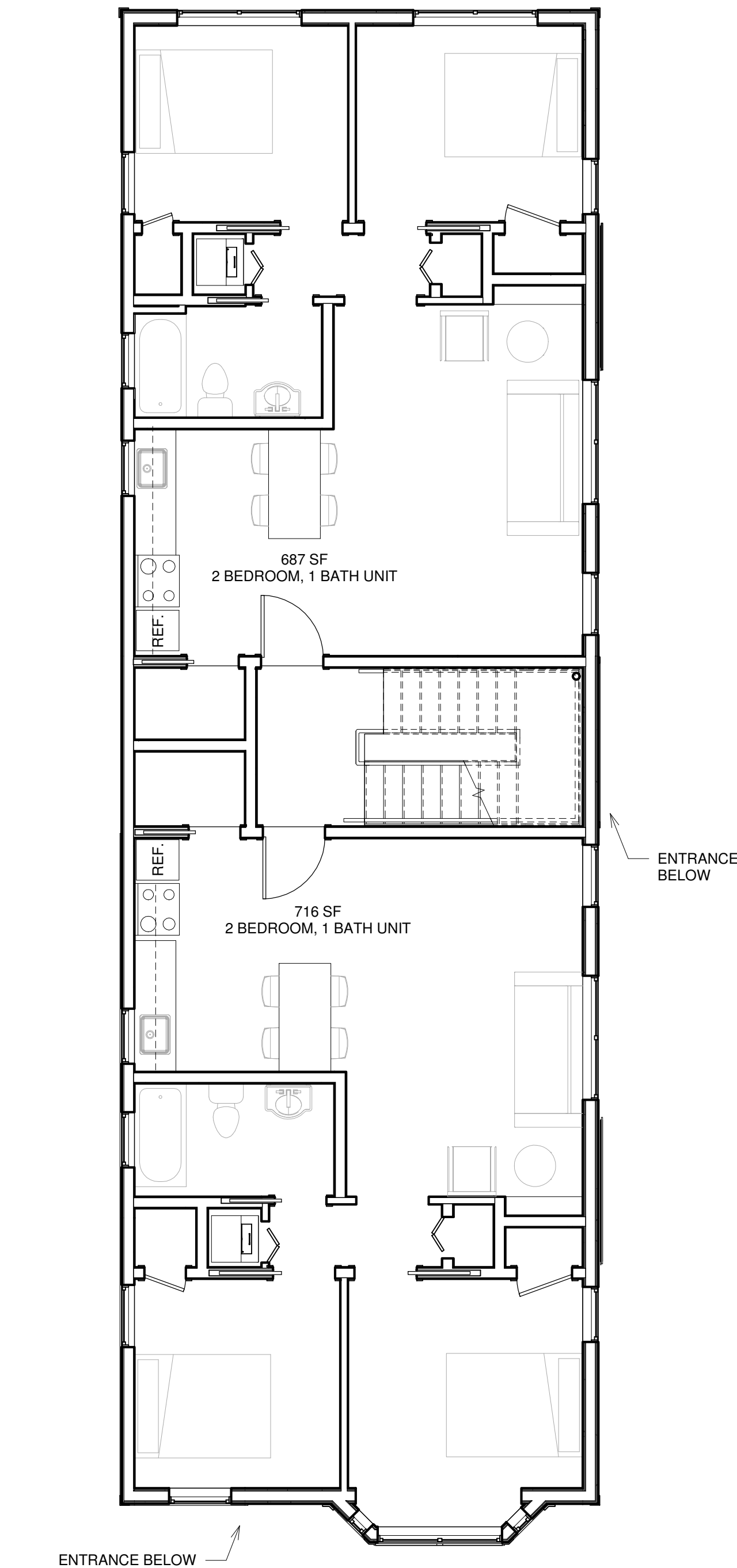


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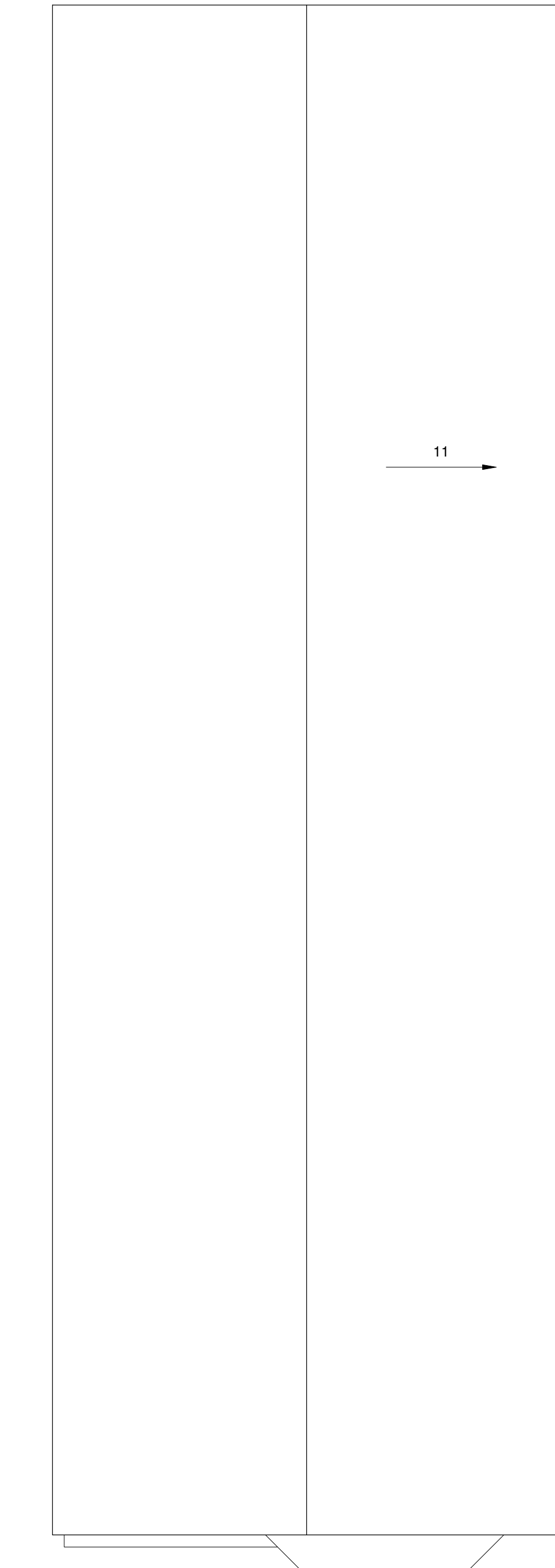
PLAT



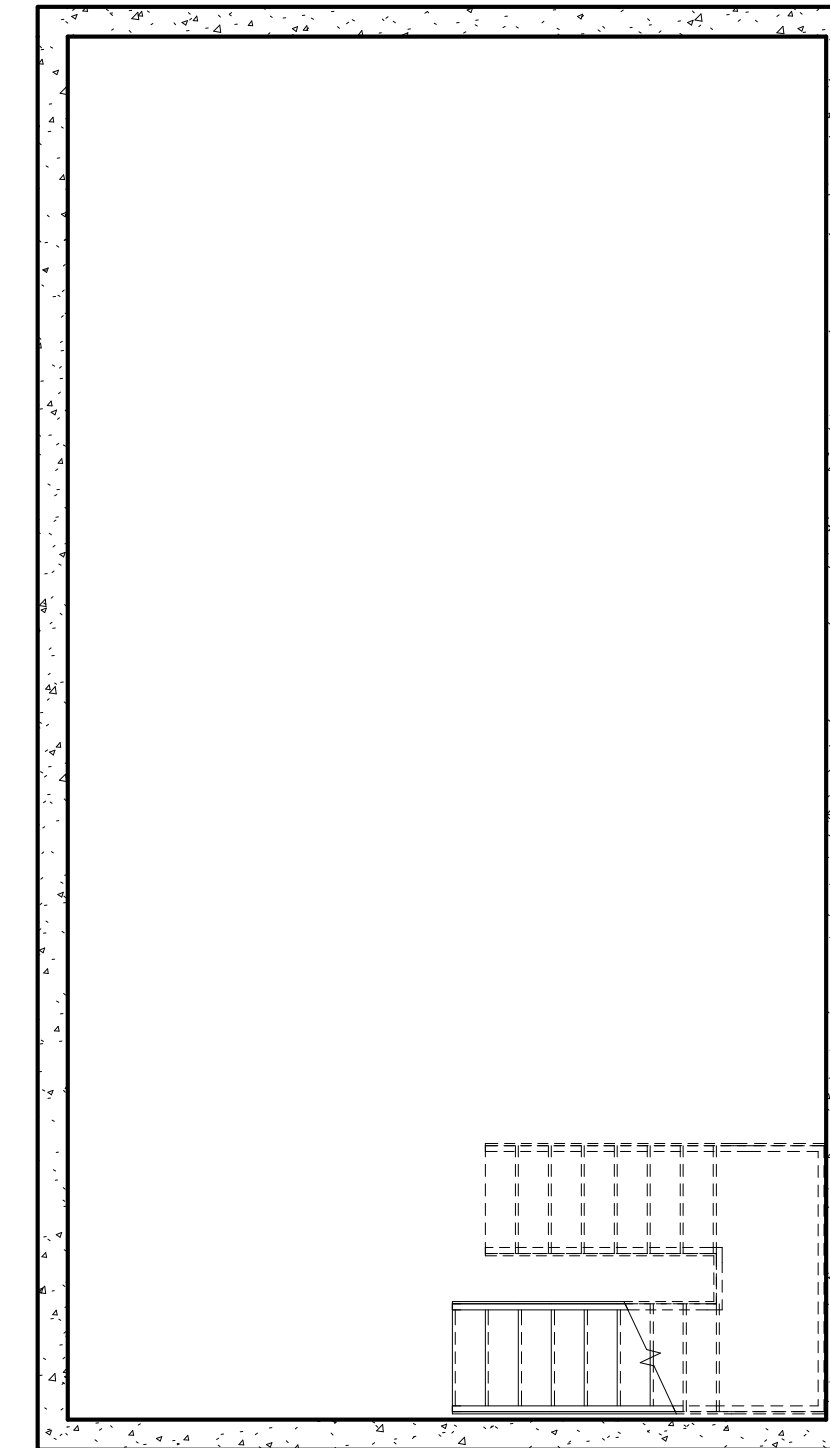
A First Floor 126
3/16" = 1'-0"



B Second & Third Floors 126
3/16" = 1'-0"



C Roof 126
3/16" = 1'-0"



D Basement
3/16" = 1'-0"

126 & 128R North Street

NEW CONSTRUCTION

OWNER
JOSHUA WOJCIK
UPRIGHT FRAMEWORKS LLC
PO BOX 833
WILTON ME 04294
jwojck@uprightframeworks.com



PORTLAND, ME 04102
TRACIE REED, ARCHITECT
NCARB, AIA, LEED AP BD+C
traciereed@dextrouscreative.com
207.403.0453 (cell)

PROJECT TEAM

SURVEYOR
James P. Nadeau, PLS
Nadeau Land Surveyors
918 Brighton Ave
Portland, ME 04102
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Senior Geotechnical Engineer
Summit Geotechnical Services, Inc.
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Lewiston, Maine 04243
(207) 576-6762

CIVIL ENGINEER
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(207) 775-2655

STRUCTURAL ENGINEER
Aaron C. Jones, P.E.
Structural Integrity Consulting Engineers, Inc.
46 Forest Ave
Portland, ME 04101
(207) 774-4614

No.	Description	Date

PHASE 2 PLANS

Project number	18-16_128R North
Date	04.16.20
Drawn by	Author
Checked by	Checker

A-1.6 126
Scale: 3/16" = 1'-0"



A View for Walnut Street Rendering



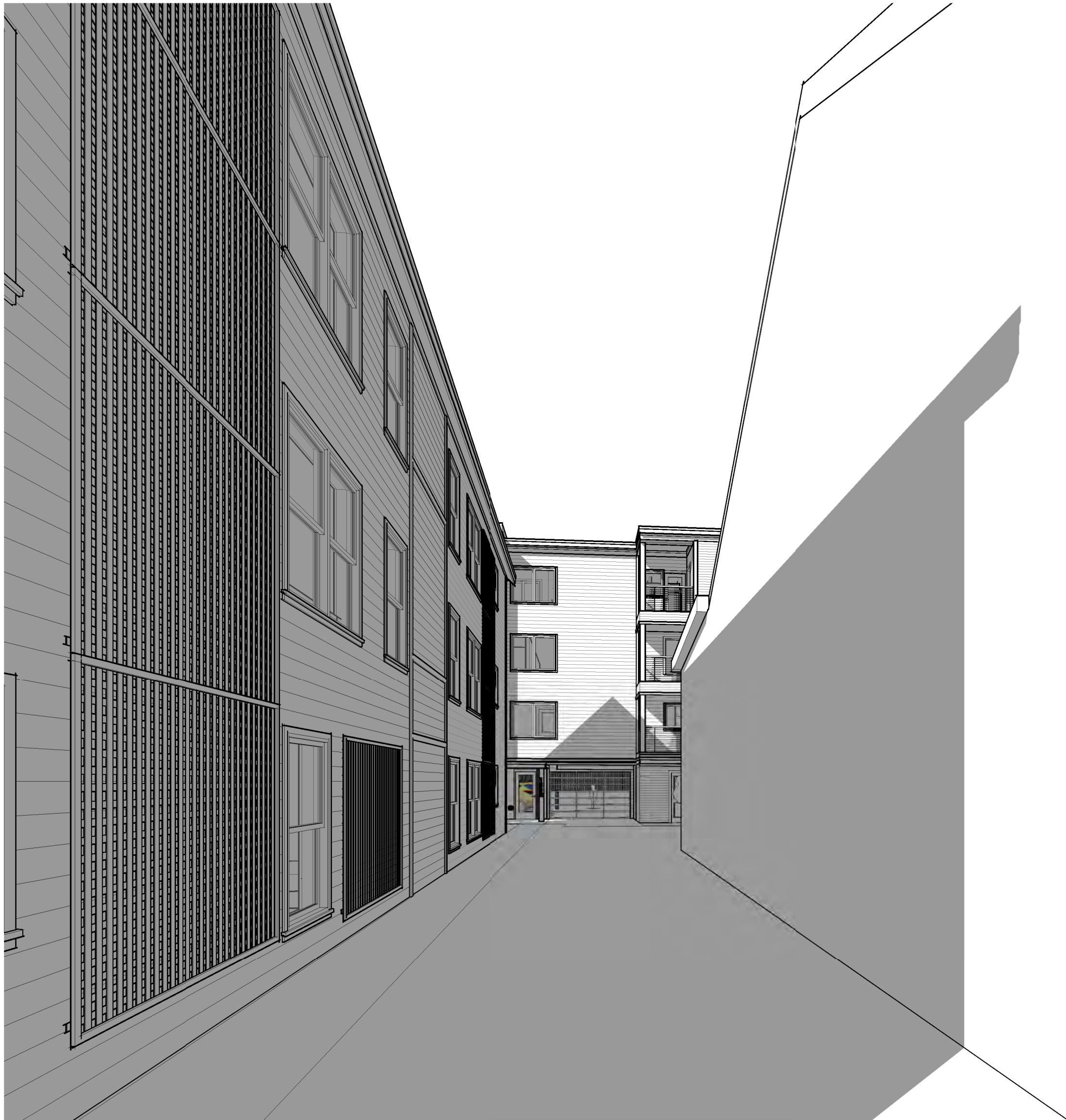
D View from Senior Housing for Rendering Copy 1



B View 126 + 128R North (elevation 176")



C Street View 126 + 128R North (Eye at 5'-0")



E View from North Street Sidewalk 126 & 128R

126 & 128R North Street

NEW CONSTRUCTION

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No.	Description	Date

PERSPECTIVES 126

Project number 18-16_128R North

Date 04.16.20

Drawn by Author

Checked by Checker

A-5.3

Scale:



A North Street View Showing Entrances



B Main Entrance 126

126 & 128R
North Street
NEW CONSTRUCTION

OWNER
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No.	Description	Date

PERSPECTIVES
126

Project number 18-16_128R North

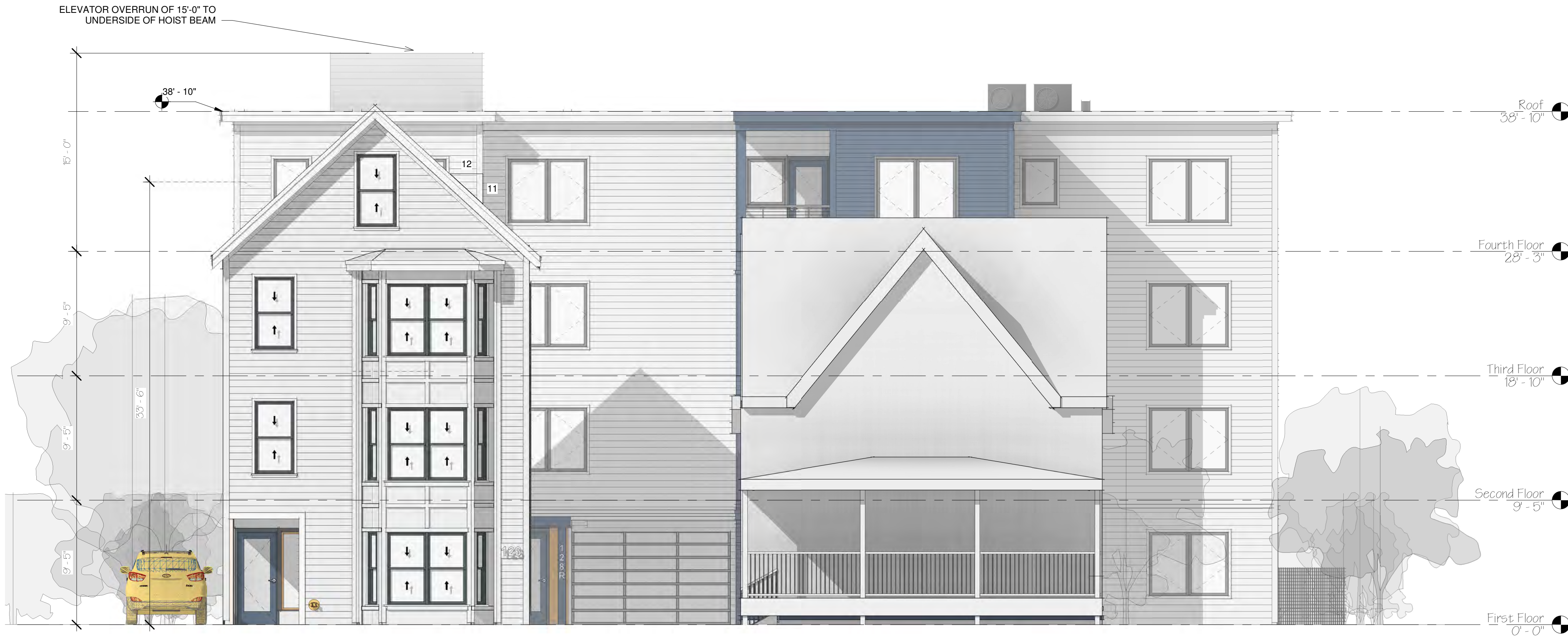
Date 04.16.20

Drawn by Author

Checked by Checker

A-5.4

Scale



A South Elevation 126 & 128
3/16" = 1'-0"



B North Elevation 126 North
3/16" = 1'-0"



C East Elevation 126 North
3/16" = 1'-0"

126 & 128R North Street NEW CONSTRUCTION

OWNER
JOSHUA WOJCIK
UPRIGHT FRAMEWORKS LLC
PO BOX 833
WILTON ME 04294
jwojck@uprightframeworks.com



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No.	Description	Date

SOUTH, NORTH & EAST 126

Project number	18-16_128R North
Date	04.16.20
Drawn by	Author
Checked by	Checker

A-2.3

Scale: 3/16" = 1'-0"



**126 & 128R
North Street**
NEW CONSTRUCTION

OWNER
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jwojck@uprightframeworks.com



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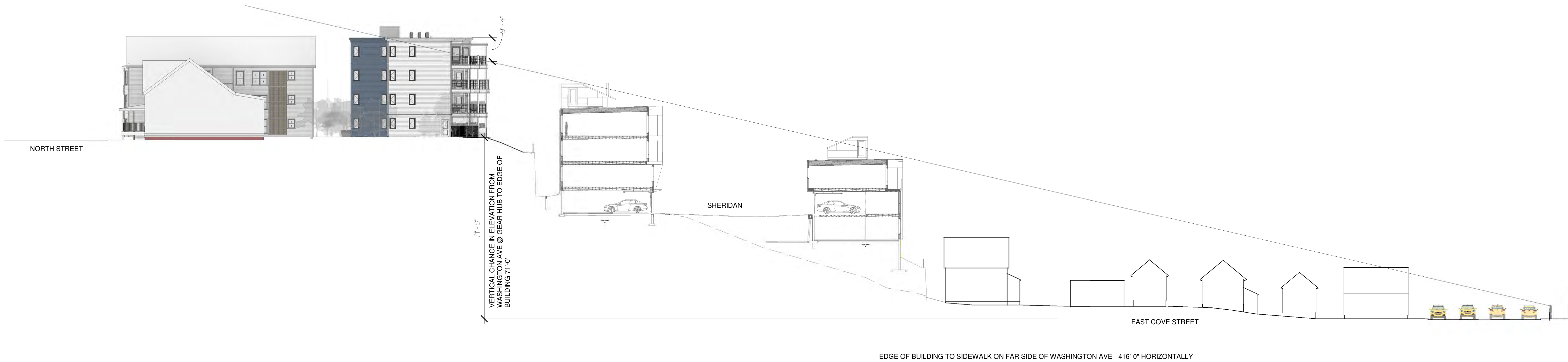
STRUCTURAL ENGINEER
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(207) 774-4614

No.	Description	Date

**WEST
ELEVATION
126**

Project number	18-16_128R North
Date	04.16.20
Drawn by	Author
Checked by	Checker

A-2.4
Scale: 3/16" = 1'-0"



SITE SECTION NORTH STREET TO
WASHINGTON AVENUE
1" = 20'-0"

ENTOURAGE 'FLORENCE' IS 5'-6" TALL. IF FLORENCE WERE TO STAND ON THE FAR SIDEWALK OF WASHINGTON AVENUE AND LOOK UP TOWARDS NORTH STREET THEY WOULD BE ABLE TO SEE THE TOP OF THE DECK RAIL AT 128R NORTH AND THE ELEVATION BEYOND AT A DISTANCE OF 435'-0" (HYPOTENUSE). THE REAR FACE OF THE BUILDING WOULD BE 418'-0" FROM HER HORIZONTALLY AND 71'-0" VERTICALLY*. THE MAJORITY OF THEIR SITE LINE WOULD BE CONSUMED BY THE MUNJOY HEIGHTS PROJECT (ALONG SHERIDAN STREET). THE DASHED LINE SHOWS THE CHANGE IN TOPOGRAPHY CREATED BY THE MUNJOY HEIGHTS PROJECT. THE ENTOURAGE IS ALSO SHOWN WITHIN THE FOURTH FLOOR OF THE MUNJOY HEIGHTS PROJECT LOOKING AT THE BACK OF 128R. THIS INDIVIDUAL IS 31'-0" AWAY FROM THE FACE OF DECK AND THEIR EYES WOULD BE 5'-0" ABOVE THE GRADE OF PARKING. THE PERSPECTIVE SEEN BY THIS PERSON IS SHOWN ON B/A-5.2. NOTE THAT THE MUNJOY HEIGHTS PROJECT. NOTE THAT THE BUILDINGS IN THE MUNJOY HEIGHTS PROJECT ARE SITUATED ALONG A SPLINE AND VARY IN DISTANCE FROM THE REAR FACE OF 128R BUILDING. AT THE CLOSEST POINT THE EXTERIOR FACE OF THE MUNJOY HEIGHTS BUILDING TO THE FACE OF DECK IS 25'-0" AND AT THE WIDEST POINT IT IS 32'-0". AT THE POINT OF THIS SECTION THE BUILDING IS MODELED AT 28'-0" SEPARATION.

*BASED ON ACORN ENGINEERING SITE ELEVATIONS POINTS AT THE EDGE OF BUILDING ON 128R NORTH STREET AND PROJECTS CURRENTLY UNDER CONSTRUCTION ALONG WASHINGTON AVENUE. SITE SECTION THROUGH MUNJOY HEIGHTS OBTAINED FROM ENGINEER. EAST COVE STREET HOUSES WERE SITED USING A COMBIATION OF PORTLAND GIS DATA, ASSESSING DEPARTMENT MEASUREMENTS AND GOOGLE STREET VIEW IMAGES

126 & 128R North Street

NEW CONSTRUCTION

OWNER
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UPRIGHT FRAMEWORKS LLC
PO BOX 833
WILTON ME 04294
jwojick@uprightframeworks.com



**DEXTROUS
CREATIVE**

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traciereed@dextrouscreative.com
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(207) 774-4614

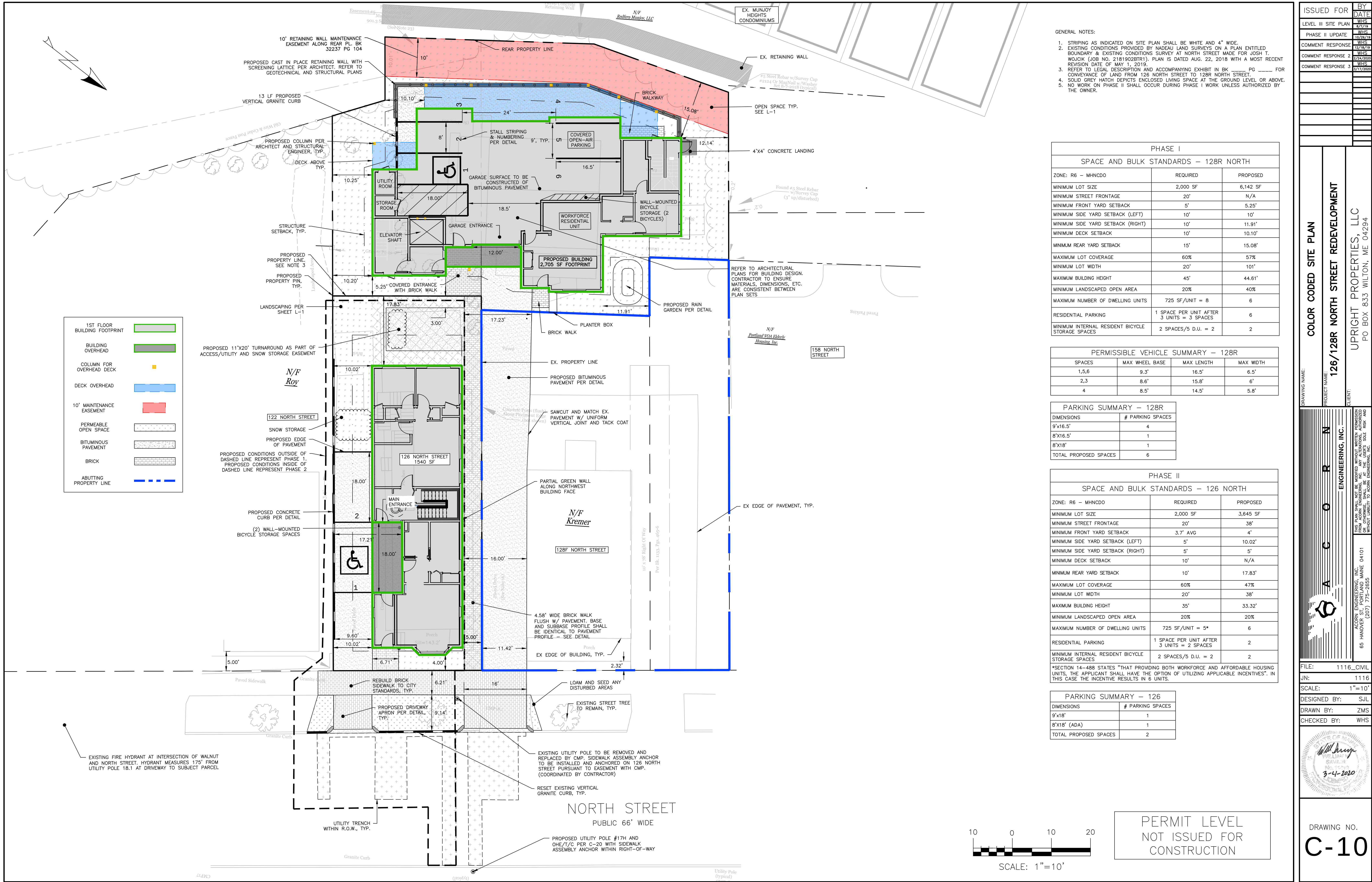
No.	Description	Date

SITE SECTION

Project number 18-16_128R North
Date 04.16.20
Drawn by Author
Checked by Checker

A-3.2

Scale 1" = 20'-0"



- GENERAL NOTES:
1. STRIPING AS INDICATED ON SITE PLAN SHALL BE WHITE AND 4" WIDE.
 2. EXISTING CONDITIONS PROVIDED BY NADÉAU LAND SURVEYS ON A PLAN ENTITLED BOUNDARY & EXISTING CONDITIONS SURVEY AT NORTH STREET MADE FOR JOSH T. WOLICK (JOB NO. 2181902BTR1). PLAN IS DATED AUG. 22, 2018 WITH A MOST RECENT REVISION DATE OF MAY 1, 2019.
 3. REFER TO LEGAL DESCRIPTION AND ACCOMPANYING EXHIBIT IN BK _____ PG _____ FOR CONVEYANCE OF LAND FROM 126 NORTH STREET TO 128R NORTH STREET.
 4. SOLID GREY HATCH DEPICTS ENCLOSED LIVING SPACE AT THE GROUND LEVEL OR ABOVE.
 5. NO WORK ON PHASE II SHALL OCCUR DURING PHASE I WORK UNLESS AUTHORIZED BY THE OWNER.

PHASE I		
SPACE AND BULK STANDARDS - 128R NORTH		
ZONE: R6 - MHNDO	REQUIRED	PROPOSED
MINIMUM LOT SIZE	2,000 SF	6,142 SF
MINIMUM STREET FRONTAGE	20'	N/A
MINIMUM FRONT YARD SETBACK	5'	5.25'
MINIMUM SIDE YARD SETBACK (LEFT)	10'	10'
MINIMUM SIDE YARD SETBACK (RIGHT)	10'	11.91'
MINIMUM DECK SETBACK	10'	10.10'
MINIMUM REAR YARD SETBACK	15'	15.08'
MAXIMUM LOT COVERAGE	60%	57%
MINIMUM LOT WIDTH	20'	101'
MAXIMUM BUILDING HEIGHT	45'	44.61'
MINIMUM LANDSCAPED OPEN AREA	20%	40%
MAXIMUM NUMBER OF DWELLING UNITS	725 SF/UNIT = 8	6
RESIDENTIAL PARKING	1 SPACE PER UNIT AFTER 3 UNITS = 3 SPACES	6
MINIMUM INTERNAL RESIDENT BICYCLE STORAGE SPACES	2 SPACES/5 D.U. = 2	2

PERMISSIBLE VEHICLE SUMMARY - 128R			
SPACES	MAX WHEEL BASE	MAX LENGTH	MAX WIDTH
1,5,6	9.3'	16.5'	6.5'
2,3	8.6'	15.8'	6'
4	8.5'	14.5'	5.8'

PARKING SUMMARY - 128R	
DIMENSIONS	# PARKING SPACES
9'x16.5'	4
8'x16.5'	1
8'x18'	1
TOTAL PROPOSED SPACES	6

PHASE II		
SPACE AND BULK STANDARDS - 126 NORTH		
ZONE: R6 - MINDO	REQUIRED	PROPOSED
MINIMUM LOT SIZE	2,000 SF	3,645 SF
MINIMUM STREET FRONTAGE	20'	38'
MINIMUM FRONT YARD SETBACK	3.7' AVG	4'
MINIMUM SIDE YARD SETBACK (LEFT)	5'	10.02'
MINIMUM SIDE YARD SETBACK (RIGHT)	5'	5'
MINIMUM DECK SETBACK	10'	N/A
MINIMUM REAR YARD SETBACK	10'	17.83'
MAXIMUM LOT COVERAGE	60%	47%
MINIMUM LOT WIDTH	20'	38'
MAXIMUM BUILDING HEIGHT	35'	33.32'
MINIMUM LANDSCAPED OPEN AREA	20%	20%
MAXIMUM NUMBER OF DWELLING UNITS	725 SF/UNIT = 5*	6
RESIDENTIAL PARKING	1 SPACE PER UNIT AFTER 3 UNITS = 2 SPACES	2
MINIMUM INTERNAL RESIDENT BICYCLE STORAGE SPACES	2 SPACES/5 D.U. = 2	2

*SECTION 14-498 STATES "THAT PROVIDING BOTH WORKFORCE AND AFFORDABLE HOUSING UNITS, THE APPLICANT SHALL HAVE THE OPTION OF UTILIZING APPLICABLE INCENTIVES". IN THIS CASE THE INCENTIVE RESULTS IN 6 UNITS.

PARKING SUMMARY - 126	
DIMENSIONS	# PARKING SPACES
9'x18'	1
8'x18' (ADA)	1
TOTAL PROPOSED SPACES	2

ISSUED FOR

BY

DATE

LEVEL III SITE PLAN

WHS

4/7/19

PHASE II UPDATE

WHS

10/29/19

COMMENT RESPONSE 1

WHS

12/18/19

COMMENT RESPONSE 2

WHS

2/24/2020

COMMENT RESPONSE 3

WHS

3/17/2020

COLOR CODED SITE PLAN

126/128R NORTH STREET REDEVELOPMENT

UPRIGHT PROPERTIES, LLC

PO BOX 833 WILTON, ME 04294

DRAWING NAME

PROJECT NAME

CLIENT

ACORN ENGINEERING, INC.

ENGINEERING, INC.

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY ALTERATIONS, AUTHORIZED OR UNAUTHORIZED, SHALL BE THE RESPONSIBILITY OF THE USER AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

65 HANOVER ST, PORTLAND, MAINE 04101

(207) 775-2655

FILE:

1116_CIVIL

JN:

1116

SCALE:

1"=10'

DESIGNED BY:

SJL

DRAWN BY:

ZMS

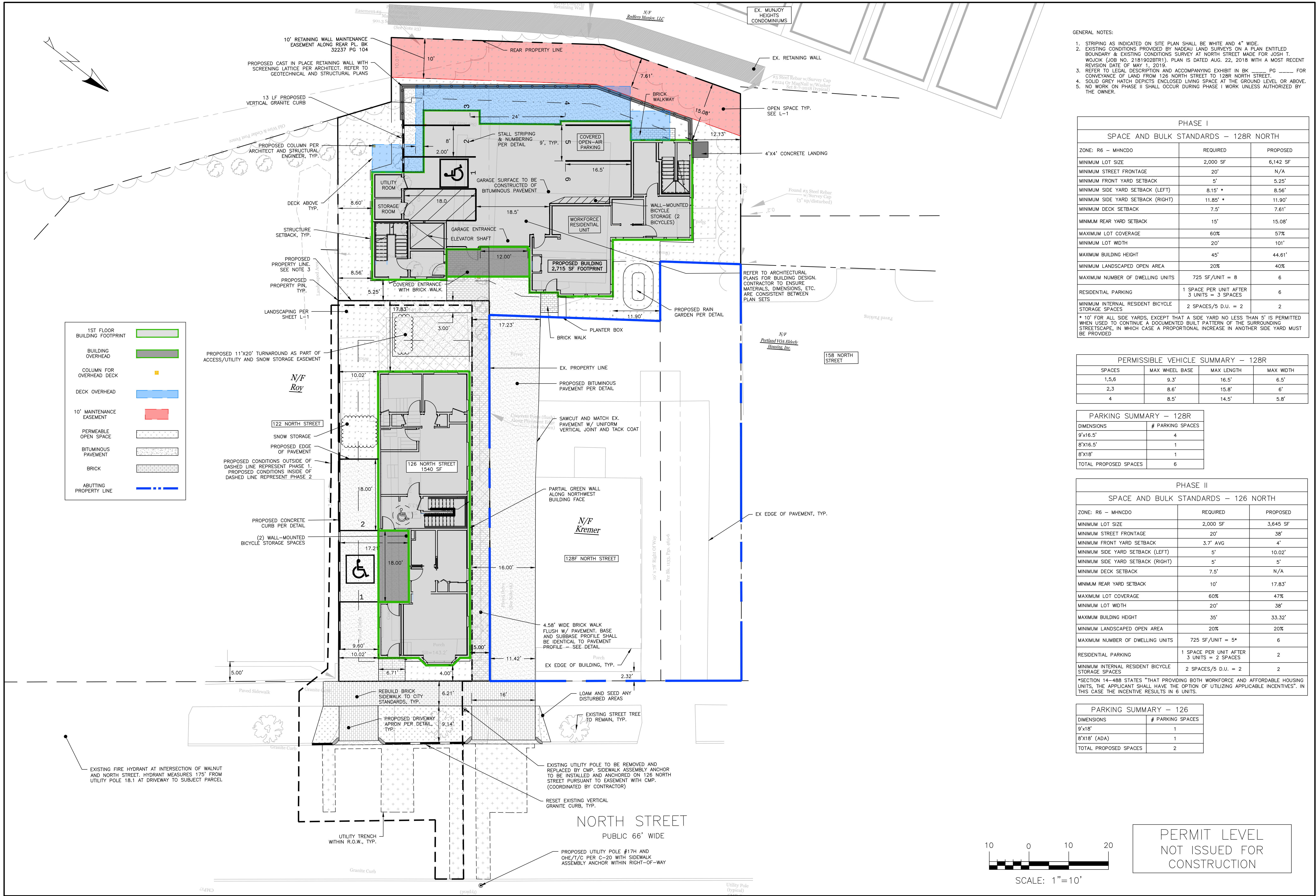
CHECKED BY:

WHS

3-4-2020

DRAWING NO.

C-10



- GENERAL NOTES:
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 2. EXISTING CONDITIONS PROVIDED BY NADEAU LAND SURVEYS ON A PLAN ENTITLED BOUNDARY & EXISTING CONDITIONS SURVEY AT NORTH STREET MADE FOR JOSH T. WOLCK (JOB NO. 21819028TR1). PLAN IS DATED AUG. 22, 2018 WITH A MOST RECENT REVISION DATE OF MAY 1, 2019.
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MINIMUM FRONT YARD SETBACK	5'	5.25'
MINIMUM SIDE YARD SETBACK (LEFT)	8.15' *	8.56'
MINIMUM SIDE YARD SETBACK (RIGHT)	11.85' *	11.90'
MINIMUM DECK SETBACK	7.5'	7.61'
MINIMUM REAR YARD SETBACK	15'	15.08'
MAXIMUM LOT COVERAGE	60%	57%
MINIMUM LOT WIDTH	20'	101'
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RESIDENTIAL PARKING	1 SPACE PER UNIT AFTER 3 UNITS = 3 SPACES	6
MINIMUM INTERNAL RESIDENT BICYCLE STORAGE SPACES	2 SPACES/5 D.U. = 2	2
* 10' FOR ALL SIDE YARDS, EXCEPT THAT A SIDE YARD NO LESS THAN 5' IS PERMITTED WHEN USED TO CONTINUE A DOCUMENTED BUILT PATTERN OF THE SURROUNDING STREETSCAPE, IN WHICH CASE A PROPORTIONAL INCREASE IN ANOTHER SIDE YARD MUST BE PROVIDED		

PERMISSIBLE VEHICLE SUMMARY - 128R			
SPACES	MAX WHEEL BASE	MAX LENGTH	MAX WIDTH
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RESIDENTIAL PARKING	1 SPACE PER UNIT AFTER 3 UNITS = 2 SPACES	2
MINIMUM INTERNAL RESIDENT BICYCLE STORAGE SPACES	2 SPACES/5 D.U. = 2	2
*SECTION 14-488 STATES "THAT PROVIDING BOTH WORKFORCE AND AFFORDABLE HOUSING UNITS, THE APPLICANT SHALL HAVE THE OPTION OF UTILIZING APPLICABLE INCENTIVES". IN THIS CASE THE INCENTIVE RESULTS IN 6 UNITS.		

PARKING SUMMARY - 126	
DIMENSIONS	# PARKING SPACES
9'x18'	1
8'x18' (ADA)	1
TOTAL PROPOSED SPACES	2

ISSUED FOR

BY

DATE

LEVEL III SITE PLAN

WHS

4/7/19

PHASE II UPDATE

WHS

10/29/19

COMMENT RESPONSE

WHS

12/18/19

COMMENT RESPONSE 2

WHS

2/24/2020

COLOR CODED SITE PLAN

126/128R NORTH STREET REDEVELOPMENT

UPRIGHT PROPERTIES, LLC

PO BOX 833 WILTON, ME 04294

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65 HANOVER ST. PORTLAND, MAINE 04101

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FILE:

1116_CIVIL

JN:

1116

SCALE:

1"=10'

DESIGNED BY:

SUL

DRAWN BY:

ZMS

CHECKED BY:

WHS

DRAWING NO.

C-10

PLANNING BOARD REPORT PORTLAND, MAINE



44 Bedford Street Development

Level III Site Plan Review

University of Southern Maine, Applicant

PL-000974-2020

CBL: 114 A001

Submitted to: Portland Planning Board
Public Hearing Date: May 26, 2020

Prepared by: Andrew Tufts, Planner
Date: May 22, 2020



Figure 1: Parcel outline - Source: City of Portland Maine Parcel Viewer

I. INTRODUCTION

The University of Southern Maine has submitted a Level III Site Plan application for the expansion of the Wishcamper parking lot located at 44 Bedford Street. The proposed project would create 122 additional parking spaces. The site is located in the R-5 and B-2 Zones, as well as the University of Southern Maine Overlay Zone. The proposed activity will not result in any change to the site's existing use.

The Planning Department sent 41 notices advertising this meeting to property owners within 500 feet of the site. Legal advertisements ran in the May 15th & May 16th editions of the Portland Press Herald.

Applicant: University of Southern Maine

Consultants: Ashley Fletcher (Woodard & Curran) John Schwanda (Owen Haskell Inc (Surveying)) Joe Gallant (University of Southern Maine)

II. REQUIRED REVIEWS

<i>Waiver Requests</i>	<i>Applicable Standards</i>
<i>Review</i>	<i>Applicable Standards</i>
Site Plan	Section 14-526

III. PROJECT DATA

Existing Zoning	R-5, B-2 Zones, USM Overlay
Existing Use	<i>Parking Lot</i>
Proposed Use	<i>Parking Lot</i>
Parcel Size	63,200 SF

	<i>Existing</i>	<i>Proposed</i>	<i>Net Change</i>
Building Footprint	NA	NA	NA
Building Floor Area	NA	NA	NA
Impervious Surface Area	27,900 SF	52,300 SF	+ 24,400 SF
Parking Spaces	82	214	+ 132
Bicycle Parking Spaces	0	0	0



Figure 2: Existing Conditions - Source: Google Maps

IV. EXISTING CONDITIONS

The proposed development site is located on 44 Bedford Street which extends between Forest Avenue and Deering Avenue. The parcel is approximately 63,200 SF in size. The site is part of the University of Southern Maine Portland campus, and is surrounded by Hannaford Hall Parking Garage to the west, the Muskie School's Wishcamper Building to the north, Osher Library to the east, and Interstate 295 to the south. The existing grassed area interior to the site that will be converted to parking is not considered open space used for recreation; it is currently used for overflow parking and storage.

The applicant and owner of the parcel is the University of Southern Maine. The site is currently developed as an 82-space surface parking lot with landscaped islands. Owen Haskell, Inc. completed a boundary and topographic survey of the site. There were no existing or proposed easements identified.

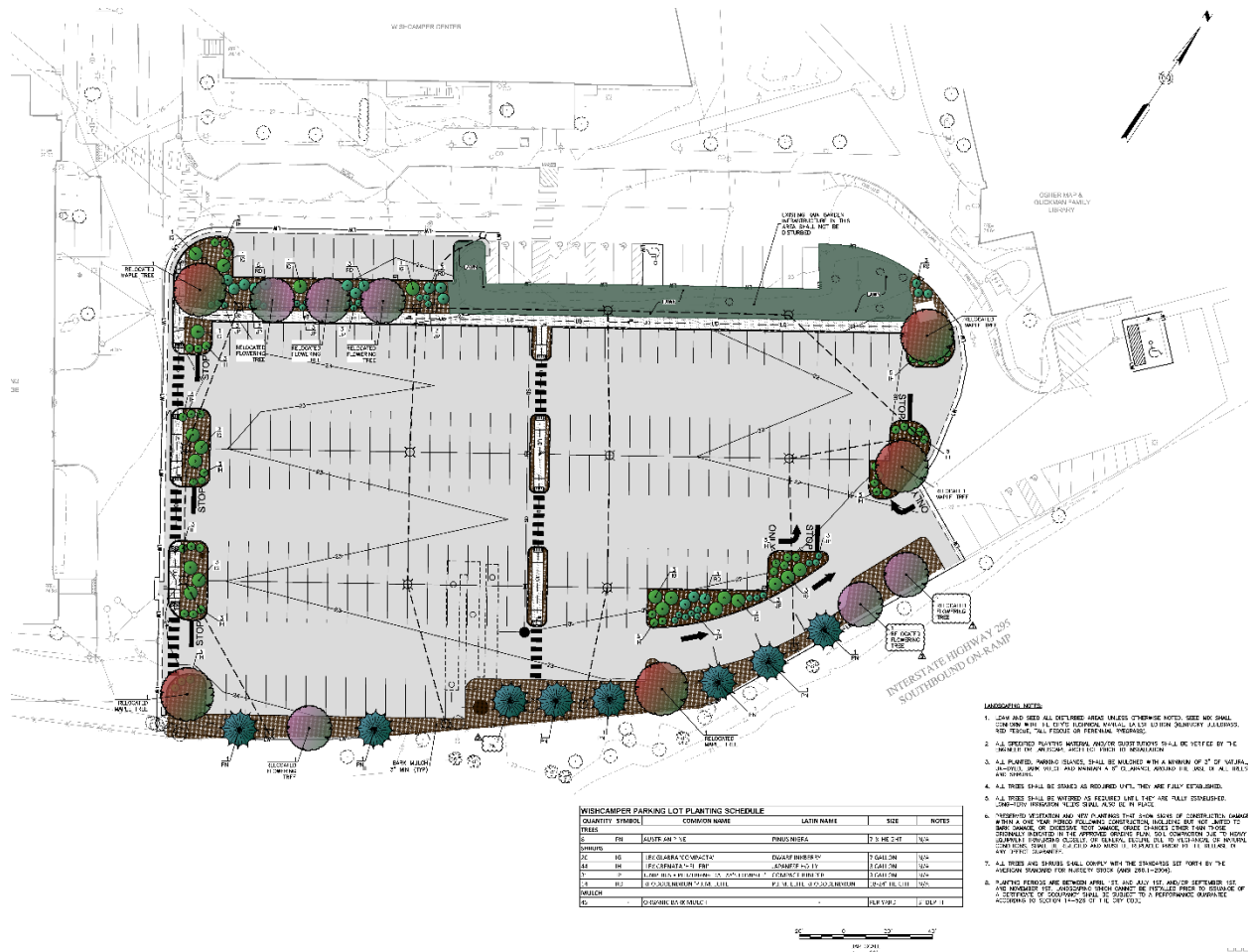


Figure 3: Proposed Landscape Plan - Source: Woodard & Curran

V. PROPOSED DEVELOPMENT

The proposed development includes the creation of an additional 122 parking spaces resulting in a total of 214 surface parking spaces (82 existing + 122 additional). The proposed project is intended to enable the University to replace some of the parking that will be displaced by the planned future development of a new Student Center and Student Residential Building (to be submitted under a separate application). The proposed parking lot will include the necessary ADA accessible parking spaces as well as compact spaces. The proposed stormwater management plan will consist of porous pavement walkways, similar to existing walkways throughout the University, and a subsurface detention and proprietary treatment device. The parking field consists of 166 standard spaces, 38 compact spaces and 10 handicap accessible spaces comprising 52,300 square feet of impervious paving. The total area of the project is 63,200 square feet.

VI. PUBLIC COMMENT AND NEIGHBORHOOD MEETING

The applicant team held a neighborhood meeting on the evening of March 4, 2020 from 5:30 PM at the Talbot Lecture Hall within Luther Bonney Hall on Bedford Street in Portland, ME. The meeting was attended by two abutters and one individual who did not sign in, along with members of the project team. Attending on behalf of the development team were Ashley Fletcher and Darrin Stairs of Woodard & Curran, and Alec Porteous of USM. A presentation was provided by Darrin Stairs & Alec Porteous. Comments

included questions regarding associated traffic from the project, as well as specifics on overall campus parking plans. (See Attachment Q)

VII. RIGHT, TITLE, & INTEREST AND FINANCIAL & TECHNICAL CAPACITY

The owner of the property is The University of Southern Maine Foundation. The applicant provided a copy of the warranty deed, recorded at the Cumberland County Registry of Deeds in CCRD Book 29219 page 218, which demonstrates their right, title and interest in the property. The applicant team cited their experience and qualifications to demonstrate capacity to design and construct the project. The anticipated total cost of the project is projected to be \$1,710,000. (See Attachments D & E)

VIII. ZONING ANALYSIS

Dimensional requirements for this project are dictated by the R-5, B-2, & USM Overlay Zones.

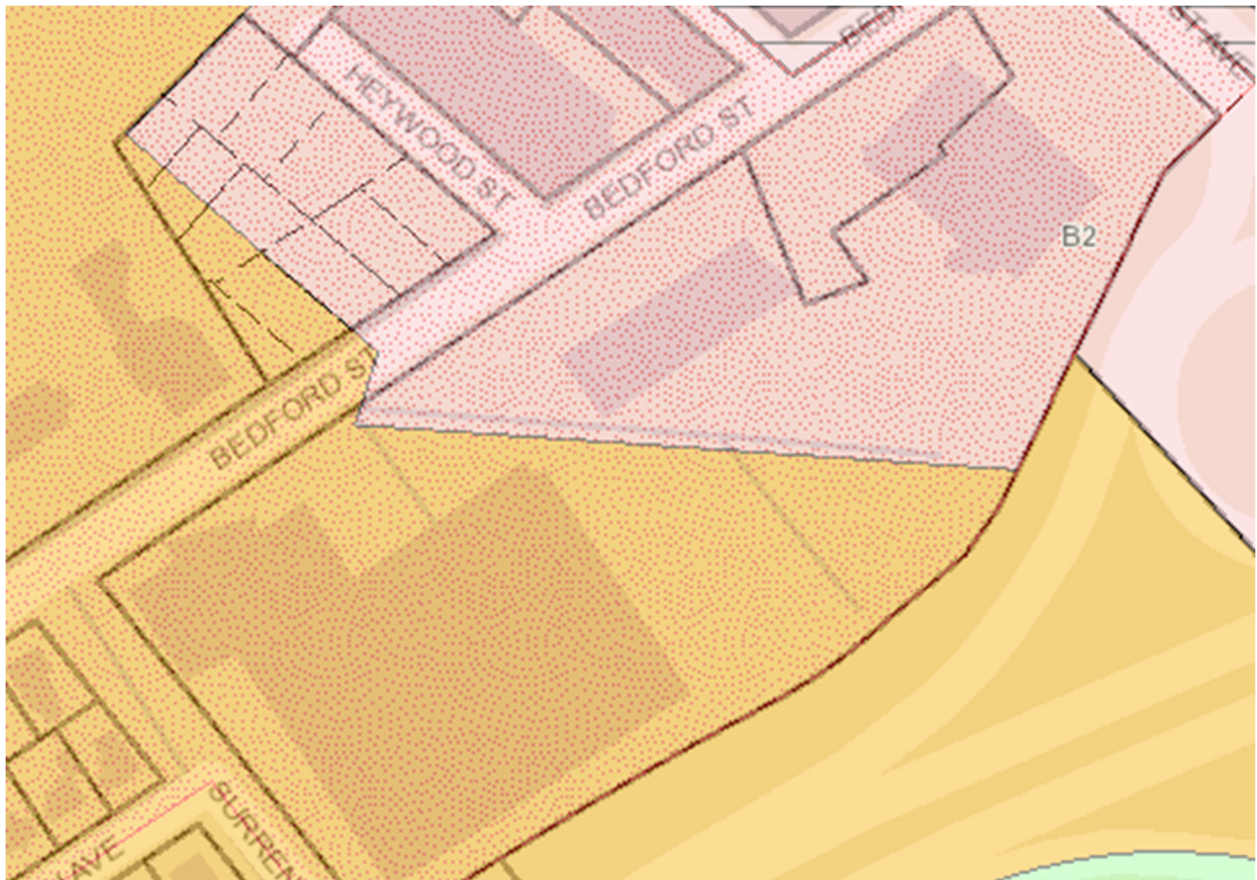


Figure 4: Zoning Map

Zoning Requirements	I-M	Provided	+/-
Minimum Lot Size	None	62,300 SF	N/A
Minimum Street Frontage	NA	NA	
Maximum Lot Coverage	66%	55%	-11%
Parking	NA	214	NA
Bicycle Parking	NA	NA	NA

IX. DEVELOPMENT REVIEW

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

SITE PLAN STANDARDS (Section 14-526)

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

1. Transportation Standards

a. Impact on Surrounding Street Systems and Access and Circulation

The proposed parking lot will include the construction of ADA accessible parking and pedestrian walkways. Traffic signage and pavement markings will be provided to circulate pedestrian and vehicular traffic throughout the Site. The proposed project will maintain Site's existing access and traffic patterns.

b. Sidewalks

Internal sidewalks and ADA ramps will be provided, as shown and detailed on the design drawings. The proposed project will not include any work along street frontages or in the public Right-of-Way.

c. Public Transit Access

No changes to public transit access are proposed as part of this project.

d. Parking

The purpose of the proposed parking lot is to replace parking that will be displaced by the University's future developments; the intent is to construct the proposed parking lot in advance of future developments in order to satisfy the University's existing parking demands. The University is currently conducting a campus-wide parking study that will be submitted as part of future applications. The proposed project will create 122 additional off-street parking spaces, including required ADA parking; a parking summary is provided on the Site Plan. The proposed parking lot has been designed in accordance with the

dimensional standards of Section 1 of the City's Technical Design Manual, as shown on the design drawings.

e. Bicycle Parking

The University does not currently anticipate an increase in the demand for bicycle parking; additional bicycle parking may be provided as part of future developments. In response to comments from planning staff, 10 bike spaces will be added to the site plan.

2. Environmental Quality Standards

a. Preservation of Significant Natural Features

The Site has been previously developed and there are no known areas of significant natural features, including rare or endangered botanical features, significant wildlife habitats, or wetland areas.

b. Landscaping and Landscape Preservation

Landscaping Plans are included in the drawings referenced in Section 3 of this Report. These Plans show proposed landscaped islands within the proposed parking area, as well as screening of the Site; plant sizes are specified in the planting schedule provided on the Plans. A Tree Preservation & Removals Plan is included in the design drawings; this Plan shows what existing trees will be preserved and specifies protection measures.

c. Water Quality, Storm Water Management and Erosion Control

The project must comply with the water quality, stormwater management, and erosion control standards identified by the City of Portland in the Land Use Chapter of the Code of Ordinances and Section 5 of the City's Technical Manual, as well as the Maine DEP Chapter 500 Stormwater Standards associated with Site Location of Development Act Permit requirements. The Stormwater Management Plan included with the application demonstrates that the proposed development meets the applicable standards. Stormwater treatment will be provided by porous pavement walkways and a Storm Filter system. Erosion and sediment control measures are shown and detailed on the drawings.

The Stormwater Management Plan was reviewed by consulting civil engineer Wright-Pierce and found to be in conformance with City standards and Chapter 500.

3. Public Infrastructure and Community Safety Standards

a. Public Safety and Fire Prevention

Overhead lighting will be provided to promote public safety and emergency vehicle access to the Site will be maintained. No new structures requiring Fire Department review are proposed as part of this project.

b. Availability and Adequate Capacity of Public Utilities

Proposed lighting will connect to an existing underground electric conduit, as shown on the drawings, and will be served by an existing electrical panel in Wishcamper Center. Water and sewer utilities are not included in the proposed work. The proposed project will also generate construction waste and demolition debris (CDD). The contractor will be responsible for hauling the CDD or contracting with a waste management service to haul the CDD from the project site.

4. Site Design Standards

a. Snow and Ice Loading

Proposed snow storage areas are indicated on the drawings. The proposed landscaped areas will be the primary source for snow storage. Parking demands are lower during the winter months, so some of the proposed parking along the southern perimeter of the site may be utilized for additional snow storage. Snow that exceeds the available space on-site will be hauled off-site.

b. View Corridors

N/A

c. Historic Resources

N/A

d. Exterior Lighting

Overhead lighting is proposed in accordance with Section 12 of the City's Technical Manual. A Photometric Plan and details for the proposed lighting fixtures are included in the drawings; cut sheets of the proposed lighting fixtures are also attached to this Section for your reference. It should be noted that the project abuts the I-295 corridor; according to Section 12 of the Technical Manual, public rights-of-way is considered a non-sensitive use and, as such, illumination at the property boundary must not exceed 1.0 foot-candles; the lighting plan has been designed in accordance with these standards.

e. Noise and Vibration

The proposed project will not result in any increase in noise or vibration on the Site.

f. Signage and Wayfinding

Existing signage will be maintained, and new traffic signage will be provided as shown on the drawings.

g. Zoning Related Design Standards

According to the City's Land Use Ordinance, Chapter 14 of the Code of Ordinances, the proposed work is subject to a maximum impervious surface ratio of 66% of the total land

area within the University of Southern Maine overlay zone exclusive of public streets. Based on available data from the City of Portland's Online Stormwater Fee Lookup service, the University currently has an impervious surface ratio of approximately 54%; the proposed parking lot will result in an impervious surface ratio of approximately 55%.

h. Construction Management Plan

The construction management plan was reviewed and approved by city staff. **(See Attachment P16. CONSTRUCTION MANAGEMENT PLAN)**

X. SITE LOCATION OF DEVELOPMENT REVIEW

The City of Portland has delegated review authority from the Maine DEP for large projects that trigger Site Location of Development Act (SLODA) review; this project meets the threshold requiring SLODA review. The standards for this review generally dovetail with Portland's existing site plan and subdivision standards:

- Financial & Technical Capacity: see section VII, above.
- Traffic Movement: see site plan standards, a, above.
- No Adverse Effect on the Natural Environment: see site plan standards, b, above.
- Soil Types: see site plan standards, b, above.
- Ground Water: see site plan standards, 2, above.
- Infrastructure: see site plan 2, 3, and 4, above.
- Flooding: see site plan, 2, above.
- Storm Water Management & Erosion and Sedimentation Control: see site plan 2, above.

Staff finds that the project meets SLODA standards.

XI. STAFF RECOMMENDATION

Subject to the proposed motions and conditions of approval listed below, Planning Division staff recommends that the Planning Board find that the 44 Bedford Street development project meets the applicable standards of Portland's Land Use Code.

XII. PROPOSED MOTIONS FOR THE BOARD TO CONSIDER

A. SITE PLAN REVIEW & SITE LOCATION OF DEVELOPMENT

On the basis of the application, plans, reports and other information submitted by the applicant; findings and recommendations contained in the Planning Board Report for the public hearing on May 26, 2020, for application #PL-000974-2020, 44 Bedford Street relevant to the site plan and Site Location of Development Act regulations; and the testimony presented at the Planning Board hearing, the Planning Board [**finds/does not find**] that the plan is in conformance with the site plan standards of the Land Use Code.

XIII. ATTACHMENTS
PLANNING BOARD REPORT ATTACHMENTS

1. COMMENT RESPONSE LETTER
2. WRIGHT PIERCE STORMWATER COMMENTS
3. WISHCAMPER PARKING LOT STORMWATER CONNECTION
4. JEFF TARLING LANDSCAPE COMMENTS

APPLICANT'S SUBMITTALS

- A - COVER
- B - SUBMISSION CHECKLIST
- C - PROJECT DESCRIPTION
- D - RIGHT, TITLE & INTEREST
- E - FINANCIAL CAPACITY
- F - STATE & FEDERAL APPROVALS
- G - APPLICATION FEES
- H - ZONING
- I - EASEMENTS
- J - SURVEY
- K - CONSTRUCTION MANAGEMENT PLAN
- L - SLOD
- M - COMPLIANCE WITH SITE PLAN STANDARDS
- N - STORMWATER REPORT
- O - REVISED STORMWATER INSPECTION CHECKLIST
- P - REQUEST FOR SD CONNECTION
- Q - NEIGHBORHOOD MEETING
- R - MHPC REVIEW LETTER
- S - MNAP REVIEW LETTER
- T - MDIFW REVIEW LETTER
- U - 3.25 RESPONSE TO COMMENTS LETTER
- V - 5.07 RESPONSE TO COMMENTS LETTER

PLANS

- P1. COVER SHEET
- P2. SITE PLAN
- P3. EXISTING CONDITIONS
- P4. LANDSCAPE PLAN
- P5. LANDSCAPE DETAILS
- P6. TREE PRESERVATION & REMOVALS PLAN
- P7. GRADING & DRAINAGE PLAN
- P8. MATERIALS & LAYOUT
- P9. EROSION & SEDIMENT CONTROL PLAN
- P10. CIVIL DETAILS
- P11. ELECTRICAL & PHOTOMETRICS
- P12. GENERAL NOTES & LEGEND



March 25, 2020

Andrew Tufts, Planner
City of Portland Planning Division
389 Congress Street
Portland, ME 04101

Re: University of Southern Maine Wishcamper Parking Lot
Response to Planning Staff Comments

Dear Andrew:

Thank you for coordinating the review of the proposed parking lot located at 44 Bedford Street. The following letter compiles responses to comments received from the City, including the March 2, 2020, City letter with comments from Mike Tremblay and the February 13, 2020, email from Portland Trails. In addition, we have made other updates to the drawings and offer supplemental Application materials; those updates and materials are described herein and attached for your use.

Comments from City

The comments received to-date are provided below for your reference and our response follows each comment in italics:

March 2, 2020 City Letter

- The site plan provides the appropriate number of accessible spaces required by ADA. The number of compact spaces is below the threshold set by the City of Portland Technical Manual. The parking spaces on the east side of the site (the pull-in spaces just east of the parallel spaces) appear difficult to maneuver into from the west, but are more accessible from the northern part of the new parking lot if such circulation is permitted (see comment below). Overall, the provided parking meets city and ADA requirements.
 - *Noted.*
- It is unclear whether two-way circulation is permitted in the area just northeast of the parallel parking spaces. Any southwesterly circulation would need to reenter the new parking area at the southerly drive aisle near the parallel spaces. More markings are suggested; if two-way circulation is intended, then right-only arrow should direct motorists back into the parking area; if one-way circulation is intended, then left-only arrows should be painted at the stop bars.
 - *The enclosed drawings have been revised to clarify traffic circulation in this area. Two parallel parking spaces have been eliminated and proposed plantings have been adjusted to accommodate two-way circulation in the area northeast of the parallel parking spaces. Additional pavement markings and "Do Not Enter" signs have also been added to clarify circulation.*
- An accessible pedestrian connection should be provided between the central north-south walkway through the parking lot through the landscaped area to the crosswalk towards the Wishcamper Center; as this represents a direct desire line and is likely to be used as such, resulting in damage to the landscaped area.
 - *This landscaped area is part of an existing stormwater raingarden feature that currently provides stormwater treatment for the adjacent developed area; in order to continue managing and treating stormwater runoff from the rest of the Site, we are proposing to maintain and protect this raingarden from development.*



- The Applicant should be aware that the porous pavement sidewalk requires regular maintenance.
 - *Noted; the Stormwater Management Plan submitted as part of the Site Plan Application contains a Stormwater Inspection & Maintenance Plan, which includes provisions for porous pavement. The University is familiar with the maintenance required for this type of surfacing, as it is present elsewhere on the campus. Additionally, Woodard & Curran has provided 3rd party inspection of the University's stormwater BMPs since 2017, to support its recertification of Stormwater User Fee Non-Residential Credits.*
- The sidewalk ramps along the westerly edge of the parking area do not appear to have sufficient level landing areas. Ramps require a level landing at the top of the ramp that is 4'x4'. The landings provided appear smaller along the run of the sidewalk. Additionally, as designed, the majority of this sidewalk appears to be ramps, which is uncomfortable for all users. Shifting this sidewalk westward so that they can remain at street grade, with landscaping on either side of the sidewalk, is recommended. This may require moving the stop bars accordingly.
 - *The drawings have been revised to ensure that the sidewalk ramps along the westerly edge of the parking area will have sufficient level landing areas. In order to maximize the space available for parking, landscaping, and lighting features, we are proposing to maintain the previously proposed layout of the westerly walkways.*
- Relating to the above comment, the curb radii at the three westerly stop bars exiting the parking area appear to be rather large. Larger-than-required curb radii can facilitate faster-than-desirable vehicle speeds. Reducing these curb radii may provide sufficient room within each island to provide acceptable curb ramps without shifting the whole sidewalk. The applicant should also consider how likely it will be that any vehicle will be turning right into any of those driveways, as the parking lot appears to have a typical counterclockwise circulation pattern.
 - *The drawings have been revised and curb radii have been reduced, as suggested.*
- Curb ramps within sites do not require warning panels, but they can be provided if the Applicant wishes. It is advised that USM provide these panels in a predictable manner (e.g. at every ramp, at every ramp across a street, etc.) throughout their campus.
 - *Noted; warning panels will be provided at curb ramps consistent with the rest of the campus.*

February 13, 2020 Email from Portland Trails

- I saw the plans for the surface parking lot at 44 Bedford St and wanted to offer a suggestion related to pedestrian connectivity. I note that there is a very clear and heavily used pedestrian wear-path from Forest Ave. to the existing lot between Wishcamper and the garage. Since the proposed expanded parking lot is directly adjacent, it would make sense to include the formalization of this path in their plans. Additionally, extending the path along the entire edge of the lot and past the garage to make a connection with Surrenden/Washburn, would provide a functional connection to the neighborhood, and between Forest and Deering. This would repair one of the connections lost when 295 was built. I recognize that this may conflict with the site plan as presented, but urge a closer look at facilitating this connection.
 - *The University is not proposing any major changes to circulation in or around the Site at this time. The area between Forest Ave and the parking lot is not well lit and would require substantial site modifications outside of the proposed limit of work in order to formalize this path. The area behind the garage, between the proposed parking lot and Surrenden St, currently serves as an Emergency Fire Access Lane and an area for snow dump off the top level of the garage (per the Site Plan approval of the Community Education Center and Parking Garage in 2002); this area is not intended for uncontrolled pedestrian access or foot traffic. In order to promote pedestrian safety and*



maintain existing uses, the University prefers to encourage pedestrian traffic use the Bedford Street corridor. It should be noted that the University has engaged a traffic consultant (VHB) to develop a transportation demand management (TDM) plan that will help to identify areas where improvements may be made to encourage multimodal travel and better connectivity; such improvements would be proposed as part of future Site Plan Applications to the City.

Updates to Application Materials

Since submitting the Site Plan Application, the following updates have been made to the project:

- A neighborhood meeting was held on March 4, 2020, at the Talbot Lecture Hall within Luther Bonney Hall on Bedford Street in Portland, ME, at 5:30pm regarding the Level III Site Plan Submittal for the proposed Wishcamper Parking Lot project located at 44 Bedford Street; enclosed is a letter certifying that the neighborhood meeting was held, in addition to copies of the meeting invitation, sign-in sheets, and meeting notes.
- Responses were received from the Maine Historic Preservation Commission, Maine Department of Inland Fisheries & Wildlife, and the Maine Natural Areas Program regarding their review of the proposed project in accordance with Site Location of Development Act requirements and no issues have been identified; copies of the response letters are enclosed for your reference.
- The Grading and Drainage Plan has been revised to clarify the intent for the underdrains associated with the porous pavement, which is enclosed for your reference; all plan revisions are encircled by "clouds".
- Minor modifications have been made to the Landscaping Plan in order to avoid conflicts between trees and utilities, which is enclosed for your reference; all plan revisions are encircled by "clouds".

If you have any questions or require additional information, please do not hesitate to contact me at (207) 558-3665 or by email at aefletcher@woodardcurran.com.

Sincerely,

WOODARD & CURRAN INC.

Ashley Fletcher, PE
Project Engineer

cc: Joseph Gallant, University of Southern Maine

Enclosures: Revised Drawings
Neighborhood Meeting Materials
Agency Review Letters



May 7, 2020

Andrew Tufts, Planner
City of Portland Planning Division
389 Congress Street
Portland, ME 04101

Re: University of Southern Maine Wishcamper Parking Lot
Response to Wright Pierce Stormwater Review Comments

Dear Andrew:

Thank you for coordinating the review of the proposed parking lot located at 44 Bedford Street. We received the April 10, 2020, email from Andrew Tufts and the April 14, 2020, memo from Wright-Pierce (3rd party peer reviewer); the comments provided by the City and Wright-Pierce are provided below for your reference and our response follows each comment in italics:

April 10, 2020 Email from Andrew Tufts

- The applicant has stated that the rain garden on the north side of the site prevents a pedestrian path from being provided through the north-south pedestrian corridor towards the Wishcamper Center. I believe it is likely that pedestrians will walk through the rain garden if a formal walkway is not provided, potentially damaging the rain garden. The applicant should reevaluate.
 - *As previously discussed with the City, the enclosed drawings have been revised to include a walkway across the raingarden. The walkway will be constructed of porous pavement and will include two small culverts that will provide connectivity between the two sections of the raingarden. The subsurface raingarden filter layers and associated underdrain system beneath the porous walkway will be protected, the porous pavement will provide additional stormwater treatment and some storage, and the curve number of porous pavement (40) is nearly equal to the curve number of the existing grass cover (39), such that the short section of additional porous pavement is not anticipated to have any significant impacts on the previously submitted stormwater management plan. Based on previous discussions with the City, it is our understanding that this minor change does not impact the University's compliance with the City's standards for stormwater treatment and flood control, as demonstrated by the previously submitted Stormwater Management Plan.*

April 14, 2020 Memo from Wright-Pierce

Basic Standard

- Catch basin inlet protection should include catch basin throat inlet protection where necessary.
 - *Catch basin inlet protection will be provided as indicated on Sheet C-001 and as detailed on D-300; none of the existing catch basins within the project area have throat inlets.*
- Additional clarification is needed for blank spaces on the erosion control notes regarding the timeframe of application within the tables.
 - *The enclosed drawings have been revised to clarify the timeframe of mulch application within the Erosion and Sediment Control Notes table provided on Sheet D-300.*



General Standard

- A summary of pollutant rankings was provided by the applicant, reviewed, and it is agreed that the site required surface runoff treatment for 60% of the disturbed surface area for the proposed project. No further action necessary.
 - *Acknowledged.*
- High-pollutant surface areas should be prioritized to a practicable extent for stormwater treatment under the redevelopment standard. Please provide a calculation of what percentage of higher-ranking pollutants are being treated, and what site limitations are requiring the lower-ranking pollutants (sidewalk areas) to be treated instead of the remaining parking lot area.
 - *As indicated in the previously submitted redevelopment treatment calculations, of the 37,897 square-feet of redeveloped area that must be treated, only 2,614 square-feet of the redeveloped area being treated is sidewalk area. As such, 93.1% of the area being treated is high-pollutant surface area. The University has opted to utilize porous pavement for sidewalks (a Low Impact Development technique and a small percentage of the redeveloped area) consistent with previous development throughout the campus and as encouraged by the City of Portland. High-pollutant surface areas comprise the large majority of the treated area and have been prioritized to the extent practicable.*
- An executed maintenance contract for the BMP systems is required. Maintenance agreements may be provided as a condition of approval.
 - *We respectfully request that the requirement for providing an executed maintenance contract for the BMP systems be made a condition of approval.*

Porous Pavement, Stormfilter, and Subsurface Storage Design

- Porous pavement design for water quality volume is found to be in accordance with Chapter 500 requirements. The underdrain invert elevation is set near the surface of the parking elevation which arises some concern about frost upheaval and saturated conditions.
 - *The porous pavement cross-section (which specifies the underdrain depth) has been developed per Chapter 7.7 of Volume III of the MaineDEP Stormwater BMP Manual. The proposed porous pavement cross-section is similar to what was used to construct the existing porous pavement walkways located throughout the campus; the University has not experienced any issues with frost upheaval or saturated conditions with the existing porous pavement walkways.*
- Subsurface storage is adequate for the proposed site, modeled at inverts shown on the design drawings, and indicates runoff reduction to the regulated requirements per the Chapter 500 flooding standard, while also ensuring that the water quality volume is detained for 24-48 hours.
 - *Acknowledged.*
- A letter from the manufacturer is provided stating the StormFilter and storage conduit meets their approval for the specific project. The subsurface alignment is provided to remove a portion of granular solids prior to entering the treatment system.
 - *Acknowledged.*
- The applicant has indicated StormFilter treatment media shall meet the required alumina and zeolite requirements confirmed by the MaineDEP.
 - *Acknowledged.*
- The corrugated metal pipe detention does not have guidance from DEP on frequency for observation and maintenance ports. Please provide a statement about the ability for



maintenance staff to remove accumulated sediments/debris through the available observation ports, and their location to corners, weirs/baffles throughout the system.

- *The proposed corrugated metal pipe detection system was designed in direct collaboration with the manufacturer; proposed riser structures have been located at key points in the system such as corners and weirs to allow maintenance staff to access the system for inspection and maintenance activities.*
- Corrugated metal pipe is susceptible to rusting, especially in salted areas. Please indicate how this pipe will be protected against rust, such as cathodic protection, and indicate a check for rust or visual pipe damage in the stormwater treatment inspection list.
 - *The manufacturer of the proposed corrugated metal pipe system (Contech) specifies an Aluminized Steel Type 2 Pipe that is fabricated from steel that has been hot-dipped in commercially pure aluminum; aluminum does not rust. As indicated on Contech's website (<https://www.conteches.com/pipe/corrugated-metal-cmp/cmp-coatings>), they have over 50 years of field-testing demonstrating that this material offers 75 years or more of maintenance free service life. The enclosed stormwater inspection checklist has been revised to include a line item for signs of corrosion/pipe damage.*

Flooding Standard

- The applicant has submitted HydroCAD files indicating the pre-development runoff rates do not exceed the post-development runoff rates for the facility. No further action necessary.
 - *Acknowledged.*

Grading and Drainage

- The applicant has indicated Maine Construction General Permit will likely be required for the project due to the extent of disturbed surface area. No further action necessary.
 - *Acknowledged.*
- Typical details should show a maximum 2% cross-slope for sidewalks, crosswalks, and crosswalk portions of driveways and maintenance entrances.
 - *The enclosed drawings have been revised to specify a maximum 2% cross-slope for sidewalks, crosswalks, and crosswalk portions of driveways and maintenance entrances on the details provided on Sheet D-302.*
- For catch basin grates and frames to be re-set in the roadway, please provide a standard "dishpan" detail in accordance with the City Technical Manual.
 - *No catch basin grates or frames located in the City Right-of-Way will be reset as part of this project and the Technical Manual published on the City of Portland website does not currently contain a standard "dishpan" detail; the proposed parking lot will be graded to drain to all basins as shown on the Grading Plan.*

Utility Connections

- Ability to serve letters have not been provided for utilities impacted by the proposed project, but have been requested by the applicant for applicable utilities (electrical and drainage). The applicant has indicated that ability to serve letters will be submitted to Planning upon receipt.
 - *Acknowledged.*
- Standard design for the electrical utility has been provided.
 - *Acknowledged.*



- Connection to Existing Stormwater Systems: E-mail, or otherwise written, confirmation from the Department of Public Works accepting this connection is requested to confirm that this connection is appropriate under Land Use section 14-526 (b) 3 a. (iv); and 14-526 (c) 3 a., as well as adherence to MaineDEP Chapter 500.
 - *A copy of the email sent to the Department of Public Works on April 17, 2020, requesting confirmation that the proposed connection is acceptable is attached for your reference; a copy of the Department's response can be provided upon receipt. We respectfully request that providing the Department's response be made a condition of approval.*

If you have any questions or require additional information, please do not hesitate to contact me at (207) 558-3665 or by email at aefletcher@woodardcurran.com.

Sincerely,

WOODARD & CURRAN INC.

Ashley Fletcher, PE
Project Engineer

cc: University of Southern Maine

Enclosures: Revised Drawings
Revised Stormwater Inspection Checklist
Email Communications with Department of Public Works

MEMORANDUM

TO:	Andrew Tufts, Planner	DATE:	4/14/2020
FROM:	Michael Guethle, PE	PROJECT NO.:	20309B
SUBJECT:	44 Bedford Street – Level III Site Plan, PL-000974-2020		

Wright-Pierce has reviewed the initial Level III Site Plan Application information provided for the redevelopment at 44 Bedford Street, as defined in the above subject line. The proposed project is located on a 1.5 +/- acre site of land at the USM campus. The proposed project includes redevelopment of existing parking area with a central vegetated section used as overflow parking, and modifying that lot into an improved parking area with updated utility connections, lighting, and sidewalks.

Documents Reviewed by Wright-Pierce:

- Level III Site Plan application, dated (most recent) March 30, 2020
- Engineering Permitting Plans, uploaded (most recent) March 25, 2020

Comments:

For stormwater treatment, Level III Site Plan applications with the City of Portland must submit a stormwater plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules. This includes conformance with the Basic, General, and Flooding Standards (Ref: Technical Manual, Section 5. II. Applicability in Portland. C. a.; and Ref: City of Portland Code of Ordinances Sec. 14-526. Site Plan Standards, (b). 3. b.)

- 1) Basic Standard: Per the City's Technical Manual *Portland Stormwater Management Standards And Maine Dep Chapter 500 Stormwater Management*, an Erosion & Sediment Control management plan, notes, and details per the Chapter 500 Rules must be provided to meet the Basic Standard.
 - a. Erosion and Sedimentation Control best practices were observed on the Erosion and Sediment Control Plan and associated Details. An Inspection, Maintenance, and Housekeeping Plan has been provided with the erosion details and notes.

- b. In general, application of erosion and sedimentation control devices is appropriate. The following items need revision or review:
 - i. Catch basin inlet protection should include catch basin throat inlet protection where necessary.
 - ii. Additional clarification is needed for blank spaces on the erosion control notes regarding the timeframe of application within the tables.
- 2) General Standard: The applicant has provided information regarding the size and scope of the project, and has indicated the project is subject to the General Standard under the requirements of the Site Location of Development Act (SLODA). The project is being reviewed under the redevelopment guidelines and requirements.
 - a. The applicant has provided an impact analysis to compare pre-development and post-development land use pollutant rankings under MaineDEP redevelopment guidelines. The written analysis indicated that the proposed development had a higher pollutant ranking than the existing site by a magnitude between 0 and 1, and is therefore required to treat 60% of the proposed site's disturbed surface area.
 - i. A summary of pollutant rankings was provided by the applicant, reviewed, and it is agreed that the site required surface runoff treatment for 60% of the disturbed surface area for the proposed project. No further action necessary.
 - b. High-pollutant surface areas should be prioritized to a practicable extent for stormwater treatment under the redevelopment standard. Please provide a calculation of what percentage of higher-ranking pollutants are being treated, and what site limitations are requiring the lower-ranking pollutants (sidewalk areas) to be treated instead of the remaining parking lot area.
 - c. An executed maintenance contract for the BMP systems is required. Maintenance agreements may be provided as a condition of approval.
- 3) Porous Pavement, Stormfilter, and Subsurface Storage Design:
 - a. Porous pavement design for water quality volume is found to be in accordance with Chapter 500 requirements.

- i. The underdrain invert elevation is set near the surface of the parking elevation which arises some concern about frost upheaval and saturated conditions.
- b. StormFilter and Subsurface Storage Design
 - i. Subsurface storage is adequate for the proposed site, modeled at inverts shown on the design drawings, and indicates runoff reduction to the regulated requirements per the Chapter 500 flooding standard, while also ensuring that the water quality volume is detained for 24-48 hours.
 - ii. A letter from the manufacturer is provided stating the StormFilter and storage conduit meets their approval for the specific project. The subsurface alignment is provided to remove a portion of granular solids prior to entering the treatment system.
 - iii. The applicant has indicated StormFilter treatment media shall meet the required alumina and zeolite requirements confirmed by the MaineDEP.
 - iv. The corrugated metal pipe detention does not have guidance from DEP on frequency for observation and maintenance ports. Please provide a statement about the ability for maintenance staff to remove accumulated sediments/debris through the available observation ports, and their location to corners, weirs/baffles throughout the system.
 - v. Corrugated metal pipe is susceptible to rusting, especially in salted areas. Please indicate how this pipe will be protected against rust, such as cathodic protection, and indicate a check for rust or visual pipe damage in the stormwater treatment inspection list.
- 4) Flooding Standard: The applicant has submitted HydroCAD files indicating the pre-development runoff rates do not exceed the post-development runoff rates for the facility. No further action necessary.
- 5) Grading and Drainage:

- a. The applicant has indicated Maine Construction General Permit will likely be required for the project due to the extent of disturbed surface area. No further action necessary.
- b. Typical details should show a maximum 2% cross-slope for sidewalks, crosswalks, and crosswalk portions of driveways and maintenance entrances.
- c. For catch basin grates and frames to be re-set in the roadway, please provide a standard “dishpan” detail in accordance with the City Technical Manual.

6) Utility Connections

- a. Ability to serve letters have not been provided for utilities impacted by the proposed project, but have been requested by the applicant for applicable utilities (electrical and drainage). The applicant has indicated that ability to serve letters will be submitted to Planning upon receipt.
- b. Standard design for the electrical utility has been provided.
- c. Connection to Existing Stormwater Systems: E-mail, or otherwise written, confirmation from the Department of Public Works accepting this connection is requested to confirm that this connection is appropriate under Land Use section 14-526 (b) 3 a. (iv); and 14-526 (c) 3 a., as well as adherence to MaineDEP Chapter 500.

TO:	Andrew Tufts, Planner	DATE:	5/14/2020
FROM:	Michael Guethle, PE	PROJECT NO.:	20309B
SUBJECT:	44 Bedford Street – Level III Site Plan, PL-000974-2020		

Wright-Pierce has reviewed the initial Level III Site Plan Application information provided for the redevelopment at 44 Bedford Street, as defined in the above subject line. The proposed project is located on a 1.5 +/- acre site of land at the USM campus. The proposed project includes redevelopment of existing parking area with a central vegetated section used as overflow parking, and modifying that lot into an improved parking area with updated utility connections, lighting, and sidewalks.

Documents Reviewed by Wright-Pierce:

- Level III Site Plan application, uploaded (most recent) May 7, 2020
- Engineering Permitting Plans, uploaded (most recent) May 7, 2020
- Comment Response Letter, dated May 7, 2020

Comments:

For stormwater treatment, Level III Site Plan applications with the City of Portland must submit a stormwater plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules. This includes conformance with the Basic, General, and Flooding Standards (Ref: Technical Manual, Section 5. II. Applicability in Portland. C. a.; and Ref: City of Portland Code of Ordinances Sec. 14-526. Site Plan Standards, (b). 3. b.)

- 1) Basic Standard: Per the City's Technical Manual *Portland Stormwater Management Standards And Maine Dep Chapter 500 Stormwater Management*, an Erosion & Sediment Control management plan, notes, and details per the Chapter 500 Rules must be provided to meet the Basic Standard.
 - a. Erosion and Sedimentation Control best practices were observed on the Erosion and Sediment Control Plan and associated Details. An Inspection, Maintenance,

and Housekeeping Plan has been provided with the erosion details and notes. Applicant has provided additional information confirming inspection frequencies, and that catch basin throat protection will not be required due to the lack of granite inlets on the project. No further action necessary.

2) General Standard: The applicant has provided information regarding the size and scope of the project, and has indicated the project is subject to the General Standard under the requirements of the Site Location of Development Act (SLODA). The project is being reviewed under the redevelopment guidelines and requirements.

a. High-pollutant surface areas should be prioritized to a practicable extent for stormwater treatment under the redevelopment standard.

i. Applicant has indicated that over 90% of the required treatment area has been prioritized for the high pollutant parking lot. The applicant has indicated porous pavement is proposed to meet LID use goals within the project. No further action necessary.

b. An executed maintenance contract for the BMP systems is required. The applicant has requested that maintenance agreements may be provided as a condition of approval from the planning authority. We support this request.

3) Porous Pavement, Stormfilter, and Subsurface Storage Design:

a. Porous pavement design for water quality volume is found to be in accordance with Chapter 500 requirements.

i. The underdrain invert elevation is set near the surface of the parking elevation which raises some concern about freezing of the underdrain and frost upheaval in saturated conditions. Applicant has indicated this design is typical to similar projects on USM properties in the same climate, and issues were not persistent in those applications

1. While the pipe maintains 2' of cover in sidewalk areas, there is concern that the roadway areas have 18" of cover or less in certain areas due to the curb reveal tipping down to parking lot grade. We remain concerned about this application, and also appreciate that the

applicant's experience not indicating this issue arising on other campus properties with similar application.

- a. We would recommend monitoring of the sidewalk during winter and spring months for heaving following the construction. This could be completed during stormwater BMP inspections. The applicant has submitted an inspection, maintenance, and housekeeping plan that incorporates different points of the system that will be monitored, including structural elements such as the parking lot. No further action necessary.

b. StormFilter and Subsurface Storage Design

- i. The corrugated metal pipe detention does not have guidance from DEP on frequency for observation and maintenance ports. Please provide a statement about the ability for maintenance staff to remove accumulated sediments/debris through the available observation ports, and their location to corners, weirs/baffles throughout the system.
 1. Applicant has confirmed the location of monitoring ports with the manufacturer, and has provided an updated inspection form. No further action necessary.
- ii. Corrugated metal pipe is susceptible to rusting, especially in salted areas. Please indicate how this pipe will be protected against rust, such as cathodic protection, and indicate a check for rust or visual pipe damage in the stormwater treatment inspection list.
 1. Applicant has confirmed the corrugated metal pipe provided will be hot-dipped in aluminum to minimize concerns regarding rust. While aluminum is more likely to corrode from abrasion due to sedimentation compared to other pipe options, the applicant has provided an updated inspection list containing several variables related to pipe condition and sediment accumulation, ensuring these

items will be monitored as part of the regulated BMP inspections.

No further action necessary.

4) Grading and Drainage:

- a. Typical details have been updated to show a maximum 2% cross-slope for sidewalks, crosswalks, and crosswalk portions of driveways and maintenance entrances. No further action necessary.
- b. Applicant has indicated no roadway catch basins are to be re-set, and that notes for positive drainage are incorporated into the design. (For potential future reference, we were alluding to the basin grading shown in Figure II-10, page 94 of the City Technical Manual). No further action necessary.

5) Utility Connections

- a. Ability to serve letters have not been provided for utilities impacted by the proposed project, but have been requested by the applicant for applicable utilities (electrical and drainage). The applicant has indicated that ability to serve letters will be submitted to Planning upon receipt.
- b. Connection to Existing Stormwater Systems: E-mail, or otherwise written, confirmation from the Department of Public Works accepting this connection is requested to confirm that this connection is appropriate under Land Use section 14-526 (b) 3 a. (iv); and 14-526 (c) 3 a., as well as adherence to MaineDEP Chapter 500. Applicant has requested this item to be considered a condition of approval, and we support this request.



Andrew Tufts <atufts@portlandmaine.gov>

FW: USM Wishcamper Parking Lot Connection to Existing Stormwater System

10 messages

Darrin Stairs <DStairs@woodardcurran.com>

Wed, May 13, 2020 at 11:15 AM

To: Andrew Tufts <atufts@portlandmaine.gov>

Cc: Barry Sheff <bsheff@woodardcurran.com>, Ashley Fletcher <aefletcher@woodardcurran.com>

Andrew – as we just discussed, here (below) is the last email communication we sent to Brad on the subject of stormwater separation. Please let me know if we can provide any additional information.

I look forward to working with you in preparation for the hearing on the 26th.

Thank you,

Darrin

Darrin B. Stairs, PE

Project Manager

Woodard & Curran

Office: 207.774.2112

Toll Free: 800.426.4262

Direct: 207.558.3662

Cell: 207.405.4805

From: Darrin Stairs**Sent:** Thursday, May 7, 2020 3:26 PM**To:** Bradley Roland <brad@portlandmaine.gov>**Cc:** Ashley Fletcher <aefletcher@woodardcurran.com>; Barry Sheff <bsheff@woodardcurran.com>**Subject:** RE: USM Wishcamper Parking Lot Connection to Existing Stormwater System

Brad – Sorry we've been unable to connect and talk through this but appreciate your laryngitis must not be fun. Barry shared that you're thinking the basement carpet is the culprit and hope its removal does the trick.

Thank you for the additional input on this. We certainly understand your frustration with the separation of stormwater on this particular portion of the campus, and W&C certainly shares in the overarching goal of clean water throughout the City. That being said, and as Ashley described out below, we were challenged on this part of the campus due to elevation of the site relative to the depth of the separated sewer system in Bedford and the requirement of the City ordinance to provide stormwater treatment for the new impervious areas we are creating. Given the University's goal to maximize parking on this site, there is no opportunity in this area for shallow, surface-type treatments that would have required less hydraulic head. These factors gravitated us to the subsurface structural treatment system that we proposed.

Please note, we submitted this application on January 17th and had anticipated a more timely review process (notwithstanding unforeseen delays) but unfortunately just received these comments in mid-April from the City's 3rd party reviewers and staff, and was directed at that time to seek confirmation of the acceptance of the connection. That is when we reached out to you.

Our construction window is the summer, to avoid interfering with the school session that will restart in mid-August. As such we had to proceed with selection of a contractor, reviewing of submittals and procurement of long lead items (like the treatment and detention system). Admittedly, this was the University's risk to take, not any fault of the City's, prior to receiving site plan approval. However, even acknowledging some delay that the current COVID-19 situation has caused, we did not imagine that we would be waiting to get to the planning board in late May and June.

If the City had indicated earlier (whether during Pre-Application meeting or other) that they would be willing to relax the stormwater treatment standards in order to connect to the Bedford Street separate stormwater system, we certainly would have given strong consideration to that. Unfortunately, as you have said below, it is late in the game, and reversing course now would result in further delay and no doubt *additional* cost to the University. As you pointed out, these changes may require a much larger system, which the University has not budgeted for.

We respectfully request that the connection we have proposed, that maintains current drainage patterns and peak flows, but adds significant new stormwater treatment, be considered an acceptable connection in this situation.

Best,

Darrin

Darrin B. Stairs, PE

Project Manager

Woodard & Curran

Office: 207.774.2112

Toll Free: 800.426.4262

Direct: 207.558.3662

Cell: 207.405.4805

From: Bradley Roland <brad@portlandmaine.gov>

Sent: Monday, May 4, 2020 2:39 PM

To: Darrin Stairs <DStairs@woodardcurran.com>

Cc: Ashley Fletcher <aefletcher@woodardcurran.com>; bnpearson@gmail.com <bnp@portlandmaine.gov>; Jodie Keene <JKEENE@portlandmaine.gov>

Subject: [Pending]Re: USM Wishcamper Parking Lot Connection to Existing Stormwater System

Hello All,

Yes Ashley and Darrin I saw the responses.

Just trying to frame a reply.

Because I feel like I have deja vu.

Because, in my opinion, I do not believe USM has done or is doing enough to provide for the separation of that section of the campus.

The City has spent \$5.1M on Bedford Street with another \$1.1M planned for Deering Center but we will never be able to collect the storm drain system on the south side of Bedford Street because it is too low.

And no, I do not foresee the City jacking a pipe under the I-295 just to collect the USM Wishcamper storm drain system.

In response to your three items:

1. 7" is the difference - without even knowing if we can gain more to the east (towards Forest Ave). And it is great you are providing a StormFilter treatment system, except that nice clean water will be going into the combined sewer to take up volume and head to the treatment plant. Or possibly taking up volume in the new storage facility, before going to the treatment plant. If necessary, I would prefer to see a less robust treatment system that would allow the water pushed the other direction (and possibly save USM money with the replacement costs associated with the cartridges in that system).
2. Which might provide the perfect opportunity to replace that 12" pipe with an upsized linear detention system - think outside the box. It is a 250 foot run to the edge of your work zone. How long is your existing system? And would the pipe size have to be as big (possibly saving costs) if it was stretched out?
3. Yes the storage system might have to get bigger - see comment 2.

So here it is late in the game and I understand my comments will likely be overridden.

"we ultimately proposed to maintain drainage patterns in order to comply with the City's standards for stormwater treatment and flood mitigation."

Unfortunately, it will not benefit the city's sewer separation and CSO mitigation programs in the long run.

Your original April 17 email asked "if the proposed connection is acceptable".

No - I think there are other options that could have been explored if the university was truly interested in providing separation.

But that's my opinion, as documented above.

Brad

--

Bradley A. Roland, P.E.
Senior Project Engineer
Portland Public Works
[212 Canco Road](#)
Portland, ME 04103
Tel: 207-874-8840
Fax: 207-874-8852
brad@portlandmaine.gov

On Mon, May 4, 2020 at 10:34 AM Darrin Stairs <DStairs@woodardcurran.com> wrote:

Hi Brad –

I just called and left a vmail on your office number but your message says you "are out of the office until January 2nd." I am assuming that is an old message that has re-appeared somehow but wanted to let you know.

We are scheduled to go to PB on May 28th for this project, and are desperate to get construction underway ASAP so we can finish this project before the students (hopefully) come back in the fall.

Can you let Ashley and me know if you would like to discuss the information below any further, or if you are okay with the storm system as it is proposed?

I can be reached at 207-558-3662. Thank you, Brad!

Best,

Darrin

Darrin B. Stairs, PE

Project Manager

Woodard & Curran

Office: 207.774.2112

Toll Free: 800.426.4262

Direct: 207.558.3662

Cell: 207.405.4805

From: Ashley Fletcher <aefletcher@woodardcurran.com>

Sent: Tuesday, April 28, 2020 3:53 PM

To: Bradley Roland <brad@portlandmaine.gov>

Cc: Darrin Stairs <DStairs@woodardcurran.com>; bnpearson@gmail.com <bnp@portlandmaine.gov>; Jodie Keene <JKEENE@portlandmaine.gov>

Subject: RE: USM Wishcamper Parking Lot Connection to Existing Stormwater System

Hi Brad,

I tried calling you last week to discuss this but kept getting your voicemail.

I spoke with Barry Sheff to make sure that we understood the history of the site and we did initially look at trying to make the storm drain connection you identified, but we encountered the following issues/concerns with making this connection work:

1. The outlet of the proposed system is below the lowest invert out of the easternmost CB you circled. The depth of the proposed system is being driven by the hydraulic headwater condition needed by the StormFilter treatment structure in order to provide sufficient treatment. These systems typically require a 3.05' headwater condition (the elevation difference between the filter inlet and outlet inverts), but for this project we were able to reduce the headwater condition to 1' by utilizing the upstream storage to achieve the necessary float valve activation elevation for the filter. The manufacturer does not recommend any further reductions in the headwater condition and the storm drain system has been designed to minimize the slope and cover to the maximum extent practicable, such that raising the elevation of our system in order to make this connection is not feasible.
2. As you pointed out, the size of the existing 12" storm drain we would need to connect to is insufficient and a significant amount of additional work would be required to upsize this pipe (the runoff from the lot requires a minimum pipe size of 18"); and
3. Re-directing the site runoff to discharge to the existing separated storm drain system east of the site would result in an increase in the peak rate of runoff to that separated storm drain system, which may impact the capacity of the City's storm drain system, because the

underground storage system we are proposing would not be sufficient to mitigate the increase in runoff that would result from the larger drainage area being directed to the separated storm drain system.

My understanding is that previous design intents were to maintain drainage patterns and to fully separate the University's stormwater system, such that the University's storm drain system can be easily connected to a future separated storm drain system, so we ultimately proposed to maintain drainage patterns in order to comply with the City's standards for stormwater treatment and flood mitigation.

Please let me know if you have any additional questions or if you would like to schedule a time to discuss this in more detail.

Thank you,

Ashley Fletcher, PE*

Project Engineer | Associate Principal

**Licensed in Maine*

Woodard & Curran

[41 Hutchins Drive](#)

[Portland, ME 04102](#)

[\(207\)558-3665](#)

www.woodardcurran.com

COMMITMENT & INTEGRITY DRIVE RESULTS

From: Bradley Roland <brad@portlandmaine.gov>

Sent: Tuesday, April 21, 2020 9:58 AM

To: Ashley Fletcher <aefletcher@woodardcurran.com>

Cc: Darrin Stairs <DStairs@woodardcurran.com>; bnpearson@gmail.com <bnp@portlandmaine.gov>; Jodie Keene <JKEENE@portlandmaine.gov>

Subject: Re: USM Wishcamper Parking Lot Connection to Existing Stormwater System

Good Morning Ashley,

Thank you for reaching out.

You have correctly identified that this entire storm drain system ties into the combined sewer crossing the I-295.

I understand that you are not increasing the peak flows being discharged from the site.

But you are ultimately putting more stormwater into the combined sewer.

I can not understand why more can not be done for the separation of this site.

There is an existing storm drain system on and adjacent to the current work area that provides for the complete separation from the combined sewer.

I have circled them on the attached plan.

The invert leaving the site, adjacent to the library, is very close to your proposed connections into the existing system.

Is there a reason why the new CBs 1-6 can not be connected into this separated system?

I understand the pipe size leaving that system is 12".

But with your underground storage capacity and your "not increasing peak discharge" can this not be accommodated?

I understand I can not do anything about the existing storm drain system.

And you may be asking yourself why was this not brought forward during the original Wishcamper Garage and parking lot design.

It was.

And was rejected by the people in charge at that time.

Those are my questions associated with approval of your proposed connection.

Brad

--

Bradley A. Roland, P.E.
Senior Project Engineer
Portland Public Works
[212 Canco Road](#)
Portland, ME 04103
Tel: 207-874-8840
Fax: 207-874-8852
brad@portlandmaine.gov

On Fri, Apr 17, 2020 at 12:06 PM Ashley Fletcher <aefletcher@woodardcurran.com> wrote:

Hi Brad,

We submitted a Site Plan Application to the City in January for the expansion of the USM Wishcamper Parking Lot. We will be connecting to an existing catch basin located on the southern side of the University's property which ultimately discharges to the City's combined sewer system west of the Site (a copy of the drainage plan is attached for your reference). As part of our Site Plan Application, we demonstrated that we would not be increasing the peak rate of stormwater runoff to this catch basin; Wright-Pierce has reviewed our HydroCAD analysis and agrees that the project will not result in an increase in the peak rate of runoff, but they have requested that we provide written confirmation from the Department of Public Works that the proposed connection is acceptable.

Please let me know if you have any questions or if the proposed connection is acceptable.

Thank you,

Ashley Fletcher, PE*
Project Engineer | Associate Principal
*Licensed in Maine

Woodard & Curran
[41 Hutchins Drive](#)
Portland, ME 04102
(207)558-3665

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

From: **Jeff Tarling** <jst@portlandmaine.gov>
Date: Fri, May 15, 2020, 2:26 PM
Subject: Fwd: FW: Jeff Tarling Meeting
To: James Rather <jrather@portlandmaine.gov>
Cc: Jodie Keene <jkeene@portlandmaine.gov>

Hi James -

This is a note from the USM Wishcamper center parking lot project. I met with USM yesterday and after looking at the tree size & condition they are not movable. Their response is to plant new trees and after reviewing I agree with the recommendation.

Thanks

Jeff

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

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

From: **Polly Sewall** <polly@ahgrover.com>
Date: Fri, May 15, 2020 at 8:41 AM
Subject: FW: Jeff Tarling Meeting
To: <jst@portlandmaine.gov>

From: Polly Sewall <polly@ahgrover.com>
Sent: Friday, May 15, 2020 8:39 AM
To: Ashley Fletcher <aefletcher@woodardcurran.com>; Darrin Stairs <DStairs@woodardcurran.com>; Thomas Blanchard <thomas.blanchard@maine.edu>; Ben Grover <ben@ahgrover.com>; Robert Adams <robert.g.adams@maine.edu>

Cc: jst@portlandmaine.gov
Subject: Jeff Tarling Meeting

Robert Adams and I met with Jeff Tarling yesterday to talk about the mature trees planned to be transplanted on the project. Jeff concurred with me that it would not really be feasible to try and move these given their age and size as the chance for survival would be very slim. He suggested replacement with similar species and a 2 1/2" - 3" caliper size tree would really be the way to go. During the bid process these trees were addressed in an Addendum and we decided to cover our costs for replacement with 2 1/2" - 3" cal trees. If USM is all set with this approach then this would be a No Cost Change Order to the project. Please feel free to discuss with Jeff directly if you feel the need for confirmation. I appreciate you all considering this change.

--

Mary P. Sewall, PE (Polly)

A.H. Grover, Inc.

PO Box 307

Cumberland, ME 04021

Office: (207) 829-3373

Mobile: (207) 400-7496



USM Wishcamper Parking Lot

44 Bedford Street

Level III Site Plan
Application

41 Hutchins Drive
Portland, ME 04102
800-426-4262

woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

0232479.01
**University of Southern
Maine**
January 2020

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1. APPLICATION CHECKLIST

CITY OF PORTLAND
Planning & Urban Development Department

LEVEL II and LEVEL III SITE PLAN
GENERAL DOCUMENT AND DRAWINGS CHECKLIST

Please submit each document as a separate PDF file
Please confirm by electronically checking the boxes to the left

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

GENERAL APPLICATION DOCUMENTS

Yes ☒	NA ☐	Project Description Cover Letter with detailed project description
Yes ☒	NA ☐	Completed Checklist – Level II and Level III Site Plan (this document)
Yes ☒	NA ☐	Right, Title and Interest Deeds, leases, or purchase and sales agreements
Yes ☒	NA ☐	Evidence of State or Federal Approvals Permits or letters of non-jurisdiction, if applicable
Yes ☒	NA ☐	Zoning Assessment Table listing required and proposed uses and dimensional standards Zoning Assessment Table
Yes ☒	NA ☐	Existing and/or Proposed Easements or Covenants, applicable. Evidence of existing easements and any proposed easements
Yes ☐	NA ☒	Waiver Requests Written request for waiver describing request and reason Waiver Table
Yes ☒	NA ☐	Financial Capability Letter or evidence from a financial institution or third party verifying financial capacity to undertake project
Yes ☒	NA ☐	Technical Capability Evidence of technical capability of applicant and consultants – resumes and/or examples of past projects

**LEVEL II AND LEVEL III SITE PLAN
STANDARDS AND SUBMISSION CHECKLIST**
Provide assessment of compliance with standards and include
supplemental documentation, as applicable
Please Submit each document as a separate PDF file

TRANSPORTATION

Yes ☐	NA ☒	Transportation Analysis- Traffic Impact (14-526 (a) 1) - Provisions for pedestrian, bicycle, vehicle, and loading circulation and incremental volume of traffic impacts - Traffic Impact Study (Technical Manual, Section 1) if applicable
Yes ☒	NA ☐	Access and Circulation (14-526 (a) 2 a) - Access and internal circulation, addressing ADA access - Access and egress impacts on traffic flows - Description and use of drive-up features, if applicable
Yes ☐	NA ☒	Loading and Servicing (14-526 (a) 2 b) - Loading and servicing needs, route and travel way geometrics for deliveries - Turning templates for delivery vehicles, if applicable
Yes ☒	NA ☐	Sidewalks (14-526 (a) 2 c) - Sidewalks and condition along street frontages and internal walkways - Engineered details for ADA ramps and public sidewalk details meeting sidewalk materials policy and ADA ramp construction details as applicable (Technical Manual, Section 1)
Yes ☐	NA ☒	Public Transit (14-526 (a) 3), if applicable - Existing available transit services - Proposed site plan design details, such as easement, pad base, and shelter
Yes ☒	NA ☐	Off-Street Parking: Vehicle & Motorcycle/Scooter) (14-526 (a) 4 a and c) - Expected parking demand, proposed parking supply, ADA parking, and applicable Zoning Requirements - Address Technical Manual standards (Section 1) for curb cut separation and parking lot layout and locate on site plan
Yes ☐	NA ☒	Bicycle Parking (14-526 (a) 4 b) - Address bicycle parking requirements and identify locations on-site - Construction details for bike racks (Technical Manual, Section 1)
Yes ☒	NA ☐	Snow Storage (14-526 (a) 4 d) Management plan for snow removal and locate snow storage areas on plan
Yes ☐	NA ☒	Traffic Demand Management (TDM) (14-526 (a) 5), if applicable Develop TDM with Trip Reduction Targets and Strategies

ENVIRONMENTAL AND LANDSCAPE FEATURES		
Yes ☒	NA ☐	Preservation of Significant Natural Features (14-526 (b) 1), if applicable - Trees, plants, habitats listed on State or Federal list of endangered or threatened - High and moderate value waterfowl and wading habitat - Aquifers on Casco Bay Islands - Waterbodies (including wetlands, watercourses, significant vernal pools and floodplains) - Proposed preservation areas and protection measures - Documentation from environmental consultants, determinations from applicable state agencies
Yes ☒	NA ☐	Landscaping and Landscape Preservation (14-526 (b) 2 a) - Preservation of trees and preservation within required zoning setbacks (Technical Manual, Section 4) - Protection measures of existing vegetation during construction - Protection measures within Shoreland Zone, if applicable
Yes ☒	NA ☐	Site Landscaping (14-526 (b) 2 b) - Screening and buffering of service areas and between non-residential and residential uses - Planting plans with plant schedule and sizes (Technical Manual, Section 4)
Yes ☒	NA ☐	Parking Lot Landscaping (14-526 (b) 2 b ii), if applicable Landscaped islands within parking areas (Technical Manual, Section 4)
Yes ☐	NA ☒	Street Trees (14-526 (b) 2 b iii) - Existing Heritage or Feature Trees on site and measures to preserve - Identify street trees on the plan meeting the site plan and Technical Manual standards (Section 4) or identify alternative measures, if applicable
ENVIRONMENTAL AND STORMWATER		
Yes ☒	NA ☐	Water Quality, Stormwater Management and Erosion Control (14-526 (b)3 a) - Stormwater report in compliance with Section 5 of Technical Manual and DEP Chapter 500 stormwater for basic, general and flooding standards, as applicable - Erosion control plan and measures - Evidence of compliance with Urban Impaired Stream Standards pursuant to DEP Chapter 500 stormwater, as applicable - Subsurface sanitary sewage disposal and groundwater protection

PUBLIC INFRASTRUCTURE AND SAFETY		
Yes ☒	NA ☐	Consistency with City Master Plans (14-526 (c) 1) - Identify consistency with master plans - Proposed easements, rights and improvements to connect or continue off-premises public infrastructure, as applicable
Yes ☒	NA ☐	Public Safety and Fire Prevention (14-526 (c)) - Address Crime Prevention through Environmental Design (CPTED) (Technical Manual, Section 3) - Emergency vehicle access - Address consistency with public safety standards (Technical Manual, Section 3) - Submit a code summary referring NFPA 1 and all Fire Department standards (Technical Manual, Section 3) – Fire Checklist
Yes ☒	NA ☐	Availability and Adequacy of Public Utilities (14-526 (c) 3) (Technical Manual, Sections 2 & 9) - Electrical services, including providing underground services - Identify existing and proposed connections for public utilities and required public utility upgrades - Sewer line connections are required, if there is a main within 200 feet - Proposed solid waste management facilities on-site and management for the site - Written evidence of the ability to serve from utility companies, as applicable
SITE DESIGN		
Yes ☐	NA ☒	Massing, Ventilations and Wind Impact (14-526 (d) 1) - Wind and ventilation impacts on adjoining structures and/or adjacent public spaces. Wind study, if applicable - Bulk, location or height impacts on adjoining structures - Identify and locate HVAC equipment and venting away from public spaces and residential properties - Identify screening and manufacturing specifications for noise, if applicable
Yes ☐	NA ☒	Shadows (14-526 (d) 2), if applicable Shadow analysis of impacts on publicly accessible open space (Technical Manual, Section 11)
Yes ☐	NA ☒	Snow and Ice Loading (14-526 (d) 3) Building design to prevent snow and ice from loading or falling onto adjacent properties or public ways
Yes ☐	NA ☒	View Corridors (14-526 (d) 4), if applicable Protection of designated view corridors (Portland Design Manual, Appen. 1)

Yes ☐	NA ☒	Historic Resources (14-526 (d) 5), if applicable • Identify developments within Historic Districts or affecting Designated Landmarks • Certificate of Appropriateness or other evidence • Identify Developments within 100 feet of Historic Districts or affecting Designated Landmarks. Advisory HP review may be required • Address preservation and documentation of Archaeological Resources
Yes ☒	NA ☐	Exterior Lighting (14-526 (d) 6) • Cut sheets of on-site light fixtures and any architectural or specialty lights (Technical Manual, Section 12) • Engineered details for any lights proposed in street right-of-way (Technical Manual, Section 10)
Yes ☐	NA ☒	Noise and Vibration (14-526 (d) 7) • Evidence of noise levels for equipment, such as equipment specifications, to demonstrate consistency with zoning requirements
Yes ☒	NA ☐	Signage and Wayfinding (14-526 (d) 8), if applicable • Signage plan showing the location, dimensions, height and setback of all existing and proposed signs. Signs in Historic Districts are reviewed by Historic Preservation staff • Proposed commercial and directional signage on site
Yes ☒	NA ☐	Zone Related Design Standards (14-526 (d) 5) • Address Historic Preservation Design Review, if applicable • Address any applicable design review standards by zone • Address submission requirements from Design Manual, page 1, addressing neighborhood context • Description of exterior materials, color, finish, and samples
Construction Management Plan		
Yes ☒	NA ☐	Construction Management Plan • Construction Management Document and Plan

**LEVEL II AND LEVEL III SITE PLAN
DRAWINGS CHECKLIST**

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

RECENT BOUNDARY SURVEY (stamped by Maine Licensed Surveyor)

- ☒ Must be in compliance with Technical Manual, Section 13

SITE PLAN(s) (stamped by Maine Licensed Engineer) including:

Existing Conditions

- ☒ Approximate location of structures on abutting property
- ☒ Topography
- ☐ Locate water courses
- ☐ Delineate wetlands
- ☒ Zone lines

Proposed Site Plan

- ☐ Ground floor area, and grade elevations for all buildings

Access, Circulation, and Parking

- ☒ Streets and intersections adjacent to site, any proposed geometric modifications
- ☒ Location, dimensions and materials of all existing and proposed driveways, vehicle, bicycle, & pedestrian access ways with corresponding curb lines
- ☒ Engineered specifications/ cross-sections for proposed driveways, sidewalks & paved areas
- ☐ Location and dimensions of proposed loading areas
- ☐ Existing and proposed transit infrastructure with dimensions/ engineering specifications
- ☒ Location of vehicle and bicycle parking with dimensions and engineering specifications

Site Considerations

- ☒ Identify snow storage areas
- ☐ Location of fire hydrants
- ☐ Location of solid waste management facilities

UTILITY PLAN including:

- ☒ Existing utilities on site and within public streets
- ☒ Location, sizing and directional flows of all existing and proposed utilities
- ☒ Location and dimensions of off-premises public or publicly accessible infrastructure adjacent to site
- ☒ Electric utility infrastructure

GRADING AND DRAINAGE PLAN including:

- ☒ Existing grades and drainage
- ☒ Proposed grades
- ☒ Proposed stormwater management meeting Technical Manual (Section 5), standards
- ☐ Location and proposed alteration of a water course
- ☐ Preservation or alteration of wetlands

EROSION CONTROL

- ☒ Must be in compliance with Technical Manual, Section 5

LANDSCAPE PLAN including:

- ☒ Existing vegetation to be preserved and preservation measures
- ☒ Proposed landscaping and buffers
- ☒ Planting schedule

RECORDING PLAT, if applicable**N/A**☐

If Subdivision, must be in compliance with requirements of Section 14-496 (b)

ARCHITECTURAL PLANS AND RENDERINGS including:**N/A**☐

Exterior building elevations, color renderings, illustrations of all sides

☐

Location and dimensions of all existing and proposed HVAC and mechanical equipment, all proposed screening

☐

Provide context drawings, if applicable (Design Manual, page 1)

☐

Floor plans

3. PROJECT DESCRIPTION

On behalf of the University of Southern Maine (Applicant), Woodard & Curran is submitting this application for Level III Site Plan Review for a parking lot. Attached to this Section is a letter from the University authorizing Woodard & Curran to act as their Agent. This application has been prepared in accordance with the City of Portland's Chapter 14, Land Use Code of Ordinances and the applicable sections of the City of Portland Design and Technical Manuals.

3.1 PROJECT SITE & BACKGROUND

The project site is located at 44 Bedford Street (Tax Map/Lot No. 114 A001001), in the area south of the Wishcamper Center and north of the I-295 corridor. A Site Location Map is attached to this Section for your reference. The subject property is located in the R-5 Residential, B-2 Community Business, and University of Southern Maine Overlay Zones. The project is not located in a flood hazard zone, as shown on the attached FEMA FIRM Map provided in Appendix A.

As the University of Southern Maine expands to better serve its growing student body, available parking will be displaced. The proposed parking lot will enable future developments at the University by replacing a portion of the parking that will be displaced by future developments (to be submitted under separate cover). By constructing the proposed parking lot in advance of future developments, the University's existing parking demands will be satisfied during periods of future construction.

3.2 PROPOSED PROJECT

The proposed project will create 122 additional parking spaces for the University. The proposed parking lot will include the necessary ADA accessible parking spaces as well as compact spaces in order to minimize the amount of impervious area on the site. The proposed stormwater management plan will consist of porous pavement walkways, similar to existing walkways throughout the University, and a subsurface detention and treatment system. The proposed work will also include site landscaping and exterior lighting. Design drawings for the proposed project are included with this application.

3.3 ATTACHMENTS

- Agent Authorization Letter
- Site Location Map
- FEMA FIRMette
- Design Drawings (Bound Separately)

December 23, 2019

To: Local, State and Federal Review Officials

The University of Southern Maine, a member of the University of Maine System, is preparing plans for the Wishcamper Parking Lot Expansion at the University of Southern Maine, Portland, ME. The University has retained Woodard & Curran, Inc. to assist in the preparation of the applications associated with permitting approvals for this project. When necessary, Woodard & Curran, Inc. is authorized as its agent to represent the University in addressing questions on the plans, or applicable applications, for this project.

Sincerely,



John M. Souther,
Executive Director of Facilities Management,
University of Southern Maine for the
University of Maine System



WISHCAMPER PARKING LOT EXPANSION

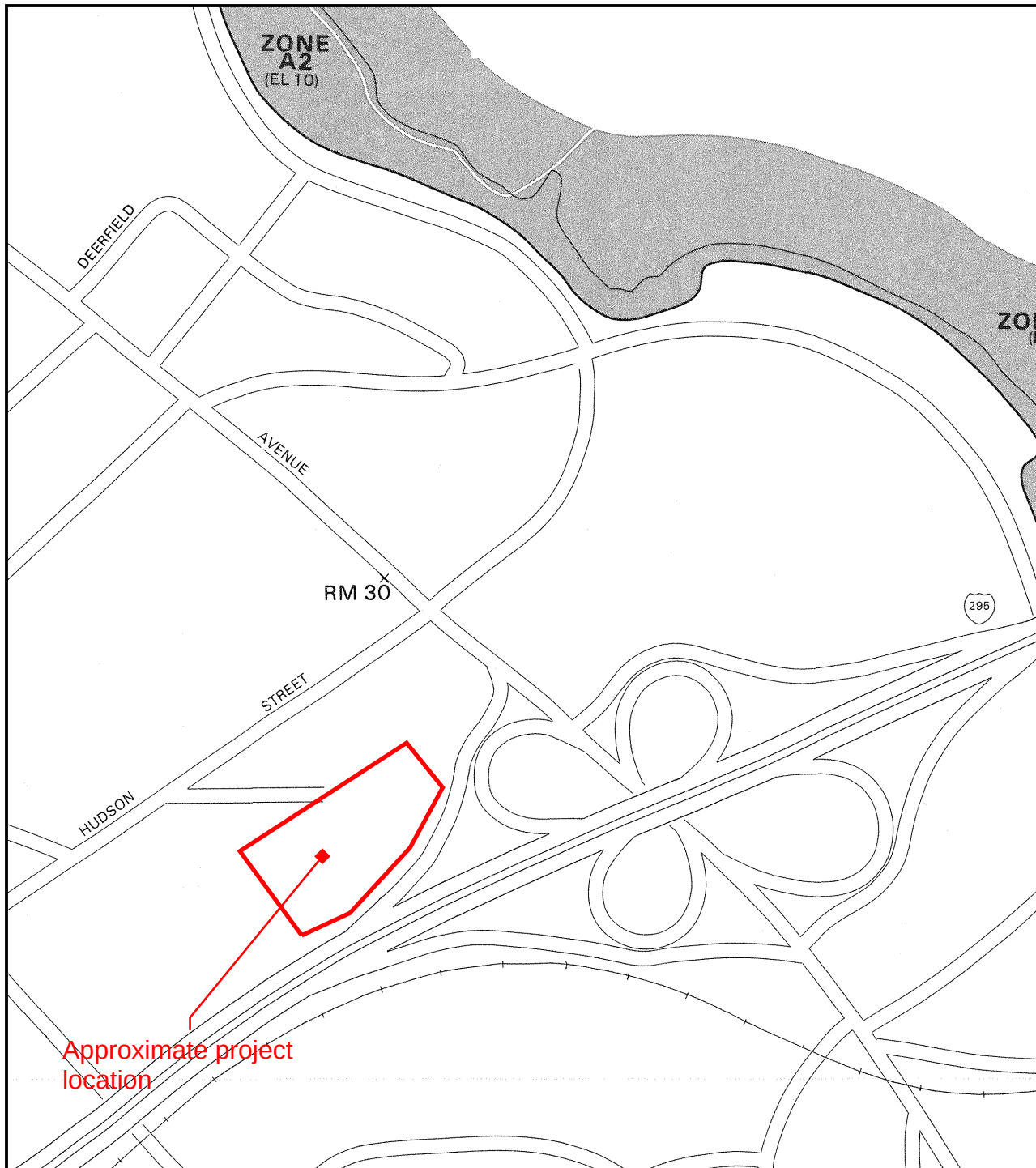
BEDFORD STREET
PORTLAND, ME

FIGURE 1 - SITE LOCATION MAP



Project #: 0232479.01
Map Created: December 2019

0 1,000 2,000
Feet



APPROXIMATE SCALE

400 0 400 FEET

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

Approximate project
location

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

4. RIGHT, TITLE, & INTEREST

The proposed project is located on property owned by the Applicant and identified as Tax Map 114, Lot A001001. Attached is a copy of the deeds associated with this property.

4.1 ATTACHMENTS

- Deeds

GOVERNOR'S DEED
(with Reverter)

KNOW ALL PERSONS BY THESE PRESENTS, that the STATE OF MAINE, acting by and through its Governor, on recommendation of the Commissioner of its DEPARTMENT OF TRANSPORTATION, under and pursuant to the provisions of 23 M.R.S.A., Section 61, for consideration, the sufficiency of which is hereby acknowledged, RELEASES to THE UNIVERSITY OF MAINE SYSTEM, organized as a non-profit corporation of the State of Maine, with offices at 16 Central Street in Bangor, Maine, its successors and assigns forever, all its right, title and interest in and to a certain lot or parcel of land situated on the southerly side of Winslow Street, so-called, at its intersection with the westerly sideline of the right-of-way of State Highway "295", also known as Interstate 295, in Portland, County of Cumberland and State of Maine, and being as shown on a Right-of-way Map for State Highway "295" Portland, Cumberland County, Federal Aid Project Number I-295-3(28), dated January 1967, File Number 3-185, sheet 57 of 73, on file at the offices of the Maine Department of Transportation in Augusta, bounded and described as follows:

BEGINNING at a point on the southerly sideline of Winslow Street at its intersection with the westerly sideline of the right-of-way of Route 295;

THENCE S 26° 51' 18" W along said westerly sideline of Route 295, a distance of 34.00 feet;

THENCE S 51° 22' 05" W continuing along said westerly sideline of Route 295, a distance of 23.93 feet to land now or formerly of the University Of Southern Maine Foundation;

THENCE N 38° 37' 55" W along said University Of Southern Maine Foundation land 20.00 feet;

THENCE N 6° 51' 23" E continuing along said University Of Southern Maine Foundation land, 33.28 feet to the southerly sideline of said Winslow Street;

THENCE S 85° 26' 46" E along said southerly sideline of Winslow Street, 42.70 feet, more or less to the aforementioned westerly sideline of the right-of-way of Route 295 and the POINT OF BEGINNING, and containing one thousand four hundred twenty-seven square feet, more or less (1,427 sq. ft. ±).

EXCEPTING AND RESERVING from this conveyance any and all rights of access from the herein described parcel of land to State Highway "295", also known as Interstate 295, all of which rights of access are expressly reserved to, and retained by, the State of Maine.

ALSO RESERVING to the State of Maine the perpetual right to enter upon said parcel to maintain any highway slopes and drainage facilities or installations that may exist.

SUBJECT TO all utility easements and installations located on the above described premises, including those shown on the herein referred to Right-of-way Map, and to those rights which any utility enjoys over the subject premises for maintenance, location or relocation of poles and other installations.

NOTWITHSTANDING the foregoing, Grantor gives this deed, and Grantee accepts the same, upon the express CONDITION that the property hereby conveyed is to be retained by the University of Maine system and used for

public purposes only; and if said property or any interest in it, or any portion of it, is transferred, or if it is used for any commercial or other non-public purposes, said property shall at once REVERT to, and re-vest in, the Grantor, its successors or assigns; and that such reversion, should it occur, shall be automatic and require no further act of conveyance or documentation in order to be effective.

BEING a portion of premises acquired by the State of Maine from Charles T. Hayes, Jr. and Beatrice Hayes by warranty deed dated July 19, 1968 and recorded at the Cumberland County Registry of Deeds on July 23, 1968 in Volume 3049 at Page 553; and a portion of premises acquired from Reuben Katz by warranty deed dated January 10, 1969 and recorded at said Registry Of Deeds on January 15, 1969 in Volume 3072 at Page 435.

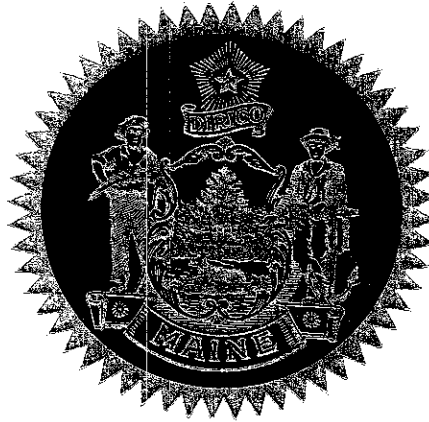
THE STATE OF MAINE makes no representations or warranties with respect to the premises hereby conveyed. The representations and warranties so excluded encompass, but are not limited to, those pertaining to: land use and environmental matters; fitness of the premises or any portion thereof for any particular purposes; water quality or quantity; the condition or quality of the soil; inchoate or unrecorded liens; status of title to or rights within that area lying between the high and low water marks; or the existence, status, or condition of access to, or public utilities serving the premises. Any subsequent use of, improvement to, or construction on the parcel shall be subject to all applicable laws, regulations, ordinances, and permitting requirements.

IN WITNESS WHEREOF, I, John E. Baldacci, Governor of the State of Maine,
have caused the name and Great Seal of the State of Maine to be hereunto
affixed this 11th day of Sept in the year
two thousand six.

STATE OF MAINE

By: John E. Baldacci, Governor
John E. Baldacci

Received
Recorded Register of Deeds
Sep 20, 2006 02:29:02P
Cumberland County
John B O'Brien



Affixed by: [Signature]
Secretary of State

STATE OF MAINE
Kennebec, ss.

Sept. 11th, 2006

Personally appeared the above-named, John E. Baldacci, Governor of the State of Maine and
acknowledged the foregoing instrument to be his free act and deed in his said capacity and the
free act and deed of the State of Maine.

Before me, Rosemarie D. Smith
Notary Public/Attorney at Law

Print Name: _____

My commission expires _____

ROSEMARIE D. SMITH
Notary Public, Maine
My Commission Expires January 6, 2009

SEAL

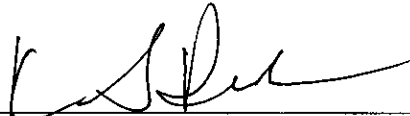
SHORT FORM QUITCLAIM DEED WITH COVENANT

THE UNIVERSITY OF SOUTHERN MAINE FOUNDATION, a Maine nonprofit corporation with a mailing address of 96 Falmouth Street, Portland, Maine 04104, FOR CONSIDERATION PAID, grants to UNIVERSITY OF MAINE SYSTEM, a body politic and instrumentality of the State of Maine, with a mailing address of 16 Central Street, Bangor, Maine 04401, with QUITCLAIM COVENANT, certain real property, together with any improvements thereon, located in the City of Portland, Cumberland County, Maine and more particularly described on Exhibit A attached hereto and made a part hereof.

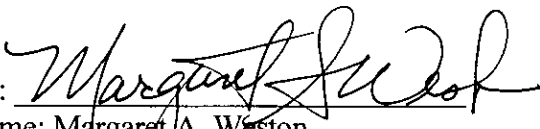
Being the same premises conveyed to the grantor herein by a Short Form Quitclaim Deed With Covenant from Frederick J. Olsen dated April 27, 2005 and recorded at the Cumberland County Registry of Deeds in Book 22577, Page 79.

IN WITNESS WHEREOF, The University of Southern Maine Foundation, has caused this instrument to be executed and delivered as of the 20th day of December, 2011.

The University of Southern Maine
Foundation



Witness

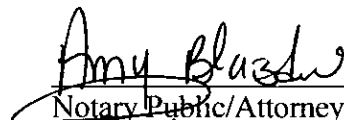
By: 
Name: Margaret A. Weston
Its: President

State of Maine
County of Cumberland, ss.

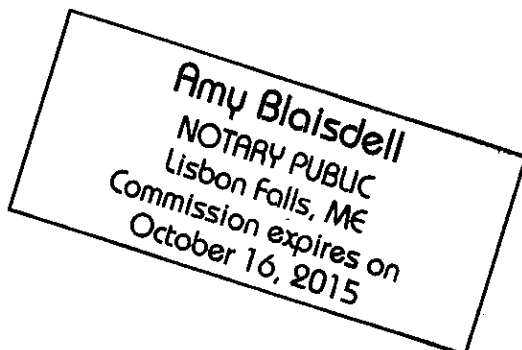
December 16, 2011

Personally appeared the above-named Margaret A. Weston, President of The University of Southern Maine Foundation, and acknowledged the foregoing instrument to be her free act and deed in her said capacity and the free act and deed of The University of Southern Maine Foundation.

Before me,



Notary Public/Attorney at Law
Name: Amy Blaisdell
Commission Expires: 10/16/2015



MAINE REAL ESTATE TAX PAID

Exhibit A

Formerly Tax Map 114, Block D, Lot 21:

Three (3) certain lots or parcels of land, with the buildings thereon, situated on the northerly side of Winslow Street in the City of Portland, County of Cumberland, State of Maine, being lots numbered 1, 2 and 3 on an unrecorded plan of the Heater piece at and adjoining the junction of said Winslow Street and Bedford Street made by E.C. Jordan & Co., Civ. Eng., in January 1918, and on file in the office of said E.C. Jordan & Co., said three lots taken together, being bounded and described as follows:

Beginning at a point on said northerly line of Winslow Street at the southwest corner of land now or formerly of John W. Lovely heirs and thence running, with an included angle of $88^{\circ} 43'$ and by the westerly line of said Lovely land eighty-six (86) feet to a post and land now or formerly of the T.A. Huston & Co.; thence northwesterly and along said Huston land, forty-nine (49) feet to a post; thence northwesterly and along said Huston land thirty-two and three tenths (32.3) feet to an iron post; thence westerly and along said Huston land twenty-two and thirty-five hundredths (22.35) feet to an iron post; thence westerly and along said Huston land nineteen and eighty-four hundredths (19.84) feet to a post; said post being the southeasterly corner of lot numbered 11 on said plan; thence westerly and along the rear or southerly line of said lot numbered 11, fifty-nine and thirty-seven hundredths (59.37) feet to the southwesterly corner of lot numbered 11; thence southwesterly at right angles to said Winslow Street one hundred (100) feet to said northerly line of Winslow Street; thence easterly and along said northerly line of Winslow Street one hundred fifty-nine (159) feet to the point or place of beginning; said three lots having together an area of 18,027 square feet, be the same more or less.

EXCEPTING AND RESERVING from the above-described premises that portion thereof which was conveyed by Ellestad Hansen, Warren K. Webber and Mary E. Hansen to Charles A. Adams by deed dated April 8, 1924 and recorded in the Cumberland County Registry of Deeds in Book 1165, Page 79, and such portion thereof as may have been conveyed by Mary E. Hansen to the State of Maine by deed dated January 7, 1970 and recorded in the said Registry of Deeds in Book 3114, Page 724.

Formerly Tax Map 114, Block D, Lot 22:

ALSO a certain lot or parcel of land situated on the northerly side of Winslow Street in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows, to wit:

Beginning at an iron hub at the southwest corner of a lot of land conveyed by Edward D. Noyes, et al. to Ellestad Hansen and Warren K. Webber by deed dated November 14, 1923 and recorded in the Cumberland County Registry of Deeds in Book 1153, Page 280; thence easterly along the northerly side line of Winslow Street forty-seven (47) feet to a stake; thence northerly at right angles to said Winslow Street one hundred sixteen and thirty-three hundredths (116.33) feet to an iron hub in the northerly line of the lot above mentioned; thence westerly with an included angle of seventy (70) degrees and thirty-six (36) minutes to the right, forty-nine and seventy-six hundredths (49.76) feet to a stake at the northwest corner of the lot above mentioned; thence southerly on a line at right angles to said Winslow Street one hundred (100) feet to the point of beginning.

Formerly Tax Map 114, Block C, Lot 1:

ALSO a certain lot or parcel of land in the City of Portland, County of Cumberland and State of Maine, described as follows: Beginning at a stake on the southerly side of Winslow Street at the intersection with the easterly side of Conant Street; thence 25° E by Conant Street one hundred ten (110) feet; thence easterly at right angles with Conant Street forty-six and thirty-one hundredths (46.31) feet to a stake; thence northerly to a point in the southerly side of Winslow Street distant easterly sixty-three and seventy-two hundredths (63.72) feet from the point of beginning; thence $N 71^{\circ} 37' W$ by said Winslow Street sixty-three and seventy-two hundredths (63.72) feet to the point of beginning.

Formerly Tax Map 114, Block C, Lot 2:

ALSO a certain lot or parcel of land situated in the City of Portland, County of Cumberland and State of Maine bounded and described as follows, to wit:

Beginning at a point on the present southerly boundary line of Winslow Street at the northeasterly line of land now or formerly of Frederick J. Olsen; thence southeasterly along the northeasterly line of land now or formerly of said Olsen, about sixty-six (66) feet to a corner; thence southwesterly along the southeasterly line of land now or formerly of said Olsen, about forty-six and three tenths (46.3) feet to the northeasterly boundary line of Conant Street; thence southeasterly along the northeasterly boundary line of Conant Street about eighteen (18) feet to a monument located about seventy-one (71) feet northwesterly from and as measured along a line normal to the Ramp F.A. 6 Base Line at about Sta. 5+50; thence northeasterly about sixty-six (66) feet to a point on a line, said line being a projected line between the beforementioned monument and a monument located fifty (50) feet northwesterly from and as measured along a line normal to the Ramp F.A. 6 Base Line at Sta. 4+50, said point being twenty-five (25) feet southwesterly of and as measured along said projected line from said monument located

northwesterly of Sta. 4+50; thence northwesterly at right angles to said projected line twenty (20) feet to a point; thence northerly by a direct course to a point on the present southerly boundary line of Winslow Street; thence westerly along the present southerly boundary line of Winslow Street sixty (60) feet to the point of beginning. Said lot or parcel of land contains about 2,867 square feet and is a portion of that land as acquired from Charles T. Hayes, Jr. and Beatrice Hayes, pursuant to a Notice of Layout and Taking dated March 8, 1973 and recorded at the Cumberland County Registry of Deeds in Book 3367, Page 58. Said parcel is shown on a certain Maine Department of Transportation Right-of-way Map entitled "State Highway '295', Portland, Cumberland County, Federal Aid Project No. 1-295-3(28)" dated January 1967, on file in Augusta, File No. 3-185.

The premises herein conveyed is SUBJECT to a State of Maine Notice of Layout and Taking dated February 28, 1973 and recorded in said Cumberland County Registry of Deeds in Book 3367, Page 58.

Received
Recorded Register of Deeds
Dec 21, 2011 12:40:48P
Cumberland County
Pamela E. Lovley

9. FINANCIAL & TECHNICAL CAPABILITY

9.1 FINANCIAL CAPABILITY

Attached is evidence of the University's financial capability to complete the proposed project.

9.2 TECHNICAL CAPABILITY

On behalf of the University of Southern Maine, Woodard & Curran is preparing this application for the Wishcamper Parking Lot Project. Woodard & Curran has extensive experience with design for site construction and parking lot projects and resumes can be made available upon request. Woodard & Curran is an over 1,000-person Portland-based firm that has provided engineering services to the public and private sector for over 40 years, including permitting, civil/site engineering, storm water, and construction management services.

9.3 ATTACHMENTS

- Evidence of Financial Capability



UNIVERSITY OF
SOUTHERN MAINE
Finance and Administration

January 17, 2020

Darrin Stairs
Woodard & Curran
41 Hutchins Drive
Portland, ME 04102

Dear Mr. Stairs:

The University of Southern Maine is currently seeking approval from the University of Maine System Board of Trustees to expend up to \$1,710,000 to expand the current parking area behind the Wishcamper Center on the Portland campus.

USM would fund the project with approximately \$1 million in existing capital reserves and would utilize Education & General fund resources to fund any remaining project balance.

Thank you for your consideration.

Sincerely,

Alexander E. Porteous
Chief Business Officer

5. EVIDENCE OF STATE AND/OR FEDERAL APPROVALS

The following state and federal permits will be required for the proposed work:

- Maine Department of Environmental Protection Site Location of Development Act Permit Amendment (reviewed by City of Portland under Delegated Review Authority); and
- Maine Construction General Permit Notice of Intent;

Copies of permits can be provided to the City under separate cover as they become available.

2. APPLICATION FEES

A check for the required application fee will be provided to the Planning Department. It is our understanding that the application fee includes:

- Level III Site Plan – 50,000 to 100,000 sq. ft.: \$3,000
- SLOD Review: \$3,500

6. ZONING ASSESSMENT

The project is located within the City of Portland R-5 and B-2 Zones, as well as the University of Southern Maine Overlay Zone. These Zones are regulated by Divisions 6, 8.1, and 10 of the Land Use Ordinance. The proposed activity will not result in any change to the site's existing use. The existing grassed area interior to the site that will be converted to parking is not considered open space used for recreation; it is currently used for overflow parking and storage and consists largely of a weedy overgrowth and dirt. It should be noted that the University's plans for future development includes creating an open space that will be central to the campus, which will provide a better opportunity for recreational use than the area that will be replaced by the proposed parking lot.

According to the City's Land Use Ordinance, Chapter 14 of the Code of Ordinances, the proposed work is subject to a maximum impervious surface ratio of 66% of the total land area within the University of Southern Maine overlay zone exclusive of public streets. Based on available data from the City of Portland's Online Stormwater Fee Lookup service, the University currently has an impervious surface ratio of approximately 54%; the proposed parking lot will result in an impervious surface ratio of approximately 55%. The attached Zoning Assessment Table summarizes how the proposed project will comply with the dimensional requirements specified in the City's Land Use Ordinance.

6.1 ATTACHMENTS

- Zoning Assessment Table



ZONING ANALYSIS Relevant Zone(s) R-5, B-2 & USM Overlay

All Projects:

	Required	Proposed
Lot Size	N/A	N/A
Area Per Dwelling Unit	N/A	N/A
Minimum Street Frontage	N/A	N/A
Front Yard Minimum	N/A	N/A
Front Yard Maximum	N/A	N/A
Rear Yard	N/A	N/A
Yard Right	N/A	N/A
Yard Left	N/A	N/A
Side Street Setback	N/A	N/A
Step Back	N/A	N/A
Maximum Lot Coverage	N/A	N/A
Minimum Lot Coverage	N/A	N/A
Maximum Height	N/A	N/A
Open Space	N/A	N/A
Maximum Impervious Area	66%	55%
Pavement Setback	None	N/A
Floor Area Ratio	N/A	N/A
Off Street Parking Spaces	N/A	122
Loading Bays	N/A	N/A
Other 1		
Other 2		
Other 3		

Planned Residential Unit Developments (PRUD) Requirements**N/A**

	Required	Proposed
Minimum Lot Size		
Minimum Lot Area per Dwelling		
Maximum # Units per Building		
Maximum Building Length		
Maximum Accessory Building Length		
Minimum Setbacks		
Minimum Building Separation		
Minimum Open Space		

Affordable Housing Density Bonuses (if applicable)**N/A**

	Bonus Increase or Decrease	Maximum Allowable With Bonus	Proposed
Density			
Height			
Setback Reduction			
Recreation Space			
Maximum Accessory Building Length			
Minimum Setbacks			
Minimum Building Separation			
Minimum Open Space			
Explanatory Text 1 (optional):			
Explanatory Text 2 (optional):			
Explanatory Text 3 (optional):			

7. EASEMENTS & OTHER BURDENS

Existing easements associated with the Site are shown on the enclosed drawings; no new easements will be created as part of the proposed project.

12. BOUNDARY SURVEY

A boundary and topographic survey of the Site was completed by Owen Haskell, Inc. Professional Land Surveyors. The survey is included with the drawings referenced in Section 3 of this Report.

11. CONSTRUCTION MANAGEMENT PLAN

A Construction Management Plan has been prepared for the proposed project per the City of Portland guidelines. The Contractor will be required to provide adequate safety fencing and signage directing pedestrians safely around the construction area. The Construction Management Plan is attached to this Section for your reference.

11.1 ATTACHMENTS

- Construction Management Plan



CONSTRUCTION MANAGEMENT PLAN

Wishcamper Parking
Lot

41 Hutchins Drive
Portland, ME 04102
800-426-4262

woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

0232479.01
USM
January 2020

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1.11 Special Measures as Necessary	4

CONSTRUCTION MANAGEMENT PLAN

The Contractor will be required to provide a Construction Management Plan for the project, subject to the review and approval of the Engineer, that provides a comprehensive logistics and safety program for the construction project, which includes a detailed site plan and schedule. The following narrative provides an overview of the construction management principles that have been identified to minimize impacts from the construction of the proposed project, such as noise, vibrations, ground movement, truck traffic, and other construction related factors to the surrounding building and communities.

1.1 Construction Management Plan Goals

The goal of the Construction Management Plan is to manage the project site and surrounding area during construction to minimize impacts to adjacent public and private land uses and natural resources. The Plan will support a safe construction site and protect the public safety, accessibility (including preserving accessible pedestrian, bicycle, and vehicular modes of transport throughout the city), and welfare during construction. In addition, the Plan shall develop an effective communication process for resolving concerns and conflicts. The following sections define the intended approach to the successful management of the project construction and the general conditions that will be addressed by the Construction Management Plan.

1.2 Construction Administration & Communication

The Contractor shall work diligently to implement a communication strategy as outlined below. The communication strategy is intended to ensure that all construction operations are performed in accordance with all agreements, ordinances and special permits applicable to this project. The Construction Manager will work closely with adjacent abutters, businesses, nearby construction sites, and all parties informed, as far in advance as possible, of scheduled work, particularly work anticipated to cause significant noise, vibrations, or dust. The final Construction Management Plan shall provide for the following:

1. Contact Person and contact information for the [applicant and contractor] and who is available 24 hours.
2. Construction Signage posted on the site with Contact Information for Contractor.
3. Describe any additional communication strategies.
4. All construction site signage is temporary and shall be removed at project completion.

1.3 Construction Schedule

The Contractor shall submit a schedule for the construction project, including any phasing and hours of operation. Construction may occur during the daytime hours as defined in Section 17-18 and 25-129 of the City's Code of Ordinances. The Contractor shall also designate a location and schedule for the delivery of materials and boxed goods.

1.4 Security & Public Safety

The Construction Management Plan shall depict all proposed fencing or other barriers and access gates (with Knox locking devices) with the intent of separating pedestrian and vehicle circulation from the construction site. Structures undergoing construction, alteration, or demolition operations, including those in underground locations, shall comply with NFPA 1 Chapter 16. An overall construction or demolition fire safety program shall be developed. Essential items to be emphasized include the following:

- Good Housekeeping;
- On-site security;

- Installation of new fire protection systems as construction progresses;
- Preservation of existing systems during demolition;
- Organization and training of an on-site fire brigade;
- Development of a pre-fire plan with the local fire department;
- Rapid communication;
- Consideration of special hazards resulting from previous occupancies; and
- Protection of existing structures and equipment from exposure fires resulting from construction, alteration, and demolition operations.

Blasting shall not be permitted without approval by the Owner, Engineer, and City of Portland. Temporary security lighting, if needed, shall be shown on the Construction Management Plan and all fixtures shall be full cutoffs.

1.5 Construction Permitting & Traffic Control Plans

Construction activity in the public right-of-way is controlled by Chapter 25 Article VII of the City Code of Ordinances. Required licenses and permits, restrictions on activity, and fees are outlined in that Chapter. Rules and Regulations for Excavation Activity are available through the Street Opening Clerk at the Department of Public Works. At no time can construction activity, including delivery vehicles, close or block streets or affect public safety access without prior notice and approval of the City Department of Public Works. Use of public parking spaces or the blockage of any portion of sidewalk for the purpose of construction activity shall require an occupancy permit and appropriate fee as assessed by the Department of Public Works.

Sewer and stormwater water system connections are controlled by Chapters 24 and 32 of the City Code of Ordinance. Required permits for new connections and/or abandonment of existing connections are available through the Street Opening Clerk at the Department of Public Works. Rules and Regulations for these utility systems are available through the City Engineer's office of the Department of Public Works and in Section II of the Technical Manual.

The Contractor shall prepare a Traffic Control Plan for review and approval by the Owner and Engineer. The Plan shall provide for the safe passage of the public through or along the construction work zone. Traffic controls will include temporary signage and barriers where necessary to manage vehicle, pedestrian, and bicycle traffic, and other measures as called for in the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). In addition:

- Construction speed signing may be used as needed to slow traffic;
- Traffic Control signs shall not be placed where they are an obstruction to bicycles or pedestrians;
- In some situations, flaggers may be required; and
- Police details may be required at lighted intersections and may be requested by the City's transportation engineer or his designee.

All existing modes of travel in the work zone area shall be accommodated if impacted by the activity. The safe passage of pedestrians, bicyclists, transit providers, and motorists are of equal importance when planning out the work zone; no pre-existing travel mode may be eliminated without the express approval of the Owner. The Plan should also address parking impacts, including deliveries and parking for the property owner, and coordination with other on-going or future construction in the vicinity.

Traffic control of bicycle and pedestrian facilities or routes through work zones shall be maintained until the bicycle and pedestrian facilities or routes are ready for safe operation. Traffic control will not be removed to allow auto travel at the expense of bicycle and pedestrians. Barrier systems utilized to separate the construction activity from roadways

and /or sidewalk shall not inhibit sight distances, particularly for visibility of pedestrians and bicyclists. ADA compliance shall be maintained.

1.6 Site Management & Controls

The final Construction Management Plan will address maintaining the site in a safe condition and will include the following:

1. Regular trash and debris removal.
2. Street cleaning and damage controls.
3. Dust controls: The construction shall comply with Portland's requirements under Section 25-129 of the City Code on dust and debris.
4. Noise: The construction shall comply with Portland's requirements under Section 17- 18 and Section 25-129 of the City Code.
5. Rodent Control will be provided, if applicable, by a professional exterminator and consistent with Chapter 22 of the City Code.
6. Snow Removal: Pursuant to Section 25-173 of the City Code Contractors are obligated to ensure a safe means of travel within the work zone by implementing the following measures (Monday-Friday Sat/Sunday/Holidays):
 - 1) Snow/ice removal or commence automatically from snow (1" and up) or Ice.
 - 2) Remove snow as needed within the work zone, including parking spaces and to prevent blocking any driveways or sight lines with the piles of snow.
 - 3) Clear all walks and ramps within the work zone.
 - 4) Sand or Salt as needed.
 - 5) Clear all basins or drainage to help snow melt.

1.7 Erosion Control & Preservation of Trees

The Contractor shall install all erosion and sediment controls as depicted on the erosion and sediment control plan prior to the pre-construction meeting for inspection by the City. The Contractor shall regularly inspect the control measures, no less than weekly and after significant storm events, and maintain any installed temporary or permanent stormwater management systems in working order. The Contractor shall document all inspection activities and corrective actions and be prepared to provide these documents for inspection by the City, Maine Department of Environmental Protection or the U.S. Environmental Protection Agency upon request. The Contractor shall maintain all tree and landscaping preservation measures as depicted on the landscaping plan. The storage of materials shall be identified on the Construction Management Plan (avoid locating under/near trees).

1.8 Construction Staging Area

The Construction Management Plan shall depict the location of the material staging areas, the location of onsite temporary construction trailers, the location of onsite truck delivery holding areas, the location of onsite truck washing stations, masonry mixing stations, the general location of the construction security fence, and the general location of temporary construction dumpsters. Any open storage areas shall be shown on the plan. The delivery truck holding area shall be shown on the plan and shall not be blocked during construction. On days when the construction activities require multiple truck deliveries, these deliveries will be carefully scheduled so that there is always adequate on-site area for the holding of the trucks until they can be unloaded. Once at the site, all vehicles will be brought within the

fence line and will make every attempt to avoid queueing on public streets. In the event that adequate on-site area for holding of delivery trucks is not available, an off-site marshalling area will be utilized for trucking, which will be identified in the Construction Management Plan.

1.9 Parking During Construction

Adequate parking for construction workers shall be provided on-site or arrangements for off-street parking at an off-site location shall be provided. The parking arrangements shall be included in the Construction Management Plan. Where existing facilities are remaining in operation during construction, the Construction Management Plan shall identify how the parking for employees and others shall be managed. The Construction Management Plan shall address the designated truck routes and expected truck volumes.

1.10 Dewatering Plans

A basic dewatering plan for any construction work is required. The plan must cover areas where groundwater is not expected, but where the impact of rainwater may require dewatering. The plan must include operating procedures, equipment to be used, including filters, erosion and sediment control measures, or other methods of removing sediment from approved discharges. The plan should be in compliance with the recommendations of the Soil Management Plan.

For construction work that will require frequent dewatering of groundwater from site, a dewatering plan must be prepared and approved by the Department of Public Works. Groundwater and/or soil testing may be required to determine if treatment is necessary. Approval for all discharges to City infrastructure is required.

The plan must address the following:

- Project duration, discharge location, storage equipment on-site, dewatering schematic, and emergency contact.
- General requirements include trained staff on-site for all approved discharges and required site log for documentation of all discharges.
- Storage and/or treatment process should include proper settling time and maintain proper use of filtering medium as required.
- Contingency/maintenance plan for all dewatering equipment devices and filtration mediums.

Any water that is removed from an excavation must be pumped from a perforated device buried in crush stone prior to discharge and/or prior to storage and treatment. There will be no discharge allowed during precipitation events.

1.11 Special Measures as Necessary

For construction work that will take place over a long period (e.g. 12 months or more), involve major demolition/ deep excavation/ piling and/or special construction techniques, or are located near sensitive uses (e.g. medical care facilities, schools), the Construction Management Plan should provide details and demonstrate that all appropriate special measures have been taken to avoid, minimize, or possibly compensate for potential impacts. This may include taking baseline measurements before construction, such as arranging to photograph the foundations of nearby properties upon consent of the owners, in order to assess any future impacts of vibration, noise, etc.

Department of Environmental Protection
Bureau of Land & Water Quality
17 State House Station
Augusta, Maine 04333
Telephone: 207-287-3901

FOR DEP USE

FORM A PAGE 1

ATS # _____

L- _____

Total Fees: _____

Date: Received _____

SITE LOCATION OF DEVELOPMENT PERMIT APPLICATION 38 M.R.S.A. §§481-490

PLEASE TYPE OR PRINT IN *INK ONLY*

This application is for: (CHECK THE ONE THAT APPLIES)		☐ 20 acre development ☐ Planning Permit ☐ Metallic Mining		☐ Marine Oil Terminal ☐ Structure ☐ Subdivision		☐ Major Amendment ☒ Minor Amendment	
1. Name of Applicant:		University of Southern Maine		6. Name of Agent (if applicable):		Ashley Fletcher, PE, (W&C)	
2. Applicant's Mailing Address:				7. Agent's Mailing Address:		41 Hutchins Dr., Portland, ME	
3. Applicant's Daytime Phone #:				8. Agent's Daytime Phone #:		+1 (207) 558-3665	
4. Applicant's Fax # (if available):				9. Agent's Fax # (if available):			
5. Applicant's e-mail address (REQUIRED -license will be sent via: e-mail):				10. Agent's e-mail address (REQUIRED - license will be sent via e-mail):		aefletcher@woodardcurran.com	
PROJECT INFORMATION							
11. Name of Development:		USM Wishcamper Parking Lot Expansion					
12. Map and Lot #'s:		Map #:	Lot #:	13. Deed Reference #'s:		Book #:	Page #:
		114	A001				
14. Location of Project City/Town:		Portland		15. County:	Cumberland	16. UTM Northing	17. UTM Easting
18. Brief Description of Project including total parcel size:		Expansion of an existing parking lot to include an additional 122 parking spaces and associated storm water infrastructure.					
19. Type of Direct Watershed: (Check all that apply)		☐ Lake not most at risk ☐ River, stream or brook ☒ Coastal wetland ☐ Lake most at risk ☐ Urban impaired stream ☐ Wellhead or public water ☐ Lake most at risk, severely blooming ☐ Freshwater wetland					
20. Name of Waterbody Project Site drains to:				Casco Bay			
21. Amount of Developed Area:		Total 1.45 acres:	Existing Developed area: 1.45 acres		New Developed area: 0 acres (Existing parcel is fully developed)		
22. Amount of Impervious Area:		Total 1.2 acres:	Existing Impervious areas 0.64 acres		New Impervious area: 0.56 acres		
23. Development started prior to obtaining a license?:				☐ Yes ☒ No			
24. Development or any portion of the site subject to enforcement action?				☐ Yes ☒ No		If yes, name of enforcement staff involved?	
25. Common scheme of development?:		☐ Yes ☒ No		26. Title, Right or Interest:		☒ own ☐ lease ☐ purchase option ☐ written agreement	
27. Natural Resources Protection Act permit required?:				☐ Yes ☒ No		If yes: ☐ PBR ☐ Tier 1 ☐ Full Permit ☐ Tier 2	
28. Existing DEP Permit number (if applicable):				L-20438-22-D-A			
29. Names of DEP staff person(s) present at the pre-application meeting:		n/a					
30. Does agent have an interest in project? If yes, what is the interest?		☐ Yes ☒ No					
CERTIFICATIONS AND SIGNATURES LOCATED ON PAGE 2							

IMPORTANT: IF THE SIGNATURE BELOW IS NOT THE APPLICANT'S SIGNATURE, ATTACH LETTER OF AGENT AUTHORIZATION SIGNED BY THE APPLICANT.

By signing below the applicant (or authorized agent), certifies that he or she has read and understood the following :

CERTIFICATIONS / SIGNATURES

"I certify under penalty of law that I have personally examined the information submitted in this document and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment. I authorize the Department to enter the property that is the subject of this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein.

Further, I hereby authorize the DEP to send me an electronically signed decision on the license I am applying for with this application by emailing the decision to the electronic address located on the front page of this application (see #5 for the applicant and #10 for the agent)".

Signed:  Title Project Engineer Date: January 16, 2020

Notice of Intent to Comply with Maine Construction General Permit

With this Site Law application form and my signature, I am filing notice of my intent to carry out work which meets the requirements of the Maine Construction General Permit (MCGP). I have read and will comply with all of the MCGP standards.

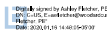
If this form is not being signed by the landowner or lessee of the property, attach documentation showing authorization to sign.

Signed:  Date: January 16, 2020

NOTE: You must file a MCGP Notice of Termination (Form K) within 20 days of completing permanent stabilization of the project site.

CERTIFICATION

The person responsible for preparing this application and/or attaching pertinent site and design information hereto, by signing below, certifies that the application for development approval is complete and accurate to the best of his/her knowledge.

Signature: Ashley Fletcher, PE 

Name (print): Ashley Fletcher, PE

Date: January 16, 2020

Re/Cert/Lic No.: _____

Engineer 13750

Geologist _____

Soil Scientist _____

Land Surveyor _____

Site Evaluator _____

Active Member of the Maine Bar _____

Professional Landscape Architect _____

Other _____

December 23, 2019

To: Local, State and Federal Review Officials

The University of Southern Maine, a member of the University of Maine System, is preparing plans for the Wishcamper Parking Lot Expansion at the University of Southern Maine, Portland, ME. The University has retained Woodard & Curran, Inc. to assist in the preparation of the applications associated with permitting approvals for this project. When necessary, Woodard & Curran, Inc. is authorized as its agent to represent the University in addressing questions on the plans, or applicable applications, for this project.

Sincerely,



John M. Souther,
Executive Director of Facilities Management,
University of Southern Maine for the
University of Maine System

SUBMISSIONS CHECKLIST

If a provision is not applicable, put "NA"

Section 1. Development description

- A. Narrative
 - X 1. Objectives and details
 - X 2. Existing facilities (with dates of construction)
- B. Topographic map
 - X 1. Location of development boundaries
 - X 2. Quadrangle name
- C. Construction plan
 - X 1. Outline of construction sequence (major aspects)
 - 2. Dates
- D. Drawings
 - X 1. Development facilities
 - X a. Location, function and ground area
 - X b. Length/cross-sections for roads
 - X 2. Site work (nature and extent)
 - X 3. Existing facilities (location, function ground area and floor area)
 - 4. Topography
 - X a. Pre- and post-development (contours 2 ft or less)
 - X b. Previous construction, facilities and lot lines

X **Section 2. Title, right or interest** (copy of document)**Section 3. Financial capacity**

- X A. Estimated costs
- B. Financing
 - 1. Letter of commitment to fund
 - 2. Self-financing
 - a. Annual report
 - b. Bank statement
 - 3. Other
 - a. Cash equity commitment
 - b. Financial plan
 - X c. Letter
 - NA 4. Affordable housing information

Section 4. Technical ability (description)

- X A. Prior experience (statement)
- x B. Personnel (documents)

Section 5. Noise

- X A. Developments producing a minor noise impact (statement)
 - NA 1. Residential developments
 - NA 2. Certain non-residential subdivisions
 - NA 3. Schools and hospitals
 - X 4. Other developments
 - X a. Type, source and location of noise
 - NA b. Uses, zoning and plans
 - NA c. Protected locations
 - X d. Minor nature of impact

- | | |
|----|---|
| NA | e. Demonstration |
| NA | B. Developments producing a major noise impact (full noise study) |
| NA | 1. Baseline |
| NA | a. Uses, zoning and plans |
| NA | b. Protected locations |
| NA | c. Quiet area |
| NA | 2. Noise generated by the development |
| NA | a. Type, source and location of noise |
| NA | b. Sound levels |
| NA | c. Control measures |
| NA | d. Comparison with regulatory limits |
| NA | e. Comparison with local limits |

X **Section 6. Visual quality and scenic character**(narrative, description, visual impact analysis)

X **Section 7. Wildlife and fisheries** (narrative)

X **Section 8. Historic sites** (narrative)

X **Section 9. Unusual natural areas** (narrative)

Section 10. Buffers

NA A. Site plan and narrative

Section 11. Soils

- | | |
|----|--|
| X | A. Soil survey map and report |
| X | 1. Soil investigation narrative |
| X | 2. Soil survey map |
| NA | B. Soil survey intensity level by development type |
| | 1. Class A (High Intensity) Soil Survey |
| | 2. Class B (High Intensity) Soil Survey |
| | 3. Class C (Medium High-Intensity) Soil Survey |
| | 4. Class D (Medium Intensity) Soil Survey |
| X | C. Geotechnical Investigation |
| NA | D. Hydric soils mapping |

Section 12. Stormwater management

- | | |
|----|--|
| | A. Narrative |
| X | 1. Development location |
| NA | 2. Surface water on or abutting the site |
| NA | 3. Downstream ponds and lakes |
| X | 4. General topography |
| X | 5. Flooding |
| NA | 6. Alterations to natural drainage ways |
| X | 7. Alterations to land cover |
| X | 8. Modeling assumptions |
| X | 9. Basic standard |
| X | 10. Flooding standard |
| X | 11. General standard |
| X | 12. Parcel size |
| X | 13. Developed area |
| X | 14. Disturbed area |
| X | 15. Impervious area |
| | B. Maps |
| X | 1. U.S.G.S. map with site boundaries |
| X | 2. S.C.S. soils map with site boundaries |
| X | C. Drainage Plans (a pre-development plan and a post-development plan) |

X	1. Contours
X	2. Plan elements
X	3. Land cover types and boundaries
X	4. Soil group boundaries
X	5. Stormwater quantity subwatershed boundaries
X	6. Stormwater quality subwatershed boundaries
X	7. Watershed analysis points
X	8. Hydrologic flow lines (w/flow types and flow lengths labeled)
X	9. Runoff storage areas
X	10. Roads and drives
X	11. Buildings, parking lots, and other facilities
X	12. Drainage system layout for storm drains, catch basins, and culverts
NA	13. Natural and man-made open drainage channels
NA	14. Wetlands
NA	15. Flooded areas
X	16. Benchmark
X	17. Stormwater detention, retention, and infiltration facilities
X	18. Stormwater treatment facilities
NA	19. Drainage easements
X	20. Identify reaches, ponds, and subwatersheds matching stormwater model
NA	21. Buffers
X	D. Runoff analysis (pre-development and post development)
X	1. Curve number computations
X	2. Time of concentration calculations
X	3. Travel time calculations
X	4. Peak discharge calculations
NA	5. Reservoir routing calculations
X	E. Flooding Standard
NA	1. Variance submissions (if applicable)
NA	a. Submissions for discharge to the ocean, great pond, or major river
NA	i. Map
NA	ii. Drainage plan
NA	iii. Drainage system design
NA	iv. Outfall design
NA	v. Easements
NA	b. Insignificant increase
NA	i. Downstream impacts
NA	c. Submissions for discharge to a public stormwater system
NA	i. Letter of permission
NA	ii. Proof of capacity
NA	ii. Outfall analysis and design (pictures)
X	2. Sizing of storm drains and culverts
NA	3. Stormwater ponds and basins
NA	a. Impoundment sizing calculations
NA	b. Inlet calculations
NA	c. Outlet calculations
NA	d. Emergency spillway calculations
NA	e. Subsurface investigation report
NA	f. Embankment specifications
NA	g. Embankment seepage controls
NA	h. Outlet seepage controls
NA	i. Detail sheet
NA	j. Basin cross sections
NA	k. Basin plan sheet
NA	4. Infiltration systems
NA	a. Well locations map
NA	b. Sand and gravel aquifer map
NA	c. Subsurface investigation report with test pit or boring logs

NA	d. Permeability analysis
NA	e. Infiltration structure design
NA	f. Pollutant generation and transport analysis
NA	g. Monitoring and operations plan
NA	i. Locations of storage points of potential contaminants
NA	ii. Locations of observation wells and infiltration monitoring plan
NA	iii. Groundwater quality monitoring plan
NA	5. Drainage easement declarations.
X	F. Stormwater quality treatment plan peak discharge calculations
X	1. Basic stabilization plan
NA	a. Ditches, swales, and other open channel stabilization
NA	b. Culvert and storm-drain outfall stabilization
NA	c. Earthen slope and embankment stabilization
X	d. Disturbed area stabilization
NA	e. Gravel roads and drives stabilization
X	2. General Standard
X	a. Calculations for sizing BMP
X	b. Impervious area calculation
X	c. Developed area calculation
X	d. Summary spreadsheet of calculations
NA	3. Phosphorus control plan
NA	a. Calculations for the site's allowable phosphorus export
NA	b. Calculations for determining the developed site's phosphorus export
NA	c. Calculations for determining any phosphorus compensation fees
NA	4. Offset Credits
NA	a. Urban impaired stream
NA	Offset credit calculation
NA	b. Phosphorus credit determination
NA	i. Location map
NA	ii. Scaled plan
NA	iii. Title and right
NA	iv. Demolition plan
NA	v. Vegetation plan
NA	vi. Offset credit calculation
NA	vii. Calculation for the new allowable export
X	5. Runoff treatment measures
X	a. structural measures
X	i. Design drawings and specifications
X	ii. Design calculations
X	iii. Maintenance plan
X	iv. TSS removal or phosphorus treatment factor determinations
X	v. Stabilization plan
NA	b. Vegetated buffers
NA	i. Soil survey
NA	ii. Buffer plan
NA	iii. Turnout and level spreader designs
NA	iv. Deed restrictions
NA	6. Control plan for thermal impacts to coldwater fisheries
NA	7. Control plan for other pollutants
X	8. Engineering inspection of stormwater management facilities
X	G. Maintenance of common facilities or property
X	1. Components of the maintenance plan
X	A. Maintenance of facilities by owner or operator
X	1. Site owner or operator (name legally responsible party)
X	2. Contact person responsible for maintenance
X	3. Transfer mechanism

X	4. List of facilities to be maintained
X	5. List of inspection and maintenance tasks for each facility
X	6. Identifications of any deed covenants, easements, or restrictions
X	7. Sample maintenance log
X	8. Copies of any third-party maintenance contracts
NA	B. Maintenance of facilities by homeowner's association
NA	1. Incorporation documents for the association
NA	2. Membership criteria
NA	3. Association officer responsible for maintenance
NA	4. Establishment of fee assessment for maintenance work
NA	5. Establishment of lien system
NA	6. Reference to department order(s) in association charter
NA	7. Transfer mechanism from developer to association
NA	8. List of facilities to be maintained
NA	9. Identification of any deed covenants, easements, or restrictions
NA	10. Renewal of covenants and leases
NA	11. List of inspection and maintenance tasks for each facility
NA	12. Sample maintenance log
NA	13. Copies of any third-party maintenance contracts
NA	C. Maintenance of facilities by municipality or municipal district
NA	1. Identification of the municipal department or utility district
NA	2. Contact person responsible for maintenance
NA	3. Evidence of acceptance of maintenance responsibility
NA	4. Transfer mechanism from developer
NA	5. List of facilities to be maintained
NA	6. List of inspection and maintenance tasks for each facility
NA	7. Identifications of any deed covenants, easements, or restrictions
NA	8. Sample maintenance log
X	2. General inspection and maintenance requirements
NA	a. Drainage easements
X	b. Ditches, culverts, and catch-basin systems
X	c. Roadways and parking surfaces
X	d. Stormwater detention and retention facilities
NA	1. Embankment inspection and maintenance
X	2. Outlet inspection and clean-out
NA	3. Spillway maintenance
X	4. Sediment removal and disposal
NA	e. Stormwater infiltration facilities
NA	1. Sediment protection plan
NA	2. Infiltration rehabilitation plan
NA	3. Sediment removal and disposal
NA	4. Groundwater monitoring plan
X	f. Proprietary treatment devices
NA	g. Buffers
NA	h. Other practices and measures

Section 13. Urban Impaired Stream Submissions

NA	1. Off-site credits
NA	2. Compensation fees (Urban Impaired Stream/Phosphorus)
NA	3. Development impacts

Section 14. Basic Standards

X	A. Narrative
X	1. Soil types
NA	2. Existing erosion problems
NA	3. Critical areas
NA	4. Protected natural resources
X	5. Erosion control measures

X	6. Site stabilization
X	B. Implementation schedule
X	C. Erosion and sediment control plan
X	1. Pre-development and post-development contours
X	2. Plan scale and elements
X	3. Land cover types and boundaries
NA	4. Existing erosion problems
NA	5. Critical areas
NA	6. Protected natural resources
X	7. Locations (general)
X	8. Locations of controls
X	9. Disturbed areas
X	10. Stabilized construction entrance
X	D. Details and specifications (for both temporary and permanent measures)
X	E. Design calculations
X	F. Stabilization plan
X	1. Temporary seeding
X	2. Permanent seeding
NA	3. Sodding
X	4. Temporary mulching
X	5. Permanent mulching
X	G. Winter construction plan
X	1. Dormant seeding
X	2. Winter mulching
X	H. Third-party inspections
X	1. Inspector's name, address, and telephone number
X	2. Inspector's qualifications
X	3. Inspection schedule
X	4. Contractor contact
X	5. Reporting protocol

Section 15. Groundwater

X	A. Narrative
NA	1. Location and maps
NA	2. Quantity
NA	3. Sources
NA	4. Measures to prevent degradation
NA	B. Groundwater protection plan
NA	C. Monitoring plan
NA	1. Monitoring points
NA	2. Monitoring frequency
NA	3. Background conditions
NA	4. Monitoring parameters
NA	5. Personnel qualifications
NA	6. Proof of training
NA	7. Equipment and methods
NA	8. Quality assurance/quality control
NA	9. Reporting requirements
NA	10. Remedial action plan
NA	D. Monitoring well installation report
NA	1. Well location map
NA	2. Elevation data
NA	3. Well installation data
NA	4. Well construction details
NA	5. Borehole logs
NA	6. Summary of depth measurements
NA	7. Characteristics of subsurface strata
NA	8. Well installation contract

NA	9. Schematic cross-sections
NA	10. Monitoring point summary table
NA	11. Protective casing
NA	12. On-site well identification

Section 16. Water supply

NA	A. Water supply method
NA	1. Individual wells (evidence of sufficient/healthful supply)
NA	a. Support of findings by well drillers
NA	b. Support of findings by geologist
NA	2. Common well(s) (reports)
NA	a. Hydrogeology report
NA	b. Engineering report
NA	c. Well installation report
NA	d. Long-term safe yield and zone of influence determination
NA	e. Public water supply
NA	i. Proposed well or wells
NA	ii. Existing well or wells
NA	iii. Water quality analysis
NA	3. Well construction in shallow-to-bedrock areas
NA	4. Additional information
NA	5. Off-site utility company or public agency
NA	6. Other sources
NA	B. Subsurface wastewater disposal systems (locations of systems and wells)
NA	C. Total usage (statement re: total anticipated water usage)

Section 17. Wastewater disposal

NA	A. On-site subsurface wastewater disposal systems (investigation results)
NA	1. Site plan
NA	2. Soil conditions summary table
NA	3. Logs of subsurface explorations
NA	4. Additional test pits, borings or probes
NA	a. Soil conditions A
NA	b. Soils with Profiles 8 and 9 parent material
NA	c. Soil conditions D
NA	d. Disposal field length 60 feet or greater
NA	5. 3-bedroom design
NA	6. Larger disposal systems
NA	a. System design details
NA	b. Plan view
NA	c. Cross sections
NA	d. Test pit data
NA	e. Mounding analysis
NA	B. Nitrate-nitrogen impact assessment
NA	1. When required
NA	a. Exempted_____
NA	i. Conventional systems meeting certain setbacks
NA	ii. Denitrification systems
NA	b. Special conditions and other exemptions
NA	2. Assumptions
NA	a. Initial concentration
NA	b. Background concentration
NA	c. Contribution from development
NA	d. Mixing and dilution
NA	e. Severe-drought scenario
NA	f. Wastewater flow to subsurface wastewater disposal fields

NA	3. Assessment report minimum requirements
NA	a. Narrative and calculations
NA	b. Site plan
NA	i. Well locations
NA	ii. 10 mg/l and 8 mg/l isocons
NA	iii. Groundwater contours and groundwater flow divides
NA	c. References
NA	4. Denitrification systems
NA	a. Design plans and specifications
NA	b. Installation information
NA	c. Monitoring plan
NA	d. Maintenance
NA	e. Backup system
NA	D. Municipal facility or utility company letter
NA	E. Storage or treatment lagoons

X	Section 18. Solid waste (list: type, quantity, method of collection and location)
NA	A. Commercial solid waste facility (final disposal location)
X	B. Off-site disposal of construction/demolition debris (final disposal location)
NA	C. On-site disposal of woodwaste/land clearing debris
	1. Applicability of rules (evidence re: applicability of rules)
	2. Burning of wood wastes
NA	a. Delineation on site plan
NA	b. Plans for handling unburned woodwaste and woodash
NA	c. Evidence of capacity to accept waste (approved facility)
NA	d. Usage of materials
NA	e. Data on mixing ratios and application rates
X	D. Special or Hazardous Waste

	Section 19. Flooding
X	A. Explanation of flooding impact
X	B. Site plan showing 100-year flood elevation
NA	C. Hydrology analysis
X	D. FEMA flood zone map with site boundaries

	Section 20. Blasting
NA	A. Site Plan or map
NA	B. Report
	1. Assessment
	2. Blasting plan

	Section 21. Air emissions (narrative and summary)
NA	A. Point and non-point sources identified
NA	B. Emission components (point sources)

	Section 22. Odors
NA	A. Identification of nature/source
NA	B. Estimate of areas affected
NA	C. Methods of control)

NA	Section 23. Water vapor (narrative)
----	--

NA	Section 24. Sunlight (statement and drawing, if required)
----	--

	Section 25. Notices
NA	A. Evidence that notice sent
NA	B. List of abutters for purposes of notice



USM Wishcamper Parking Lot Expansion

Site Location of
Development
Amendment

41 Hutchins Drive
Portland, ME 04102
800-426-4262

woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

0232479.01
**University of Southern
Maine**
January 2020

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1. DEVELOPMENT DESCRIPTION

This narrative is being submitted in support of an amendment to the Site Location of Development (SLOD) Permit for the University of Southern Maine (USM) Portland campus located at 44 Bedford Street. The proposed work will take place on a single parcel, identified by the City of Portland Assessor as Tax Map 114, Lot A001001, which is approximately 8.1 acres in size. The proposed work will be limited to approximately 1.45 acres of the property. Proposed work includes the expansion of the existing parking lot and associated site improvements, sidewalks, and stormwater management infrastructure.

In addition to this SLOD Amendment, the proposed project will require a City of Portland Site Plan Review. As discussed at the pre-application meeting with the City on December 4, 2019, it is our understanding that the City of Portland will have delegated review authority over this project.

1.1 OBJECTIVES & DETAILS

As the University of Southern Maine expands to better serve its growing student body, available parking will be displaced. The proposed parking lot will enable future developments at the University by replacing a portion of the parking that will be displaced. Constructing the proposed parking lot in advance of future developments will help meet the University's parking demands during periods of future construction.

The proposed project will create 122 additional parking spaces for the University. The proposed parking lot will include the necessary ADA accessible parking spaces as well as compact spaces in order to minimize the amount of impervious area on the site. The proposed stormwater management plan will consist of porous pavement walkways, similar to existing walkways throughout the University, and a subsurface detention and treatment system. The proposed work will also include site landscaping and exterior lighting. Design drawings for the proposed project are included with this application.

1.2 EXISTING FACILITIES

The existing Site consists of several buildings, a parking lot, and a parking garage. Stormwater runoff from the project site drains to City of Portland infrastructure, and ultimately discharges to the Casco Bay. Existing site conditions are described in greater detail in the following sections of this Report.

1.3 TOPOGRAPHIC MAP

A USGS topographic map showing the approximate location of proposed development is attached to this Section for your reference.

1.4 CONSTRUCTION PLAN

Construction is scheduled to take place in the summer months, between school sessions, when parking demand is lowest. Construction will commence in May of 2020 and be completed by August of 2020. The following is the anticipated sequence of construction for major aspects of the development:

- Installation of erosion and sediment control measures;
- Clearing and site preparation activities;
- Construction of parking lot and stormwater management system;
- Stabilization of the Site; and
- Removal of erosion and sediment control measures.

1.5 DRAWINGS

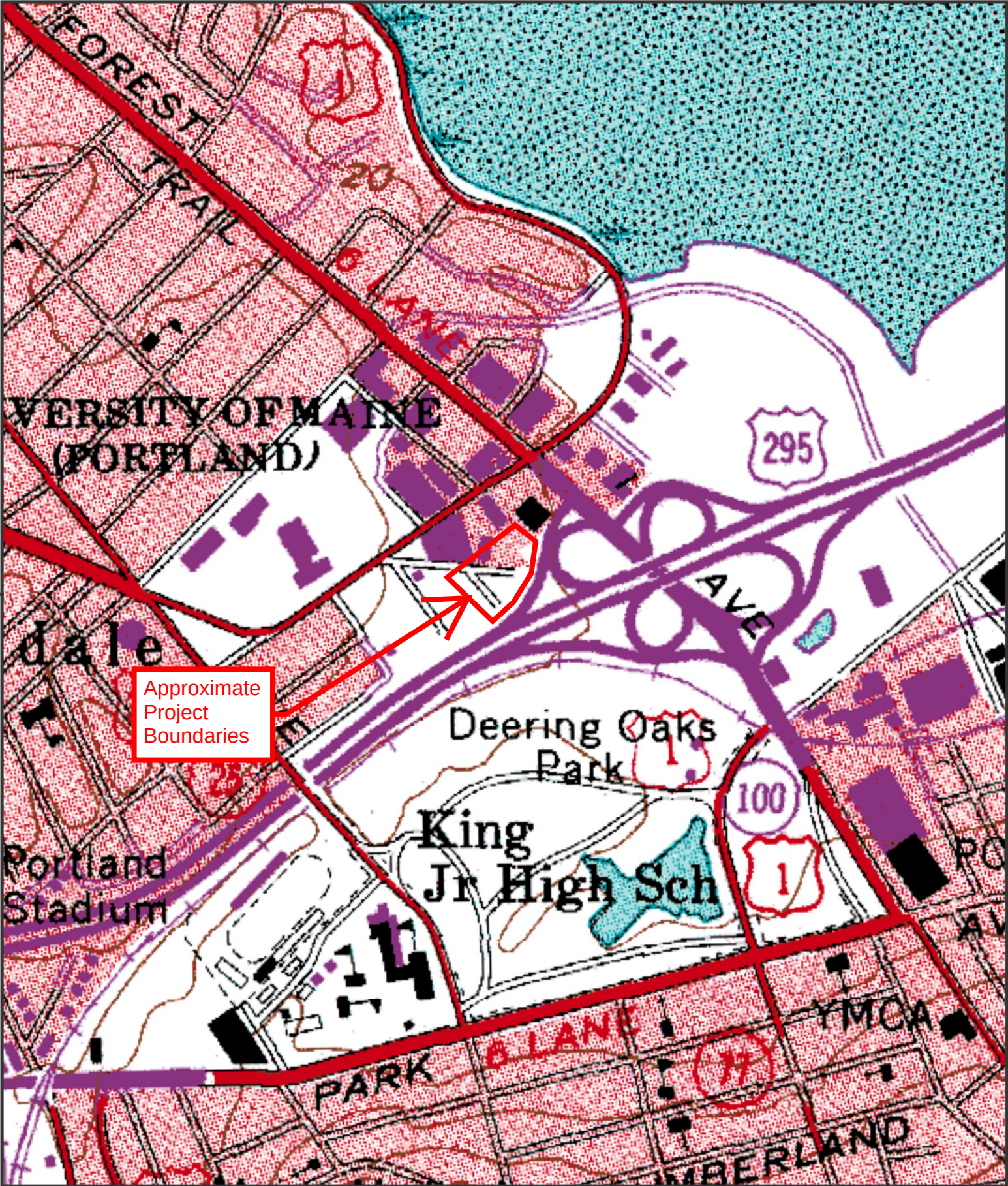
A survey of the existing Site, as well as design drawings of the proposed development, is attached to this Section for your reference. The design drawings show all proposed construction activities, site work, existing facilities, and topography.

1.6 LIST OF ATTACHMENTS

The following documents are attached to this Section:

- Topographic Map; and
- Design Drawings (bound separately).

USM WISHCAMPER PARKING LOT EXPANSION



The Maine Department of Transportation provides this publication for information only. Reliance upon this information is at user risk. It is subject to revision and may be incomplete depending upon changing conditions. The Department assumes no liability if injuries or damages result from this information. This map is not intended to support emergency dispatch.

0.1
Miles
1 inch = 0.14 miles

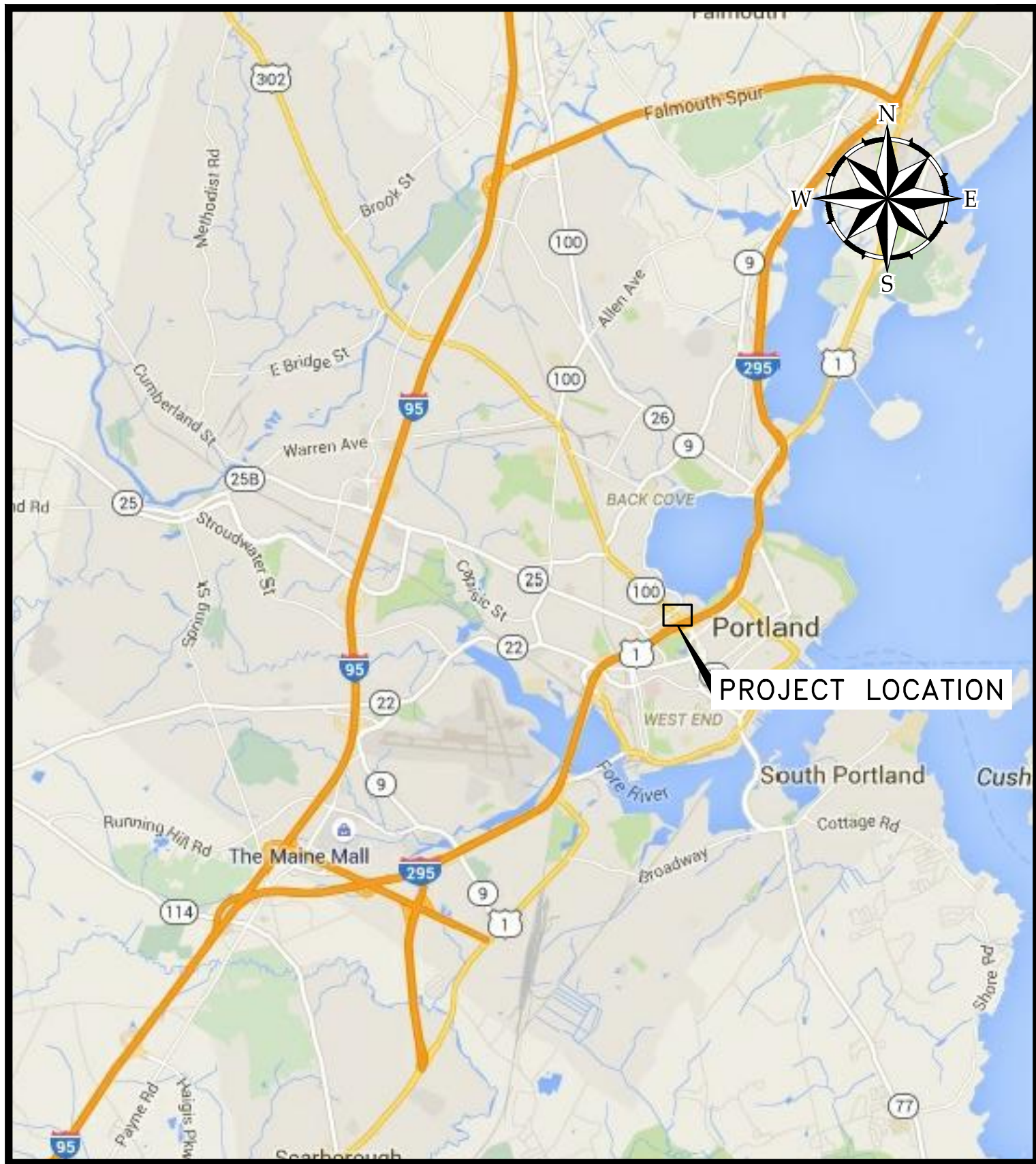
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UNIVERSITY OF SOUTHERN MAINE PORTLAND, MAINE

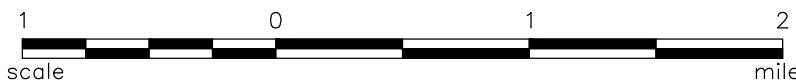
WISHCAMPER PARKING LOT

PROJECT NO.
0232479.01

DECEMBER 2019
NOT FOR CONSTRUCTION



PROJECT LOCATION MAP

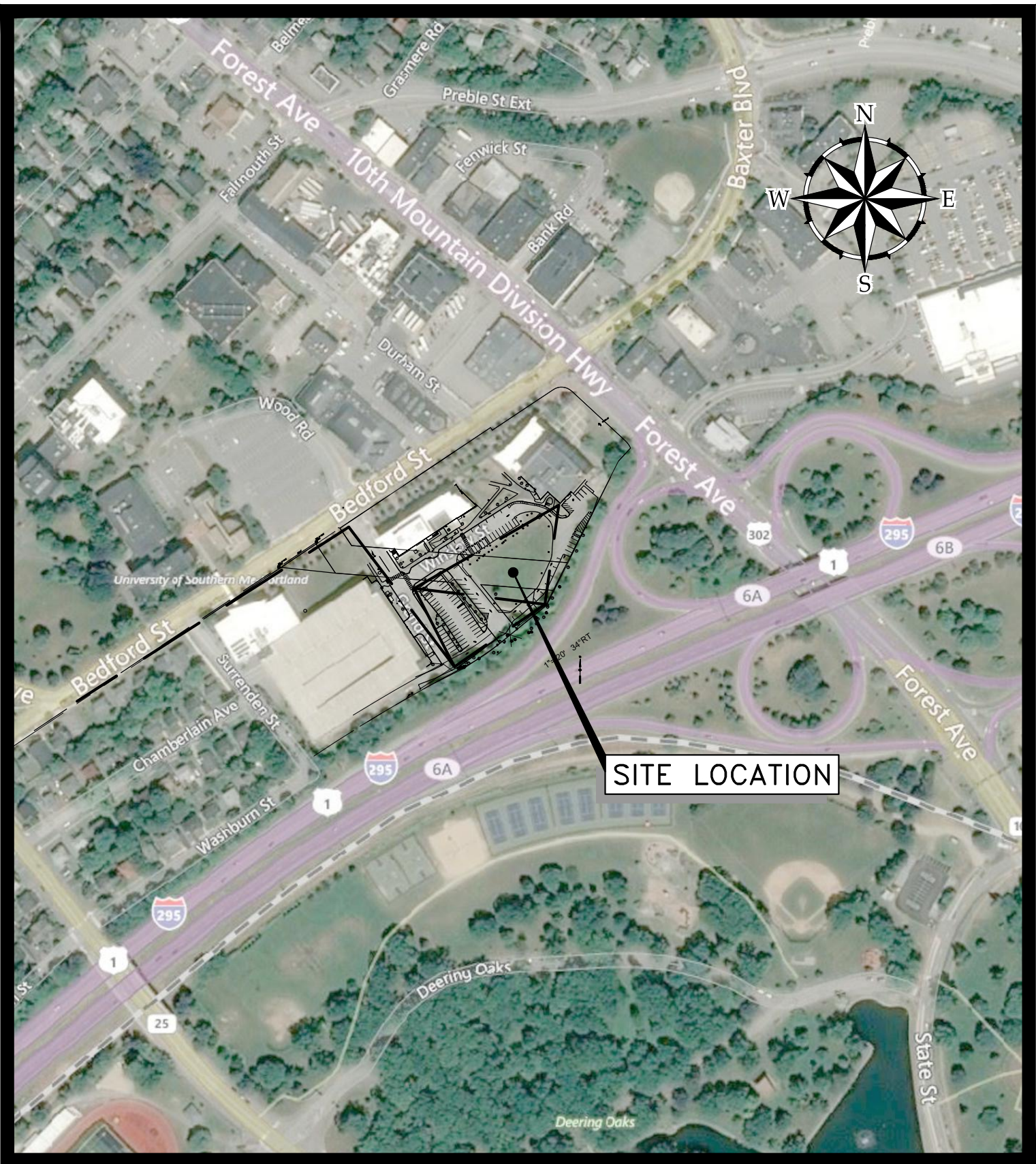


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Sheet Number	Sheet Title	Sheet Description
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2	EC	EXISTING CONDITIONS SURVEY
3	C-001	DEMOLITION AND EROSION & SEDIMENT CONTROL PLAN
4	C-100	MATERIALS & LAYOUT SITE PLAN
5	C-101	GRADING & DRAINAGE PLAN
6	L-200	TREE PRESERVATION & REMOVALS PLAN
7	L-201	LANDSCAPE PLAN
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17	E20.01	ELECTRICAL PHOTOMETRICS
18	E60.01	ELECTRICAL SCHEDULES
19	E80.01	ELECTRICAL DETAILS

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



COMMITMENT & INTEGRITY DRIVE RESULTS



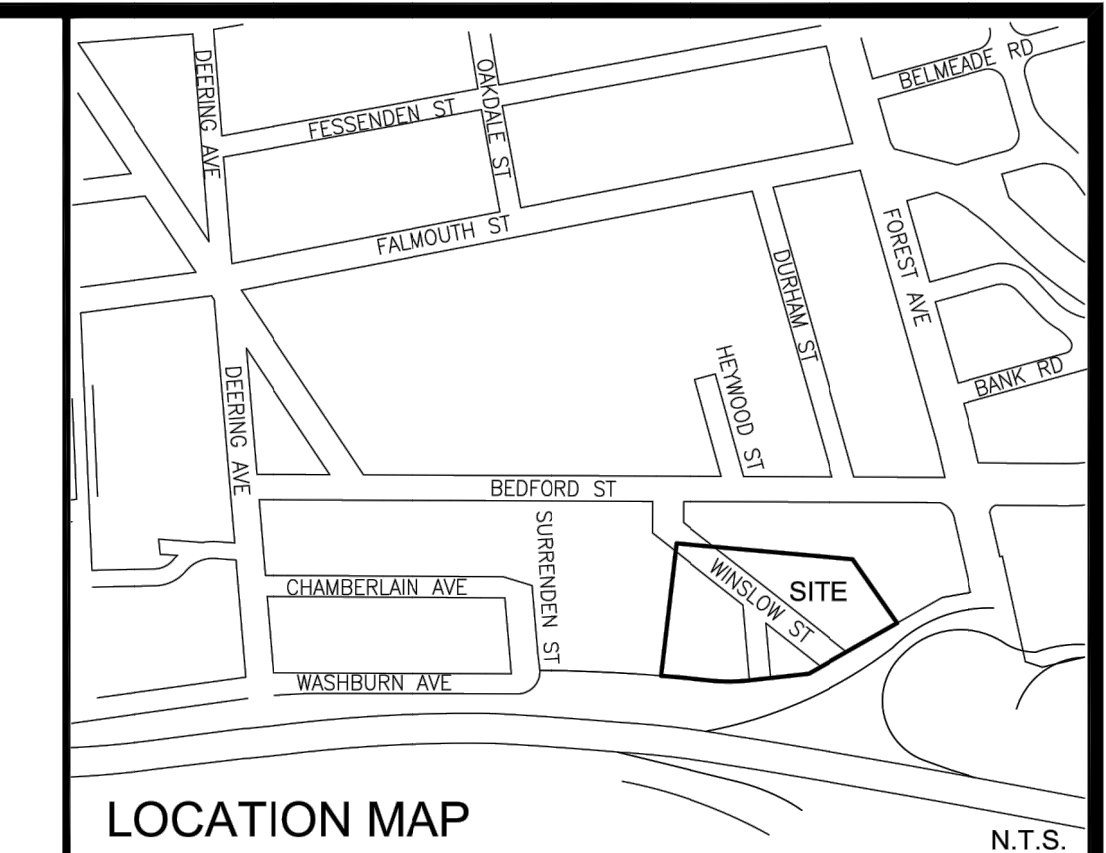
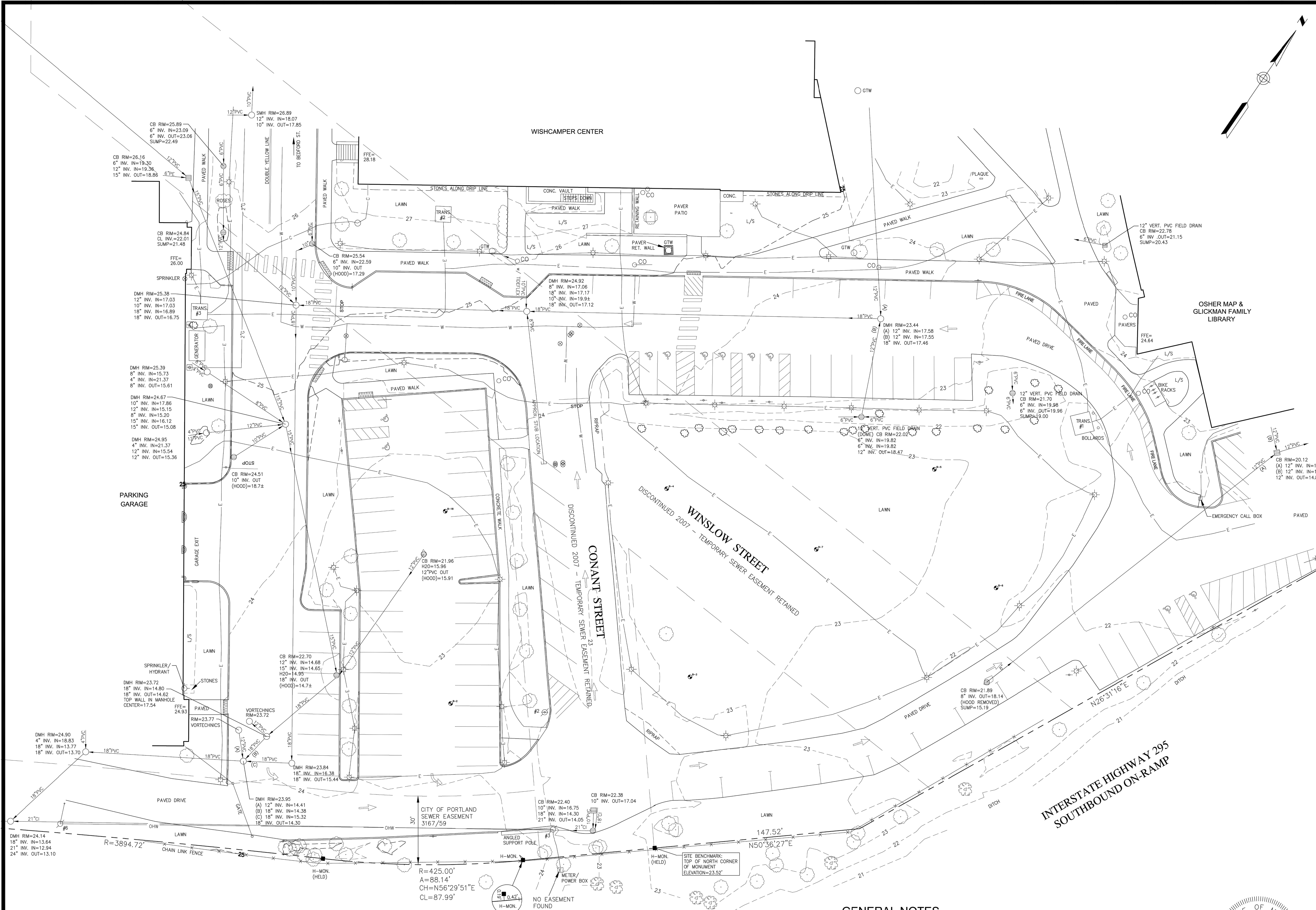
SITE LOCATION MAP



LEGEND

- G-001

NOT FOR CONSTRUCTION



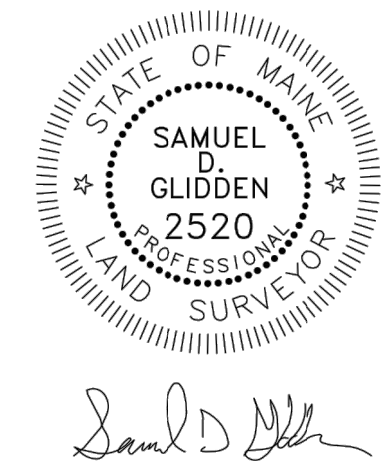
LEGEND	
●	IRON PIPE OR ROD FOUND
○	MONUMENT FOUND
○	UTILITY POLE
○	MANHOLE
□	ELECTRIC/GAS METER
□	SIGN
○	CATCH BASIN
○	HYDRANT
○	WATER VALVE OR SHUTOFF
○	GAS VALVE
○	LIGHT POLE
○	DECIDUOUS TREE
○	CONIFEROUS TREE
○	SHRUB / BUSH
○	GEOTHERMAL WELL
—X—X—	FENCE
—	CURB
—	OVERHEAD WIRES
—E—	UNDERGROUND POWER
—C—	COMMUNICATION
—W—	WATER LINE
—G—	GAS LINE
—T—	TELEPHONE
—SD—	STORM DRAIN
—SS—	SANITARY SEWER
—STM—	STEAM LINE
—50—	1' CONTOUR
IPF/IRF	IRON PIPE OR ROD FOUND
L/S	LANDSCAPED AREA
CONC.	CONCRETE
FFE	FINISHED FLOOR ELEVATION
THRES.	THRESHOLD
N/F	NOW OR FORMERLY
000/000	DEED BOOK / PAGE

UTILITY NOTE

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEY HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. CALL 1-888-DIGSAFE AT LEAST THREE BUSINESS DAYS BEFORE PERFORMING ANY CONSTRUCTION. DUE TO OSHA CONFINED SPACE REQUIREMENTS, ALL INVERTS AND PIPE SIZES MUST BE VERIFIED PRIOR TO ANY CONSTRUCTION.

- PLAN REFERENCES**
- "BOUNDARY & TOPOGRAPHIC PLAN ON BEDFORD STREET, USM CAMPUS, PORTLAND, MAINE MADE FOR WOODARD & CURRAN, INC." SEPTEMBER 08, 2005 REV. 5 11-02-06 BY OWEN HASKELL, INC.
 - MAINE STATE HIGHWAY COMMISSION RIGHT OF WAY MAP, STATE HIGHWAY "295", PORTLAND, CUMBERLAND COUNTY, S.H.C. FILE NO. 3-185. SHEETS 57 REVISED AND 61

- GENERAL NOTES**
- OWNER OF RECORD: UNIVERSITY OF MAINE
TAX MAP 114 BLOCK A LOT 1
C.C.R.D. BOOK 29219 PAGE 218
BOOK 24387 PAGE 258
 - BEARINGS ARE BASED ON MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE, NAD 83 PER COORDINATE DATA PROVIDED BY THE CITY OF PORTLAND DEPARTMENT OF PUBLIC WORKS.
 - ELEVATIONS ARE BASED ON CITY OF PORTLAND DATUM, NGVD 29. BENCHMARK UTILIZED IS A COPPER BOLT IN 3 FOOT OFFSET MONUMENT LOCATED AT THE SOUTHWEST CORNER OF THE BRIGHTON AVENUE AND FALMOUTH STREET INTERSECTION.

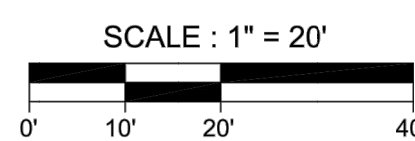


EC-001

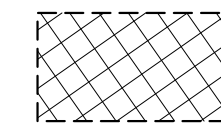
Existing Conditions Survey
USM Portland - Wishcamper Lot
Portland, Maine
Made for
Woodard & Curran
41 Hutchins Drive, Portland, Maine

OWEN HASKELL, INC.
PROFESSIONAL LAND SURVEYORS
390 US ROUTE 1, UNIT 10, FALMOUTH, ME 04105 TEL. 207-774-0424

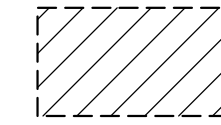
DRAWN BY: SDG/JLW DATE: NOV. 11, 2019 JOB NO. 2019-267 P
CHECKED BY: SDG SCALE: 1" = 20' DRWG. NO. 1



SHEET LEGEND



REMOVE & DISPOSE OF PAVEMENT
(REMOVE PAVEMENT, CURB AND/OR
STRUCTURE WITHIN ZONE)



REMOVE LANDSCAPED AREAS



REMOVE & DISPOSE OF POROUS
PAVEMENT SIDEWALK

XXXXXXXXXXXXXXXXXX

UTILITY LINE DEMOLITION



CATCH BASIN INLET PROTECTION

SEDIMENT BARRIER

OSHER MAP &
GLICKMAN FAMILY
LIBRARY

WINSLOW STREET

INTERSTATE HIGHWAY 295
SOUTHBOUND ON-RAMP

- NOTES:
1. CONTRACTOR SHALL USE CAUTION WORKING IN PROXIMITY OF EXISTING UNDERGROUND HIGH VOLTAGE ELECTRICAL LINES. LOCATION AND DEPTH OF LINES SHOULD BE VERIFIED PRIOR TO CONSTRUCTION.
 2. REFER TO LANDSCAPE PRESERVATION PLAN FOR EXISTING VEGETATION TO BE PROTECTED OR REMOVED.
 3. REFER TO ELECTRICAL DEMOLITION PLAN.



BAR SCALE
1" = 20'
CHECK GRAPHIC SCALE BEFORE USING

NOT FOR CONSTRUCTION

DEMOLITION AND EROSION &
SEDIMENT CONTROL PLAN

UNIVERSITY OF SOUTHERN MAINE
PORTLAND, MAINE

WISHCAMPER PARKING LOT

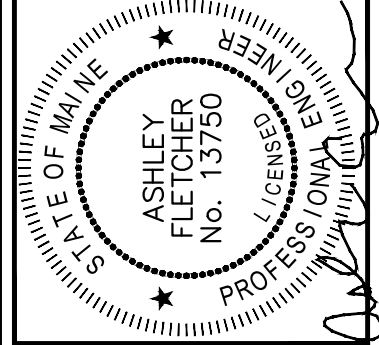
JOB NO.: 0232479.01
DATE: DECEMBER 2019
SCALE: 1"=20'
SHEET: 3 OF 19

C-001

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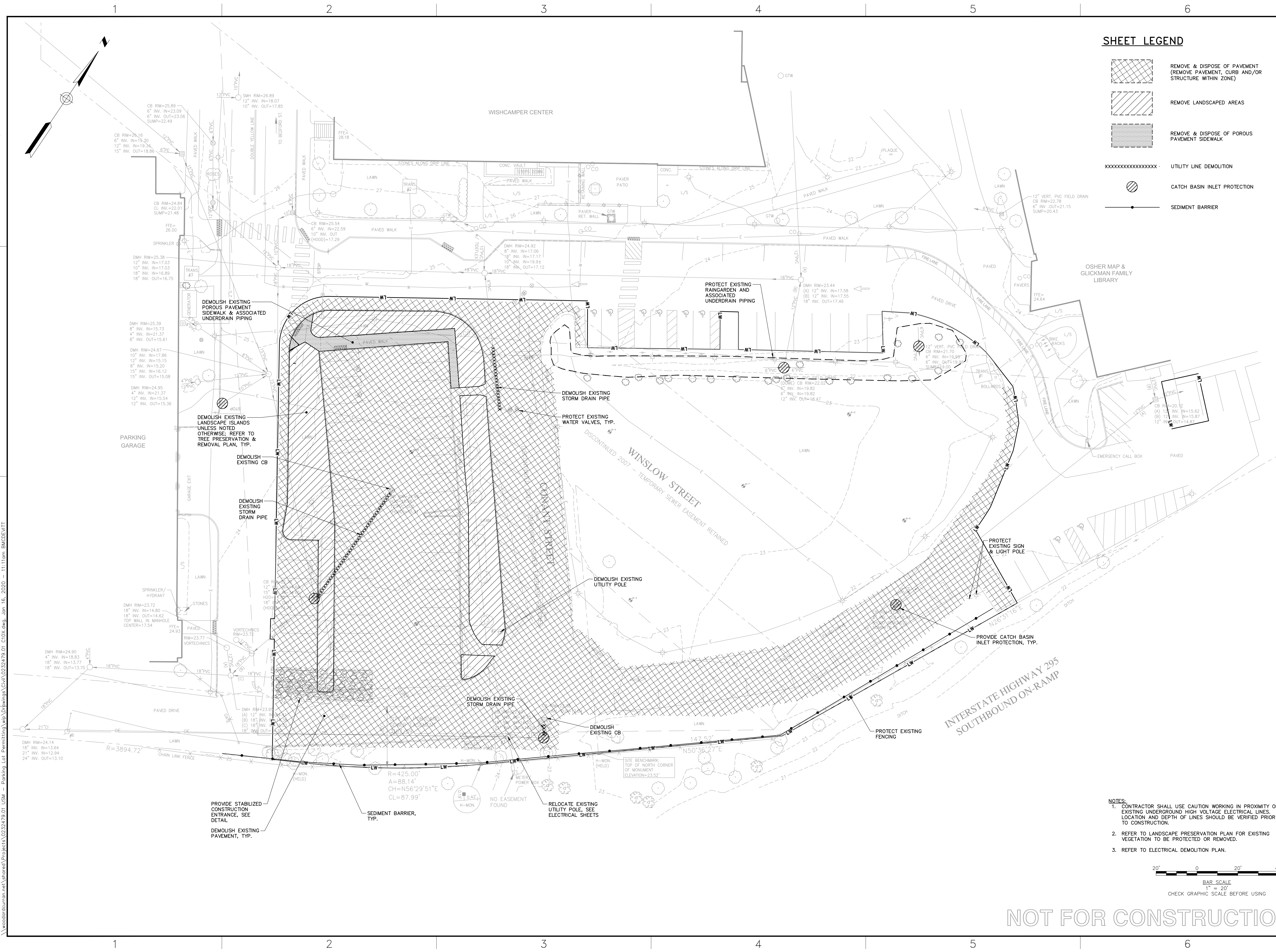


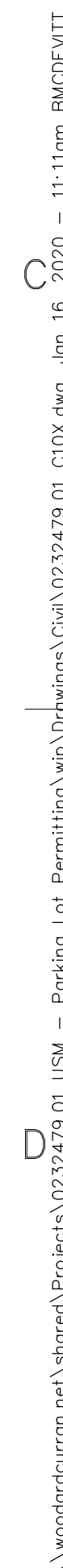
COMMITMENT & INTEGRITY DRIVE RESULTS



REV	DESCRIPTION	CHECKED BY: DBS	DATE

DESIGNED BY: ACF
DRAWN BY: BCM





EXISTING STANDARD PARKING SPACES = 82
EXISTING ADA VAN ACCESSIBLE PARKING SPACES = 2
EXISTING ADA ACCESSIBLE PARKING SPACES = 8
TOTAL EXISTING PARKING SPACES = 92

EXISTING STANDARD PARKING SPACES TO REMAIN = 23
EXISTING ADA VAN ACCESSIBLE PARKING SPACES TO REMAIN = 2 (2 TOTAL PROVIDED; 2 TOTAL REQUIRED)
EXISTING ADA ACCESSIBLE PARKING SPACES TO REMAIN = 6
PROPOSED NEW STANDARD PARKING SPACES = 143
PROPOSED NEW ADA VAN ACCESSIBLE PARKING SPACES = 38 (18% OF TOTAL PROVIDED; 20% MAX. ALLOWABLE)
PROPOSED NEW ADA ACCESSIBLE PARKING SPACES = 8 (8 TOTAL PROVIDED; 7 TOTAL REQUIRED)
TOTAL PROPOSED PARKING SPACES = 214

PROPOSED NET INCREASE IN PARKING SPACES = 122

20' 0 20' 40'

BAR SCALE
1" = 20'

CHECK GRAPHIC SCALE BEFORE USING

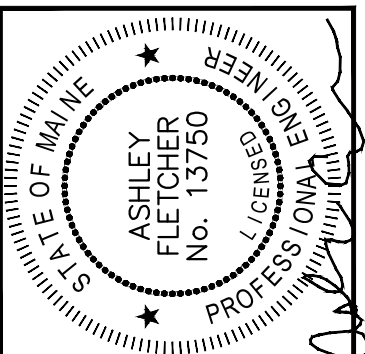
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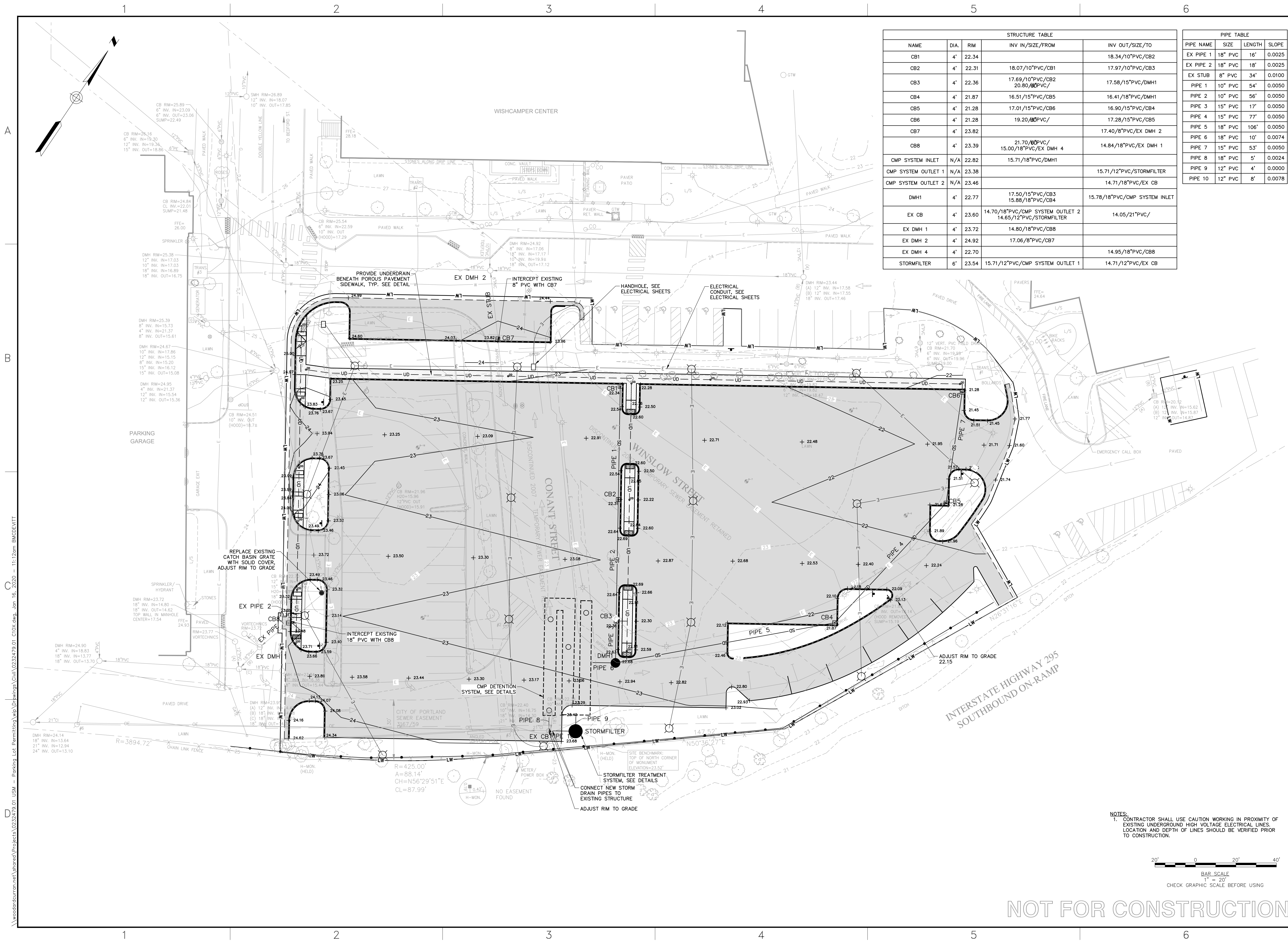
WISHCAMPER PARKING LOT

C-100



WOODWARD
CLYDE

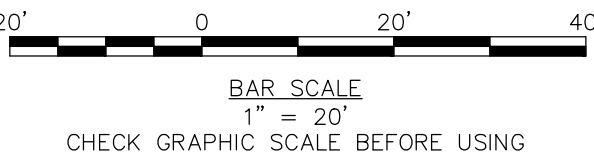
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STRUCTURE TABLE				
NAME	DIA.	RIM	INV IN/SIZE/TO	INV OUT/TO
CB1	4'	22.34	18.34/10"PVC/CB2	18.34/10"PVC/CB2
CB2	4'	22.31	18.07/10"PVC/CB1	17.97/10"PVC/CB3
CB3	4'	22.36	17.69/10"PVC/CB2	17.58/15"PVC/DMH1
CB4	4'	21.87	16.51/15"PVC/CB5	16.41/18"PVC/DMH1
CB5	4'	21.28	17.01/15"PVC/CB6	16.90/15"PVC/CB4
CB6	4'	21.28	19.20/8"PVC/	17.28/15"PVC/CB5
CB7	4'	23.82		17.40/8"PVC/EX DMH 2
CB8	4'	23.39	21.70/8"PVC/	14.84/18"PVC/EX DMH 1
CMP SYSTEM INLET			15.71/18"PVC/DMH1	
CMP SYSTEM OUTLET 1				15.71/12"PVC/STORMFILTER
CMP SYSTEM OUTLET 2				14.71/18"PVC/EX CB
DMH1	4'	22.77	17.50/15"PVC/CB3	15.78/18"PVC/CMP SYSTEM INLET
EX CB	4'	23.60	14.70/18"PVC/CMP SYSTEM OUTLET 2	14.05/21"PVC/
EX DMH 1	4'	23.72	14.80/18"PVC/CB8	
EX DMH 2	4'	24.92	17.06/8"PVC/CB7	
EX DMH 4	4'	22.70		14.95/18"PVC/CB8
STORMFILTER	6'	23.54	15.71/12"PVC/CMP SYSTEM OUTLET 1	14.71/12"PVC/EX CB

PIPE TABLE			
PIPE NAME	SIZE	LENGTH	SLOPE
EX PIPE 1	18" PVC	16'	0.0025
EX PIPE 2	18" PVC	18'	0.0025
EX STUB	8" PVC	34'	0.0100
PIPE 1	10" PVC	54'	0.0050
PIPE 2	10" PVC	56'	0.0050
PIPE 3	15" PVC	17'	0.0050
PIPE 4	15" PVC	77'	0.0050
PIPE 5	18" PVC	106'	0.0050
PIPE 6	18" PVC	10'	0.0074
PIPE 7	15" PVC	53'	0.0050
PIPE 8	18" PVC	5'	0.0024
PIPE 9	12" PVC	4'	0.0000
PIPE 10	12" PVC	8'	0.0078

NOTES:
1. CONTRACTOR SHALL USE CAUTION WORKING IN PROXIMITY OF EXISTING UNDERGROUND HIGH VOLTAGE ELECTRICAL LINES. LOCATION AND DEPTH OF LINES SHOULD BE VERIFIED PRIOR TO CONSTRUCTION.



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WOODARD & CURRAN

COMMITMENT & INTEGRITY DRIVE RESULTS

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STATE OF MAINE
REGISTERED PROFESSIONAL ENGINEER
ASHLEY FLETCHER
No. 13750

DESIGNED BY: ACF
CHECKED BY: DBS
DRAWN BY: BCM
DATE: 02/24/2019

GRADING & DRAINAGE PLAN

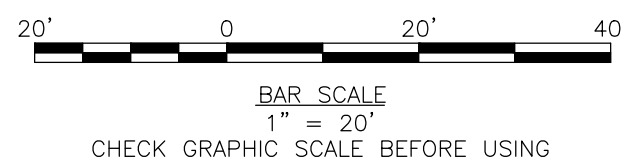
UNIVERSITY OF SOUTHERN MAINE
PORTLAND, MAINE

WISHCAMPER PARKING LOT

JOB NO.: 0232479.01
DATE: DECEMBER 2019
SCALE: 1"=20'
SHEET: 5 OF 19

C-101

NOT FOR CONSTRUCTION



1. ALL TREES MARKED TO BE RELOCATED, SHALL BE PROTECTED PRIOR TO CONSTRUCTION. THEY SHALL BE CAREFULLY DUG WITH A ROOTBALL 10 TIMES THE SIZE OF THE CALIPER. ALL ROOTBALLS SHALL BE PROTECTED WITH BURLAP PRIOR TO BEING TRANSPLANTED, AND WATERED AS DIRECTED BY THE LANDSCAPE ARCHITECT OR ENGINEER.

NOT FOR CONSTRUCTION

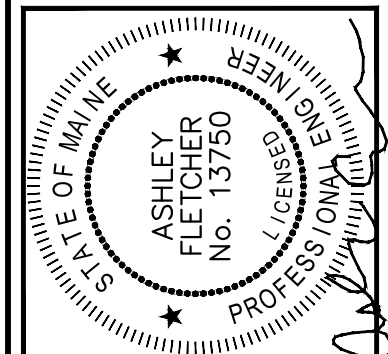
JOB NO.:0232479.01
DATE:DECEMBER 2019
SCALE: AS SHOWN
SHEET: 6 OF 19

L-200



WOODWARD
& CLYBURN

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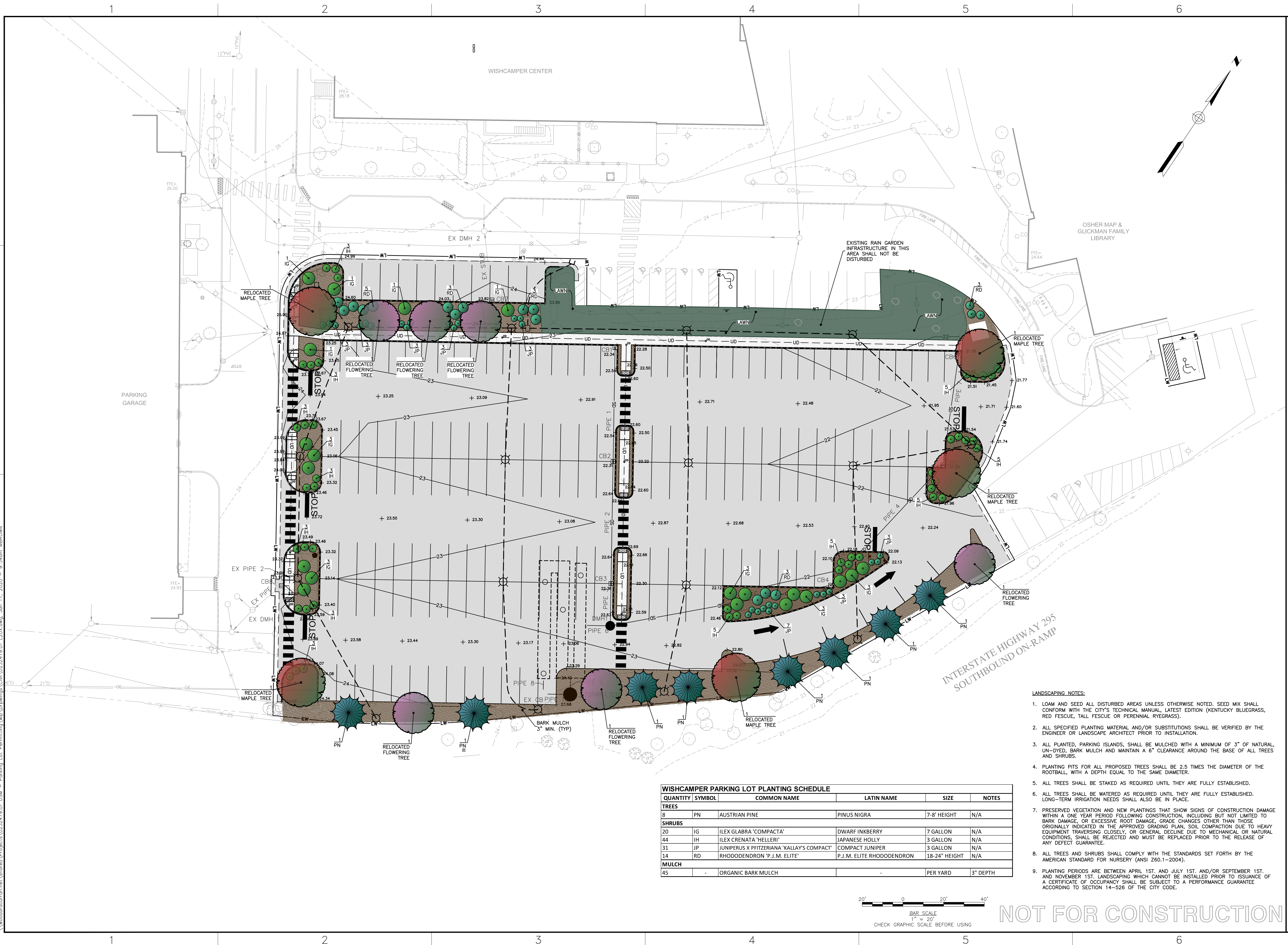
LANDSCAPE PLAN

UNIVERSITY OF SOUTHERN MAINE
PORTLAND, MAINE

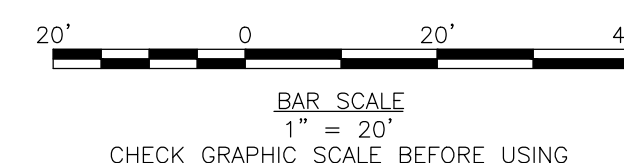
WISHCAMPER PARKING LOT

JOB NO.: 0232479.01
DATE: DECEMBER 2019
SCALE: AS SHOWN
SHEET: 7 OF 19

L-201

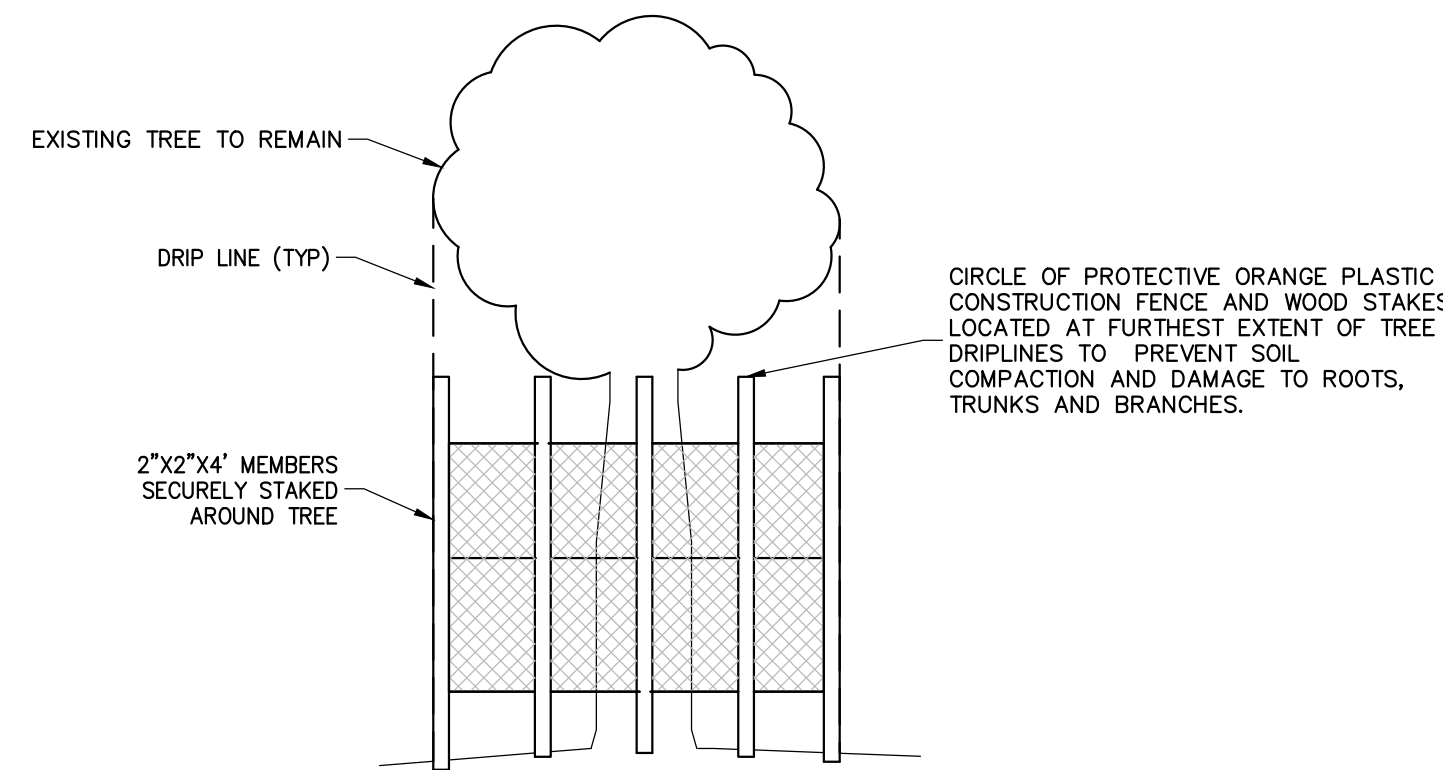


WISHCAMPER PARKING LOT PLANTING SCHEDULE					
QUANTITY	SYMBOL	COMMON NAME	LATIN NAME	SIZE	NOTES
TREES					
8	PN	AUSTRIAN PINE	PINUS NIGRA	7-8' HEIGHT	N/A
SHRUBS					
20	IG	ILEX GLABRA 'COMPACTA'	DWARF INKBERRY	7 GALLON	N/A
44	IH	ILEX CRENATA 'HELLER'	JAPANESE HOLLY	3 GALLON	N/A
31	JP	JUNIPERUS X PFITZERIANA 'KALLAY'S COMPACT'	COMPACT JUNIPER	3 GALLON	N/A
14	RD	RHODODENDRON 'P.J.M. ELITE'	P.J.M. ELITE RHODODENDRON	18-24" HEIGHT	N/A
MULCH					
45	-	ORGANIC BARK MULCH	-	PER YARD	3" DEPTH



NOT FOR CONSTRUCTION

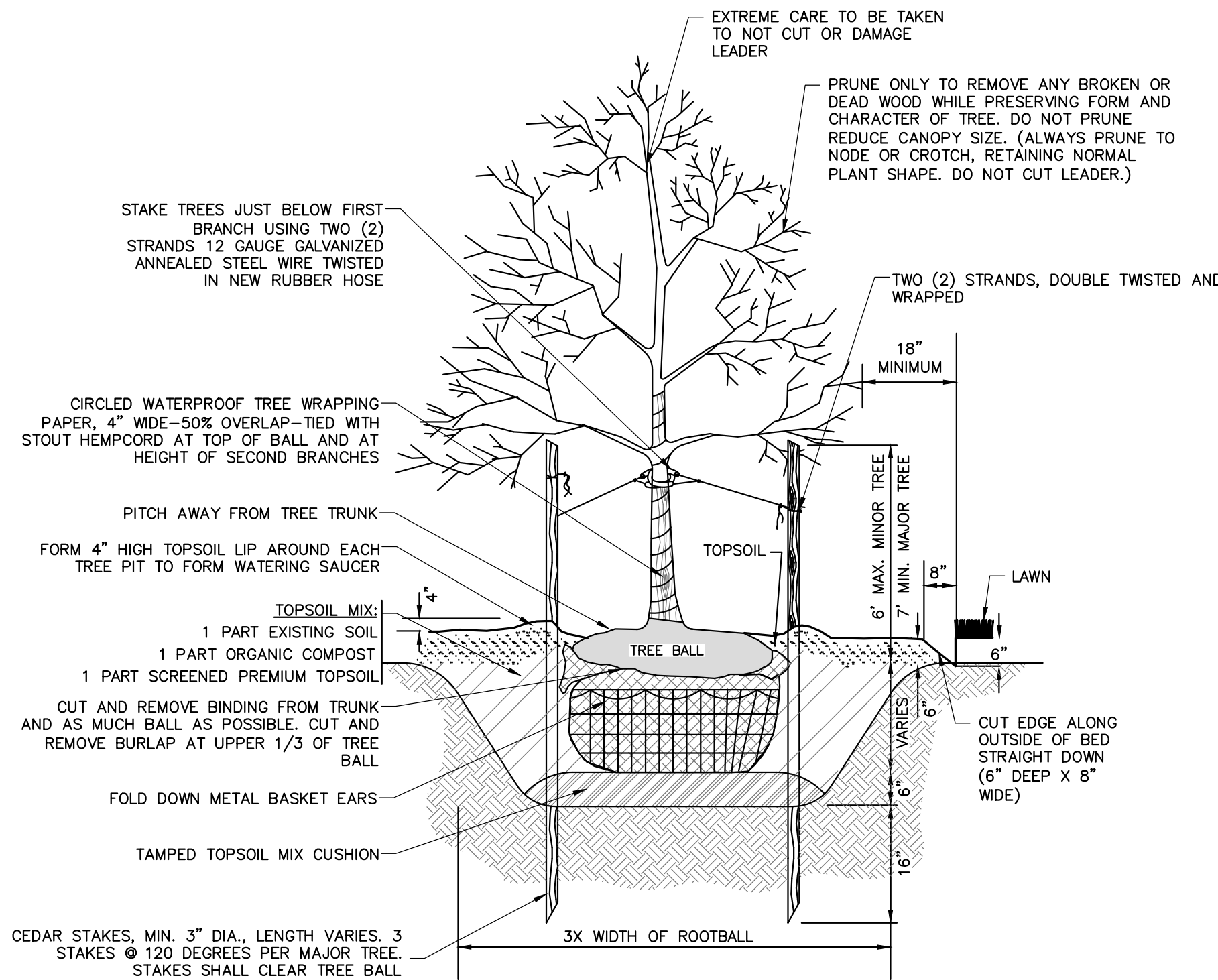
A



- NOTES:
1. LOCATE FENCING AS SHOWN ON PLANS.
 2. NO MATERIAL OR EQUIPMENT SHALL BE STORED OR STOCKPILED WITHIN THE AREA SURROUNDED BY TREE PROTECTION FENCING.
 3. FENCE MUST REMAIN AND BE MAINTAINED THROUGHOUT ENTIRE BUILDING PHASES DURING WHICH CONSTRUCTION MAY AFFECT TREES.

TREE PROTECTION
NOT TO SCALE

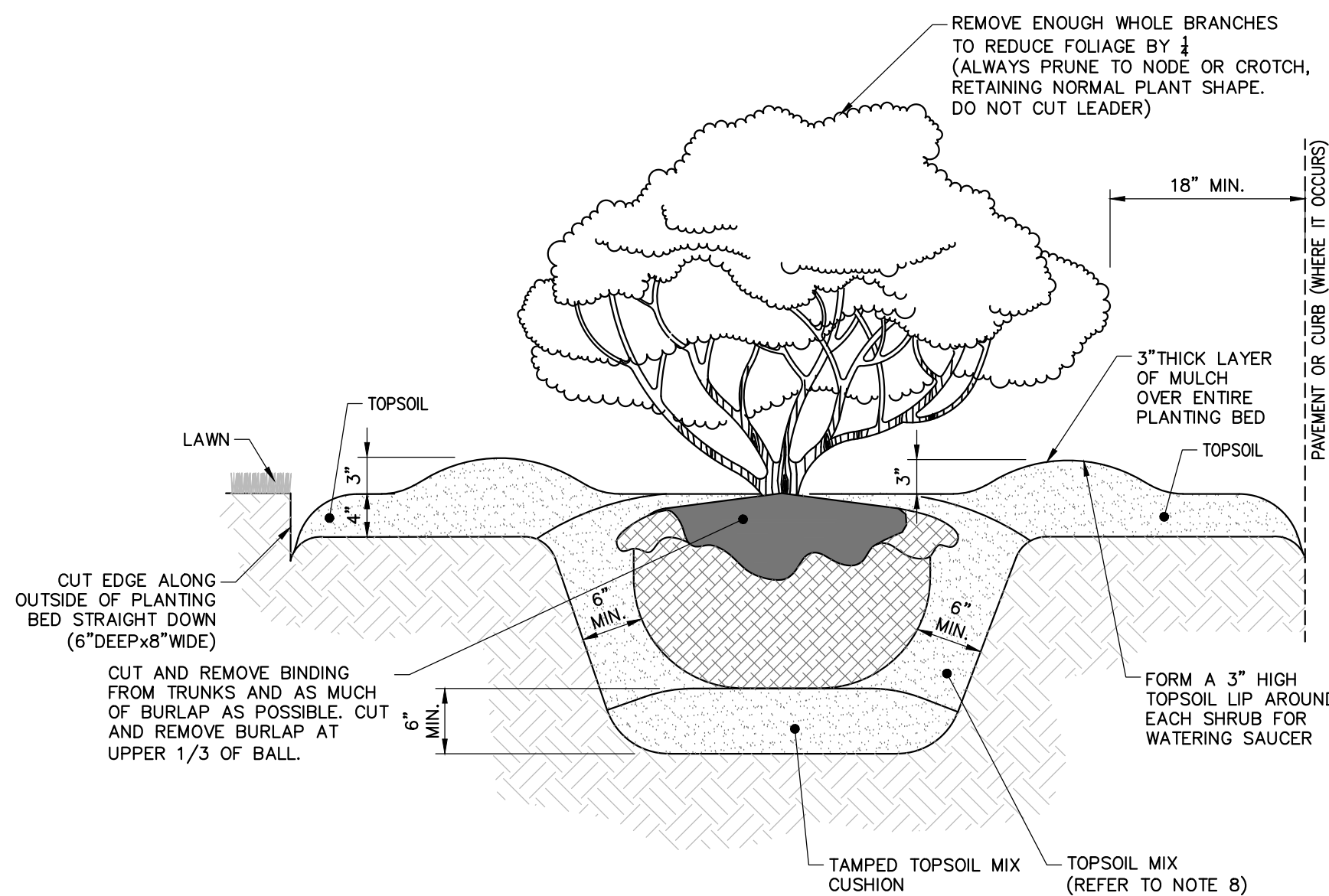
B



- NOTES:
1. PLANT TO SCALE IN CONTAINERS MUST HAVE THE FIBROUS POTBOUND ROOTS PULLED APART TO ALLOW THE ROOTS TO SPREAD.
 2. AFTER THE SHRUB HAS BEEN PLACED IN THE HOLE, THE TOPSOIL MIX SHOULD BE PLACED AROUND THE PLANT ONE-THIRD OF THE WAY UP. A SLOW RELEASE SUPER PHOSPHATE FERTILIZER WILL BE ADDED TO THE SOIL AROUND THE SHRUB, AND THEN FILL THE REMAINDER OF HOLE WITH TOPSOIL MIX. THE TOPSOIL MIX SHOULD THEN BE GENTLY COMPACTED.
 3. PROVIDE 3" LAYER OF MULCH AS SPECIFIED OVER ENTIRE WATERING SAUCER AT ALL TREE PITS OR OVER ENTIRE TREE BED.
 4. REMOVE EXISTING WEEDS, LAWN OR PLANT MATERIAL FROM PROPOSED BED AREA.
 5. REMOVE EXISTING WEEDS, LAWN OR PLANT MATERIAL FROM PROPOSED BED AREA.
 6. ALL TREES SHALL CONFORM TO THE STANDARDS FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN (A.A.N.).

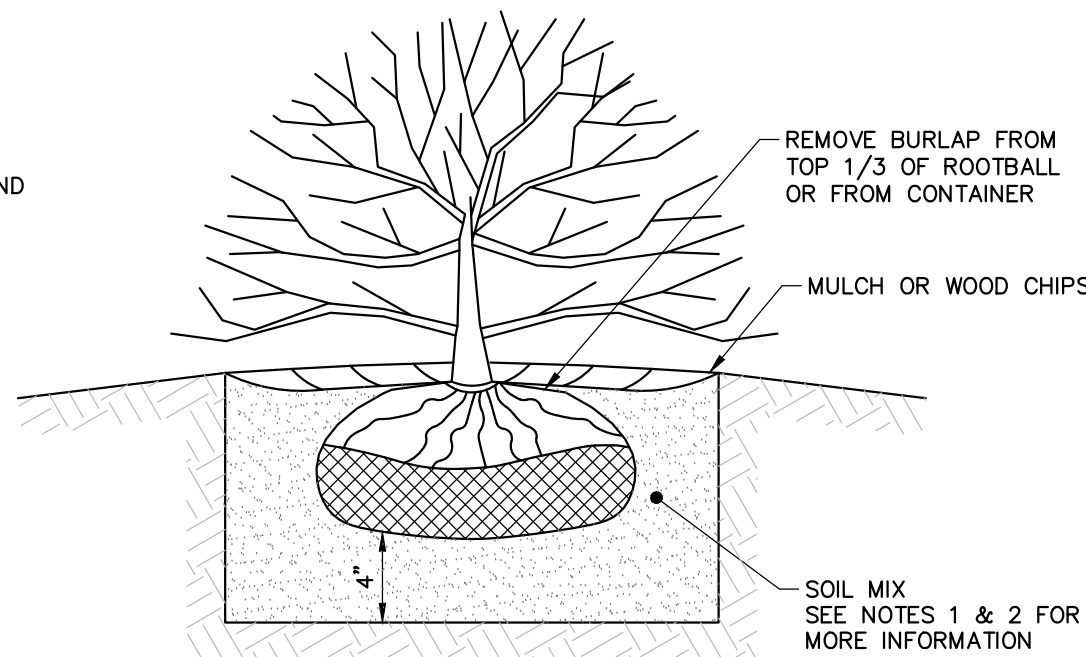
DECIDUOUS TREE PLANTING
NOT TO SCALE

C



- NOTES:
1. ALL PLANTING BEDS SHALL BE FREE OF WEEDS AND GRASS PRIOR TO INSTALLATION OF PLANT TO SCALE.
 2. PLANT TO SCALE IN CONTAINERS MUST HAVE THE FIBROUS ROOTS PULLED APART.
 3. AFTER THE SHRUB HAS BEEN PLACED IN THE HOLE, THE TOPSOIL MIX SHALL BE PLACED AROUND THE PLANT 1/3 OF THE WAY UP. A SLOW RELEASE FERTILIZER SHALL THEN BE ADDED TO THE SOIL AROUND THE SHRUB, AND THEN FILL THE REMAINDER OF THE HOLE WITH TOPSOIL MIX. THE TOPSOIL MIX SHALL THEN BE GENTLY COMPACTED.
 4. TOPSOIL SHALL CONSIST OF NATURAL LOAM TOPSOIL, FREE FROM SUBSOIL. TOPSOIL SHALL BE OF UNIFORM QUALITY, FREE FROM HARD CLODS, STIFF CLAY, HARD PAN, SODS, STONES OVER 1 1/2" DIAMETER AND NOXIOUS WEEDS.
 5. PLANT MATERIAL SHALL BEAR SAME RELATION TO FINISHED GRADE AS IT BORE TO PREVIOUS EXISTING GRADE.
 6. TOPSOIL MIX SHALL CONSIST OF: 1 PART SCREENED PREMIUM TOPSOIL : 1 PART EXISTING SOIL : 1 PART ORGANIC COMPOST

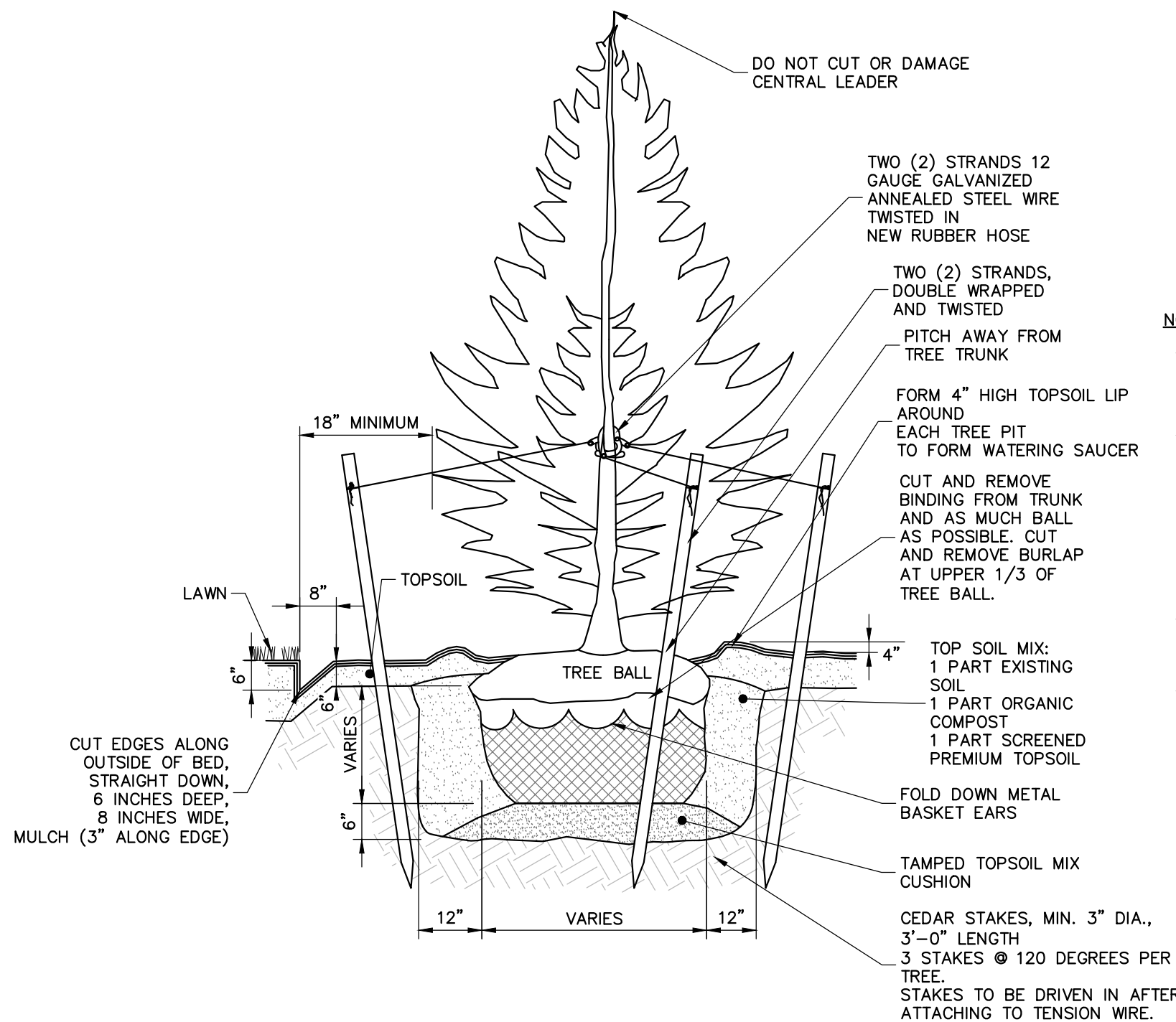
SHRUB PLANTING
NOT TO SCALE



- NOTES:
1. DECIDUOUS SHRUBS: USE A MIXTURE OF 4 PARTS TOPSOIL TO 1 PART ROTTED MANURE.
 2. EVERGREEN SHRUBS: USE A MIXTURE OF 4 PARTS TOPSOIL TO 1 PART PEAT HUMUS.

SHRUB
NOT TO SCALE

D



- NOTES:
1. PLANTS IN CONTAINERS MUST HAVE THE FIBROUS POTBOUND ROOTS PULLED APART TO ALLOW THE ROOTS TO SPREAD.
 2. AFTER THE TREE HAS BEEN PLACED IN THE HOLE, THE TOPSOIL MIX SHOULD BE PLACED AROUND THE PLANT ONE-THIRD OF THE WAY UP. A SLOW RELEASE SUPER PHOSPHATE FERTILIZER WILL BE ADDED TO THE SOIL AROUND THE TREE, AND THEN FILL THE REMAINDER OF THE HOLE WITH TOPSOIL MIX. THE TOPSOIL MIX SHOULD THEN BE GENTLY COMPACTED.
 3. PROVIDE 3" LAYER OF MULCH AS SPECIFIED OVER ENTIRE WATERING SAUCER AT ALL TREE PITS OR OVER ENTIRE TREE BED.
 4. REMOVE EXISTING WEEDS, LAWN OR PLANT MATERIAL FROM PROPOSED BED AREA.

EVERGREEN TREE PLANTING AND STAKING
NOT TO SCALE

LANDSCAPE DETAILS

UNIVERSITY OF SOUTHERN MAINE
PORTLAND, MAINE

WISHCAMPER PARKING LOT

JOB NO.: 0232479.01
DATE: DECEMBER 2019
SCALE: AS SHOWN
SHEET: 8 OF 19

L-202

DRAFT

NOT FOR CONSTRUCTION

EROSION AND SEDIMENT CONTROL NOTES

Temporary Controls

Contractor shall prepare and submit a soil erosion and water pollution control plan to engineer.

Measure	Dates For Use	Timing, Activity, and Location
Sediment 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, Siltsaver 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. On all areas of exposed soil, apply 150 to 170 lbs. mulch (4 bales) per 1,000 sq. ft. and anchor with netting at the end of each working day. 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 Controls:

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 rivulets.
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 SEDIMENT 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, CATCHBASIN SEDIMENT COLLECTION BAGS AND GEOTEXTILE FILTER BAGS. PERMANENT MEASURES INCLUDE PERMANENT VEGETATION OR PAVING.

GENERAL

- THE PROJECT SHALL CONFORM WITH THE STANDARDS OF THE MAINE CONSTRUCTION GENERAL PERMIT.
- 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.
- 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 DISTURBED AREAS ARE STABILIZED TO THE SATISFACTION OF THE ABOVE PERSONNEL. DESCRIPTIONS OF PERMANENT STABILIZATION FOR VARIOUS COVER TYPES FOLLOW:
- 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 PAVED AREAS, PERMANENT STABILIZATION MEANS THE PLACEMENT OF THE ASPHALT BINDER COURSE.
- IF THE AREA WILL REMAIN UNWORKED FOR MORE THAN ONE YEAR OR HAS BEEN BROUGHT TO FINAL GRADE, AND WILL NOT BE IMMEDIATELY PROVIDED 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 SPECIFICATION: IT IS RECOMMENDED THAT PERMANENT SEEDING BE COMPLETED BETWEEN APRIL 1 AND AUGUST 15 OF EACH YEAR. LATE SEASON SEEDING MAY BE DONE BETWEEN AUGUST 15 AND SEPTEMBER 15. AREAS NOT SEEDED OR WHICH DO NOT OBTAIN A SATISFACTORY GROWTH BY OCTOBER 1 SHALL BE SEEDED WITH AROOSTOOK WINTER RYE OR MULCHED AT SPECIFIED RATES. SEE WINTER SEEDING AND MULCHING SPECIFICATIONS FOR STABILIZATION AFTER NOVEMBER 1.
 - APPLY TOPSOIL TO A DEPTH OF 6 INCHES. IN COMPACTED AREAS TILL 2-3" OF COMPOST INTO UPPER 8" OF DISTURBED SOIL AND THEN APPLY 6 INCHES OF TOPSOIL.
 - APPLY LIME AND FERTILIZER ACCORDING TO SOIL TESTS. IN LIEU OF SOIL TESTS, APPLY GROUND LIMESTONE AT A RATE OF 33 LBS PER 1000 SQUARE FEET AND GRANULAR, COMMERCIAL-GRADE FERTILIZER 10-10-10 AT A RATE OF 18 LBS PER 1000 SQUARE FEET.
 - UNIFORMLY APPLY SEED MIXTURE AT THE RECOMMENDED SEEDING RATES AND DATES, APPLY HAY OR STRAW MULCH AT A RATE OF 2.5 BALES PER 1000 SQUARE FEET AND ANCHOR AS NECESSARY.
- 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 RESEEDING IF GERMINATION IS SPARSE OR SURFACE EROSION IS EVIDENT.
- EROSION CONTROL BLANKET SHALL BE INSTALLED ON ALL PERMANENT SLOPES STEEPER THAN 3:1 OR AS OTHERWISE NOTED. 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

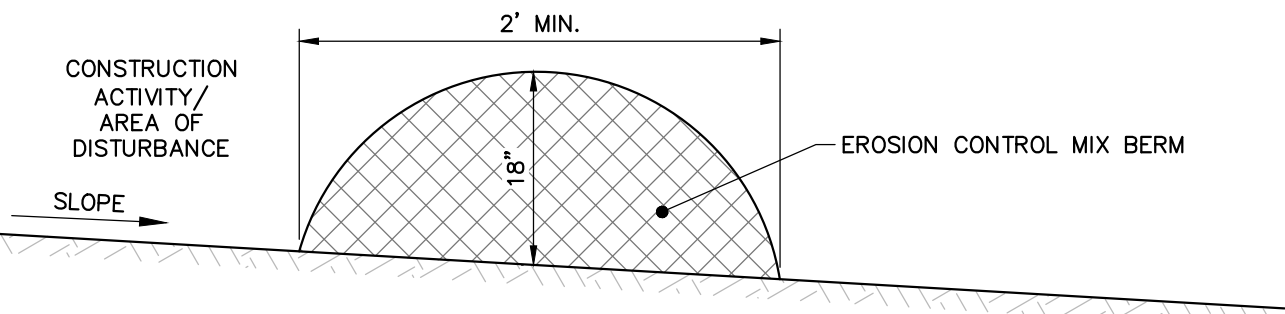
- WINTER CONSTRUCTION IS CONSTRUCTION ACTIVITY PERFORMED DURING THE PERIOD FROM NOVEMBER 1 THROUGH APRIL 1. IF AREAS WITHIN THE CONSTRUCTION AREA ARE NOT STABILIZED WITH TEMPORARY OR PERMANENT MEASURES OUTLINED ABOVE BY NOVEMBER 15 THEN THE SITE MUST BE PROTECTED WITH ADDITIONAL STABILIZATION MEASURES 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 SWEEPED 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 7 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.

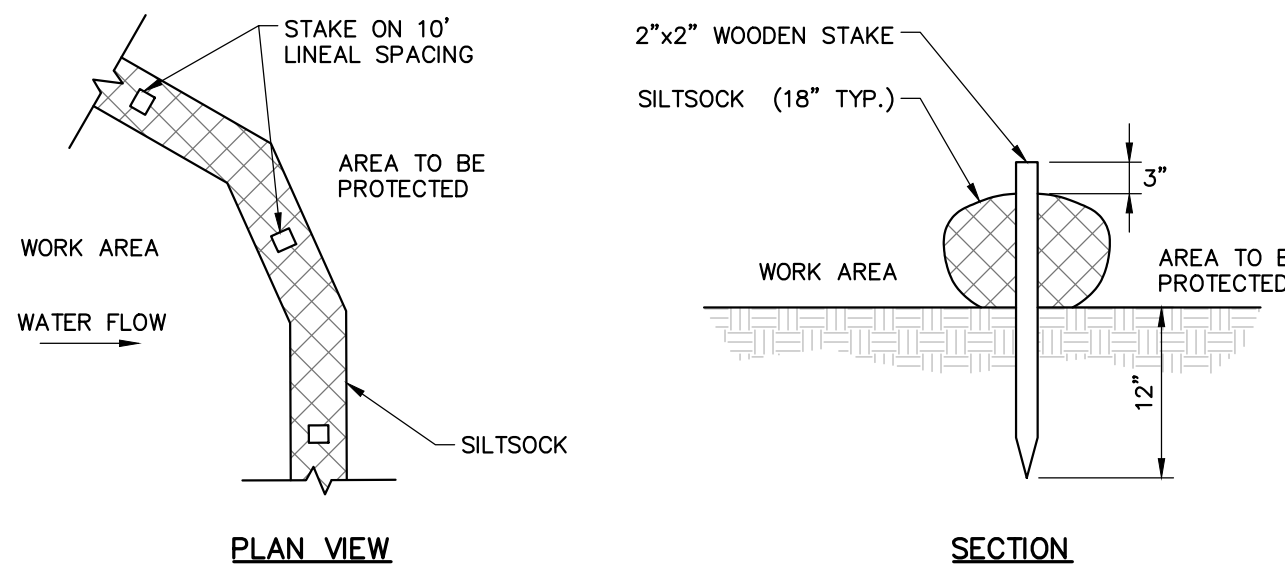


NOTES:

- EROSION CONTROL MIX CAN BE MANUFACTURED ON OR OFF THE PROJECT SITE. IT MUST CONSIST PRIMARILY OF ORGANIC MATERIAL AND MAY INCLUDE: SHREDDED BARK, STUMP GRINDINGS, COMPOSTED BARK, OR ACCEPTABLE MANUFACTURED PRODUCTS. WOOD AND BARK CHIPS, GROUND CONSTRUCTION DEBRIS OR REPROCESSED WOOD PRODUCTS WILL NOT BE ACCEPTABLE AS THE ORGANIC COMPONENT OF THE MIX.
- EROSION CONTROL MIX SHALL CONTAIN A WELL-GRADED MIXTURE OF PARTICLE SIZES AND MAY CONTAIN ROCKS LESS THAN 4" IN DIAMETER. EROSION CONTROL MIX MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH. THE MIX COMPOSITION SHALL MEET THE FOLLOWING STANDARDS:
 - THE ORGANIC MATTER CONTENT SHALL BE BETWEEN 80 AND 100% DRY WEIGHT BASIS.
 - PARTICLE SIZE BY WEIGHT SHALL BE 100% PASSING A 6" SCREEN AND A MINIMUM OF 70% MAXIMUM OF 85% PASSING A 0.75" SCREEN.
 - THE ORGANIC PORTION NEEDS TO BE FIBROUS AND ELONGATED.
 - LARGE PORTIONS OF SILTS, CLAYS OR FINE SANDS ARE NOT ACCEPTABLE IN THE MIX.
 - SOLUBLE SALTS CONTENT SHALL BE < 4.0 MMHOS/CM.
 - THE PH SHOULD FALL BETWEEN 5.0 AND 8.0.

EROSION CONTROL MIX BERM
(SEDIMENT BARRIER OPTION)

N.T.S.

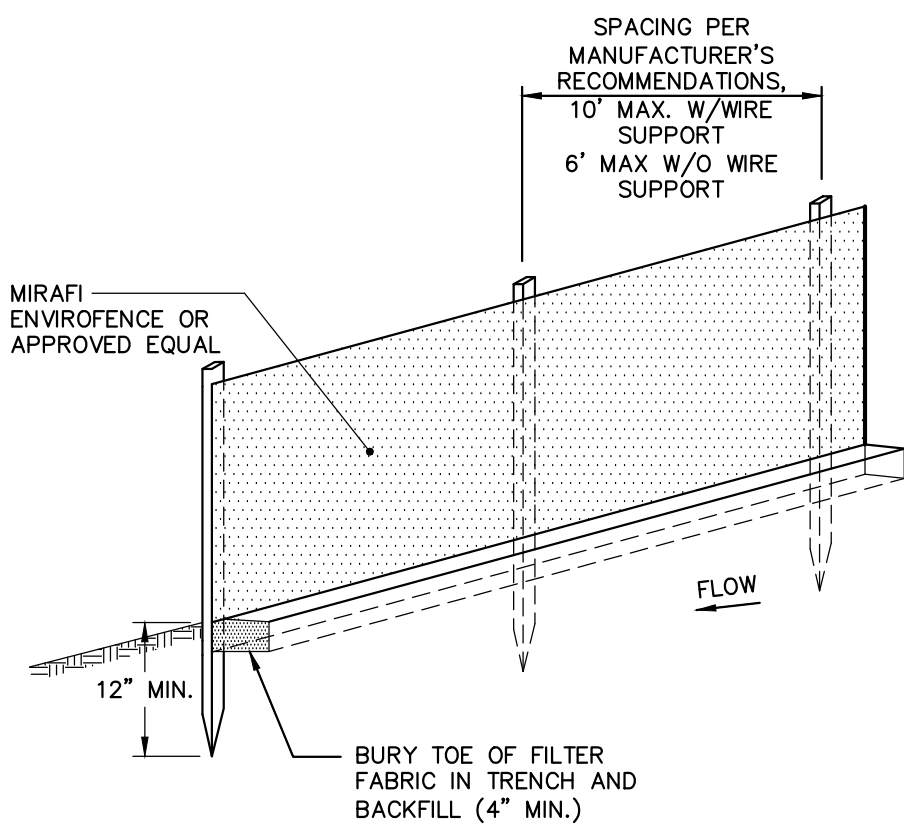


NOTE:

- WHEN STAKING IS NOT POSSIBLE, HEAVY CONCRETE BLOCKS SHALL BE USED BEHIND THE SEDIMENT BARRIER TO HELP STABILIZE DURING RAINFALL/RUNOFF EVENTS.

SILT SOCK (SEDIMENT BARRIER OPTION)

N.T.S.



NOTES:

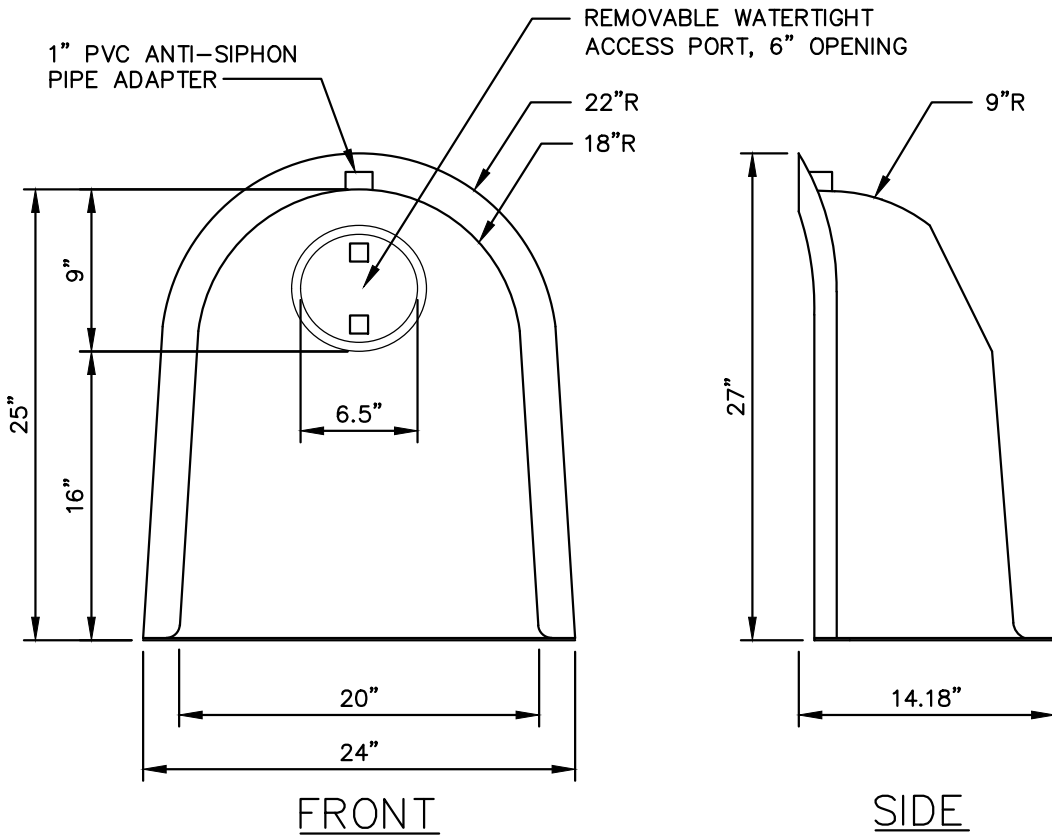
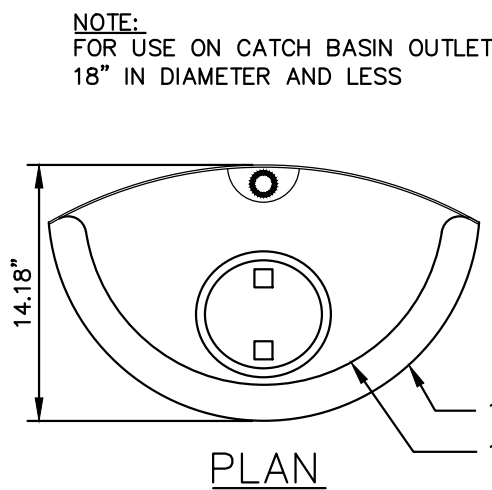
- INSTALL FABRIC ON UPHILL SIDE OF SUPPORT POSTS
- INSTALL SILT FENCE ACROSS SLOPES
- SILT FENCE SHALL NOT BE USED IN DRAINAGE WAYS

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.

SILTATION FENCE
(SEDIMENT BARRIER OPTION)

N.T.S.



"THE SNOOT"
N.T.S.

NOTES:

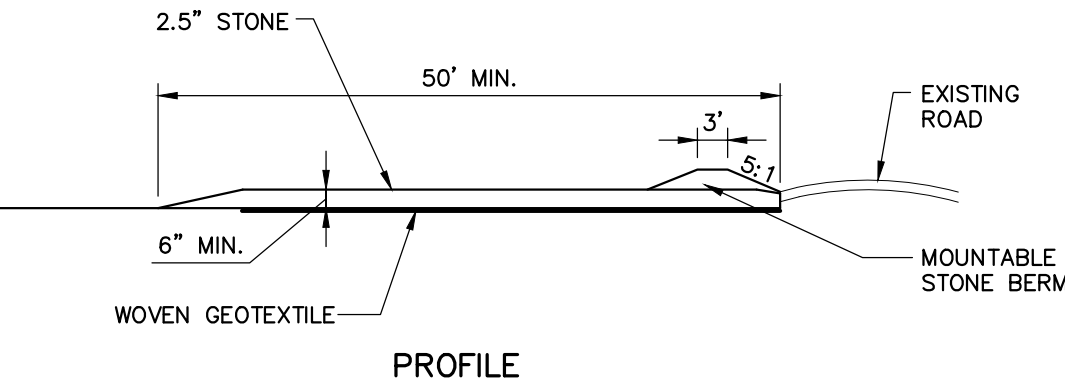
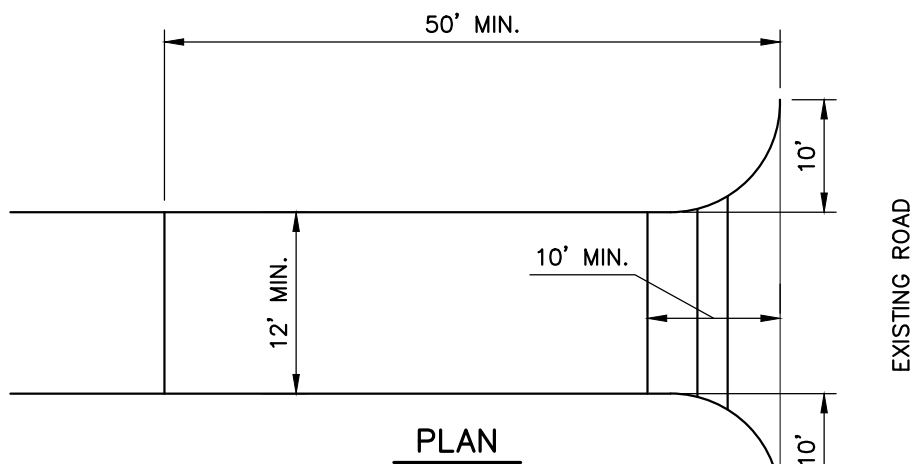
CATCH BASIN PROTECTION TO BE "SILTSACK" (BY ACF ENVIRONMENTAL) OR "STREAM GUARD" (BY FOSS ENVIRONMENTAL SERVICES).

INSERT TO BE EMPTIED IN AN APPROVED MANNER WHEN IT IS 1/2 FULL OF SEDIMENT.

INSERT INSERT AFTER ALL RAINFALL EVENTS, REPAIR AND MAINTAIN AS REQUIRED.

CATCH BASIN INLET PROTECTION
DEVICE (SILTSACK OR EQUAL)

N.T.S.



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.

AT LEAST ONE CONSTRUCTION ENTRANCE SHALL BE MAINTAINED UNTIL ALL AREAS OF THE SITE ARE STABILIZED.

STABILIZED CONSTRUCTION
ENTRANCE

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STATE OF MAINE
ENGINEER
ASHLEY FLETCHER
No. 13750
PROFESSIONAL SEAL

REV	DESCRIPTION	DATE	CHECKED BY: DBS	DRAWN BY: BOM

CIVIL DETAILS - 1

UNIVERSITY OF SOUTHERN MAINE
PORTLAND, MAINE

WISHCAMPER PARKING LOT

JOB NO.: 0232479.01
DATE: DECEMBER 2019
SCALE: AS NOTED
SHEET: 9 OF 19

D-300

NOT FOR CONSTRUCTION



- PROVIDE CAST-IN INSERTS IN PRECAST MANHOLE CONES AND FLAT TOPS. LOCATIONS TO MATCH HOLES IN GRADE RING.

- PROVIDE H OF 4" MIN. TO 12" MAX. AS REQUIRED TO BRING FRAME TO FINAL GRADE.

- FOR FRAME ADJUSTMENTS OF LESS THAN 4" USE APPROVED ALTERNATE MANHOLE FRAME AND/OR ATTACH FRAME DIRECTLY TO PRECAST MANHOLE CONE.

- CONTRACTOR MAY USE BRICKS TO BRING MANHOLE TO GRADE.



N.T.S.



N.T.S.



N.T.S.



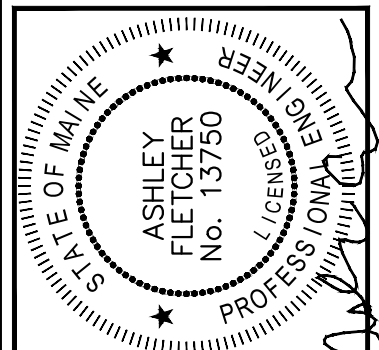
NOTES:

1. PRECAST CONCRETE STRUCTURES AND CASTINGS SHALL BE SUITABLE FOR HS-20 LOADINGS.
2. PRECAST CONCRETE STRUCTURES SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM C-478.
3. ALTERNATE TOP SLAB MAY BE USED AS DICTATED BY DESIGN AND/OR FIELD CONDITIONS.
4. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE BUTYL RUBBER.

N.T.S



MANHOLE FRAME FASTENING

[illegible]

CIVIL DETAILS - 2

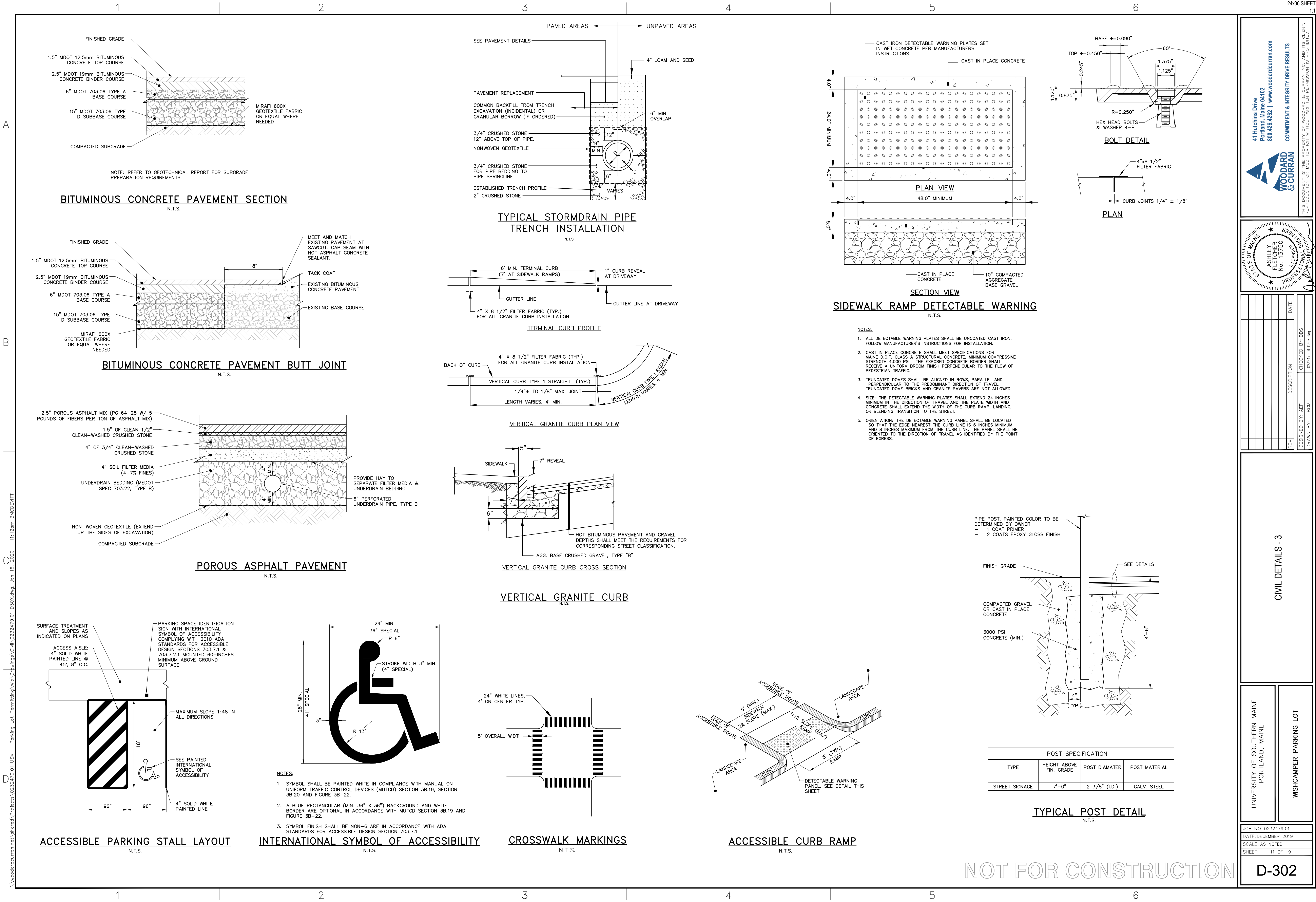
UNIVERSITY OF SOUTHERN MAINE
PORTLAND, MAINE

WISHCAMPER PARKING LOT

JOB NO.:0232479.01
DATE:DECEMBER 2019
SCALE: AS NOTED
SHEET: 10 OF 19

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No. 13750
PROFESSIONAL ENGINEER

DESIGNED BY: ACF
DRAWN BY: BCM

CHECKED BY: DBS
DATE: 02/24/20
02/24/20

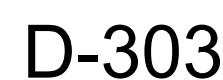
CIVIL DETAILS - 3

UNIVERSITY OF SOUTHERN MAINE
PORTLAND, MAINE

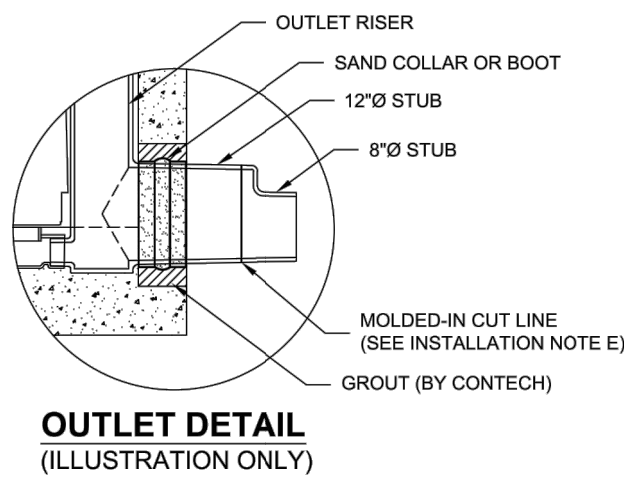
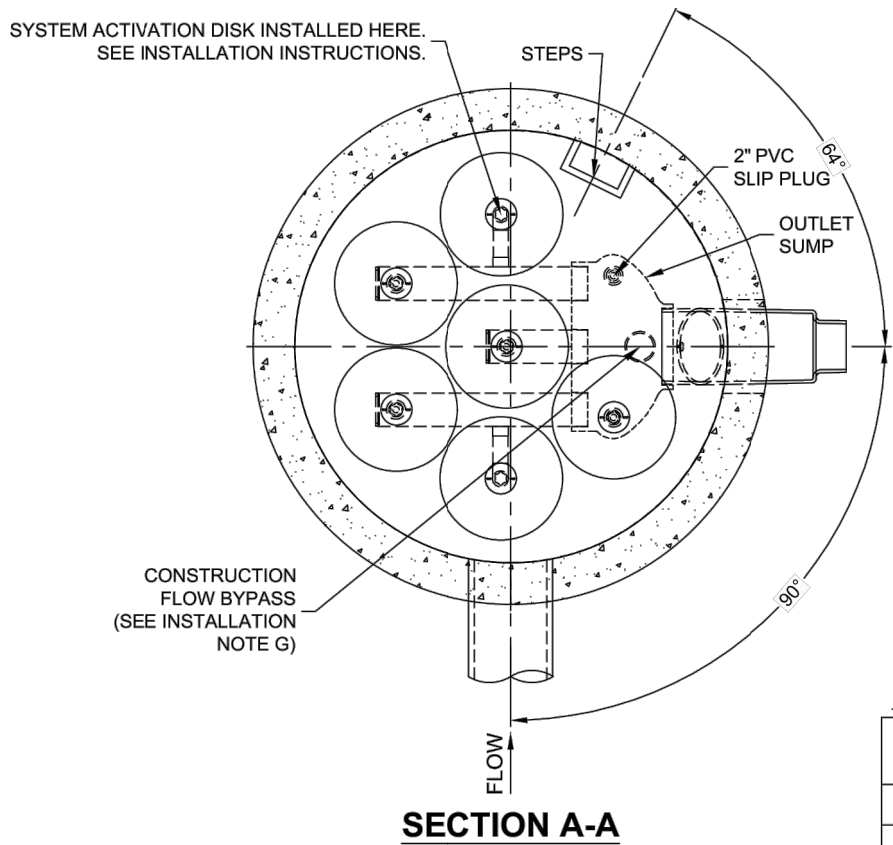
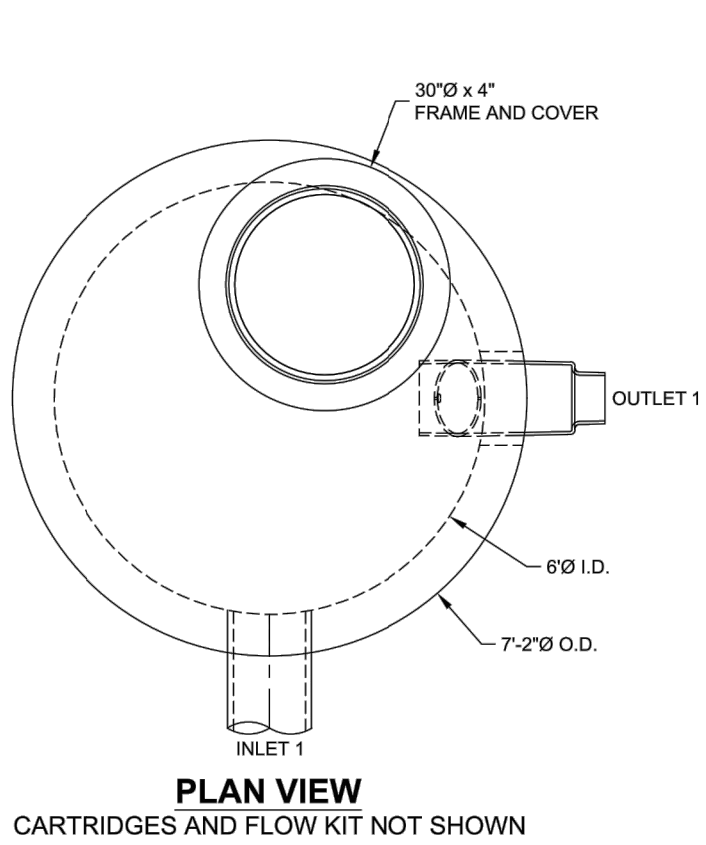
WISHCAMPER PARKING LOT

JOB NO.: 0232479.01
DATE: DECEMBER 2019
SCALE: AS NOTED
SHEET: 11 OF 19

D-302



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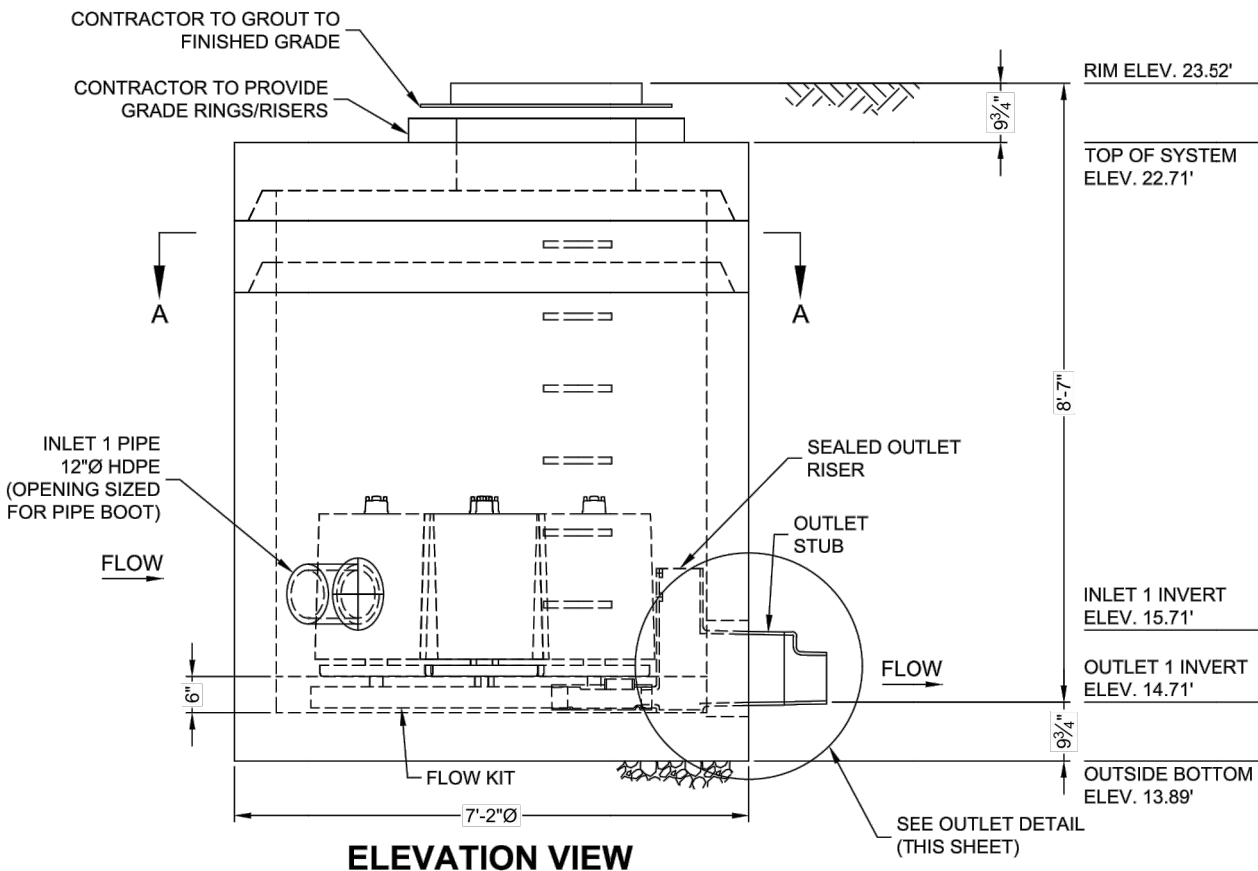
MATERIAL LIST (PROVIDED BY CONTECH)		
COUNT	DESCRIPTION	INSTALLED BY
6	27" ZEO-PSORB CARTRIDGE	CONTECH
7	RESTRICTOR DISK (0.25" BLK) 3 GPM PER CARTRIDGE	CONTECH
1	2" PVC SLIP PLUG	CONTECH
1	42A FLOWKIT	CONTECH
1	SF ACTIVATION DISK	CONTECH
1	SEALED OUTLET RISER	CONTECH
6	STEPS, P10CTS, LANE LADDER, OR EQUIV.	CONTECH
1	SEALANT FOR JOINTS	CONTRACTOR
1	30"Ø x 4" FRAME & COVER, EJ#41600484, OR EQUIV.	CONTRACTOR

PERFORMANCE SPECIFICATION
FILTER CARTRIDGES SHALL BE MEDIA-FILLED, PASSIVE, SIPHON ACTUATED, RADIAL FLOW, AND SELF CLEANING. **RADIAL MEDIA DEPTH SHALL BE 7-INCHES.** FILTER MEDIA CONTACT TIME SHALL BE AT LEAST **30 SECONDS.**
SPECIFIC FLOW RATE SHALL BE **6.25 GPM/SF (MAXIMUM).** SPECIFIC FLOW RATE IS THE MEASURE OF THE FLOW (GPM) DIVIDED BY THE MEDIA SURFACE CONTACT AREA (SF). MEDIA VOLUMETRIC FLOW RATE SHALL BE **6 GPM/CF OF MEDIA (MAXIMUM).**

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
3. STORMFILTER WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS-20 LOAD RATING. CASTINGS SHALL MEET AASHTO M306 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
5. STORMFILTER STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.

INSTALLATION NOTES
A. ANTI-FLOATATION PROVISIONS SHALL BE DESIGNED AND PROVIDED BY THE CONTRACTOR.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STORMFILTER STRUCTURE.
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET PIPE(S). ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
E. CONTRACTOR TO PROVIDE AND INSTALL CONNECTOR TO THE OUTLET RISER STUB. STORMFILTER EQUIPPED WITH A DUAL DIAMETER HDPE OUTLET STUB. IF OUTLET PIPE IS LARGER THAN 8 INCHES, CONTRACTOR TO REMOVE THE 8 INCH OUTLET STUB AT MOLDED IN CUT LINE. COUPLING BY FERRODO OR EQUAL AND PROVIDED BY CONTRACTOR.
F. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.
G. CONTRACTOR TO INSTALL SUPPLIED PLUG IN CONSTRUCTION FLOW BYPASS WHEN SYSTEM IS BROUGHT ON LINE (PRESSURE FIT ONLY, DO NOT GLUE).

STRUCTURE WEIGHT
APPROXIMATE HEAVIEST PICK = 4500 LBS. OF 3 PIECES
BASE SECTION SHIPPED WITH CARTRIDGES INSTALLED
MAX FOOTPRINT = 67'-2"



STORMFILTER DETAIL
N.T.S.

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DESIGNED BY: ASF
DRAWN BY: BCM

CHECKED BY: DBS
02/28/2019 (D30X.dwg)

DATE

CIVIL DETAILS - 5

UNIVERSITY OF SOUTHERN MAINE
PORTLAND, MAINE

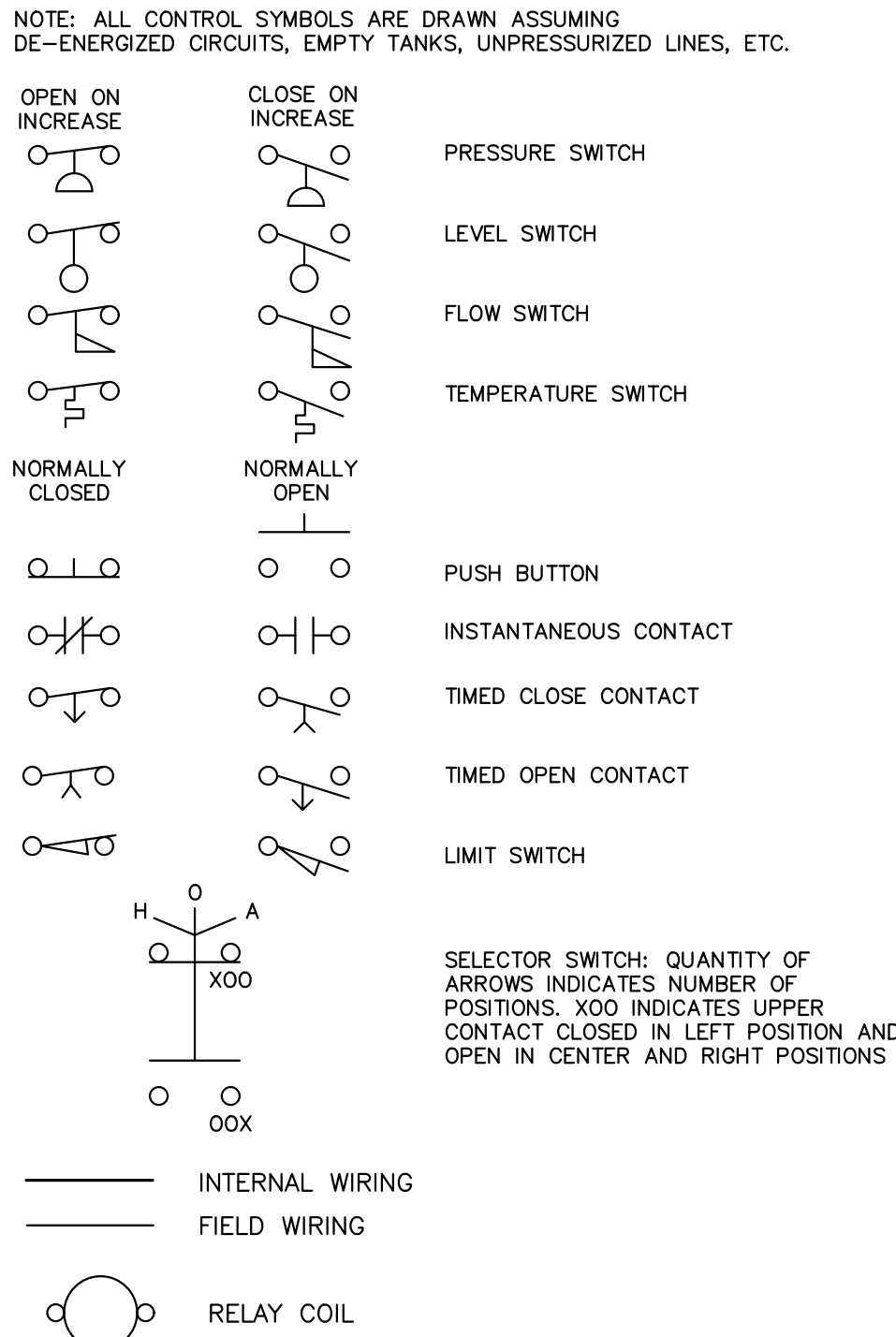
WISHCAMPER PARKING LOT

JOB NO.: 0232479.01
DATE: DECEMBER 2019
SCALE: AS NOTED
SHEET: 13 OF 19

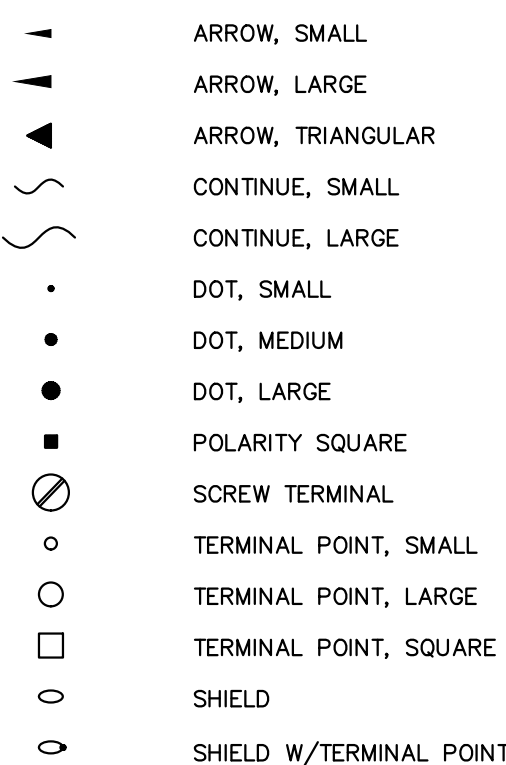
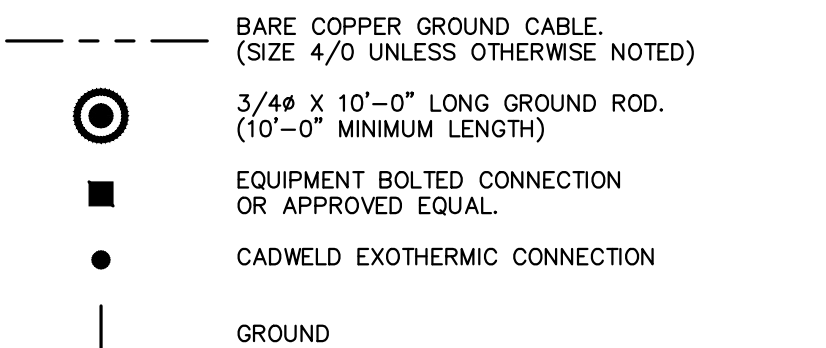
D-304

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CONTROL DIAGRAM SYMBOLS



GROUNDING



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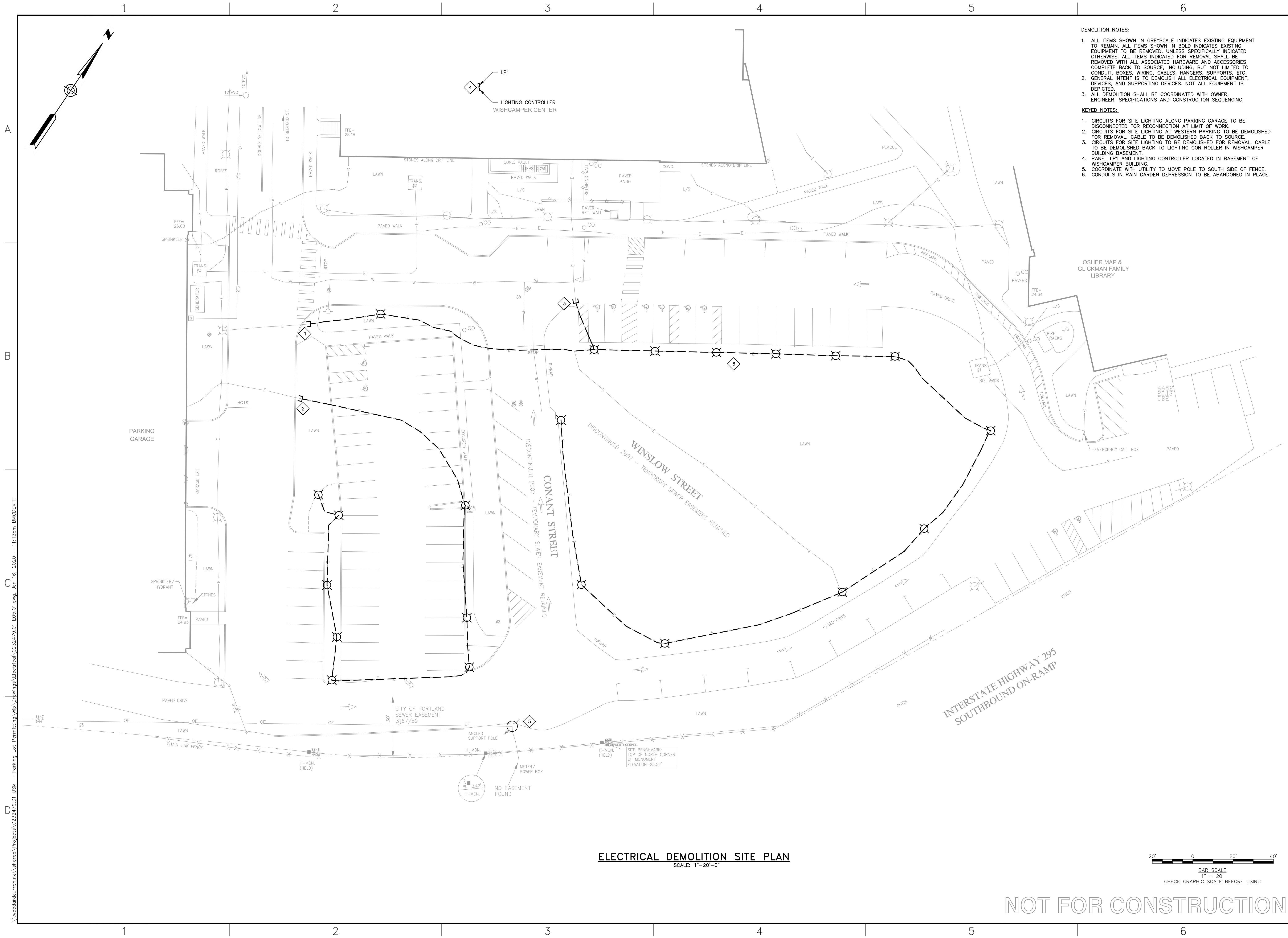
UNIVERSITY OF SOUTHERN MAINE
PORTLAND, MAINE

WISHCAMPER PARKING LOT

JOB NO.:0232479.01
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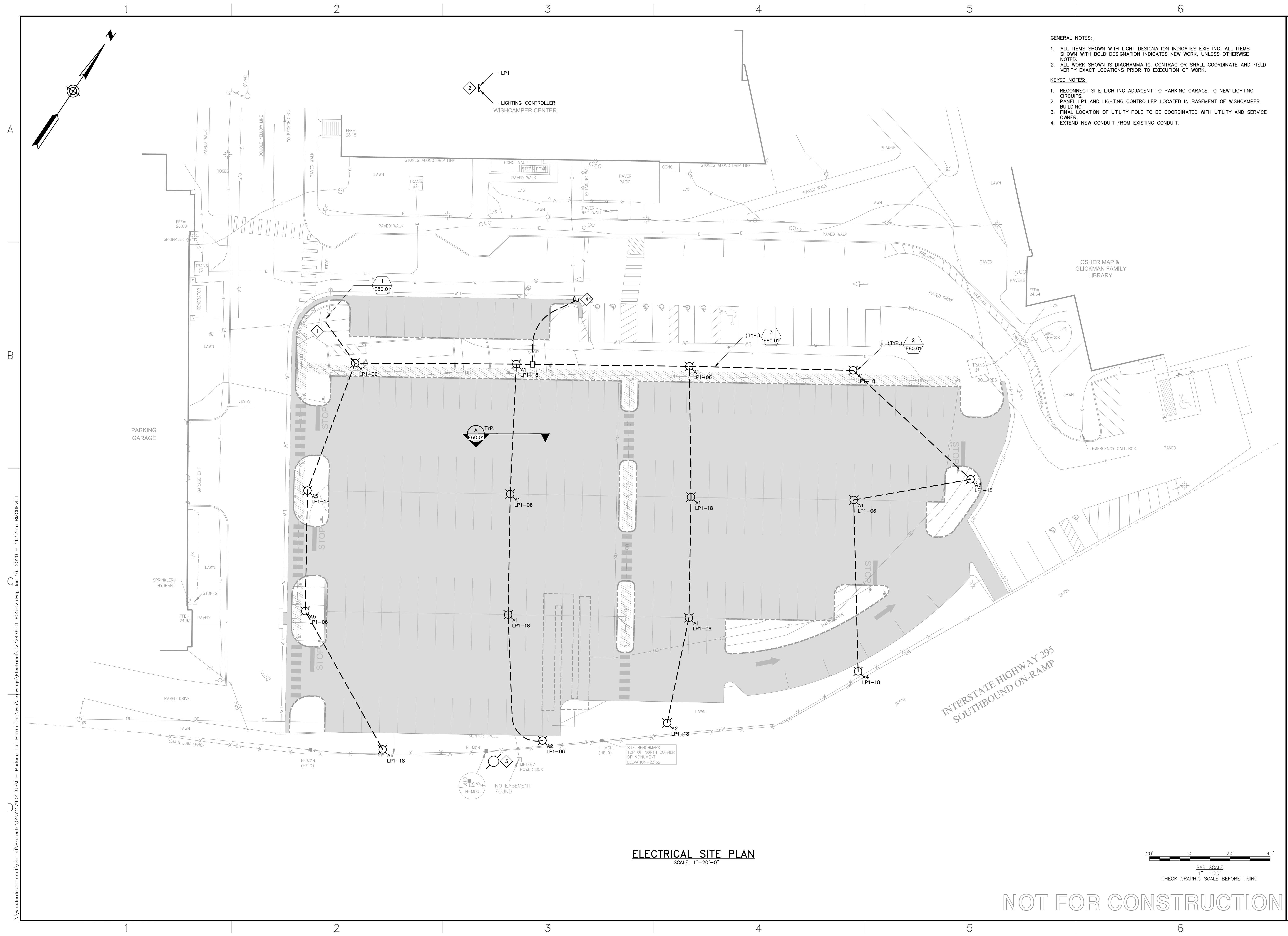
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WISHCAMPER PARKING LOT

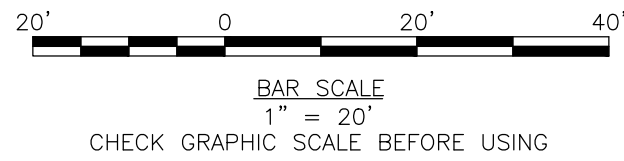
JOB NO.: 0232479.01
DATE: DECEMBER 2019
SCALE: AS NOTED
SHEET: 15 OF 19

E05.01



- GENERAL NOTES:**
1. ALL ITEMS SHOWN WITH LIGHT DESIGNATION INDICATES EXISTING. ALL ITEMS SHOWN WITH BOLD DESIGNATION INDICATES NEW WORK, UNLESS OTHERWISE NOTED.
 2. ALL WORK SHOWN IS DIAGRAMMATIC. CONTRACTOR SHALL COORDINATE AND FIELD VERIFY EXACT LOCATIONS PRIOR TO EXECUTION OF WORK.
- KEYED NOTES:**
1. RECONNECT SITE LIGHTING ADJACENT TO PARKING GARAGE TO NEW LIGHTING CIRCUITS.
 2. PANEL LP1 AND LIGHTING CONTROLLER LOCATED IN BASEMENT OF WISHCAMPER BUILDING.
 3. FINAL LOCATION OF UTILITY POLE TO BE COORDINATED WITH UTILITY AND SERVICE OWNER.
 4. EXTEND NEW CONDUIT FROM EXISTING CONDUIT.

ELECTRICAL SITE PLAN
SCALE: 1"=20'-0"

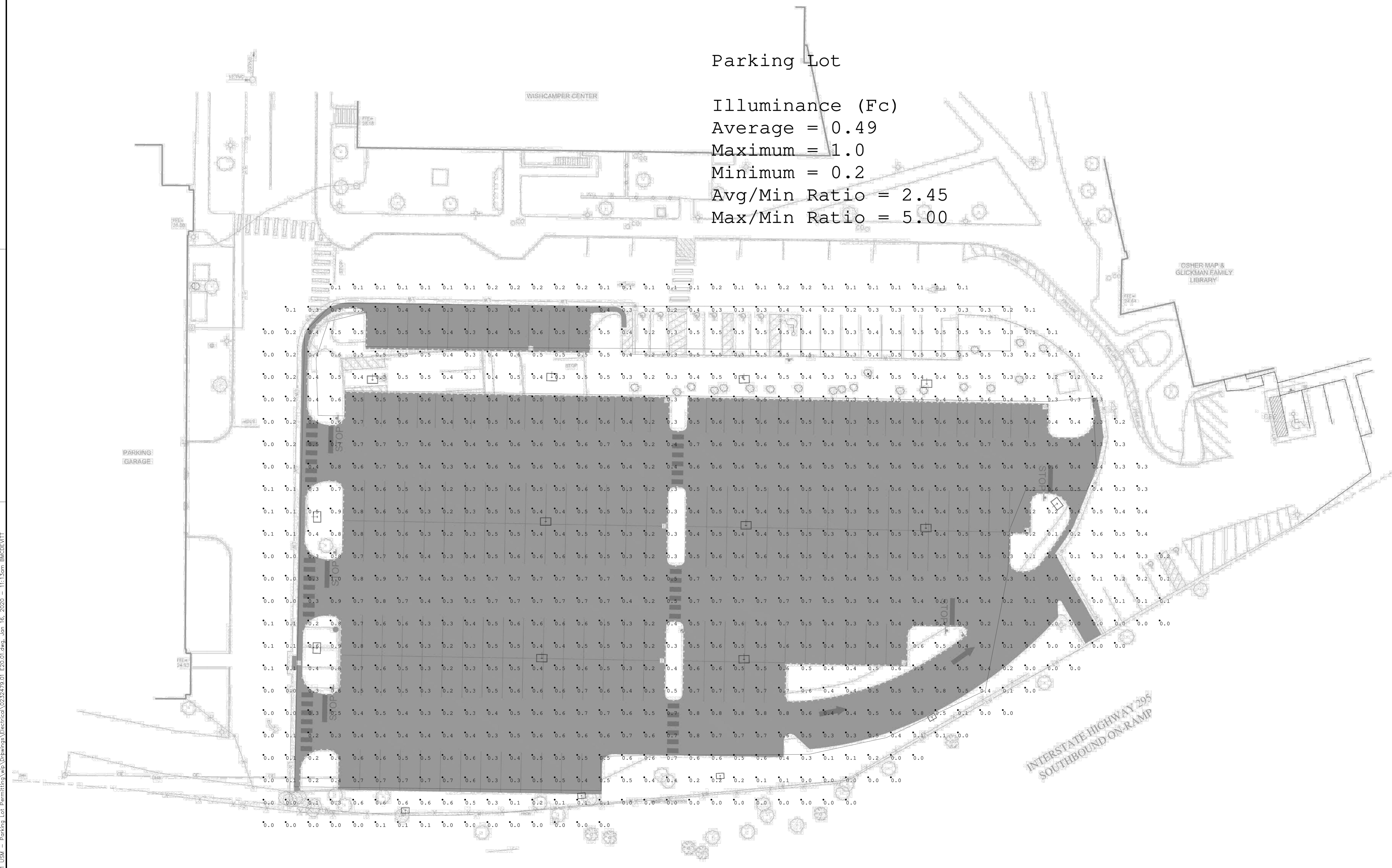


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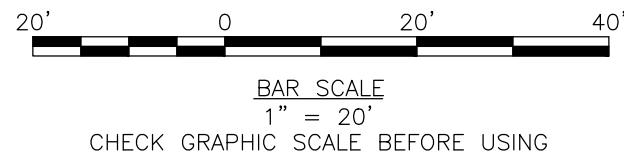
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ELECTRICAL SITE PLAN PROPOSED			
UNIVERSITY OF SOUTHERN MAINE PORTLAND, MAINE		WISHCAMPER PARKING LOT	
JOB NO.: 0232479.01		DATE: DECEMBER 2019	
SCALE: AS NOTED		SHEET: 16 OF 19	
DESIGNED BY: SEH		CHECKED BY: PPH	
DRAWN BY: SAA		DRAWN BY: BSC/24mg	
E05.02			

Parking Lot

Illuminance (Fc)
Average = 0.49
Maximum = 1.0
Minimum = 0.2
Avg/Min Ratio = 2.45
Max/Min Ratio = 5.00



ELECTRICAL PHOTOMETRIC PLAN
SCALE: 1"=20'-0"



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WISHCAMPER PARKING LOT			
JOB NO.: 0232479.01		DATE: DECEMBER 2019	
SCALE: AS NOTED		SHEET: 17 OF 19	
E20.01			

LP-1 PANEL SCHEDULE
SCALE: NO SCALE

SECTION A

SCALE: N.T.S.

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A

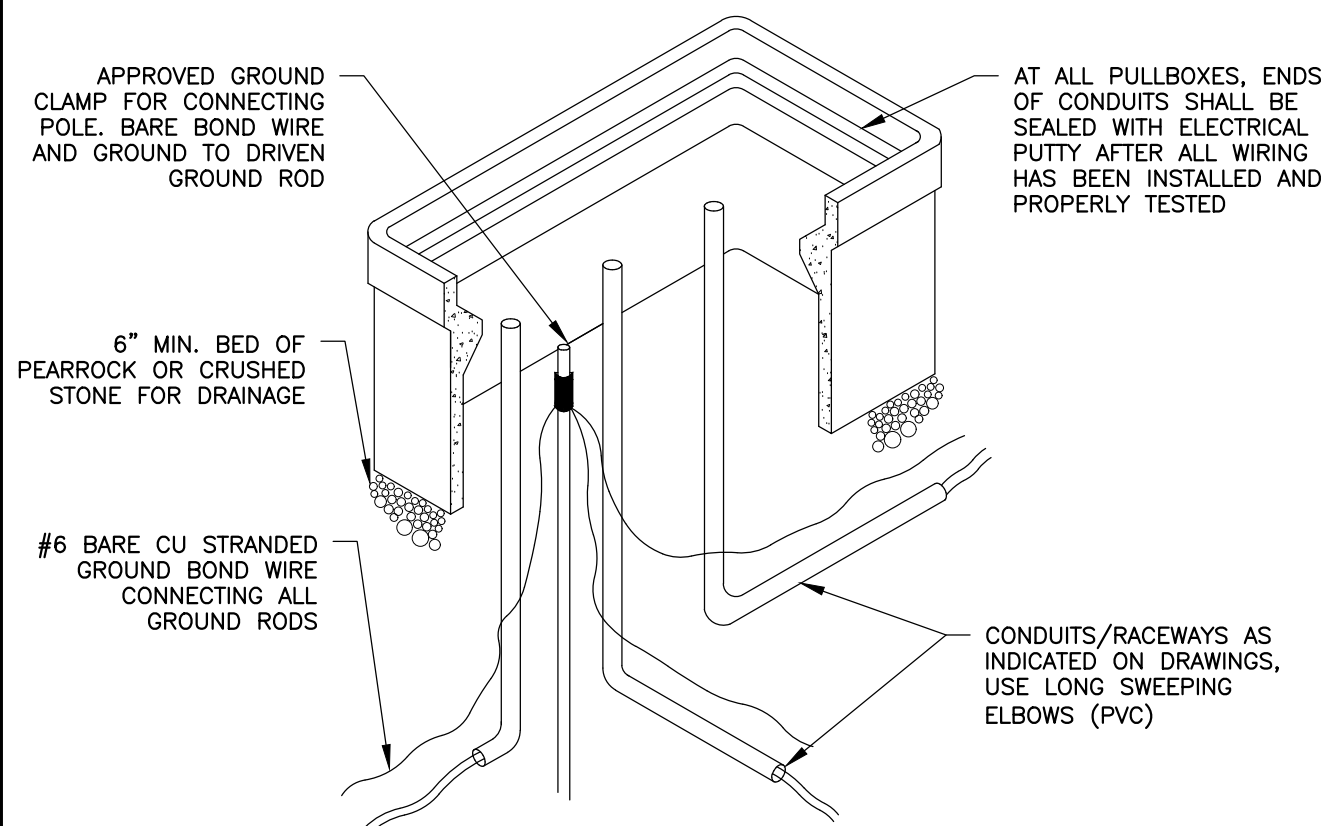
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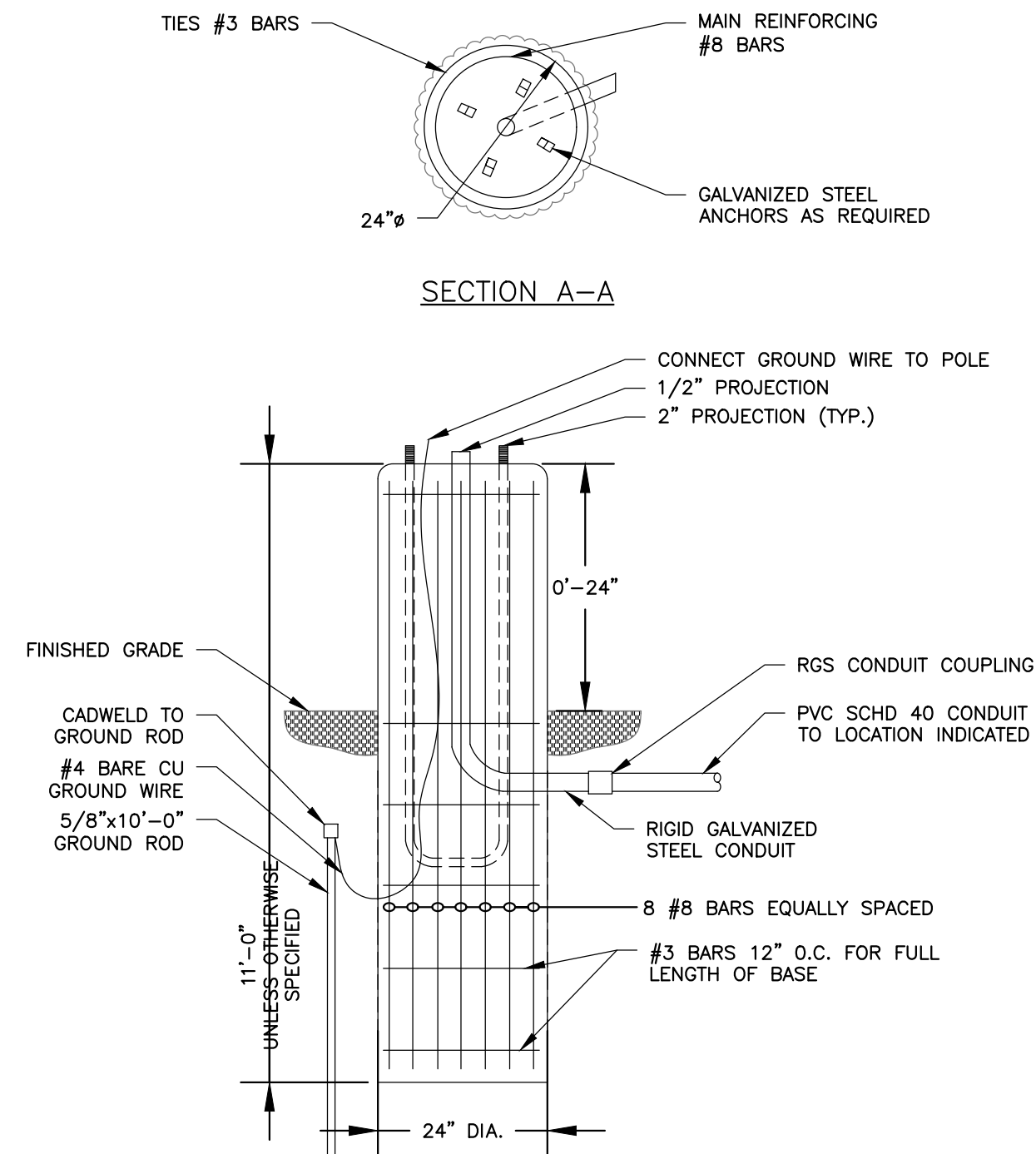
- GENERAL NOTES:
1. FINAL DIMENSIONS OF PULL BOXES SHALL BE AS VERIFIED IN THE FIELD AND SHALL BE IN ACCORDANCE WITH NEC.
 2. PULLBOX COVERS SHALL BE CAST IRON. PROVIDE EXTENSION AS REQUIRED.
 3. PULLBOXES SHALL BE PRECAST EQUAL TO: GEORGE ROBERTS, BROOKS, OR A.C. MILLER.
 4. REFER TO SPECIFICATIONS FOR FURTHER REQUIREMENTS.



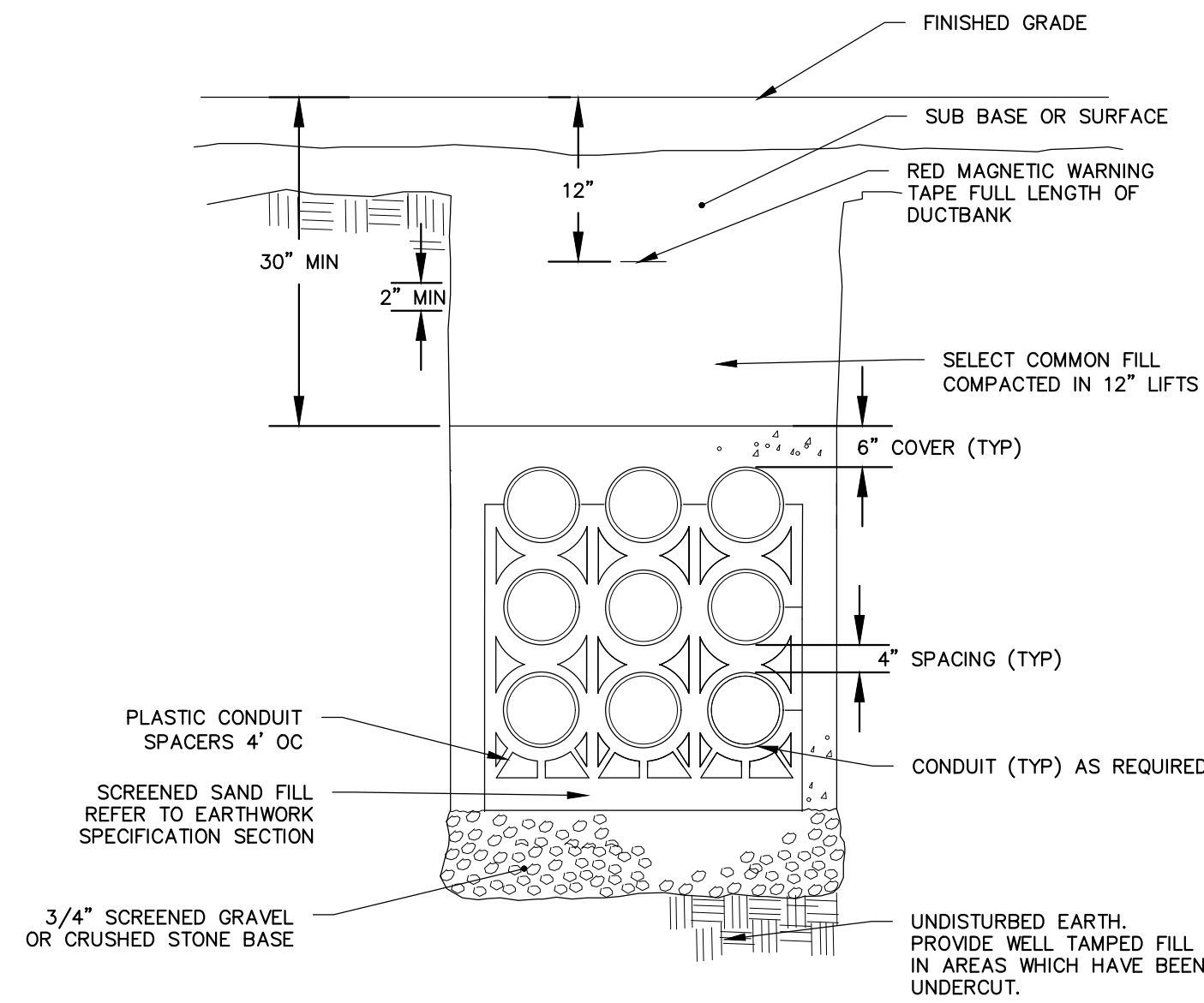
1 PULL BOX/HANDHOLE DETAIL
E05.02 SCALE: N.T.S.

GENERAL DETAILS:

1. THIS DETAIL IS APPLICABLE FOR POLES BASES WHERE LIGHT POLES MAY BE SUBJECT TO DAMAGE BY VEHICLES. DETAIL SHALL BE APPLICABLE FOR LIGHT FIXTURES LOCATED IN THE PAVED PARKING AREAS, AND NOT LOCATED WITHIN ISLANDS.



2 PARKING AREA LIGHTING POLE BASE DETAIL
E05.02 SCALE: N.T.S.



3 TYPICAL SAND ENCASED UNDERGROUND DUCT BANK DETAIL
E05.02 SCALE: N.T.S.

ELECTRICAL DETAILS

UNIVERSITY OF SOUTHERN MAINE
PORTLAND, MAINE

WISHCAMPER PARKING LOT

JOB NO.: 0232479.01
DATE: DECEMBER 2019
SCALE: AS NOTED
SHEET: 19 OF 19

E80.01

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



COMMITMENT & INTEGRITY DRIVE RESULTS

THIS DOCUMENT IS THE PROPERTY OF WOODARD & CURRAN INC. AND ITS CLIENT. REPRODUCTION OR DISSEMINATION WITHOUT WRITTEN PERMISSION IS PROHIBITED.

NOT FOR CONSTRUCTION

2. TITLE, RIGHT, OR INTEREST

The proposed development is located on properties owned by the Applicant and identified as Tax Map 114, Lot A001001. Attached is a copy of the deeds with this property.

2.1 LIST OF ATTACHMENTS

- Deeds.

GOVERNOR'S DEED
(with Reverter)

KNOW ALL PERSONS BY THESE PRESENTS, that the STATE OF MAINE, acting by and through its Governor, on recommendation of the Commissioner of its DEPARTMENT OF TRANSPORTATION, under and pursuant to the provisions of 23 M.R.S.A., Section 61, for consideration, the sufficiency of which is hereby acknowledged, RELEASES to THE UNIVERSITY OF MAINE SYSTEM, organized as a non-profit corporation of the State of Maine, with offices at 16 Central Street in Bangor, Maine, its successors and assigns forever, all its right, title and interest in and to a certain lot or parcel of land situated on the southerly side of Winslow Street, so-called, at its intersection with the westerly sideline of the right-of-way of State Highway "295", also known as Interstate 295, in Portland, County of Cumberland and State of Maine, and being as shown on a Right-of-way Map for State Highway "295" Portland, Cumberland County, Federal Aid Project Number I-295-3(28), dated January 1967, File Number 3-185, sheet 57 of 73, on file at the offices of the Maine Department of Transportation in Augusta, bounded and described as follows:

BEGINNING at a point on the southerly sideline of Winslow Street at its intersection with the westerly sideline of the right-of-way of Route 295;

THENCE S 26° 51' 18" W along said westerly sideline of Route 295, a distance of 34.00 feet;

THENCE S 51° 22' 05" W continuing along said westerly sideline of Route 295, a distance of 23.93 feet to land now or formerly of the University Of Southern Maine Foundation;

THENCE N 38° 37' 55" W along said University Of Southern Maine Foundation land 20.00 feet;

THENCE N 6° 51' 23" E continuing along said University Of Southern Maine Foundation land, 33.28 feet to the southerly sideline of said Winslow Street;

THENCE S 85° 26' 46" E along said southerly sideline of Winslow Street, 42.70 feet, more or less to the aforementioned westerly sideline of the right-of-way of Route 295 and the POINT OF BEGINNING, and containing one thousand four hundred twenty-seven square feet, more or less (1,427 sq. ft. ±).

EXCEPTING AND RESERVING from this conveyance any and all rights of access from the herein described parcel of land to State Highway "295", also known as Interstate 295, all of which rights of access are expressly reserved to, and retained by, the State of Maine.

ALSO RESERVING to the State of Maine the perpetual right to enter upon said parcel to maintain any highway slopes and drainage facilities or installations that may exist.

SUBJECT TO all utility easements and installations located on the above described premises, including those shown on the herein referred to Right-of-way Map, and to those rights which any utility enjoys over the subject premises for maintenance, location or relocation of poles and other installations.

NOTWITHSTANDING the foregoing, Grantor gives this deed, and Grantee accepts the same, upon the express CONDITION that the property hereby conveyed is to be retained by the University of Maine system and used for

public purposes only; and if said property or any interest in it, or any portion of it, is transferred, or if it is used for any commercial or other non-public purposes, said property shall at once REVERT to, and re-vest in, the Grantor, its successors or assigns; and that such reversion, should it occur, shall be automatic and require no further act of conveyance or documentation in order to be effective.

BEING a portion of premises acquired by the State of Maine from Charles T. Hayes, Jr. and Beatrice Hayes by warranty deed dated July 19, 1968 and recorded at the Cumberland County Registry of Deeds on July 23, 1968 in Volume 3049 at Page 553; and a portion of premises acquired from Reuben Katz by warranty deed dated January 10, 1969 and recorded at said Registry Of Deeds on January 15, 1969 in Volume 3072 at Page 435.

THE STATE OF MAINE makes no representations or warranties with respect to the premises hereby conveyed. The representations and warranties so excluded encompass, but are not limited to, those pertaining to: land use and environmental matters; fitness of the premises or any portion thereof for any particular purposes; water quality or quantity; the condition or quality of the soil; inchoate or unrecorded liens; status of title to or rights within that area lying between the high and low water marks; or the existence, status, or condition of access to, or public utilities serving the premises. Any subsequent use of, improvement to, or construction on the parcel shall be subject to all applicable laws, regulations, ordinances, and permitting requirements.

IN WITNESS WHEREOF, I, John E. Baldacci, Governor of the State of Maine,
have caused the name and Great Seal of the State of Maine to be hereunto
affixed this 11th day of Sept in the year
two thousand six.

STATE OF MAINE

By: [Signature], Governor
John E. Baldacci

Received
Recorded Register of Deeds
Sep 20, 2006 02:29:02P
Cumberland County
John B O'Brien



Affixed by: [Signature]
Secretary of State

STATE OF MAINE
Kennebec, ss.

Sept. 11th, 2006

Personally appeared the above-named, John E. Baldacci, Governor of the State of Maine and
acknowledged the foregoing instrument to be his free act and deed in his said capacity and the
free act and deed of the State of Maine.

Before me, [Signature]
Notary Public/Attorney at Law

Print Name: _____

My commission expires _____

ROSEMARIE D. SMITH
Notary Public, Maine
My Commission Expires January 6, 2009

SEAL

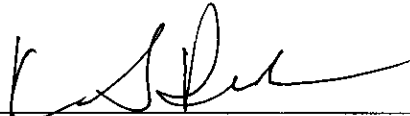
SHORT FORM QUITCLAIM DEED WITH COVENANT

THE UNIVERSITY OF SOUTHERN MAINE FOUNDATION, a Maine nonprofit corporation with a mailing address of 96 Falmouth Street, Portland, Maine 04104, FOR CONSIDERATION PAID, grants to UNIVERSITY OF MAINE SYSTEM, a body politic and instrumentality of the State of Maine, with a mailing address of 16 Central Street, Bangor, Maine 04401, with QUITCLAIM COVENANT, certain real property, together with any improvements thereon, located in the City of Portland, Cumberland County, Maine and more particularly described on Exhibit A attached hereto and made a part hereof.

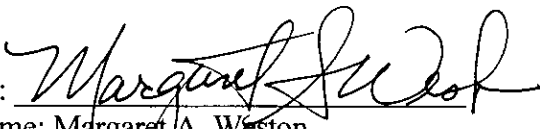
Being the same premises conveyed to the grantor herein by a Short Form Quitclaim Deed With Covenant from Frederick J. Olsen dated April 27, 2005 and recorded at the Cumberland County Registry of Deeds in Book 22577, Page 79.

IN WITNESS WHEREOF, The University of Southern Maine Foundation, has caused this instrument to be executed and delivered as of the 20th day of December, 2011.

The University of Southern Maine
Foundation



Witness

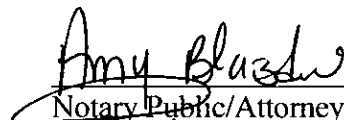
By: 
Name: Margaret A. Weston
Its: President

State of Maine
County of Cumberland, ss.

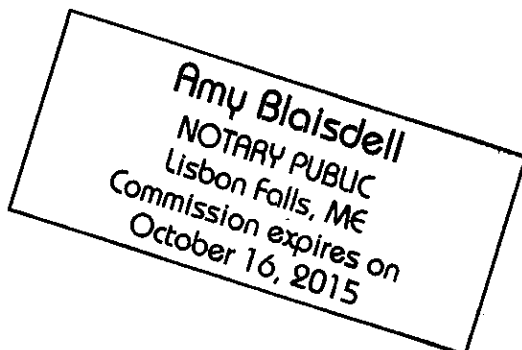
December 16, 2011

Personally appeared the above-named Margaret A. Weston, President of The University of Southern Maine Foundation, and acknowledged the foregoing instrument to be her free act and deed in her said capacity and the free act and deed of The University of Southern Maine Foundation.

Before me,



Notary Public/Attorney at Law
Name: Amy Blaisdell
Commission Expires: 10/16/2015



MAINE REAL ESTATE TAX PAID

Exhibit A

Formerly Tax Map 114, Block D, Lot 21:

Three (3) certain lots or parcels of land, with the buildings thereon, situated on the northerly side of Winslow Street in the City of Portland, County of Cumberland, State of Maine, being lots numbered 1, 2 and 3 on an unrecorded plan of the Heater piece at and adjoining the junction of said Winslow Street and Bedford Street made by E.C. Jordan & Co., Civ. Eng., in January 1918, and on file in the office of said E.C. Jordan & Co., said three lots taken together, being bounded and described as follows:

Beginning at a point on said northerly line of Winslow Street at the southwest corner of land now or formerly of John W. Lovely heirs and thence running, with an included angle of $88^{\circ} 43'$ and by the westerly line of said Lovely land eighty-six (86) feet to a post and land now or formerly of the T.A. Huston & Co.; thence northwesterly and along said Huston land, forty-nine (49) feet to a post; thence northwesterly and along said Huston land thirty-two and three tenths (32.3) feet to an iron post; thence westerly and along said Huston land twenty-two and thirty-five hundredths (22.35) feet to an iron post; thence westerly and along said Huston land nineteen and eighty-four hundredths (19.84) feet to a post; said post being the southeasterly corner of lot numbered 11 on said plan; thence westerly and along the rear or southerly line of said lot numbered 11, fifty-nine and thirty-seven hundredths (59.37) feet to the southwesterly corner of lot numbered 11; thence southwesterly at right angles to said Winslow Street one hundred (100) feet to said northerly line of Winslow Street; thence easterly and along said northerly line of Winslow Street one hundred fifty-nine (159) feet to the point or place of beginning; said three lots having together an area of 18,027 square feet, be the same more or less.

EXCEPTING AND RESERVING from the above-described premises that portion thereof which was conveyed by Ellestad Hansen, Warren K. Webber and Mary E. Hansen to Charles A. Adams by deed dated April 8, 1924 and recorded in the Cumberland County Registry of Deeds in Book 1165, Page 79, and such portion thereof as may have been conveyed by Mary E. Hansen to the State of Maine by deed dated January 7, 1970 and recorded in the said Registry of Deeds in Book 3114, Page 724.

Formerly Tax Map 114, Block D, Lot 22:

ALSO a certain lot or parcel of land situated on the northerly side of Winslow Street in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows, to wit:

Beginning at an iron hub at the southwest corner of a lot of land conveyed by Edward D. Noyes, et al. to Ellestad Hansen and Warren K. Webber by deed dated November 14, 1923 and recorded in the Cumberland County Registry of Deeds in Book 1153, Page 280; thence easterly along the northerly side line of Winslow Street forty-seven (47) feet to a stake; thence northerly at right angles to said Winslow Street one hundred sixteen and thirty-three hundredths (116.33) feet to an iron hub in the northerly line of the lot above mentioned; thence westerly with an included angle of seventy (70) degrees and thirty-six (36) minutes to the right, forty-nine and seventy-six hundredths (49.76) feet to a stake at the northwest corner of the lot above mentioned; thence southerly on a line at right angles to said Winslow Street one hundred (100) feet to the point of beginning.

Formerly Tax Map 114, Block C, Lot 1:

ALSO a certain lot or parcel of land in the City of Portland, County of Cumberland and State of Maine, described as follows: Beginning at a stake on the southerly side of Winslow Street at the intersection with the easterly side of Conant Street; thence 25° E by Conant Street one hundred ten (110) feet; thence easterly at right angles with Conant Street forty-six and thirty-one hundredths (46.31) feet to a stake; thence northerly to a point in the southerly side of Winslow Street distant easterly sixty-three and seventy-two hundredths (63.72) feet from the point of beginning; thence $N 71^{\circ} 37' W$ by said Winslow Street sixty-three and seventy-two hundredths (63.72) feet to the point of beginning.

Formerly Tax Map 114, Block C, Lot 2:

ALSO a certain lot or parcel of land situated in the City of Portland, County of Cumberland and State of Maine bounded and described as follows, to wit:

Beginning at a point on the present southerly boundary line of Winslow Street at the northeasterly line of land now or formerly of Frederick J. Olsen; thence southeasterly along the northeasterly line of land now or formerly of said Olsen, about sixty-six (66) feet to a corner; thence southwesterly along the southeasterly line of land now or formerly of said Olsen, about forty-six and three tenths (46.3) feet to the northeasterly boundary line of Conant Street; thence southeasterly along the northeasterly boundary line of Conant Street about eighteen (18) feet to a monument located about seventy-one (71) feet northwesterly from and as measured along a line normal to the Ramp F.A. 6 Base Line at about Sta. 5+50; thence northeasterly about sixty-six (66) feet to a point on a line, said line being a projected line between the beforementioned monument and a monument located fifty (50) feet northwesterly from and as measured along a line normal to the Ramp F.A. 6 Base Line at Sta. 4+50, said point being twenty-five (25) feet southwesterly of and as measured along said projected line from said monument located

northwesterly of Sta. 4+50; thence northwesterly at right angles to said projected line twenty (20) feet to a point; thence northerly by a direct course to a point on the present southerly boundary line of Winslow Street; thence westerly along the present southerly boundary line of Winslow Street sixty (60) feet to the point of beginning. Said lot or parcel of land contains about 2,867 square feet and is a portion of that land as acquired from Charles T. Hayes, Jr. and Beatrice Hayes, pursuant to a Notice of Layout and Taking dated March 8, 1973 and recorded at the Cumberland County Registry of Deeds in Book 3367, Page 58. Said parcel is shown on a certain Maine Department of Transportation Right-of-way Map entitled "State Highway '295', Portland, Cumberland County, Federal Aid Project No. 1-295-3(28)" dated January 1967, on file in Augusta, File No. 3-185.

The premises herein conveyed is SUBJECT to a State of Maine Notice of Layout and Taking dated February 28, 1973 and recorded in said Cumberland County Registry of Deeds in Book 3367, Page 58.

Received
Recorded Register of Deeds
Dec 21, 2011 12:40:48P
Cumberland County
Pamela E. Lovley

3. FINANCIAL CAPACITY

The proposed project will cost approximately \$1,259,000 to construct. Evidence of the University's financial capability to complete the proposed project is attached to this Section.

3.1 LIST OF ATTACHMENTS

- Evidence of Financial Capability.



UNIVERSITY OF
SOUTHERN MAINE
Finance and Administration

January 17, 2020

Darrin Stairs
Woodard & Curran
41 Hutchins Drive
Portland, ME 04102

Dear Mr. Stairs:

The University of Southern Maine is currently seeking approval from the University of Maine System Board of Trustees to expend up to \$1,710,000 to expand the current parking area behind the Wishcamper Center on the Portland campus.

USM would fund the project with approximately \$1 million in existing capital reserves and would utilize Education & General fund resources to fund any remaining project balance.

Thank you for your consideration.

Sincerely,

Alexander E. Porteous
Chief Business Officer

4. TECHNICAL ABILITY

On behalf of the Applicant, Woodard & Curran is preparing this application for the proposed development. Woodard & Curran has extensive experience with design for site development projects and specifically within the City of Portland. Woodard & Curran, a 1,000-person Portland-based firm, has provided engineering services to the public and private sector for over 40 years, including permitting, civil/site engineering, stormwater and construction management services. Additional company information for W&C, sub consultants referenced within this application, or key personnel involved in preparing this application can be provided upon request.

5. NOISE

The noise impact from the proposed development will be minor. The primary source of noise from the proposed project will be the result of construction. Construction activities will be limited to the hours permitting by the City. Noise associated with the proposed development will not exceed regulated levels and is not anticipated to negatively impact the surrounding urban environment.

6. VISUAL QUALITY & SCENIC CHARACTER

As shown on the design drawings, landscaping will be provided per the City of Portland guidelines to provide visual screening of the proposed parking lot. It is not anticipated that the proposed development will result in any negative visual impacts.

7. WILDLIFE & FISHERIES

The Site has been previously developed and there are no known areas of significant natural features, including areas of significant wildlife habitats or wetlands. The attached Official Species List identifies the northern long-eared bat, which has been listed as a Federally Threatened Species, in association with the project area; however, there are no critical habitat areas located within the project area. Based on US Fish & Wildlife information, the northern long-eared bat typically lives in caves during the winter months and in trees larger than three inches in diameter during the summer, with migration between these two habitats in the spring in the fall. Tree-clearing for this project will be minimal.

A letter has been sent to the Maine Department of Inland Fisheries and Wildlife (MDIFW) requesting information regarding any known threatened or endangered species or critical habitat relative to the project area; a copy of this letter is attached to this Section for your reference. A copy of the MDIFW response can be provided upon receipt. It is not anticipated that the proposed development will have a negative impact on the northern long-eared bat.

7.1 LIST OF ATTACHMENTS

- Official Species List; and
- MDIFW Environmental Review Request Letter.



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Maine Ecological Services Field Office

P. O. Box A

East Orland, ME 04431

Phone: (207) 469-7300 Fax: (207) 902-1588

<http://www.fws.gov/mainefieldoffice/index.html>



In Reply Refer To:

December 12, 2019

Consultation Code: 05E1ME00-2020-SLI-0297

Event Code: 05E1ME00-2020-E-01087

Project Name: USM

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies the threatened, endangered, candidate, and proposed species and designated or proposed critical habitat that may occur within the boundary of your proposed project or may be affected by your proposed project. This species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC Web site at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the Endangered Species Consultation Handbook at: <http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

This species list also identifies candidate species under review for listing and those species that the Service considers species of concern. Candidate species have no protection under the Act but are included for consideration because they could be listed prior to completion of your project. Species of concern are those taxa whose conservation status is of concern to the Service (i.e., species previously known as Category 2 candidates), but for which further information is needed.

If a proposed project may affect only candidate species or species of concern, you are not required to prepare a Biological Assessment or biological evaluation or to consult with the Service. However, the Service recommends minimizing effects to these species to prevent future conflicts. Therefore, if early evaluation indicates that a project will affect a candidate species or species of concern, you may wish to request technical assistance from this office to identify appropriate minimization measures.

Please be aware that bald and golden eagles are not protected under the Endangered Species Act but are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.). Projects affecting these species may require development of an eagle conservation plan: http://www.fws.gov/windenergy/eagle_guidance.html Information on the location of bald eagle nests in Maine can be found on the Maine Field Office Web site: <http://www.fws.gov/mainefieldoffice/Project%20review4.html>

Additionally, wind energy projects should follow the wind energy guidelines: <http://www.fws.gov/windenergy/> for minimizing impacts to migratory birds and bats. Projects may require development of an avian and bat protection plan.

Migratory birds are also a Service trust resource. Under the Migratory Bird Treaty Act, construction activities in grassland, wetland, stream, woodland, and other habitats that would result in the take of migratory birds, eggs, young, or active nests should be avoided. Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g.,

cellular, digital television, radio, and emergency broadcast) can be found at:
<http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm> and at:
<http://www.towerkill.com>; and at:
<http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Maine Ecological Services Field Office

P. O. Box A

East Orland, ME 04431

(207) 469-7300

Project Summary

Consultation Code: 05E1ME00-2020-SLI-0297

Event Code: 05E1ME00-2020-E-01087

Project Name: USM

Project Type: ** OTHER **

Project Description: Wishcamper Parking Lot

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/43.66185866314612N70.27315908620606W>



Counties: Cumberland, ME

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

January 17, 2020



Maine Department of Inland Fisheries and Wildlife
41 State House Station
Augusta, ME 04333

RE: USM Wishcamper Parking Lot Expansion – Environmental Review Request

To Whom It May Concern:

The University of Southern Maine Portland Campus is proposing to expand the Wishcamper Center parking lot located at 44 Bedford Street in Portland, Maine. The proposed project will include the construction of a parking lot and associated lighting, landscaping, and stormwater management infrastructure. The entire limit of work has been previously developed. The proposed work will require a Maine Department of Environmental Protection Site Location of Development Permit Amendment, which requires coordination with the Maine Department of Inland Fisheries and Wildlife.

On behalf of the University, we are requesting a review of the project area for any known threatened or endangered species or critical habitat. A site location map and Site Plan have been attached for your reference. If you have any questions regarding this information or the proposed project, please do not hesitate to contact me at (207) 558-3665 or aefletcher@woodardcurran.com. Thank you for your assistance.

Sincerely,

WOODARD & CURRAN INC.

A handwritten signature in blue ink, appearing to read "Ashley Fletcher", is written over a horizontal line.

Ashley Fletcher, PE
Project Engineer

Enclosure: Site Location Map
Site Plan

Cc: MaineDEP

8. HISTORIC SITES

A letter has been sent to the Maine Historic Preservation Commission (MHPC) requesting a review of the project area relative to historic properties; a copy of this letter is attached to this Section for your reference. A copy of the MHPC response can be provided upon receipt.

8.1 LIST OF ATTACHMENTS

- MHPC Project Review Request Letter.

January 17, 2020



Kirk F. Mohney, Director
Maine Historic Preservation Commission
55 Capitol Street, 65 State House Station
Augusta, Maine 04333-0065

Re: USM Wishcamper Parking Lot Expansion – Project Review Request

Dear Mr. Mohney:

The University of Southern Maine Portland Campus is proposing to expand the existing Wishcamper Center parking lot located at 44 Bedford Street in Portland, Maine. The proposed project will include the construction of a parking lot and associated lighting, landscaping, and stormwater management infrastructure. The entire limit of work has been previously developed. The proposed work will require a Maine Department of Environmental Protection Site Location of Development Permit Amendment, which requires coordination with the Maine Historic Preservation Commission.

On behalf of the University, we are requesting a review of the project area relative to historic properties. Please note that no bridges or buildings or other structures will be directly impacted by the proposed work, but that the proposed project is located adjacent to the Glickman Family Library, which was built in 1900. The building is located northeast of the proposed project, across a site access road, as shown on the enclosed Site Plan; a photo of the building, a USGS topographic map, and proposed Site Plan have been enclosed for your reference. The project is not located adjacent to or within any known historic properties or districts.

We appreciate your review of this project. If you have any questions regarding this information or the proposed project, please do not hesitate to contact me at (207) 558-3665 or aefletcher@woodardcurran.com. Thank you for your assistance.

Sincerely,

WOODARD & CURRAN INC.

A handwritten signature in black ink, appearing to read "Ashley Fletcher", is written over a light blue horizontal line.

Ashley Fletcher, PE
Project Engineer

Enclosures: Photograph of Glickman Family Library
USGS Map
Site Plan

Cc: MaineDEP

9. UNUSUAL NATURAL AREAS

The Site has been previously developed and there are no known unusual natural areas. A letter has been sent to the Maine Natural Areas Program (MNAP) requesting a review of the Site relative to rare and exemplary botanical features; a copy of this letter is attached to this Section for your reference. A copy of the MNAP response can be provided upon receipt.

9.1 LIST OF ATTACHMENTS

- MNAP Site Review Request Letter.

Via Electronic Mail



January 16, 2020

Maine Natural Areas Program
177 State House Station
Augusta, ME 04333-0177

RE: USM Wishcamper Parking Lot Expansion – Site Review Request

To Whom It May Concern:

The University of Southern Maine Portland Campus is proposing to expand the existing Wishcamper Center parking lot located at 44 Bedford Street in Portland, Maine. The proposed project will include the construction of a parking lot and associated lighting, landscaping, and stormwater management infrastructure. The entire limit of work has been previously developed. The proposed work will require a Maine Department of Environmental Protection Site Location of Development Permit Amendment, which requires coordination with the Maine Natural Areas Program.

On behalf of the University, we are requesting information on rare and exemplary botanical features in the project area. A site location map has been attached for your reference. If you have any questions regarding this information or the proposed project, please do not hesitate to contact me at (207) 558-3665 or aefletcher@woodardcurran.com. Thank you for your assistance.

Sincerely,

WOODARD & CURRAN INC.

Ashley Fletcher, PE
Project Engineer

Enclosure: Site Location Map

Cc: MaineDEP

10. BUFFERS

The Site has been previously developed. There are no existing or proposed buffers. This Section is not applicable.

11. SOILS

Copies of the United States Department of Agriculture Natural Resources Conservation Service Web Soil Survey and the Geotechnical Report prepared for the Site are attached to this Section for your reference. Environmental assessments of the Site have been conducted and the Owner is a participant in the Maine Department of Environmental Protection Voluntary Response Action Program (VRAP). A soil management plan will be developed for the site.

11.1 LIST OF ATTACHMENTS

- United States Department of Agriculture Natural Resources Conservation Service Web Soil Survey; and
- Geotechnical Report for the Site, dated November 1, 2019, prepared by S.W. Cole Engineering, Inc.



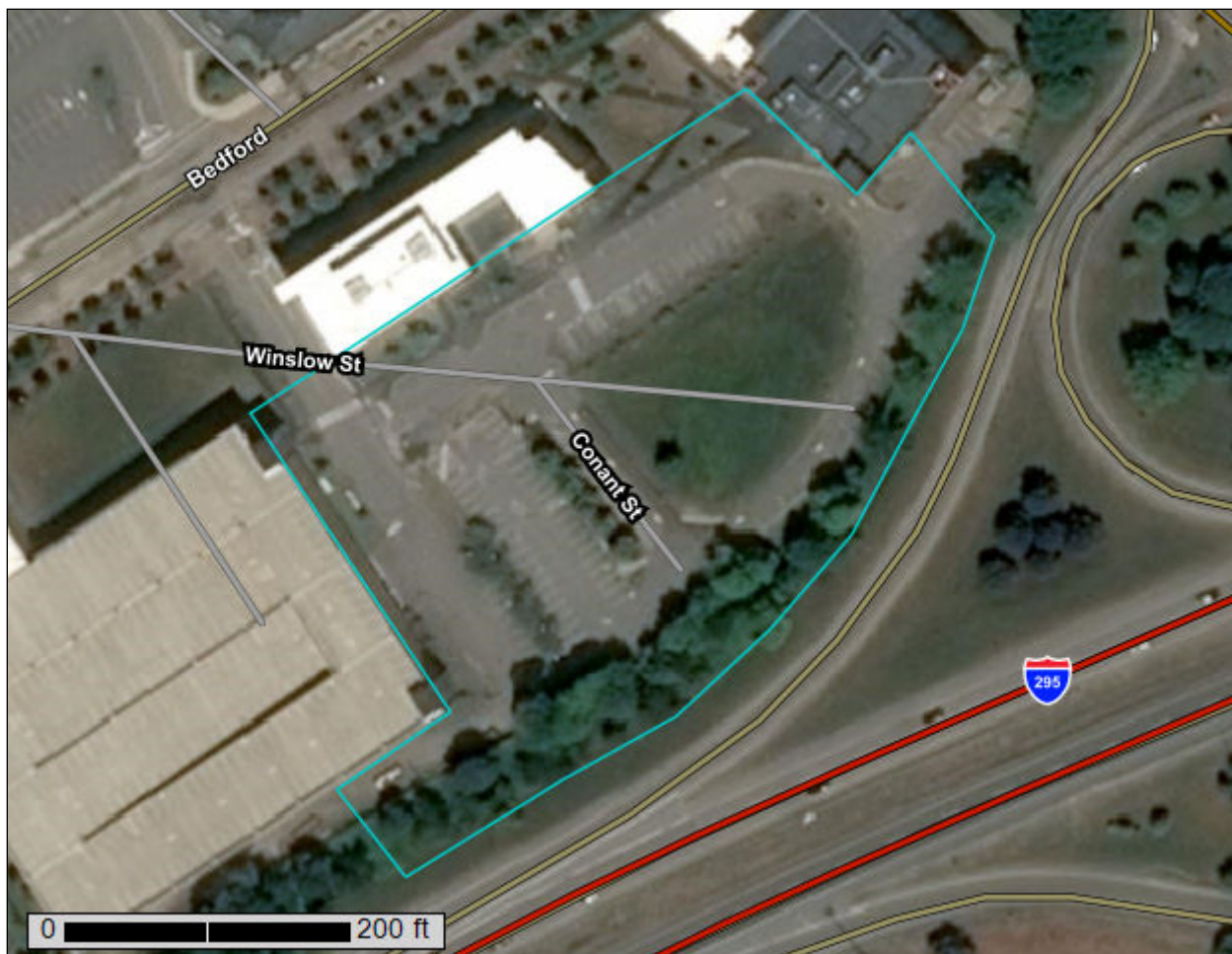
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Cumberland County and Part of Oxford County, Maine



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

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

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

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

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Cumberland County and Part of Oxford County, Maine
Survey Area Data: Version 16, Sep 16, 2019

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

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

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
WmB	Windsor loamy sand, 0 to 8 percent slopes	3.4	100.0%
Totals for Area of Interest		3.4	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Cumberland County and Part of Oxford County, Maine

WmB—Windsor loamy sand, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2w2x2

Elevation: 0 to 1,410 feet

Mean annual precipitation: 36 to 71 inches

Mean annual air temperature: 39 to 55 degrees F

Frost-free period: 140 to 240 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Windsor and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windsor

Setting

Landform: Outwash terraces, deltas, outwash plains, dunes

Landform position (three-dimensional): Tread, riser

Down-slope shape: Linear, convex

Across-slope shape: Linear, convex

Parent material: Loose sandy glaciofluvial deposits derived from granite and/or loose sandy glaciofluvial deposits derived from schist and/or loose sandy glaciofluvial deposits derived from gneiss

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material

A - 1 to 3 inches: loamy sand

Bw - 3 to 25 inches: loamy sand

C - 25 to 65 inches: sand

Properties and qualities

Slope: 0 to 8 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Excessively drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)

Available water storage in profile: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2s

Hydrologic Soil Group: A

Hydric soil rating: No

Minor Components

Hinckley

Percent of map unit: 5 percent

Landform: Outwash plains, eskers, deltas, kames

Landform position (two-dimensional): Summit, shoulder, backslope

Landform position (three-dimensional): Nose slope, side slope, crest, head slope, rise

Down-slope shape: Convex

Across-slope shape: Linear, convex

Hydric soil rating: No

Agawam

Percent of map unit: 5 percent

Landform: Kames, moraines, outwash terraces, kame terraces, outwash plains

Landform position (two-dimensional): Footslope, summit, backslope, shoulder

Landform position (three-dimensional): Side slope, crest, tread, riser, rise

Down-slope shape: Convex

Across-slope shape: Convex

Hydric soil rating: No

Deerfield

Percent of map unit: 5 percent

Landform: Outwash plains, deltas, terraces

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Tread, talf

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

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Custom Soil Resource Report

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REPORT

19-1318 S

November 1, 2019

Explorations and Geotechnical Engineering Services

Woodard & Curran
Proposed Parking Lot
University of Southern Maine
Bedford Street
Portland, Maine

Prepared For:

Woodard & Curran
Attention: Darrin Stairs – Project Manager
41 Hutchins Drive
Portland, ME 04102

Prepared By:

S. W. Cole Engineering, Inc.
286 Potland Road
Gray, Maine
207-657-2866



- *Geotechnical Engineering*
- *Construction Materials Testing and Special Inspections*
- *GeoEnvironmental Services*
- *Test Boring Explorations*

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19-1318 S

November 1, 2019

Woodard & Curran
Attention: Darrin Stairs – Project Manager
41 Hutchins Drive
Portland, Maine 04102

Subject: Proposal
 Explorations and Geotechnical Engineering Services
 Proposed Parking Lot
 Bedford Street
 Portland, Maine

Dear Darrin:

In accordance with our Proposal dated September 12, 2019, we have performed subsurface explorations for the subject project. This report summarizes our findings and geotechnical recommendations and its contents are subject to the limitations set forth in Appendix A.

1.0 INTRODUCTION

1.1 Scope and Purpose

The purpose of our services was to obtain subsurface information at the site in order to develop geotechnical recommendations relative to earthwork and pavement associated with the proposed construction. Our scope of services included test boring explorations, soils laboratory testing, and a geotechnical analysis of the subsurface findings and preparation of this report.

1.2 Site and Proposed Construction

The site is located on the southeasterly side of Bedford Street and southeast of the existing Wishcamper Center for the Muskie School. Based on the provided existing conditions site plan, the site is relatively level at about elevation 23 to 24 feet (project

datum) and is currently occupied by an existing paved parking lot on the southwesterly third of the site and grass lawn and landscaped areas on the northeasterly two thirds of the site. A catch basin and storm water utility pipe exists in the existing paved parking lot. A prior site conditions plan indicates that historically there were several building structures and paved areas on the site. We understand, the structures were removed and the foundations and associated utilities and paved areas were reportedly completely removed.

We understand construction will include a new paved parking lot measuring about 200 by 350 feet in plan dimensions with associated landscape islands, storm drainage and a subsurface stormwater treatment system in the northerly portion of the site. Proposed grades are planned within 1 to 2 feet of existing grades.

Existing site features are shown on the “Exploration Location Plan” attached in Appendix B.

2.0 EXPLORATION AND TESTING

2.1 Explorations

Seven test borings (B-19-101 through B-19-107) were made at the site on October 14, 2019. The explorations were made by S. W. Cole Explorations, LLC. The exploration locations were selected and established in the field by S. W. Cole Engineering, Inc. (S.W.COLE) using measurements from existing site features and a site plan provided by the client. Some of the proposed exploration locations needed to be shifted due to existing site features and/or utilities. The approximate exploration locations are shown on the “Exploration Location Plan” attached in Appendix B. Logs of the explorations and a key to the notes and symbols used on the logs are attached in Appendix C. The elevations shown on the logs were estimated based on topographic information shown on the “Exploration Location Plan”.

2.2 Laboratory Testing

Soil samples obtained from the explorations were returned to our laboratory for further classification and testing. Moisture content test results are noted on the logs. The results of two soil gradation tests are attached in Appendix D.

3.0 SUBSURFACE CONDITIONS

3.1 Soil and Bedrock

Borings B-19-101 and B-19-102 were made in the southwesterly portion of the proposed parking lot, in the existing paved parking lot area. These two borings encountered about 6 inches of asphalt pavement overlying about 12 inches of gravelly sand (base gravel) overlying medium dense to loose brown silty sand with varying amounts of gravel (fill). Below the fill, boring B-19-101 encountered native stiff brown silty clay with sand layers at a depth of about 3 feet. This boring was terminated in the stiff brown silty clay at a depth of about 8.7 feet below the existing ground surface. Below the fill, boring B-19-102, encountered a 1.5 foot thick layer of loose brown sand at a depth of about 5 feet overlying softer gray-brown silty clay with sand layers. This boring was terminated in the softer silty clay at a depth of about 8.7 feet.

Borings B-19-103 through B-19-107 encountered soil profiles generally consisting of about 3 to 8 inches of topsoil and organics, overlying loose to medium dense layered and mixed fills extending to depths varying from about 3.5 to 7.5 feet below the existing ground surface, overlying a relic ground surface in some borings. The mixed fill was observed to be silty sands and silty clays with varying amounts of gravel, organics and construction debris (concrete, asphalt and brick pieces) in some areas. Borings B-19-103 and B-19-104 encountered olfactory evidence of petroleum in the fill. Boring B-19-105 encountered a thin layer of what appears to be ash at a depth of about 20 inches below the ground surface. Below the fills, these explorations encountered either loose gray-brown silty sand or soft to stiff gray and brown silty clay with sand layers. These borings were terminated in the silty clay soils at depths of 9 feet.

Not all the strata were encountered at each exploration; refer to the attached logs for more detailed subsurface information.

3.2 Groundwater

The soils encountered at the test borings were generally moist from the ground surface and became saturated at depths of about 6 to 7 feet below the ground surface at the time of drilling. Long term groundwater information is not available. It should be anticipated that groundwater levels will become perched atop the underlying silty clay soils and will fluctuate seasonally, particularly in response to periods of snowmelt and precipitation, as well as changes in site use.

4.0 EVALUATION AND RECOMMENDATIONS

4.1 Site and Subgrade Preparation

We recommend that site preparation begin with the construction of an erosion control system to protect adjacent drainage ways and areas outside the construction limits. As much vegetation as possible should remain outside the construction areas to lessen the potential for erosion and site disturbance.

Based on the findings at the test borings and considering this site was previously developed for many years, it should be expected that excavation will encounter variable existing fill and may encounter relic foundations, pavements, utilities, etc., from prior development. All topsoil, soils with organics and roots, soft and yielding soils, pavements, relic structures and utilities should be removed from beneath the proposed paved areas.

As discussed with you, based on the findings at the explorations and anticipated variable subgrade conditions, there is some risk of a shorter pavement life span due to the anticipated variable nature of the subgrade and underlying silty clayey soils. As discussed with you, to help mitigate this risk, we offer the following for consideration:

Option 1: Underdrains and geotextile fabric beneath the entire lot: For this option, we recommend the proposed parking lot be under-drained with perforated drainage pipe. The underdrain pipe should be placed at least 4.5 feet below finish grade and consist of either MaineDOT Type B or Type C perforated drain pipe. The proposed storm drain pipes could be type C underdrains. Type B underdrains could be installed in an east-west orientation along the proposed car parking stalls and be connected to the proposed storm drain system. The underdrain pipes should have positive gravity outlets protected from freezing, clogging and backflow. Subgrades should be sloped to promote groundwater movement toward the perimeter of the proposed paved areas as well as toward the subsurface underdrains. We also recommend the subgrade be proof-rolled with a roller-compactor weighing at least 10 kips. Soft and yielding areas should be over-excavated and replaced with additional subbase gravel or Granular Borrow. A woven geotextile fabric such as Mirafi 600X be placed on the subgrade soils under the entire parking lot area (except over drainage lines) to help provide a more stable subgrade.

Option 2: No underdrains and geotextile fabric on subgrade where needed: Also as discussed with you, if the owner wants to accept some risk of a potentially shorter life span of the pavement and does not want to install underdrains and geotextile fabric beneath the entire lot, we recommend at a minimum, all pavement subgrades be proof-rolled prior to the placement of new fills. The subgrade should be static rolled if subgrade soils are wet and soils are being disturbed during densification and vibratory rolled if subgrade soils are relatively dry and densification is not disturbing the subgrade soils. The proof-rolling should be performed with several passes of a roller-compactor having a static weight on the order of 10 kips. Areas that become soft or continue to yield after several passes with the roller compactor should be removed and replaced with additional compacted subbase gravel or Granular Borrow. Geotextile stabilization fabric such as Mirafi 600X (or equivalent) will likely be needed in some areas prior to placing new fills. Where subgrades are below bottom of proposed gravel subbase material, we recommend additional compacted subbase gravel or MaineDOT Standard Specification 703.19 Granular Borrow be placed over the stable subgrade and geotextile fabric, where needed in softer areas prior to placing new fills. Perimeter swales should be constructed, where possible, to help drain base and subbase gravels.

4.2 Excavation and Dewatering

As mentioned, excavation will encounter variable existing fill and may encounter relic foundations, pavements, utilities, etc., from prior development. Earthwork and grading activities should occur during drier, non-freezing weather of spring, summer and fall. Final cuts to subgrade should be performed with a smooth-edged bucket to help reduce strength loss from soil disturbance. If groundwater is encountered during deeper excavations for proposed utilities, sump and pump dewatering techniques should be adequate. Groundwater should be controlled to at least 12 inches below subgrades during construction.

Excavations must be properly shored or sloped in accordance with OSHA Regulations to prevent sloughing and caving of the sidewalls during construction. Care must be taken to preclude undermining adjacent structures, utilities and roadways. The design and planning of excavations, excavation support systems, and dewatering is the responsibility of the contractor.

4.3 Paved Areas

We anticipate the parking lot will be primarily subject to passenger car and periodic bus

and delivery truck traffic. We recommend the following pavement sections for your consideration. The materials are based on MaineDOT specifications.

BITUMINOUS PAVEMENT SECTIONS	
Pavement Layer	Standard Duty
Maine DOT 12.5 mm Superpave (50 Gyration Design)	1½ inches
Maine DOT 19.0 mm Superpave (50 Gyration Design)	2½ inches
Maine DOT Crushed Aggregate Base 703.06 Type A	6 inches
Maine DOT Aggregate Subbase 703.06 Type D	15 inches
Geotextile Stabilization Fabric (Mirafi 600X or equivalent) Where needed	

The binder and surface pavements should be placed during the same construction season. The base and subbase materials should be compacted to at least 95 percent of their maximum dry densities as determined by ASTM D-1557. Tack coat between pavement layers is recommended. Bituminous pavement should be compacted to 92 to 97 percent of its theoretical maximum density as determined by ASTM D-2041.

Consideration should be given to the development of both surface and subgrade drainage. Paved areas should be graded to promote surface drainage away from adjacent buildings and toward adjacent drainage swale(s) and design should consider sloping of the subgrade toward the perimeter to enhance drainage.

Frost penetration can be on the order of 4.5 feet in this area of the state. In the absence of full depth excavation of frost susceptible soils or use of insulation, frost will penetrate into the subgrade and some frost heaving and pavement distress must be anticipated.

4.4 Weather Considerations

Construction activity should be limited during wet and freezing weather and the site soils may require drying or thawing before construction activities may continue. The contractor should anticipate the need for water to temper fills in order to facilitate compaction during dry weather. If construction takes place during cold weather, subgrades must be protected during freezing conditions. Fill must not be placed on frozen soil; and once placed, must be protected from freezing.

4.5 Design Review and Construction Testing

S.W.COLE should be retained to review the construction documents prior to bidding to determine that our earthwork and pavement recommendations have been properly interpreted and implemented.

We recommend that S.W.COLE be retained to observe subgrades, proof-rolling activities and to provide observation and testing services during construction. This is to observe compliance with the design concepts and design recommendations and to allow design changes in the event that subsurface conditions are found to differ from those anticipated prior to start of construction.

5.0 CLOSURE

It has been a pleasure to be of assistance to you with this phase of your project. We look forward to working with you during the construction phase of the project.

Sincerely,

S. W. Cole Engineering, Inc.

Paul F. Kohler, P.E.
Senior Geotechnical Engineer

PFK:tjb



This report has been prepared for the exclusive use of Woodard & Curran for specific application to the proposed Paved Parking Lot east of Bedford Street on the University of Southern Maine Campus in Portland, Maine. S. W. Cole Engineering, Inc. (S.W.COLE) has endeavored to conduct our services in accordance with generally accepted soil and foundation engineering practices. No warranty, expressed or implied, is made.

The soil profiles described in the report are intended to convey general trends in subsurface conditions. The boundaries between strata are approximate and are based upon interpretation of exploration data and samples.

The analyses performed during this investigation and recommendations presented in this report are based in part upon the data obtained from subsurface explorations made at the site. Variations in subsurface conditions may occur between explorations and may not become evident until construction. If variations in subsurface conditions become evident after submission of this report, it will be necessary to evaluate their nature and to review the recommendations of this report.

Observations have been made during exploration work to assess site groundwater levels. Fluctuations in water levels will occur due to variations in rainfall, temperature, and other factors.

S.W.COLE's scope of services has not included the investigation, detection, or prevention of any Biological Pollutants at the project site or in any existing or proposed structure at the site. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and the byproducts of any such biological organisms.

Recommendations contained in this report are based substantially upon information provided by others regarding the proposed project. In the event that any changes are made in the design, nature, or location of the proposed project, S.W.COLE should review such changes as they relate to analyses associated with this report. Recommendations contained in this report shall not be considered valid unless the changes are reviewed by S.W.COLE.

APPENDIX A

Limitations

This report has been prepared for the exclusive use of Woodard & Curran for specific application to the proposed Paved Parking Lot east of Bedford Street on the University of Southern Maine Campus in Portland, Maine. S. W. Cole Engineering, Inc. (S.W.COLE) has endeavored to conduct our services in accordance with generally accepted soil and foundation engineering practices. No warranty, expressed or implied, is made.

The soil profiles described in the report are intended to convey general trends in subsurface conditions. The boundaries between strata are approximate and are based upon interpretation of exploration data and samples.

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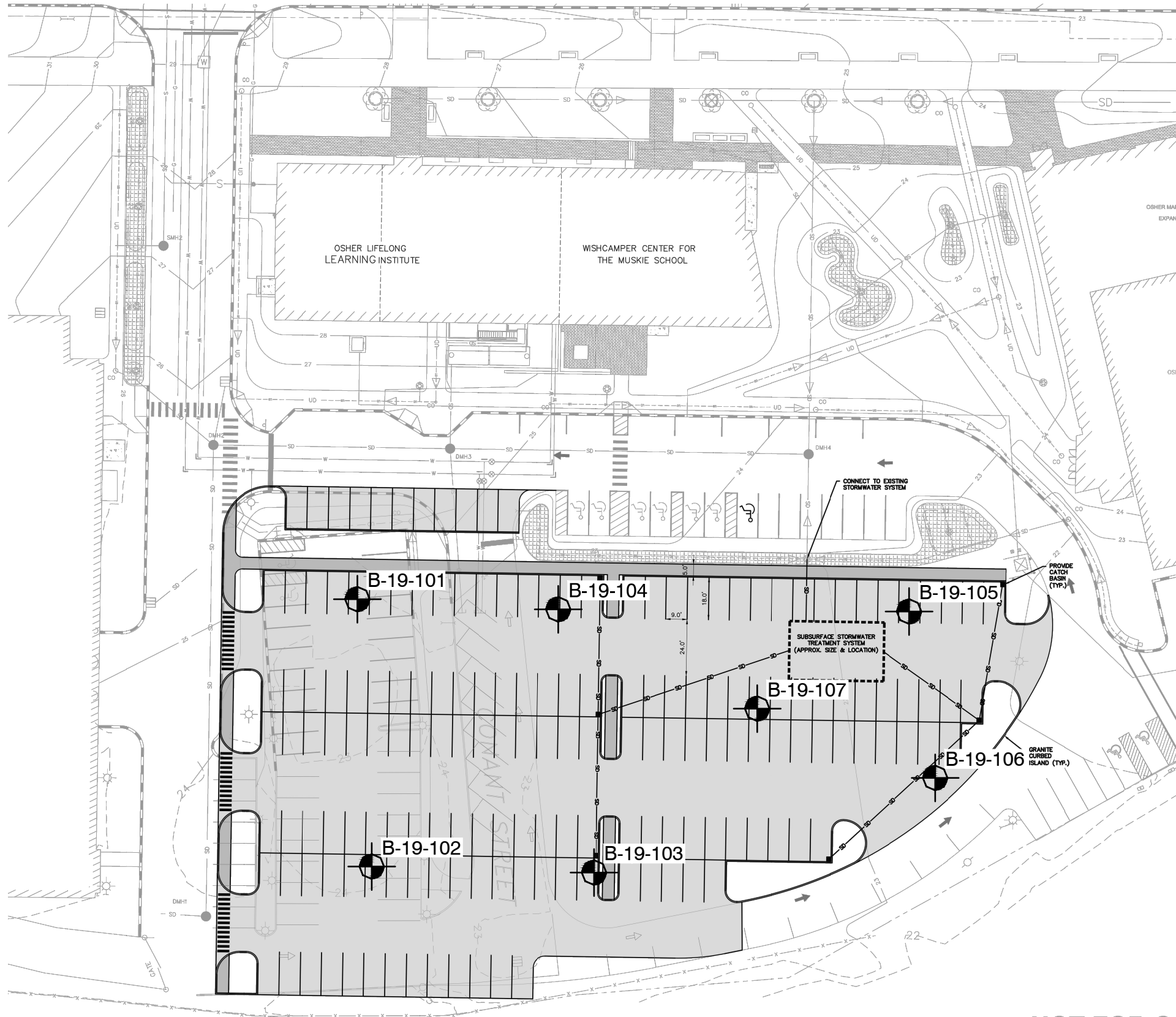
Observations have been made during exploration work to assess site groundwater levels. Fluctuations in water levels will occur due to variations in rainfall, temperature, and other factors.

S.W.COLE's scope of services has not included the investigation, detection, or prevention of any Biological Pollutants at the project site or in any existing or proposed structure at the site. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and the byproducts of any such biological organisms.

Recommendations contained in this report are based substantially upon information provided by others regarding the proposed project. In the event that any changes are made in the design, nature, or location of the proposed project, S.W.COLE should review such changes as they relate to analyses associated with this report. Recommendations contained in this report shall not be considered valid unless the changes are reviewed by S.W.COLE.

APPENDIX B

Figures



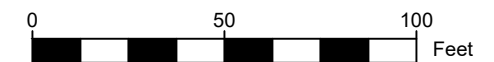
LEGEND:



APPROXIMATE BORING LOCATION

NOTES:

1. EXPLORATION LOCATION PLAN WAS PREPARED FROM A 1"=20' SCALE PLAN OF THE SITE ENTITLED "PARKING CONCEPT - 2," PREPARED BY WOODARD & CURRAN, DATED MAY 2019 AND PROVIDED AS A PORTABLE DOCUMENT FORMAT (PDF) FILE.
2. THE BORINGS WERE LOCATED IN THE FIELD BY MEASUREMENTS FROM EXISTING SITE FEATURES.
3. THIS PLAN SHOULD BE USED IN CONJUNCTION WITH THE ASSOCIATED S. W. COLE ENGINEERING, INC. GEOTECHNICAL REPORT.
4. THE PURPOSE OF THIS PLAN IS ONLY TO DEPICT THE LOCATION OF THE EXPLORATIONS IN RELATION TO THE EXISTING CONDITIONS AND PROPOSED CONSTRUCTION AND IS NOT TO BE USED FOR CONSTRUCTION.



S.W. COLE
ENGINEERING, INC.

WOODARD & CURRAN
EXPLORATION LOCATION PLAN
PROPOSED PARKING LOT
BEDFORD STREET
PORTLAND, MAINE

Job No.:	19-1318	Scale:	1" = 50'
Date :	11/01/2019	Sheet:	1

APPENDIX C

Exploration Logs and Key



BORING LOG

BORING NO.: **B-19-101**

SHEET: 1 of 1

PROJECT NO. 19-1318

DATE START: 10/14/2019

DATE FINISH: 10/14/2019

CLIENT: University of Southern Maine

PROJECT: USM - Proposed Parking Lot

LOCATION: Bedford Street, Portland, ME

Drilling Information

LOCATION: See Exploration Location Plan ELEVATION (FT): 24' +/- TOTAL DEPTH (FT): 8.7 LOGGED BY: Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC DRILLER: Sam Shaw DRILLING METHOD: Hollow Stem Auger
RIG TYPE: Track Mounted Diedrich D-50 AUGER ID/OD: 2 1/4 in / 5 5/8 in SAMPLER: Standard Split-Spoon
HAMMER TYPE: Automatic HAMMER WEIGHT (lbs): 140 / 300 CASING ID/OD: N/A / N/A CORE BARREL:
HAMMER EFFICIENCY FACTOR: HAMMER DROP (inch): 30 / 16
WATER LEVEL ELEVATIONS (ft): 10/14/2019 Soils moist

GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level
At time of Drilling
At Completion of Drilling
After Drilling
D = Split Spoon Sample
U = Thin Walled Tube Sample
R = Rock Core Sample
V = Field Vane Shear
Pen. = Penetration Length
Rec. = Recovery Length
bpf = Blows per Foot
mpf = Minute per Foot
WOR = Weight of Rods
WOH = Weight of Hammer
RQD = Rock Quality Designation
PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.
q_u = Unconfined Compressive Strength, kips/sq.ft.
Ø = Friction Angle (Estimated)
N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION					Graphic Log	Sample Description & Classification	H ₂ O Depth	Remarks
			Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD				
20 											

Bottom of Exploration at 8.7 feet

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: **B-19-101**



BORING LOG

BORING NO.: **B-19-102**

SHEET: 1 of 1

CLIENT: University of Southern Maine

PROJECT NO. 19-1318

PROJECT: USM - Proposed Parking Lot

DATE START: 10/14/2019

LOCATION: Bedford Street, Portland, ME

DATE FINISH: 10/14/2019

Drilling Information

LOCATION: See Exploration Location Plan ELEVATION (FT): 24' +/- TOTAL DEPTH (FT): 8.7 LOGGED BY: Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC DRILLER: Sam Shaw DRILLING METHOD: Hollow Stem Auger
RIG TYPE: Track Mounted Diedrich D-50 AUGER ID/OD: 2 1/4 in / 5 5/8 in SAMPLER: Track Mounted Diedrich D-50
HAMMER TYPE: Track Mounted Diedrich D-50 HAMMER WEIGHT (lbs): 140 / 300 CASING ID/OD: N/A / N/A CORE BARREL: _____
HAMMER EFFICIENCY FACTOR: _____ HAMMER DROP (inch): 30 / 16
WATER LEVEL ELEVATIONS (ft): ∇ 17.00 ft 10/14/2019 Soils saturated at 7 +/- ft

GENERAL NOTES:

KEY TO NOTES AND SYMBOLS: ∇ Water Level ∇ At time of Drilling ∇ At Completion of Drilling ∇ After Drilling
D = Split Spoon Sample U = Thin Walled Tube Sample R = Rock Core Sample V = Field Vane Shear
Pen. = Penetration Length Rec. = Recovery Length bpf = Blows per Foot mpf = Minute per Foot
WOR = Weight of Rods WOH = Weight of Hammer RQD = Rock Quality Designation PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft. q_u = Unconfined Compressive Strength, kips/sq.ft. Ø = Friction Angle (Estimated) N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION					Graphic Log	Sample Description & Classification	H ₂ O Depth	Remarks
			Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD				
20 5			1D		0.7-2.7	24/15	15-13-9-6		Asphalt Pavement	∇	
									0.6 Medium dense brown gravelly SAND, some silt (Base Gravel Fill)		
									1.5 Medium dense brown silty SAND, some gravel (Fill)		
			2D		2.7-4.7	24/12	5-4-4-4		3.0 Medium dense brown silty SAND, trace clay (Fill)		
			3D		4.7-6.7	24/17	3-4-3-3		5.0 Loose light brown SAND, trace silt, trace gravel		
			4D		6.7-8.7	24/12	3-2-1/12		6.5 Soft gray brown silty CLAY with some gray sand layers		
			8-					q _p = .5 to 1 ksf			

Bottom of Exploration at 8.7 feet

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: **B-19-102**

BORING NO.: B-19-103



BORING LOG

BORING NO.: **B-19-106**

SHEET: 1 of 1

CLIENT: University of Southern Maine

PROJECT NO. 19-1318

PROJECT: USM - Proposed Parking Lot

DATE START: 10/14/2019

LOCATION: Bedford Street, Portland, ME

DATE FINISH: 10/14/2019

Drilling Information

LOCATION: See Exploration Location Plan ELEVATION (FT): 23' +/- TOTAL DEPTH (FT): 9.0 LOGGED BY: Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC DRILLER: Sam Shaw DRILLING METHOD: Hollow Stem Auger
RIG TYPE: Track Mounted Diedrich D-50 AUGER ID/OD: 2 1/4 in / 5 5/8 in SAMPLER: Track Mounted Diedrich D-50
HAMMER TYPE: Track Mounted Diedrich D-50 HAMMER WEIGHT (lbs): 140 / 300 CASING ID/OD: N/A / N/A CORE BARREL:
HAMMER EFFICIENCY FACTOR: HAMMER DROP (inch): 30 / 16
WATER LEVEL ELEVATIONS (ft): 17.00 ft 10/14/2019 Soils saturated at 6+/- ft

GENERAL NOTES:

KEY TO NOTES AND SYMBOLS: Water Level
▽ At time of Drilling
▽ At Completion of Drilling
▽ After Drilling
D = Split Spoon Sample
U = Thin Walled Tube Sample
R = Rock Core Sample
V = Field Vane Shear
Pen. = Penetration Length
Rec. = Recovery Length
bpf = Blows per Foot
mpf = Minute per Foot
WOR = Weight of Rods
WOH = Weight of Hammer
RQD = Rock Quality Designation
PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.
q_u = Unconfined Compressive Strength, kips/sq.ft.
Ø = Friction Angle (Estimated)
N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION					Graphic Log	Sample Description & Classification	H ₂ O Depth	Remarks
			Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD				
20 											

Bottom of Exploration at 9.0 feet

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: **B-19-106**

KEY TO NOTES & SYMBOLS

Test Boring and Test Pit Explorations

All stratification lines represent the approximate boundary between soil types and the transition may be gradual.

Key to Symbols Used:

w	-	water content, percent (dry weight basis)
q_u	-	unconfined compressive strength, kips/sq. ft. - laboratory test
S_v	-	field vane shear strength, kips/sq. ft.
L_v	-	lab vane shear strength, kips/sq. ft.
q_p	-	unconfined compressive strength, kips/sq. ft. – pocket penetrometer test
O	-	organic content, percent (dry weight basis)
W_L	-	liquid limit - Atterberg test
W_P	-	plastic limit - Atterberg test
WOH	-	advance by weight of hammer
WOM	-	advance by weight of man
WOR	-	advance by weight of rods
HYD	-	advance by force of hydraulic piston on drill
RQD	-	Rock Quality Designator - an index of the quality of a rock mass.
γ_T	-	total soil weight
γ_B	-	buoyant soil weight

Description of Proportions:

Trace:	0 to 5%
Some:	5 to 12%
"Y"	12 to 35%
And	35+%
With	Undifferentiated

Description of Stratified Soils

Parting:	0 to 1/16" thickness
Seam:	1/16" to 1/2" thickness
Layer:	1/2" to 12" thickness
Varved:	Alternating seams or layers
Occasional:	one or less per foot of thickness
Frequent:	more than one per foot of thickness

REFUSAL: Test Boring Explorations - Refusal depth indicates that depth at which, in the drill foreman's opinion, sufficient resistance to the advance of the casing, auger, probe rod or sampler was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

REFUSAL: Test Pit Explorations - Refusal depth indicates that depth at which sufficient resistance to the advance of the backhoe bucket was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

Although refusal may indicate the encountering of the bedrock surface, it may indicate the striking of large cobbles, boulders, very dense or cemented soil, or other buried natural or man-made objects or it may indicate the encountering of a harder zone after penetrating a considerable depth through a weathered or disintegrated zone of the bedrock.



APPENDIX D

Laboratory Test Results



Report of Gradation

ASTM C-117 & C-136

Project Name PORTLAND ME - BEDFORD STREET USM PARKING LOT -
GEOTECHNICAL ENGINEERING SERVICES

Client WOODARD & CURRAN, INC.

Material Source **B-19-101 1D .7-2.7**

Project Number 19-1318

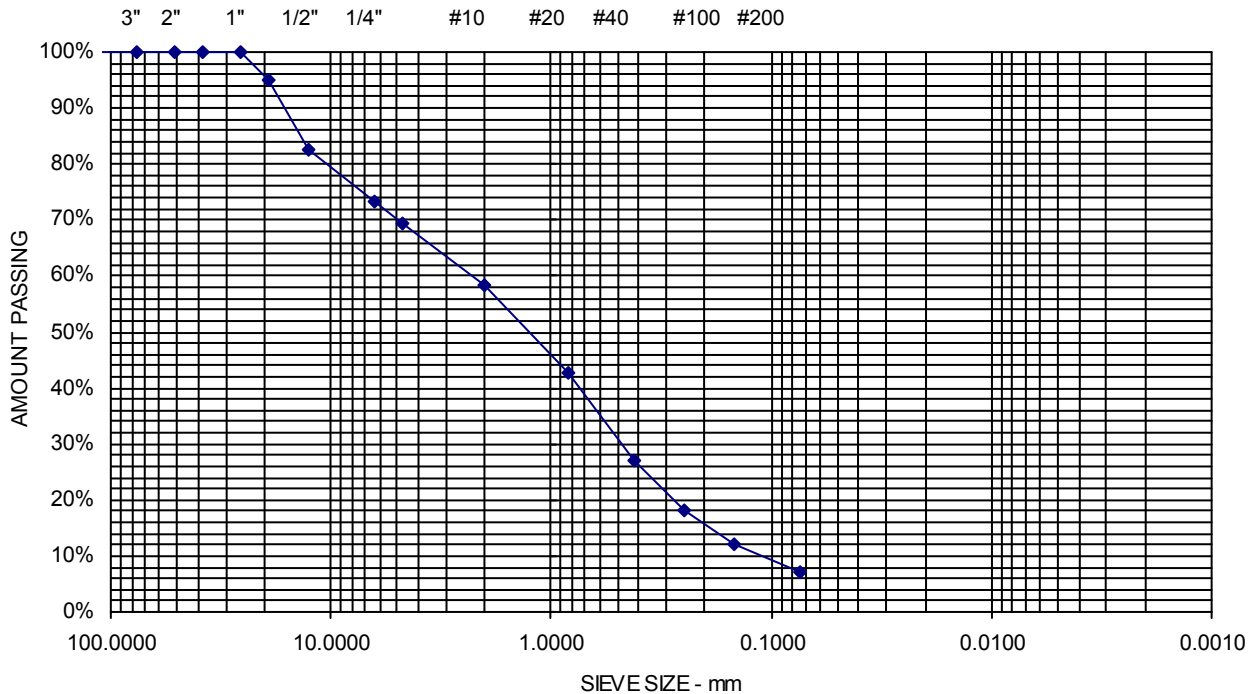
Lab ID 25615G

Date Received 10/18/2019

Date Completed 10/23/2019

Tested By PAUL SHAFFER

<u>STANDARD DESIGNATION (mm/μm)</u>	<u>SIEVE SIZE</u>	<u>AMOUNT PASSING (%)</u>	
150 mm	6"	100	
125 mm	5"	100	
100 mm	4"	100	
75 mm	3"	100	
50 mm	2"	100	
38.1 mm	1-1/2"	100	
25.0 mm	1"	100	
19.0 mm	3/4"	95	
12.5 mm	1/2"	83	
6.3 mm	1/4"	73	
4.75 mm	No. 4	69	30.8% Gravel
2.00 mm	No. 10	58	
850 μm	No. 20	43	
425 μm	No. 40	27	62.2% Sand
250 μm	No. 60	18	
150 μm	No. 100	12	
75 μm	No. 200	7.0	7% Fines



12. STORMWATER MANAGEMENT

The attached Stormwater Management Plan describes the proposed stormwater management measures for the project, as shown on the design drawings attached to Section 1 of this Report. A USGS map and a soils map are attached to Section 1 and Section 11 of this Report, respectively.

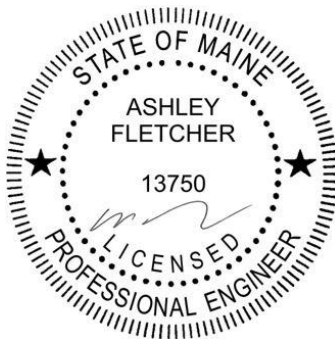
12.1 LIST OF ATTACHMENTS

- Stormwater Management Plan (Bound Separately).



STORMWATER MANAGEMENT PLAN

USM Wishcamper
Parking Lot



41 Hutchins Drive
Portland, ME 04102
800-426-4262

woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

0232479.01
**University of Southern
Maine**
January 2020

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1.4.2 General Standard (Stormwater Quality)	2
1.4.3 Flooding Standard (Stormwater Quantity)	2
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1.4.3.2 Pre- and Post-Development Peak Runoff Rate Results	3

APPENDICES

Appendix A:	Stormwater Inspection & Maintenance Plan
Appendix B:	Stormwater Quality Calculations
Appendix C:	HydroCAD Reports
Appendix D:	Figures

1. STORMWATER MANAGEMENT PLAN

This Stormwater Management Plan (SWMP) describes existing site conditions, the proposed development, inspection and maintenance requirements for the proposed stormwater system, and compliance with applicable stormwater standards for the University of Southern Maine Wishcamper Parking Lot located at 44 Bedford Street in Portland, Maine.

1.1 Existing Conditions

The project site is a portion of an approximately 29-acre University campus, south of the Wishcamper Center and north of the I-295 corridor. The project area has been previously developed and is currently utilized for parking. Existing conditions consist primarily of impervious paved areas and a large vegetated area interior to the site, which consists largely of a weedy overgrowth and dirt and is utilized for overflow parking and storage. The project site is not located in a FEMA flood hazard zone. Stormwater runoff from the Site is collected in catch basins and discharged to the City of Portland combined sewer west of the Site and towards Forest Avenue.

1.2 Proposed Development

The proposed development will result in approximately 1.5-acres of disturbance. The proposed project will create 122 additional parking spaces for the University. The proposed parking lot will include compact spaces in order to minimize the amount of impervious area on the site. The proposed stormwater management plan will consist of porous pavement walkways, similar to existing walkways throughout the University, and a subsurface detention and treatment system. The proposed work will also include site landscaping and exterior lighting.

The proposed drainage system will be comprised of a series of catch basins, which discharge to a subsurface stormwater management system that will provide storage and treatment for site runoff prior to discharging to the City's combined sewer and drainage system. The subsurface stormwater management system will consist of large metal pipe for storage and a StormFilter unit for stormwater treatment. Site drainage patterns will be largely maintained and, as a result of the proposed project, most of the runoff from the site will continue to discharge to the City's combined sewer, similar to existing conditions. However, the Site's stormwater collection system has been kept separate from the Site's sanitary sewer collection, which will allow stormwater to be rerouted to a separate stormwater collection system, if constructed in the future by the City.

1.3 Inspection & Maintenance Requirements

General inspection and maintenance of stormwater systems will take place during and after construction. During construction, the Contractor will be responsible for inspecting and maintaining the Site, as described in Section 1.4.1 of this Report. Upon completion of construction, the property owner will be responsible for implementing the Inspection and Maintenance Plan for the proposed stormwater system, which is provided in Appendix A of this Report.

1.4 Stormwater Standards

The project is subject to the MaineDEP Chapter 500 Stormwater Standards. The project is not located within the watershed of an Urban Impaired Stream and is therefore not subject to the Urban Impaired Stream Standard. The following sections describe the project's compliance with the applicable stormwater standards.

1.4.1 Basic Standard (Soil Erosion & Sediment Control)

A variety of erosion and sediment control measures will be utilized during construction, including but not limited to the following:

- Stabilized construction entrances;

- Up-gradient runoff diversion barriers;
- Downgradient sediment barriers;
- Catch basin inlet protection devices;
- Preservation and maintenance of vegetated areas to the maximum extent possible;
- Temporary stabilization of disturbed areas to be exposed for more than seven days;
- Permanent stabilization of final graded areas;
- Controls for fugitive dust, debris, and other materials; and
- Inspection of all measures until the Site is permanently stabilized.

Structural measures will be installed as shown on the design drawings. Details and specifications for these measures are included on the drawings. All measures will be implemented in accordance with the “Maine Erosion and Sedimentation Handbook for Construction: Best Management Practices”. All temporary measures will be installed prior to any earth-disturbing activities and will be removed upon permanent stabilization of the Site. The Contractor will be responsible for implementing and maintaining all erosion and sediment control measures in an effective operating condition during construction. Permanent erosion control measures will include vegetation and pavement. After construction, the Owner will be responsible for inspecting and maintaining the Site as described in Section 1.3 of this Report.

1.4.2 General Standard (Stormwater Quality)

The proposed project is considered redevelopment and is therefore subject to Section 4.C(2)(d) of the MaineDEP Chapter 500 Stormwater Standards. As demonstrated by the calculations provided in Appendix B of this Report, the proposed project is required to provide treatment for 60% of the redeveloped area, and the proposed porous pavement and StormFilter treatment unit will provide the required treatment. The StormFilter treatment system has been designed in accordance with the MaineDEP proprietary BMP approval letter to Contech dated March 13, 2015. Larger storm events will bypass the StormFilter unit via a weir in the upstream corrugated metal pipe (CMP) system. A letter prepared by Contech describing the design of the StormFilter treatment system is also provided in Appendix B of this Report.

1.4.3 Flooding Standard (Stormwater Quantity)

The project is required to comply with the flooding standard, as the project requires review pursuant to MaineDEP Site Law. Chapter 500 Stormwater Rules require that the stormwater management system detain, retain, or result in the infiltration of the stormwater flows from the 24-hour storm of the 2-year, 10-year, and 25-year frequencies, such that peak flows from the post-development Site do not exceed those from the pre-development Site. Stormwater models were developed for the pre-development and post-development site conditions. Adequate provisions have been made to collect and control stormwater via the proposed stormwater detention system. The following sections describe the stormwater modeling methodology and the results of the HydroCAD analysis.

1.4.3.1 Stormwater Modeling Methodology

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 provided in Appendix C. A 24-hour duration and Type III rainfall distribution was applied to the rainfall depths for the 2-year, 10-year, and 25-year storm events from Appendix H of the DEPs Chapter 500 Rules.

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 Site contains Hydrologic Soil Group A soils. The area of each land cover type was delineated utilizing topographical survey information and HydroCAD computed the final CN for each subcatchment based on an area-weighted average. It should be noted that the curve number utilized for the proposed porous pavement is based upon data from the Rhode Island Stormwater Design and Installation Standards Manual.

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 longest hydraulic flow path is partitioned into segments based on flow types, land cover, and slopes. The Tc for each watershed is computed within HydroCAD as the sum of the travel times for each consecutive flow segment along the longest hydraulic flow path. The primary types of flow consist of sheet flow, shallow concentrated flow, and channel flows; sheet flow typically occurs within the first 100-feet of runoff. A minimum Tc of six minutes was utilized for all watershed areas.

The HydroCAD model has been prepared utilizing conservative assumptions about the proposed porous pavement walkways. While we anticipate that the proposed walkways will provide some detention and infiltration, this has not been included in the HydroCAD model for the purposes of this stormwater analysis. As previously described, the project area discharges City's combined sewer and drainage systems in two locations; these two discharge points have been utilized as the Study Points for the stormwater analysis:

- Study Point 1: Forest Avenue Storm Drain System; and
- Study Point 2: Combined Sewer System West of the Site.

Existing and proposed drainage patterns and features are shown on the figures provided in Appendix D.

1.4.3.2 Pre- and Post-Development Peak Runoff Rate Results

The table below provides a summary of the peak runoff rates for the 24-hour, 2-, 10-, and 25-year Type III storm events:

STUDY POINT		PEAK RUNOFF RATE (CFS)		
		2-YEAR STORM	10-YEAR STORM	25-YEAR STORM
1	Pre-Development	0.9	1.9	2.7
	Post-Development	0.8	1.4	1.9
2	Pre-Development	2.7	5.4	7.6
	Post-Development	2.7	5.4	7.6

The proposed stormwater management system has been designed to improve and maintain current runoff conditions to the maximum extent possible. As demonstrated in the table above, the proposed CMP storage system will provide detention for the area draining to Study Point #2 (the City's Combined Sewer) and the size of the area draining to Study Point #1 (Forest Avenue Storm Drain System) has been reduced such that the post-development peak runoff rates will not exceed pre-development peak runoff rates. Therefore, there will be no adverse effects, including flooding and erosion, to abutting properties as a result of the project.

APPENDIX A: STORMWATER INSPECTION & MAINTENANCE PLAN

STORMWATER INSPECTION & MAINTENANCE PLAN

USM Wishcamper Parking Lot, Portland, Maine

General inspection and maintenance during and after construction must take place in accordance with the requirements outlined in Appendix B of the Maine Department of Environmental Protection (MaineDEP) Chapter 500 Rules. Upon completion of the project, the Owner will assume responsibility for overseeing the property, including the inspection and maintenance of the Site's stormwater drainage system and treatment measures outlined herein. A person 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.

Inspection and maintenance activities will be performed per the attached checklist, schedule, StormFilter guidelines; an example page of the BMP Maintenance Log that shall be kept on-site is also attached.

Storm Drain System

Trash, debris, and sediment shall be removed from storm drain pipes and catch basins 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. Visual inspections will enable parking areas to be kept clean and clear through periodic sweeping and winter plowing as required. The inspections will also ensure pavement markings are repainted as needed to maintain proper traffic circulation and parking space delineation. Paved areas will be plowed and sanded as often as necessary to maintain public safety. Periodic sweeping of pavement will keep the parking areas clean and will reduce the amount of sediment available to enter the stormwater systems, in turn reducing the need to clean the stormwater systems.

Porous Pavement

Winter maintenance procedures may be problematic (e.g., scraping by plows, clogging by sand, clogging by or inability to treat de-icing chemicals). Snow removal and deicing activities should be done carefully to avoid disturbance to the pavement structure. The plow blade should be raised 1" above the surface or outfitted with a flexible rubber bottom piece. Porous pavement has the potential to become impervious if not properly maintained. Proper maintenance should consist of the following:

- Frequent inspections should be performed during the first few months following construction; the system should be inspected routinely on an annual basis thereafter. Inspections should be made after significant storm events to check for surface ponding that could indicate failure due to clogging. Non-routine maintenance may require reconstruction of the surface treatment, and possibly the filter and reservoir layers, to relieve major clogging.
- Prevent sedimentation due to the erosion of areas upgradient of the porous pavement.
- Prevent vehicles with muddy wheels from accessing the porous pavement.
- Sweep, vacuum and/or pressure wash pavement twice annually at a minimum.
- Limit salt use for deicing and do not use sand.
- Remove leaves and organic debris in the fall.
- Measures should be taken to ensure that an area designed to be porous does not receive a future overlay of conventional non-porous paving.

StormFilter System

The StormFilter system must be inspected at least once every six months, and the filters maintained annually per the manufacturer's guidelines, which are outlined in the attached guidance document.

STORMWATER INSPECTION CHECKLIST

Inspection by: _____

Date: _____

Stormwater Management Feature	Condition						Comments
Subsurface Detention System	no siltation		some siltation		heavily silted in		
Subsurface Detention System	no clogging/flooding		some clogging/flooding		heavy clogging/flooding		
Subsurface Detention System	outlet free of erosion		some erosion at outlet		outlet heavily eroded		
Subsurface Detention System	inlet/outlet clear		some debris		completely blocked		
StormFilter System*	Cartridges are in good condition		Cartridges in need of cleaning		Cartridges in need of replacement		
StormFilter System*	no clogging/flooding		some clogging/flooding		heavy clogging/flooding		
Porous Pavement	No sediment or debris accumulation		Some sediment or debris accumulation		Excessive sediment or debris accumulation		
Porous Pavement	Structure is in good condition.		Structure has small visible wear.		Structure has excessive visible wear.		

**See attached manufacturer's guidelines for StormFilter System maintenance and inspection.*

Recommended Actions: _____

Actions Completed: _____ Date: _____

STORMWATER MAINTENANCE TASKS & RECOMMENDED SCHEDULE

TASKS	DETENTION AND STORMFILTER SYSTEM	POROUS PAVEMENT	STORM DRAIN PIPES	SCHEDULE
Inspect for sediment & debris accumulation	X	X	X	Spring and Fall
Remove sediment & Debris accumulation	X	X	X	As needed
Inspect for erosion				As needed
Reestablish vegetation in erosion areas				Early spring
Inspect structural elements during wet weather and compare to as-built plans	X	X	X	Annually
Make adjustments or replacements as determined by wet weather observations	X	X	X	As needed
Keep records of all inspections and maintenance activities	X	X	X	Annually
Have a professional engineer perform emergency inspections upon identification of severe problems	X	X	X	As needed

StormFilter Inspection and Maintenance Procedures



Maintenance Guidelines

The primary purpose of the Stormwater Management StormFilter® is to filter and prevent pollutants from entering our waterways. Like any effective filtration system, periodically these pollutants must be removed to restore the StormFilter to its full efficiency and effectiveness.

Maintenance requirements and frequency are dependent on the pollutant load characteristics of each site. Maintenance activities may be required in the event of a chemical spill or due to excessive sediment loading from site erosion or extreme storms. It is a good practice to inspect the system after major storm events.

Maintenance Procedures

Although there are many effective maintenance options, we believe the following procedure to be efficient, using common equipment and existing maintenance protocols. The following two-step procedure is recommended::

1. Inspection

- Inspection of the vault interior to determine the need for maintenance.

2. Maintenance

- Cartridge replacement
- Sediment removal

Inspection and Maintenance Timing

At least one scheduled inspection should take place per year with maintenance following as warranted.

First, an inspection should be done before the winter season. During the inspection the need for maintenance should be determined and, if disposal during maintenance will be required, samples of the accumulated sediments and media should be obtained.

Second, if warranted, a maintenance (replacement of the filter cartridges and removal of accumulated sediments) should be performed during periods of dry weather.

In addition to these two activities, it is important to check the condition of the StormFilter unit after major storms for potential damage caused by high flows and for high sediment accumulation that may be caused by localized erosion in the drainage area. It may be necessary to adjust the inspection/maintenance schedule depending on the actual operating conditions encountered by the system. In general, inspection activities can be conducted at any time, and maintenance should occur, if warranted, during dryer months in late summer to early fall.

Maintenance Frequency

The primary factor for determining frequency of maintenance for the StormFilter is sediment loading.

A properly functioning system will remove solids from water by trapping particulates in the porous structure of the filter media inside the cartridges. The flow through the system will naturally decrease as more and more particulates are trapped. Eventually the flow through the cartridges will be low enough to require replacement. It may be possible to extend the usable span of the cartridges by removing sediment from upstream trapping devices on a routine as-needed basis, in order to prevent material from being re-suspended and discharged to the StormFilter treatment system.

The average maintenance lifecycle is approximately 1-5 years. Site conditions greatly influence maintenance requirements. StormFilter units located in areas with erosion or active construction may need to be inspected and maintained more often than those with fully stabilized surface conditions.

Regulatory requirements or a chemical spill can shift maintenance timing as well. The maintenance frequency may be adjusted as additional monitoring information becomes available during the inspection program. Areas that develop known problems should be inspected more frequently than areas that demonstrate no problems, particularly after major storms. Ultimately, inspection and maintenance activities should be scheduled based on the historic records and characteristics of an individual StormFilter system or site. It is recommended that the site owner develop a database to properly manage StormFilter inspection and maintenance programs..





Inspection Procedures

The primary goal of an inspection is to assess the condition of the cartridges relative to the level of visual sediment loading as it relates to decreased treatment capacity. It may be desirable to conduct this inspection during a storm to observe the relative flow through the filter cartridges. If the submerged cartridges are severely plugged, then typically large amounts of sediments will be present and very little flow will be discharged from the drainage pipes. If this is the case, then maintenance is warranted and the cartridges need to be replaced.

Warning: In the case of a spill, the worker should abort inspection activities until the proper guidance is obtained. Notify the local hazard control agency and Contech Engineered Solutions immediately.

To conduct an inspection:

Important: Inspection should be performed by a person who is familiar with the operation and configuration of the StormFilter treatment unit.

1. If applicable, set up safety equipment to protect and notify surrounding vehicle and pedestrian traffic.
2. Visually inspect the external condition of the unit and take notes concerning defects/problems.
3. Open the access portals to the vault and allow the system vent.
4. Without entering the vault, visually inspect the inside of the unit, and note accumulations of liquids and solids.
5. Be sure to record the level of sediment build-up on the floor of the vault, in the forebay, and on top of the cartridges. If flow is occurring, note the flow of water per drainage pipe. Record all observations. Digital pictures are valuable for historical documentation.
6. Close and fasten the access portals.
7. Remove safety equipment.
8. If appropriate, make notes about the local drainage area relative to ongoing construction, erosion problems, or high loading of other materials to the system.
9. Discuss conditions that suggest maintenance and make decision as to whether or not maintenance is needed.

Maintenance Decision Tree

The need for maintenance is typically based on results of the inspection. The following Maintenance Decision Tree should be used as a general guide. (Other factors, such as Regulatory Requirements, may need to be considered)

1. Sediment loading on the vault floor.
 - a. If $>4"$ of accumulated sediment, maintenance is required.
2. Sediment loading on top of the cartridge.
 - a. If $>1/4"$ of accumulation, maintenance is required.
3. Submerged cartridges.
 - a. If $>4"$ of static water above cartridge bottom for more than 24 hours after end of rain event, maintenance is required. (Catch basins have standing water in the cartridge bay.)
4. Plugged media.
 - a. If pore space between media granules is absent, maintenance is required.
5. Bypass condition.
 - a. If inspection is conducted during an average rain fall event and StormFilter remains in bypass condition (water over the internal outlet baffle wall or submerged cartridges), maintenance is required.
6. Hazardous material release.
 - a. If hazardous material release (automotive fluids or other) is reported, maintenance is required.
7. Pronounced scum line.
 - a. If pronounced scum line (say $\geq 1/4"$ thick) is present above top cap, maintenance is required.



Maintenance

Depending on the configuration of the particular system, maintenance personnel will be required to enter the vault to perform the maintenance.

Important: If vault entry is required, OSHA rules for confined space entry must be followed.

Filter cartridge replacement should occur during dry weather. It may be necessary to plug the filter inlet pipe if base flows is occurring.

Replacement cartridges can be delivered to the site or customers facility. Information concerning how to obtain the replacement cartridges is available from Contech Engineered Solutions.

Warning: In the case of a spill, the maintenance personnel should abort maintenance activities until the proper guidance is obtained. Notify the local hazard control agency and Contech Engineered Solutions immediately.

To conduct cartridge replacement and sediment removal maintenance:

1. If applicable, set up safety equipment to protect maintenance personnel and pedestrians from site hazards.
2. Visually inspect the external condition of the unit and take notes concerning defects/problems.
3. Open the doors (access portals) to the vault and allow the system to vent.
4. Without entering the vault, give the inside of the unit, including components, a general condition inspection.
5. Make notes about the external and internal condition of the vault. Give particular attention to recording the level of sediment build-up on the floor of the vault, in the forebay, and on top of the internal components.
6. Using appropriate equipment offload the replacement cartridges (up to 150 lbs. each) and set aside.
7. Remove used cartridges from the vault using one of the following methods:

Method 1:

- A. This activity will require that maintenance personnel enter the vault to remove the cartridges from the under drain manifold and place them under the vault opening for lifting (removal). Disconnect each filter cartridge from the underdrain connector by rotating counterclockwise 1/4 of a turn. Roll the loose cartridge, on edge, to a convenient spot beneath the vault access.

Using appropriate hoisting equipment, attach a cable from the boom, crane, or tripod to the loose cartridge. Contact Contech Engineered Solutions for suggested attachment devices.

- B. Remove the used cartridges (up to 250 lbs. each) from the vault.



Important: Care must be used to avoid damaging the cartridges during removal and installation. The cost of repairing components damaged during maintenance will be the responsibility of the owner.

- C. Set the used cartridge aside or load onto the hauling truck.
- D. Continue steps a through c until all cartridges have been removed.

Method 2:

- A. This activity will require that maintenance personnel enter the vault to remove the cartridges from the under drain manifold and place them under the vault opening for lifting (removal). Disconnect each filter cartridge from the underdrain connector by rotating counterclockwise 1/4 of a turn. Roll the loose cartridge, on edge, to a convenient spot beneath the vault access.
- B. Unscrew the cartridge cap.
- C. Remove the cartridge hood and float.
- D. At location under structure access, tip the cartridge on its side.
- E. Empty the cartridge onto the vault floor. Reassemble the empty cartridge.
- F. Set the empty, used cartridge aside or load onto the hauling truck.
- G. Continue steps a through e until all cartridges have been removed.

8. Remove accumulated sediment from the floor of the vault and from the forebay. This can most effectively be accomplished by use of a vacuum truck.
9. Once the sediments are removed, assess the condition of the vault and the condition of the connectors.
10. Using the vacuum truck boom, crane, or tripod, lower and install the new cartridges. Once again, take care not to damage connections.
11. Close and fasten the door.
12. Remove safety equipment.
13. Finally, dispose of the accumulated materials in accordance with applicable regulations. Make arrangements to return the used **empty** cartridges to Contech Engineered Solutions.

Related Maintenance Activities - Performed on an as-needed basis

StormFilter units are often just one of many structures in a more comprehensive stormwater drainage and treatment system.

In order for maintenance of the StormFilter to be successful, it is imperative that all other components be properly maintained. The maintenance/repair of upstream facilities should be carried out prior to StormFilter maintenance activities.

In addition to considering upstream facilities, it is also important to correct any problems identified in the drainage area. Drainage area concerns may include: erosion problems, heavy oil loading, and discharges of inappropriate materials.

Material Disposal

The accumulated sediment found in stormwater treatment and conveyance systems must be handled and disposed of in accordance with regulatory protocols. It is possible for sediments to contain measurable concentrations of heavy metals and organic chemicals (such as pesticides and petroleum products). Areas with the greatest potential for high pollutant loading include industrial areas and heavily traveled roads.

Sediments and water must be disposed of in accordance with all applicable waste disposal regulations. When scheduling maintenance, consideration must be made for the disposal of solid and liquid wastes. This typically requires coordination with a local landfill for solid waste disposal. For liquid waste disposal a number of options are available including a municipal vacuum truck decant facility, local waste water treatment plant or on-site treatment and discharge.



Inspection Report

Date: Personnel:

Location: _____ System Size: _____

System Type: Vault ☐ Cast-In-Place ☐ Linear Catch Basin ☐ Manhole ☐ Other ☐

Sediment Thickness in Forebay: _____ Date: _____

Sediment Depth on Vault Floor: _____

Structural Damage: _____

Estimated Flow from Drainage Pipes (if available): _____

Cartridges Submerged: Yes ☐ No ☐ Depth of Standing Water: _____

StormFilter Maintenance Activities (check off if done and give description)

☐ Trash and Debris Removal: _____

☐ Minor Structural Repairs: _____

☐ Drainage Area Report _____

Excessive Oil Loading: Yes ☐ No ☐ Source: _____

Sediment Accumulation on Pavement: Yes ☐ No ☐ Source: _____

Erosion of Landscaped Areas: Yes ☐ No ☐ Source: _____

Items Needing Further Work: _____

Owners should contact the local public works department and inquire about how the department disposes of their street waste residuals.

Other Comments:

Review the condition reports from the previous inspection visits.

StormFilter Maintenance Report

Date: _____ Personnel: _____

Location: _____ System Size: _____

System Type: Vault ☐ Cast-In-Place ☐ Linear Catch Basin ☐ Manhole ☐ Other ☐

List Safety Procedures and Equipment Used: _____

System Observations

Months in Service: _____

Oil in Forebay (if present): Yes ☐ No ☐

Sediment Depth in Forebay (if present): _____

Sediment Depth on Vault Floor: _____

Structural Damage: _____

Drainage Area Report

Excessive Oil Loading: Yes ☐ No ☐ Source: _____

Sediment Accumulation on Pavement: Yes ☐ No ☐ Source: _____

Erosion of Landscaped Areas: Yes ☐ No ☐ Source: _____

StormFilter Cartridge Replacement Maintenance Activities

Remove Trash and Debris: Yes ☐ No ☐ Details: _____

Replace Cartridges: Yes ☐ No ☐ Details: _____

Sediment Removed: Yes ☐ No ☐ Details: _____

Quantity of Sediment Removed (estimate?): _____

Minor Structural Repairs: Yes ☐ No ☐ Details: _____

Residuals (debris, sediment) Disposal Methods: _____

Notes:



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Support

- Drawings and specifications are available at www.conteches.com.
- Site-specific design support is available from our engineers.

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Stormwater BMP Maintenance Log

BMP Structure	Inspector (Name)	Work Performed	Date Performed	Comments
Pavement Sweeping				
Porous Pavement				
Catch Basins				
CMP System				
StormFilter System				
Other				
Additional Comments:				

APPENDIX B: STORMWATER QUALITY CALCULATIONS

Redevelopment Treatment Calculations - Per Section 4.C.2.d of the MaineDEP Chapter 500 Rules

Area of Redevelopment (acres) = 1.45

a. Existing Pollutant Impact

Land Use	Pollutant Ranking	Land Area (Ac.)	Impact
High Use Roads	5	0.00	0.00
Medium Use Roads/Parking Lot	4	0.64	2.56
Other Parking Lots/Flat Asphalt Roofs/Industrial Roofs	3	0.00	0.00
Other Roofs/Landscaped Area/Paved Walkway	2	0.79	1.58
Non-grass Landscaping/Stormwater	1	0.02	0.02
Forest/Meadow	0	0.00	0.00
Sum:		1.45	4.15

b. Proposed Pollutant Impact

Land Use	Pollutant Ranking	Land Area (Ac.)	Impact
High Use Roads	5	0.00	0.00
Medium Use Roads/Parking Lot	4	1.20	4.80
Other Parking Lots/Flat Asphalt Roofs/Industrial Roofs	3	0.00	0.00
Other Roofs/Landscaped Area/Paved Walkway	2	0.19	0.38
Non-grass Landscaping/Stormwater	1	0.06	0.06
Forest/Meadow	0	0.00	0.00
Sum:		1.45	5.24

c. Existing Impact/Total Redevelopment Acres

2.9

d. Proposed Impact/Total Redevelopment Acres

3.6

e. Item D Minus Item C

0.7

Treatment Requirements - Per Table 3 of the MaineDEP Chapter 500 Rules

Treatment Required (%) = 60%
Treatment Required (SF) = 37,897

Treatment Design Calculations

Porous Pavement:

Treated Area = 2614 SF
WQV (required) = 1" x Treated Area = 218 CF
WQV (provided)* = 348 CF

*Assumes 4" deep reservoir w/40% porosity

StormFilter System:

Treated Area = 35284 SF
WQV (required) = 1" x Treated Area = 2940 CF
WQV (provided)* = 2959 CF

*Refer to Contech Design Review Letter for information on the sizing and design of the StormFilter Treatment System.

Ashley Fletcher
Woodard & Curran
41 Hutchins Drive
Portland, ME 04102

December 3, 2020

RE: University of Southern Maine Wishcamper Parking Lot (Contech Reference No. 609,235)
Review of StormFilter Design

To whom it may concern,

The purpose of this letter is to document Contech Engineered Solutions review of the plans and the proposed application of the StormFilter Media Filtration System water quality unit for the USM Wishcamper Parking Lot site in Portland, ME.

Contech Engineered Solutions (Contech) has reviewed the StormFilter (SF) design for this project. We believe the SF configuration to be an appropriate water quality solution for this site.

The SF system with Zeolite-Phosphosorb (Zeo-Psorb) cartridges is approved for use by MEDEP meeting the General Standard of the Stormwater rules (Chapter 500) if designed, installed, and maintained in accordance with the provisions noted in the March 13, 2015 approval letter from the MEDEP.

The SF system is designed in accordance with the maximum drain down rate of 0.27 gallons per minute per square foot of filter surface area (3 gpm per 27" cartridge). Additionally, the SF is designed with an upstream sumped water quality volume (WQv) detention system to retain, route and treat the entire WQ event flow from the contributing drainage area to the treatment unit. The resultant volume from the WQ event storm is detained in the upstream detention to an elevation below any bypass flow paths resulting in a routed storm event volume through the SF cartridges with a required emptying time of 24 to 48 hours. Due to the extended detention time upstream of the SF in the sumped WQv detention system, Contech assumes sedimentation of the larger solids at an estimated 50 percent reduction of the total suspended solids prior to the treatment by the SF.

The engineer of record provided a WQv of 2,940 cf and a drainage area of 1.20 ac, of which 1.02 ac is impervious. In order to adequately treat the runoff from this area, Contech recommends a SF manhole SFMH72 with six (6) – 27" Zeo-Psorb cartridges.

The SF system requires a hydraulic headwater condition to fully immerse the media and activate the cartridge float valve. For 27" SF cartridges, this headwater condition is 3.05 ft above SF outlet invert. This is achieved by the either physical inlet to outlet pipe elevation drop or an upstream WQ detention filling during the WQ storm flow to the required SF float valve activation elevation.

The site detention system storage is designed to store the WQv and flood control volume separately. The two parts of the detention system are separated by a weir to ensure that the WQv is captured for treatment prior to overflowing into the flood control detention. The WQv shall be stored in a 66" diameter corrugated metal pipe (CMP) with a 6" sump depth. The treatment flow outlet pipe stub is positioned 6" above the 66" CMP WQv detention invert.

The WQv is routed through the SF vault and is designed to drain down between hours 8 and 38 after the beginning of the storm resulting in a cumulative treated volume of 2,959 cf.

The weir plate between the WQv and the Flood Control Detention CMP with high overflow weir is positioned to allow storms larger than the WQ storm to overflow into the flood control detention. The flood control detention is a 72" diameter CMP system with an internal flow control wall to control outlet flows to a downstream structure.

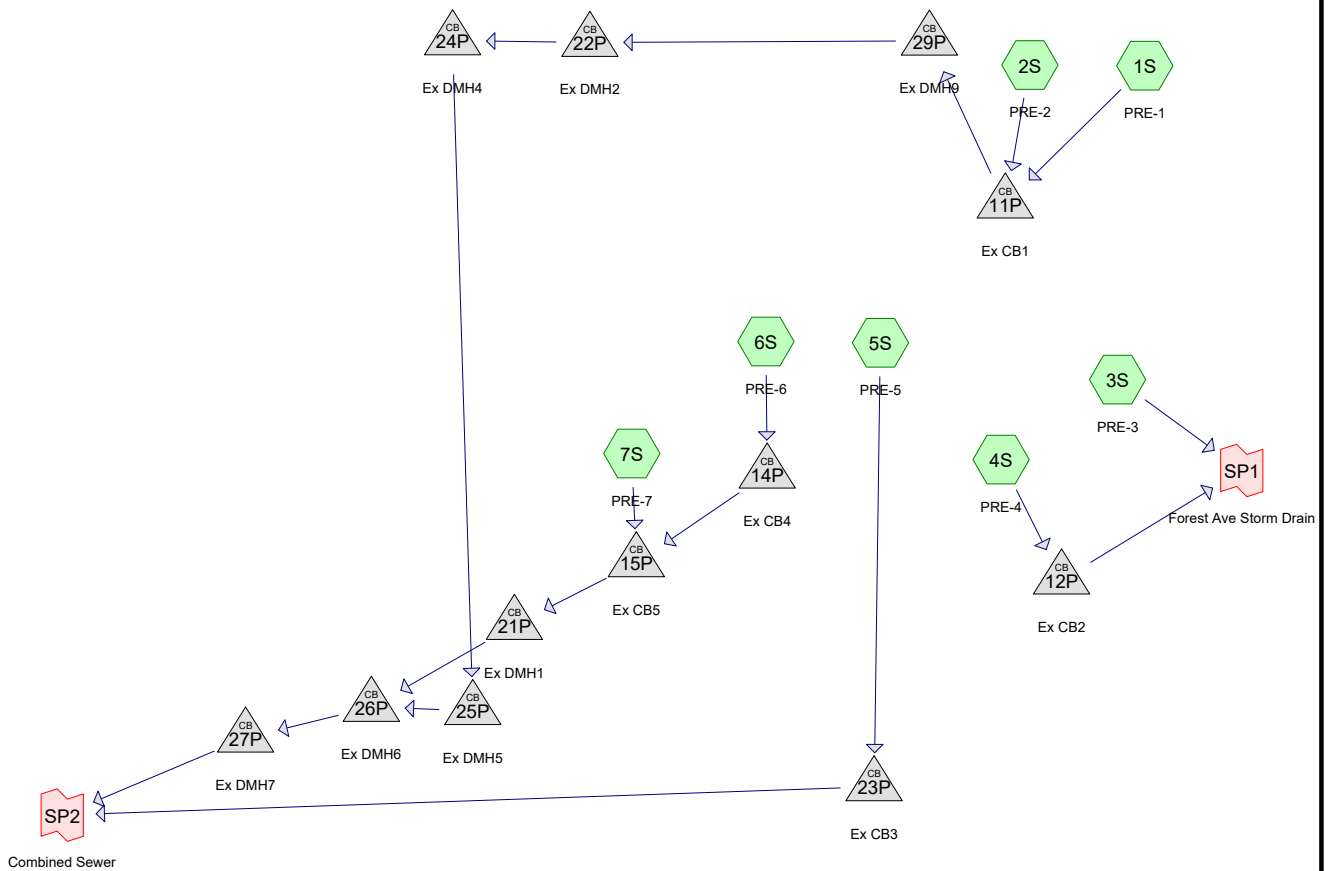
Our systems require periodic maintenance to continue operating properly. Given typical runoff pollutant loading rates, Contech recommends maintenance inspections on an annual basis.

This system is expected to operate in accordance with Contech's design intent. Please feel free to contact me if you have any questions or concerns.

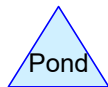
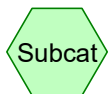
Sincerely,

David Adams, PE
Contech Engineered Solutions, LLC.
(207) 885-6191
dadams@conteches.com

APPENDIX C: HYDROCAD REPORTS



Combined Sewer



Routing Diagram for C1. Pre

Prepared by Woodard Curran, Printed 1/16/2020

HydroCAD® 10.00-21 s/n 01204 © 2018 HydroCAD Software Solutions LLC

C1. Pre

Prepared by Woodard Curran

HydroCAD® 10.00-21 s/n 01204 © 2018 HydroCAD Software Solutions LLC

PRE
Type III 24-hr 1" Storm Event Rainfall=1.00"

Printed 1/16/2020

Page 2

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: PRE-1	Runoff Area=8,487 sf 61.42% Impervious Runoff Depth>0.08" Tc=6.0 min CN=80 Runoff=0.0 cfs 0.001 af
Subcatchment2S: PRE-2	Runoff Area=14,855 sf 50.48% Impervious Runoff Depth>0.05" Tc=6.0 min CN=77 Runoff=0.0 cfs 0.001 af
Subcatchment3S: PRE-3	Runoff Area=19,668 sf 51.10% Impervious Runoff Depth>0.10" Tc=6.0 min CN=81 Runoff=0.0 cfs 0.004 af
Subcatchment4S: PRE-4	Runoff Area=11,760 sf 19.74% Impervious Runoff Depth>0.00" Tc=6.0 min CN=69 Runoff=0.0 cfs 0.000 af
Subcatchment5S: PRE-5	Runoff Area=27,546 sf 57.26% Impervious Runoff Depth>0.06" Tc=6.0 min CN=78 Runoff=0.0 cfs 0.003 af
Subcatchment6S: PRE-6	Runoff Area=16,352 sf 71.97% Impervious Runoff Depth>0.11" Tc=6.0 min CN=82 Runoff=0.0 cfs 0.004 af
Subcatchment7S: PRE-7	Runoff Area=13,974 sf 73.24% Impervious Runoff Depth>0.11" Tc=6.0 min CN=82 Runoff=0.0 cfs 0.003 af
Pond 11P: Ex CB1	Peak Elev=18.52' Inflow=0.0 cfs 0.003 af 12.0" Round Culvert n=0.010 L=41.0' S=0.0224 '/ Outflow=0.0 cfs 0.003 af
Pond 12P: Ex CB2	Peak Elev=18.15' Inflow=0.0 cfs 0.000 af 8.0" Round Culvert n=0.010 L=159.0' S=0.0158 '/ Outflow=0.0 cfs 0.000 af
Pond 14P: Ex CB4	Peak Elev=15.99' Inflow=0.0 cfs 0.004 af 12.0" Round Culvert n=0.010 L=63.0' S=0.0195 '/ Outflow=0.0 cfs 0.004 af
Pond 15P: Ex CB5	Peak Elev=14.90' Inflow=0.0 cfs 0.007 af 18.0" Round Culvert n=0.010 L=38.0' S=-0.0026 '/ Outflow=0.0 cfs 0.007 af
Pond 21P: Ex DMH1	Peak Elev=14.72' Inflow=0.0 cfs 0.007 af 18.0" Round Culvert n=0.010 L=12.0' S=0.0200 '/ Outflow=0.0 cfs 0.007 af
Pond 22P: Ex DMH2	Peak Elev=17.18' Inflow=0.0 cfs 0.003 af 18.0" Round Culvert n=0.010 L=98.0' S=0.0023 '/ Outflow=0.0 cfs 0.003 af
Pond 23P: Ex CB3	Peak Elev=14.11' Inflow=0.0 cfs 0.003 af 24.0" Round Culvert n=0.013 L=252.0' S=0.0044 '/ Outflow=0.0 cfs 0.003 af
Pond 24P: Ex DMH4	Peak Elev=16.81' Inflow=0.0 cfs 0.003 af 18.0" Round Culvert n=0.010 L=198.0' S=0.0019 '/ Outflow=0.0 cfs 0.003 af
Pond 25P: Ex DMH5	Peak Elev=15.49' Inflow=0.0 cfs 0.003 af 18.0" Round Culvert n=0.010 L=9.0' S=0.0133 '/ Outflow=0.0 cfs 0.003 af

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Pond 26P: Ex DMH6Peak Elev=14.41' Inflow=0.1 cfs 0.009 af
18.0" Round Culvert n=0.010 L=66.0' S=0.0080 '/ Outflow=0.1 cfs 0.009 af**Pond 27P: Ex DMH7**Peak Elev=13.84' Inflow=0.1 cfs 0.009 af
18.0" Round Culvert n=0.010 L=42.0' S=0.0014 '/ Outflow=0.1 cfs 0.009 af**Pond 29P: Ex DMH9**Peak Elev=17.52' Inflow=0.0 cfs 0.003 af
18.0" Round Culvert n=0.010 L=152.0' S=0.0019 '/ Outflow=0.0 cfs 0.003 af**Link SP1: Forest Ave Storm Drain**Inflow=0.0 cfs 0.004 af
Primary=0.0 cfs 0.004 af**Link SP2: Combined Sewer**Inflow=0.1 cfs 0.012 af
Primary=0.1 cfs 0.012 af**Total Runoff Area = 2.59 ac Runoff Volume = 0.016 af Average Runoff Depth = 0.07"**
44.19% Pervious = 1.14 ac 55.81% Impervious = 1.44 ac

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Summary for Subcatchment 1S: PRE-1

Runoff = 0.0 cfs @ 12.32 hrs, Volume= 0.001 af, Depth> 0.08"

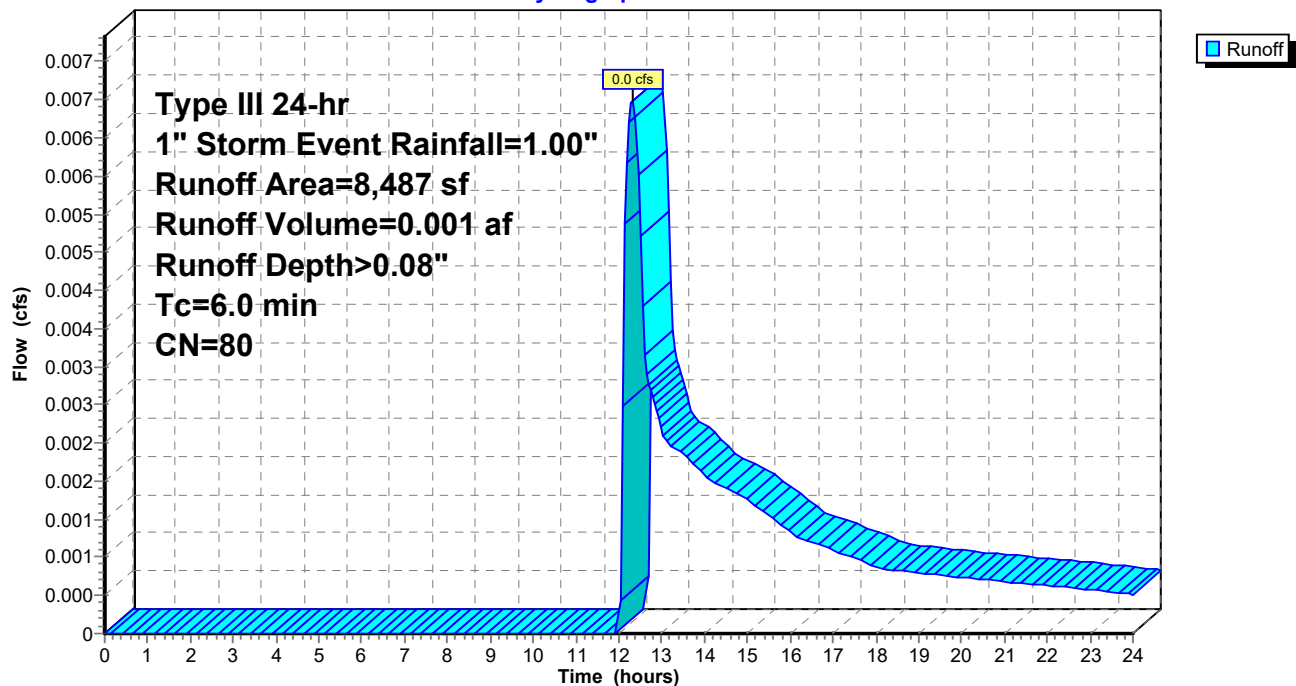
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
5,213	98	Paved parking, HSG A
1,900	39	Grass cover, Good, HSG A
* 1,374	68	Grass cover (parking area), HSG A
8,487	80	Weighted Average
3,274		38.58% Pervious Area
5,213		61.42% Impervious Area

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

Subcatchment 1S: PRE-1

Hydrograph



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Summary for Subcatchment 2S: PRE-2

Runoff = 0.0 cfs @ 12.44 hrs, Volume= 0.001 af, Depth> 0.05"

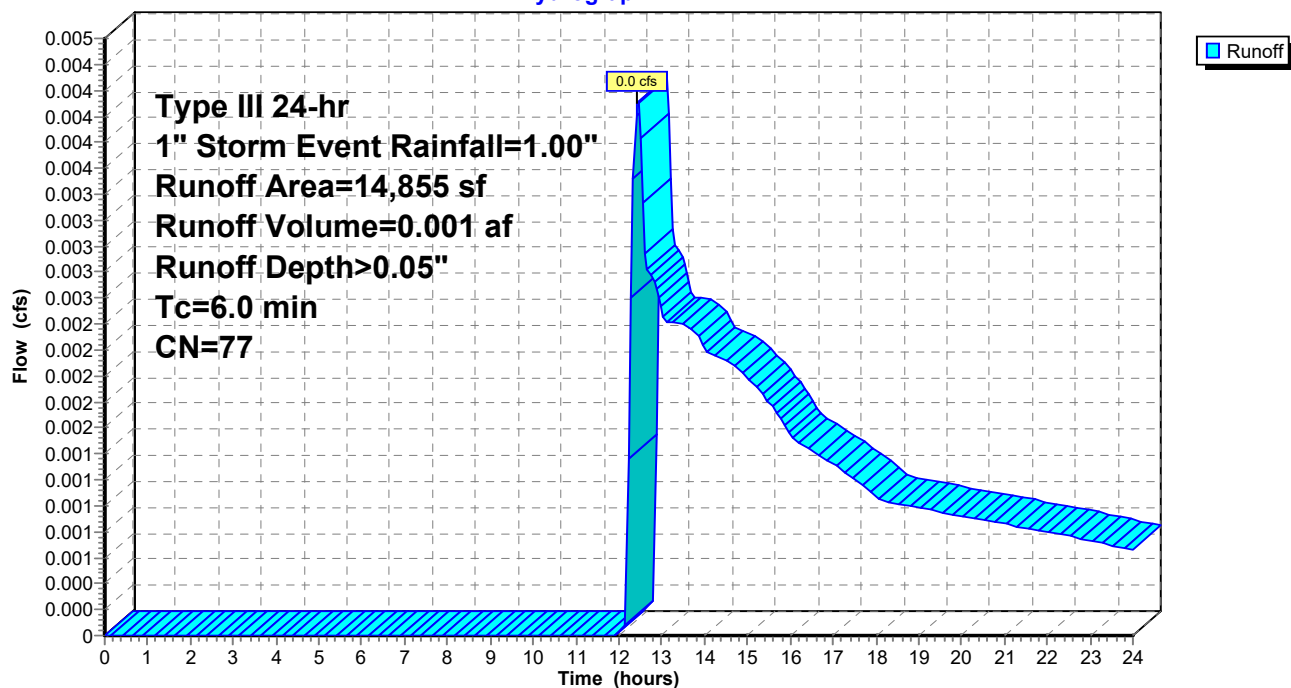
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
7,499	98	Paved parking, HSG A
2,948	39	Grass cover, Good, HSG A
4,408	68	Grass cover (parking area), HSG A
14,855	77	Weighted Average
7,356		49.52% Pervious Area
7,499		50.48% Impervious Area

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

Subcatchment 2S: PRE-2

Hydrograph



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PRE
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Summary for Subcatchment 3S: PRE-3

Runoff = 0.0 cfs @ 12.27 hrs, Volume= 0.004 af, Depth> 0.10"

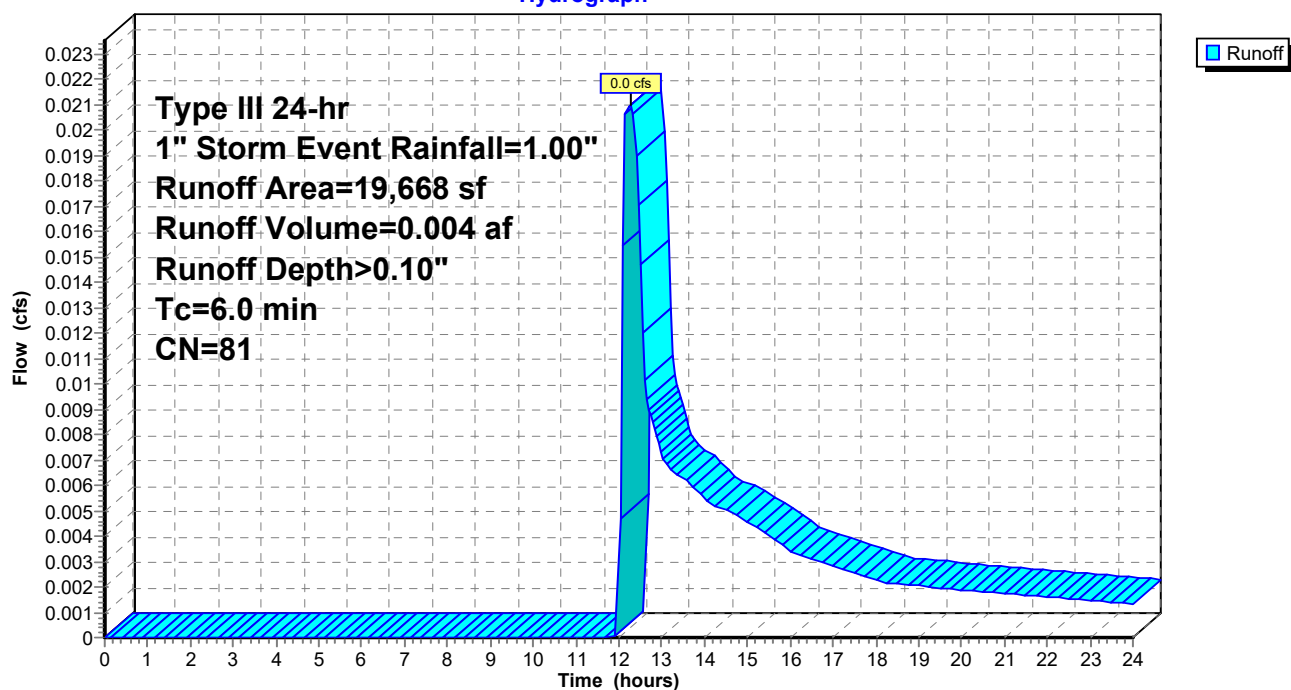
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
10,050	98	Paved parking, HSG A
1,903	39	Grass cover, Good, HSG A
7,715	68	Grass cover (parking area), HSG A
19,668	81	Weighted Average
9,618		48.90% Pervious Area
10,050		51.10% Impervious Area

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

Subcatchment 3S: PRE-3

Hydrograph



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Summary for Subcatchment 4S: PRE-4

Runoff = 0.0 cfs @ 22.64 hrs, Volume= 0.000 af, Depth> 0.00"

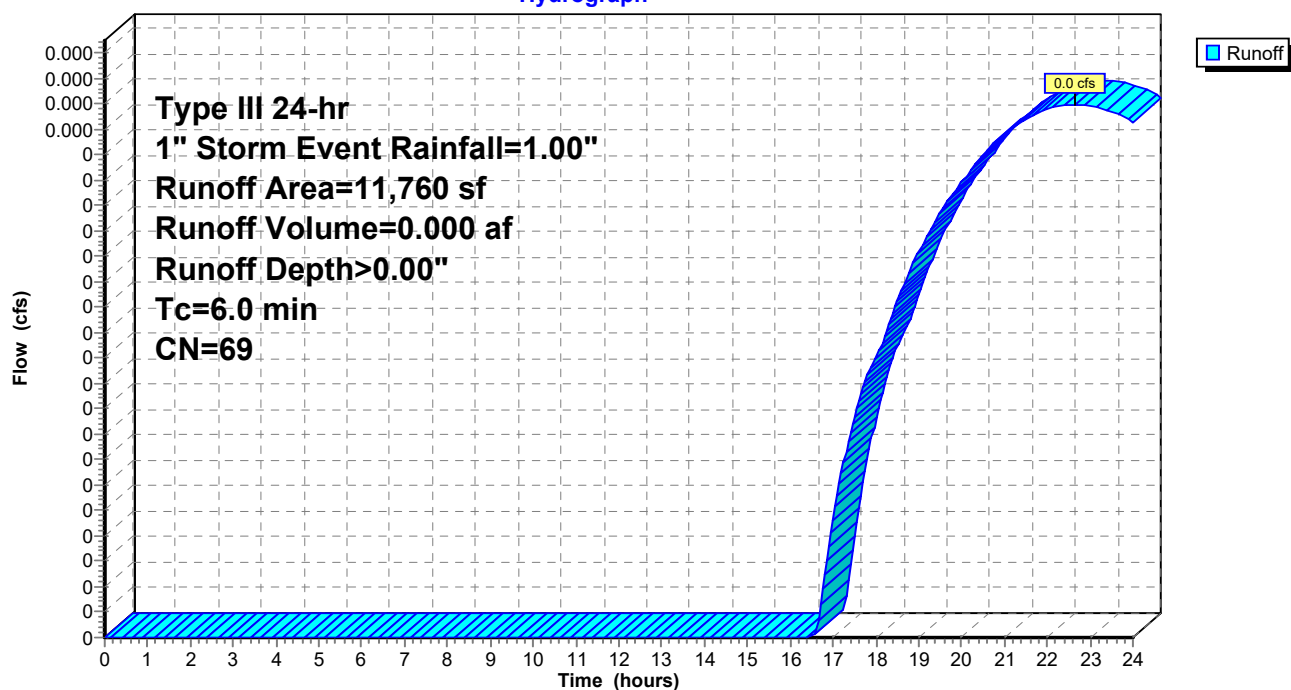
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
2,321	98	Paved parking, HSG A
1,957	39	Grass cover, Good, HSG A
7,482	68	Grass cover (parking area), HSG A
11,760	69	Weighted Average
9,439		80.26% Pervious Area
2,321		19.74% Impervious Area

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

Subcatchment 4S: PRE-4

Hydrograph



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Summary for Subcatchment 5S: PRE-5

Runoff = 0.0 cfs @ 12.39 hrs, Volume= 0.003 af, Depth> 0.06"

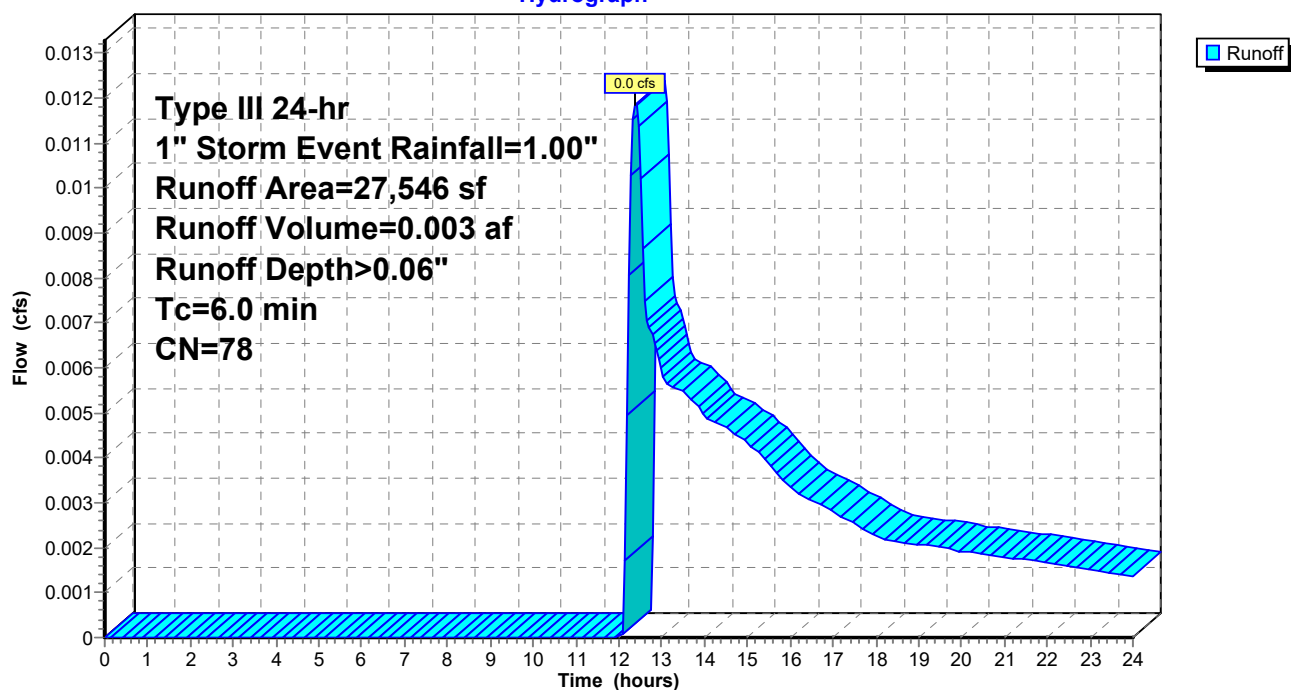
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
15,774	98	Paved parking, HSG A
6,700	39	Grass cover, Good, HSG A
5,072	68	Grass cover (parking area), HSG A
27,546	78	Weighted Average
11,772		42.74% Pervious Area
15,774		57.26% Impervious Area

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

Subcatchment 5S: PRE-5

Hydrograph



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Summary for Subcatchment 6S: PRE-6

Runoff = 0.0 cfs @ 12.16 hrs, Volume= 0.004 af, Depth> 0.11"

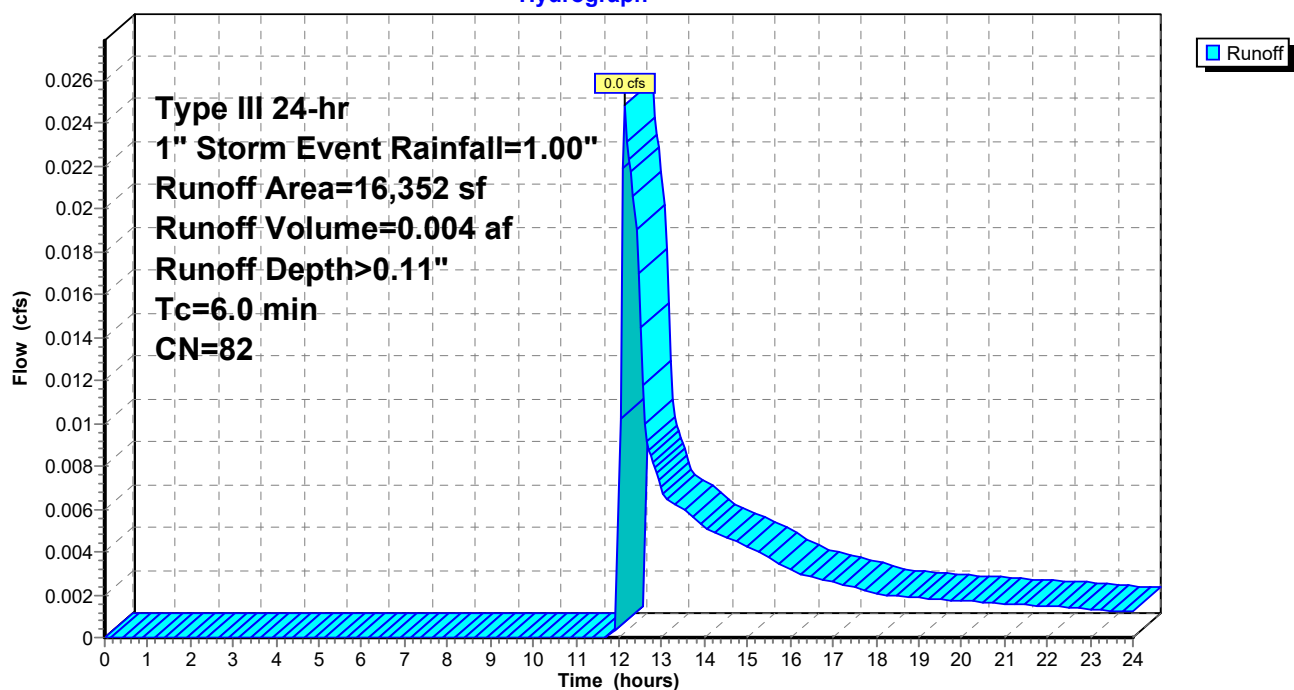
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
11,768	98	Paved parking, HSG A
3,865	39	Grass cover, Good, HSG A
* 719	40	Porous Pavement
16,352	82	Weighted Average
4,584		28.03% Pervious Area
11,768		71.97% Impervious Area

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

Subcatchment 6S: PRE-6

Hydrograph



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Summary for Subcatchment 7S: PRE-7

Runoff = 0.0 cfs @ 12.16 hrs, Volume= 0.003 af, Depth> 0.11"

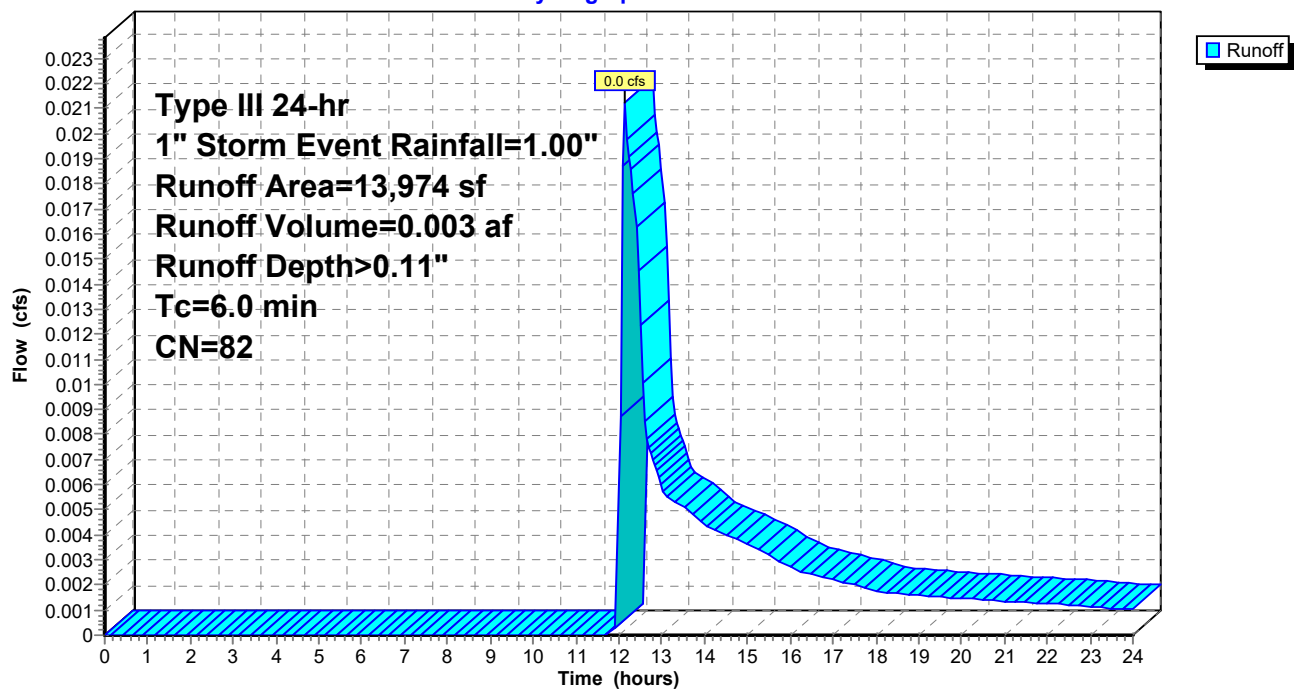
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
10,235	98	Paved parking, HSG A
3,739	39	Grass cover, Good, HSG A
13,974	82	Weighted Average
3,739		26.76% Pervious Area
10,235		73.24% Impervious Area

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

Subcatchment 7S: PRE-7

Hydrograph



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Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Pond 11P: Ex CB1

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 0.06" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.39 hrs, Volume= 0.003 af
Outflow = 0.0 cfs @ 12.39 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.39 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 18.52' @ 12.39 hrs

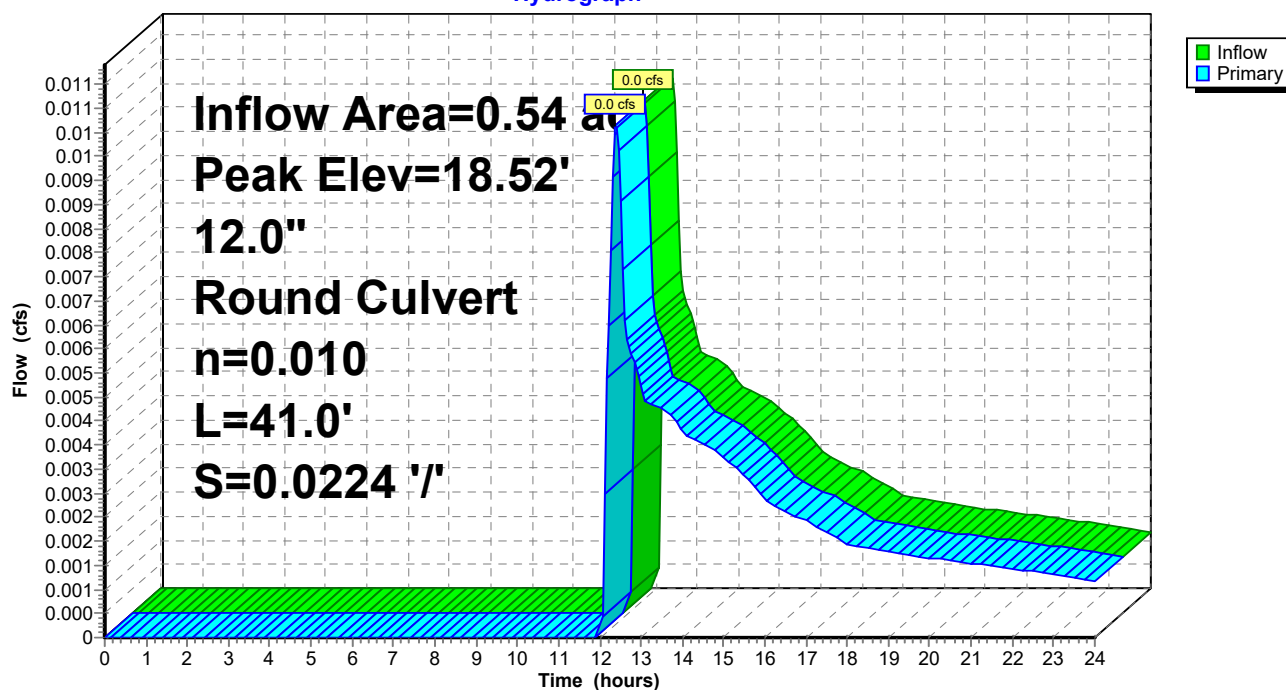
Flood Elev= 22.02'

Device	Routing	Invert	Outlet Devices
#1	Primary	18.47'	12.0" Round Culvert L= 41.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.47' / 17.55' S= 0.0224 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.0 cfs @ 12.39 hrs HW=18.52' TW=17.52' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 0.0 cfs @ 0.63 fps)

Pond 11P: Ex CB1

Hydrograph



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Summary for Pond 12P: Ex CB2

Inflow Area = 0.27 ac, 19.74% Impervious, Inflow Depth > 0.00" for 1" Storm Event event
Inflow = 0.0 cfs @ 22.64 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 22.65 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.3 min
Primary = 0.0 cfs @ 22.65 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 18.15' @ 22.65 hrs

Flood Elev= 22.15'

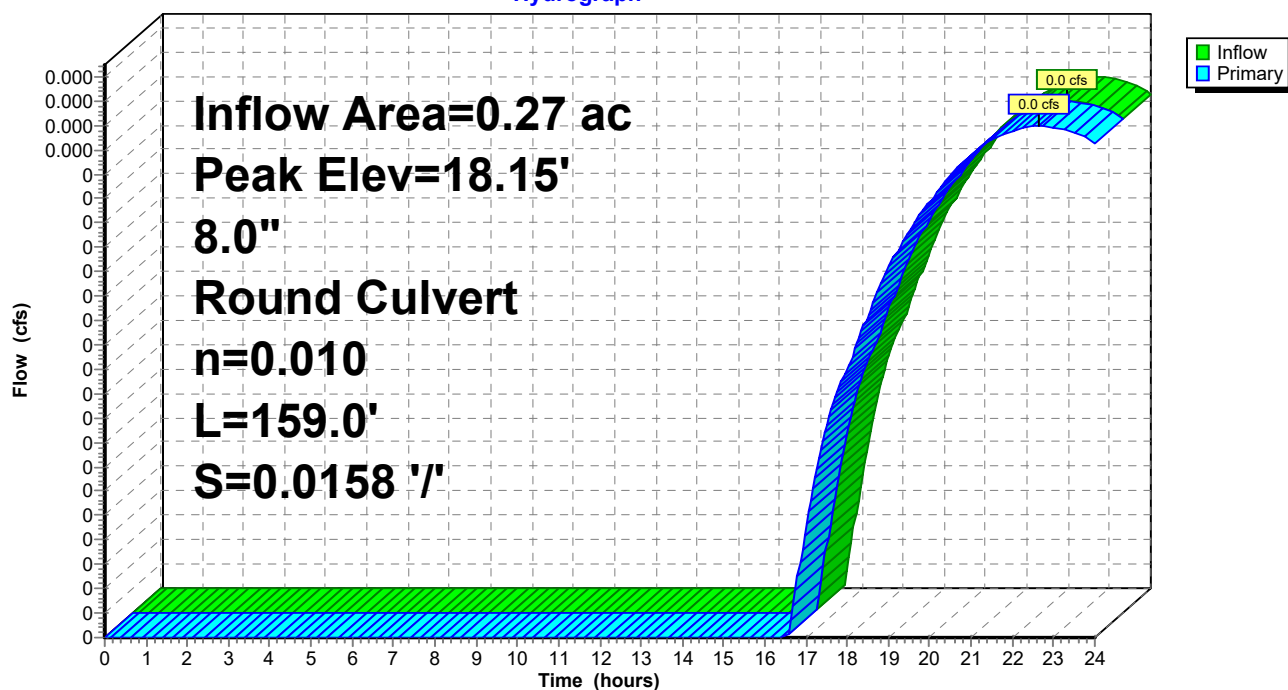
Device	Routing	Invert	Outlet Devices
#1	Primary	18.14'	8.0" Round Culvert L= 159.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.14' / 15.62' S= 0.0158 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.0 cfs @ 22.65 hrs HW=18.15' TW=0.00' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 0.0 cfs @ 0.21 fps)

Pond 12P: Ex CB2

Hydrograph



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Summary for Pond 14P: Ex CB4

Inflow Area = 0.38 ac, 71.97% Impervious, Inflow Depth > 0.11" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.16 hrs, Volume= 0.004 af
Outflow = 0.0 cfs @ 12.16 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.16 hrs, Volume= 0.004 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.99' @ 12.16 hrs

Flood Elev= 21.96'

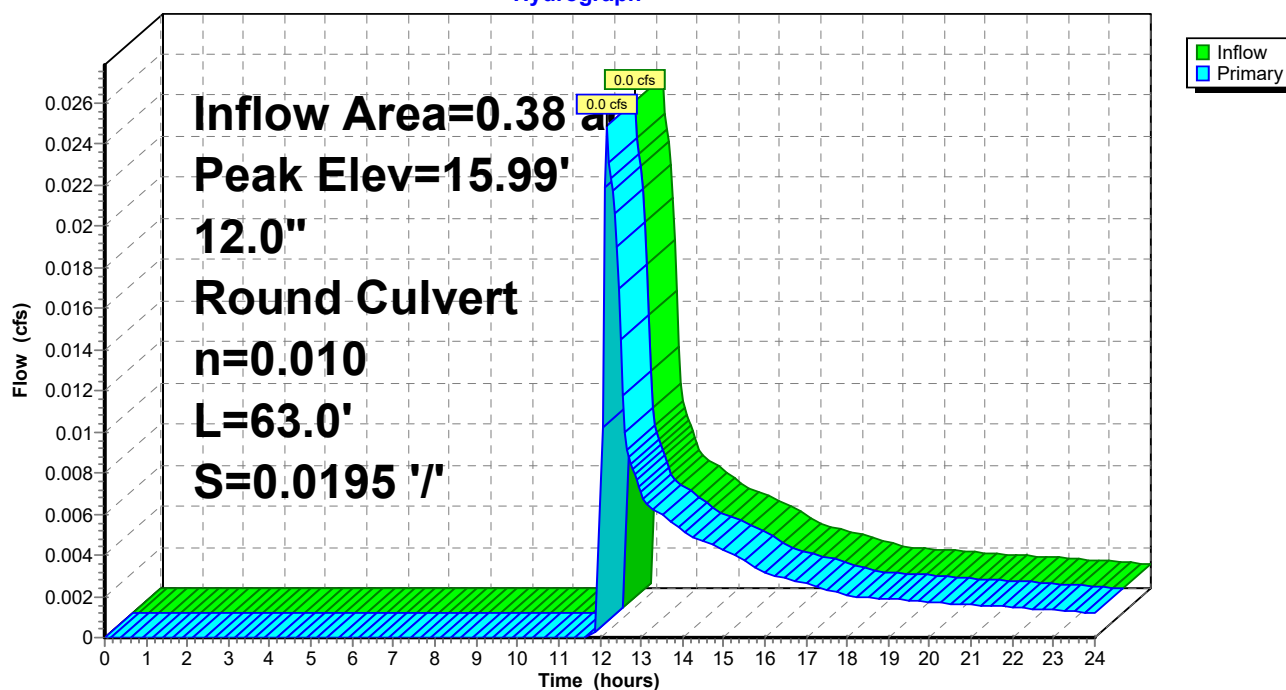
Device	Routing	Invert	Outlet Devices
#1	Primary	15.91'	12.0" Round Culvert L= 63.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.91' / 14.68' S= 0.0195 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.0 cfs @ 12.16 hrs HW=15.99' TW=14.90' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 0.0 cfs @ 0.78 fps)

Pond 14P: Ex CB4

Hydrograph



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Summary for Pond 15P: Ex CB5

Inflow Area = 0.70 ac, 72.55% Impervious, Inflow Depth > 0.11" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.16 hrs, Volume= 0.007 af
Outflow = 0.0 cfs @ 12.16 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.16 hrs, Volume= 0.007 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 14.90' @ 12.16 hrs

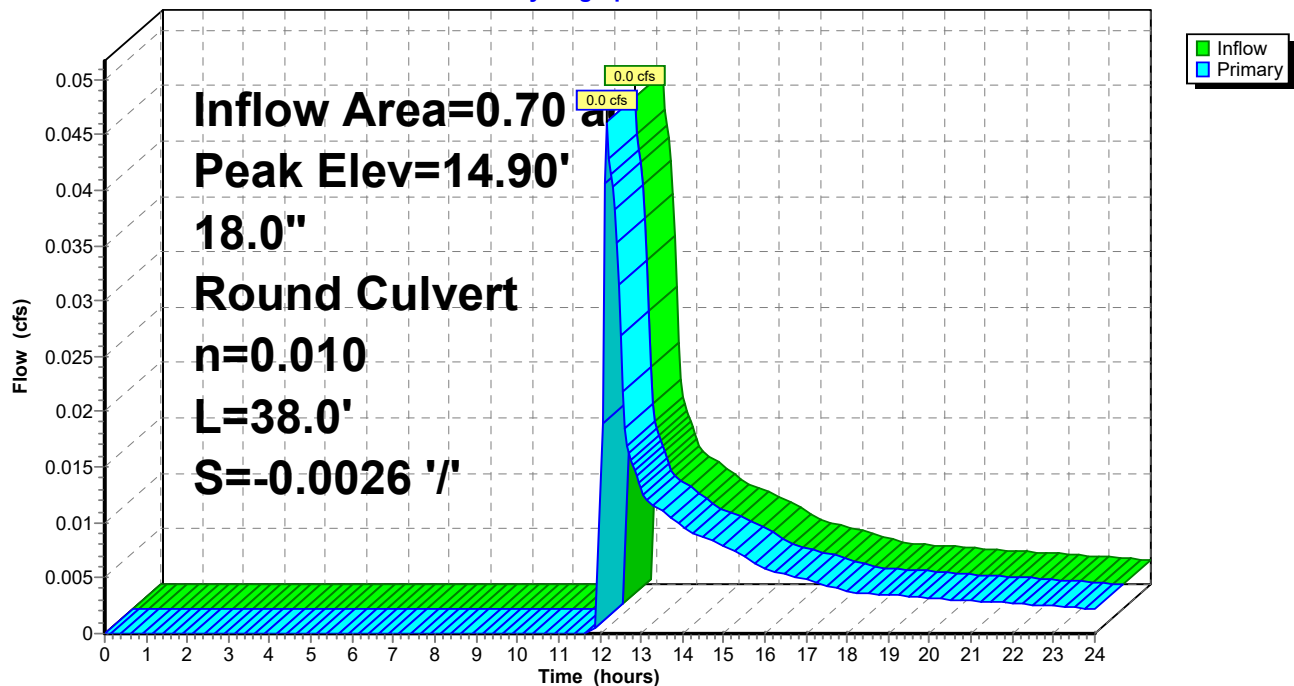
Flood Elev= 22.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	14.80'	18.0" Round Culvert L= 38.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.70' / 14.80' S= -0.0026 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.16 hrs HW=14.90' TW=14.72' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 0.0 cfs @ 0.86 fps)

Pond 15P: Ex CB5

Hydrograph



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Summary for Pond 21P: Ex DMH1

Inflow Area = 0.70 ac, 72.55% Impervious, Inflow Depth > 0.11" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.16 hrs, Volume= 0.007 af
Outflow = 0.0 cfs @ 12.16 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.16 hrs, Volume= 0.007 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 14.72' @ 12.16 hrs

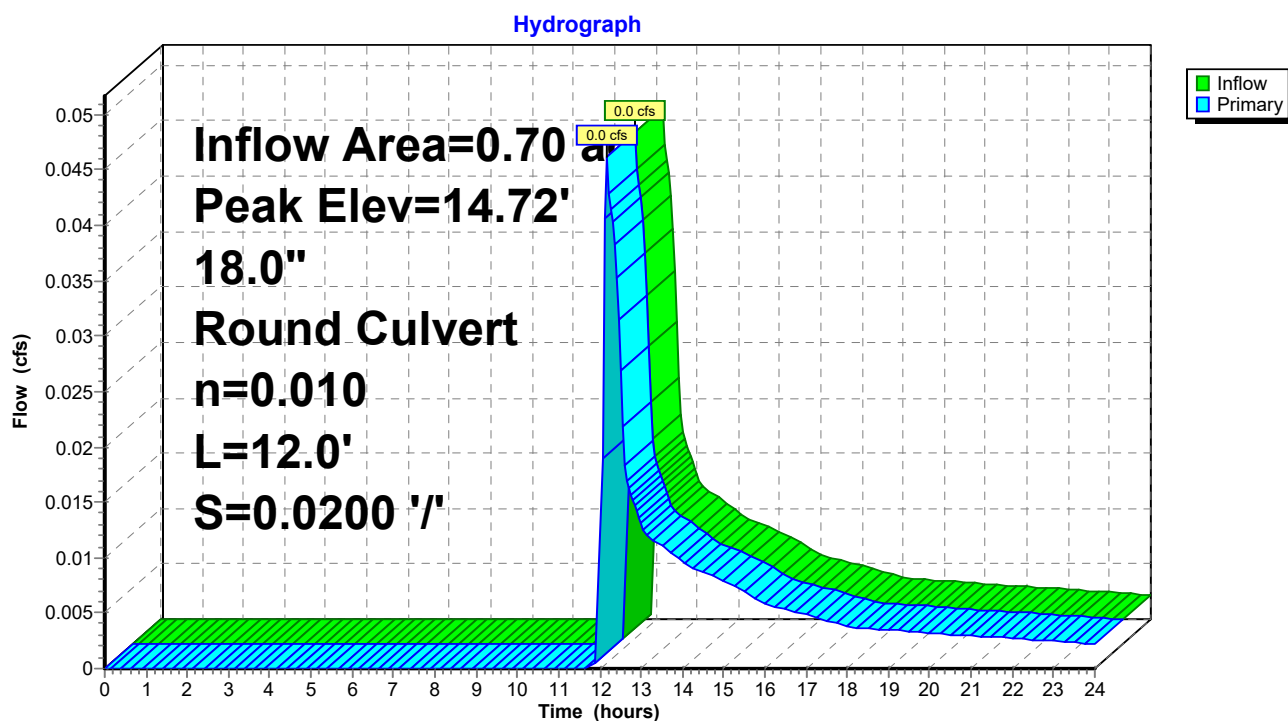
Flood Elev= 23.72'

Device	Routing	Invert	Outlet Devices
#1	Primary	14.62'	18.0" Round Culvert L= 12.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.62' / 14.38' S= 0.0200 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.16 hrs HW=14.72' TW=14.41' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 0.0 cfs @ 0.86 fps)

Pond 21P: Ex DMH1



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Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Pond 22P: Ex DMH2

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 0.06" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.39 hrs, Volume= 0.003 af
Outflow = 0.0 cfs @ 12.39 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.39 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.18' @ 12.39 hrs

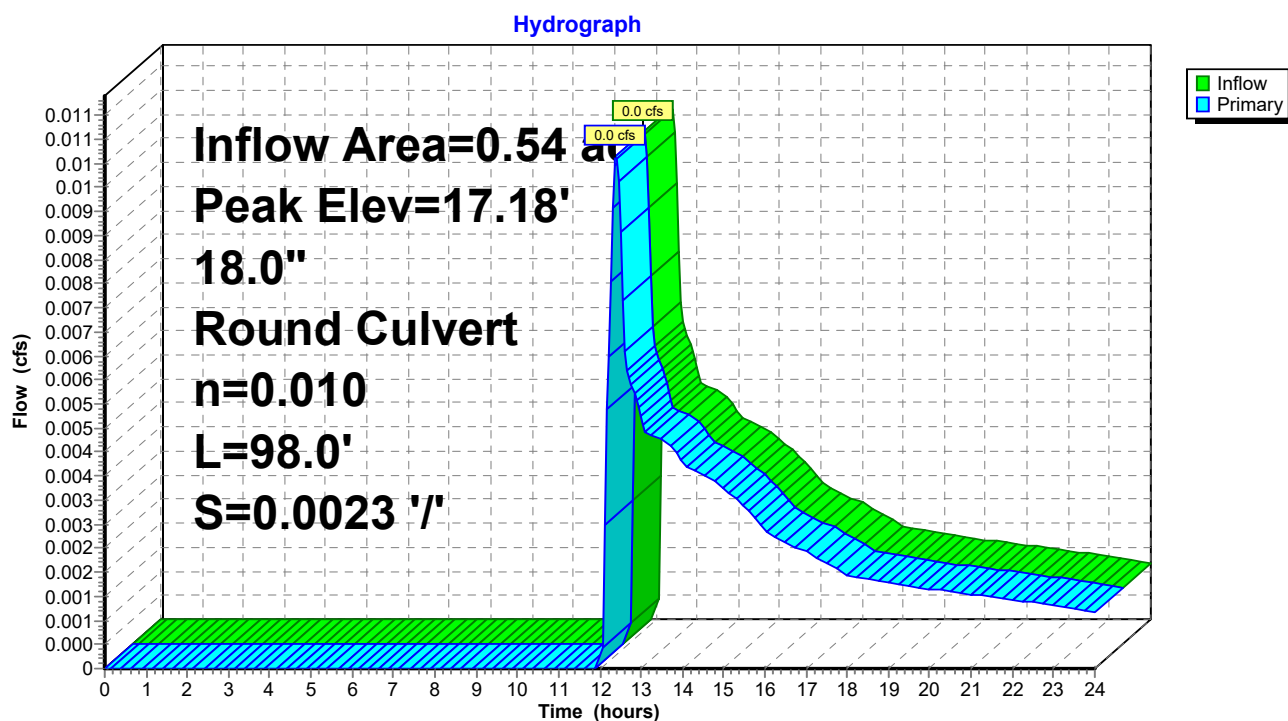
Flood Elev= 24.92'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.12'	18.0" Round Culvert L= 98.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.12' / 16.89' S= 0.0023 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.39 hrs HW=17.18' TW=16.81' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 0.0 cfs @ 0.69 fps)

Pond 22P: Ex DMH2



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PRE
Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Pond 23P: Ex CB3

Inflow Area = 0.63 ac, 57.26% Impervious, Inflow Depth > 0.06" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.39 hrs, Volume= 0.003 af
Outflow = 0.0 cfs @ 12.40 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.40 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 14.11' @ 12.39 hrs

Flood Elev= 23.60'

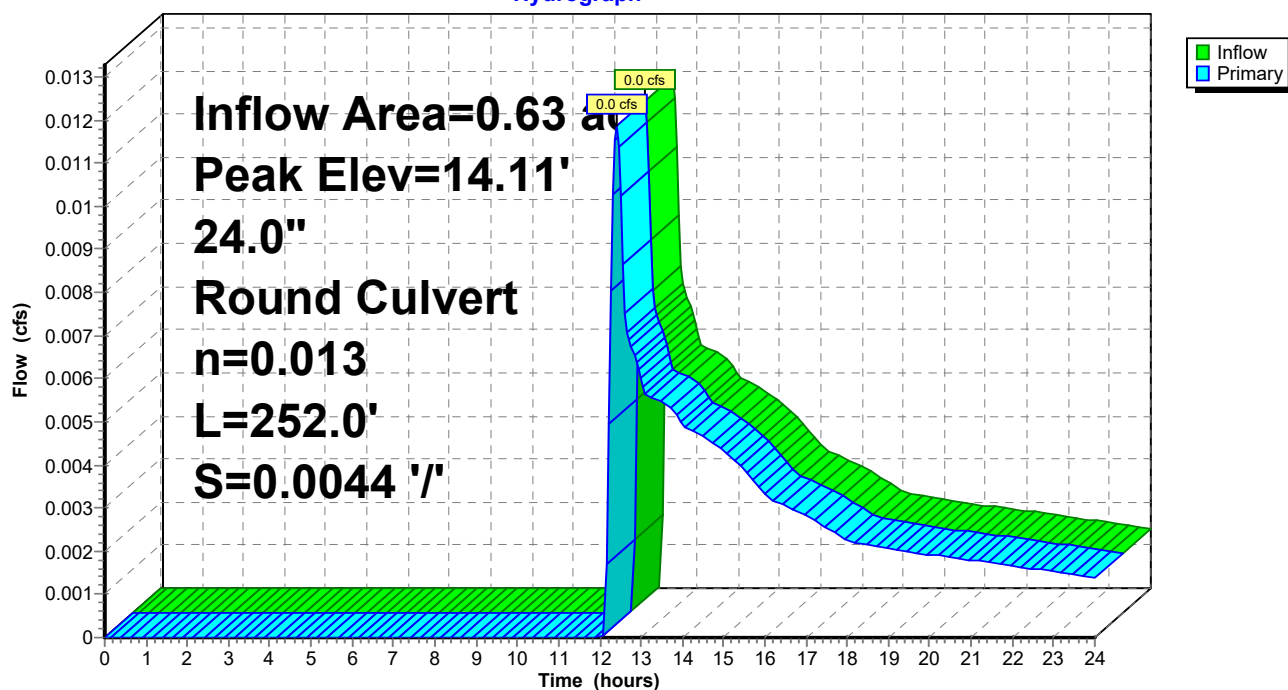
Device	Routing	Invert	Outlet Devices
#1	Primary	14.05'	24.0" Round Culvert L= 252.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.05' / 12.94' S= 0.0044 '/' Cc= 0.900 n= 0.013 Cast iron, coated, Flow Area= 3.14 sf

Primary OutFlow Max=0.0 cfs @ 12.40 hrs HW=14.11' TW=0.00' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 0.0 cfs @ 0.71 fps)

Pond 23P: Ex CB3

Hydrograph



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Summary for Pond 24P: Ex DMH4

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 0.06" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.39 hrs, Volume= 0.003 af
Outflow = 0.0 cfs @ 12.39 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.39 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

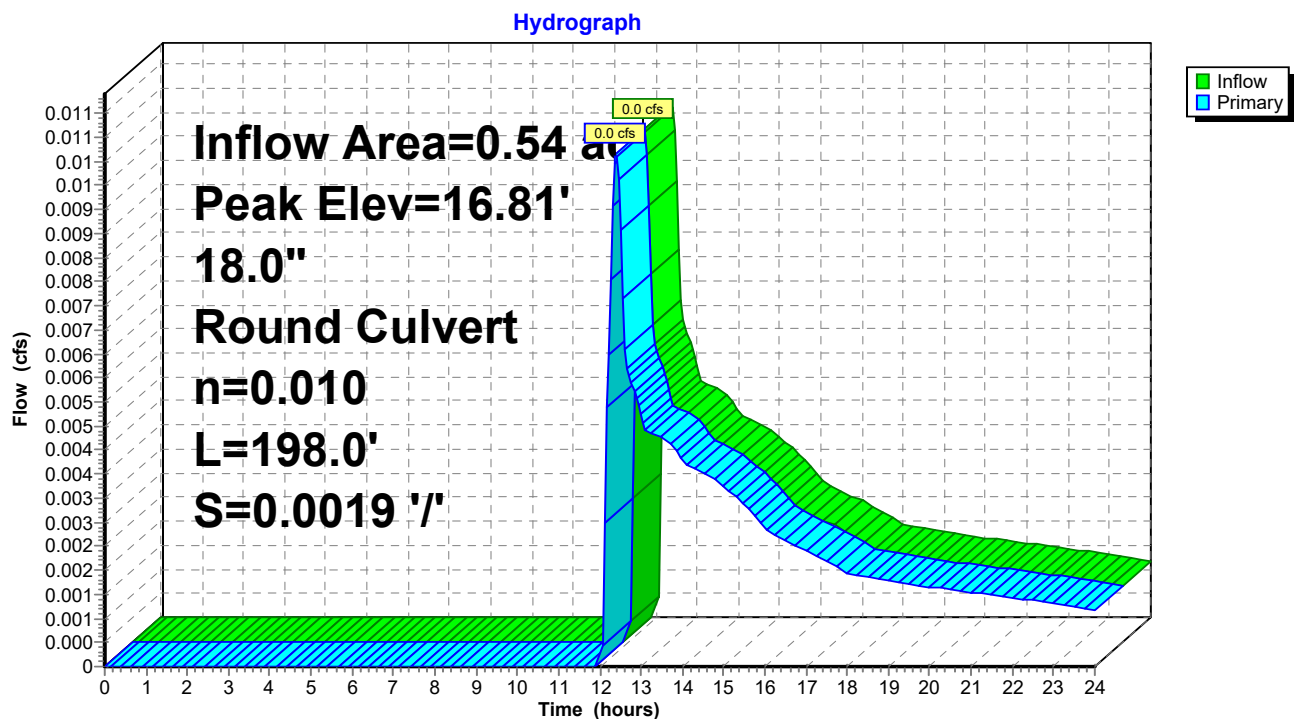
Peak Elev= 16.81' @ 12.39 hrs

Flood Elev= 25.38'

Device	Routing	Invert	Outlet Devices
#1	Primary	16.75'	18.0" Round Culvert L= 198.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.75' / 16.38' S= 0.0019 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.39 hrs HW=16.81' TW=15.49' (Dynamic Tailwater)
↑1=Culvert (Barrel Controls 0.0 cfs @ 0.64 fps)

Pond 24P: Ex DMH4



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PRE
Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Pond 25P: Ex DMH5

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 0.06" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.39 hrs, Volume= 0.003 af
Outflow = 0.0 cfs @ 12.39 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.39 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

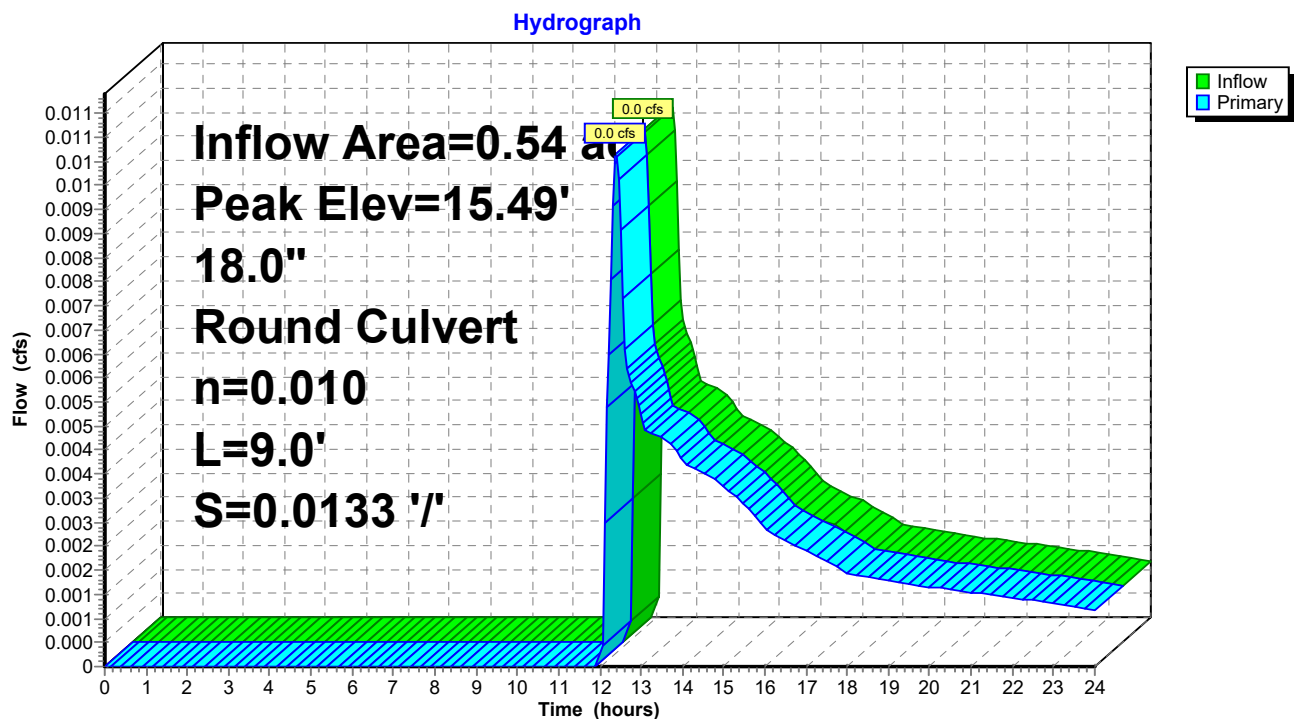
Peak Elev= 15.49' @ 12.39 hrs

Flood Elev= 23.84'

Device	Routing	Invert	Outlet Devices
#1	Primary	15.44'	18.0" Round Culvert L= 9.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.44' / 15.32' S= 0.0133 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.39 hrs HW=15.49' TW=14.40' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 0.0 cfs @ 0.60 fps)

Pond 25P: Ex DMH5



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Summary for Pond 26P: Ex DMH6

Inflow Area = 1.23 ac, 64.68% Impervious, Inflow Depth > 0.09" for 1" Storm Event event
Inflow = 0.1 cfs @ 12.16 hrs, Volume= 0.009 af
Outflow = 0.1 cfs @ 12.16 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min
Primary = 0.1 cfs @ 12.16 hrs, Volume= 0.009 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 14.41' @ 12.15 hrs

Flood Elev= 23.95'

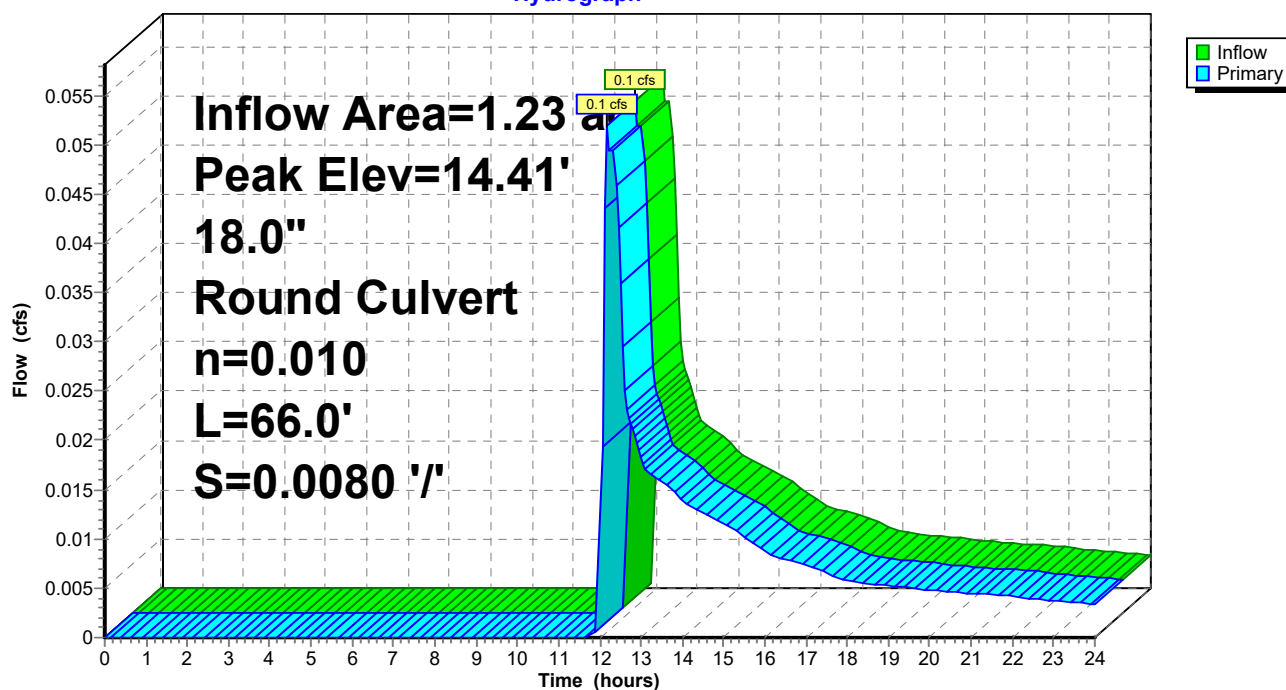
Device	Routing	Invert	Outlet Devices
#1	Primary	14.30'	18.0" Round Culvert L= 66.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.30' / 13.77' S= 0.0080 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.1 cfs @ 12.16 hrs HW=14.41' TW=13.84' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 0.1 cfs @ 0.89 fps)

Pond 26P: Ex DMH6

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Summary for Pond 27P: Ex DMH7

Inflow Area = 1.23 ac, 64.68% Impervious, Inflow Depth > 0.09" for 1" Storm Event event
Inflow = 0.1 cfs @ 12.16 hrs, Volume= 0.009 af
Outflow = 0.1 cfs @ 12.16 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min
Primary = 0.1 cfs @ 12.16 hrs, Volume= 0.009 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 13.84' @ 12.15 hrs

Flood Elev= 24.90'

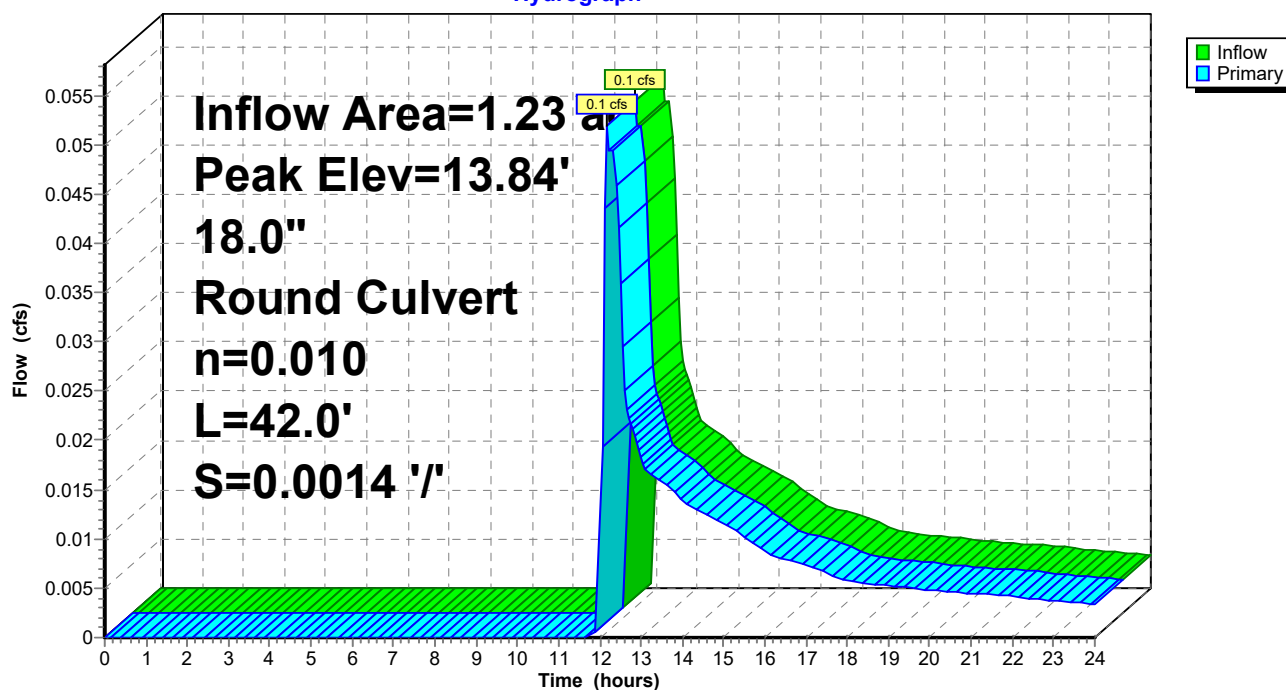
Device	Routing	Invert	Outlet Devices
#1	Primary	13.70'	18.0" Round Culvert L= 42.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.70' / 13.64' S= 0.0014 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.1 cfs @ 12.16 hrs HW=13.84' TW=0.00' (Dynamic Tailwater)

↑**1=Culvert** (Barrel Controls 0.1 cfs @ 0.97 fps)

Pond 27P: Ex DMH7

Hydrograph



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Summary for Pond 29P: Ex DMH9

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 0.06" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.39 hrs, Volume= 0.003 af
Outflow = 0.0 cfs @ 12.39 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.39 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.52' @ 12.39 hrs

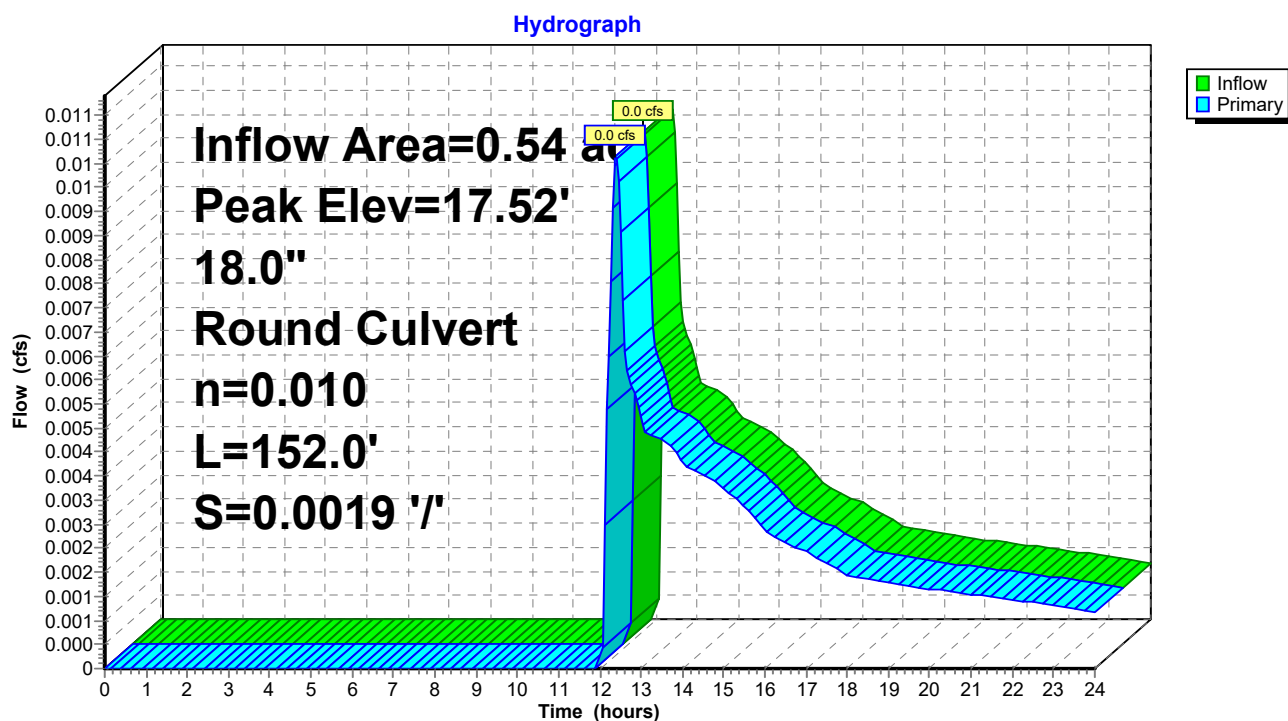
Flood Elev= 23.44'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.46'	18.0" Round Culvert L= 152.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.46' / 17.17' S= 0.0019 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.39 hrs HW=17.52' TW=17.18' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 0.0 cfs @ 0.64 fps)

Pond 29P: Ex DMH9



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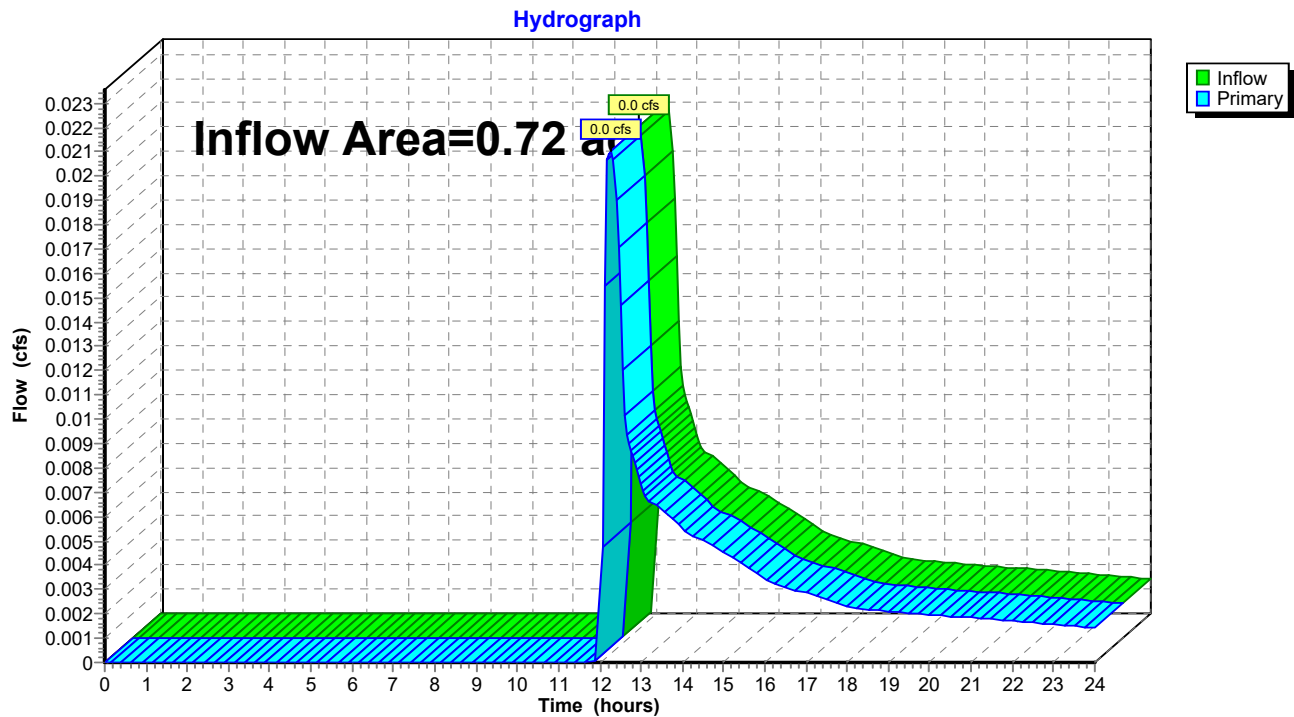
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Summary for Link SP1: Forest Ave Storm Drain

Inflow Area = 0.72 ac, 39.36% Impervious, Inflow Depth > 0.06" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.27 hrs, Volume= 0.004 af
Primary = 0.0 cfs @ 12.27 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP1: Forest Ave Storm Drain



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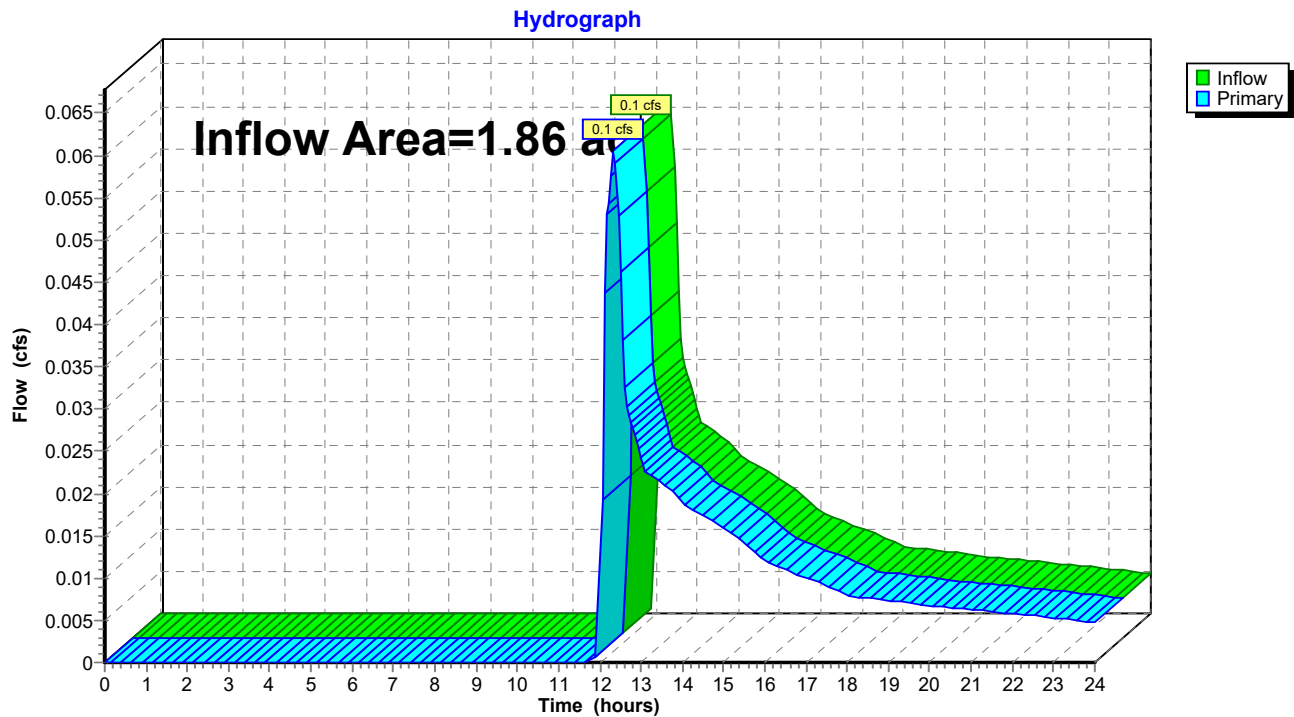
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Summary for Link SP2: Combined Sewer

Inflow Area = 1.86 ac, 62.17% Impervious, Inflow Depth > 0.08" for 1" Storm Event event
Inflow = 0.1 cfs @ 12.33 hrs, Volume= 0.012 af
Primary = 0.1 cfs @ 12.33 hrs, Volume= 0.012 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP2: Combined Sewer



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Type III 24-hr 2-Year Storm Rainfall=3.10"

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: PRE-1	Runoff Area=8,487 sf 61.42% Impervious Runoff Depth>1.32" Tc=6.0 min CN=80 Runoff=0.3 cfs 0.021 af
Subcatchment2S: PRE-2	Runoff Area=14,855 sf 50.48% Impervious Runoff Depth>1.14" Tc=6.0 min CN=77 Runoff=0.4 cfs 0.032 af
Subcatchment3S: PRE-3	Runoff Area=19,668 sf 51.10% Impervious Runoff Depth>1.39" Tc=6.0 min CN=81 Runoff=0.7 cfs 0.052 af
Subcatchment4S: PRE-4	Runoff Area=11,760 sf 19.74% Impervious Runoff Depth>0.72" Tc=6.0 min CN=69 Runoff=0.2 cfs 0.016 af
Subcatchment5S: PRE-5	Runoff Area=27,546 sf 57.26% Impervious Runoff Depth>1.20" Tc=6.0 min CN=78 Runoff=0.9 cfs 0.063 af
Subcatchment6S: PRE-6	Runoff Area=16,352 sf 71.97% Impervious Runoff Depth>1.46" Tc=6.0 min CN=82 Runoff=0.6 cfs 0.046 af
Subcatchment7S: PRE-7	Runoff Area=13,974 sf 73.24% Impervious Runoff Depth>1.46" Tc=6.0 min CN=82 Runoff=0.5 cfs 0.039 af
Pond 11P: Ex CB1	Peak Elev=18.96' Inflow=0.7 cfs 0.054 af 12.0" Round Culvert n=0.010 L=41.0' S=0.0224 '/ Outflow=0.7 cfs 0.054 af
Pond 12P: Ex CB2	Peak Elev=18.42' Inflow=0.2 cfs 0.016 af 8.0" Round Culvert n=0.010 L=159.0' S=0.0158 '/ Outflow=0.2 cfs 0.016 af
Pond 14P: Ex CB4	Peak Elev=16.36' Inflow=0.6 cfs 0.046 af 12.0" Round Culvert n=0.010 L=63.0' S=0.0195 '/ Outflow=0.6 cfs 0.046 af
Pond 15P: Ex CB5	Peak Elev=15.40' Inflow=1.2 cfs 0.085 af 18.0" Round Culvert n=0.010 L=38.0' S=-0.0026 '/ Outflow=1.2 cfs 0.085 af
Pond 21P: Ex DMH1	Peak Elev=15.21' Inflow=1.2 cfs 0.085 af 18.0" Round Culvert n=0.010 L=12.0' S=0.0200 '/ Outflow=1.2 cfs 0.085 af
Pond 22P: Ex DMH2	Peak Elev=17.59' Inflow=0.7 cfs 0.054 af 18.0" Round Culvert n=0.010 L=98.0' S=0.0023 '/ Outflow=0.7 cfs 0.054 af
Pond 23P: Ex CB3	Peak Elev=14.49' Inflow=0.9 cfs 0.063 af 24.0" Round Culvert n=0.013 L=252.0' S=0.0044 '/ Outflow=0.9 cfs 0.063 af
Pond 24P: Ex DMH4	Peak Elev=17.23' Inflow=0.7 cfs 0.054 af 18.0" Round Culvert n=0.010 L=198.0' S=0.0019 '/ Outflow=0.7 cfs 0.054 af
Pond 25P: Ex DMH5	Peak Elev=15.87' Inflow=0.7 cfs 0.054 af 18.0" Round Culvert n=0.010 L=9.0' S=0.0133 '/ Outflow=0.7 cfs 0.054 af

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Type III 24-hr 2-Year Storm Rainfall=3.10"

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Pond 26P: Ex DMH6Peak Elev=15.01' Inflow=1.9 cfs 0.138 af
18.0" Round Culvert n=0.010 L=66.0' S=0.0080 '/ Outflow=1.9 cfs 0.138 af**Pond 27P: Ex DMH7**Peak Elev=14.54' Inflow=1.9 cfs 0.138 af
18.0" Round Culvert n=0.010 L=42.0' S=0.0014 '/ Outflow=1.9 cfs 0.138 af**Pond 29P: Ex DMH9**Peak Elev=17.95' Inflow=0.7 cfs 0.054 af
18.0" Round Culvert n=0.010 L=152.0' S=0.0019 '/ Outflow=0.7 cfs 0.054 af**Link SP1: Forest Ave Storm Drain**Inflow=0.9 cfs 0.069 af
Primary=0.9 cfs 0.069 af**Link SP2: Combined Sewer**Inflow=2.7 cfs 0.202 af
Primary=2.7 cfs 0.202 af**Total Runoff Area = 2.59 ac Runoff Volume = 0.270 af Average Runoff Depth = 1.25"**
44.19% Pervious = 1.14 ac 55.81% Impervious = 1.44 ac

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Summary for Subcatchment 1S: PRE-1

Runoff = 0.3 cfs @ 12.10 hrs, Volume= 0.021 af, Depth> 1.32"

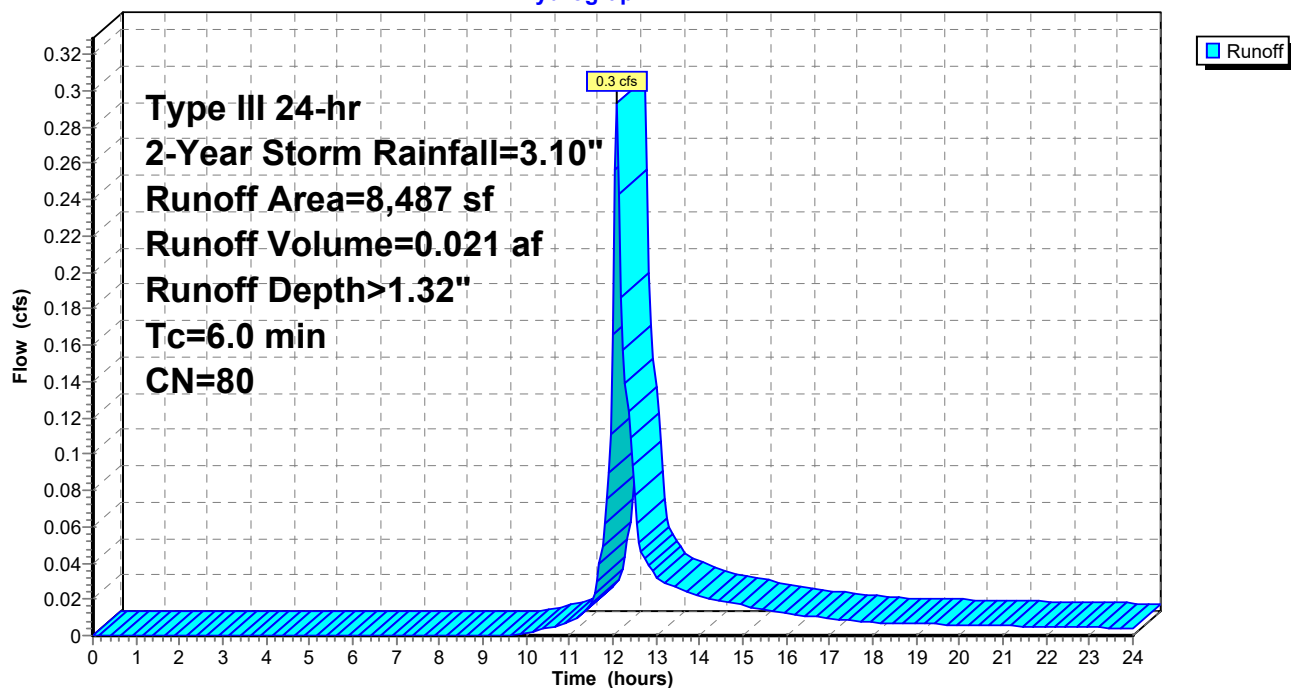
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
5,213	98	Paved parking, HSG A
1,900	39	Grass cover, Good, HSG A
* 1,374	68	Grass cover (parking area), HSG A
8,487	80	Weighted Average
3,274		38.58% Pervious Area
5,213		61.42% Impervious Area

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

Subcatchment 1S: PRE-1

Hydrograph



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Summary for Subcatchment 2S: PRE-2

Runoff = 0.4 cfs @ 12.10 hrs, Volume= 0.032 af, Depth> 1.14"

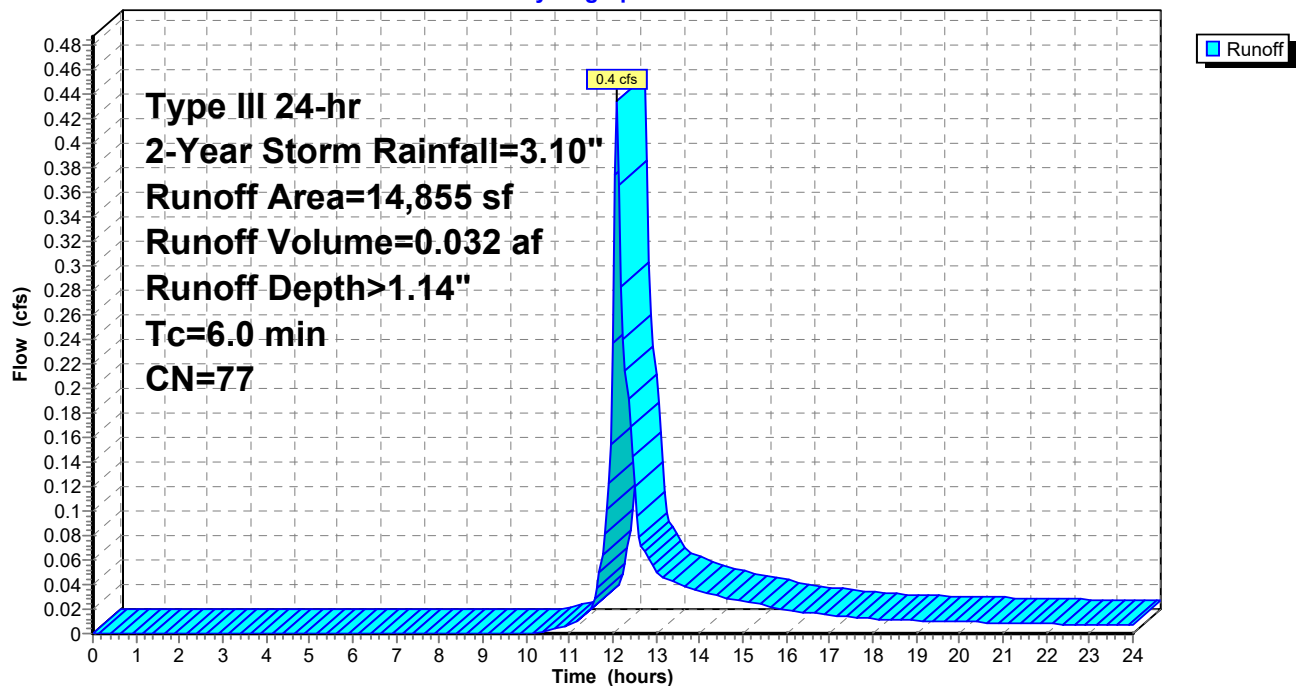
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
7,499	98	Paved parking, HSG A
2,948	39	Grass cover, Good, HSG A
4,408	68	Grass cover (parking area), HSG A
14,855	77	Weighted Average
7,356		49.52% Pervious Area
7,499		50.48% Impervious Area

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

Subcatchment 2S: PRE-2

Hydrograph



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Summary for Subcatchment 3S: PRE-3

Runoff = 0.7 cfs @ 12.10 hrs, Volume= 0.052 af, Depth> 1.39"

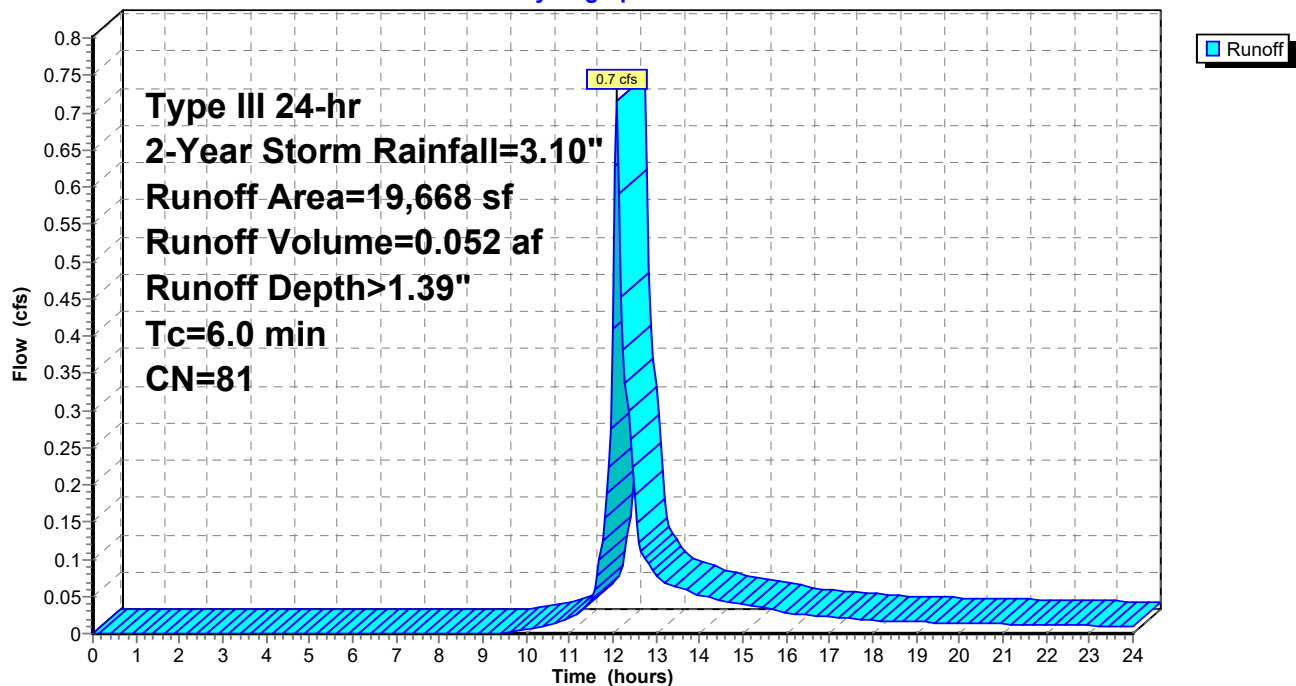
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
10,050	98	Paved parking, HSG A
1,903	39	Grass cover, Good, HSG A
7,715	68	Grass cover (parking area), HSG A
19,668	81	Weighted Average
9,618		48.90% Pervious Area
10,050		51.10% Impervious Area

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

Subcatchment 3S: PRE-3

Hydrograph



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Summary for Subcatchment 4S: PRE-4

Runoff = 0.2 cfs @ 12.11 hrs, Volume= 0.016 af, Depth> 0.72"

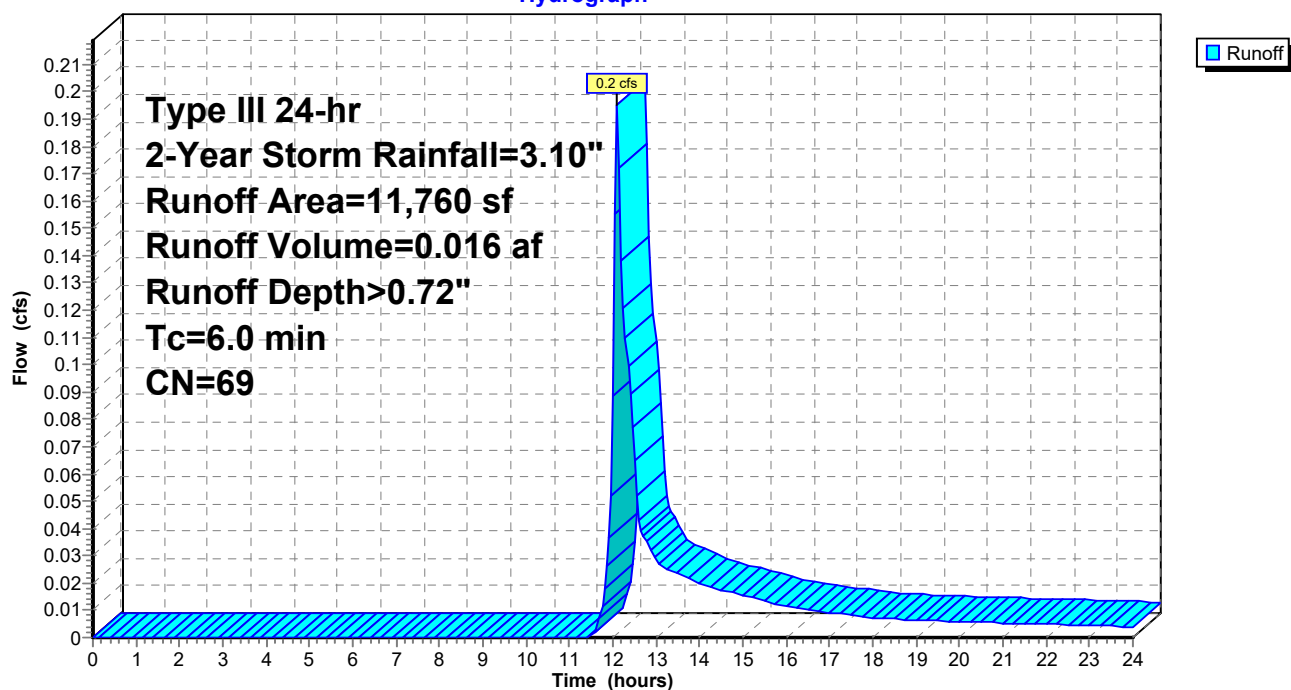
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
2,321	98	Paved parking, HSG A
1,957	39	Grass cover, Good, HSG A
7,482	68	Grass cover (parking area), HSG A
11,760	69	Weighted Average
9,439		80.26% Pervious Area
2,321		19.74% Impervious Area

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

Subcatchment 4S: PRE-4

Hydrograph



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Summary for Subcatchment 5S: PRE-5

Runoff = 0.9 cfs @ 12.10 hrs, Volume= 0.063 af, Depth> 1.20"

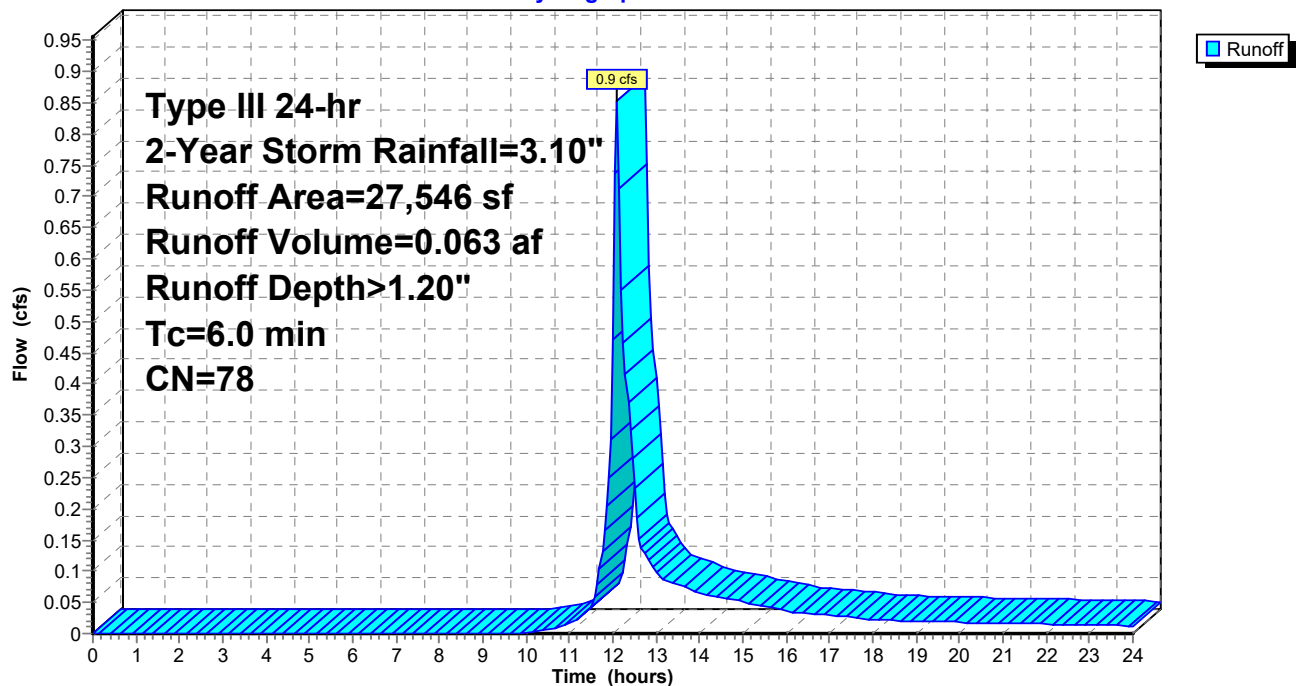
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
15,774	98	Paved parking, HSG A
6,700	39	Grass cover, Good, HSG A
5,072	68	Grass cover (parking area), HSG A
27,546	78	Weighted Average
11,772		42.74% Pervious Area
15,774		57.26% Impervious Area

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

Subcatchment 5S: PRE-5

Hydrograph



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Summary for Subcatchment 6S: PRE-6

Runoff = 0.6 cfs @ 12.09 hrs, Volume= 0.046 af, Depth> 1.46"

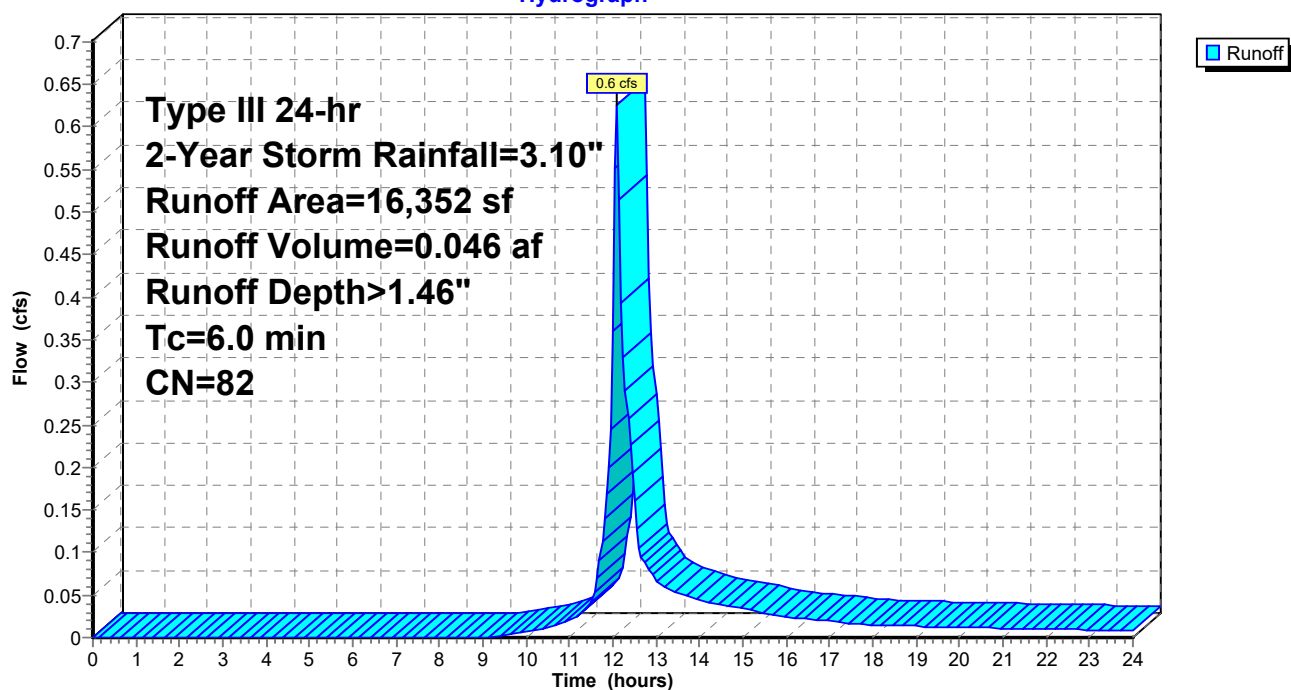
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
11,768	98	Paved parking, HSG A
3,865	39	Grass cover, Good, HSG A
* 719	40	Porous Pavement
16,352	82	Weighted Average
4,584		28.03% Pervious Area
11,768		71.97% Impervious Area

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

Subcatchment 6S: PRE-6

Hydrograph



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Summary for Subcatchment 7S: PRE-7

Runoff = 0.5 cfs @ 12.09 hrs, Volume= 0.039 af, Depth> 1.46"

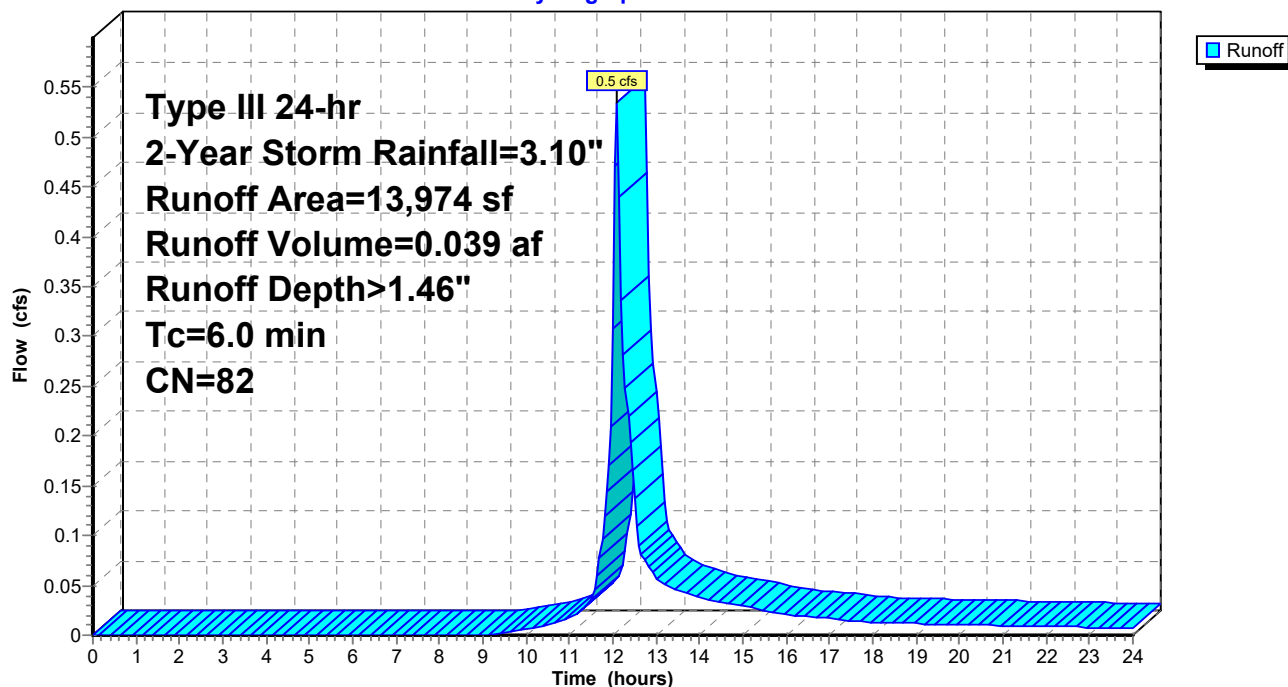
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
10,235	98	Paved parking, HSG A
3,739	39	Grass cover, Good, HSG A
13,974	82	Weighted Average
3,739		26.76% Pervious Area
10,235		73.24% Impervious Area

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

Subcatchment 7S: PRE-7

Hydrograph



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Summary for Pond 11P: Ex CB1

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 1.21" for 2-Year Storm event
Inflow = 0.7 cfs @ 12.10 hrs, Volume= 0.054 af
Outflow = 0.7 cfs @ 12.10 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min
Primary = 0.7 cfs @ 12.10 hrs, Volume= 0.054 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 18.96' @ 12.10 hrs

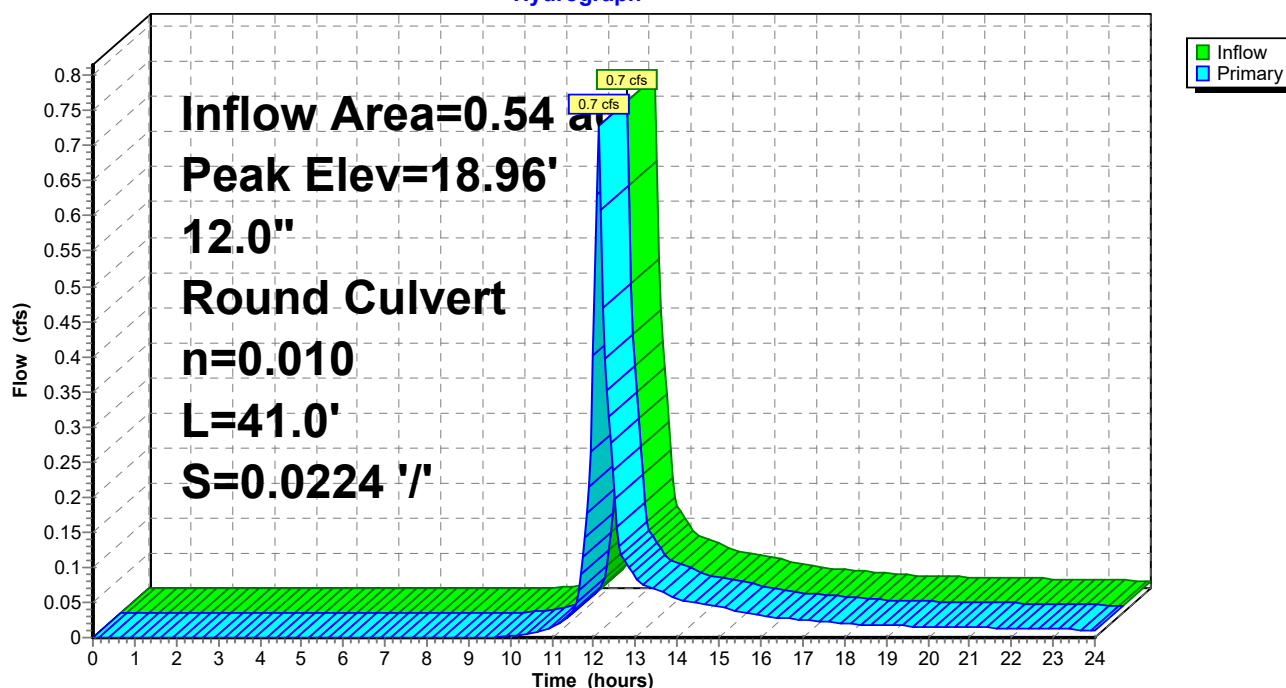
Flood Elev= 22.02'

Device	Routing	Invert	Outlet Devices
#1	Primary	18.47'	12.0" Round Culvert L= 41.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.47' / 17.55' S= 0.0224 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.7 cfs @ 12.10 hrs HW=18.96' TW=17.95' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 0.7 cfs @ 1.88 fps)

Pond 11P: Ex CB1

Hydrograph



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Summary for Pond 12P: Ex CB2

Inflow Area = 0.27 ac, 19.74% Impervious, Inflow Depth > 0.72" for 2-Year Storm event
Inflow = 0.2 cfs @ 12.11 hrs, Volume= 0.016 af
Outflow = 0.2 cfs @ 12.11 hrs, Volume= 0.016 af, Atten= 0%, Lag= 0.0 min
Primary = 0.2 cfs @ 12.11 hrs, Volume= 0.016 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 18.42' @ 12.11 hrs

Flood Elev= 22.15'

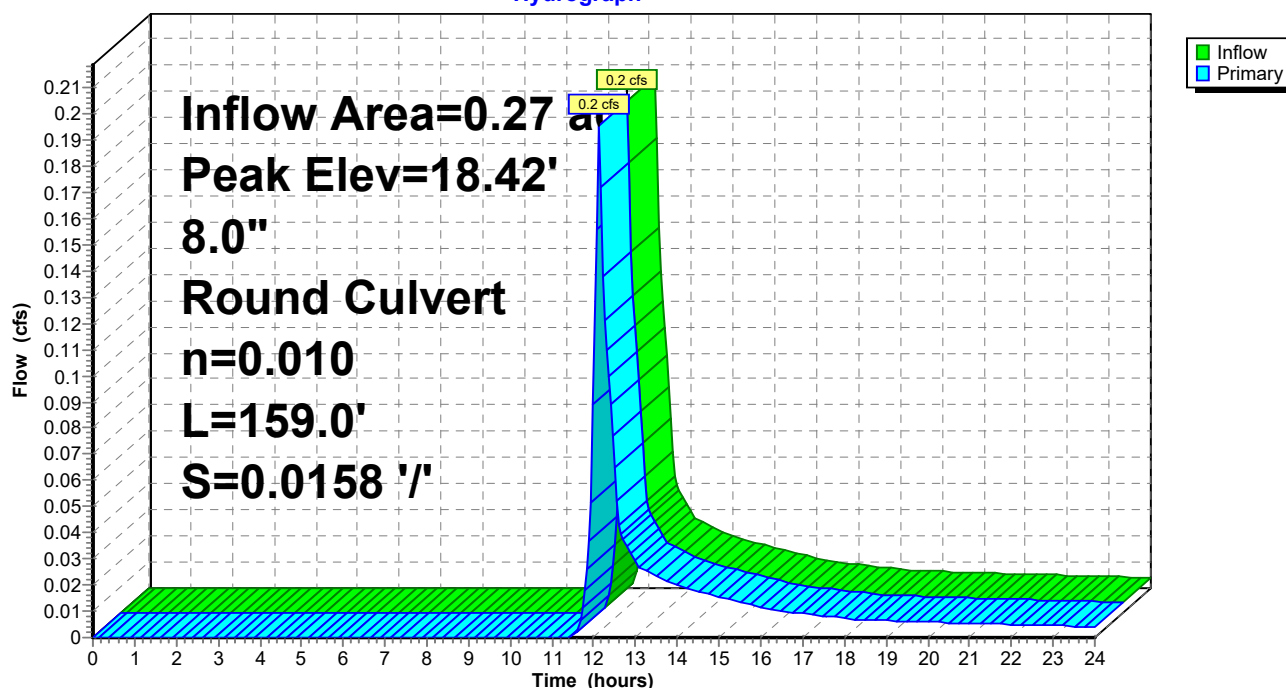
Device	Routing	Invert	Outlet Devices
#1	Primary	18.14'	8.0" Round Culvert L= 159.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.14' / 15.62' S= 0.0158 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.2 cfs @ 12.11 hrs HW=18.42' TW=0.00' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 0.2 cfs @ 1.41 fps)

Pond 12P: Ex CB2

Hydrograph



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Summary for Pond 14P: Ex CB4

Inflow Area = 0.38 ac, 71.97% Impervious, Inflow Depth > 1.46" for 2-Year Storm event
Inflow = 0.6 cfs @ 12.09 hrs, Volume= 0.046 af
Outflow = 0.6 cfs @ 12.09 hrs, Volume= 0.046 af, Atten= 0%, Lag= 0.0 min
Primary = 0.6 cfs @ 12.09 hrs, Volume= 0.046 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 16.36' @ 12.09 hrs

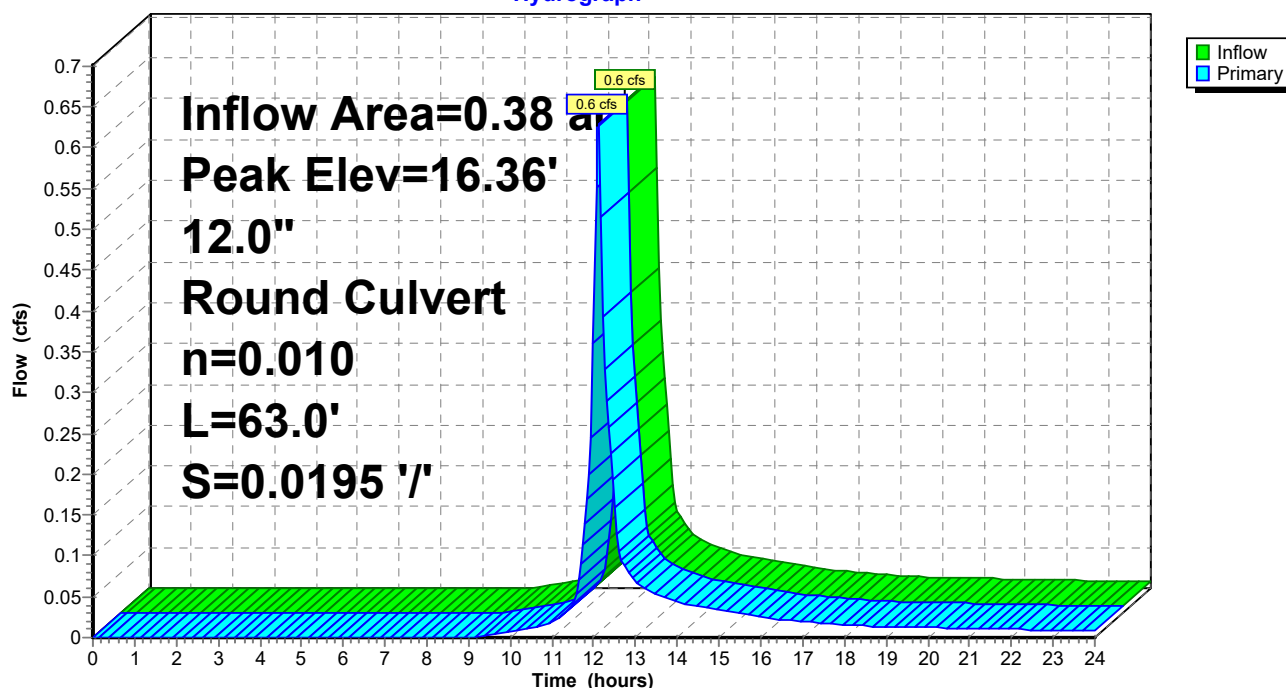
Flood Elev= 21.96'

Device	Routing	Invert	Outlet Devices
#1	Primary	15.91'	12.0" Round Culvert L= 63.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.91' / 14.68' S= 0.0195 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.6 cfs @ 12.09 hrs HW=16.36' TW=15.39' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 0.6 cfs @ 1.80 fps)

Pond 14P: Ex CB4

Hydrograph



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Summary for Pond 15P: Ex CB5

Inflow Area = 0.70 ac, 72.55% Impervious, Inflow Depth > 1.46" for 2-Year Storm event
Inflow = 1.2 cfs @ 12.09 hrs, Volume= 0.085 af
Outflow = 1.2 cfs @ 12.09 hrs, Volume= 0.085 af, Atten= 0%, Lag= 0.0 min
Primary = 1.2 cfs @ 12.09 hrs, Volume= 0.085 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.40' @ 12.11 hrs

Flood Elev= 22.70'

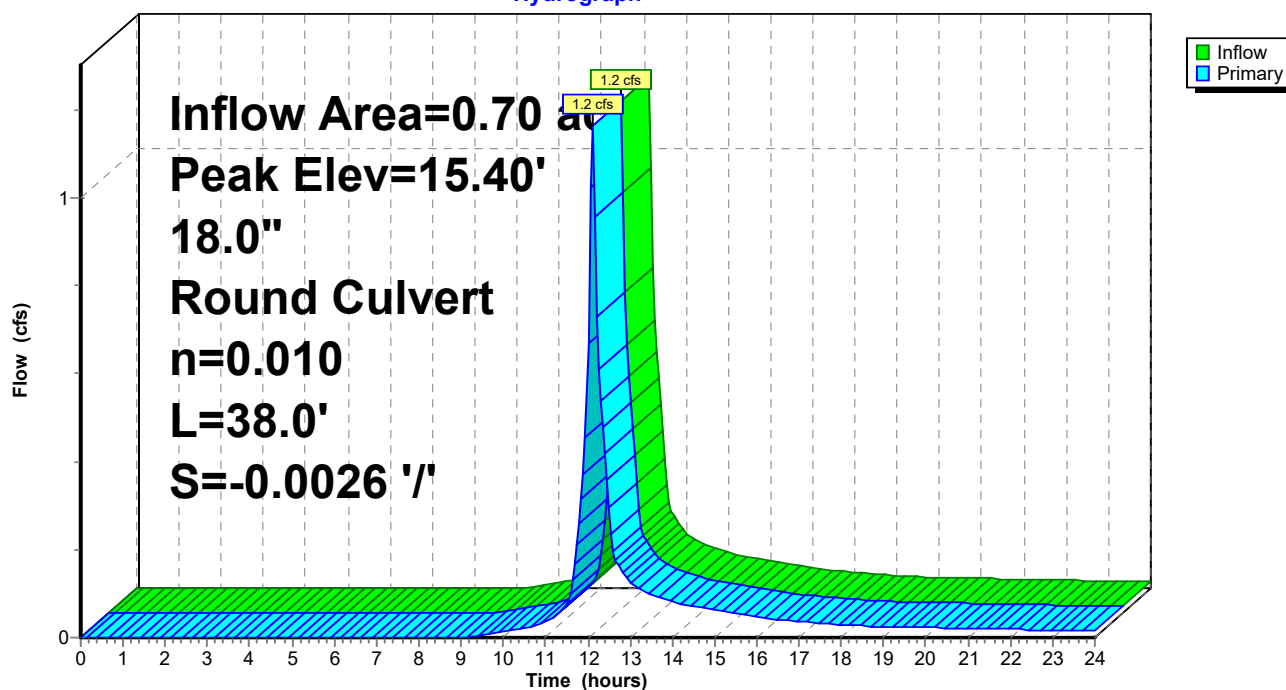
Device	Routing	Invert	Outlet Devices
#1	Primary	14.80'	18.0" Round Culvert L= 38.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.70' / 14.80' S= -0.0026 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.1 cfs @ 12.09 hrs HW=15.39' TW=15.20' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 1.1 cfs @ 1.68 fps)

Pond 15P: Ex CB5

Hydrograph



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Summary for Pond 21P: Ex DMH1

Inflow Area = 0.70 ac, 72.55% Impervious, Inflow Depth > 1.46" for 2-Year Storm event
Inflow = 1.2 cfs @ 12.09 hrs, Volume= 0.085 af
Outflow = 1.2 cfs @ 12.09 hrs, Volume= 0.085 af, Atten= 0%, Lag= 0.0 min
Primary = 1.2 cfs @ 12.09 hrs, Volume= 0.085 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.21' @ 12.12 hrs

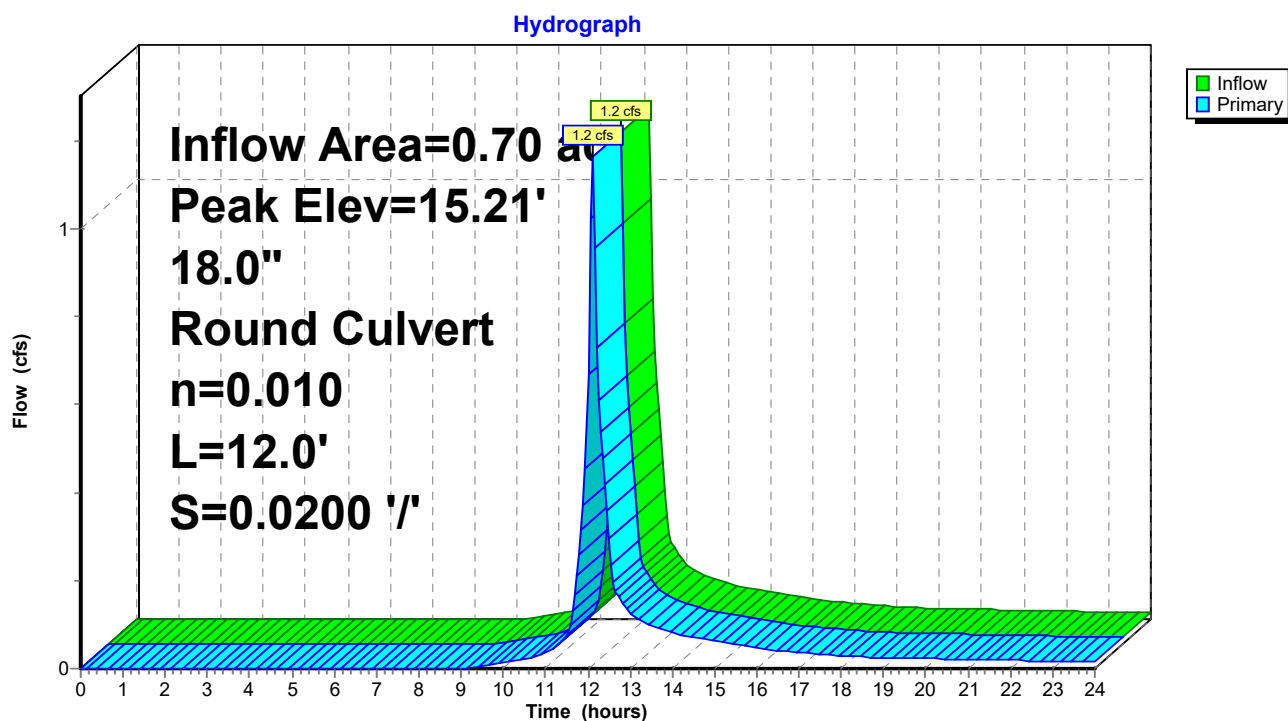
Flood Elev= 23.72'

Device	Routing	Invert	Outlet Devices
#1	Primary	14.62'	18.0" Round Culvert L= 12.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.62' / 14.38' S= 0.0200 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.0 cfs @ 12.09 hrs HW=15.20' TW=15.01' (Dynamic Tailwater)

↑1=Culvert (Outlet Controls 1.0 cfs @ 2.38 fps)

Pond 21P: Ex DMH1



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Summary for Pond 22P: Ex DMH2

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 1.21" for 2-Year Storm event
Inflow = 0.7 cfs @ 12.10 hrs, Volume= 0.054 af
Outflow = 0.7 cfs @ 12.10 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min
Primary = 0.7 cfs @ 12.10 hrs, Volume= 0.054 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.59' @ 12.10 hrs

Flood Elev= 24.92'

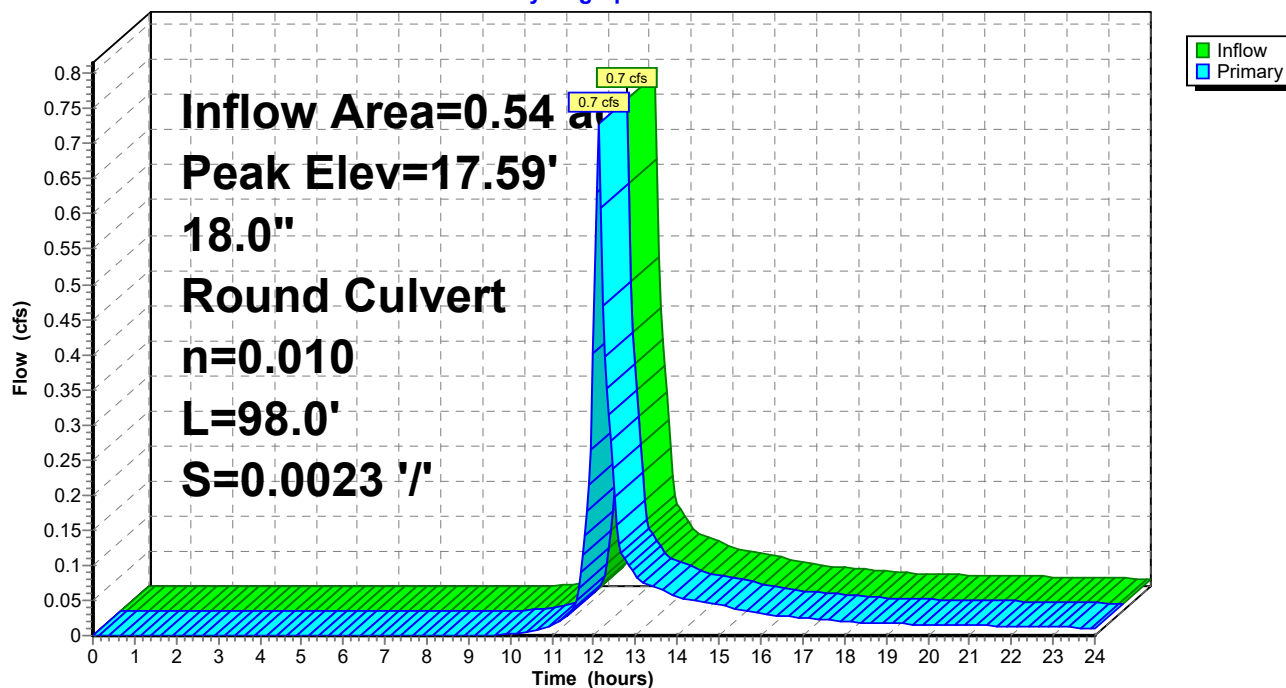
Device	Routing	Invert	Outlet Devices
#1	Primary	17.12'	18.0" Round Culvert L= 98.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.12' / 16.89' S= 0.0023 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.7 cfs @ 12.10 hrs HW=17.59' TW=17.23' (Dynamic Tailwater)

1=Culvert (Barrel Controls 0.7 cfs @ 2.30 fps)

Pond 22P: Ex DMH2

Hydrograph



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Summary for Pond 23P: Ex CB3

Inflow Area = 0.63 ac, 57.26% Impervious, Inflow Depth > 1.20" for 2-Year Storm event
Inflow = 0.9 cfs @ 12.10 hrs, Volume= 0.063 af
Outflow = 0.9 cfs @ 12.10 hrs, Volume= 0.063 af, Atten= 0%, Lag= 0.0 min
Primary = 0.9 cfs @ 12.10 hrs, Volume= 0.063 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 14.49' @ 12.10 hrs

Flood Elev= 23.60'

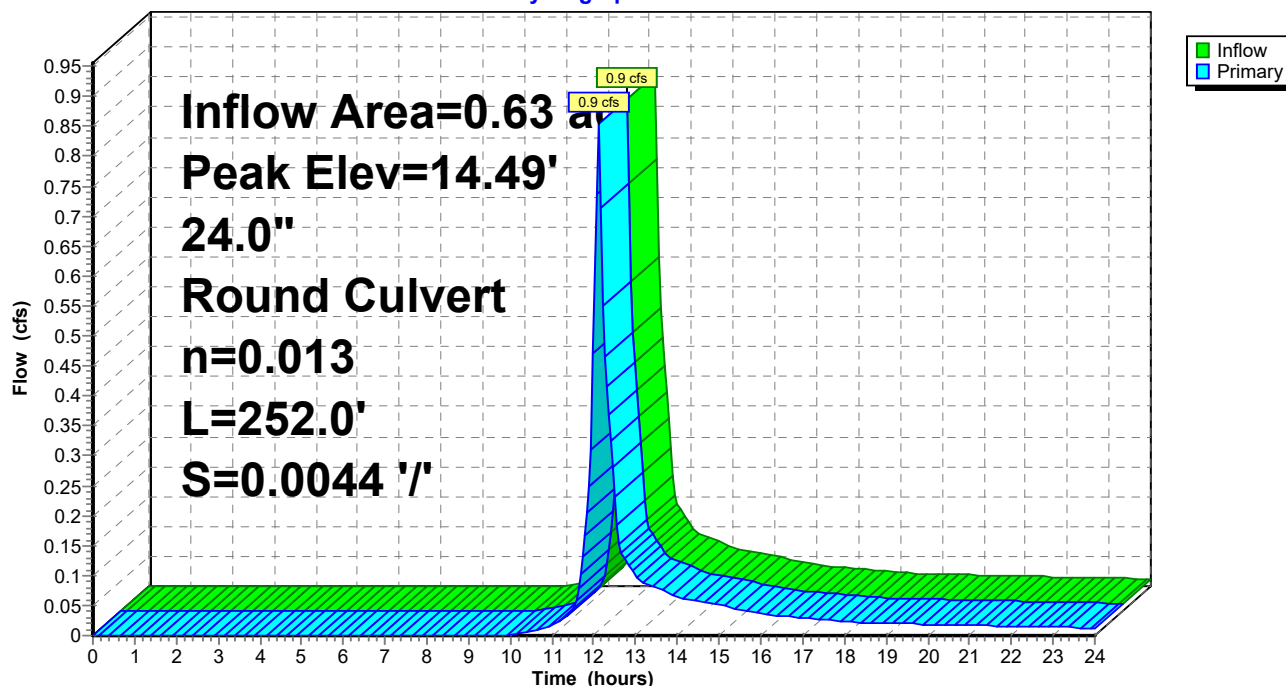
Device	Routing	Invert	Outlet Devices
#1	Primary	14.05'	24.0" Round Culvert L= 252.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.05' / 12.94' S= 0.0044 '/' Cc= 0.900 n= 0.013 Cast iron, coated, Flow Area= 3.14 sf

Primary OutFlow Max=0.8 cfs @ 12.10 hrs HW=14.49' TW=0.00' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 0.8 cfs @ 2.52 fps)

Pond 23P: Ex CB3

Hydrograph



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Summary for Pond 24P: Ex DMH4

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 1.21" for 2-Year Storm event
Inflow = 0.7 cfs @ 12.10 hrs, Volume= 0.054 af
Outflow = 0.7 cfs @ 12.10 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min
Primary = 0.7 cfs @ 12.10 hrs, Volume= 0.054 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.23' @ 12.10 hrs

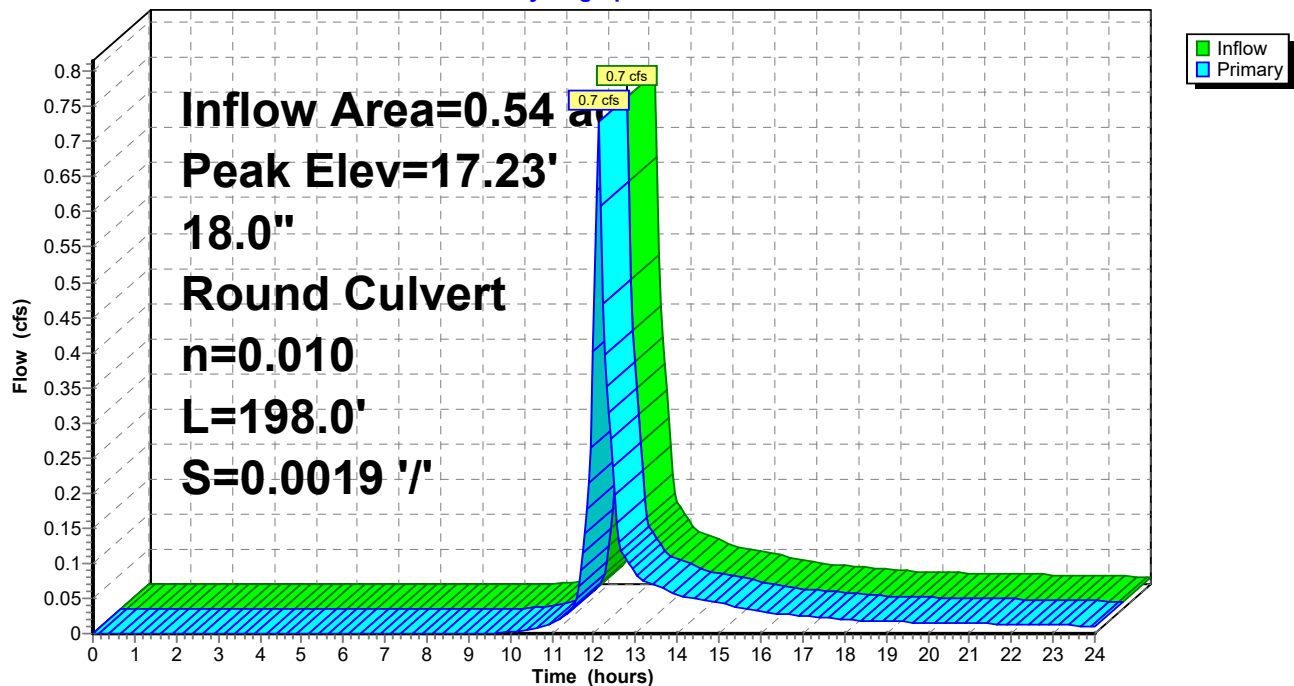
Flood Elev= 25.38'

Device	Routing	Invert	Outlet Devices
#1	Primary	16.75'	18.0" Round Culvert L= 198.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.75' / 16.38' S= 0.0019 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.7 cfs @ 12.10 hrs HW=17.23' TW=15.87' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.7 cfs @ 2.21 fps)

Pond 24P: Ex DMH4

Hydrograph



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Summary for Pond 25P: Ex DMH5

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 1.21" for 2-Year Storm event
Inflow = 0.7 cfs @ 12.10 hrs, Volume= 0.054 af
Outflow = 0.7 cfs @ 12.10 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min
Primary = 0.7 cfs @ 12.10 hrs, Volume= 0.054 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.87' @ 12.10 hrs

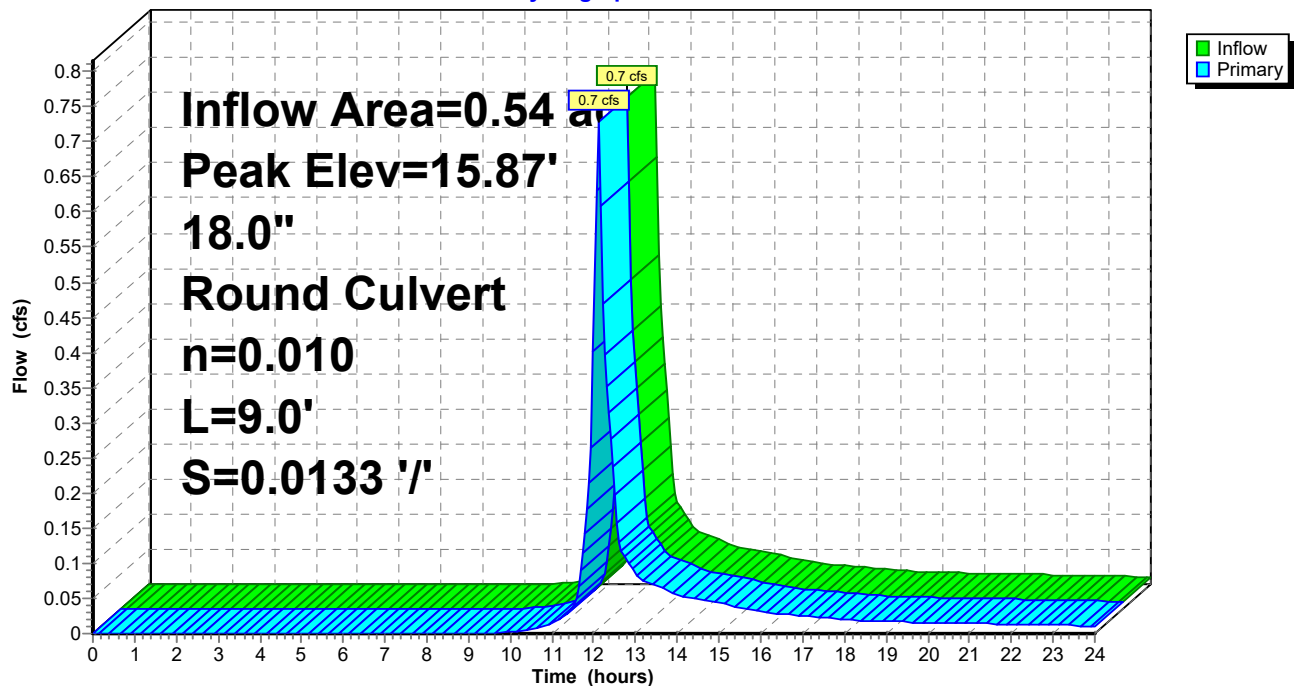
Flood Elev= 23.84'

Device	Routing	Invert	Outlet Devices
#1	Primary	15.44'	18.0" Round Culvert L= 9.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.44' / 15.32' S= 0.0133 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.7 cfs @ 12.10 hrs HW=15.87' TW=15.01' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.7 cfs @ 2.61 fps)

Pond 25P: Ex DMH5

Hydrograph



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Summary for Pond 26P: Ex DMH6

Inflow Area = 1.23 ac, 64.68% Impervious, Inflow Depth > 1.35" for 2-Year Storm event
Inflow = 1.9 cfs @ 12.10 hrs, Volume= 0.138 af
Outflow = 1.9 cfs @ 12.10 hrs, Volume= 0.138 af, Atten= 0%, Lag= 0.0 min
Primary = 1.9 cfs @ 12.10 hrs, Volume= 0.138 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.01' @ 12.10 hrs

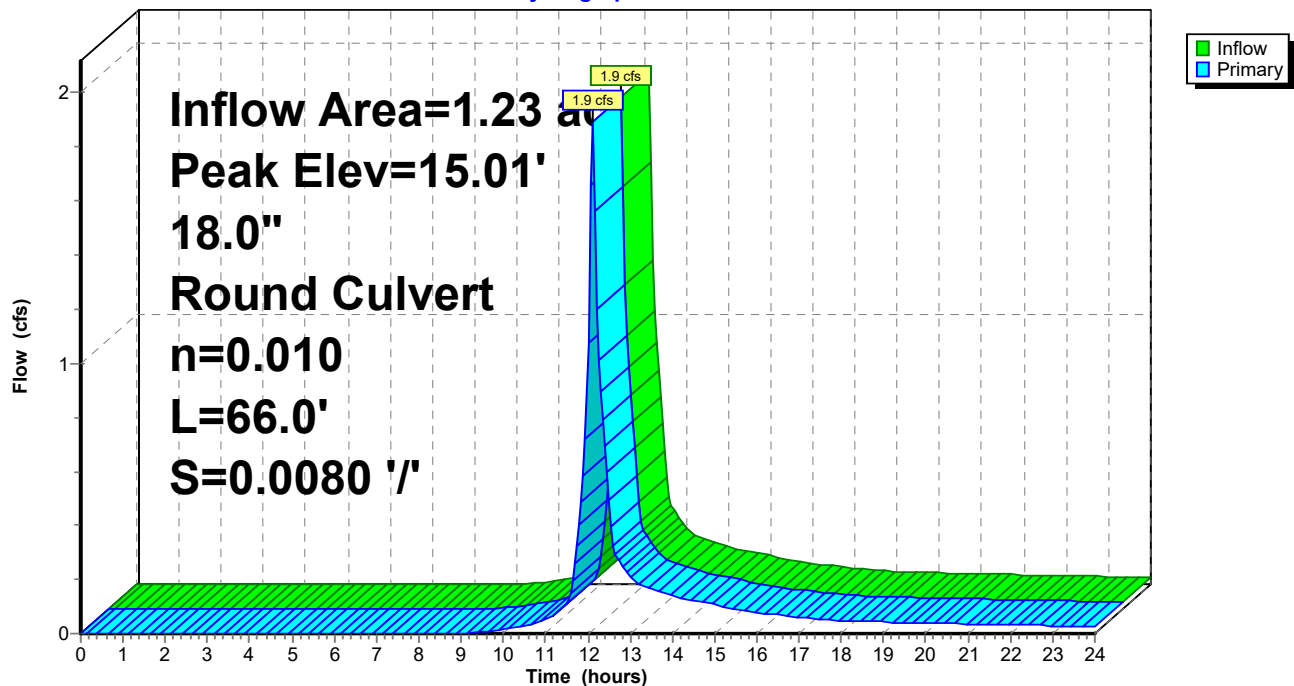
Flood Elev= 23.95'

Device	Routing	Invert	Outlet Devices
#1	Primary	14.30'	18.0" Round Culvert L= 66.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.30' / 13.77' S= 0.0080 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.8 cfs @ 12.10 hrs HW=15.01' TW=14.54' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.8 cfs @ 3.25 fps)

Pond 26P: Ex DMH6

Hydrograph



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Summary for Pond 27P: Ex DMH7

Inflow Area = 1.23 ac, 64.68% Impervious, Inflow Depth > 1.35" for 2-Year Storm event
Inflow = 1.9 cfs @ 12.10 hrs, Volume= 0.138 af
Outflow = 1.9 cfs @ 12.10 hrs, Volume= 0.138 af, Atten= 0%, Lag= 0.0 min
Primary = 1.9 cfs @ 12.10 hrs, Volume= 0.138 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

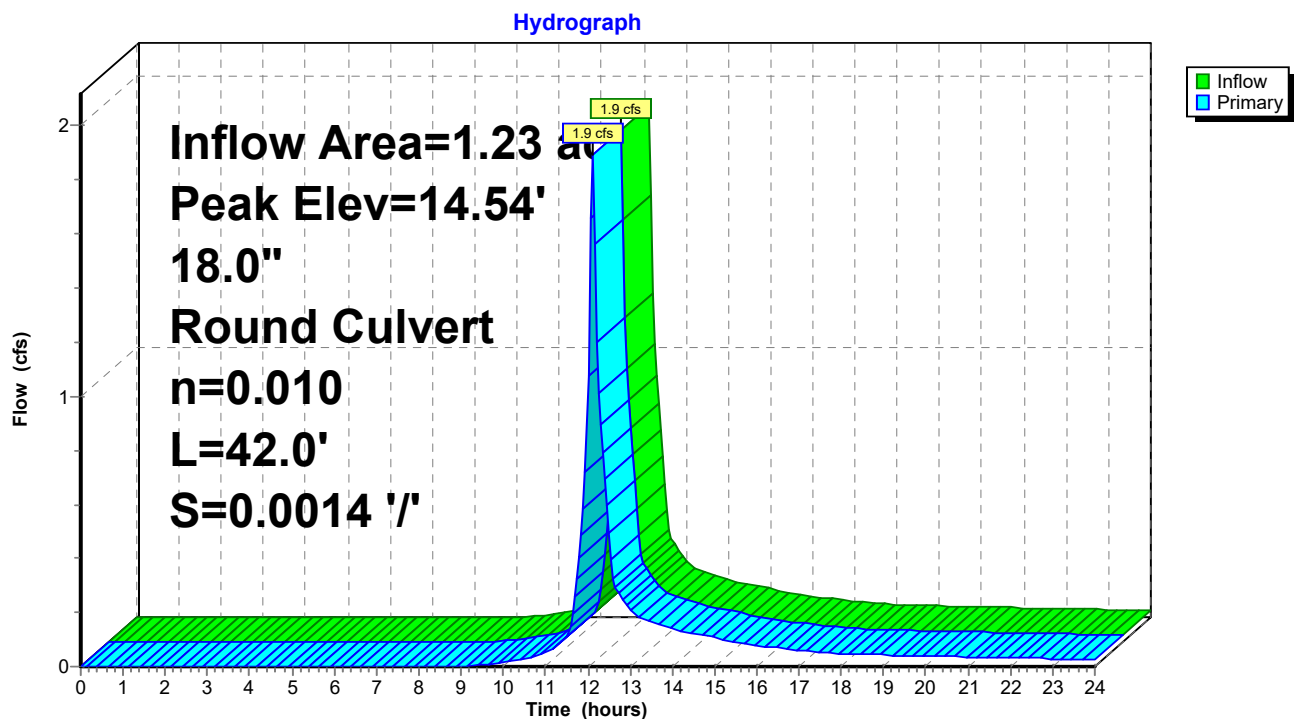
Peak Elev= 14.54' @ 12.10 hrs

Flood Elev= 24.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	13.70'	18.0" Round Culvert L= 42.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.70' / 13.64' S= 0.0014 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.9 cfs @ 12.10 hrs HW=14.54' TW=0.00' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 1.9 cfs @ 2.67 fps)

Pond 27P: Ex DMH7



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Summary for Pond 29P: Ex DMH9

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 1.21" for 2-Year Storm event
Inflow = 0.7 cfs @ 12.10 hrs, Volume= 0.054 af
Outflow = 0.7 cfs @ 12.10 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min
Primary = 0.7 cfs @ 12.10 hrs, Volume= 0.054 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.95' @ 12.11 hrs

Flood Elev= 23.44'

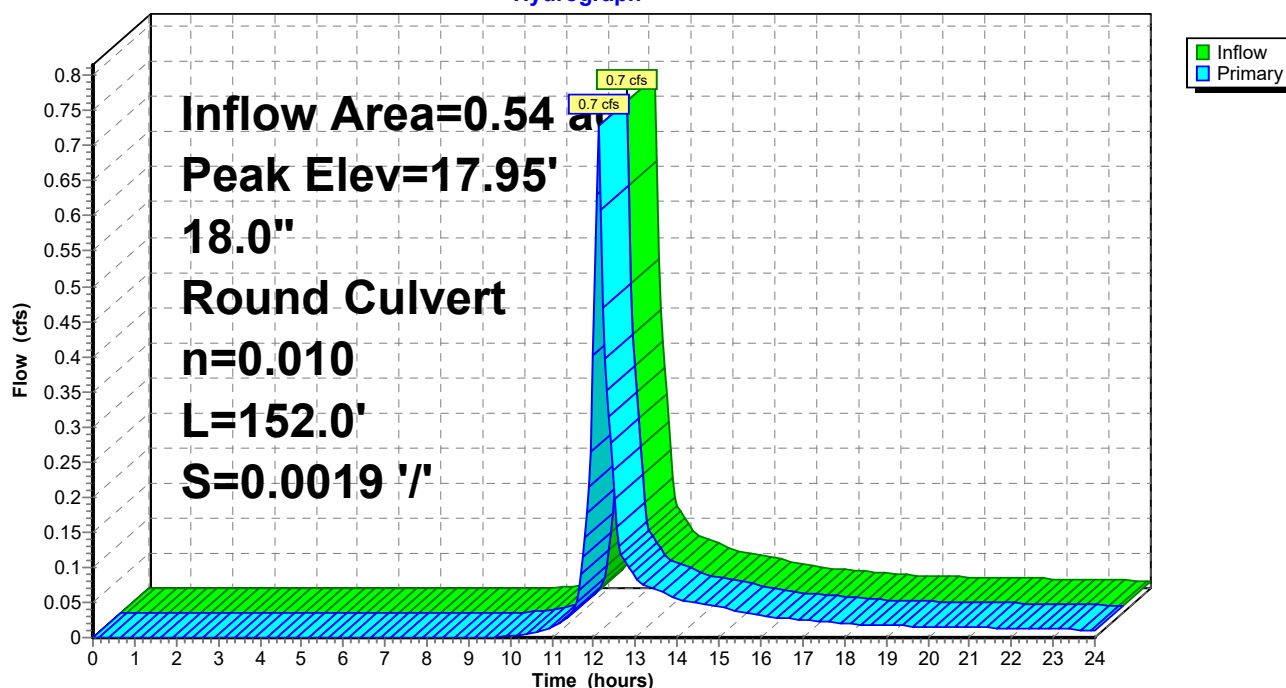
Device	Routing	Invert	Outlet Devices
#1	Primary	17.46'	18.0" Round Culvert L= 152.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.46' / 17.17' S= 0.0019 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.7 cfs @ 12.10 hrs HW=17.95' TW=17.59' (Dynamic Tailwater)

1=Culvert (Outlet Controls 0.7 cfs @ 2.08 fps)

Pond 29P: Ex DMH9

Hydrograph



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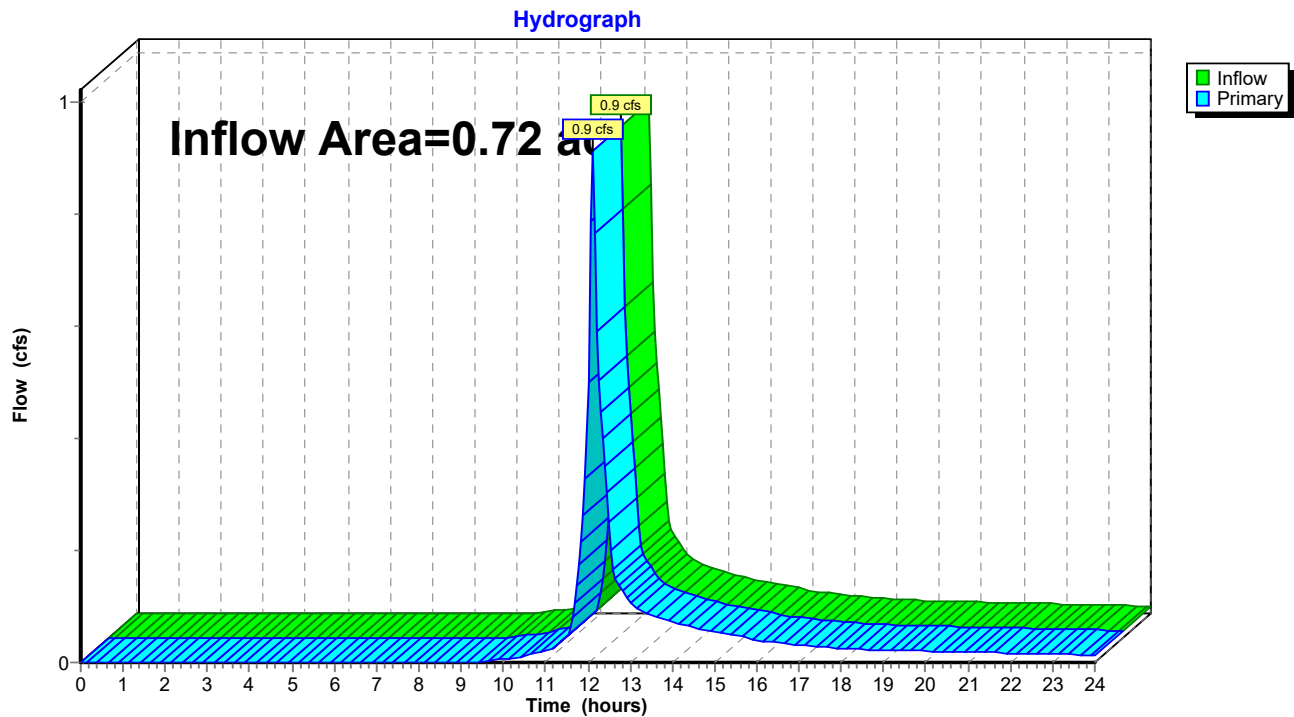
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Summary for Link SP1: Forest Ave Storm Drain

Inflow Area = 0.72 ac, 39.36% Impervious, Inflow Depth > 1.14" for 2-Year Storm event
Inflow = 0.9 cfs @ 12.10 hrs, Volume= 0.069 af
Primary = 0.9 cfs @ 12.10 hrs, Volume= 0.069 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP1: Forest Ave Storm Drain



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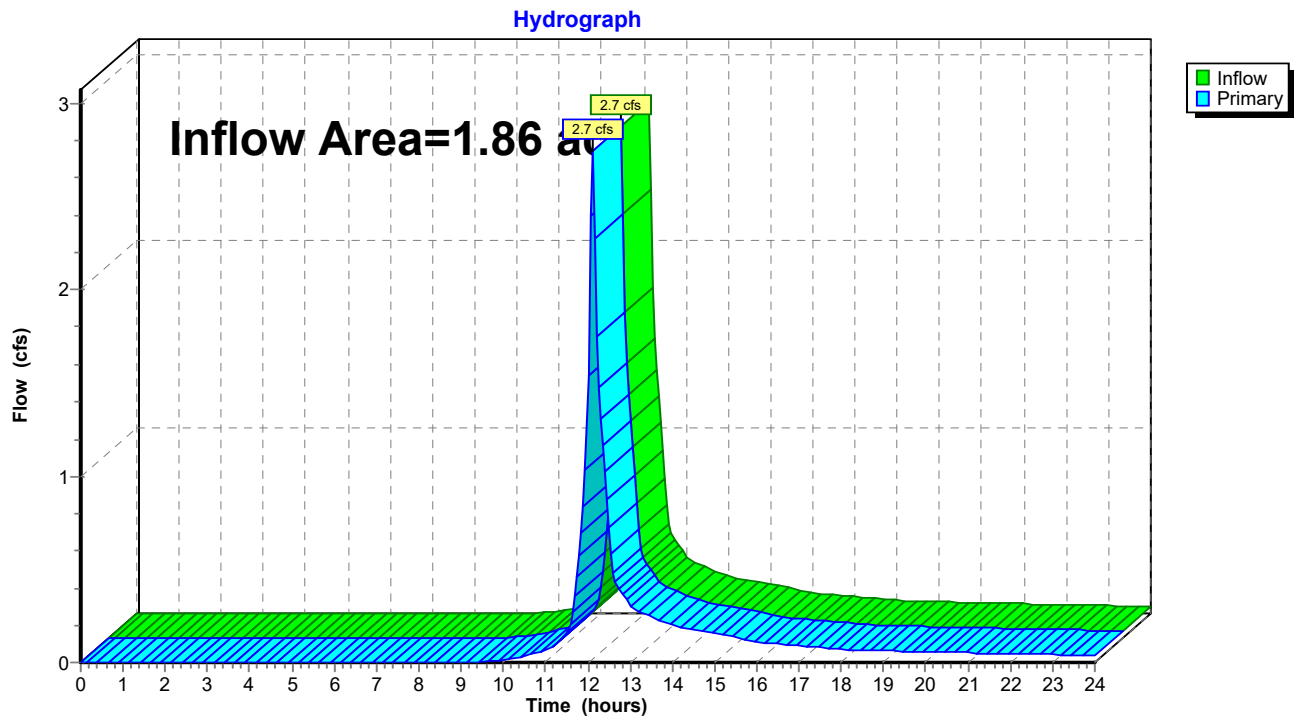
Page 47

Summary for Link SP2: Combined Sewer

Inflow Area = 1.86 ac, 62.17% Impervious, Inflow Depth > 1.30" for 2-Year Storm event
Inflow = 2.7 cfs @ 12.10 hrs, Volume= 0.202 af
Primary = 2.7 cfs @ 12.10 hrs, Volume= 0.202 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP2: Combined Sewer



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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: PRE-1	Runoff Area=8,487 sf 61.42% Impervious Runoff Depth>2.54" Tc=6.0 min CN=80 Runoff=0.6 cfs 0.041 af
Subcatchment2S: PRE-2	Runoff Area=14,855 sf 50.48% Impervious Runoff Depth>2.29" Tc=6.0 min CN=77 Runoff=0.9 cfs 0.065 af
Subcatchment3S: PRE-3	Runoff Area=19,668 sf 51.10% Impervious Runoff Depth>2.63" Tc=6.0 min CN=81 Runoff=1.4 cfs 0.099 af
Subcatchment4S: PRE-4	Runoff Area=11,760 sf 19.74% Impervious Runoff Depth>1.67" Tc=6.0 min CN=69 Runoff=0.5 cfs 0.038 af
Subcatchment5S: PRE-5	Runoff Area=27,546 sf 57.26% Impervious Runoff Depth>2.37" Tc=6.0 min CN=78 Runoff=1.7 cfs 0.125 af
Subcatchment6S: PRE-6	Runoff Area=16,352 sf 71.97% Impervious Runoff Depth>2.72" Tc=6.0 min CN=82 Runoff=1.2 cfs 0.085 af
Subcatchment7S: PRE-7	Runoff Area=13,974 sf 73.24% Impervious Runoff Depth>2.72" Tc=6.0 min CN=82 Runoff=1.0 cfs 0.073 af
Pond 11P: Ex CB1	Peak Elev=19.22' Inflow=1.5 cfs 0.106 af 12.0" Round Culvert n=0.010 L=41.0' S=0.0224 '/ Outflow=1.5 cfs 0.106 af
Pond 12P: Ex CB2	Peak Elev=18.62' Inflow=0.5 cfs 0.038 af 8.0" Round Culvert n=0.010 L=159.0' S=0.0158 '/ Outflow=0.5 cfs 0.038 af
Pond 14P: Ex CB4	Peak Elev=16.56' Inflow=1.2 cfs 0.085 af 12.0" Round Culvert n=0.010 L=63.0' S=0.0195 '/ Outflow=1.2 cfs 0.085 af
Pond 15P: Ex CB5	Peak Elev=15.71' Inflow=2.2 cfs 0.158 af 18.0" Round Culvert n=0.010 L=38.0' S=-0.0026 '/ Outflow=2.2 cfs 0.158 af
Pond 21P: Ex DMH1	Peak Elev=15.56' Inflow=2.2 cfs 0.158 af 18.0" Round Culvert n=0.010 L=12.0' S=0.0200 '/ Outflow=2.2 cfs 0.158 af
Pond 22P: Ex DMH2	Peak Elev=17.80' Inflow=1.5 cfs 0.106 af 18.0" Round Culvert n=0.010 L=98.0' S=0.0023 '/ Outflow=1.5 cfs 0.106 af
Pond 23P: Ex CB3	Peak Elev=14.68' Inflow=1.7 cfs 0.125 af 24.0" Round Culvert n=0.013 L=252.0' S=0.0044 '/ Outflow=1.7 cfs 0.125 af
Pond 24P: Ex DMH4	Peak Elev=17.45' Inflow=1.5 cfs 0.106 af 18.0" Round Culvert n=0.010 L=198.0' S=0.0019 '/ Outflow=1.5 cfs 0.106 af
Pond 25P: Ex DMH5	Peak Elev=16.09' Inflow=1.5 cfs 0.106 af 18.0" Round Culvert n=0.010 L=9.0' S=0.0133 '/ Outflow=1.5 cfs 0.106 af

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Pond 26P: Ex DMH6Peak Elev=15.39' Inflow=3.6 cfs 0.264 af
18.0" Round Culvert n=0.010 L=66.0' S=0.0080 '/ Outflow=3.6 cfs 0.264 af**Pond 27P: Ex DMH7**Peak Elev=14.93' Inflow=3.6 cfs 0.264 af
18.0" Round Culvert n=0.010 L=42.0' S=0.0014 '/ Outflow=3.6 cfs 0.264 af**Pond 29P: Ex DMH9**Peak Elev=18.18' Inflow=1.5 cfs 0.106 af
18.0" Round Culvert n=0.010 L=152.0' S=0.0019 '/ Outflow=1.5 cfs 0.106 af**Link SP1: Forest Ave Storm Drain**Inflow=1.9 cfs 0.137 af
Primary=1.9 cfs 0.137 af**Link SP2: Combined Sewer**Inflow=5.4 cfs 0.389 af
Primary=5.4 cfs 0.389 af**Total Runoff Area = 2.59 ac Runoff Volume = 0.526 af Average Runoff Depth = 2.44"**
44.19% Pervious = 1.14 ac 55.81% Impervious = 1.44 ac

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Summary for Subcatchment 1S: PRE-1

Runoff = 0.6 cfs @ 12.09 hrs, Volume= 0.041 af, Depth> 2.54"

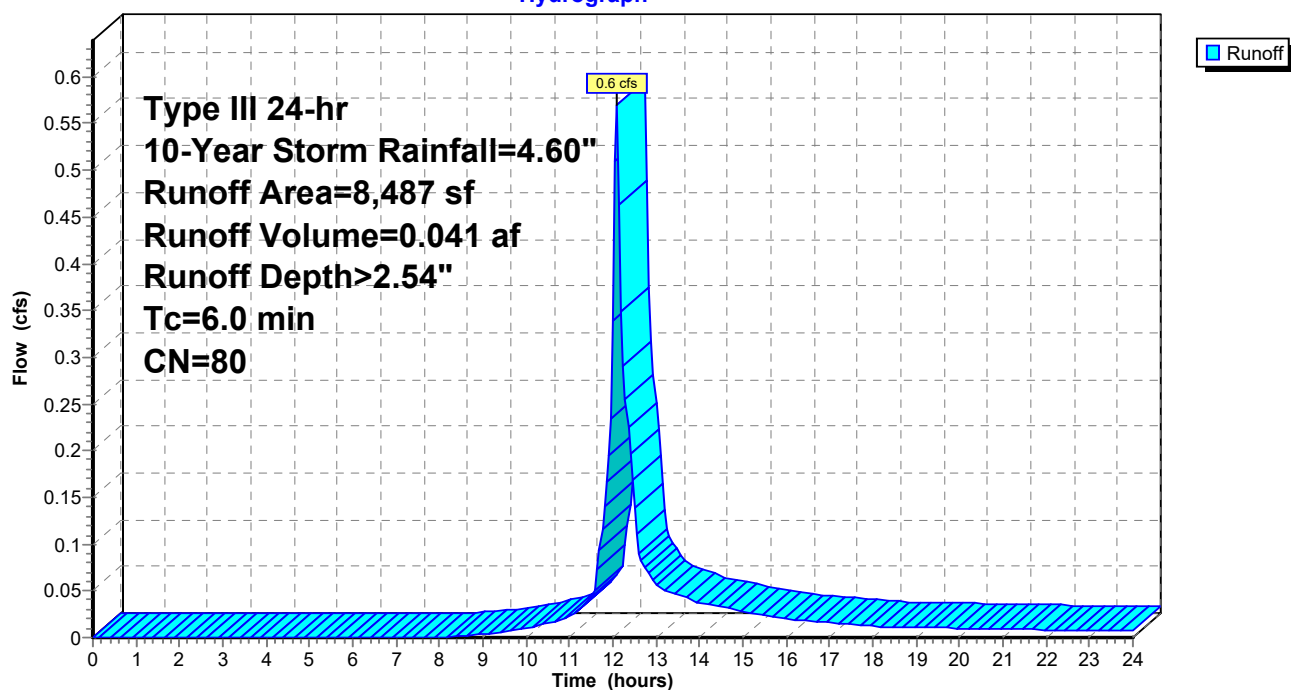
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
5,213	98	Paved parking, HSG A
1,900	39	Grass cover, Good, HSG A
* 1,374	68	Grass cover (parking area), HSG A
8,487	80	Weighted Average
3,274		38.58% Pervious Area
5,213		61.42% Impervious Area

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

Subcatchment 1S: PRE-1

Hydrograph



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Summary for Subcatchment 2S: PRE-2

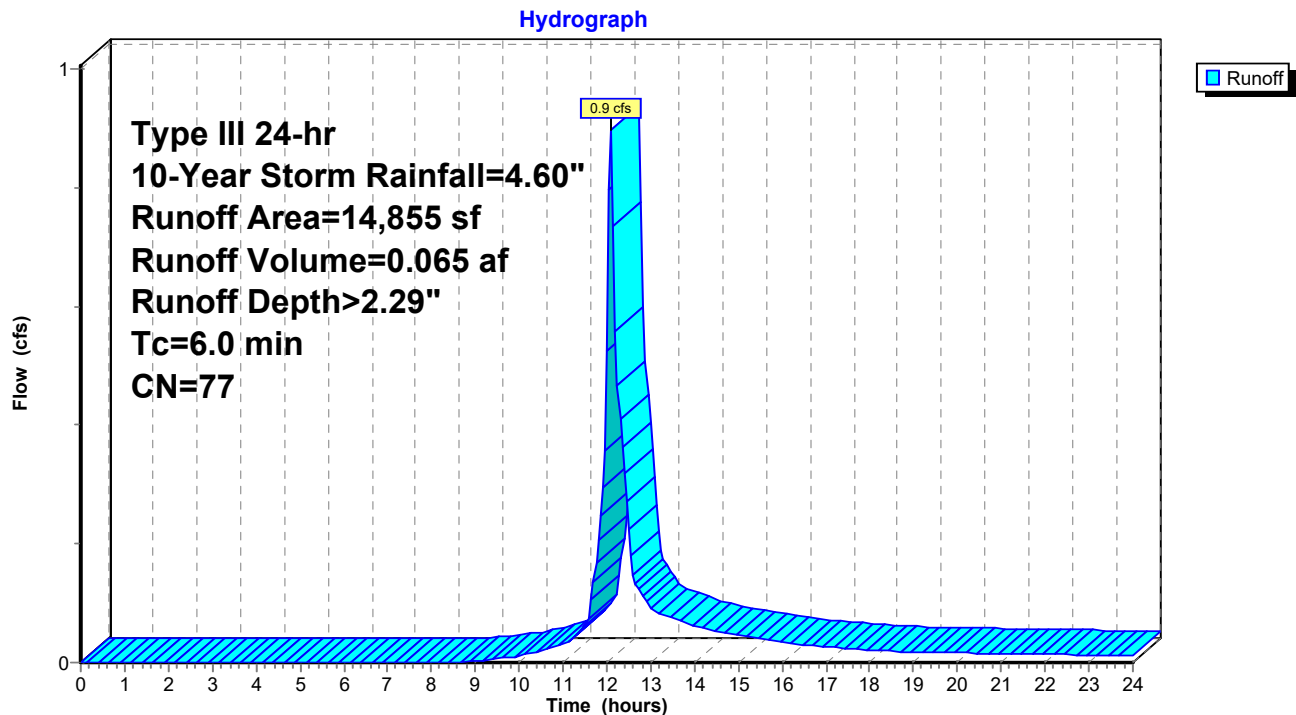
Runoff = 0.9 cfs @ 12.09 hrs, Volume= 0.065 af, Depth> 2.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
7,499	98	Paved parking, HSG A
2,948	39	Grass cover, Good, HSG A
4,408	68	Grass cover (parking area), HSG A
14,855	77	Weighted Average
7,356		49.52% Pervious Area
7,499		50.48% Impervious Area

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

Subcatchment 2S: PRE-2



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Summary for Subcatchment 3S: PRE-3

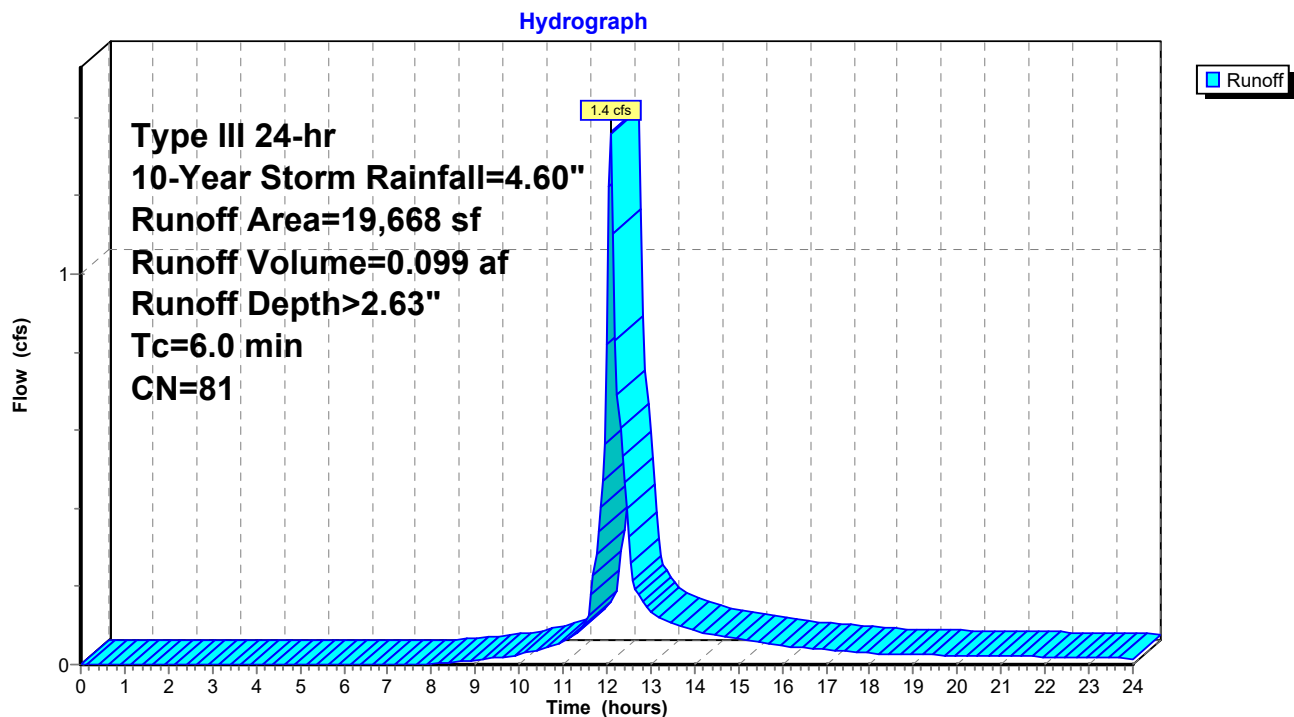
Runoff = 1.4 cfs @ 12.09 hrs, Volume= 0.099 af, Depth> 2.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
10,050	98	Paved parking, HSG A
1,903	39	Grass cover, Good, HSG A
7,715	68	Grass cover (parking area), HSG A
19,668	81	Weighted Average
9,618		48.90% Pervious Area
10,050		51.10% Impervious Area

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

Subcatchment 3S: PRE-3



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Subcatchment 4S: PRE-4

Runoff = 0.5 cfs @ 12.10 hrs, Volume= 0.038 af, Depth> 1.67"

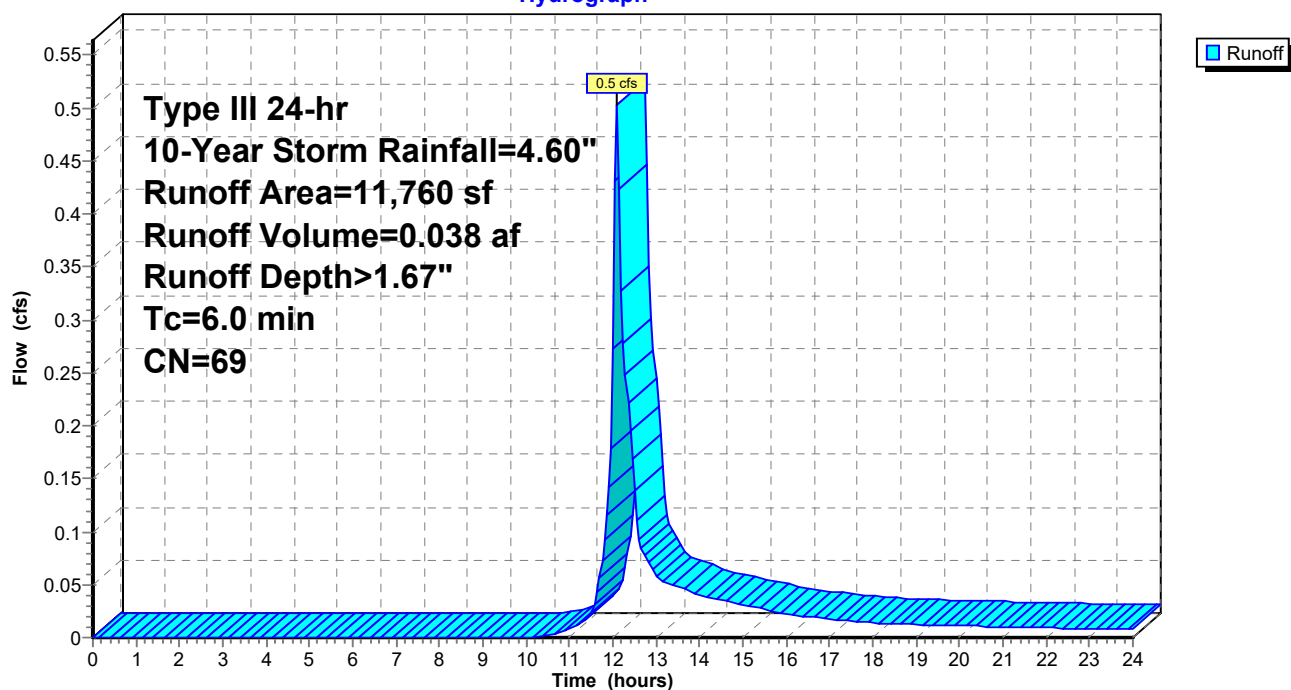
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
2,321	98	Paved parking, HSG A
1,957	39	Grass cover, Good, HSG A
7,482	68	Grass cover (parking area), HSG A
11,760	69	Weighted Average
9,439		80.26% Pervious Area
2,321		19.74% Impervious Area

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

Subcatchment 4S: PRE-4

Hydrograph



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Subcatchment 5S: PRE-5

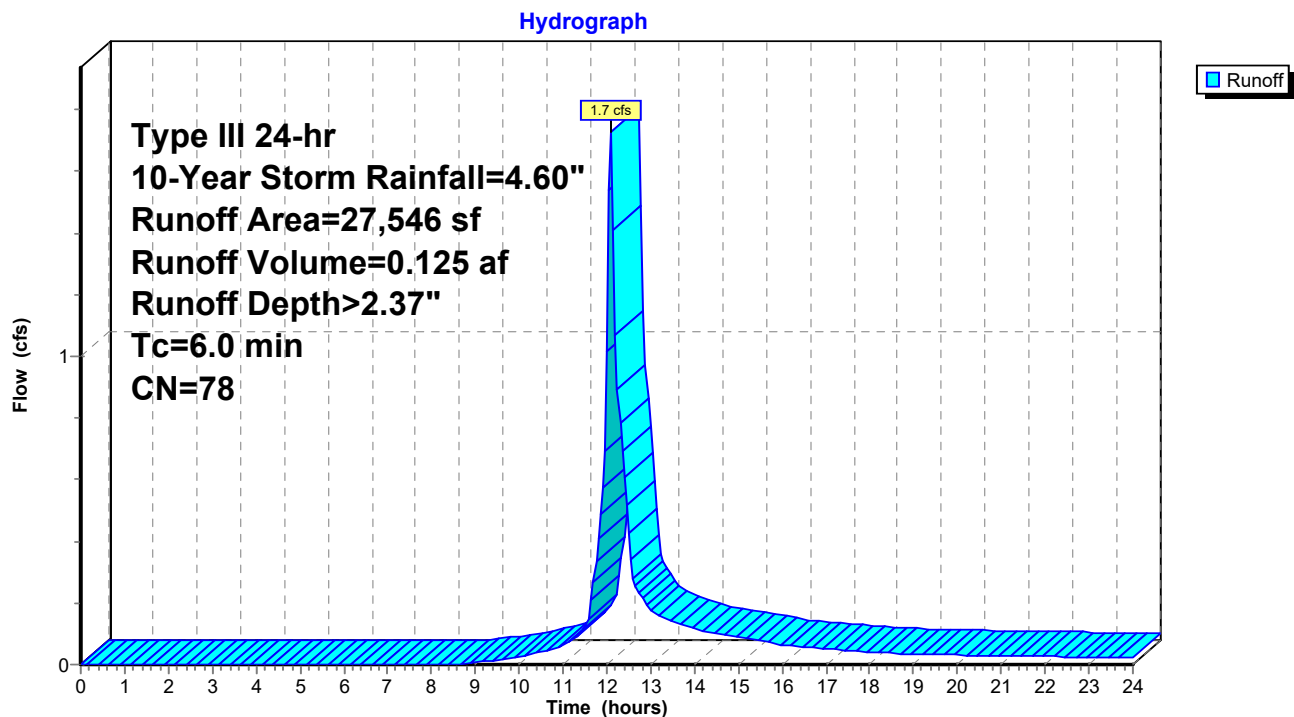
Runoff = 1.7 cfs @ 12.09 hrs, Volume= 0.125 af, Depth> 2.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
15,774	98	Paved parking, HSG A
6,700	39	Grass cover, Good, HSG A
5,072	68	Grass cover (parking area), HSG A
27,546	78	Weighted Average
11,772		42.74% Pervious Area
15,774		57.26% Impervious Area

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

Subcatchment 5S: PRE-5



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Subcatchment 6S: PRE-6

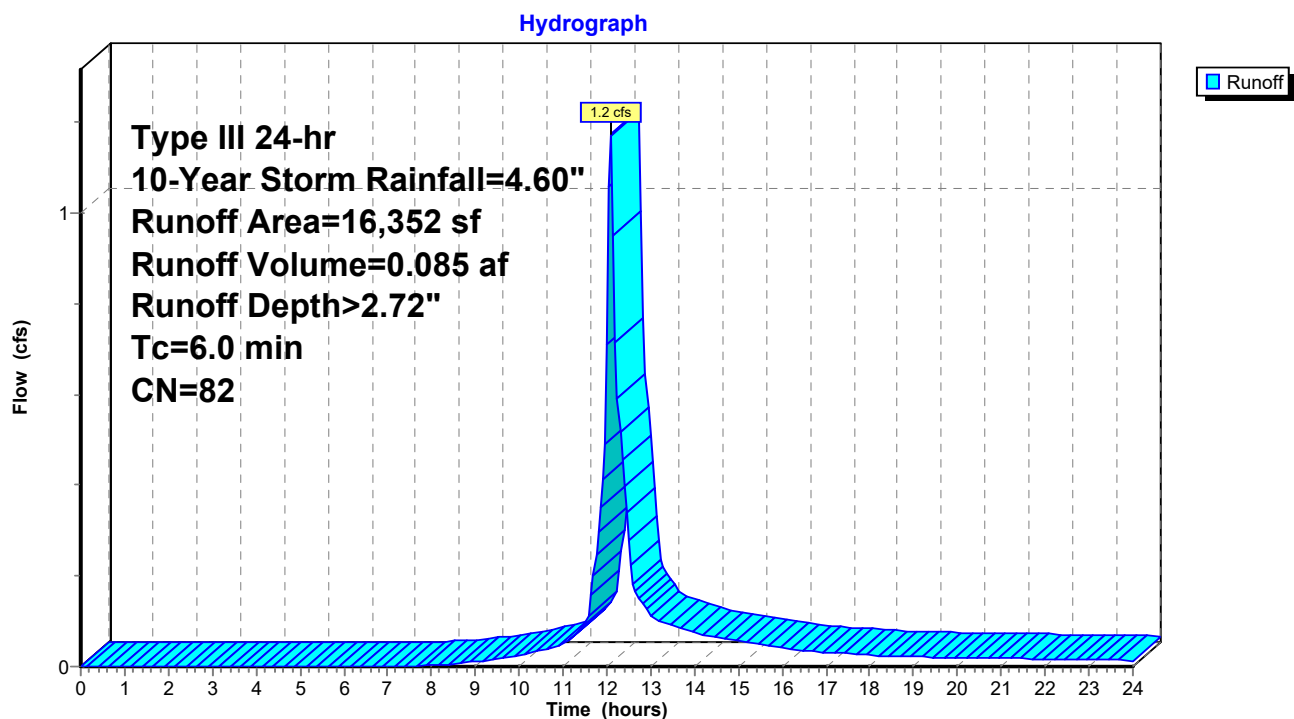
Runoff = 1.2 cfs @ 12.09 hrs, Volume= 0.085 af, Depth> 2.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
11,768	98	Paved parking, HSG A
3,865	39	Grass cover, Good, HSG A
* 719	40	Porous Pavement
16,352	82	Weighted Average
4,584		28.03% Pervious Area
11,768		71.97% Impervious Area

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

Subcatchment 6S: PRE-6



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Subcatchment 7S: PRE-7

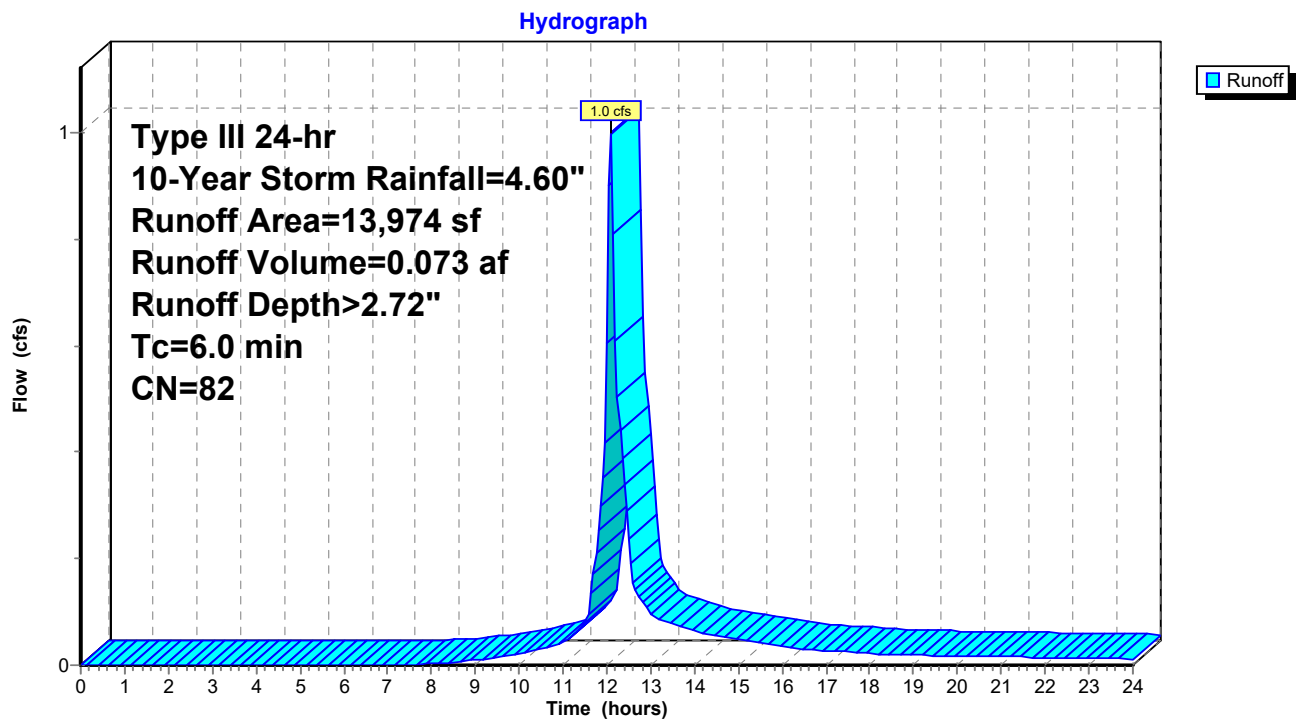
Runoff = 1.0 cfs @ 12.09 hrs, Volume= 0.073 af, Depth> 2.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
10,235	98	Paved parking, HSG A
3,739	39	Grass cover, Good, HSG A
13,974	82	Weighted Average
3,739		26.76% Pervious Area
10,235		73.24% Impervious Area

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

Subcatchment 7S: PRE-7



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Pond 11P: Ex CB1

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 2.38" for 10-Year Storm event
Inflow = 1.5 cfs @ 12.09 hrs, Volume= 0.106 af
Outflow = 1.5 cfs @ 12.09 hrs, Volume= 0.106 af, Atten= 0%, Lag= 0.0 min
Primary = 1.5 cfs @ 12.09 hrs, Volume= 0.106 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 19.22' @ 12.09 hrs

Flood Elev= 22.02'

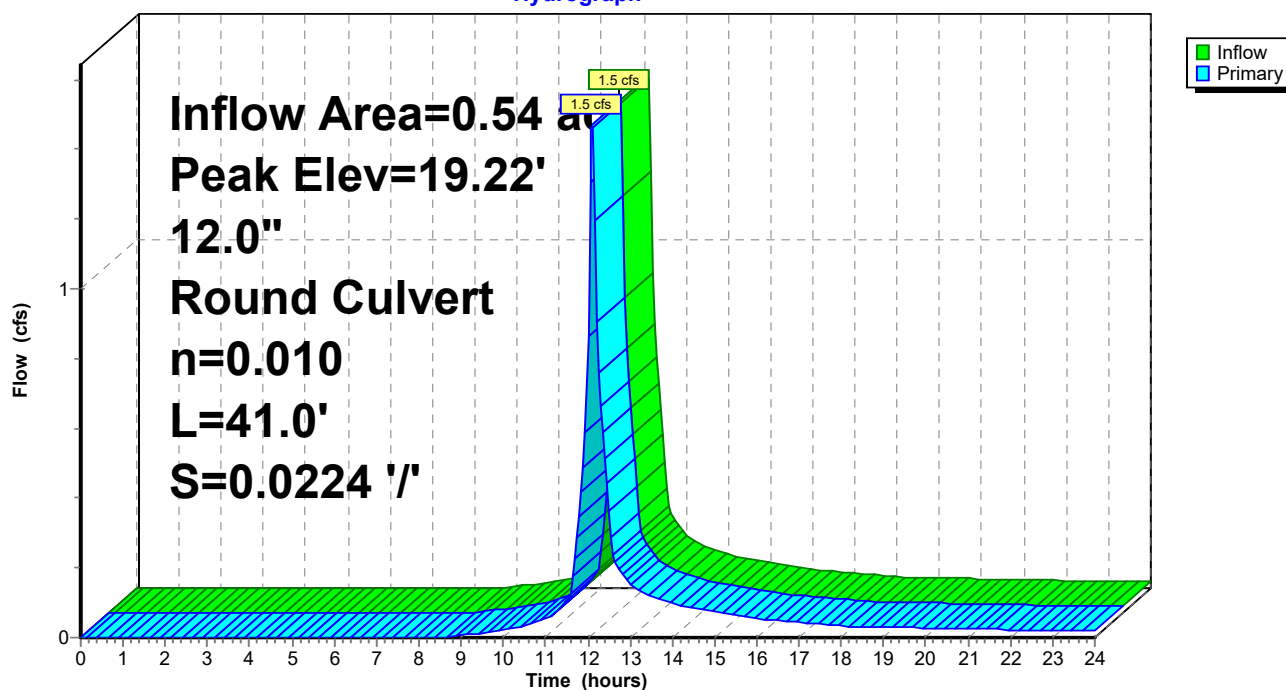
Device	Routing	Invert	Outlet Devices
#1	Primary	18.47'	12.0" Round Culvert L= 41.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.47' / 17.55' S= 0.0224 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.4 cfs @ 12.09 hrs HW=19.21' TW=18.17' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 1.4 cfs @ 2.31 fps)

Pond 11P: Ex CB1

Hydrograph



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Pond 12P: Ex CB2

Inflow Area = 0.27 ac, 19.74% Impervious, Inflow Depth > 1.67" for 10-Year Storm event
Inflow = 0.5 cfs @ 12.10 hrs, Volume= 0.038 af
Outflow = 0.5 cfs @ 12.10 hrs, Volume= 0.038 af, Atten= 0%, Lag= 0.0 min
Primary = 0.5 cfs @ 12.10 hrs, Volume= 0.038 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 18.62' @ 12.10 hrs

Flood Elev= 22.15'

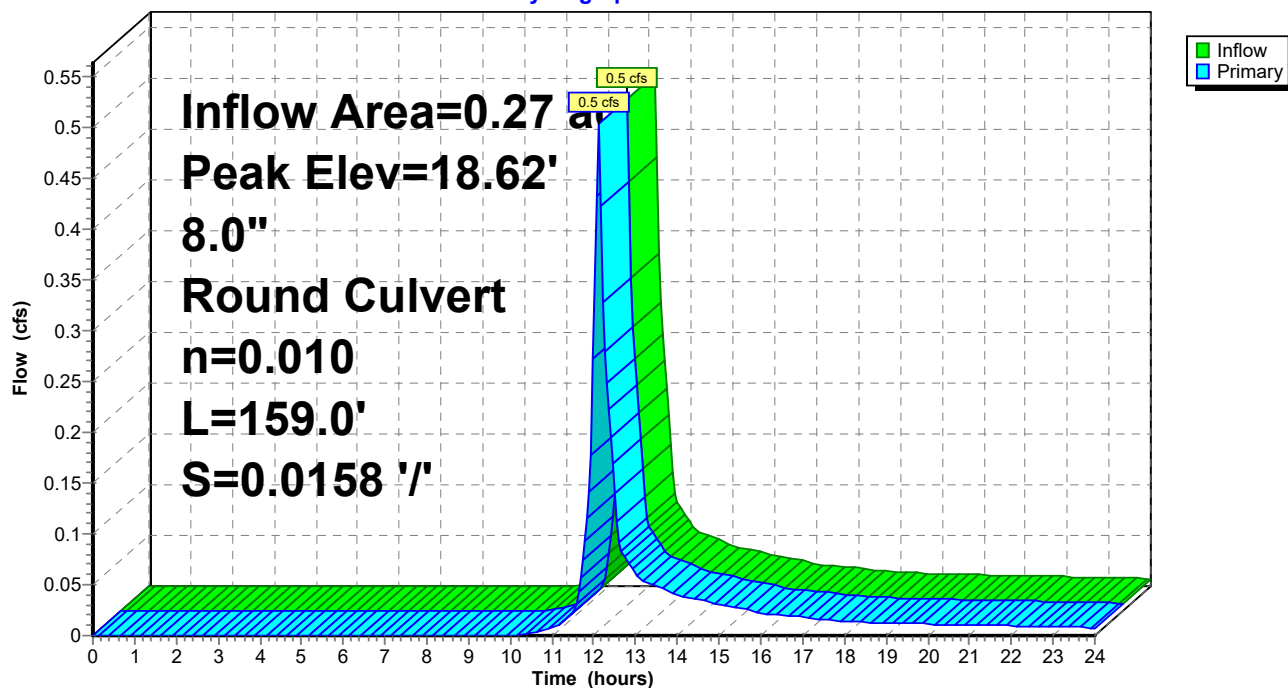
Device	Routing	Invert	Outlet Devices
#1	Primary	18.14'	8.0" Round Culvert L= 159.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.14' / 15.62' S= 0.0158 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.5 cfs @ 12.10 hrs HW=18.62' TW=0.00' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 0.5 cfs @ 1.86 fps)

Pond 12P: Ex CB2

Hydrograph



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Pond 14P: Ex CB4

Inflow Area = 0.38 ac, 71.97% Impervious, Inflow Depth > 2.72" for 10-Year Storm event
Inflow = 1.2 cfs @ 12.09 hrs, Volume= 0.085 af
Outflow = 1.2 cfs @ 12.09 hrs, Volume= 0.085 af, Atten= 0%, Lag= 0.0 min
Primary = 1.2 cfs @ 12.09 hrs, Volume= 0.085 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 16.56' @ 12.09 hrs

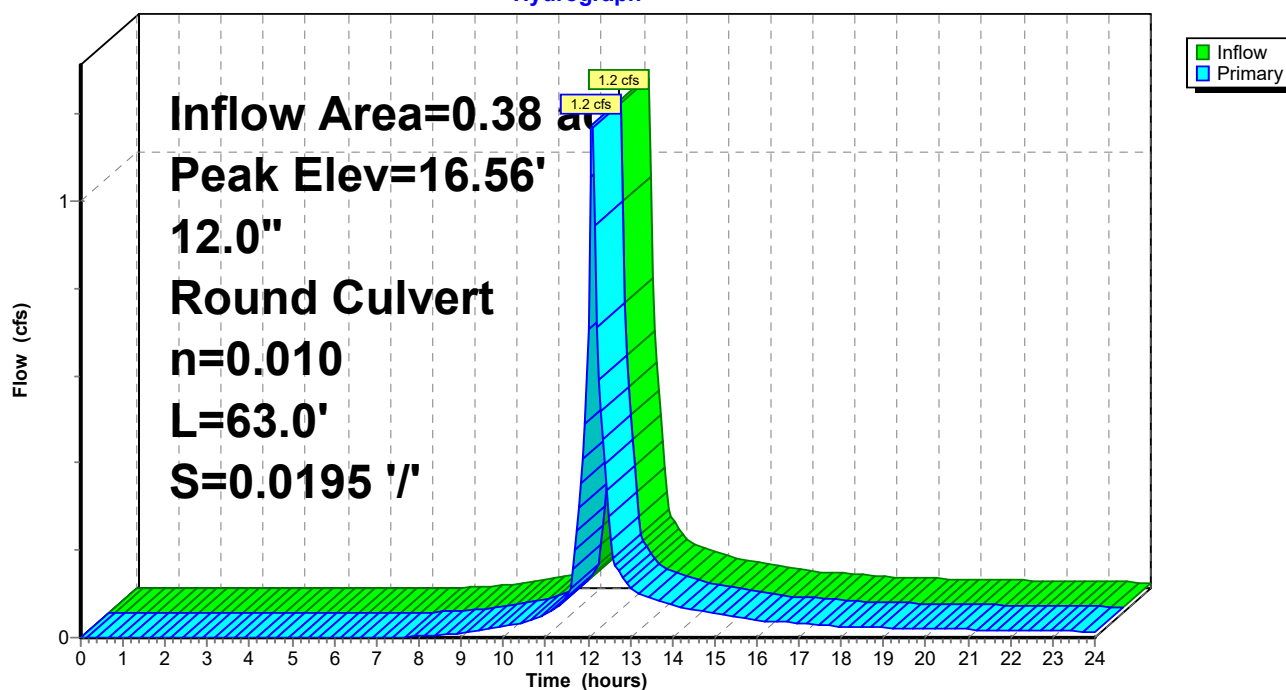
Flood Elev= 21.96'

Device	Routing	Invert	Outlet Devices
#1	Primary	15.91'	12.0" Round Culvert L= 63.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.91' / 14.68' S= 0.0195 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.2 cfs @ 12.09 hrs HW=16.55' TW=15.66' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 1.2 cfs @ 2.16 fps)

Pond 14P: Ex CB4

Hydrograph



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Summary for Pond 15P: Ex CB5

Inflow Area = 0.70 ac, 72.55% Impervious, Inflow Depth > 2.72" for 10-Year Storm event
Inflow = 2.2 cfs @ 12.09 hrs, Volume= 0.158 af
Outflow = 2.2 cfs @ 12.09 hrs, Volume= 0.158 af, Atten= 0%, Lag= 0.0 min
Primary = 2.2 cfs @ 12.09 hrs, Volume= 0.158 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.71' @ 12.15 hrs

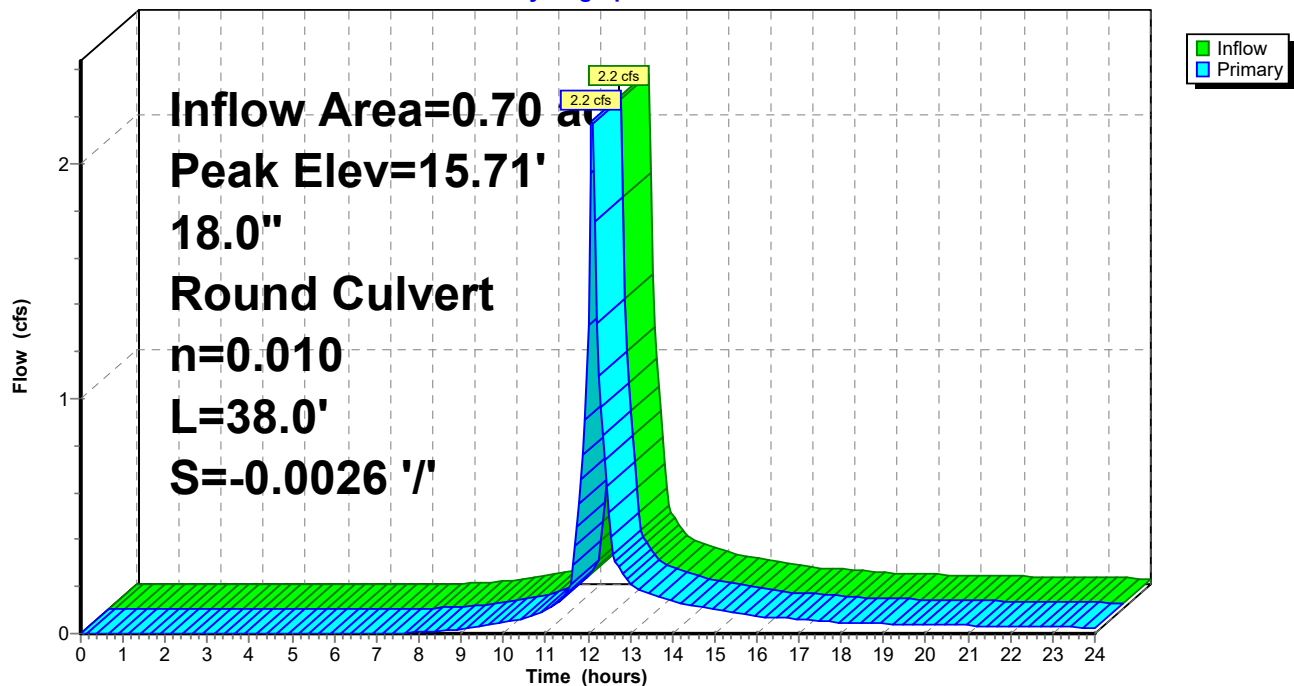
Flood Elev= 22.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	14.80'	18.0" Round Culvert L= 38.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.70' / 14.80' S= -0.0026 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.6 cfs @ 12.09 hrs HW=15.66' TW=15.51' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 1.6 cfs @ 1.48 fps)

Pond 15P: Ex CB5

Hydrograph



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Pond 21P: Ex DMH1

Inflow Area = 0.70 ac, 72.55% Impervious, Inflow Depth > 2.72" for 10-Year Storm event
Inflow = 2.2 cfs @ 12.09 hrs, Volume= 0.158 af
Outflow = 2.2 cfs @ 12.09 hrs, Volume= 0.158 af, Atten= 0%, Lag= 0.0 min
Primary = 2.2 cfs @ 12.09 hrs, Volume= 0.158 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.56' @ 12.13 hrs

Flood Elev= 23.72'

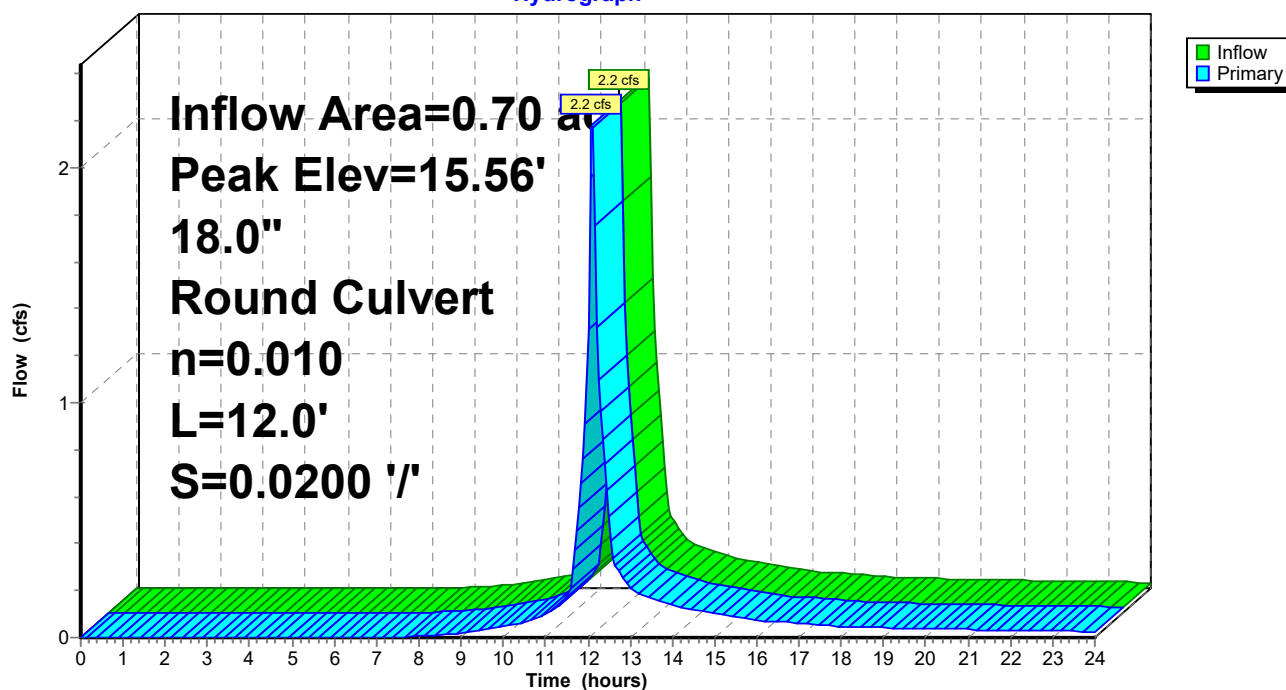
Device	Routing	Invert	Outlet Devices
#1	Primary	14.62'	18.0" Round Culvert L= 12.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.62' / 14.38' S= 0.0200 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.6 cfs @ 12.09 hrs HW=15.51' TW=15.37' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 1.6 cfs @ 1.42 fps)

Pond 21P: Ex DMH1

Hydrograph



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Pond 22P: Ex DMH2

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 2.38" for 10-Year Storm event
Inflow = 1.5 cfs @ 12.09 hrs, Volume= 0.106 af
Outflow = 1.5 cfs @ 12.09 hrs, Volume= 0.106 af, Atten= 0%, Lag= 0.0 min
Primary = 1.5 cfs @ 12.09 hrs, Volume= 0.106 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.80' @ 12.10 hrs

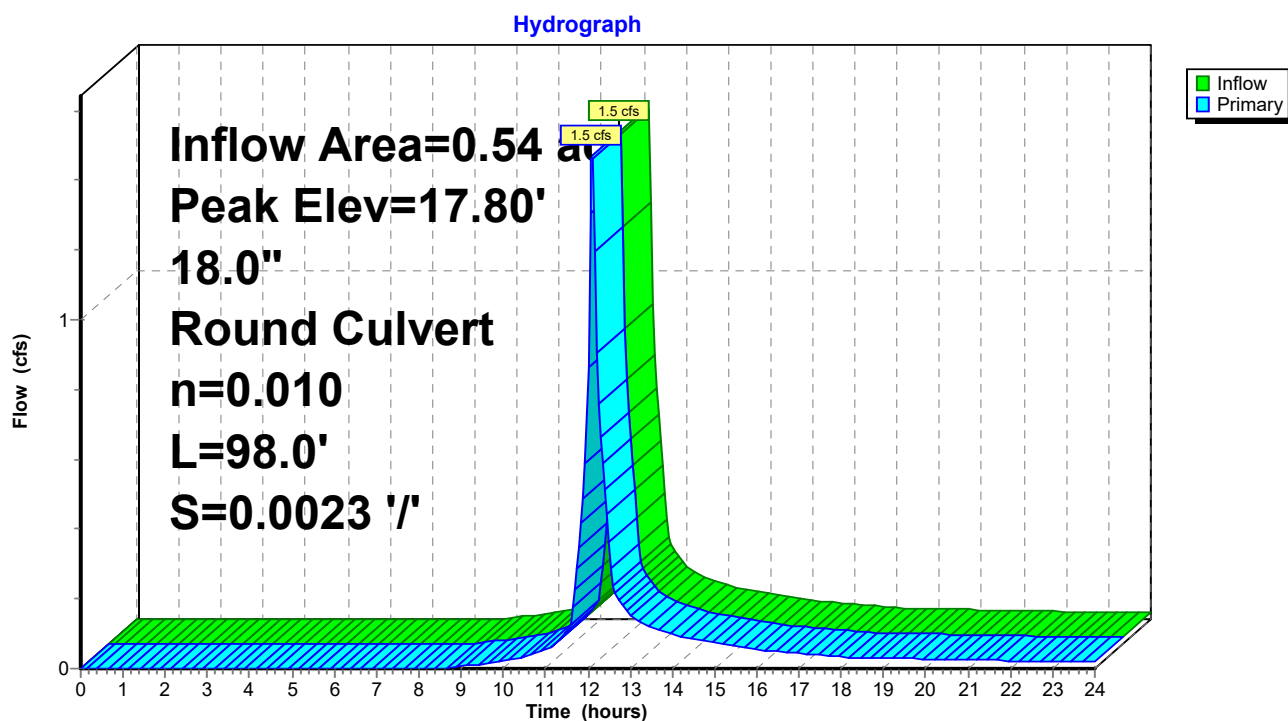
Flood Elev= 24.92'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.12'	18.0" Round Culvert L= 98.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.12' / 16.89' S= 0.0023 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.4 cfs @ 12.09 hrs HW=17.80' TW=17.44' (Dynamic Tailwater)

↑1=Culvert (Outlet Controls 1.4 cfs @ 2.58 fps)

Pond 22P: Ex DMH2



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Summary for Pond 23P: Ex CB3

Inflow Area = 0.63 ac, 57.26% Impervious, Inflow Depth > 2.37" for 10-Year Storm event
Inflow = 1.7 cfs @ 12.09 hrs, Volume= 0.125 af
Outflow = 1.7 cfs @ 12.09 hrs, Volume= 0.125 af, Atten= 0%, Lag= 0.0 min
Primary = 1.7 cfs @ 12.09 hrs, Volume= 0.125 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 14.68' @ 12.09 hrs

Flood Elev= 23.60'

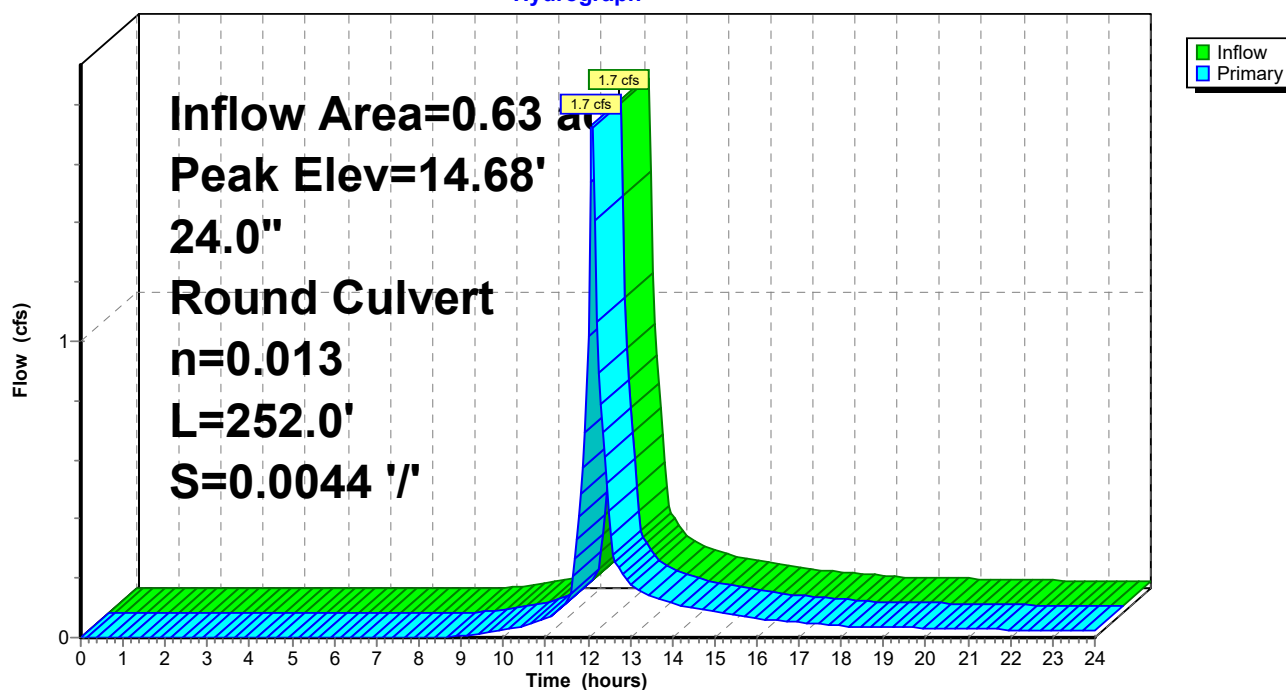
Device	Routing	Invert	Outlet Devices
#1	Primary	14.05'	24.0" Round Culvert L= 252.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.05' / 12.94' S= 0.0044 '/ Cc= 0.900 n= 0.013 Cast iron, coated, Flow Area= 3.14 sf

Primary OutFlow Max=1.7 cfs @ 12.09 hrs HW=14.67' TW=0.00' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 1.7 cfs @ 3.04 fps)

Pond 23P: Ex CB3

Hydrograph



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Summary for Pond 24P: Ex DMH4

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 2.38" for 10-Year Storm event
Inflow = 1.5 cfs @ 12.09 hrs, Volume= 0.106 af
Outflow = 1.5 cfs @ 12.09 hrs, Volume= 0.106 af, Atten= 0%, Lag= 0.0 min
Primary = 1.5 cfs @ 12.09 hrs, Volume= 0.106 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.45' @ 12.09 hrs

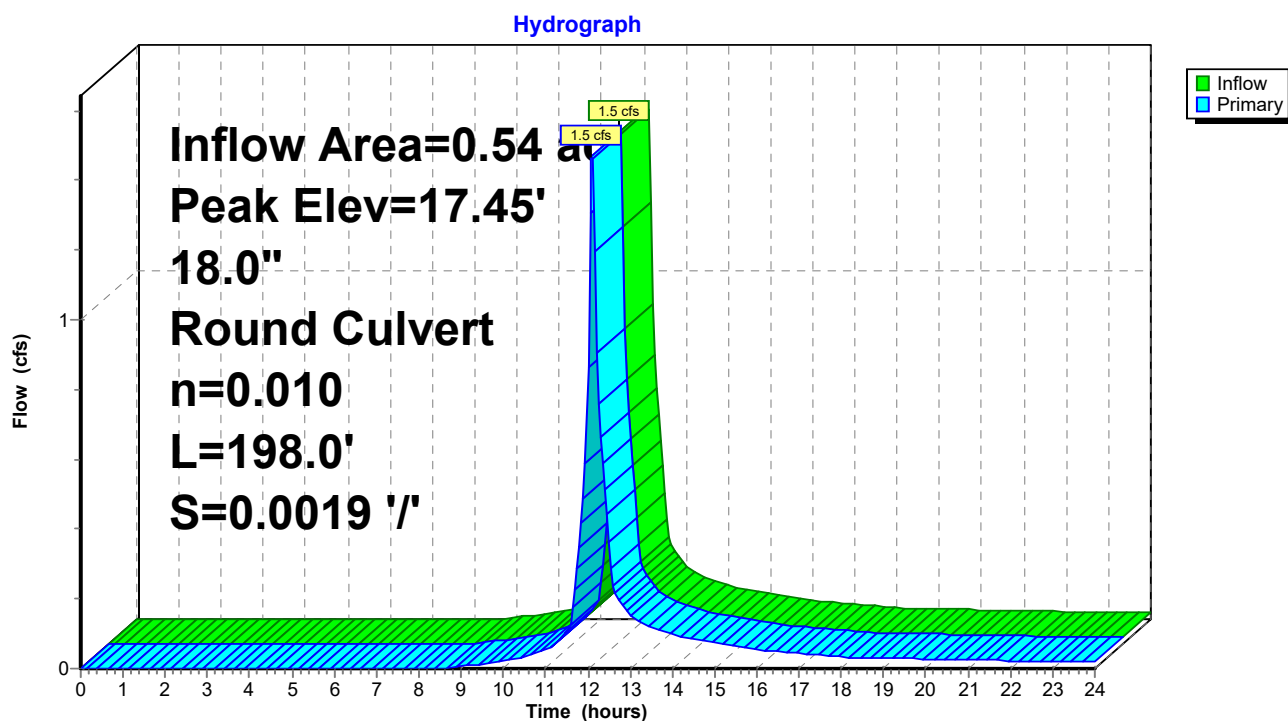
Flood Elev= 25.38'

Device	Routing	Invert	Outlet Devices
#1	Primary	16.75'	18.0" Round Culvert L= 198.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.75' / 16.38' S= 0.0019 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.4 cfs @ 12.09 hrs HW=17.44' TW=16.08' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 1.4 cfs @ 2.66 fps)

Pond 24P: Ex DMH4



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Summary for Pond 25P: Ex DMH5

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 2.38" for 10-Year Storm event
Inflow = 1.5 cfs @ 12.09 hrs, Volume= 0.106 af
Outflow = 1.5 cfs @ 12.09 hrs, Volume= 0.106 af, Atten= 0%, Lag= 0.0 min
Primary = 1.5 cfs @ 12.09 hrs, Volume= 0.106 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 16.09' @ 12.09 hrs

Flood Elev= 23.84'

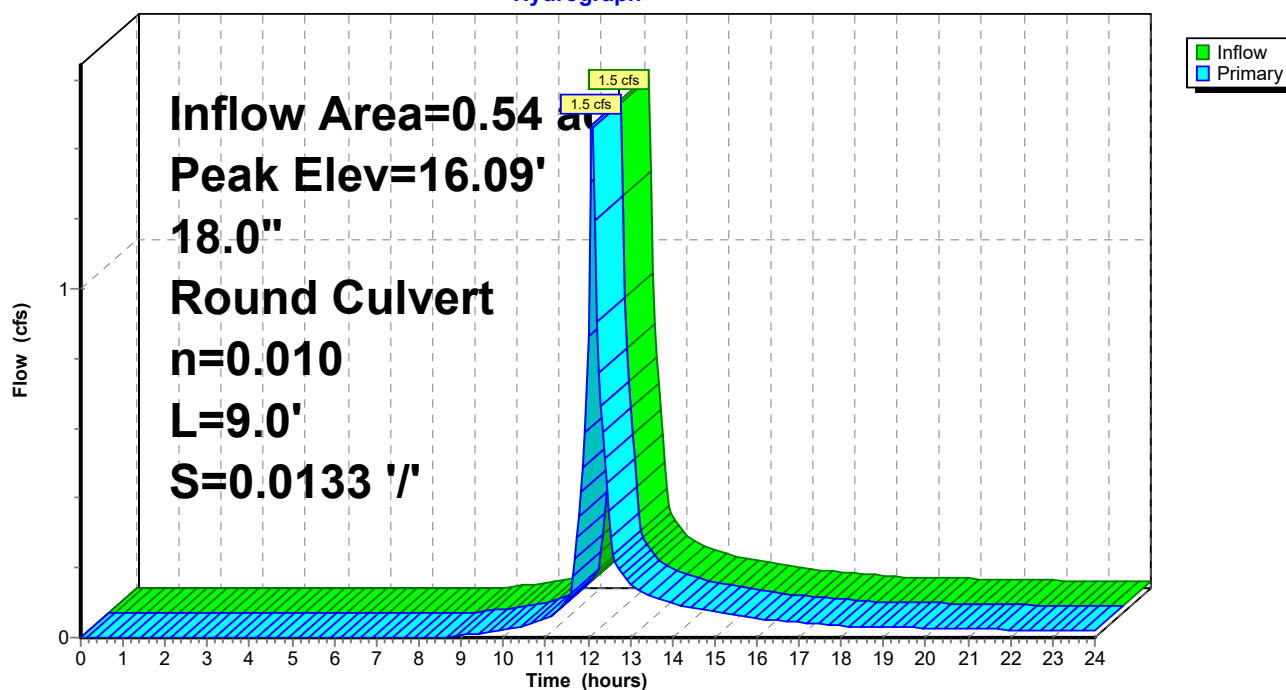
Device	Routing	Invert	Outlet Devices
#1	Primary	15.44'	18.0" Round Culvert L= 9.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.44' / 15.32' S= 0.0133 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.4 cfs @ 12.09 hrs HW=16.08' TW=15.38' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 1.4 cfs @ 2.96 fps)

Pond 25P: Ex DMH5

Hydrograph



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Pond 26P: Ex DMH6

Inflow Area = 1.23 ac, 64.68% Impervious, Inflow Depth > 2.57" for 10-Year Storm event
Inflow = 3.6 cfs @ 12.09 hrs, Volume= 0.264 af
Outflow = 3.6 cfs @ 12.09 hrs, Volume= 0.264 af, Atten= 0%, Lag= 0.0 min
Primary = 3.6 cfs @ 12.09 hrs, Volume= 0.264 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.39' @ 12.11 hrs

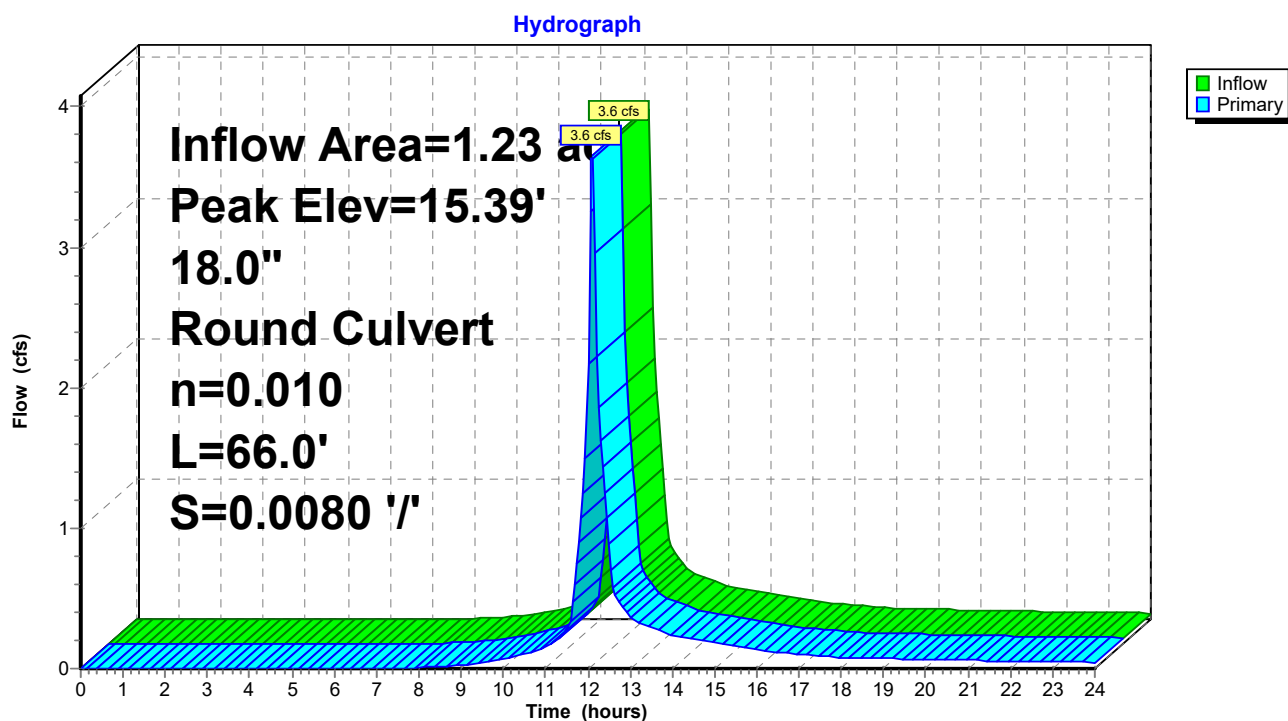
Flood Elev= 23.95'

Device	Routing	Invert	Outlet Devices
#1	Primary	14.30'	18.0" Round Culvert L= 66.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.30' / 13.77' S= 0.0080 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.3 cfs @ 12.09 hrs HW=15.37' TW=14.91' (Dynamic Tailwater)

↑1=Culvert (Outlet Controls 3.3 cfs @ 3.40 fps)

Pond 26P: Ex DMH6



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Pond 27P: Ex DMH7

Inflow Area = 1.23 ac, 64.68% Impervious, Inflow Depth > 2.57" for 10-Year Storm event
Inflow = 3.6 cfs @ 12.09 hrs, Volume= 0.264 af
Outflow = 3.6 cfs @ 12.09 hrs, Volume= 0.264 af, Atten= 0%, Lag= 0.0 min
Primary = 3.6 cfs @ 12.09 hrs, Volume= 0.264 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 14.93' @ 12.09 hrs

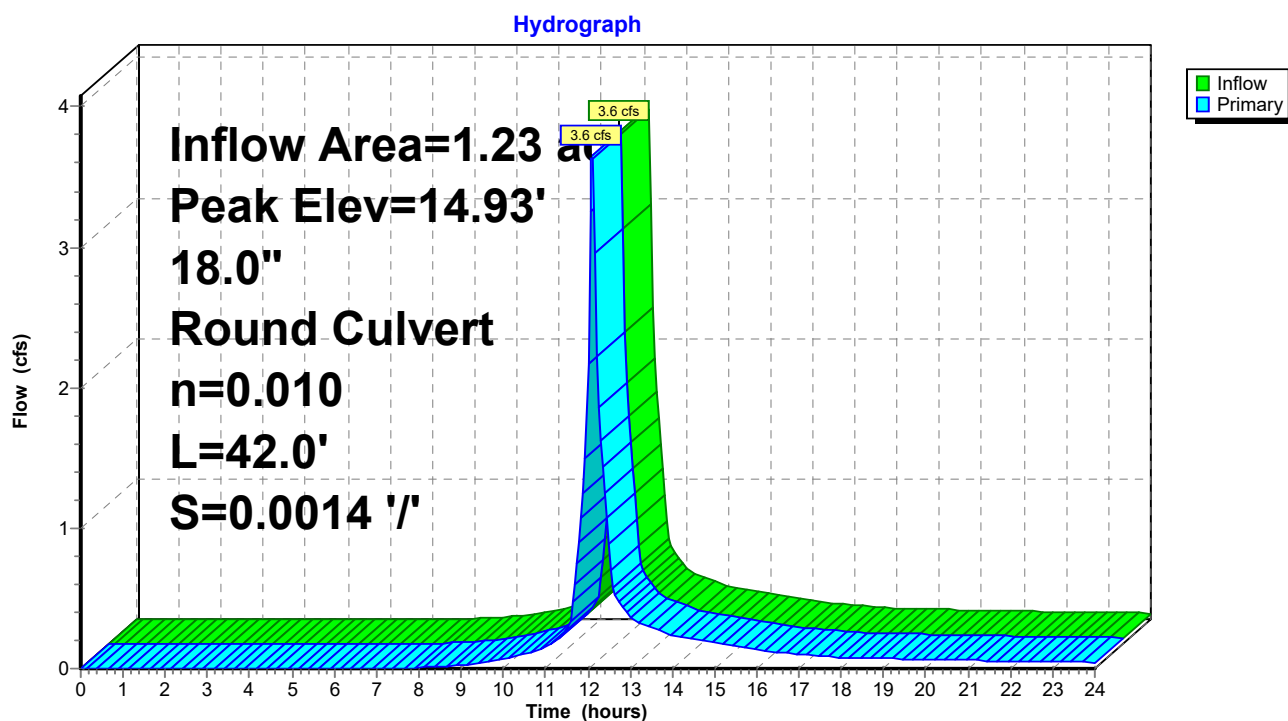
Flood Elev= 24.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	13.70'	18.0" Round Culvert L= 42.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.70' / 13.64' S= 0.0014 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.6 cfs @ 12.09 hrs HW=14.91' TW=0.00' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 3.6 cfs @ 3.19 fps)

Pond 27P: Ex DMH7



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Pond 29P: Ex DMH9

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 2.38" for 10-Year Storm event
Inflow = 1.5 cfs @ 12.09 hrs, Volume= 0.106 af
Outflow = 1.5 cfs @ 12.09 hrs, Volume= 0.106 af, Atten= 0%, Lag= 0.0 min
Primary = 1.5 cfs @ 12.09 hrs, Volume= 0.106 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 18.18' @ 12.11 hrs

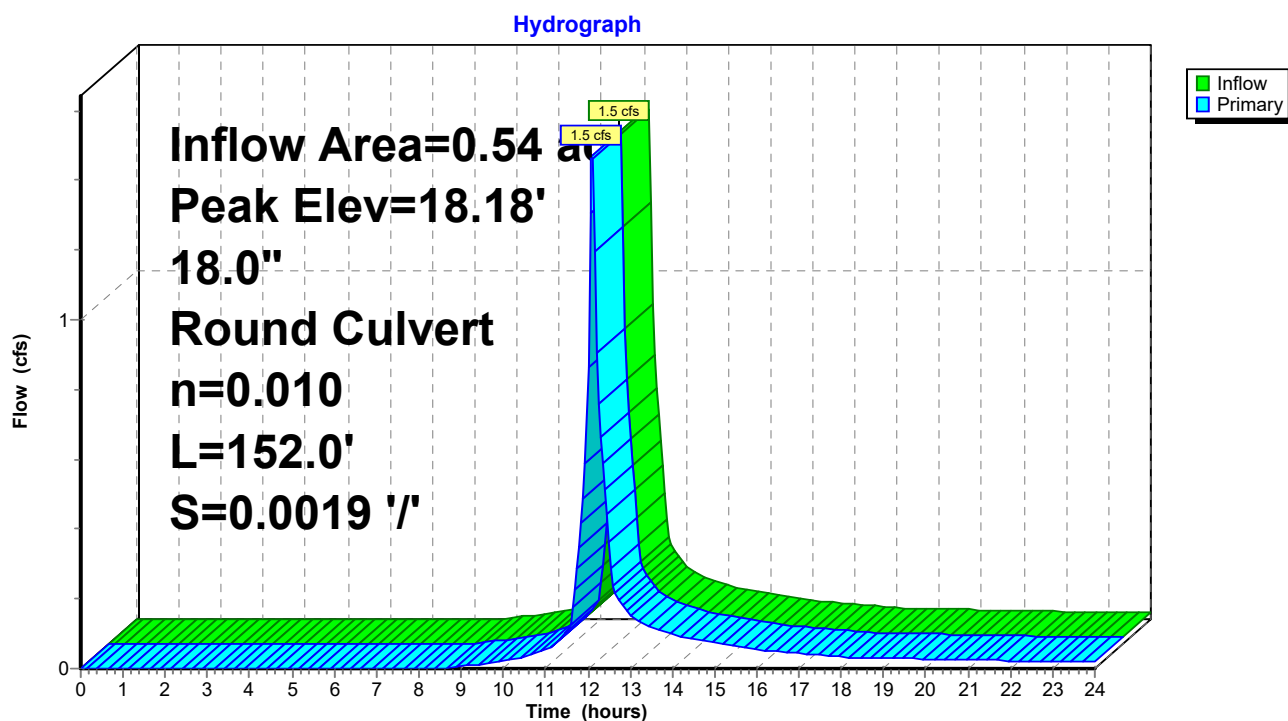
Flood Elev= 23.44'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.46'	18.0" Round Culvert L= 152.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.46' / 17.17' S= 0.0019 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.4 cfs @ 12.09 hrs HW=18.17' TW=17.80' (Dynamic Tailwater)

↑1=Culvert (Outlet Controls 1.4 cfs @ 2.40 fps)

Pond 29P: Ex DMH9



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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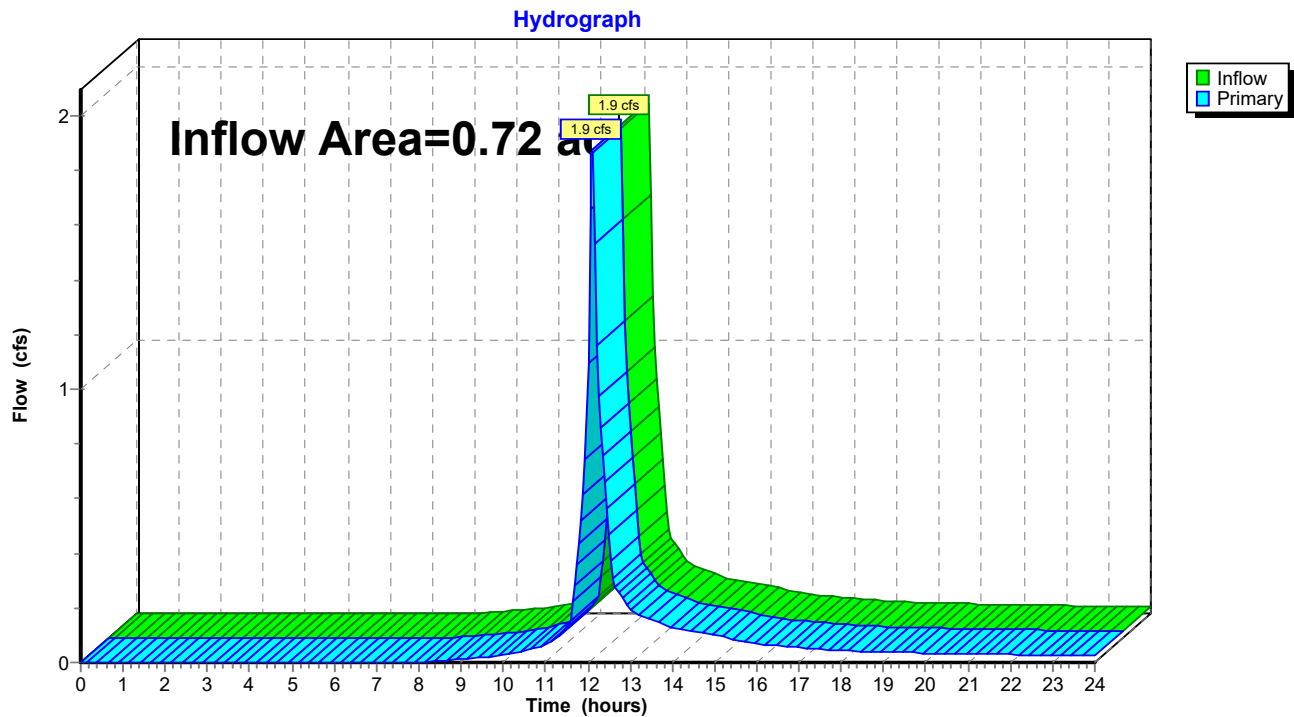
Page 69

Summary for Link SP1: Forest Ave Storm Drain

Inflow Area = 0.72 ac, 39.36% Impervious, Inflow Depth > 2.27" for 10-Year Storm event
Inflow = 1.9 cfs @ 12.09 hrs, Volume= 0.137 af
Primary = 1.9 cfs @ 12.09 hrs, Volume= 0.137 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP1: Forest Ave Storm Drain



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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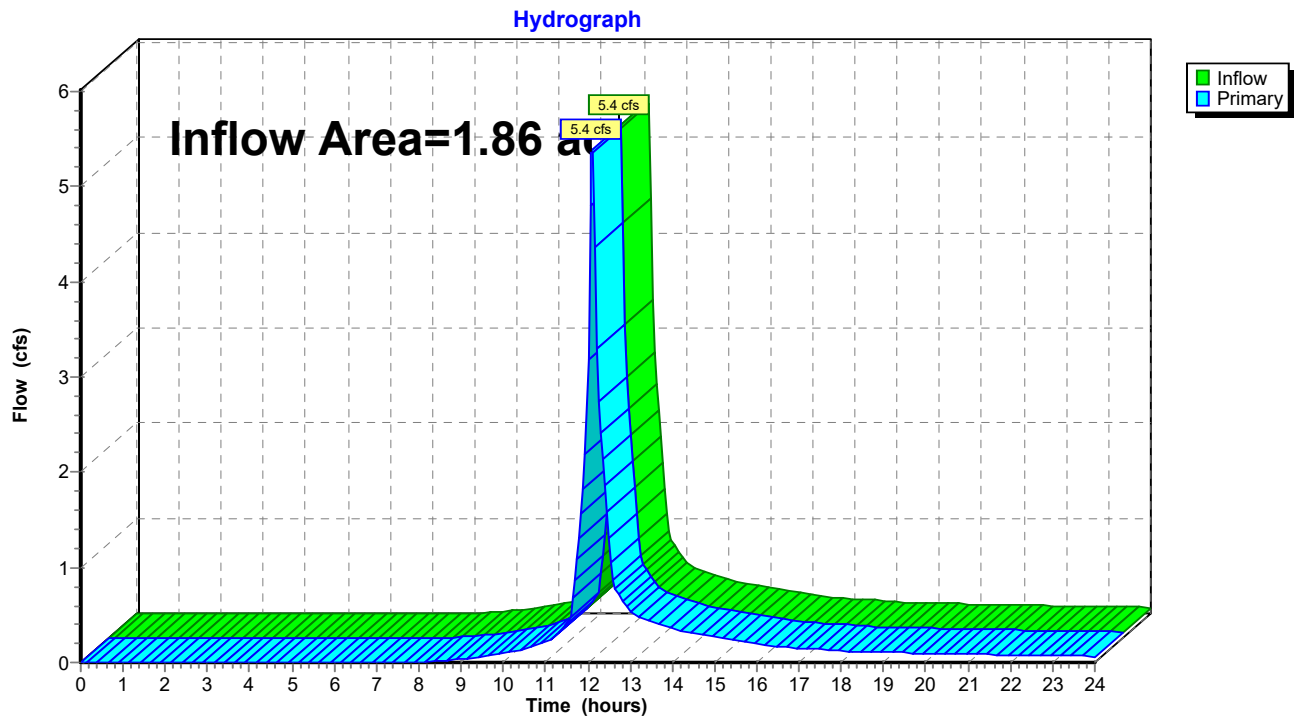
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Summary for Link SP2: Combined Sewer

Inflow Area = 1.86 ac, 62.17% Impervious, Inflow Depth > 2.51" for 10-Year Storm event
Inflow = 5.4 cfs @ 12.09 hrs, Volume= 0.389 af
Primary = 5.4 cfs @ 12.09 hrs, Volume= 0.389 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP2: Combined Sewer



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: PRE-1	Runoff Area=8,487 sf 61.42% Impervious Runoff Depth>3.60" Tc=6.0 min CN=80 Runoff=0.8 cfs 0.058 af
Subcatchment2S: PRE-2	Runoff Area=14,855 sf 50.48% Impervious Runoff Depth>3.30" Tc=6.0 min CN=77 Runoff=1.3 cfs 0.094 af
Subcatchment3S: PRE-3	Runoff Area=19,668 sf 51.10% Impervious Runoff Depth>3.70" Tc=6.0 min CN=81 Runoff=1.9 cfs 0.139 af
Subcatchment4S: PRE-4	Runoff Area=11,760 sf 19.74% Impervious Runoff Depth>2.55" Tc=6.0 min CN=69 Runoff=0.8 cfs 0.057 af
Subcatchment5S: PRE-5	Runoff Area=27,546 sf 57.26% Impervious Runoff Depth>3.40" Tc=6.0 min CN=78 Runoff=2.5 cfs 0.179 af
Subcatchment6S: PRE-6	Runoff Area=16,352 sf 71.97% Impervious Runoff Depth>3.80" Tc=6.0 min CN=82 Runoff=1.6 cfs 0.119 af
Subcatchment7S: PRE-7	Runoff Area=13,974 sf 73.24% Impervious Runoff Depth>3.80" Tc=6.0 min CN=82 Runoff=1.4 cfs 0.102 af
Pond 11P: Ex CB1	Peak Elev=19.46' Inflow=2.1 cfs 0.152 af 12.0" Round Culvert n=0.010 L=41.0' S=0.0224 '/ Outflow=2.1 cfs 0.152 af
Pond 12P: Ex CB2	Peak Elev=18.82' Inflow=0.8 cfs 0.057 af 8.0" Round Culvert n=0.010 L=159.0' S=0.0158 '/ Outflow=0.8 cfs 0.057 af
Pond 14P: Ex CB4	Peak Elev=16.71' Inflow=1.6 cfs 0.119 af 12.0" Round Culvert n=0.010 L=63.0' S=0.0195 '/ Outflow=1.6 cfs 0.119 af
Pond 15P: Ex CB5	Peak Elev=15.99' Inflow=3.0 cfs 0.220 af 18.0" Round Culvert n=0.010 L=38.0' S=-0.0026 '/ Outflow=3.0 cfs 0.220 af
Pond 21P: Ex DMH1	Peak Elev=15.88' Inflow=3.0 cfs 0.220 af 18.0" Round Culvert n=0.010 L=12.0' S=0.0200 '/ Outflow=3.0 cfs 0.220 af
Pond 22P: Ex DMH2	Peak Elev=17.97' Inflow=2.1 cfs 0.152 af 18.0" Round Culvert n=0.010 L=98.0' S=0.0023 '/ Outflow=2.1 cfs 0.152 af
Pond 23P: Ex CB3	Peak Elev=14.81' Inflow=2.5 cfs 0.179 af 24.0" Round Culvert n=0.013 L=252.0' S=0.0044 '/ Outflow=2.5 cfs 0.179 af
Pond 24P: Ex DMH4	Peak Elev=17.60' Inflow=2.1 cfs 0.152 af 18.0" Round Culvert n=0.010 L=198.0' S=0.0019 '/ Outflow=2.1 cfs 0.152 af
Pond 25P: Ex DMH5	Peak Elev=16.24' Inflow=2.1 cfs 0.152 af 18.0" Round Culvert n=0.010 L=9.0' S=0.0133 '/ Outflow=2.1 cfs 0.152 af

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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Pond 26P: Ex DMH6Peak Elev=15.73' Inflow=5.1 cfs 0.373 af
18.0" Round Culvert n=0.010 L=66.0' S=0.0080 '/ Outflow=5.1 cfs 0.373 af**Pond 27P: Ex DMH7**Peak Elev=15.22' Inflow=5.1 cfs 0.373 af
18.0" Round Culvert n=0.010 L=42.0' S=0.0014 '/ Outflow=5.1 cfs 0.373 af**Pond 29P: Ex DMH9**Peak Elev=18.35' Inflow=2.1 cfs 0.152 af
18.0" Round Culvert n=0.010 L=152.0' S=0.0019 '/ Outflow=2.1 cfs 0.152 af**Link SP1: Forest Ave Storm Drain**Inflow=2.7 cfs 0.197 af
Primary=2.7 cfs 0.197 af**Link SP2: Combined Sewer**Inflow=7.6 cfs 0.552 af
Primary=7.6 cfs 0.552 af**Total Runoff Area = 2.59 ac Runoff Volume = 0.749 af Average Runoff Depth = 3.47"**
44.19% Pervious = 1.14 ac 55.81% Impervious = 1.44 ac

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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Subcatchment 1S: PRE-1

Runoff = 0.8 cfs @ 12.09 hrs, Volume= 0.058 af, Depth> 3.60"

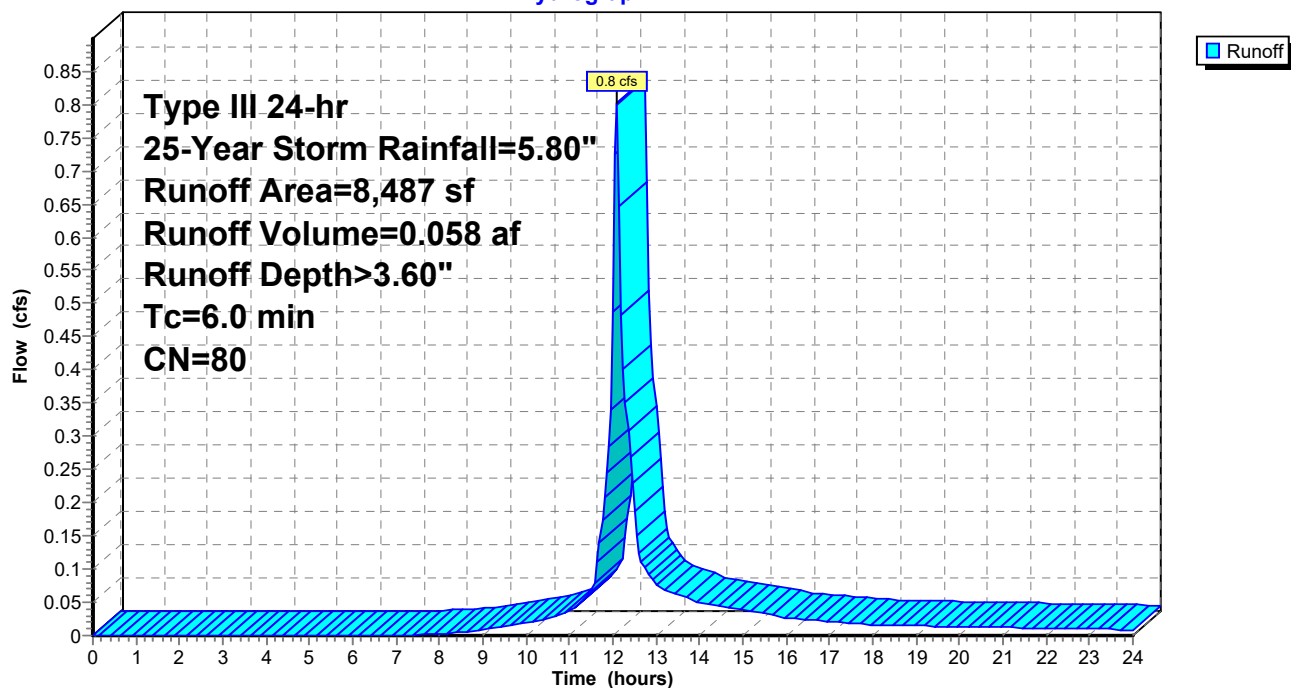
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
5,213	98	Paved parking, HSG A
1,900	39	Grass cover, Good, HSG A
* 1,374	68	Grass cover (parking area), HSG A
8,487	80	Weighted Average
3,274		38.58% Pervious Area
5,213		61.42% Impervious Area

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

Subcatchment 1S: PRE-1

Hydrograph



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Summary for Subcatchment 2S: PRE-2

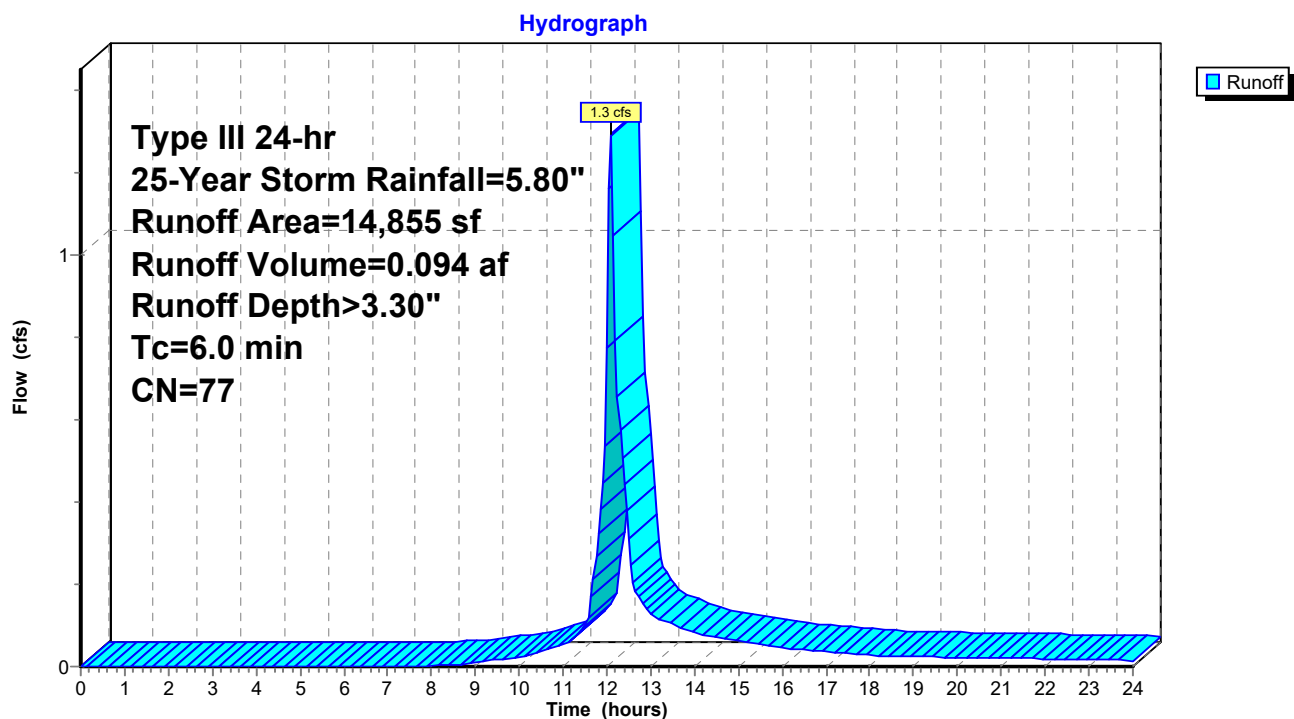
Runoff = 1.3 cfs @ 12.09 hrs, Volume= 0.094 af, Depth> 3.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
7,499	98	Paved parking, HSG A
2,948	39	Grass cover, Good, HSG A
4,408	68	Grass cover (parking area), HSG A
14,855	77	Weighted Average
7,356		49.52% Pervious Area
7,499		50.48% Impervious Area

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

Subcatchment 2S: PRE-2



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Summary for Subcatchment 3S: PRE-3

Runoff = 1.9 cfs @ 12.09 hrs, Volume= 0.139 af, Depth> 3.70"

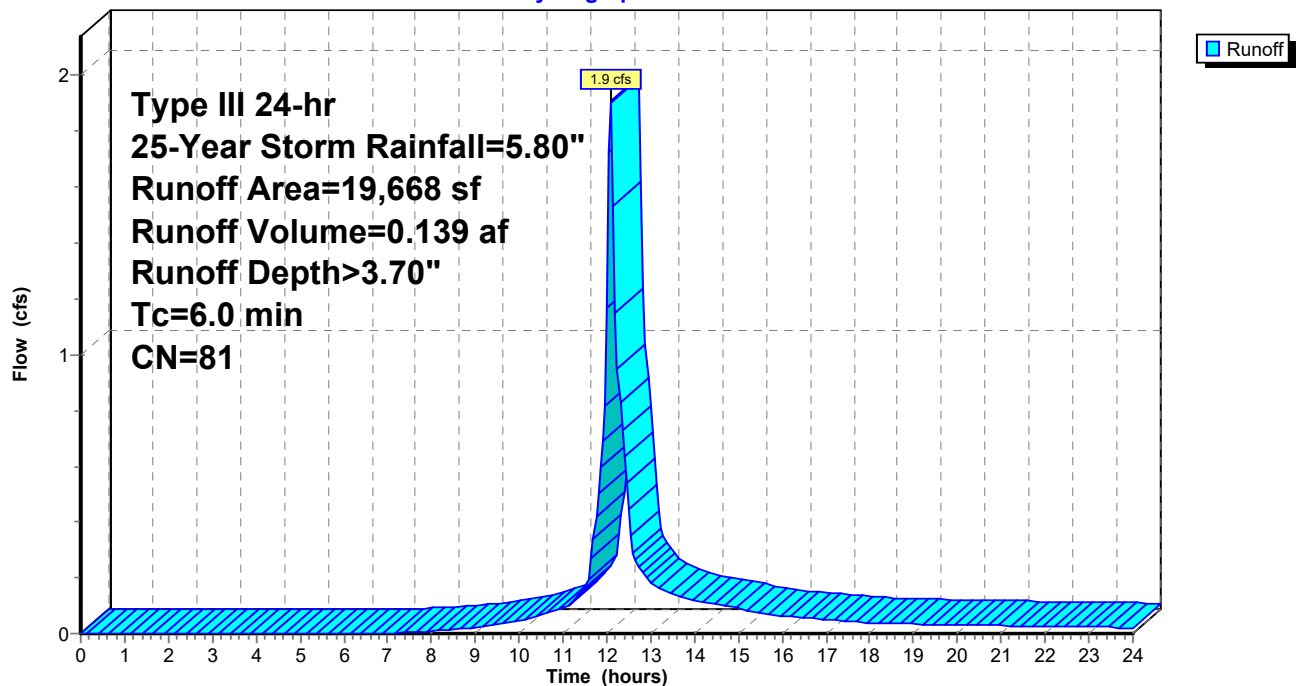
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
10,050	98	Paved parking, HSG A
1,903	39	Grass cover, Good, HSG A
7,715	68	Grass cover (parking area), HSG A
19,668	81	Weighted Average
9,618		48.90% Pervious Area
10,050		51.10% Impervious Area

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

Subcatchment 3S: PRE-3

Hydrograph



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Subcatchment 4S: PRE-4

Runoff = 0.8 cfs @ 12.10 hrs, Volume= 0.057 af, Depth> 2.55"

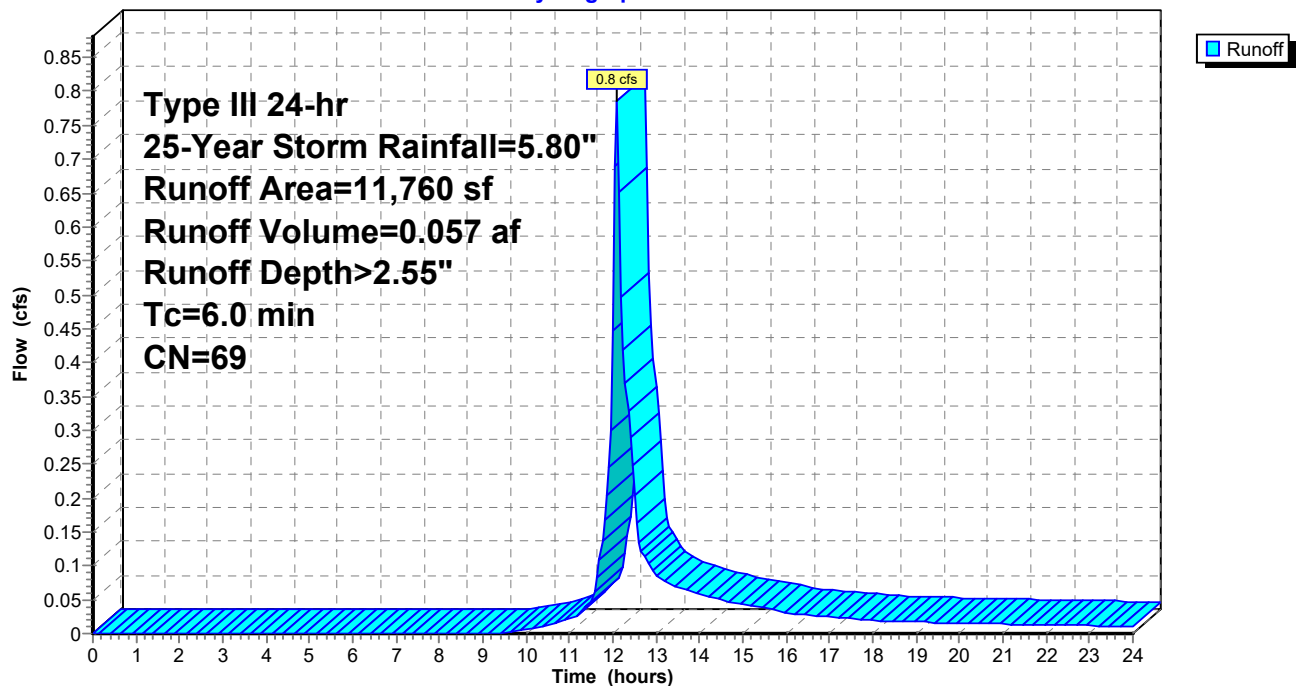
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
2,321	98	Paved parking, HSG A
1,957	39	Grass cover, Good, HSG A
7,482	68	Grass cover (parking area), HSG A
11,760	69	Weighted Average
9,439		80.26% Pervious Area
2,321		19.74% Impervious Area

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

Subcatchment 4S: PRE-4

Hydrograph



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Subcatchment 5S: PRE-5

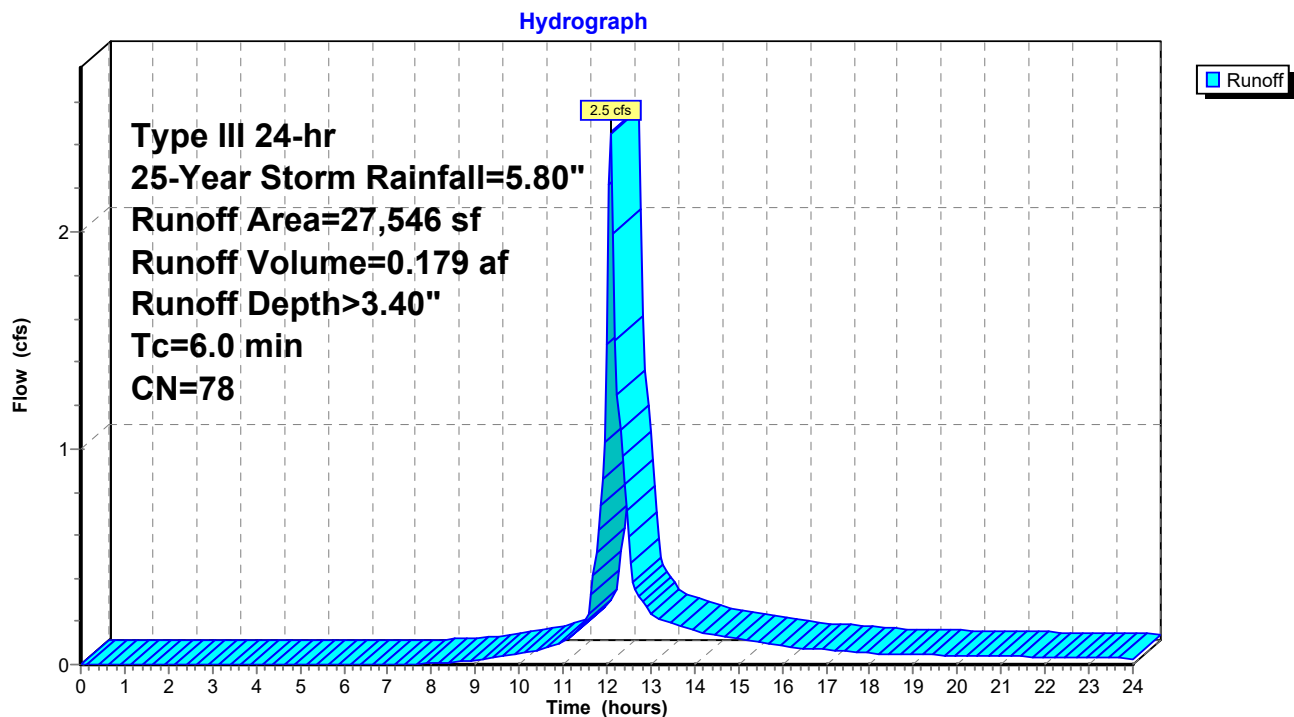
Runoff = 2.5 cfs @ 12.09 hrs, Volume= 0.179 af, Depth> 3.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
15,774	98	Paved parking, HSG A
6,700	39	Grass cover, Good, HSG A
5,072	68	Grass cover (parking area), HSG A
27,546	78	Weighted Average
11,772		42.74% Pervious Area
15,774		57.26% Impervious Area

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

Subcatchment 5S: PRE-5



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Subcatchment 6S: PRE-6

Runoff = 1.6 cfs @ 12.09 hrs, Volume= 0.119 af, Depth> 3.80"

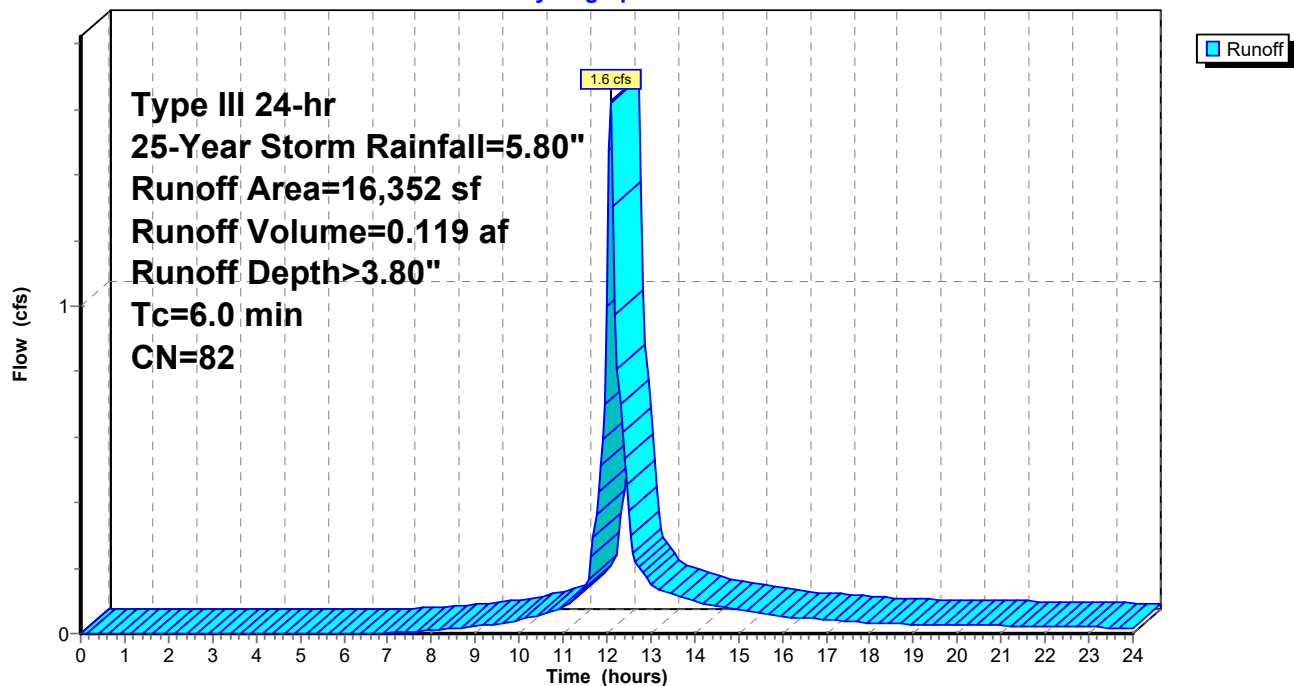
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
11,768	98	Paved parking, HSG A
3,865	39	Grass cover, Good, HSG A
* 719	40	Porous Pavement
16,352	82	Weighted Average
4,584		28.03% Pervious Area
11,768		71.97% Impervious Area

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

Subcatchment 6S: PRE-6

Hydrograph



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PRE
Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Subcatchment 7S: PRE-7

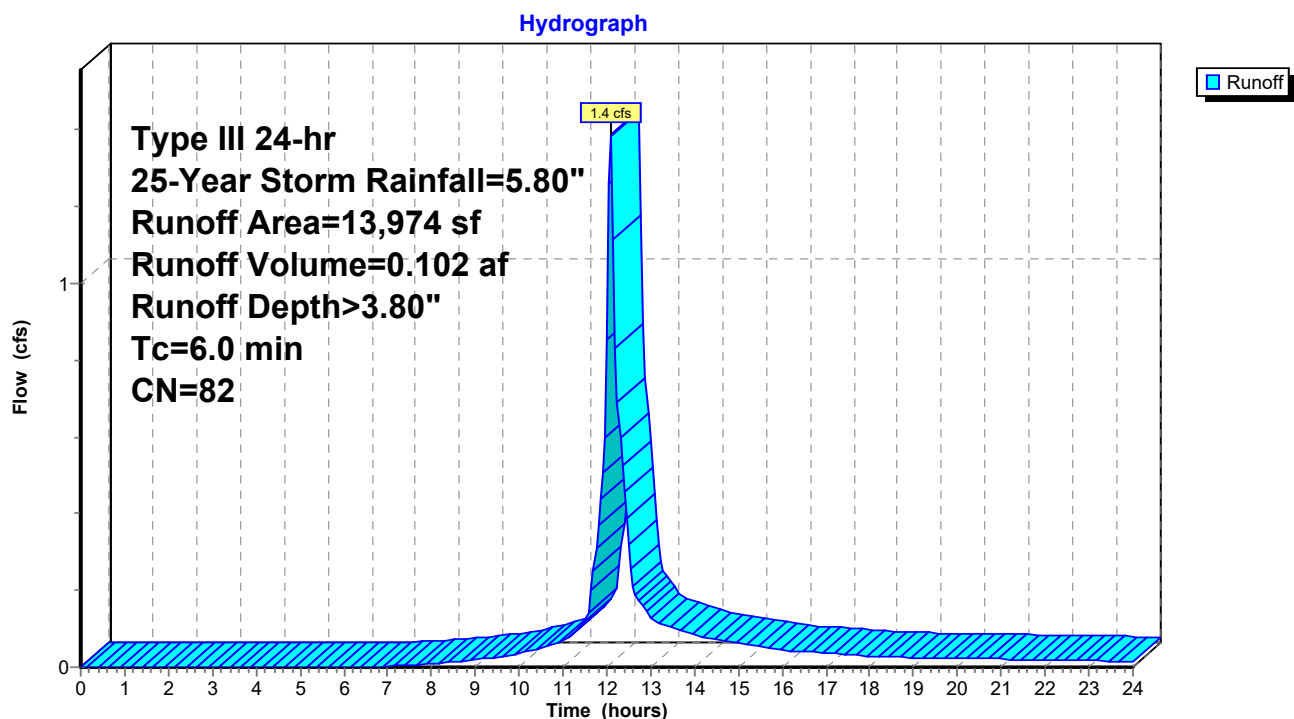
Runoff = 1.4 cfs @ 12.09 hrs, Volume= 0.102 af, Depth> 3.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
10,235	98	Paved parking, HSG A
3,739	39	Grass cover, Good, HSG A
13,974	82	Weighted Average
3,739		26.76% Pervious Area
10,235		73.24% Impervious Area

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

Subcatchment 7S: PRE-7



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PRE
Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Pond 11P: Ex CB1

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 3.41" for 25-Year Storm event
Inflow = 2.1 cfs @ 12.09 hrs, Volume= 0.152 af
Outflow = 2.1 cfs @ 12.09 hrs, Volume= 0.152 af, Atten= 0%, Lag= 0.0 min
Primary = 2.1 cfs @ 12.09 hrs, Volume= 0.152 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 19.46' @ 12.09 hrs

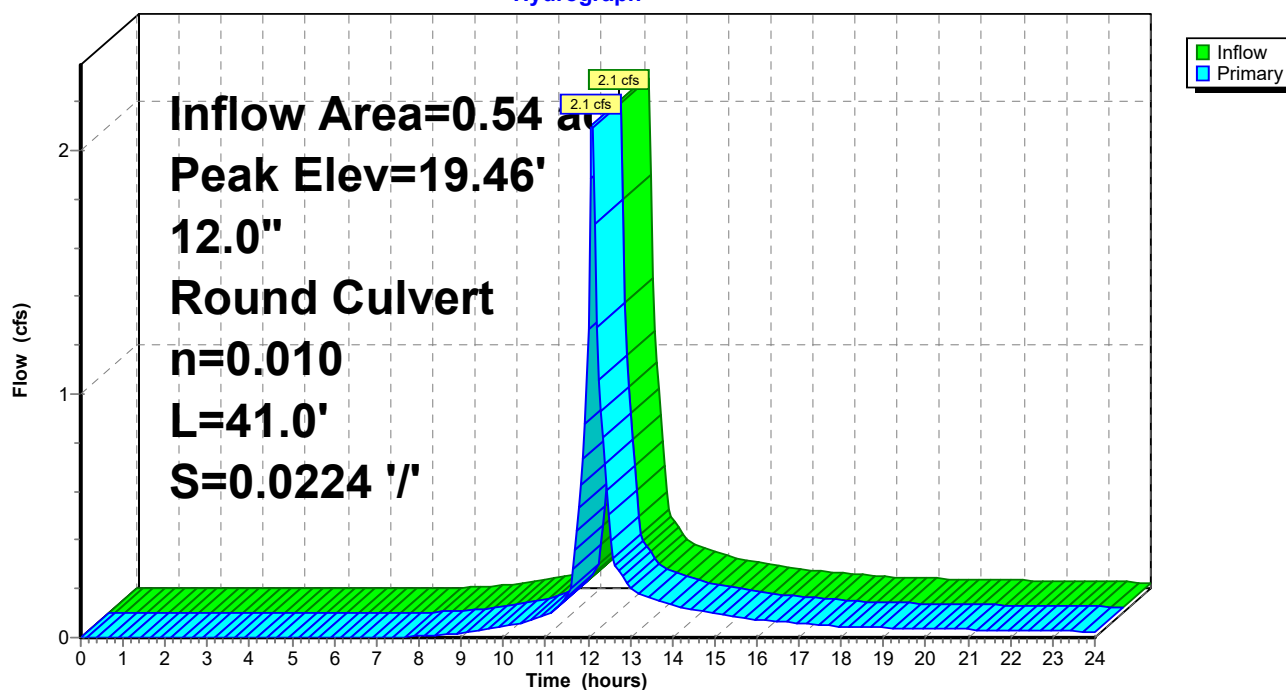
Flood Elev= 22.02'

Device	Routing	Invert	Outlet Devices
#1	Primary	18.47'	12.0" Round Culvert L= 41.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.47' / 17.55' S= 0.0224 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.1 cfs @ 12.09 hrs HW=19.44' TW=18.33' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 2.1 cfs @ 2.65 fps)

Pond 11P: Ex CB1

Hydrograph



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Summary for Pond 12P: Ex CB2

Inflow Area = 0.27 ac, 19.74% Impervious, Inflow Depth > 2.55" for 25-Year Storm event
Inflow = 0.8 cfs @ 12.10 hrs, Volume= 0.057 af
Outflow = 0.8 cfs @ 12.10 hrs, Volume= 0.057 af, Atten= 0%, Lag= 0.0 min
Primary = 0.8 cfs @ 12.10 hrs, Volume= 0.057 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 18.82' @ 12.10 hrs

Flood Elev= 22.15'

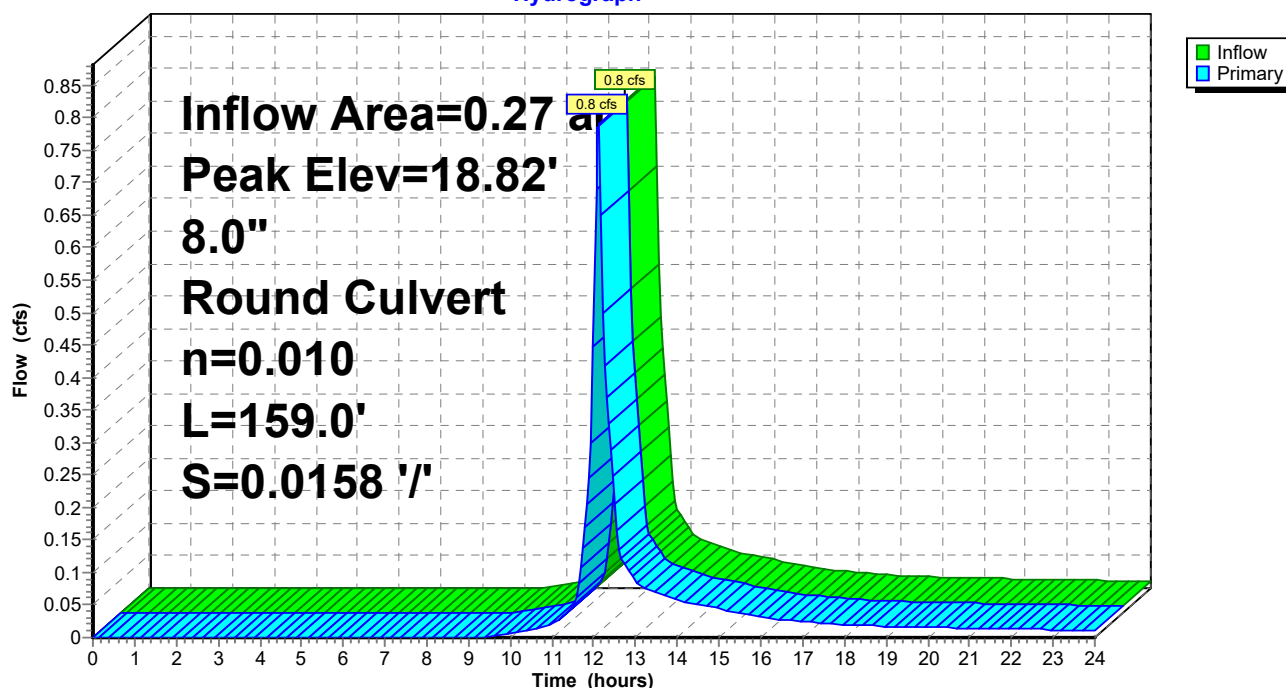
Device	Routing	Invert	Outlet Devices
#1	Primary	18.14'	8.0" Round Culvert L= 159.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.14' / 15.62' S= 0.0158 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.8 cfs @ 12.10 hrs HW=18.82' TW=0.00' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 0.8 cfs @ 2.23 fps)

Pond 12P: Ex CB2

Hydrograph



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PRE
Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Pond 14P: Ex CB4

Inflow Area = 0.38 ac, 71.97% Impervious, Inflow Depth > 3.80" for 25-Year Storm event
Inflow = 1.6 cfs @ 12.09 hrs, Volume= 0.119 af
Outflow = 1.6 cfs @ 12.09 hrs, Volume= 0.119 af, Atten= 0%, Lag= 0.0 min
Primary = 1.6 cfs @ 12.09 hrs, Volume= 0.119 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 16.71' @ 12.09 hrs

Flood Elev= 21.96'

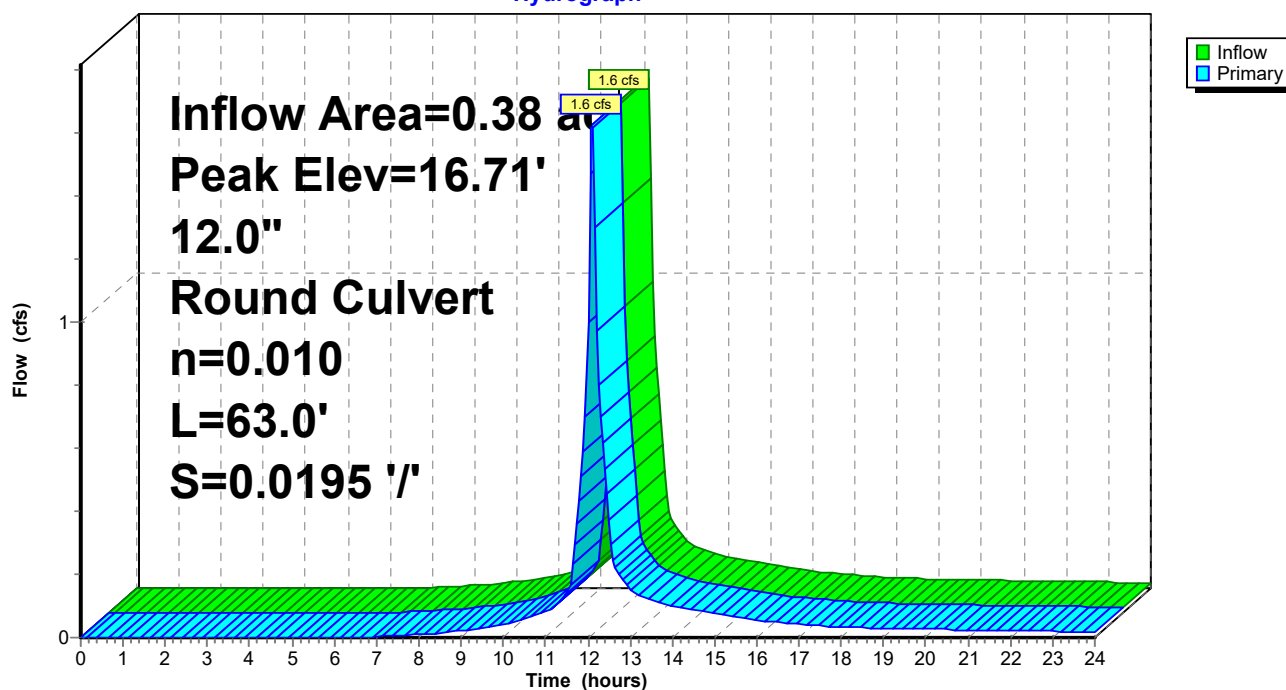
Device	Routing	Invert	Outlet Devices
#1	Primary	15.91'	12.0" Round Culvert L= 63.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.91' / 14.68' S= 0.0195 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.6 cfs @ 12.09 hrs HW=16.70' TW=15.89' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 1.6 cfs @ 2.39 fps)

Pond 14P: Ex CB4

Hydrograph



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Pond 15P: Ex CB5

Inflow Area = 0.70 ac, 72.55% Impervious, Inflow Depth > 3.80" for 25-Year Storm event
Inflow = 3.0 cfs @ 12.09 hrs, Volume= 0.220 af
Outflow = 3.0 cfs @ 12.09 hrs, Volume= 0.220 af, Atten= 0%, Lag= 0.0 min
Primary = 3.0 cfs @ 12.09 hrs, Volume= 0.220 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.99' @ 12.17 hrs

Flood Elev= 22.70'

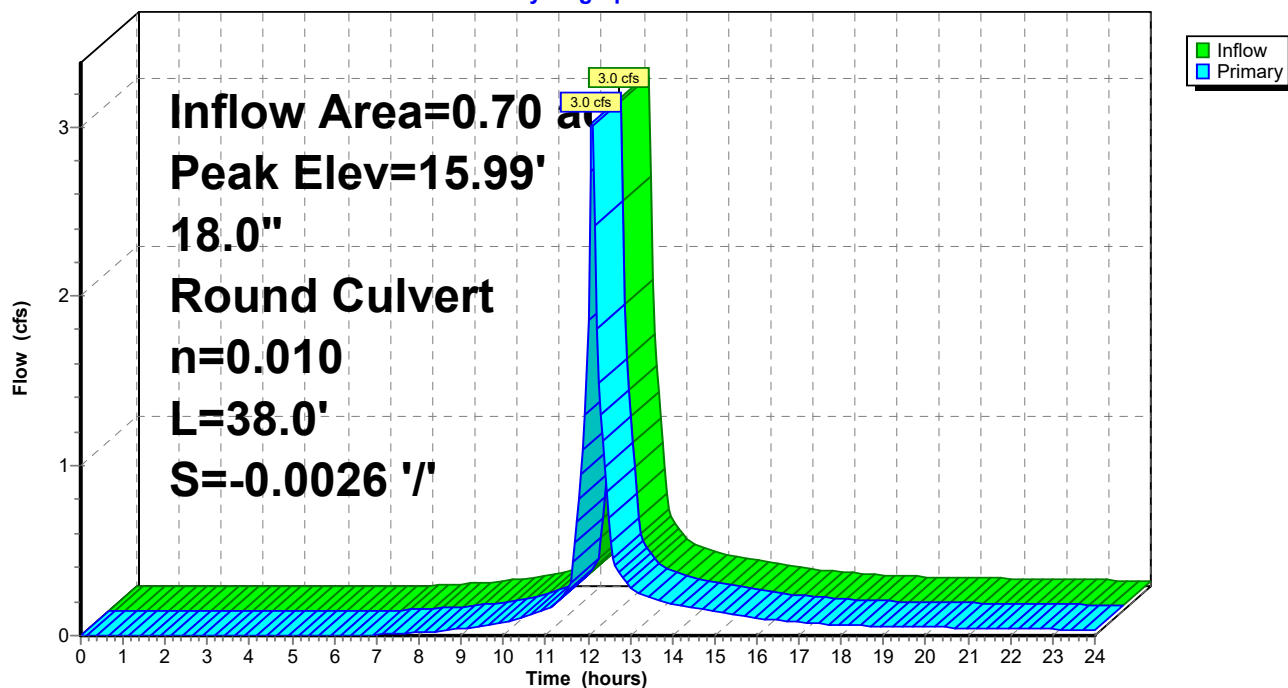
Device	Routing	Invert	Outlet Devices
#1	Primary	14.80'	18.0" Round Culvert L= 38.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.70' / 14.80' S= -0.0026 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.8 cfs @ 12.09 hrs HW=15.89' TW=15.77' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 1.8 cfs @ 1.34 fps)

Pond 15P: Ex CB5

Hydrograph



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PRE
Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Pond 21P: Ex DMH1

Inflow Area = 0.70 ac, 72.55% Impervious, Inflow Depth > 3.80" for 25-Year Storm event
Inflow = 3.0 cfs @ 12.09 hrs, Volume= 0.220 af
Outflow = 3.0 cfs @ 12.09 hrs, Volume= 0.220 af, Atten= 0%, Lag= 0.0 min
Primary = 3.0 cfs @ 12.09 hrs, Volume= 0.220 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.88' @ 12.14 hrs

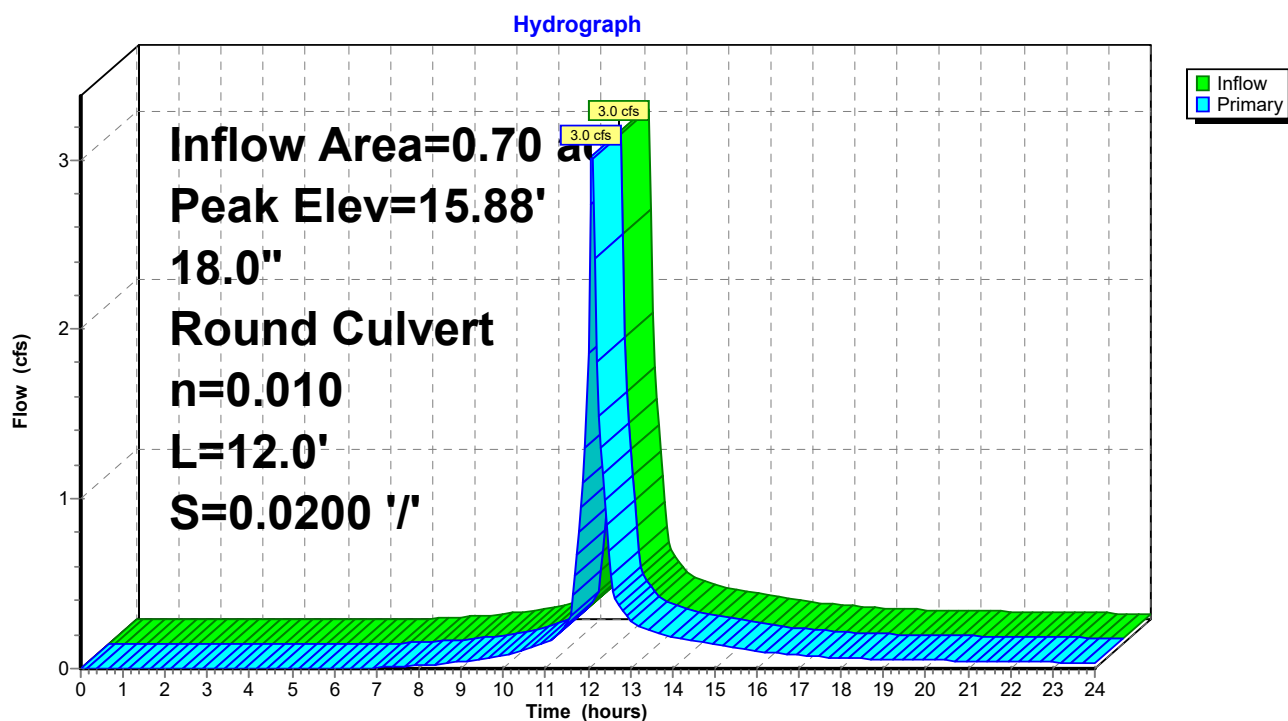
Flood Elev= 23.72'

Device	Routing	Invert	Outlet Devices
#1	Primary	14.62'	18.0" Round Culvert L= 12.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.62' / 14.38' S= 0.0200 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.6 cfs @ 12.09 hrs HW=15.77' TW=15.68' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 1.6 cfs @ 1.10 fps)

Pond 21P: Ex DMH1



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PRE
Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Pond 22P: Ex DMH2

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 3.41" for 25-Year Storm event
Inflow = 2.1 cfs @ 12.09 hrs, Volume= 0.152 af
Outflow = 2.1 cfs @ 12.09 hrs, Volume= 0.152 af, Atten= 0%, Lag= 0.0 min
Primary = 2.1 cfs @ 12.09 hrs, Volume= 0.152 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.97' @ 12.10 hrs

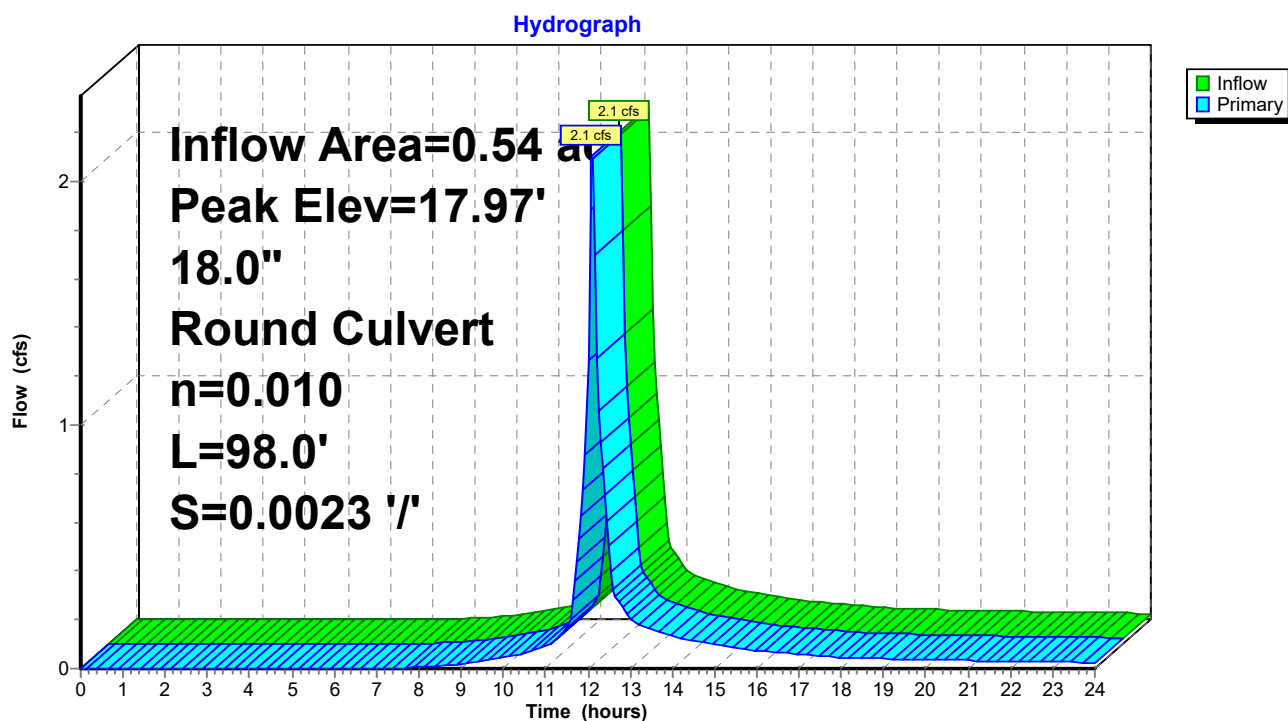
Flood Elev= 24.92'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.12'	18.0" Round Culvert L= 98.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.12' / 16.89' S= 0.0023 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.9 cfs @ 12.09 hrs HW=17.96' TW=17.59' (Dynamic Tailwater)

↑1=Culvert (Outlet Controls 1.9 cfs @ 2.74 fps)

Pond 22P: Ex DMH2



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Summary for Pond 23P: Ex CB3

Inflow Area = 0.63 ac, 57.26% Impervious, Inflow Depth > 3.40" for 25-Year Storm event
Inflow = 2.5 cfs @ 12.09 hrs, Volume= 0.179 af
Outflow = 2.5 cfs @ 12.09 hrs, Volume= 0.179 af, Atten= 0%, Lag= 0.0 min
Primary = 2.5 cfs @ 12.09 hrs, Volume= 0.179 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 14.81' @ 12.09 hrs

Flood Elev= 23.60'

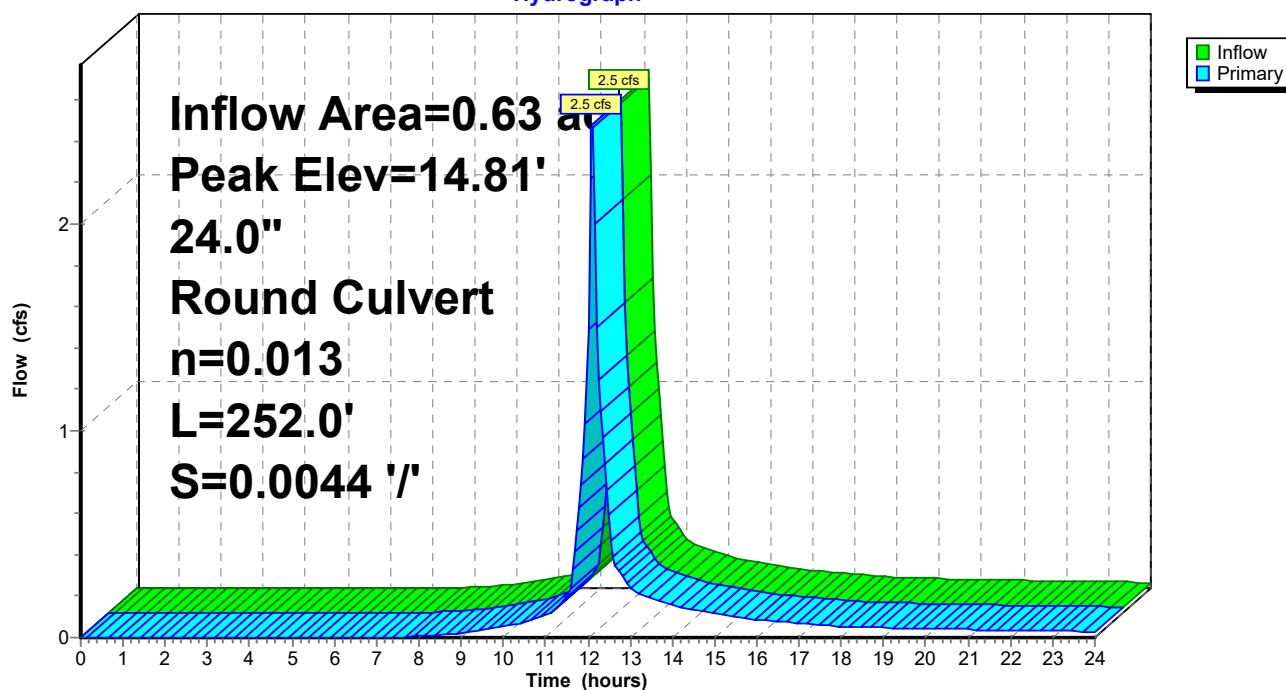
Device	Routing	Invert	Outlet Devices
#1	Primary	14.05'	24.0" Round Culvert L= 252.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.05' / 12.94' S= 0.0044 '/' Cc= 0.900 n= 0.013 Cast iron, coated, Flow Area= 3.14 sf

Primary OutFlow Max=2.4 cfs @ 12.09 hrs HW=14.80' TW=0.00' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 2.4 cfs @ 3.34 fps)

Pond 23P: Ex CB3

Hydrograph



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Pond 24P: Ex DMH4

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 3.41" for 25-Year Storm event
Inflow = 2.1 cfs @ 12.09 hrs, Volume= 0.152 af
Outflow = 2.1 cfs @ 12.09 hrs, Volume= 0.152 af, Atten= 0%, Lag= 0.0 min
Primary = 2.1 cfs @ 12.09 hrs, Volume= 0.152 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.60' @ 12.09 hrs

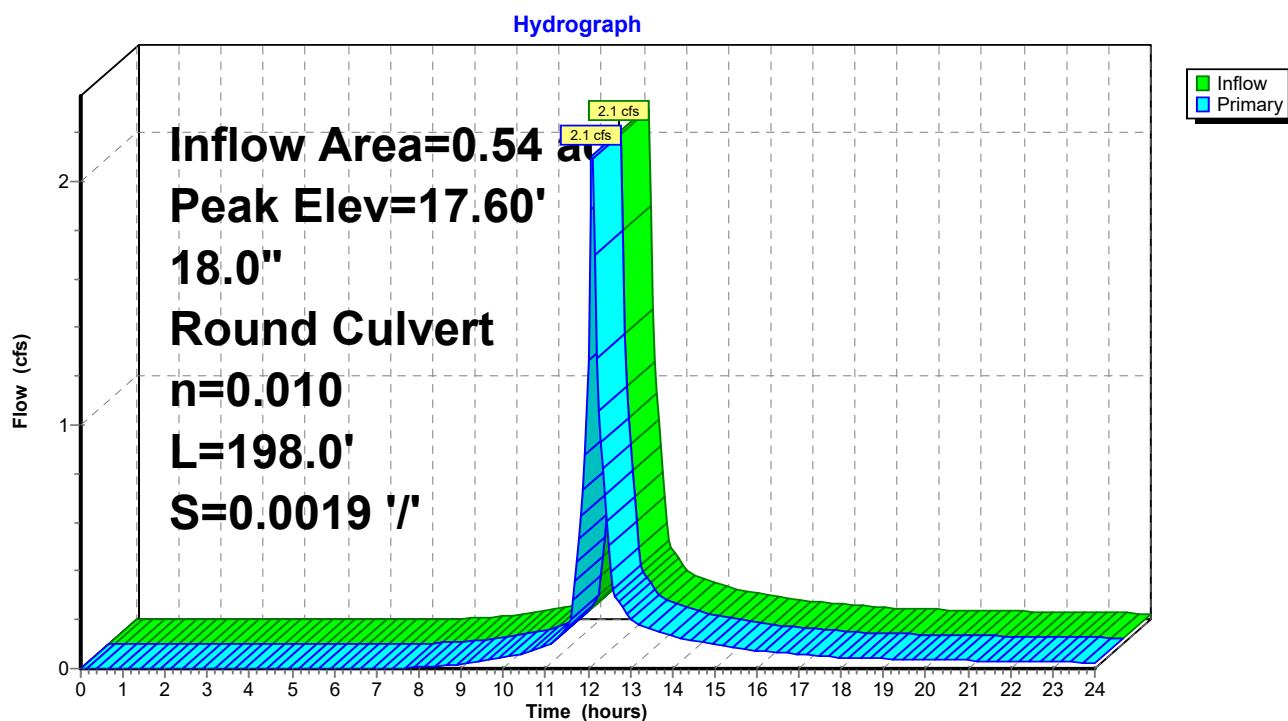
Flood Elev= 25.38'

Device	Routing	Invert	Outlet Devices
#1	Primary	16.75'	18.0" Round Culvert L= 198.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.75' / 16.38' S= 0.0019 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.1 cfs @ 12.09 hrs HW=17.59' TW=16.23' (Dynamic Tailwater)

1=Culvert (Barrel Controls 2.1 cfs @ 2.91 fps)

Pond 24P: Ex DMH4



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Summary for Pond 25P: Ex DMH5

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 3.41" for 25-Year Storm event
Inflow = 2.1 cfs @ 12.09 hrs, Volume= 0.152 af
Outflow = 2.1 cfs @ 12.09 hrs, Volume= 0.152 af, Atten= 0%, Lag= 0.0 min
Primary = 2.1 cfs @ 12.09 hrs, Volume= 0.152 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 16.24' @ 12.09 hrs

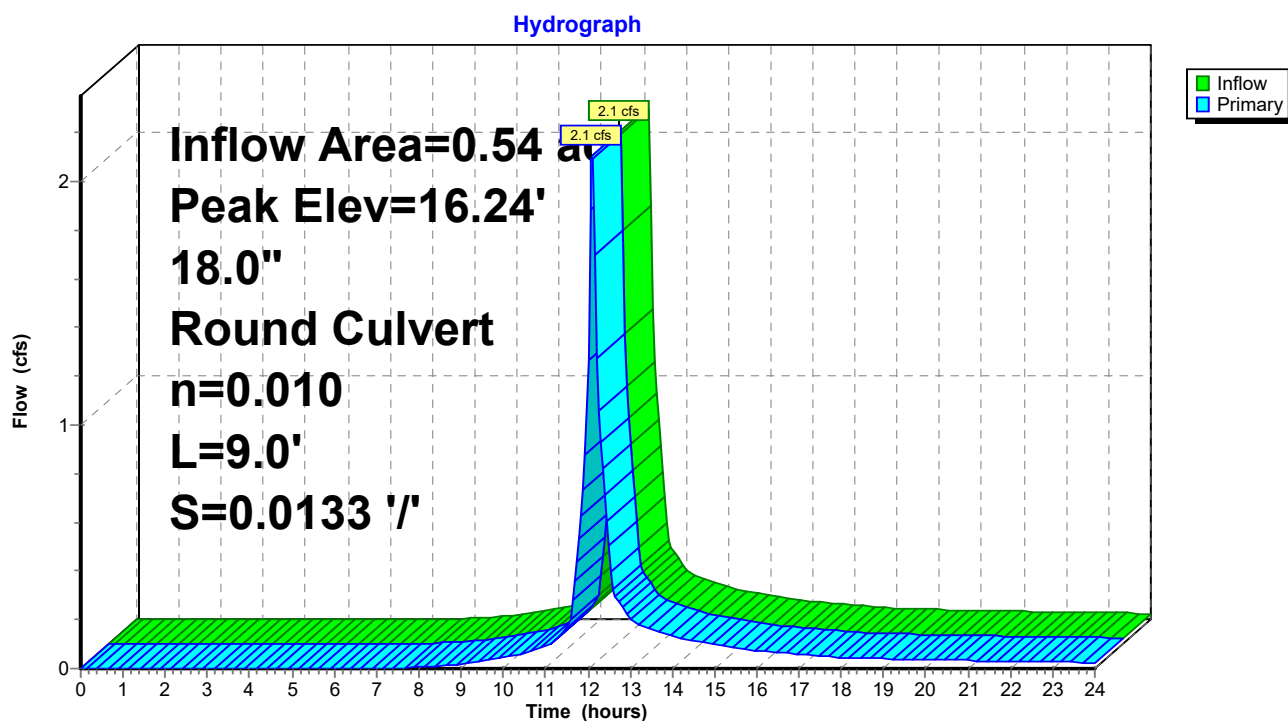
Flood Elev= 23.84'

Device	Routing	Invert	Outlet Devices
#1	Primary	15.44'	18.0" Round Culvert L= 9.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.44' / 15.32' S= 0.0133 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.1 cfs @ 12.09 hrs HW=16.23' TW=15.69' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 2.1 cfs @ 3.18 fps)

Pond 25P: Ex DMH5



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Summary for Pond 26P: Ex DMH6

Inflow Area = 1.23 ac, 64.68% Impervious, Inflow Depth > 3.63" for 25-Year Storm event
Inflow = 5.1 cfs @ 12.09 hrs, Volume= 0.373 af
Outflow = 5.1 cfs @ 12.09 hrs, Volume= 0.373 af, Atten= 0%, Lag= 0.0 min
Primary = 5.1 cfs @ 12.09 hrs, Volume= 0.373 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.73' @ 12.11 hrs

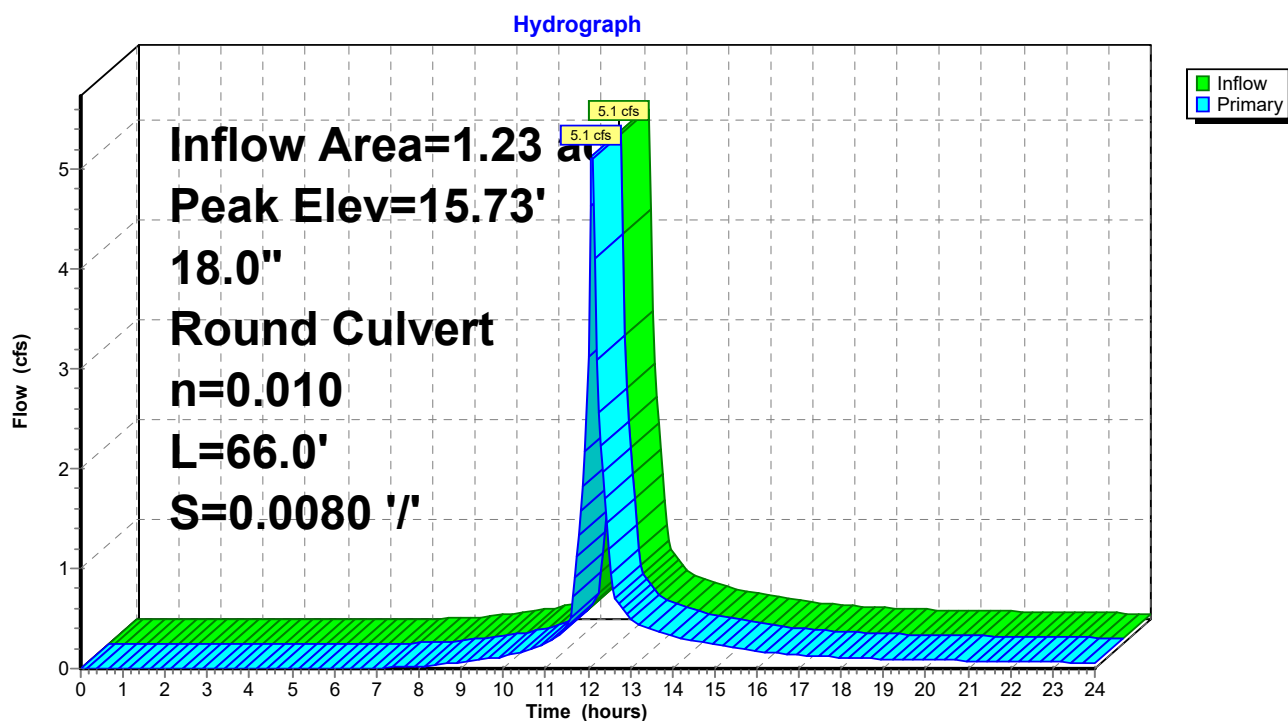
Flood Elev= 23.95'

Device	Routing	Invert	Outlet Devices
#1	Primary	14.30'	18.0" Round Culvert L= 66.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.30' / 13.77' S= 0.0080 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.5 cfs @ 12.09 hrs HW=15.69' TW=15.20' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 4.5 cfs @ 2.65 fps)

Pond 26P: Ex DMH6



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Summary for Pond 27P: Ex DMH7

Inflow Area = 1.23 ac, 64.68% Impervious, Inflow Depth > 3.63" for 25-Year Storm event
Inflow = 5.1 cfs @ 12.09 hrs, Volume= 0.373 af
Outflow = 5.1 cfs @ 12.09 hrs, Volume= 0.373 af, Atten= 0%, Lag= 0.0 min
Primary = 5.1 cfs @ 12.09 hrs, Volume= 0.373 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

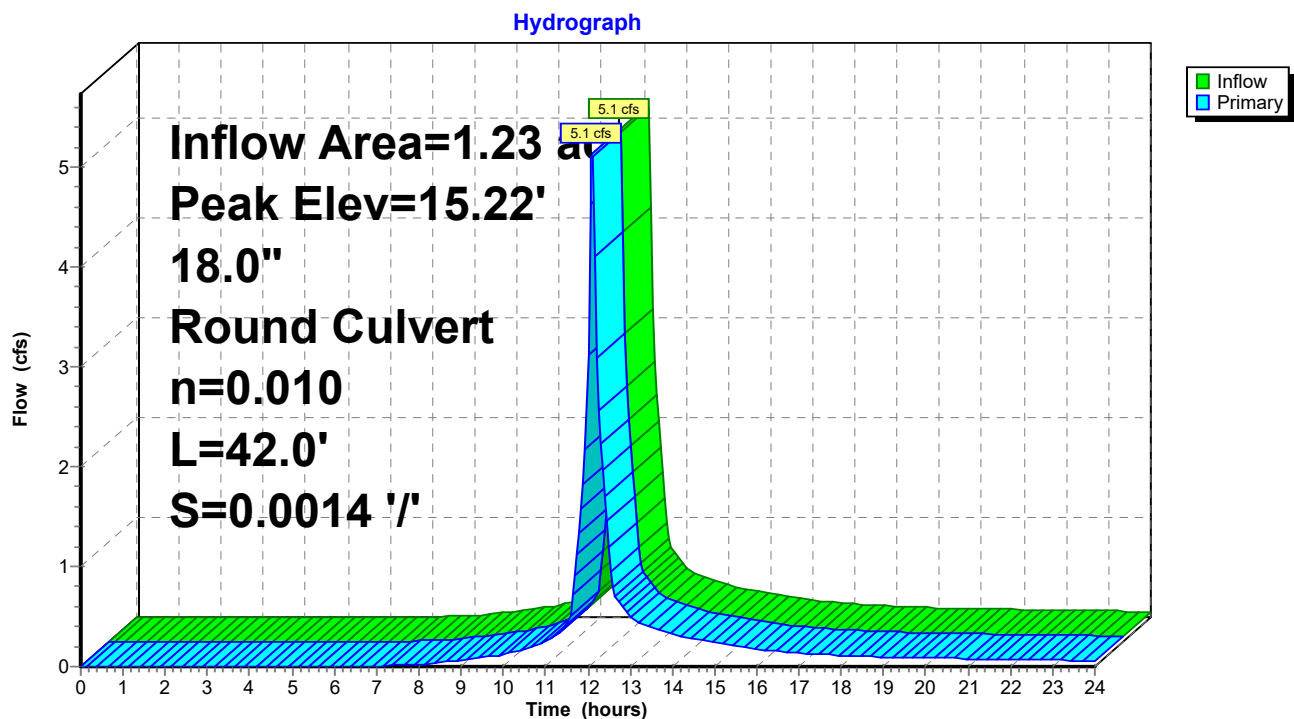
Peak Elev= 15.22' @ 12.09 hrs

Flood Elev= 24.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	13.70'	18.0" Round Culvert L= 42.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.70' / 13.64' S= 0.0014 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=5.0 cfs @ 12.09 hrs HW=15.20' TW=0.00' (Dynamic Tailwater)
↑1=Culvert (Barrel Controls 5.0 cfs @ 3.52 fps)

Pond 27P: Ex DMH7



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Pond 29P: Ex DMH9

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 3.41" for 25-Year Storm event
Inflow = 2.1 cfs @ 12.09 hrs, Volume= 0.152 af
Outflow = 2.1 cfs @ 12.09 hrs, Volume= 0.152 af, Atten= 0%, Lag= 0.0 min
Primary = 2.1 cfs @ 12.09 hrs, Volume= 0.152 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

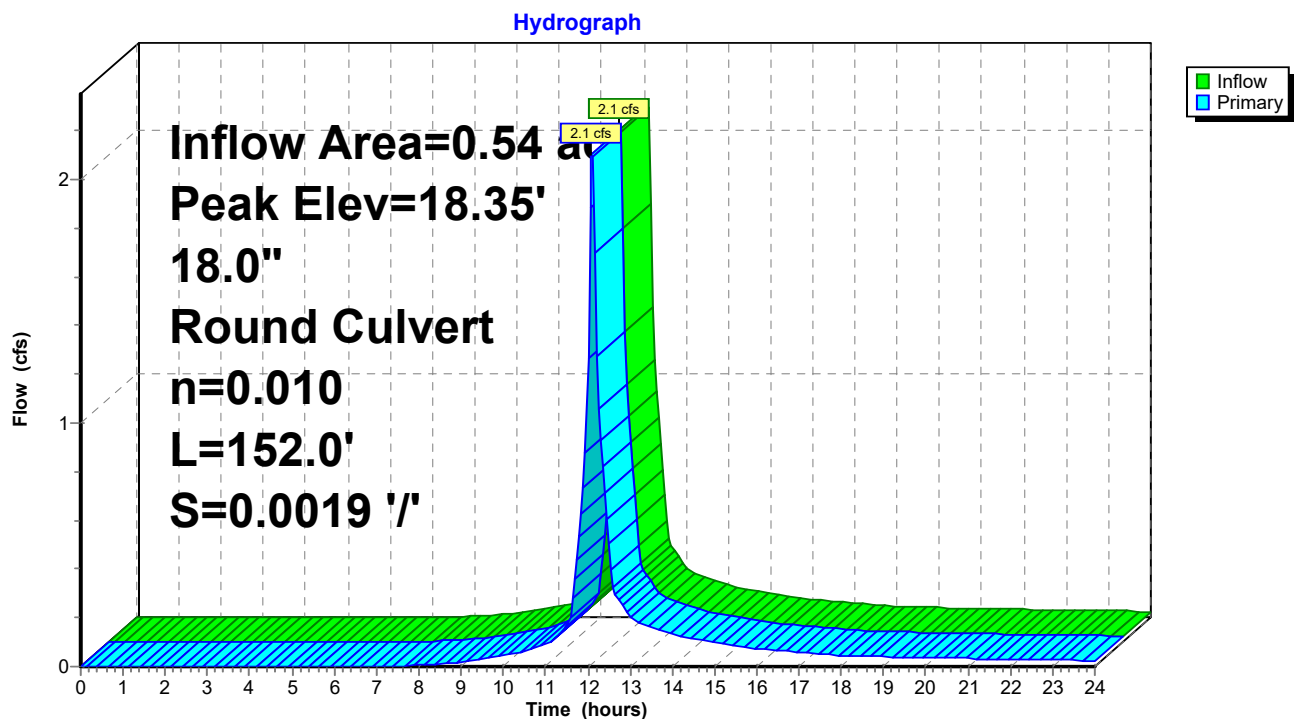
Peak Elev= 18.35' @ 12.11 hrs

Flood Elev= 23.44'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.46'	18.0" Round Culvert L= 152.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.46' / 17.17' S= 0.0019 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.9 cfs @ 12.09 hrs HW=18.33' TW=17.96' (Dynamic Tailwater)
↑1=Culvert (Outlet Controls 1.9 cfs @ 2.54 fps)

Pond 29P: Ex DMH9



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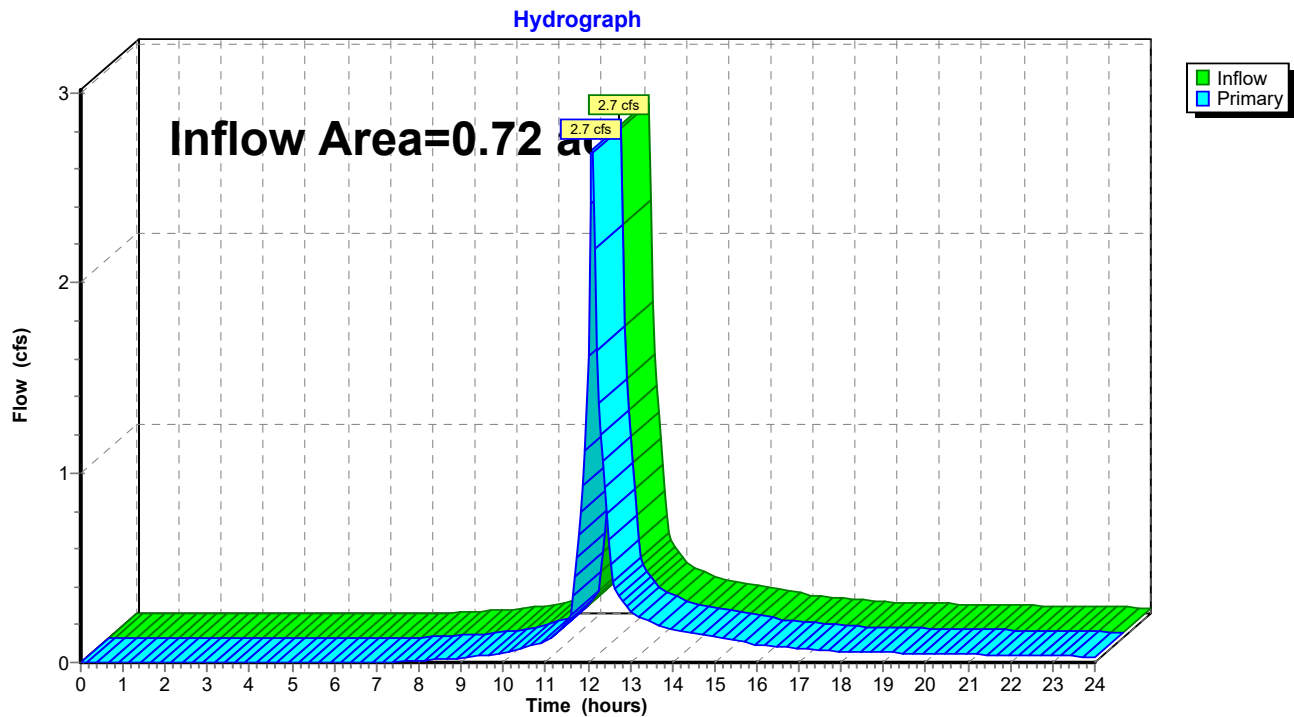
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Summary for Link SP1: Forest Ave Storm Drain

Inflow Area = 0.72 ac, 39.36% Impervious, Inflow Depth > 3.27" for 25-Year Storm event
Inflow = 2.7 cfs @ 12.09 hrs, Volume= 0.197 af
Primary = 2.7 cfs @ 12.09 hrs, Volume= 0.197 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP1: Forest Ave Storm Drain



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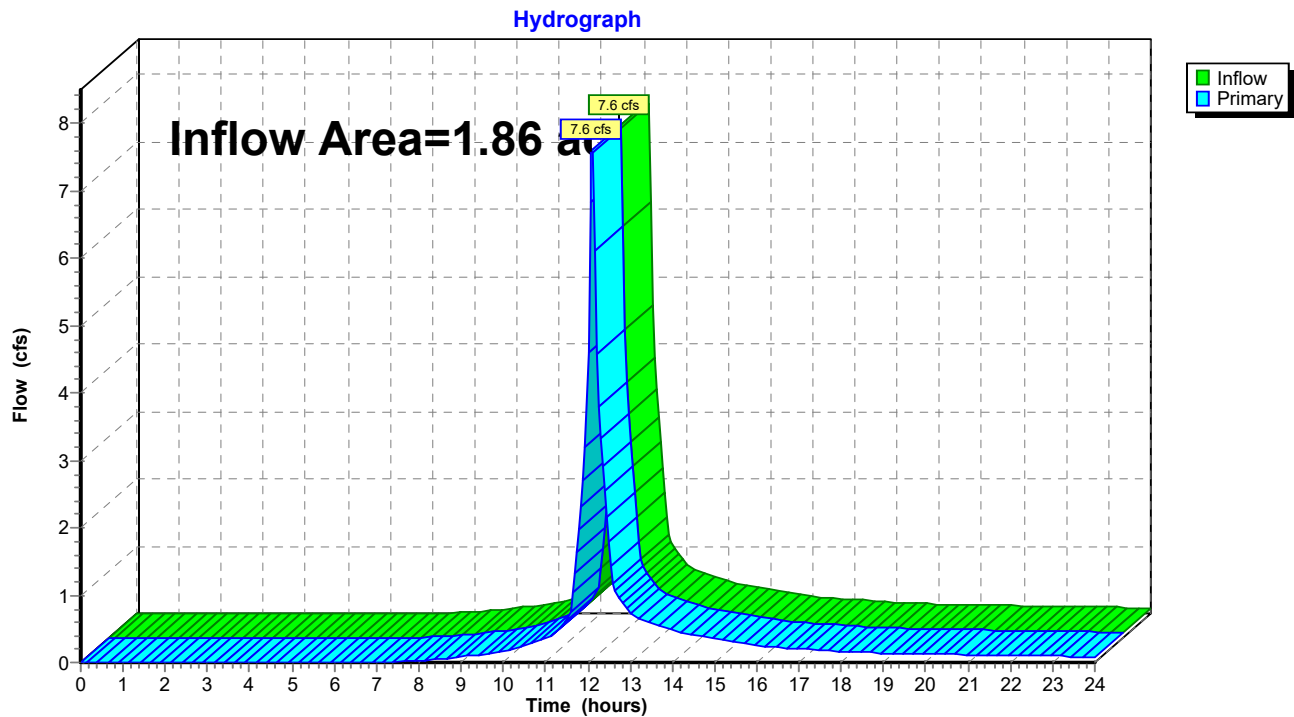
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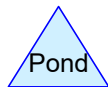
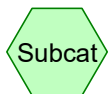
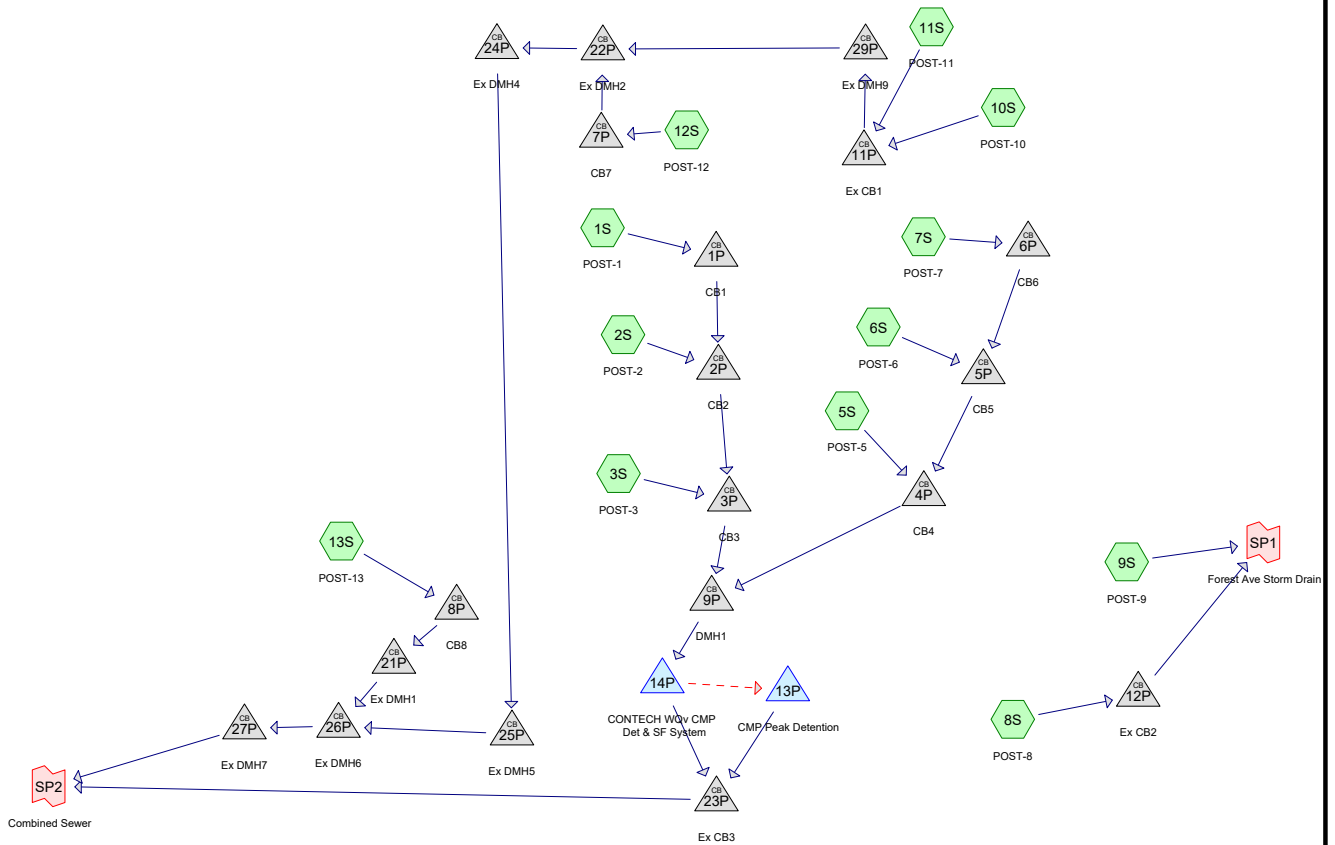
Summary for Link SP2: Combined Sewer

Inflow Area = 1.86 ac, 62.17% Impervious, Inflow Depth > 3.55" for 25-Year Storm event
Inflow = 7.6 cfs @ 12.09 hrs, Volume= 0.552 af
Primary = 7.6 cfs @ 12.09 hrs, Volume= 0.552 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP2: Combined Sewer





Routing Diagram for C2. Post
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Type III 24-hr 1" Storm Event Rainfall=1.00"

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: POST-1	Runoff Area=5,692 sf 70.24% Impervious Runoff Depth>0.10" Tc=6.0 min CN=81 Runoff=0.0 cfs 0.001 af
Subcatchment2S: POST-2	Runoff Area=9,641 sf 93.94% Impervious Runoff Depth>0.50" Tc=6.0 min CN=94 Runoff=0.1 cfs 0.009 af
Subcatchment3S: POST-3	Runoff Area=15,050 sf 86.74% Impervious Runoff Depth>0.32" Tc=6.0 min CN=90 Runoff=0.1 cfs 0.009 af
Subcatchment5S: POST-5	Runoff Area=6,810 sf 75.96% Impervious Runoff Depth>0.15" Tc=6.0 min CN=84 Runoff=0.0 cfs 0.002 af
Subcatchment6S: POST-6	Runoff Area=9,346 sf 95.25% Impervious Runoff Depth>0.56" Tc=6.0 min CN=95 Runoff=0.1 cfs 0.010 af
Subcatchment7S: POST-7	Runoff Area=5,710 sf 71.52% Impervious Runoff Depth>0.10" Tc=6.0 min CN=81 Runoff=0.0 cfs 0.001 af
Subcatchment8S: POST-8	Runoff Area=3,553 sf 58.65% Impervious Runoff Depth>0.02" Tc=6.0 min CN=74 Runoff=0.0 cfs 0.000 af
Subcatchment9S: POST-9	Runoff Area=14,487 sf 79.34% Impervious Runoff Depth>0.20" Tc=6.0 min CN=86 Runoff=0.1 cfs 0.005 af
Subcatchment10S: POST-10	Runoff Area=7,001 sf 74.06% Impervious Runoff Depth>0.13" Tc=6.0 min CN=83 Runoff=0.0 cfs 0.002 af
Subcatchment11S: POST-11	Runoff Area=10,124 sf 73.25% Impervious Runoff Depth>0.11" Tc=6.0 min CN=82 Runoff=0.0 cfs 0.002 af
Subcatchment12S: POST-12	Runoff Area=12,768 sf 60.52% Impervious Runoff Depth>0.03" Tc=6.0 min CN=75 Runoff=0.0 cfs 0.001 af
Subcatchment13S: POST-13	Runoff Area=12,612 sf 69.88% Impervious Runoff Depth>0.08" Tc=6.0 min CN=80 Runoff=0.0 cfs 0.002 af
Pond 1P: CB1	Peak Elev=18.39' Inflow=0.0 cfs 0.001 af 10.0" Round Culvert n=0.010 L=56.0' S=0.0048 '/' Outflow=0.0 cfs 0.001 af
Pond 2P: CB2	Peak Elev=18.18' Inflow=0.1 cfs 0.010 af 10.0" Round Culvert n=0.010 L=56.0' S=0.0050 '/' Outflow=0.1 cfs 0.010 af
Pond 3P: CB3	Peak Elev=17.85' Inflow=0.3 cfs 0.020 af 15.0" Round Culvert n=0.010 L=21.0' S=0.0048 '/' Outflow=0.3 cfs 0.020 af
Pond 4P: CB4	Peak Elev=17.59' Inflow=0.2 cfs 0.013 af 18.0" Round Culvert n=0.010 L=106.0' S=0.0102 '/' Outflow=0.2 cfs 0.013 af

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Type III 24-hr 1" Storm Event Rainfall=1.00"

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Pond 5P: CB5Peak Elev=17.64' Inflow=0.1 cfs 0.011 af
15.0" Round Culvert n=0.010 L=77.0' S=0.0051 '/' Outflow=0.1 cfs 0.011 af**Pond 6P: CB6**Peak Elev=17.57' Inflow=0.0 cfs 0.001 af
15.0" Round Culvert n=0.010 L=53.0' S=0.0051 '/' Outflow=0.0 cfs 0.001 af**Pond 7P: CB7**Peak Elev=17.42' Inflow=0.0 cfs 0.001 af
8.0" Round Culvert n=0.010 L=34.0' S=0.0100 '/' Outflow=0.0 cfs 0.001 af**Pond 8P: CB8**Peak Elev=14.91' Inflow=0.0 cfs 0.002 af
18.0" Round Culvert n=0.010 L=18.0' S=0.0028 '/' Outflow=0.0 cfs 0.002 af**Pond 9P: DMH1**Peak Elev=17.62' Inflow=0.4 cfs 0.033 af
18.0" Round Culvert n=0.010 L=15.0' S=0.0047 '/' Outflow=0.4 cfs 0.033 af**Pond 11P: Ex CB1**Peak Elev=18.56' Inflow=0.0 cfs 0.004 af
12.0" Round Culvert n=0.010 L=41.0' S=0.0224 '/' Outflow=0.0 cfs 0.004 af**Pond 12P: Ex CB2**Peak Elev=18.15' Inflow=0.0 cfs 0.000 af
8.0" Round Culvert n=0.010 L=159.0' S=0.0158 '/' Outflow=0.0 cfs 0.000 af**Pond 13P: CMP Peak Detention**Peak Elev=14.71' Storage=0 cf Inflow=0.0 cfs 0.000 af
Outflow=0.0 cfs 0.000 af**Pond 14P: CONTECHWQv CMP Det & SF**Peak Elev=17.62' Storage=892 cf Inflow=0.4 cfs 0.033 af
Primary=0.0 cfs 0.019 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.019 af**Pond 21P: Ex DMH1**Peak Elev=14.67' Inflow=0.0 cfs 0.002 af
18.0" Round Culvert n=0.010 L=12.0' S=0.0200 '/' Outflow=0.0 cfs 0.002 af**Pond 22P: Ex DMH2**Peak Elev=17.22' Inflow=0.0 cfs 0.005 af
18.0" Round Culvert n=0.010 L=98.0' S=0.0023 '/' Outflow=0.0 cfs 0.005 af**Pond 23P: Ex CB3**Peak Elev=14.12' Inflow=0.0 cfs 0.019 af
21.0" Round Culvert n=0.013 L=252.0' S=0.0044 '/' Outflow=0.0 cfs 0.019 af**Pond 24P: Ex DMH4**Peak Elev=16.85' Inflow=0.0 cfs 0.005 af
18.0" Round Culvert n=0.010 L=198.0' S=0.0019 '/' Outflow=0.0 cfs 0.005 af**Pond 25P: Ex DMH5**Peak Elev=15.52' Inflow=0.0 cfs 0.005 af
18.0" Round Culvert n=0.010 L=9.0' S=0.0133 '/' Outflow=0.0 cfs 0.005 af**Pond 26P: Ex DMH6**Peak Elev=14.39' Inflow=0.0 cfs 0.007 af
18.0" Round Culvert n=0.010 L=66.0' S=0.0080 '/' Outflow=0.0 cfs 0.007 af**Pond 27P: Ex DMH7**Peak Elev=13.82' Inflow=0.0 cfs 0.007 af
18.0" Round Culvert n=0.010 L=42.0' S=0.0014 '/' Outflow=0.0 cfs 0.007 af**Pond 29P: Ex DMH9**Peak Elev=17.56' Inflow=0.0 cfs 0.004 af
18.0" Round Culvert n=0.010 L=152.0' S=0.0019 '/' Outflow=0.0 cfs 0.004 af

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Link SP1: Forest Ave Storm Drain

Inflow=0.1 cfs 0.006 af
Primary=0.1 cfs 0.006 af

Link SP2: Combined Sewer

Inflow=0.1 cfs 0.026 af
Primary=0.1 cfs 0.026 af

Total Runoff Area = 2.59 ac Runoff Volume = 0.045 af Average Runoff Depth = 0.21"
22.88% Pervious = 0.59 ac 77.12% Impervious = 2.00 ac

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Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Subcatchment 1S: POST-1

Runoff = 0.0 cfs @ 12.27 hrs, Volume= 0.001 af, Depth> 0.10"

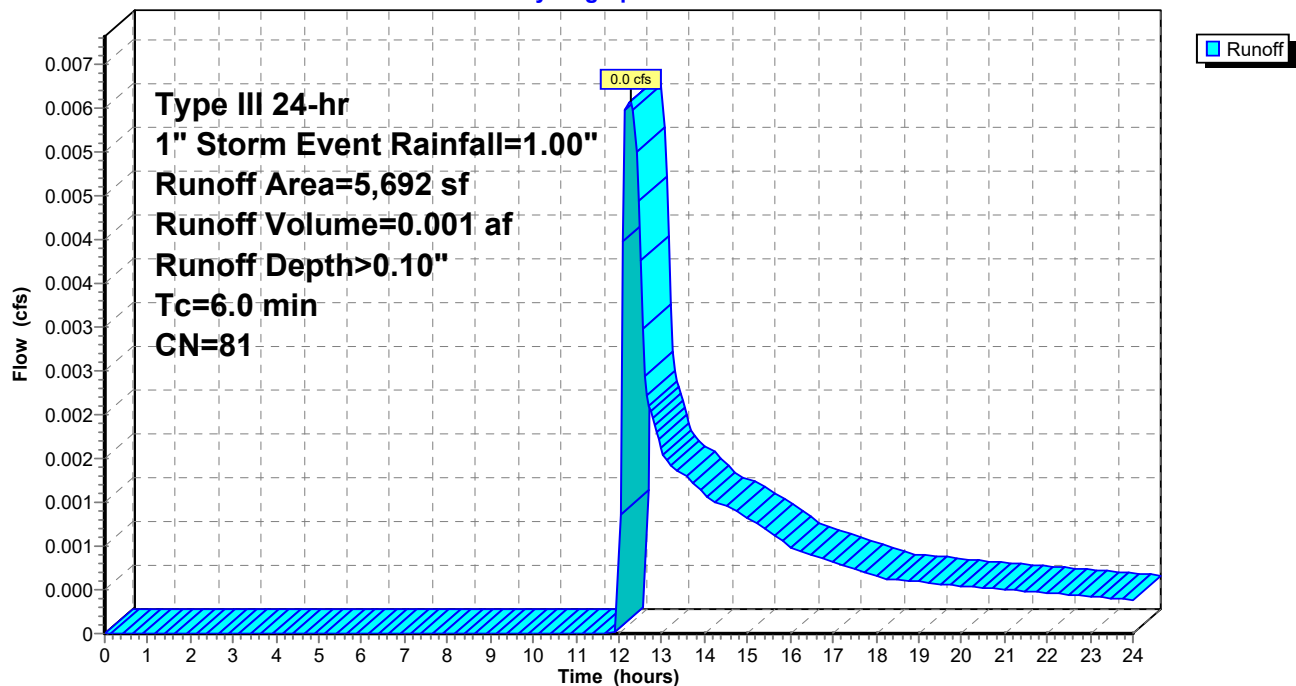
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
3,998	98	Paved parking, HSG A
830	39	Grass cover, Good, HSG A
* 864	40	Porous Pavement
5,692	81	Weighted Average
1,694		29.76% Pervious Area
3,998		70.24% Impervious Area

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

Subcatchment 1S: POST-1

Hydrograph



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Summary for Subcatchment 2S: POST-2

Runoff = 0.1 cfs @ 12.09 hrs, Volume= 0.009 af, Depth> 0.50"

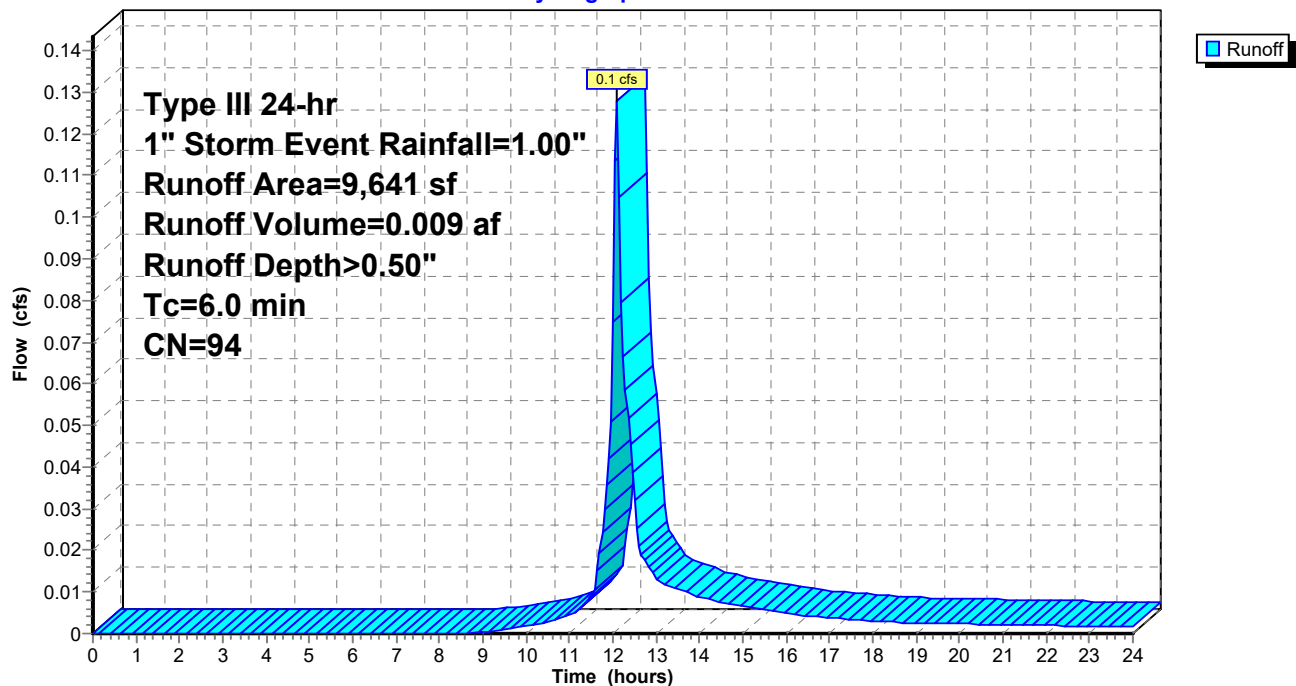
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
9,057	98	Paved parking, HSG A
502	39	Grass cover, Good, HSG A
* 82	40	Porous Pavement
9,641	94	Weighted Average
584		6.06% Pervious Area
9,057		93.94% Impervious Area

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

Subcatchment 2S: POST-2

Hydrograph



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Summary for Subcatchment 3S: POST-3

Runoff = 0.1 cfs @ 12.10 hrs, Volume= 0.009 af, Depth> 0.32"

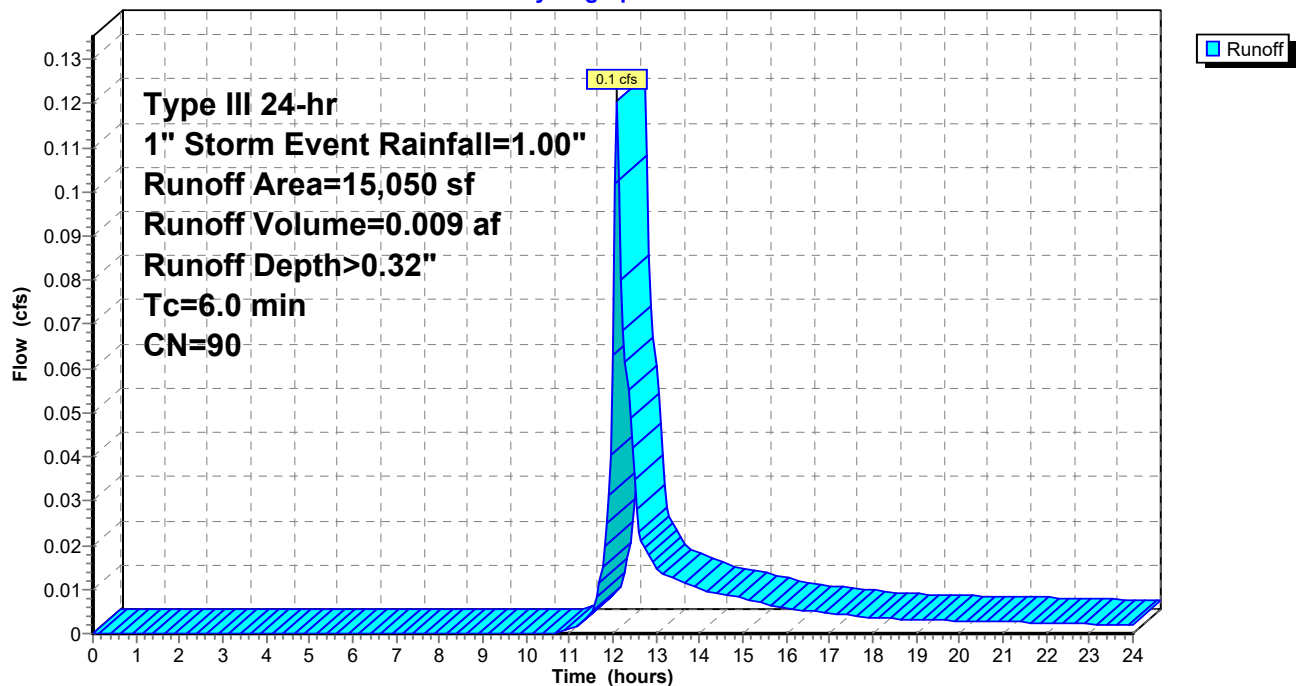
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
13,054	98	Paved parking, HSG A
1,909	39	Grass cover, Good, HSG A
* 87	40	Porous Pavement
15,050	90	Weighted Average
1,996		13.26% Pervious Area
13,054		86.74% Impervious Area

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

Subcatchment 3S: POST-3

Hydrograph



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Summary for Subcatchment 5S: POST-5

Runoff = 0.0 cfs @ 12.12 hrs, Volume= 0.002 af, Depth> 0.15"

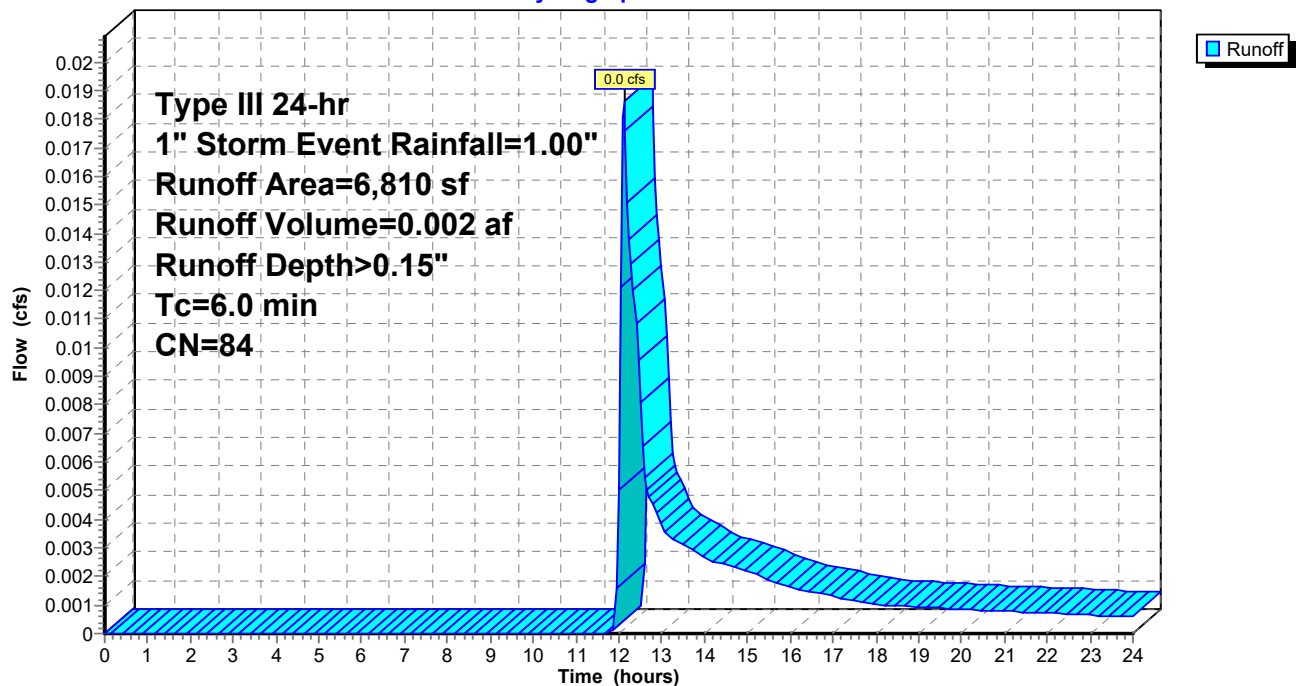
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
5,173	98	Paved parking, HSG A
1,547	39	Grass cover, Good, HSG A
* 90	40	Porous Pavement
6,810	84	Weighted Average
1,637		24.04% Pervious Area
5,173		75.96% Impervious Area

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

Subcatchment 5S: POST-5

Hydrograph



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Summary for Subcatchment 6S: POST-6

Runoff = 0.1 cfs @ 12.09 hrs, Volume= 0.010 af, Depth> 0.56"

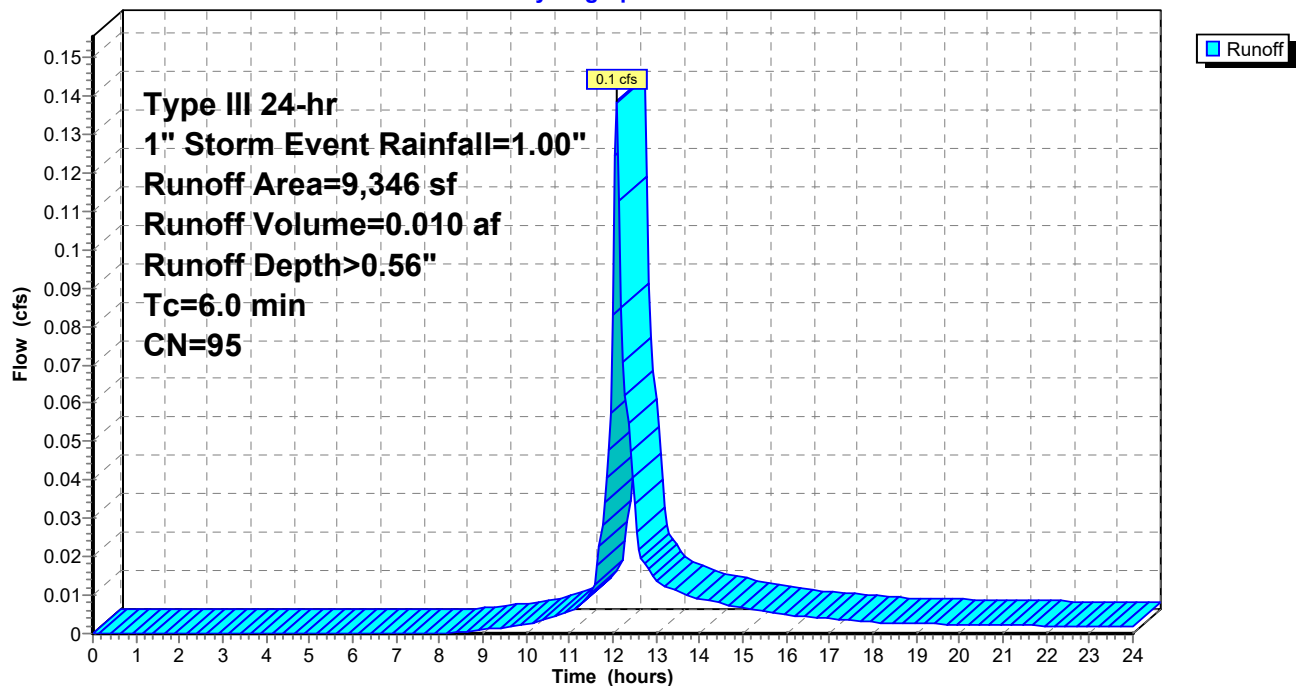
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
8,902	98	Paved parking, HSG A
351	39	Grass cover, Good, HSG A
* 93	40	Porous Pavement
9,346	95	Weighted Average
444		4.75% Pervious Area
8,902		95.25% Impervious Area

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

Subcatchment 6S: POST-6

Hydrograph



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Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Subcatchment 7S: POST-7

Runoff = 0.0 cfs @ 12.27 hrs, Volume= 0.001 af, Depth> 0.10"

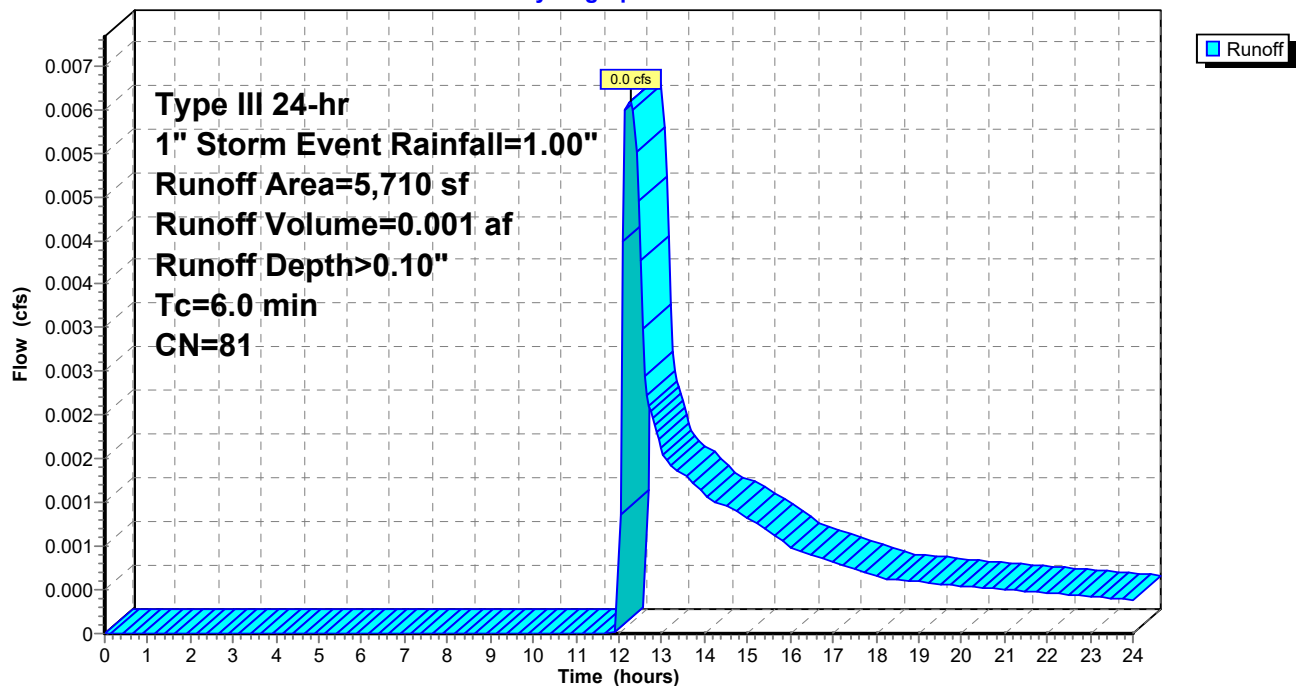
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
4,084	98	Paved parking, HSG A
809	39	Grass cover, Good, HSG A
* 817	40	Porous Pavement
5,710	81	Weighted Average
1,626		28.48% Pervious Area
4,084		71.52% Impervious Area

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

Subcatchment 7S: POST-7

Hydrograph



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Summary for Subcatchment 8S: POST-8

Runoff = 0.0 cfs @ 14.78 hrs, Volume= 0.000 af, Depth> 0.02"

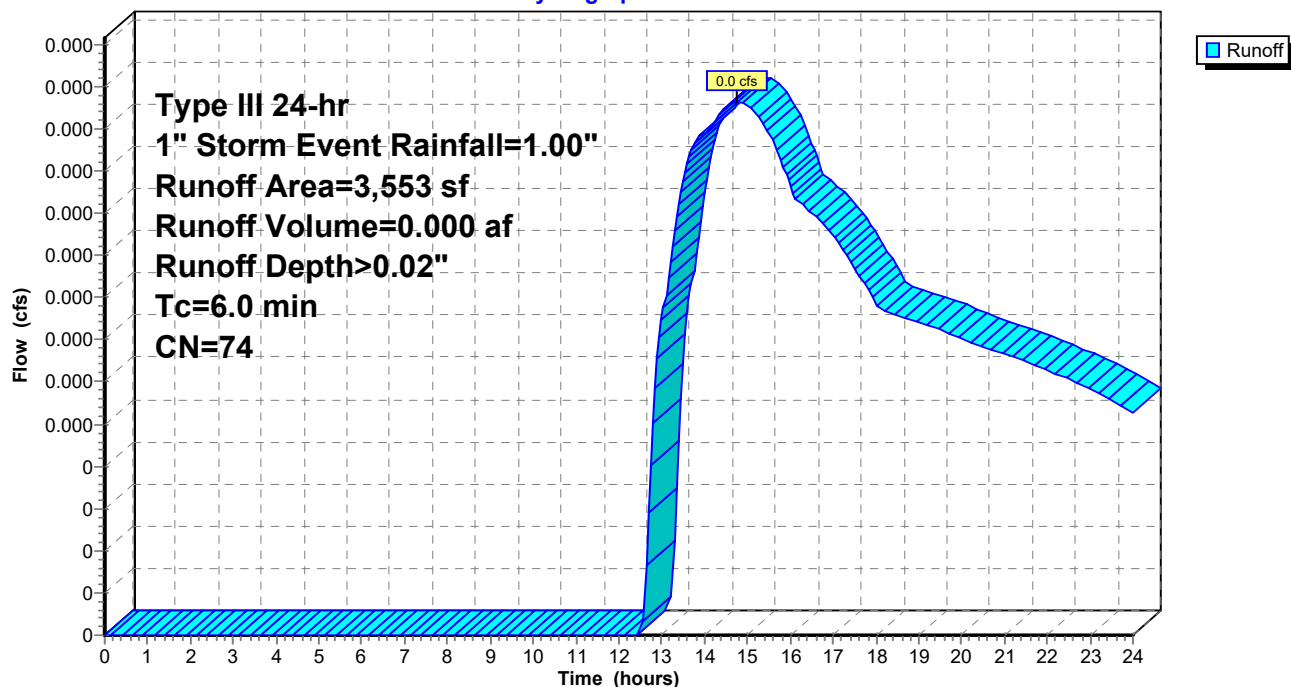
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
2,084	98	Paved parking, HSG A
1,469	39	Grass cover, Good, HSG A
3,553	74	Weighted Average
1,469		41.35% Pervious Area
2,084		58.65% Impervious Area

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

Subcatchment 8S: POST-8

Hydrograph



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Summary for Subcatchment 9S: POST-9

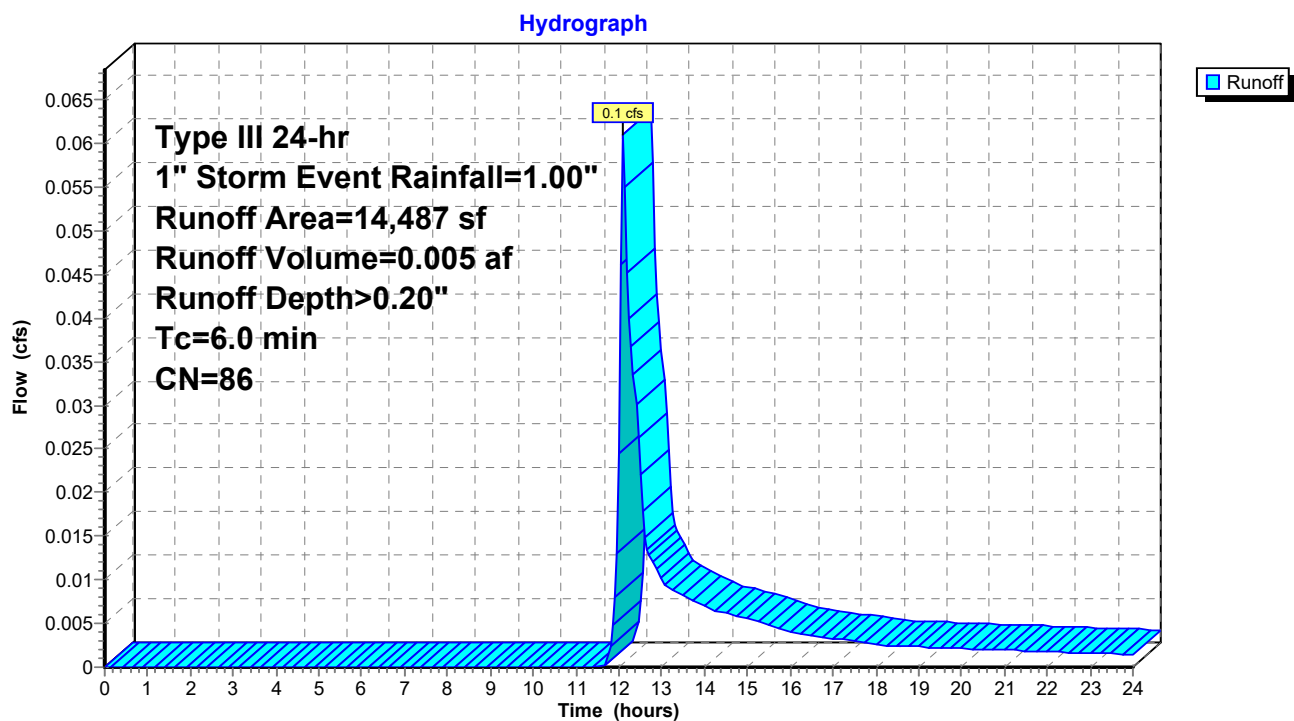
Runoff = 0.1 cfs @ 12.11 hrs, Volume= 0.005 af, Depth> 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
11,494	98	Paved parking, HSG A
2,993	39	Grass cover, Good, HSG A
14,487	86	Weighted Average
2,993		20.66% Pervious Area
11,494		79.34% Impervious Area

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

Subcatchment 9S: POST-9



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Summary for Subcatchment 10S: POST-10

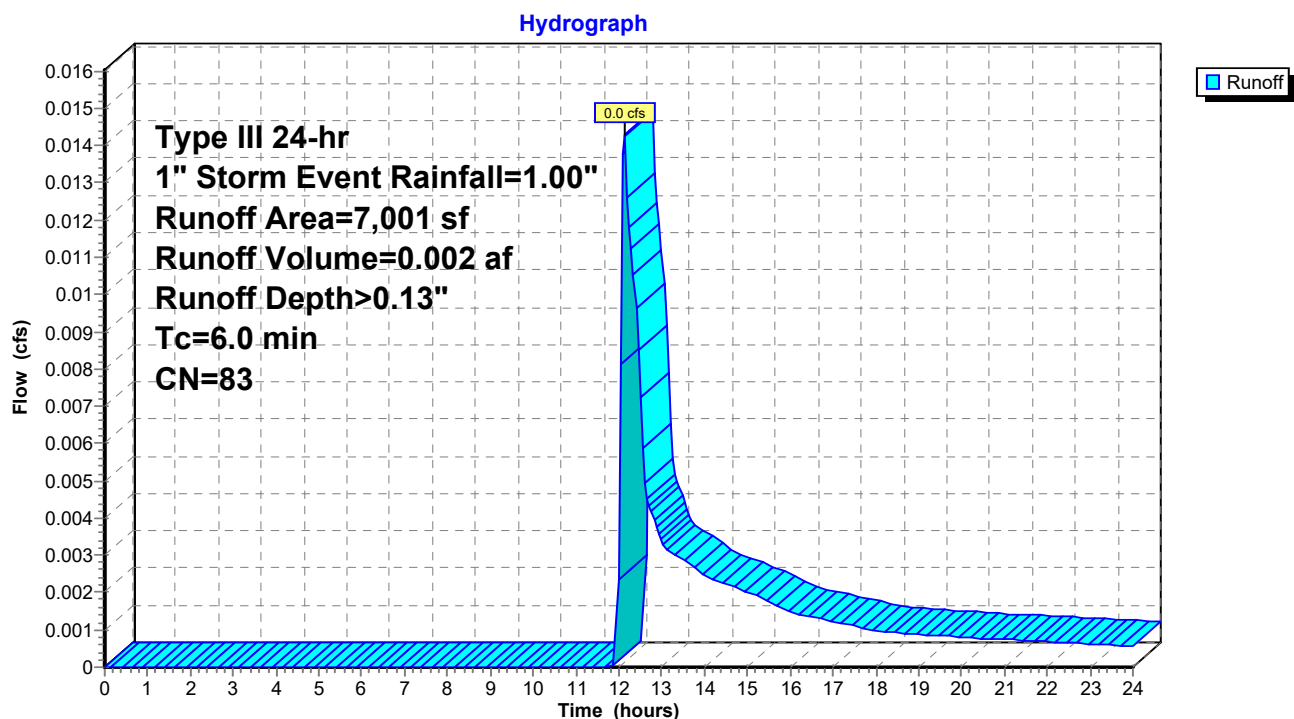
Runoff = 0.0 cfs @ 12.14 hrs, Volume= 0.002 af, Depth> 0.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
5,185	98	Paved parking, HSG A
1,816	39	Grass cover, Good, HSG A
7,001	83	Weighted Average
1,816		25.94% Pervious Area
5,185		74.06% Impervious Area

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

Subcatchment 10S: POST-10



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Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Subcatchment 11S: POST-11

Runoff = 0.0 cfs @ 12.16 hrs, Volume= 0.002 af, Depth> 0.11"

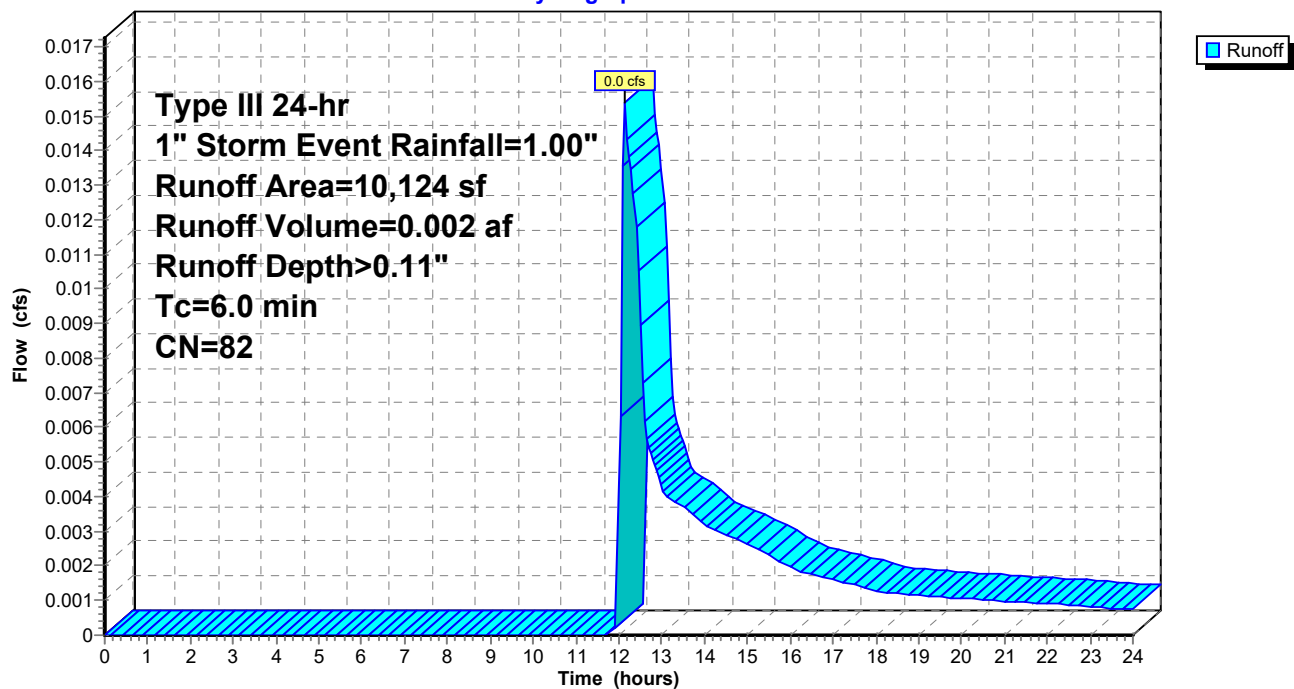
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
7,416	98	Paved parking, HSG A
2,708	39	Grass cover, Good, HSG A
10,124	82	Weighted Average
2,708		26.75% Pervious Area
7,416		73.25% Impervious Area

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

Subcatchment 11S: POST-11

Hydrograph



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Summary for Subcatchment 12S: POST-12

Runoff = 0.0 cfs @ 13.77 hrs, Volume= 0.001 af, Depth> 0.03"

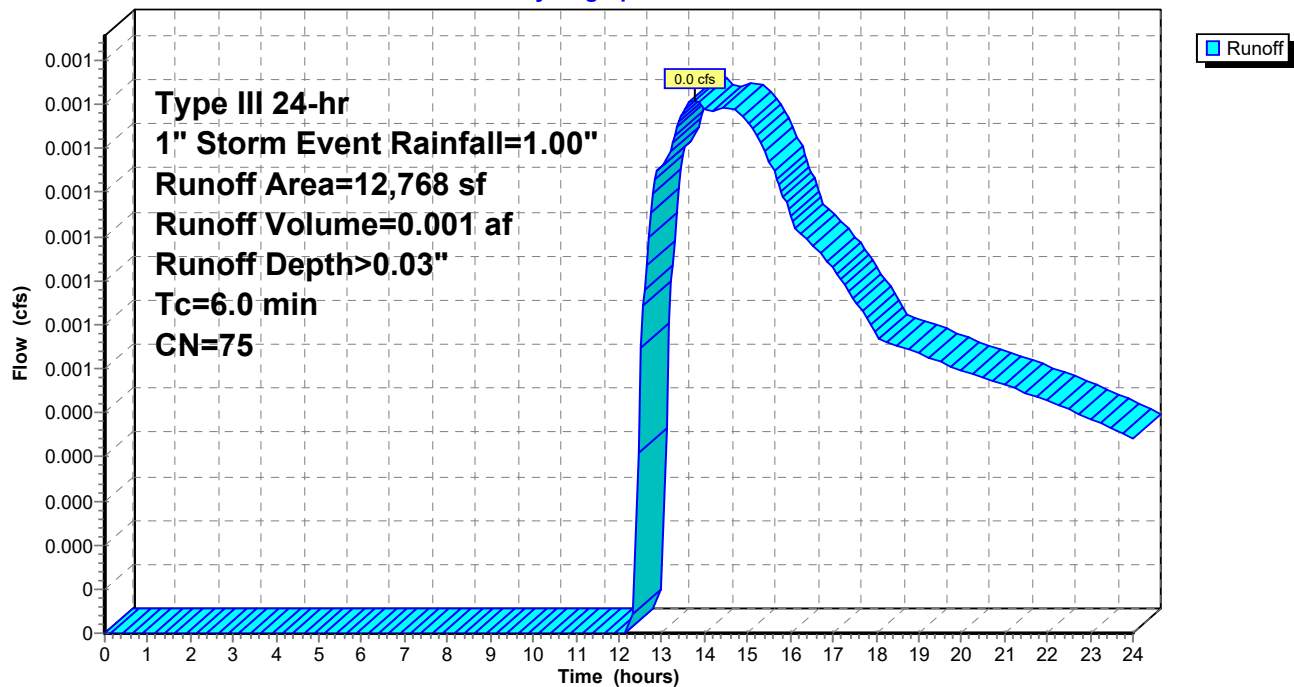
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
7,727	98	Paved parking, HSG A
5,041	39	Grass cover, Good, HSG A
12,768	75	Weighted Average
5,041		39.48% Pervious Area
7,727		60.52% Impervious Area

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

Subcatchment 12S: POST-12

Hydrograph



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Summary for Subcatchment 13S: POST-13

Runoff = 0.0 cfs @ 12.32 hrs, Volume= 0.002 af, Depth> 0.08"

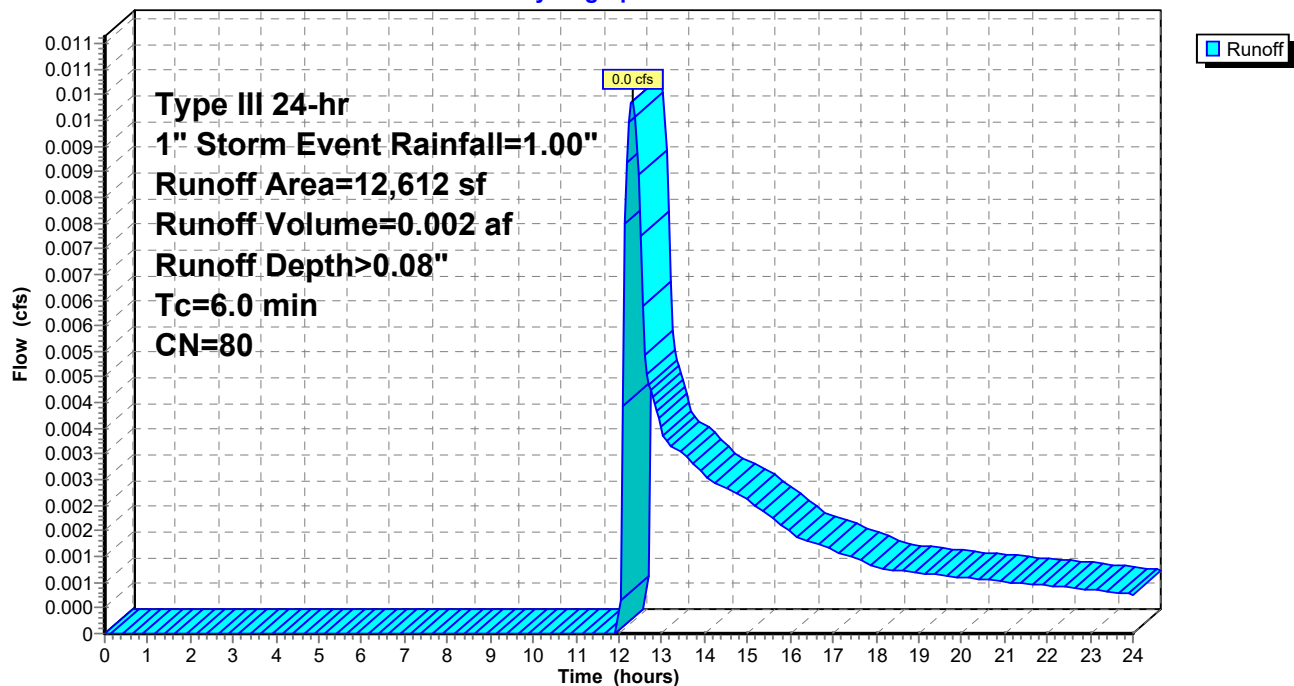
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
8,813	98	Paved parking, HSG A
3,299	39	Grass cover, Good, HSG A
* 500	40	Porous Pavement
12,612	80	Weighted Average
3,799		30.12% Pervious Area
8,813		69.88% Impervious Area

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

Subcatchment 13S: POST-13

Hydrograph



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Summary for Pond 1P: CB1

Inflow Area = 0.13 ac, 70.24% Impervious, Inflow Depth > 0.10" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.27 hrs, Volume= 0.001 af
Outflow = 0.0 cfs @ 12.27 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.27 hrs, Volume= 0.001 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 18.39' @ 12.17 hrs

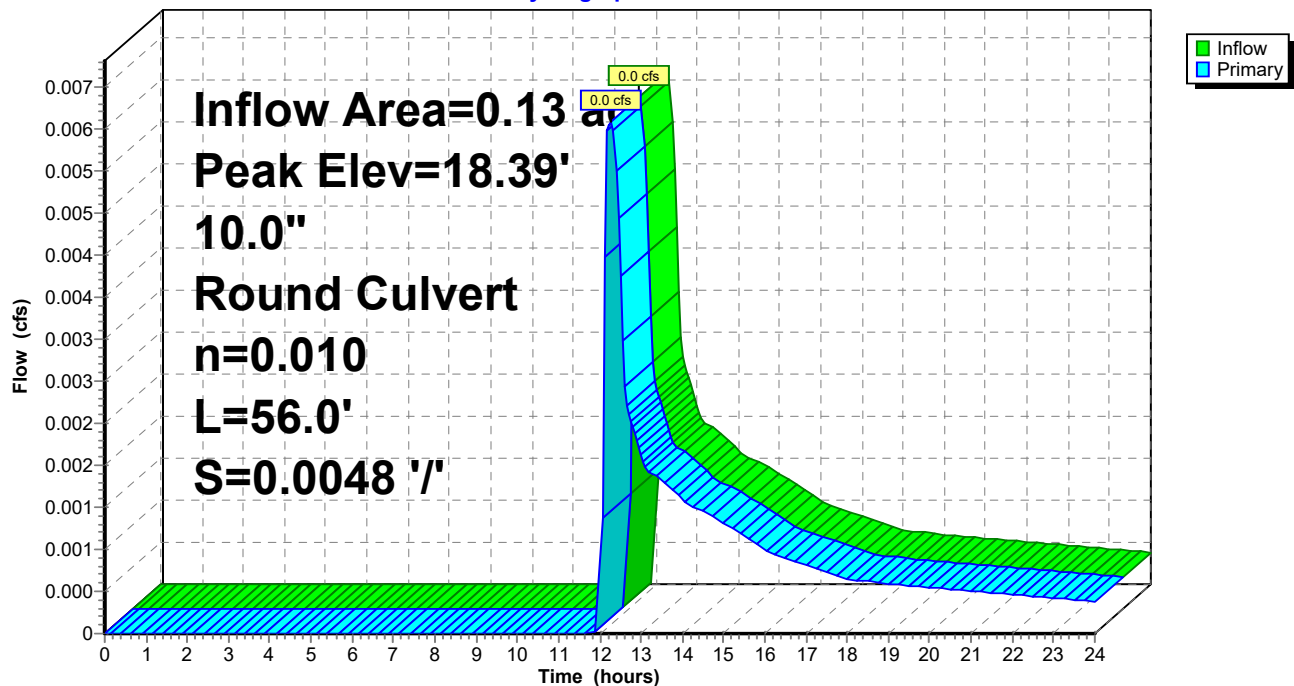
Flood Elev= 22.34'

Device	Routing	Invert	Outlet Devices
#1	Primary	18.34'	10.0" Round Culvert L= 56.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.34' / 18.07' S= 0.0048 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.0 cfs @ 12.27 hrs HW=18.39' TW=18.12' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 0.0 cfs @ 0.79 fps)

Pond 1P: CB1

Hydrograph



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Summary for Pond 2P: CB2

Inflow Area = 0.35 ac, 85.14% Impervious, Inflow Depth > 0.35" for 1" Storm Event event
Inflow = 0.1 cfs @ 12.10 hrs, Volume= 0.010 af
Outflow = 0.1 cfs @ 12.10 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min
Primary = 0.1 cfs @ 12.10 hrs, Volume= 0.010 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 18.18' @ 12.10 hrs

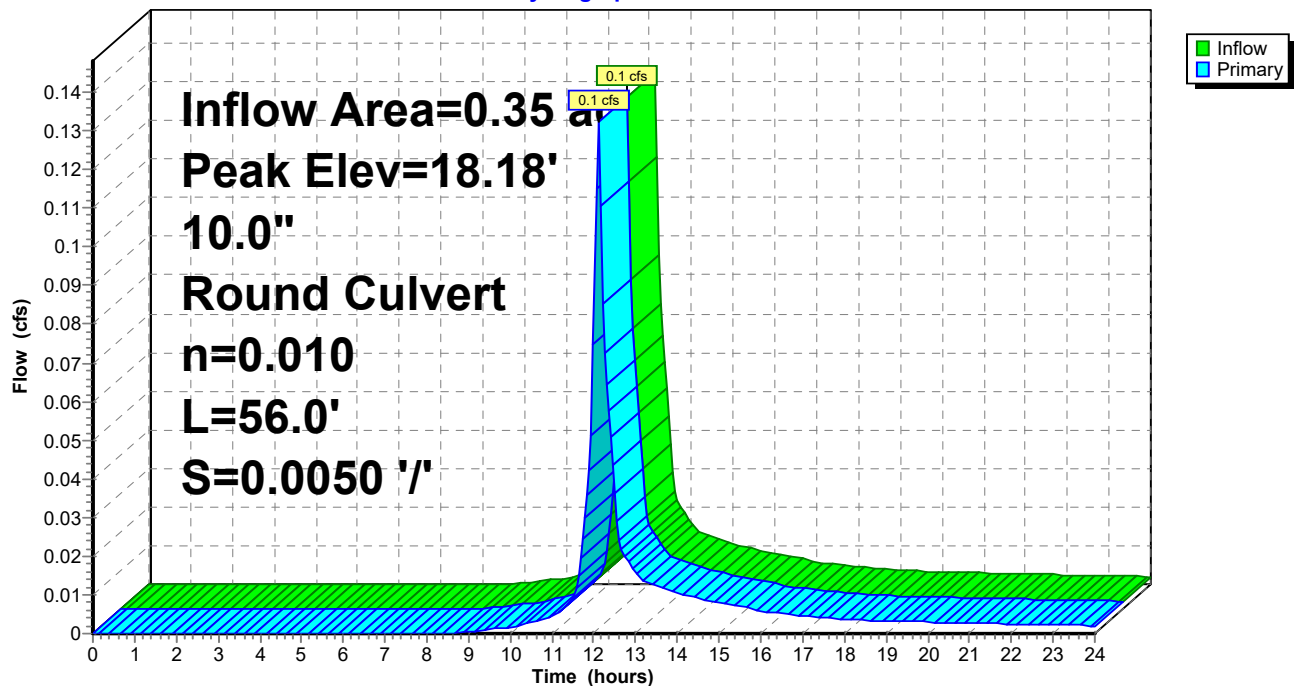
Flood Elev= 22.31'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.97'	10.0" Round Culvert L= 56.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.97' / 17.69' S= 0.0050 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.1 cfs @ 12.10 hrs HW=18.18' TW=17.85' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 0.1 cfs @ 1.23 fps)

Pond 2P: CB2

Hydrograph



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Summary for Pond 3P: CB3

Inflow Area = 0.70 ac, 85.93% Impervious, Inflow Depth > 0.34" for 1" Storm Event event
Inflow = 0.3 cfs @ 12.10 hrs, Volume= 0.020 af
Outflow = 0.3 cfs @ 12.10 hrs, Volume= 0.020 af, Atten= 0%, Lag= 0.0 min
Primary = 0.3 cfs @ 12.10 hrs, Volume= 0.020 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.85' @ 12.10 hrs

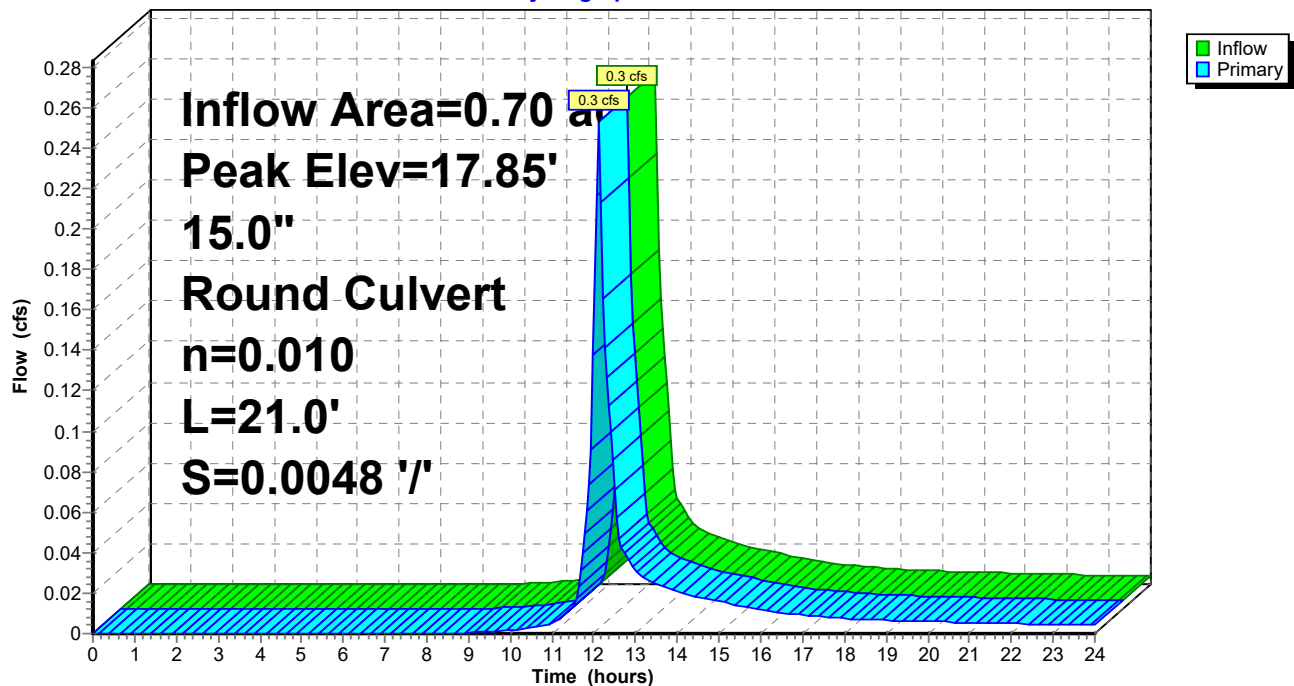
Flood Elev= 22.36'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.58'	15.0" Round Culvert L= 21.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.58' / 17.48' S= 0.0048 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.3 cfs @ 12.10 hrs HW=17.85' TW=16.33' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 0.3 cfs @ 1.94 fps)

Pond 3P: CB3

Hydrograph



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Summary for Pond 4P: CB4

Inflow Area = 0.50 ac, 83.05% Impervious, Inflow Depth > 0.31" for 1" Storm Event event
Inflow = 0.2 cfs @ 12.10 hrs, Volume= 0.013 af
Outflow = 0.2 cfs @ 12.10 hrs, Volume= 0.013 af, Atten= 0%, Lag= 0.0 min
Primary = 0.2 cfs @ 12.10 hrs, Volume= 0.013 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.59' @ 16.15 hrs

Flood Elev= 21.87'

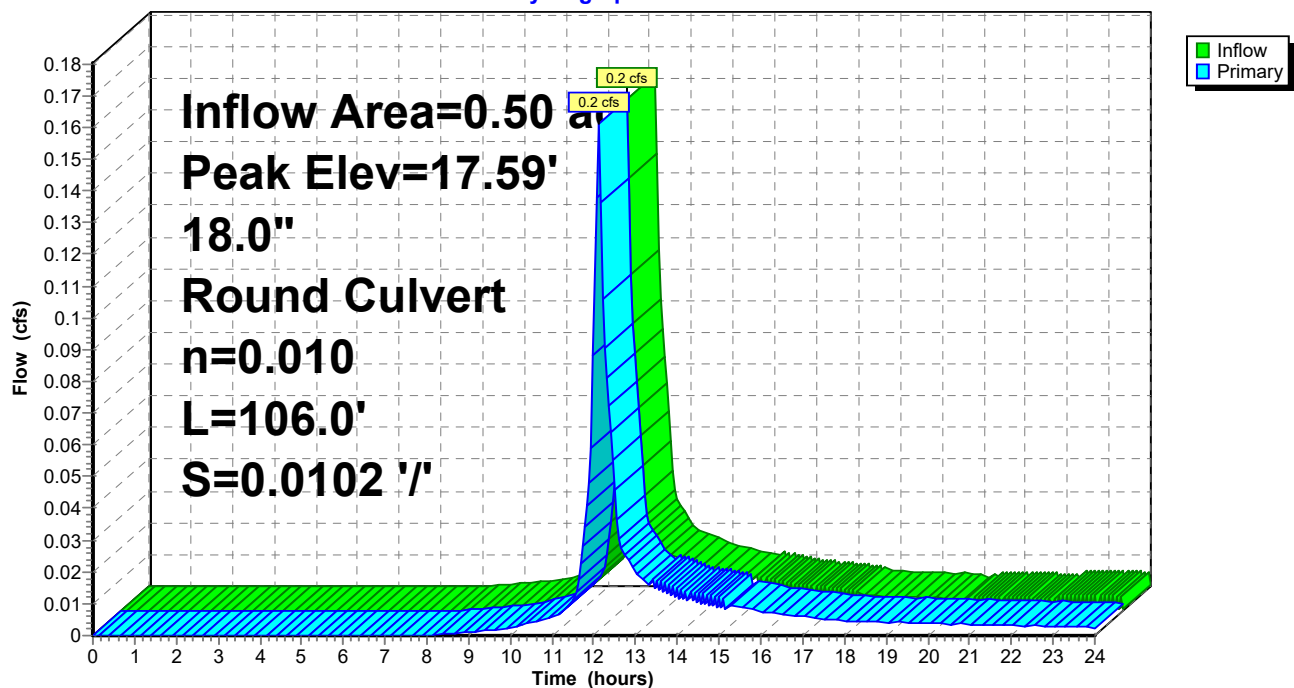
Device	Routing	Invert	Outlet Devices
#1	Primary	15.72'	18.0" Round Culvert L= 106.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.72' / 14.64' S= 0.0102 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.10 hrs HW=16.23' TW=16.33' (Dynamic Tailwater)

↑1=Culvert (Controls 0.0 cfs)

Pond 4P: CB4

Hydrograph



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Summary for Pond 5P: CB5

Inflow Area = 0.35 ac, 86.25% Impervious, Inflow Depth > 0.39" for 1" Storm Event event
Inflow = 0.1 cfs @ 12.10 hrs, Volume= 0.011 af
Outflow = 0.1 cfs @ 12.10 hrs, Volume= 0.011 af, Atten= 0%, Lag= 0.0 min
Primary = 0.1 cfs @ 12.10 hrs, Volume= 0.011 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.64' @ 15.32 hrs

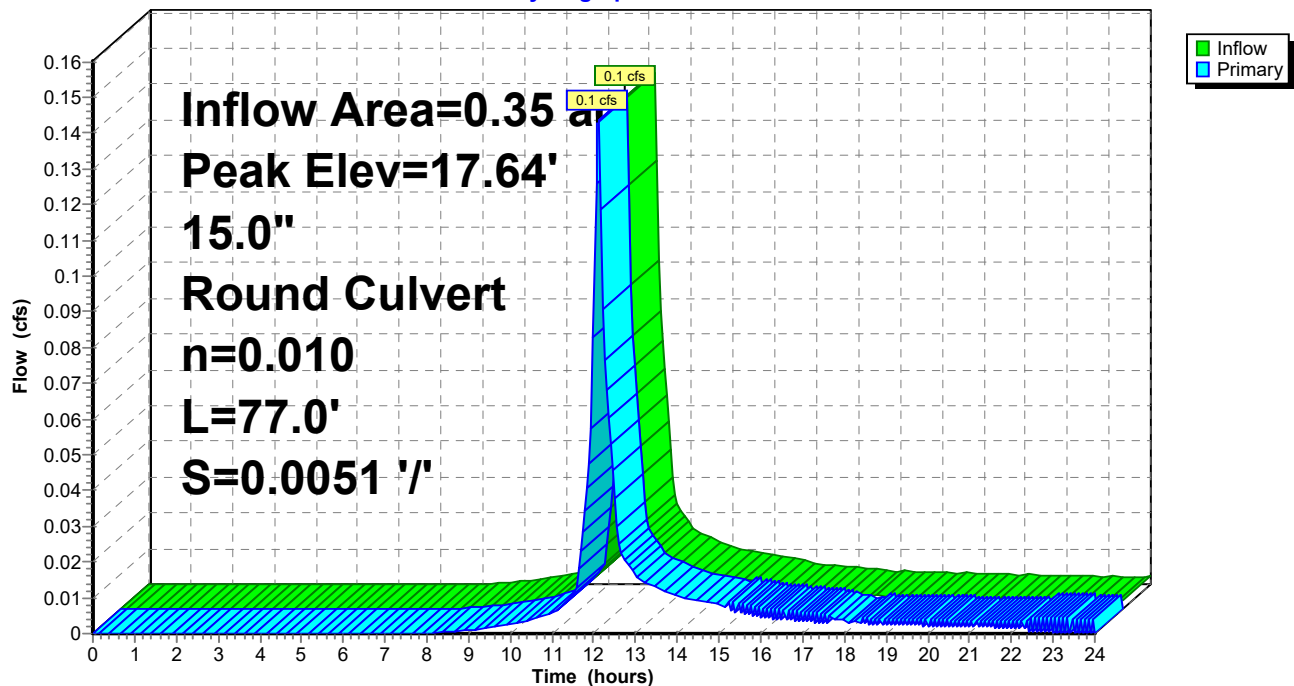
Flood Elev= 21.28'

Device	Routing	Invert	Outlet Devices
#1	Primary	16.90'	15.0" Round Culvert L= 77.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.90' / 16.51' S= 0.0051 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.1 cfs @ 12.10 hrs HW=17.09' TW=16.23' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 0.1 cfs @ 1.18 fps)

Pond 5P: CB5

Hydrograph



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Summary for Pond 6P: CB6

Inflow Area = 0.13 ac, 71.52% Impervious, Inflow Depth > 0.10" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.27 hrs, Volume= 0.001 af
Outflow = 0.0 cfs @ 12.27 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.27 hrs, Volume= 0.001 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.57' @ 15.05 hrs

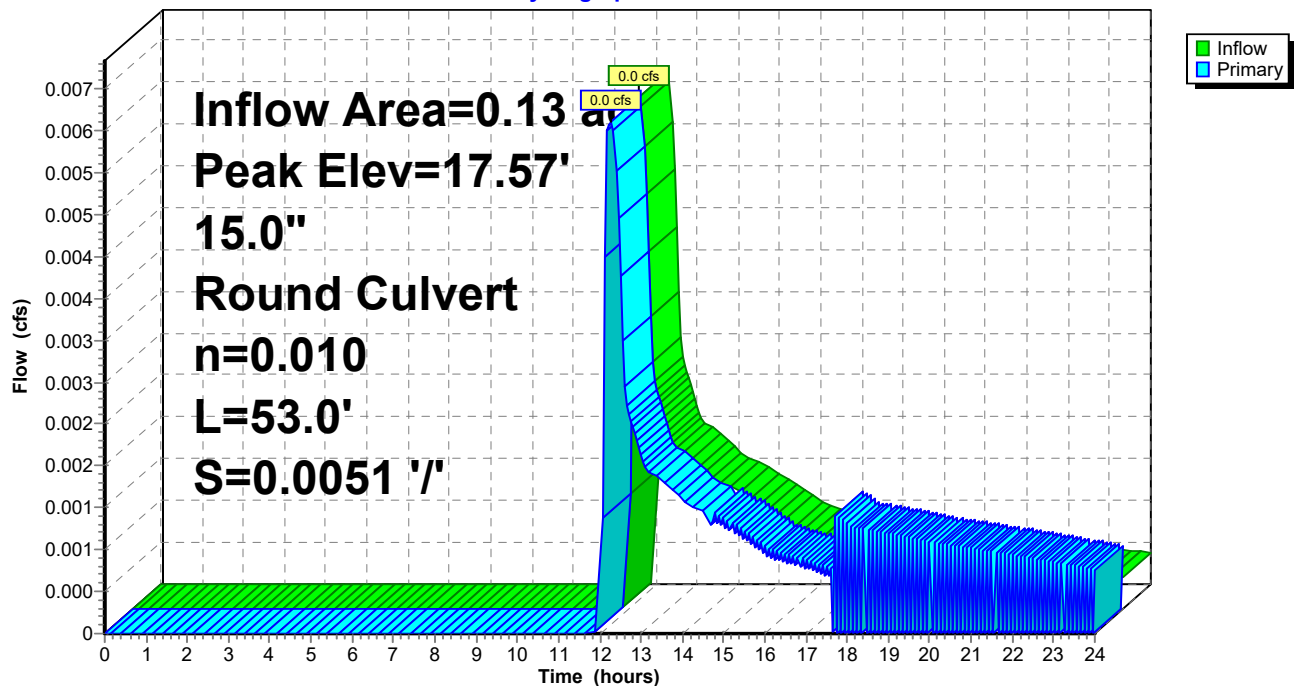
Flood Elev= 21.28'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.28'	15.0" Round Culvert L= 53.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.28' / 17.01' S= 0.0051 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.0 cfs @ 12.27 hrs HW=17.32' TW=17.04' (Dynamic Tailwater)
↑ **1=Culvert** (Barrel Controls 0.0 cfs @ 0.78 fps)

Pond 6P: CB6

Hydrograph



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Summary for Pond 7P: CB7

Inflow Area = 0.29 ac, 60.52% Impervious, Inflow Depth > 0.03" for 1" Storm Event event
Inflow = 0.0 cfs @ 13.77 hrs, Volume= 0.001 af
Outflow = 0.0 cfs @ 13.78 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.6 min
Primary = 0.0 cfs @ 13.78 hrs, Volume= 0.001 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.42' @ 13.75 hrs

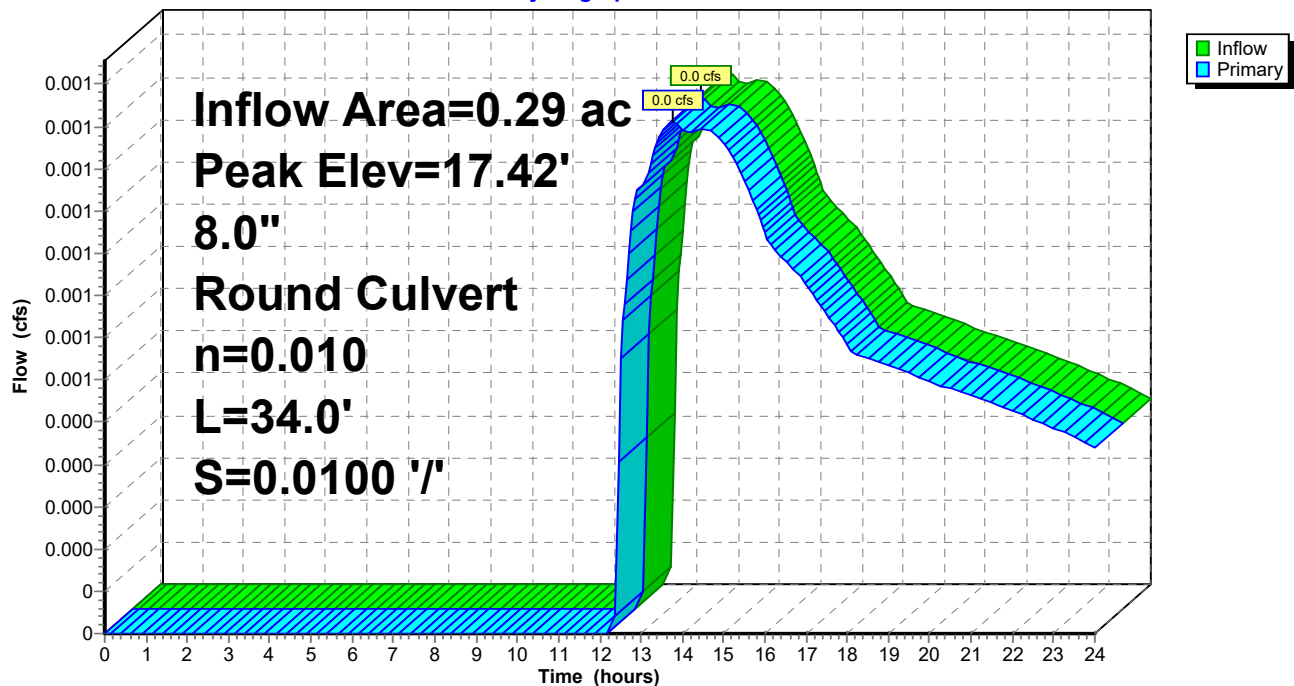
Flood Elev= 23.82'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.40'	8.0" Round Culvert L= 34.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.40' / 17.06' S= 0.0100 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.0 cfs @ 13.78 hrs HW=17.42' TW=17.17' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 0.0 cfs @ 0.59 fps)

Pond 7P: CB7

Hydrograph



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Summary for Pond 8P: CB8

Inflow Area = 0.29 ac, 69.88% Impervious, Inflow Depth > 0.08" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.32 hrs, Volume= 0.002 af
Outflow = 0.0 cfs @ 12.32 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.32 hrs, Volume= 0.002 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 14.91' @ 12.32 hrs

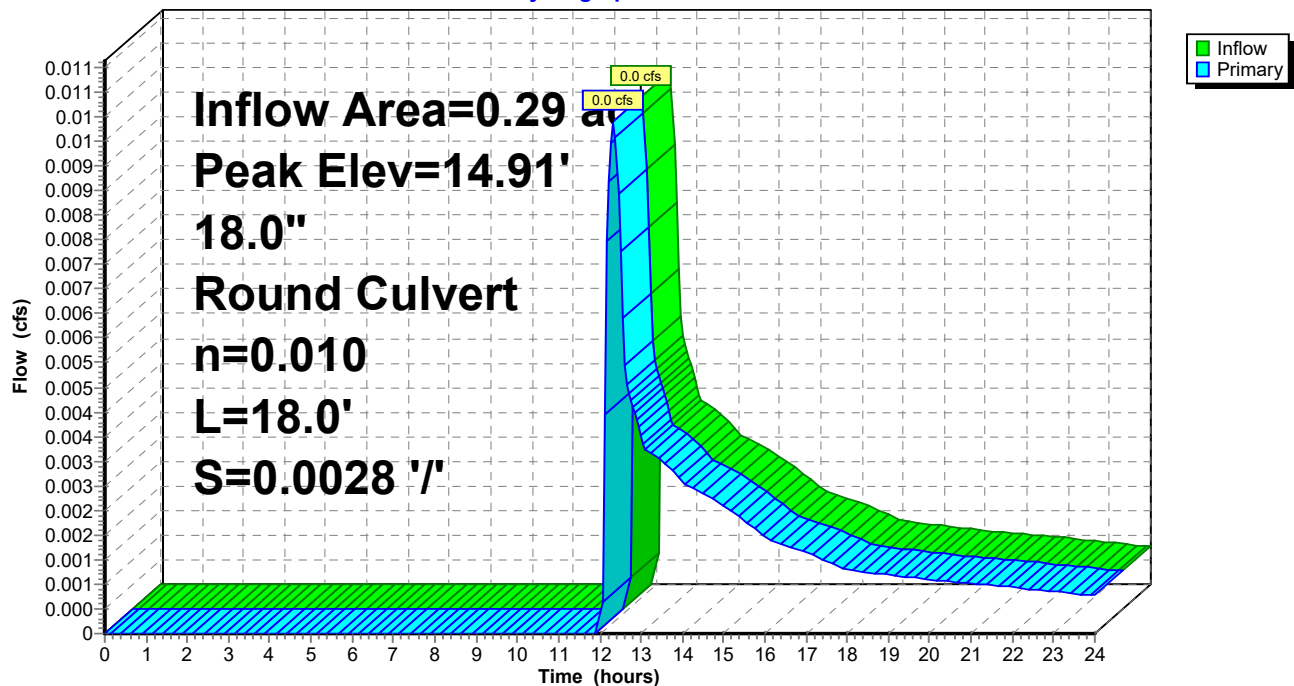
Flood Elev= 23.39'

Device	Routing	Invert	Outlet Devices
#1	Primary	14.85'	18.0" Round Culvert L= 18.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.85' / 14.80' S= 0.0028 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.32 hrs HW=14.91' TW=14.67' (Dynamic Tailwater)
↑1=Culvert (Barrel Controls 0.0 cfs @ 0.72 fps)

Pond 8P: CB8

Hydrograph



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Summary for Pond 9P: DMH1

Inflow Area = 1.20 ac, 84.73% Impervious, Inflow Depth > 0.33" for 1" Storm Event event
Inflow = 0.4 cfs @ 12.10 hrs, Volume= 0.033 af
Outflow = 0.4 cfs @ 12.10 hrs, Volume= 0.033 af, Atten= 0%, Lag= 0.0 min
Primary = 0.4 cfs @ 12.10 hrs, Volume= 0.033 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.62' @ 16.10 hrs

Flood Elev= 22.85'

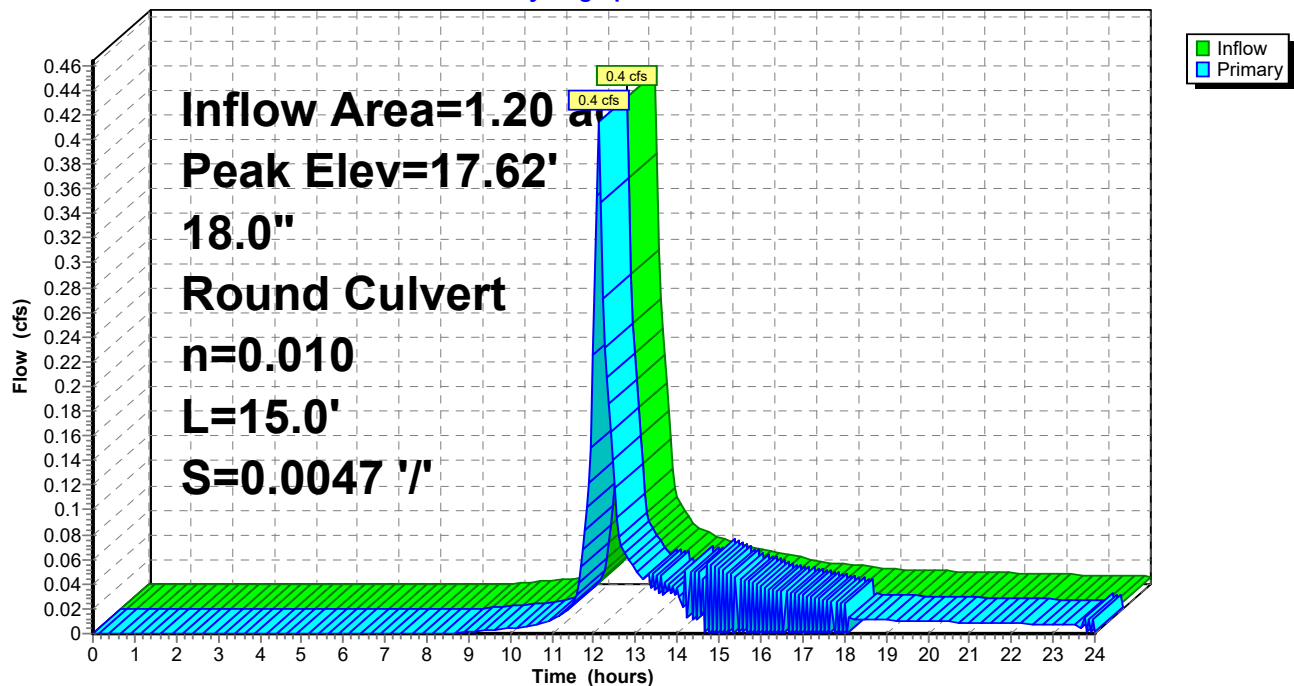
Device	Routing	Invert	Outlet Devices
#1	Primary	15.78'	18.0" Round Culvert L= 15.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.78' / 15.71' S= 0.0047 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.10 hrs HW=16.33' TW=16.46' (Dynamic Tailwater)

↑1=Culvert (Controls 0.0 cfs)

Pond 9P: DMH1

Hydrograph



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Summary for Pond 11P: Ex CB1

Inflow Area = 0.39 ac, 73.58% Impervious, Inflow Depth > 0.12" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.15 hrs, Volume= 0.004 af
Outflow = 0.0 cfs @ 12.15 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.15 hrs, Volume= 0.004 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 18.56' @ 12.15 hrs

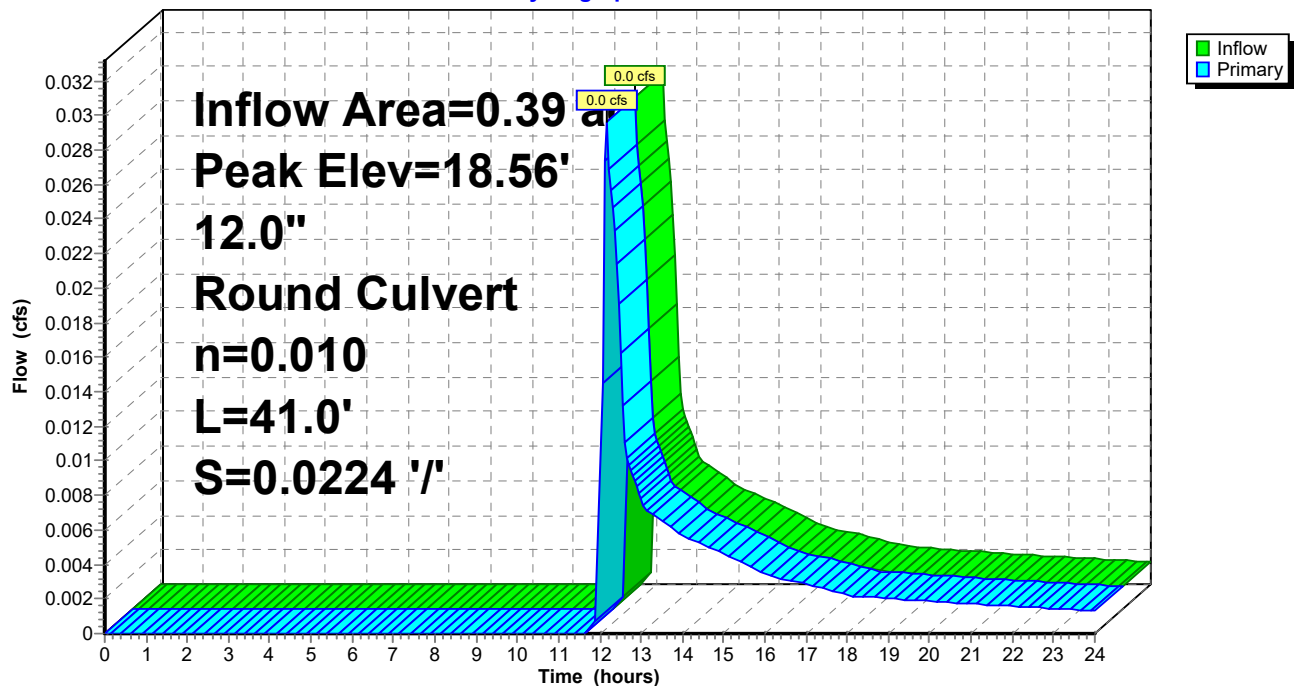
Flood Elev= 22.02'

Device	Routing	Invert	Outlet Devices
#1	Primary	18.47'	12.0" Round Culvert L= 41.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.47' / 17.55' S= 0.0224 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.0 cfs @ 12.15 hrs HW=18.56' TW=17.56' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 0.0 cfs @ 0.82 fps)

Pond 11P: Ex CB1

Hydrograph



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Summary for Pond 12P: Ex CB2

Inflow Area = 0.08 ac, 58.65% Impervious, Inflow Depth > 0.02" for 1" Storm Event event
Inflow = 0.0 cfs @ 14.78 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 14.79 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.9 min
Primary = 0.0 cfs @ 14.79 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 18.15' @ 14.79 hrs

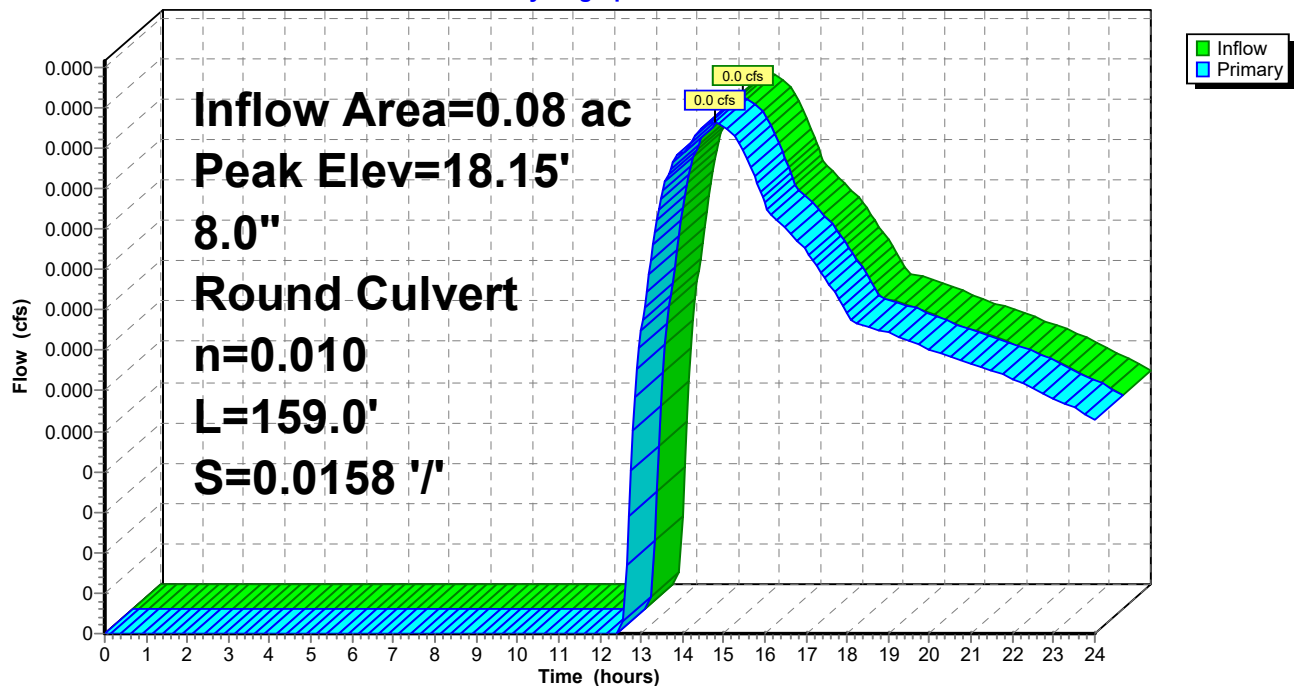
Flood Elev= 22.15'

Device	Routing	Invert	Outlet Devices
#1	Primary	18.14'	8.0" Round Culvert L= 159.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.14' / 15.62' S= 0.0158 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.0 cfs @ 14.79 hrs HW=18.15' TW=0.00' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 0.0 cfs @ 0.26 fps)

Pond 12P: Ex CB2

Hydrograph



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Summary for Pond 13P: CMP Peak Detention

Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 14.71' @ 0.00 hrs Surf.Area= 696 sf Storage= 0 cf

Flood Elev= 23.00' Surf.Area= 696 sf Storage= 2,403 cf

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

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

Volume	Invert	Avail.Storage	Storage Description
#1A	14.71'	0 cf	8.00'W x 87.00'L x 6.00'H Field A 4,176 cf Overall - 2,403 cf Embedded = 1,773 cf x 0.0% Voids
#2A	14.71'	2,403 cf	CMP Round 72 x 4 Inside #1 Effective Size= 72.0"W x 72.0"H => 28.27 sf x 20.00'L = 565.5 cf Overall Size= 72.0"W x 72.0"H x 20.00'L Row Length Adjustment= +5.00' x 28.27 sf x 1 rows
		2,403 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	14.71'	18.0" Round Culvert L= 20.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 14.71' / 14.33' S= 0.0190 ' S= 0.0190 ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf
#2	Device 1	14.71'	6.1" Vert. Orifice/Grate C= 0.600
#3	Device 1	17.21'	5.7" Vert. Orifice/Grate C= 0.600
#4	Device 1	18.79'	4.8" Vert. Orifice/Grate C= 0.600
#5	Device 1	20.05'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 5.34 5.40 5.46 5.52 5.58 5.64 5.70 5.76 5.82 5.88 5.94 6.00 Width (feet) 3.75 3.60 3.43 3.26 3.06 2.85 2.62 2.35 2.05 1.68 1.19 0.00

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=14.71' TW=14.05' (Dynamic Tailwater)

1=Culvert (Controls 0.0 cfs)
 2=Orifice/Grate (Controls 0.0 cfs)
 3=Orifice/Grate (Controls 0.0 cfs)
 4=Orifice/Grate (Controls 0.0 cfs)
 5=Custom Weir/Orifice (Controls 0.0 cfs)

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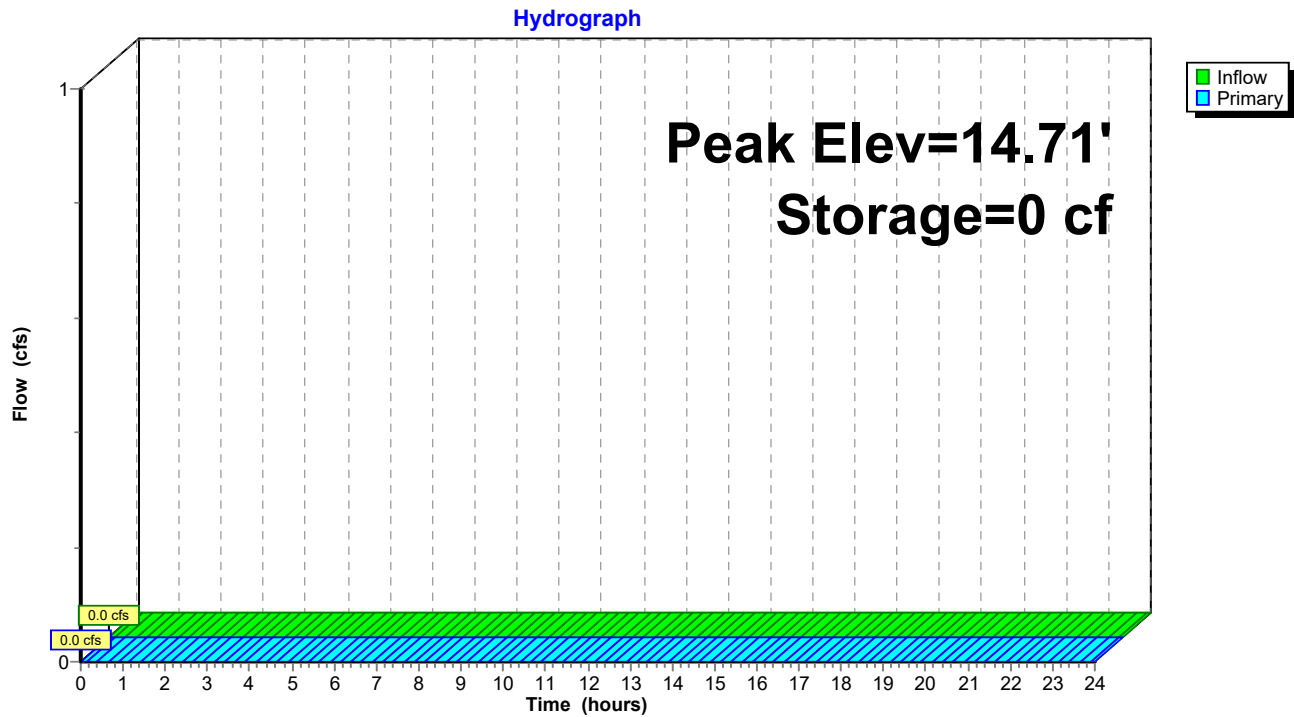
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Type III 24-hr 1" Storm Event Rainfall=1.00"

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Pond 13P: CMP Peak Detention



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Summary for Pond 14P: CONTECH WQv CMP Det & SF System

Inflow Area = 1.20 ac, 84.73% Impervious, Inflow Depth > 0.33" for 1" Storm Event event
 Inflow = 0.4 cfs @ 12.10 hrs, Volume= 0.033 af
 Outflow = 0.0 cfs @ 16.07 hrs, Volume= 0.019 af, Atten= 96%, Lag= 238.0 min
 Primary = 0.0 cfs @ 16.07 hrs, Volume= 0.019 af
 Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Starting Elev= 15.71' Surf.Area= 683 sf Storage= 96 cf

Peak Elev= 17.62' @ 16.07 hrs Surf.Area= 683 sf Storage= 892 cf (797 cf above start)

Flood Elev= 23.00' Surf.Area= 683 sf Storage= 2,114 cf (2,019 cf above start)

Plug-Flow detention time= 373.4 min calculated for 0.017 af (52% of inflow)

Center-of-Mass det. time= 201.4 min (1,050.4 - 849.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	15.21'	0 cf	7.50'W x 91.00'L x 5.50'H Field A 3,754 cf Overall - 2,114 cf Embedded = 1,639 cf x 0.0% Voids
#2A	15.21'	2,114 cf	CMP Round 66 x 4 Inside #1 Effective Size= 66.0"W x 66.0"H => 23.76 sf x 20.00'L = 475.2 cf Overall Size= 66.0"W x 66.0"H x 20.00'L Row Length Adjustment= +9.00' x 23.76 sf x 1 rows
		2,114 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	14.71'	Tube/Siphon/Float Valve X 6.00 Starts@17.76' Breaks@15.38' 0.336" Diameter, C= 0.600, 0.263" Trickle Diameter
#2	Device 1	15.71'	12.0" Round CMP_Round 12" L= 10.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 15.71' / 15.68' S= 0.0030 ' / Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#3	Secondary	19.78'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 4.57 4.62 4.67 4.73 4.79 4.84 4.89 4.95 5.00 5.06 5.12 5.17 5.22 5.28 5.33 5.39 5.45 5.50 Width (feet) 4.13 4.03 3.93 3.82 3.70 3.57 3.44 3.30 3.15 2.98 2.81 2.61 2.40 2.16 1.88 1.54 1.09 0.00

Primary OutFlow Max=0.0 cfs @ 16.07 hrs HW=17.62' TW=14.12' (Dynamic Tailwater)

↑1=Tube/Siphon/Float Valve (Orifice Controls 0.0 cfs @ 8.22 fps)

↑2=CMP_Round 12" (Passes 0.0 cfs of 4.5 cfs potential flow)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=15.71' TW=14.71' (Dynamic Tailwater)

↑3=Custom Weir/Orifice (Controls 0.0 cfs)

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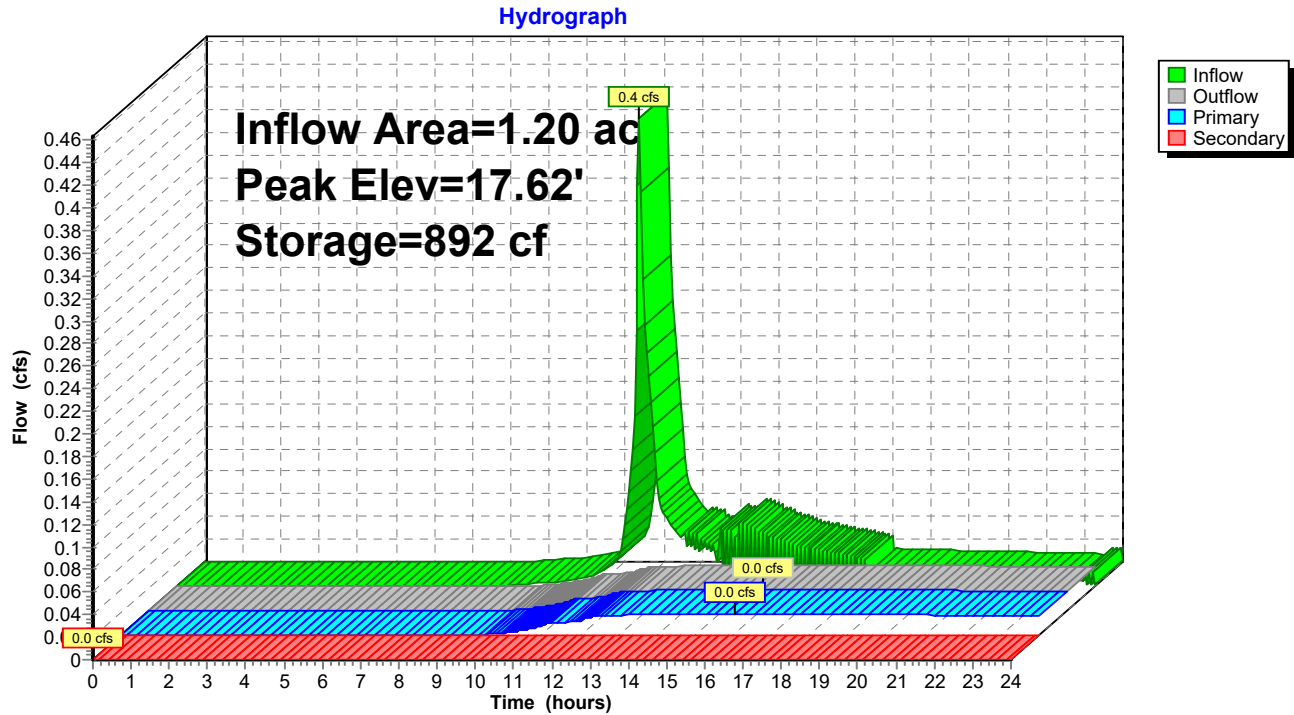
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Type III 24-hr 1" Storm Event Rainfall=1.00"

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Pond 14P: CONTECH WQv CMP Det & SF System



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Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Pond 21P: Ex DMH1

Inflow Area = 0.29 ac, 69.88% Impervious, Inflow Depth > 0.08" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.32 hrs, Volume= 0.002 af
Outflow = 0.0 cfs @ 12.32 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.32 hrs, Volume= 0.002 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

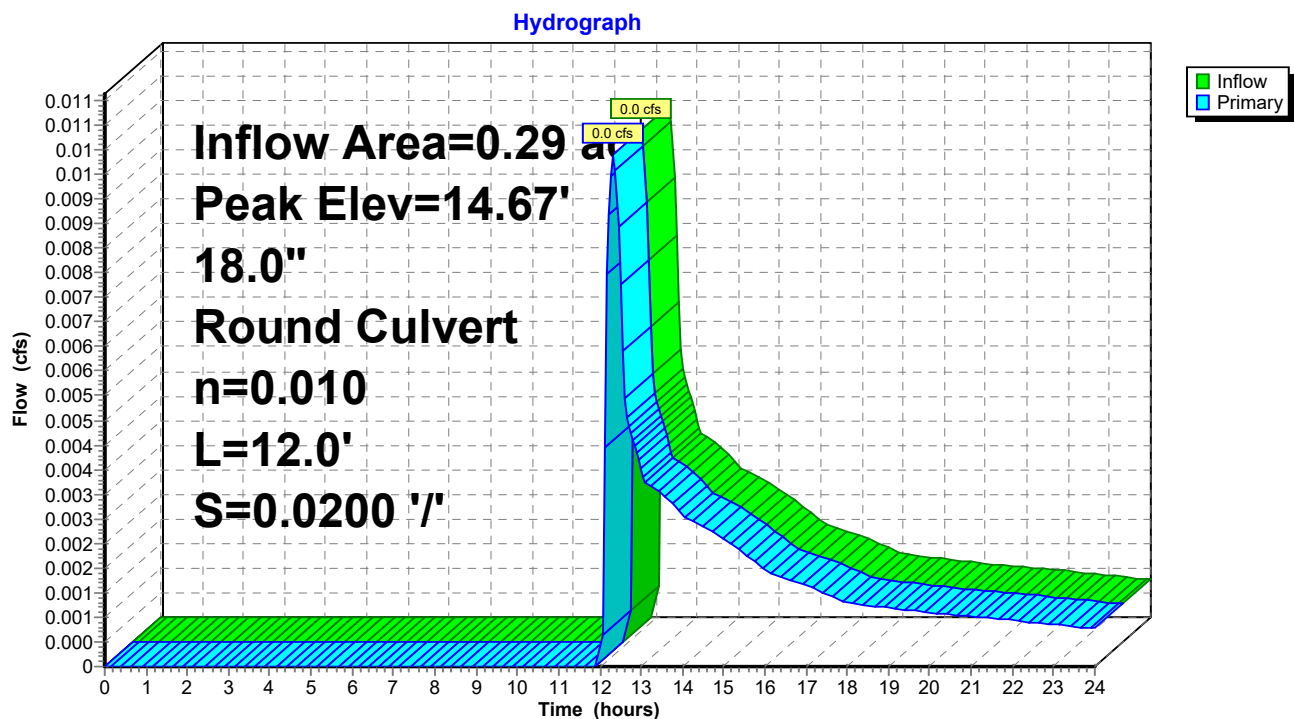
Peak Elev= 14.67' @ 12.32 hrs

Flood Elev= 23.72'

Device	Routing	Invert	Outlet Devices
#1	Primary	14.62'	18.0" Round Culvert L= 12.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.62' / 14.38' S= 0.0200 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.32 hrs HW=14.67' TW=14.39' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 0.0 cfs @ 0.59 fps)

Pond 21P: Ex DMH1



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Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Pond 22P: Ex DMH2

Inflow Area = 0.69 ac, 68.00% Impervious, Inflow Depth > 0.08" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.15 hrs, Volume= 0.005 af
Outflow = 0.0 cfs @ 12.15 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.15 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

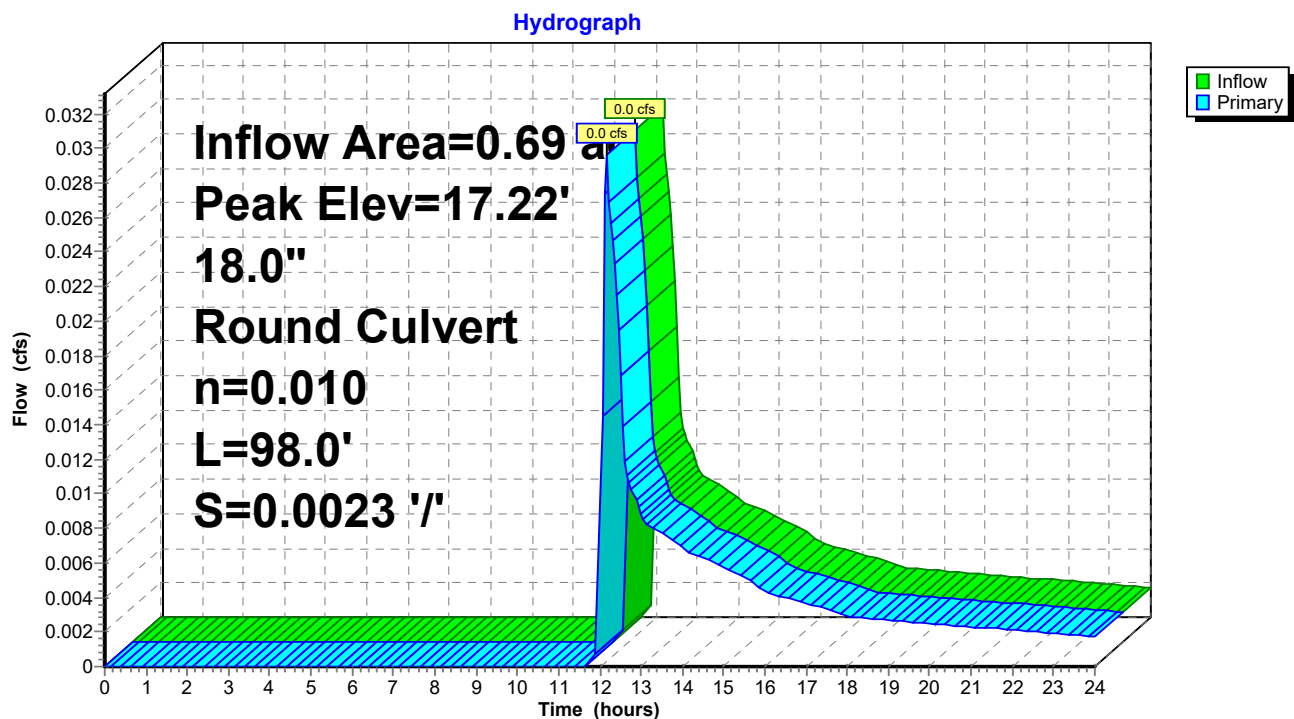
Peak Elev= 17.22' @ 12.15 hrs

Flood Elev= 24.92'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.12'	18.0" Round Culvert L= 98.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.12' / 16.89' S= 0.0023 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.15 hrs HW=17.22' TW=16.85' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 0.0 cfs @ 0.94 fps)

Pond 22P: Ex DMH2



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Summary for Pond 23P: Ex CB3

Inflow Area = 1.20 ac, 84.73% Impervious, Inflow Depth > 0.19" for 1" Storm Event event
Inflow = 0.0 cfs @ 16.07 hrs, Volume= 0.019 af
Outflow = 0.0 cfs @ 16.07 hrs, Volume= 0.019 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 16.07 hrs, Volume= 0.019 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 14.12' @ 16.07 hrs

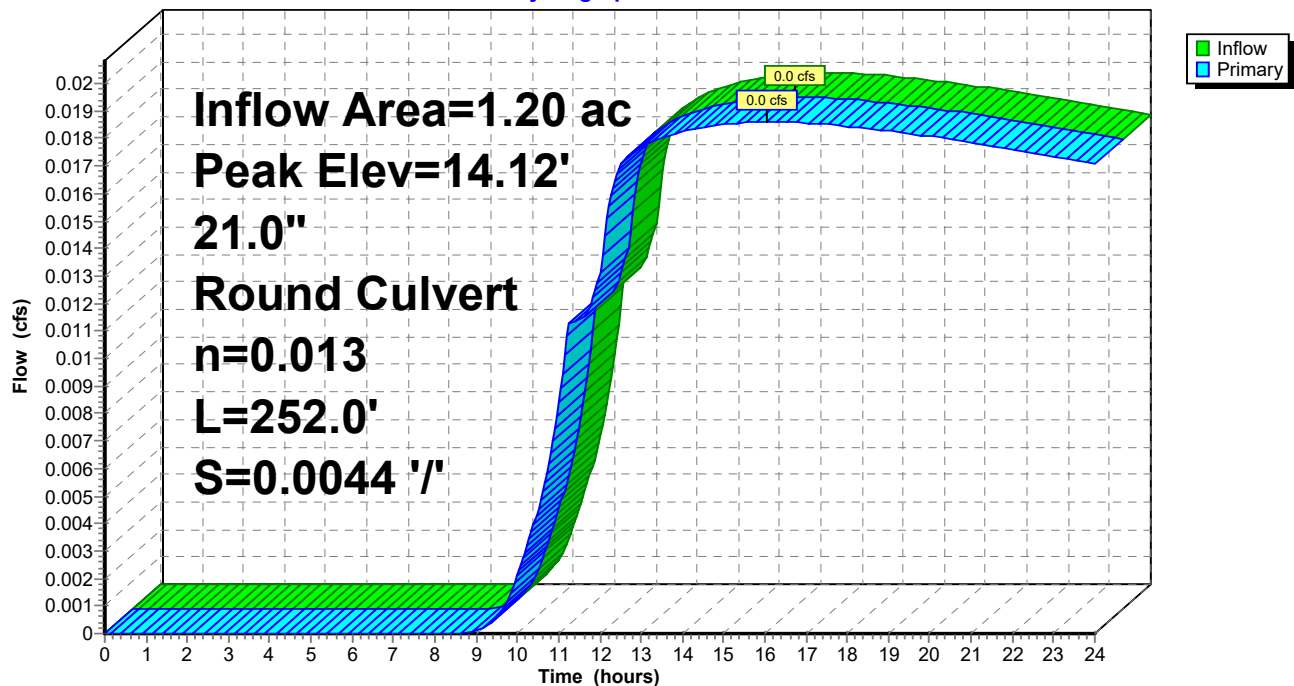
Flood Elev= 23.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	14.05'	21.0" Round Culvert L= 252.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.05' / 12.94' S= 0.0044 '/ Cc= 0.900 n= 0.013 Cast iron, coated, Flow Area= 2.41 sf

Primary OutFlow Max=0.0 cfs @ 16.07 hrs HW=14.12' TW=0.00' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 0.0 cfs @ 0.83 fps)

Pond 23P: Ex CB3

Hydrograph



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Summary for Pond 24P: Ex DMH4

Inflow Area = 0.69 ac, 68.00% Impervious, Inflow Depth > 0.08" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.15 hrs, Volume= 0.005 af
Outflow = 0.0 cfs @ 12.15 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.15 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

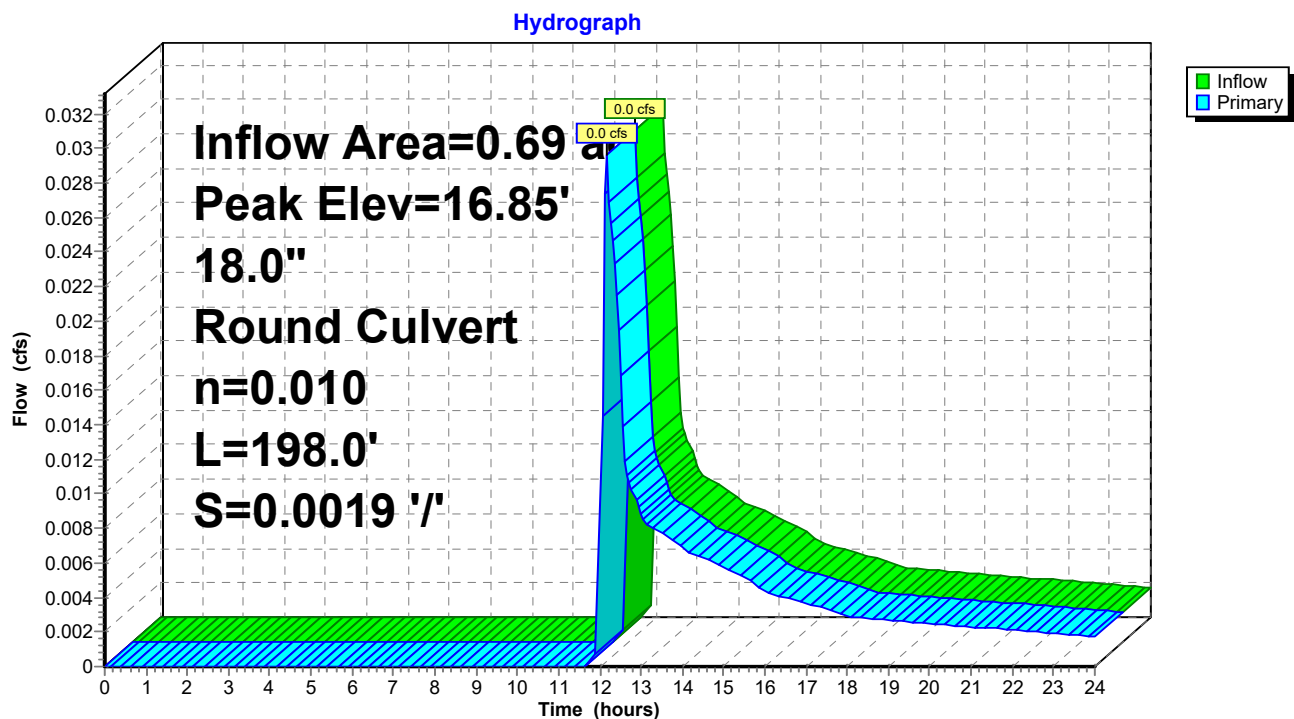
Peak Elev= 16.85' @ 12.15 hrs

Flood Elev= 25.38'

Device	Routing	Invert	Outlet Devices
#1	Primary	16.75'	18.0" Round Culvert L= 198.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.75' / 16.38' S= 0.0019 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.15 hrs HW=16.85' TW=15.52' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 0.0 cfs @ 0.87 fps)

Pond 24P: Ex DMH4



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Summary for Pond 25P: Ex DMH5

Inflow Area = 0.69 ac, 68.00% Impervious, Inflow Depth > 0.08" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.15 hrs, Volume= 0.005 af
Outflow = 0.0 cfs @ 12.15 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.15 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

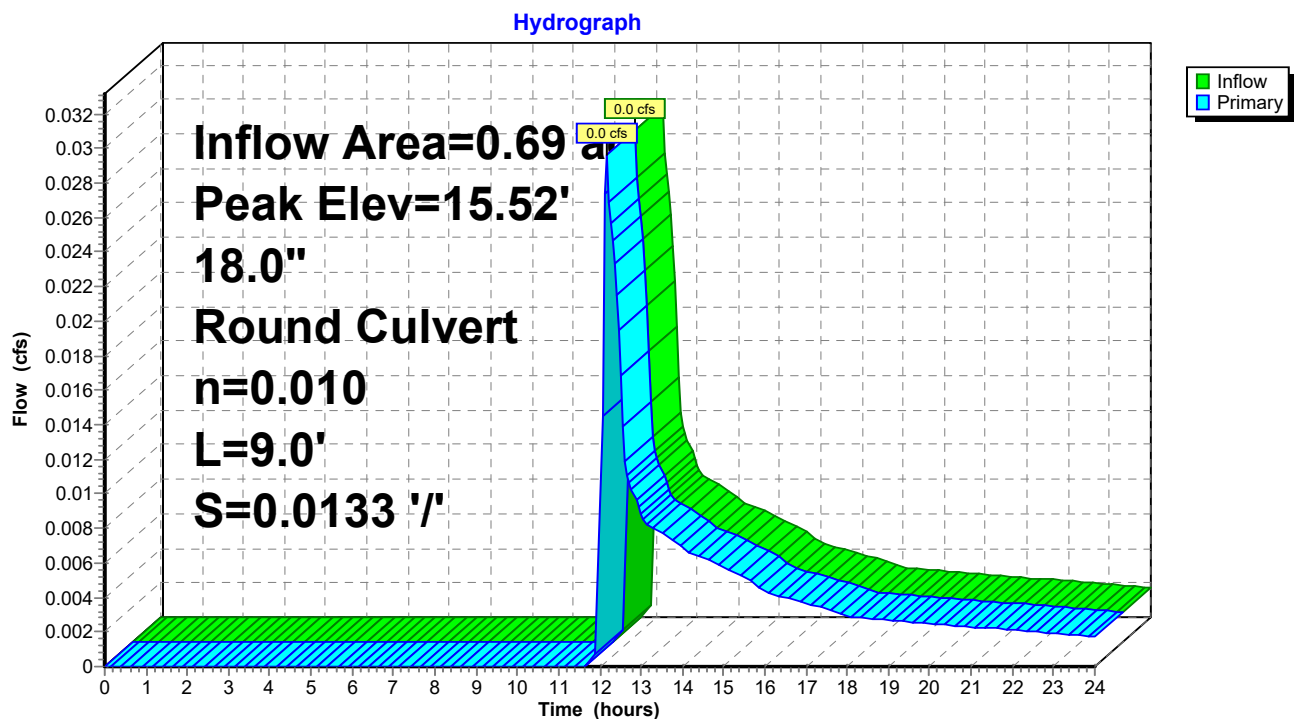
Peak Elev= 15.52' @ 12.15 hrs

Flood Elev= 23.84'

Device	Routing	Invert	Outlet Devices
#1	Primary	15.44'	18.0" Round Culvert L= 9.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.44' / 15.32' S= 0.0133 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.15 hrs HW=15.52' TW=14.39' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 0.0 cfs @ 0.77 fps)

Pond 25P: Ex DMH5



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Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Pond 26P: Ex DMH6

Inflow Area = 0.98 ac, 68.56% Impervious, Inflow Depth > 0.08" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.16 hrs, Volume= 0.007 af
Outflow = 0.0 cfs @ 12.16 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.16 hrs, Volume= 0.007 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 14.39' @ 12.17 hrs

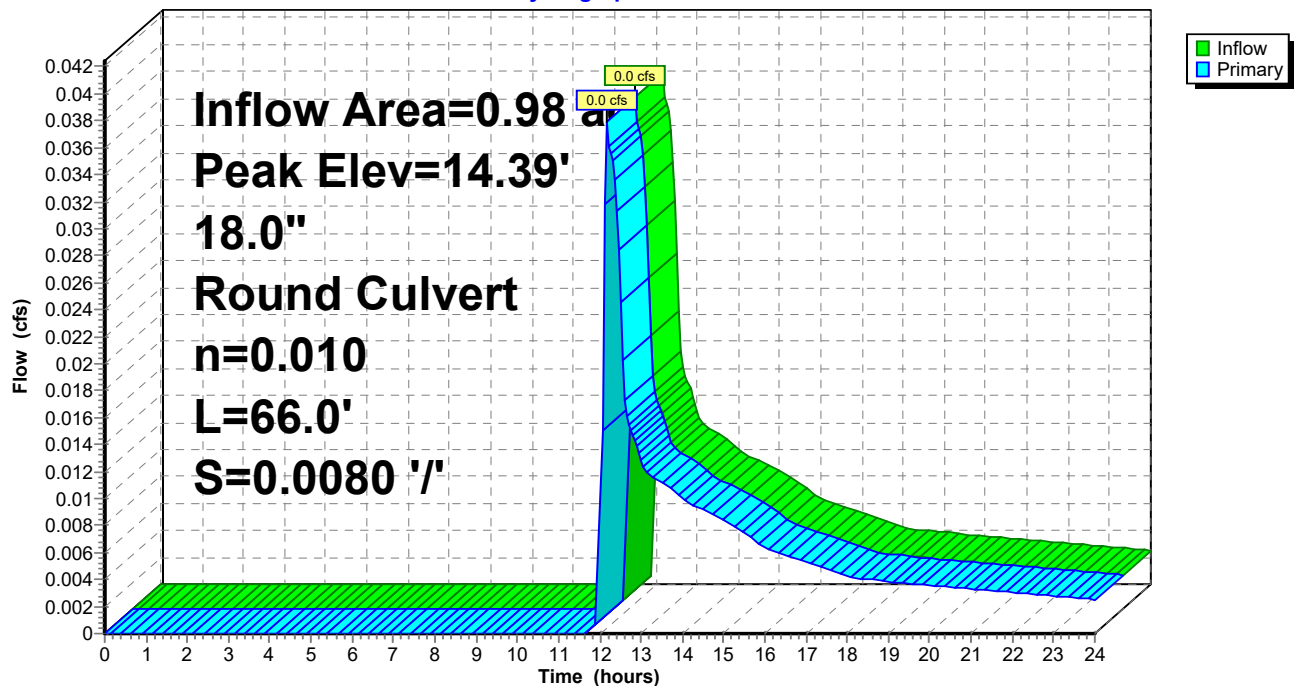
Flood Elev= 23.95'

Device	Routing	Invert	Outlet Devices
#1	Primary	14.30'	18.0" Round Culvert L= 66.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.30' / 13.77' S= 0.0080 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.16 hrs HW=14.39' TW=13.82' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 0.0 cfs @ 0.82 fps)

Pond 26P: Ex DMH6

Hydrograph



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Summary for Pond 27P: Ex DMH7

Inflow Area = 0.98 ac, 68.56% Impervious, Inflow Depth > 0.08" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.16 hrs, Volume= 0.007 af
Outflow = 0.0 cfs @ 12.16 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.16 hrs, Volume= 0.007 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 13.82' @ 12.17 hrs

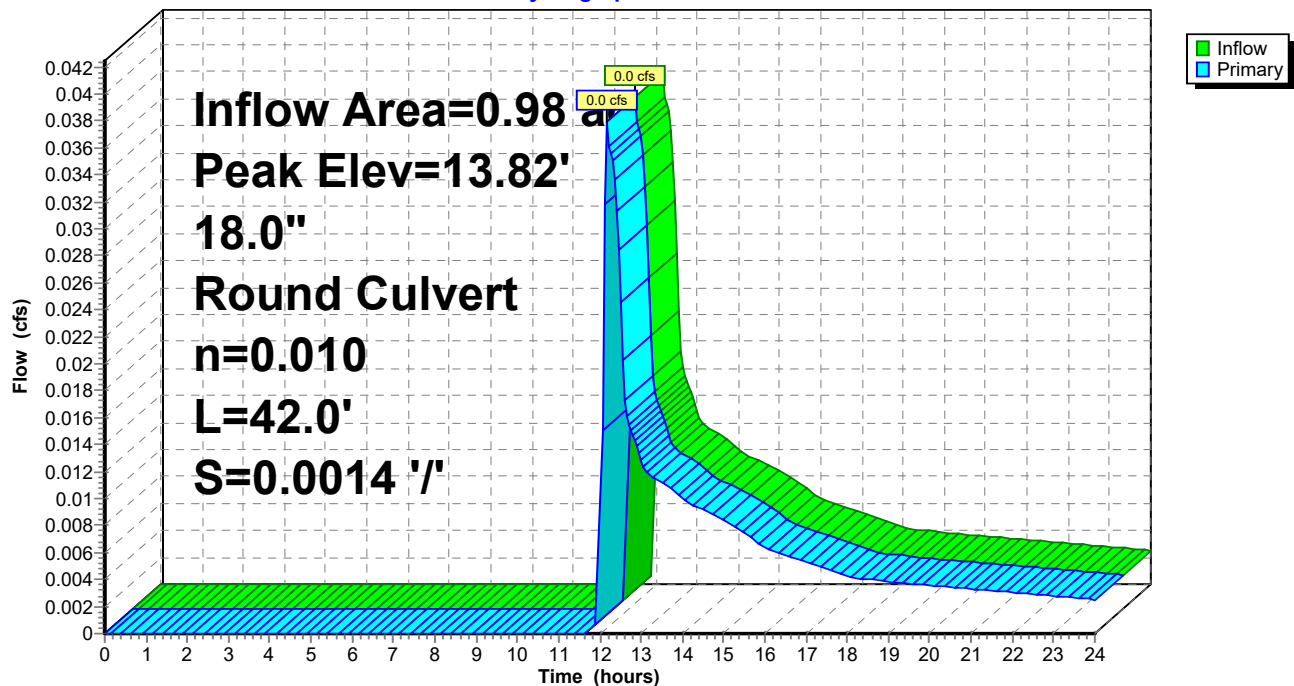
Flood Elev= 24.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	13.70'	18.0" Round Culvert L= 42.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.70' / 13.64' S= 0.0014 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.16 hrs HW=13.82' TW=0.00' (Dynamic Tailwater)
↑1=Culvert (Barrel Controls 0.0 cfs @ 0.88 fps)

Pond 27P: Ex DMH7

Hydrograph



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Summary for Pond 29P: Ex DMH9

Inflow Area = 0.39 ac, 73.58% Impervious, Inflow Depth > 0.12" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.15 hrs, Volume= 0.004 af
Outflow = 0.0 cfs @ 12.15 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.15 hrs, Volume= 0.004 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

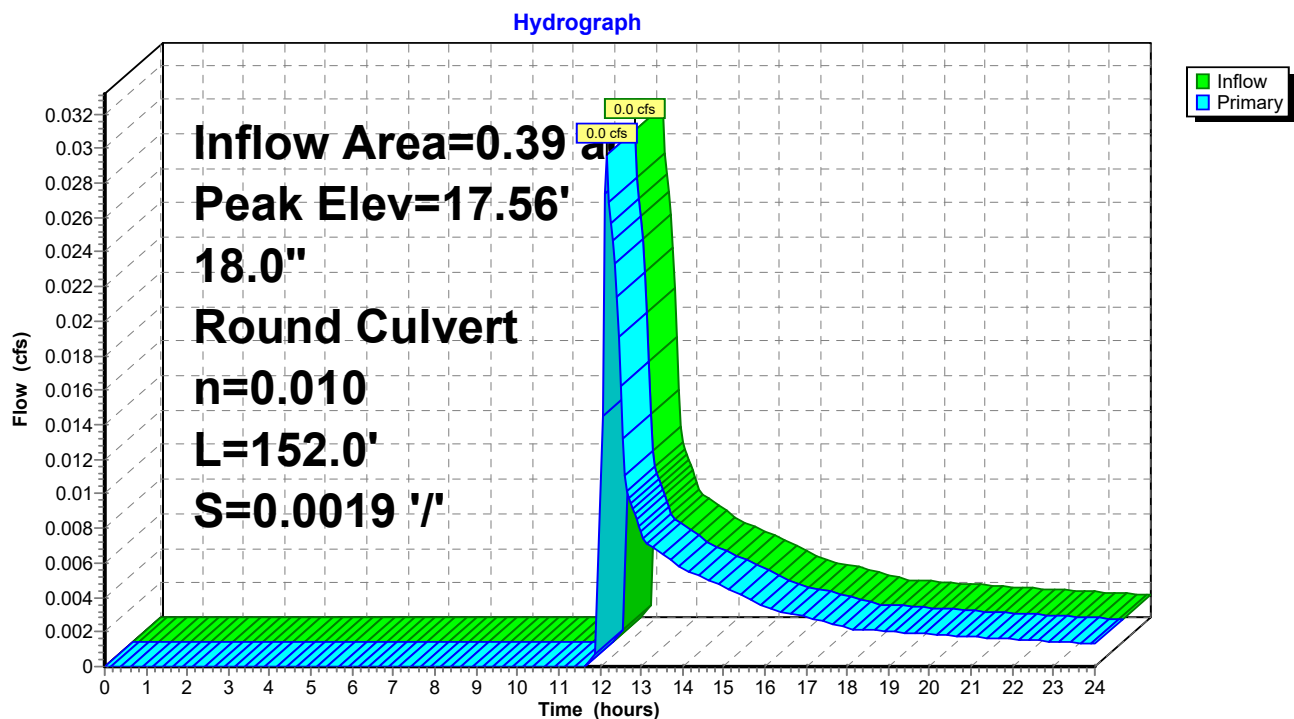
Peak Elev= 17.56' @ 12.15 hrs

Flood Elev= 23.44'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.46'	18.0" Round Culvert L= 152.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.46' / 17.17' S= 0.0019 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.15 hrs HW=17.56' TW=17.22' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 0.0 cfs @ 0.88 fps)

Pond 29P: Ex DMH9



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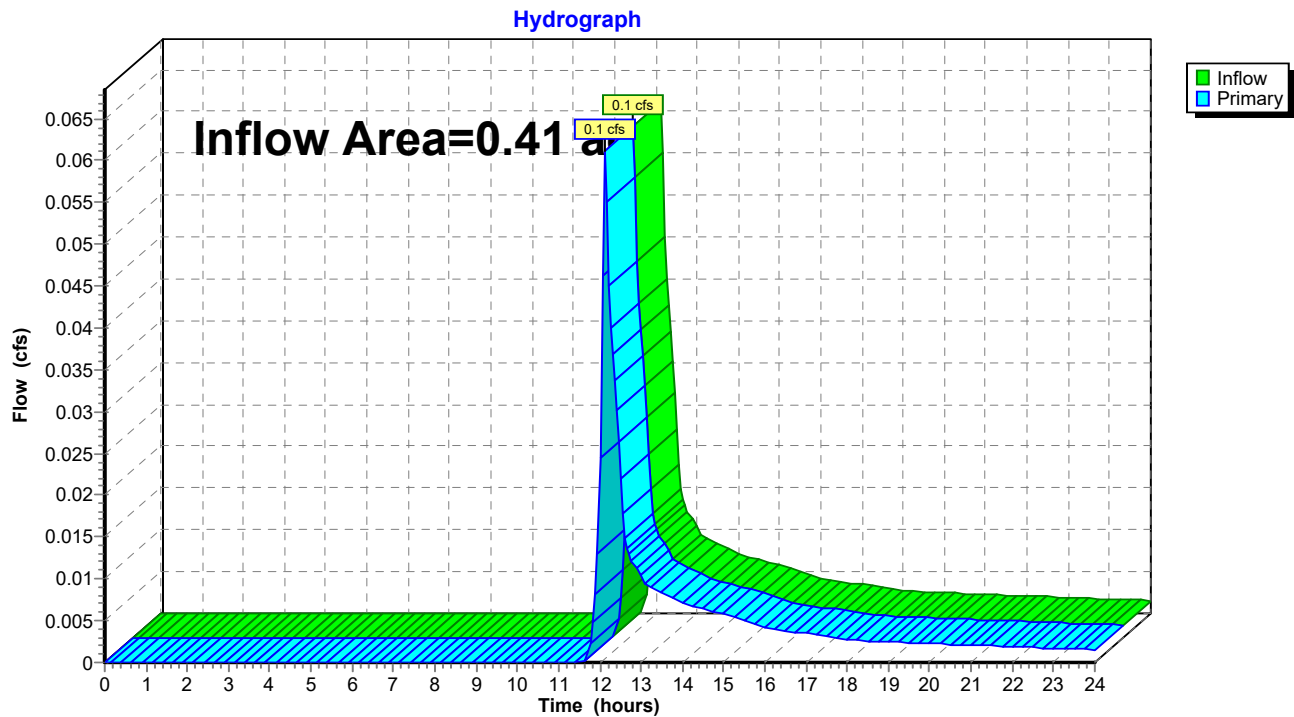
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Summary for Link SP1: Forest Ave Storm Drain

Inflow Area = 0.41 ac, 75.27% Impervious, Inflow Depth > 0.16" for 1" Storm Event event
Inflow = 0.1 cfs @ 12.11 hrs, Volume= 0.006 af
Primary = 0.1 cfs @ 12.11 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP1: Forest Ave Storm Drain



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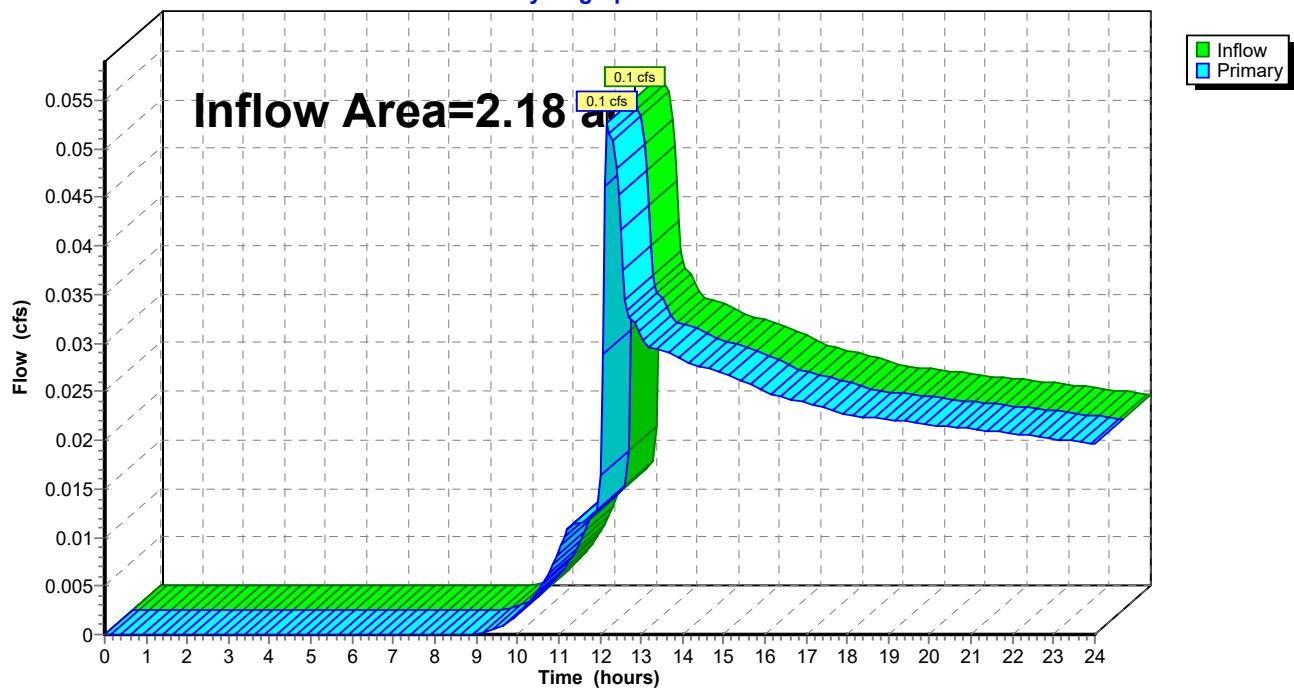
Summary for Link SP2: Combined Sewer

Inflow Area = 2.18 ac, 77.47% Impervious, Inflow Depth > 0.14" for 1" Storm Event event
Inflow = 0.1 cfs @ 12.15 hrs, Volume= 0.026 af
Primary = 0.1 cfs @ 12.15 hrs, Volume= 0.026 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP2: Combined Sewer

Hydrograph



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Type III 24-hr 2-Year Storm Rainfall=3.10"

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: POST-1	Runoff Area=5,692 sf 70.24% Impervious Runoff Depth>1.39" Tc=6.0 min CN=81 Runoff=0.2 cfs 0.015 af
Subcatchment2S: POST-2	Runoff Area=9,641 sf 93.94% Impervious Runoff Depth>2.45" Tc=6.0 min CN=94 Runoff=0.6 cfs 0.045 af
Subcatchment3S: POST-3	Runoff Area=15,050 sf 86.74% Impervious Runoff Depth>2.07" Tc=6.0 min CN=90 Runoff=0.8 cfs 0.060 af
Subcatchment5S: POST-5	Runoff Area=6,810 sf 75.96% Impervious Runoff Depth>1.60" Tc=6.0 min CN=84 Runoff=0.3 cfs 0.021 af
Subcatchment6S: POST-6	Runoff Area=9,346 sf 95.25% Impervious Runoff Depth>2.55" Tc=6.0 min CN=95 Runoff=0.6 cfs 0.046 af
Subcatchment7S: POST-7	Runoff Area=5,710 sf 71.52% Impervious Runoff Depth>1.39" Tc=6.0 min CN=81 Runoff=0.2 cfs 0.015 af
Subcatchment8S: POST-8	Runoff Area=3,553 sf 58.65% Impervious Runoff Depth>0.97" Tc=6.0 min CN=74 Runoff=0.1 cfs 0.007 af
Subcatchment9S: POST-9	Runoff Area=14,487 sf 79.34% Impervious Runoff Depth>1.75" Tc=6.0 min CN=86 Runoff=0.7 cfs 0.048 af
Subcatchment10S: POST-10	Runoff Area=7,001 sf 74.06% Impervious Runoff Depth>1.53" Tc=6.0 min CN=83 Runoff=0.3 cfs 0.020 af
Subcatchment11S: POST-11	Runoff Area=10,124 sf 73.25% Impervious Runoff Depth>1.46" Tc=6.0 min CN=82 Runoff=0.4 cfs 0.028 af
Subcatchment12S: POST-12	Runoff Area=12,768 sf 60.52% Impervious Runoff Depth>1.03" Tc=6.0 min CN=75 Runoff=0.3 cfs 0.025 af
Subcatchment13S: POST-13	Runoff Area=12,612 sf 69.88% Impervious Runoff Depth>1.32" Tc=6.0 min CN=80 Runoff=0.4 cfs 0.032 af
Pond 1P: CB1	Peak Elev=20.43' Inflow=0.2 cfs 0.015 af 10.0" Round Culvert n=0.010 L=56.0' S=0.0048 '/ Outflow=0.2 cfs 0.015 af
Pond 2P: CB2	Peak Elev=20.42' Inflow=0.8 cfs 0.060 af 10.0" Round Culvert n=0.010 L=56.0' S=0.0050 '/ Outflow=0.8 cfs 0.060 af
Pond 3P: CB3	Peak Elev=20.32' Inflow=1.6 cfs 0.120 af 15.0" Round Culvert n=0.010 L=21.0' S=0.0048 '/ Outflow=1.6 cfs 0.120 af
Pond 4P: CB4	Peak Elev=20.27' Inflow=1.1 cfs 0.081 af 18.0" Round Culvert n=0.010 L=106.0' S=0.0102 '/ Outflow=1.1 cfs 0.081 af

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Pond 5P: CB5

Peak Elev=20.28' Inflow=0.8 cfs 0.061 af
15.0" Round Culvert n=0.010 L=77.0' S=0.0051 '/' Outflow=0.8 cfs 0.061 af

Pond 6P: CB6

Peak Elev=20.28' Inflow=0.2 cfs 0.015 af
15.0" Round Culvert n=0.010 L=53.0' S=0.0051 '/' Outflow=0.2 cfs 0.015 af

Pond 7P: CB7

Peak Elev=17.83' Inflow=0.3 cfs 0.025 af
8.0" Round Culvert n=0.010 L=34.0' S=0.0100 '/' Outflow=0.3 cfs 0.025 af

Pond 8P: CB8

Peak Elev=15.22' Inflow=0.4 cfs 0.032 af
18.0" Round Culvert n=0.010 L=18.0' S=0.0028 '/' Outflow=0.4 cfs 0.032 af

Pond 9P: DMH1

Peak Elev=20.25' Inflow=2.7 cfs 0.201 af
18.0" Round Culvert n=0.010 L=15.0' S=0.0047 '/' Outflow=2.7 cfs 0.201 af

Pond 11P: Ex CB1

Peak Elev=18.94' Inflow=0.7 cfs 0.049 af
12.0" Round Culvert n=0.010 L=41.0' S=0.0224 '/' Outflow=0.7 cfs 0.049 af

Pond 12P: Ex CB2

Peak Elev=18.32' Inflow=0.1 cfs 0.007 af
8.0" Round Culvert n=0.010 L=159.0' S=0.0158 '/' Outflow=0.1 cfs 0.007 af

Pond 13P: CMP Peak Detention

Peak Elev=17.13' Storage=905 cf Inflow=2.7 cfs 0.114 af
Outflow=1.4 cfs 0.114 af

Pond 14P: CONTECHWQv CMP Det & SF

Peak Elev=20.14' Storage=1,999 cf Inflow=2.7 cfs 0.201 af
Primary=0.0 cfs 0.047 af Secondary=2.7 cfs 0.114 af Outflow=2.8 cfs 0.162 af

Pond 21P: Ex DMH1

Peak Elev=15.01' Inflow=0.4 cfs 0.032 af
18.0" Round Culvert n=0.010 L=12.0' S=0.0200 '/' Outflow=0.4 cfs 0.032 af

Pond 22P: Ex DMH2

Peak Elev=17.68' Inflow=1.0 cfs 0.074 af
18.0" Round Culvert n=0.010 L=98.0' S=0.0023 '/' Outflow=1.0 cfs 0.074 af

Pond 23P: Ex CB3

Peak Elev=14.66' Inflow=1.5 cfs 0.162 af
21.0" Round Culvert n=0.013 L=252.0' S=0.0044 '/' Outflow=1.5 cfs 0.162 af

Pond 24P: Ex DMH4

Peak Elev=17.32' Inflow=1.0 cfs 0.074 af
18.0" Round Culvert n=0.010 L=198.0' S=0.0019 '/' Outflow=1.0 cfs 0.074 af

Pond 25P: Ex DMH5

Peak Elev=15.96' Inflow=1.0 cfs 0.074 af
18.0" Round Culvert n=0.010 L=9.0' S=0.0133 '/' Outflow=1.0 cfs 0.074 af

Pond 26P: Ex DMH6

Peak Elev=14.91' Inflow=1.4 cfs 0.106 af
18.0" Round Culvert n=0.010 L=66.0' S=0.0080 '/' Outflow=1.4 cfs 0.106 af

Pond 27P: Ex DMH7

Peak Elev=14.42' Inflow=1.4 cfs 0.106 af
18.0" Round Culvert n=0.010 L=42.0' S=0.0014 '/' Outflow=1.4 cfs 0.106 af

Pond 29P: Ex DMH9

Peak Elev=17.96' Inflow=0.7 cfs 0.049 af
18.0" Round Culvert n=0.010 L=152.0' S=0.0019 '/' Outflow=0.7 cfs 0.049 af

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Link SP1: Forest Ave Storm DrainInflow=0.8 cfs 0.055 af
Primary=0.8 cfs 0.055 af**Link SP2: Combined Sewer**Inflow=2.7 cfs 0.267 af
Primary=2.7 cfs 0.267 af

Total Runoff Area = 2.59 ac Runoff Volume = 0.362 af Average Runoff Depth = 1.68"
22.88% Pervious = 0.59 ac 77.12% Impervious = 2.00 ac

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POST
Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Subcatchment 1S: POST-1

Runoff = 0.2 cfs @ 12.10 hrs, Volume= 0.015 af, Depth> 1.39"

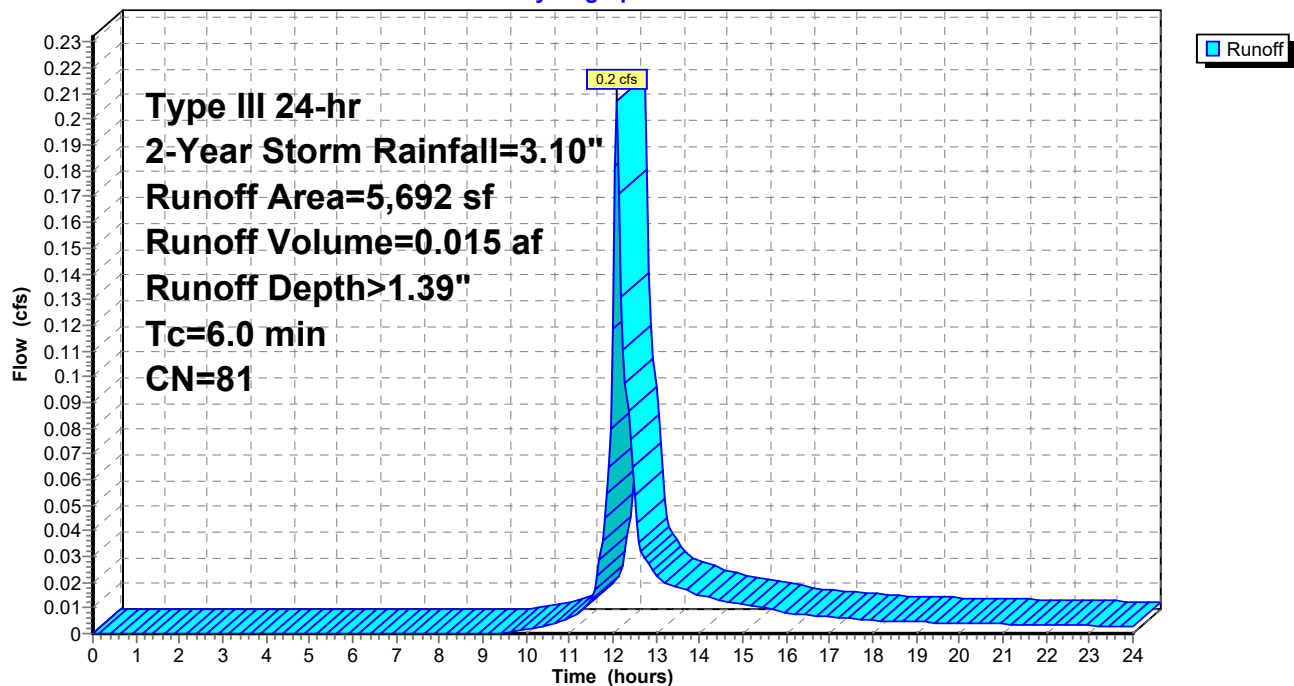
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
3,998	98	Paved parking, HSG A
830	39	Grass cover, Good, HSG A
* 864	40	Porous Pavement
5,692	81	Weighted Average
1,694		29.76% Pervious Area
3,998		70.24% Impervious Area

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

Subcatchment 1S: POST-1

Hydrograph



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Summary for Subcatchment 2S: POST-2

Runoff = 0.6 cfs @ 12.09 hrs, Volume= 0.045 af, Depth> 2.45"

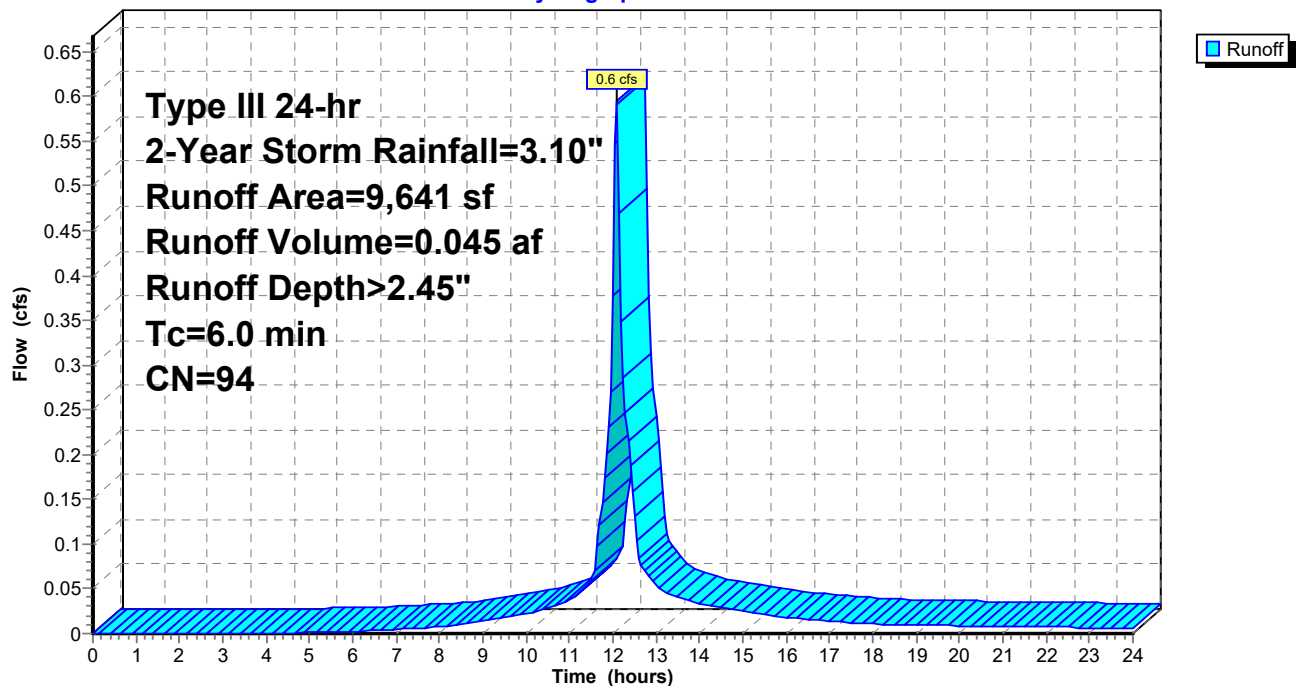
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
9,057	98	Paved parking, HSG A
502	39	Grass cover, Good, HSG A
* 82	40	Porous Pavement
9,641	94	Weighted Average
584		6.06% Pervious Area
9,057		93.94% Impervious Area

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

Subcatchment 2S: POST-2

Hydrograph



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Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Subcatchment 3S: POST-3

Runoff = 0.8 cfs @ 12.09 hrs, Volume= 0.060 af, Depth> 2.07"

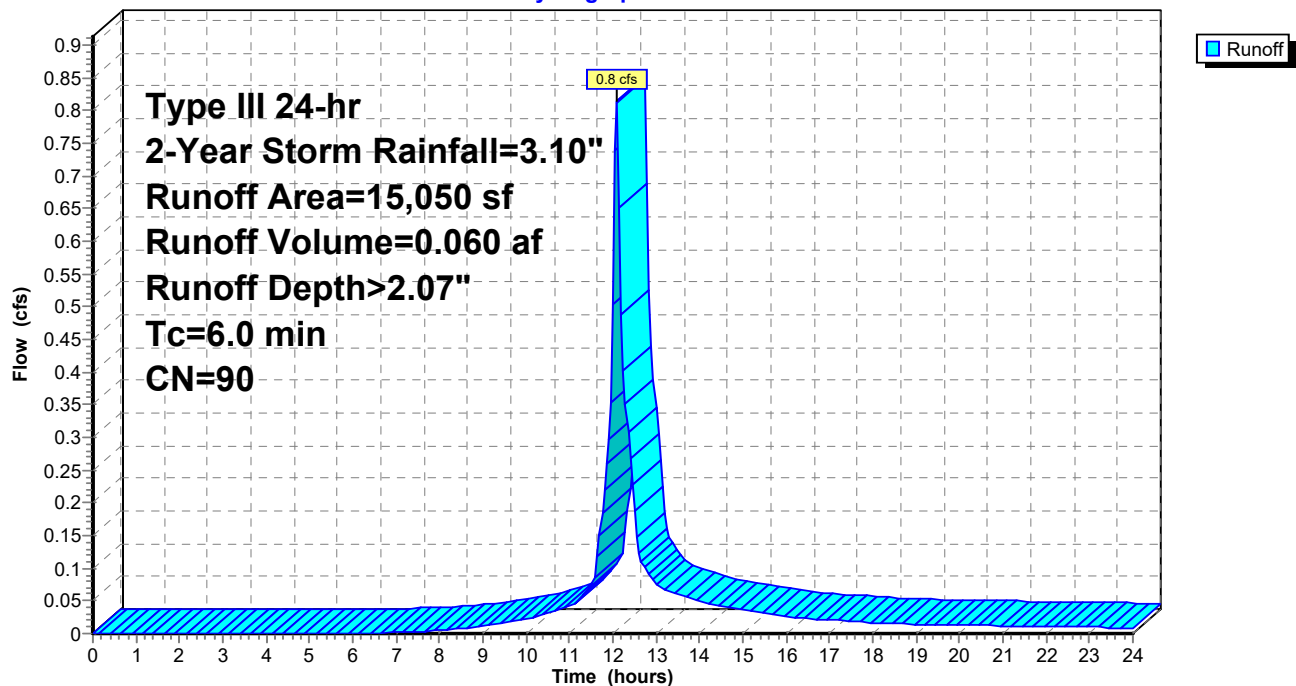
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
13,054	98	Paved parking, HSG A
1,909	39	Grass cover, Good, HSG A
* 87	40	Porous Pavement
15,050	90	Weighted Average
1,996		13.26% Pervious Area
13,054		86.74% Impervious Area

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

Subcatchment 3S: POST-3

Hydrograph



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Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Subcatchment 5S: POST-5

Runoff = 0.3 cfs @ 12.09 hrs, Volume= 0.021 af, Depth> 1.60"

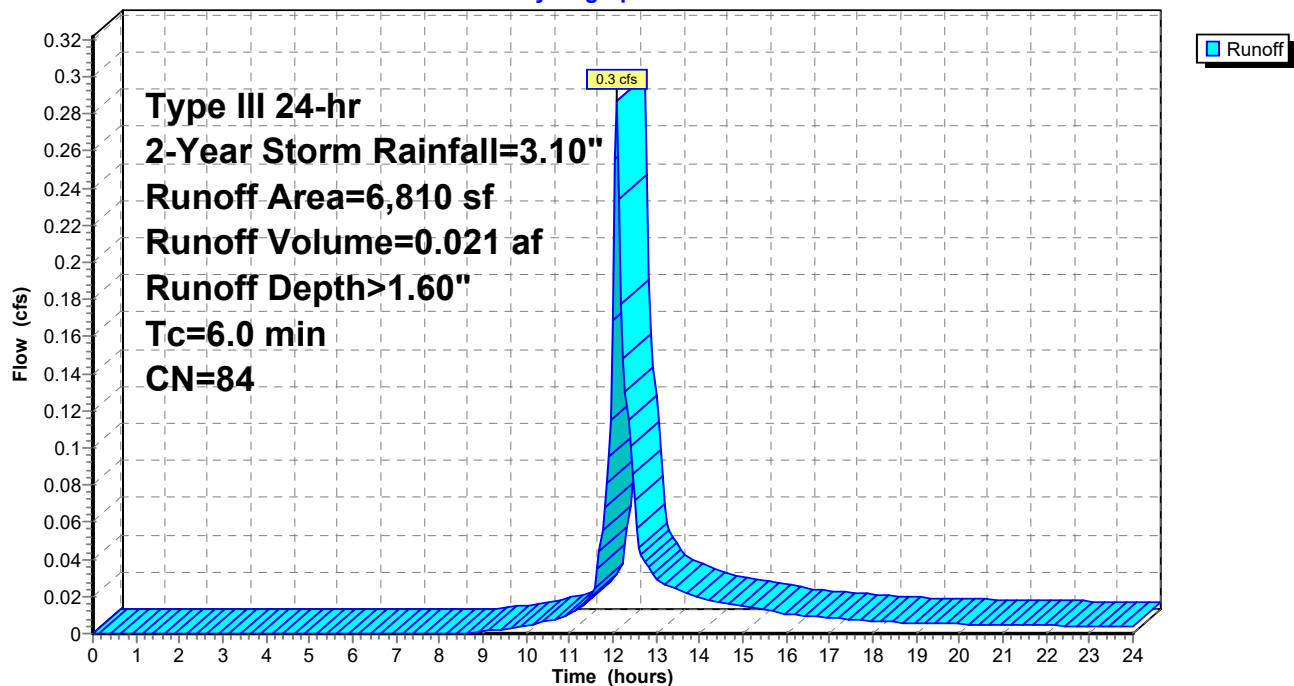
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
5,173	98	Paved parking, HSG A
1,547	39	Grass cover, Good, HSG A
* 90	40	Porous Pavement
6,810	84	Weighted Average
1,637		24.04% Pervious Area
5,173		75.96% Impervious Area

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

Subcatchment 5S: POST-5

Hydrograph



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Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Subcatchment 6S: POST-6

Runoff = 0.6 cfs @ 12.09 hrs, Volume= 0.046 af, Depth> 2.55"

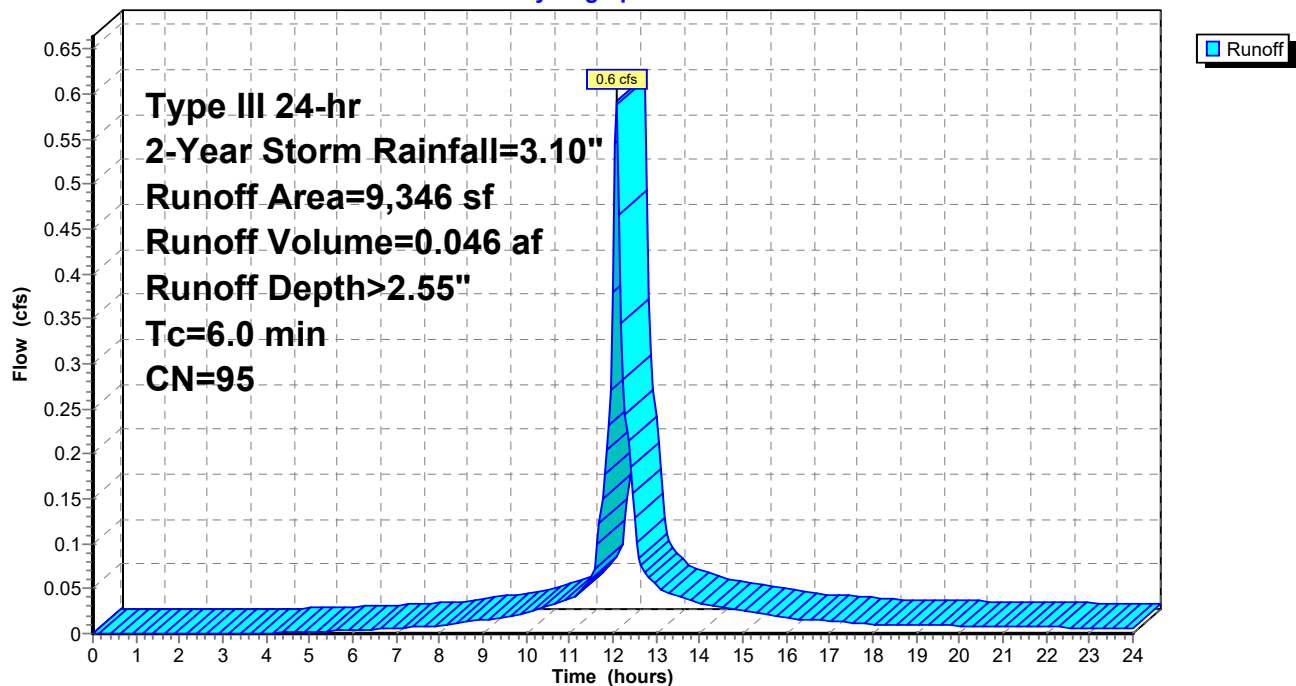
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
8,902	98	Paved parking, HSG A
351	39	Grass cover, Good, HSG A
* 93	40	Porous Pavement
9,346	95	Weighted Average
444		4.75% Pervious Area
8,902		95.25% Impervious Area

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

Subcatchment 6S: POST-6

Hydrograph



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Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Subcatchment 7S: POST-7

Runoff = 0.2 cfs @ 12.10 hrs, Volume= 0.015 af, Depth> 1.39"

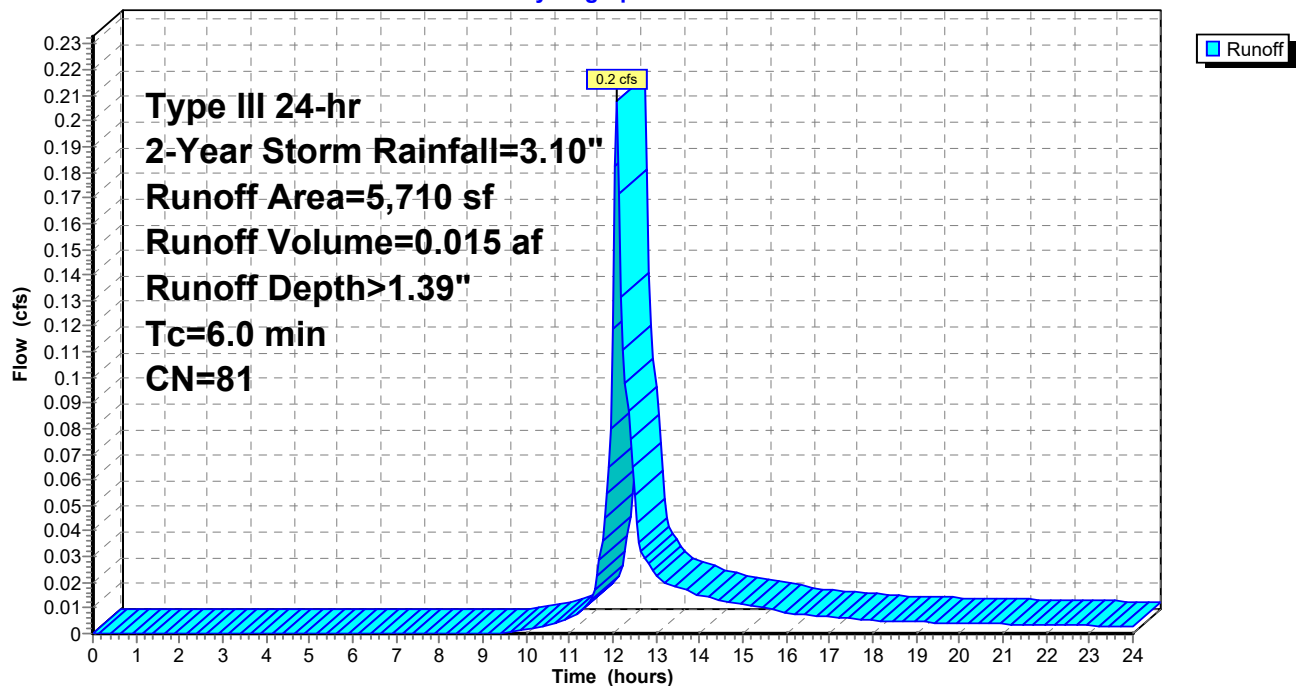
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
4,084	98	Paved parking, HSG A
809	39	Grass cover, Good, HSG A
* 817	40	Porous Pavement
5,710	81	Weighted Average
1,626		28.48% Pervious Area
4,084		71.52% Impervious Area

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

Subcatchment 7S: POST-7

Hydrograph



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Summary for Subcatchment 8S: POST-8

Runoff = 0.1 cfs @ 12.10 hrs, Volume= 0.007 af, Depth> 0.97"

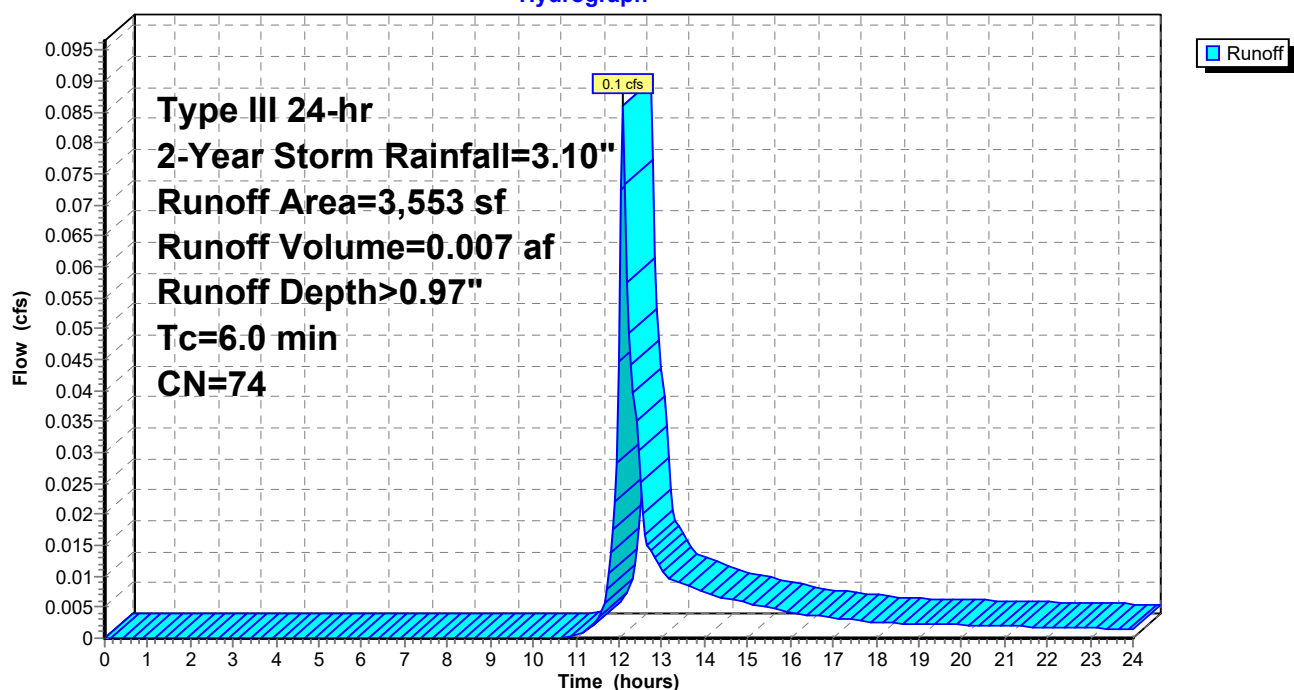
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
2,084	98	Paved parking, HSG A
1,469	39	Grass cover, Good, HSG A
3,553	74	Weighted Average
1,469		41.35% Pervious Area
2,084		58.65% Impervious Area

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

Subcatchment 8S: POST-8

Hydrograph



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Summary for Subcatchment 9S: POST-9

Runoff = 0.7 cfs @ 12.09 hrs, Volume= 0.048 af, Depth> 1.75"

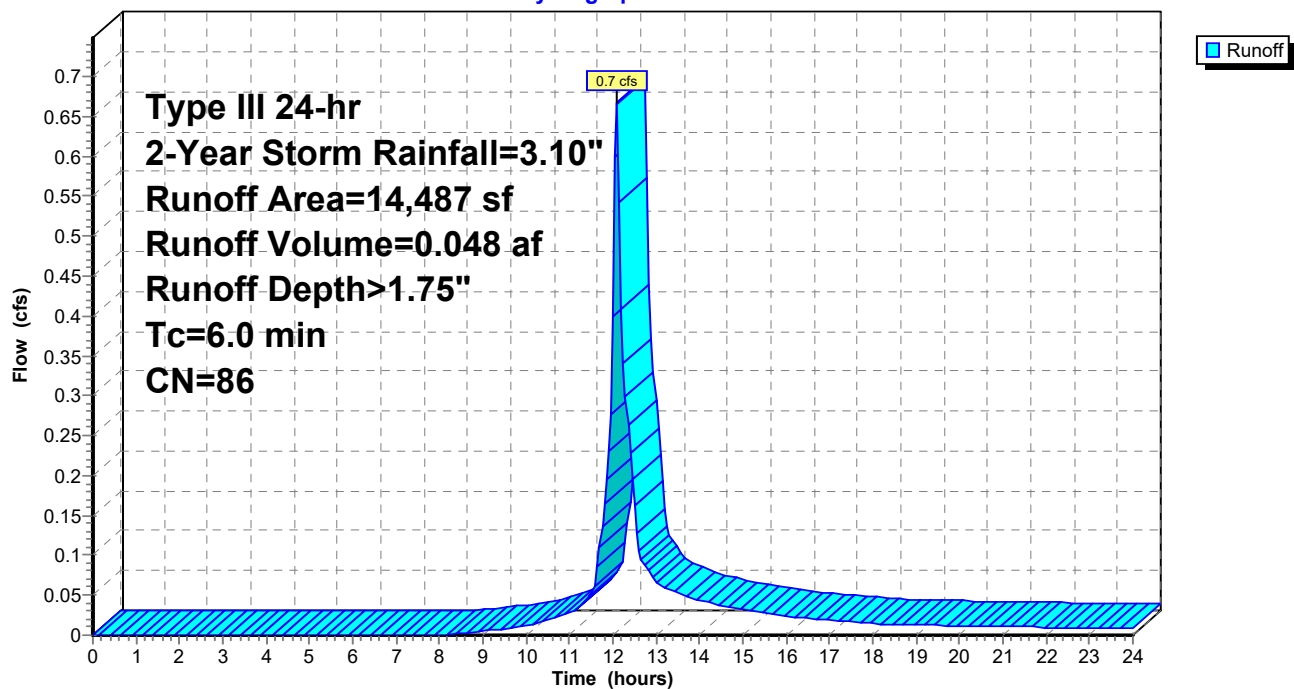
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
11,494	98	Paved parking, HSG A
2,993	39	Grass cover, Good, HSG A
14,487	86	Weighted Average
2,993		20.66% Pervious Area
11,494		79.34% Impervious Area

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

Subcatchment 9S: POST-9

Hydrograph



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Summary for Subcatchment 10S: POST-10

Runoff = 0.3 cfs @ 12.09 hrs, Volume= 0.020 af, Depth> 1.53"

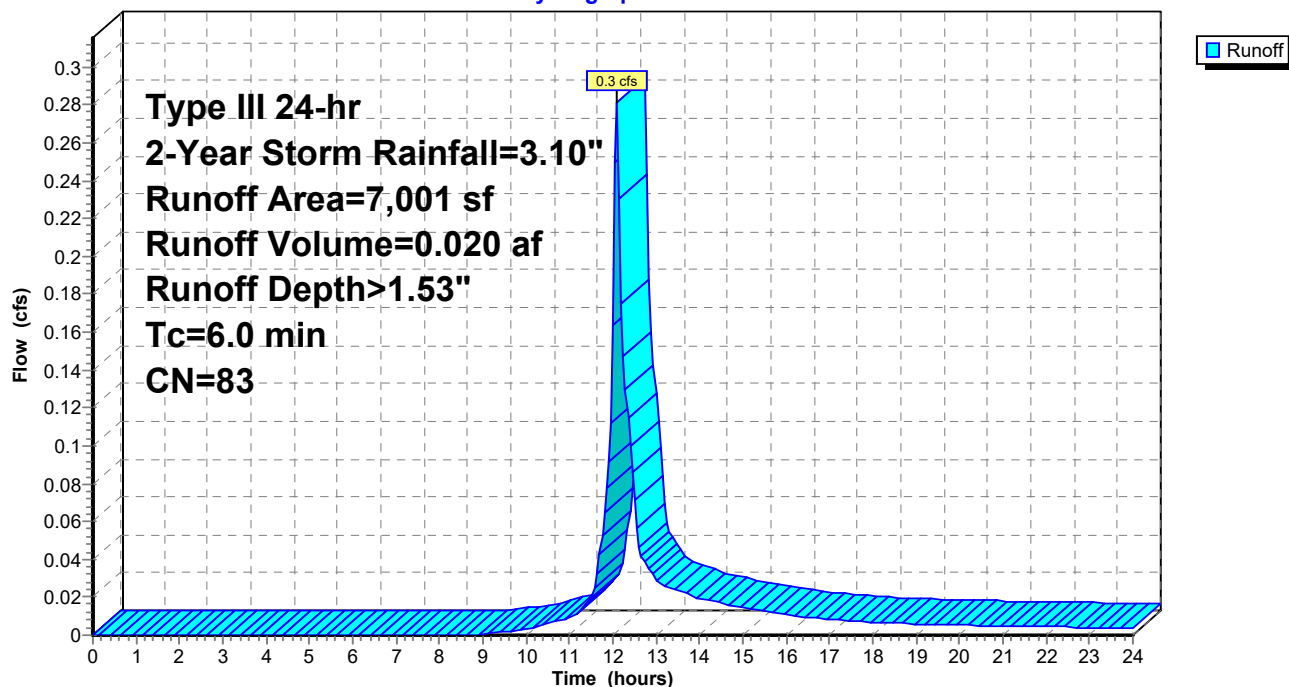
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
5,185	98	Paved parking, HSG A
1,816	39	Grass cover, Good, HSG A
7,001	83	Weighted Average
1,816		25.94% Pervious Area
5,185		74.06% Impervious Area

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

Subcatchment 10S: POST-10

Hydrograph



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Summary for Subcatchment 11S: POST-11

Runoff = 0.4 cfs @ 12.09 hrs, Volume= 0.028 af, Depth> 1.46"

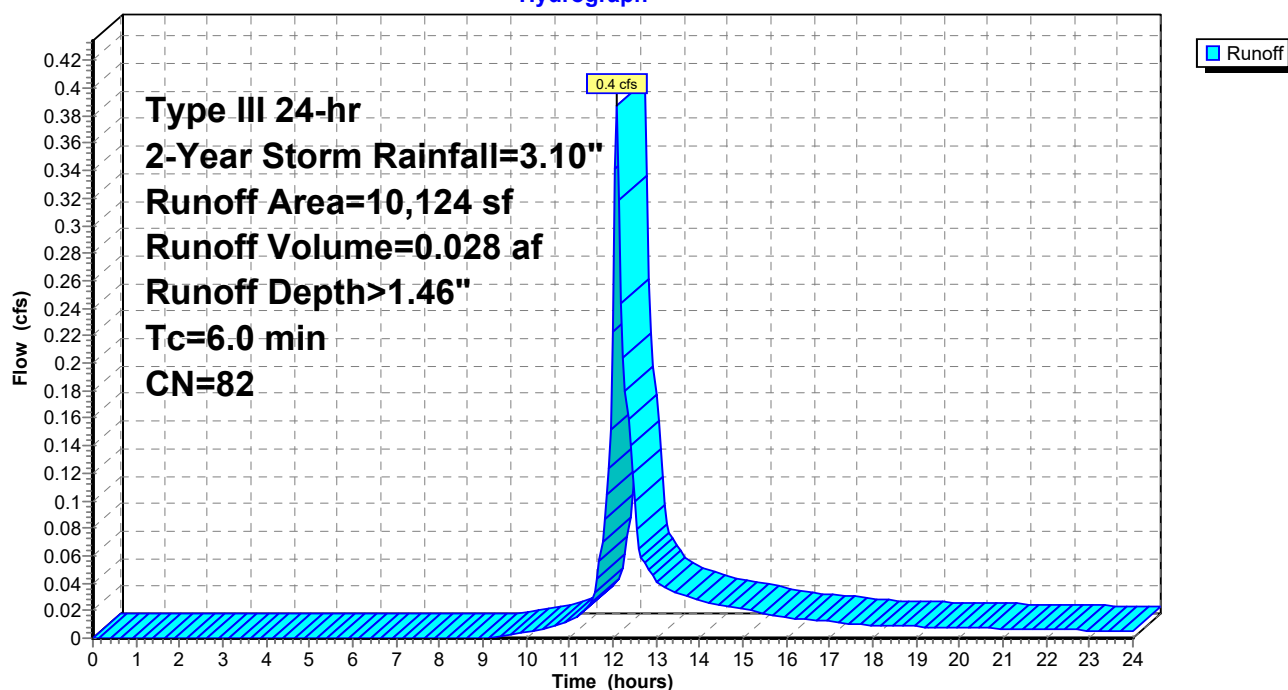
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
7,416	98	Paved parking, HSG A
2,708	39	Grass cover, Good, HSG A
10,124	82	Weighted Average
2,708		26.75% Pervious Area
7,416		73.25% Impervious Area

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

Subcatchment 11S: POST-11

Hydrograph



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Summary for Subcatchment 12S: POST-12

Runoff = 0.3 cfs @ 12.10 hrs, Volume= 0.025 af, Depth> 1.03"

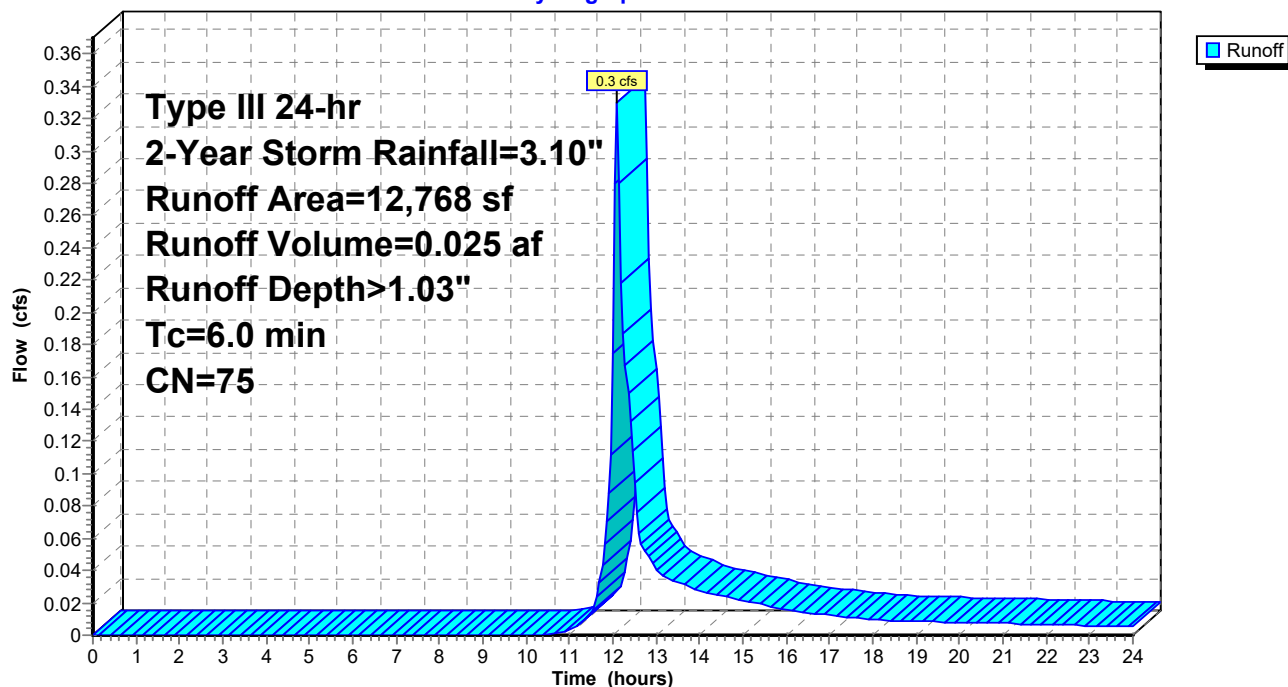
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
7,727	98	Paved parking, HSG A
5,041	39	Grass cover, Good, HSG A
12,768	75	Weighted Average
5,041		39.48% Pervious Area
7,727		60.52% Impervious Area

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

Subcatchment 12S: POST-12

Hydrograph



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Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Subcatchment 13S: POST-13

Runoff = 0.4 cfs @ 12.10 hrs, Volume= 0.032 af, Depth> 1.32"

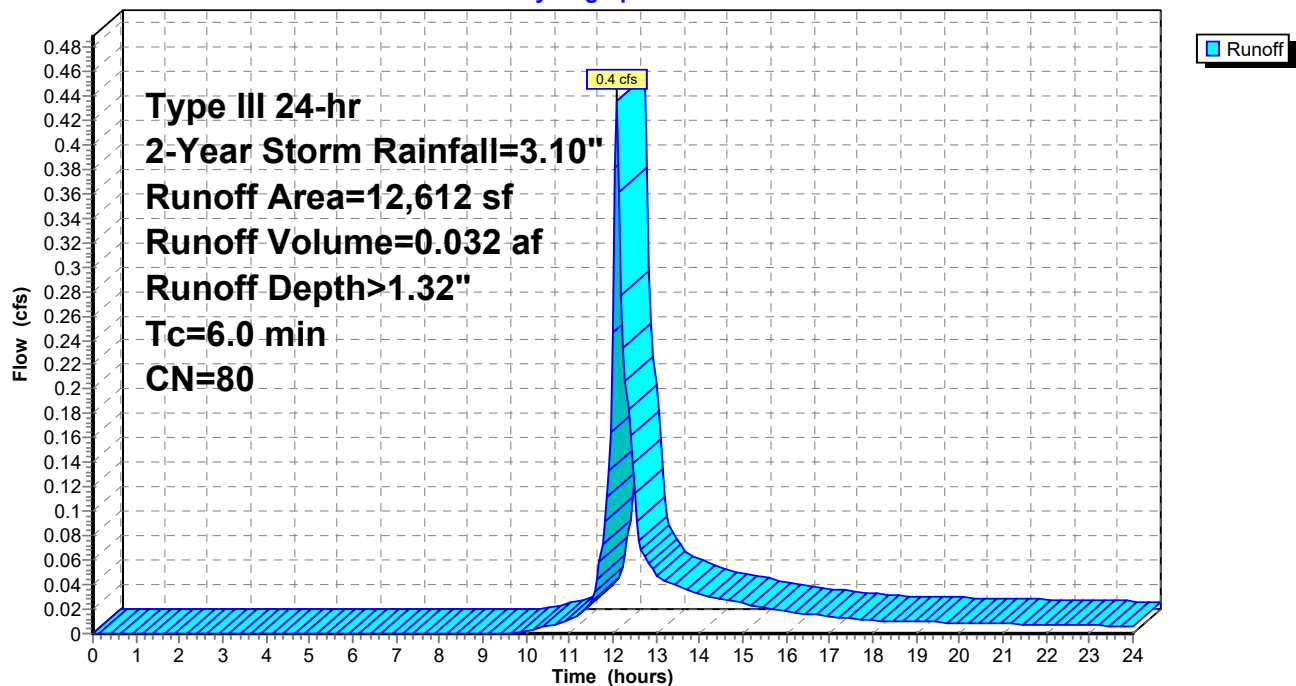
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
8,813	98	Paved parking, HSG A
3,299	39	Grass cover, Good, HSG A
* 500	40	Porous Pavement
12,612	80	Weighted Average
3,799		30.12% Pervious Area
8,813		69.88% Impervious Area

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

Subcatchment 13S: POST-13

Hydrograph



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Summary for Pond 1P: CB1

Inflow Area = 0.13 ac, 70.24% Impervious, Inflow Depth > 1.39" for 2-Year Storm event
Inflow = 0.2 cfs @ 12.10 hrs, Volume= 0.015 af
Outflow = 0.2 cfs @ 12.10 hrs, Volume= 0.015 af, Atten= 0%, Lag= 0.0 min
Primary = 0.2 cfs @ 12.10 hrs, Volume= 0.015 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 20.43' @ 12.22 hrs

Flood Elev= 22.34'

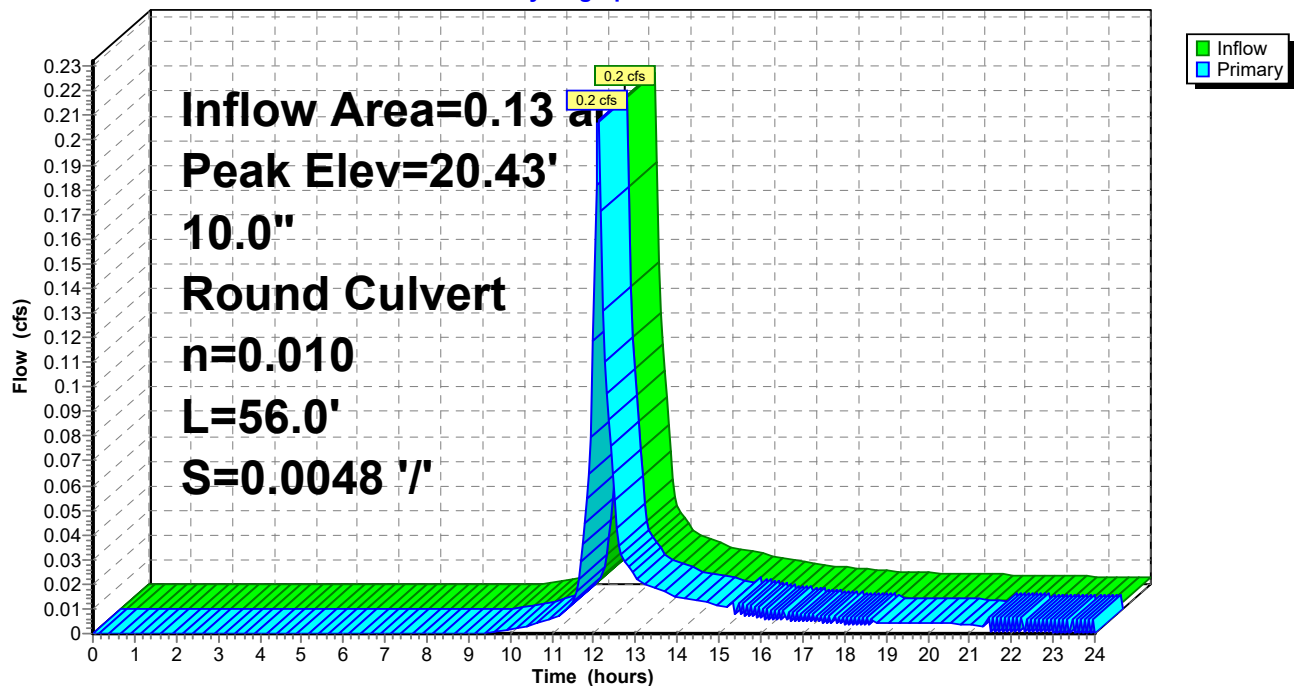
Device	Routing	Invert	Outlet Devices
#1	Primary	18.34'	10.0" Round Culvert L= 56.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.34' / 18.07' S= 0.0048 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.0 cfs @ 12.10 hrs HW=19.48' TW=20.04' (Dynamic Tailwater)

↑1=Culvert (Controls 0.0 cfs)

Pond 1P: CB1

Hydrograph



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Summary for Pond 2P: CB2

Inflow Area = 0.35 ac, 85.14% Impervious, Inflow Depth > 2.05" for 2-Year Storm event
Inflow = 0.8 cfs @ 12.09 hrs, Volume= 0.060 af
Outflow = 0.8 cfs @ 12.09 hrs, Volume= 0.060 af, Atten= 0%, Lag= 0.0 min
Primary = 0.8 cfs @ 12.09 hrs, Volume= 0.060 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 20.42' @ 12.17 hrs

Flood Elev= 22.31'

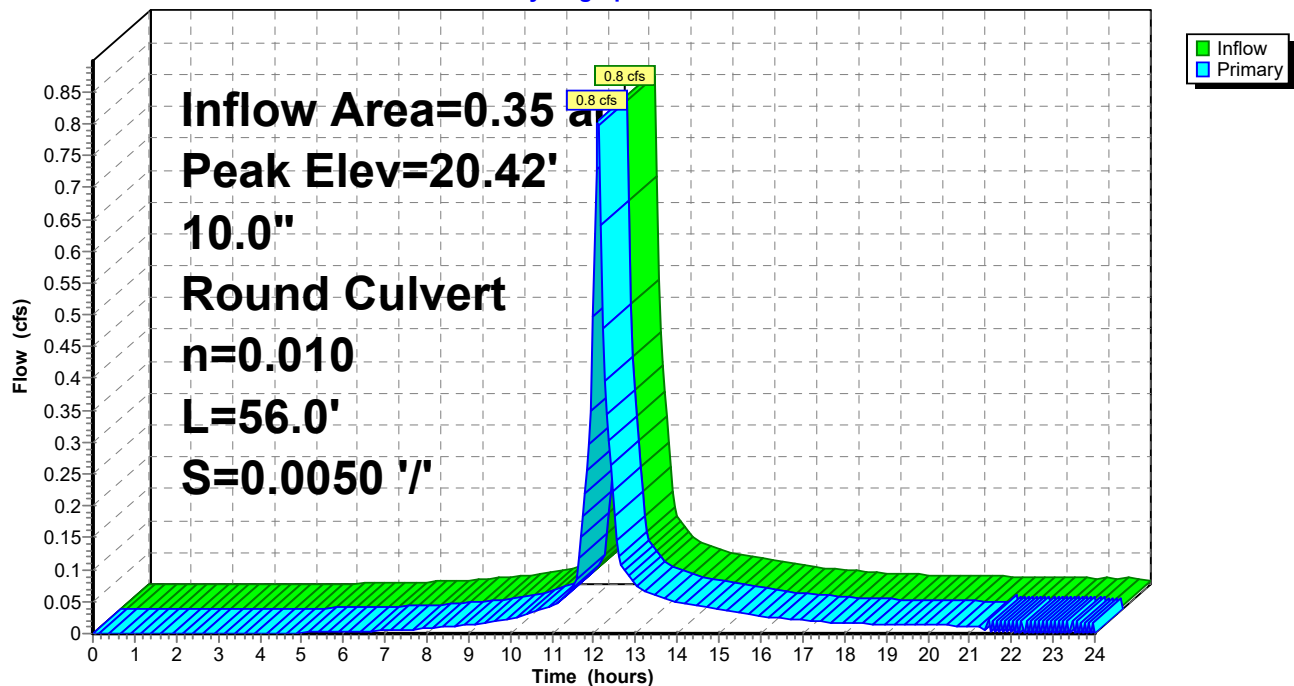
Device	Routing	Invert	Outlet Devices
#1	Primary	17.97'	10.0" Round Culvert L= 56.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.97' / 17.69' S= 0.0050 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.0 cfs @ 12.09 hrs HW=19.98' TW=20.23' (Dynamic Tailwater)

↑1=Culvert (Controls 0.0 cfs)

Pond 2P: CB2

Hydrograph



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Summary for Pond 3P: CB3

Inflow Area = 0.70 ac, 85.93% Impervious, Inflow Depth > 2.06" for 2-Year Storm event
Inflow = 1.6 cfs @ 12.09 hrs, Volume= 0.120 af
Outflow = 1.6 cfs @ 12.09 hrs, Volume= 0.120 af, Atten= 0%, Lag= 0.0 min
Primary = 1.6 cfs @ 12.09 hrs, Volume= 0.120 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 20.32' @ 12.15 hrs

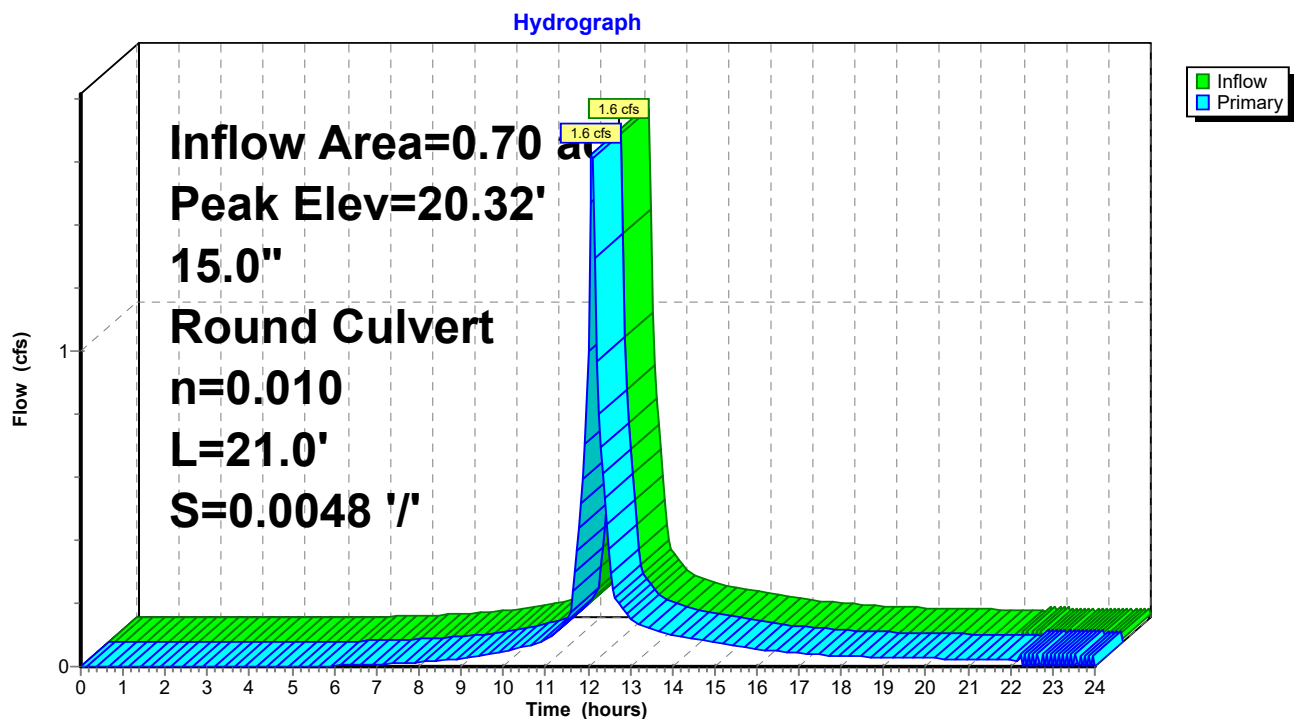
Flood Elev= 22.36'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.58'	15.0" Round Culvert L= 21.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.58' / 17.48' S= 0.0048 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.0 cfs @ 12.09 hrs HW=20.23' TW=20.23' (Dynamic Tailwater)

↑1=Culvert (Controls 0.0 cfs)

Pond 3P: CB3



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Summary for Pond 4P: CB4

Inflow Area = 0.50 ac, 83.05% Impervious, Inflow Depth > 1.95" for 2-Year Storm event
Inflow = 1.1 cfs @ 12.09 hrs, Volume= 0.081 af
Outflow = 1.1 cfs @ 12.09 hrs, Volume= 0.081 af, Atten= 0%, Lag= 0.0 min
Primary = 1.1 cfs @ 12.09 hrs, Volume= 0.081 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 20.27' @ 12.17 hrs

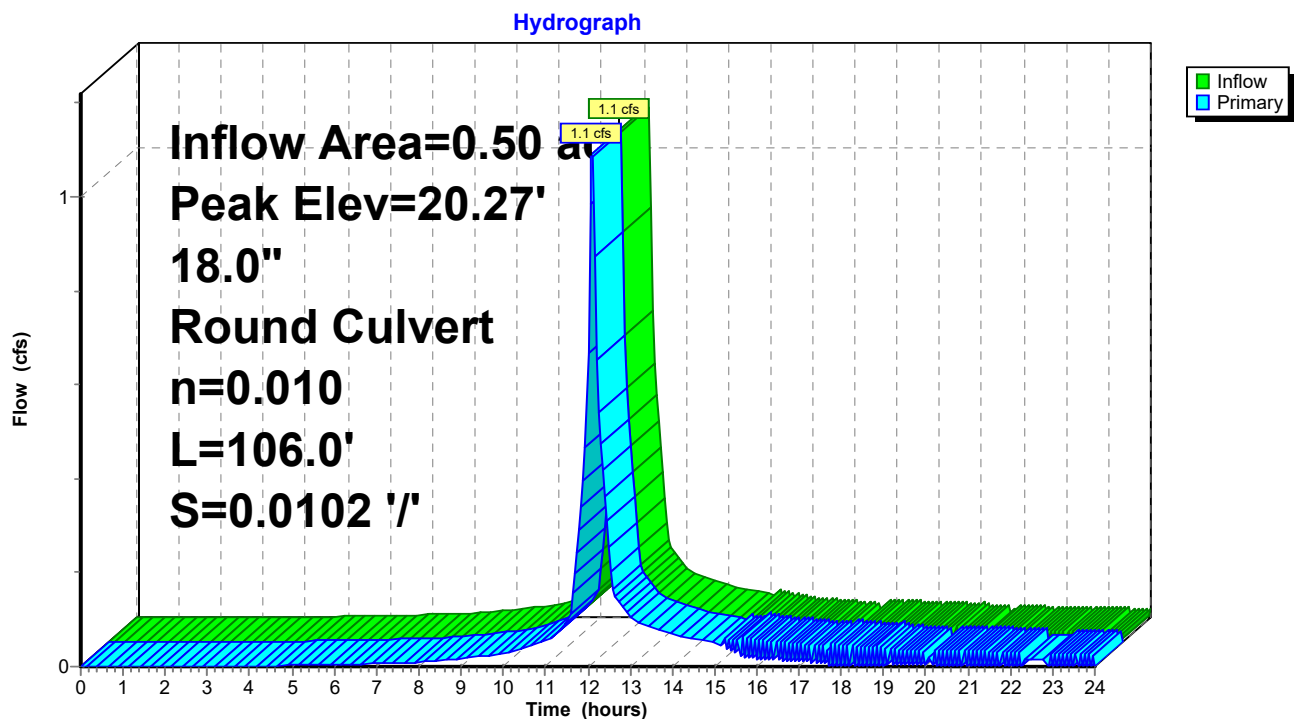
Flood Elev= 21.87'

Device	Routing	Invert	Outlet Devices
#1	Primary	15.72'	18.0" Round Culvert L= 106.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.72' / 14.64' S= 0.0102 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.09 hrs HW=20.14' TW=20.23' (Dynamic Tailwater)

↑1=Culvert (Controls 0.0 cfs)

Pond 4P: CB4



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Summary for Pond 5P: CB5

Inflow Area = 0.35 ac, 86.25% Impervious, Inflow Depth > 2.11" for 2-Year Storm event
Inflow = 0.8 cfs @ 12.09 hrs, Volume= 0.061 af
Outflow = 0.8 cfs @ 12.09 hrs, Volume= 0.061 af, Atten= 0%, Lag= 0.0 min
Primary = 0.8 cfs @ 12.09 hrs, Volume= 0.061 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 20.28' @ 12.22 hrs

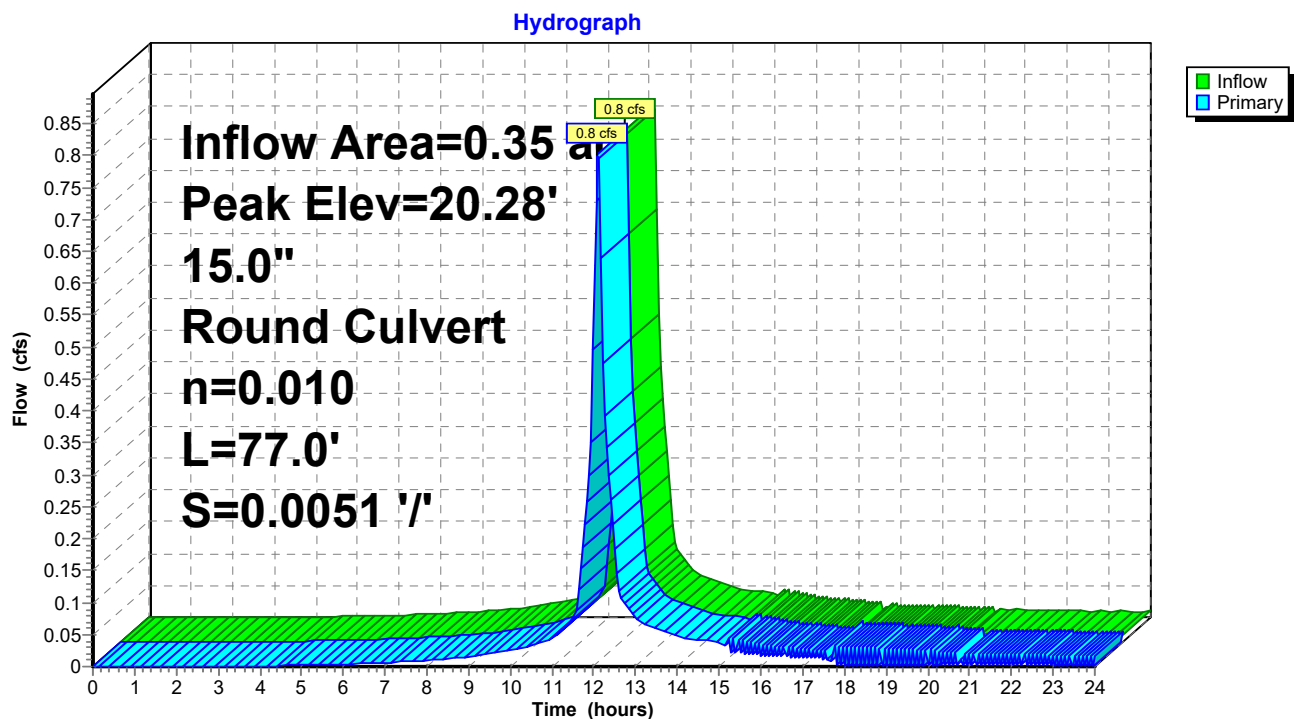
Flood Elev= 21.28'

Device	Routing	Invert	Outlet Devices
#1	Primary	16.90'	15.0" Round Culvert L= 77.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.90' / 16.51' S= 0.0051 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.0 cfs @ 12.09 hrs HW=19.79' TW=20.14' (Dynamic Tailwater)

↑1=Culvert (Controls 0.0 cfs)

Pond 5P: CB5



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Summary for Pond 6P: CB6

Inflow Area = 0.13 ac, 71.52% Impervious, Inflow Depth > 1.39" for 2-Year Storm event
Inflow = 0.2 cfs @ 12.10 hrs, Volume= 0.015 af
Outflow = 0.2 cfs @ 12.10 hrs, Volume= 0.015 af, Atten= 0%, Lag= 0.0 min
Primary = 0.2 cfs @ 12.10 hrs, Volume= 0.015 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 20.28' @ 12.27 hrs

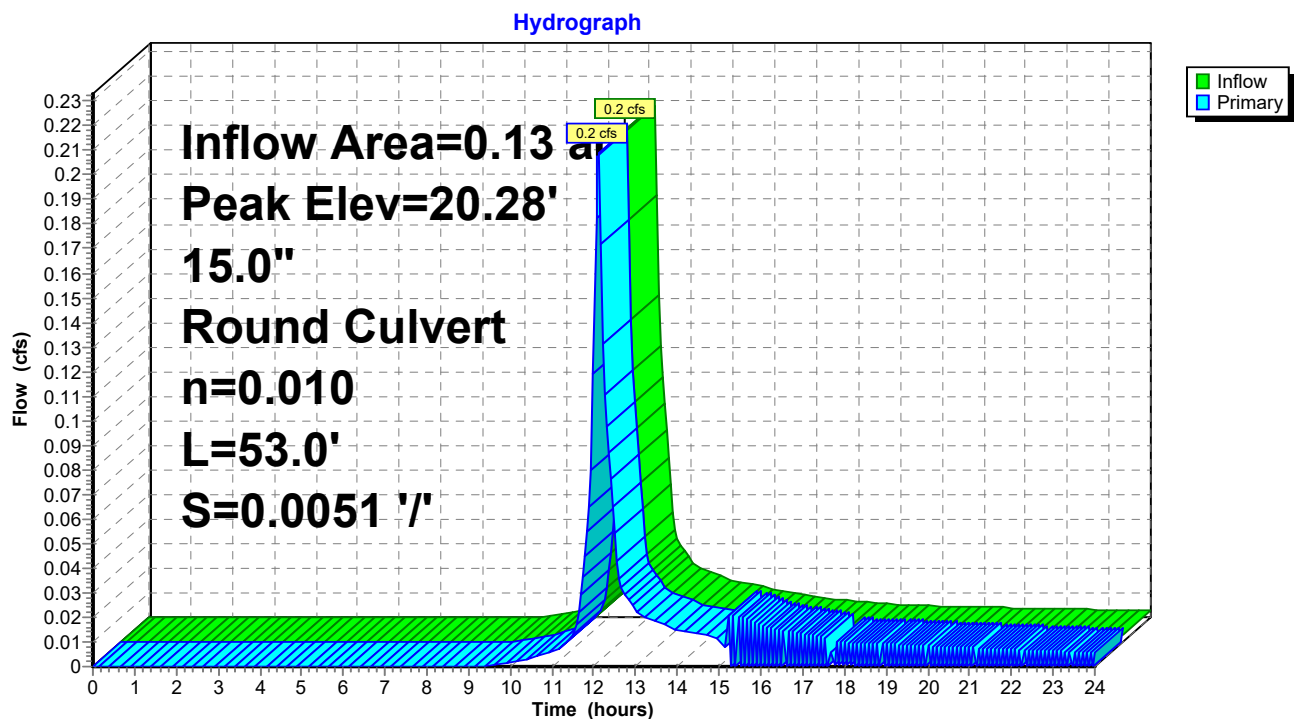
Flood Elev= 21.28'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.28'	15.0" Round Culvert L= 53.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.28' / 17.01' S= 0.0051 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.0 cfs @ 12.10 hrs HW=19.35' TW=19.85' (Dynamic Tailwater)

↑1=Culvert (Controls 0.0 cfs)

Pond 6P: CB6



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Summary for Pond 7P: CB7

Inflow Area = 0.29 ac, 60.52% Impervious, Inflow Depth > 1.03" for 2-Year Storm event
Inflow = 0.3 cfs @ 12.10 hrs, Volume= 0.025 af
Outflow = 0.3 cfs @ 12.10 hrs, Volume= 0.025 af, Atten= 0%, Lag= 0.0 min
Primary = 0.3 cfs @ 12.10 hrs, Volume= 0.025 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.83' @ 12.12 hrs

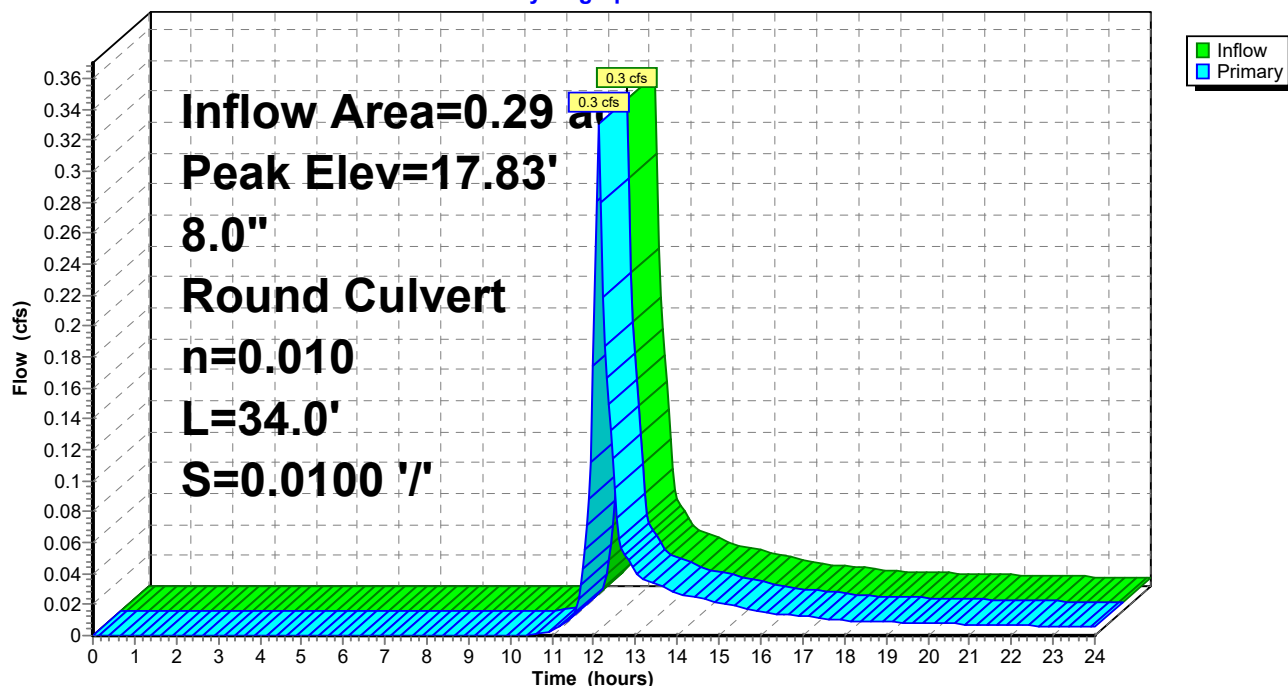
Flood Elev= 23.82'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.40'	8.0" Round Culvert L= 34.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.40' / 17.06' S= 0.0100 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.3 cfs @ 12.10 hrs HW=17.83' TW=17.68' (Dynamic Tailwater)
↑1=Culvert (Outlet Controls 0.3 cfs @ 1.78 fps)

Pond 7P: CB7

Hydrograph



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Summary for Pond 8P: CB8

Inflow Area = 0.29 ac, 69.88% Impervious, Inflow Depth > 1.32" for 2-Year Storm event
Inflow = 0.4 cfs @ 12.10 hrs, Volume= 0.032 af
Outflow = 0.4 cfs @ 12.10 hrs, Volume= 0.032 af, Atten= 0%, Lag= 0.0 min
Primary = 0.4 cfs @ 12.10 hrs, Volume= 0.032 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.22' @ 12.10 hrs

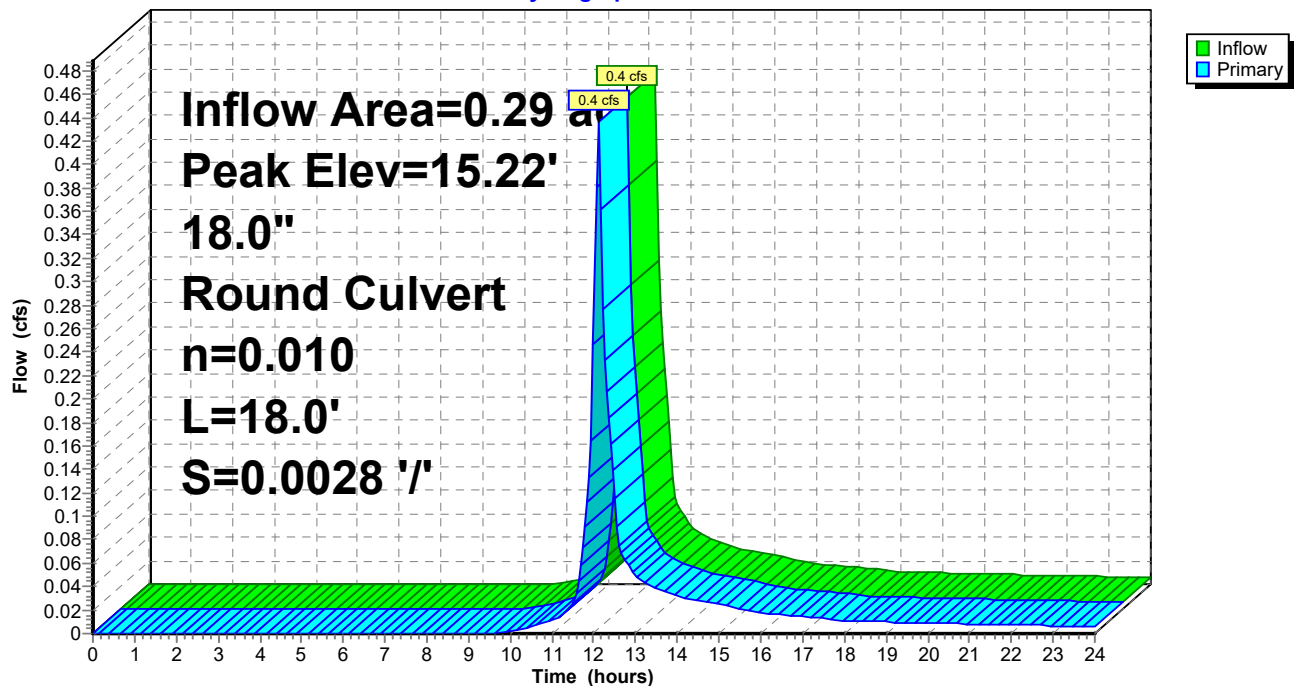
Flood Elev= 23.39'

Device	Routing	Invert	Outlet Devices
#1	Primary	14.85'	18.0" Round Culvert L= 18.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.85' / 14.80' S= 0.0028 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.4 cfs @ 12.10 hrs HW=15.22' TW=14.99' (Dynamic Tailwater)
↑1=Culvert (Barrel Controls 0.4 cfs @ 1.93 fps)

Pond 8P: CB8

Hydrograph



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Summary for Pond 9P: DMH1

Inflow Area = 1.20 ac, 84.73% Impervious, Inflow Depth > 2.01" for 2-Year Storm event
Inflow = 2.7 cfs @ 12.09 hrs, Volume= 0.201 af
Outflow = 2.7 cfs @ 12.09 hrs, Volume= 0.201 af, Atten= 0%, Lag= 0.0 min
Primary = 2.7 cfs @ 12.09 hrs, Volume= 0.201 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 20.25' @ 12.12 hrs

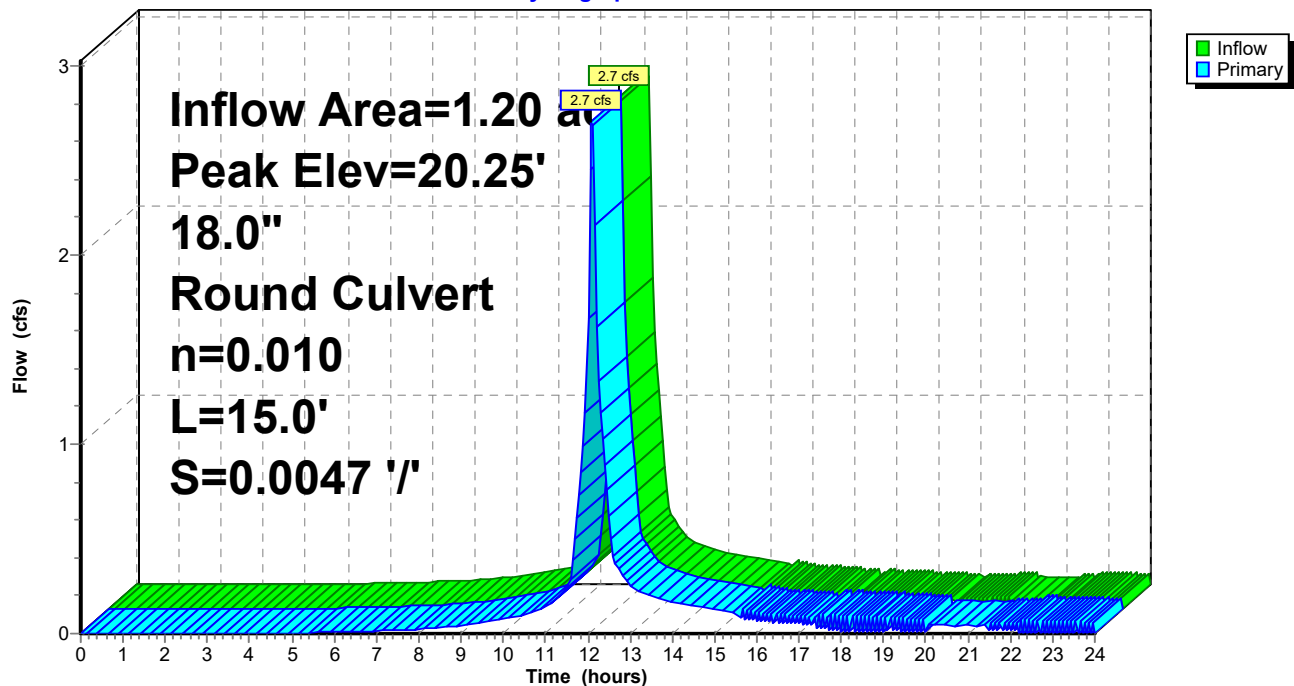
Flood Elev= 22.85'

Device	Routing	Invert	Outlet Devices
#1	Primary	15.78'	18.0" Round Culvert L= 15.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.78' / 15.71' S= 0.0047 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.1 cfs @ 12.09 hrs HW=20.23' TW=20.13' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 2.1 cfs @ 1.22 fps)

Pond 9P: DMH1

Hydrograph



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Summary for Pond 11P: Ex CB1

Inflow Area = 0.39 ac, 73.58% Impervious, Inflow Depth > 1.49" for 2-Year Storm event
Inflow = 0.7 cfs @ 12.09 hrs, Volume= 0.049 af
Outflow = 0.7 cfs @ 12.09 hrs, Volume= 0.049 af, Atten= 0%, Lag= 0.0 min
Primary = 0.7 cfs @ 12.09 hrs, Volume= 0.049 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 18.94' @ 12.09 hrs

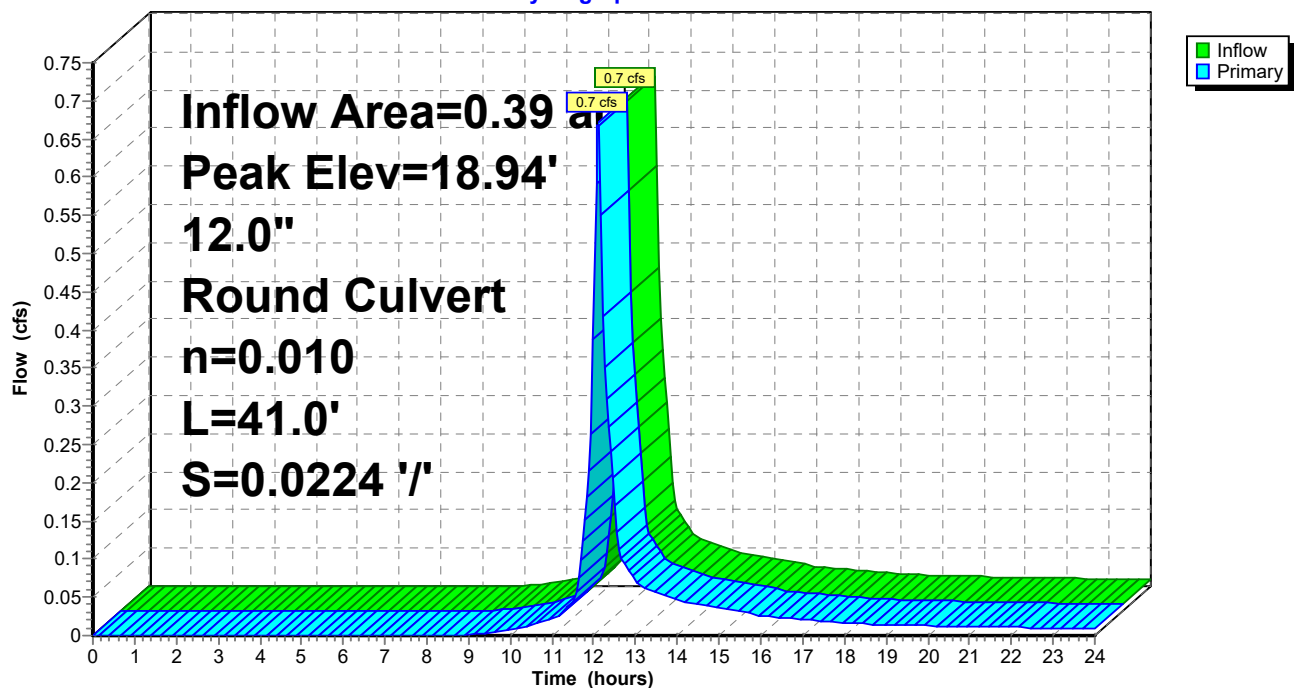
Flood Elev= 22.02'

Device	Routing	Invert	Outlet Devices
#1	Primary	18.47'	12.0" Round Culvert L= 41.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.47' / 17.55' S= 0.0224 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.7 cfs @ 12.09 hrs HW=18.94' TW=17.95' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 0.7 cfs @ 1.84 fps)

Pond 11P: Ex CB1

Hydrograph



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Summary for Pond 12P: Ex CB2

Inflow Area = 0.08 ac, 58.65% Impervious, Inflow Depth > 0.97" for 2-Year Storm event
Inflow = 0.1 cfs @ 12.10 hrs, Volume= 0.007 af
Outflow = 0.1 cfs @ 12.10 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min
Primary = 0.1 cfs @ 12.10 hrs, Volume= 0.007 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 18.32' @ 12.10 hrs

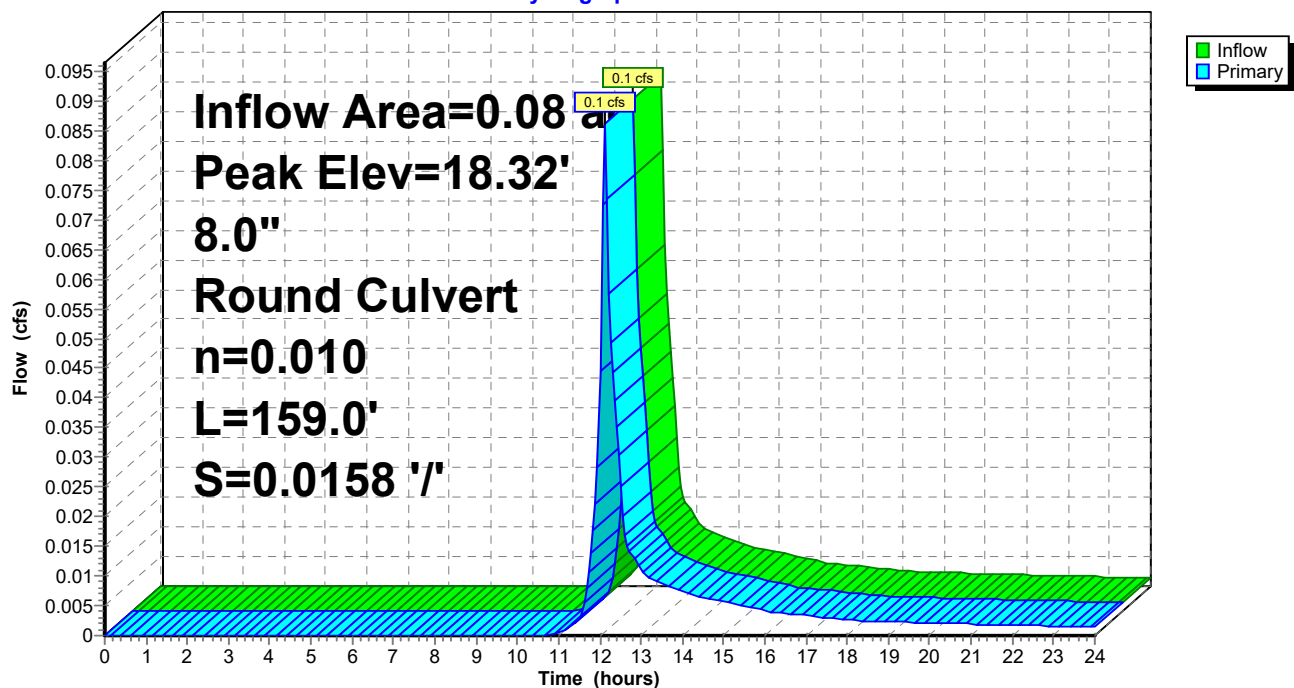
Flood Elev= 22.15'

Device	Routing	Invert	Outlet Devices
#1	Primary	18.14'	8.0" Round Culvert L= 159.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.14' / 15.62' S= 0.0158 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.1 cfs @ 12.10 hrs HW=18.32' TW=0.00' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 0.1 cfs @ 1.14 fps)

Pond 12P: Ex CB2

Hydrograph



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Summary for Pond 13P: CMP Peak Detention

Inflow = 2.7 cfs @ 12.10 hrs, Volume= 0.114 af
Outflow = 1.4 cfs @ 12.24 hrs, Volume= 0.114 af, Atten= 47%, Lag= 8.3 min
Primary = 1.4 cfs @ 12.24 hrs, Volume= 0.114 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.13' @ 12.24 hrs Surf.Area= 696 sf Storage= 905 cf

Flood Elev= 23.00' Surf.Area= 696 sf Storage= 2,403 cf

Plug-Flow detention time= 6.6 min calculated for 0.114 af (100% of inflow)

Center-of-Mass det. time= 6.6 min (788.7 - 782.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	14.71'	0 cf	8.00'W x 87.00'L x 6.00'H Field A 4,176 cf Overall - 2,403 cf Embedded = 1,773 cf x 0.0% Voids
#2A	14.71'	2,403 cf	CMP Round 72 x 4 Inside #1 Effective Size= 72.0"W x 72.0"H => 28.27 sf x 20.00'L = 565.5 cf Overall Size= 72.0"W x 72.0"H x 20.00'L Row Length Adjustment= +5.00' x 28.27 sf x 1 rows
		2,403 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	14.71'	18.0" Round Culvert L= 20.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 14.71' / 14.33' S= 0.0190 ' /' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf
#2	Device 1	14.71'	6.1" Vert. Orifice/Grate C= 0.600
#3	Device 1	17.21'	5.7" Vert. Orifice/Grate C= 0.600
#4	Device 1	18.79'	4.8" Vert. Orifice/Grate C= 0.600
#5	Device 1	20.05'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 5.34 5.40 5.46 5.52 5.58 5.64 5.70 5.76 5.82 5.88 5.94 6.00 Width (feet) 3.75 3.60 3.43 3.26 3.06 2.85 2.62 2.35 2.05 1.68 1.19 0.00

Primary OutFlow Max=1.4 cfs @ 12.24 hrs HW=17.12' TW=14.66' (Dynamic Tailwater)

- 1=Culvert (Passes 1.4 cfs of 11.0 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 1.4 cfs @ 7.07 fps)
- 3=Orifice/Grate (Controls 0.0 cfs)
- 4=Orifice/Grate (Controls 0.0 cfs)
- 5=Custom Weir/Orifice (Controls 0.0 cfs)

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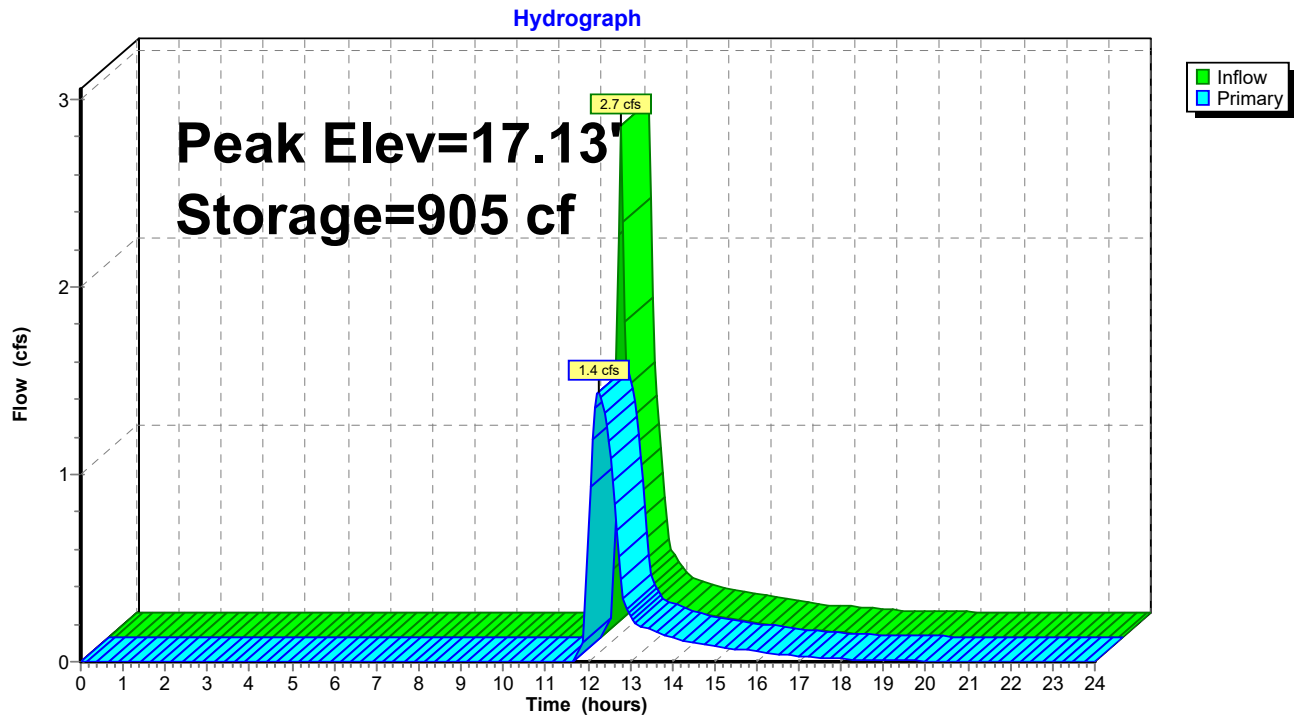
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Pond 13P: CMP Peak Detention



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Summary for Pond 14P: CONTECH WQv CMP Det & SF System

Inflow Area = 1.20 ac, 84.73% Impervious, Inflow Depth > 2.01" for 2-Year Storm event
 Inflow = 2.7 cfs @ 12.09 hrs, Volume= 0.201 af
 Outflow = 2.8 cfs @ 12.10 hrs, Volume= 0.162 af, Atten= 0%, Lag= 0.7 min
 Primary = 0.0 cfs @ 12.10 hrs, Volume= 0.047 af
 Secondary = 2.7 cfs @ 12.10 hrs, Volume= 0.114 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Starting Elev= 15.71' Surf.Area= 683 sf Storage= 96 cf

Peak Elev= 20.14' @ 12.10 hrs Surf.Area= 683 sf Storage= 1,999 cf (1,903 cf above start)

Flood Elev= 23.00' Surf.Area= 683 sf Storage= 2,114 cf (2,019 cf above start)

Plug-Flow detention time= 124.9 min calculated for 0.159 af (79% of inflow)

Center-of-Mass det. time= 41.8 min (845.8 - 804.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	15.21'	0 cf	7.50'W x 91.00'L x 5.50'H Field A 3,754 cf Overall - 2,114 cf Embedded = 1,639 cf x 0.0% Voids
#2A	15.21'	2,114 cf	CMP Round 66 x 4 Inside #1 Effective Size= 66.0"W x 66.0"H => 23.76 sf x 20.00'L = 475.2 cf Overall Size= 66.0"W x 66.0"H x 20.00'L Row Length Adjustment= +9.00' x 23.76 sf x 1 rows
		2,114 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	14.71'	Tube/Siphon/Float Valve X 6.00 Starts@17.76' Breaks@15.38' 0.336" Diameter, C= 0.600, 0.263" Trickle Diameter
#2	Device 1	15.71'	12.0" Round CMP_Round 12" L= 10.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 15.71' / 15.68' S= 0.0030 ' / Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#3	Secondary	19.78'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 4.57 4.62 4.67 4.73 4.79 4.84 4.89 4.95 5.00 5.06 5.12 5.17 5.22 5.28 5.33 5.39 5.45 5.50 Width (feet) 4.13 4.03 3.93 3.82 3.70 3.57 3.44 3.30 3.15 2.98 2.81 2.61 2.40 2.16 1.88 1.54 1.09 0.00

Primary OutFlow Max=0.0 cfs @ 12.10 hrs HW=20.14' TW=14.60' (Dynamic Tailwater)↑ **1=Tube/Siphon/Float Valve** (Orifice Controls 0.0 cfs @ 11.22 fps)↑ **2=CMP_Round 12"** (Passes 0.0 cfs of 7.5 cfs potential flow)**Secondary OutFlow** Max=2.7 cfs @ 12.10 hrs HW=20.14' TW=16.46' (Dynamic Tailwater)↑ **3=Custom Weir/Orifice** (Weir Controls 2.7 cfs @ 2.00 fps)

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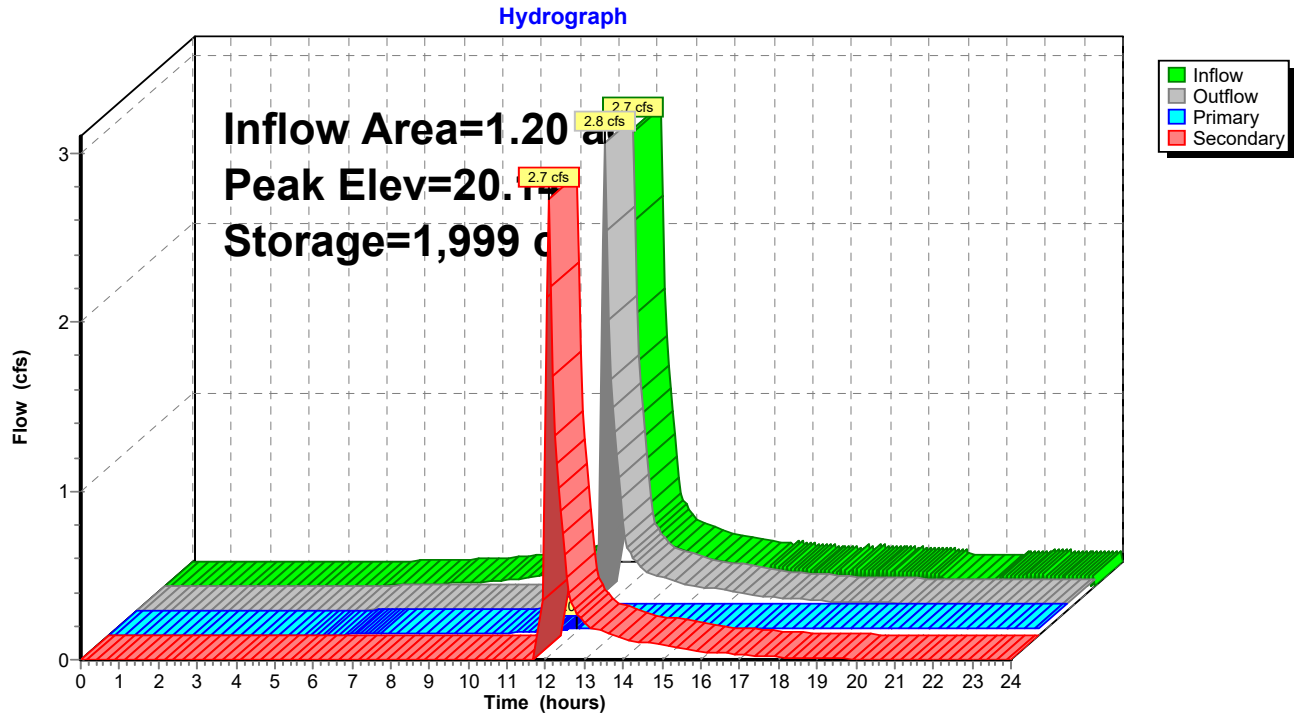
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Pond 14P: CONTECH WQv CMP Det & SF System



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Summary for Pond 21P: Ex DMH1

Inflow Area = 0.29 ac, 69.88% Impervious, Inflow Depth > 1.32" for 2-Year Storm event
Inflow = 0.4 cfs @ 12.10 hrs, Volume= 0.032 af
Outflow = 0.4 cfs @ 12.10 hrs, Volume= 0.032 af, Atten= 0%, Lag= 0.0 min
Primary = 0.4 cfs @ 12.10 hrs, Volume= 0.032 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.01' @ 12.13 hrs

Flood Elev= 23.72'

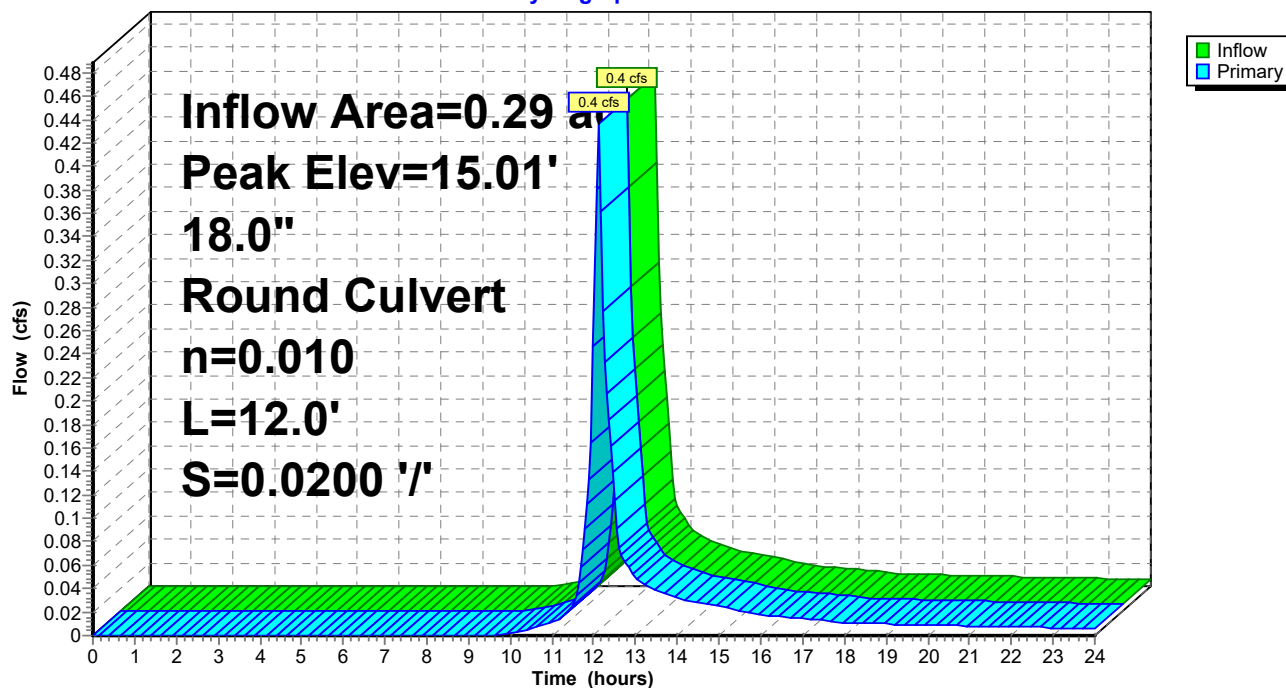
Device	Routing	Invert	Outlet Devices
#1	Primary	14.62'	18.0" Round Culvert L= 12.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.62' / 14.38' S= 0.0200 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.3 cfs @ 12.10 hrs HW=14.99' TW=14.91' (Dynamic Tailwater)

↑1=Culvert (Outlet Controls 0.3 cfs @ 1.51 fps)

Pond 21P: Ex DMH1

Hydrograph



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Summary for Pond 22P: Ex DMH2

Inflow Area = 0.69 ac, 68.00% Impervious, Inflow Depth > 1.29" for 2-Year Storm event
Inflow = 1.0 cfs @ 12.10 hrs, Volume= 0.074 af
Outflow = 1.0 cfs @ 12.10 hrs, Volume= 0.074 af, Atten= 0%, Lag= 0.0 min
Primary = 1.0 cfs @ 12.10 hrs, Volume= 0.074 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.68' @ 12.10 hrs

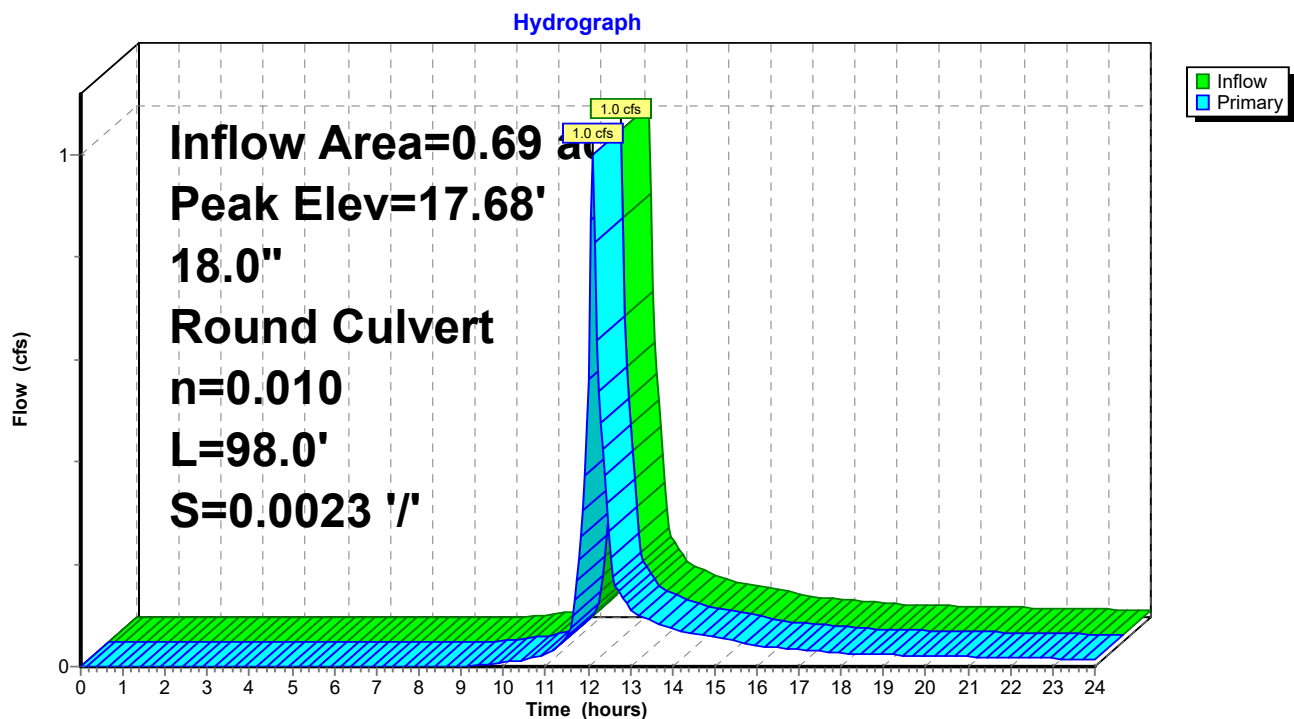
Flood Elev= 24.92'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.12'	18.0" Round Culvert L= 98.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.12' / 16.89' S= 0.0023 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.0 cfs @ 12.10 hrs HW=17.67' TW=17.32' (Dynamic Tailwater)

↑1=Culvert (Outlet Controls 1.0 cfs @ 2.45 fps)

Pond 22P: Ex DMH2



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Summary for Pond 23P: Ex CB3

Inflow Area = 1.20 ac, 84.73% Impervious, Inflow Depth > 1.62" for 2-Year Storm event
Inflow = 1.5 cfs @ 12.24 hrs, Volume= 0.162 af
Outflow = 1.5 cfs @ 12.24 hrs, Volume= 0.162 af, Atten= 0%, Lag= 0.0 min
Primary = 1.5 cfs @ 12.24 hrs, Volume= 0.162 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 14.66' @ 12.24 hrs

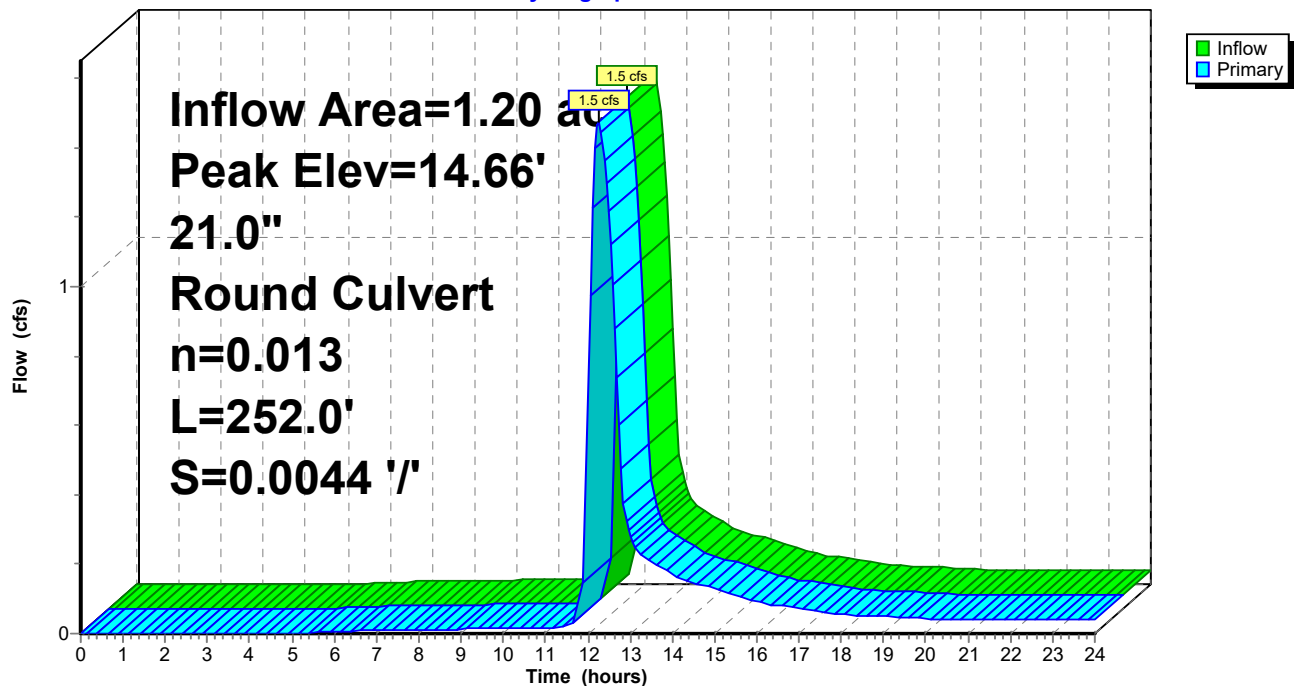
Flood Elev= 23.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	14.05'	21.0" Round Culvert L= 252.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.05' / 12.94' S= 0.0044 '/ Cc= 0.900 n= 0.013 Cast iron, coated, Flow Area= 2.41 sf

Primary OutFlow Max=1.5 cfs @ 12.24 hrs HW=14.66' TW=0.00' (Dynamic Tailwater)
↑1=Culvert (Barrel Controls 1.5 cfs @ 2.97 fps)

Pond 23P: Ex CB3

Hydrograph



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Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Pond 24P: Ex DMH4

Inflow Area = 0.69 ac, 68.00% Impervious, Inflow Depth > 1.29" for 2-Year Storm event
Inflow = 1.0 cfs @ 12.10 hrs, Volume= 0.074 af
Outflow = 1.0 cfs @ 12.10 hrs, Volume= 0.074 af, Atten= 0%, Lag= 0.0 min
Primary = 1.0 cfs @ 12.10 hrs, Volume= 0.074 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

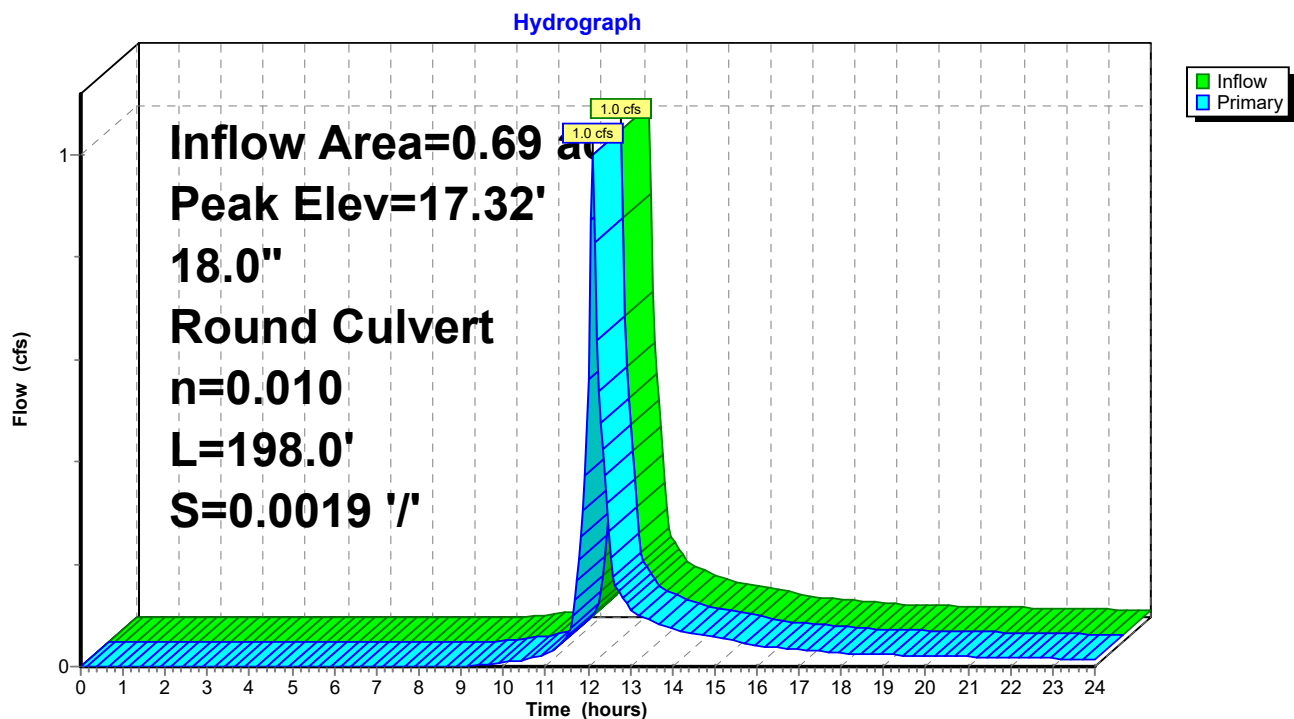
Peak Elev= 17.32' @ 12.10 hrs

Flood Elev= 25.38'

Device	Routing	Invert	Outlet Devices
#1	Primary	16.75'	18.0" Round Culvert L= 198.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.75' / 16.38' S= 0.0019 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.0 cfs @ 12.10 hrs HW=17.32' TW=15.95' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.0 cfs @ 2.41 fps)

Pond 24P: Ex DMH4



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Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Pond 25P: Ex DMH5

Inflow Area = 0.69 ac, 68.00% Impervious, Inflow Depth > 1.29" for 2-Year Storm event
Inflow = 1.0 cfs @ 12.10 hrs, Volume= 0.074 af
Outflow = 1.0 cfs @ 12.10 hrs, Volume= 0.074 af, Atten= 0%, Lag= 0.0 min
Primary = 1.0 cfs @ 12.10 hrs, Volume= 0.074 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

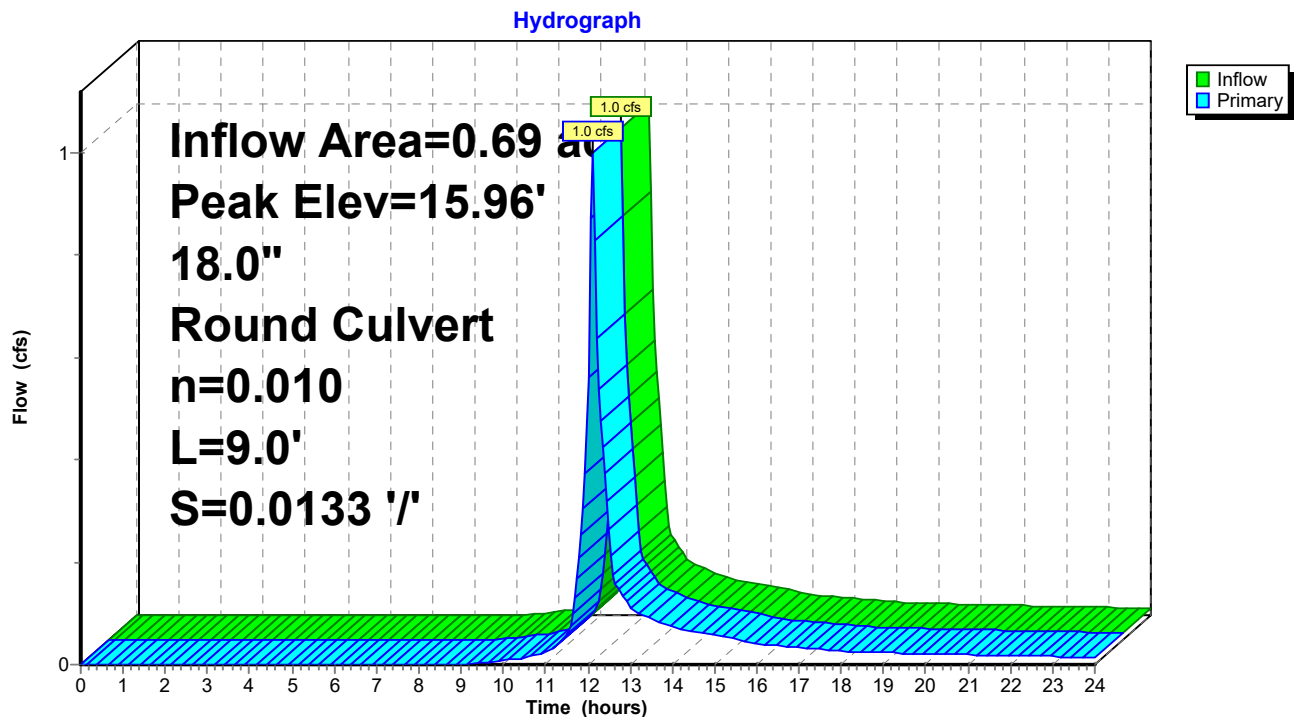
Peak Elev= 15.96' @ 12.10 hrs

Flood Elev= 23.84'

Device	Routing	Invert	Outlet Devices
#1	Primary	15.44'	18.0" Round Culvert L= 9.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.44' / 15.32' S= 0.0133 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.0 cfs @ 12.10 hrs HW=15.95' TW=14.91' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.0 cfs @ 2.76 fps)

Pond 25P: Ex DMH5



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Summary for Pond 26P: Ex DMH6

Inflow Area = 0.98 ac, 68.56% Impervious, Inflow Depth > 1.30" for 2-Year Storm event
Inflow = 1.4 cfs @ 12.10 hrs, Volume= 0.106 af
Outflow = 1.4 cfs @ 12.10 hrs, Volume= 0.106 af, Atten= 0%, Lag= 0.0 min
Primary = 1.4 cfs @ 12.10 hrs, Volume= 0.106 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 14.91' @ 12.10 hrs

Flood Elev= 23.95'

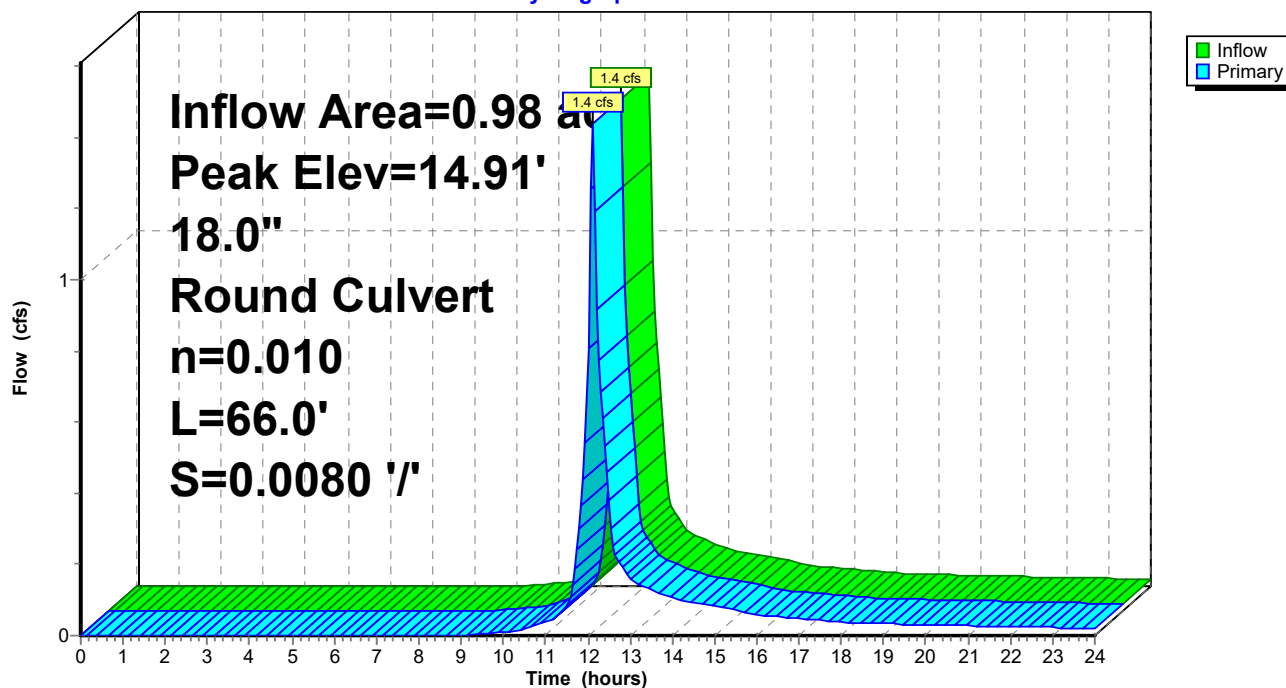
Device	Routing	Invert	Outlet Devices
#1	Primary	14.30'	18.0" Round Culvert L= 66.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.30' / 13.77' S= 0.0080 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.4 cfs @ 12.10 hrs HW=14.91' TW=14.42' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 1.4 cfs @ 2.10 fps)

Pond 26P: Ex DMH6

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Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Pond 27P: Ex DMH7

Inflow Area = 0.98 ac, 68.56% Impervious, Inflow Depth > 1.30" for 2-Year Storm event
Inflow = 1.4 cfs @ 12.10 hrs, Volume= 0.106 af
Outflow = 1.4 cfs @ 12.10 hrs, Volume= 0.106 af, Atten= 0%, Lag= 0.0 min
Primary = 1.4 cfs @ 12.10 hrs, Volume= 0.106 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

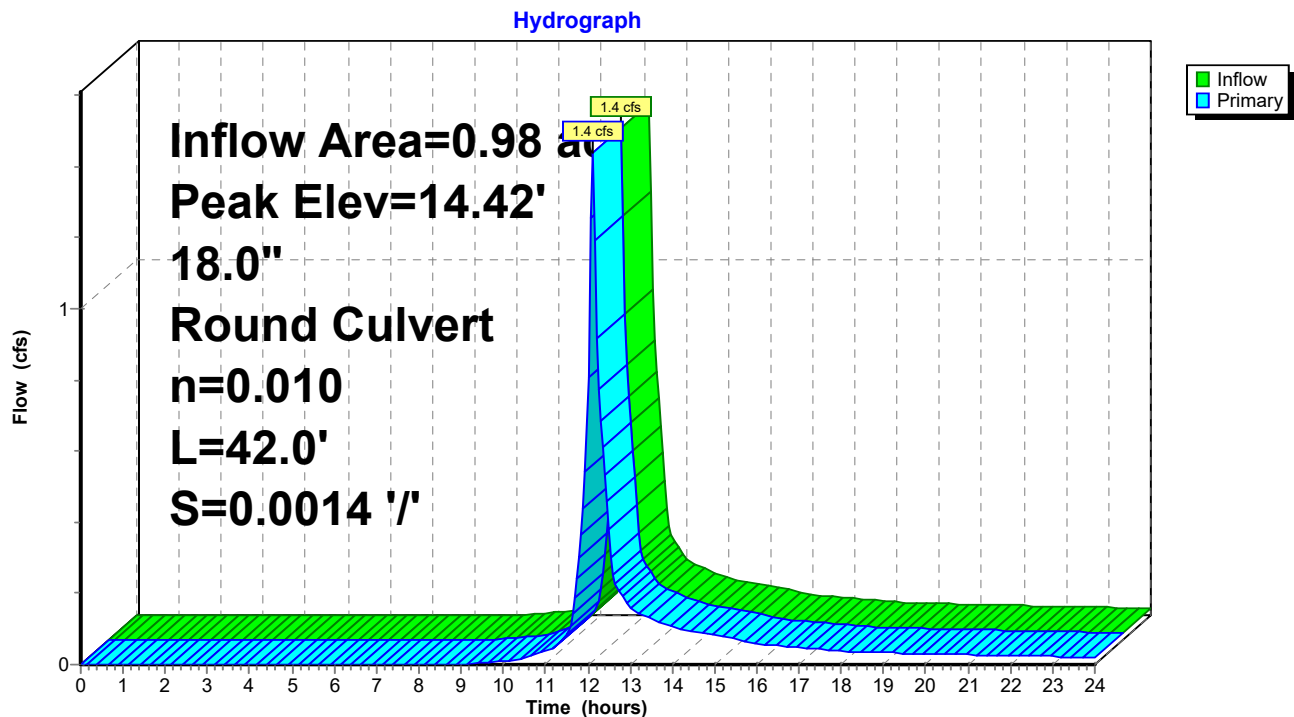
Peak Elev= 14.42' @ 12.10 hrs

Flood Elev= 24.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	13.70'	18.0" Round Culvert L= 42.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.70' / 13.64' S= 0.0014 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.4 cfs @ 12.10 hrs HW=14.42' TW=0.00' (Dynamic Tailwater)
↑1=Culvert (Barrel Controls 1.4 cfs @ 2.48 fps)

Pond 27P: Ex DMH7



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Summary for Pond 29P: Ex DMH9

Inflow Area = 0.39 ac, 73.58% Impervious, Inflow Depth > 1.49" for 2-Year Storm event
Inflow = 0.7 cfs @ 12.09 hrs, Volume= 0.049 af
Outflow = 0.7 cfs @ 12.09 hrs, Volume= 0.049 af, Atten= 0%, Lag= 0.0 min
Primary = 0.7 cfs @ 12.09 hrs, Volume= 0.049 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.96' @ 12.11 hrs

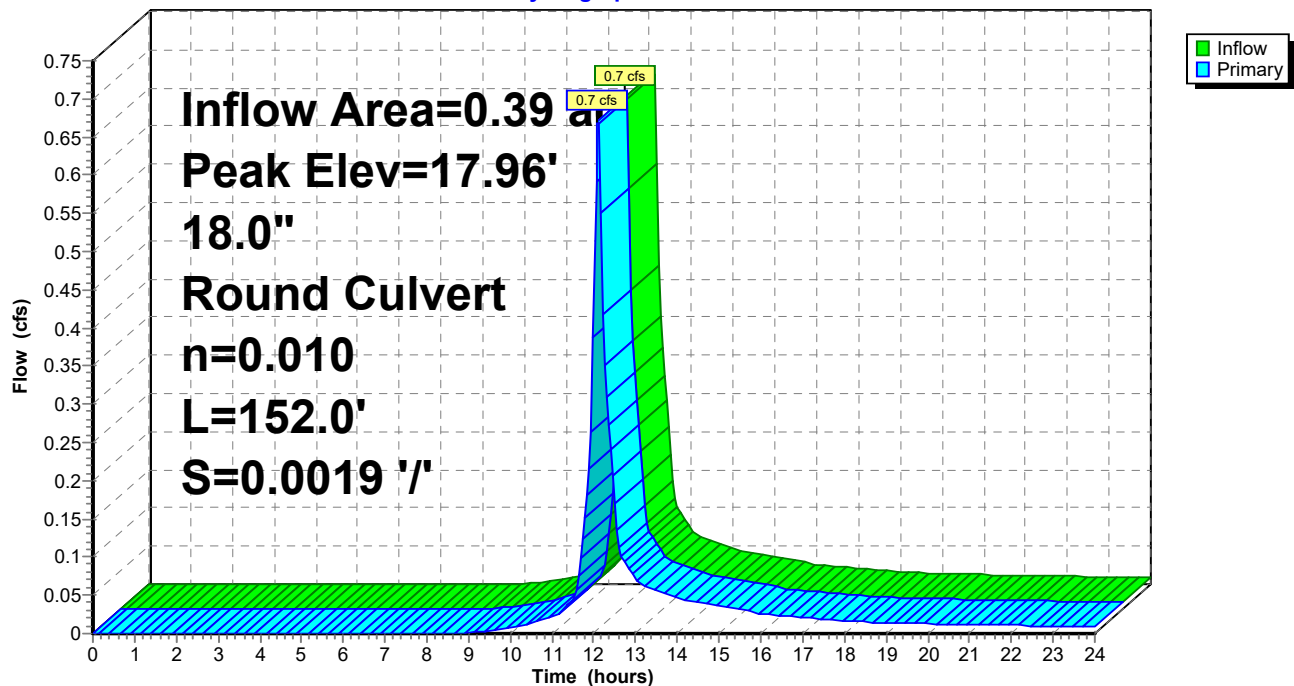
Flood Elev= 23.44'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.46'	18.0" Round Culvert L= 152.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.46' / 17.17' S= 0.0019 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.6 cfs @ 12.09 hrs HW=17.95' TW=17.67' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 0.6 cfs @ 1.83 fps)

Pond 29P: Ex DMH9

Hydrograph



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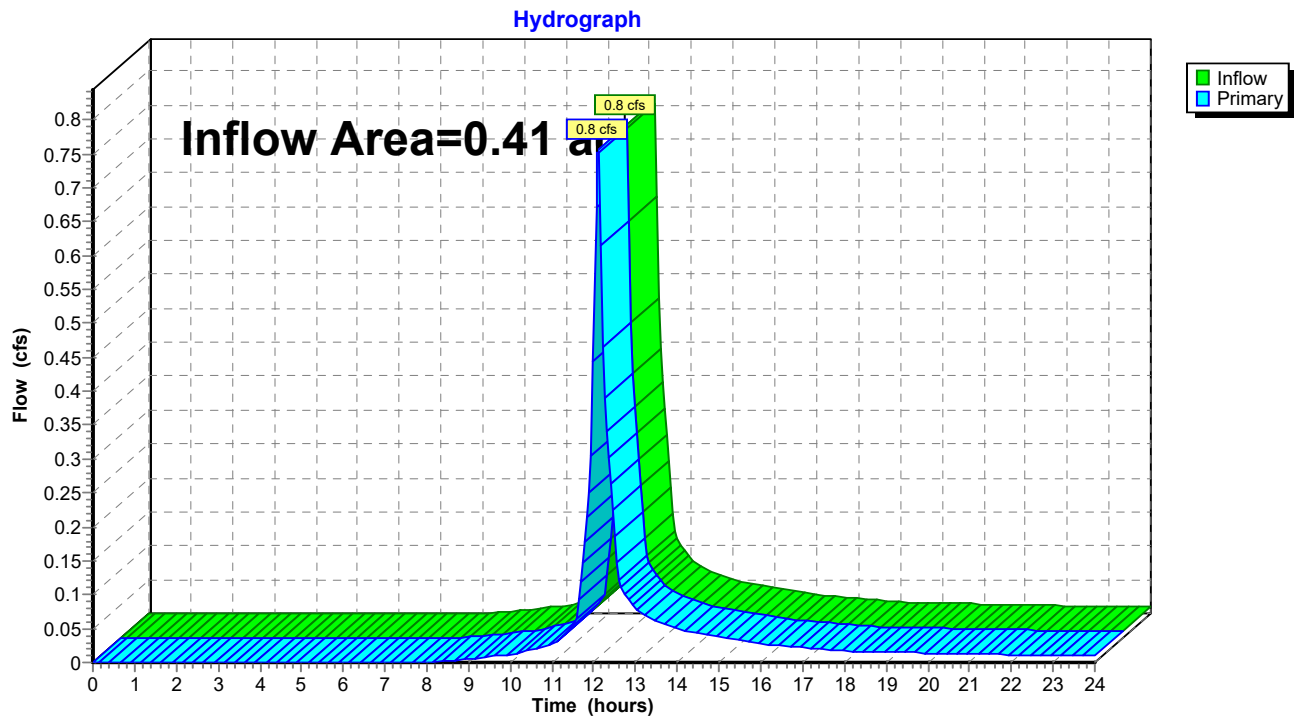
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Summary for Link SP1: Forest Ave Storm Drain

Inflow Area = 0.41 ac, 75.27% Impervious, Inflow Depth > 1.59" for 2-Year Storm event
Inflow = 0.8 cfs @ 12.09 hrs, Volume= 0.055 af
Primary = 0.8 cfs @ 12.09 hrs, Volume= 0.055 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP1: Forest Ave Storm Drain



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Type III 24-hr 2-Year Storm Rainfall=3.10"

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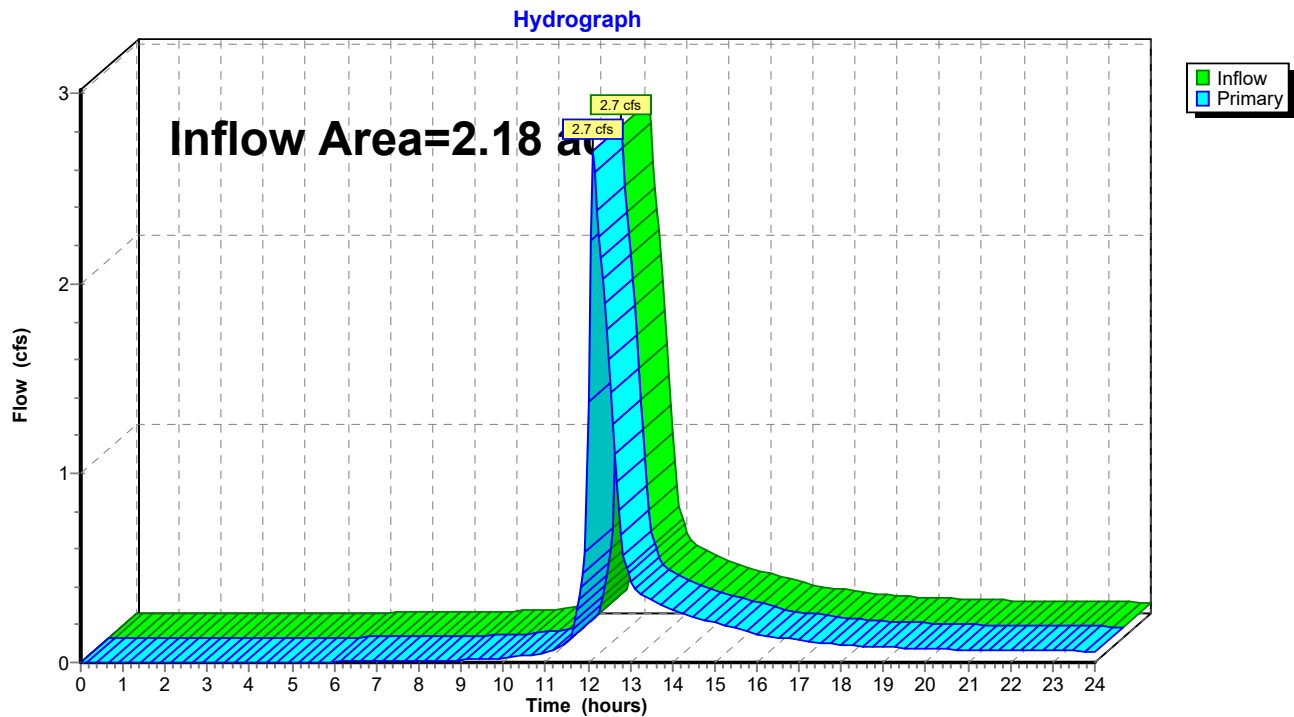
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Summary for Link SP2: Combined Sewer

Inflow Area = 2.18 ac, 77.47% Impervious, Inflow Depth > 1.47" for 2-Year Storm event
Inflow = 2.7 cfs @ 12.12 hrs, Volume= 0.267 af
Primary = 2.7 cfs @ 12.12 hrs, Volume= 0.267 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP2: Combined Sewer



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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: POST-1	Runoff Area=5,692 sf 70.24% Impervious Runoff Depth>2.63" Tc=6.0 min CN=81 Runoff=0.4 cfs 0.029 af
Subcatchment2S: POST-2	Runoff Area=9,641 sf 93.94% Impervious Runoff Depth>3.91" Tc=6.0 min CN=94 Runoff=0.9 cfs 0.072 af
Subcatchment3S: POST-3	Runoff Area=15,050 sf 86.74% Impervious Runoff Depth>3.49" Tc=6.0 min CN=90 Runoff=1.3 cfs 0.100 af
Subcatchment5S: POST-5	Runoff Area=6,810 sf 75.96% Impervious Runoff Depth>2.90" Tc=6.0 min CN=84 Runoff=0.5 cfs 0.038 af
Subcatchment6S: POST-6	Runoff Area=9,346 sf 95.25% Impervious Runoff Depth>4.02" Tc=6.0 min CN=95 Runoff=0.9 cfs 0.072 af
Subcatchment7S: POST-7	Runoff Area=5,710 sf 71.52% Impervious Runoff Depth>2.63" Tc=6.0 min CN=81 Runoff=0.4 cfs 0.029 af
Subcatchment8S: POST-8	Runoff Area=3,553 sf 58.65% Impervious Runoff Depth>2.05" Tc=6.0 min CN=74 Runoff=0.2 cfs 0.014 af
Subcatchment9S: POST-9	Runoff Area=14,487 sf 79.34% Impervious Runoff Depth>3.09" Tc=6.0 min CN=86 Runoff=1.2 cfs 0.086 af
Subcatchment10S: POST-10	Runoff Area=7,001 sf 74.06% Impervious Runoff Depth>2.81" Tc=6.0 min CN=83 Runoff=0.5 cfs 0.038 af
Subcatchment11S: POST-11	Runoff Area=10,124 sf 73.25% Impervious Runoff Depth>2.72" Tc=6.0 min CN=82 Runoff=0.7 cfs 0.053 af
Subcatchment12S: POST-12	Runoff Area=12,768 sf 60.52% Impervious Runoff Depth>2.13" Tc=6.0 min CN=75 Runoff=0.7 cfs 0.052 af
Subcatchment13S: POST-13	Runoff Area=12,612 sf 69.88% Impervious Runoff Depth>2.54" Tc=6.0 min CN=80 Runoff=0.8 cfs 0.061 af
Pond 1P: CB1	Peak Elev=21.10' Inflow=0.4 cfs 0.029 af 10.0" Round Culvert n=0.010 L=56.0' S=0.0048 '/' Outflow=0.4 cfs 0.029 af
Pond 2P: CB2	Peak Elev=21.09' Inflow=1.3 cfs 0.101 af 10.0" Round Culvert n=0.010 L=56.0' S=0.0050 '/' Outflow=1.3 cfs 0.101 af
Pond 3P: CB3	Peak Elev=20.89' Inflow=2.7 cfs 0.201 af 15.0" Round Culvert n=0.010 L=21.0' S=0.0048 '/' Outflow=2.7 cfs 0.201 af
Pond 4P: CB4	Peak Elev=20.73' Inflow=1.8 cfs 0.138 af 18.0" Round Culvert n=0.010 L=106.0' S=0.0102 '/' Outflow=1.8 cfs 0.138 af

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Pond 5P: CB5Peak Elev=20.75' Inflow=1.3 cfs 0.101 af
15.0" Round Culvert n=0.010 L=77.0' S=0.0051 '/' Outflow=1.3 cfs 0.101 af**Pond 6P: CB6**Peak Elev=20.76' Inflow=0.4 cfs 0.029 af
15.0" Round Culvert n=0.010 L=53.0' S=0.0051 '/' Outflow=0.4 cfs 0.029 af**Pond 7P: CB7**Peak Elev=18.17' Inflow=0.7 cfs 0.052 af
8.0" Round Culvert n=0.010 L=34.0' S=0.0100 '/' Outflow=0.7 cfs 0.052 af**Pond 8P: CB8**Peak Elev=15.38' Inflow=0.8 cfs 0.061 af
18.0" Round Culvert n=0.010 L=18.0' S=0.0028 '/' Outflow=0.8 cfs 0.061 af**Pond 9P: DMH1**Peak Elev=20.68' Inflow=4.5 cfs 0.340 af
18.0" Round Culvert n=0.010 L=15.0' S=0.0047 '/' Outflow=4.5 cfs 0.340 af**Pond 11P: Ex CB1**Peak Elev=19.14' Inflow=1.2 cfs 0.090 af
12.0" Round Culvert n=0.010 L=41.0' S=0.0224 '/' Outflow=1.2 cfs 0.090 af**Pond 12P: Ex CB2**Peak Elev=18.41' Inflow=0.2 cfs 0.014 af
8.0" Round Culvert n=0.010 L=159.0' S=0.0158 '/' Outflow=0.2 cfs 0.014 af**Pond 13P: CMP Peak Detention**Peak Elev=18.79' Storage=1,741 cf Inflow=4.5 cfs 0.247 af
Outflow=2.9 cfs 0.247 af**Pond 14P: CONTECHWQv CMP Det & SF**Peak Elev=20.29' Storage=2,042 cf Inflow=4.5 cfs 0.340 af
Primary=0.0 cfs 0.052 af Secondary=4.5 cfs 0.247 af Outflow=4.5 cfs 0.299 af**Pond 21P: Ex DMH1**Peak Elev=15.28' Inflow=0.8 cfs 0.061 af
18.0" Round Culvert n=0.010 L=12.0' S=0.0200 '/' Outflow=0.8 cfs 0.061 af**Pond 22P: Ex DMH2**Peak Elev=17.93' Inflow=2.0 cfs 0.142 af
18.0" Round Culvert n=0.010 L=98.0' S=0.0023 '/' Outflow=2.0 cfs 0.142 af**Pond 23P: Ex CB3**Peak Elev=14.93' Inflow=2.9 cfs 0.299 af
21.0" Round Culvert n=0.013 L=252.0' S=0.0044 '/' Outflow=2.9 cfs 0.299 af**Pond 24P: Ex DMH4**Peak Elev=17.57' Inflow=2.0 cfs 0.142 af
18.0" Round Culvert n=0.010 L=198.0' S=0.0019 '/' Outflow=2.0 cfs 0.142 af**Pond 25P: Ex DMH5**Peak Elev=16.21' Inflow=2.0 cfs 0.142 af
18.0" Round Culvert n=0.010 L=9.0' S=0.0133 '/' Outflow=2.0 cfs 0.142 af**Pond 26P: Ex DMH6**Peak Elev=15.21' Inflow=2.8 cfs 0.204 af
18.0" Round Culvert n=0.010 L=66.0' S=0.0080 '/' Outflow=2.8 cfs 0.204 af**Pond 27P: Ex DMH7**Peak Elev=14.75' Inflow=2.8 cfs 0.204 af
18.0" Round Culvert n=0.010 L=42.0' S=0.0014 '/' Outflow=2.8 cfs 0.204 af**Pond 29P: Ex DMH9**Peak Elev=18.18' Inflow=1.2 cfs 0.090 af
18.0" Round Culvert n=0.010 L=152.0' S=0.0019 '/' Outflow=1.2 cfs 0.090 af

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Link SP1: Forest Ave Storm Drain

Inflow=1.4 cfs 0.100 af

Primary=1.4 cfs 0.100 af

Link SP2: Combined Sewer

Inflow=5.4 cfs 0.502 af

Primary=5.4 cfs 0.502 af

Total Runoff Area = 2.59 ac Runoff Volume = 0.643 af Average Runoff Depth = 2.98"
22.88% Pervious = 0.59 ac 77.12% Impervious = 2.00 ac

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Summary for Subcatchment 1S: POST-1

Runoff = 0.4 cfs @ 12.09 hrs, Volume= 0.029 af, Depth> 2.63"

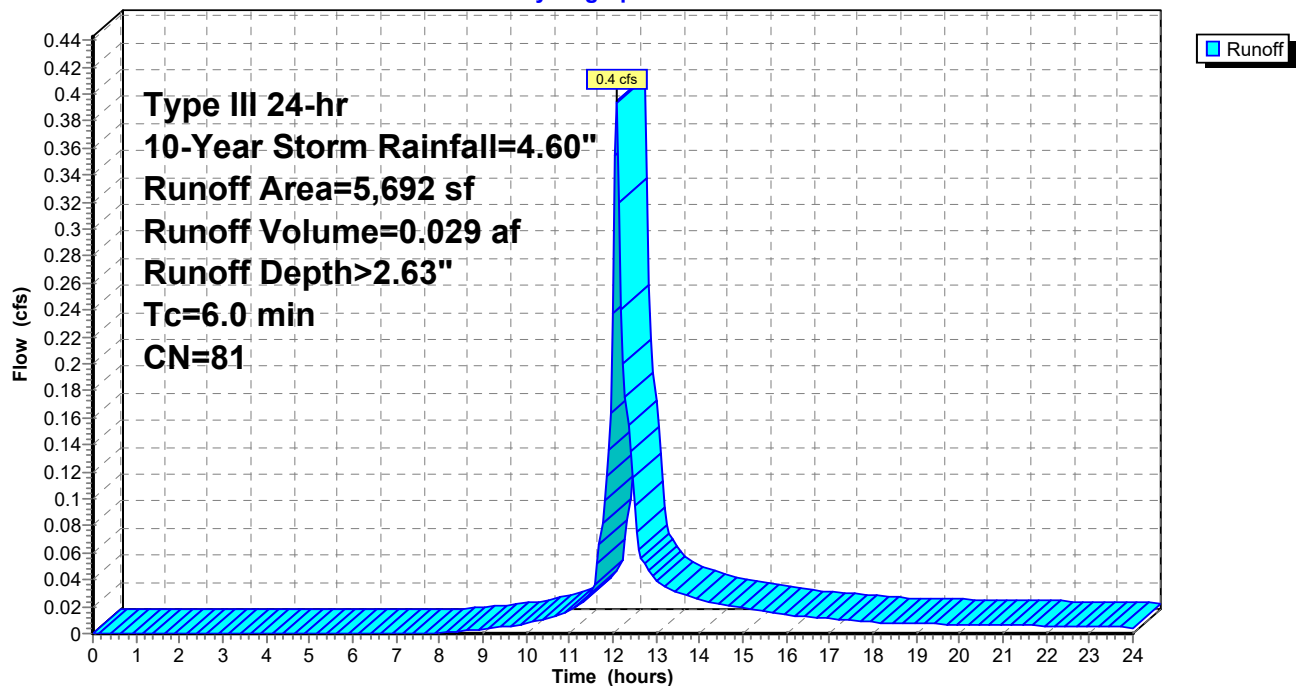
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
3,998	98	Paved parking, HSG A
830	39	Grass cover, Good, HSG A
* 864	40	Porous Pavement
5,692	81	Weighted Average
1,694		29.76% Pervious Area
3,998		70.24% Impervious Area

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

Subcatchment 1S: POST-1

Hydrograph



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Summary for Subcatchment 2S: POST-2

Runoff = 0.9 cfs @ 12.09 hrs, Volume= 0.072 af, Depth> 3.91"

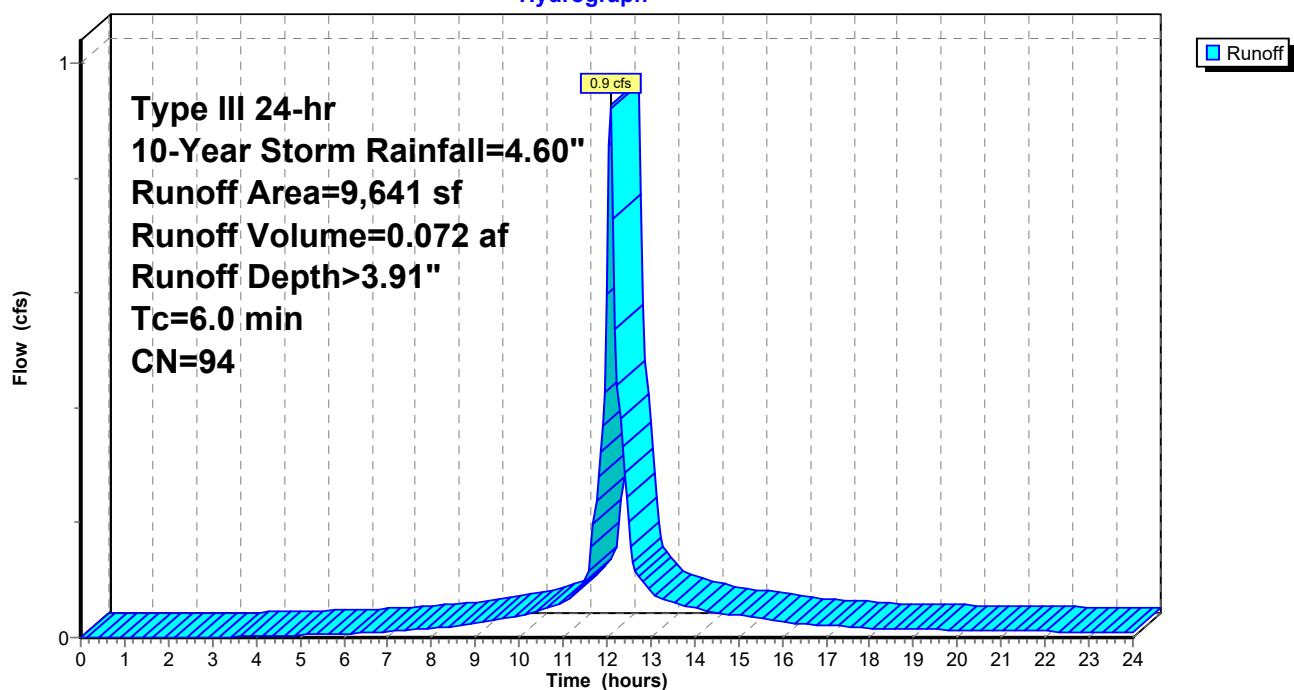
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
9,057	98	Paved parking, HSG A
502	39	Grass cover, Good, HSG A
* 82	40	Porous Pavement
9,641	94	Weighted Average
584		6.06% Pervious Area
9,057		93.94% Impervious Area

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

Subcatchment 2S: POST-2

Hydrograph



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Summary for Subcatchment 3S: POST-3

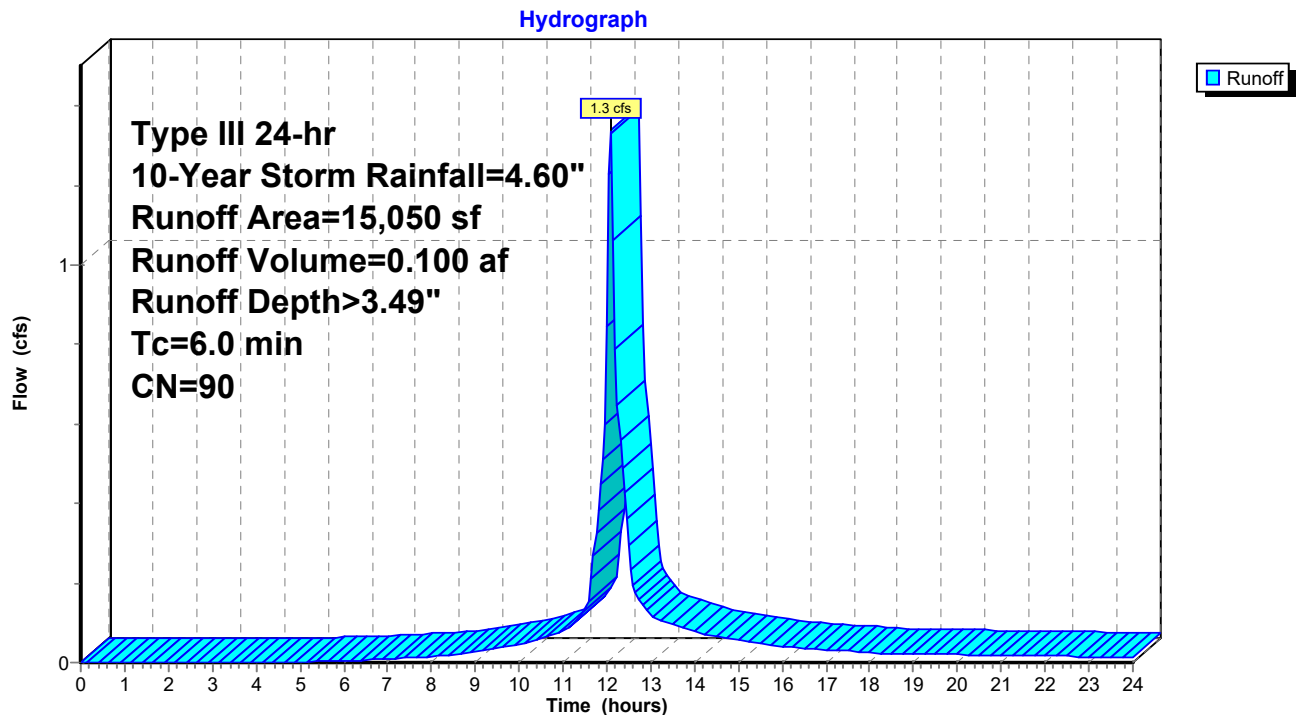
Runoff = 1.3 cfs @ 12.09 hrs, Volume= 0.100 af, Depth> 3.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
13,054	98	Paved parking, HSG A
1,909	39	Grass cover, Good, HSG A
* 87	40	Porous Pavement
15,050	90	Weighted Average
1,996		13.26% Pervious Area
13,054		86.74% Impervious Area

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

Subcatchment 3S: POST-3



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Summary for Subcatchment 5S: POST-5

Runoff = 0.5 cfs @ 12.09 hrs, Volume= 0.038 af, Depth> 2.90"

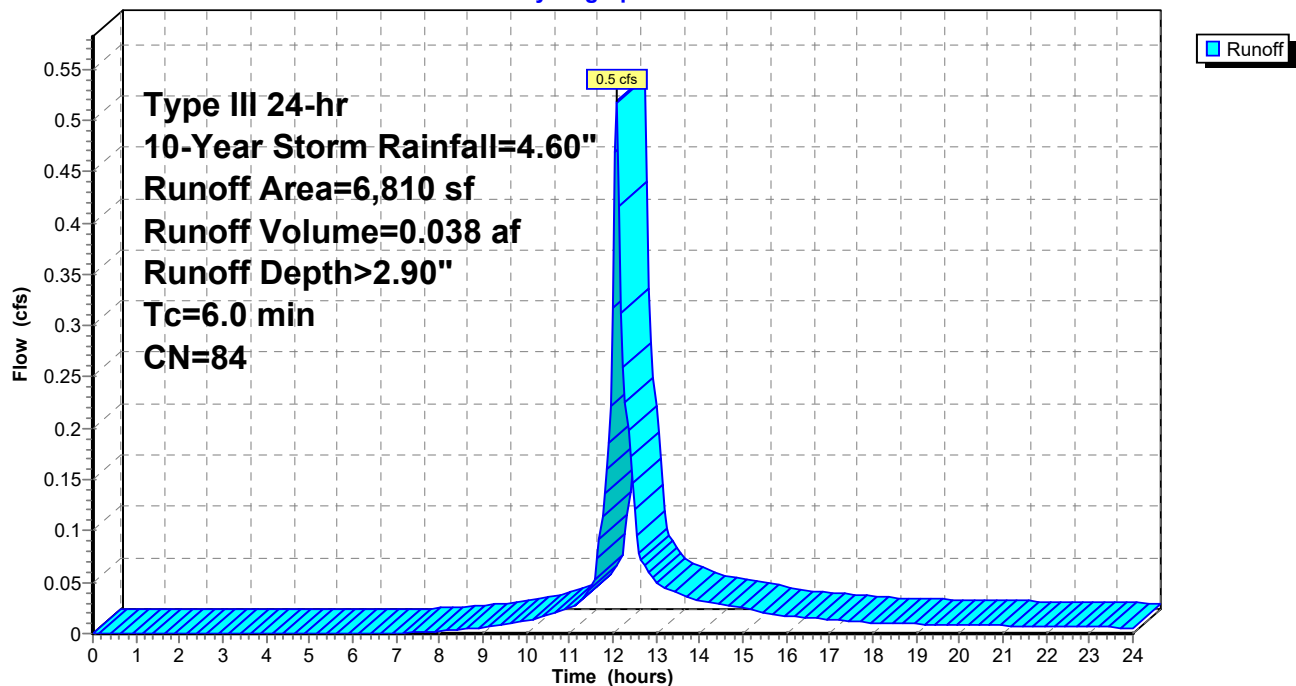
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
5,173	98	Paved parking, HSG A
1,547	39	Grass cover, Good, HSG A
* 90	40	Porous Pavement
6,810	84	Weighted Average
1,637		24.04% Pervious Area
5,173		75.96% Impervious Area

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

Subcatchment 5S: POST-5

Hydrograph



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Summary for Subcatchment 6S: POST-6

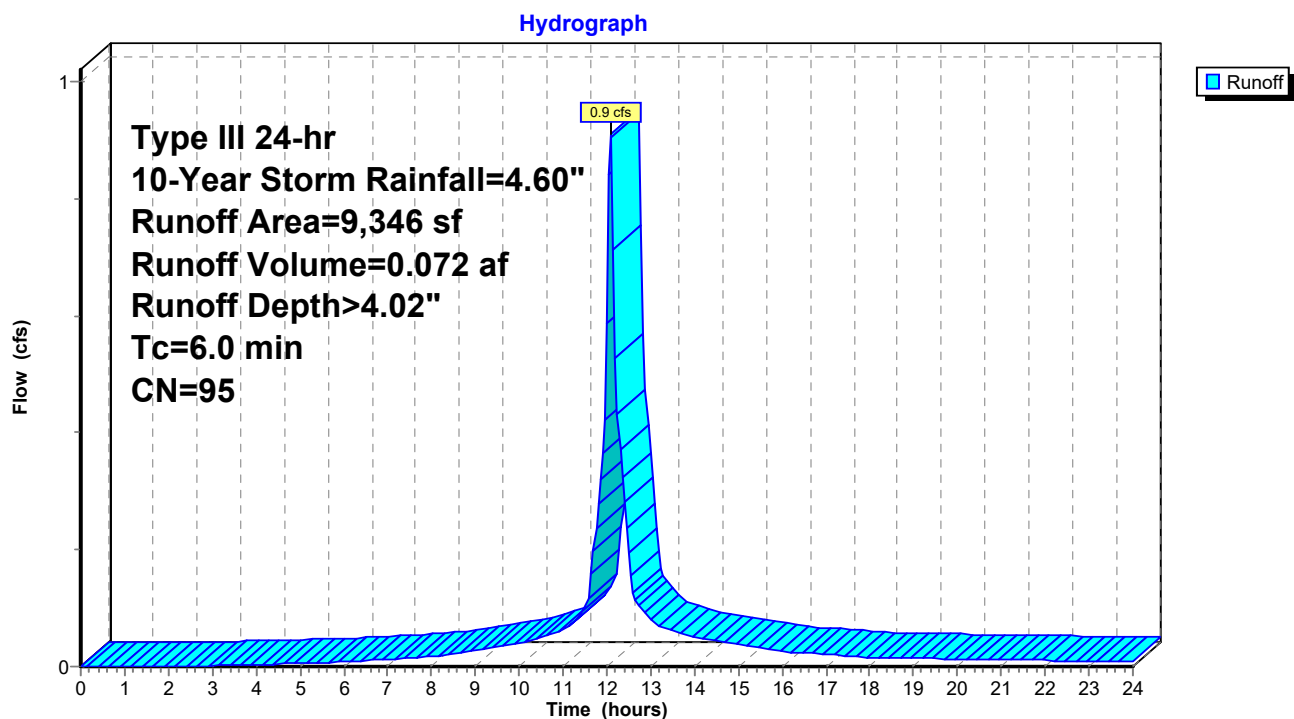
Runoff = 0.9 cfs @ 12.09 hrs, Volume= 0.072 af, Depth> 4.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
8,902	98	Paved parking, HSG A
351	39	Grass cover, Good, HSG A
* 93	40	Porous Pavement
9,346	95	Weighted Average
444		4.75% Pervious Area
8,902		95.25% Impervious Area

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

Subcatchment 6S: POST-6



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Summary for Subcatchment 7S: POST-7

Runoff = 0.4 cfs @ 12.09 hrs, Volume= 0.029 af, Depth> 2.63"

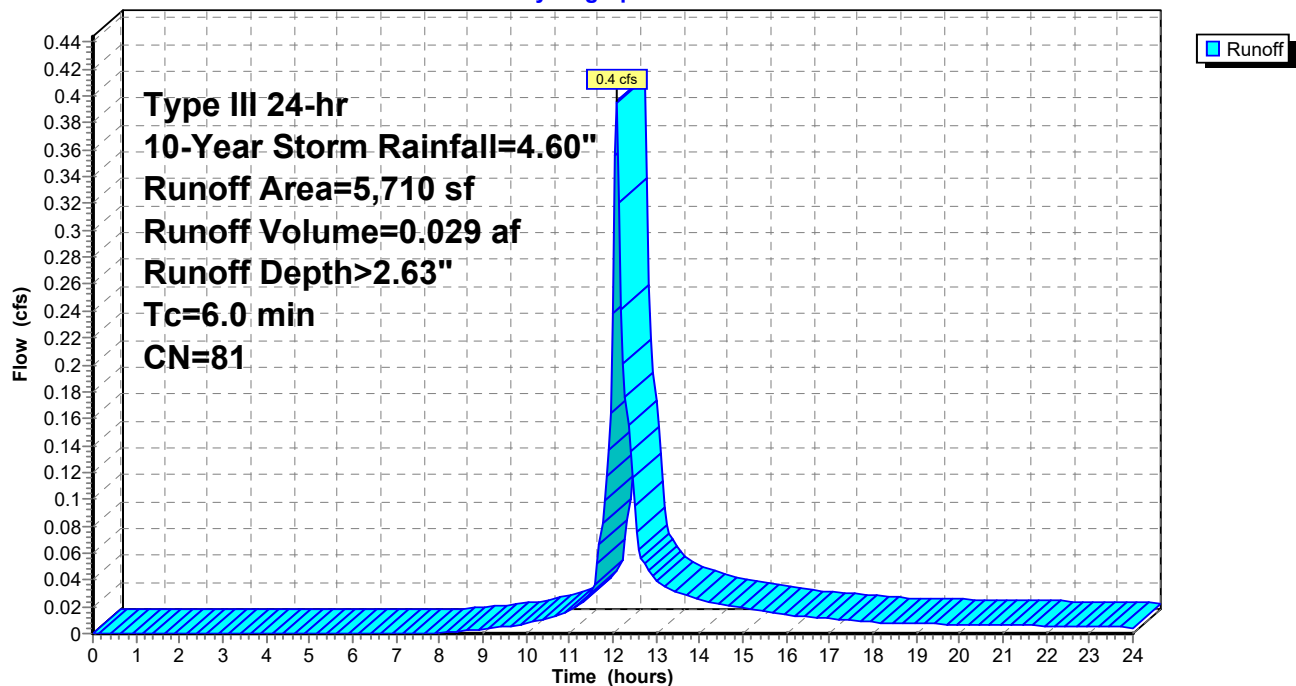
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
4,084	98	Paved parking, HSG A
809	39	Grass cover, Good, HSG A
* 817	40	Porous Pavement
5,710	81	Weighted Average
1,626		28.48% Pervious Area
4,084		71.52% Impervious Area

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

Subcatchment 7S: POST-7

Hydrograph



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Subcatchment 8S: POST-8

Runoff = 0.2 cfs @ 12.10 hrs, Volume= 0.014 af, Depth> 2.05"

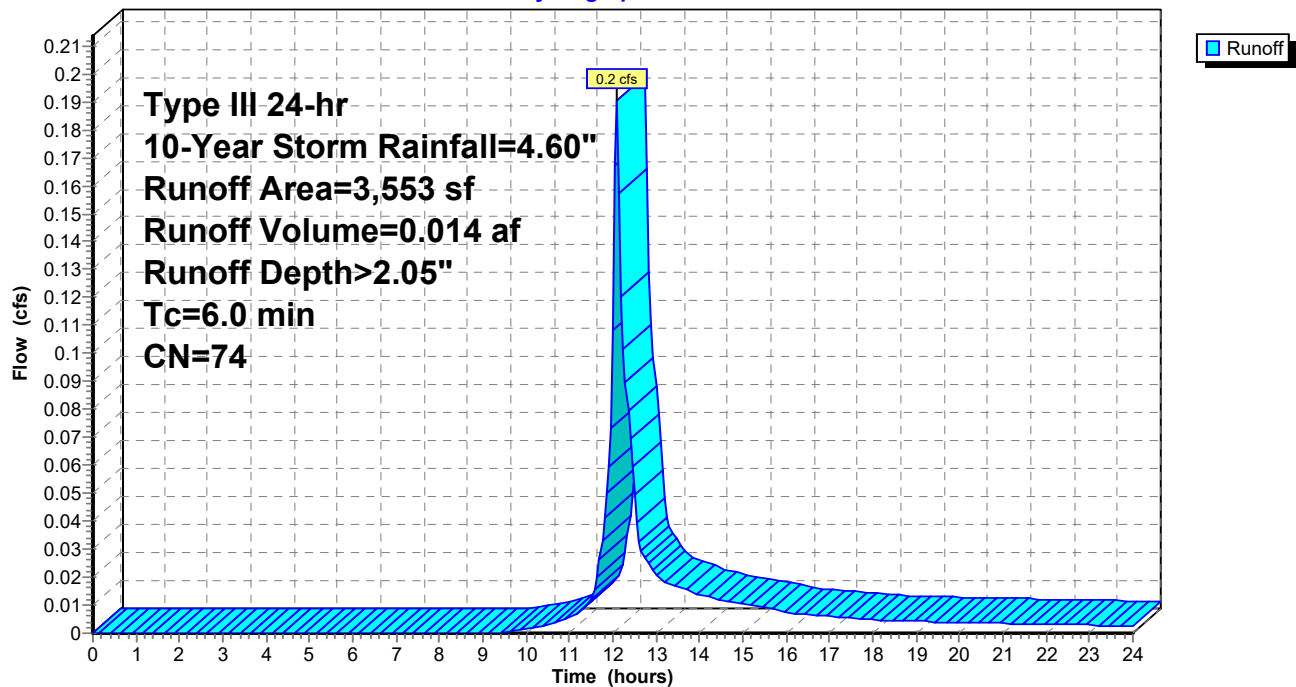
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
2,084	98	Paved parking, HSG A
1,469	39	Grass cover, Good, HSG A
3,553	74	Weighted Average
1,469		41.35% Pervious Area
2,084		58.65% Impervious Area

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

Subcatchment 8S: POST-8

Hydrograph



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Subcatchment 9S: POST-9

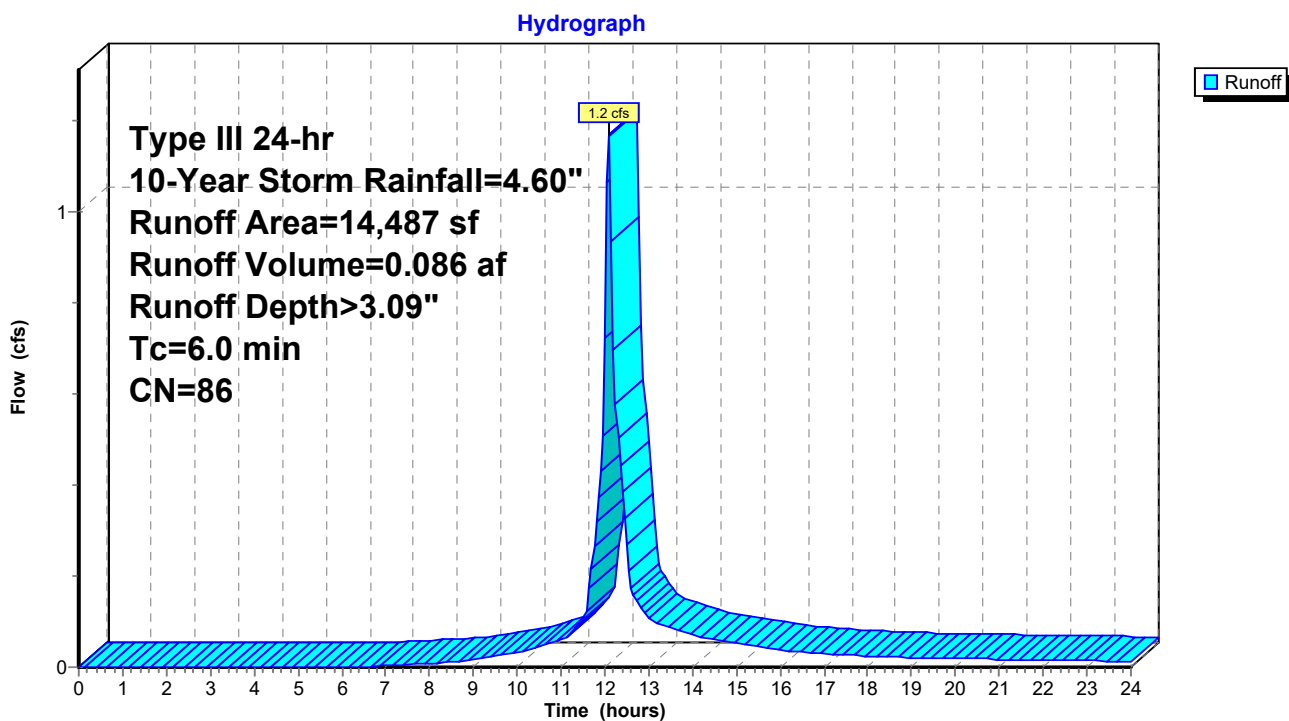
Runoff = 1.2 cfs @ 12.09 hrs, Volume= 0.086 af, Depth> 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
11,494	98	Paved parking, HSG A
2,993	39	Grass cover, Good, HSG A
14,487	86	Weighted Average
2,993		20.66% Pervious Area
11,494		79.34% Impervious Area

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

Subcatchment 9S: POST-9



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Subcatchment 10S: POST-10

Runoff = 0.5 cfs @ 12.09 hrs, Volume= 0.038 af, Depth> 2.81"

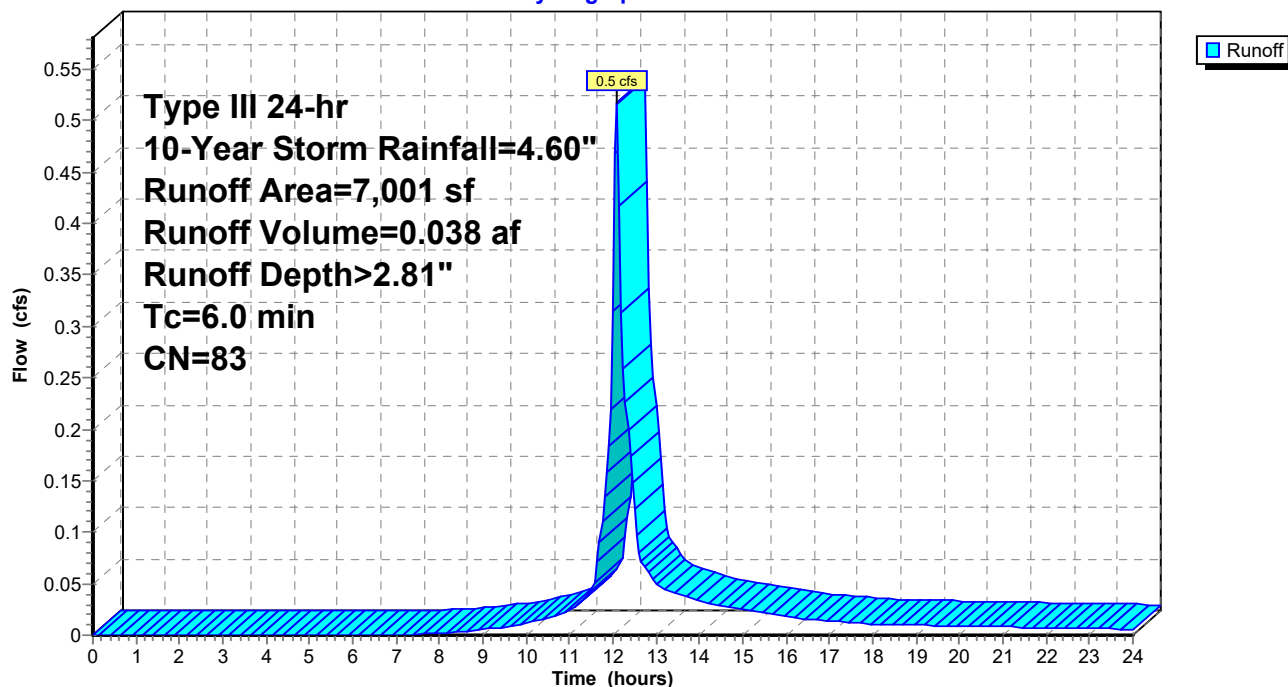
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
5,185	98	Paved parking, HSG A
1,816	39	Grass cover, Good, HSG A
7,001	83	Weighted Average
1,816		25.94% Pervious Area
5,185		74.06% Impervious Area

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

Subcatchment 10S: POST-10

Hydrograph



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Subcatchment 11S: POST-11

Runoff = 0.7 cfs @ 12.09 hrs, Volume= 0.053 af, Depth> 2.72"

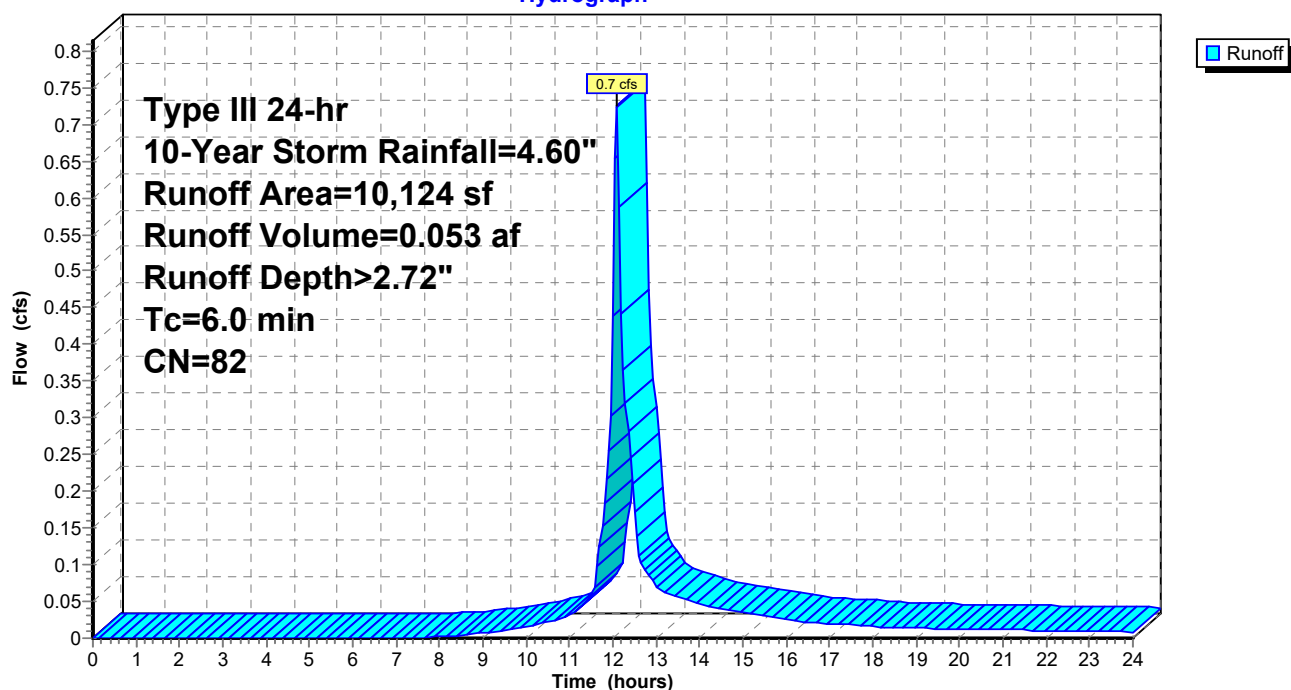
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
7,416	98	Paved parking, HSG A
2,708	39	Grass cover, Good, HSG A
10,124	82	Weighted Average
2,708		26.75% Pervious Area
7,416		73.25% Impervious Area

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

Subcatchment 11S: POST-11

Hydrograph



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Subcatchment 12S: POST-12

Runoff = 0.7 cfs @ 12.10 hrs, Volume= 0.052 af, Depth> 2.13"

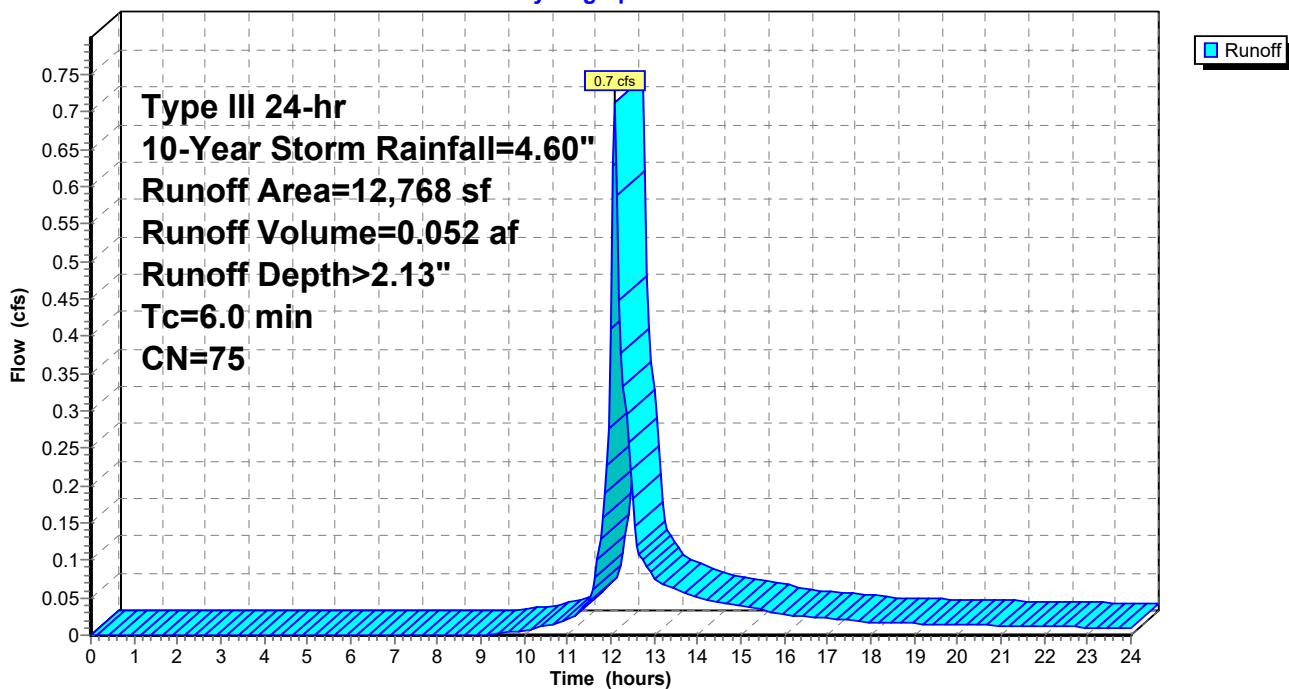
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
7,727	98	Paved parking, HSG A
5,041	39	Grass cover, Good, HSG A
12,768	75	Weighted Average
5,041		39.48% Pervious Area
7,727		60.52% Impervious Area

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

Subcatchment 12S: POST-12

Hydrograph



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Subcatchment 13S: POST-13

Runoff = 0.8 cfs @ 12.09 hrs, Volume= 0.061 af, Depth> 2.54"

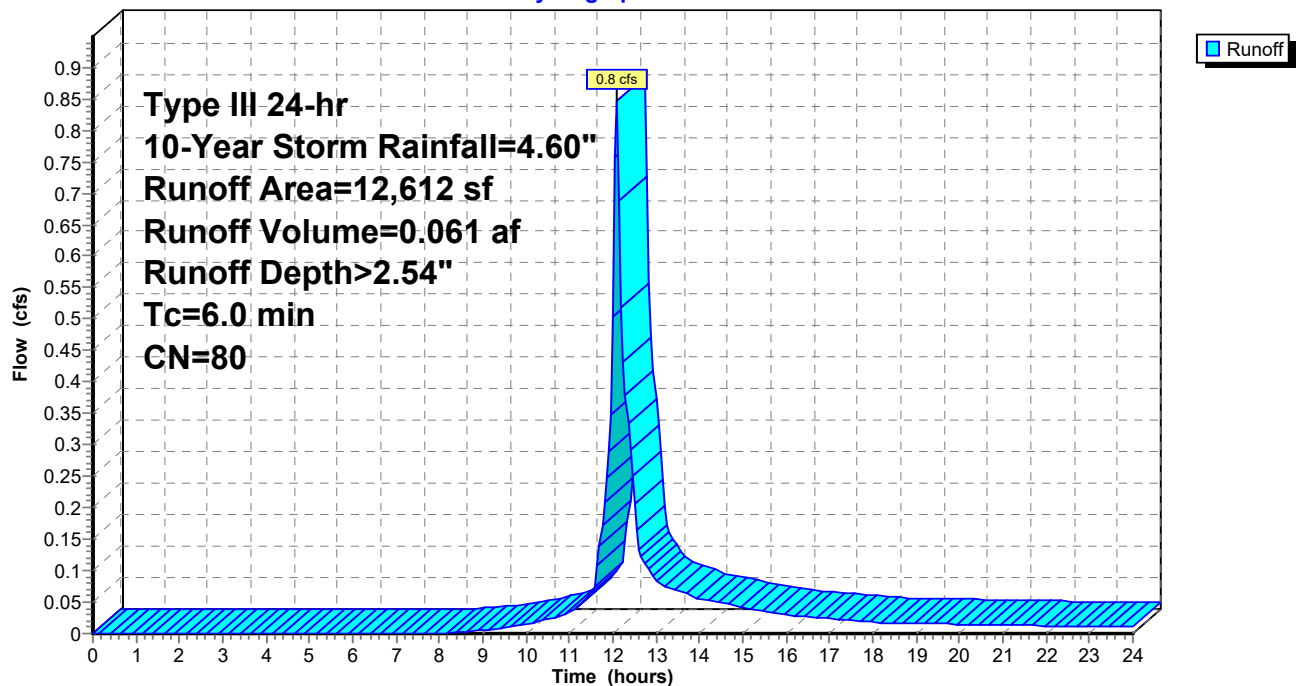
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
8,813	98	Paved parking, HSG A
3,299	39	Grass cover, Good, HSG A
* 500	40	Porous Pavement
12,612	80	Weighted Average
3,799		30.12% Pervious Area
8,813		69.88% Impervious Area

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

Subcatchment 13S: POST-13

Hydrograph



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Summary for Pond 1P: CB1

Inflow Area = 0.13 ac, 70.24% Impervious, Inflow Depth > 2.63" for 10-Year Storm event
Inflow = 0.4 cfs @ 12.09 hrs, Volume= 0.029 af
Outflow = 0.4 cfs @ 12.09 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.0 min
Primary = 0.4 cfs @ 12.09 hrs, Volume= 0.029 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 21.10' @ 12.21 hrs

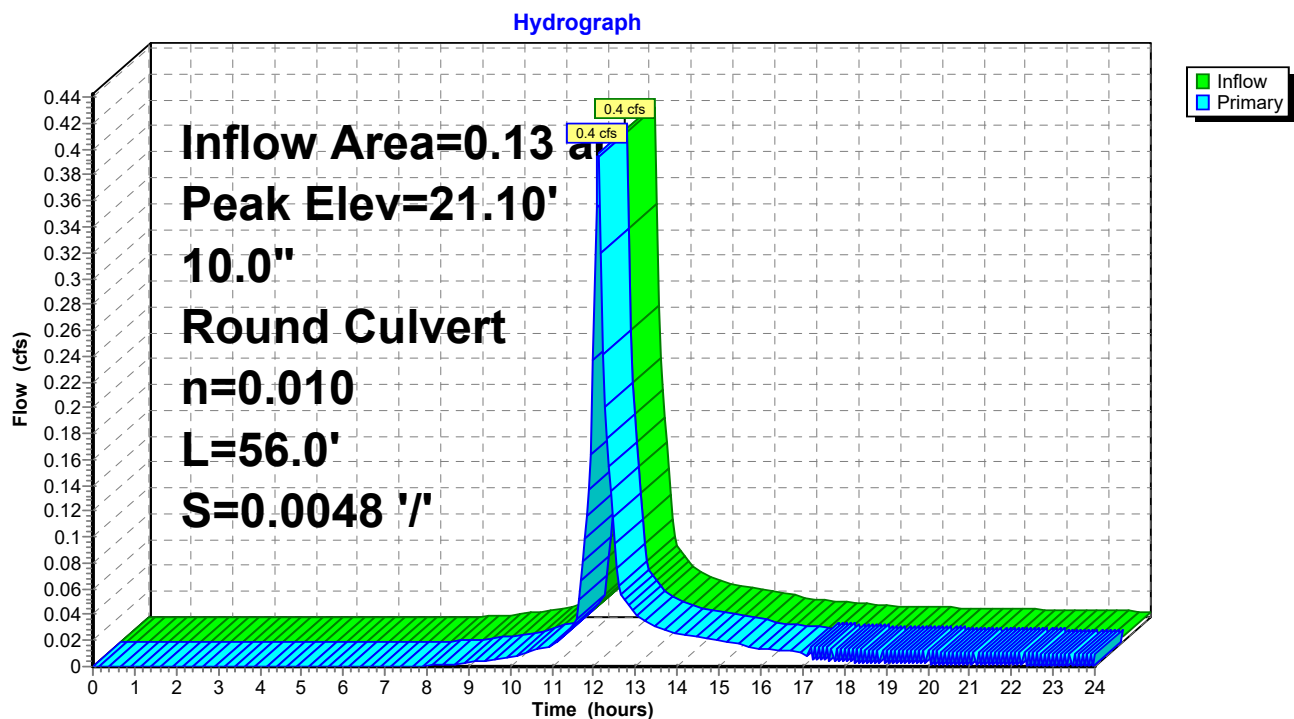
Flood Elev= 22.34'

Device	Routing	Invert	Outlet Devices
#1	Primary	18.34'	10.0" Round Culvert L= 56.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.34' / 18.07' S= 0.0048 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.0 cfs @ 12.09 hrs HW=20.58' TW=20.86' (Dynamic Tailwater)

↑1=Culvert (Controls 0.0 cfs)

Pond 1P: CB1



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Summary for Pond 2P: CB2

Inflow Area = 0.35 ac, 85.14% Impervious, Inflow Depth > 3.44" for 10-Year Storm event
Inflow = 1.3 cfs @ 12.09 hrs, Volume= 0.101 af
Outflow = 1.3 cfs @ 12.09 hrs, Volume= 0.101 af, Atten= 0%, Lag= 0.0 min
Primary = 1.3 cfs @ 12.09 hrs, Volume= 0.101 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 21.09' @ 12.16 hrs

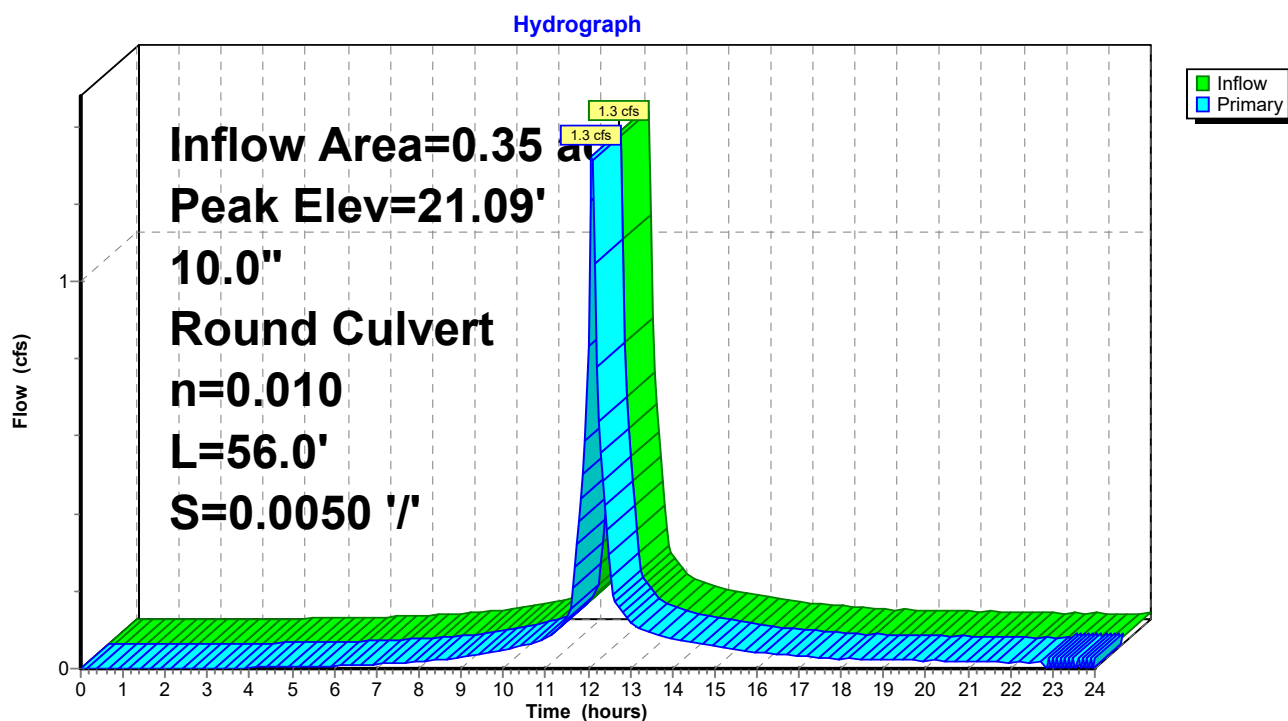
Flood Elev= 22.31'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.97'	10.0" Round Culvert L= 56.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.97' / 17.69' S= 0.0050 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.6 cfs @ 12.09 hrs HW=20.84' TW=20.76' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 0.6 cfs @ 1.07 fps)

Pond 2P: CB2



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Summary for Pond 3P: CB3

Inflow Area = 0.70 ac, 85.93% Impervious, Inflow Depth > 3.46" for 10-Year Storm event
Inflow = 2.7 cfs @ 12.09 hrs, Volume= 0.201 af
Outflow = 2.7 cfs @ 12.09 hrs, Volume= 0.201 af, Atten= 0%, Lag= 0.0 min
Primary = 2.7 cfs @ 12.09 hrs, Volume= 0.201 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

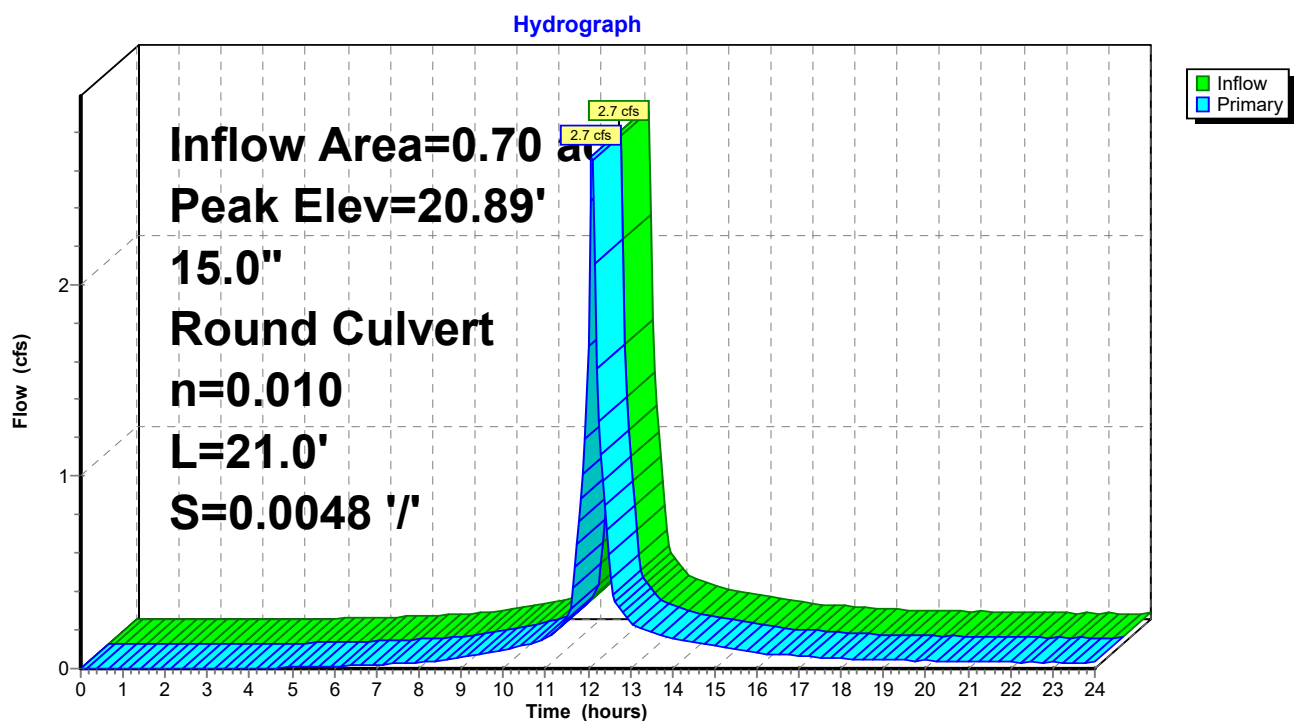
Peak Elev= 20.89' @ 12.14 hrs

Flood Elev= 22.36'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.58'	15.0" Round Culvert L= 21.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.58' / 17.48' S= 0.0048 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.6 cfs @ 12.09 hrs HW=20.76' TW=20.64' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 1.6 cfs @ 1.30 fps)

Pond 3P: CB3



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Summary for Pond 4P: CB4

Inflow Area = 0.50 ac, 83.05% Impervious, Inflow Depth > 3.31" for 10-Year Storm event
Inflow = 1.8 cfs @ 12.09 hrs, Volume= 0.138 af
Outflow = 1.8 cfs @ 12.09 hrs, Volume= 0.138 af, Atten= 0%, Lag= 0.0 min
Primary = 1.8 cfs @ 12.09 hrs, Volume= 0.138 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 20.73' @ 12.15 hrs

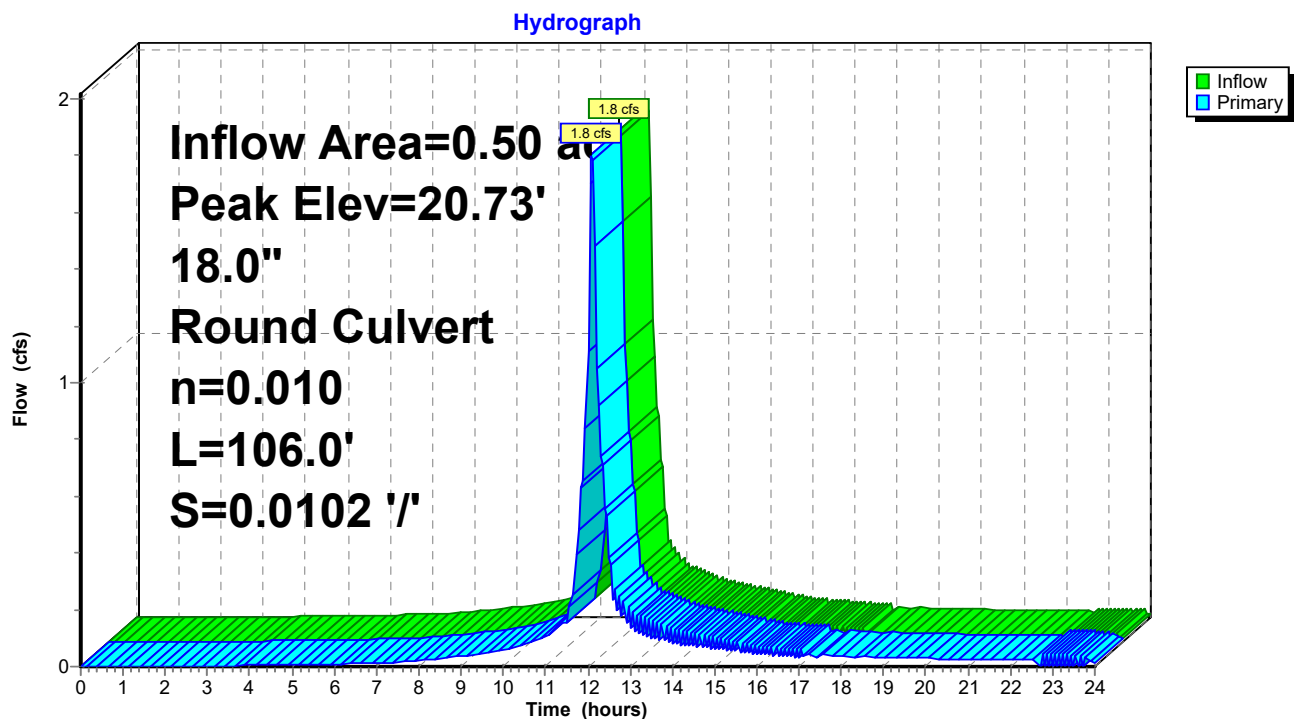
Flood Elev= 21.87'

Device	Routing	Invert	Outlet Devices
#1	Primary	15.72'	18.0" Round Culvert L= 106.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.72' / 14.64' S= 0.0102 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.09 hrs HW=20.50' TW=20.63' (Dynamic Tailwater)

↑1=Culvert (Controls 0.0 cfs)

Pond 4P: CB4



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Pond 5P: CB5

Inflow Area = 0.35 ac, 86.25% Impervious, Inflow Depth > 3.49" for 10-Year Storm event
Inflow = 1.3 cfs @ 12.08 hrs, Volume= 0.101 af
Outflow = 1.3 cfs @ 12.08 hrs, Volume= 0.101 af, Atten= 0%, Lag= 0.0 min
Primary = 1.3 cfs @ 12.08 hrs, Volume= 0.101 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 20.75' @ 12.20 hrs

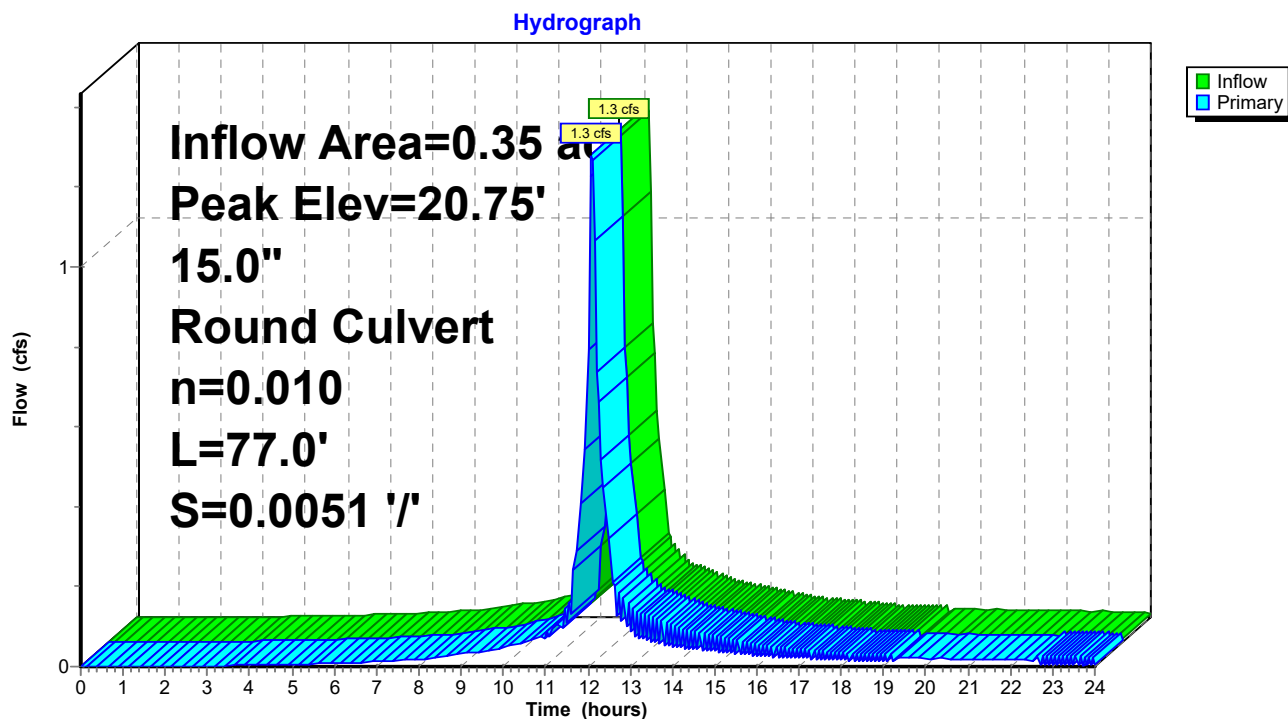
Flood Elev= 21.28'

Device	Routing	Invert	Outlet Devices
#1	Primary	16.90'	15.0" Round Culvert L= 77.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.90' / 16.51' S= 0.0051 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.0 cfs @ 12.08 hrs HW=20.32' TW=20.48' (Dynamic Tailwater)

↑1=Culvert (Controls 0.0 cfs)

Pond 5P: CB5



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Summary for Pond 6P: CB6

Inflow Area = 0.13 ac, 71.52% Impervious, Inflow Depth > 2.63" for 10-Year Storm event
Inflow = 0.4 cfs @ 12.09 hrs, Volume= 0.029 af
Outflow = 0.4 cfs @ 12.07 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.0 min
Primary = 0.4 cfs @ 12.07 hrs, Volume= 0.029 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 20.76' @ 12.25 hrs

Flood Elev= 21.28'

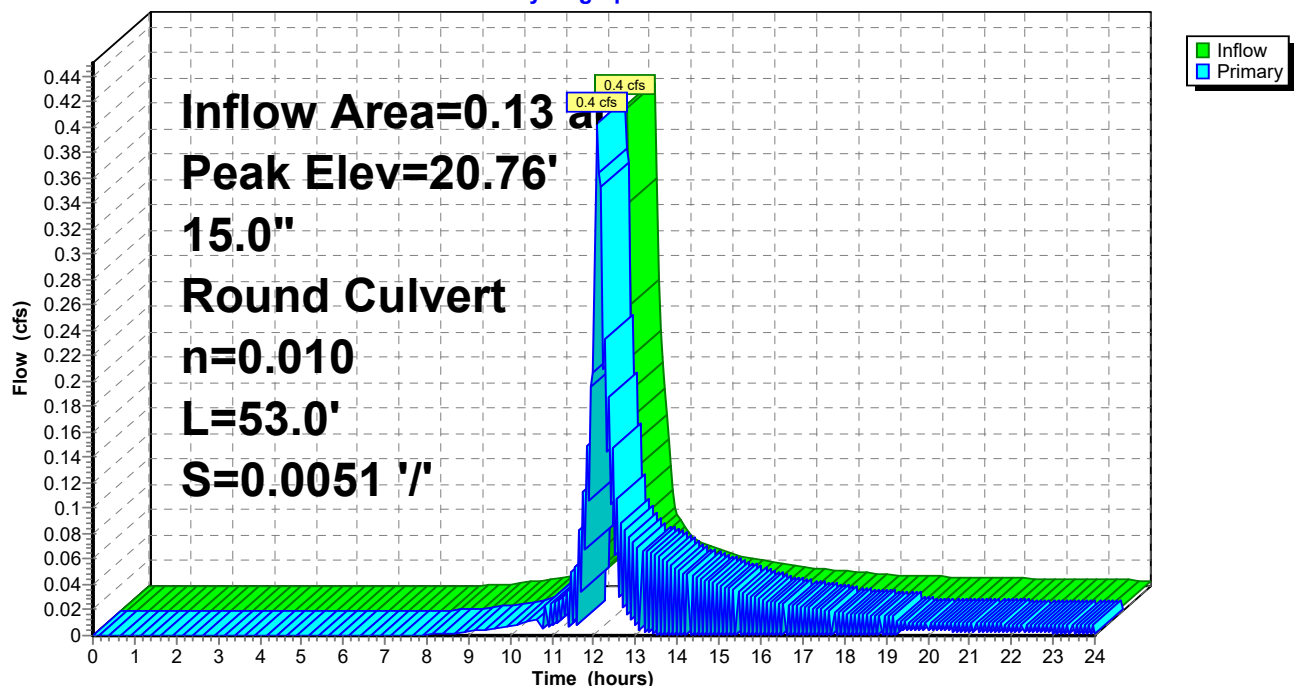
Device	Routing	Invert	Outlet Devices
#1	Primary	17.28'	15.0" Round Culvert L= 53.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.28' / 17.01' S= 0.0051 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.0 cfs @ 12.07 hrs HW=20.16' TW=20.28' (Dynamic Tailwater)

↑1=Culvert (Controls 0.0 cfs)

Pond 6P: CB6

Hydrograph



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Summary for Pond 7P: CB7

Inflow Area = 0.29 ac, 60.52% Impervious, Inflow Depth > 2.13" for 10-Year Storm event
Inflow = 0.7 cfs @ 12.10 hrs, Volume= 0.052 af
Outflow = 0.7 cfs @ 12.10 hrs, Volume= 0.052 af, Atten= 0%, Lag= 0.0 min
Primary = 0.7 cfs @ 12.10 hrs, Volume= 0.052 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

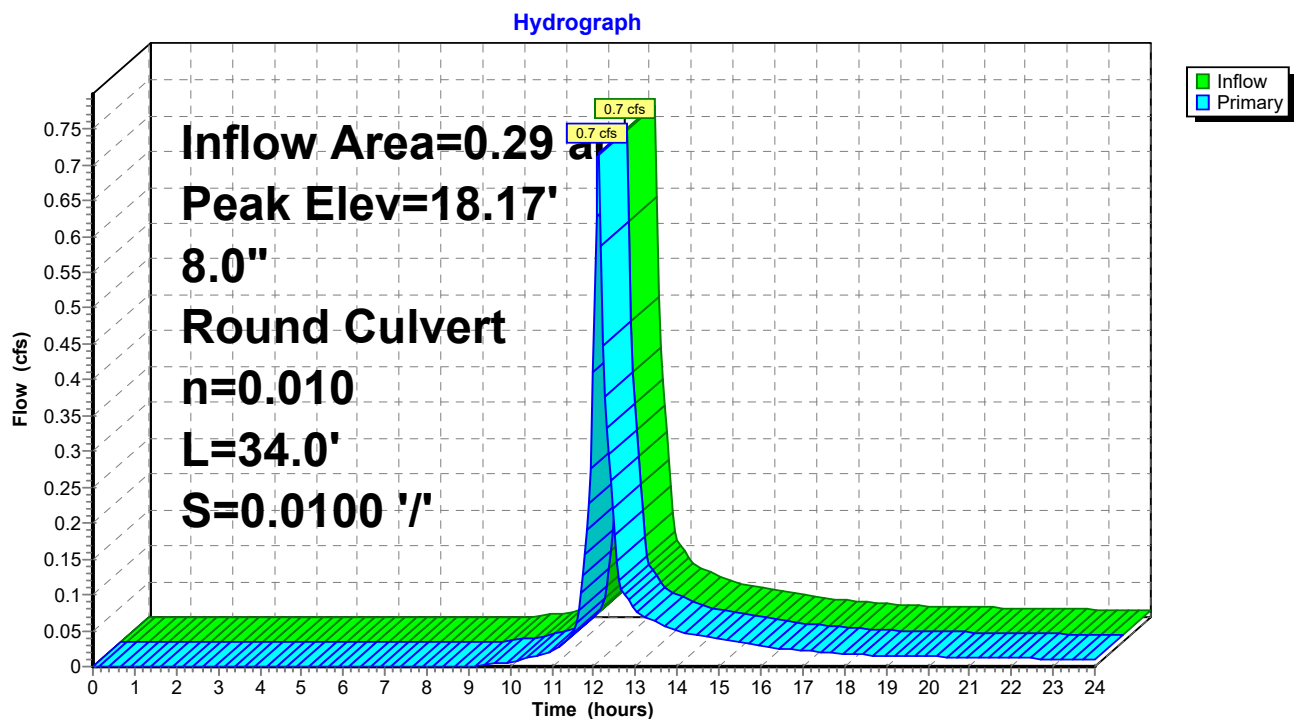
Peak Elev= 18.17' @ 12.12 hrs

Flood Elev= 23.82'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.40'	8.0" Round Culvert L= 34.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.40' / 17.06' S= 0.0100 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.6 cfs @ 12.10 hrs HW=18.15' TW=17.93' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 0.6 cfs @ 1.78 fps)

Pond 7P: CB7



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Summary for Pond 8P: CB8

Inflow Area = 0.29 ac, 69.88% Impervious, Inflow Depth > 2.54" for 10-Year Storm event
Inflow = 0.8 cfs @ 12.09 hrs, Volume= 0.061 af
Outflow = 0.8 cfs @ 12.09 hrs, Volume= 0.061 af, Atten= 0%, Lag= 0.0 min
Primary = 0.8 cfs @ 12.09 hrs, Volume= 0.061 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.38' @ 12.12 hrs

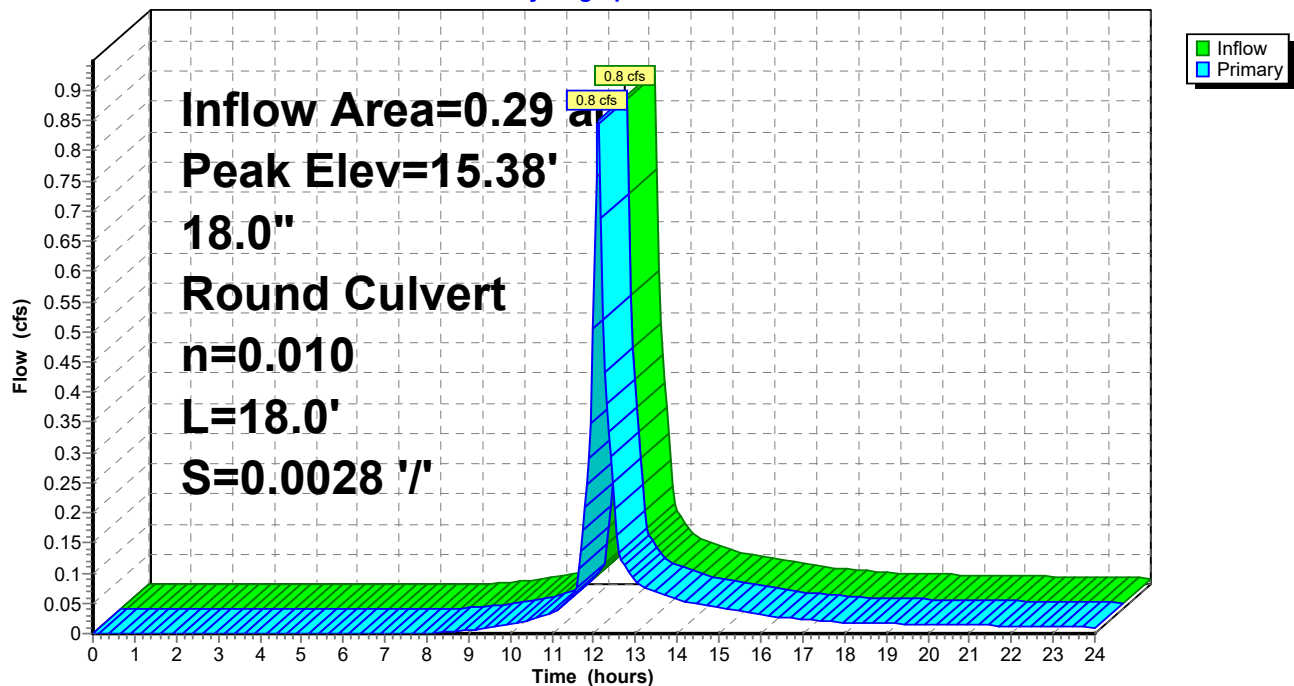
Flood Elev= 23.39'

Device	Routing	Invert	Outlet Devices
#1	Primary	14.85'	18.0" Round Culvert L= 18.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.85' / 14.80' S= 0.0028 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.7 cfs @ 12.09 hrs HW=15.37' TW=15.23' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.7 cfs @ 2.03 fps)

Pond 8P: CB8

Hydrograph



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Pond 9P: DMH1

Inflow Area = 1.20 ac, 84.73% Impervious, Inflow Depth > 3.40" for 10-Year Storm event
 Inflow = 4.5 cfs @ 12.09 hrs, Volume= 0.340 af
 Outflow = 4.5 cfs @ 12.09 hrs, Volume= 0.340 af, Atten= 0%, Lag= 0.0 min
 Primary = 4.5 cfs @ 12.09 hrs, Volume= 0.340 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 20.68' @ 12.11 hrs

Flood Elev= 22.85'

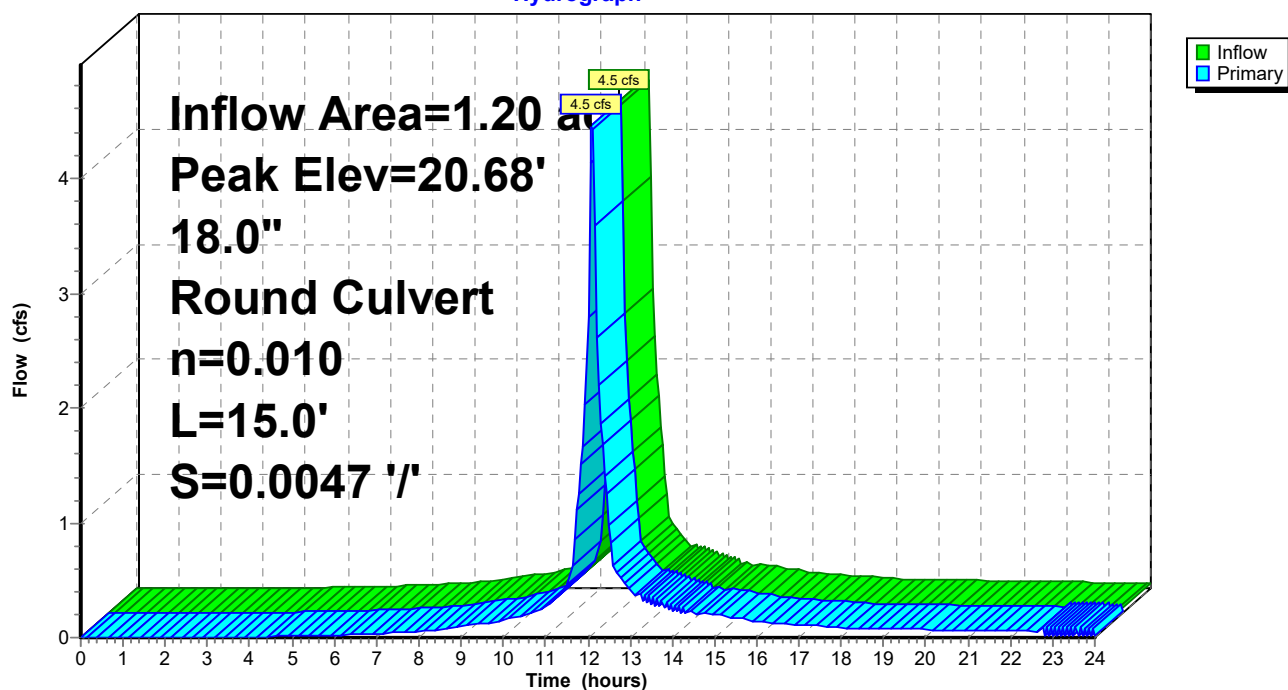
Device	Routing	Invert	Outlet Devices
#1	Primary	15.78'	18.0" Round Culvert L= 15.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.78' / 15.71' S= 0.0047 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.0 cfs @ 12.09 hrs HW=20.64' TW=20.28' (Dynamic Tailwater)

1=Culvert (Inlet Controls 4.0 cfs @ 2.27 fps)

Pond 9P: DMH1

Hydrograph



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Summary for Pond 11P: Ex CB1

Inflow Area = 0.39 ac, 73.58% Impervious, Inflow Depth > 2.76" for 10-Year Storm event
Inflow = 1.2 cfs @ 12.09 hrs, Volume= 0.090 af
Outflow = 1.2 cfs @ 12.09 hrs, Volume= 0.090 af, Atten= 0%, Lag= 0.0 min
Primary = 1.2 cfs @ 12.09 hrs, Volume= 0.090 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 19.14' @ 12.09 hrs

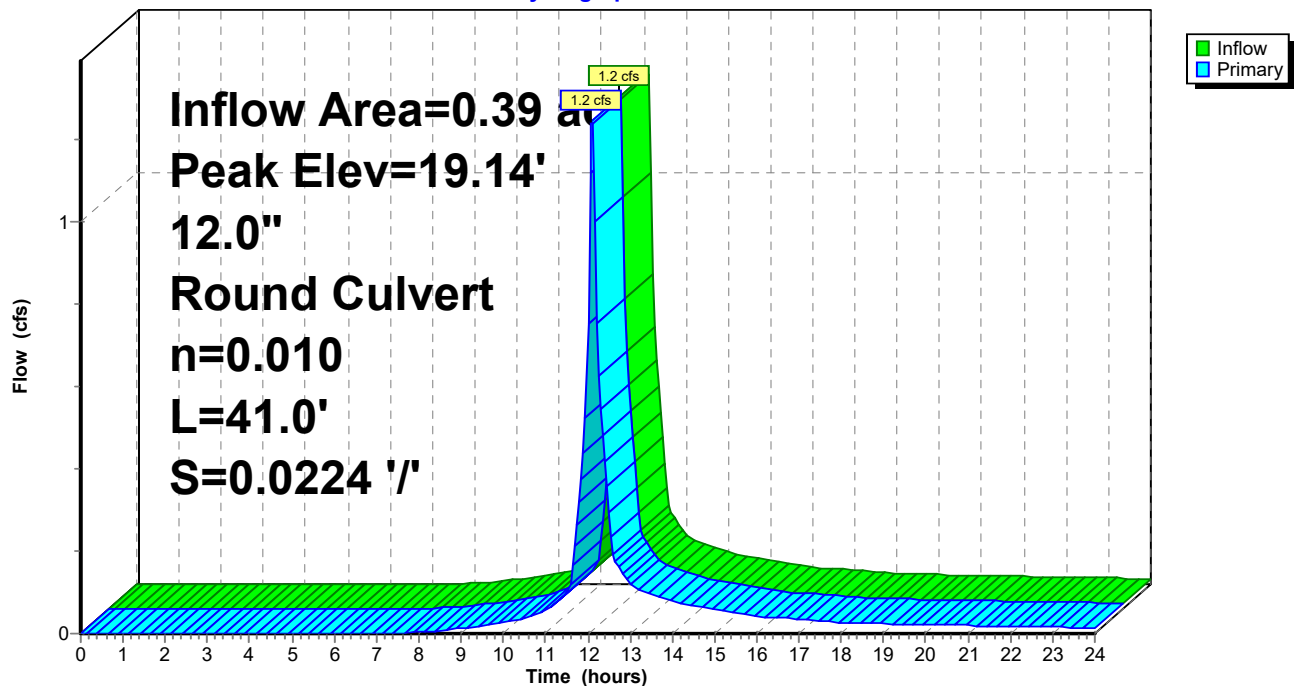
Flood Elev= 22.02'

Device	Routing	Invert	Outlet Devices
#1	Primary	18.47'	12.0" Round Culvert L= 41.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.47' / 17.55' S= 0.0224 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.2 cfs @ 12.09 hrs HW=19.14' TW=18.16' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 1.2 cfs @ 2.19 fps)

Pond 11P: Ex CB1

Hydrograph



C2. Post

Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Pond 12P: Ex CB2

Inflow Area = 0.08 ac, 58.65% Impervious, Inflow Depth > 2.05" for 10-Year Storm event
 Inflow = 0.2 cfs @ 12.10 hrs, Volume= 0.014 af
 Outflow = 0.2 cfs @ 12.10 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.2 cfs @ 12.10 hrs, Volume= 0.014 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 18.41' @ 12.10 hrs

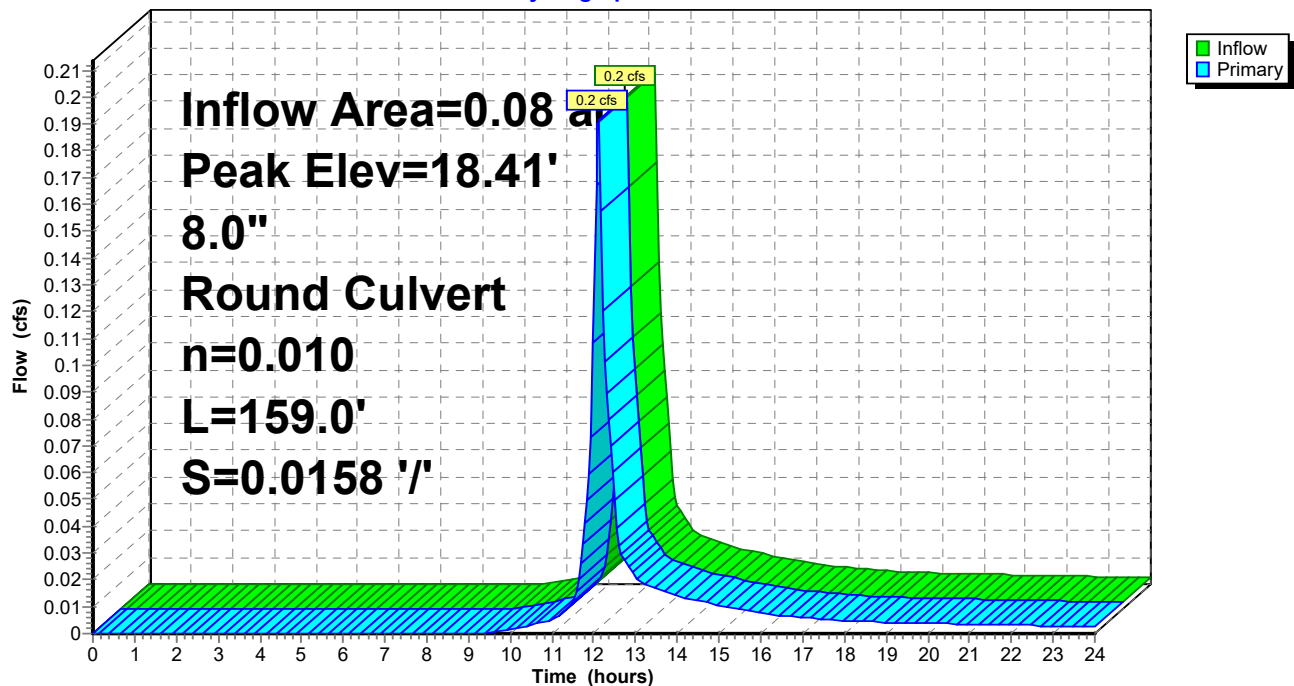
Flood Elev= 22.15'

Device	Routing	Invert	Outlet Devices
#1	Primary	18.14'	8.0" Round Culvert L= 159.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.14' / 15.62' S= 0.0158 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.2 cfs @ 12.10 hrs HW=18.41' TW=0.00' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 0.2 cfs @ 1.40 fps)

Pond 12P: Ex CB2

Hydrograph



C2. Post

Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Pond 13P: CMP Peak Detention

Inflow = 4.5 cfs @ 12.10 hrs, Volume= 0.247 af
 Outflow = 2.9 cfs @ 12.20 hrs, Volume= 0.247 af, Atten= 35%, Lag= 6.1 min
 Primary = 2.9 cfs @ 12.20 hrs, Volume= 0.247 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 18.79' @ 12.20 hrs Surf.Area= 696 sf Storage= 1,741 cf

Flood Elev= 23.00' Surf.Area= 696 sf Storage= 2,403 cf

Plug-Flow detention time= 7.0 min calculated for 0.246 af (100% of inflow)

Center-of-Mass det. time= 6.9 min (797.4 - 790.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	14.71'	0 cf	8.00'W x 87.00'L x 6.00'H Field A 4,176 cf Overall - 2,403 cf Embedded = 1,773 cf x 0.0% Voids
#2A	14.71'	2,403 cf	CMP Round 72 x 4 Inside #1 Effective Size= 72.0"W x 72.0"H => 28.27 sf x 20.00'L = 565.5 cf Overall Size= 72.0"W x 72.0"H x 20.00'L Row Length Adjustment= +5.00' x 28.27 sf x 1 rows
		2,403 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	14.71'	18.0" Round Culvert L= 20.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 14.71' / 14.33' S= 0.0190 ' S= 0.0190 ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf
#2	Device 1	14.71'	6.1" Vert. Orifice/Grate C= 0.600
#3	Device 1	17.21'	5.7" Vert. Orifice/Grate C= 0.600
#4	Device 1	18.79'	4.8" Vert. Orifice/Grate C= 0.600
#5	Device 1	20.05'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 5.34 5.40 5.46 5.52 5.58 5.64 5.70 5.76 5.82 5.88 5.94 6.00 Width (feet) 3.75 3.60 3.43 3.26 3.06 2.85 2.62 2.35 2.05 1.68 1.19 0.00

Primary OutFlow Max=2.9 cfs @ 12.20 hrs HW=18.79' TW=14.93' (Dynamic Tailwater)

- 1=Culvert (Passes 2.9 cfs of 15.5 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 1.9 cfs @ 9.41 fps)
- 3=Orifice/Grate (Orifice Controls 1.0 cfs @ 5.57 fps)
- 4=Orifice/Grate (Controls 0.0 cfs)
- 5=Custom Weir/Orifice (Controls 0.0 cfs)

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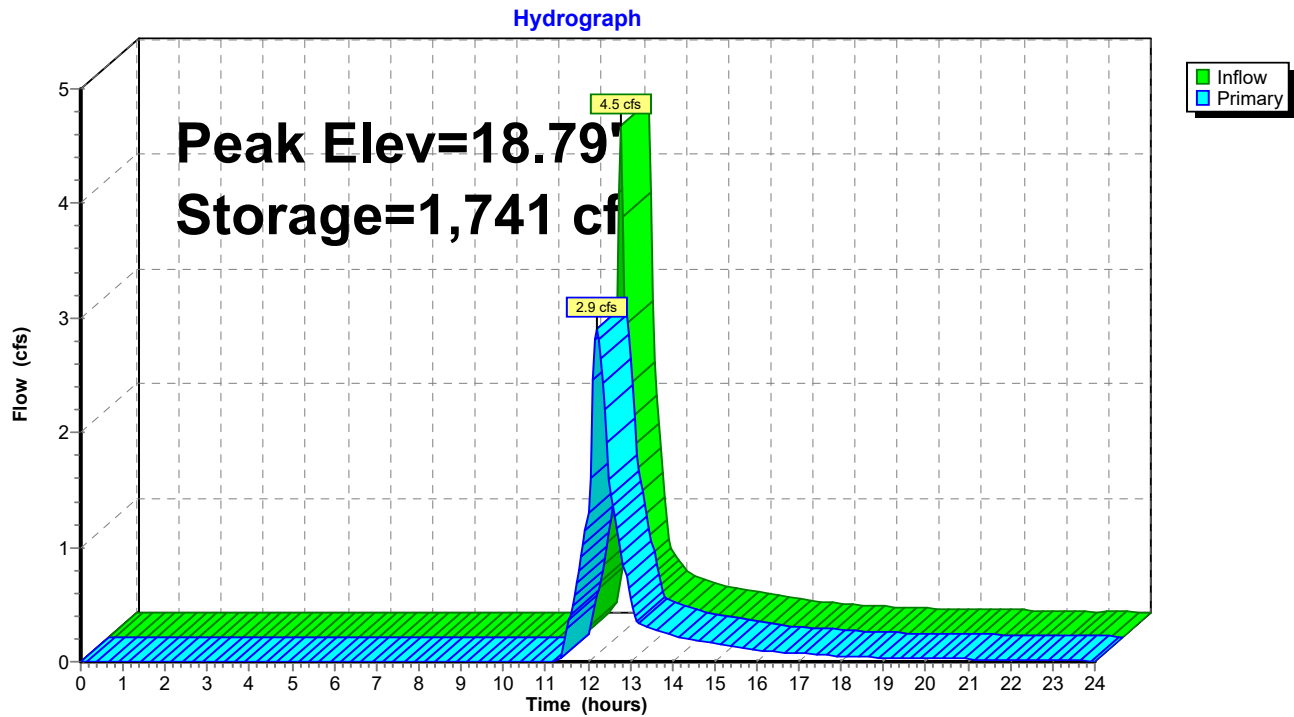
POST

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Pond 13P: CMP Peak Detention



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Summary for Pond 14P: CONTECH WQv CMP Det & SF System

Inflow Area = 1.20 ac, 84.73% Impervious, Inflow Depth > 3.40" for 10-Year Storm event
 Inflow = 4.5 cfs @ 12.09 hrs, Volume= 0.340 af
 Outflow = 4.5 cfs @ 12.10 hrs, Volume= 0.299 af, Atten= 0%, Lag= 0.5 min
 Primary = 0.0 cfs @ 12.08 hrs, Volume= 0.052 af
 Secondary = 4.5 cfs @ 12.10 hrs, Volume= 0.247 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Starting Elev= 15.71' Surf.Area= 683 sf Storage= 96 cf

Peak Elev= 20.29' @ 12.10 hrs Surf.Area= 683 sf Storage= 2,042 cf (1,946 cf above start)

Flood Elev= 23.00' Surf.Area= 683 sf Storage= 2,114 cf (2,019 cf above start)

Plug-Flow detention time= 88.7 min calculated for 0.296 af (87% of inflow)

Center-of-Mass det. time= 28.4 min (819.7 - 791.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	15.21'	0 cf	7.50'W x 91.00'L x 5.50'H Field A 3,754 cf Overall - 2,114 cf Embedded = 1,639 cf x 0.0% Voids
#2A	15.21'	2,114 cf	CMP Round 66 x 4 Inside #1 Effective Size= 66.0"W x 66.0"H => 23.76 sf x 20.00'L = 475.2 cf Overall Size= 66.0"W x 66.0"H x 20.00'L Row Length Adjustment= +9.00' x 23.76 sf x 1 rows
		2,114 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	14.71'	Tube/Siphon/Float Valve X 6.00 Starts@17.76' Breaks@15.38' 0.336" Diameter, C= 0.600, 0.263" Trickle Diameter
#2	Device 1	15.71'	12.0" Round CMP_Round 12" L= 10.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 15.71' / 15.68' S= 0.0030 ' / Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#3	Secondary	19.78'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 4.57 4.62 4.67 4.73 4.79 4.84 4.89 4.95 5.00 5.06 5.12 5.17 5.22 5.28 5.33 5.39 5.45 5.50 Width (feet) 4.13 4.03 3.93 3.82 3.70 3.57 3.44 3.30 3.15 2.98 2.81 2.61 2.40 2.16 1.88 1.54 1.09 0.00

Primary OutFlow Max=0.0 cfs @ 12.08 hrs HW=20.28' TW=14.80' (Dynamic Tailwater)↑ **1=Tube/Siphon/Float Valve** (Orifice Controls 0.0 cfs @ 11.27 fps)↑ **2=CMP_Round 12"** (Passes 0.0 cfs of 7.6 cfs potential flow)**Secondary OutFlow** Max=4.4 cfs @ 12.10 hrs HW=20.29' TW=18.09' (Dynamic Tailwater)↑ **3=Custom Weir/Orifice** (Weir Controls 4.4 cfs @ 2.42 fps)

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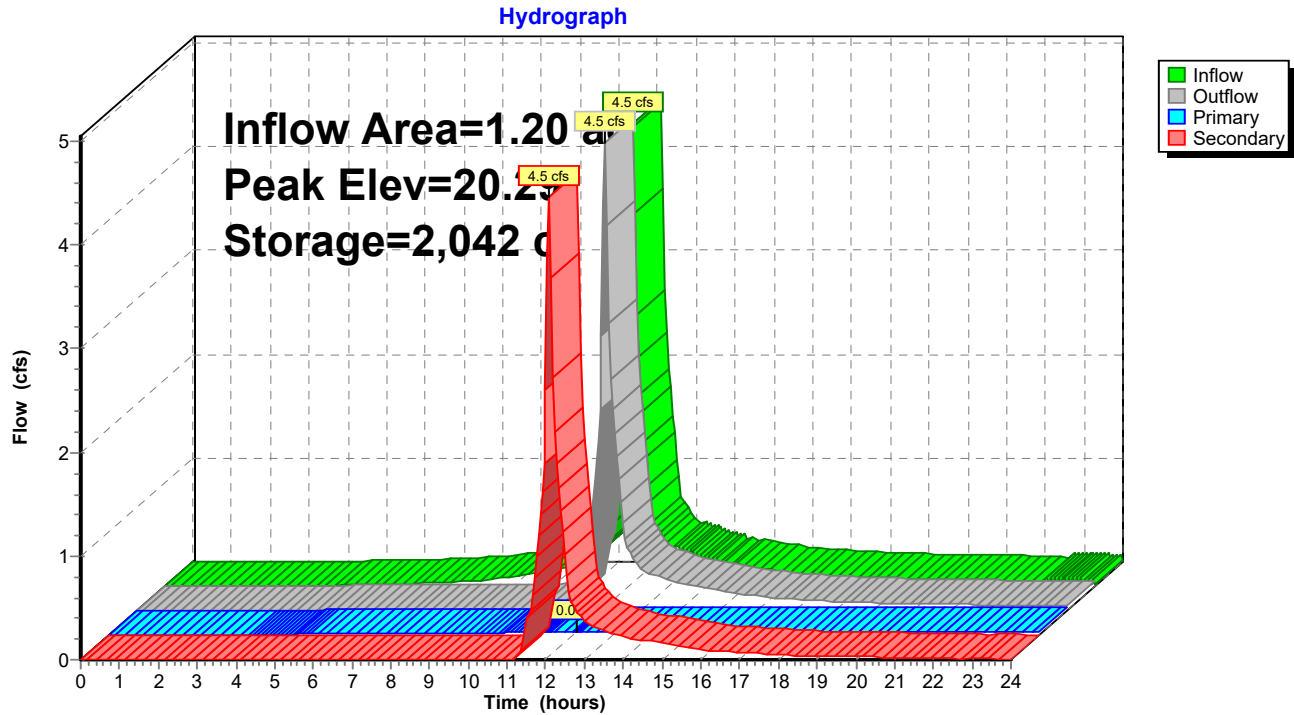
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Pond 14P: CONTECH WQv CMP Det & SF System



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Summary for Pond 21P: Ex DMH1

Inflow Area = 0.29 ac, 69.88% Impervious, Inflow Depth > 2.54" for 10-Year Storm event
Inflow = 0.8 cfs @ 12.09 hrs, Volume= 0.061 af
Outflow = 0.8 cfs @ 12.09 hrs, Volume= 0.061 af, Atten= 0%, Lag= 0.0 min
Primary = 0.8 cfs @ 12.09 hrs, Volume= 0.061 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.28' @ 12.14 hrs

Flood Elev= 23.72'

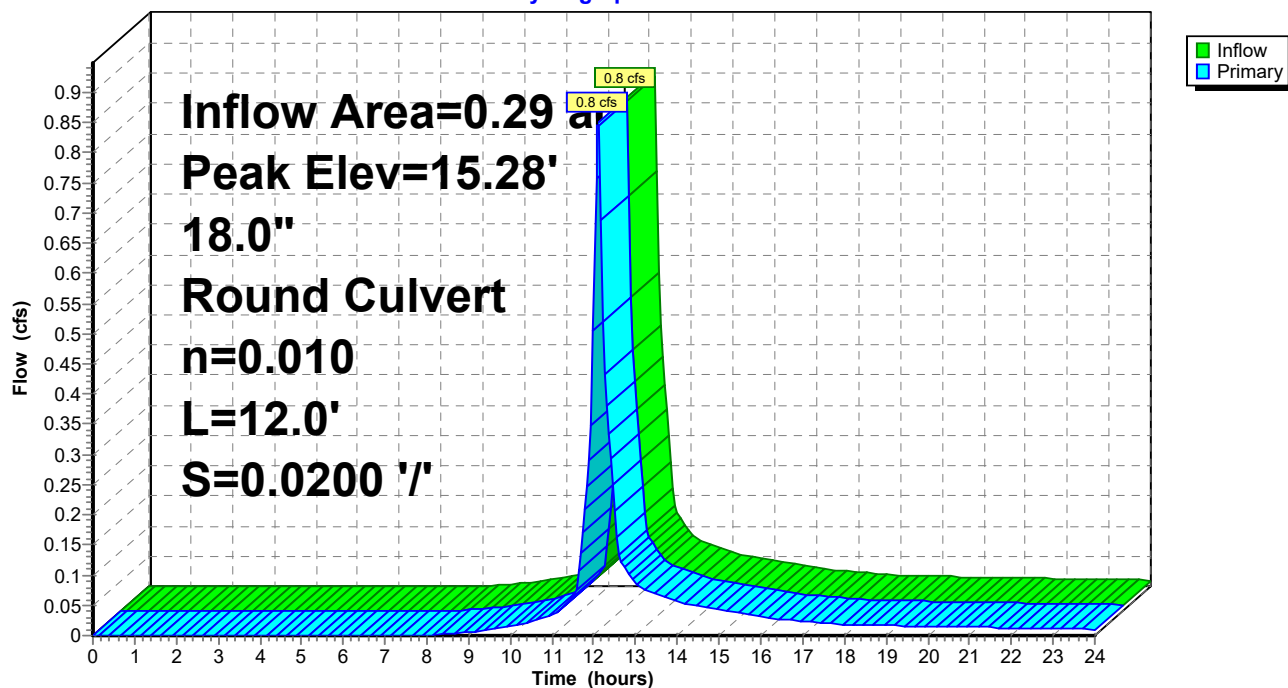
Device	Routing	Invert	Outlet Devices
#1	Primary	14.62'	18.0" Round Culvert L= 12.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.62' / 14.38' S= 0.0200 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.4 cfs @ 12.09 hrs HW=15.23' TW=15.20' (Dynamic Tailwater)

↑**1=Culvert** (Outlet Controls 0.4 cfs @ 0.88 fps)

Pond 21P: Ex DMH1

Hydrograph



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Pond 22P: Ex DMH2

Inflow Area = 0.69 ac, 68.00% Impervious, Inflow Depth > 2.49" for 10-Year Storm event
Inflow = 2.0 cfs @ 12.09 hrs, Volume= 0.142 af
Outflow = 2.0 cfs @ 12.09 hrs, Volume= 0.142 af, Atten= 0%, Lag= 0.0 min
Primary = 2.0 cfs @ 12.09 hrs, Volume= 0.142 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

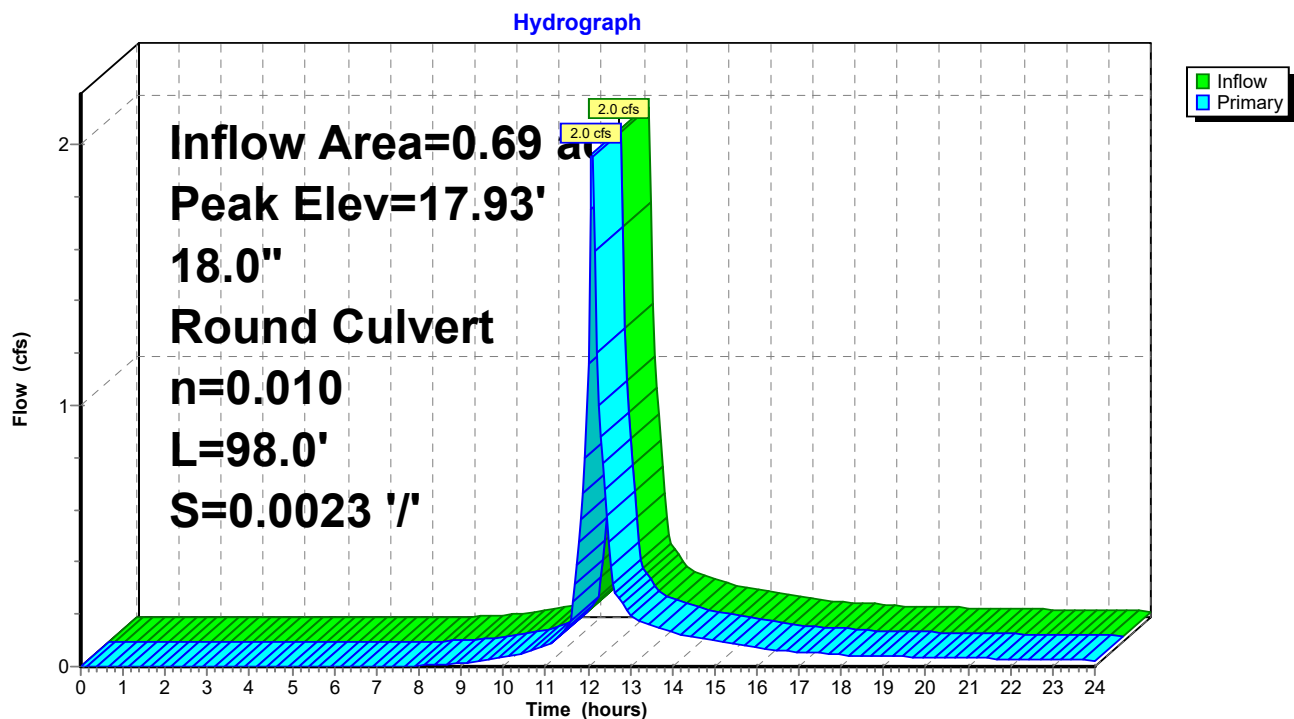
Peak Elev= 17.93' @ 12.10 hrs

Flood Elev= 24.92'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.12'	18.0" Round Culvert L= 98.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.12' / 16.89' S= 0.0023 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.8 cfs @ 12.09 hrs HW=17.92' TW=17.56' (Dynamic Tailwater)
↑1=Culvert (Outlet Controls 1.8 cfs @ 2.71 fps)

Pond 22P: Ex DMH2



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Summary for Pond 23P: Ex CB3

Inflow Area = 1.20 ac, 84.73% Impervious, Inflow Depth > 2.99" for 10-Year Storm event
Inflow = 2.9 cfs @ 12.20 hrs, Volume= 0.299 af
Outflow = 2.9 cfs @ 12.20 hrs, Volume= 0.299 af, Atten= 0%, Lag= 0.0 min
Primary = 2.9 cfs @ 12.20 hrs, Volume= 0.299 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 14.93' @ 12.20 hrs

Flood Elev= 23.60'

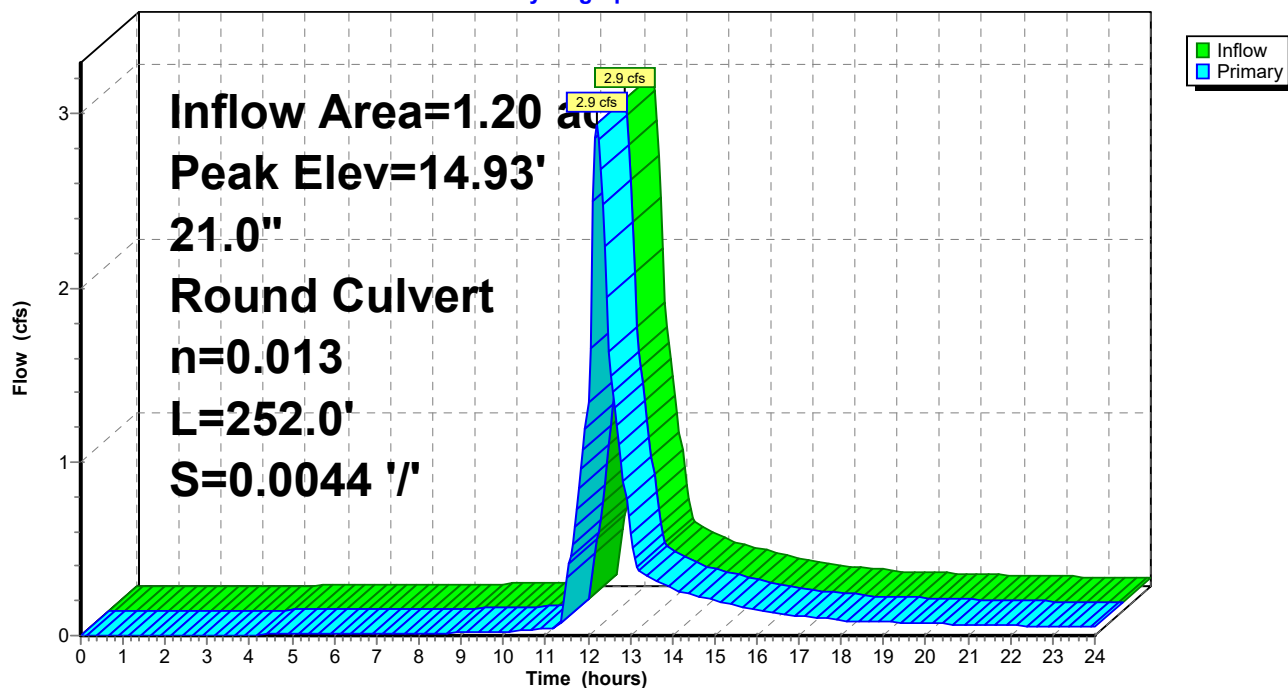
Device	Routing	Invert	Outlet Devices
#1	Primary	14.05'	21.0" Round Culvert L= 252.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.05' / 12.94' S= 0.0044 '/ Cc= 0.900 n= 0.013 Cast iron, coated, Flow Area= 2.41 sf

Primary OutFlow Max=2.9 cfs @ 12.20 hrs HW=14.93' TW=0.00' (Dynamic Tailwater)

↑**1=Culvert** (Barrel Controls 2.9 cfs @ 3.55 fps)

Pond 23P: Ex CB3

Hydrograph



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Summary for Pond 24P: Ex DMH4

Inflow Area = 0.69 ac, 68.00% Impervious, Inflow Depth > 2.49" for 10-Year Storm event
Inflow = 2.0 cfs @ 12.09 hrs, Volume= 0.142 af
Outflow = 2.0 cfs @ 12.09 hrs, Volume= 0.142 af, Atten= 0%, Lag= 0.0 min
Primary = 2.0 cfs @ 12.09 hrs, Volume= 0.142 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.57' @ 12.09 hrs

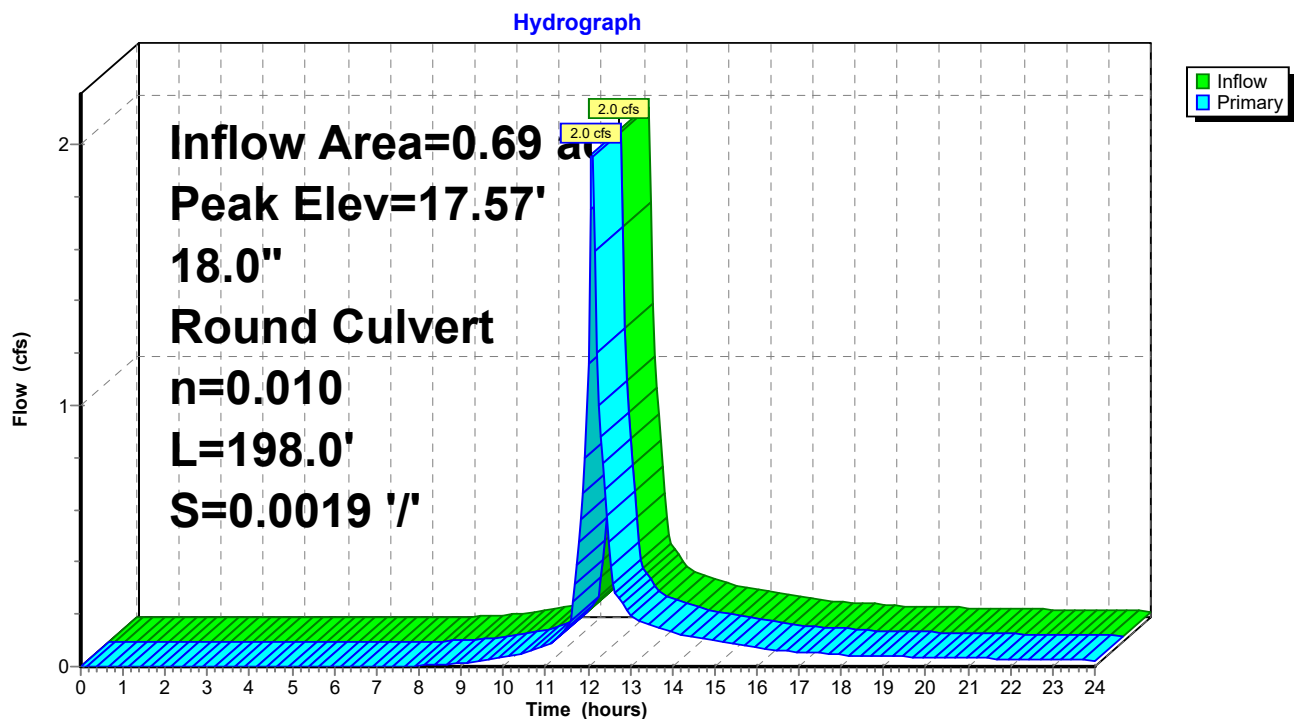
Flood Elev= 25.38'

Device	Routing	Invert	Outlet Devices
#1	Primary	16.75'	18.0" Round Culvert L= 198.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.75' / 16.38' S= 0.0019 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.9 cfs @ 12.09 hrs HW=17.56' TW=16.20' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 1.9 cfs @ 2.86 fps)

Pond 24P: Ex DMH4



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Summary for Pond 25P: Ex DMH5

Inflow Area = 0.69 ac, 68.00% Impervious, Inflow Depth > 2.49" for 10-Year Storm event
Inflow = 2.0 cfs @ 12.09 hrs, Volume= 0.142 af
Outflow = 2.0 cfs @ 12.09 hrs, Volume= 0.142 af, Atten= 0%, Lag= 0.0 min
Primary = 2.0 cfs @ 12.09 hrs, Volume= 0.142 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 16.21' @ 12.09 hrs

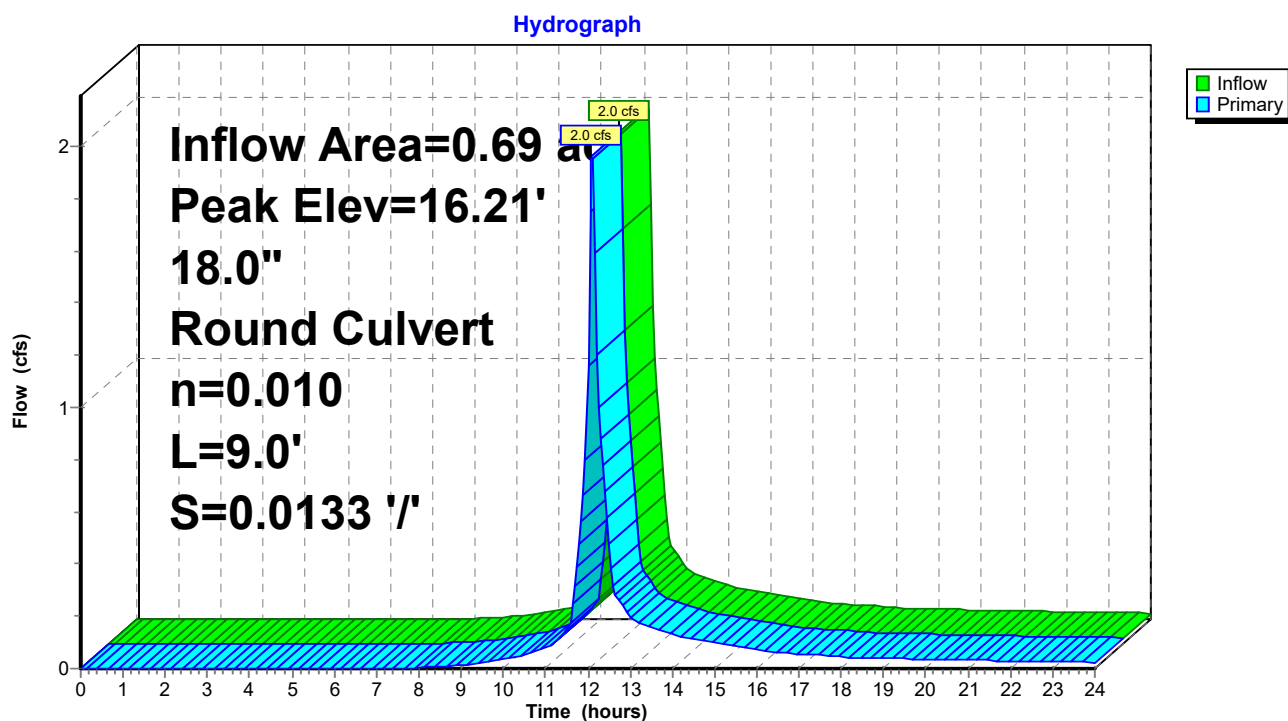
Flood Elev= 23.84'

Device	Routing	Invert	Outlet Devices
#1	Primary	15.44'	18.0" Round Culvert L= 9.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.44' / 15.32' S= 0.0133 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.9 cfs @ 12.09 hrs HW=16.20' TW=15.20' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 1.9 cfs @ 3.14 fps)

Pond 25P: Ex DMH5



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Pond 26P: Ex DMH6

Inflow Area = 0.98 ac, 68.56% Impervious, Inflow Depth > 2.51" for 10-Year Storm event
Inflow = 2.8 cfs @ 12.09 hrs, Volume= 0.204 af
Outflow = 2.8 cfs @ 12.09 hrs, Volume= 0.204 af, Atten= 0%, Lag= 0.0 min
Primary = 2.8 cfs @ 12.09 hrs, Volume= 0.204 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.21' @ 12.10 hrs

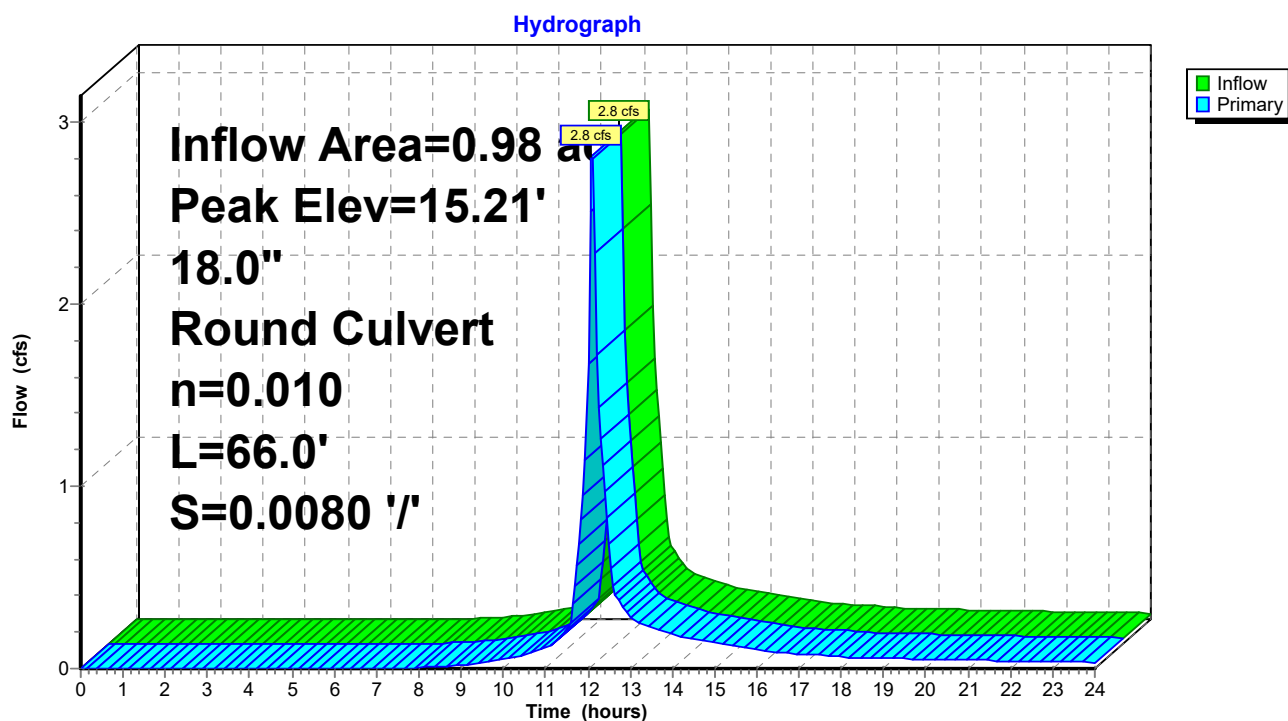
Flood Elev= 23.95'

Device	Routing	Invert	Outlet Devices
#1	Primary	14.30'	18.0" Round Culvert L= 66.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.30' / 13.77' S= 0.0080 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.6 cfs @ 12.09 hrs HW=15.20' TW=14.74' (Dynamic Tailwater)

1=Culvert (Outlet Controls 2.6 cfs @ 3.33 fps)

Pond 26P: Ex DMH6



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Pond 27P: Ex DMH7

Inflow Area = 0.98 ac, 68.56% Impervious, Inflow Depth > 2.51" for 10-Year Storm event
Inflow = 2.8 cfs @ 12.09 hrs, Volume= 0.204 af
Outflow = 2.8 cfs @ 12.09 hrs, Volume= 0.204 af, Atten= 0%, Lag= 0.0 min
Primary = 2.8 cfs @ 12.09 hrs, Volume= 0.204 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

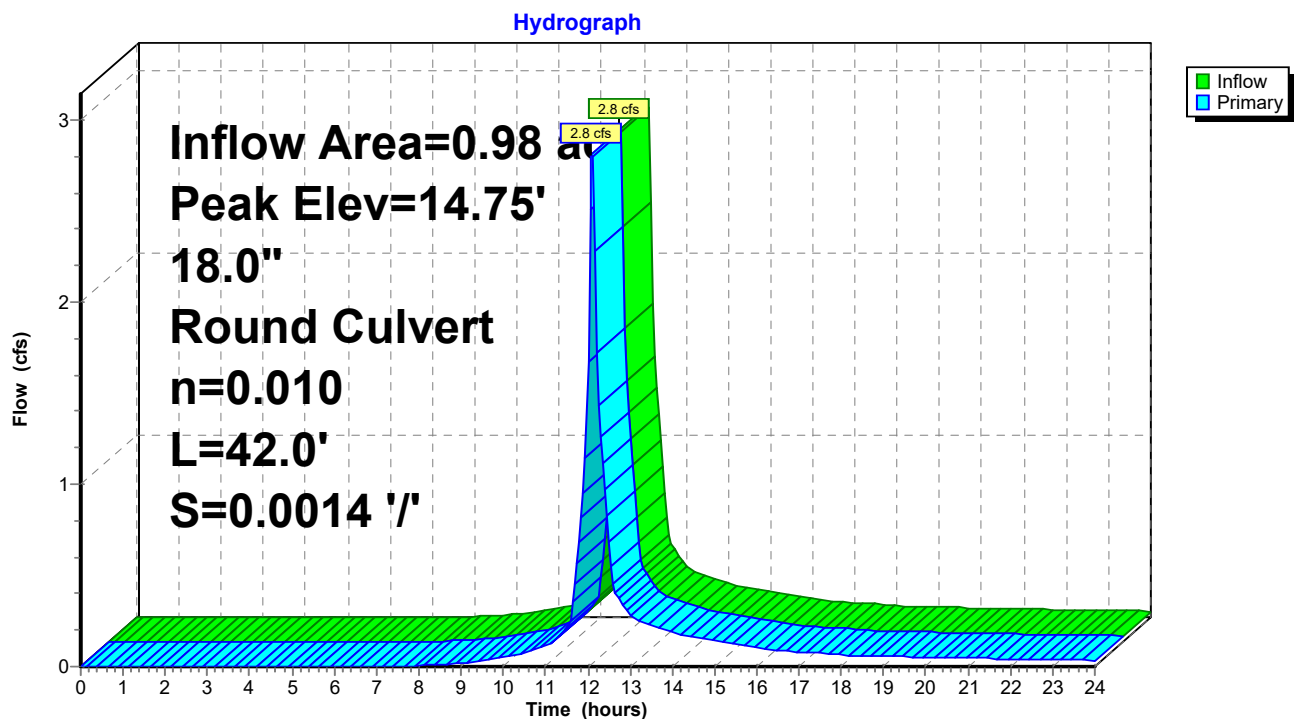
Peak Elev= 14.75' @ 12.09 hrs

Flood Elev= 24.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	13.70'	18.0" Round Culvert L= 42.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.70' / 13.64' S= 0.0014 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.8 cfs @ 12.09 hrs HW=14.74' TW=0.00' (Dynamic Tailwater)
↑1=Culvert (Barrel Controls 2.8 cfs @ 2.97 fps)

Pond 27P: Ex DMH7



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Summary for Pond 29P: Ex DMH9

Inflow Area = 0.39 ac, 73.58% Impervious, Inflow Depth > 2.76" for 10-Year Storm event
Inflow = 1.2 cfs @ 12.09 hrs, Volume= 0.090 af
Outflow = 1.2 cfs @ 12.09 hrs, Volume= 0.090 af, Atten= 0%, Lag= 0.0 min
Primary = 1.2 cfs @ 12.09 hrs, Volume= 0.090 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

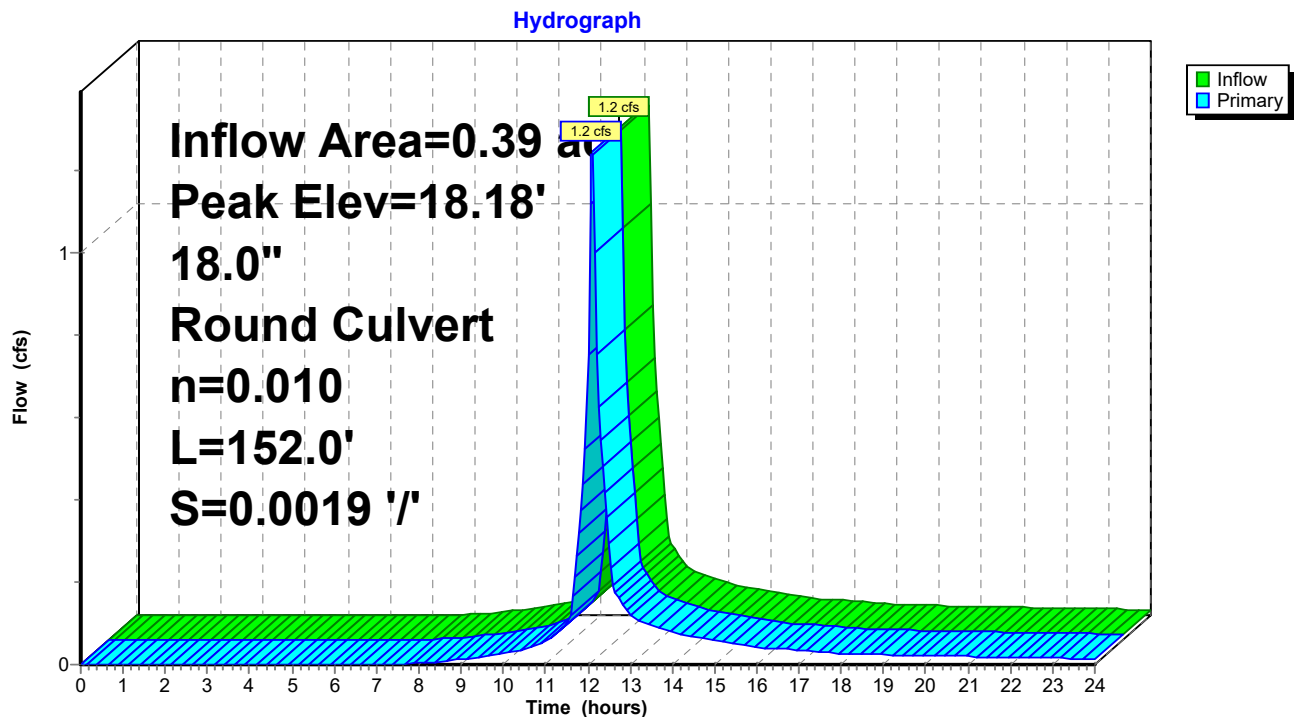
Peak Elev= 18.18' @ 12.11 hrs

Flood Elev= 23.44'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.46'	18.0" Round Culvert L= 152.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.46' / 17.17' S= 0.0019 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.1 cfs @ 12.09 hrs HW=18.16' TW=17.92' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 1.1 cfs @ 1.92 fps)

Pond 29P: Ex DMH9



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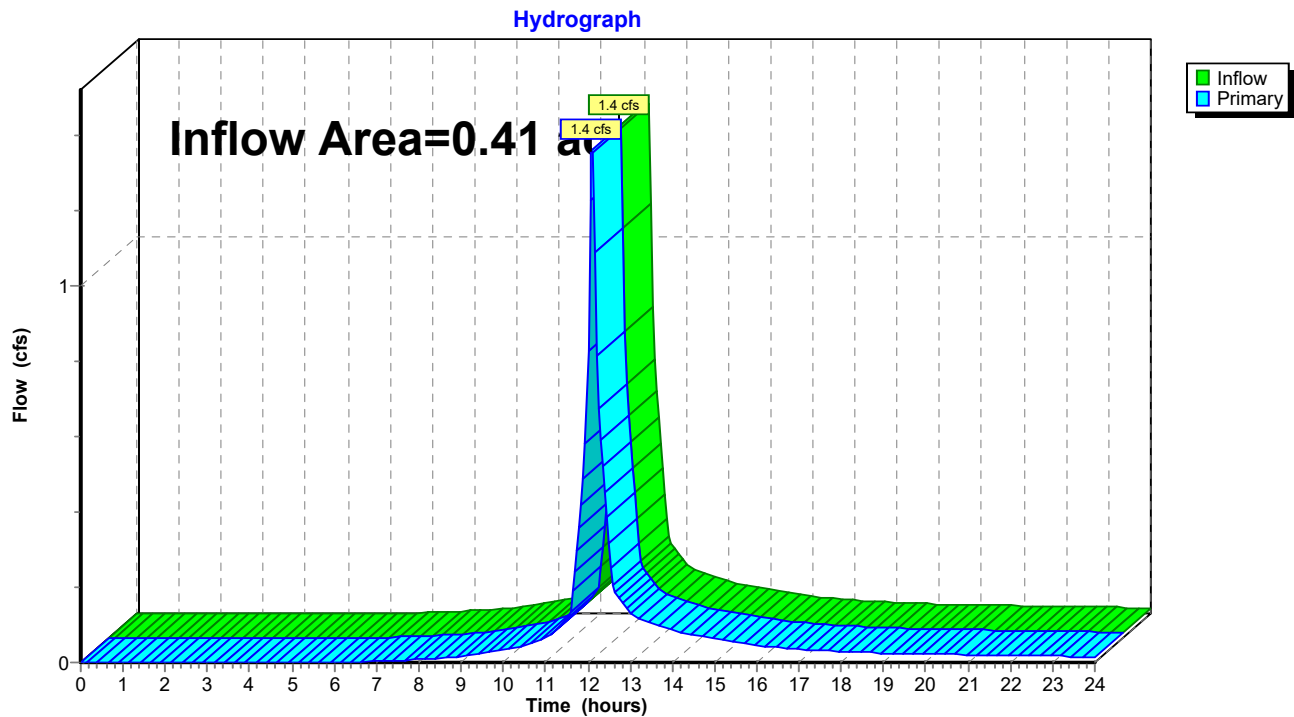
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Summary for Link SP1: Forest Ave Storm Drain

Inflow Area = 0.41 ac, 75.27% Impervious, Inflow Depth > 2.89" for 10-Year Storm event
Inflow = 1.4 cfs @ 12.09 hrs, Volume= 0.100 af
Primary = 1.4 cfs @ 12.09 hrs, Volume= 0.100 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP1: Forest Ave Storm Drain



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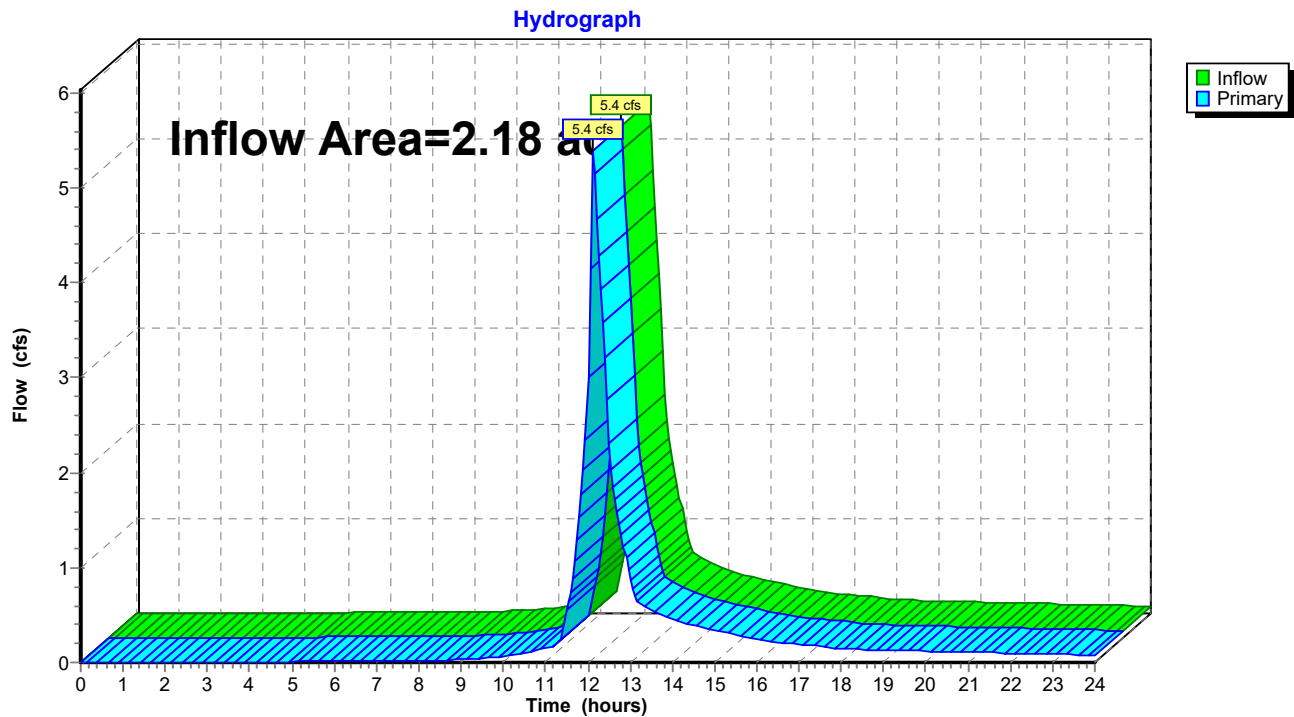
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Summary for Link SP2: Combined Sewer

Inflow Area = 2.18 ac, 77.47% Impervious, Inflow Depth > 2.77" for 10-Year Storm event
Inflow = 5.4 cfs @ 12.12 hrs, Volume= 0.502 af
Primary = 5.4 cfs @ 12.12 hrs, Volume= 0.502 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP2: Combined Sewer



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: POST-1	Runoff Area=5,692 sf 70.24% Impervious Runoff Depth>3.70" Tc=6.0 min CN=81 Runoff=0.6 cfs 0.040 af
Subcatchment2S: POST-2	Runoff Area=9,641 sf 93.94% Impervious Runoff Depth>5.10" Tc=6.0 min CN=94 Runoff=1.2 cfs 0.094 af
Subcatchment3S: POST-3	Runoff Area=15,050 sf 86.74% Impervious Runoff Depth>4.65" Tc=6.0 min CN=90 Runoff=1.8 cfs 0.134 af
Subcatchment5S: POST-5	Runoff Area=6,810 sf 75.96% Impervious Runoff Depth>4.01" Tc=6.0 min CN=84 Runoff=0.7 cfs 0.052 af
Subcatchment6S: POST-6	Runoff Area=9,346 sf 95.25% Impervious Runoff Depth>5.21" Tc=6.0 min CN=95 Runoff=1.2 cfs 0.093 af
Subcatchment7S: POST-7	Runoff Area=5,710 sf 71.52% Impervious Runoff Depth>3.70" Tc=6.0 min CN=81 Runoff=0.6 cfs 0.040 af
Subcatchment8S: POST-8	Runoff Area=3,553 sf 58.65% Impervious Runoff Depth>3.01" Tc=6.0 min CN=74 Runoff=0.3 cfs 0.020 af
Subcatchment9S: POST-9	Runoff Area=14,487 sf 79.34% Impervious Runoff Depth>4.22" Tc=6.0 min CN=86 Runoff=1.6 cfs 0.117 af
Subcatchment10S: POST-10	Runoff Area=7,001 sf 74.06% Impervious Runoff Depth>3.90" Tc=6.0 min CN=83 Runoff=0.7 cfs 0.052 af
Subcatchment11S: POST-11	Runoff Area=10,124 sf 73.25% Impervious Runoff Depth>3.80" Tc=6.0 min CN=82 Runoff=1.0 cfs 0.074 af
Subcatchment12S: POST-12	Runoff Area=12,768 sf 60.52% Impervious Runoff Depth>3.11" Tc=6.0 min CN=75 Runoff=1.0 cfs 0.076 af
Subcatchment13S: POST-13	Runoff Area=12,612 sf 69.88% Impervious Runoff Depth>3.60" Tc=6.0 min CN=80 Runoff=1.2 cfs 0.087 af
Pond 1P: CB1	Peak Elev=21.89' Inflow=0.6 cfs 0.040 af 10.0" Round Culvert n=0.010 L=56.0' S=0.0048 '/' Outflow=0.6 cfs 0.040 af
Pond 2P: CB2	Peak Elev=21.87' Inflow=1.7 cfs 0.134 af 10.0" Round Culvert n=0.010 L=56.0' S=0.0050 '/' Outflow=1.7 cfs 0.134 af
Pond 3P: CB3	Peak Elev=21.50' Inflow=3.5 cfs 0.268 af 15.0" Round Culvert n=0.010 L=21.0' S=0.0048 '/' Outflow=3.5 cfs 0.268 af
Pond 4P: CB4	Peak Elev=21.20' Inflow=2.4 cfs 0.186 af 18.0" Round Culvert n=0.010 L=106.0' S=0.0102 '/' Outflow=2.4 cfs 0.186 af

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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Pond 5P: CB5Peak Elev=21.25' Inflow=1.7 cfs 0.134 af
15.0" Round Culvert n=0.010 L=77.0' S=0.0051 '/ Outflow=1.7 cfs 0.134 af**Pond 6P: CB6**Peak Elev=21.25' Inflow=0.6 cfs 0.040 af
15.0" Round Culvert n=0.010 L=53.0' S=0.0051 '/ Outflow=0.5 cfs 0.040 af**Pond 7P: CB7**Peak Elev=18.68' Inflow=1.0 cfs 0.076 af
8.0" Round Culvert n=0.010 L=34.0' S=0.0100 '/ Outflow=1.0 cfs 0.076 af**Pond 8P: CB8**Peak Elev=15.57' Inflow=1.2 cfs 0.087 af
18.0" Round Culvert n=0.010 L=18.0' S=0.0028 '/ Outflow=1.2 cfs 0.087 af**Pond 9P: DMH1**Peak Elev=21.12' Inflow=5.9 cfs 0.454 af
18.0" Round Culvert n=0.010 L=15.0' S=0.0047 '/ Outflow=5.9 cfs 0.454 af**Pond 11P: Ex CB1**Peak Elev=19.30' Inflow=1.7 cfs 0.126 af
12.0" Round Culvert n=0.010 L=41.0' S=0.0224 '/ Outflow=1.7 cfs 0.126 af**Pond 12P: Ex CB2**Peak Elev=18.48' Inflow=0.3 cfs 0.020 af
8.0" Round Culvert n=0.010 L=159.0' S=0.0158 '/ Outflow=0.3 cfs 0.020 af**Pond 13P: CMP Peak Detention**Peak Elev=20.03' Storage=2,253 cf Inflow=5.9 cfs 0.358 af
Outflow=4.2 cfs 0.358 af**Pond 14P: CONTECHWQv CMP Det & SF**Peak Elev=20.41' Storage=2,070 cf Inflow=5.9 cfs 0.454 af
Primary=0.0 cfs 0.055 af Secondary=5.9 cfs 0.358 af Outflow=6.0 cfs 0.413 af**Pond 21P: Ex DMH1**Peak Elev=15.51' Inflow=1.2 cfs 0.087 af
18.0" Round Culvert n=0.010 L=12.0' S=0.0200 '/ Outflow=1.2 cfs 0.087 af**Pond 22P: Ex DMH2**Peak Elev=18.13' Inflow=2.8 cfs 0.202 af
18.0" Round Culvert n=0.010 L=98.0' S=0.0023 '/ Outflow=2.8 cfs 0.202 af**Pond 23P: Ex CB3**Peak Elev=15.13' Inflow=4.2 cfs 0.413 af
21.0" Round Culvert n=0.013 L=252.0' S=0.0044 '/ Outflow=4.2 cfs 0.413 af**Pond 24P: Ex DMH4**Peak Elev=17.75' Inflow=2.8 cfs 0.202 af
18.0" Round Culvert n=0.010 L=198.0' S=0.0019 '/ Outflow=2.8 cfs 0.202 af**Pond 25P: Ex DMH5**Peak Elev=16.38' Inflow=2.8 cfs 0.202 af
18.0" Round Culvert n=0.010 L=9.0' S=0.0133 '/ Outflow=2.8 cfs 0.202 af**Pond 26P: Ex DMH6**Peak Elev=15.46' Inflow=4.0 cfs 0.289 af
18.0" Round Culvert n=0.010 L=66.0' S=0.0080 '/ Outflow=4.0 cfs 0.289 af**Pond 27P: Ex DMH7**Peak Elev=14.99' Inflow=4.0 cfs 0.289 af
18.0" Round Culvert n=0.010 L=42.0' S=0.0014 '/ Outflow=4.0 cfs 0.289 af**Pond 29P: Ex DMH9**Peak Elev=18.35' Inflow=1.7 cfs 0.126 af
18.0" Round Culvert n=0.010 L=152.0' S=0.0019 '/ Outflow=1.7 cfs 0.126 af

C2. Post*Type III 24-hr 25-Year Storm Rainfall=5.80"*

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Link SP1: Forest Ave Storm Drain

Inflow=1.9 cfs 0.137 af

Primary=1.9 cfs 0.137 af

Link SP2: Combined Sewer

Inflow=7.6 cfs 0.701 af

Primary=7.6 cfs 0.701 af

Total Runoff Area = 2.59 ac Runoff Volume = 0.880 af Average Runoff Depth = 4.08"
22.88% Pervious = 0.59 ac 77.12% Impervious = 2.00 ac

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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Subcatchment 1S: POST-1

Runoff = 0.6 cfs @ 12.09 hrs, Volume= 0.040 af, Depth> 3.70"

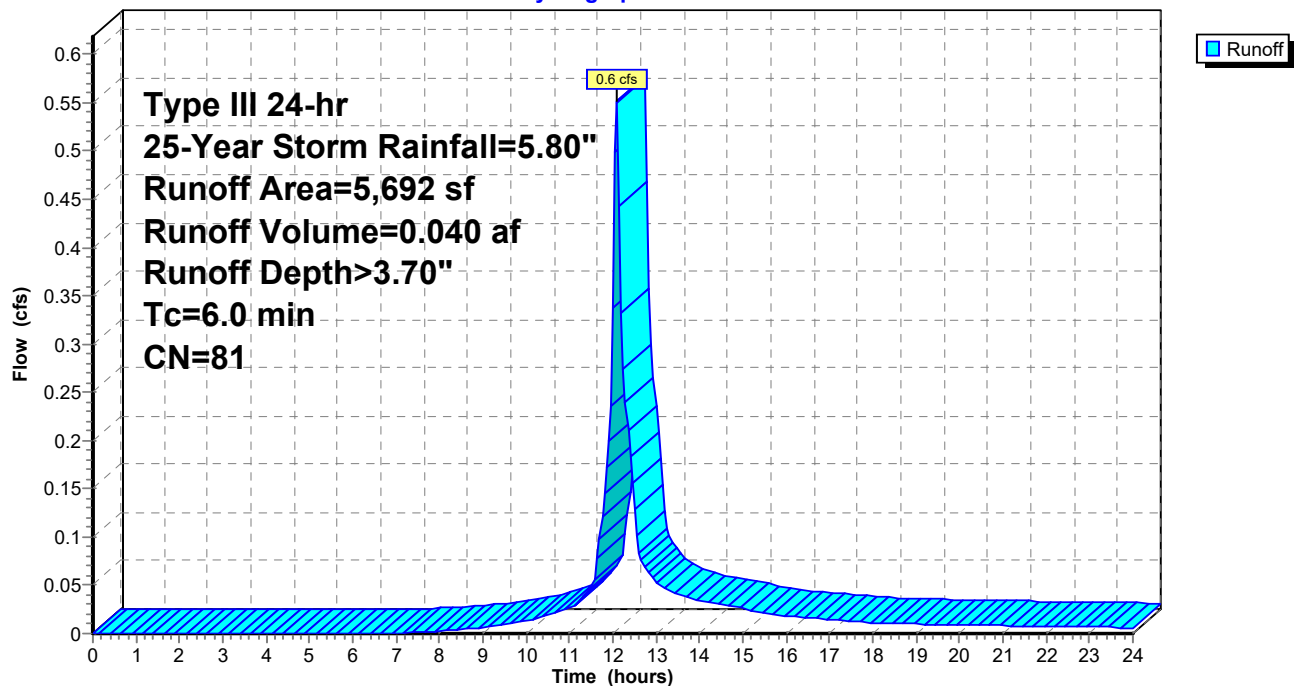
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
3,998	98	Paved parking, HSG A
830	39	Grass cover, Good, HSG A
* 864	40	Porous Pavement
5,692	81	Weighted Average
1,694		29.76% Pervious Area
3,998		70.24% Impervious Area

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

Subcatchment 1S: POST-1

Hydrograph



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Subcatchment 2S: POST-2

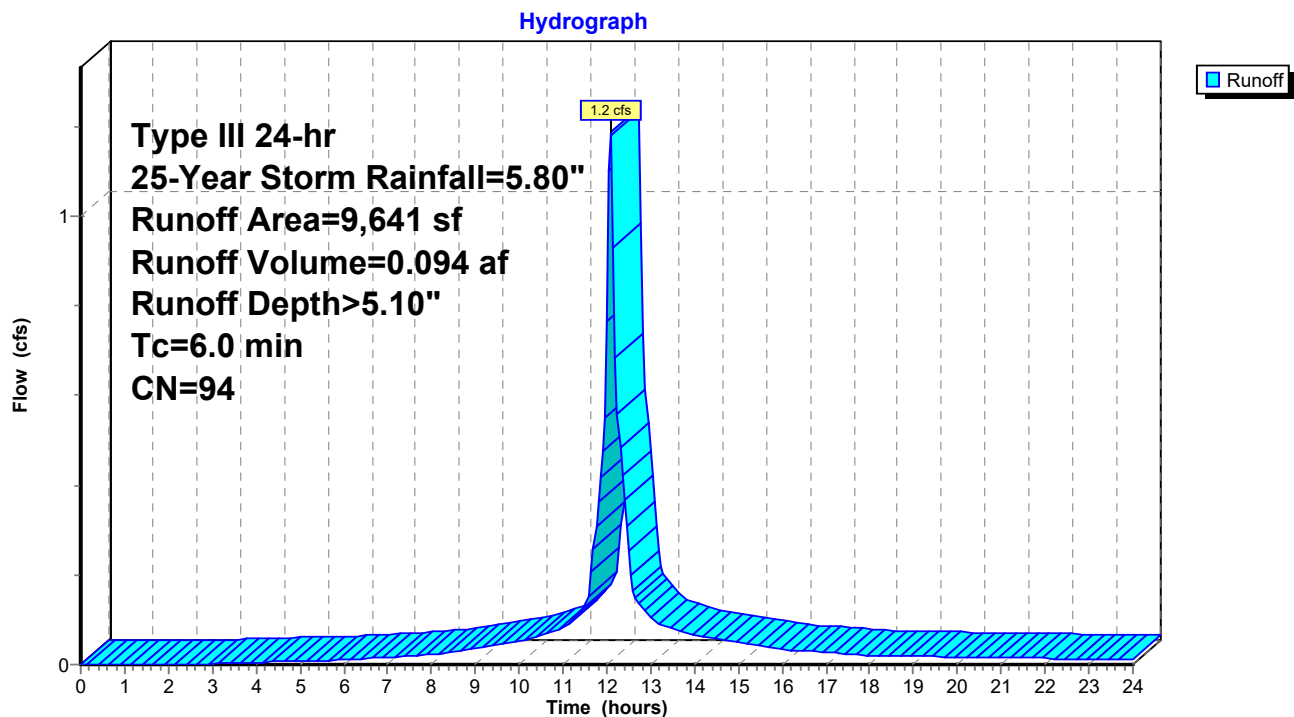
Runoff = 1.2 cfs @ 12.09 hrs, Volume= 0.094 af, Depth> 5.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
9,057	98	Paved parking, HSG A
502	39	Grass cover, Good, HSG A
* 82	40	Porous Pavement
9,641	94	Weighted Average
584		6.06% Pervious Area
9,057		93.94% Impervious Area

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

Subcatchment 2S: POST-2



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Subcatchment 3S: POST-3

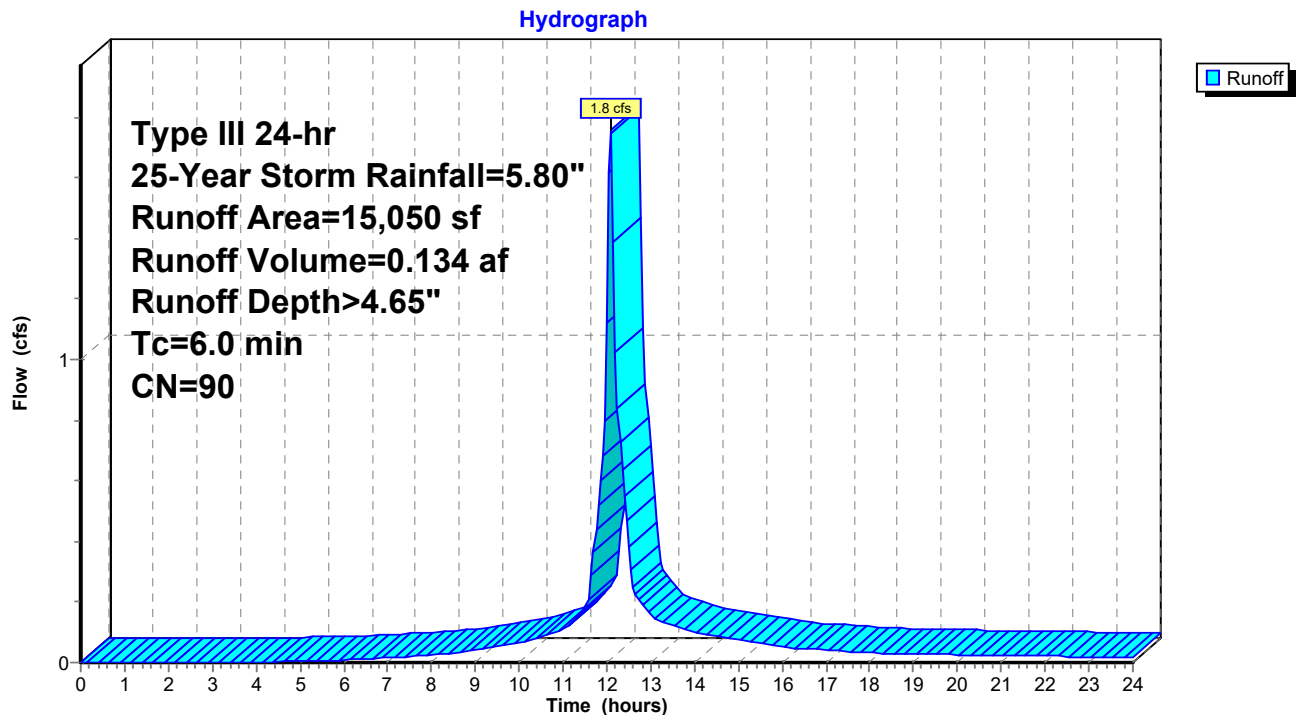
Runoff = 1.8 cfs @ 12.09 hrs, Volume= 0.134 af, Depth> 4.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
13,054	98	Paved parking, HSG A
1,909	39	Grass cover, Good, HSG A
* 87	40	Porous Pavement
15,050	90	Weighted Average
1,996		13.26% Pervious Area
13,054		86.74% Impervious Area

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

Subcatchment 3S: POST-3



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Subcatchment 5S: POST-5

Runoff = 0.7 cfs @ 12.09 hrs, Volume= 0.052 af, Depth> 4.01"

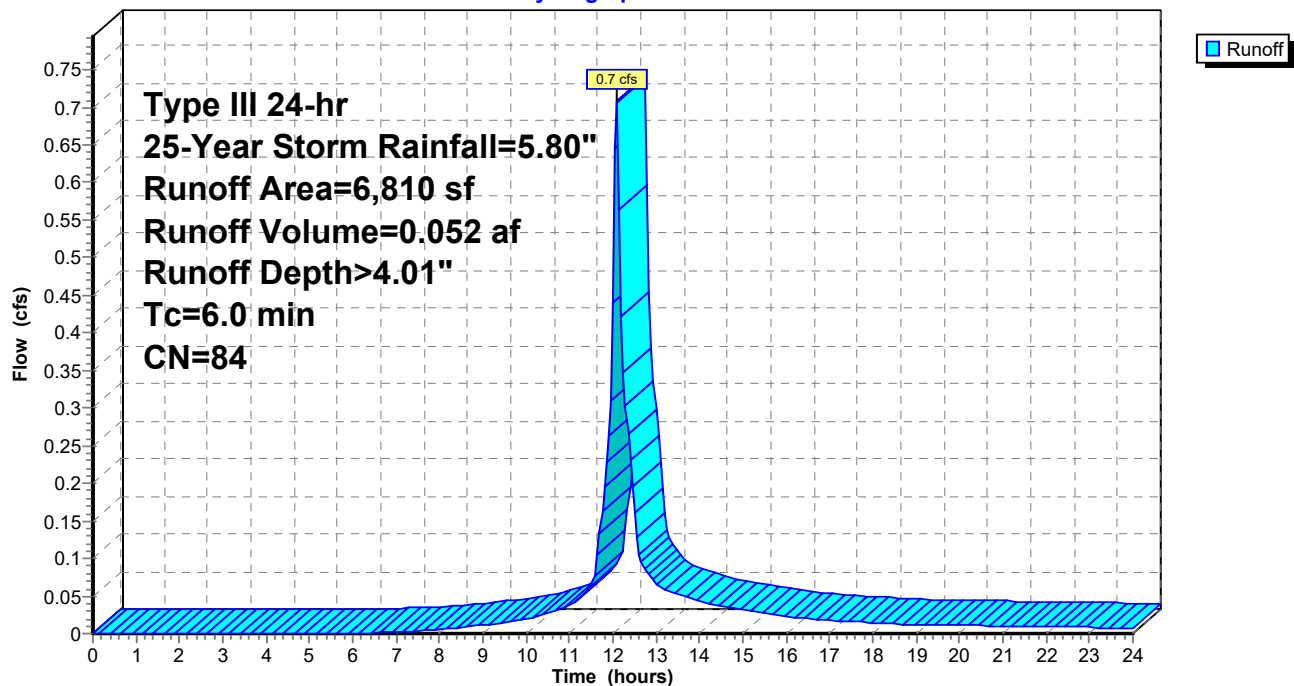
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
5,173	98	Paved parking, HSG A
1,547	39	Grass cover, Good, HSG A
* 90	40	Porous Pavement
6,810	84	Weighted Average
1,637		24.04% Pervious Area
5,173		75.96% Impervious Area

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

Subcatchment 5S: POST-5

Hydrograph



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Summary for Subcatchment 6S: POST-6

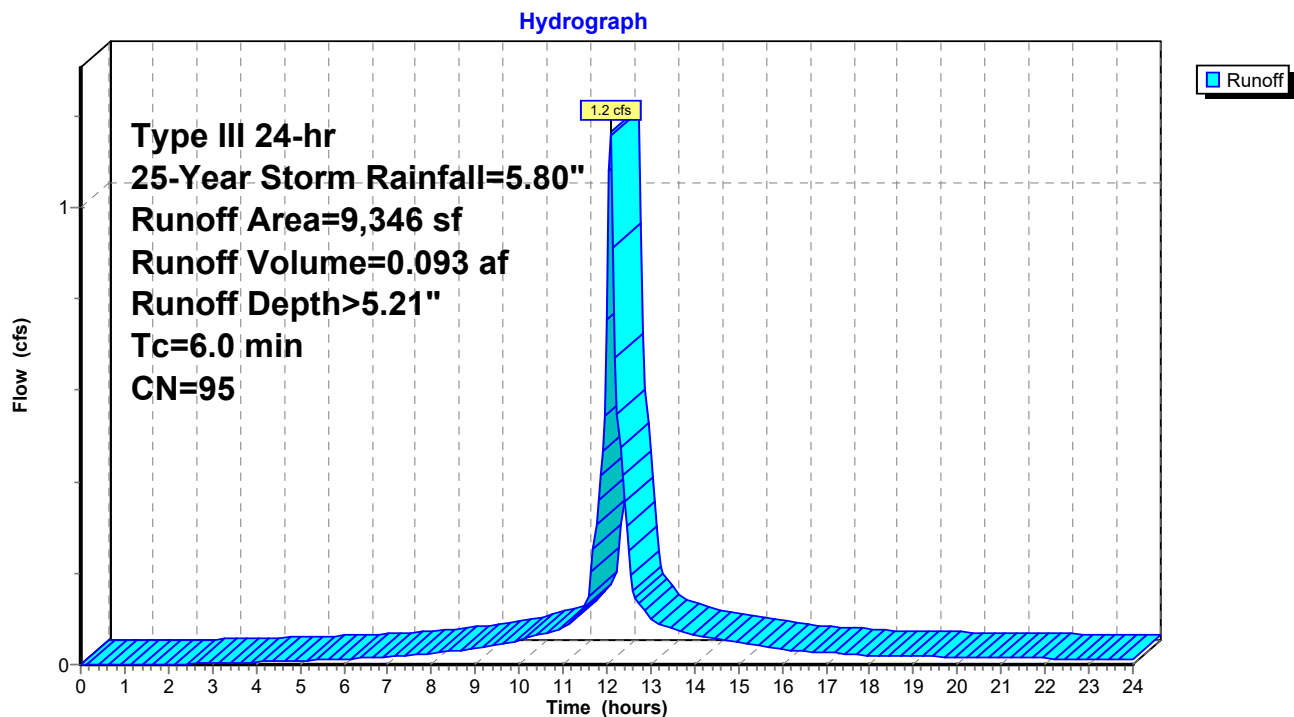
Runoff = 1.2 cfs @ 12.09 hrs, Volume= 0.093 af, Depth> 5.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
8,902	98	Paved parking, HSG A
351	39	Grass cover, Good, HSG A
* 93	40	Porous Pavement
9,346	95	Weighted Average
444		4.75% Pervious Area
8,902		95.25% Impervious Area

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

Subcatchment 6S: POST-6



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Subcatchment 7S: POST-7

Runoff = 0.6 cfs @ 12.09 hrs, Volume= 0.040 af, Depth> 3.70"

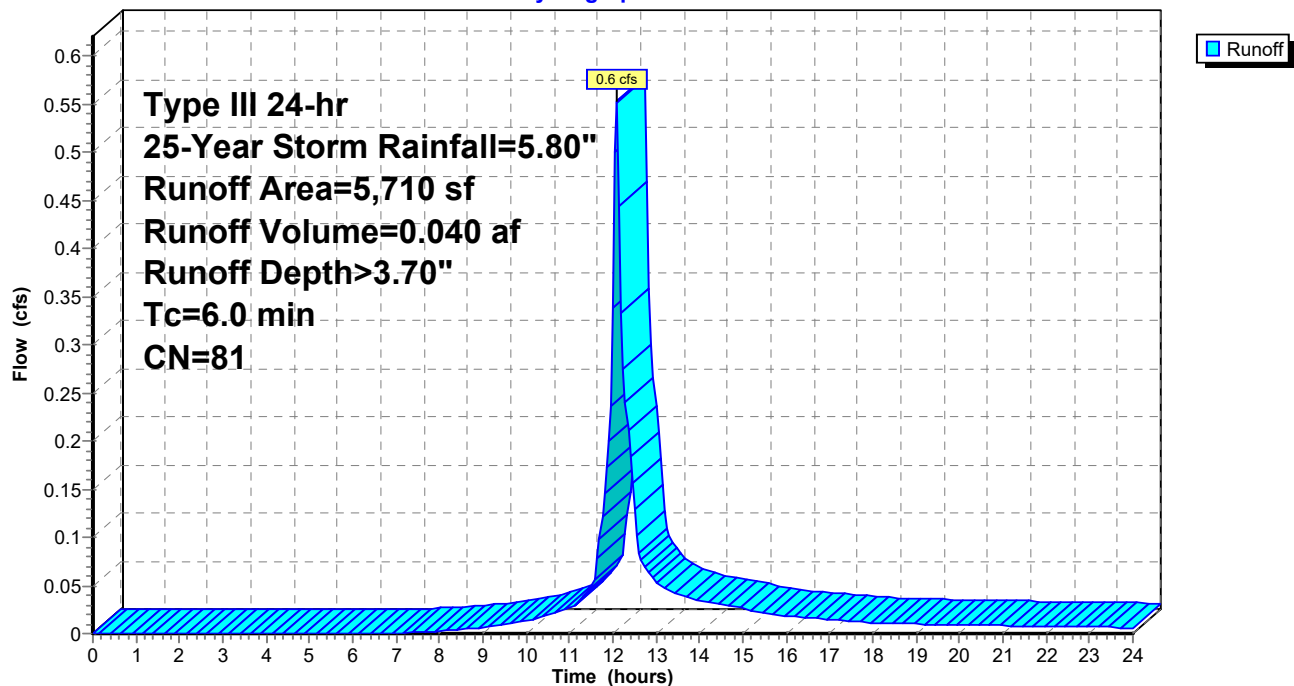
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
4,084	98	Paved parking, HSG A
809	39	Grass cover, Good, HSG A
* 817	40	Porous Pavement
5,710	81	Weighted Average
1,626		28.48% Pervious Area
4,084		71.52% Impervious Area

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

Subcatchment 7S: POST-7

Hydrograph



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Subcatchment 8S: POST-8

Runoff = 0.3 cfs @ 12.09 hrs, Volume= 0.020 af, Depth> 3.01"

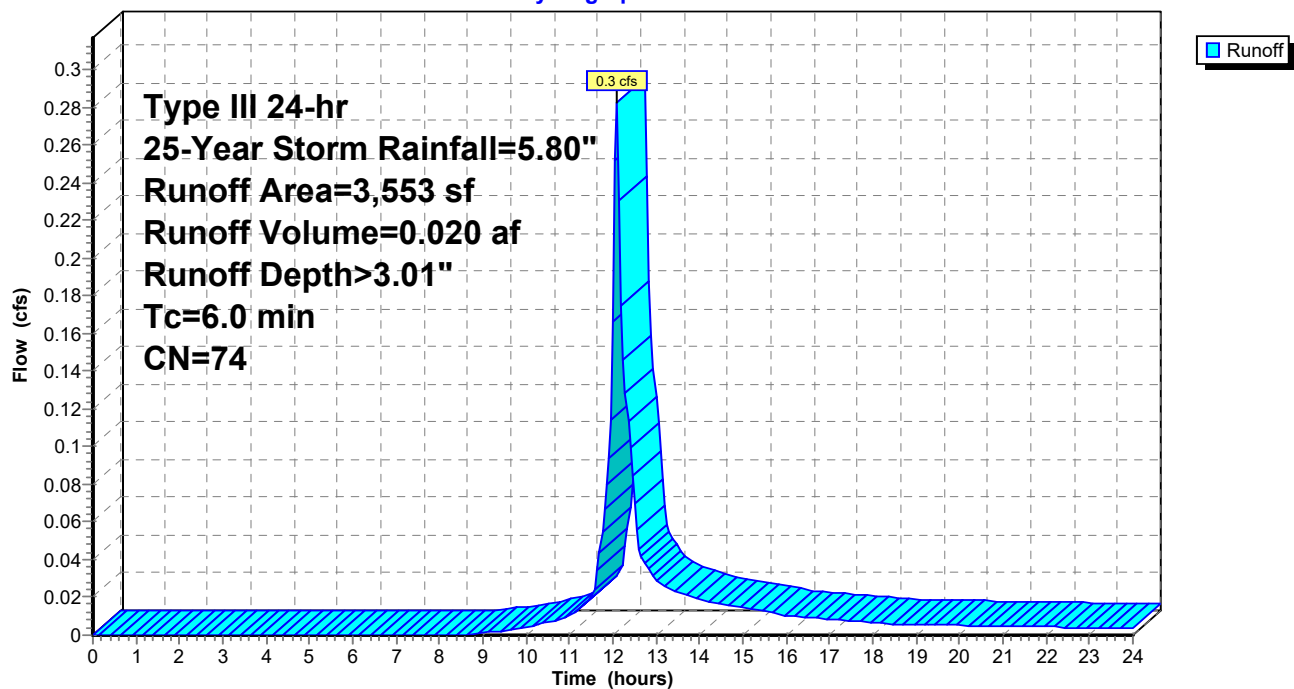
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
2,084	98	Paved parking, HSG A
1,469	39	Grass cover, Good, HSG A
3,553	74	Weighted Average
1,469		41.35% Pervious Area
2,084		58.65% Impervious Area

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

Subcatchment 8S: POST-8

Hydrograph



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Subcatchment 9S: POST-9

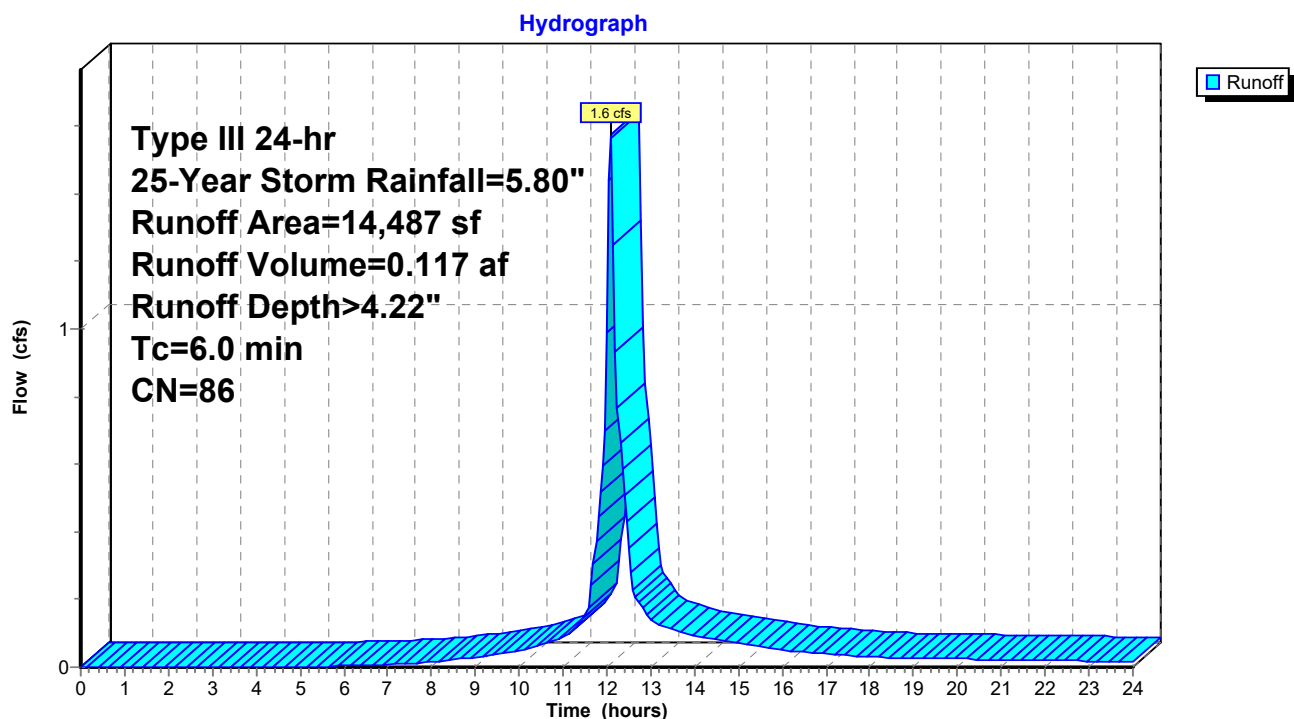
Runoff = 1.6 cfs @ 12.09 hrs, Volume= 0.117 af, Depth> 4.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
11,494	98	Paved parking, HSG A
2,993	39	Grass cover, Good, HSG A
14,487	86	Weighted Average
2,993		20.66% Pervious Area
11,494		79.34% Impervious Area

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

Subcatchment 9S: POST-9



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Summary for Subcatchment 10S: POST-10

Runoff = 0.7 cfs @ 12.09 hrs, Volume= 0.052 af, Depth> 3.90"

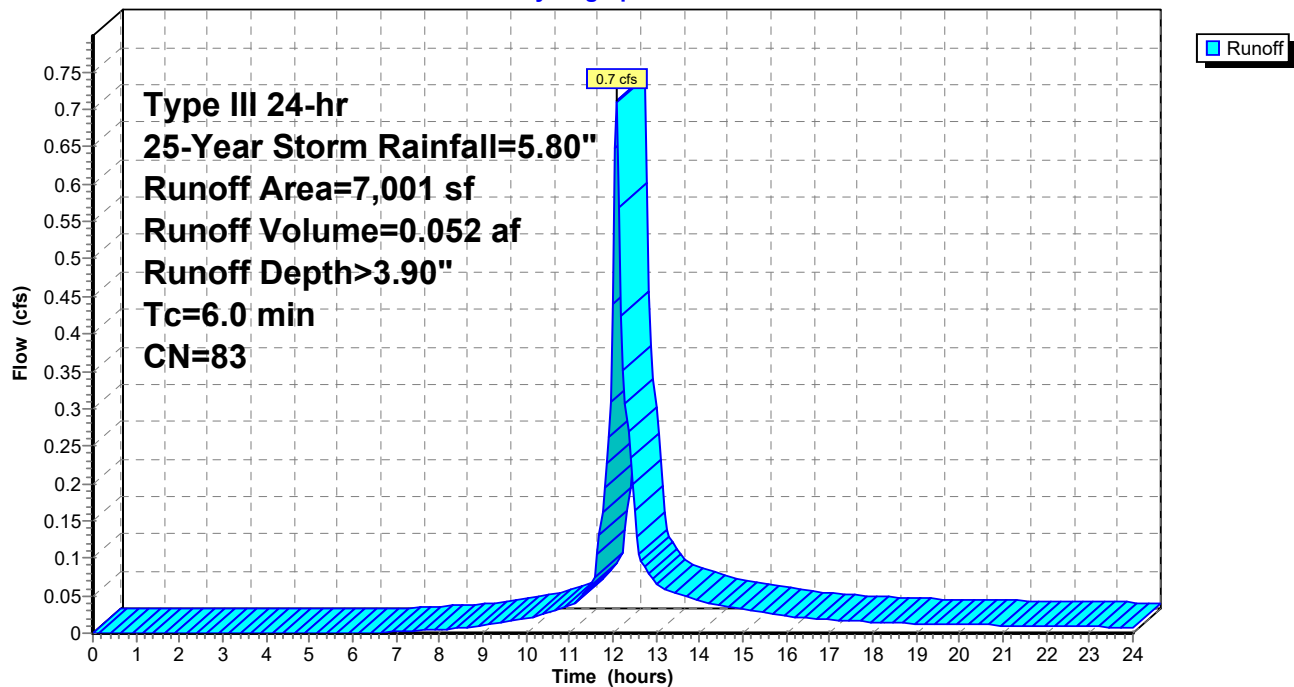
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
5,185	98	Paved parking, HSG A
1,816	39	Grass cover, Good, HSG A
7,001	83	Weighted Average
1,816		25.94% Pervious Area
5,185		74.06% Impervious Area

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

Subcatchment 10S: POST-10

Hydrograph



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POST
Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Subcatchment 11S: POST-11

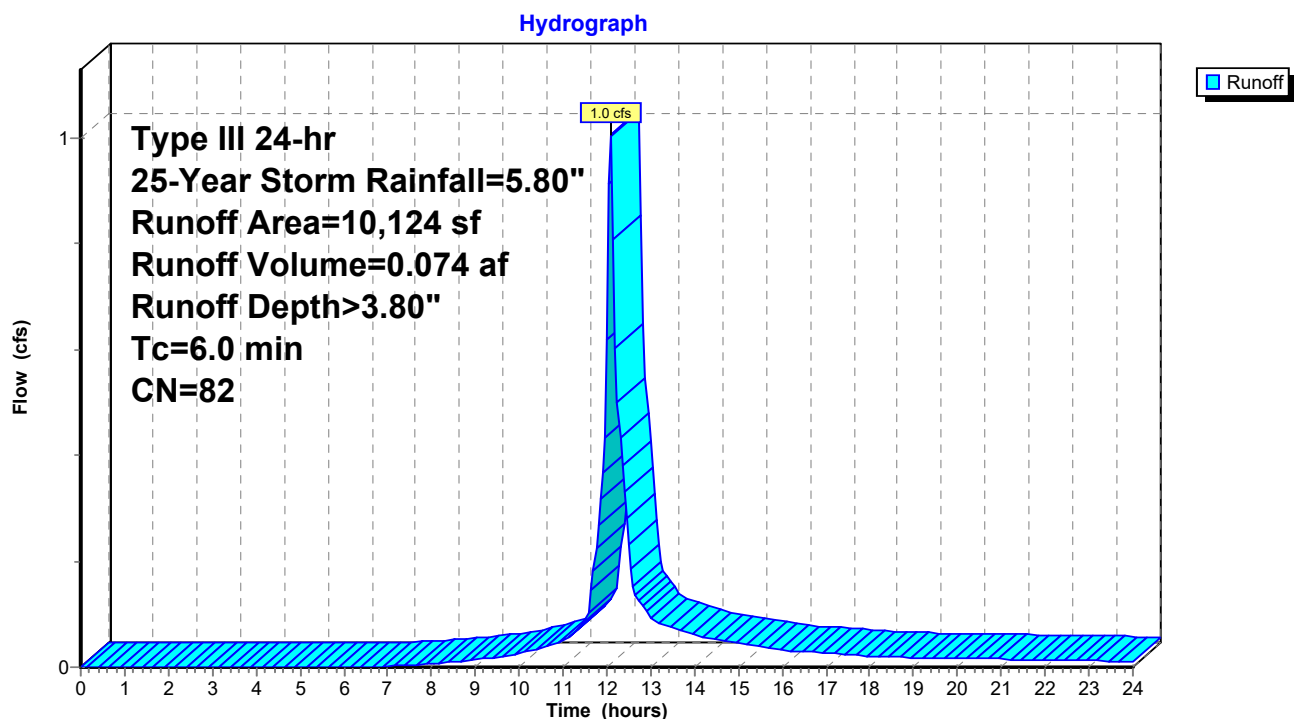
Runoff = 1.0 cfs @ 12.09 hrs, Volume= 0.074 af, Depth> 3.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
7,416	98	Paved parking, HSG A
2,708	39	Grass cover, Good, HSG A
10,124	82	Weighted Average
2,708		26.75% Pervious Area
7,416		73.25% Impervious Area

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

Subcatchment 11S: POST-11



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Summary for Subcatchment 12S: POST-12

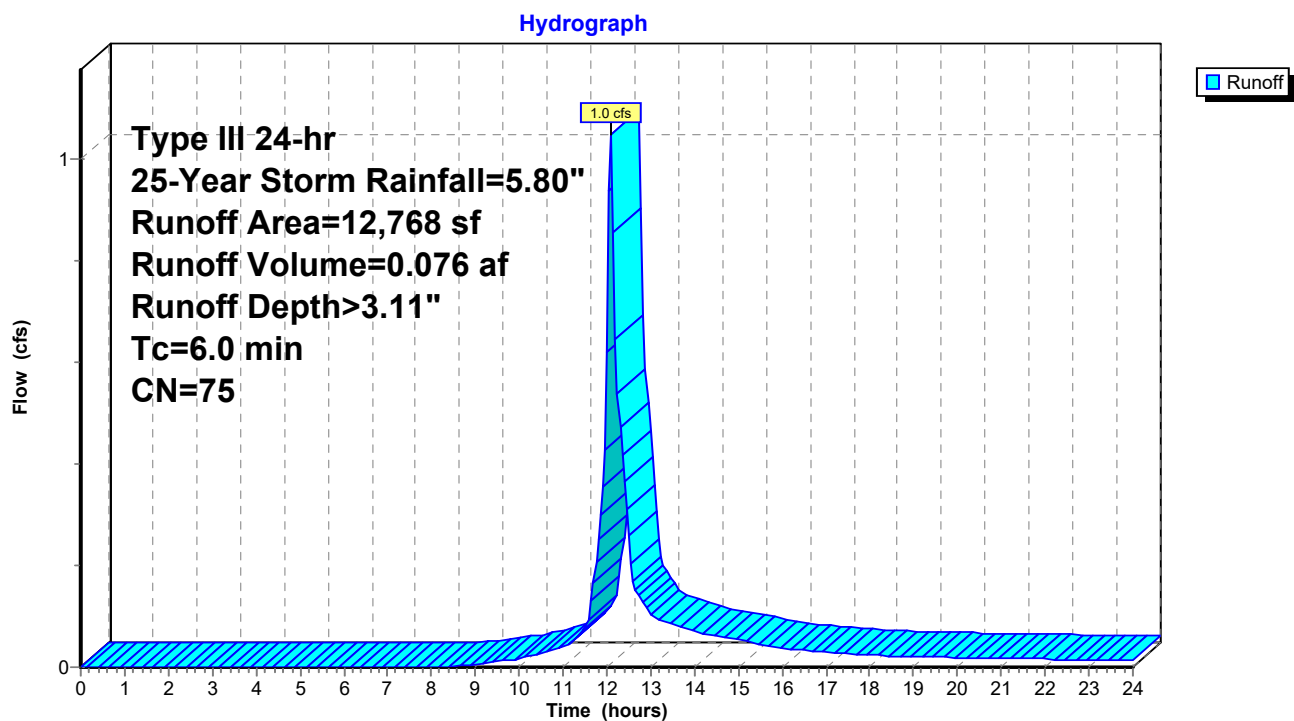
Runoff = 1.0 cfs @ 12.09 hrs, Volume= 0.076 af, Depth> 3.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
7,727	98	Paved parking, HSG A
5,041	39	Grass cover, Good, HSG A
12,768	75	Weighted Average
5,041		39.48% Pervious Area
7,727		60.52% Impervious Area

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

Subcatchment 12S: POST-12



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Summary for Subcatchment 13S: POST-13

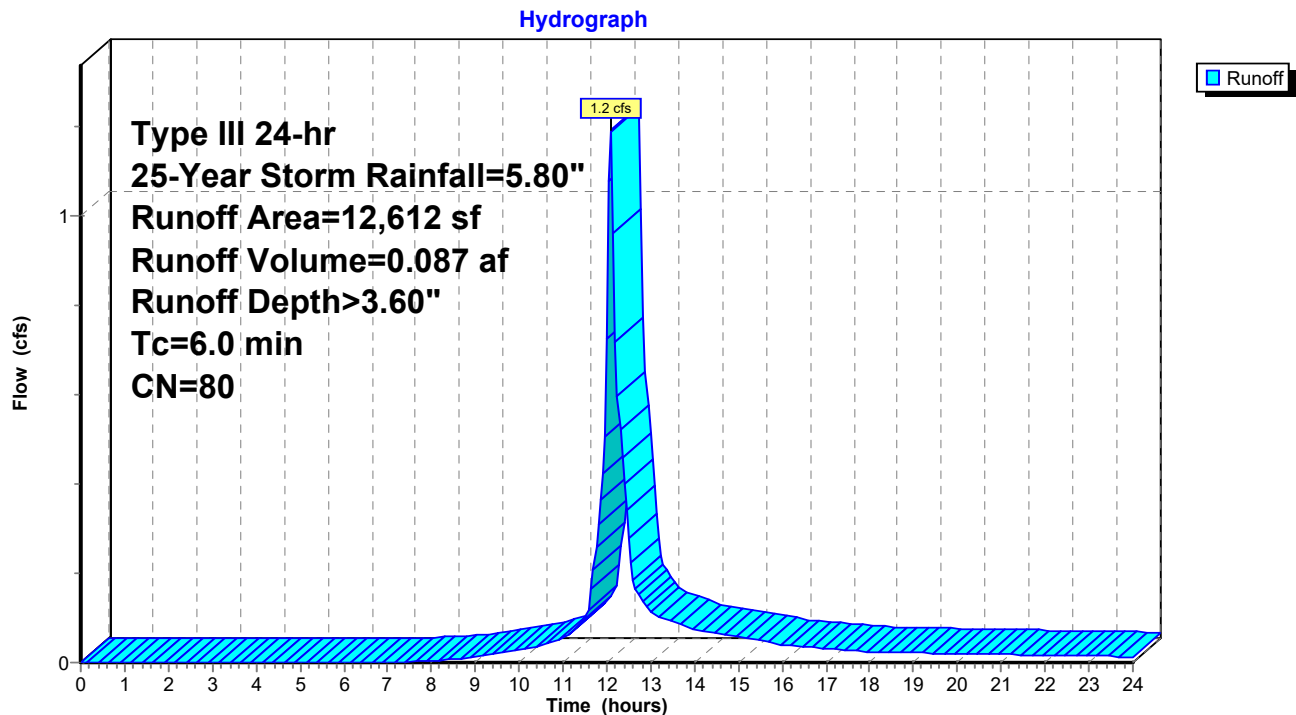
Runoff = 1.2 cfs @ 12.09 hrs, Volume= 0.087 af, Depth> 3.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
8,813	98	Paved parking, HSG A
3,299	39	Grass cover, Good, HSG A
* 500	40	Porous Pavement
12,612	80	Weighted Average
3,799		30.12% Pervious Area
8,813		69.88% Impervious Area

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

Subcatchment 13S: POST-13



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Summary for Pond 1P: CB1

Inflow Area = 0.13 ac, 70.24% Impervious, Inflow Depth > 3.70" for 25-Year Storm event
Inflow = 0.6 cfs @ 12.09 hrs, Volume= 0.040 af
Outflow = 0.6 cfs @ 12.09 hrs, Volume= 0.040 af, Atten= 0%, Lag= 0.0 min
Primary = 0.6 cfs @ 12.09 hrs, Volume= 0.040 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 21.89' @ 12.20 hrs

Flood Elev= 22.34'

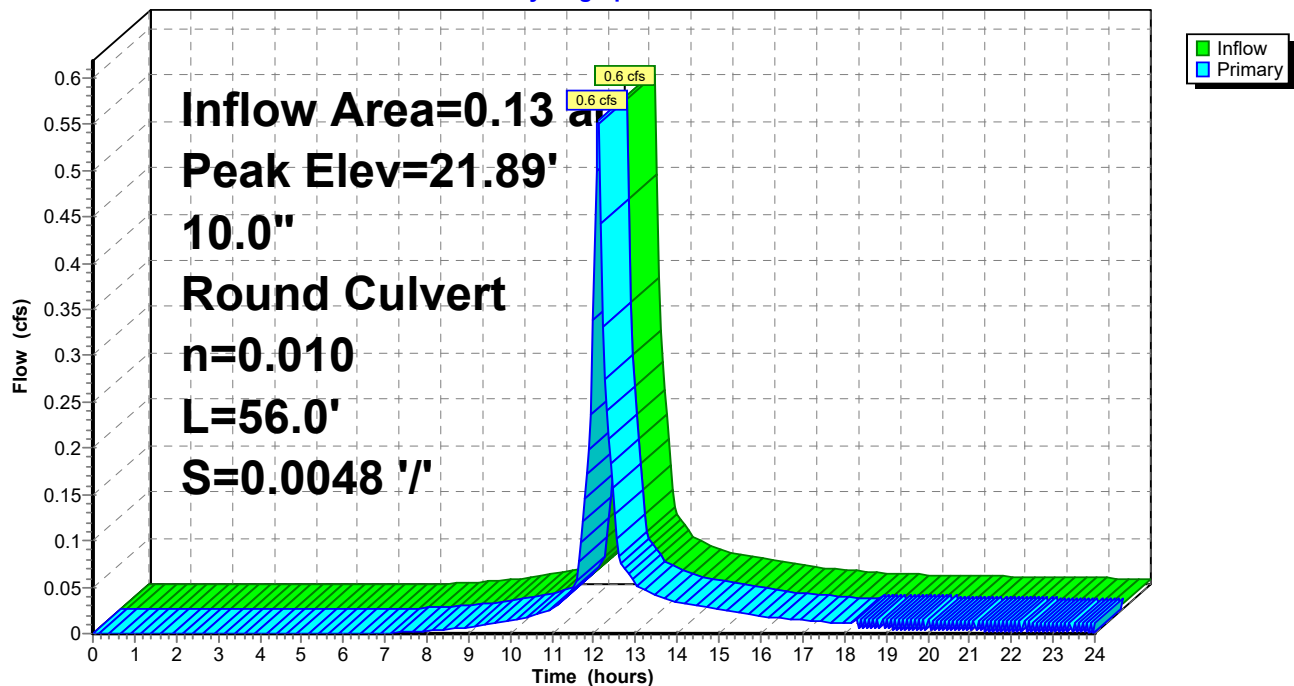
Device	Routing	Invert	Outlet Devices
#1	Primary	18.34'	10.0" Round Culvert L= 56.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.34' / 18.07' S= 0.0048 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.0 cfs @ 12.09 hrs HW=21.05' TW=21.51' (Dynamic Tailwater)

↑1=Culvert (Controls 0.0 cfs)

Pond 1P: CB1

Hydrograph



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Pond 2P: CB2

Inflow Area = 0.35 ac, 85.14% Impervious, Inflow Depth > 4.58" for 25-Year Storm event
Inflow = 1.7 cfs @ 12.09 hrs, Volume= 0.134 af
Outflow = 1.7 cfs @ 12.09 hrs, Volume= 0.134 af, Atten= 0%, Lag= 0.0 min
Primary = 1.7 cfs @ 12.09 hrs, Volume= 0.134 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

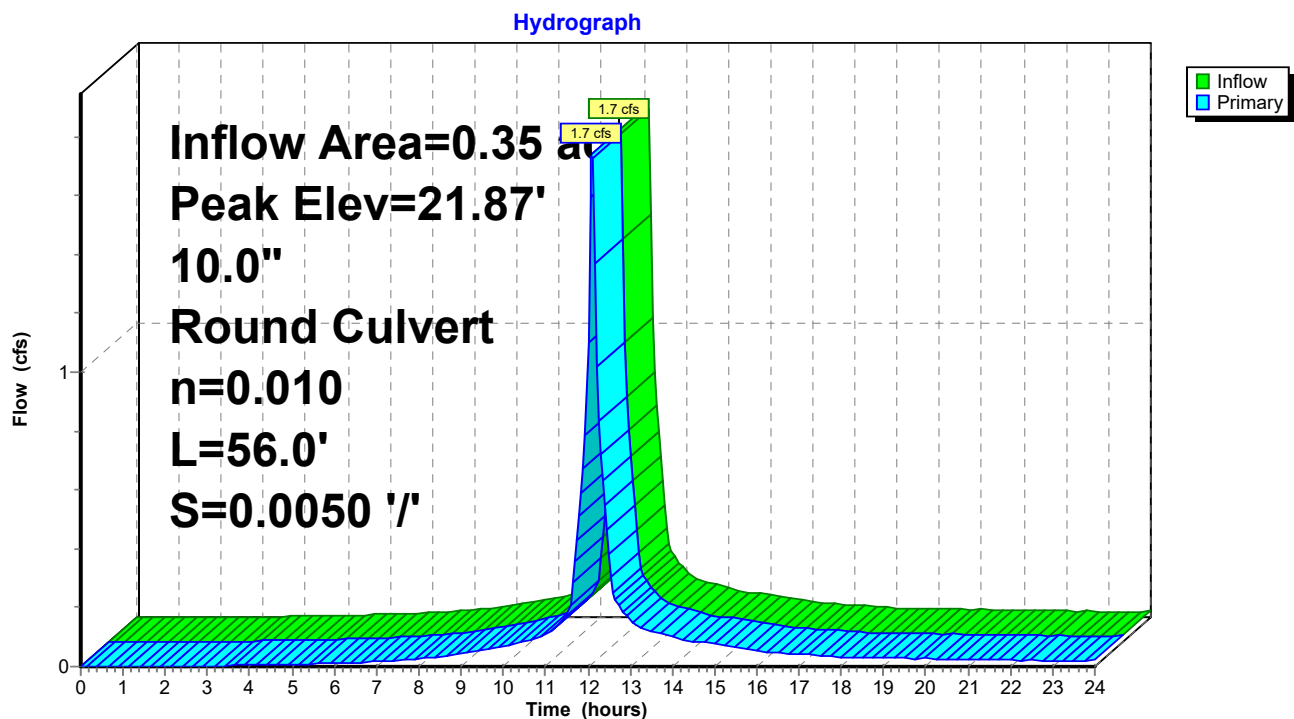
Peak Elev= 21.87' @ 12.16 hrs

Flood Elev= 22.31'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.97'	10.0" Round Culvert L= 56.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.97' / 17.69' S= 0.0050 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.9 cfs @ 12.09 hrs HW=21.48' TW=21.31' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 0.9 cfs @ 1.59 fps)

Pond 2P: CB2



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Summary for Pond 3P: CB3

Inflow Area = 0.70 ac, 85.93% Impervious, Inflow Depth > 4.61" for 25-Year Storm event
Inflow = 3.5 cfs @ 12.09 hrs, Volume= 0.268 af
Outflow = 3.5 cfs @ 12.09 hrs, Volume= 0.268 af, Atten= 0%, Lag= 0.0 min
Primary = 3.5 cfs @ 12.09 hrs, Volume= 0.268 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 21.50' @ 12.13 hrs

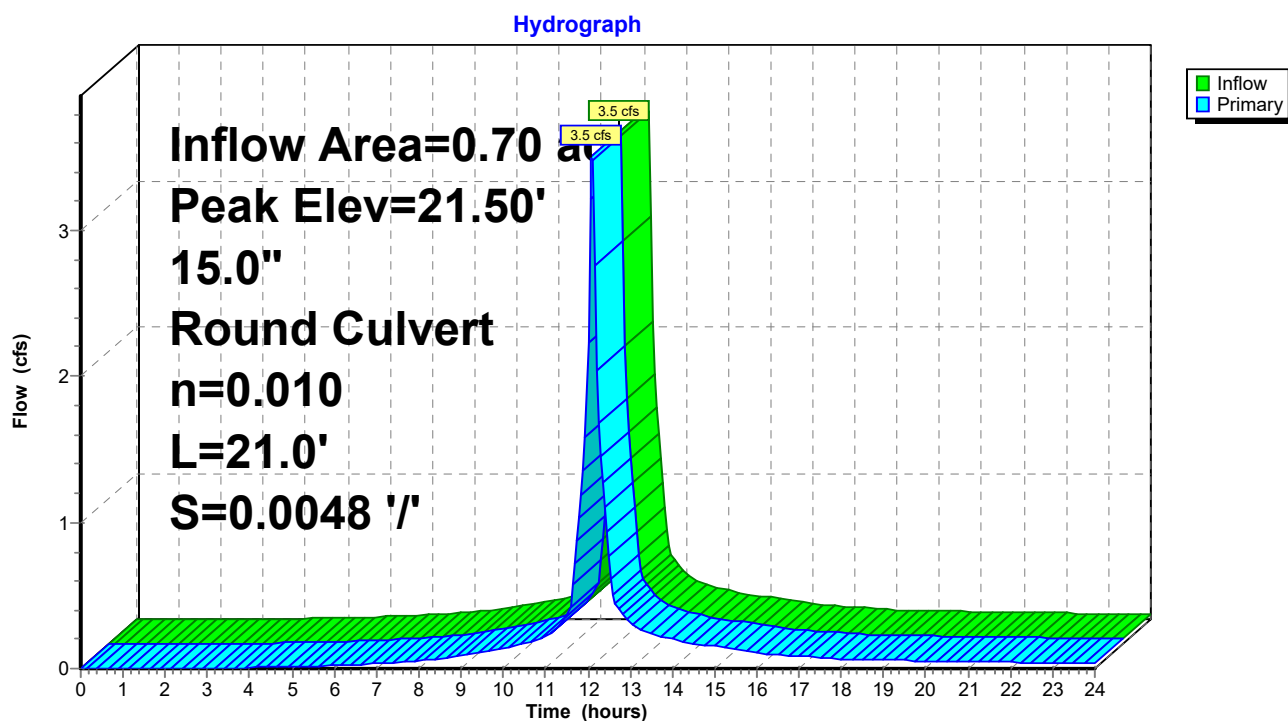
Flood Elev= 22.36'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.58'	15.0" Round Culvert L= 21.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.58' / 17.48' S= 0.0048 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.3 cfs @ 12.09 hrs HW=21.31' TW=21.06' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 2.3 cfs @ 1.89 fps)

Pond 3P: CB3



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Pond 4P: CB4

Inflow Area = 0.50 ac, 83.05% Impervious, Inflow Depth > 4.44" for 25-Year Storm event
Inflow = 2.4 cfs @ 12.09 hrs, Volume= 0.186 af
Outflow = 2.4 cfs @ 12.09 hrs, Volume= 0.186 af, Atten= 0%, Lag= 0.0 min
Primary = 2.4 cfs @ 12.09 hrs, Volume= 0.186 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 21.20' @ 12.15 hrs

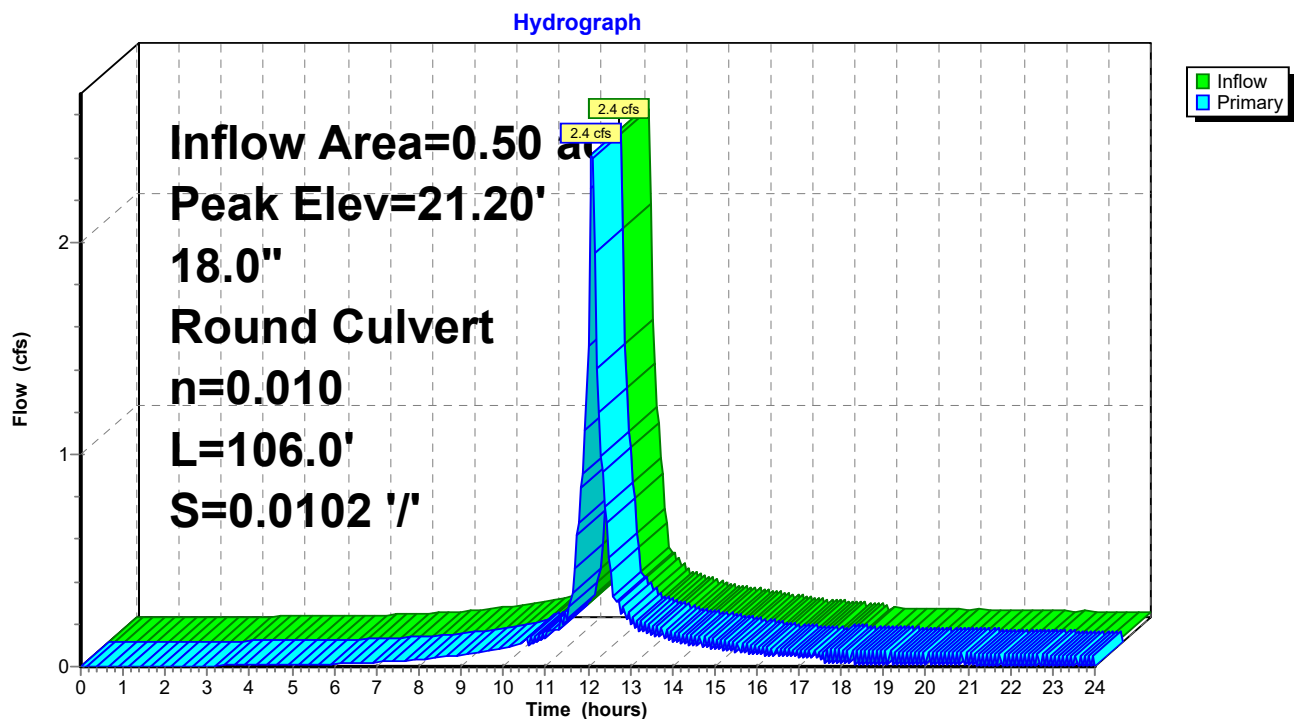
Flood Elev= 21.87'

Device	Routing	Invert	Outlet Devices
#1	Primary	15.72'	18.0" Round Culvert L= 106.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.72' / 14.64' S= 0.0102 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.09 hrs HW=20.88' TW=21.05' (Dynamic Tailwater)

↑1=Culvert (Controls 0.0 cfs)

Pond 4P: CB4



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Pond 5P: CB5

Inflow Area = 0.35 ac, 86.25% Impervious, Inflow Depth > 4.64" for 25-Year Storm event
Inflow = 1.7 cfs @ 12.09 hrs, Volume= 0.134 af
Outflow = 1.7 cfs @ 12.09 hrs, Volume= 0.134 af, Atten= 0%, Lag= 0.0 min
Primary = 1.7 cfs @ 12.09 hrs, Volume= 0.134 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 21.25' @ 12.19 hrs

Flood Elev= 21.28'

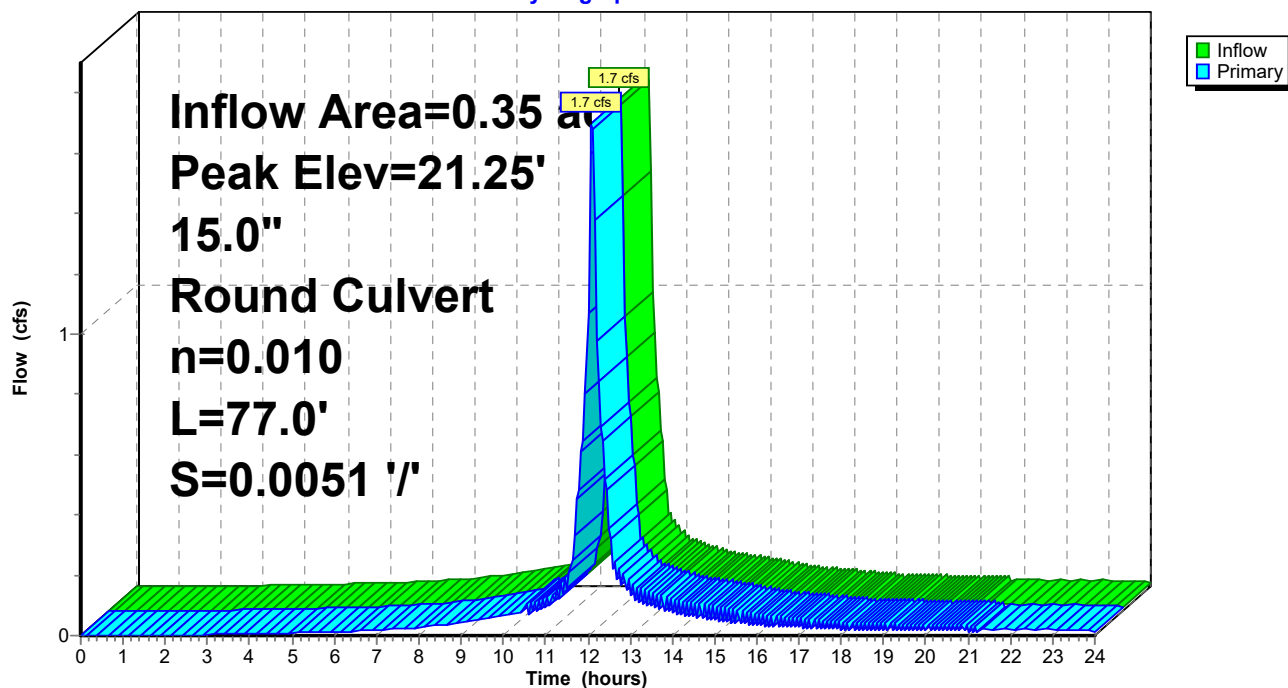
Device	Routing	Invert	Outlet Devices
#1	Primary	16.90'	15.0" Round Culvert L= 77.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.90' / 16.51' S= 0.0051 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.0 cfs @ 12.09 hrs HW=20.60' TW=20.87' (Dynamic Tailwater)

↑1=Culvert (Controls 0.0 cfs)

Pond 5P: CB5

Hydrograph



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Summary for Pond 6P: CB6

Inflow Area = 0.13 ac, 71.52% Impervious, Inflow Depth > 3.70" for 25-Year Storm event
Inflow = 0.6 cfs @ 12.09 hrs, Volume= 0.040 af
Outflow = 0.5 cfs @ 12.08 hrs, Volume= 0.040 af, Atten= 4%, Lag= 0.0 min
Primary = 0.5 cfs @ 12.08 hrs, Volume= 0.040 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 21.25' @ 12.24 hrs

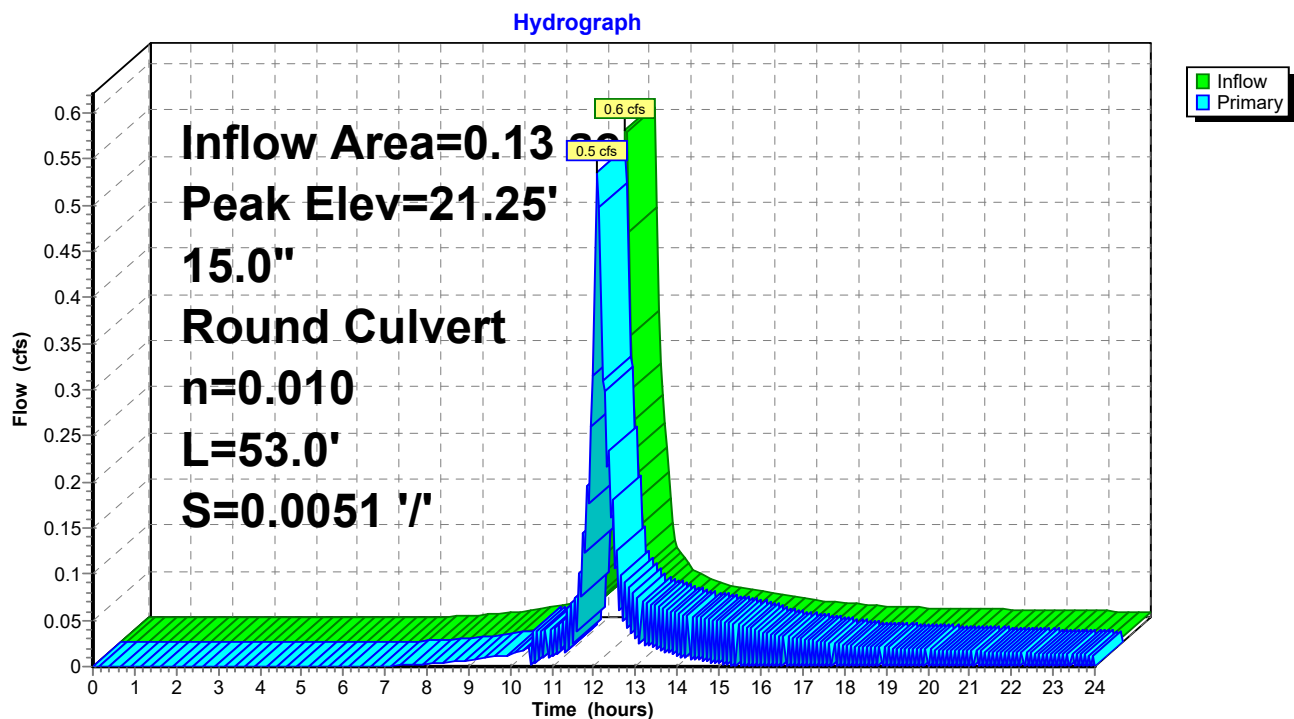
Flood Elev= 21.28'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.28'	15.0" Round Culvert L= 53.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.28' / 17.01' S= 0.0051 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.0 cfs @ 12.08 hrs HW=20.36' TW=20.57' (Dynamic Tailwater)

↑1=Culvert (Controls 0.0 cfs)

Pond 6P: CB6



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Summary for Pond 7P: CB7

Inflow Area = 0.29 ac, 60.52% Impervious, Inflow Depth > 3.11" for 25-Year Storm event
Inflow = 1.0 cfs @ 12.09 hrs, Volume= 0.076 af
Outflow = 1.0 cfs @ 12.09 hrs, Volume= 0.076 af, Atten= 0%, Lag= 0.0 min
Primary = 1.0 cfs @ 12.09 hrs, Volume= 0.076 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

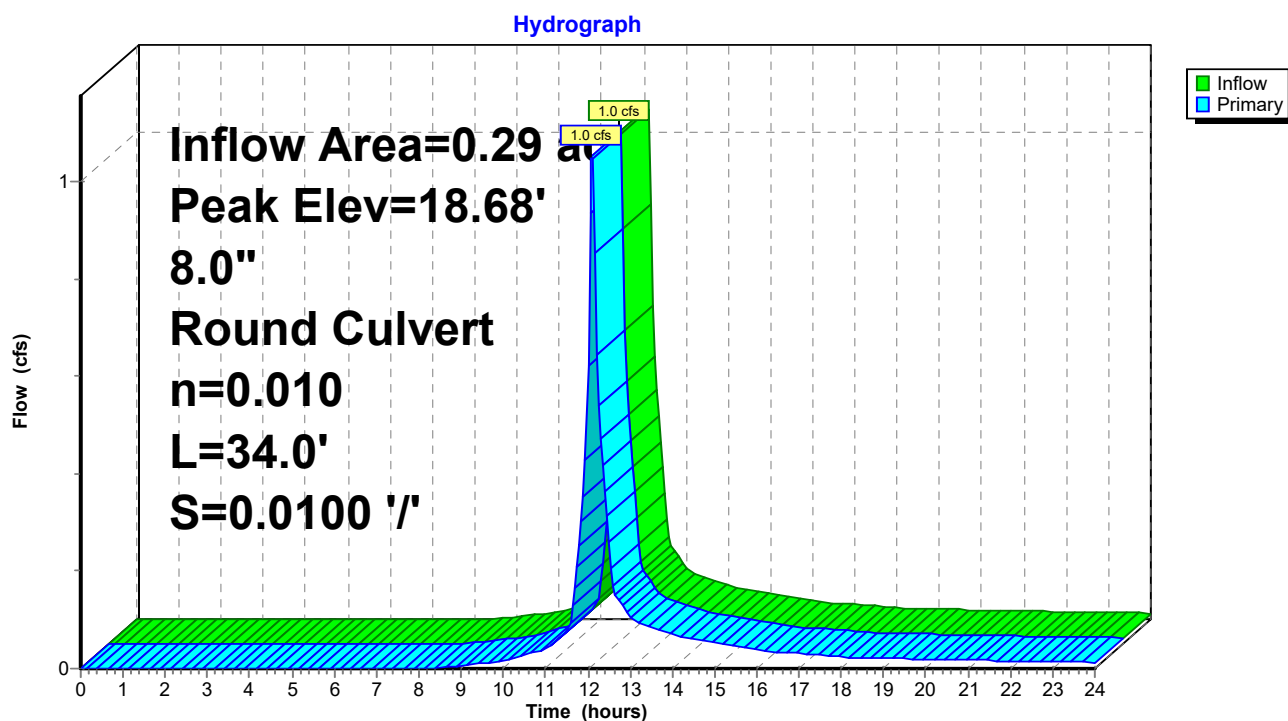
Peak Elev= 18.68' @ 12.11 hrs

Flood Elev= 23.82'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.40'	8.0" Round Culvert L= 34.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.40' / 17.06' S= 0.0100 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.9 cfs @ 12.09 hrs HW=18.62' TW=18.12' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 0.9 cfs @ 2.71 fps)

Pond 7P: CB7



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Pond 8P: CB8

Inflow Area = 0.29 ac, 69.88% Impervious, Inflow Depth > 3.60" for 25-Year Storm event
Inflow = 1.2 cfs @ 12.09 hrs, Volume= 0.087 af
Outflow = 1.2 cfs @ 12.09 hrs, Volume= 0.087 af, Atten= 0%, Lag= 0.0 min
Primary = 1.2 cfs @ 12.09 hrs, Volume= 0.087 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

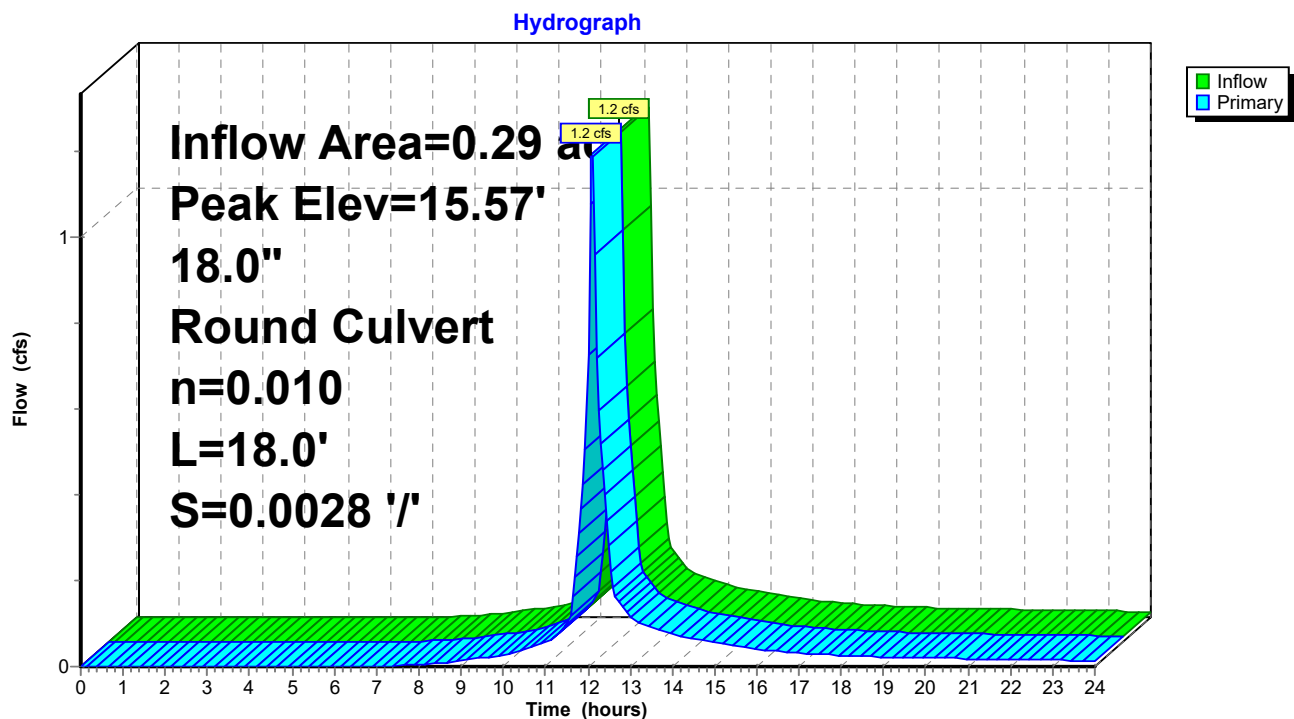
Peak Elev= 15.57' @ 12.19 hrs

Flood Elev= 23.39'

Device	Routing	Invert	Outlet Devices
#1	Primary	14.85'	18.0" Round Culvert L= 18.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.85' / 14.80' S= 0.0028 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.7 cfs @ 12.09 hrs HW=15.48' TW=15.41' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 0.7 cfs @ 1.42 fps)

Pond 8P: CB8



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Summary for Pond 9P: DMH1

Inflow Area = 1.20 ac, 84.73% Impervious, Inflow Depth > 4.54" for 25-Year Storm event
Inflow = 5.9 cfs @ 12.09 hrs, Volume= 0.454 af
Outflow = 5.9 cfs @ 12.09 hrs, Volume= 0.454 af, Atten= 0%, Lag= 0.0 min
Primary = 5.9 cfs @ 12.09 hrs, Volume= 0.454 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 21.12' @ 12.10 hrs

Flood Elev= 22.85'

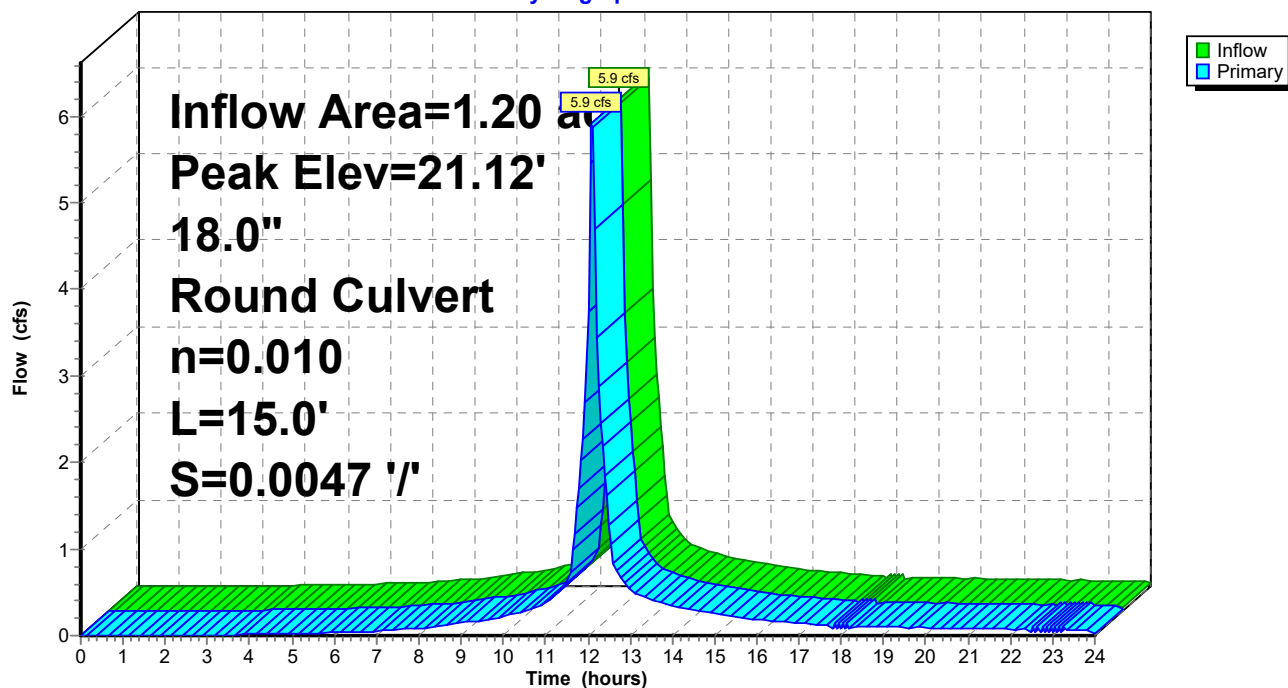
Device	Routing	Invert	Outlet Devices
#1	Primary	15.78'	18.0" Round Culvert L= 15.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.78' / 15.71' S= 0.0047 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=5.4 cfs @ 12.09 hrs HW=21.06' TW=20.40' (Dynamic Tailwater)

↑**1=Culvert** (Inlet Controls 5.4 cfs @ 3.08 fps)

Pond 9P: DMH1

Hydrograph



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Summary for Pond 11P: Ex CB1

Inflow Area = 0.39 ac, 73.58% Impervious, Inflow Depth > 3.84" for 25-Year Storm event
Inflow = 1.7 cfs @ 12.09 hrs, Volume= 0.126 af
Outflow = 1.7 cfs @ 12.09 hrs, Volume= 0.126 af, Atten= 0%, Lag= 0.0 min
Primary = 1.7 cfs @ 12.09 hrs, Volume= 0.126 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 19.30' @ 12.09 hrs

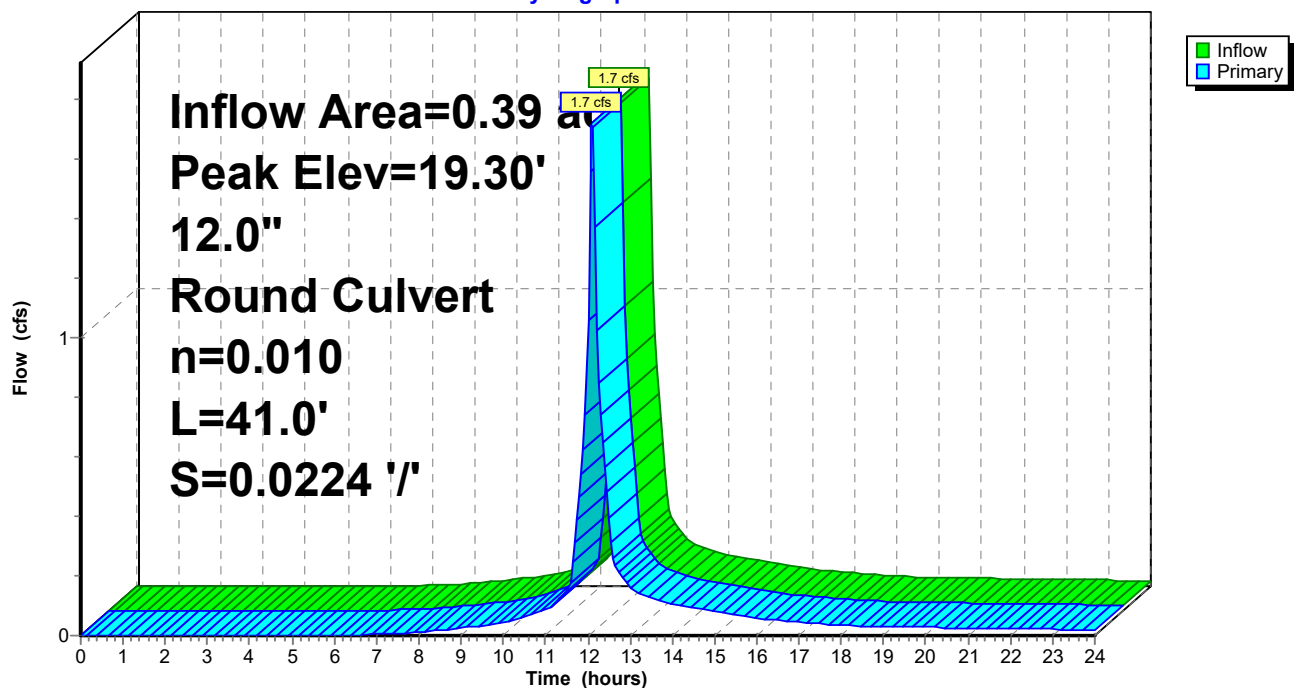
Flood Elev= 22.02'

Device	Routing	Invert	Outlet Devices
#1	Primary	18.47'	12.0" Round Culvert L= 41.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.47' / 17.55' S= 0.0224 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.7 cfs @ 12.09 hrs HW=19.29' TW=18.32' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 1.7 cfs @ 2.44 fps)

Pond 11P: Ex CB1

Hydrograph



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Summary for Pond 12P: Ex CB2

Inflow Area = 0.08 ac, 58.65% Impervious, Inflow Depth > 3.01" for 25-Year Storm event
Inflow = 0.3 cfs @ 12.09 hrs, Volume= 0.020 af
Outflow = 0.3 cfs @ 12.09 hrs, Volume= 0.020 af, Atten= 0%, Lag= 0.0 min
Primary = 0.3 cfs @ 12.09 hrs, Volume= 0.020 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 18.48' @ 12.09 hrs

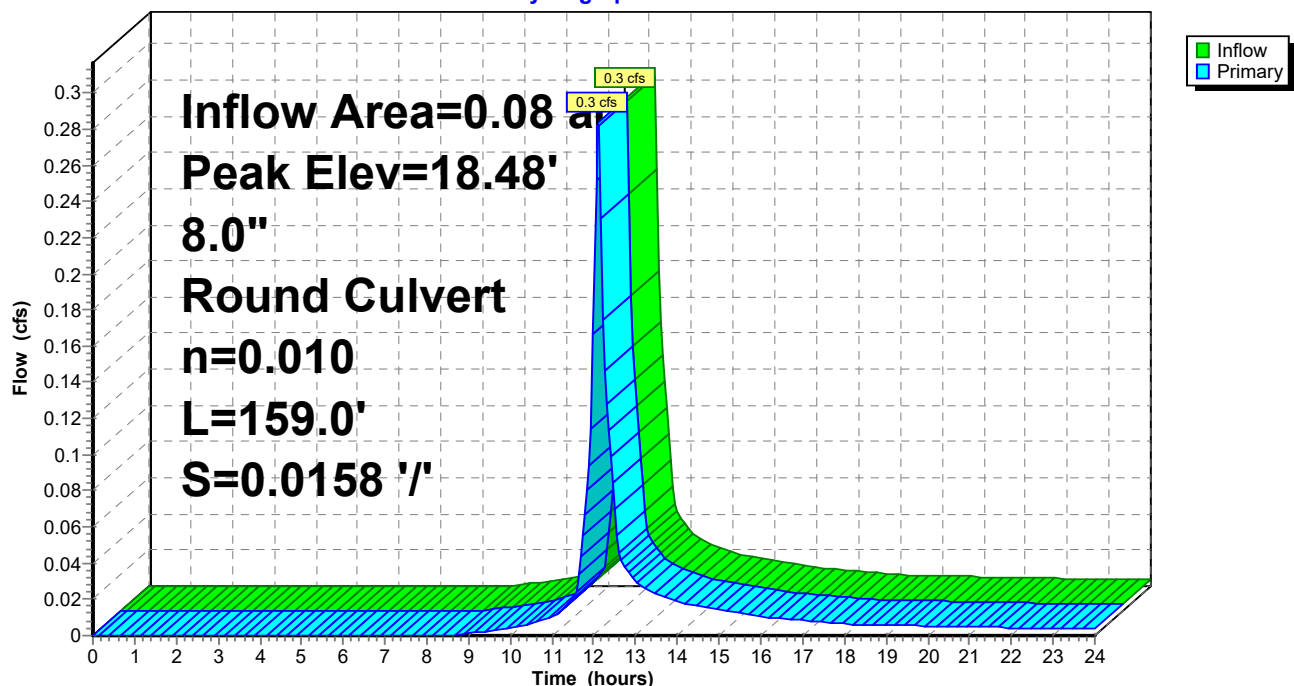
Flood Elev= 22.15'

Device	Routing	Invert	Outlet Devices
#1	Primary	18.14'	8.0" Round Culvert L= 159.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.14' / 15.62' S= 0.0158 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.3 cfs @ 12.09 hrs HW=18.48' TW=0.00' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 0.3 cfs @ 1.56 fps)

Pond 12P: Ex CB2

Hydrograph



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Summary for Pond 13P: CMP Peak Detention

Inflow = 5.9 cfs @ 12.09 hrs, Volume= 0.358 af
 Outflow = 4.2 cfs @ 12.17 hrs, Volume= 0.358 af, Atten= 29%, Lag= 4.8 min
 Primary = 4.2 cfs @ 12.17 hrs, Volume= 0.358 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 20.03' @ 12.18 hrs Surf.Area= 696 sf Storage= 2,253 cf

Flood Elev= 23.00' Surf.Area= 696 sf Storage= 2,403 cf

Plug-Flow detention time= 6.9 min calculated for 0.358 af (100% of inflow)

Center-of-Mass det. time= 6.6 min (797.5 - 790.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	14.71'	0 cf	8.00'W x 87.00'L x 6.00'H Field A 4,176 cf Overall - 2,403 cf Embedded = 1,773 cf x 0.0% Voids
#2A	14.71'	2,403 cf	CMP Round 72 x 4 Inside #1 Effective Size= 72.0"W x 72.0"H => 28.27 sf x 20.00'L = 565.5 cf Overall Size= 72.0"W x 72.0"H x 20.00'L Row Length Adjustment= +5.00' x 28.27 sf x 1 rows
		2,403 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	14.71'	18.0" Round Culvert L= 20.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 14.71' / 14.33' S= 0.0190 ' S= 0.0190 ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf
#2	Device 1	14.71'	6.1" Vert. Orifice/Grate C= 0.600
#3	Device 1	17.21'	5.7" Vert. Orifice/Grate C= 0.600
#4	Device 1	18.79'	4.8" Vert. Orifice/Grate C= 0.600
#5	Device 1	20.05'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 5.34 5.40 5.46 5.52 5.58 5.64 5.70 5.76 5.82 5.88 5.94 6.00 Width (feet) 3.75 3.60 3.43 3.26 3.06 2.85 2.62 2.35 2.05 1.68 1.19 0.00

Primary OutFlow Max=4.1 cfs @ 12.17 hrs HW=19.98' TW=15.12' (Dynamic Tailwater)

- 1=Culvert (Passes 4.1 cfs of 18.1 cfs potential flow)
 2=Orifice/Grate (Orifice Controls 2.2 cfs @ 10.61 fps)
 3=Orifice/Grate (Orifice Controls 1.4 cfs @ 7.66 fps)
 4=Orifice/Grate (Orifice Controls 0.6 cfs @ 4.79 fps)
 5=Custom Weir/Orifice (Controls 0.0 cfs)

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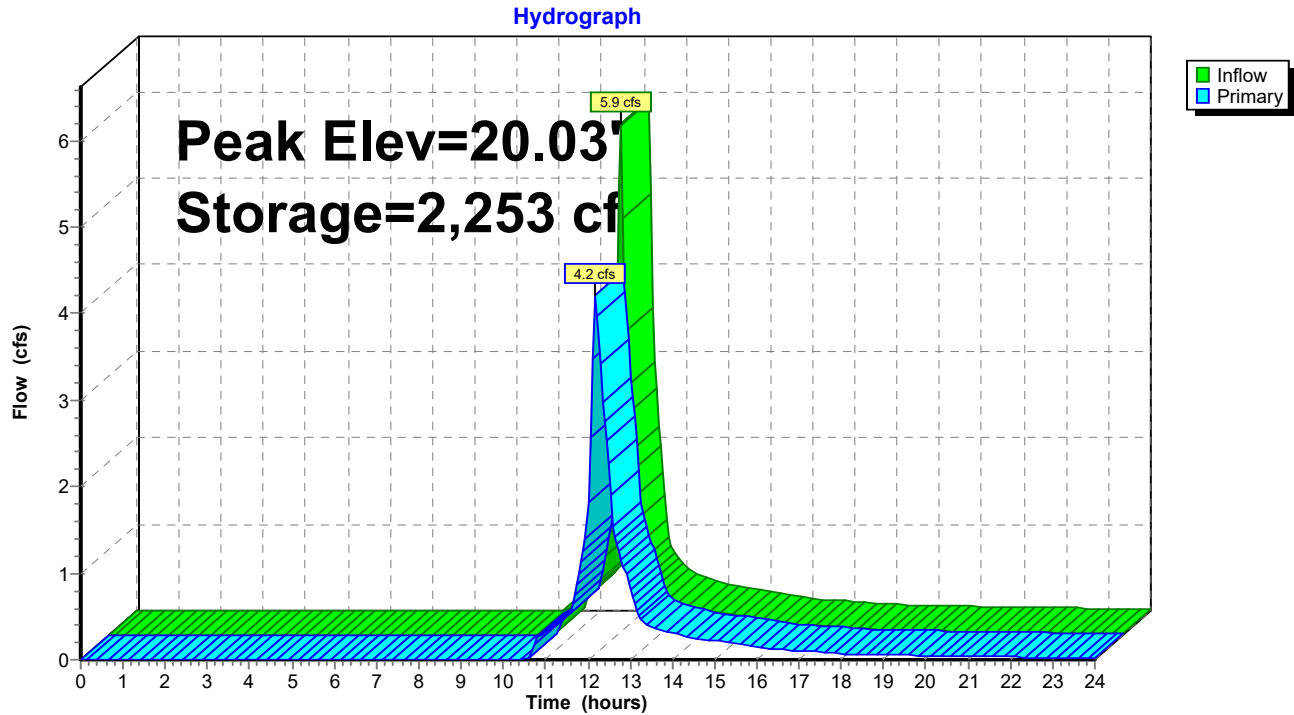
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Pond 13P: CMP Peak Detention



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Summary for Pond 14P: CONTECH WQv CMP Det & SF System

Inflow Area = 1.20 ac, 84.73% Impervious, Inflow Depth > 4.54" for 25-Year Storm event
 Inflow = 5.9 cfs @ 12.09 hrs, Volume= 0.454 af
 Outflow = 6.0 cfs @ 12.09 hrs, Volume= 0.413 af, Atten= 0%, Lag= 0.4 min
 Primary = 0.0 cfs @ 12.05 hrs, Volume= 0.055 af
 Secondary = 5.9 cfs @ 12.09 hrs, Volume= 0.358 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Starting Elev= 15.71' Surf.Area= 683 sf Storage= 96 cf

Peak Elev= 20.41' @ 12.09 hrs Surf.Area= 683 sf Storage= 2,070 cf (1,975 cf above start)

Flood Elev= 23.00' Surf.Area= 683 sf Storage= 2,114 cf (2,019 cf above start)

Plug-Flow detention time= 74.7 min calculated for 0.410 af (90% of inflow)

Center-of-Mass det. time= 25.3 min (809.8 - 784.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	15.21'	0 cf	7.50'W x 91.00'L x 5.50'H Field A 3,754 cf Overall - 2,114 cf Embedded = 1,639 cf x 0.0% Voids
#2A	15.21'	2,114 cf	CMP Round 66 x 4 Inside #1 Effective Size= 66.0"W x 66.0"H => 23.76 sf x 20.00'L = 475.2 cf Overall Size= 66.0"W x 66.0"H x 20.00'L Row Length Adjustment= +9.00' x 23.76 sf x 1 rows
		2,114 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	14.71'	Tube/Siphon/Float Valve X 6.00 Starts@17.76' Breaks@15.38' 0.336" Diameter, C= 0.600, 0.263" Trickle Diameter
#2	Device 1	15.71'	12.0" Round CMP_Round 12" L= 10.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 15.71' / 15.68' S= 0.0030 ' / Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#3	Secondary	19.78'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 4.57 4.62 4.67 4.73 4.79 4.84 4.89 4.95 5.00 5.06 5.12 5.17 5.22 5.28 5.33 5.39 5.45 5.50 Width (feet) 4.13 4.03 3.93 3.82 3.70 3.57 3.44 3.30 3.15 2.98 2.81 2.61 2.40 2.16 1.88 1.54 1.09 0.00

Primary OutFlow Max=0.0 cfs @ 12.05 hrs HW=20.36' TW=14.89' (Dynamic Tailwater)↑ **1=Tube/Siphon/Float Valve** (Orifice Controls 0.0 cfs @ 11.26 fps)↑ **2=CMP_Round 12"** (Passes 0.0 cfs of 7.7 cfs potential flow)**Secondary OutFlow** Max=5.8 cfs @ 12.09 hrs HW=20.41' TW=19.16' (Dynamic Tailwater)↑ **3=Custom Weir/Orifice** (Weir Controls 5.8 cfs @ 2.72 fps)

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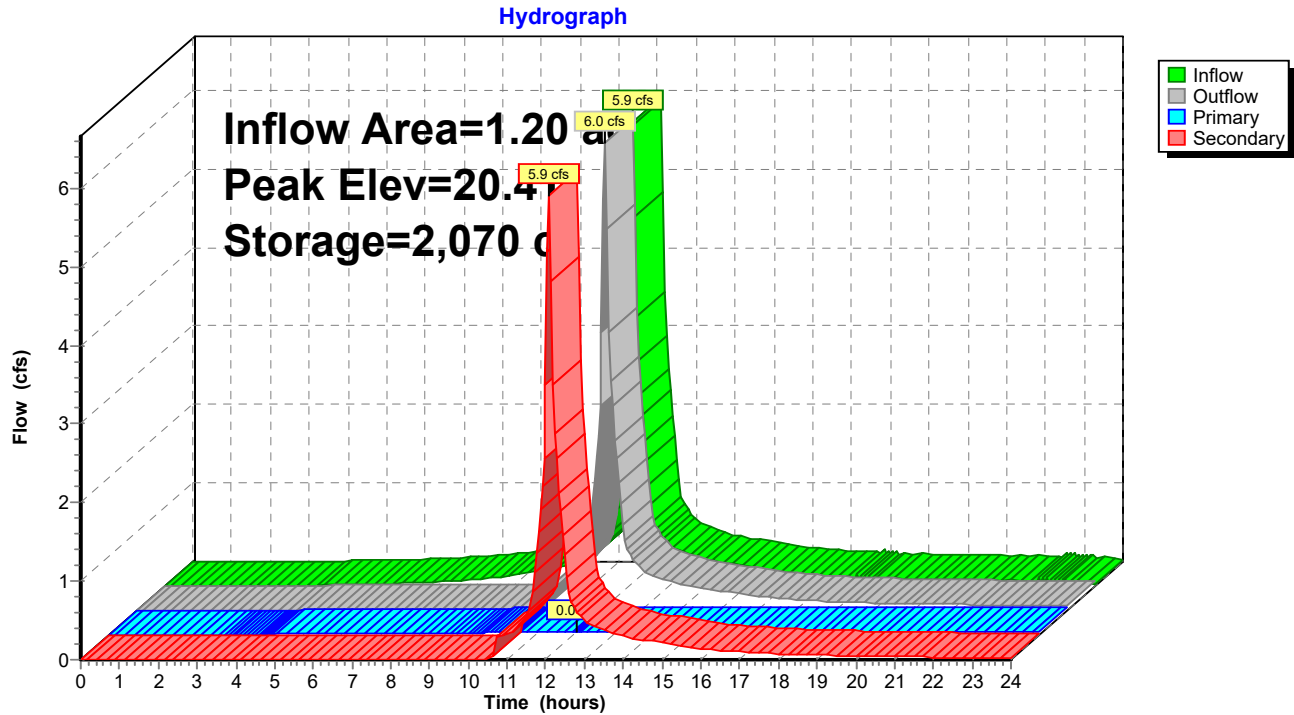
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Pond 14P: CONTECH WQv CMP Det & SF System



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Summary for Pond 21P: Ex DMH1

Inflow Area = 0.29 ac, 69.88% Impervious, Inflow Depth > 3.60" for 25-Year Storm event
Inflow = 1.2 cfs @ 12.09 hrs, Volume= 0.087 af
Outflow = 1.2 cfs @ 12.09 hrs, Volume= 0.087 af, Atten= 0%, Lag= 0.0 min
Primary = 1.2 cfs @ 12.09 hrs, Volume= 0.087 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.51' @ 12.15 hrs

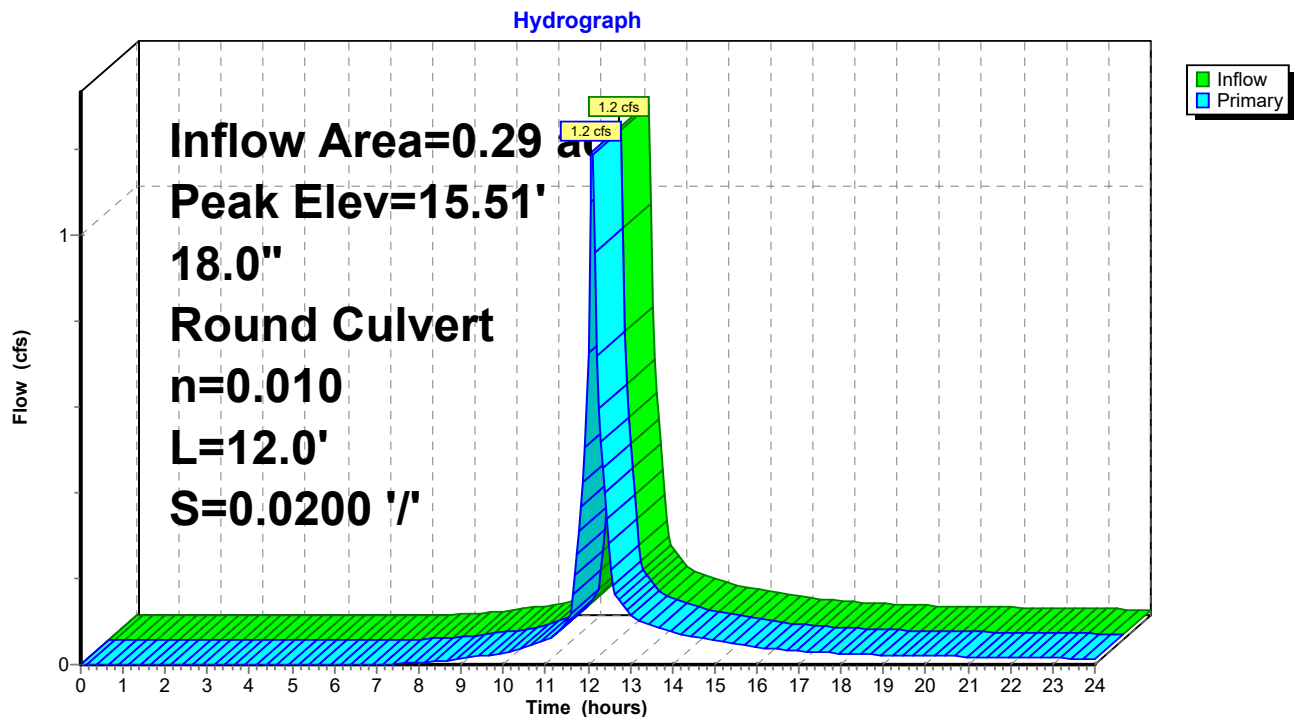
Flood Elev= 23.72'

Device	Routing	Invert	Outlet Devices
#1	Primary	14.62'	18.0" Round Culvert L= 12.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.62' / 14.38' S= 0.0200 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.09 hrs HW=15.41' TW=15.44' (Dynamic Tailwater)

↑1=Culvert (Controls 0.0 cfs)

Pond 21P: Ex DMH1



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Summary for Pond 22P: Ex DMH2

Inflow Area = 0.69 ac, 68.00% Impervious, Inflow Depth > 3.53" for 25-Year Storm event
Inflow = 2.8 cfs @ 12.09 hrs, Volume= 0.202 af
Outflow = 2.8 cfs @ 12.09 hrs, Volume= 0.202 af, Atten= 0%, Lag= 0.0 min
Primary = 2.8 cfs @ 12.09 hrs, Volume= 0.202 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

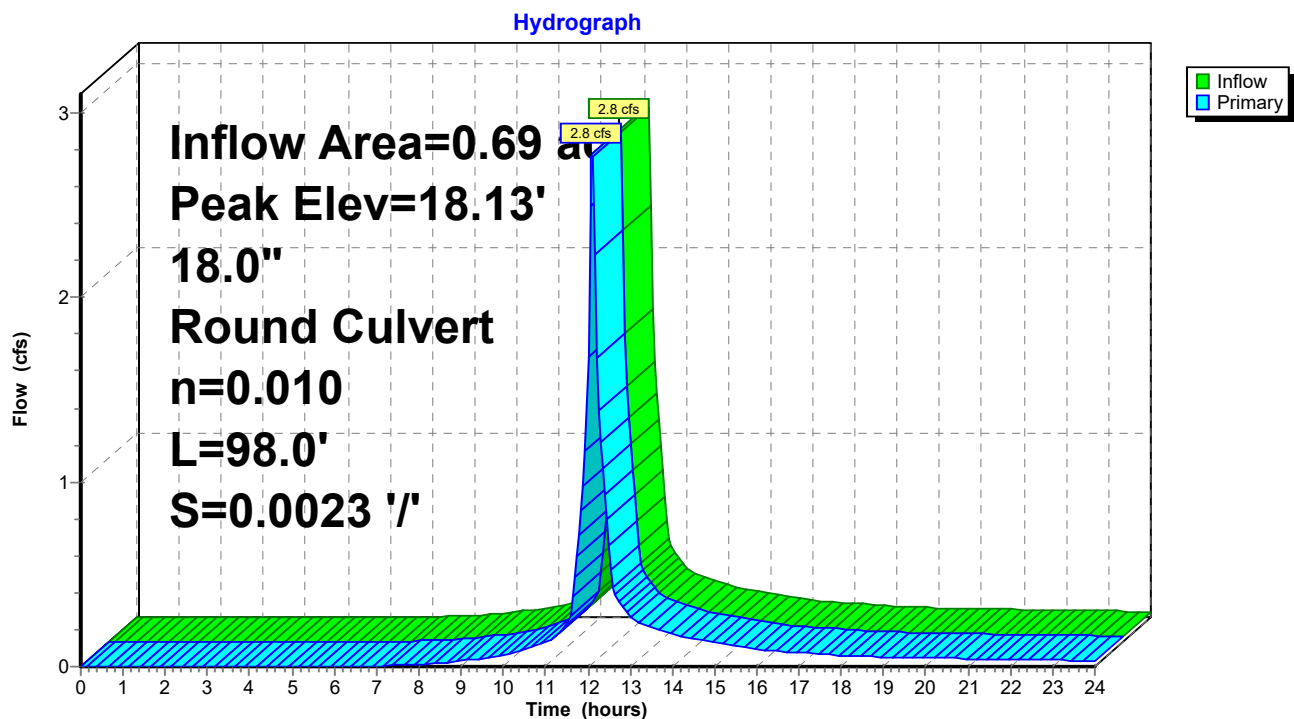
Peak Elev= 18.13' @ 12.11 hrs

Flood Elev= 24.92'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.12'	18.0" Round Culvert L= 98.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.12' / 16.89' S= 0.0023 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.5 cfs @ 12.09 hrs HW=18.11' TW=17.74' (Dynamic Tailwater)
↑ **1=Culvert** (Outlet Controls 2.5 cfs @ 2.86 fps)

Pond 22P: Ex DMH2



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Summary for Pond 23P: Ex CB3

Inflow Area = 1.20 ac, 84.73% Impervious, Inflow Depth > 4.13" for 25-Year Storm event
Inflow = 4.2 cfs @ 12.17 hrs, Volume= 0.413 af
Outflow = 4.2 cfs @ 12.17 hrs, Volume= 0.413 af, Atten= 0%, Lag= 0.0 min
Primary = 4.2 cfs @ 12.17 hrs, Volume= 0.413 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.13' @ 12.17 hrs

Flood Elev= 23.60'

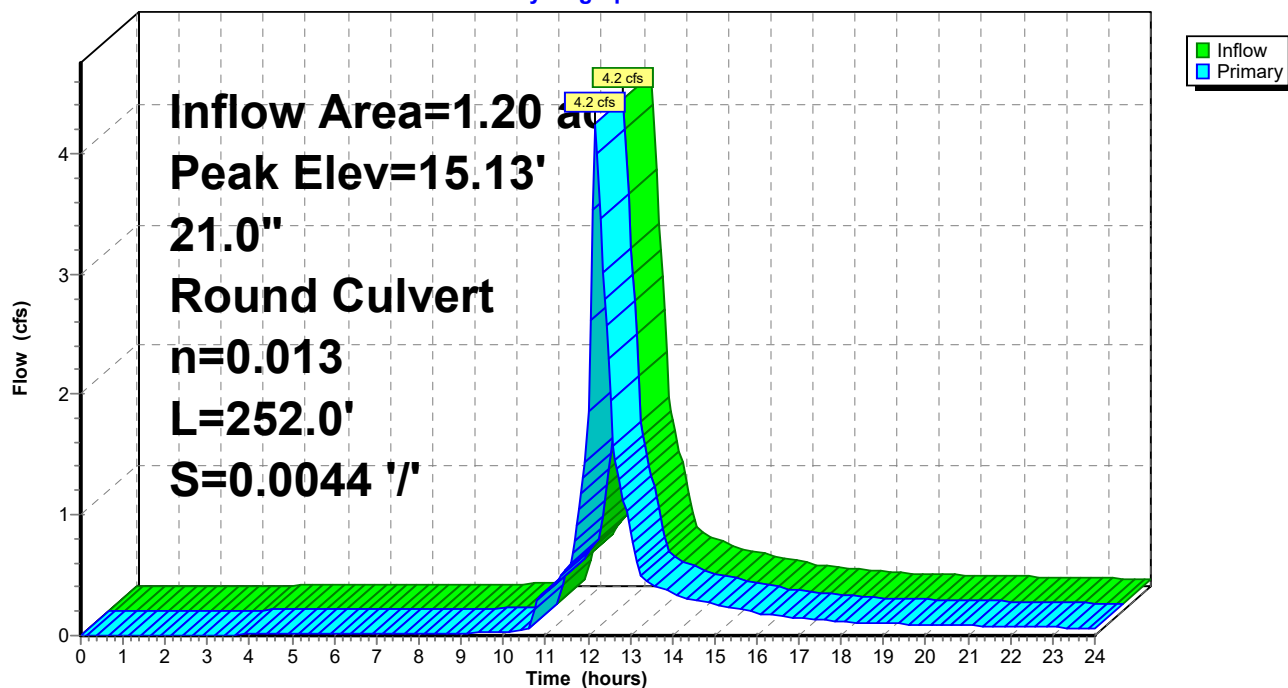
Device	Routing	Invert	Outlet Devices
#1	Primary	14.05'	21.0" Round Culvert L= 252.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.05' / 12.94' S= 0.0044 '/ Cc= 0.900 n= 0.013 Cast iron, coated, Flow Area= 2.41 sf

Primary OutFlow Max=4.2 cfs @ 12.17 hrs HW=15.12' TW=0.00' (Dynamic Tailwater)

↑**1=Culvert** (Barrel Controls 4.2 cfs @ 3.86 fps)

Pond 23P: Ex CB3

Hydrograph



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Summary for Pond 24P: Ex DMH4

Inflow Area = 0.69 ac, 68.00% Impervious, Inflow Depth > 3.53" for 25-Year Storm event
Inflow = 2.8 cfs @ 12.09 hrs, Volume= 0.202 af
Outflow = 2.8 cfs @ 12.09 hrs, Volume= 0.202 af, Atten= 0%, Lag= 0.0 min
Primary = 2.8 cfs @ 12.09 hrs, Volume= 0.202 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

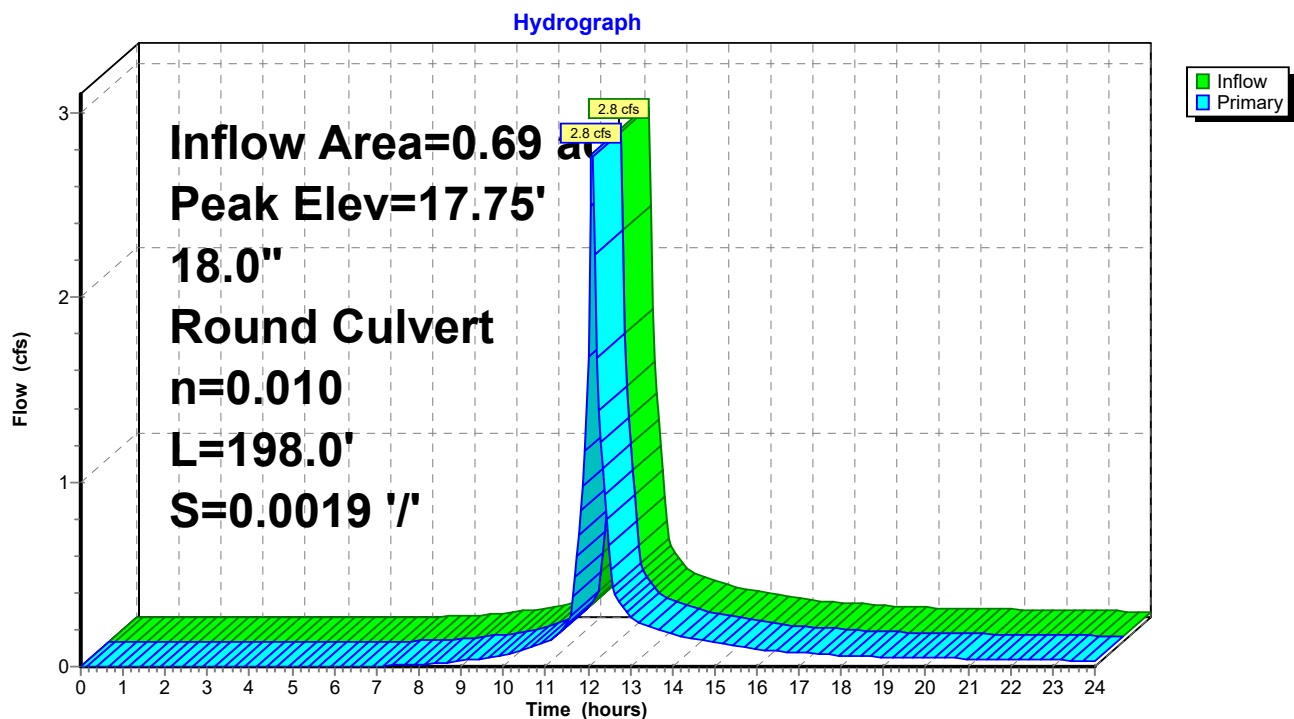
Peak Elev= 17.75' @ 12.09 hrs

Flood Elev= 25.38'

Device	Routing	Invert	Outlet Devices
#1	Primary	16.75'	18.0" Round Culvert L= 198.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.75' / 16.38' S= 0.0019 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.7 cfs @ 12.09 hrs HW=17.74' TW=16.37' (Dynamic Tailwater)
1=Culvert (Barrel Controls 2.7 cfs @ 3.12 fps)

Pond 24P: Ex DMH4



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Summary for Pond 25P: Ex DMH5

Inflow Area = 0.69 ac, 68.00% Impervious, Inflow Depth > 3.53" for 25-Year Storm event
 Inflow = 2.8 cfs @ 12.09 hrs, Volume= 0.202 af
 Outflow = 2.8 cfs @ 12.09 hrs, Volume= 0.202 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.8 cfs @ 12.09 hrs, Volume= 0.202 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 16.38' @ 12.09 hrs

Flood Elev= 23.84'

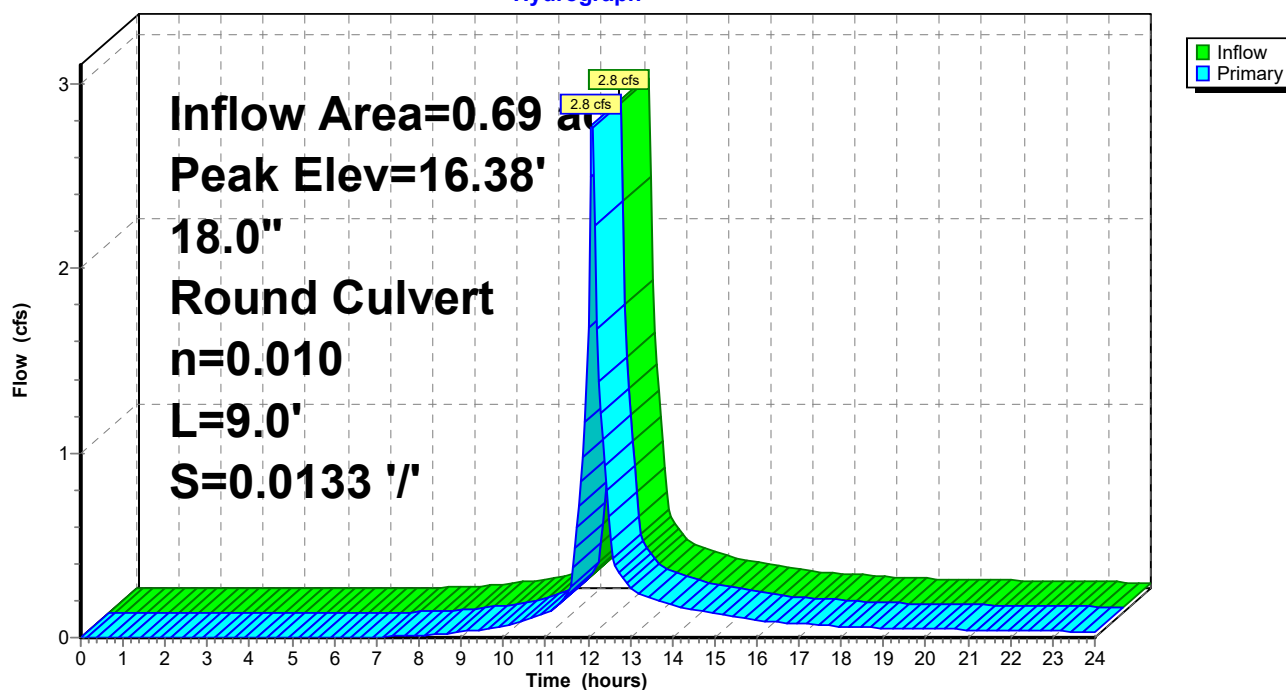
Device	Routing	Invert	Outlet Devices
#1	Primary	15.44'	18.0" Round Culvert L= 9.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.44' / 15.32' S= 0.0133 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.7 cfs @ 12.09 hrs HW=16.37' TW=15.44' (Dynamic Tailwater)

1=Culvert (Barrel Controls 2.7 cfs @ 3.37 fps)

Pond 25P: Ex DMH5

Hydrograph



C2. Post

Prepared by Woodard Curran

HydroCAD® 10.00-21 s/n 01204 © 2018 HydroCAD Software Solutions LLC

POST
Type III 24-hr 25-Year Storm Rainfall=5.80"

Printed 1/16/2020

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Summary for Pond 26P: Ex DMH6

Inflow Area = 0.98 ac, 68.56% Impervious, Inflow Depth > 3.55" for 25-Year Storm event
Inflow = 4.0 cfs @ 12.09 hrs, Volume= 0.289 af
Outflow = 4.0 cfs @ 12.09 hrs, Volume= 0.289 af, Atten= 0%, Lag= 0.0 min
Primary = 4.0 cfs @ 12.09 hrs, Volume= 0.289 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.46' @ 12.11 hrs

Flood Elev= 23.95'

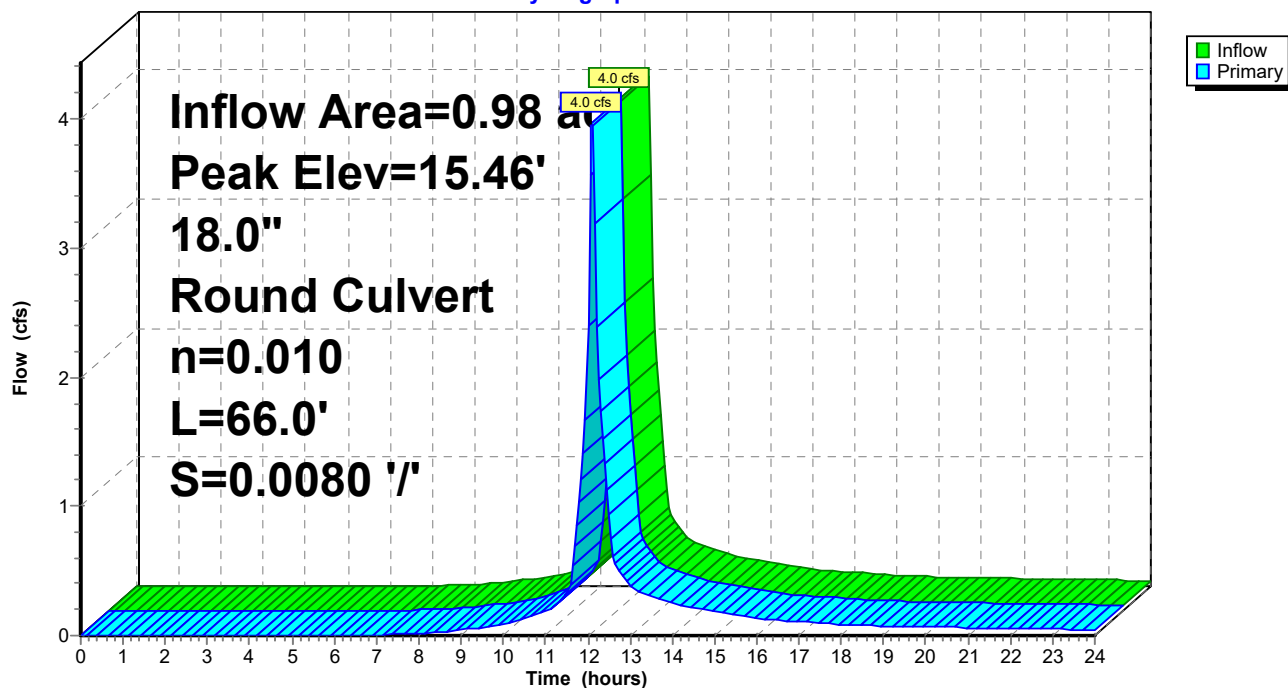
Device	Routing	Invert	Outlet Devices
#1	Primary	14.30'	18.0" Round Culvert L= 66.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.30' / 13.77' S= 0.0080 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.6 cfs @ 12.09 hrs HW=15.44' TW=14.97' (Dynamic Tailwater)

↑ **1=Culvert** (Outlet Controls 3.6 cfs @ 3.42 fps)

Pond 26P: Ex DMH6

Hydrograph



C2. Post

Prepared by Woodard Curran

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POST
Type III 24-hr 25-Year Storm Rainfall=5.80"

Printed 1/16/2020

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Summary for Pond 27P: Ex DMH7

Inflow Area = 0.98 ac, 68.56% Impervious, Inflow Depth > 3.55" for 25-Year Storm event
Inflow = 4.0 cfs @ 12.09 hrs, Volume= 0.289 af
Outflow = 4.0 cfs @ 12.09 hrs, Volume= 0.289 af, Atten= 0%, Lag= 0.0 min
Primary = 4.0 cfs @ 12.09 hrs, Volume= 0.289 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 14.99' @ 12.09 hrs

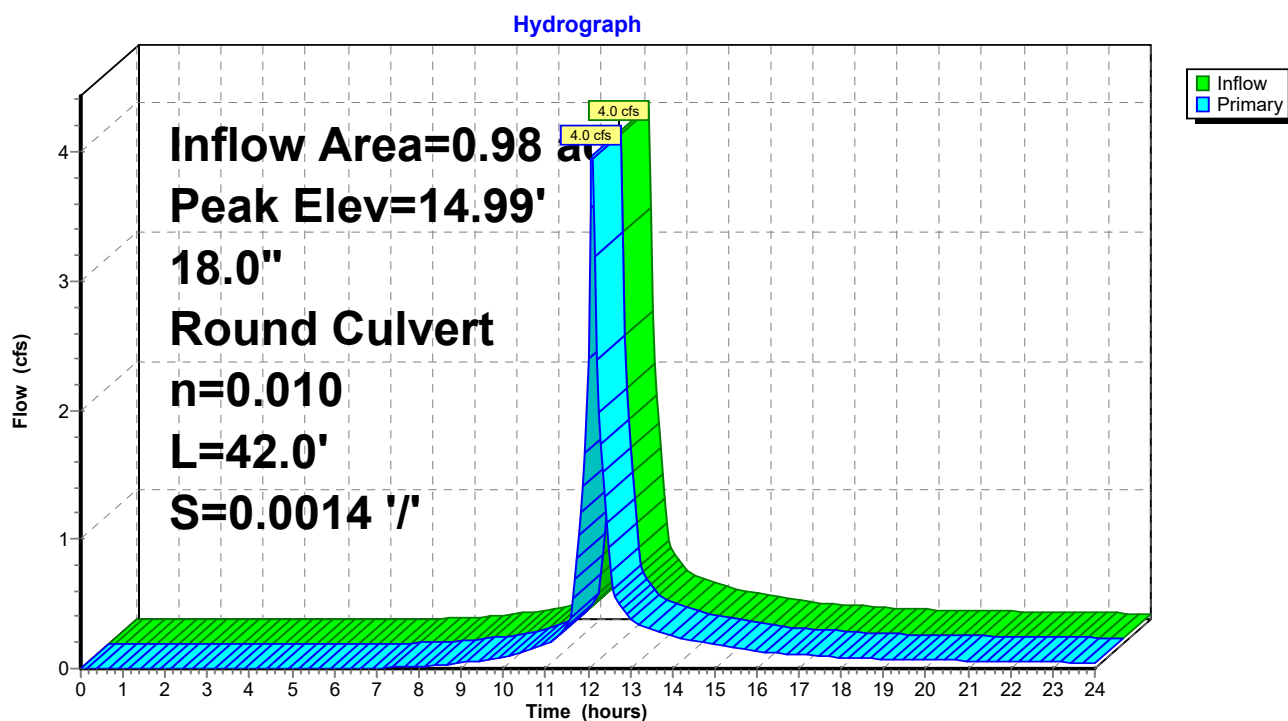
Flood Elev= 24.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	13.70'	18.0" Round Culvert L= 42.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.70' / 13.64' S= 0.0014 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.9 cfs @ 12.09 hrs HW=14.97' TW=0.00' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 3.9 cfs @ 3.27 fps)

Pond 27P: Ex DMH7



C2. Post

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POST
Type III 24-hr 25-Year Storm Rainfall=5.80"

Printed 1/16/2020

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Summary for Pond 29P: Ex DMH9

Inflow Area = 0.39 ac, 73.58% Impervious, Inflow Depth > 3.84" for 25-Year Storm event
Inflow = 1.7 cfs @ 12.09 hrs, Volume= 0.126 af
Outflow = 1.7 cfs @ 12.09 hrs, Volume= 0.126 af, Atten= 0%, Lag= 0.0 min
Primary = 1.7 cfs @ 12.09 hrs, Volume= 0.126 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

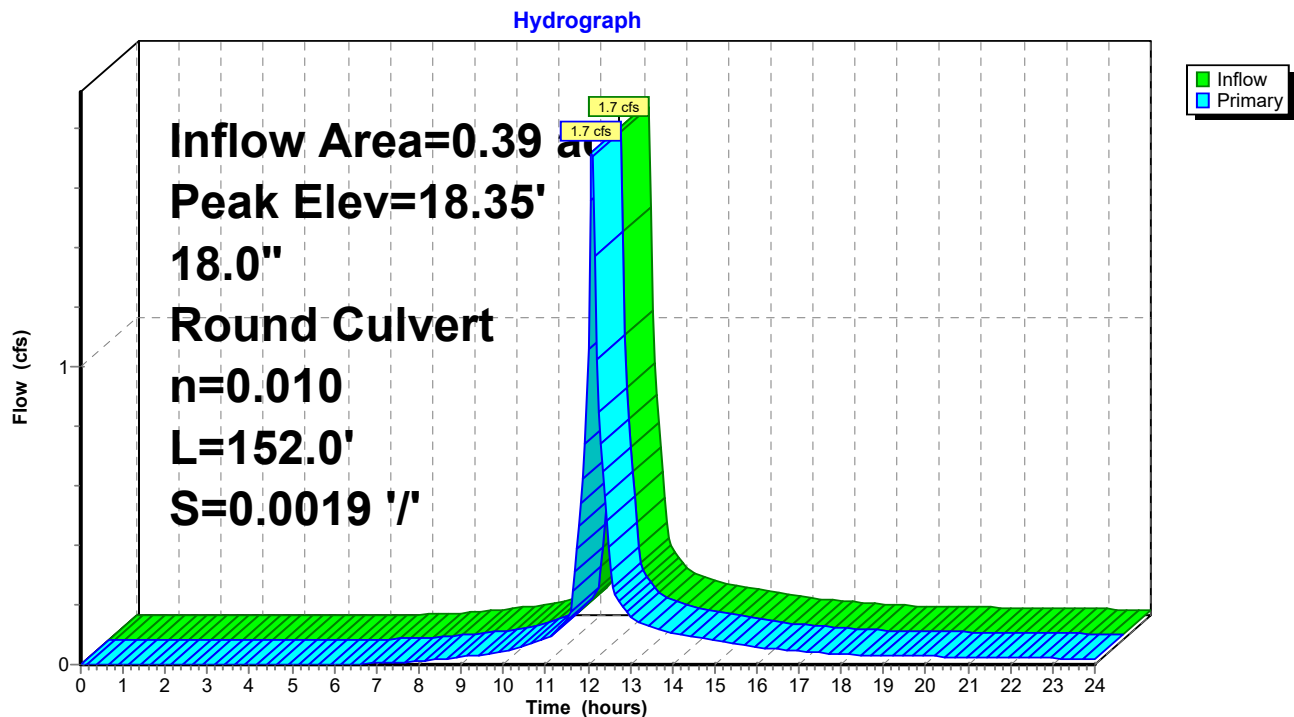
Peak Elev= 18.35' @ 12.12 hrs

Flood Elev= 23.44'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.46'	18.0" Round Culvert L= 152.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.46' / 17.17' S= 0.0019 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.4 cfs @ 12.09 hrs HW=18.32' TW=18.11' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.4 cfs @ 1.90 fps)

Pond 29P: Ex DMH9



C2. Post

Prepared by Woodard Curran

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POST

Type III 24-hr 25-Year Storm Rainfall=5.80"

Printed 1/16/2020

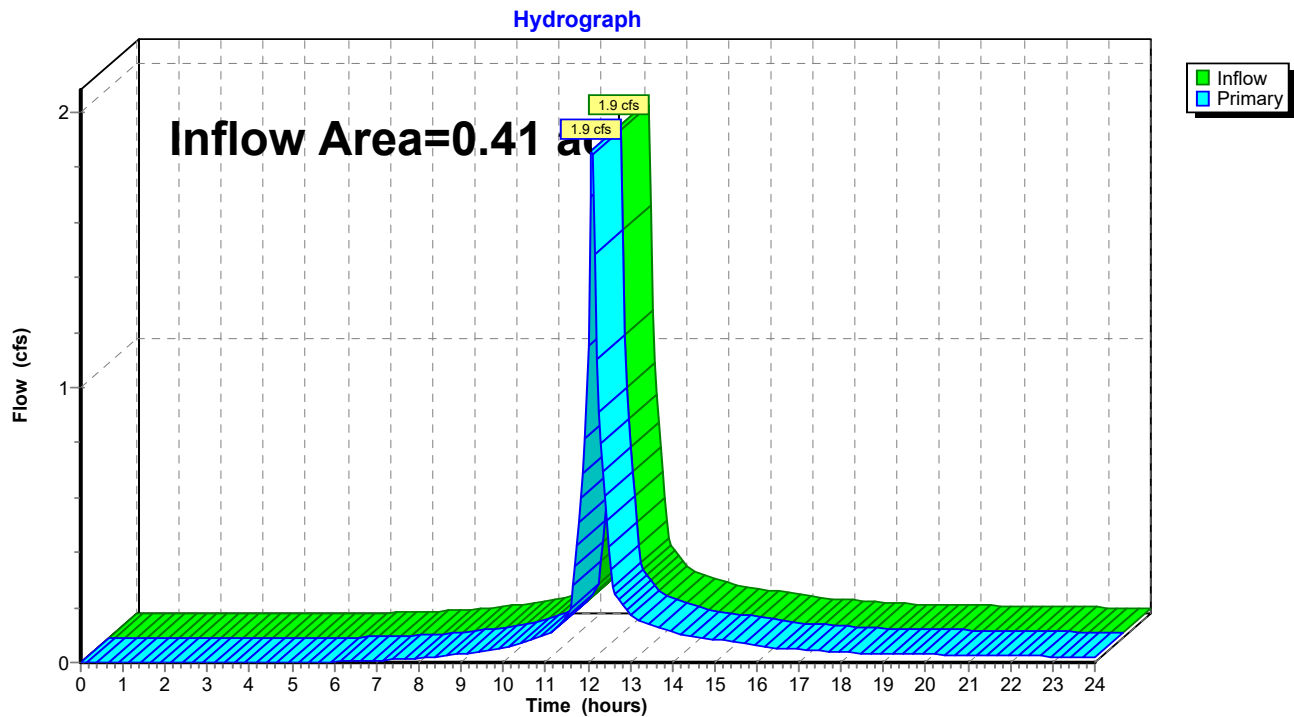
Page 160

Summary for Link SP1: Forest Ave Storm Drain

Inflow Area = 0.41 ac, 75.27% Impervious, Inflow Depth > 3.98" for 25-Year Storm event
Inflow = 1.9 cfs @ 12.09 hrs, Volume= 0.137 af
Primary = 1.9 cfs @ 12.09 hrs, Volume= 0.137 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP1: Forest Ave Storm Drain



C2. Post

Prepared by Woodard Curran

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POST

Type III 24-hr 25-Year Storm Rainfall=5.80"

Printed 1/16/2020

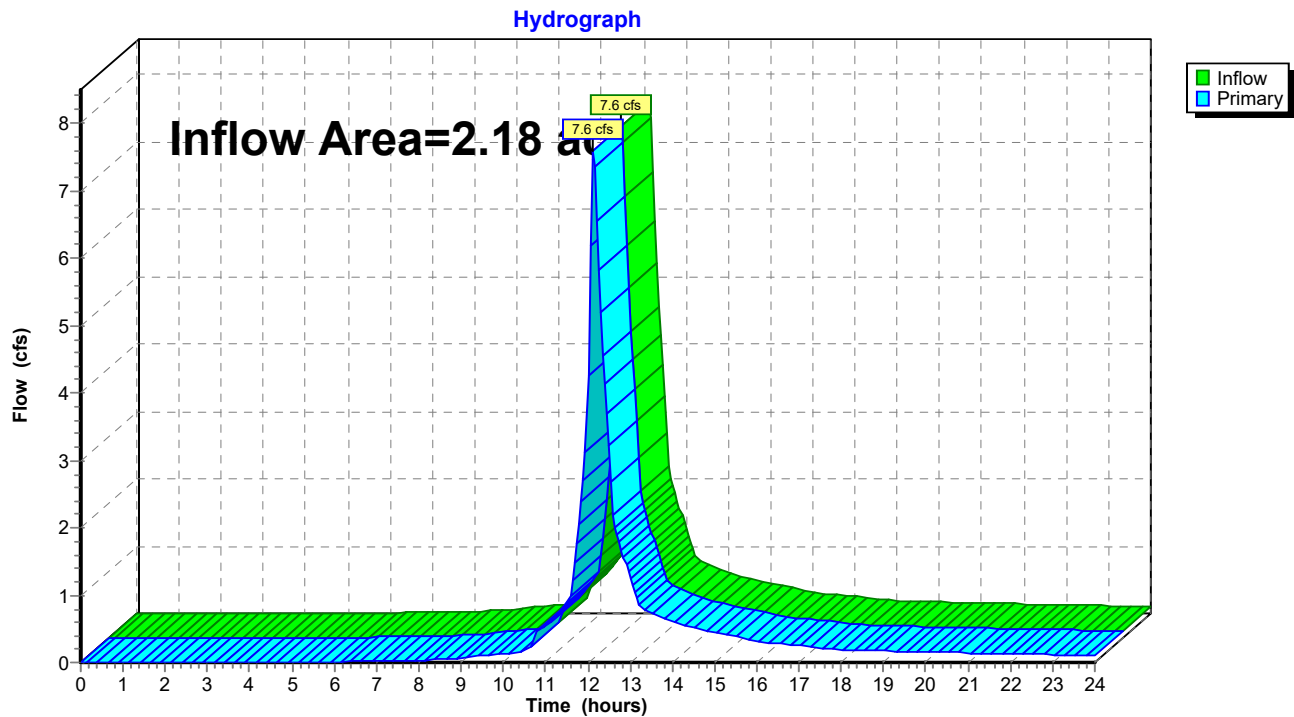
Page 161

Summary for Link SP2: Combined Sewer

Inflow Area = 2.18 ac, 77.47% Impervious, Inflow Depth > 3.87" for 25-Year Storm event
Inflow = 7.6 cfs @ 12.12 hrs, Volume= 0.701 af
Primary = 7.6 cfs @ 12.12 hrs, Volume= 0.701 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP2: Combined Sewer



APPENDIX D: FIGURES

13. URBAN IMPAIRED STREAM

The proposed development is not located within the watershed of an Urban Impaired Stream; the Urban Impaired Stream Standard does not apply.

14. BASIC STANDARD

The overall goal of the Soil Erosion and Sediment Control 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 up-gradient runoff from flowing through the active construction areas;
- Preservation and maintenance of vegetated areas to the maximum extent possible;
- Temporary stabilization of disturbed vegetated areas to be exposed for more than seven days;
- Installation and maintenance of sediment barriers adjacent to and down-gradient of the construction site;
- Installation and maintenance of construction entrances at the travelled interface between stabilized and non-stabilized areas;
- Controls for fugitive sediment and dust, debris, and other materials;
- Application of seeding and mulching (or other permanent surface treatment as indicated on the drawings) applied as soon as areas achieve final grades; and
- Inspection of all in-place measures after every significant rainfall until permanent measures are in place and the Site has been stabilized.

Structural measures will be installed where shown on the design drawings. Details for the installation of these measures, as well as implementation notes, are included on the drawings. All measures will be implemented in accordance with the "Maine Erosion and Sedimentation Handbook for Construction: Best Management Practices". All temporary measures will be installed prior to any earthmoving operation and removed after the areas are permanently stabilized. Permanent erosion control measures for the development will include vegetation and pavement. The anticipated construction schedule is provided in Section 1.3 of this Report, and information on soil types and protected natural resources is provided in Section 11 of this Report.

All measures will be maintained in an effective operating condition until the Site is permanently stabilized. During construction, the Contractor will be responsible for conducting inspections in accordance with the attached *Stormwater Erosion & Sediment Control Inspection Report Form* (or equivalent). Inspections shall be performed at least once a week, as well as before and after storm events. A person 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. If maintenance or modifications are necessary, implementation will be completed within seven days and prior to any rainfall event. After construction, the responsible party for the owner will conduct inspections of the Site per the inspection and maintenance requirements outlined in Section 12 of this Report.

14.1 LIST OF ATTACHMENTS

- Stormwater Erosion & Sediment Control Inspection Report Form.

**EROSION & SEDIMENT 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 Action Taken:

Attachments (if any):

Signature:

Name Title Date

15. GROUNDWATER

The proposed development is not located within a Significant Sand and Gravel Aquifer. Environmental assessments of the Site have been conducted and the Owner is a participant in the Maine Department of Environmental Protection Voluntary Response Action Program (VRAP). The proposed development will not infiltrate to or extract groundwater and is not anticipated to produce any hazardous waste. It is not anticipated that the proposed development will result in any impacts to groundwater.

16. WATER SUPPLY

The proposed project will not include any water utilities; this Section is not applicable.

17. WASTEWATER DISPOSAL

The proposed project will not include any sewer utilities; this Section is not applicable.

18. SOLID WASTE

18.1 SOLID WASTE

The proposed project will not result in any additional solid waste after construction has been completed.

18.2 CONSTRUCTION & DEMOLITION DEBRIS

As with any construction project, the proposed construction will generate construction waste and demolition debris (CDD). The construction contractor(s) will be responsible for hauling the CDD or contracting with a waste management service to haul the CDD from the project site. The contractor(s) will be fully responsible for handling, managing, and disposing of all waste generated by construction 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 all applicable local state and federal regulations.

18.3 SPECIAL & HAZARDOUS WASTE

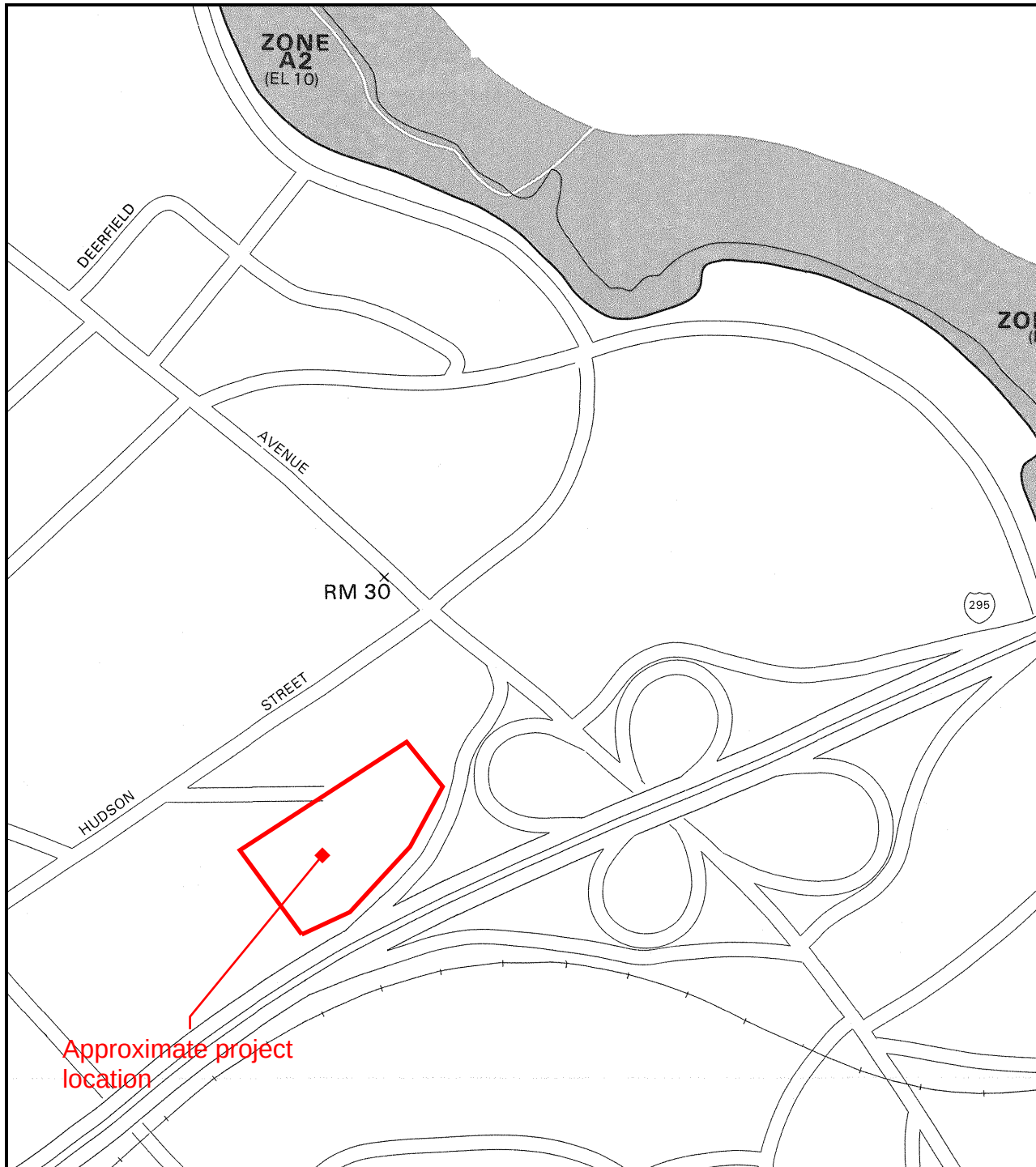
The proposed development is not anticipated to produce any hazardous waste. Environmental assessments of the Site have been conducted and the Owner is a participant in the Maine Department of Environmental Protection Voluntary Response Action Program (VRAP). A soil management plan will be developed for the Site.

19. FLOODING

The project is not located in a flood hazard zone, as shown on the attached FEMA FIRM Map.

19.1 LIST OF ATTACHMENTS

- FEMA Flood Insurance Rate Map.



Approximate project
location



APPROXIMATE SCALE

400 0 400 FEET

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

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

20. BLASTING

No blasting is anticipated for this project; this Section is not applicable.

21. AIR EMISSIONS

The project will not require an air emissions license; this Section is not applicable.

22. ODORS

The proposed development will not involve any processes that emit significant odors; this Section is not applicable.

23. WATER VAPOR

The proposed development will not use water for any processes that would emit water vapor; this Section is not applicable.

24. SUNLIGHT

The proposed development will not block access to sunlight for any structures utilizing solar energy; this Section is not applicable.

25. NOTICES

The City of Portland has Delegated Review Authority for this application; as such, it is our understanding that the public notice requirements associated with MaineDEP Site Law do not apply.



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COMMITMENT & INTEGRITY DRIVE RESULTS

10. COMPLIANCE WITH SITE PLAN STANDARDS

Section 14-526 of the City of Portland's Land Use Code outlines the site plan standards that must be met by Level III Site Plan projects. The proposed project will comply with the City's design standards as described in the following sections:

10.1 TRANSPORTATION

The proposed project will not increase traffic or parking demand. The proposed parking lot will enable future developments at the University by replacing a portion of the parking that will be displaced by the future developments. By constructing the proposed parking lot in advance of future developments, the University's existing parking demands will be satisfied during future construction. It should be noted that the University is currently developing a campus-wide Transportation Demand Management (TDM) Plan that will address the University's long-term goals for future developments. This TDM Plan will be submitted at a later date and under separate cover as part of applications for future developments.

10.1.1 Traffic Impact

The proposed project will not result in an increase in traffic (no new trips generated). The entrance to the proposed parking lot is on the opposite side of Bedford Street from the existing parking lot at the Woodbury Campus Center that will be lost to future development. Local changes to traffic patterns will result as vehicles coming from the east and west on Bedford Street will be turning into the new expanded parking area behind Wishcamper versus turning into the former parking area located at the Woodbury Campus Center (ie. turning left instead of right, and vice versa). It is not anticipated that these changes will result in any impacts to the surrounding street systems.

10.1.2 Access & Circulation

The proposed parking lot will include the construction of ADA accessible parking and pedestrian walkways. Traffic signage and pavement markings will be provided to circulate pedestrian and vehicular traffic throughout the Site. The proposed project will maintain Site's existing access and traffic patterns.

10.1.3 Loading & Servicing

The proposed project will not include any changes to the Site's loading or servicing needs. Existing traffic patterns to the Site's loading and service areas will be maintained.

10.1.4 Sidewalks

Internal sidewalks and ADA ramps will be provided, as shown and detailed on the design drawings. The proposed project will not include any work along street frontages or in the public Right-of-Way.

10.1.5 Public Transit

No changes to public transit access are proposed as part of this project.

10.1.6 Parking

As previously described, the purpose of the proposed parking lot is to replace parking that will be displaced by the University's future developments; the intent is to construct the proposed parking lot in advance of future developments in order to satisfy the University's existing parking demands. The University is currently conducting a campus-wide parking study that will be submitted as part of future applications. The proposed project will create 122 additional off-

street parking spaces, including required ADA parking; a parking summary is provided on the Site Plan. The proposed parking lot has been designed in accordance with the dimensional standards of Section 1 of the City's Technical Design Manual, as shown on the design drawings.

10.1.7 Bicycle Parking

The University does not currently anticipate an increase in the demand for bicycle parking; additional bicycle parking may be provided as part of future developments. No new bicycle parking is proposed at this time.

10.1.8 Snow Storage

Proposed snow storage areas are indicated on the drawings. The proposed landscaped areas will be the primary source for snow storage. Parking demands are lower during the winter months, so some of the proposed parking along the southern perimeter of the site may be utilized for additional snow storage. Snow that exceeds the available space on-site will be hauled off-site.

10.1.9 Traffic Demand Management

A TDM Plan is not required for the proposed project.

10.2 ENVIRONMENTAL & LANDSCAPE FEATURES

10.2.1 Preservation of Significant Natural Features

The Site has been previously developed and there are no known areas of significant natural features, including rare or endangered botanical features, significant wildlife habitats, or wetland areas. The attached Official Species List identifies the northern long-eared bat, which has been listed as a Federally Threatened Species, in association with the project area (a common designation across the state); however, there are no critical habitat areas located within the project area. Based on US Fish & Wildlife information, the northern long-eared bat typically lives in caves during the winter months, and in trees larger than three inches in diameter during the summer, with migration between these two habitats in the spring in the fall. Tree-clearing for this project will be minimal; it is not anticipated that this project will have an impact on the northern long-eared bat species.

10.2.2 Landscape Preservation

A Tree Preservation & Removals Plan is included in the design drawings; this Plan shows what existing trees will be preserved and specifies protection measures.

10.2.3 Site Landscaping

Landscaping Plans are included in the drawings referenced in Section 3 of this Report. These Plans show proposed landscaped islands within the proposed parking area, as well as screening of the Site; plant sizes are specified in the planting schedule provided on the Plans.

10.3 ENVIRONMENTAL & STORMWATER

10.3.1 Water Quality, Stormwater Management, & Erosion Control

The project must comply with the water quality, stormwater management, and erosion control standards identified by the City of Portland in the Land Use Chapter of the Code of Ordinances and Section 5 of the City's Technical Manual, as well as the MaineDEP Chapter 500 Stormwater Standards associated with Site Location of Development Act Permit

requirements. The Stormwater Management Plan included with this application demonstrates that the proposed development meets the applicable standards. Stormwater treatment will be provided by porous pavement walkways and a StormFilter system. The project will not result in the flooding of adjacent lots or City property. Erosion and sediment control measures are shown and detailed on the drawings. The project is not located within the watershed of an Urban Impaired Stream and is not anticipated to pose a risk of groundwater contamination during or after construction; the project does not include subsurface sanitary sewage disposal.

10.4 PUBLIC INFRASTRUCTURE & SAFETY

10.4.1 Consistency with City Master Plans

The proposed project is consistent with the City of Portland Comprehensive Plan, Portland's Plan 2030, developed in 2017. The proposed project will help support the growth of the University of Southern Maine's student body, a vital resource for the economic development of the City of Portland.

10.4.2 Public Safety & Fire Prevention

Overhead lighting will be provided to promote public safety and emergency vehicle access to the Site will be maintained. No new structures requiring Fire Department review are proposed as part of this project.

10.4.3 Availability & Adequacy of Public Utilities

Proposed lighting will connect to existing underground electric conduit, as shown on the drawings, and will be served by an existing electrical panel in Wishcamper Center. Water and sewer utilities are not included in the proposed work. The proposed project will also generate construction waste and demolition debris (CDD). The Contractor will be responsible for hauling the CDD or contracting with a waste management service to haul the CDD, from the project site. The Contractor will be fully responsible for handling, managing, and disposing of all waste generated by construction in accordance with Maine Solid Waste Management Regulations – 06-096 CMR 400-409 and all other applicable local, state, and federal regulations.

The proposed development is not anticipated to produce any hazardous waste. Environmental assessments of the Site have been conducted and the Owner is a participant in the Maine Department of Environmental Protection Voluntary Response Action Program (VRAP). A soil management plan will be developed for the Site.

10.5 SITE DESIGN

10.5.1 Massing, Ventilation, & Wind Impact

No buildings are proposed as part of this project.

10.5.2 Shadows

No buildings are proposed as part of this project.

10.5.3 Snow & Ice Loading

No buildings are proposed as part of this project.

10.5.4 View Corridors

No buildings are proposed as part of this project.

10.5.5 Historic Resources

The proposed development is not located in or adjacent to a historic district or historic landmark.

10.5.6 Exterior Lighting

Overhead lighting is proposed in accordance with Section 12 of the City's Technical Manual. A Photometric Plan and details for the proposed lighting fixtures are included in the drawings; cut sheets of the proposed lighting fixtures are also attached to this Section for your reference. It should be noted that the project abuts the I-295 corridor; according to Section 12 of the Technical Manual, public rights-of-way is considered a non-sensitive use and, as such, illumination at the property boundary must not exceed 1.0 foot-candles; the lighting plan has been designed in accordance with these standards.

10.5.7 Noise & Vibration

The proposed project will not result in any increase in noise or vibration on the Site.

10.5.8 Signage & Wayfinding

Existing signage will be maintained, and new traffic signage will be provided as shown on the drawings.

10.5.9 Zoning Related Design Standards

A summary of the project's compliance with zoning related design standards is provided in Section 6 of this Report.

10.6 ATTACHMENTS

- Official Species List
- Stormwater Management Plan
- Light Fixture Cut Sheets



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Maine Ecological Services Field Office

P. O. Box A

East Orland, ME 04431

Phone: (207) 469-7300 Fax: (207) 902-1588

<http://www.fws.gov/mainefieldoffice/index.html>



In Reply Refer To:

December 12, 2019

Consultation Code: 05E1ME00-2020-SLI-0297

Event Code: 05E1ME00-2020-E-01087

Project Name: USM

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies the threatened, endangered, candidate, and proposed species and designated or proposed critical habitat that may occur within the boundary of your proposed project or may be affected by your proposed project. This species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC Web site at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the Endangered Species Consultation Handbook at: <http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

This species list also identifies candidate species under review for listing and those species that the Service considers species of concern. Candidate species have no protection under the Act but are included for consideration because they could be listed prior to completion of your project. Species of concern are those taxa whose conservation status is of concern to the Service (i.e., species previously known as Category 2 candidates), but for which further information is needed.

If a proposed project may affect only candidate species or species of concern, you are not required to prepare a Biological Assessment or biological evaluation or to consult with the Service. However, the Service recommends minimizing effects to these species to prevent future conflicts. Therefore, if early evaluation indicates that a project will affect a candidate species or species of concern, you may wish to request technical assistance from this office to identify appropriate minimization measures.

Please be aware that bald and golden eagles are not protected under the Endangered Species Act but are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.). Projects affecting these species may require development of an eagle conservation plan: http://www.fws.gov/windenergy/eagle_guidance.html Information on the location of bald eagle nests in Maine can be found on the Maine Field Office Web site: <http://www.fws.gov/mainefieldoffice/Project%20review4.html>

Additionally, wind energy projects should follow the wind energy guidelines: <http://www.fws.gov/windenergy/> for minimizing impacts to migratory birds and bats. Projects may require development of an avian and bat protection plan.

Migratory birds are also a Service trust resource. Under the Migratory Bird Treaty Act, construction activities in grassland, wetland, stream, woodland, and other habitats that would result in the take of migratory birds, eggs, young, or active nests should be avoided. Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g.,

cellular, digital television, radio, and emergency broadcast) can be found at:
<http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm> and at:
<http://www.towerkill.com>; and at:
<http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Maine Ecological Services Field Office

P. O. Box A

East Orland, ME 04431

(207) 469-7300

Project Summary

Consultation Code: 05E1ME00-2020-SLI-0297

Event Code: 05E1ME00-2020-E-01087

Project Name: USM

Project Type: ** OTHER **

Project Description: Wishcamper Parking Lot

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/43.66185866314612N70.27315908620606W>



Counties: Cumberland, ME

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

JOB _____

TYPE _____

NOTES _____

APPROVALS _____

FEATURES

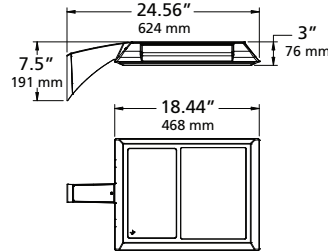
- Elegant form factor
- High performance optics provide up to 17,500 delivered lumens
- Diffusion lens for low glare comfort
- NX™ wireless control options
- IP66

CERTIFICATIONS

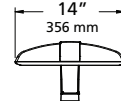


3000K and warmer CCTs only

SPECIFICATIONS



EPA
Side View
.64



EPA
Front View
.37

Weight: 21.5 lbs / 9.75 kg

ORDERING CODE

Series	LED Engine	CCT	Distribution	Rotation	Voltage	Mounting
ALT1 Altitude	No Lens	AM Amber	FR Type I/Front Row	Blank for no rotation	UNV 120-277V	ASQ Arm Square pole
	28L-20 3,000 lm	3K7 3000K, 70 CRI	2 Type II	L ¹ Optic rotation left	347 347V	A34 Arm mt 3.3-4.2" OD pole
	28L-40 5,000 lm	4K7 4000K, 70 CRI	3 Type III	R ¹ Optic rotation right	480 480V	A46 Arm mt 4.5-6.0" OD pole
	28L-60 7,500 lm	5K7 5000K, 70 CRI	4 Type IV			MAF Horizontal Slipfitter 2 3/8" OD arm
	28L-85 10,000 lm	3K8 3000K, 80 CRI	4W Type IV Wide			SVSF Vertical Slipfitter Mount square for 2" pipe tenon, (2-3/8" O.D.)
	54L-95 12,500 lm	4K8 4000K, 80 CRI	5QM Type V Square Medium			VSF Vertical Slipfitter Mount for 2" pipe tenon, (2-3/8" O.D.)
	54L-120 15,000 lm	3K9 3000K, 90 CRI	5QN Type V Square Narrow			WB Wall Bracket for area wall mount
	54L-155 17,500 lm		5R Type V Rectangular			
			5W Type V Wide (Round)			

Fixture Finish	Control Options	Options	Control Accessories
BL Black	7PR 7 pin PCR, wireless control enabled	BC ⁵ Backlight Control	SCPREMOTE Remote control for SCP option. Order at least one per project to program and control the occupancy sensor
DB Dark Bronze	7PR-TL 7 pin PCR with twist lock photocontrol	SF Single Fuse	SW7PR SiteSync™ on fixture module via 7PR
GT Graphite	7PR-SC 7 pin PCR with shorting cap	DF Double Fuse	SWUSB SiteSync™ Software on USB
LG Light Gray	AD-01 ² AstroDIM: 50% output at midnight	TB Terminal Block	SWTAB SiteSync™ Windows Tablet
PS Platinum Silver	AD-02 ² AstroDIM: 50% output midnight to 4 AM	CLR Clear Lens	SWBRG SiteSync™ Wireless Bridge Node
TT Titanium	AD-03 ² AstroDIM: 50% output 10PM	HDL ⁶ Diffuse Lens	SWFC SiteSync™ Field Commission Service
WH White	AD-04 ² AstroDIM: 50% output 10PM to 4AM		WIR-RME-L wiSCAPE™ External Fixture Module
CC Custom Color [†]	NXSP14F ^{2,3} Wired NX, PIR Occupancy Sensor, Dimming Daylight Harvesting, 14'		NXOFM-1R1D-UNV NX External Contol Node
†Consult factory	NXSP30F ^{2,3} Wired NX, PIR Occupancy Sensor, Dimming Daylight Harvesting, 30'		
	NXSPW14F ^{2,3} NX Wireless, PIR Occupancy Sensor, Dimming Daylight Harvesting, 14'		
	NXSPW30F ^{2,3} NX Wireless, PIR Occupancy Sensor, Dimming Daylight Harvesting, 30'		
	NXWE NX Wireless Enabled		
	SCL-8F Low voltage sensor for 3rd party wireless controls via 7PR. For mounting heights up to 8'		
	SCL-40F Low voltage sensor for 3rd party wireless controls via 7PR. For mounting heights 9' to 40'		
	SCP-8F Remote control programmable line voltage sensor, use with SCPREMOTE		
	SCP-40F Remote control programmable line voltage sensor, use with SCPREMOTE		
	SWP ^{2,3,4} Site Sync™ Pre Commission Wireless Module		
	SWPM-40F ^{2,3,4} Site Sync with Sensor 9' to 40' MH		

Microsoft, Encarta, MSN, and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

- 1 Not available with 5QM and 5W distributions.
- 2 Not available with other sensor or wireless control options.
- 3 Not available in 480V.
- 4 Specify group and zone at time of order. See www.hubbelllighting.com/sitesync for more details. Order at least one SiteSync interface accessory SWUSB or SWTAB. Each option contains SiteSync License, GUI, and Bridge Node.
- 5 Not available with Type 5 distributions, CLR, or HDL option.
- 6 Only available in Type 3 or Type 5W

Kim Lighting reserves the right to change specifications without notice.

LUMINAIRE PERFORMANCE

LED #	Nominal Lumen Package	Nominal Wattage	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
28L	3,000	20	No Lens	FR	3110	0	0	0	141	3274	0	0	0	149	3318	1	0	0	148
				FR-BC	2036	0	0	0	93	2143	0	0	0	97	2172	0	0	0	97
				2	2903	1	0	1	132	3056	1	0	1	139	3097	1	0	1	138
				2-BC	1771	0	0	0	80	1864	0	0	0	85	1889	0	0	0	84
				3	2945	1	0	1	131	3100	1	0	1	138	3141	1	0	1	140
				3-BC	1779	0	0	1	81	1873	0	0	1	85	1898	0	0	1	85
				4	2943	0	0	1	134	3098	0	0	1	141	3139	0	0	1	141
				4-BC	2189	0	0	1	100	2304	0	0	1	105	2335	0	0	1	104
				4W	2927	1	0	1	133	3081	1	0	1	140	3122	1	0	1	139
				4W-BC	1673	0	0	1	76	1761	0	0	1	80	1785	0	0	1	80
				5R	3025	2	0	2	137	3184	2	0	2	145	3227	2	0	2	144
				5QM	3069	2	0	0	139	3230	2	0	0	147	3273	2	0	0	146
				5QN	3051	2	0	0	139	3211	2	0	0	146	3254	2	0	0	145
				5W	3024	2	0	1	137	3183	2	0	1	145	3226	2	0	1	144
			Clear Lens	FR	2909	0	0	0	132	3062	0	0	0	139	3103	0	0	0	141
				2	2715	1	0	1	123	2858	1	0	1	130	2896	1	0	1	132
				3	2754	1	0	1	125	2899	1	0	1	132	2938	1	0	1	134
				4	2752	0	0	1	125	2897	0	0	1	132	2936	0	0	1	133
				4W	2738	1	0	1	124	2882	1	0	1	131	2920	1	0	1	133
				5R	2829	2	0	2	129	2978	2	0	2	135	3018	2	0	2	137
				5QM	2870	2	0	0	130	3021	2	0	0	137	3062	2	0	0	139
				5QN	2853	2	0	0	130	3003	2	0	0	137	3044	2	0	0	138
				5W	2829	2	0	1	129	2977	2	0	1	135	3017	2	0	1	137
			HDL Lens	3	2341	1	0	1	106	2464	1	0	1	112	2497	1	0	1	114
				5W	2405	1	0	1	109	2531	1	0	1	115	2565	1	0	1	117

Lumen Multiplier		
CCT	80 CRI	90 CRI
3000K	0.9119	0.7033
4000K	0.8941	N/A

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LUMINAIRE PERFORMANCE

LED #	Nominal Lumen Package	Nominal Wattage	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
28L	5,000	40	No Lens	FR	4870	1	0	0	128	5127	1	0	0	135	5195	1	0	0	137
				FR-BC	3189	0	0	0	84	3356	0	0	0	88	3401	0	0	0	90
				2	4546	1	0	1	120	4785	1	0	1	126	4849	1	0	1	128
				2-BC	2773	0	0	1	73	2919	0	0	1	77	2958	0	0	1	78
				3	4611	1	0	2	121	4854	1	0	2	128	4919	1	0	2	129
				3-BC	2786	0	0	1	73	2933	0	0	1	77	2972	0	0	1	78
				4	4608	1	0	2	121	4851	1	0	2	128	4915	1	0	2	129
				4-BC	3428	0	0	1	90	3608	0	0	1	95	3656	0	0	1	96
				4W	4584	1	0	2	121	4825	1	0	2	127	4889	1	0	2	129
				4W-BC	2621	0	0	1	69	2758	0	0	1	73	2795	0	0	1	74
				5R	4737	2	0	2	125	4986	3	0	1	131	5053	3	0	3	133
				5QM	4806	2	0	1	126	5058	2	0	1	133	5126	2	0	1	135
				5QN	4777	2	0	0	126	5028	2	0	0	132	5096	2	0	0	134
				5W	4736	3	0	1	125	4985	2	0	2	131	5052	3	0	1	133
			Clear Lens	FR	4555	1	0	0	120	4795	1	0	0	126	4859	1	0	0	128
				2	4252	1	0	1	112	4476	1	0	1	118	4536	1	0	1	119
				3	4333	1	0	1	114	4561	1	0	1	120	4622	1	0	1	121
				4	4310	0	0	2	113	4537	1	0	2	119	4598	1	0	2	121
				4W	4287	1	0	2	113	4513	1	0	2	119	4573	1	0	2	120
				5R	4431	2	0	2	117	4663	2	0	2	123	4726	2	0	2	124
				5QM	4495	2	0	1	118	4731	2	0	1	125	4794	2	0	1	126
				5QN	4468	2	0	0	118	4703	2	0	0	124	4766	2	0	0	125
			HDL Lens	5W	4430	3	0	1	117	4663	3	0	1	123	4725	3	0	1	124
				3	3741	1	0	1	98	3937	1	0	1	104	3990	1	0	1	105
				5W	3891	2	0	1	102	4095	2	0	1	108	4150	2	0	1	109

Lumen Multiplier		
CCT	80 CRI	90 CRI
3000K	0.9119	0.7033
4000K	0.8941	N/A

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LUMINAIRE PERFORMANCE

LED #	Nominal Lumen Package	Nominal Wattage	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
28L	7,500	60	No Lens	FR	7347	1	0	1	122	7733	1	0	1	129	7837	1	0	1	131
				FR-BC	4810	0	0	0	80	5063	0	0	0	84	5131	0	0	0	86
				2	6858	1	0	2	114	7218	1	0	2	120	7315	1	0	2	122
				2-BC	4183	0	0	1	70	4403	0	0	1	73	4462	0	0	1	74
				3	6956	1	0	2	116	7322	1	0	2	122	7420	1	0	2	123
				3-BC	4203	0	0	1	70	4424	0	0	1	74	4483	0	0	1	75
				4	6951	1	0	2	116	7317	1	0	2	122	7415	1	0	2	124
				4-BC	5171	0	0	2	86	5443	0	0	2	91	5516	0	0	2	92
				4W	6915	1	0	2	115	7278	1	0	2	121	7376	1	0	2	123
				4W-BC	3953	0	0	2	66	4161	0	0	2	69	4216	0	0	2	70
				5R	7145	3	0	3	119	7521	3	0	3	125	7622	3	0	3	127
				5QM	7249	3	0	1	121	7630	3	0	1	127	7732	3	0	1	129
				5QN	7206	3	0	0	120	7585	3	0	0	126	7687	3	0	0	128
				5W	7144	3	0	2	119	7520	3	0	2	125	7620	3	0	2	127
			Clear Lens	FR	6872	1	0	1	115	7233	1	0	1	121	7330	1	0	1	122
				2	6414	1	0	2	107	6751	1	0	2	113	6842	1	0	2	114
				3	6506	1	0	2	108	6848	1	0	2	114	6940	1	0	2	116
				4	6502	1	0	2	108	6844	1	0	2	114	6935	1	0	2	116
				4W	6468	1	0	2	108	6807	1	0	2	113	6899	1	0	2	115
				5R	6683	3	0	3	111	7035	3	0	3	117	7129	3	0	3	119
				5QM	6780	3	0	1	113	7137	3	0	1	119	7232	3	0	1	121
				5QN	6740	2	0	0	112	7094	3	0	0	118	7189	3	0	0	120
			HDL Lens	5W	6682	3	0	2	111	7033	3	0	2	117	7128	3	0	2	119
				3	5531	2	0	1	92	5821	2	0	1	97	5899	2	0	1	98
				5W	5680	2	0	1	95	5979	2	0	1	100	6059	2	0	1	101

Lumen Multiplier		
CCT	80 CRI	90 CRI
3000K	0.9119	0.7033
4000K	0.8941	N/A

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LUMINAIRE PERFORMANCE

LED #	Nominal Lumen Package	Nominal Wattage	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
28L	10,000	85	No Lens	FR	9699	1	0	1	113	10209	1	0	1	119	10346	1	0	1	120
				FR-BC	6350	0	0	1	74	6684	0	0	1	78	6773	0	0	1	79
				2	9054	1	0	2	105	9530	2	0	2	111	9657	2	0	2	112
				2-BC	5523	0	0	1	64	5813	0	0	1	68	5891	0	0	1	68
				3	9183	1	0	2	107	9666	1	0	2	112	9795	1	0	2	114
				3-BC	5549	0	0	2	65	5841	0	0	2	68	5919	0	0	2	69
				4	9177	1	0	2	107	9660	1	0	2	112	9789	1	0	2	114
				4-BC	6827	0	0	2	79	7186	0	0	2	84	7282	0	0	2	85
				4W	9129	1	0	3	106	9609	1	0	3	112	9737	1	0	3	113
				4W-BC	5219	0	0	2	61	5493	0	0	2	64	5567	0	0	2	65
				5R	9433	3	0	3	110	9929	3	0	3	115	10062	3	0	3	117
				5QM	9570	3	0	1	111	10073	3	0	1	117	10208	3	0	1	119
				5QN	9514	3	0	0	111	10014	3	0	0	116	10148	3	0	0	118
				5W	9432	4	0	2	110	9927	4	0	2	115	10060	4	0	2	117
			Clear Lens	FR	9072	1	0	1	105	9549	1	0	1	111	9677	1	0	1	113
				2	8468	1	0	2	98	8913	1	0	2	104	9033	1	0	2	105
				3	8589	1	0	2	100	9041	1	0	2	105	9162	1	0	2	107
				4	8584	1	0	2	100	9035	1	0	2	105	9156	1	0	2	106
				4W	8538	1	0	2	99	8987	1	0	3	105	9108	1	0	3	106
				5R	8823	3	0	3	103	9287	3	0	3	108	9411	3	0	3	109
				5QM	8951	3	0	1	104	9422	3	0	1	110	9548	3	0	1	111
				5QN	8898	3	0	0	103	9366	3	0	0	109	9491	3	0	0	110
				5W	8822	3	0	2	103	9285	4	0	2	108	9410	4	0	2	109
			HDL Lens	3	7302	2	0	2	85	7685	2	0	2	89	7788	2	0	2	91
				5W	7499	2	0	1	87	7893	2	0	1	92	7999	2	0	1	93

Lumen Multiplier		
CCT	80 CRI	90 CRI
3000K	0.9119	0.7033
4000K	0.8941	N/A

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LUMINAIRE PERFORMANCE

LED #	Nominal Lumen Package	Nominal Wattage	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
54	12,500	95	No Lens	FR	11792	1	0	1	125	12412	1	0	1	132	12578	1	0	1	134
				FR-BC	7848	0	0	1	83	8260	0	0	1	88	8371	0	0	1	90
				2	11210	2	0	2	119	11800	2	0	2	126	11958	2	0	2	126
				2-BC	5993	0	0	1	64	6308	0	0	1	67	6392	0	0	1	69
				3	11225	1	0	2	119	11815	2	0	2	126	11974	2	0	2	127
				3-BC	6273	0	0	2	67	6603	0	0	2	70	6691	0	0	2	72
				4	11311	1	0	2	120	11906	1	0	3	127	12065	1	0	3	128
				4-BC	7291	0	0	2	78	7674	0	0	2	82	7777	0	0	2	84
				4W	11203	2	0	3	119	11792	2	0	3	125	11950	2	0	3	127
				4W-BC	5603	0	0	2	60	5898	0	0	2	63	5977	0	0	2	65
				5R	11623	3	0	3	124	12234	3	0	3	130	12398	3	0	3	131
				5QM	11770	3	0	2	125	12389	3	0	2	132	12555	3	0	2	133
				5QN	11799	3	0	0	126	12420	3	0	0	132	12586	3	0	0	133
				5W	11594	4	0	2	123	12204	4	0	2	130	12367	4	0	2	131
			Clear Lens	FR	11029	1	0	1	117	11609	1	0	1	124	11765	1	0	1	125
				2	10485	2	0	2	112	11036	2	0	2	117	11184	2	0	2	119
				3	10555	1	0	2	112	11110	1	0	2	118	11259	1	0	2	120
				4	10579	1	0	2	113	11136	1	0	2	118	11285	1	0	2	120
				4W	10479	1	0	3	111	11029	2	0	3	117	11177	2	0	3	119
				5R	10871	3	0	3	116	11443	3	0	3	122	11596	3	0	3	123
				5QM	11009	3	0	2	117	11588	3	0	2	123	11743	3	0	2	125
				5QN	11036	3	0	0	117	11616	3	0	0	124	11772	3	0	0	125
				5W	10845	4	0	2	115	11415	4	0	2	121	11568	4	0	2	123
			HDL Lens	3	8736	2	0	2	93	9195	2	0	2	98	9318	2	0	2	100
				5W	9152	3	0	1	97	9633	3	0	1	102	9762	3	0	1	104

Lumen Multiplier		
CCT	80 CRI	90 CRI
3000K	0.9119	0.7033
4000K	0.8941	N/A

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LUMINAIRE PERFORMANCE

LED #	Nominal Lumen Package	Nominal Wattage	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
54	15,000	120	No Lens	FR	14390	1	0	1	118	15146	1	0	1	124	15349	1	0	1	125
				FR-BC	9577	1	0	1	78	10080	1	0	1	83	10215	1	0	1	84
				2	13680	2	0	2	112	14399	2	0	2	118	14592	2	0	2	120
				2-BC	7313	0	0	2	60	7697	0	0	2	63	7800	0	0	2	64
				3	13698	2	0	3	112	14418	2	0	3	118	14611	2	0	3	120
				3-BC	7655	0	0	2	63	8057	0	0	2	66	8165	0	0	2	67
				4	13803	1	0	3	113	14528	1	0	3	119	14723	1	0	3	121
				4-BC	8897	0	0	2	73	9365	0	0	2	77	9490	0	0	2	78
				4W	13671	2	0	3	112	14390	2	0	3	118	14583	2	0	4	120
				4W-BC	6838	1	0	2	56	7197	1	0	2	59	7294	1	0	2	60
				5R	14184	4	0	4	116	14929	4	0	4	122	15129	4	0	4	124
				5QM	14363	3	0	2	118	15118	4	0	2	124	15321	4	0	2	126
				5QN	14399	4	0	4	118	15156	4	0	1	124	15359	4	0	1	126
				5W	14149	4	0	2	116	14893	4	0	2	122	15092	4	0	2	124
			Clear Lens	FR	13459	1	0	1	110	14167	1	0	1	116	14356	1	0	2	118
				2	12795	2	0	2	105	13468	2	0	2	110	13648	2	0	2	112
				3	12812	2	0	2	105	13486	2	0	2	111	13666	2	0	2	112
				4	12910	1	0	3	106	13589	1	0	3	111	13771	1	0	3	113
				4W	12787	2	0	3	105	13459	2	0	3	110	13640	2	0	3	112
				5R	13266	4	0	4	109	13964	4	0	4	114	14151	4	0	4	116
				5QM	13434	3	0	2	110	14140	3	0	2	116	14330	3	0	2	117
				5QN	13467	4	0	0	110	14175	4	0	0	116	14365	4	0	0	118
				5W	13234	4	0	2	108	13929	4	0	2	114	14116	4	0	2	116
			HDL Lens	3	10892	3	0	2	89	11464	3	0	2	94	11618	3	0	2	95
				5W	11250	3	0	1	92	11841	3	0	2	97	12000	3	0	2	98

Lumen Multiplier		
CCT	80 CRI	90 CRI
3000K	0.9119	0.7033
4000K	0.8941	N/A

Kim Lighting reserves the right to change specifications without notice.

LUMINAIRE PERFORMANCE

LED #	Nominal Lumen Package	Nominal Wattage	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
					Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
						B	U	G			B	U	G			B	U	G	
54	17,500	155	No Lens	FR	17299	2	0	2	111	18208	2	0	2	117	18452	2	0	2	119
				FR-BC	11513	1	0	1	74	12118	1	0	1	78	12280	1	0	1	79
				2	16445	2	0	2	105	17310	2	0	3	111	17542	2	0	3	112
				2-BC	8791	0	0	2	56	9253	0	0	2	59	9377	0	0	2	60
				3	16467	2	0	3	106	17333	2	0	3	111	17565	2	0	3	113
				3-BC	9202	1	0	2	59	9686	1	0	2	62	9816	1	0	2	63
				4	16593	1	0	3	106	17465	1	0	3	112	17699	1	0	4	113
				4-BC	10696	1	0	2	69	11258	1	0	2	72	11409	1	0	2	73
				4W	16435	2	0	4	105	17299	2	0	4	111	17531	2	0	4	112
				4W-BC	8220	1	0	2	53	8652	1	0	2	55	8768	1	0	2	56
				5R	17051	4	0	4	109	17947	4	0	4	115	18188	4	0	4	117
				5QM	17267	4	0	2	111	18174	4	0	2	117	18418	4	0	2	118
				5QN	17309	4	0	1	111	18219	4	0	1	117	18463	4	0	1	118
				5W	17009	4	0	2	109	17903	4	0	2	115	18143	4	0	2	116
			Clear Lens	FR	16180	1	0	2	104	17030	1	0	2	109	17258	1	0	2	111
				2	15382	2	0	2	99	16190	2	0	2	104	16407	2	0	2	105
				3	15402	2	0	3	99	16212	2	0	3	104	16429	2	0	3	105
				4	15520	1	0	3	99	16336	1	0	3	105	16555	1	0	3	106
				4W	15372	2	0	4	99	16180	2	0	4	104	16397	2	0	4	105
				5R	15948	4	0	4	102	16787	4	0	4	108	17011	4	0	4	109
				5QM	16150	4	0	2	104	16999	4	0	2	109	17227	4	0	2	110
				5QN	16190	4	0	1	104	17041	4	0	1	109	17269	4	0	1	111
				5W	15909	4	0	2	102	16745	4	0	2	107	16969	4	0	2	109
			HDL Lens	3	13093	3	0	2	84	13782	3	0	2	88	13966	3	0	2	90
				5W	13524	3	0	2	87	14235	3	0	2	91	14426	3	0	2	92

Lumen Multiplier		
CCT	80 CRI	90 CRI
3000K	0.9119	0.7033
4000K	0.8941	N/A

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SPECIFICATIONS

Housing:

- Low copper aluminum alloy die-casting is designed as one-piece with internal cooling fins.
- Solid, cast aluminum wall creates a thermal barrier between the optical and electrical compartments.
- Molded silicone gasket throughout insures the sealing between the two compartments and provides ingress protection.
- Housing is designed with integral LED heat sink utilized for thermal transfer and for securing the location of each LED module.
- IK09 rated enclosure protects electrical equipment against external mechanical impacts.

Lens Frame:

- One-piece low copper aluminum alloy die-cast is secured to housing with 6 screws.

Backlight Control

- Optional Backlight Control on each LED module to completely control unwanted backlight.

Lens

One-piece flat glass lens slips secure with clips. Extra silicone gasketing is provided to retain a clear optical compartment.

Optical Module:

- LEDs shall be mounted to a metal printed circuit board assembly (MCPCB).
- Optical lenses shall be clear injection molded PMMA acrylic.
- Each MCPCB and optic shall be sealed to the diecast housing and sealed with a continuous one piece injection molded silicone rubber gasket.
- Patent Pending design of optical array shall independently shield each LED optic across the length of the aperture.
- Optional fixture finish optical surfaces shall not exceed BUG ratings of the standard white finish and shall be greater than or equal to the delivered lumens of the optional matte black optical surface finish.

Electrical Components

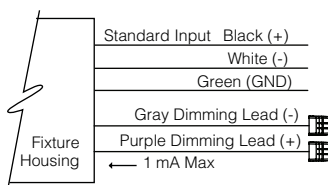
- Standard programmable driver allows for programmable drive current settings.
- Electrical components are strategically located in the driver gear compartment with a molded silicon grommet seal to provide separation from the optical chamber.
- Maximum lightning surge current 20KA with thermally protected varistor technology. Surge suppression is series circuited preventing

total fixture failure. ANSI/IEEE C62.41 Category C High.

- Open circuit fault will turn off the luminaire in order to protect the sensitive electronics and acts as a signal for maintenance.
- Programmable Driver is rated for -40°C starting.
- "Thermal Shield", primary side, thermister provides protection for the sustainable life of electronic components (350mA to 700mA).

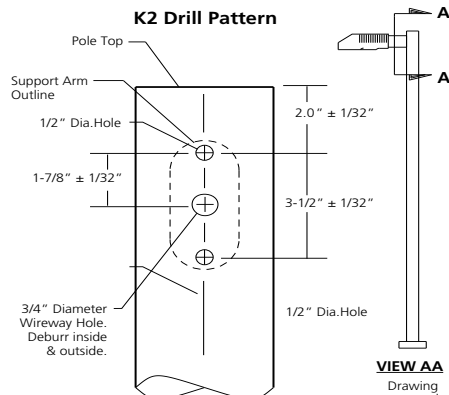
Dimming:

- Dimming range from 100% to 10% through the use of the standard 0-10V interface on the programmable driver.
- Modular wiring harness in the service area provides user access to the dimming circuitry.
- Dimming circuitry compatible with 0-10V, user-defined control devices.
- Optional factory programmed dimming profile.



Support Arm:

- Die-cast, low copper aluminum alloy, with splice access cover.
- Die-cast pole adaptor and an internal reinforcing plate are provided with a wire strain relief.
- The arm adapter is square or circular cut for specified pole size and shape.
- For field wire connections, a terminal block is mounted in the arm cavity and accessible behind the splice access cover. The block accepts #14 to #8 wire sizes and is factory prewired to the electrical module's quick-disconnect plug inside the electrical compartment.



Optional Slip-Fitter:

- Internally accessible slip-fitter attaches to a 1-1/4" to 2-3/8" tenon and allows hands-free wiring and maintenance.

Optional Wall Mount:

- Optional, cast aluminum mounting plate attaches to a wall over a junction box and the speed mount is bolted to the cover plate. To complete the wiring, the luminaire assembly slides over the mounting plate.

Fusing:

SF for 120, 277, and 347 Line volts

DF for 208, 240, and 480 Line volts

High temperature fuse holders factory installed inside the fixture housing.

Fuse is included.

Finish:

Fade and abrasion resistant, electrostatically applied, thermally cured, triglycidal isocyanurate (TGIC) polyester powdercoat.

Standard colors include (BL) Black, (DB) Dark Bronze, (GT) Graphite, (PS) Platinum Silver, (LG) Light Gray, (TT) Titanium, (WH) White, and (CC) Custom Color (Include RAL#).

Certifications and Listings:

- UL 1598 Standard for Luminaires.
- UL 8750 Standard for Safety for Light.
- ANSI C136.31-2010 3G Vibration tested and compliant.
- IDA approved, 3000K and warmer CCTs only
- IP66 Certified

CAUTION:

Fixtures must be grounded in accordance with national, state and/or local electrical codes. Failure to do so may result in serious personal injury.

WARRANTY:

For full warranty see: <http://www.hubbellighting.com/resources/warranty>

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CONTROLS

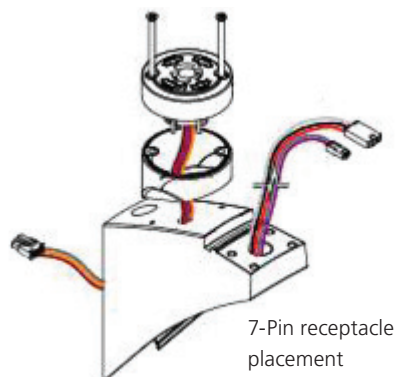
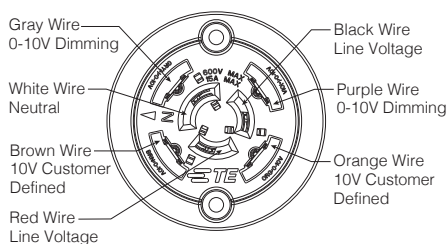
Photocell Receptacle

7PR

Fully gasketed and wired 7-pin receptacle option. Easy access location above the electrical compartment. 7-pin construction allows for a user-defined interface and provides a controlled definition of operational performance. ANSI twist-lock control module by-others.

Standard customer operation modes:

1. Traditional on/off photoelectric control.
2. 5-pin wireless photoelectric control for added dimming feature.
3. 7-pin wireless photoelectric control for dimming and additional I/O connections for customer use.



Wireless Controls

- Optional universal voltage (120-277V) for dusk to dawn energy savings. Photocontrol is factory installed inside the housing with a fully gasketed sensor on the side wall. For multiple fixture mountings, one fixture is supplied with a photocell to operate the others.

- Occupancy Sensor shall be programmable and use passive infrared (PIR) sensing technology that reacts to changes in infrared energy (moving body heat) within the coverage area. Careful consideration must be given to obstructions that may block the sensor's line of sight.

- Factory default settings for SCP option shall be:-

High mode: 10V - Low mode: 1V - Ramp-up rate: disabled - Fade-down rate: disabled - Photocell: Off - Sensitivity: Full - Time Delay: Fade to low: 5 minutes - Time Delay: Fade to off: 1 hour

- The SCP enables any wall mounted luminaire, in excess of 75 watts, to meet California Title 24 requirements with integral 10KA surge protection for added reliability and serviceability. For more detail: http://www.aal.net/products/sensor_control_programmable

AstroDIM

AstroDIM provides multi-stage night-time power reduction based on an internal timer referenced to the power on/off time. There is no need for an external control infrastructure. The unit automatically performs a dimming profile based on the predefined scheduled reference to the midpoint, which is calculated based on the power on/off times.

SiteSync™¹

SiteSync™ wireless control system for reduction in energy and maintenance cost while optimizing light quality 24/7. See ordering information or visit www.hubbelllighting.com/products/sitesync for more details.

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¹PRECOMMISSIONED SITESYNC ORDERING INFORMATION: When ordering a fixture with the SiteSync lighting control option, additional information will be required to complete the order. The SiteSync Commissioning Form or alternate schedule information must be completed. This form includes Project location, Group information, and Operating schedules. For more detailed information please visit www.HubbellLighting.com/products/sitesync or contact Hubbell Lighting tech support at (800) 345-4928.

SiteSync fixtures with occupancy sensor (SWPM) require the mounting height of the fixture for selection of the lens.

²Voltage, ³Color, ⁴Pole Diameter,



STORMWATER MANAGEMENT PLAN

USM Wishcamper
Parking Lot



41 Hutchins Drive
Portland, ME 04102
800-426-4262

woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

0232479.01
**University of Southern
Maine**
January 2020

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APPENDICES

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1. STORMWATER MANAGEMENT PLAN

This Stormwater Management Plan (SWMP) describes existing site conditions, the proposed development, inspection and maintenance requirements for the proposed stormwater system, and compliance with applicable stormwater standards for the University of Southern Maine Wishcamper Parking Lot located at 44 Bedford Street in Portland, Maine.

1.1 Existing Conditions

The project site is a portion of an approximately 29-acre University campus, south of the Wishcamper Center and north of the I-295 corridor. The project area has been previously developed and is currently utilized for parking. Existing conditions consist primarily of impervious paved areas and a large vegetated area interior to the site, which consists largely of a weedy overgrowth and dirt and is utilized for overflow parking and storage. The project site is not located in a FEMA flood hazard zone. Stormwater runoff from the Site is collected in catch basins and discharged to the City of Portland combined sewer west of the Site and towards Forest Avenue.

1.2 Proposed Development

The proposed development will result in approximately 1.5-acres of disturbance. The proposed project will create 122 additional parking spaces for the University. The proposed parking lot will include compact spaces in order to minimize the amount of impervious area on the site. The proposed stormwater management plan will consist of porous pavement walkways, similar to existing walkways throughout the University, and a subsurface detention and treatment system. The proposed work will also include site landscaping and exterior lighting.

The proposed drainage system will be comprised of a series of catch basins, which discharge to a subsurface stormwater management system that will provide storage and treatment for site runoff prior to discharging to the City's combined sewer and drainage system. The subsurface stormwater management system will consist of large metal pipe for storage and a StormFilter unit for stormwater treatment. Site drainage patterns will be largely maintained and, as a result of the proposed project, most of the runoff from the site will continue to discharge to the City's combined sewer, similar to existing conditions. However, the Site's stormwater collection system has been kept separate from the Site's sanitary sewer collection, which will allow stormwater to be rerouted to a separate stormwater collection system, if constructed in the future by the City.

1.3 Inspection & Maintenance Requirements

General inspection and maintenance of stormwater systems will take place during and after construction. During construction, the Contractor will be responsible for inspecting and maintaining the Site, as described in Section 1.4.1 of this Report. Upon completion of construction, the property owner will be responsible for implementing the Inspection and Maintenance Plan for the proposed stormwater system, which is provided in Appendix A of this Report.

1.4 Stormwater Standards

The project is subject to the MaineDEP Chapter 500 Stormwater Standards. The project is not located within the watershed of an Urban Impaired Stream and is therefore not subject to the Urban Impaired Stream Standard. The following sections describe the project's compliance with the applicable stormwater standards.

1.4.1 Basic Standard (Soil Erosion & Sediment Control)

A variety of erosion and sediment control measures will be utilized during construction, including but not limited to the following:

- Stabilized construction entrances;

- Up-gradient runoff diversion barriers;
- Downgradient sediment barriers;
- Catch basin inlet protection devices;
- Preservation and maintenance of vegetated areas to the maximum extent possible;
- Temporary stabilization of disturbed areas to be exposed for more than seven days;
- Permanent stabilization of final graded areas;
- Controls for fugitive dust, debris, and other materials; and
- Inspection of all measures until the Site is permanently stabilized.

Structural measures will be installed as shown on the design drawings. Details and specifications for these measures are included on the drawings. All measures will be implemented in accordance with the “Maine Erosion and Sedimentation Handbook for Construction: Best Management Practices”. All temporary measures will be installed prior to any earth-disturbing activities and will be removed upon permanent stabilization of the Site. The Contractor will be responsible for implementing and maintaining all erosion and sediment control measures in an effective operating condition during construction. Permanent erosion control measures will include vegetation and pavement. After construction, the Owner will be responsible for inspecting and maintaining the Site as described in Section 1.3 of this Report.

1.4.2 General Standard (Stormwater Quality)

The proposed project is considered redevelopment and is therefore subject to Section 4.C(2)(d) of the MaineDEP Chapter 500 Stormwater Standards. As demonstrated by the calculations provided in Appendix B of this Report, the proposed project is required to provide treatment for 60% of the redeveloped area, and the proposed porous pavement and StormFilter treatment unit will provide the required treatment. The StormFilter treatment system has been designed in accordance with the MaineDEP proprietary BMP approval letter to Contech dated March 13, 2015. Larger storm events will bypass the StormFilter unit via a weir in the upstream corrugated metal pipe (CMP) system. A letter prepared by Contech describing the design of the StormFilter treatment system is also provided in Appendix B of this Report.

1.4.3 Flooding Standard (Stormwater Quantity)

The project is required to comply with the flooding standard, as the project requires review pursuant to MaineDEP Site Law. Chapter 500 Stormwater Rules require that the stormwater management system detain, retain, or result in the infiltration of the stormwater flows from the 24-hour storm of the 2-year, 10-year, and 25-year frequencies, such that peak flows from the post-development Site do not exceed those from the pre-development Site. Stormwater models were developed for the pre-development and post-development site conditions. Adequate provisions have been made to collect and control stormwater via the proposed stormwater detention system. The following sections describe the stormwater modeling methodology and the results of the HydroCAD analysis.

1.4.3.1 Stormwater Modeling Methodology

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 provided in Appendix C. A 24-hour duration and Type III rainfall distribution was applied to the rainfall depths for the 2-year, 10-year, and 25-year storm events from Appendix H of the DEPs Chapter 500 Rules.

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 Site contains Hydrologic Soil Group A soils. The area of each land cover type was delineated utilizing topographical survey information and HydroCAD computed the final CN for each subcatchment based on an area-weighted average. It should be noted that the curve number utilized for the proposed porous pavement is based upon data from the Rhode Island Stormwater Design and Installation Standards Manual.

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 longest hydraulic flow path is partitioned into segments based on flow types, land cover, and slopes. The Tc for each watershed is computed within HydroCAD as the sum of the travel times for each consecutive flow segment along the longest hydraulic flow path. The primary types of flow consist of sheet flow, shallow concentrated flow, and channel flows; sheet flow typically occurs within the first 100-feet of runoff. A minimum Tc of six minutes was utilized for all watershed areas.

The HydroCAD model has been prepared utilizing conservative assumptions about the proposed porous pavement walkways. While we anticipate that the proposed walkways will provide some detention and infiltration, this has not been included in the HydroCAD model for the purposes of this stormwater analysis. As previously described, the project area discharges City's combined sewer and drainage systems in two locations; these two discharge points have been utilized as the Study Points for the stormwater analysis:

- Study Point 1: Forest Avenue Storm Drain System; and
- Study Point 2: Combined Sewer System West of the Site.

Existing and proposed drainage patterns and features are shown on the figures provided in Appendix D.

1.4.3.2 Pre- and Post-Development Peak Runoff Rate Results

The table below provides a summary of the peak runoff rates for the 24-hour, 2-, 10-, and 25-year Type III storm events:

STUDY POINT		PEAK RUNOFF RATE (CFS)		
		2-YEAR STORM	10-YEAR STORM	25-YEAR STORM
1	Pre-Development	0.9	1.9	2.7
	Post-Development	0.8	1.4	1.9
2	Pre-Development	2.7	5.4	7.6
	Post-Development	2.7	5.4	7.6

The proposed stormwater management system has been designed to improve and maintain current runoff conditions to the maximum extent possible. As demonstrated in the table above, the proposed CMP storage system will provide detention for the area draining to Study Point #2 (the City's Combined Sewer) and the size of the area draining to Study Point #1 (Forest Avenue Storm Drain System) has been reduced such that the post-development peak runoff rates will not exceed pre-development peak runoff rates. Therefore, there will be no adverse effects, including flooding and erosion, to abutting properties as a result of the project.

APPENDIX A: STORMWATER INSPECTION & MAINTENANCE PLAN

STORMWATER INSPECTION & MAINTENANCE PLAN

USM Wishcamper Parking Lot, Portland, Maine

General inspection and maintenance during and after construction must take place in accordance with the requirements outlined in Appendix B of the Maine Department of Environmental Protection (MaineDEP) Chapter 500 Rules. Upon completion of the project, the Owner will assume responsibility for overseeing the property, including the inspection and maintenance of the Site's stormwater drainage system and treatment measures outlined herein. A person 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.

Inspection and maintenance activities will be performed per the attached checklist, schedule, StormFilter guidelines; an example page of the BMP Maintenance Log that shall be kept on-site is also attached.

Storm Drain System

Trash, debris, and sediment shall be removed from storm drain pipes and catch basins 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. Visual inspections will enable parking areas to be kept clean and clear through periodic sweeping and winter plowing as required. The inspections will also ensure pavement markings are repainted as needed to maintain proper traffic circulation and parking space delineation. Paved areas will be plowed and sanded as often as necessary to maintain public safety. Periodic sweeping of pavement will keep the parking areas clean and will reduce the amount of sediment available to enter the stormwater systems, in turn reducing the need to clean the stormwater systems.

Porous Pavement

Winter maintenance procedures may be problematic (e.g., scraping by plows, clogging by sand, clogging by or inability to treat de-icing chemicals). Snow removal and deicing activities should be done carefully to avoid disturbance to the pavement structure. The plow blade should be raised 1" above the surface or outfitted with a flexible rubber bottom piece. Porous pavement has the potential to become impervious if not properly maintained. Proper maintenance should consist of the following:

- Frequent inspections should be performed during the first few months following construction; the system should be inspected routinely on an annual basis thereafter. Inspections should be made after significant storm events to check for surface ponding that could indicate failure due to clogging. Non-routine maintenance may require reconstruction of the surface treatment, and possibly the filter and reservoir layers, to relieve major clogging.
- Prevent sedimentation due to the erosion of areas upgradient of the porous pavement.
- Prevent vehicles with muddy wheels from accessing the porous pavement.
- Sweep, vacuum and/or pressure wash pavement twice annually at a minimum.
- Limit salt use for deicing and do not use sand.
- Remove leaves and organic debris in the fall.
- Measures should be taken to ensure that an area designed to be porous does not receive a future overlay of conventional non-porous paving.

StormFilter System

The StormFilter system must be inspected at least once every six months, and the filters maintained annually per the manufacturer's guidelines, which are outlined in the attached guidance document.

STORMWATER INSPECTION CHECKLIST

Inspection by: _____

Date: _____

Stormwater Management Feature	Condition						Comments
Subsurface Detention System	no siltation		some siltation		heavily silted in		
Subsurface Detention System	no clogging/flooding		some clogging/flooding		heavy clogging/flooding		
Subsurface Detention System	outlet free of erosion		some erosion at outlet		outlet heavily eroded		
Subsurface Detention System	inlet/outlet clear		some debris		completely blocked		
StormFilter System*	Cartridges are in good condition		Cartridges in need of cleaning		Cartridges in need of replacement		
StormFilter System*	no clogging/flooding		some clogging/flooding		heavy clogging/flooding		
Porous Pavement	No sediment or debris accumulation		Some sediment or debris accumulation		Excessive sediment or debris accumulation		
Porous Pavement	Structure is in good condition.		Structure has small visible wear.		Structure has excessive visible wear.		

**See attached manufacturer's guidelines for StormFilter System maintenance and inspection.*

Recommended Actions: _____

Actions Completed: _____ Date: _____

STORMWATER MAINTENANCE TASKS & RECOMMENDED SCHEDULE

TASKS	DETENTION AND STORMFILTER SYSTEM	POROUS PAVEMENT	STORM DRAIN PIPES	SCHEDULE
Inspect for sediment & debris accumulation	X	X	X	Spring and Fall
Remove sediment & Debris accumulation	X	X	X	As needed
Inspect for erosion				As needed
Reestablish vegetation in erosion areas				Early spring
Inspect structural elements during wet weather and compare to as-built plans	X	X	X	Annually
Make adjustments or replacements as determined by wet weather observations	X	X	X	As needed
Keep records of all inspections and maintenance activities	X	X	X	Annually
Have a professional engineer perform emergency inspections upon identification of severe problems	X	X	X	As needed

StormFilter Inspection and Maintenance Procedures



Maintenance Guidelines

The primary purpose of the Stormwater Management StormFilter® is to filter and prevent pollutants from entering our waterways. Like any effective filtration system, periodically these pollutants must be removed to restore the StormFilter to its full efficiency and effectiveness.

Maintenance requirements and frequency are dependent on the pollutant load characteristics of each site. Maintenance activities may be required in the event of a chemical spill or due to excessive sediment loading from site erosion or extreme storms. It is a good practice to inspect the system after major storm events.

Maintenance Procedures

Although there are many effective maintenance options, we believe the following procedure to be efficient, using common equipment and existing maintenance protocols. The following two-step procedure is recommended::

1. Inspection

- Inspection of the vault interior to determine the need for maintenance.

2. Maintenance

- Cartridge replacement
- Sediment removal

Inspection and Maintenance Timing

At least one scheduled inspection should take place per year with maintenance following as warranted.

First, an inspection should be done before the winter season. During the inspection the need for maintenance should be determined and, if disposal during maintenance will be required, samples of the accumulated sediments and media should be obtained.

Second, if warranted, a maintenance (replacement of the filter cartridges and removal of accumulated sediments) should be performed during periods of dry weather.

In addition to these two activities, it is important to check the condition of the StormFilter unit after major storms for potential damage caused by high flows and for high sediment accumulation that may be caused by localized erosion in the drainage area. It may be necessary to adjust the inspection/maintenance schedule depending on the actual operating conditions encountered by the system. In general, inspection activities can be conducted at any time, and maintenance should occur, if warranted, during dryer months in late summer to early fall.

Maintenance Frequency

The primary factor for determining frequency of maintenance for the StormFilter is sediment loading.

A properly functioning system will remove solids from water by trapping particulates in the porous structure of the filter media inside the cartridges. The flow through the system will naturally decrease as more and more particulates are trapped. Eventually the flow through the cartridges will be low enough to require replacement. It may be possible to extend the usable span of the cartridges by removing sediment from upstream trapping devices on a routine as-needed basis, in order to prevent material from being re-suspended and discharged to the StormFilter treatment system.

The average maintenance lifecycle is approximately 1-5 years. Site conditions greatly influence maintenance requirements. StormFilter units located in areas with erosion or active construction may need to be inspected and maintained more often than those with fully stabilized surface conditions.

Regulatory requirements or a chemical spill can shift maintenance timing as well. The maintenance frequency may be adjusted as additional monitoring information becomes available during the inspection program. Areas that develop known problems should be inspected more frequently than areas that demonstrate no problems, particularly after major storms. Ultimately, inspection and maintenance activities should be scheduled based on the historic records and characteristics of an individual StormFilter system or site. It is recommended that the site owner develop a database to properly manage StormFilter inspection and maintenance programs..





Inspection Procedures

The primary goal of an inspection is to assess the condition of the cartridges relative to the level of visual sediment loading as it relates to decreased treatment capacity. It may be desirable to conduct this inspection during a storm to observe the relative flow through the filter cartridges. If the submerged cartridges are severely plugged, then typically large amounts of sediments will be present and very little flow will be discharged from the drainage pipes. If this is the case, then maintenance is warranted and the cartridges need to be replaced.

Warning: In the case of a spill, the worker should abort inspection activities until the proper guidance is obtained. Notify the local hazard control agency and Contech Engineered Solutions immediately.

To conduct an inspection:

Important: Inspection should be performed by a person who is familiar with the operation and configuration of the StormFilter treatment unit.

1. If applicable, set up safety equipment to protect and notify surrounding vehicle and pedestrian traffic.
2. Visually inspect the external condition of the unit and take notes concerning defects/problems.
3. Open the access portals to the vault and allow the system vent.
4. Without entering the vault, visually inspect the inside of the unit, and note accumulations of liquids and solids.
5. Be sure to record the level of sediment build-up on the floor of the vault, in the forebay, and on top of the cartridges. If flow is occurring, note the flow of water per drainage pipe. Record all observations. Digital pictures are valuable for historical documentation.
6. Close and fasten the access portals.
7. Remove safety equipment.
8. If appropriate, make notes about the local drainage area relative to ongoing construction, erosion problems, or high loading of other materials to the system.
9. Discuss conditions that suggest maintenance and make decision as to whether or not maintenance is needed.

Maintenance Decision Tree

The need for maintenance is typically based on results of the inspection. The following Maintenance Decision Tree should be used as a general guide. (Other factors, such as Regulatory Requirements, may need to be considered)

1. Sediment loading on the vault floor.
 - a. If $>4"$ of accumulated sediment, maintenance is required.
2. Sediment loading on top of the cartridge.
 - a. If $>1/4"$ of accumulation, maintenance is required.
3. Submerged cartridges.
 - a. If $>4"$ of static water above cartridge bottom for more than 24 hours after end of rain event, maintenance is required. (Catch basins have standing water in the cartridge bay.)
4. Plugged media.
 - a. If pore space between media granules is absent, maintenance is required.
5. Bypass condition.
 - a. If inspection is conducted during an average rain fall event and StormFilter remains in bypass condition (water over the internal outlet baffle wall or submerged cartridges), maintenance is required.
6. Hazardous material release.
 - a. If hazardous material release (automotive fluids or other) is reported, maintenance is required.
7. Pronounced scum line.
 - a. If pronounced scum line (say $\geq 1/4"$ thick) is present above top cap, maintenance is required.



Maintenance

Depending on the configuration of the particular system, maintenance personnel will be required to enter the vault to perform the maintenance.

Important: If vault entry is required, OSHA rules for confined space entry must be followed.

Filter cartridge replacement should occur during dry weather. It may be necessary to plug the filter inlet pipe if base flows is occurring.

Replacement cartridges can be delivered to the site or customers facility. Information concerning how to obtain the replacement cartridges is available from Contech Engineered Solutions.

Warning: In the case of a spill, the maintenance personnel should abort maintenance activities until the proper guidance is obtained. Notify the local hazard control agency and Contech Engineered Solutions immediately.

To conduct cartridge replacement and sediment removal maintenance:

1. If applicable, set up safety equipment to protect maintenance personnel and pedestrians from site hazards.
2. Visually inspect the external condition of the unit and take notes concerning defects/problems.
3. Open the doors (access portals) to the vault and allow the system to vent.
4. Without entering the vault, give the inside of the unit, including components, a general condition inspection.
5. Make notes about the external and internal condition of the vault. Give particular attention to recording the level of sediment build-up on the floor of the vault, in the forebay, and on top of the internal components.
6. Using appropriate equipment offload the replacement cartridges (up to 150 lbs. each) and set aside.
7. Remove used cartridges from the vault using one of the following methods:

Method 1:

- A. This activity will require that maintenance personnel enter the vault to remove the cartridges from the under drain manifold and place them under the vault opening for lifting (removal). Disconnect each filter cartridge from the underdrain connector by rotating counterclockwise 1/4 of a turn. Roll the loose cartridge, on edge, to a convenient spot beneath the vault access.

Using appropriate hoisting equipment, attach a cable from the boom, crane, or tripod to the loose cartridge. Contact Contech Engineered Solutions for suggested attachment devices.

- B. Remove the used cartridges (up to 250 lbs. each) from the vault.



Important: Care must be used to avoid damaging the cartridges during removal and installation. The cost of repairing components damaged during maintenance will be the responsibility of the owner.

- C. Set the used cartridge aside or load onto the hauling truck.
- D. Continue steps a through c until all cartridges have been removed.

Method 2:

- A. This activity will require that maintenance personnel enter the vault to remove the cartridges from the under drain manifold and place them under the vault opening for lifting (removal). Disconnect each filter cartridge from the underdrain connector by rotating counterclockwise 1/4 of a turn. Roll the loose cartridge, on edge, to a convenient spot beneath the vault access.
- B. Unscrew the cartridge cap.
- C. Remove the cartridge hood and float.
- D. At location under structure access, tip the cartridge on its side.
- E. Empty the cartridge onto the vault floor. Reassemble the empty cartridge.
- F. Set the empty, used cartridge aside or load onto the hauling truck.
- G. Continue steps a through e until all cartridges have been removed.

8. Remove accumulated sediment from the floor of the vault and from the forebay. This can most effectively be accomplished by use of a vacuum truck.
9. Once the sediments are removed, assess the condition of the vault and the condition of the connectors.
10. Using the vacuum truck boom, crane, or tripod, lower and install the new cartridges. Once again, take care not to damage connections.
11. Close and fasten the door.
12. Remove safety equipment.
13. Finally, dispose of the accumulated materials in accordance with applicable regulations. Make arrangements to return the used **empty** cartridges to Contech Engineered Solutions.

Related Maintenance Activities - Performed on an as-needed basis

StormFilter units are often just one of many structures in a more comprehensive stormwater drainage and treatment system.

In order for maintenance of the StormFilter to be successful, it is imperative that all other components be properly maintained. The maintenance/repair of upstream facilities should be carried out prior to StormFilter maintenance activities.

In addition to considering upstream facilities, it is also important to correct any problems identified in the drainage area. Drainage area concerns may include: erosion problems, heavy oil loading, and discharges of inappropriate materials.

Material Disposal

The accumulated sediment found in stormwater treatment and conveyance systems must be handled and disposed of in accordance with regulatory protocols. It is possible for sediments to contain measurable concentrations of heavy metals and organic chemicals (such as pesticides and petroleum products). Areas with the greatest potential for high pollutant loading include industrial areas and heavily traveled roads.

Sediments and water must be disposed of in accordance with all applicable waste disposal regulations. When scheduling maintenance, consideration must be made for the disposal of solid and liquid wastes. This typically requires coordination with a local landfill for solid waste disposal. For liquid waste disposal a number of options are available including a municipal vacuum truck decant facility, local waste water treatment plant or on-site treatment and discharge.



Inspection Report

Date: Personnel:

Location: _____ System Size: _____

System Type: Vault ☐ Cast-In-Place ☐ Linear Catch Basin ☐ Manhole ☐ Other ☐

Sediment Thickness in Forebay: _____ Date: _____

Sediment Depth on Vault Floor: _____

Structural Damage: _____

Estimated Flow from Drainage Pipes (if available): _____

Cartridges Submerged: Yes ☐ No ☐ Depth of Standing Water: _____

StormFilter Maintenance Activities (check off if done and give description)

☐ Trash and Debris Removal: _____

☐ Minor Structural Repairs: _____

☐ Drainage Area Report _____

Excessive Oil Loading: Yes ☐ No ☐ Source: _____

Sediment Accumulation on Pavement: Yes ☐ No ☐ Source: _____

Erosion of Landscaped Areas: Yes ☐ No ☐ Source: _____

Items Needing Further Work: _____

Owners should contact the local public works department and inquire about how the department disposes of their street waste residuals.

Other Comments:

Review the condition reports from the previous inspection visits.

StormFilter Maintenance Report

Date: _____ Personnel: _____

Location: _____ System Size: _____

System Type: Vault ☐ Cast-In-Place ☐ Linear Catch Basin ☐ Manhole ☐ Other ☐

List Safety Procedures and Equipment Used: _____

System Observations

Months in Service: _____

Oil in Forebay (if present): Yes ☐ No ☐

Sediment Depth in Forebay (if present): _____

Sediment Depth on Vault Floor: _____

Structural Damage: _____

Drainage Area Report

Excessive Oil Loading: Yes ☐ No ☐ Source: _____

Sediment Accumulation on Pavement: Yes ☐ No ☐ Source: _____

Erosion of Landscaped Areas: Yes ☐ No ☐ Source: _____

StormFilter Cartridge Replacement Maintenance Activities

Remove Trash and Debris: Yes ☐ No ☐ Details: _____

Replace Cartridges: Yes ☐ No ☐ Details: _____

Sediment Removed: Yes ☐ No ☐ Details: _____

Quantity of Sediment Removed (estimate?): _____

Minor Structural Repairs: Yes ☐ No ☐ Details: _____

Residuals (debris, sediment) Disposal Methods: _____

Notes:



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Support

- Drawings and specifications are available at www.conteches.com.
- Site-specific design support is available from our engineers.

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Stormwater BMP Maintenance Log

BMP Structure	Inspector (Name)	Work Performed	Date Performed	Comments
Pavement Sweeping				
Porous Pavement				
Catch Basins				
CMP System				
StormFilter System				
Other				
Additional Comments:				

APPENDIX B: STORMWATER QUALITY CALCULATIONS

Redevelopment Treatment Calculations - Per Section 4.C.2.d of the MaineDEP Chapter 500 Rules

Area of Redevelopment (acres) = 1.45

a. Existing Pollutant Impact

Land Use	Pollutant Ranking	Land Area (Ac.)	Impact
High Use Roads	5	0.00	0.00
Medium Use Roads/Parking Lot	4	0.64	2.56
Other Parking Lots/Flat Asphalt Roofs/Industrial Roofs	3	0.00	0.00
Other Roofs/Landscaped Area/Paved Walkway	2	0.79	1.58
Non-grass Landscaping/Stormwater	1	0.02	0.02
Forest/Meadow	0	0.00	0.00
Sum:		1.45	4.15

b. Proposed Pollutant Impact

Land Use	Pollutant Ranking	Land Area (Ac.)	Impact
High Use Roads	5	0.00	0.00
Medium Use Roads/Parking Lot	4	1.20	4.80
Other Parking Lots/Flat Asphalt Roofs/Industrial Roofs	3	0.00	0.00
Other Roofs/Landscaped Area/Paved Walkway	2	0.19	0.38
Non-grass Landscaping/Stormwater	1	0.06	0.06
Forest/Meadow	0	0.00	0.00
Sum:		1.45	5.24

c. Existing Impact/Total Redevelopment Acres

2.9

d. Proposed Impact/Total Redevelopment Acres

3.6

e. Item D Minus Item C

0.7

Treatment Requirements - Per Table 3 of the MaineDEP Chapter 500 Rules

Treatment Required (%) = 60%
Treatment Required (SF) = 37,897

Treatment Design Calculations

Porous Pavement:

Treated Area = 2614 SF
WQV (required) = 1" x Treated Area = 218 CF
WQV (provided)* = 348 CF

*Assumes 4" deep reservoir w/40% porosity

StormFilter System:

Treated Area = 35284 SF
WQV (required) = 1" x Treated Area = 2940 CF
WQV (provided)* = 2959 CF

*Refer to Contech Design Review Letter for information on the sizing and design of the StormFilter Treatment System.

Ashley Fletcher
Woodard & Curran
41 Hutchins Drive
Portland, ME 04102

December 3, 2020

RE: University of Southern Maine Wishcamper Parking Lot (Contech Reference No. 609,235)
Review of StormFilter Design

To whom it may concern,

The purpose of this letter is to document Contech Engineered Solutions review of the plans and the proposed application of the StormFilter Media Filtration System water quality unit for the USM Wishcamper Parking Lot site in Portland, ME.

Contech Engineered Solutions (Contech) has reviewed the StormFilter (SF) design for this project. We believe the SF configuration to be an appropriate water quality solution for this site.

The SF system with Zeolite-Phosphosorb (Zeo-Psorb) cartridges is approved for use by MEDEP meeting the General Standard of the Stormwater rules (Chapter 500) if designed, installed, and maintained in accordance with the provisions noted in the March 13, 2015 approval letter from the MEDEP.

The SF system is designed in accordance with the maximum drain down rate of 0.27 gallons per minute per square foot of filter surface area (3 gpm per 27" cartridge). Additionally, the SF is designed with an upstream sumped water quality volume (WQv) detention system to retain, route and treat the entire WQ event flow from the contributing drainage area to the treatment unit. The resultant volume from the WQ event storm is detained in the upstream detention to an elevation below any bypass flow paths resulting in a routed storm event volume through the SF cartridges with a required emptying time of 24 to 48 hours. Due to the extended detention time upstream of the SF in the sumped WQv detention system, Contech assumes sedimentation of the larger solids at an estimated 50 percent reduction of the total suspended solids prior to the treatment by the SF.

The engineer of record provided a WQv of 2,940 cf and a drainage area of 1.20 ac, of which 1.02 ac is impervious. In order to adequately treat the runoff from this area, Contech recommends a SF manhole SFMH72 with six (6) – 27" Zeo-Psorb cartridges.

The SF system requires a hydraulic headwater condition to fully immerse the media and activate the cartridge float valve. For 27" SF cartridges, this headwater condition is 3.05 ft above SF outlet invert. This is achieved by the either physical inlet to outlet pipe elevation drop or an upstream WQ detention filling during the WQ storm flow to the required SF float valve activation elevation.

The site detention system storage is designed to store the WQv and flood control volume separately. The two parts of the detention system are separated by a weir to ensure that the WQv is captured for treatment prior to overflowing into the flood control detention. The WQv shall be stored in a 66" diameter corrugated metal pipe (CMP) with a 6" sump depth. The treatment flow outlet pipe stub is positioned 6" above the 66" CMP WQv detention invert.

The WQv is routed through the SF vault and is designed to drain down between hours 8 and 38 after the beginning of the storm resulting in a cumulative treated volume of 2,959 cf.

The weir plate between the WQv and the Flood Control Detention CMP with high overflow weir is positioned to allow storms larger than the WQ storm to overflow into the flood control detention. The flood control detention is a 72" diameter CMP system with an internal flow control wall to control outlet flows to a downstream structure.

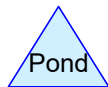
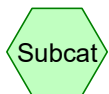
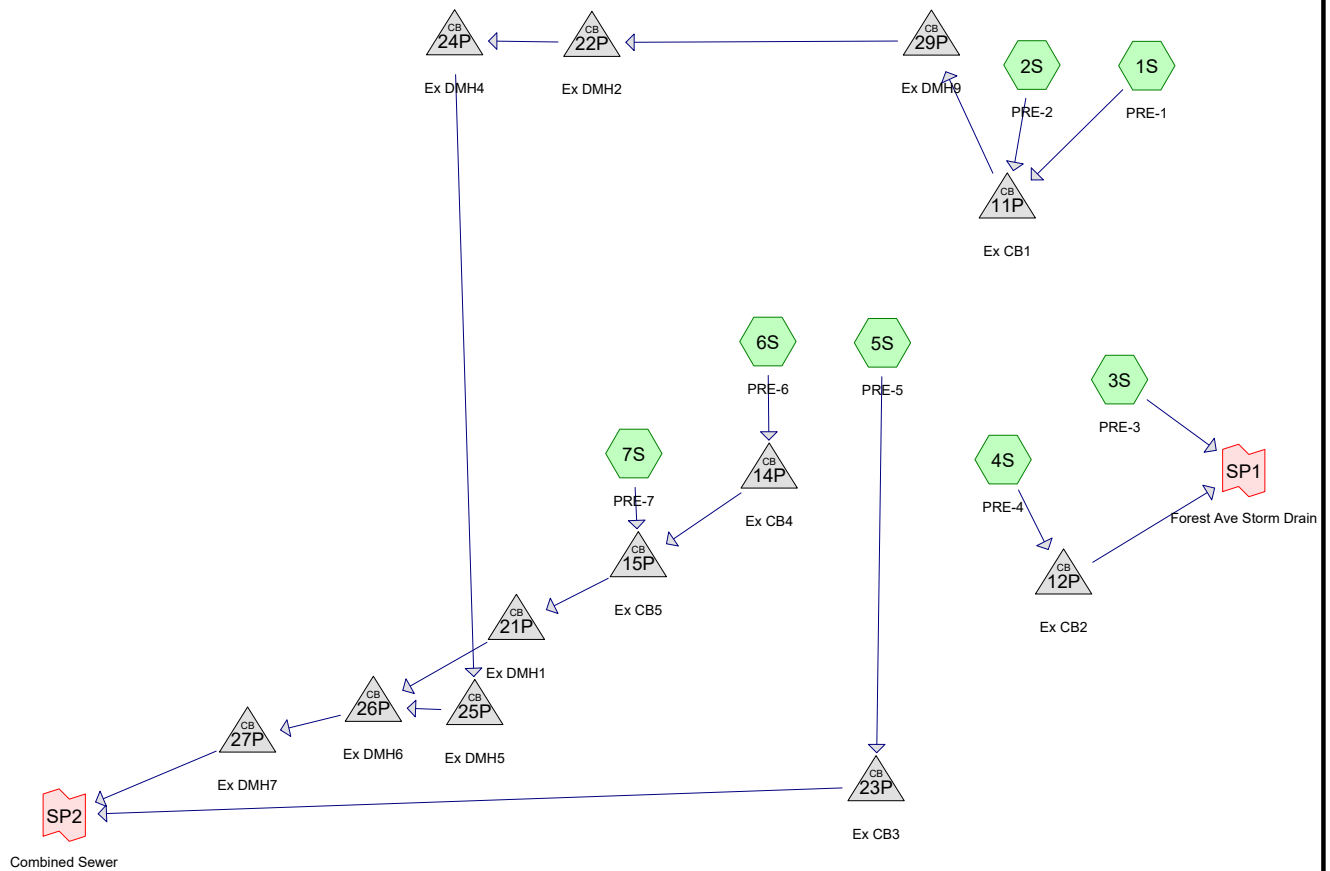
Our systems require periodic maintenance to continue operating properly. Given typical runoff pollutant loading rates, Contech recommends maintenance inspections on an annual basis.

This system is expected to operate in accordance with Contech's design intent. Please feel free to contact me if you have any questions or concerns.

Sincerely,

David Adams, PE
Contech Engineered Solutions, LLC.
(207) 885-6191
dadams@conteches.com

APPENDIX C: HYDROCAD REPORTS



Routing Diagram for C1. Pre

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C1. Pre

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PRE
Type III 24-hr 1" Storm Event Rainfall=1.00"

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Page 2

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: PRE-1	Runoff Area=8,487 sf 61.42% Impervious Runoff Depth>0.08" Tc=6.0 min CN=80 Runoff=0.0 cfs 0.001 af
Subcatchment2S: PRE-2	Runoff Area=14,855 sf 50.48% Impervious Runoff Depth>0.05" Tc=6.0 min CN=77 Runoff=0.0 cfs 0.001 af
Subcatchment3S: PRE-3	Runoff Area=19,668 sf 51.10% Impervious Runoff Depth>0.10" Tc=6.0 min CN=81 Runoff=0.0 cfs 0.004 af
Subcatchment4S: PRE-4	Runoff Area=11,760 sf 19.74% Impervious Runoff Depth>0.00" Tc=6.0 min CN=69 Runoff=0.0 cfs 0.000 af
Subcatchment5S: PRE-5	Runoff Area=27,546 sf 57.26% Impervious Runoff Depth>0.06" Tc=6.0 min CN=78 Runoff=0.0 cfs 0.003 af
Subcatchment6S: PRE-6	Runoff Area=16,352 sf 71.97% Impervious Runoff Depth>0.11" Tc=6.0 min CN=82 Runoff=0.0 cfs 0.004 af
Subcatchment7S: PRE-7	Runoff Area=13,974 sf 73.24% Impervious Runoff Depth>0.11" Tc=6.0 min CN=82 Runoff=0.0 cfs 0.003 af
Pond 11P: Ex CB1	Peak Elev=18.52' Inflow=0.0 cfs 0.003 af 12.0" Round Culvert n=0.010 L=41.0' S=0.0224 '/ Outflow=0.0 cfs 0.003 af
Pond 12P: Ex CB2	Peak Elev=18.15' Inflow=0.0 cfs 0.000 af 8.0" Round Culvert n=0.010 L=159.0' S=0.0158 '/ Outflow=0.0 cfs 0.000 af
Pond 14P: Ex CB4	Peak Elev=15.99' Inflow=0.0 cfs 0.004 af 12.0" Round Culvert n=0.010 L=63.0' S=0.0195 '/ Outflow=0.0 cfs 0.004 af
Pond 15P: Ex CB5	Peak Elev=14.90' Inflow=0.0 cfs 0.007 af 18.0" Round Culvert n=0.010 L=38.0' S=-0.0026 '/ Outflow=0.0 cfs 0.007 af
Pond 21P: Ex DMH1	Peak Elev=14.72' Inflow=0.0 cfs 0.007 af 18.0" Round Culvert n=0.010 L=12.0' S=0.0200 '/ Outflow=0.0 cfs 0.007 af
Pond 22P: Ex DMH2	Peak Elev=17.18' Inflow=0.0 cfs 0.003 af 18.0" Round Culvert n=0.010 L=98.0' S=0.0023 '/ Outflow=0.0 cfs 0.003 af
Pond 23P: Ex CB3	Peak Elev=14.11' Inflow=0.0 cfs 0.003 af 24.0" Round Culvert n=0.013 L=252.0' S=0.0044 '/ Outflow=0.0 cfs 0.003 af
Pond 24P: Ex DMH4	Peak Elev=16.81' Inflow=0.0 cfs 0.003 af 18.0" Round Culvert n=0.010 L=198.0' S=0.0019 '/ Outflow=0.0 cfs 0.003 af
Pond 25P: Ex DMH5	Peak Elev=15.49' Inflow=0.0 cfs 0.003 af 18.0" Round Culvert n=0.010 L=9.0' S=0.0133 '/ Outflow=0.0 cfs 0.003 af

C1. Pre

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Pond 26P: Ex DMH6Peak Elev=14.41' Inflow=0.1 cfs 0.009 af
18.0" Round Culvert n=0.010 L=66.0' S=0.0080 '/ Outflow=0.1 cfs 0.009 af**Pond 27P: Ex DMH7**Peak Elev=13.84' Inflow=0.1 cfs 0.009 af
18.0" Round Culvert n=0.010 L=42.0' S=0.0014 '/ Outflow=0.1 cfs 0.009 af**Pond 29P: Ex DMH9**Peak Elev=17.52' Inflow=0.0 cfs 0.003 af
18.0" Round Culvert n=0.010 L=152.0' S=0.0019 '/ Outflow=0.0 cfs 0.003 af**Link SP1: Forest Ave Storm Drain**Inflow=0.0 cfs 0.004 af
Primary=0.0 cfs 0.004 af**Link SP2: Combined Sewer**Inflow=0.1 cfs 0.012 af
Primary=0.1 cfs 0.012 af**Total Runoff Area = 2.59 ac Runoff Volume = 0.016 af Average Runoff Depth = 0.07"**
44.19% Pervious = 1.14 ac 55.81% Impervious = 1.44 ac

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Summary for Subcatchment 1S: PRE-1

Runoff = 0.0 cfs @ 12.32 hrs, Volume= 0.001 af, Depth> 0.08"

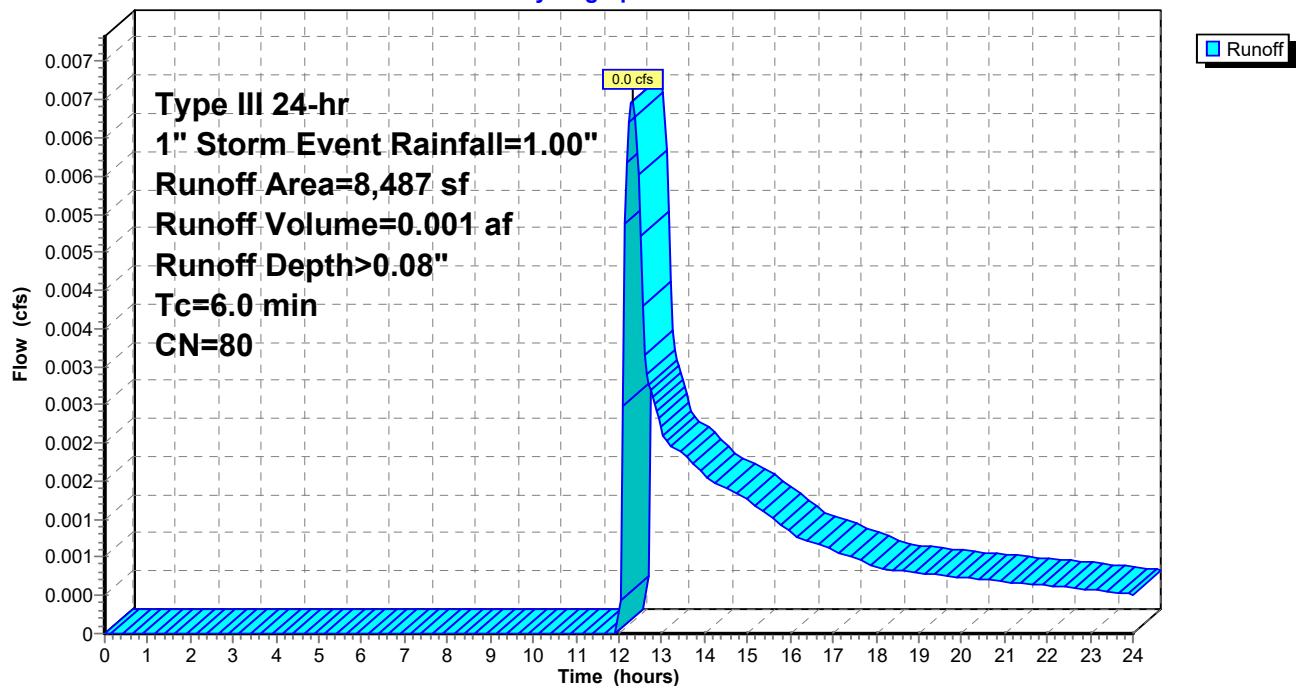
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
5,213	98	Paved parking, HSG A
1,900	39	Grass cover, Good, HSG A
* 1,374	68	Grass cover (parking area), HSG A
8,487	80	Weighted Average
3,274		38.58% Pervious Area
5,213		61.42% Impervious Area

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

Subcatchment 1S: PRE-1

Hydrograph



C1. Pre

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PRE
Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Subcatchment 2S: PRE-2

Runoff = 0.0 cfs @ 12.44 hrs, Volume= 0.001 af, Depth> 0.05"

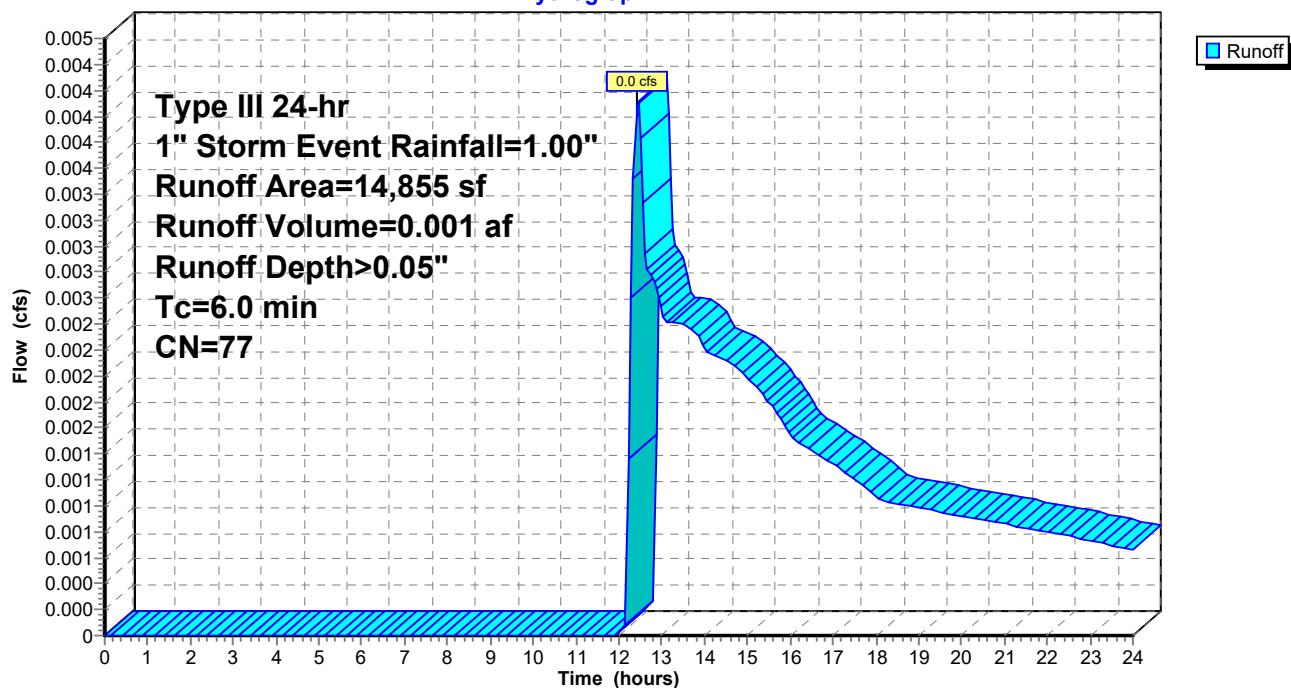
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
7,499	98	Paved parking, HSG A
2,948	39	Grass cover, Good, HSG A
4,408	68	Grass cover (parking area), HSG A
14,855	77	Weighted Average
7,356		49.52% Pervious Area
7,499		50.48% Impervious Area

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

Subcatchment 2S: PRE-2

Hydrograph



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PRE
Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Subcatchment 3S: PRE-3

Runoff = 0.0 cfs @ 12.27 hrs, Volume= 0.004 af, Depth> 0.10"

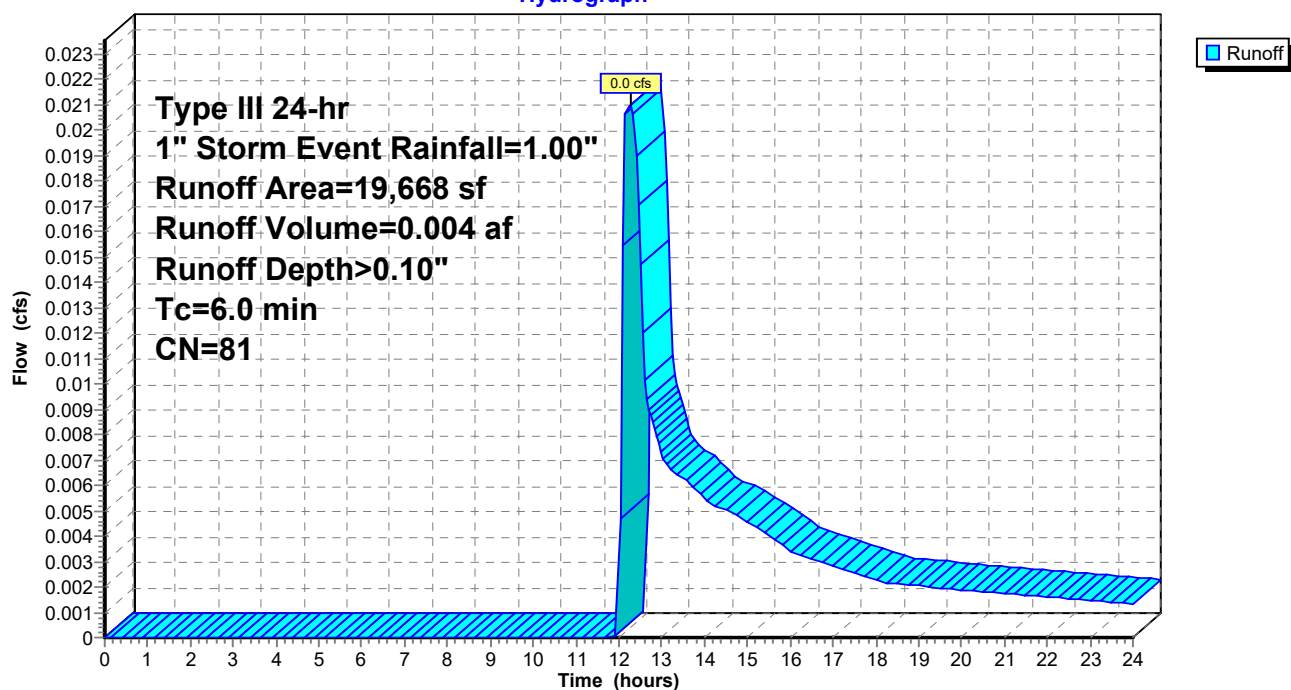
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
10,050	98	Paved parking, HSG A
1,903	39	Grass cover, Good, HSG A
7,715	68	Grass cover (parking area), HSG A
19,668	81	Weighted Average
9,618		48.90% Pervious Area
10,050		51.10% Impervious Area

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

Subcatchment 3S: PRE-3

Hydrograph



Summary for Subcatchment 4S: PRE-4

Runoff = 0.0 cfs @ 22.64 hrs, Volume= 0.000 af, Depth> 0.00"

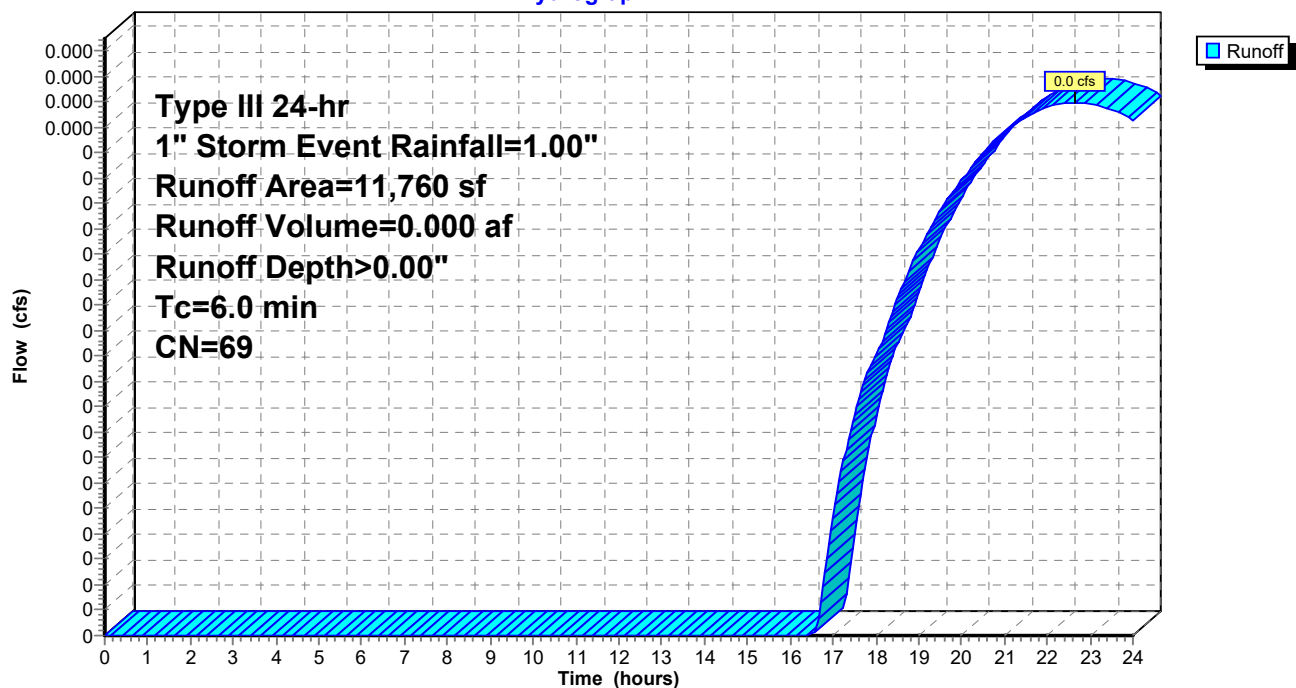
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
2,321	98	Paved parking, HSG A
1,957	39	Grass cover, Good, HSG A
7,482	68	Grass cover (parking area), HSG A
11,760	69	Weighted Average
9,439		80.26% Pervious Area
2,321		19.74% Impervious Area

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

Subcatchment 4S: PRE-4

Hydrograph



C1. Pre

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PRE
Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Subcatchment 5S: PRE-5

Runoff = 0.0 cfs @ 12.39 hrs, Volume= 0.003 af, Depth> 0.06"

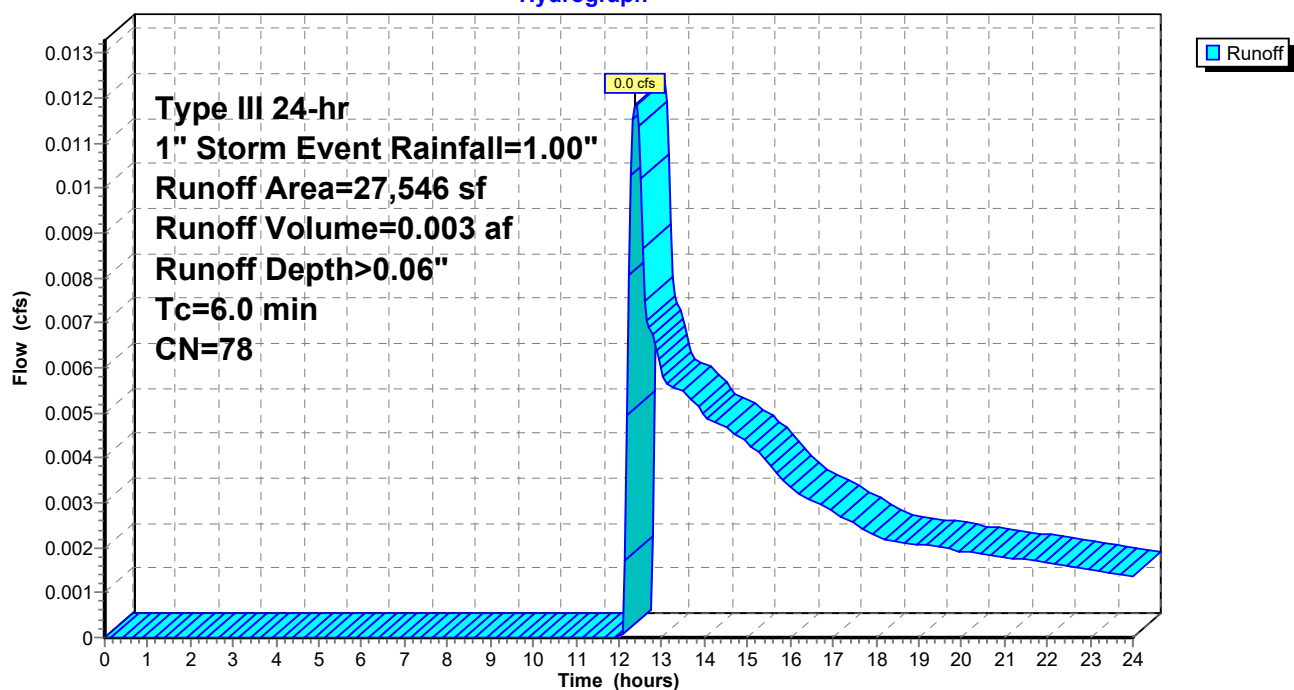
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
15,774	98	Paved parking, HSG A
6,700	39	Grass cover, Good, HSG A
5,072	68	Grass cover (parking area), HSG A
27,546	78	Weighted Average
11,772		42.74% Pervious Area
15,774		57.26% Impervious Area

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

Subcatchment 5S: PRE-5

Hydrograph



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PRE
Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Subcatchment 6S: PRE-6

Runoff = 0.0 cfs @ 12.16 hrs, Volume= 0.004 af, Depth> 0.11"

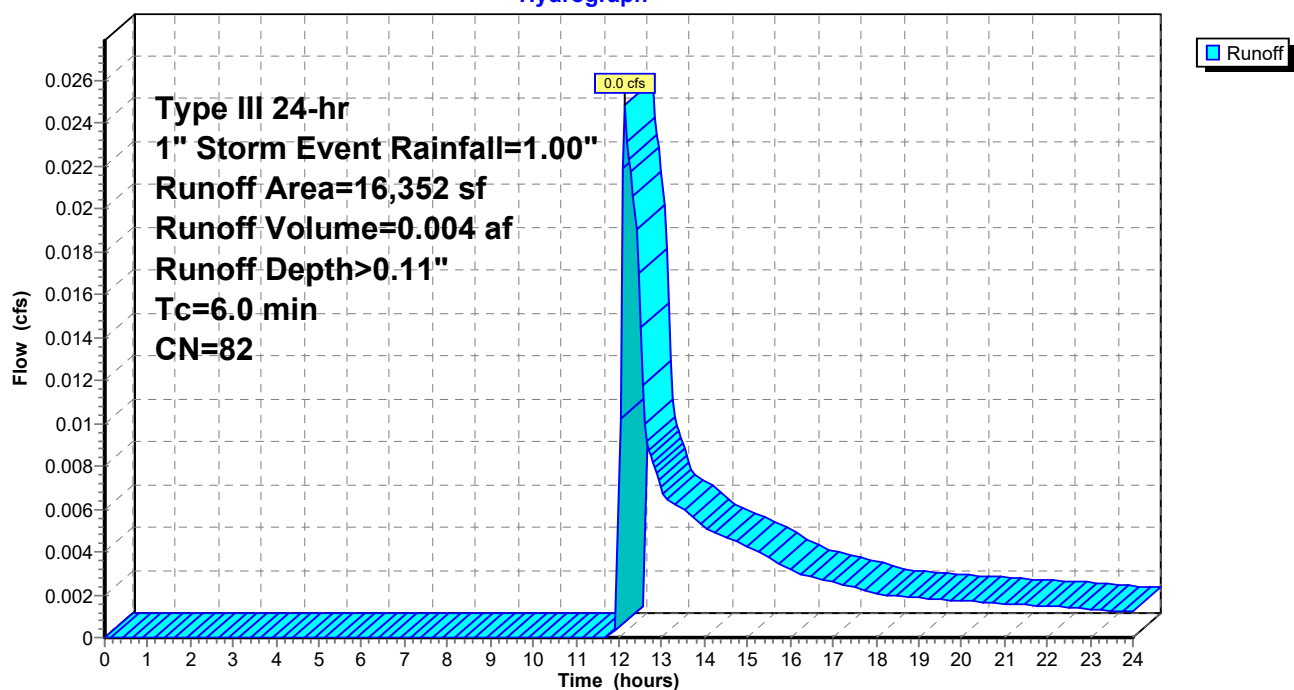
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
11,768	98	Paved parking, HSG A
3,865	39	Grass cover, Good, HSG A
* 719	40	Porous Pavement
16,352	82	Weighted Average
4,584		28.03% Pervious Area
11,768		71.97% Impervious Area

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

Subcatchment 6S: PRE-6

Hydrograph



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Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Subcatchment 7S: PRE-7

Runoff = 0.0 cfs @ 12.16 hrs, Volume= 0.003 af, Depth> 0.11"

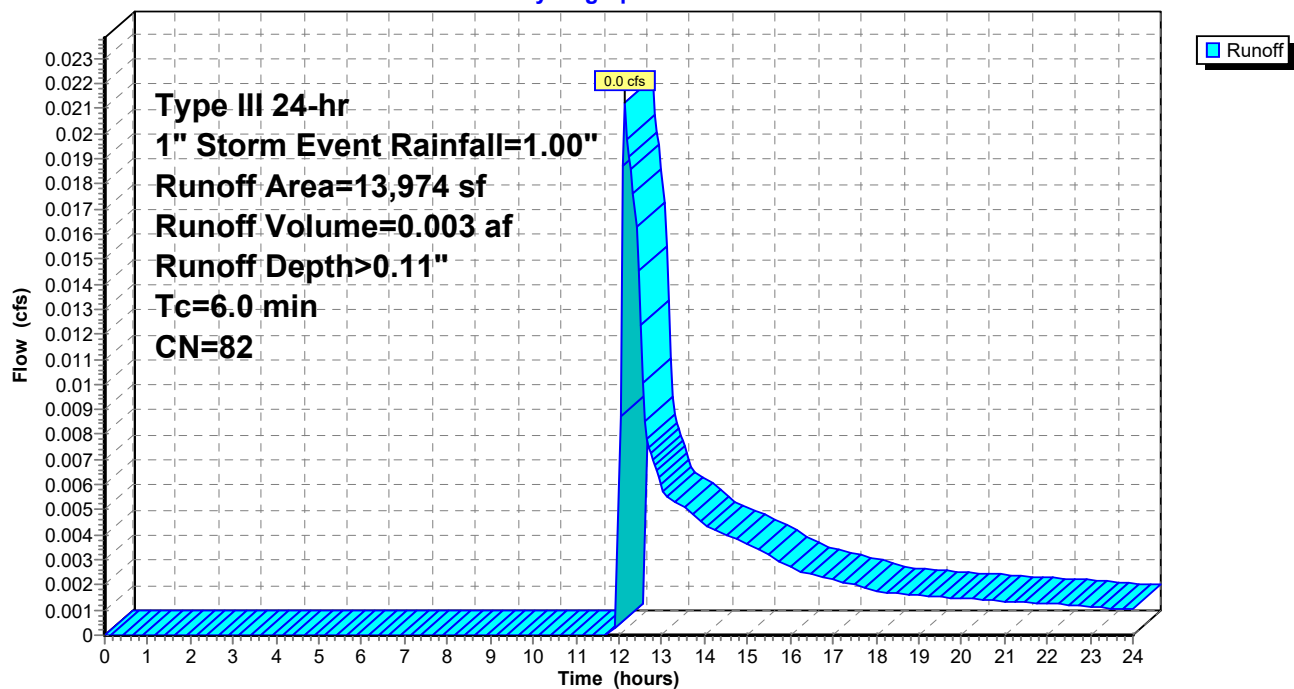
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
10,235	98	Paved parking, HSG A
3,739	39	Grass cover, Good, HSG A
13,974	82	Weighted Average
3,739		26.76% Pervious Area
10,235		73.24% Impervious Area

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

Subcatchment 7S: PRE-7

Hydrograph



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Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Pond 11P: Ex CB1

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 0.06" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.39 hrs, Volume= 0.003 af
Outflow = 0.0 cfs @ 12.39 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.39 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 18.52' @ 12.39 hrs

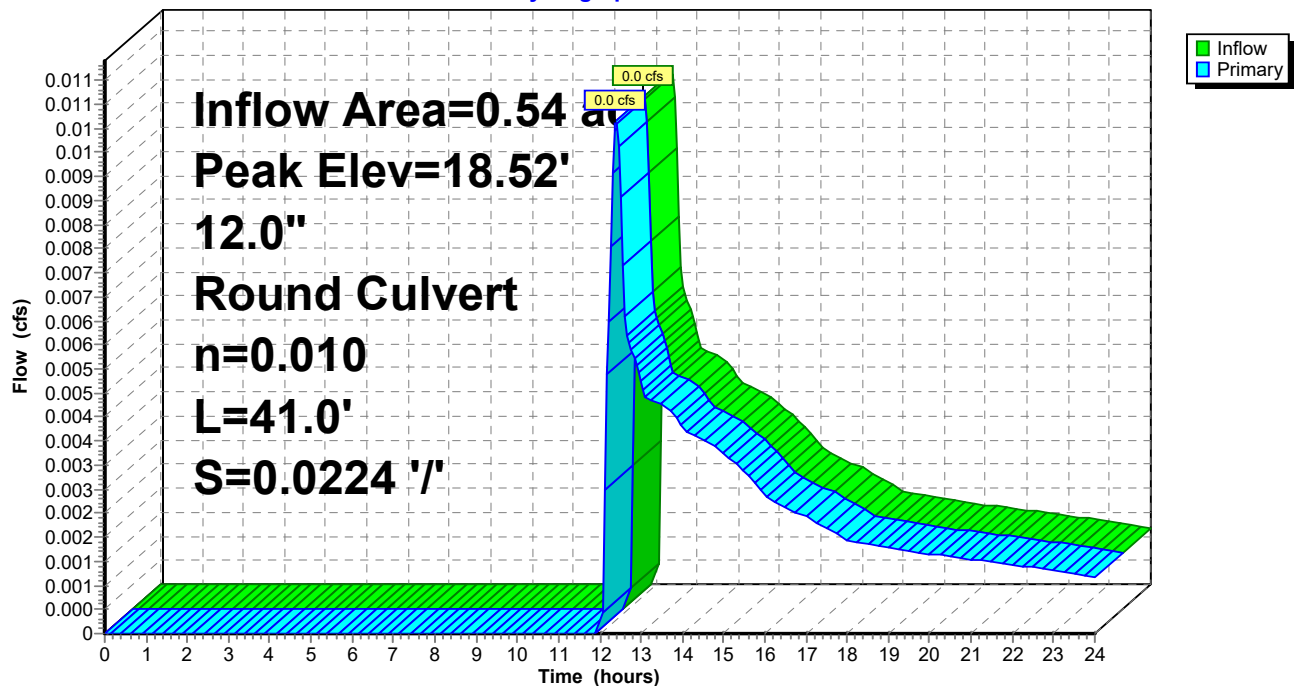
Flood Elev= 22.02'

Device	Routing	Invert	Outlet Devices
#1	Primary	18.47'	12.0" Round Culvert L= 41.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.47' / 17.55' S= 0.0224 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.0 cfs @ 12.39 hrs HW=18.52' TW=17.52' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 0.0 cfs @ 0.63 fps)

Pond 11P: Ex CB1

Hydrograph



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Summary for Pond 12P: Ex CB2

Inflow Area = 0.27 ac, 19.74% Impervious, Inflow Depth > 0.00" for 1" Storm Event event
Inflow = 0.0 cfs @ 22.64 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 22.65 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.3 min
Primary = 0.0 cfs @ 22.65 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 18.15' @ 22.65 hrs

Flood Elev= 22.15'

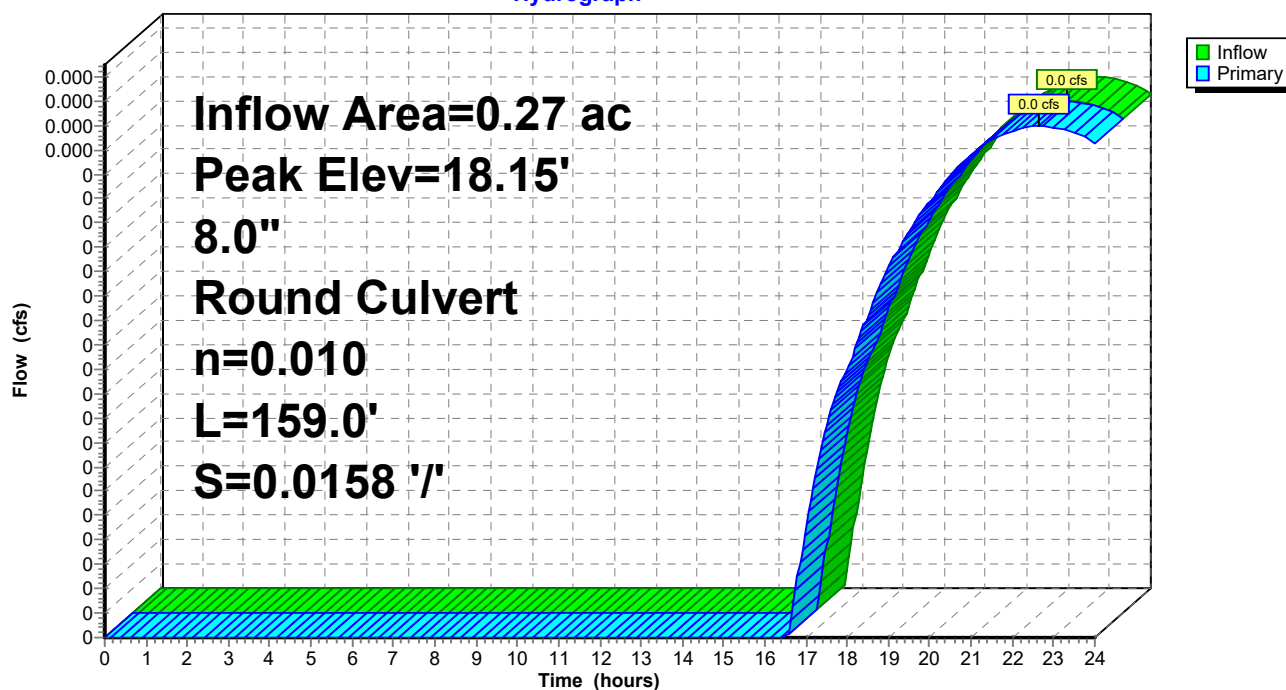
Device	Routing	Invert	Outlet Devices
#1	Primary	18.14'	8.0" Round Culvert L= 159.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.14' / 15.62' S= 0.0158 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.0 cfs @ 22.65 hrs HW=18.15' TW=0.00' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 0.0 cfs @ 0.21 fps)

Pond 12P: Ex CB2

Hydrograph



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Summary for Pond 14P: Ex CB4

Inflow Area = 0.38 ac, 71.97% Impervious, Inflow Depth > 0.11" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.16 hrs, Volume= 0.004 af
Outflow = 0.0 cfs @ 12.16 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.16 hrs, Volume= 0.004 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.99' @ 12.16 hrs

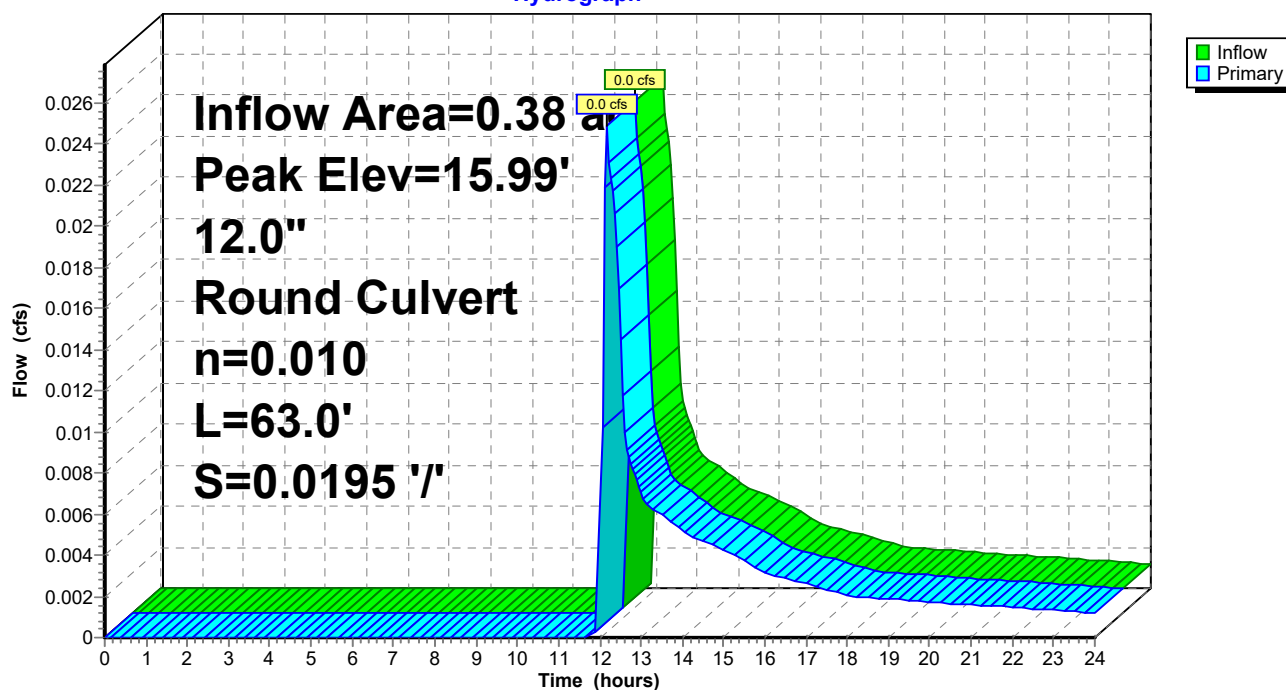
Flood Elev= 21.96'

Device	Routing	Invert	Outlet Devices
#1	Primary	15.91'	12.0" Round Culvert L= 63.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.91' / 14.68' S= 0.0195 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.0 cfs @ 12.16 hrs HW=15.99' TW=14.90' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 0.0 cfs @ 0.78 fps)

Pond 14P: Ex CB4

Hydrograph



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Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Pond 15P: Ex CB5

Inflow Area = 0.70 ac, 72.55% Impervious, Inflow Depth > 0.11" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.16 hrs, Volume= 0.007 af
Outflow = 0.0 cfs @ 12.16 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.16 hrs, Volume= 0.007 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 14.90' @ 12.16 hrs

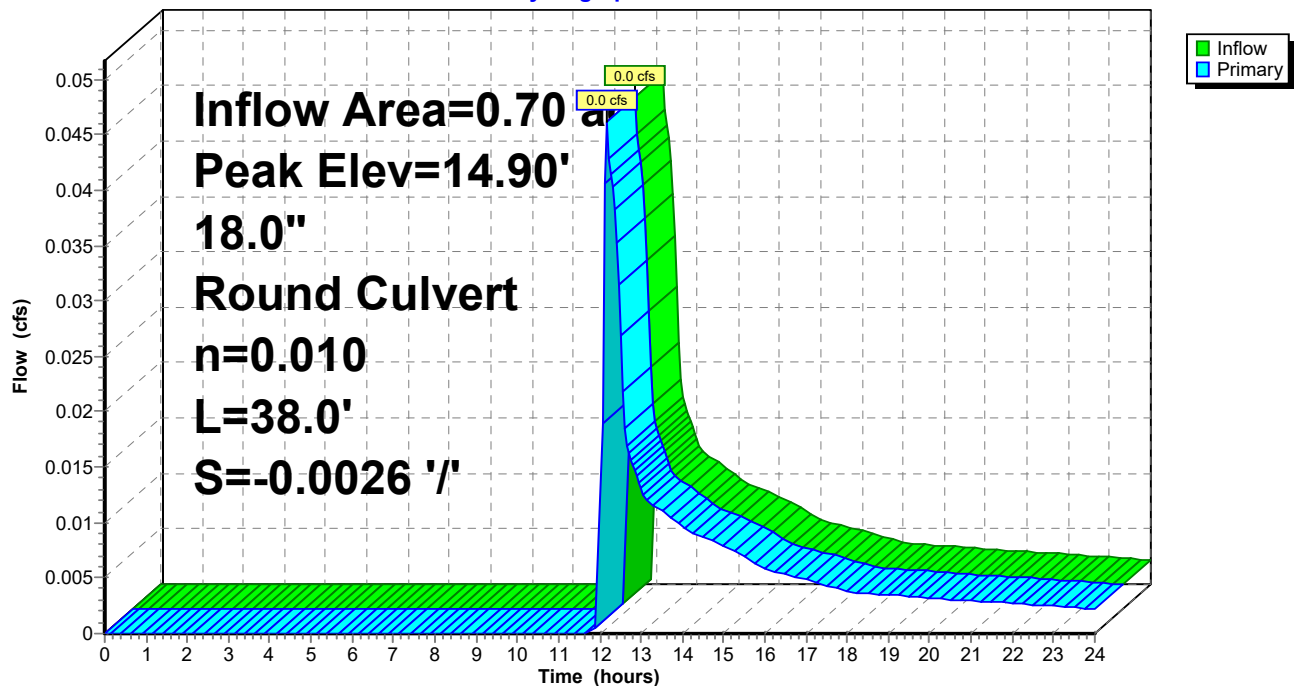
Flood Elev= 22.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	14.80'	18.0" Round Culvert L= 38.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.70' / 14.80' S= -0.0026 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.16 hrs HW=14.90' TW=14.72' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 0.0 cfs @ 0.86 fps)

Pond 15P: Ex CB5

Hydrograph



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Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Pond 21P: Ex DMH1

Inflow Area = 0.70 ac, 72.55% Impervious, Inflow Depth > 0.11" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.16 hrs, Volume= 0.007 af
Outflow = 0.0 cfs @ 12.16 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.16 hrs, Volume= 0.007 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 14.72' @ 12.16 hrs

Flood Elev= 23.72'

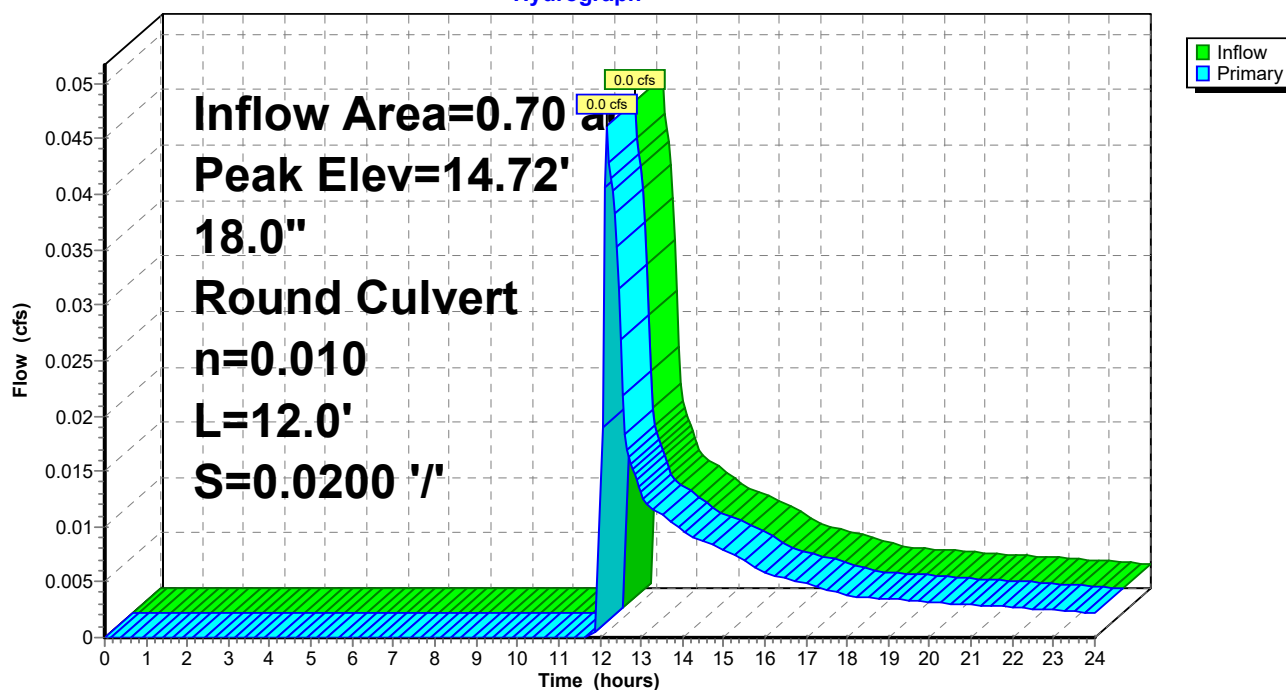
Device	Routing	Invert	Outlet Devices
#1	Primary	14.62'	18.0" Round Culvert L= 12.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.62' / 14.38' S= 0.0200 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.16 hrs HW=14.72' TW=14.41' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 0.0 cfs @ 0.86 fps)

Pond 21P: Ex DMH1

Hydrograph



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Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Pond 22P: Ex DMH2

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 0.06" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.39 hrs, Volume= 0.003 af
Outflow = 0.0 cfs @ 12.39 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.39 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

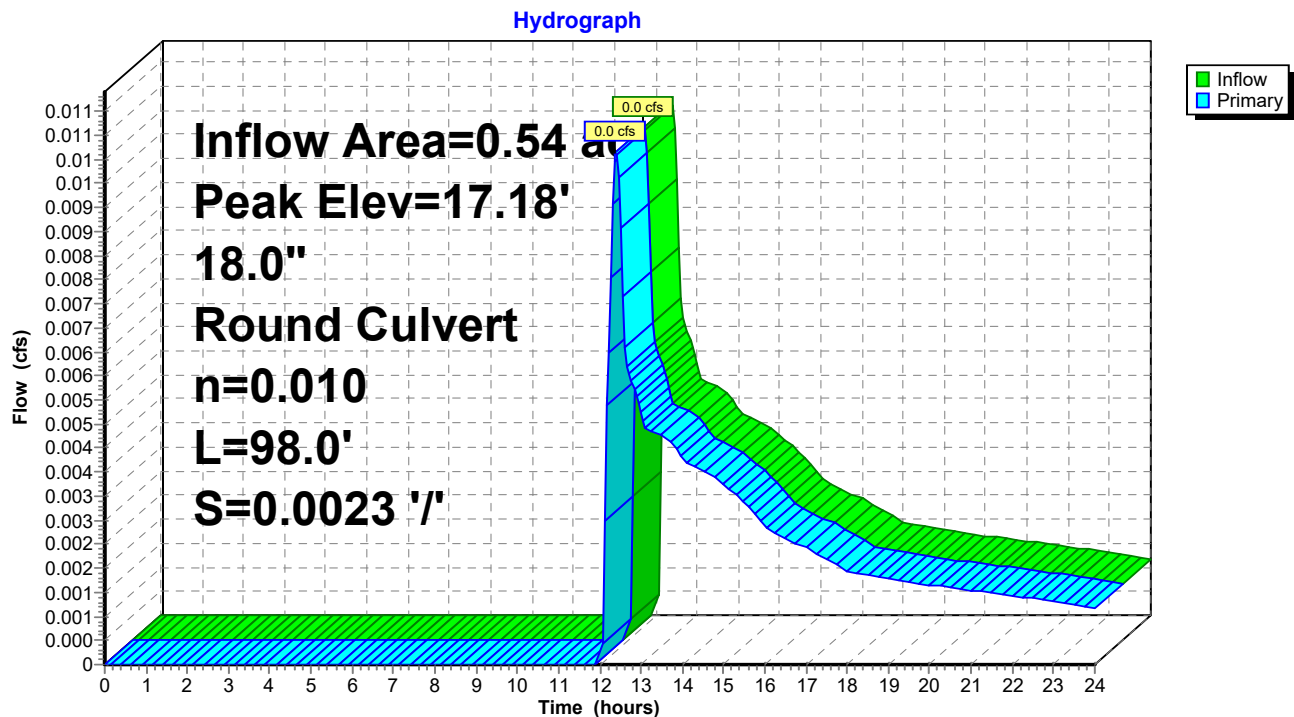
Peak Elev= 17.18' @ 12.39 hrs

Flood Elev= 24.92'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.12'	18.0" Round Culvert L= 98.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.12' / 16.89' S= 0.0023 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.39 hrs HW=17.18' TW=16.81' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 0.0 cfs @ 0.69 fps)

Pond 22P: Ex DMH2



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Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Pond 23P: Ex CB3

Inflow Area = 0.63 ac, 57.26% Impervious, Inflow Depth > 0.06" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.39 hrs, Volume= 0.003 af
Outflow = 0.0 cfs @ 12.40 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.40 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 14.11' @ 12.39 hrs

Flood Elev= 23.60'

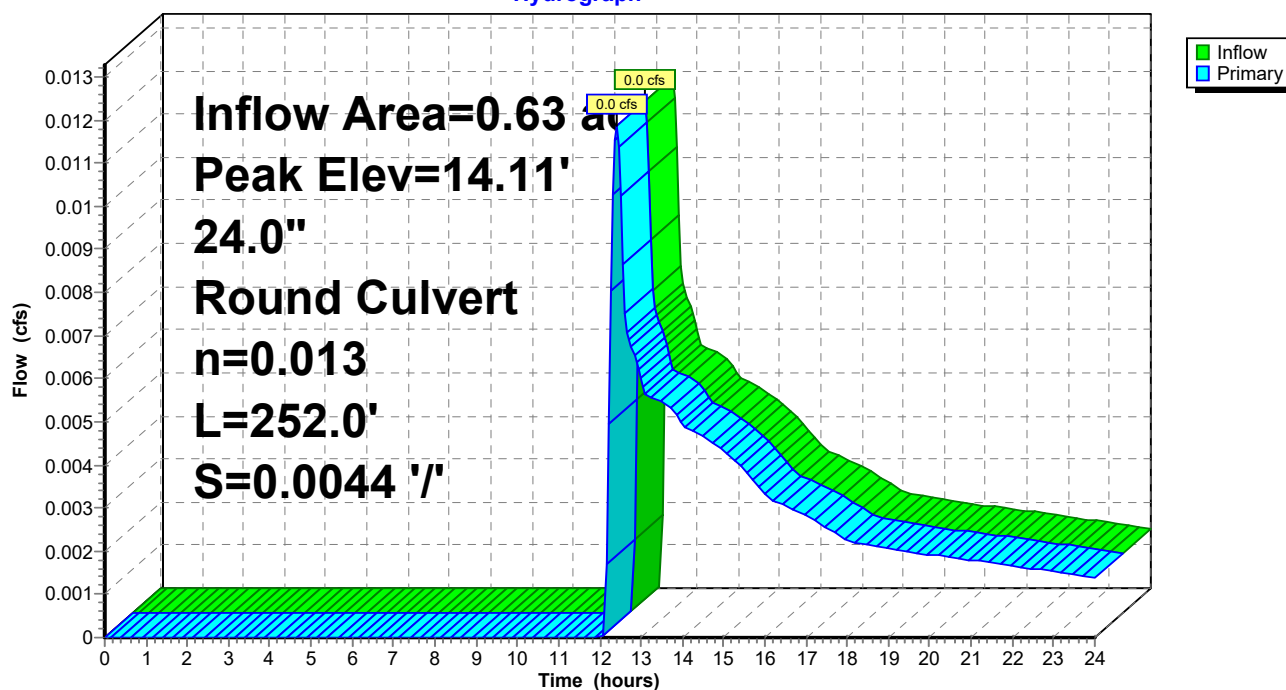
Device	Routing	Invert	Outlet Devices
#1	Primary	14.05'	24.0" Round Culvert L= 252.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.05' / 12.94' S= 0.0044 '/' Cc= 0.900 n= 0.013 Cast iron, coated, Flow Area= 3.14 sf

Primary OutFlow Max=0.0 cfs @ 12.40 hrs HW=14.11' TW=0.00' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 0.0 cfs @ 0.71 fps)

Pond 23P: Ex CB3

Hydrograph



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PRE
Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Pond 24P: Ex DMH4

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 0.06" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.39 hrs, Volume= 0.003 af
Outflow = 0.0 cfs @ 12.39 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.39 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

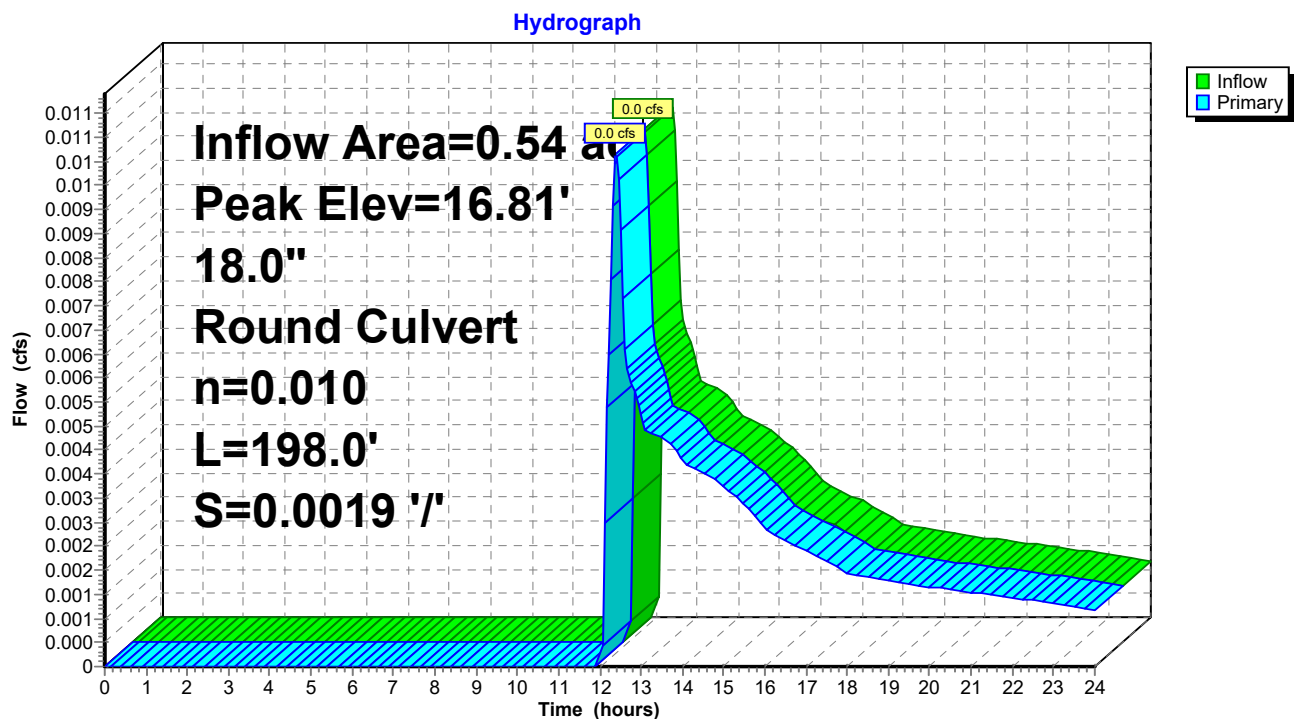
Peak Elev= 16.81' @ 12.39 hrs

Flood Elev= 25.38'

Device	Routing	Invert	Outlet Devices
#1	Primary	16.75'	18.0" Round Culvert L= 198.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.75' / 16.38' S= 0.0019 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.39 hrs HW=16.81' TW=15.49' (Dynamic Tailwater)
↑1=Culvert (Barrel Controls 0.0 cfs @ 0.64 fps)

Pond 24P: Ex DMH4



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PRE
Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Pond 25P: Ex DMH5

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 0.06" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.39 hrs, Volume= 0.003 af
Outflow = 0.0 cfs @ 12.39 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.39 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.49' @ 12.39 hrs

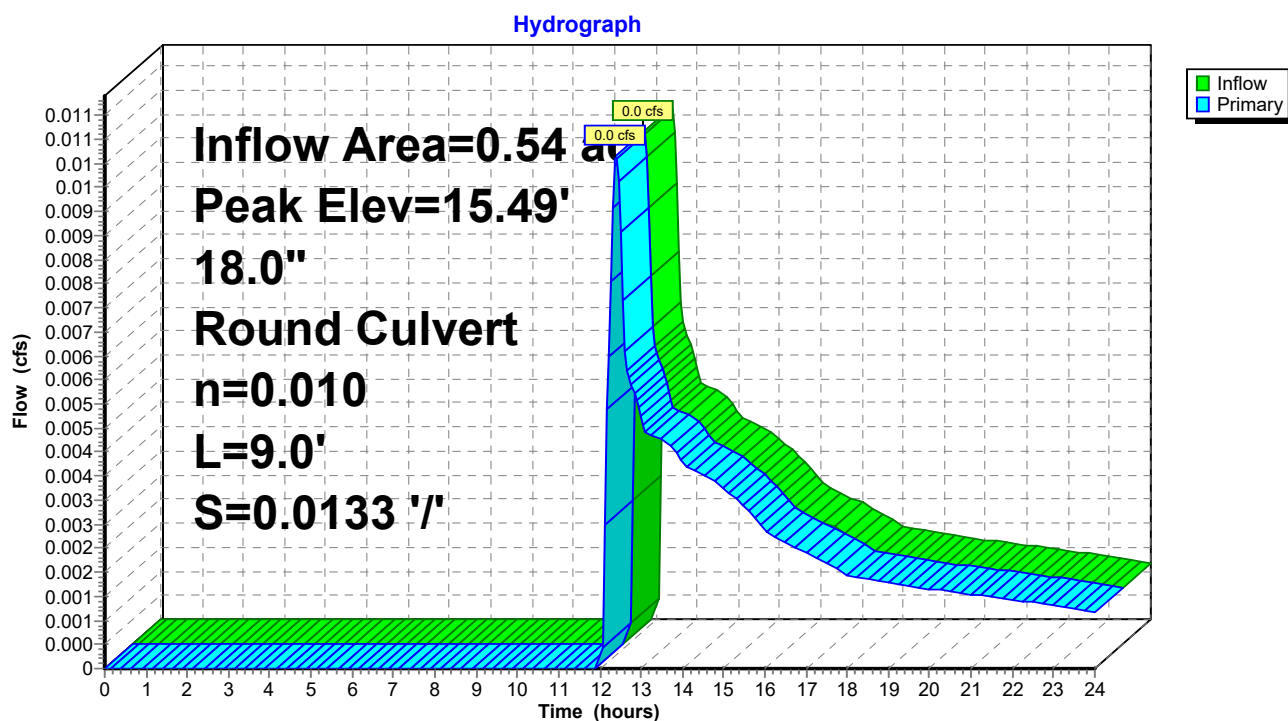
Flood Elev= 23.84'

Device	Routing	Invert	Outlet Devices
#1	Primary	15.44'	18.0" Round Culvert L= 9.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.44' / 15.32' S= 0.0133 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.39 hrs HW=15.49' TW=14.40' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 0.0 cfs @ 0.60 fps)

Pond 25P: Ex DMH5



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Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Pond 26P: Ex DMH6

Inflow Area = 1.23 ac, 64.68% Impervious, Inflow Depth > 0.09" for 1" Storm Event event
Inflow = 0.1 cfs @ 12.16 hrs, Volume= 0.009 af
Outflow = 0.1 cfs @ 12.16 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min
Primary = 0.1 cfs @ 12.16 hrs, Volume= 0.009 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 14.41' @ 12.15 hrs

Flood Elev= 23.95'

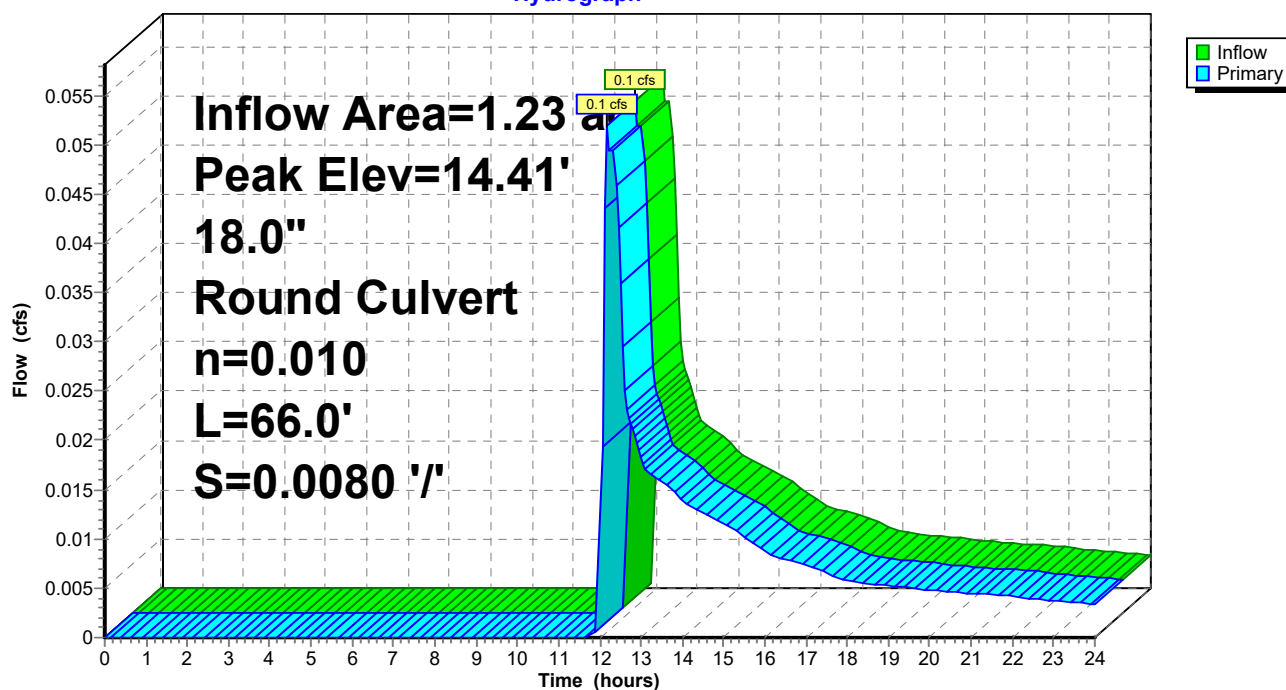
Device	Routing	Invert	Outlet Devices
#1	Primary	14.30'	18.0" Round Culvert L= 66.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.30' / 13.77' S= 0.0080 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.1 cfs @ 12.16 hrs HW=14.41' TW=13.84' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 0.1 cfs @ 0.89 fps)

Pond 26P: Ex DMH6

Hydrograph



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Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Pond 27P: Ex DMH7

Inflow Area = 1.23 ac, 64.68% Impervious, Inflow Depth > 0.09" for 1" Storm Event event
Inflow = 0.1 cfs @ 12.16 hrs, Volume= 0.009 af
Outflow = 0.1 cfs @ 12.16 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min
Primary = 0.1 cfs @ 12.16 hrs, Volume= 0.009 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 13.84' @ 12.15 hrs

Flood Elev= 24.90'

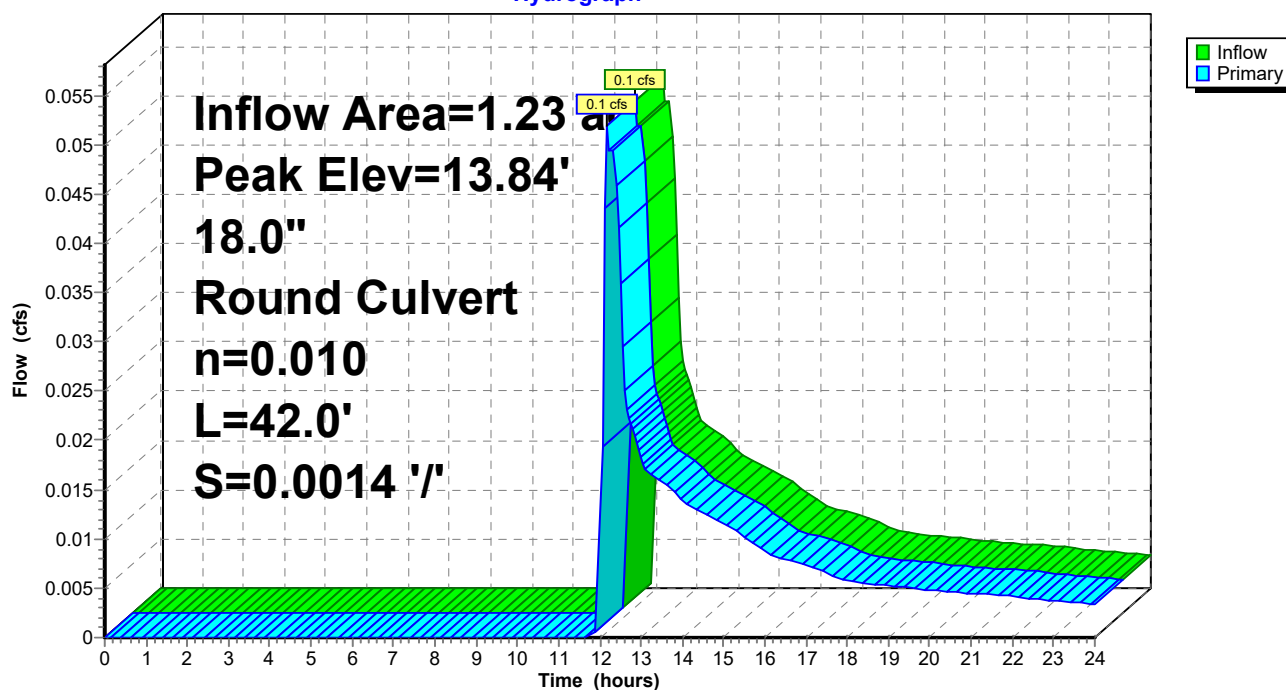
Device	Routing	Invert	Outlet Devices
#1	Primary	13.70'	18.0" Round Culvert L= 42.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.70' / 13.64' S= 0.0014 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.1 cfs @ 12.16 hrs HW=13.84' TW=0.00' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 0.1 cfs @ 0.97 fps)

Pond 27P: Ex DMH7

Hydrograph



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Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Pond 29P: Ex DMH9

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 0.06" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.39 hrs, Volume= 0.003 af
Outflow = 0.0 cfs @ 12.39 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.39 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.52' @ 12.39 hrs

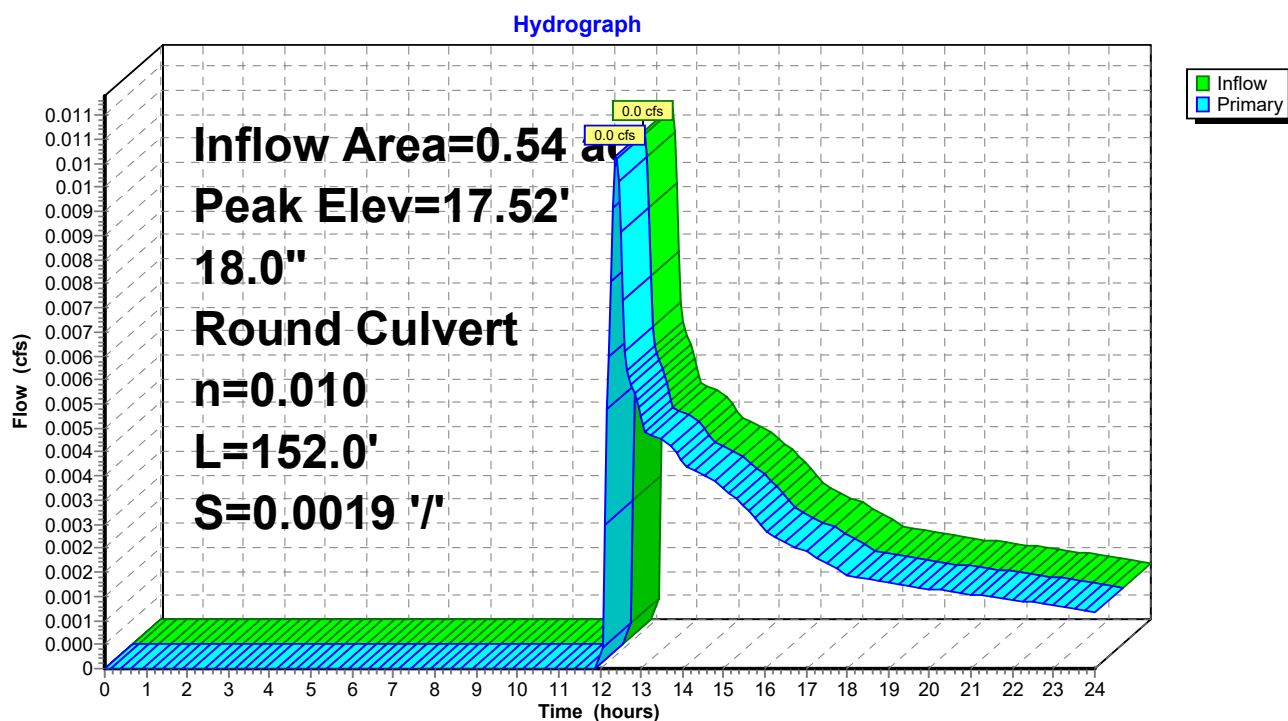
Flood Elev= 23.44'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.46'	18.0" Round Culvert L= 152.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.46' / 17.17' S= 0.0019 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.39 hrs HW=17.52' TW=17.18' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 0.0 cfs @ 0.64 fps)

Pond 29P: Ex DMH9



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Type III 24-hr 1" Storm Event Rainfall=1.00"

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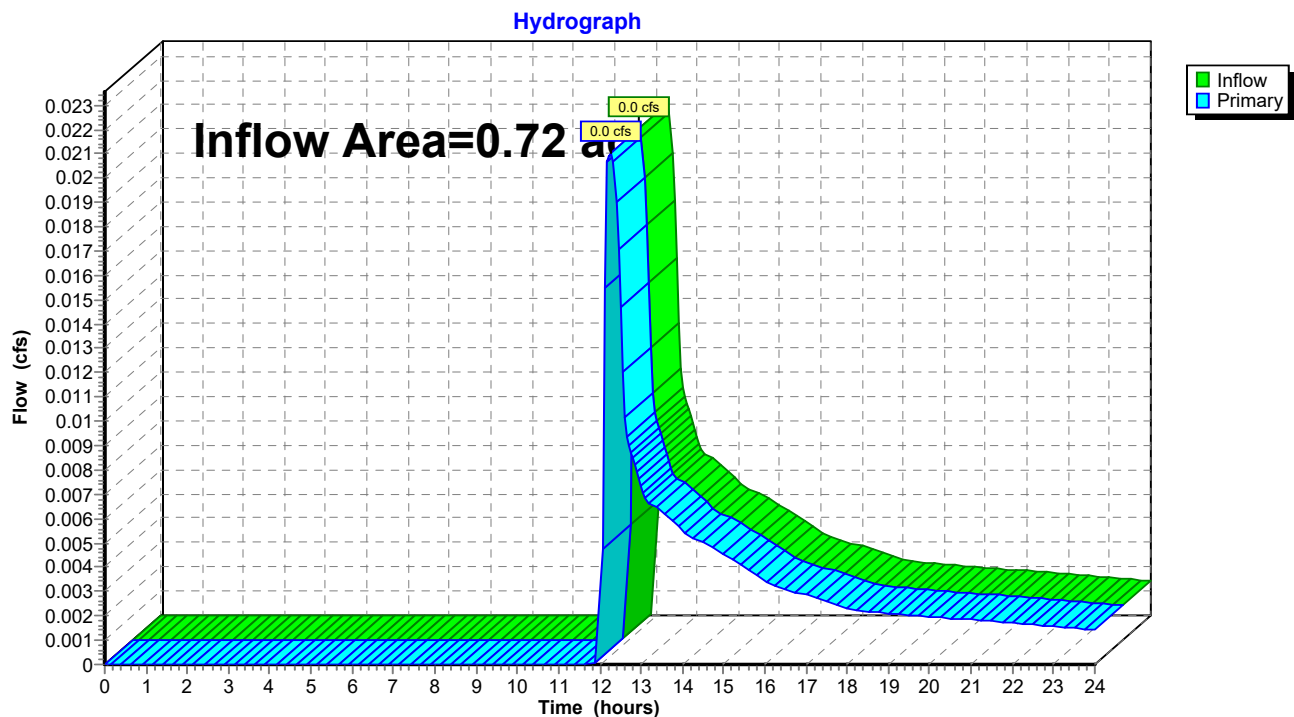
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Summary for Link SP1: Forest Ave Storm Drain

Inflow Area = 0.72 ac, 39.36% Impervious, Inflow Depth > 0.06" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.27 hrs, Volume= 0.004 af
Primary = 0.0 cfs @ 12.27 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP1: Forest Ave Storm Drain



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Type III 24-hr 1" Storm Event Rainfall=1.00"

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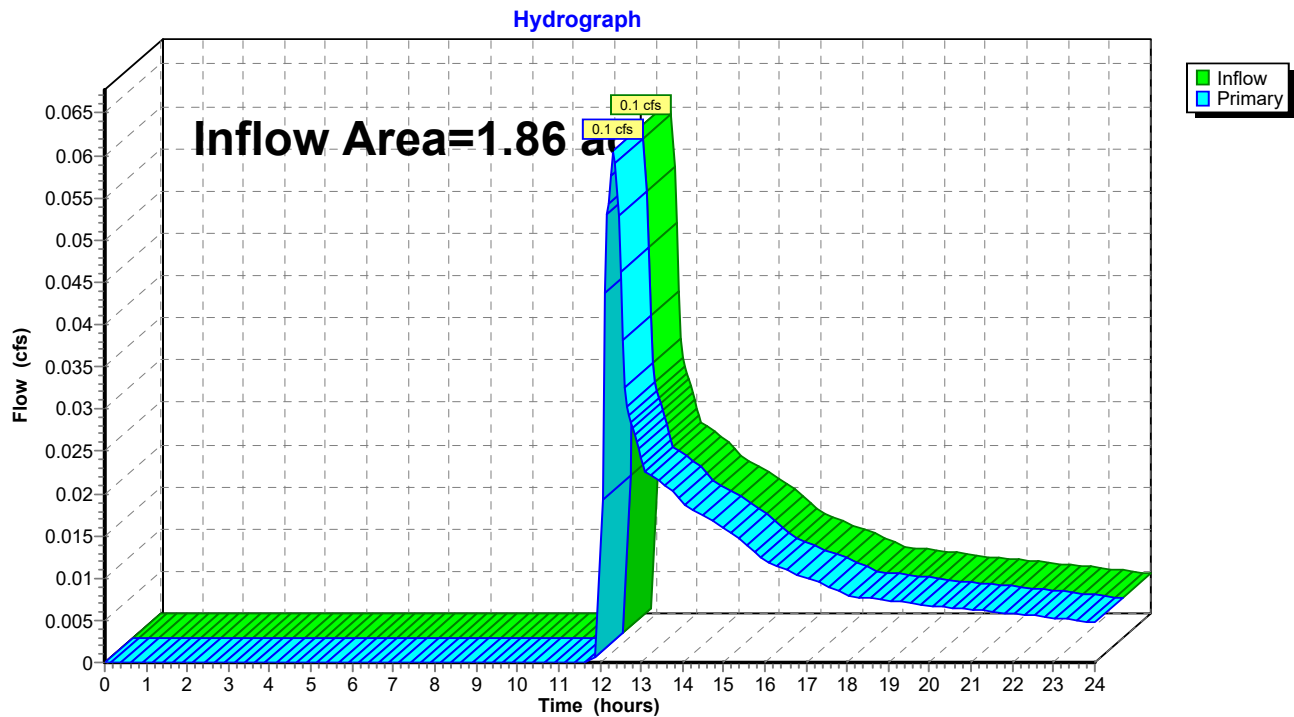
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Summary for Link SP2: Combined Sewer

Inflow Area = 1.86 ac, 62.17% Impervious, Inflow Depth > 0.08" for 1" Storm Event event
Inflow = 0.1 cfs @ 12.33 hrs, Volume= 0.012 af
Primary = 0.1 cfs @ 12.33 hrs, Volume= 0.012 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP2: Combined Sewer



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Type III 24-hr 2-Year Storm Rainfall=3.10"

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: PRE-1	Runoff Area=8,487 sf 61.42% Impervious Runoff Depth>1.32" Tc=6.0 min CN=80 Runoff=0.3 cfs 0.021 af
Subcatchment2S: PRE-2	Runoff Area=14,855 sf 50.48% Impervious Runoff Depth>1.14" Tc=6.0 min CN=77 Runoff=0.4 cfs 0.032 af
Subcatchment3S: PRE-3	Runoff Area=19,668 sf 51.10% Impervious Runoff Depth>1.39" Tc=6.0 min CN=81 Runoff=0.7 cfs 0.052 af
Subcatchment4S: PRE-4	Runoff Area=11,760 sf 19.74% Impervious Runoff Depth>0.72" Tc=6.0 min CN=69 Runoff=0.2 cfs 0.016 af
Subcatchment5S: PRE-5	Runoff Area=27,546 sf 57.26% Impervious Runoff Depth>1.20" Tc=6.0 min CN=78 Runoff=0.9 cfs 0.063 af
Subcatchment6S: PRE-6	Runoff Area=16,352 sf 71.97% Impervious Runoff Depth>1.46" Tc=6.0 min CN=82 Runoff=0.6 cfs 0.046 af
Subcatchment7S: PRE-7	Runoff Area=13,974 sf 73.24% Impervious Runoff Depth>1.46" Tc=6.0 min CN=82 Runoff=0.5 cfs 0.039 af
Pond 11P: Ex CB1	Peak Elev=18.96' Inflow=0.7 cfs 0.054 af 12.0" Round Culvert n=0.010 L=41.0' S=0.0224 '/ Outflow=0.7 cfs 0.054 af
Pond 12P: Ex CB2	Peak Elev=18.42' Inflow=0.2 cfs 0.016 af 8.0" Round Culvert n=0.010 L=159.0' S=0.0158 '/ Outflow=0.2 cfs 0.016 af
Pond 14P: Ex CB4	Peak Elev=16.36' Inflow=0.6 cfs 0.046 af 12.0" Round Culvert n=0.010 L=63.0' S=0.0195 '/ Outflow=0.6 cfs 0.046 af
Pond 15P: Ex CB5	Peak Elev=15.40' Inflow=1.2 cfs 0.085 af 18.0" Round Culvert n=0.010 L=38.0' S=-0.0026 '/ Outflow=1.2 cfs 0.085 af
Pond 21P: Ex DMH1	Peak Elev=15.21' Inflow=1.2 cfs 0.085 af 18.0" Round Culvert n=0.010 L=12.0' S=0.0200 '/ Outflow=1.2 cfs 0.085 af
Pond 22P: Ex DMH2	Peak Elev=17.59' Inflow=0.7 cfs 0.054 af 18.0" Round Culvert n=0.010 L=98.0' S=0.0023 '/ Outflow=0.7 cfs 0.054 af
Pond 23P: Ex CB3	Peak Elev=14.49' Inflow=0.9 cfs 0.063 af 24.0" Round Culvert n=0.013 L=252.0' S=0.0044 '/ Outflow=0.9 cfs 0.063 af
Pond 24P: Ex DMH4	Peak Elev=17.23' Inflow=0.7 cfs 0.054 af 18.0" Round Culvert n=0.010 L=198.0' S=0.0019 '/ Outflow=0.7 cfs 0.054 af
Pond 25P: Ex DMH5	Peak Elev=15.87' Inflow=0.7 cfs 0.054 af 18.0" Round Culvert n=0.010 L=9.0' S=0.0133 '/ Outflow=0.7 cfs 0.054 af

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Type III 24-hr 2-Year Storm Rainfall=3.10"

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Pond 26P: Ex DMH6Peak Elev=15.01' Inflow=1.9 cfs 0.138 af
18.0" Round Culvert n=0.010 L=66.0' S=0.0080 '/ Outflow=1.9 cfs 0.138 af**Pond 27P: Ex DMH7**Peak Elev=14.54' Inflow=1.9 cfs 0.138 af
18.0" Round Culvert n=0.010 L=42.0' S=0.0014 '/ Outflow=1.9 cfs 0.138 af**Pond 29P: Ex DMH9**Peak Elev=17.95' Inflow=0.7 cfs 0.054 af
18.0" Round Culvert n=0.010 L=152.0' S=0.0019 '/ Outflow=0.7 cfs 0.054 af**Link SP1: Forest Ave Storm Drain**Inflow=0.9 cfs 0.069 af
Primary=0.9 cfs 0.069 af**Link SP2: Combined Sewer**Inflow=2.7 cfs 0.202 af
Primary=2.7 cfs 0.202 af**Total Runoff Area = 2.59 ac Runoff Volume = 0.270 af Average Runoff Depth = 1.25"**
44.19% Pervious = 1.14 ac 55.81% Impervious = 1.44 ac

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Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Subcatchment 1S: PRE-1

Runoff = 0.3 cfs @ 12.10 hrs, Volume= 0.021 af, Depth> 1.32"

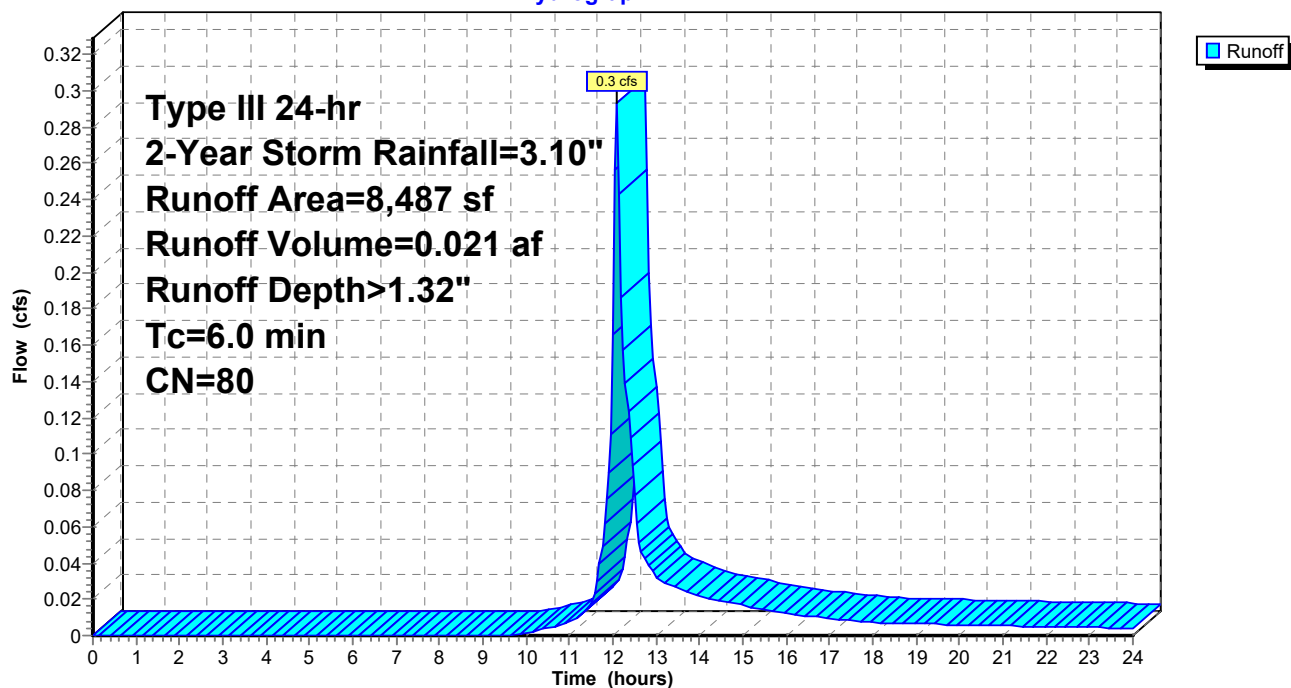
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
5,213	98	Paved parking, HSG A
1,900	39	Grass cover, Good, HSG A
* 1,374	68	Grass cover (parking area), HSG A
8,487	80	Weighted Average
3,274		38.58% Pervious Area
5,213		61.42% Impervious Area

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

Subcatchment 1S: PRE-1

Hydrograph



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Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Subcatchment 2S: PRE-2

Runoff = 0.4 cfs @ 12.10 hrs, Volume= 0.032 af, Depth> 1.14"

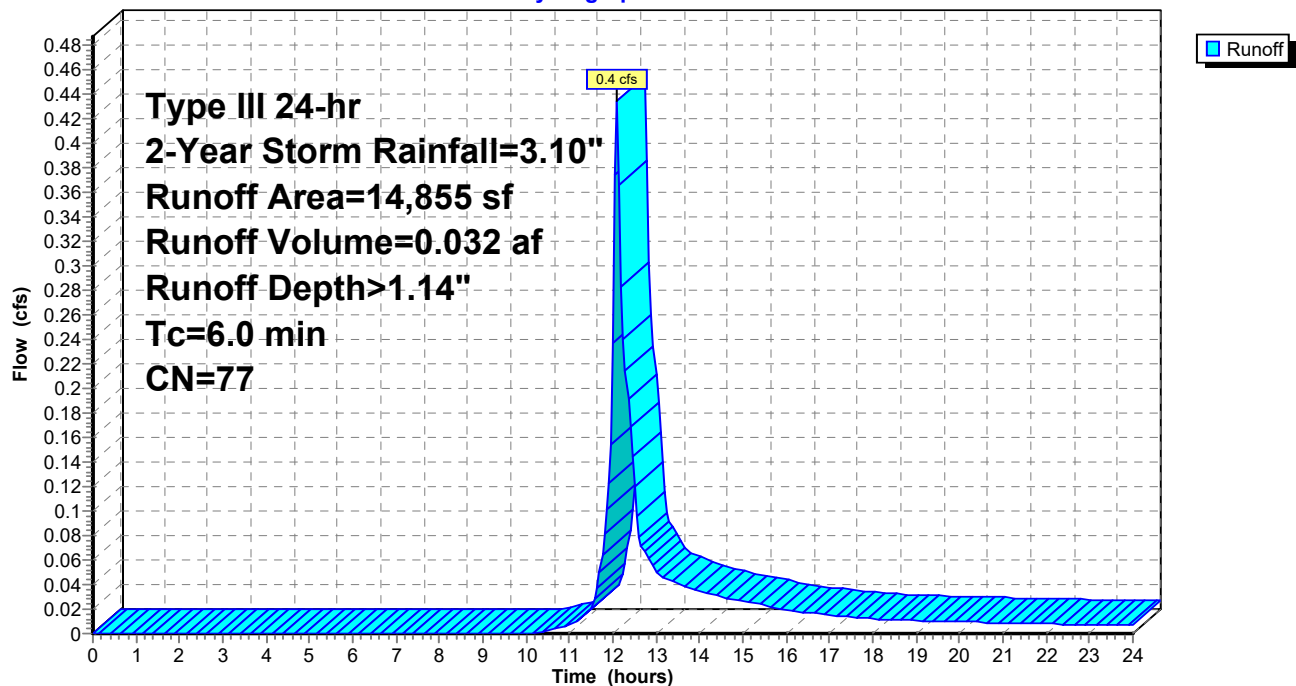
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
7,499	98	Paved parking, HSG A
2,948	39	Grass cover, Good, HSG A
4,408	68	Grass cover (parking area), HSG A
14,855	77	Weighted Average
7,356		49.52% Pervious Area
7,499		50.48% Impervious Area

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

Subcatchment 2S: PRE-2

Hydrograph



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Summary for Subcatchment 3S: PRE-3

Runoff = 0.7 cfs @ 12.10 hrs, Volume= 0.052 af, Depth> 1.39"

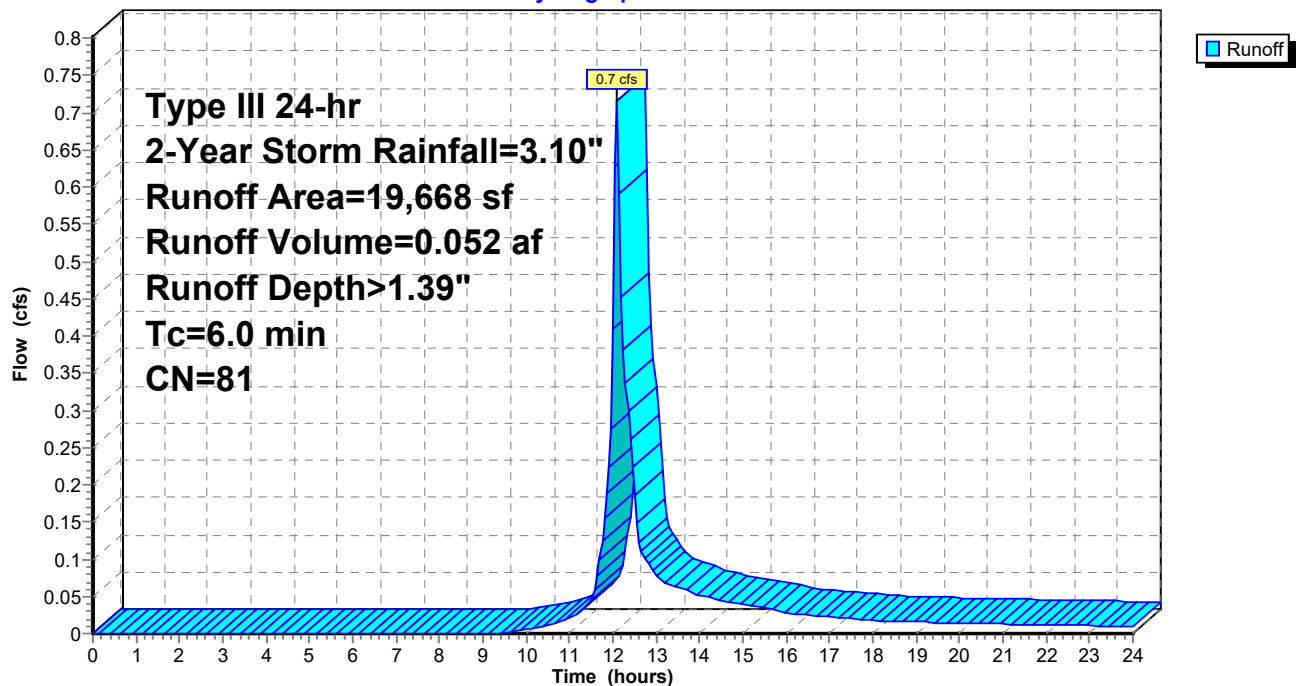
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
10,050	98	Paved parking, HSG A
1,903	39	Grass cover, Good, HSG A
7,715	68	Grass cover (parking area), HSG A
19,668	81	Weighted Average
9,618		48.90% Pervious Area
10,050		51.10% Impervious Area

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

Subcatchment 3S: PRE-3

Hydrograph



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Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Subcatchment 4S: PRE-4

Runoff = 0.2 cfs @ 12.11 hrs, Volume= 0.016 af, Depth> 0.72"

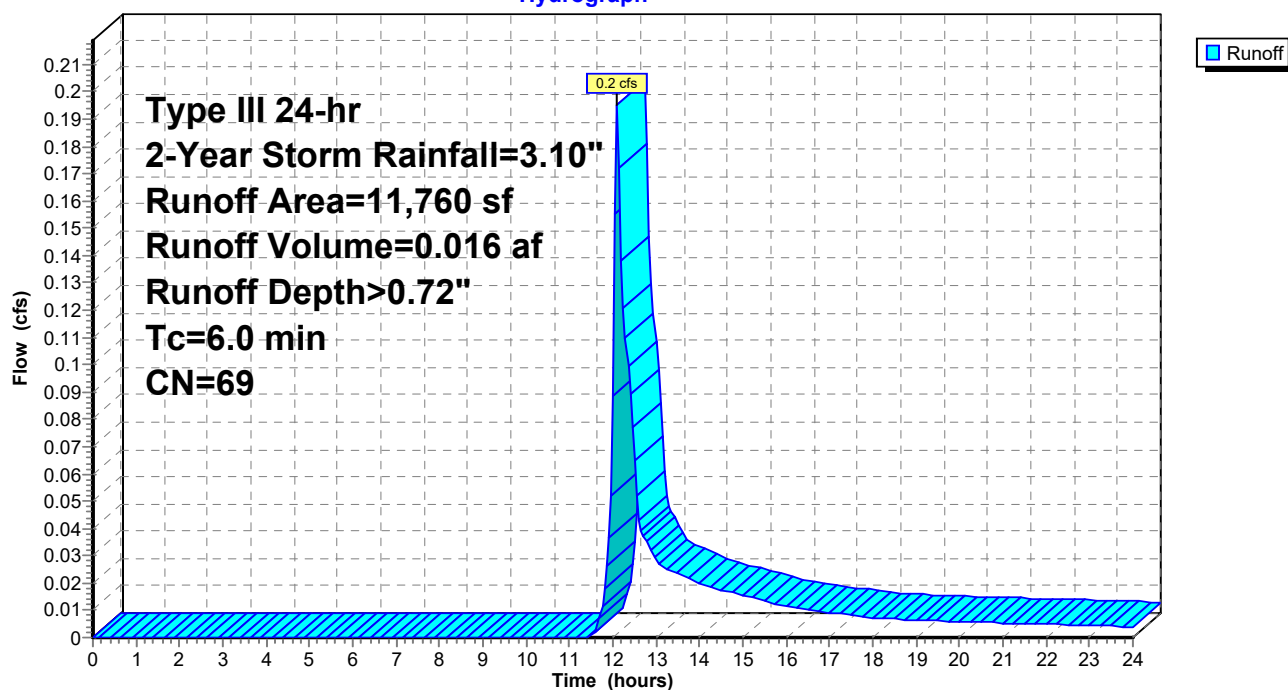
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
2,321	98	Paved parking, HSG A
1,957	39	Grass cover, Good, HSG A
7,482	68	Grass cover (parking area), HSG A
11,760	69	Weighted Average
9,439		80.26% Pervious Area
2,321		19.74% Impervious Area

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

Subcatchment 4S: PRE-4

Hydrograph



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Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Subcatchment 5S: PRE-5

Runoff = 0.9 cfs @ 12.10 hrs, Volume= 0.063 af, Depth> 1.20"

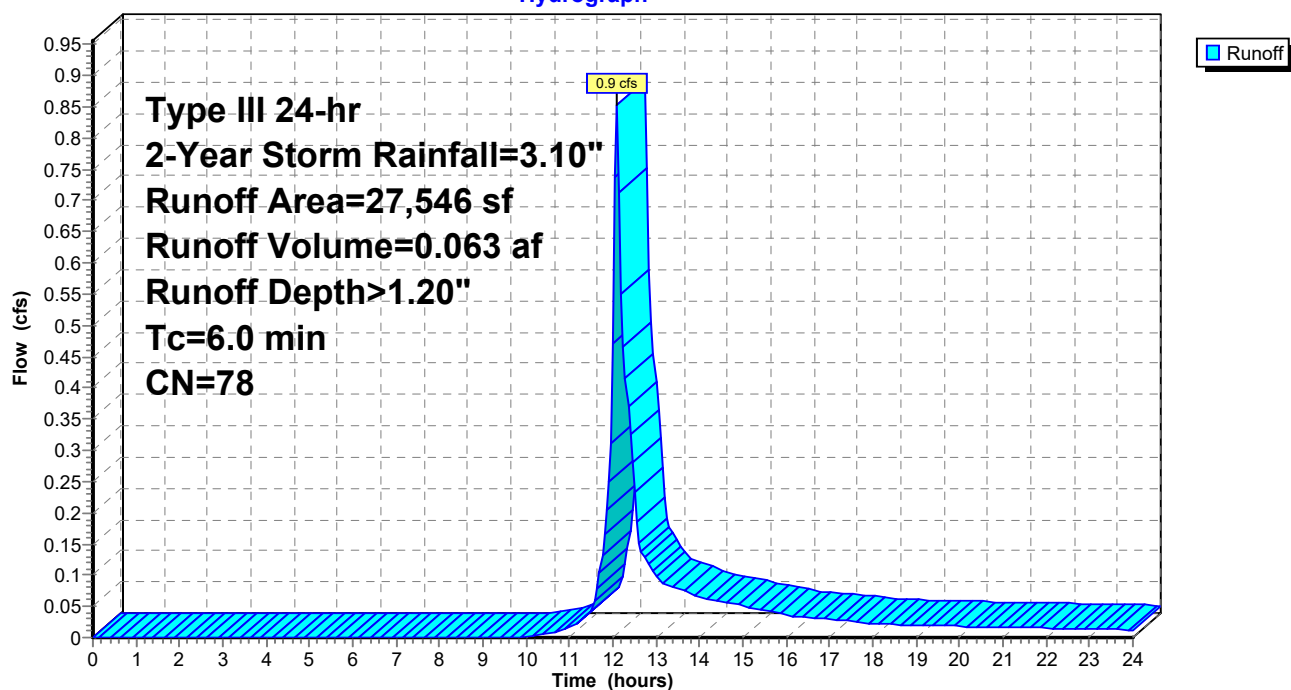
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
15,774	98	Paved parking, HSG A
6,700	39	Grass cover, Good, HSG A
5,072	68	Grass cover (parking area), HSG A
27,546	78	Weighted Average
11,772		42.74% Pervious Area
15,774		57.26% Impervious Area

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

Subcatchment 5S: PRE-5

Hydrograph



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Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Subcatchment 6S: PRE-6

Runoff = 0.6 cfs @ 12.09 hrs, Volume= 0.046 af, Depth> 1.46"

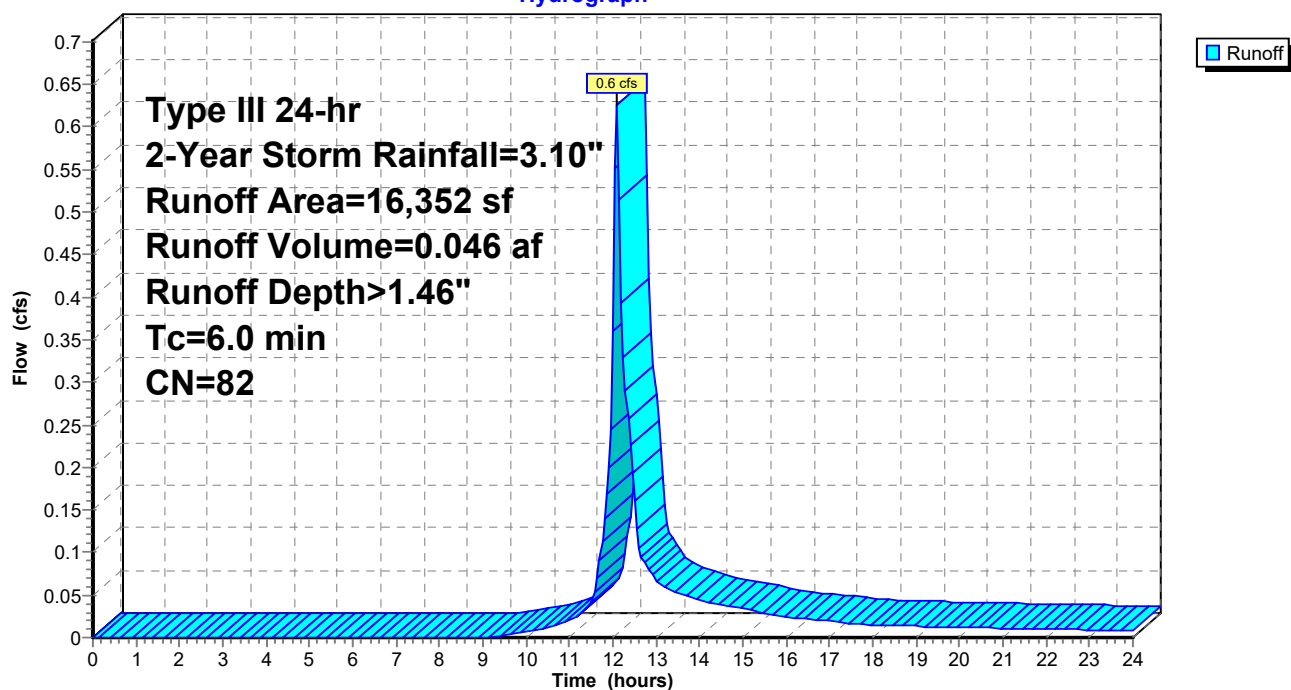
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
11,768	98	Paved parking, HSG A
3,865	39	Grass cover, Good, HSG A
* 719	40	Porous Pavement
16,352	82	Weighted Average
4,584		28.03% Pervious Area
11,768		71.97% Impervious Area

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

Subcatchment 6S: PRE-6

Hydrograph



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Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Subcatchment 7S: PRE-7

Runoff = 0.5 cfs @ 12.09 hrs, Volume= 0.039 af, Depth> 1.46"

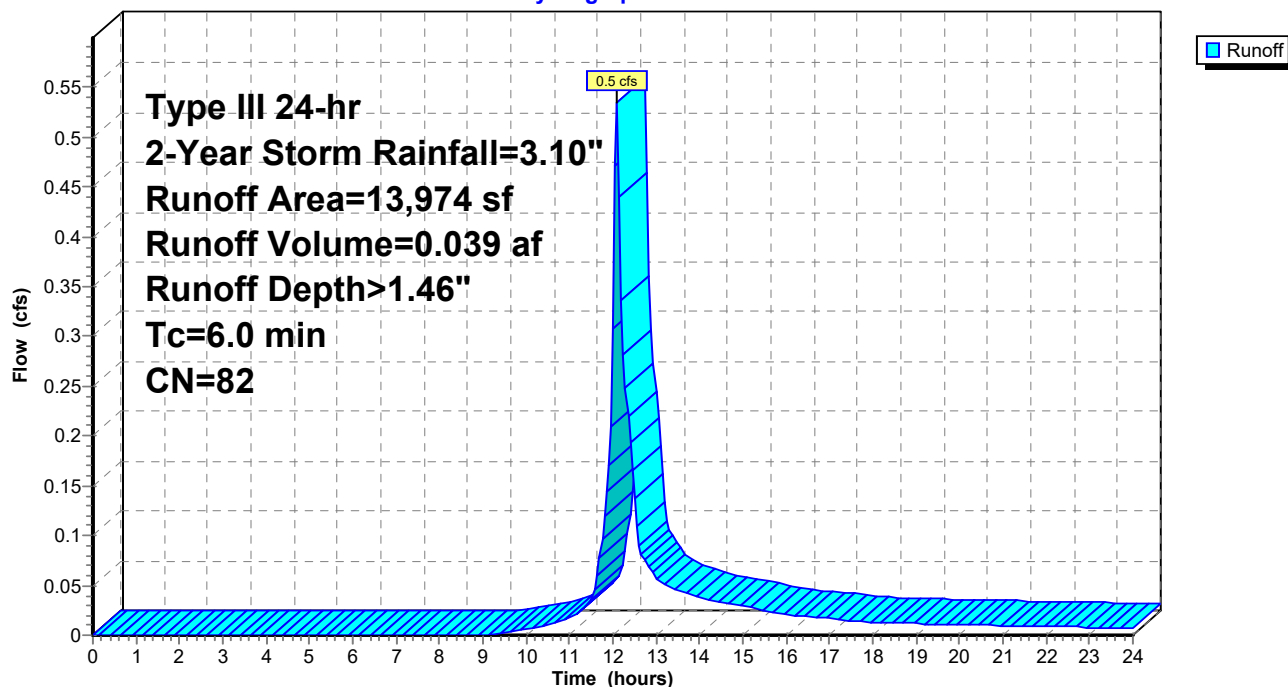
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
10,235	98	Paved parking, HSG A
3,739	39	Grass cover, Good, HSG A
13,974	82	Weighted Average
3,739		26.76% Pervious Area
10,235		73.24% Impervious Area

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

Subcatchment 7S: PRE-7

Hydrograph



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Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Pond 11P: Ex CB1

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 1.21" for 2-Year Storm event
Inflow = 0.7 cfs @ 12.10 hrs, Volume= 0.054 af
Outflow = 0.7 cfs @ 12.10 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min
Primary = 0.7 cfs @ 12.10 hrs, Volume= 0.054 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 18.96' @ 12.10 hrs

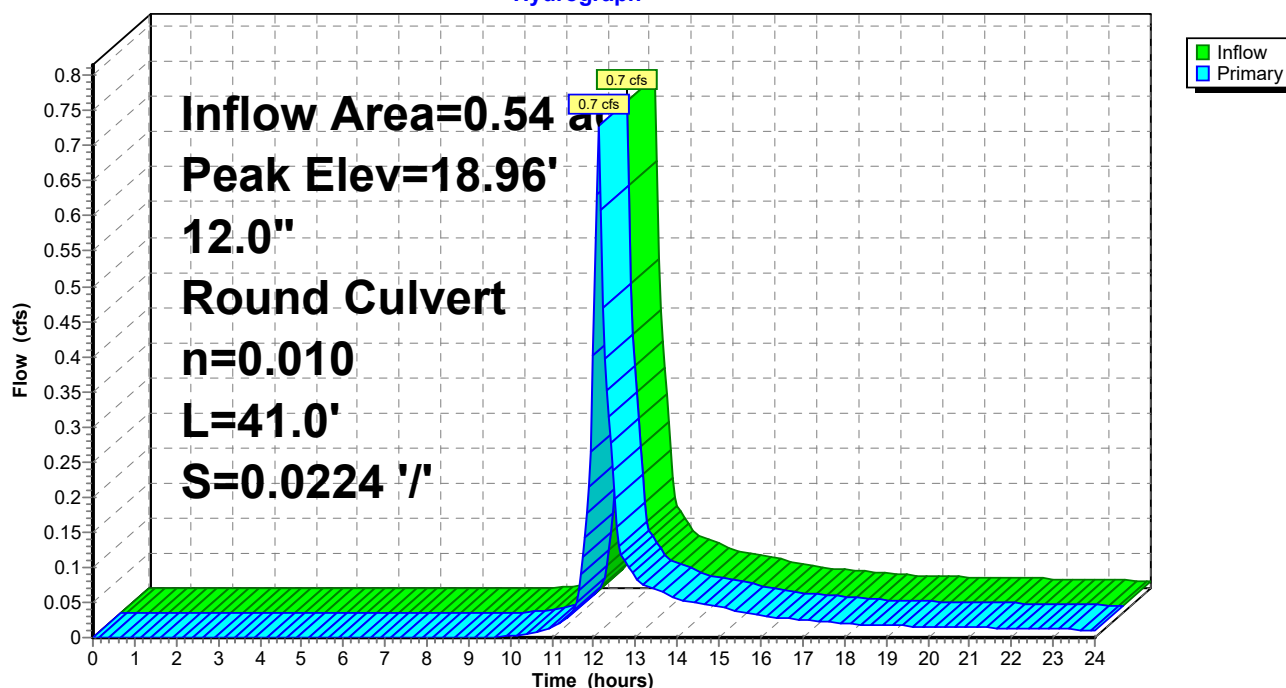
Flood Elev= 22.02'

Device	Routing	Invert	Outlet Devices
#1	Primary	18.47'	12.0" Round Culvert L= 41.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.47' / 17.55' S= 0.0224 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.7 cfs @ 12.10 hrs HW=18.96' TW=17.95' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 0.7 cfs @ 1.88 fps)

Pond 11P: Ex CB1

Hydrograph



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Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Pond 12P: Ex CB2

Inflow Area = 0.27 ac, 19.74% Impervious, Inflow Depth > 0.72" for 2-Year Storm event
Inflow = 0.2 cfs @ 12.11 hrs, Volume= 0.016 af
Outflow = 0.2 cfs @ 12.11 hrs, Volume= 0.016 af, Atten= 0%, Lag= 0.0 min
Primary = 0.2 cfs @ 12.11 hrs, Volume= 0.016 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 18.42' @ 12.11 hrs

Flood Elev= 22.15'

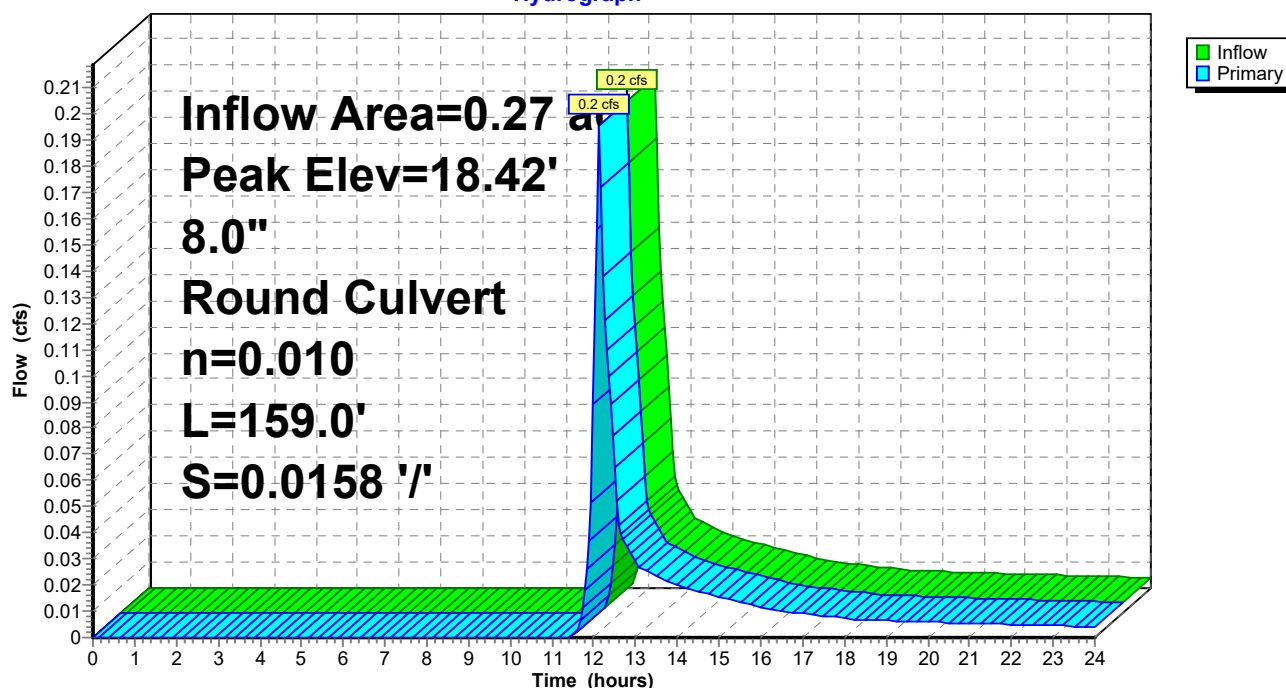
Device	Routing	Invert	Outlet Devices
#1	Primary	18.14'	8.0" Round Culvert L= 159.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.14' / 15.62' S= 0.0158 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.2 cfs @ 12.11 hrs HW=18.42' TW=0.00' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 0.2 cfs @ 1.41 fps)

Pond 12P: Ex CB2

Hydrograph



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Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Pond 14P: Ex CB4

Inflow Area = 0.38 ac, 71.97% Impervious, Inflow Depth > 1.46" for 2-Year Storm event
Inflow = 0.6 cfs @ 12.09 hrs, Volume= 0.046 af
Outflow = 0.6 cfs @ 12.09 hrs, Volume= 0.046 af, Atten= 0%, Lag= 0.0 min
Primary = 0.6 cfs @ 12.09 hrs, Volume= 0.046 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 16.36' @ 12.09 hrs

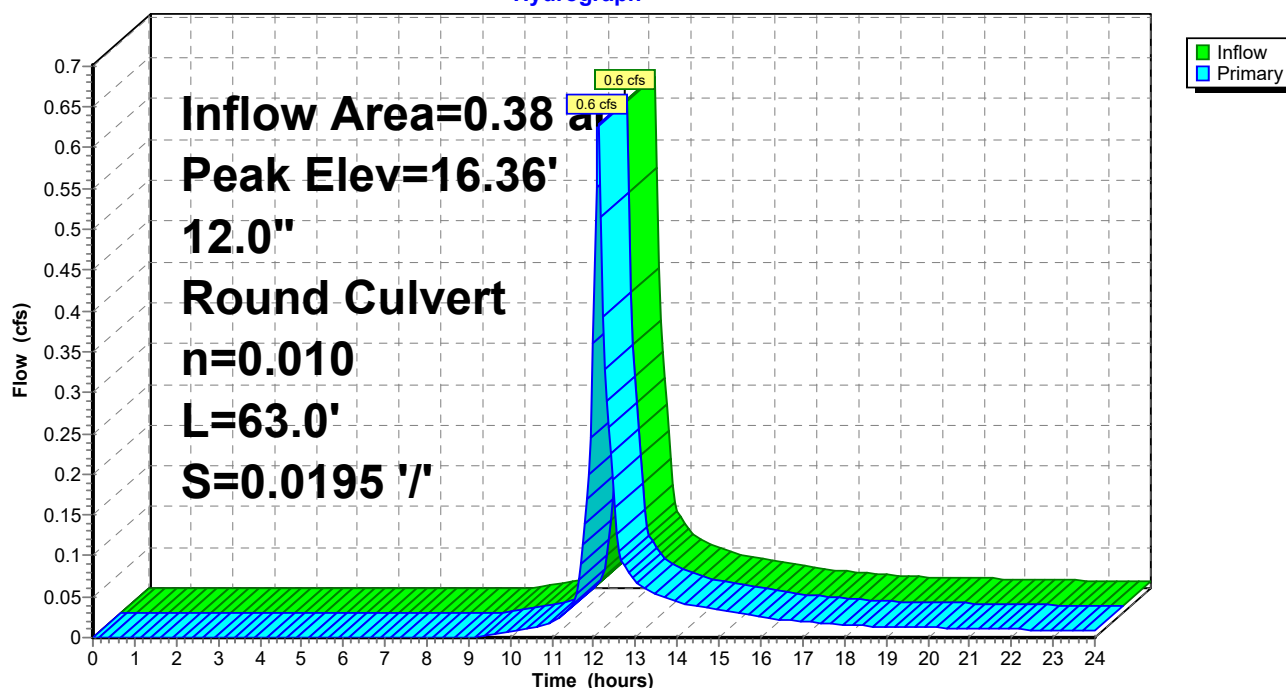
Flood Elev= 21.96'

Device	Routing	Invert	Outlet Devices
#1	Primary	15.91'	12.0" Round Culvert L= 63.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.91' / 14.68' S= 0.0195 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.6 cfs @ 12.09 hrs HW=16.36' TW=15.39' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 0.6 cfs @ 1.80 fps)

Pond 14P: Ex CB4

Hydrograph



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PRE
Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Pond 15P: Ex CB5

Inflow Area = 0.70 ac, 72.55% Impervious, Inflow Depth > 1.46" for 2-Year Storm event
Inflow = 1.2 cfs @ 12.09 hrs, Volume= 0.085 af
Outflow = 1.2 cfs @ 12.09 hrs, Volume= 0.085 af, Atten= 0%, Lag= 0.0 min
Primary = 1.2 cfs @ 12.09 hrs, Volume= 0.085 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.40' @ 12.11 hrs

Flood Elev= 22.70'

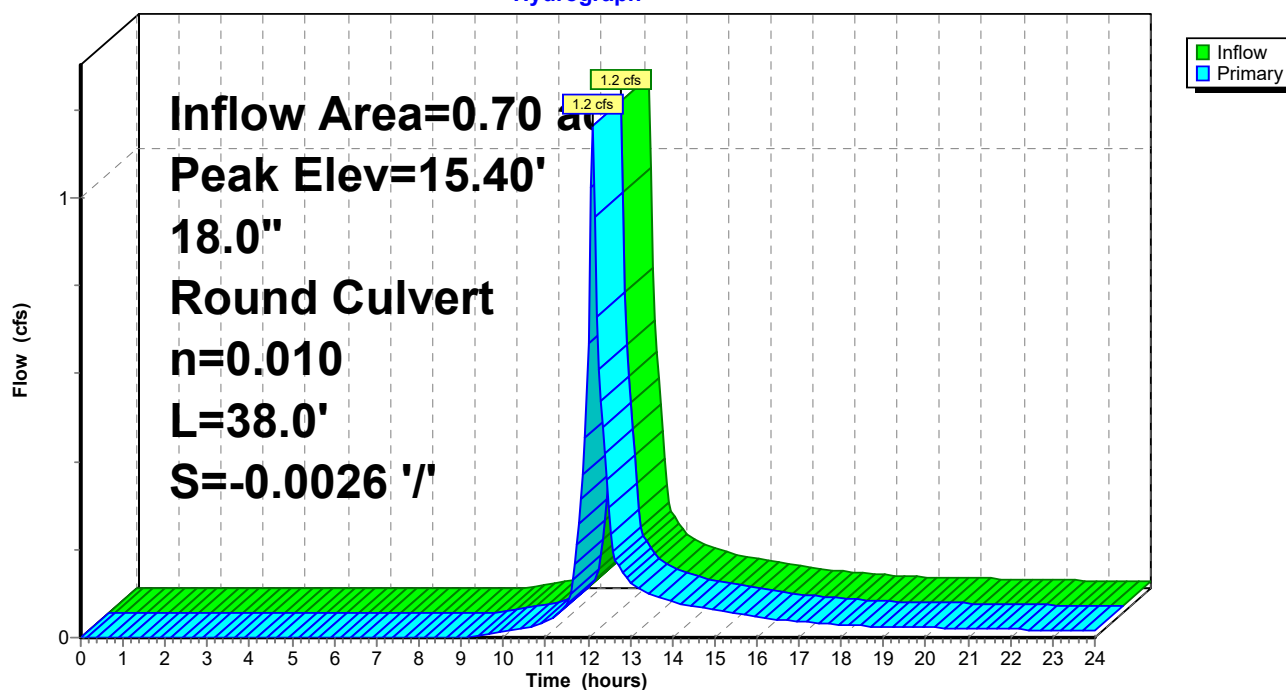
Device	Routing	Invert	Outlet Devices
#1	Primary	14.80'	18.0" Round Culvert L= 38.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.70' / 14.80' S= -0.0026 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.1 cfs @ 12.09 hrs HW=15.39' TW=15.20' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 1.1 cfs @ 1.68 fps)

Pond 15P: Ex CB5

Hydrograph



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Summary for Pond 21P: Ex DMH1

Inflow Area = 0.70 ac, 72.55% Impervious, Inflow Depth > 1.46" for 2-Year Storm event
Inflow = 1.2 cfs @ 12.09 hrs, Volume= 0.085 af
Outflow = 1.2 cfs @ 12.09 hrs, Volume= 0.085 af, Atten= 0%, Lag= 0.0 min
Primary = 1.2 cfs @ 12.09 hrs, Volume= 0.085 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.21' @ 12.12 hrs

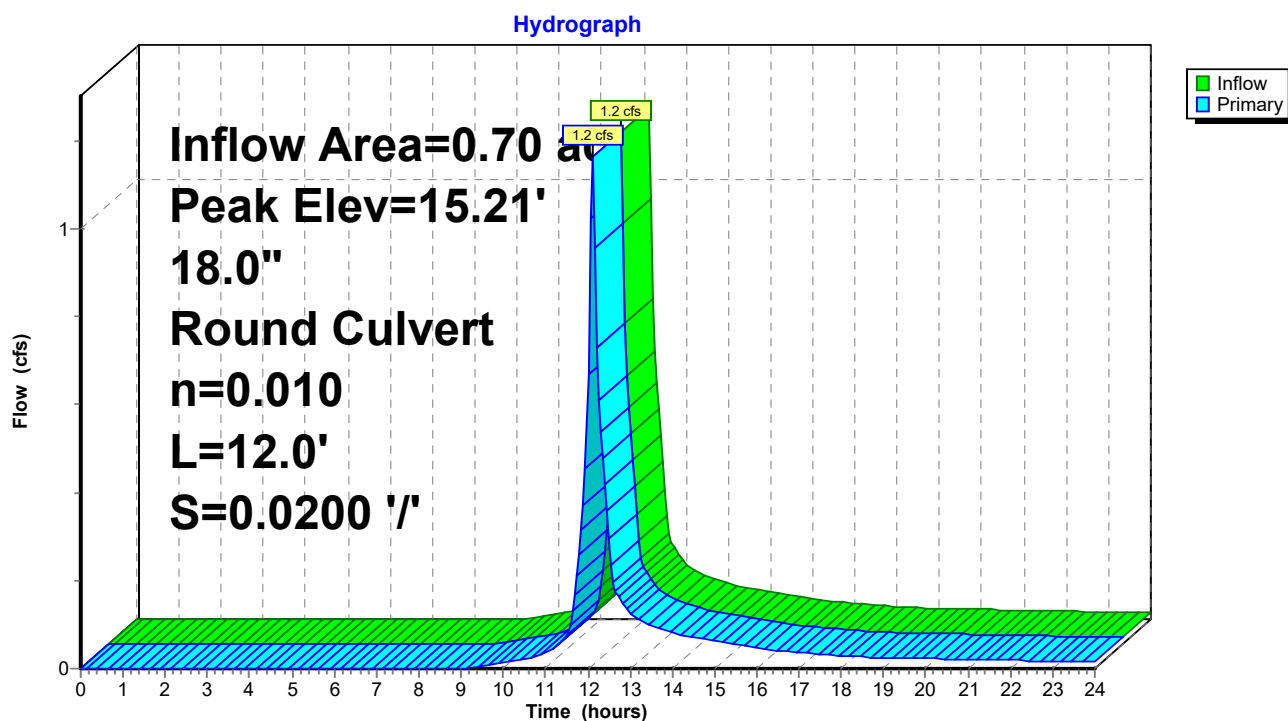
Flood Elev= 23.72'

Device	Routing	Invert	Outlet Devices
#1	Primary	14.62'	18.0" Round Culvert L= 12.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.62' / 14.38' S= 0.0200 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.0 cfs @ 12.09 hrs HW=15.20' TW=15.01' (Dynamic Tailwater)

↑1=Culvert (Outlet Controls 1.0 cfs @ 2.38 fps)

Pond 21P: Ex DMH1



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Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Pond 22P: Ex DMH2

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 1.21" for 2-Year Storm event
Inflow = 0.7 cfs @ 12.10 hrs, Volume= 0.054 af
Outflow = 0.7 cfs @ 12.10 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min
Primary = 0.7 cfs @ 12.10 hrs, Volume= 0.054 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.59' @ 12.10 hrs

Flood Elev= 24.92'

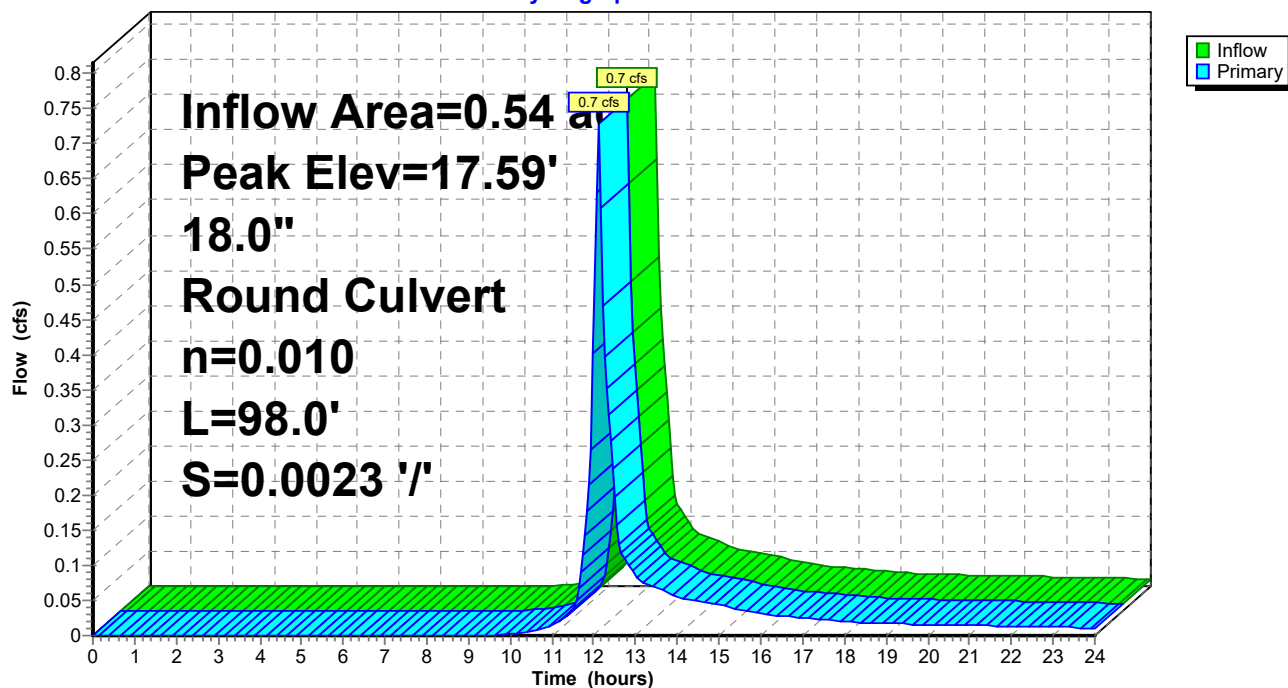
Device	Routing	Invert	Outlet Devices
#1	Primary	17.12'	18.0" Round Culvert L= 98.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.12' / 16.89' S= 0.0023 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.7 cfs @ 12.10 hrs HW=17.59' TW=17.23' (Dynamic Tailwater)

1=Culvert (Barrel Controls 0.7 cfs @ 2.30 fps)

Pond 22P: Ex DMH2

Hydrograph



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PRE
Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Pond 23P: Ex CB3

Inflow Area = 0.63 ac, 57.26% Impervious, Inflow Depth > 1.20" for 2-Year Storm event
Inflow = 0.9 cfs @ 12.10 hrs, Volume= 0.063 af
Outflow = 0.9 cfs @ 12.10 hrs, Volume= 0.063 af, Atten= 0%, Lag= 0.0 min
Primary = 0.9 cfs @ 12.10 hrs, Volume= 0.063 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 14.49' @ 12.10 hrs

Flood Elev= 23.60'

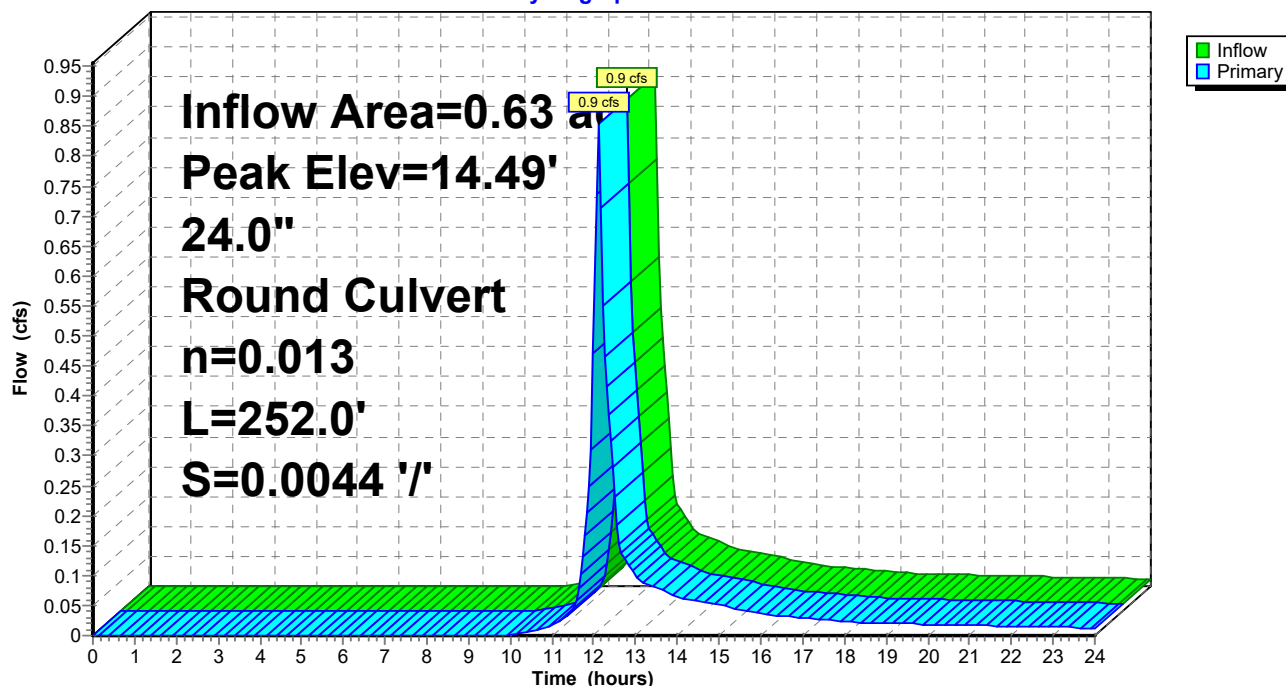
Device	Routing	Invert	Outlet Devices
#1	Primary	14.05'	24.0" Round Culvert L= 252.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.05' / 12.94' S= 0.0044 '/' Cc= 0.900 n= 0.013 Cast iron, coated, Flow Area= 3.14 sf

Primary OutFlow Max=0.8 cfs @ 12.10 hrs HW=14.49' TW=0.00' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 0.8 cfs @ 2.52 fps)

Pond 23P: Ex CB3

Hydrograph



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Summary for Pond 24P: Ex DMH4

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 1.21" for 2-Year Storm event
Inflow = 0.7 cfs @ 12.10 hrs, Volume= 0.054 af
Outflow = 0.7 cfs @ 12.10 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min
Primary = 0.7 cfs @ 12.10 hrs, Volume= 0.054 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.23' @ 12.10 hrs

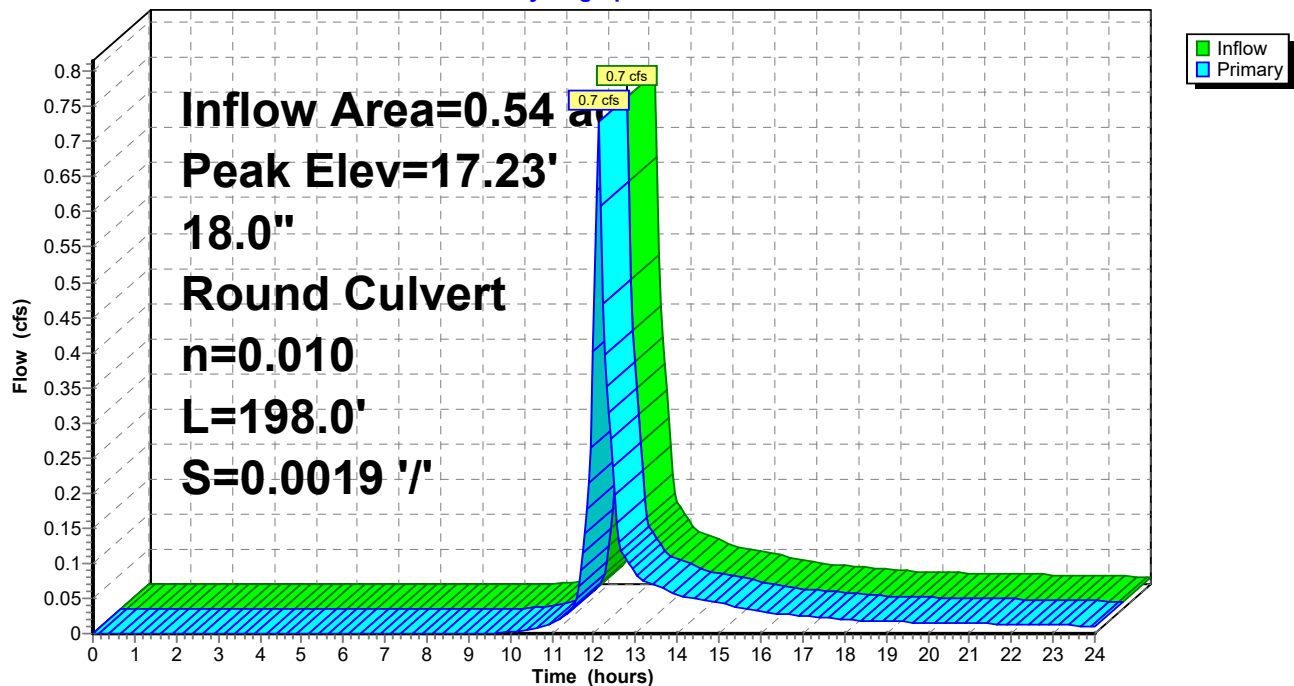
Flood Elev= 25.38'

Device	Routing	Invert	Outlet Devices
#1	Primary	16.75'	18.0" Round Culvert L= 198.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.75' / 16.38' S= 0.0019 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.7 cfs @ 12.10 hrs HW=17.23' TW=15.87' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.7 cfs @ 2.21 fps)

Pond 24P: Ex DMH4

Hydrograph



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PRE
Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Pond 25P: Ex DMH5

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 1.21" for 2-Year Storm event
Inflow = 0.7 cfs @ 12.10 hrs, Volume= 0.054 af
Outflow = 0.7 cfs @ 12.10 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min
Primary = 0.7 cfs @ 12.10 hrs, Volume= 0.054 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.87' @ 12.10 hrs

Flood Elev= 23.84'

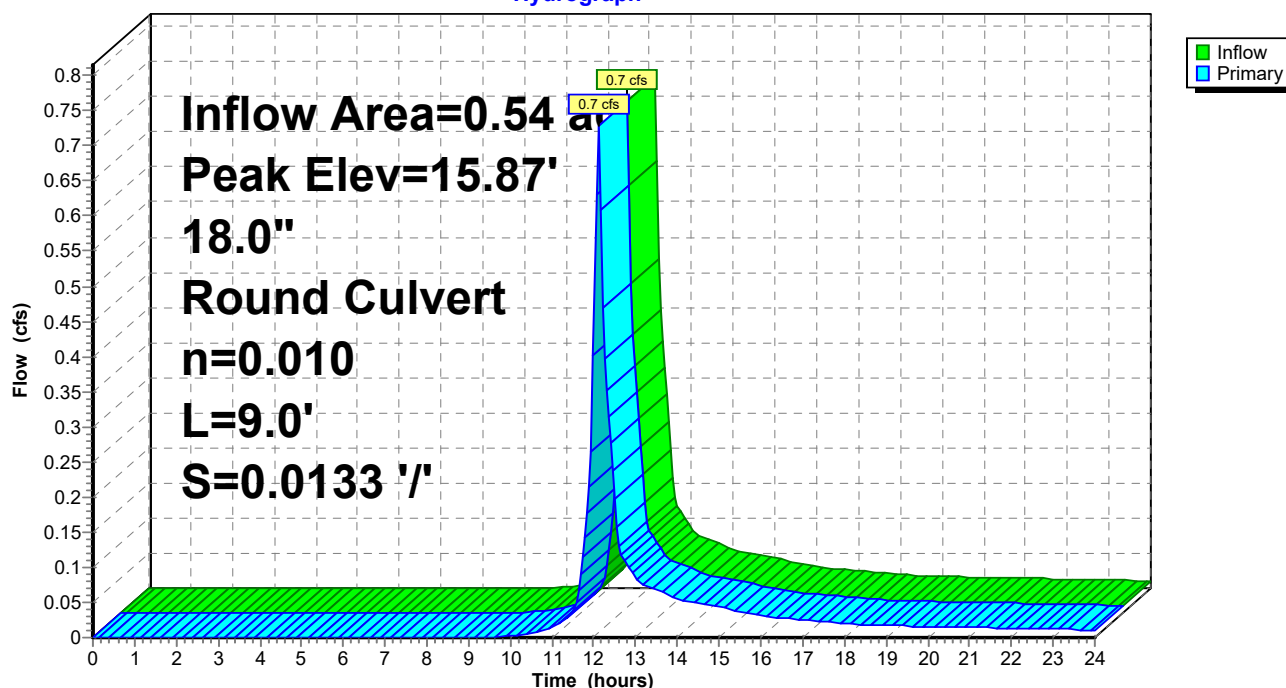
Device	Routing	Invert	Outlet Devices
#1	Primary	15.44'	18.0" Round Culvert L= 9.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.44' / 15.32' S= 0.0133 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.7 cfs @ 12.10 hrs HW=15.87' TW=15.01' (Dynamic Tailwater)

1=Culvert (Barrel Controls 0.7 cfs @ 2.61 fps)

Pond 25P: Ex DMH5

Hydrograph



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Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Pond 26P: Ex DMH6

Inflow Area = 1.23 ac, 64.68% Impervious, Inflow Depth > 1.35" for 2-Year Storm event
Inflow = 1.9 cfs @ 12.10 hrs, Volume= 0.138 af
Outflow = 1.9 cfs @ 12.10 hrs, Volume= 0.138 af, Atten= 0%, Lag= 0.0 min
Primary = 1.9 cfs @ 12.10 hrs, Volume= 0.138 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.01' @ 12.10 hrs

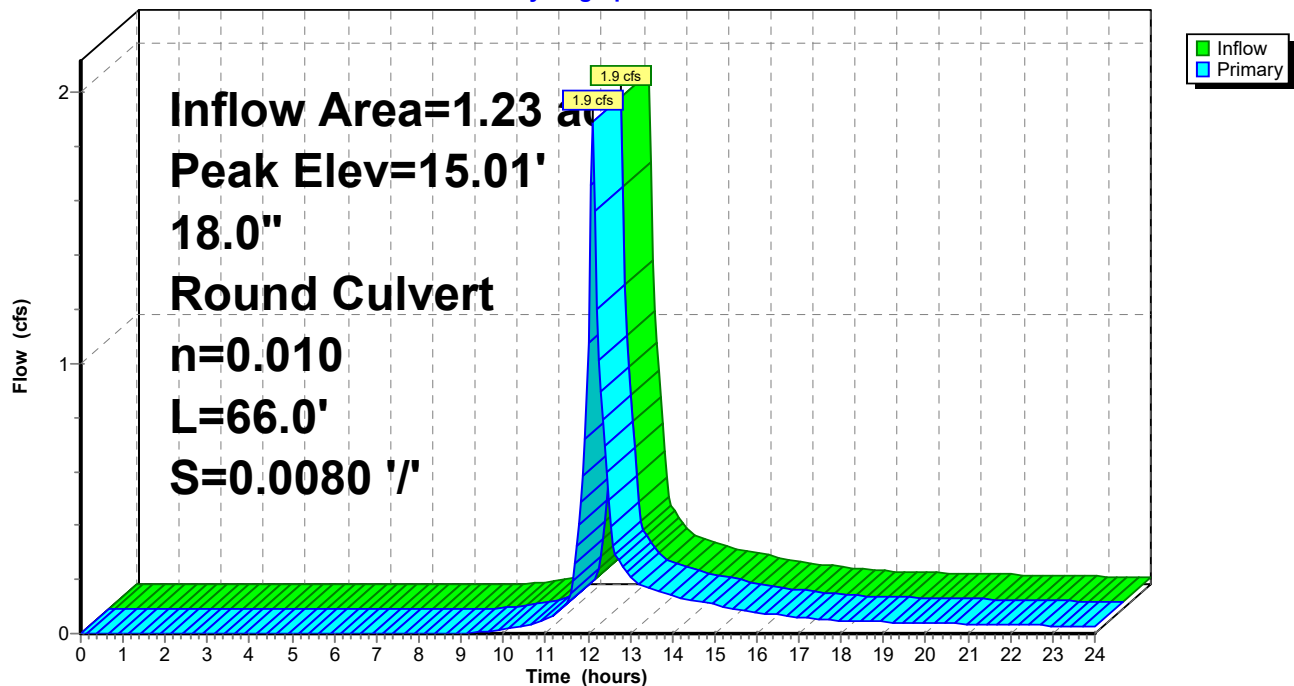
Flood Elev= 23.95'

Device	Routing	Invert	Outlet Devices
#1	Primary	14.30'	18.0" Round Culvert L= 66.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.30' / 13.77' S= 0.0080 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.8 cfs @ 12.10 hrs HW=15.01' TW=14.54' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.8 cfs @ 3.25 fps)

Pond 26P: Ex DMH6

Hydrograph



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Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Pond 27P: Ex DMH7

Inflow Area = 1.23 ac, 64.68% Impervious, Inflow Depth > 1.35" for 2-Year Storm event
Inflow = 1.9 cfs @ 12.10 hrs, Volume= 0.138 af
Outflow = 1.9 cfs @ 12.10 hrs, Volume= 0.138 af, Atten= 0%, Lag= 0.0 min
Primary = 1.9 cfs @ 12.10 hrs, Volume= 0.138 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

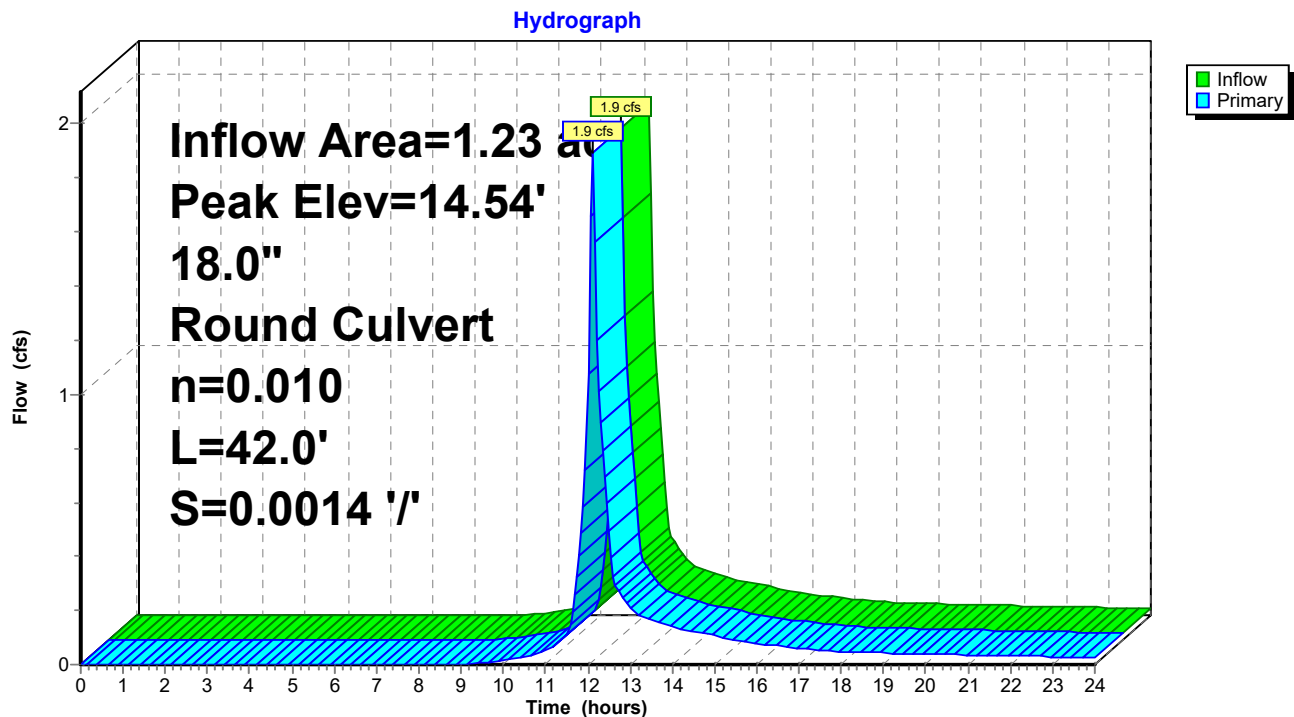
Peak Elev= 14.54' @ 12.10 hrs

Flood Elev= 24.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	13.70'	18.0" Round Culvert L= 42.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.70' / 13.64' S= 0.0014 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.9 cfs @ 12.10 hrs HW=14.54' TW=0.00' (Dynamic Tailwater)
↑1=Culvert (Barrel Controls 1.9 cfs @ 2.67 fps)

Pond 27P: Ex DMH7



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PRE
Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Pond 29P: Ex DMH9

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 1.21" for 2-Year Storm event
Inflow = 0.7 cfs @ 12.10 hrs, Volume= 0.054 af
Outflow = 0.7 cfs @ 12.10 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min
Primary = 0.7 cfs @ 12.10 hrs, Volume= 0.054 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.95' @ 12.11 hrs

Flood Elev= 23.44'

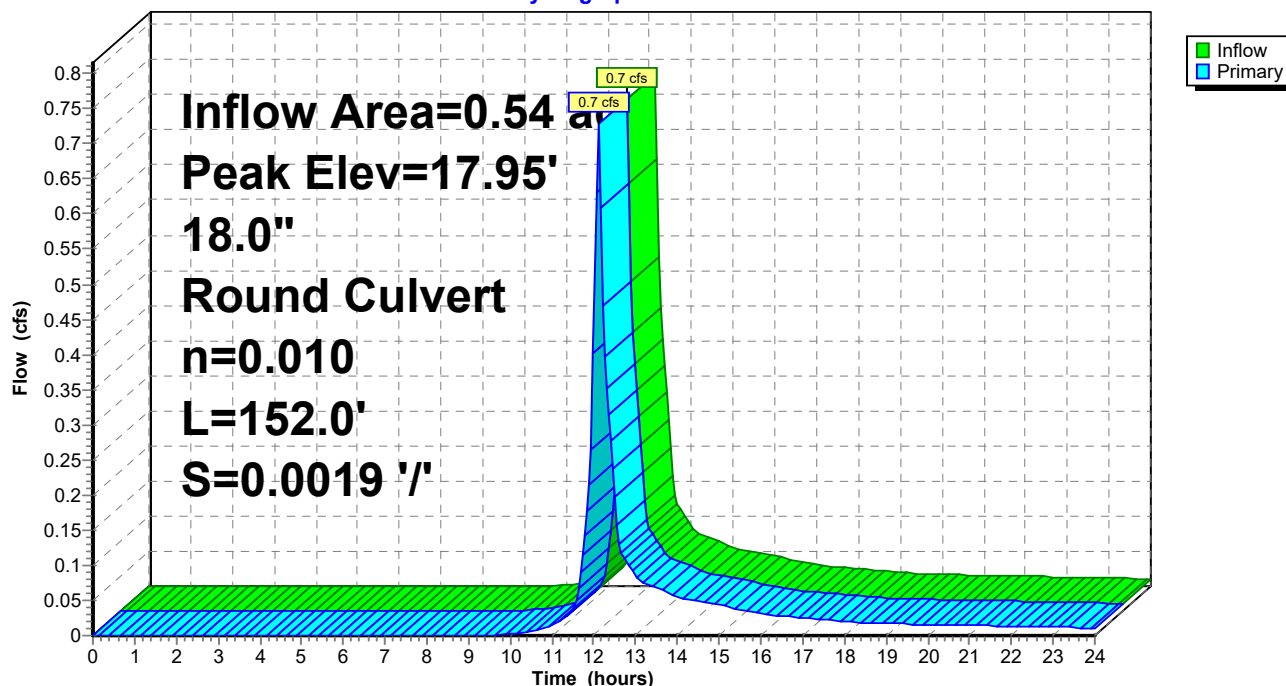
Device	Routing	Invert	Outlet Devices
#1	Primary	17.46'	18.0" Round Culvert L= 152.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.46' / 17.17' S= 0.0019 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.7 cfs @ 12.10 hrs HW=17.95' TW=17.59' (Dynamic Tailwater)

1=Culvert (Outlet Controls 0.7 cfs @ 2.08 fps)

Pond 29P: Ex DMH9

Hydrograph



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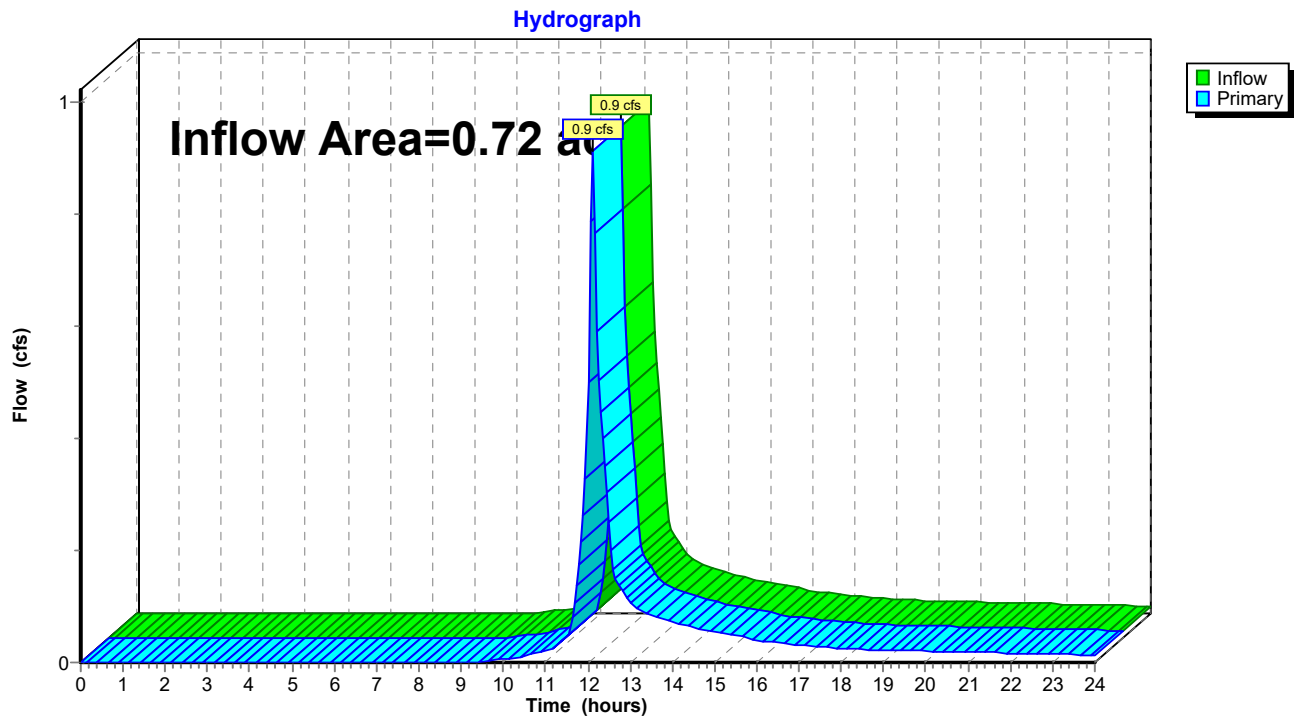
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Summary for Link SP1: Forest Ave Storm Drain

Inflow Area = 0.72 ac, 39.36% Impervious, Inflow Depth > 1.14" for 2-Year Storm event
Inflow = 0.9 cfs @ 12.10 hrs, Volume= 0.069 af
Primary = 0.9 cfs @ 12.10 hrs, Volume= 0.069 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP1: Forest Ave Storm Drain



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Type III 24-hr 2-Year Storm Rainfall=3.10"

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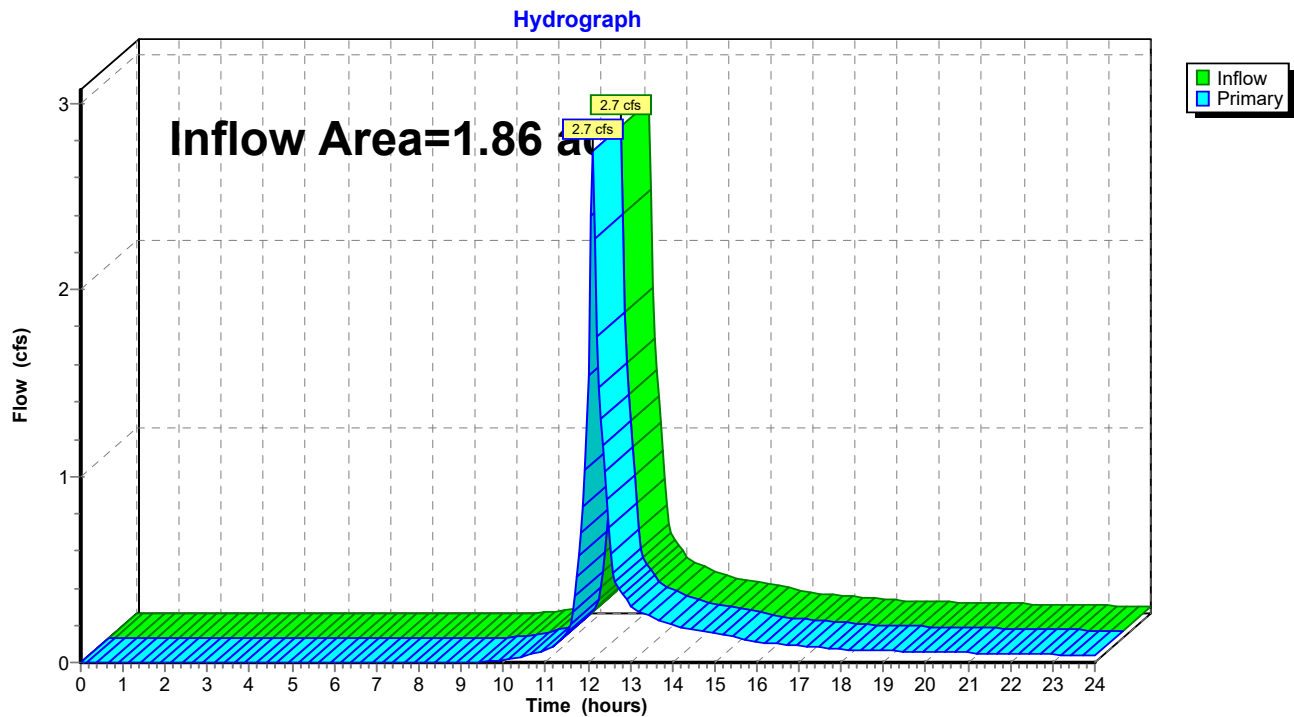
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Summary for Link SP2: Combined Sewer

Inflow Area = 1.86 ac, 62.17% Impervious, Inflow Depth > 1.30" for 2-Year Storm event
Inflow = 2.7 cfs @ 12.10 hrs, Volume= 0.202 af
Primary = 2.7 cfs @ 12.10 hrs, Volume= 0.202 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP2: Combined Sewer



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: PRE-1	Runoff Area=8,487 sf 61.42% Impervious Runoff Depth>2.54" Tc=6.0 min CN=80 Runoff=0.6 cfs 0.041 af
Subcatchment2S: PRE-2	Runoff Area=14,855 sf 50.48% Impervious Runoff Depth>2.29" Tc=6.0 min CN=77 Runoff=0.9 cfs 0.065 af
Subcatchment3S: PRE-3	Runoff Area=19,668 sf 51.10% Impervious Runoff Depth>2.63" Tc=6.0 min CN=81 Runoff=1.4 cfs 0.099 af
Subcatchment4S: PRE-4	Runoff Area=11,760 sf 19.74% Impervious Runoff Depth>1.67" Tc=6.0 min CN=69 Runoff=0.5 cfs 0.038 af
Subcatchment5S: PRE-5	Runoff Area=27,546 sf 57.26% Impervious Runoff Depth>2.37" Tc=6.0 min CN=78 Runoff=1.7 cfs 0.125 af
Subcatchment6S: PRE-6	Runoff Area=16,352 sf 71.97% Impervious Runoff Depth>2.72" Tc=6.0 min CN=82 Runoff=1.2 cfs 0.085 af
Subcatchment7S: PRE-7	Runoff Area=13,974 sf 73.24% Impervious Runoff Depth>2.72" Tc=6.0 min CN=82 Runoff=1.0 cfs 0.073 af
Pond 11P: Ex CB1	Peak Elev=19.22' Inflow=1.5 cfs 0.106 af 12.0" Round Culvert n=0.010 L=41.0' S=0.0224 '/ Outflow=1.5 cfs 0.106 af
Pond 12P: Ex CB2	Peak Elev=18.62' Inflow=0.5 cfs 0.038 af 8.0" Round Culvert n=0.010 L=159.0' S=0.0158 '/ Outflow=0.5 cfs 0.038 af
Pond 14P: Ex CB4	Peak Elev=16.56' Inflow=1.2 cfs 0.085 af 12.0" Round Culvert n=0.010 L=63.0' S=0.0195 '/ Outflow=1.2 cfs 0.085 af
Pond 15P: Ex CB5	Peak Elev=15.71' Inflow=2.2 cfs 0.158 af 18.0" Round Culvert n=0.010 L=38.0' S=-0.0026 '/ Outflow=2.2 cfs 0.158 af
Pond 21P: Ex DMH1	Peak Elev=15.56' Inflow=2.2 cfs 0.158 af 18.0" Round Culvert n=0.010 L=12.0' S=0.0200 '/ Outflow=2.2 cfs 0.158 af
Pond 22P: Ex DMH2	Peak Elev=17.80' Inflow=1.5 cfs 0.106 af 18.0" Round Culvert n=0.010 L=98.0' S=0.0023 '/ Outflow=1.5 cfs 0.106 af
Pond 23P: Ex CB3	Peak Elev=14.68' Inflow=1.7 cfs 0.125 af 24.0" Round Culvert n=0.013 L=252.0' S=0.0044 '/ Outflow=1.7 cfs 0.125 af
Pond 24P: Ex DMH4	Peak Elev=17.45' Inflow=1.5 cfs 0.106 af 18.0" Round Culvert n=0.010 L=198.0' S=0.0019 '/ Outflow=1.5 cfs 0.106 af
Pond 25P: Ex DMH5	Peak Elev=16.09' Inflow=1.5 cfs 0.106 af 18.0" Round Culvert n=0.010 L=9.0' S=0.0133 '/ Outflow=1.5 cfs 0.106 af

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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Pond 26P: Ex DMH6Peak Elev=15.39' Inflow=3.6 cfs 0.264 af
18.0" Round Culvert n=0.010 L=66.0' S=0.0080 '/ Outflow=3.6 cfs 0.264 af**Pond 27P: Ex DMH7**Peak Elev=14.93' Inflow=3.6 cfs 0.264 af
18.0" Round Culvert n=0.010 L=42.0' S=0.0014 '/ Outflow=3.6 cfs 0.264 af**Pond 29P: Ex DMH9**Peak Elev=18.18' Inflow=1.5 cfs 0.106 af
18.0" Round Culvert n=0.010 L=152.0' S=0.0019 '/ Outflow=1.5 cfs 0.106 af**Link SP1: Forest Ave Storm Drain**Inflow=1.9 cfs 0.137 af
Primary=1.9 cfs 0.137 af**Link SP2: Combined Sewer**Inflow=5.4 cfs 0.389 af
Primary=5.4 cfs 0.389 af**Total Runoff Area = 2.59 ac Runoff Volume = 0.526 af Average Runoff Depth = 2.44"**
44.19% Pervious = 1.14 ac 55.81% Impervious = 1.44 ac

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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Subcatchment 1S: PRE-1

Runoff = 0.6 cfs @ 12.09 hrs, Volume= 0.041 af, Depth> 2.54"

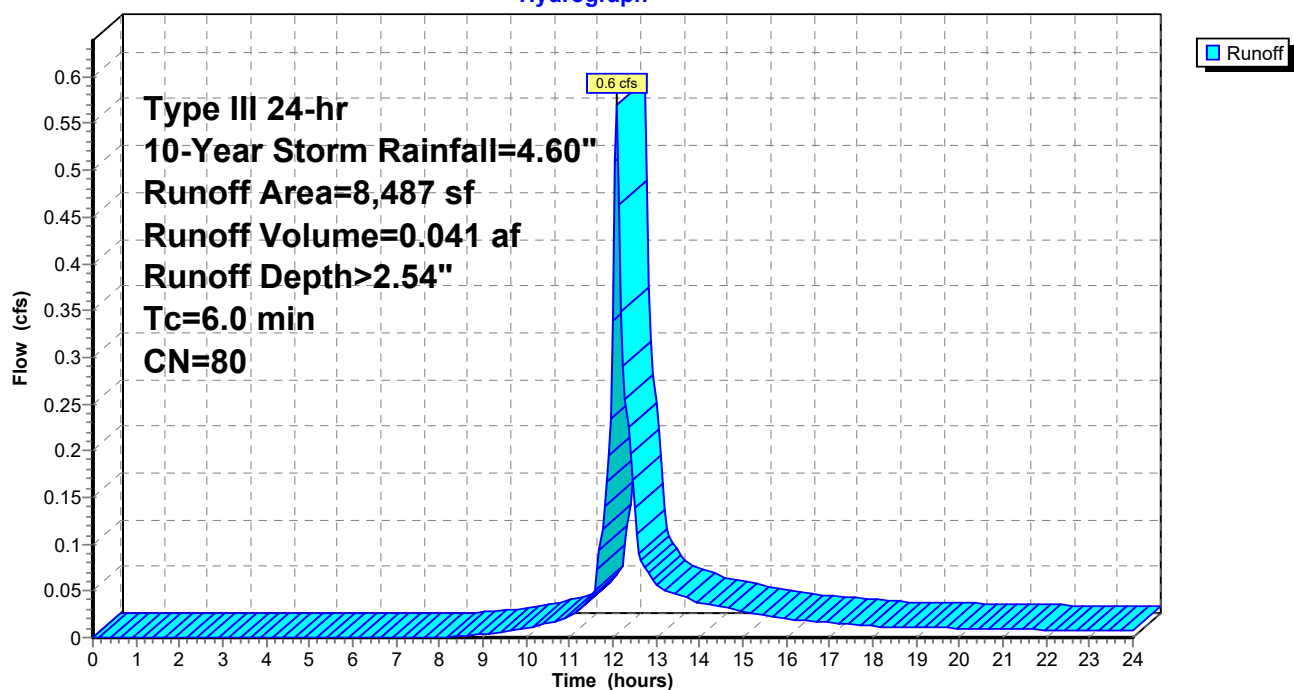
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
5,213	98	Paved parking, HSG A
1,900	39	Grass cover, Good, HSG A
* 1,374	68	Grass cover (parking area), HSG A
8,487	80	Weighted Average
3,274		38.58% Pervious Area
5,213		61.42% Impervious Area

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

Subcatchment 1S: PRE-1

Hydrograph



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Subcatchment 2S: PRE-2

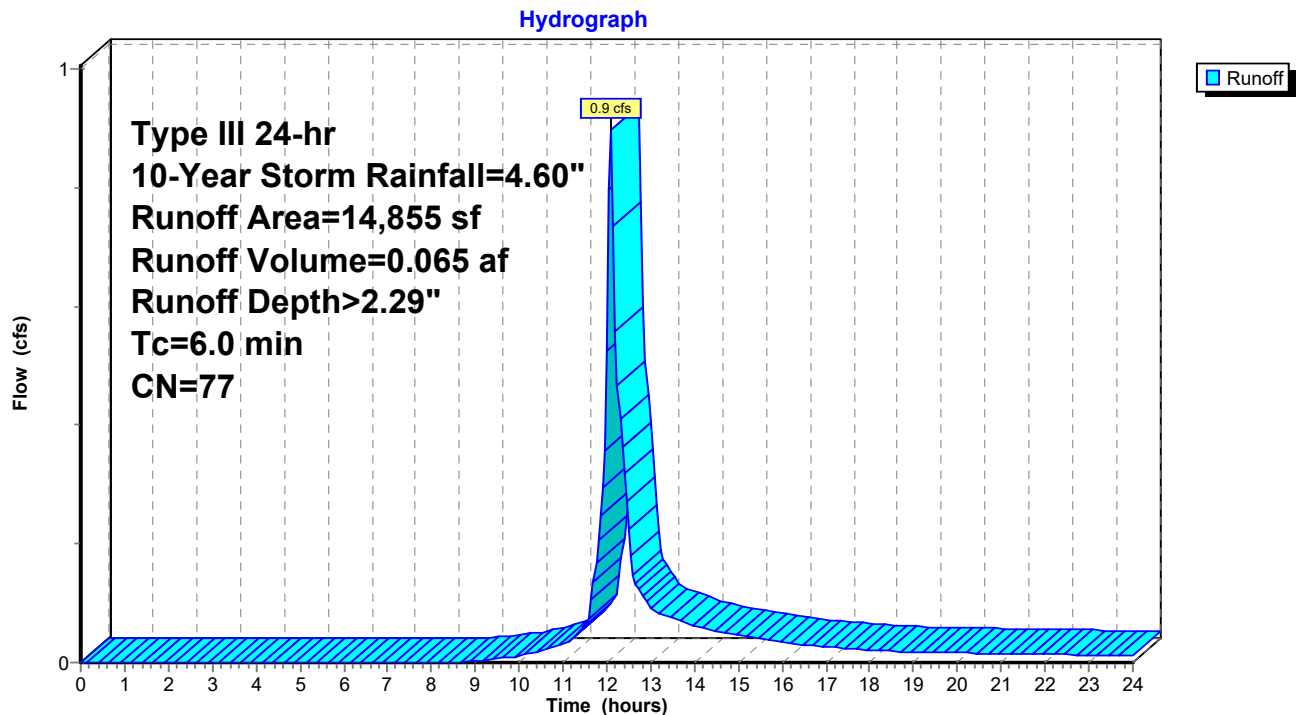
Runoff = 0.9 cfs @ 12.09 hrs, Volume= 0.065 af, Depth> 2.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
7,499	98	Paved parking, HSG A
2,948	39	Grass cover, Good, HSG A
4,408	68	Grass cover (parking area), HSG A
14,855	77	Weighted Average
7,356		49.52% Pervious Area
7,499		50.48% Impervious Area

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

Subcatchment 2S: PRE-2



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PRE
Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Subcatchment 3S: PRE-3

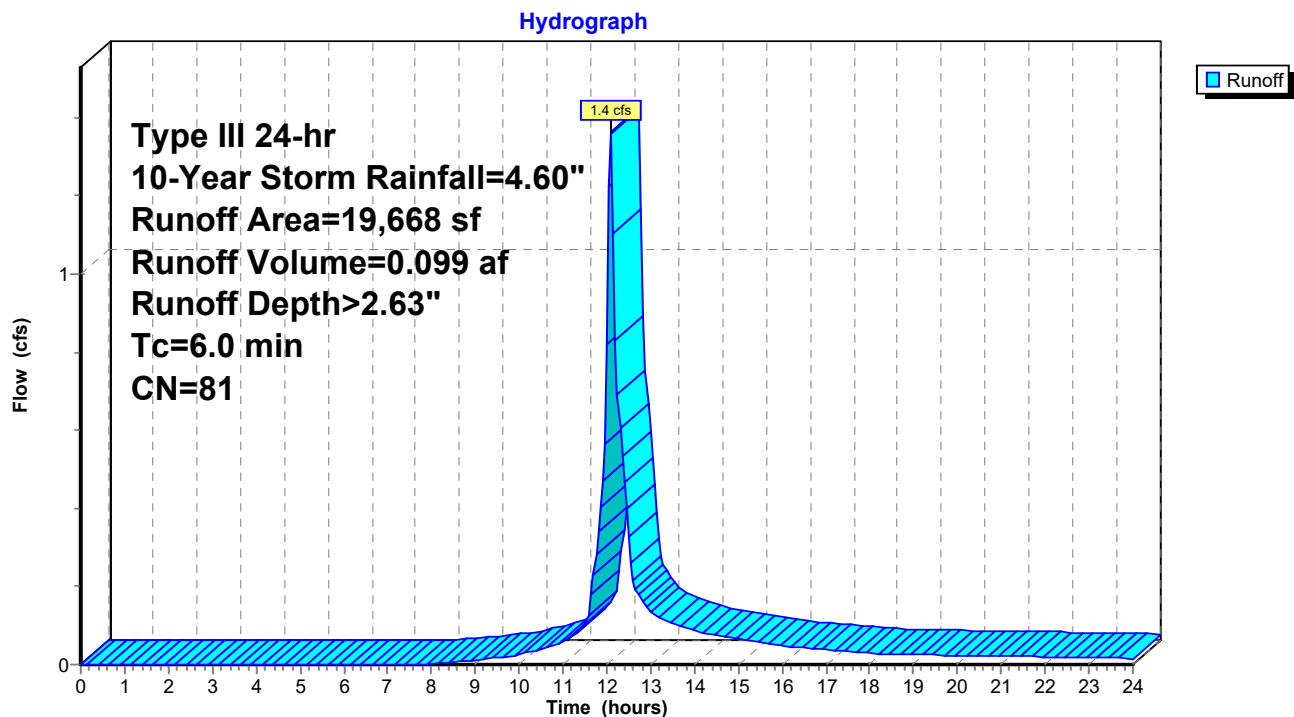
Runoff = 1.4 cfs @ 12.09 hrs, Volume= 0.099 af, Depth> 2.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
10,050	98	Paved parking, HSG A
1,903	39	Grass cover, Good, HSG A
7,715	68	Grass cover (parking area), HSG A
19,668	81	Weighted Average
9,618		48.90% Pervious Area
10,050		51.10% Impervious Area

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

Subcatchment 3S: PRE-3



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Subcatchment 4S: PRE-4

Runoff = 0.5 cfs @ 12.10 hrs, Volume= 0.038 af, Depth> 1.67"

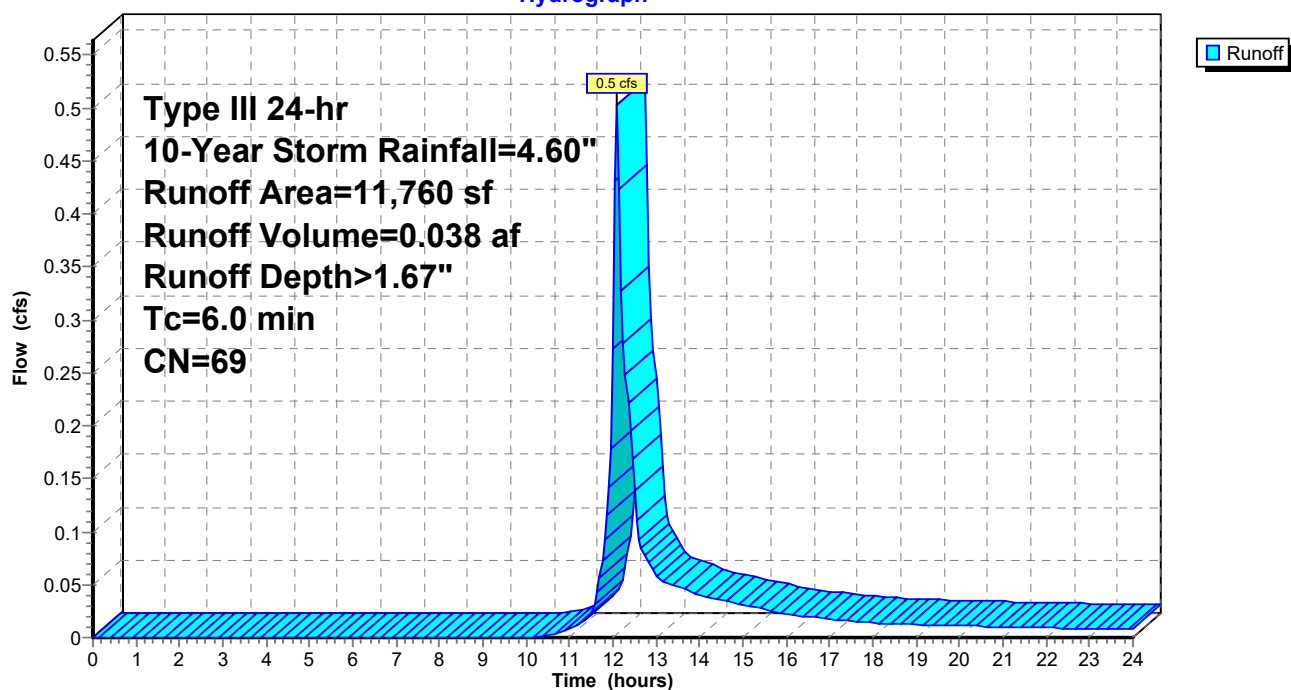
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
2,321	98	Paved parking, HSG A
1,957	39	Grass cover, Good, HSG A
7,482	68	Grass cover (parking area), HSG A
11,760	69	Weighted Average
9,439		80.26% Pervious Area
2,321		19.74% Impervious Area

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

Subcatchment 4S: PRE-4

Hydrograph



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PRE
Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Subcatchment 5S: PRE-5

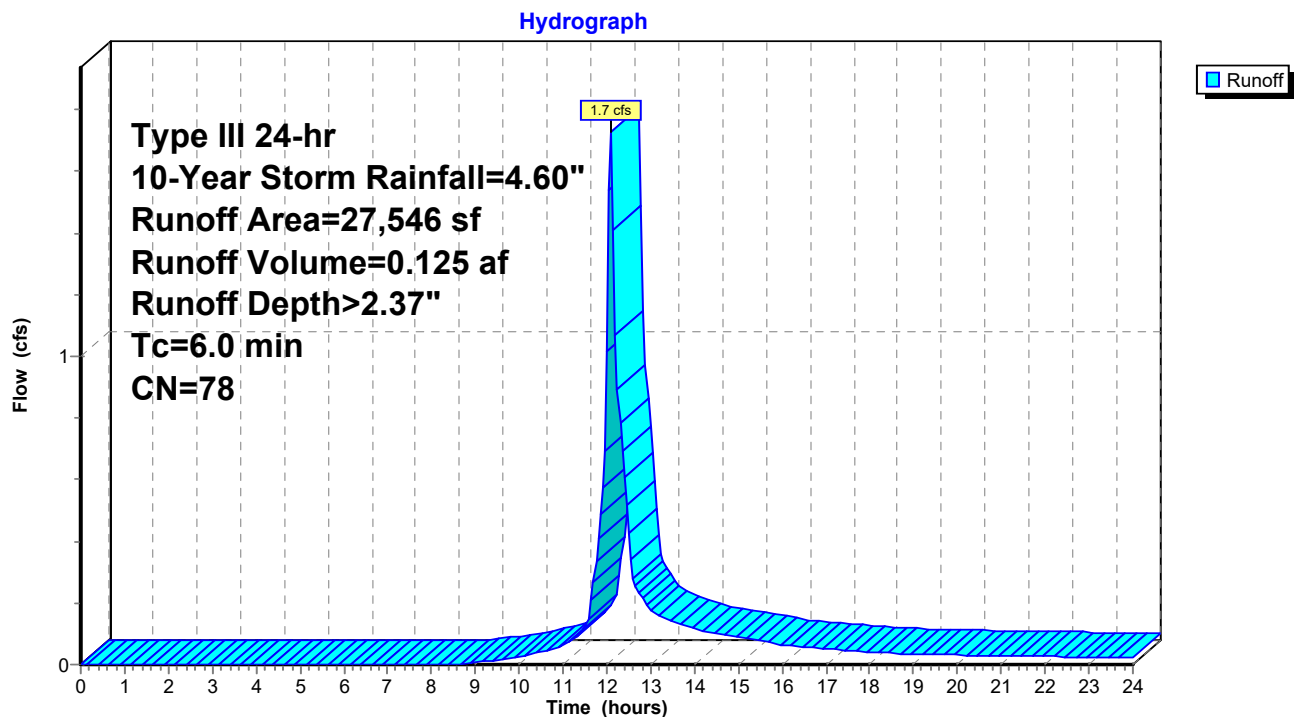
Runoff = 1.7 cfs @ 12.09 hrs, Volume= 0.125 af, Depth> 2.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
15,774	98	Paved parking, HSG A
6,700	39	Grass cover, Good, HSG A
5,072	68	Grass cover (parking area), HSG A
27,546	78	Weighted Average
11,772		42.74% Pervious Area
15,774		57.26% Impervious Area

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

Subcatchment 5S: PRE-5



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PRE
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Summary for Subcatchment 6S: PRE-6

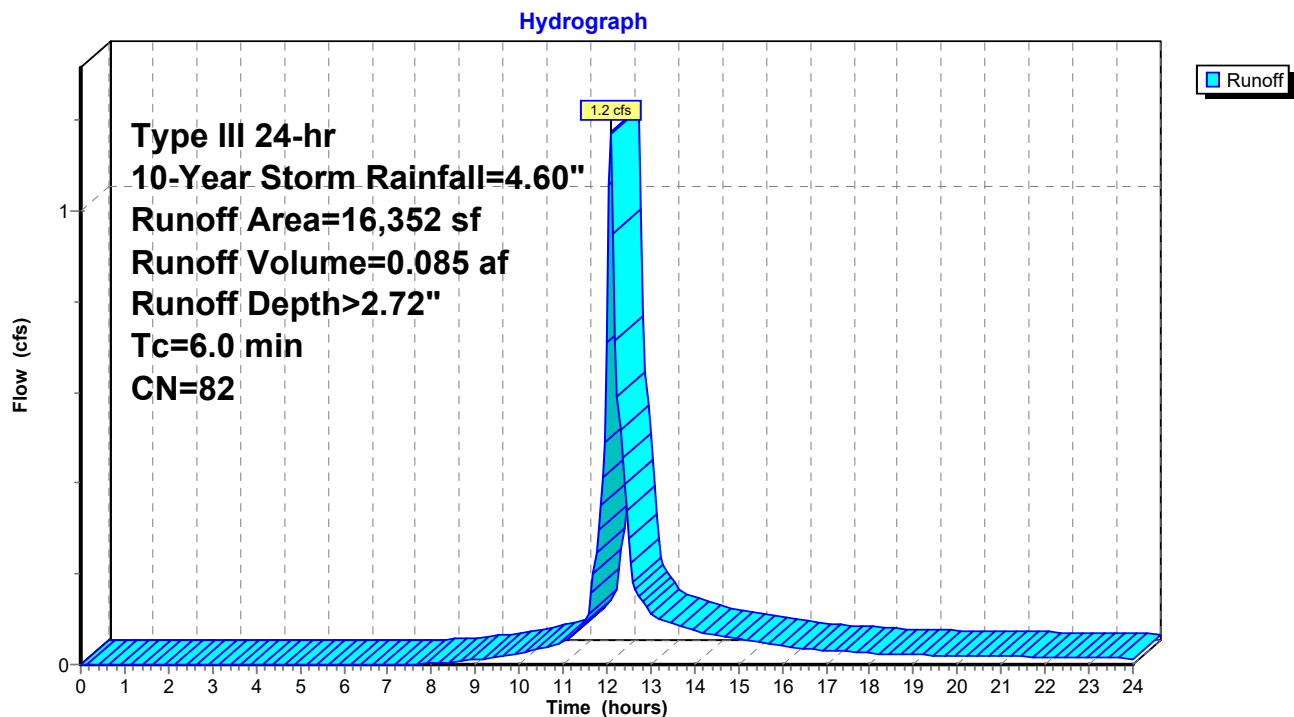
Runoff = 1.2 cfs @ 12.09 hrs, Volume= 0.085 af, Depth> 2.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
11,768	98	Paved parking, HSG A
3,865	39	Grass cover, Good, HSG A
* 719	40	Porous Pavement
16,352	82	Weighted Average
4,584		28.03% Pervious Area
11,768		71.97% Impervious Area

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

Subcatchment 6S: PRE-6



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Subcatchment 7S: PRE-7

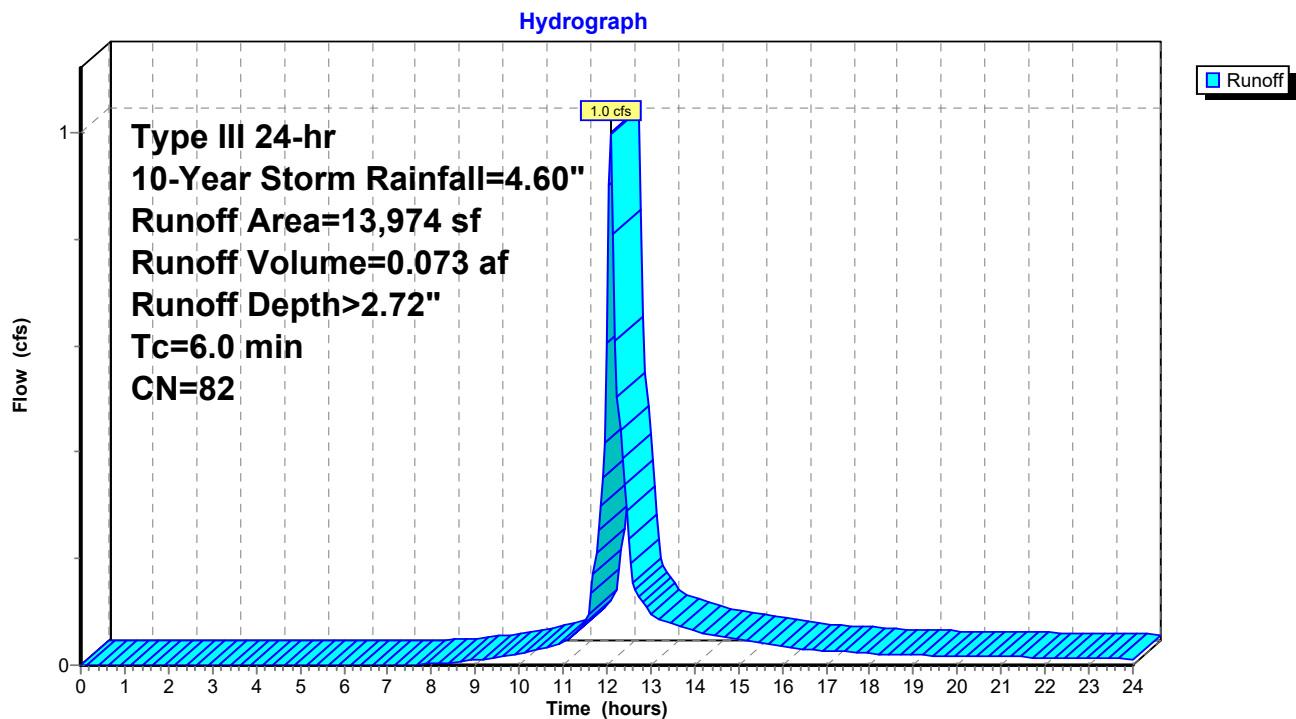
Runoff = 1.0 cfs @ 12.09 hrs, Volume= 0.073 af, Depth> 2.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
10,235	98	Paved parking, HSG A
3,739	39	Grass cover, Good, HSG A
13,974	82	Weighted Average
3,739		26.76% Pervious Area
10,235		73.24% Impervious Area

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

Subcatchment 7S: PRE-7



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Pond 11P: Ex CB1

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 2.38" for 10-Year Storm event
Inflow = 1.5 cfs @ 12.09 hrs, Volume= 0.106 af
Outflow = 1.5 cfs @ 12.09 hrs, Volume= 0.106 af, Atten= 0%, Lag= 0.0 min
Primary = 1.5 cfs @ 12.09 hrs, Volume= 0.106 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 19.22' @ 12.09 hrs

Flood Elev= 22.02'

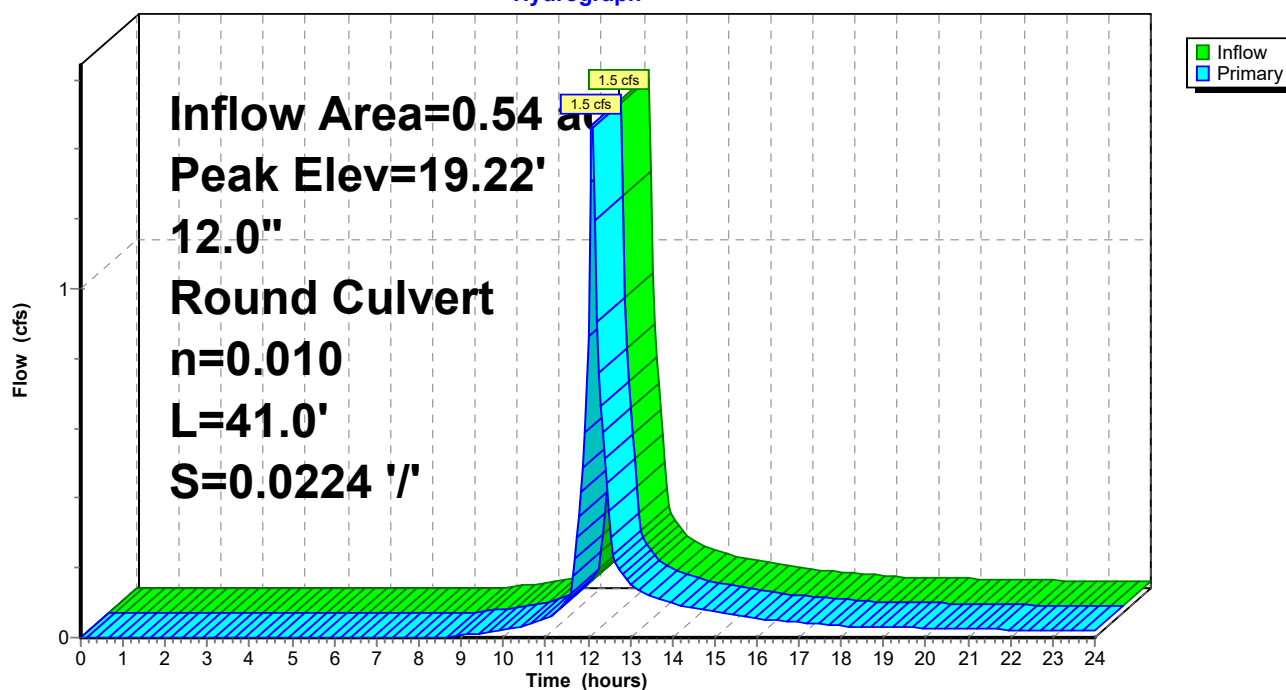
Device	Routing	Invert	Outlet Devices
#1	Primary	18.47'	12.0" Round Culvert L= 41.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.47' / 17.55' S= 0.0224 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.4 cfs @ 12.09 hrs HW=19.21' TW=18.17' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 1.4 cfs @ 2.31 fps)

Pond 11P: Ex CB1

Hydrograph



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Pond 12P: Ex CB2

Inflow Area = 0.27 ac, 19.74% Impervious, Inflow Depth > 1.67" for 10-Year Storm event
Inflow = 0.5 cfs @ 12.10 hrs, Volume= 0.038 af
Outflow = 0.5 cfs @ 12.10 hrs, Volume= 0.038 af, Atten= 0%, Lag= 0.0 min
Primary = 0.5 cfs @ 12.10 hrs, Volume= 0.038 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 18.62' @ 12.10 hrs

Flood Elev= 22.15'

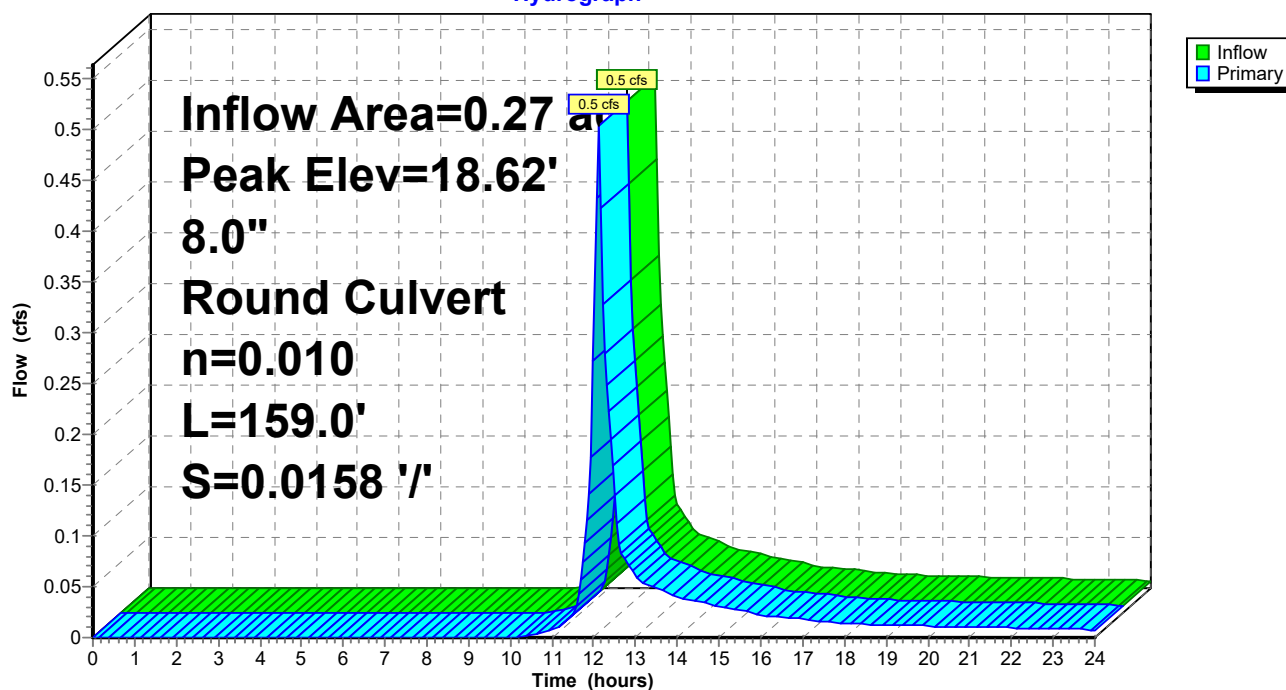
Device	Routing	Invert	Outlet Devices
#1	Primary	18.14'	8.0" Round Culvert L= 159.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.14' / 15.62' S= 0.0158 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.5 cfs @ 12.10 hrs HW=18.62' TW=0.00' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 0.5 cfs @ 1.86 fps)

Pond 12P: Ex CB2

Hydrograph



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Pond 14P: Ex CB4

Inflow Area = 0.38 ac, 71.97% Impervious, Inflow Depth > 2.72" for 10-Year Storm event
Inflow = 1.2 cfs @ 12.09 hrs, Volume= 0.085 af
Outflow = 1.2 cfs @ 12.09 hrs, Volume= 0.085 af, Atten= 0%, Lag= 0.0 min
Primary = 1.2 cfs @ 12.09 hrs, Volume= 0.085 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 16.56' @ 12.09 hrs

Flood Elev= 21.96'

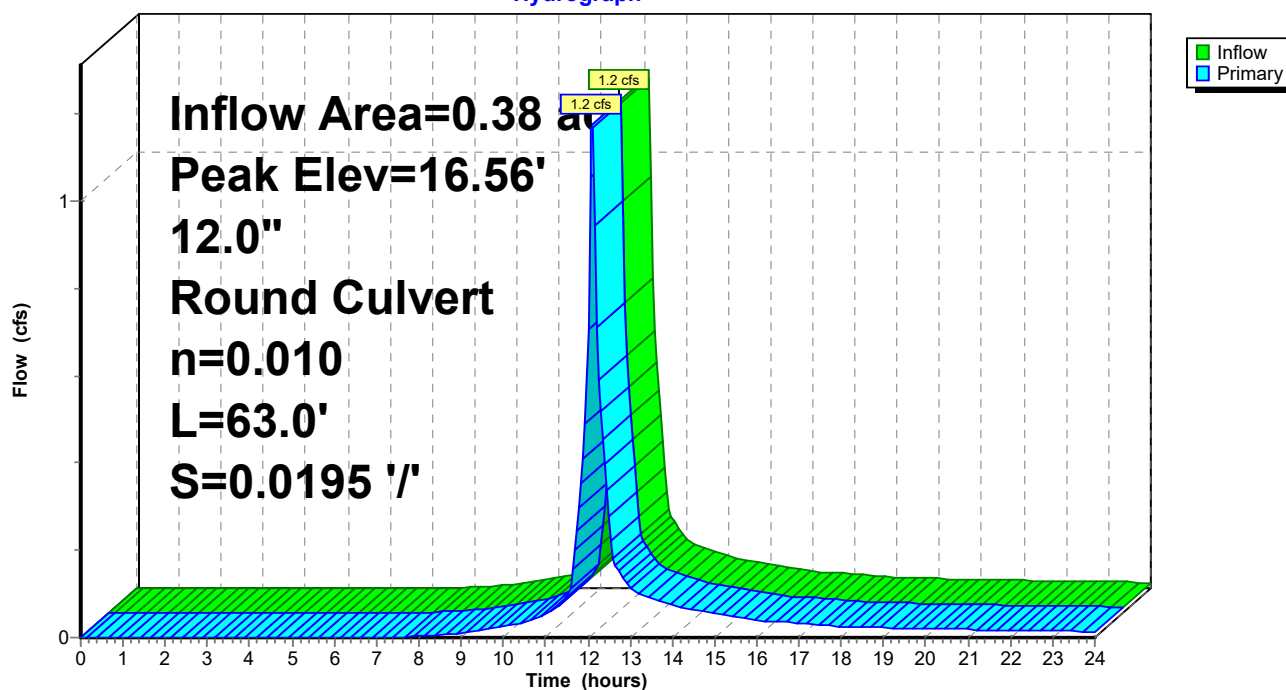
Device	Routing	Invert	Outlet Devices
#1	Primary	15.91'	12.0" Round Culvert L= 63.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.91' / 14.68' S= 0.0195 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.2 cfs @ 12.09 hrs HW=16.55' TW=15.66' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 1.2 cfs @ 2.16 fps)

Pond 14P: Ex CB4

Hydrograph



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Summary for Pond 15P: Ex CB5

Inflow Area = 0.70 ac, 72.55% Impervious, Inflow Depth > 2.72" for 10-Year Storm event
Inflow = 2.2 cfs @ 12.09 hrs, Volume= 0.158 af
Outflow = 2.2 cfs @ 12.09 hrs, Volume= 0.158 af, Atten= 0%, Lag= 0.0 min
Primary = 2.2 cfs @ 12.09 hrs, Volume= 0.158 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.71' @ 12.15 hrs

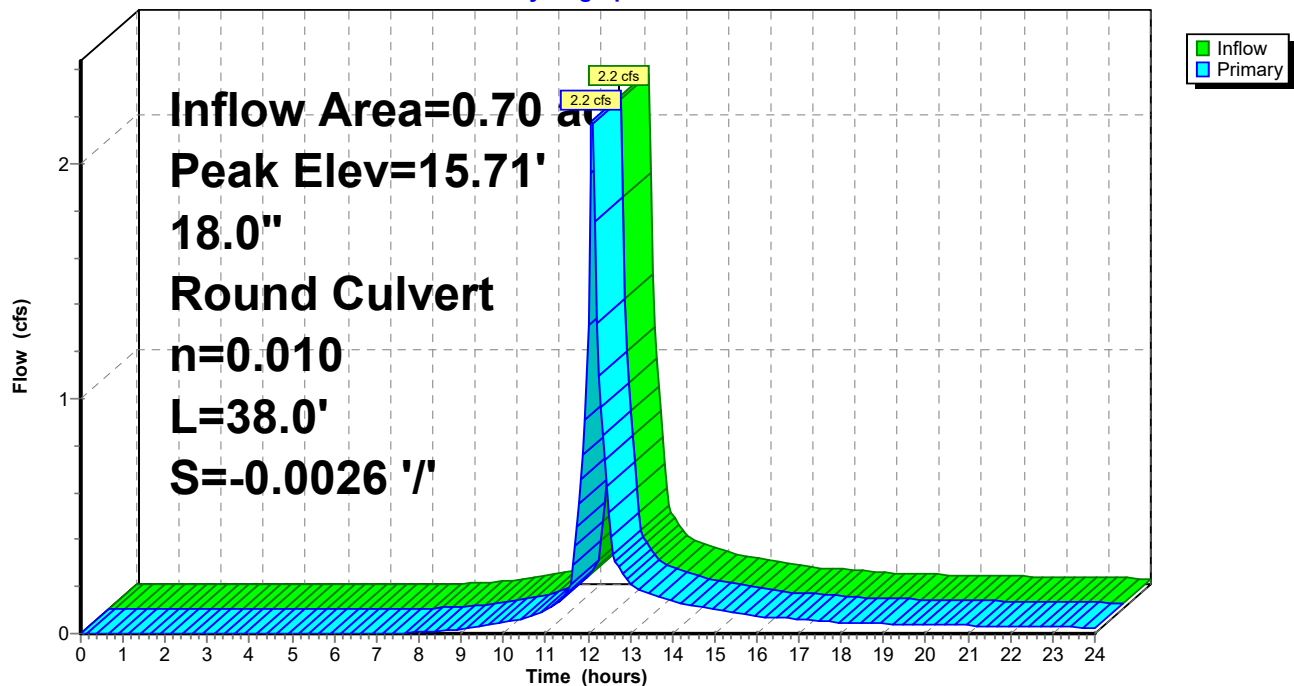
Flood Elev= 22.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	14.80'	18.0" Round Culvert L= 38.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.70' / 14.80' S= -0.0026 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.6 cfs @ 12.09 hrs HW=15.66' TW=15.51' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 1.6 cfs @ 1.48 fps)

Pond 15P: Ex CB5

Hydrograph



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Pond 21P: Ex DMH1

Inflow Area = 0.70 ac, 72.55% Impervious, Inflow Depth > 2.72" for 10-Year Storm event
Inflow = 2.2 cfs @ 12.09 hrs, Volume= 0.158 af
Outflow = 2.2 cfs @ 12.09 hrs, Volume= 0.158 af, Atten= 0%, Lag= 0.0 min
Primary = 2.2 cfs @ 12.09 hrs, Volume= 0.158 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.56' @ 12.13 hrs

Flood Elev= 23.72'

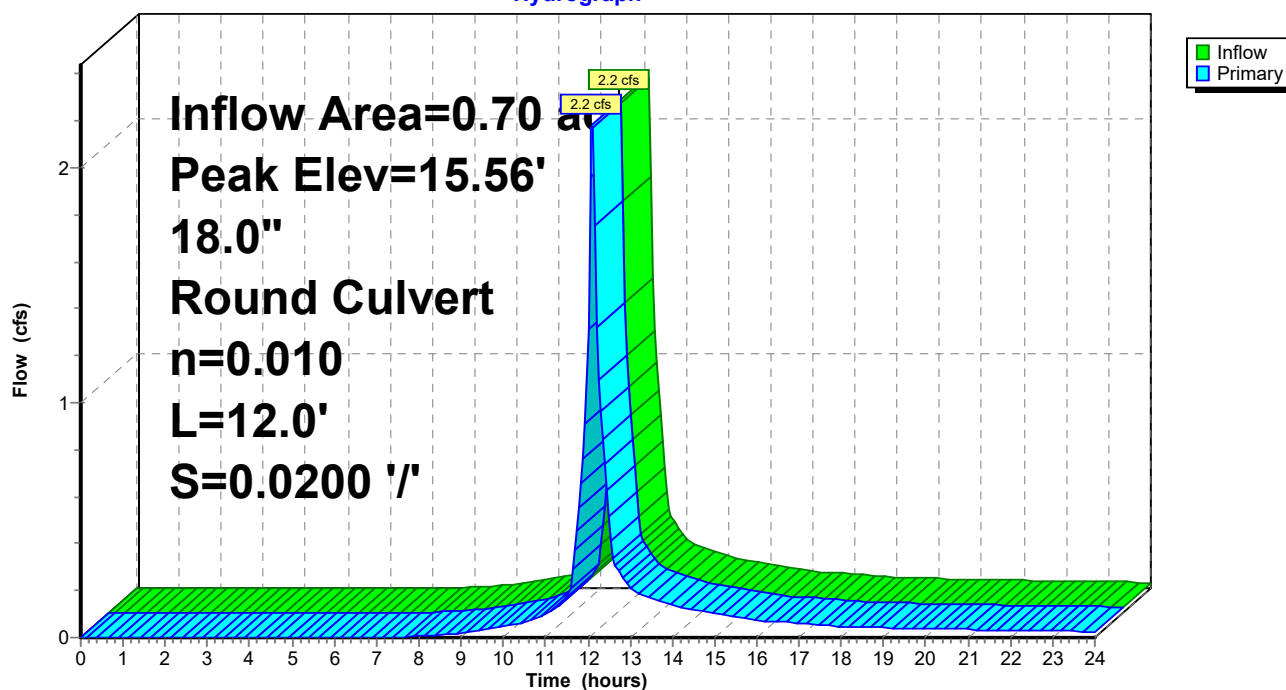
Device	Routing	Invert	Outlet Devices
#1	Primary	14.62'	18.0" Round Culvert L= 12.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.62' / 14.38' S= 0.0200 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.6 cfs @ 12.09 hrs HW=15.51' TW=15.37' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 1.6 cfs @ 1.42 fps)

Pond 21P: Ex DMH1

Hydrograph



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Summary for Pond 22P: Ex DMH2

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 2.38" for 10-Year Storm event
Inflow = 1.5 cfs @ 12.09 hrs, Volume= 0.106 af
Outflow = 1.5 cfs @ 12.09 hrs, Volume= 0.106 af, Atten= 0%, Lag= 0.0 min
Primary = 1.5 cfs @ 12.09 hrs, Volume= 0.106 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.80' @ 12.10 hrs

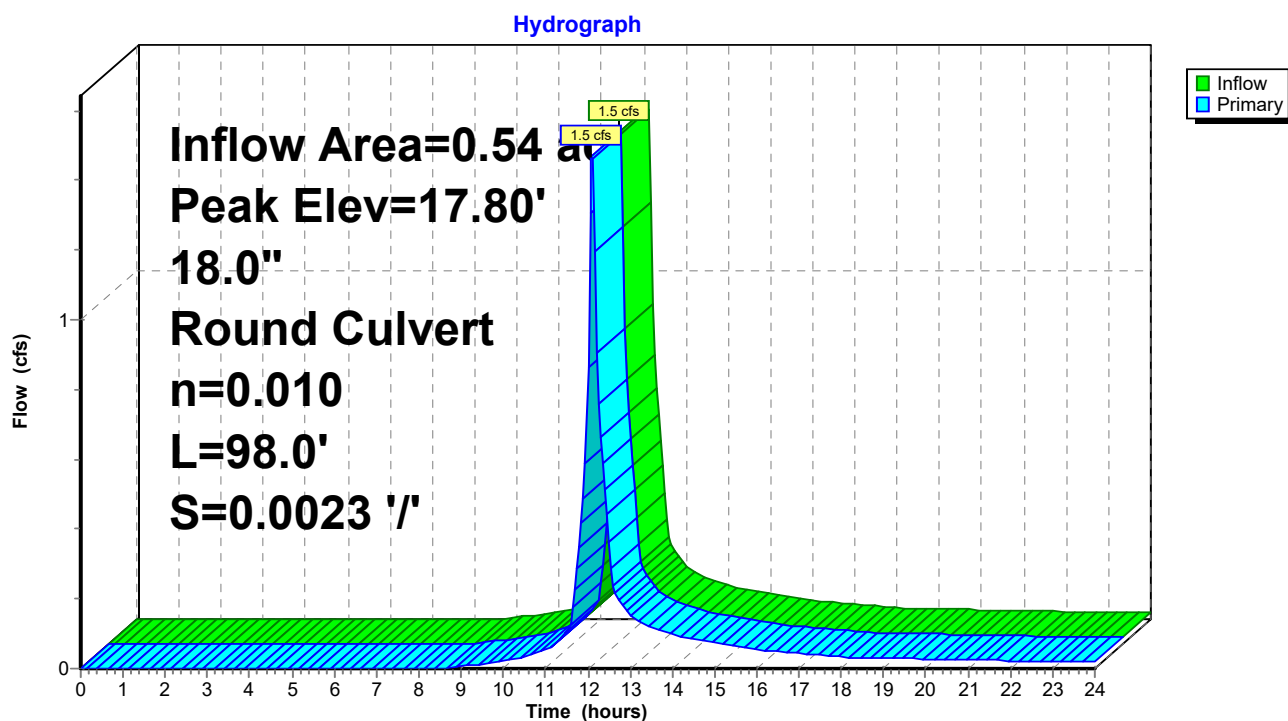
Flood Elev= 24.92'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.12'	18.0" Round Culvert L= 98.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.12' / 16.89' S= 0.0023 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.4 cfs @ 12.09 hrs HW=17.80' TW=17.44' (Dynamic Tailwater)

↑1=Culvert (Outlet Controls 1.4 cfs @ 2.58 fps)

Pond 22P: Ex DMH2



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Pond 23P: Ex CB3

Inflow Area = 0.63 ac, 57.26% Impervious, Inflow Depth > 2.37" for 10-Year Storm event
Inflow = 1.7 cfs @ 12.09 hrs, Volume= 0.125 af
Outflow = 1.7 cfs @ 12.09 hrs, Volume= 0.125 af, Atten= 0%, Lag= 0.0 min
Primary = 1.7 cfs @ 12.09 hrs, Volume= 0.125 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 14.68' @ 12.09 hrs

Flood Elev= 23.60'

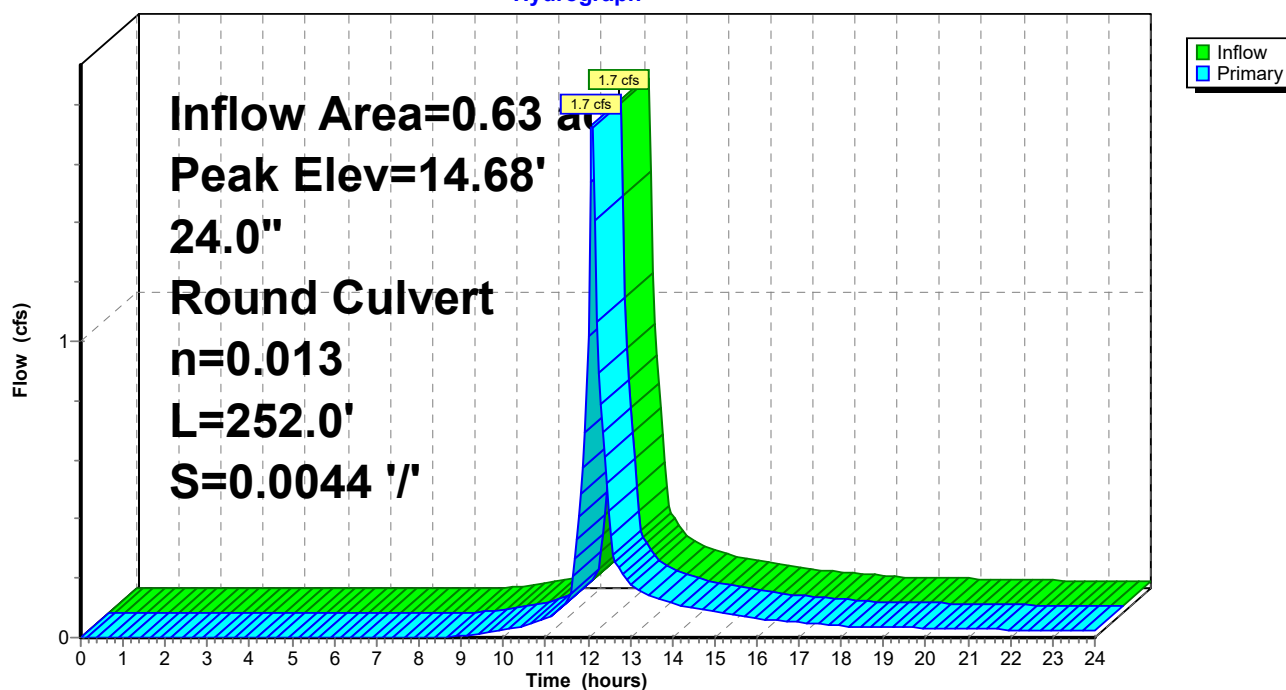
Device	Routing	Invert	Outlet Devices
#1	Primary	14.05'	24.0" Round Culvert L= 252.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.05' / 12.94' S= 0.0044 '/ Cc= 0.900 n= 0.013 Cast iron, coated, Flow Area= 3.14 sf

Primary OutFlow Max=1.7 cfs @ 12.09 hrs HW=14.67' TW=0.00' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 1.7 cfs @ 3.04 fps)

Pond 23P: Ex CB3

Hydrograph



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Summary for Pond 24P: Ex DMH4

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 2.38" for 10-Year Storm event
Inflow = 1.5 cfs @ 12.09 hrs, Volume= 0.106 af
Outflow = 1.5 cfs @ 12.09 hrs, Volume= 0.106 af, Atten= 0%, Lag= 0.0 min
Primary = 1.5 cfs @ 12.09 hrs, Volume= 0.106 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.45' @ 12.09 hrs

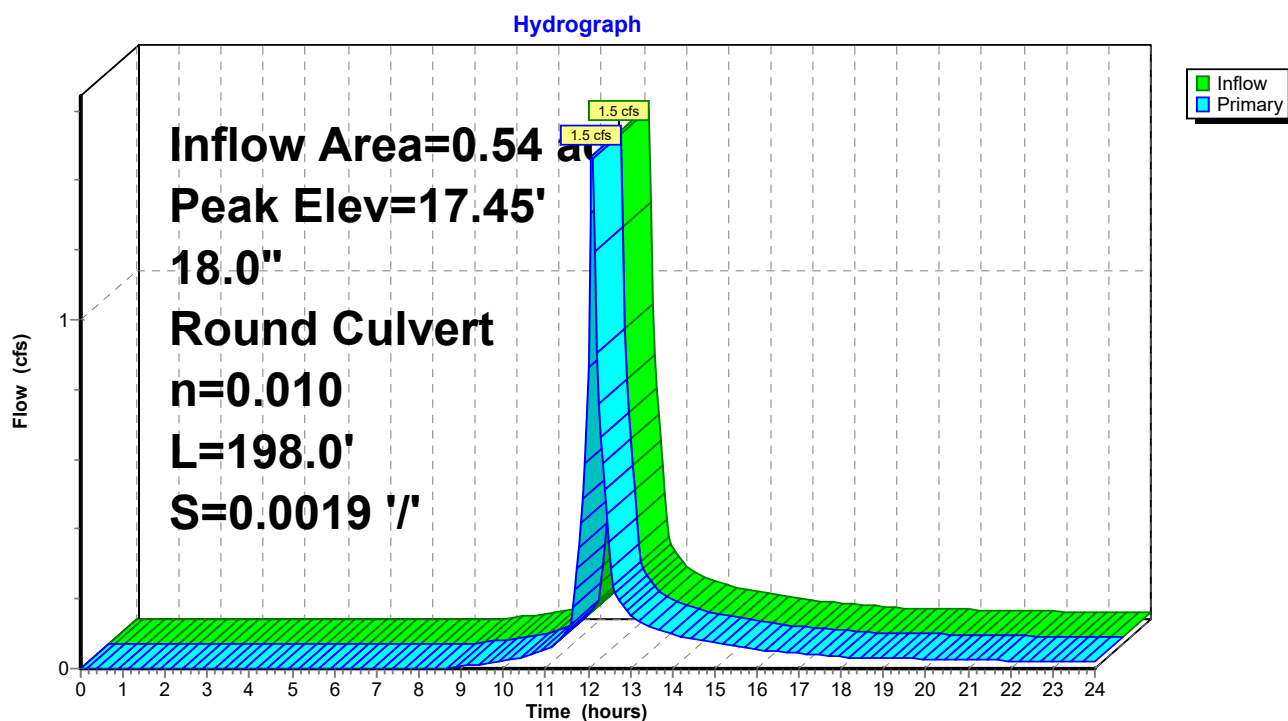
Flood Elev= 25.38'

Device	Routing	Invert	Outlet Devices
#1	Primary	16.75'	18.0" Round Culvert L= 198.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.75' / 16.38' S= 0.0019 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.4 cfs @ 12.09 hrs HW=17.44' TW=16.08' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 1.4 cfs @ 2.66 fps)

Pond 24P: Ex DMH4



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Pond 25P: Ex DMH5

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 2.38" for 10-Year Storm event
Inflow = 1.5 cfs @ 12.09 hrs, Volume= 0.106 af
Outflow = 1.5 cfs @ 12.09 hrs, Volume= 0.106 af, Atten= 0%, Lag= 0.0 min
Primary = 1.5 cfs @ 12.09 hrs, Volume= 0.106 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 16.09' @ 12.09 hrs

Flood Elev= 23.84'

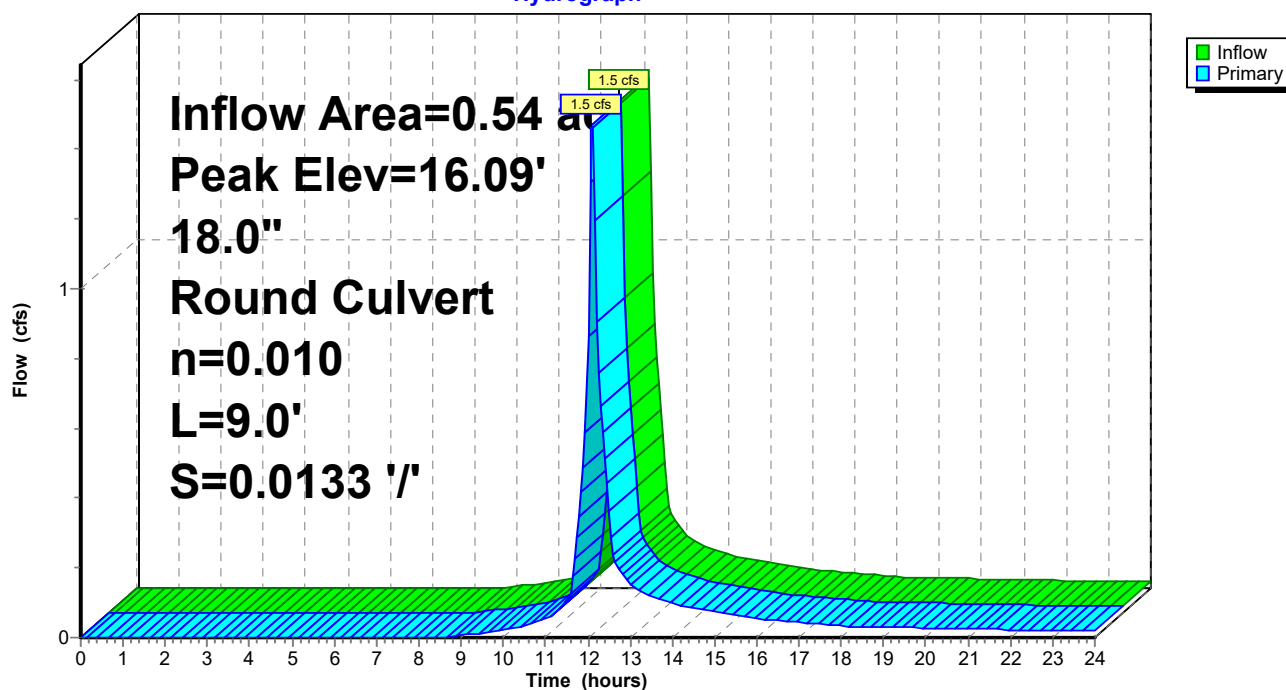
Device	Routing	Invert	Outlet Devices
#1	Primary	15.44'	18.0" Round Culvert L= 9.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.44' / 15.32' S= 0.0133 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.4 cfs @ 12.09 hrs HW=16.08' TW=15.38' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 1.4 cfs @ 2.96 fps)

Pond 25P: Ex DMH5

Hydrograph



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Summary for Pond 26P: Ex DMH6

Inflow Area = 1.23 ac, 64.68% Impervious, Inflow Depth > 2.57" for 10-Year Storm event
Inflow = 3.6 cfs @ 12.09 hrs, Volume= 0.264 af
Outflow = 3.6 cfs @ 12.09 hrs, Volume= 0.264 af, Atten= 0%, Lag= 0.0 min
Primary = 3.6 cfs @ 12.09 hrs, Volume= 0.264 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.39' @ 12.11 hrs

Flood Elev= 23.95'

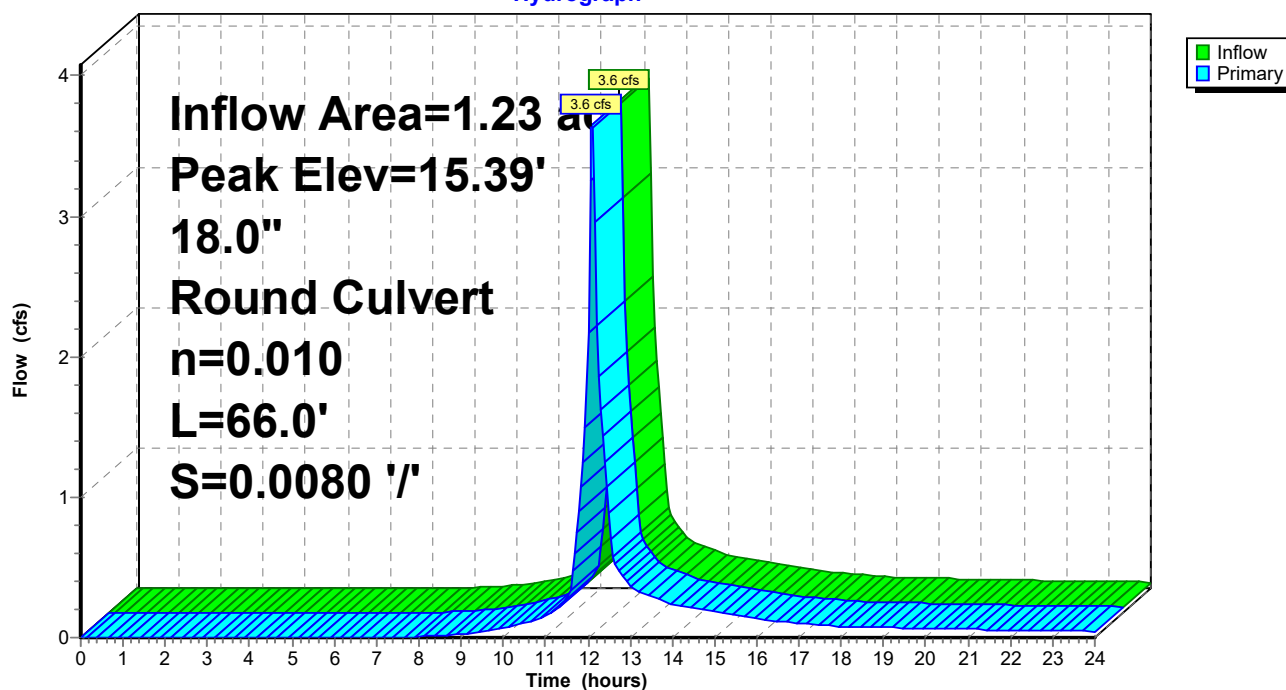
Device	Routing	Invert	Outlet Devices
#1	Primary	14.30'	18.0" Round Culvert L= 66.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.30' / 13.77' S= 0.0080 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.3 cfs @ 12.09 hrs HW=15.37' TW=14.91' (Dynamic Tailwater)

↑1=Culvert (Outlet Controls 3.3 cfs @ 3.40 fps)

Pond 26P: Ex DMH6

Hydrograph



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Summary for Pond 27P: Ex DMH7

Inflow Area = 1.23 ac, 64.68% Impervious, Inflow Depth > 2.57" for 10-Year Storm event
Inflow = 3.6 cfs @ 12.09 hrs, Volume= 0.264 af
Outflow = 3.6 cfs @ 12.09 hrs, Volume= 0.264 af, Atten= 0%, Lag= 0.0 min
Primary = 3.6 cfs @ 12.09 hrs, Volume= 0.264 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 14.93' @ 12.09 hrs

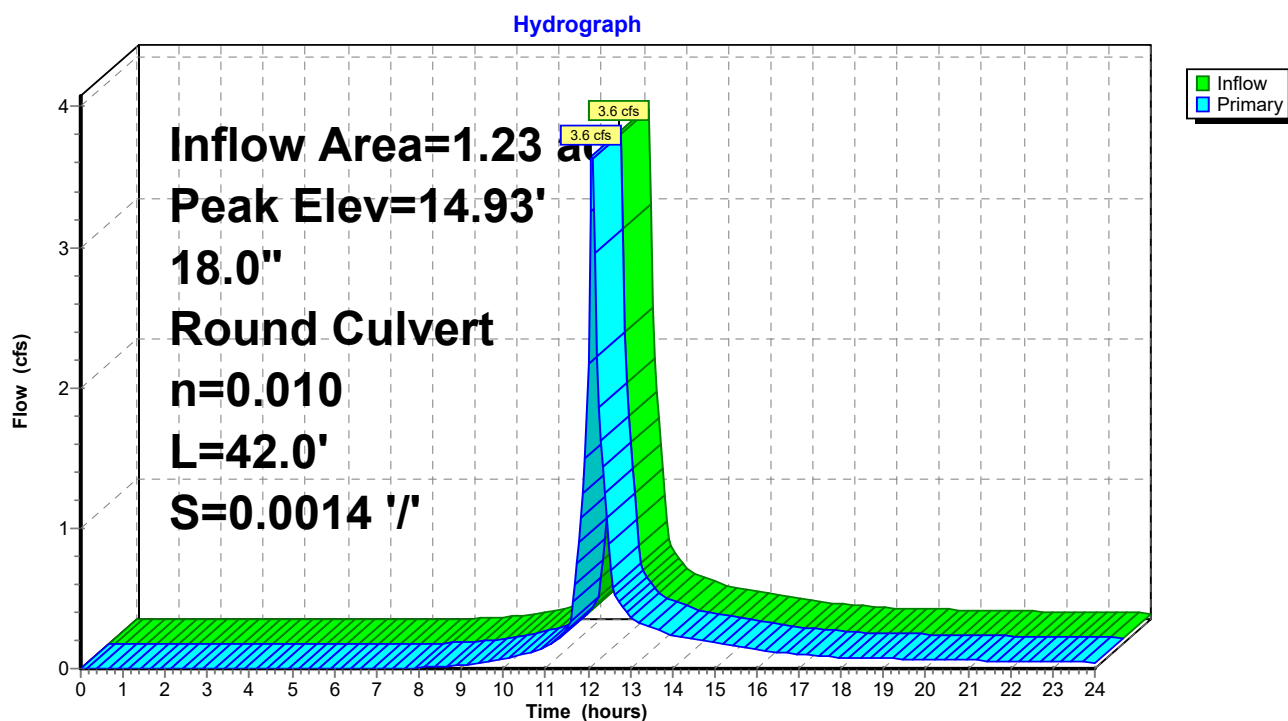
Flood Elev= 24.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	13.70'	18.0" Round Culvert L= 42.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.70' / 13.64' S= 0.0014 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.6 cfs @ 12.09 hrs HW=14.91' TW=0.00' (Dynamic Tailwater)

↑**1=Culvert** (Barrel Controls 3.6 cfs @ 3.19 fps)

Pond 27P: Ex DMH7



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Summary for Pond 29P: Ex DMH9

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 2.38" for 10-Year Storm event
Inflow = 1.5 cfs @ 12.09 hrs, Volume= 0.106 af
Outflow = 1.5 cfs @ 12.09 hrs, Volume= 0.106 af, Atten= 0%, Lag= 0.0 min
Primary = 1.5 cfs @ 12.09 hrs, Volume= 0.106 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 18.18' @ 12.11 hrs

Flood Elev= 23.44'

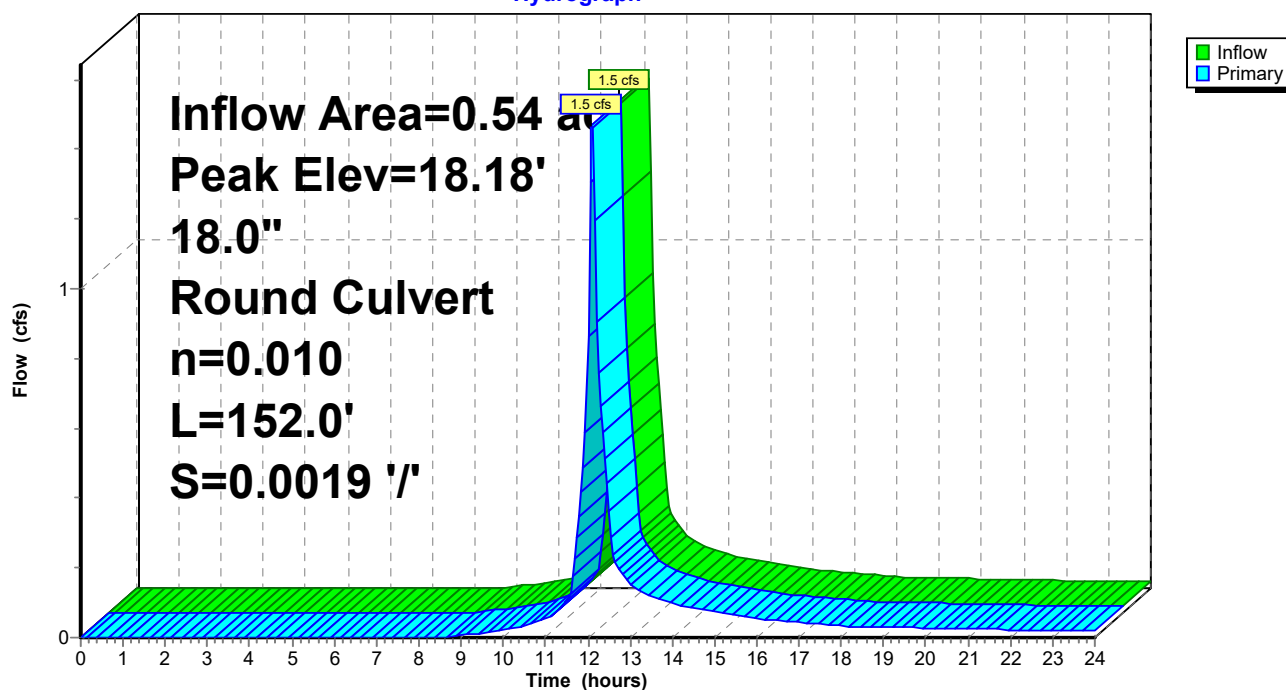
Device	Routing	Invert	Outlet Devices
#1	Primary	17.46'	18.0" Round Culvert L= 152.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.46' / 17.17' S= 0.0019 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.4 cfs @ 12.09 hrs HW=18.17' TW=17.80' (Dynamic Tailwater)

↑1=Culvert (Outlet Controls 1.4 cfs @ 2.40 fps)

Pond 29P: Ex DMH9

Hydrograph



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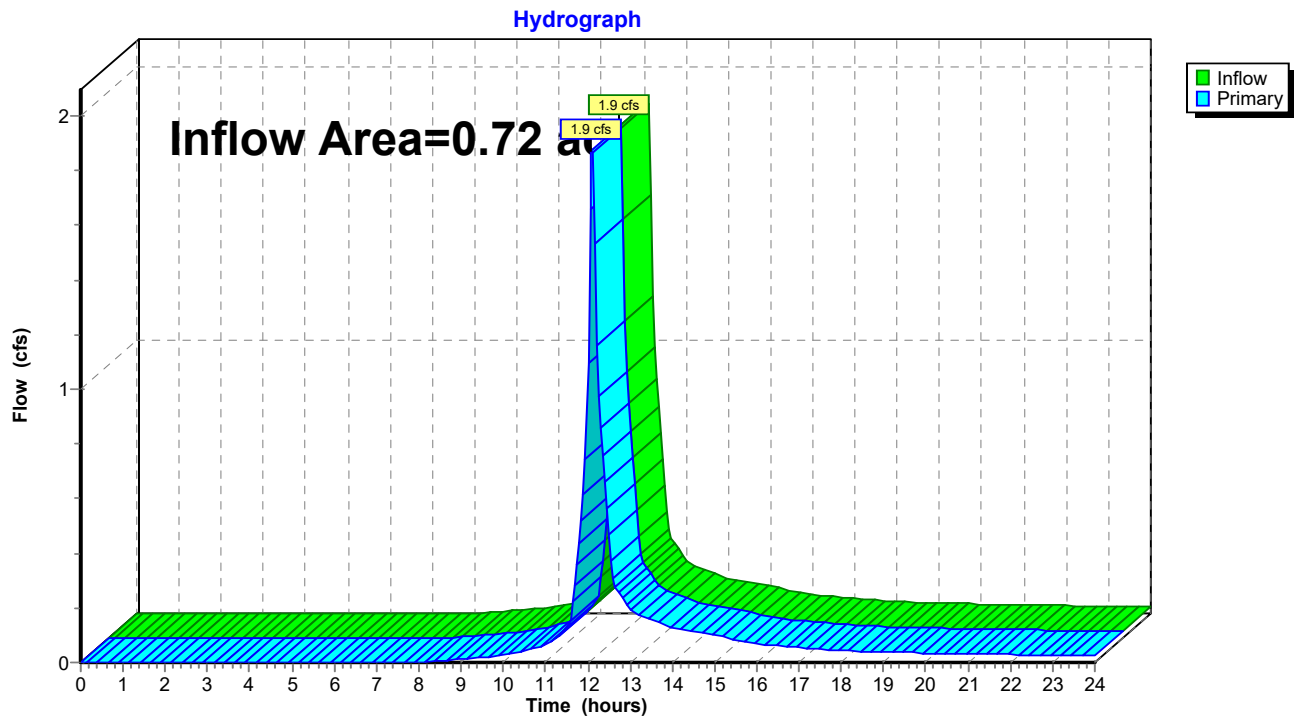
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Summary for Link SP1: Forest Ave Storm Drain

Inflow Area = 0.72 ac, 39.36% Impervious, Inflow Depth > 2.27" for 10-Year Storm event
Inflow = 1.9 cfs @ 12.09 hrs, Volume= 0.137 af
Primary = 1.9 cfs @ 12.09 hrs, Volume= 0.137 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP1: Forest Ave Storm Drain



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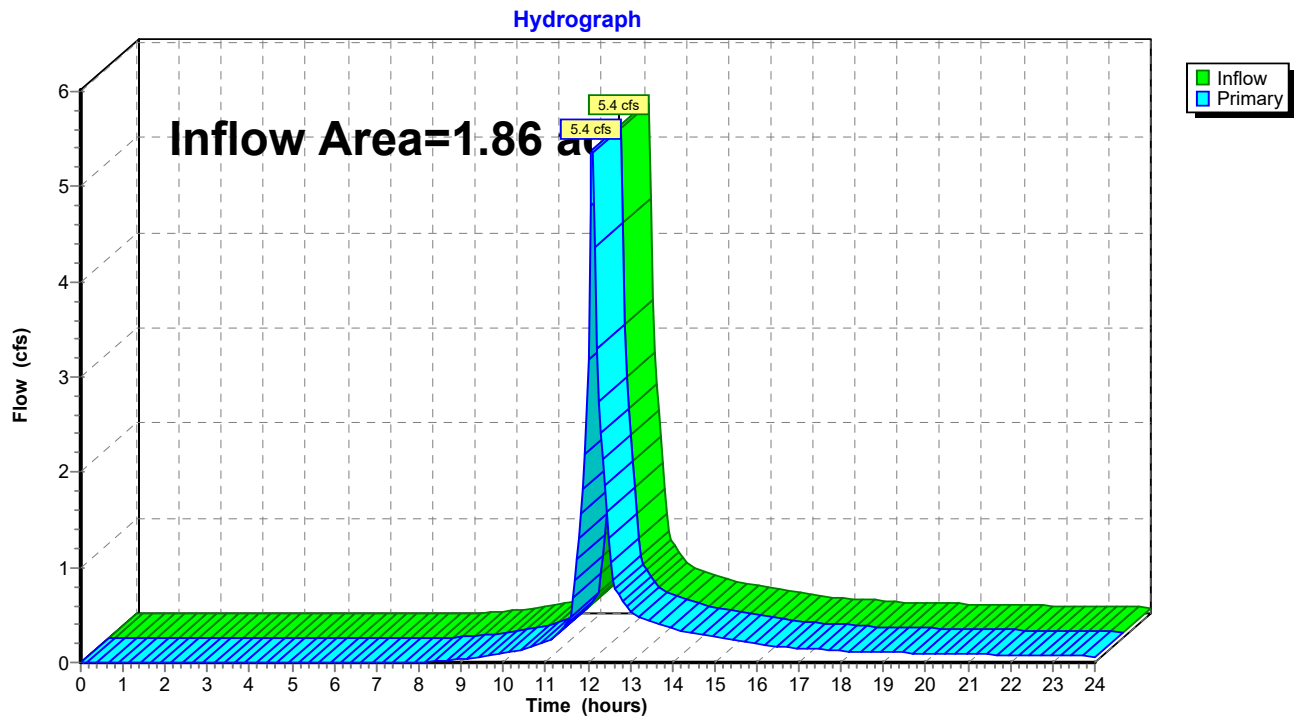
Page 70

Summary for Link SP2: Combined Sewer

Inflow Area = 1.86 ac, 62.17% Impervious, Inflow Depth > 2.51" for 10-Year Storm event
Inflow = 5.4 cfs @ 12.09 hrs, Volume= 0.389 af
Primary = 5.4 cfs @ 12.09 hrs, Volume= 0.389 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP2: Combined Sewer



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: PRE-1	Runoff Area=8,487 sf 61.42% Impervious Runoff Depth>3.60" Tc=6.0 min CN=80 Runoff=0.8 cfs 0.058 af
Subcatchment2S: PRE-2	Runoff Area=14,855 sf 50.48% Impervious Runoff Depth>3.30" Tc=6.0 min CN=77 Runoff=1.3 cfs 0.094 af
Subcatchment3S: PRE-3	Runoff Area=19,668 sf 51.10% Impervious Runoff Depth>3.70" Tc=6.0 min CN=81 Runoff=1.9 cfs 0.139 af
Subcatchment4S: PRE-4	Runoff Area=11,760 sf 19.74% Impervious Runoff Depth>2.55" Tc=6.0 min CN=69 Runoff=0.8 cfs 0.057 af
Subcatchment5S: PRE-5	Runoff Area=27,546 sf 57.26% Impervious Runoff Depth>3.40" Tc=6.0 min CN=78 Runoff=2.5 cfs 0.179 af
Subcatchment6S: PRE-6	Runoff Area=16,352 sf 71.97% Impervious Runoff Depth>3.80" Tc=6.0 min CN=82 Runoff=1.6 cfs 0.119 af
Subcatchment7S: PRE-7	Runoff Area=13,974 sf 73.24% Impervious Runoff Depth>3.80" Tc=6.0 min CN=82 Runoff=1.4 cfs 0.102 af
Pond 11P: Ex CB1	Peak Elev=19.46' Inflow=2.1 cfs 0.152 af 12.0" Round Culvert n=0.010 L=41.0' S=0.0224 '/ Outflow=2.1 cfs 0.152 af
Pond 12P: Ex CB2	Peak Elev=18.82' Inflow=0.8 cfs 0.057 af 8.0" Round Culvert n=0.010 L=159.0' S=0.0158 '/ Outflow=0.8 cfs 0.057 af
Pond 14P: Ex CB4	Peak Elev=16.71' Inflow=1.6 cfs 0.119 af 12.0" Round Culvert n=0.010 L=63.0' S=0.0195 '/ Outflow=1.6 cfs 0.119 af
Pond 15P: Ex CB5	Peak Elev=15.99' Inflow=3.0 cfs 0.220 af 18.0" Round Culvert n=0.010 L=38.0' S=-0.0026 '/ Outflow=3.0 cfs 0.220 af
Pond 21P: Ex DMH1	Peak Elev=15.88' Inflow=3.0 cfs 0.220 af 18.0" Round Culvert n=0.010 L=12.0' S=0.0200 '/ Outflow=3.0 cfs 0.220 af
Pond 22P: Ex DMH2	Peak Elev=17.97' Inflow=2.1 cfs 0.152 af 18.0" Round Culvert n=0.010 L=98.0' S=0.0023 '/ Outflow=2.1 cfs 0.152 af
Pond 23P: Ex CB3	Peak Elev=14.81' Inflow=2.5 cfs 0.179 af 24.0" Round Culvert n=0.013 L=252.0' S=0.0044 '/ Outflow=2.5 cfs 0.179 af
Pond 24P: Ex DMH4	Peak Elev=17.60' Inflow=2.1 cfs 0.152 af 18.0" Round Culvert n=0.010 L=198.0' S=0.0019 '/ Outflow=2.1 cfs 0.152 af
Pond 25P: Ex DMH5	Peak Elev=16.24' Inflow=2.1 cfs 0.152 af 18.0" Round Culvert n=0.010 L=9.0' S=0.0133 '/ Outflow=2.1 cfs 0.152 af

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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Pond 26P: Ex DMH6Peak Elev=15.73' Inflow=5.1 cfs 0.373 af
18.0" Round Culvert n=0.010 L=66.0' S=0.0080 '/ Outflow=5.1 cfs 0.373 af**Pond 27P: Ex DMH7**Peak Elev=15.22' Inflow=5.1 cfs 0.373 af
18.0" Round Culvert n=0.010 L=42.0' S=0.0014 '/ Outflow=5.1 cfs 0.373 af**Pond 29P: Ex DMH9**Peak Elev=18.35' Inflow=2.1 cfs 0.152 af
18.0" Round Culvert n=0.010 L=152.0' S=0.0019 '/ Outflow=2.1 cfs 0.152 af**Link SP1: Forest Ave Storm Drain**Inflow=2.7 cfs 0.197 af
Primary=2.7 cfs 0.197 af**Link SP2: Combined Sewer**Inflow=7.6 cfs 0.552 af
Primary=7.6 cfs 0.552 af**Total Runoff Area = 2.59 ac Runoff Volume = 0.749 af Average Runoff Depth = 3.47"**
44.19% Pervious = 1.14 ac 55.81% Impervious = 1.44 ac

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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Subcatchment 1S: PRE-1

Runoff = 0.8 cfs @ 12.09 hrs, Volume= 0.058 af, Depth> 3.60"

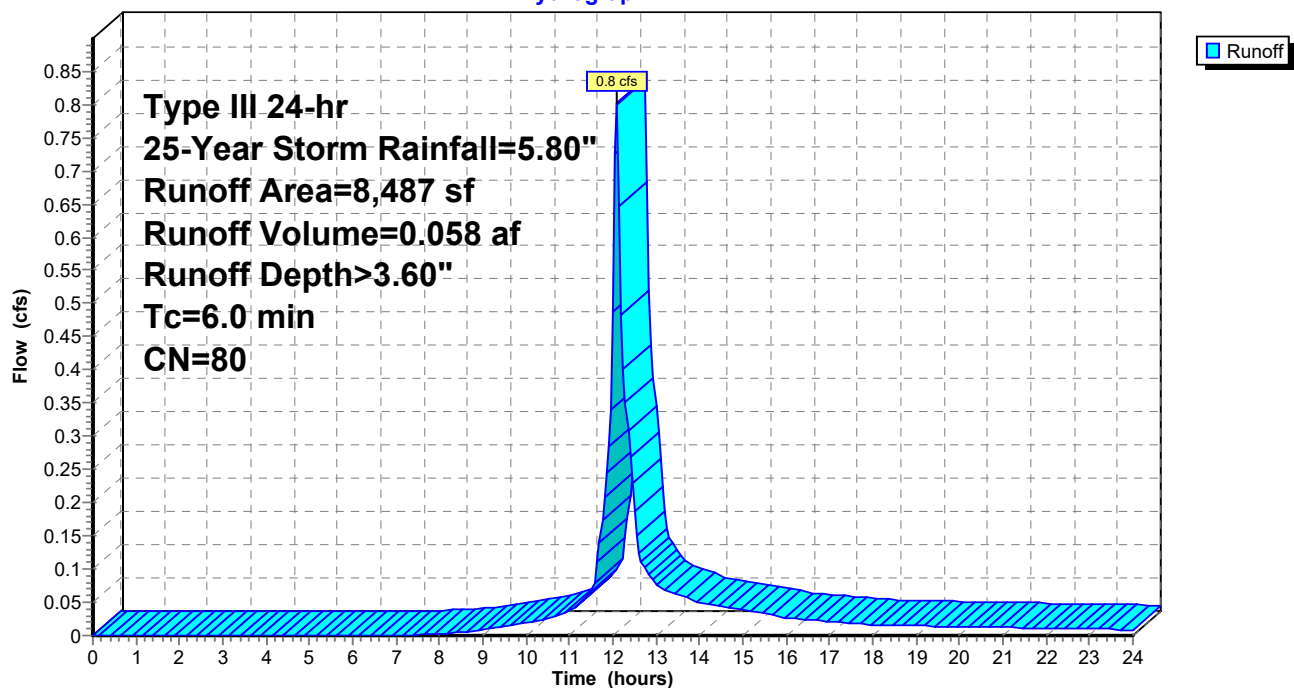
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
5,213	98	Paved parking, HSG A
1,900	39	Grass cover, Good, HSG A
* 1,374	68	Grass cover (parking area), HSG A
8,487	80	Weighted Average
3,274		38.58% Pervious Area
5,213		61.42% Impervious Area

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

Subcatchment 1S: PRE-1

Hydrograph



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Subcatchment 2S: PRE-2

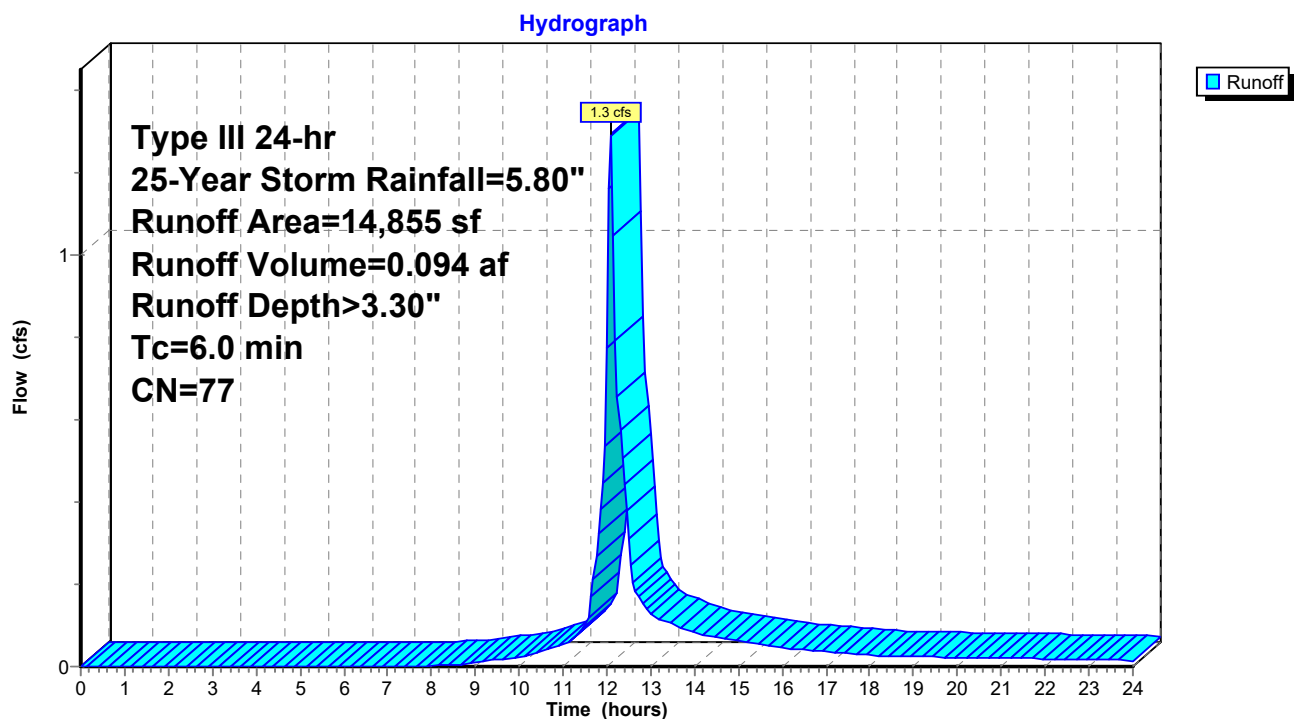
Runoff = 1.3 cfs @ 12.09 hrs, Volume= 0.094 af, Depth> 3.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
7,499	98	Paved parking, HSG A
2,948	39	Grass cover, Good, HSG A
4,408	68	Grass cover (parking area), HSG A
14,855	77	Weighted Average
7,356		49.52% Pervious Area
7,499		50.48% Impervious Area

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

Subcatchment 2S: PRE-2



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Subcatchment 3S: PRE-3

Runoff = 1.9 cfs @ 12.09 hrs, Volume= 0.139 af, Depth> 3.70"

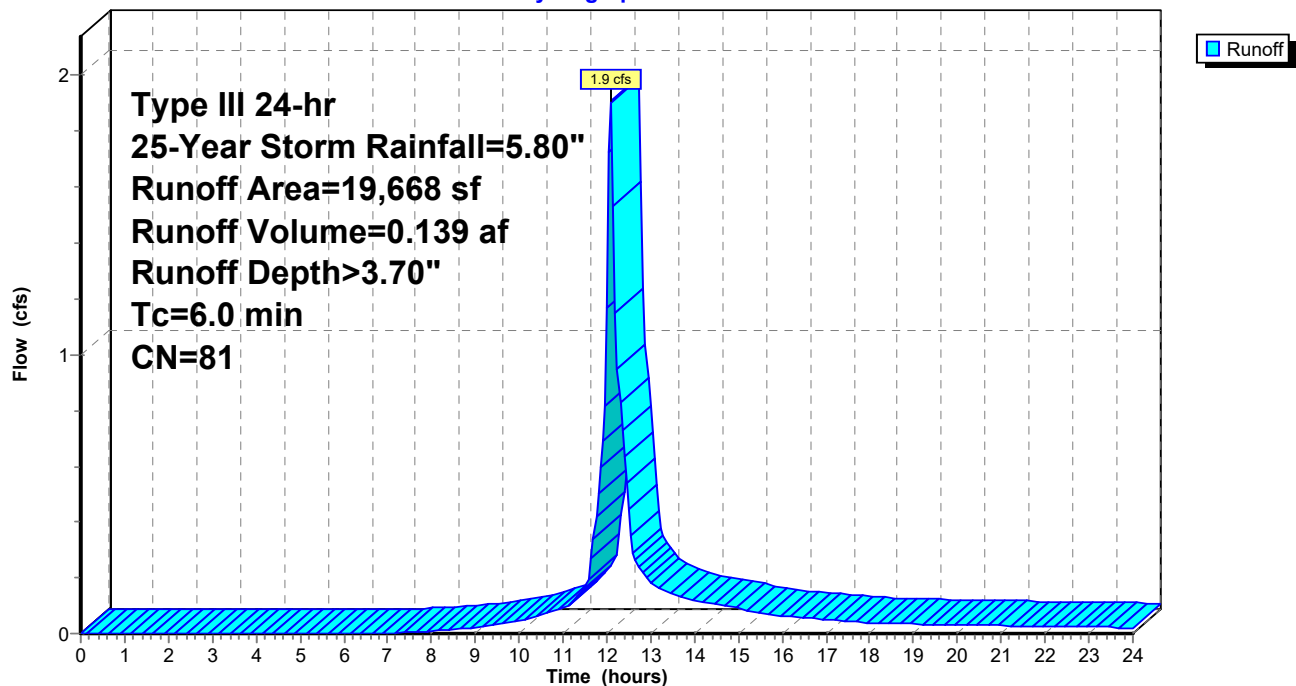
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
10,050	98	Paved parking, HSG A
1,903	39	Grass cover, Good, HSG A
7,715	68	Grass cover (parking area), HSG A
19,668	81	Weighted Average
9,618		48.90% Pervious Area
10,050		51.10% Impervious Area

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

Subcatchment 3S: PRE-3

Hydrograph



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Subcatchment 4S: PRE-4

Runoff = 0.8 cfs @ 12.10 hrs, Volume= 0.057 af, Depth> 2.55"

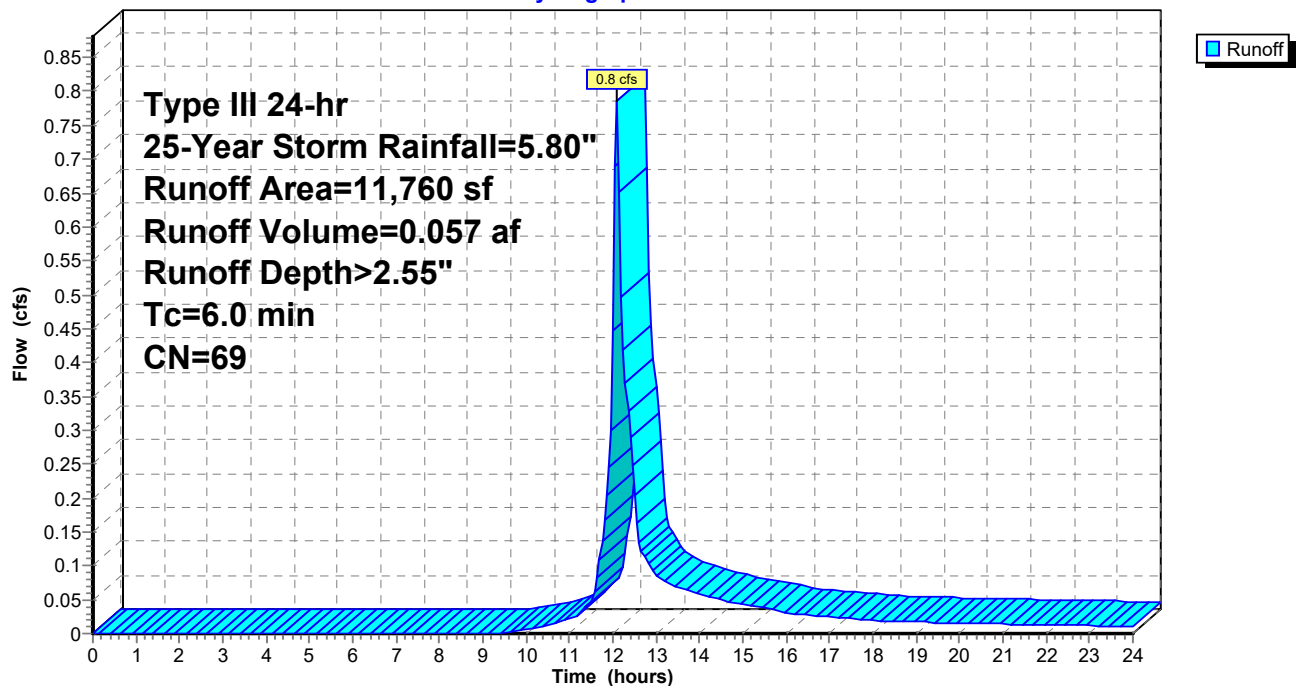
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
2,321	98	Paved parking, HSG A
1,957	39	Grass cover, Good, HSG A
7,482	68	Grass cover (parking area), HSG A
11,760	69	Weighted Average
9,439		80.26% Pervious Area
2,321		19.74% Impervious Area

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

Subcatchment 4S: PRE-4

Hydrograph



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Subcatchment 5S: PRE-5

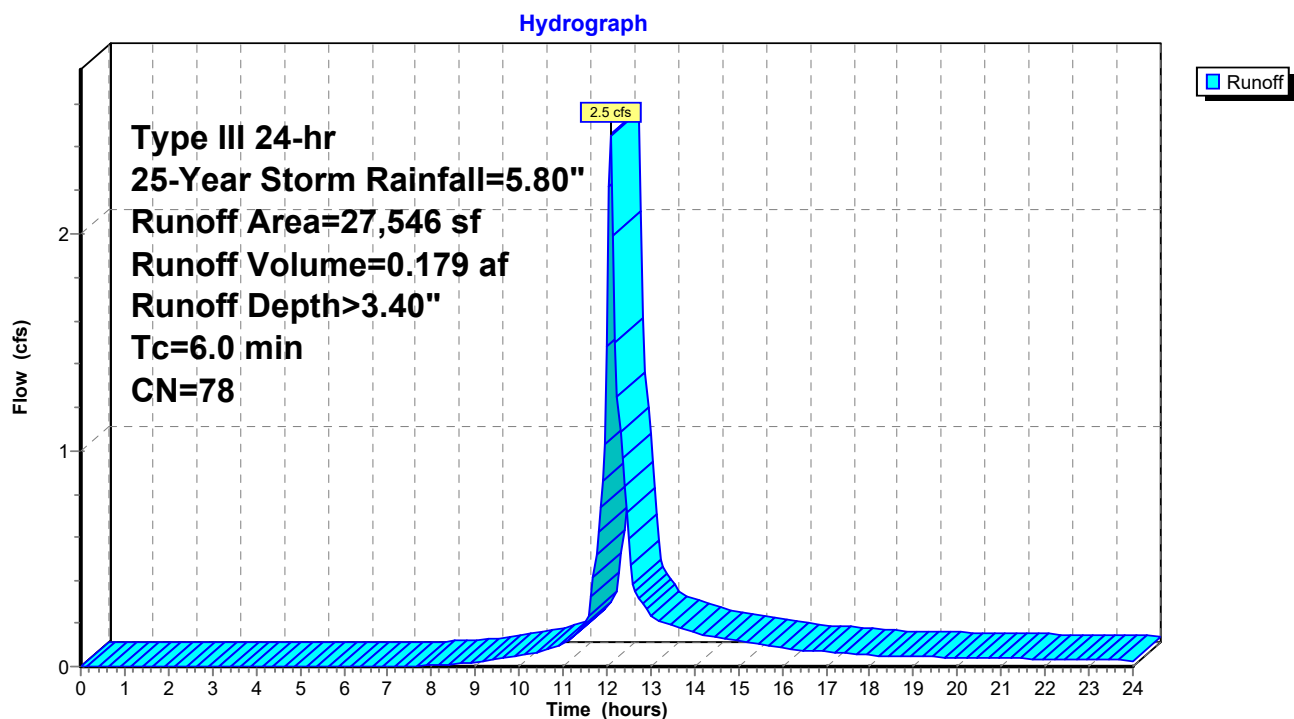
Runoff = 2.5 cfs @ 12.09 hrs, Volume= 0.179 af, Depth> 3.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
15,774	98	Paved parking, HSG A
6,700	39	Grass cover, Good, HSG A
5,072	68	Grass cover (parking area), HSG A
27,546	78	Weighted Average
11,772		42.74% Pervious Area
15,774		57.26% Impervious Area

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

Subcatchment 5S: PRE-5



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Subcatchment 6S: PRE-6

Runoff = 1.6 cfs @ 12.09 hrs, Volume= 0.119 af, Depth> 3.80"

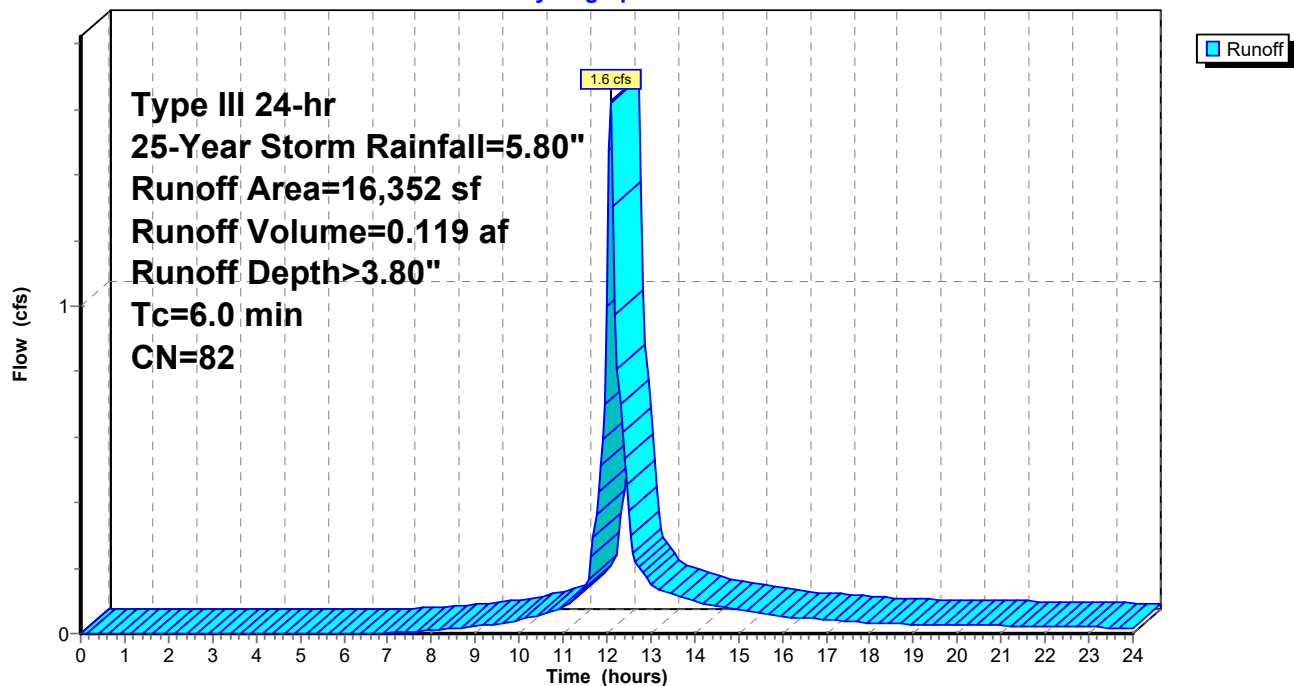
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
11,768	98	Paved parking, HSG A
3,865	39	Grass cover, Good, HSG A
* 719	40	Porous Pavement
16,352	82	Weighted Average
4,584		28.03% Pervious Area
11,768		71.97% Impervious Area

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

Subcatchment 6S: PRE-6

Hydrograph



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Subcatchment 7S: PRE-7

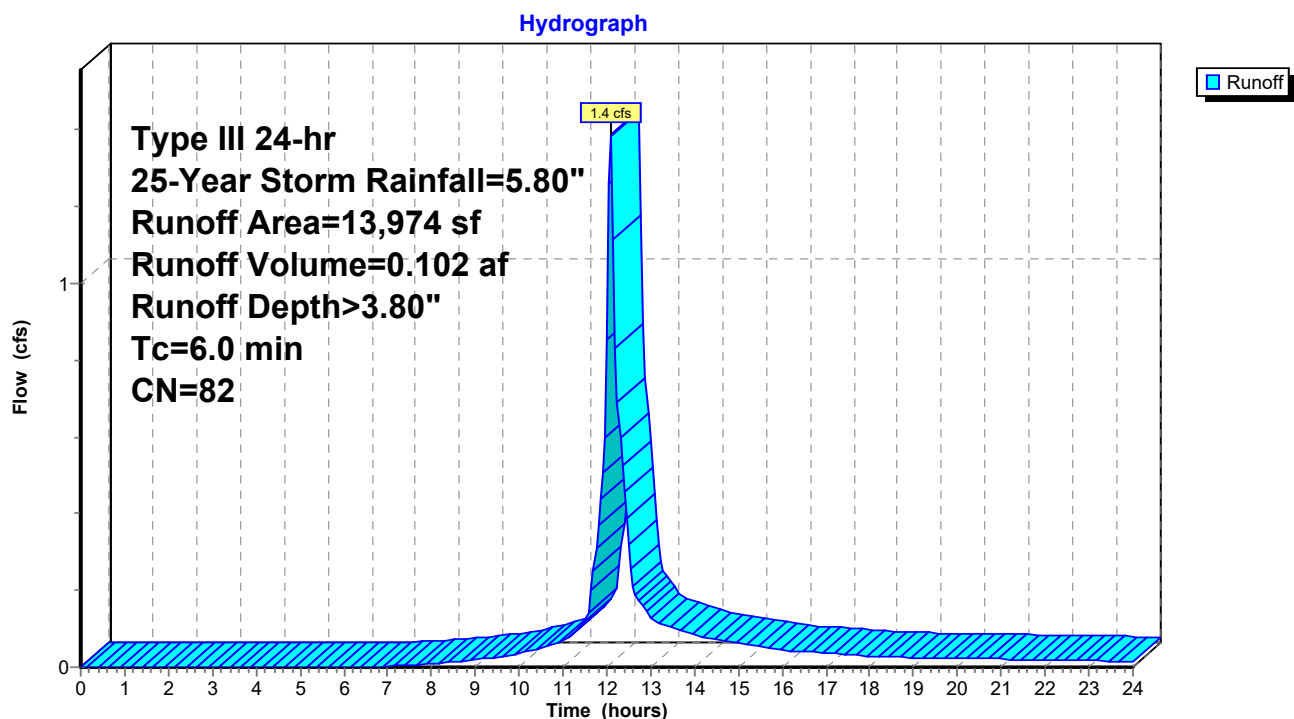
Runoff = 1.4 cfs @ 12.09 hrs, Volume= 0.102 af, Depth> 3.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
10,235	98	Paved parking, HSG A
3,739	39	Grass cover, Good, HSG A
13,974	82	Weighted Average
3,739		26.76% Pervious Area
10,235		73.24% Impervious Area

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

Subcatchment 7S: PRE-7



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Pond 11P: Ex CB1

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 3.41" for 25-Year Storm event
Inflow = 2.1 cfs @ 12.09 hrs, Volume= 0.152 af
Outflow = 2.1 cfs @ 12.09 hrs, Volume= 0.152 af, Atten= 0%, Lag= 0.0 min
Primary = 2.1 cfs @ 12.09 hrs, Volume= 0.152 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 19.46' @ 12.09 hrs

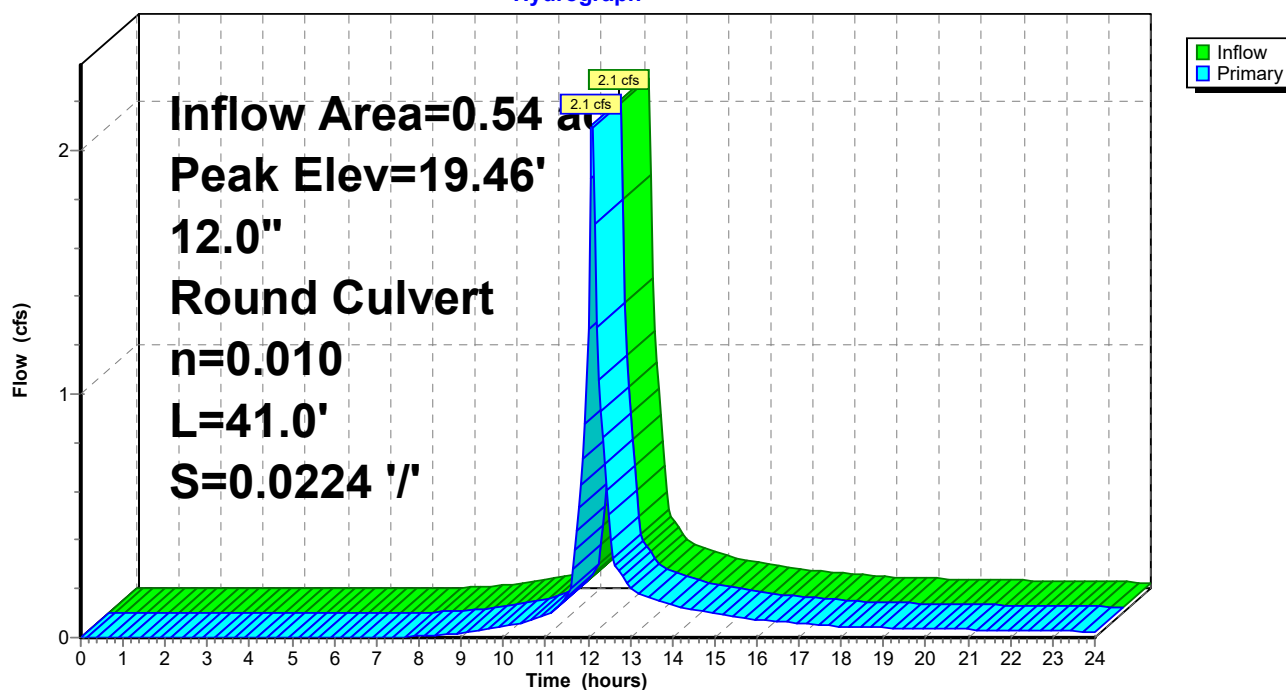
Flood Elev= 22.02'

Device	Routing	Invert	Outlet Devices
#1	Primary	18.47'	12.0" Round Culvert L= 41.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.47' / 17.55' S= 0.0224 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.1 cfs @ 12.09 hrs HW=19.44' TW=18.33' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 2.1 cfs @ 2.65 fps)

Pond 11P: Ex CB1

Hydrograph



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Pond 12P: Ex CB2

Inflow Area = 0.27 ac, 19.74% Impervious, Inflow Depth > 2.55" for 25-Year Storm event
Inflow = 0.8 cfs @ 12.10 hrs, Volume= 0.057 af
Outflow = 0.8 cfs @ 12.10 hrs, Volume= 0.057 af, Atten= 0%, Lag= 0.0 min
Primary = 0.8 cfs @ 12.10 hrs, Volume= 0.057 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 18.82' @ 12.10 hrs

Flood Elev= 22.15'

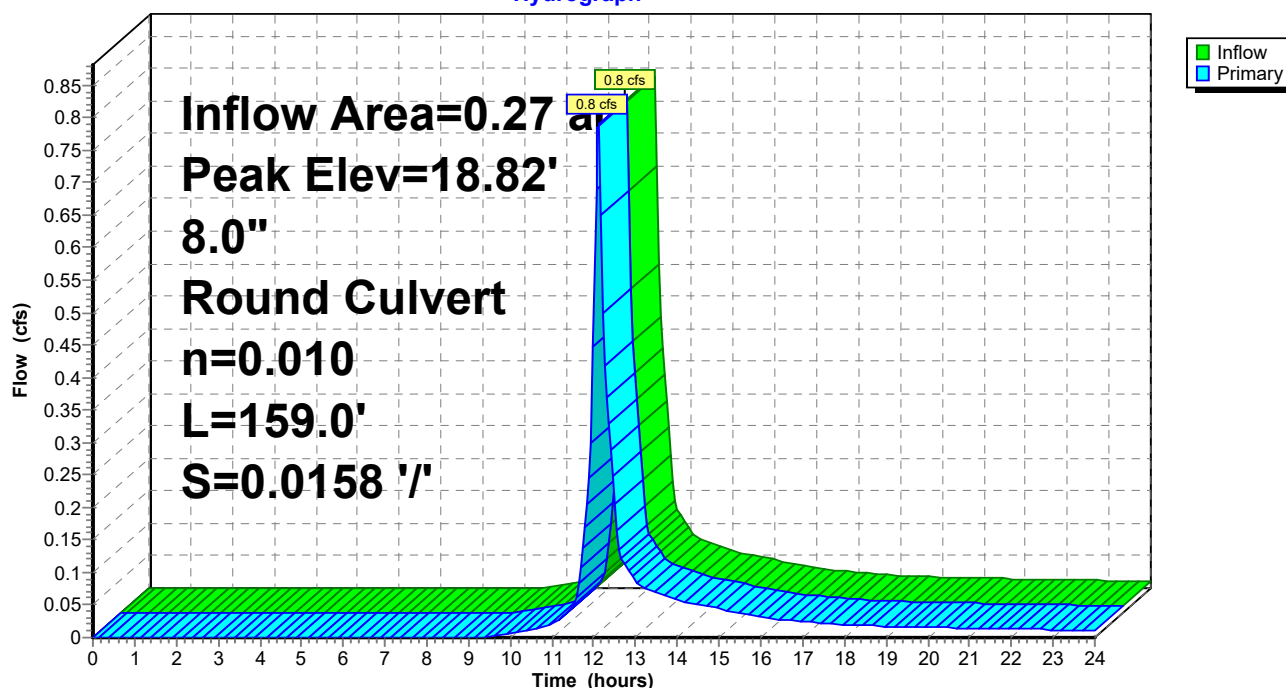
Device	Routing	Invert	Outlet Devices
#1	Primary	18.14'	8.0" Round Culvert L= 159.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.14' / 15.62' S= 0.0158 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.8 cfs @ 12.10 hrs HW=18.82' TW=0.00' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 0.8 cfs @ 2.23 fps)

Pond 12P: Ex CB2

Hydrograph



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Pond 14P: Ex CB4

Inflow Area = 0.38 ac, 71.97% Impervious, Inflow Depth > 3.80" for 25-Year Storm event
Inflow = 1.6 cfs @ 12.09 hrs, Volume= 0.119 af
Outflow = 1.6 cfs @ 12.09 hrs, Volume= 0.119 af, Atten= 0%, Lag= 0.0 min
Primary = 1.6 cfs @ 12.09 hrs, Volume= 0.119 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 16.71' @ 12.09 hrs

Flood Elev= 21.96'

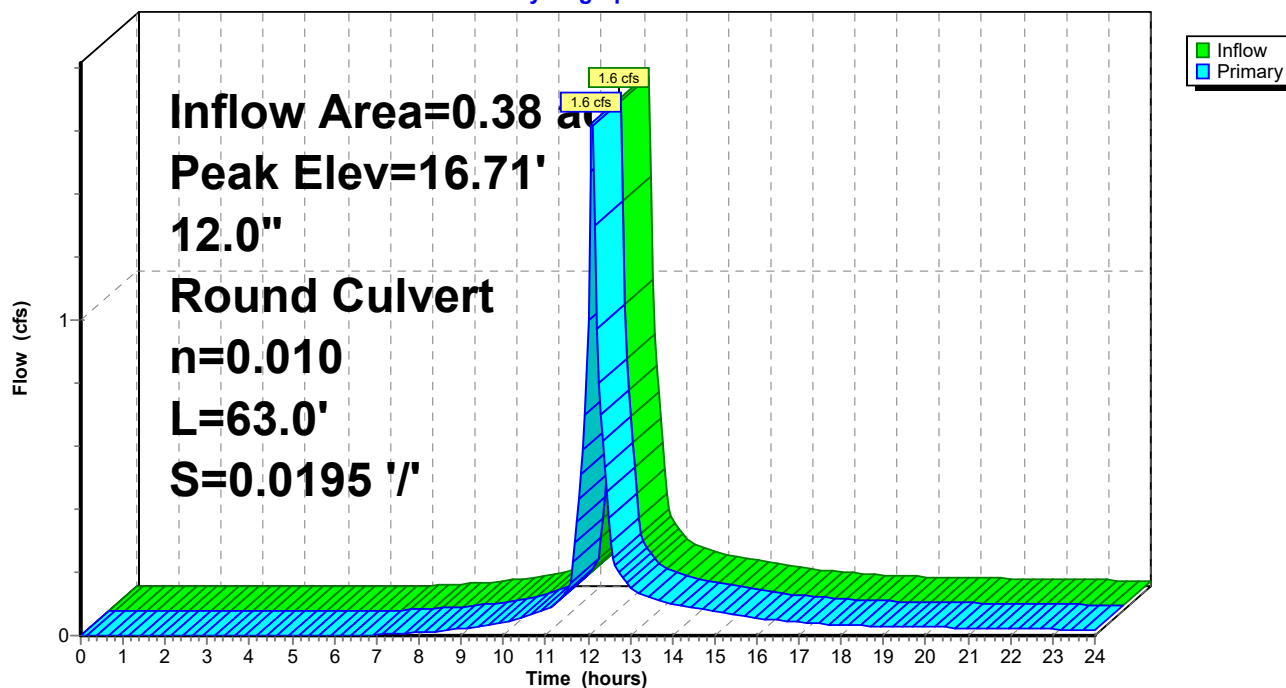
Device	Routing	Invert	Outlet Devices
#1	Primary	15.91'	12.0" Round Culvert L= 63.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.91' / 14.68' S= 0.0195 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.6 cfs @ 12.09 hrs HW=16.70' TW=15.89' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 1.6 cfs @ 2.39 fps)

Pond 14P: Ex CB4

Hydrograph



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Pond 15P: Ex CB5

Inflow Area = 0.70 ac, 72.55% Impervious, Inflow Depth > 3.80" for 25-Year Storm event
Inflow = 3.0 cfs @ 12.09 hrs, Volume= 0.220 af
Outflow = 3.0 cfs @ 12.09 hrs, Volume= 0.220 af, Atten= 0%, Lag= 0.0 min
Primary = 3.0 cfs @ 12.09 hrs, Volume= 0.220 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.99' @ 12.17 hrs

Flood Elev= 22.70'

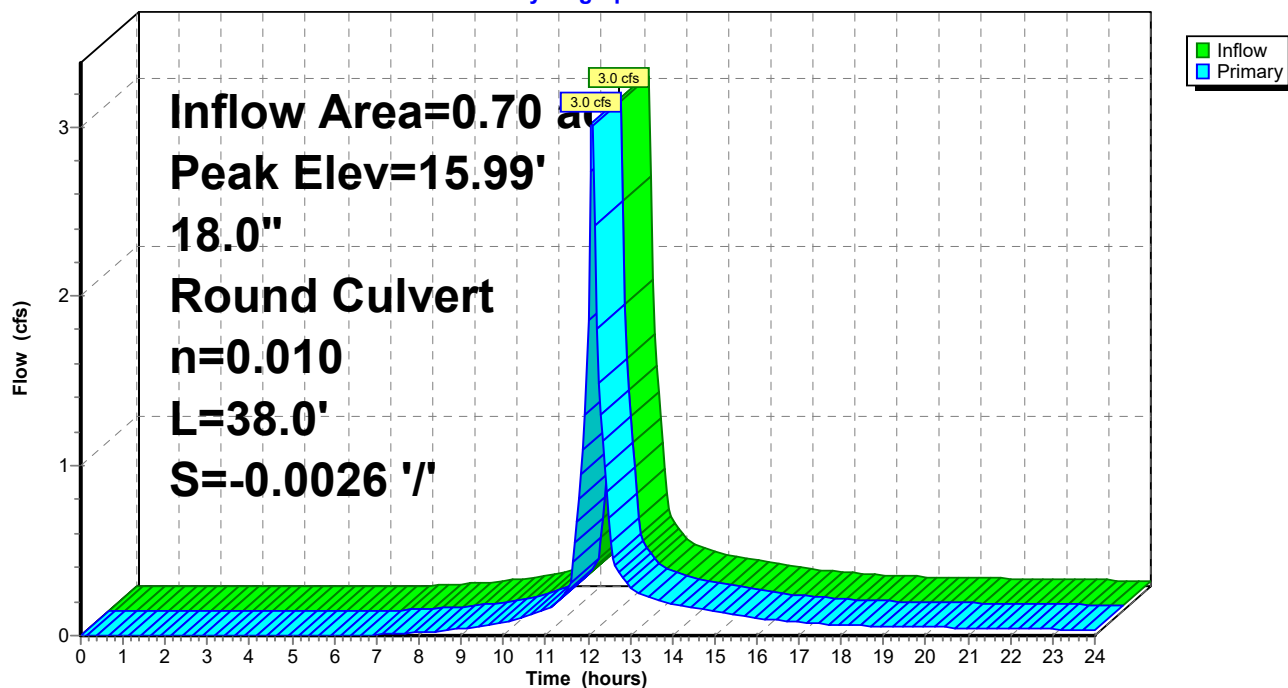
Device	Routing	Invert	Outlet Devices
#1	Primary	14.80'	18.0" Round Culvert L= 38.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.70' / 14.80' S= -0.0026 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.8 cfs @ 12.09 hrs HW=15.89' TW=15.77' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 1.8 cfs @ 1.34 fps)

Pond 15P: Ex CB5

Hydrograph



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Pond 21P: Ex DMH1

Inflow Area = 0.70 ac, 72.55% Impervious, Inflow Depth > 3.80" for 25-Year Storm event
Inflow = 3.0 cfs @ 12.09 hrs, Volume= 0.220 af
Outflow = 3.0 cfs @ 12.09 hrs, Volume= 0.220 af, Atten= 0%, Lag= 0.0 min
Primary = 3.0 cfs @ 12.09 hrs, Volume= 0.220 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.88' @ 12.14 hrs

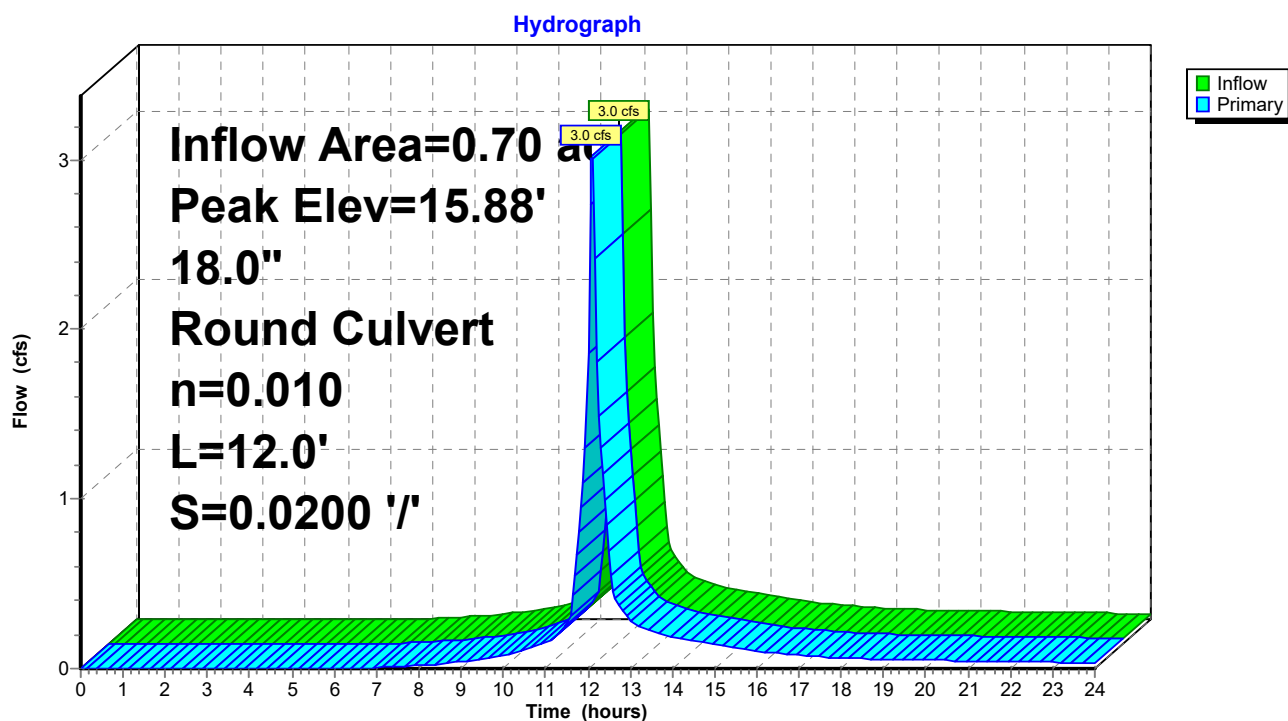
Flood Elev= 23.72'

Device	Routing	Invert	Outlet Devices
#1	Primary	14.62'	18.0" Round Culvert L= 12.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.62' / 14.38' S= 0.0200 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.6 cfs @ 12.09 hrs HW=15.77' TW=15.68' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 1.6 cfs @ 1.10 fps)

Pond 21P: Ex DMH1



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Pond 22P: Ex DMH2

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 3.41" for 25-Year Storm event
Inflow = 2.1 cfs @ 12.09 hrs, Volume= 0.152 af
Outflow = 2.1 cfs @ 12.09 hrs, Volume= 0.152 af, Atten= 0%, Lag= 0.0 min
Primary = 2.1 cfs @ 12.09 hrs, Volume= 0.152 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.97' @ 12.10 hrs

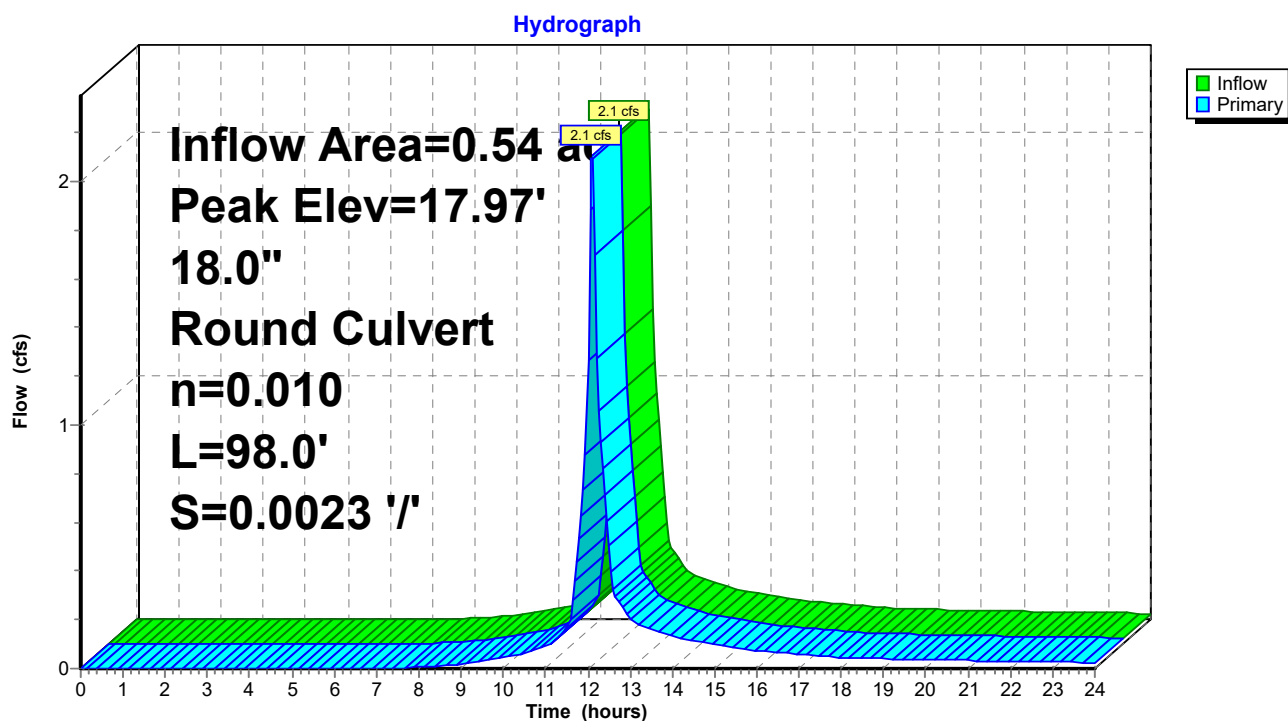
Flood Elev= 24.92'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.12'	18.0" Round Culvert L= 98.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.12' / 16.89' S= 0.0023 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.9 cfs @ 12.09 hrs HW=17.96' TW=17.59' (Dynamic Tailwater)

↑1=Culvert (Outlet Controls 1.9 cfs @ 2.74 fps)

Pond 22P: Ex DMH2



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Summary for Pond 23P: Ex CB3

Inflow Area = 0.63 ac, 57.26% Impervious, Inflow Depth > 3.40" for 25-Year Storm event
Inflow = 2.5 cfs @ 12.09 hrs, Volume= 0.179 af
Outflow = 2.5 cfs @ 12.09 hrs, Volume= 0.179 af, Atten= 0%, Lag= 0.0 min
Primary = 2.5 cfs @ 12.09 hrs, Volume= 0.179 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 14.81' @ 12.09 hrs

Flood Elev= 23.60'

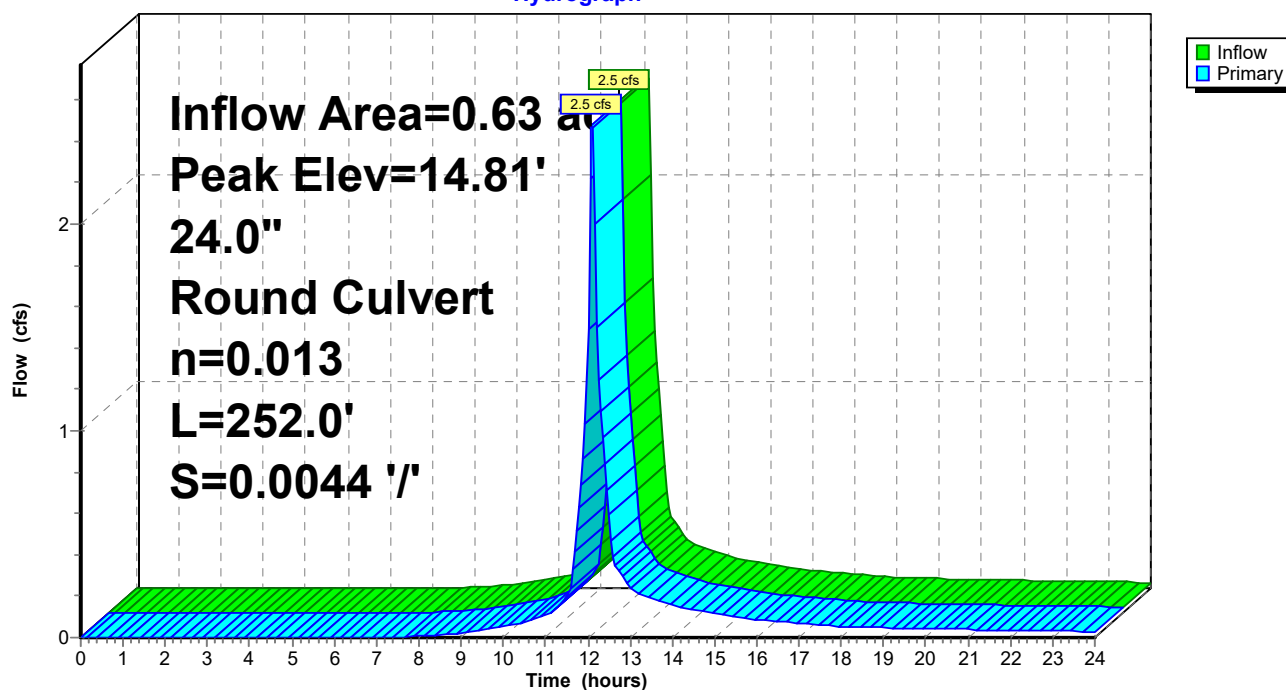
Device	Routing	Invert	Outlet Devices
#1	Primary	14.05'	24.0" Round Culvert L= 252.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.05' / 12.94' S= 0.0044 '/' Cc= 0.900 n= 0.013 Cast iron, coated, Flow Area= 3.14 sf

Primary OutFlow Max=2.4 cfs @ 12.09 hrs HW=14.80' TW=0.00' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 2.4 cfs @ 3.34 fps)

Pond 23P: Ex CB3

Hydrograph



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PRE
Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Pond 24P: Ex DMH4

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 3.41" for 25-Year Storm event
Inflow = 2.1 cfs @ 12.09 hrs, Volume= 0.152 af
Outflow = 2.1 cfs @ 12.09 hrs, Volume= 0.152 af, Atten= 0%, Lag= 0.0 min
Primary = 2.1 cfs @ 12.09 hrs, Volume= 0.152 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.60' @ 12.09 hrs

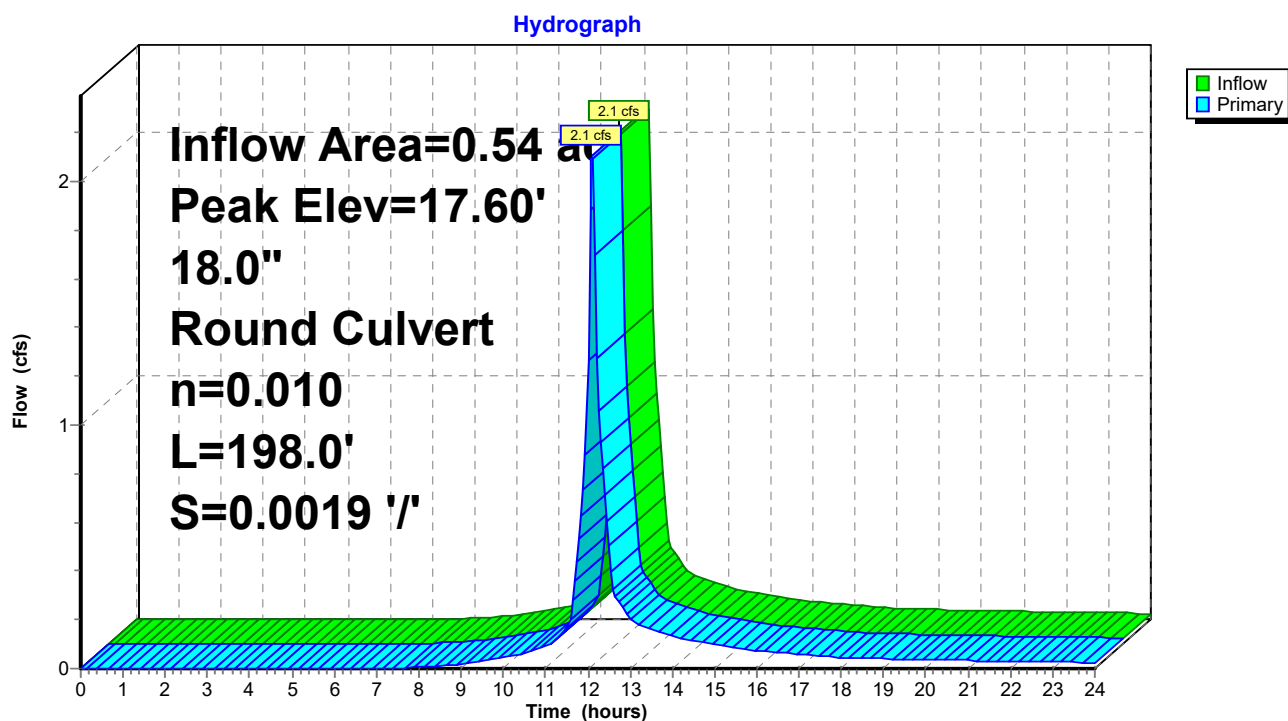
Flood Elev= 25.38'

Device	Routing	Invert	Outlet Devices
#1	Primary	16.75'	18.0" Round Culvert L= 198.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.75' / 16.38' S= 0.0019 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.1 cfs @ 12.09 hrs HW=17.59' TW=16.23' (Dynamic Tailwater)

1=Culvert (Barrel Controls 2.1 cfs @ 2.91 fps)

Pond 24P: Ex DMH4



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Pond 25P: Ex DMH5

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 3.41" for 25-Year Storm event
Inflow = 2.1 cfs @ 12.09 hrs, Volume= 0.152 af
Outflow = 2.1 cfs @ 12.09 hrs, Volume= 0.152 af, Atten= 0%, Lag= 0.0 min
Primary = 2.1 cfs @ 12.09 hrs, Volume= 0.152 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 16.24' @ 12.09 hrs

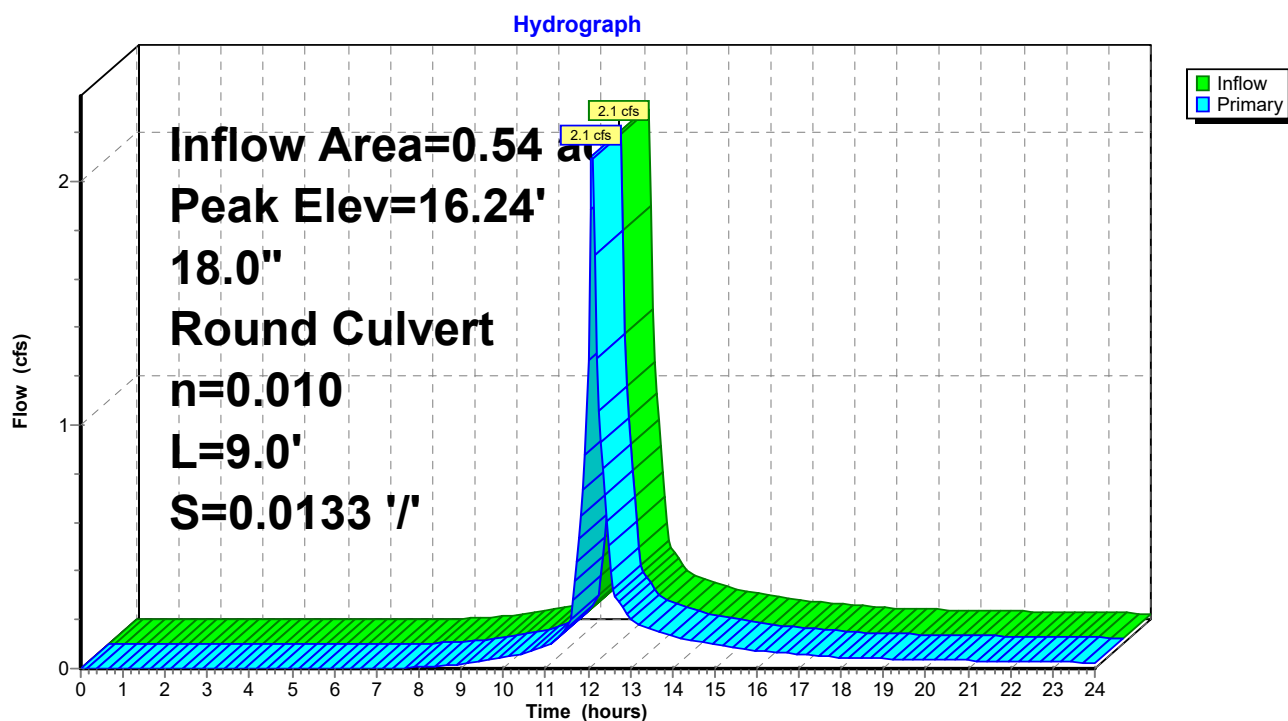
Flood Elev= 23.84'

Device	Routing	Invert	Outlet Devices
#1	Primary	15.44'	18.0" Round Culvert L= 9.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.44' / 15.32' S= 0.0133 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.1 cfs @ 12.09 hrs HW=16.23' TW=15.69' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 2.1 cfs @ 3.18 fps)

Pond 25P: Ex DMH5



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PRE
Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Pond 26P: Ex DMH6

Inflow Area = 1.23 ac, 64.68% Impervious, Inflow Depth > 3.63" for 25-Year Storm event
Inflow = 5.1 cfs @ 12.09 hrs, Volume= 0.373 af
Outflow = 5.1 cfs @ 12.09 hrs, Volume= 0.373 af, Atten= 0%, Lag= 0.0 min
Primary = 5.1 cfs @ 12.09 hrs, Volume= 0.373 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

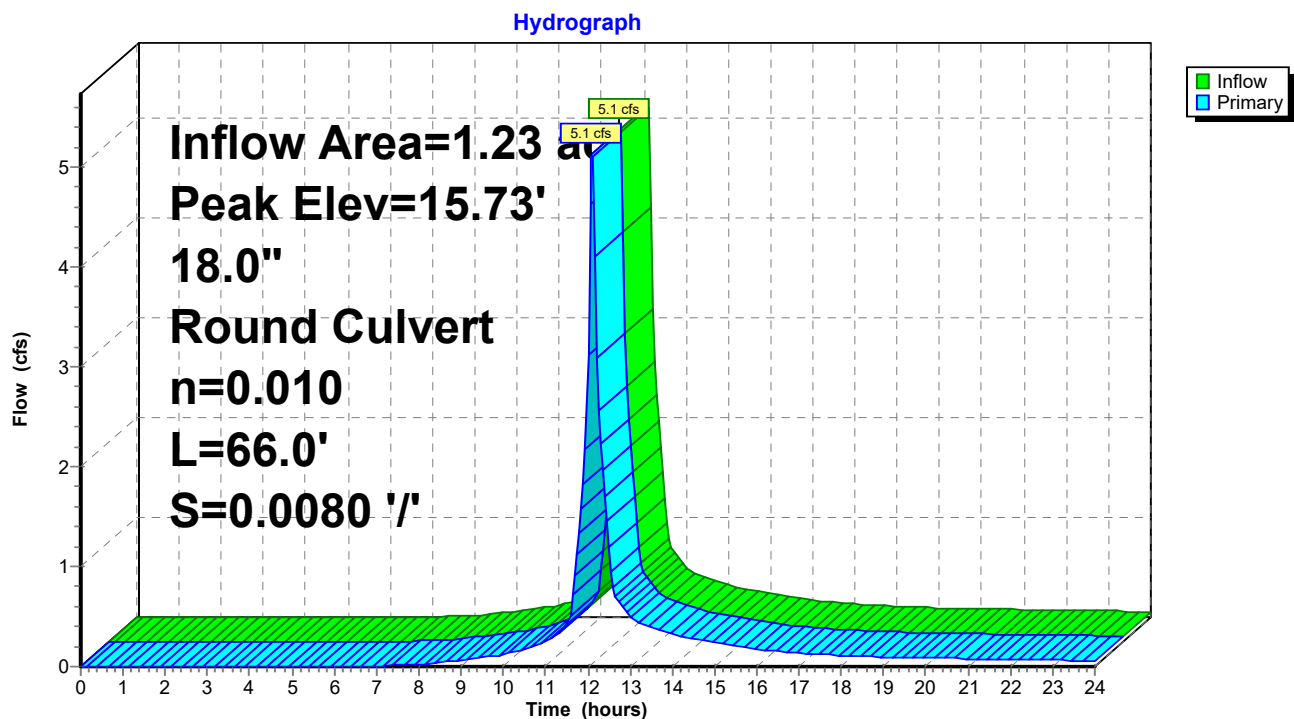
Peak Elev= 15.73' @ 12.11 hrs

Flood Elev= 23.95'

Device	Routing	Invert	Outlet Devices
#1	Primary	14.30'	18.0" Round Culvert L= 66.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.30' / 13.77' S= 0.0080 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.5 cfs @ 12.09 hrs HW=15.69' TW=15.20' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 4.5 cfs @ 2.65 fps)

Pond 26P: Ex DMH6



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PRE
Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Pond 27P: Ex DMH7

Inflow Area = 1.23 ac, 64.68% Impervious, Inflow Depth > 3.63" for 25-Year Storm event
Inflow = 5.1 cfs @ 12.09 hrs, Volume= 0.373 af
Outflow = 5.1 cfs @ 12.09 hrs, Volume= 0.373 af, Atten= 0%, Lag= 0.0 min
Primary = 5.1 cfs @ 12.09 hrs, Volume= 0.373 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.22' @ 12.09 hrs

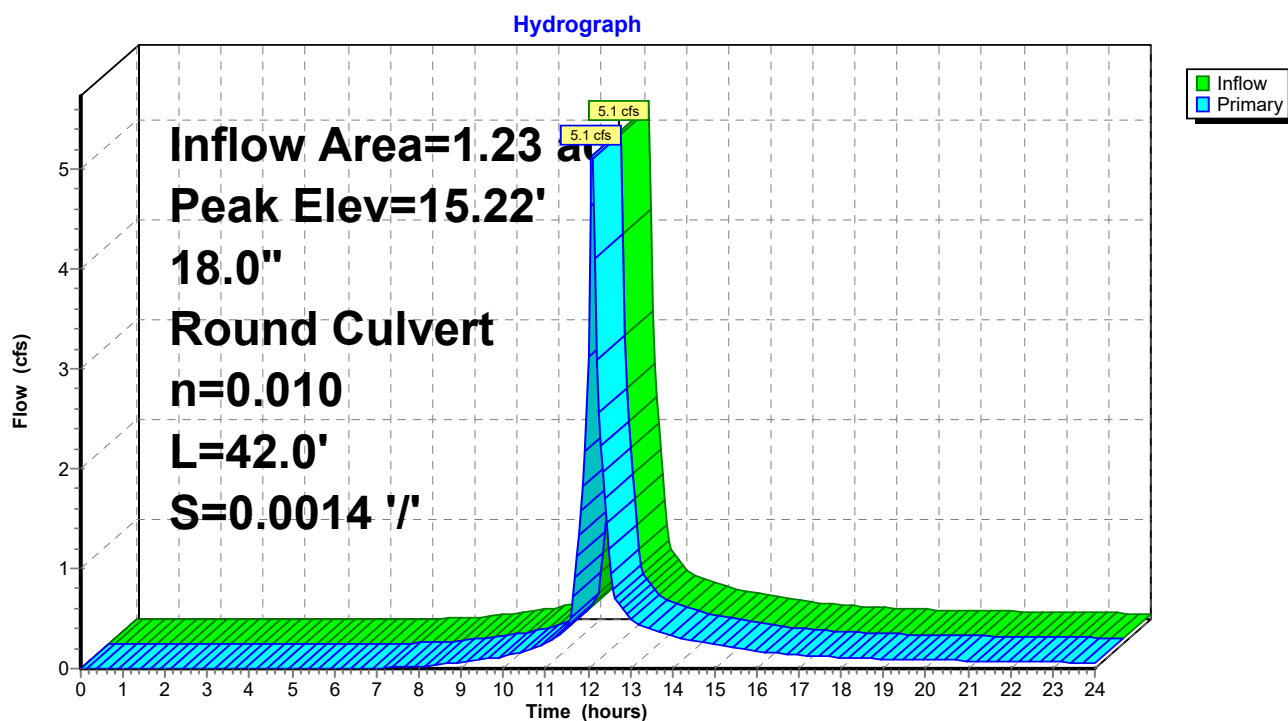
Flood Elev= 24.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	13.70'	18.0" Round Culvert L= 42.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.70' / 13.64' S= 0.0014 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=5.0 cfs @ 12.09 hrs HW=15.20' TW=0.00' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 5.0 cfs @ 3.52 fps)

Pond 27P: Ex DMH7



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PRE
Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Pond 29P: Ex DMH9

Inflow Area = 0.54 ac, 54.46% Impervious, Inflow Depth > 3.41" for 25-Year Storm event
Inflow = 2.1 cfs @ 12.09 hrs, Volume= 0.152 af
Outflow = 2.1 cfs @ 12.09 hrs, Volume= 0.152 af, Atten= 0%, Lag= 0.0 min
Primary = 2.1 cfs @ 12.09 hrs, Volume= 0.152 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 18.35' @ 12.11 hrs

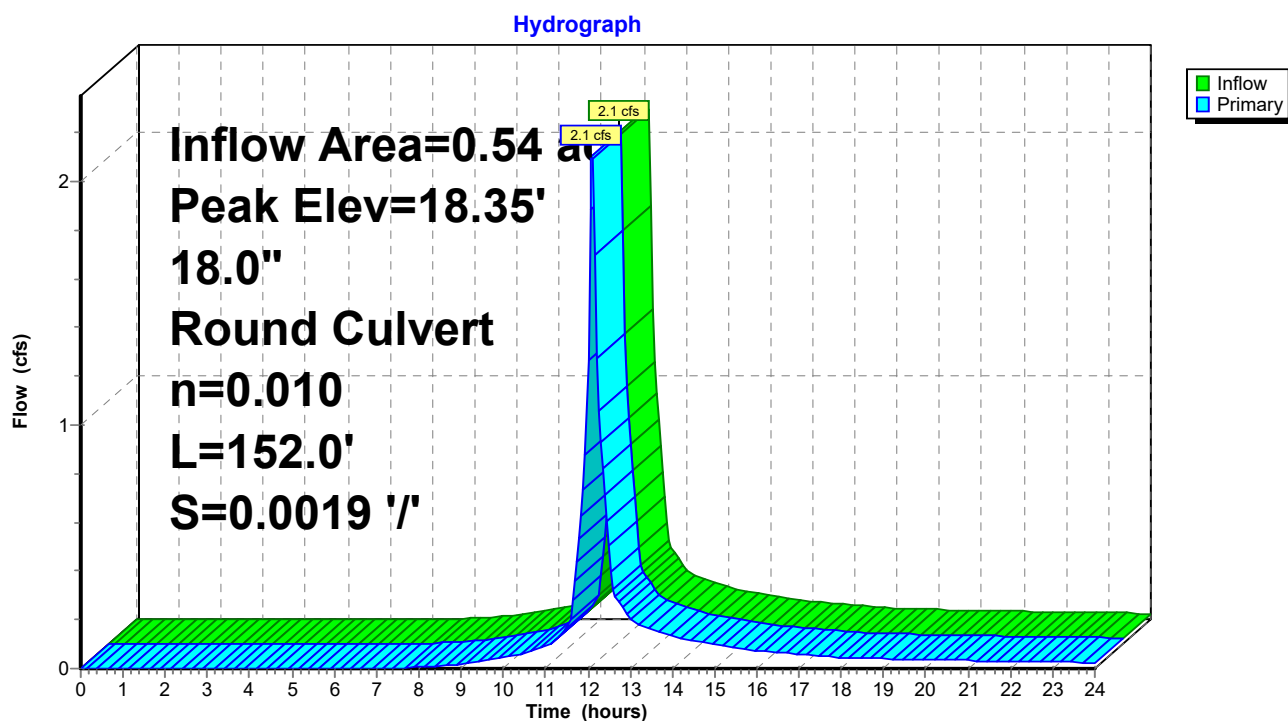
Flood Elev= 23.44'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.46'	18.0" Round Culvert L= 152.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.46' / 17.17' S= 0.0019 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.9 cfs @ 12.09 hrs HW=18.33' TW=17.96' (Dynamic Tailwater)

↑1=Culvert (Outlet Controls 1.9 cfs @ 2.54 fps)

Pond 29P: Ex DMH9



C1. Pre

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Type III 24-hr 25-Year Storm Rainfall=5.80"

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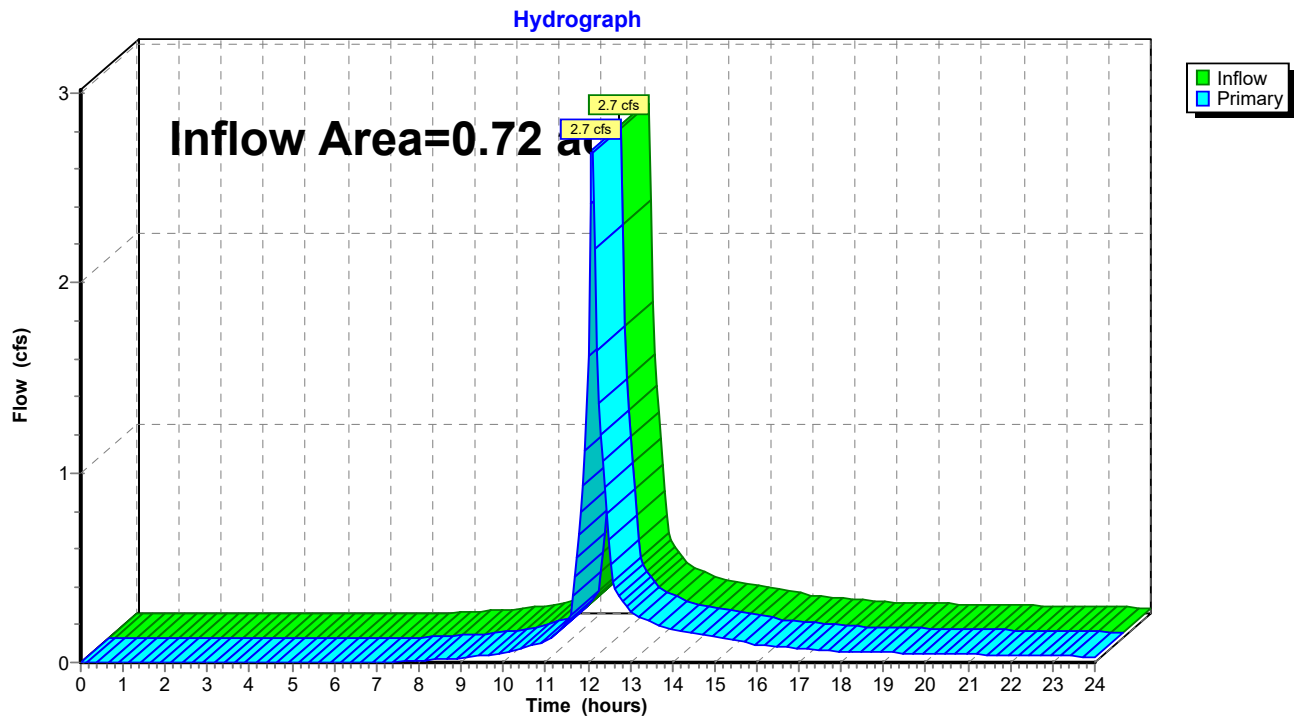
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Summary for Link SP1: Forest Ave Storm Drain

Inflow Area = 0.72 ac, 39.36% Impervious, Inflow Depth > 3.27" for 25-Year Storm event
Inflow = 2.7 cfs @ 12.09 hrs, Volume= 0.197 af
Primary = 2.7 cfs @ 12.09 hrs, Volume= 0.197 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP1: Forest Ave Storm Drain



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PRE

Type III 24-hr 25-Year Storm Rainfall=5.80"

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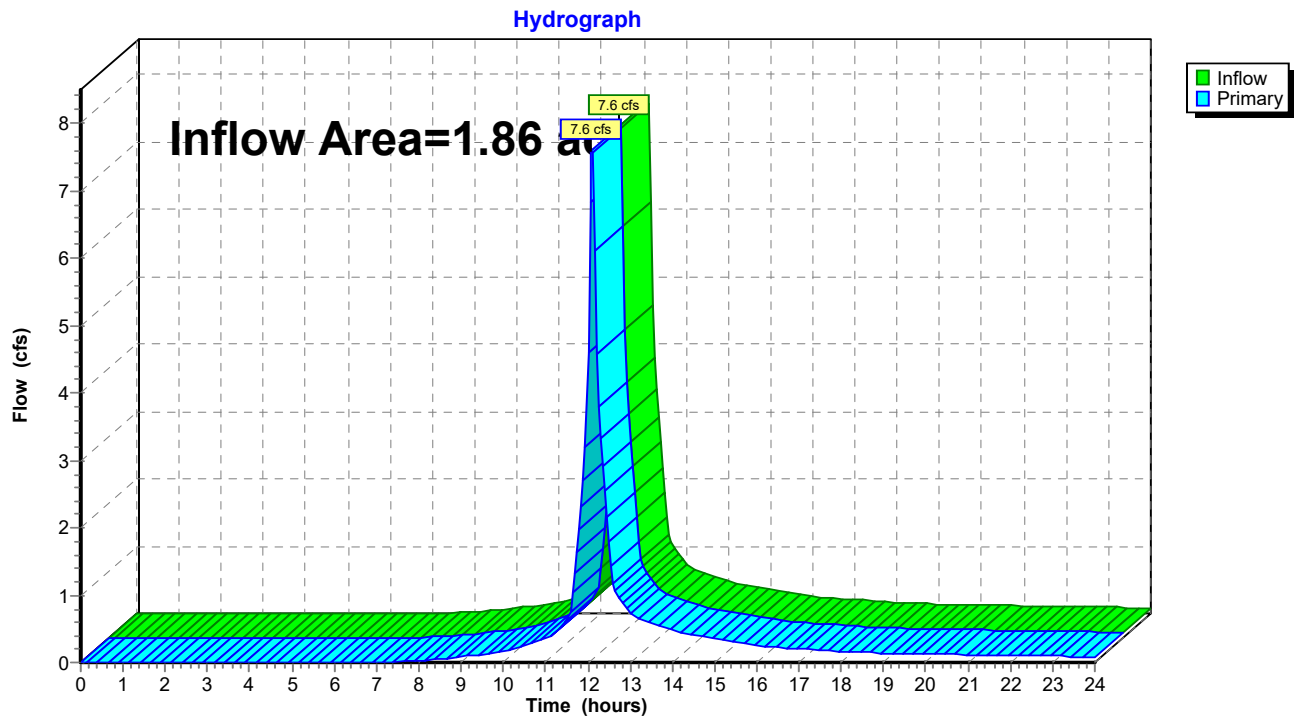
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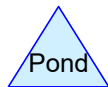
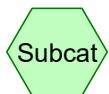
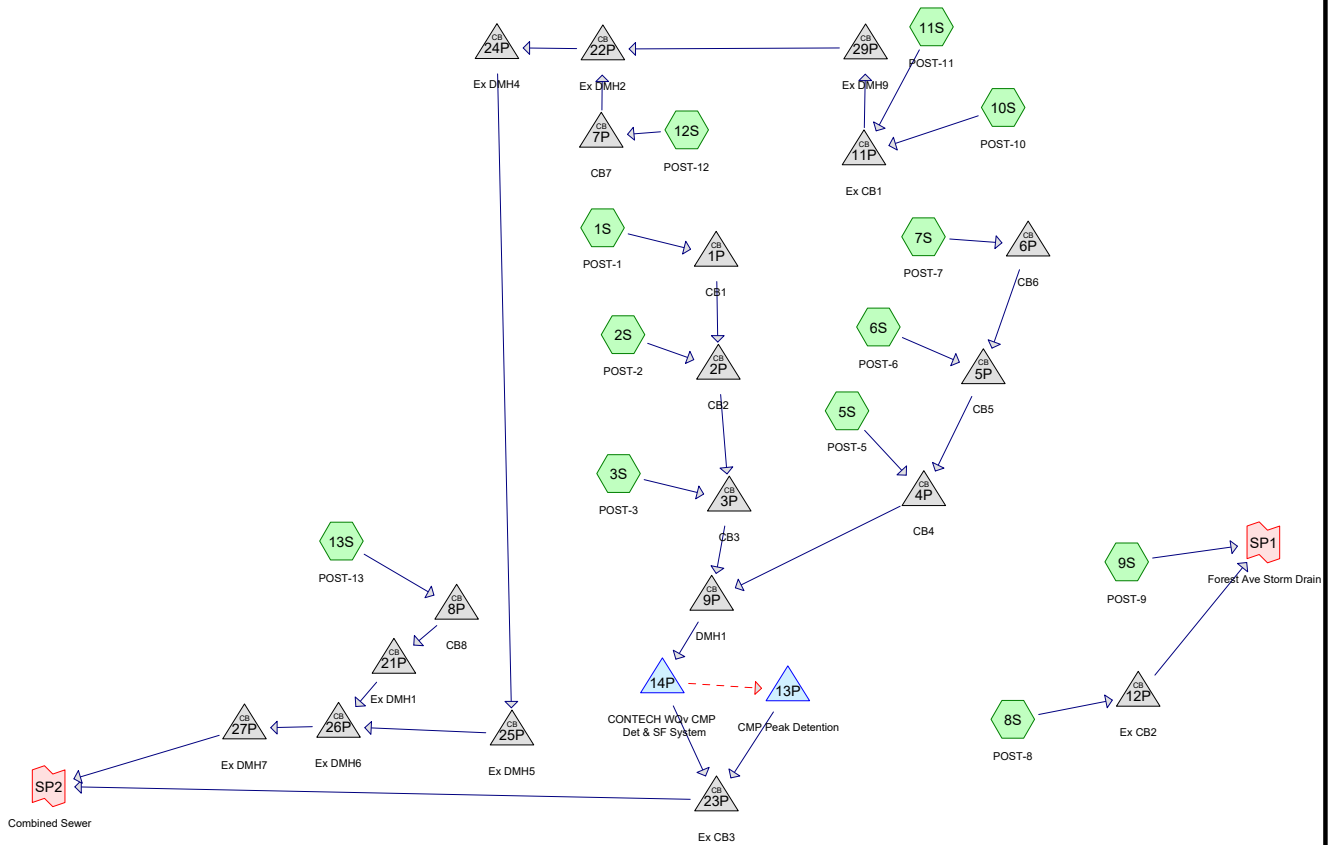
Summary for Link SP2: Combined Sewer

Inflow Area = 1.86 ac, 62.17% Impervious, Inflow Depth > 3.55" for 25-Year Storm event
Inflow = 7.6 cfs @ 12.09 hrs, Volume= 0.552 af
Primary = 7.6 cfs @ 12.09 hrs, Volume= 0.552 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP2: Combined Sewer





Routing Diagram for C2. Post
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C2. Post

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POST
Type III 24-hr 1" Storm Event Rainfall=1.00"

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: POST-1	Runoff Area=5,692 sf 70.24% Impervious Runoff Depth>0.10" Tc=6.0 min CN=81 Runoff=0.0 cfs 0.001 af
Subcatchment2S: POST-2	Runoff Area=9,641 sf 93.94% Impervious Runoff Depth>0.50" Tc=6.0 min CN=94 Runoff=0.1 cfs 0.009 af
Subcatchment3S: POST-3	Runoff Area=15,050 sf 86.74% Impervious Runoff Depth>0.32" Tc=6.0 min CN=90 Runoff=0.1 cfs 0.009 af
Subcatchment5S: POST-5	Runoff Area=6,810 sf 75.96% Impervious Runoff Depth>0.15" Tc=6.0 min CN=84 Runoff=0.0 cfs 0.002 af
Subcatchment6S: POST-6	Runoff Area=9,346 sf 95.25% Impervious Runoff Depth>0.56" Tc=6.0 min CN=95 Runoff=0.1 cfs 0.010 af
Subcatchment7S: POST-7	Runoff Area=5,710 sf 71.52% Impervious Runoff Depth>0.10" Tc=6.0 min CN=81 Runoff=0.0 cfs 0.001 af
Subcatchment8S: POST-8	Runoff Area=3,553 sf 58.65% Impervious Runoff Depth>0.02" Tc=6.0 min CN=74 Runoff=0.0 cfs 0.000 af
Subcatchment9S: POST-9	Runoff Area=14,487 sf 79.34% Impervious Runoff Depth>0.20" Tc=6.0 min CN=86 Runoff=0.1 cfs 0.005 af
Subcatchment10S: POST-10	Runoff Area=7,001 sf 74.06% Impervious Runoff Depth>0.13" Tc=6.0 min CN=83 Runoff=0.0 cfs 0.002 af
Subcatchment11S: POST-11	Runoff Area=10,124 sf 73.25% Impervious Runoff Depth>0.11" Tc=6.0 min CN=82 Runoff=0.0 cfs 0.002 af
Subcatchment12S: POST-12	Runoff Area=12,768 sf 60.52% Impervious Runoff Depth>0.03" Tc=6.0 min CN=75 Runoff=0.0 cfs 0.001 af
Subcatchment13S: POST-13	Runoff Area=12,612 sf 69.88% Impervious Runoff Depth>0.08" Tc=6.0 min CN=80 Runoff=0.0 cfs 0.002 af
Pond 1P: CB1	Peak Elev=18.39' Inflow=0.0 cfs 0.001 af 10.0" Round Culvert n=0.010 L=56.0' S=0.0048 '/ Outflow=0.0 cfs 0.001 af
Pond 2P: CB2	Peak Elev=18.18' Inflow=0.1 cfs 0.010 af 10.0" Round Culvert n=0.010 L=56.0' S=0.0050 '/ Outflow=0.1 cfs 0.010 af
Pond 3P: CB3	Peak Elev=17.85' Inflow=0.3 cfs 0.020 af 15.0" Round Culvert n=0.010 L=21.0' S=0.0048 '/ Outflow=0.3 cfs 0.020 af
Pond 4P: CB4	Peak Elev=17.59' Inflow=0.2 cfs 0.013 af 18.0" Round Culvert n=0.010 L=106.0' S=0.0102 '/ Outflow=0.2 cfs 0.013 af

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Type III 24-hr 1" Storm Event Rainfall=1.00"

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Pond 5P: CB5Peak Elev=17.64' Inflow=0.1 cfs 0.011 af
15.0" Round Culvert n=0.010 L=77.0' S=0.0051 '/ Outflow=0.1 cfs 0.011 af**Pond 6P: CB6**Peak Elev=17.57' Inflow=0.0 cfs 0.001 af
15.0" Round Culvert n=0.010 L=53.0' S=0.0051 '/ Outflow=0.0 cfs 0.001 af**Pond 7P: CB7**Peak Elev=17.42' Inflow=0.0 cfs 0.001 af
8.0" Round Culvert n=0.010 L=34.0' S=0.0100 '/ Outflow=0.0 cfs 0.001 af**Pond 8P: CB8**Peak Elev=14.91' Inflow=0.0 cfs 0.002 af
18.0" Round Culvert n=0.010 L=18.0' S=0.0028 '/ Outflow=0.0 cfs 0.002 af**Pond 9P: DMH1**Peak Elev=17.62' Inflow=0.4 cfs 0.033 af
18.0" Round Culvert n=0.010 L=15.0' S=0.0047 '/ Outflow=0.4 cfs 0.033 af**Pond 11P: Ex CB1**Peak Elev=18.56' Inflow=0.0 cfs 0.004 af
12.0" Round Culvert n=0.010 L=41.0' S=0.0224 '/ Outflow=0.0 cfs 0.004 af**Pond 12P: Ex CB2**Peak Elev=18.15' Inflow=0.0 cfs 0.000 af
8.0" Round Culvert n=0.010 L=159.0' S=0.0158 '/ Outflow=0.0 cfs 0.000 af**Pond 13P: CMP Peak Detention**Peak Elev=14.71' Storage=0 cf Inflow=0.0 cfs 0.000 af
Outflow=0.0 cfs 0.000 af**Pond 14P: CONTECHWQv CMP Det & SF**Peak Elev=17.62' Storage=892 cf Inflow=0.4 cfs 0.033 af
Primary=0.0 cfs 0.019 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.019 af**Pond 21P: Ex DMH1**Peak Elev=14.67' Inflow=0.0 cfs 0.002 af
18.0" Round Culvert n=0.010 L=12.0' S=0.0200 '/ Outflow=0.0 cfs 0.002 af**Pond 22P: Ex DMH2**Peak Elev=17.22' Inflow=0.0 cfs 0.005 af
18.0" Round Culvert n=0.010 L=98.0' S=0.0023 '/ Outflow=0.0 cfs 0.005 af**Pond 23P: Ex CB3**Peak Elev=14.12' Inflow=0.0 cfs 0.019 af
21.0" Round Culvert n=0.013 L=252.0' S=0.0044 '/ Outflow=0.0 cfs 0.019 af**Pond 24P: Ex DMH4**Peak Elev=16.85' Inflow=0.0 cfs 0.005 af
18.0" Round Culvert n=0.010 L=198.0' S=0.0019 '/ Outflow=0.0 cfs 0.005 af**Pond 25P: Ex DMH5**Peak Elev=15.52' Inflow=0.0 cfs 0.005 af
18.0" Round Culvert n=0.010 L=9.0' S=0.0133 '/ Outflow=0.0 cfs 0.005 af**Pond 26P: Ex DMH6**Peak Elev=14.39' Inflow=0.0 cfs 0.007 af
18.0" Round Culvert n=0.010 L=66.0' S=0.0080 '/ Outflow=0.0 cfs 0.007 af**Pond 27P: Ex DMH7**Peak Elev=13.82' Inflow=0.0 cfs 0.007 af
18.0" Round Culvert n=0.010 L=42.0' S=0.0014 '/ Outflow=0.0 cfs 0.007 af**Pond 29P: Ex DMH9**Peak Elev=17.56' Inflow=0.0 cfs 0.004 af
18.0" Round Culvert n=0.010 L=152.0' S=0.0019 '/ Outflow=0.0 cfs 0.004 af

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Link SP1: Forest Ave Storm Drain

Inflow=0.1 cfs 0.006 af
Primary=0.1 cfs 0.006 af

Link SP2: Combined Sewer

Inflow=0.1 cfs 0.026 af
Primary=0.1 cfs 0.026 af

Total Runoff Area = 2.59 ac Runoff Volume = 0.045 af Average Runoff Depth = 0.21"
22.88% Pervious = 0.59 ac 77.12% Impervious = 2.00 ac

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Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Subcatchment 1S: POST-1

Runoff = 0.0 cfs @ 12.27 hrs, Volume= 0.001 af, Depth> 0.10"

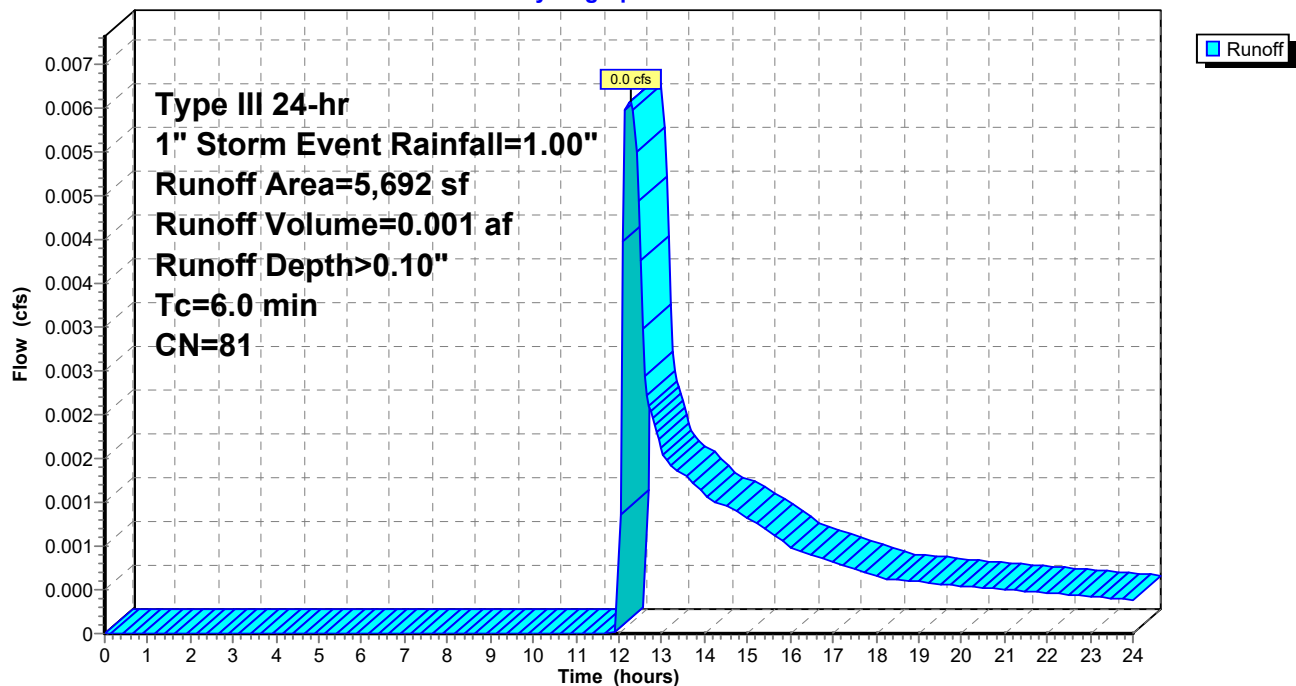
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
3,998	98	Paved parking, HSG A
830	39	Grass cover, Good, HSG A
* 864	40	Porous Pavement
5,692	81	Weighted Average
1,694		29.76% Pervious Area
3,998		70.24% Impervious Area

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

Subcatchment 1S: POST-1

Hydrograph



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Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Subcatchment 2S: POST-2

Runoff = 0.1 cfs @ 12.09 hrs, Volume= 0.009 af, Depth> 0.50"

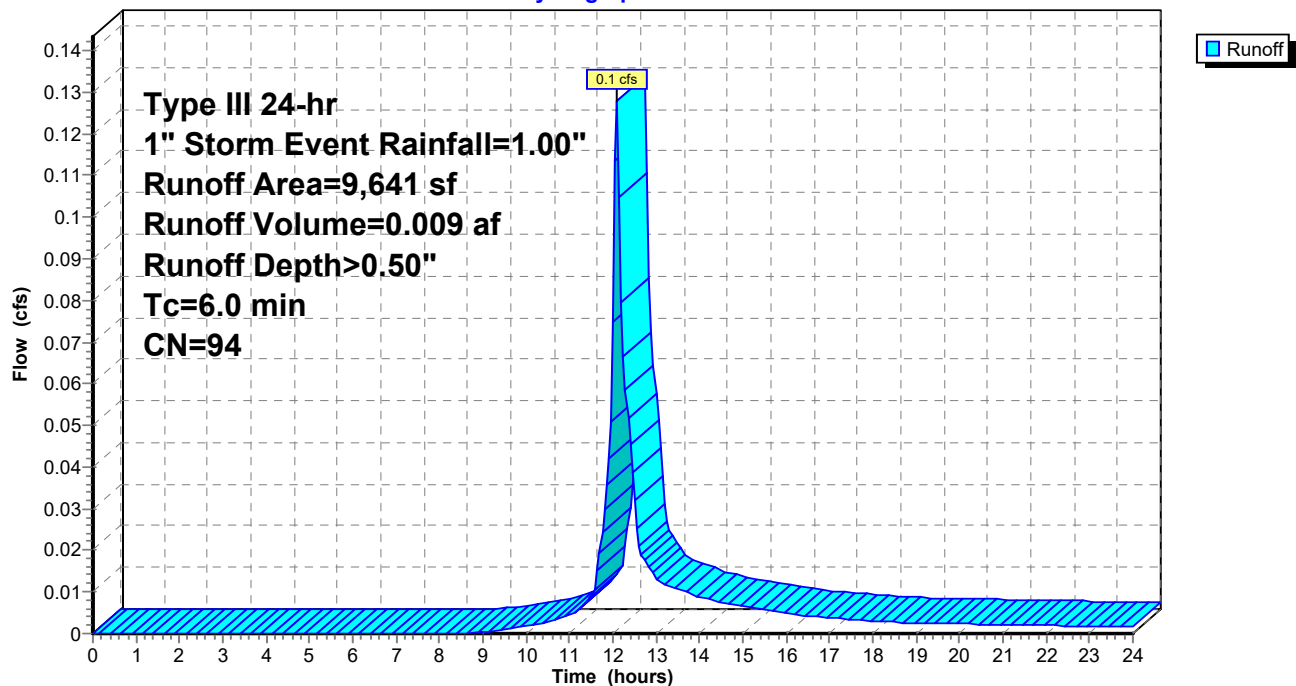
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
9,057	98	Paved parking, HSG A
502	39	Grass cover, Good, HSG A
* 82	40	Porous Pavement
9,641	94	Weighted Average
584		6.06% Pervious Area
9,057		93.94% Impervious Area

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

Subcatchment 2S: POST-2

Hydrograph



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POST
Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Subcatchment 3S: POST-3

Runoff = 0.1 cfs @ 12.10 hrs, Volume= 0.009 af, Depth> 0.32"

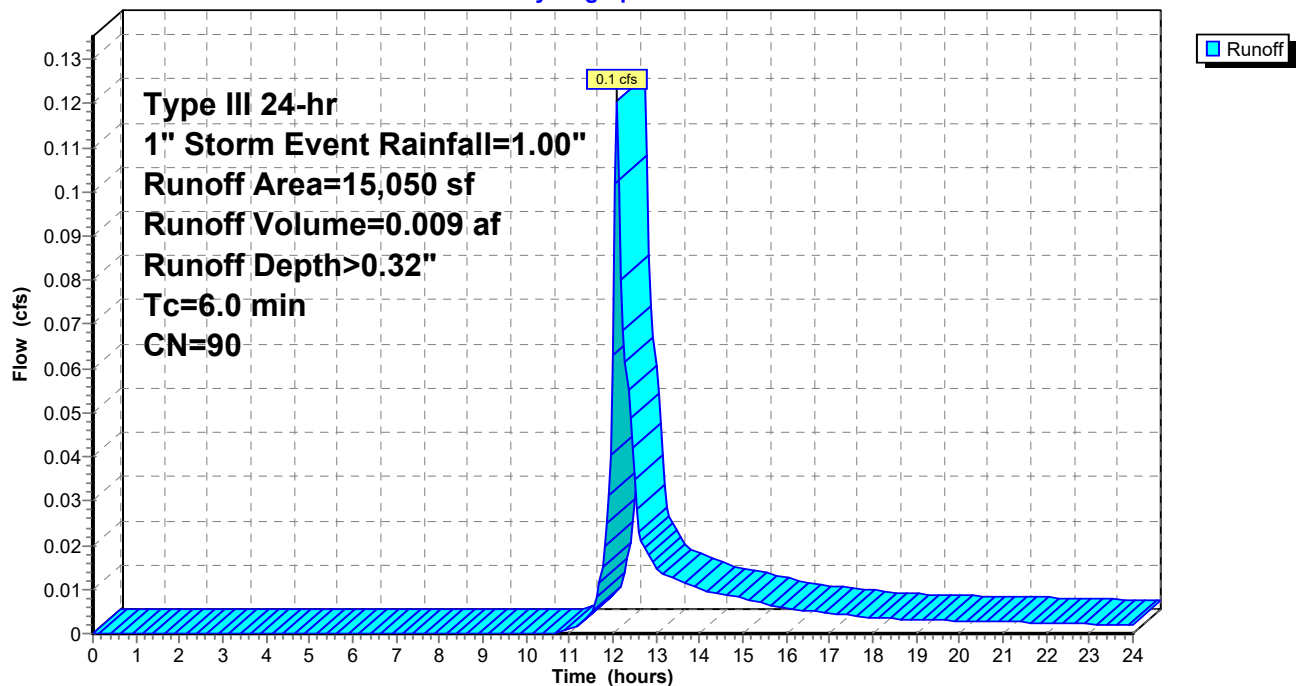
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
13,054	98	Paved parking, HSG A
1,909	39	Grass cover, Good, HSG A
* 87	40	Porous Pavement
15,050	90	Weighted Average
1,996		13.26% Pervious Area
13,054		86.74% Impervious Area

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

Subcatchment 3S: POST-3

Hydrograph



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POST
Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Subcatchment 5S: POST-5

Runoff = 0.0 cfs @ 12.12 hrs, Volume= 0.002 af, Depth> 0.15"

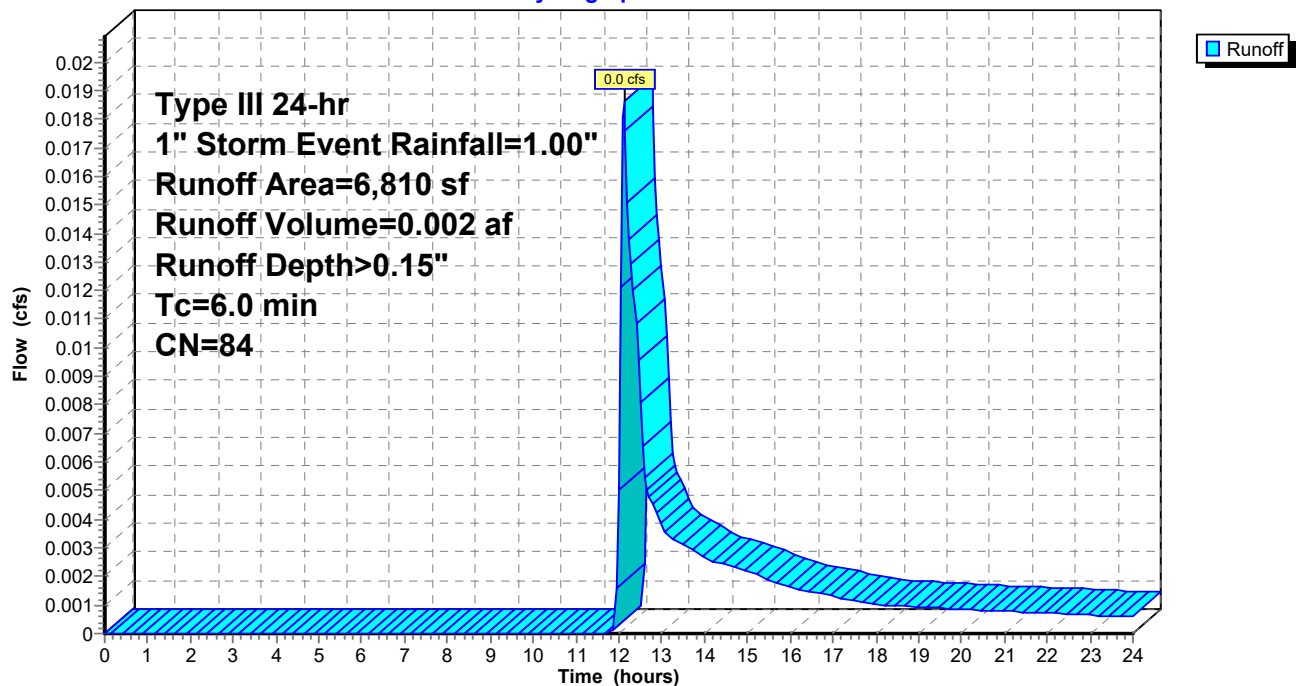
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
5,173	98	Paved parking, HSG A
1,547	39	Grass cover, Good, HSG A
* 90	40	Porous Pavement
6,810	84	Weighted Average
1,637		24.04% Pervious Area
5,173		75.96% Impervious Area

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

Subcatchment 5S: POST-5

Hydrograph



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Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Subcatchment 6S: POST-6

Runoff = 0.1 cfs @ 12.09 hrs, Volume= 0.010 af, Depth> 0.56"

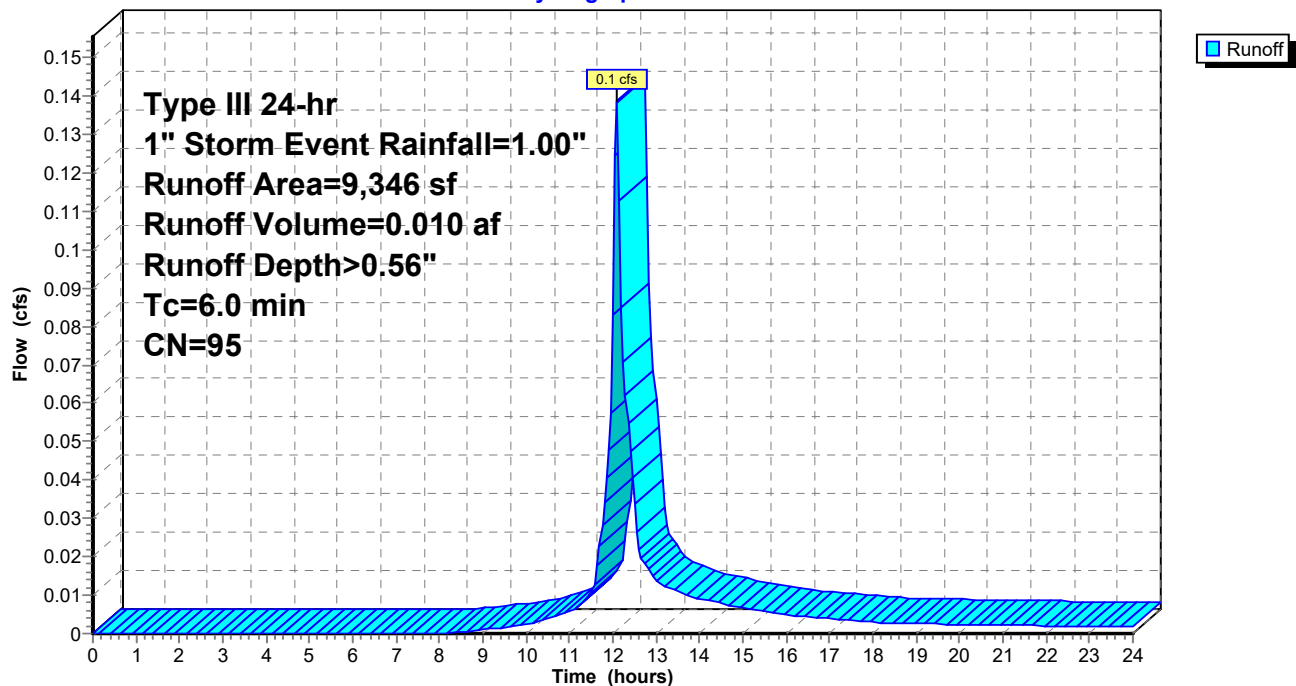
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
8,902	98	Paved parking, HSG A
351	39	Grass cover, Good, HSG A
* 93	40	Porous Pavement
9,346	95	Weighted Average
444		4.75% Pervious Area
8,902		95.25% Impervious Area

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

Subcatchment 6S: POST-6

Hydrograph



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Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Subcatchment 7S: POST-7

Runoff = 0.0 cfs @ 12.27 hrs, Volume= 0.001 af, Depth> 0.10"

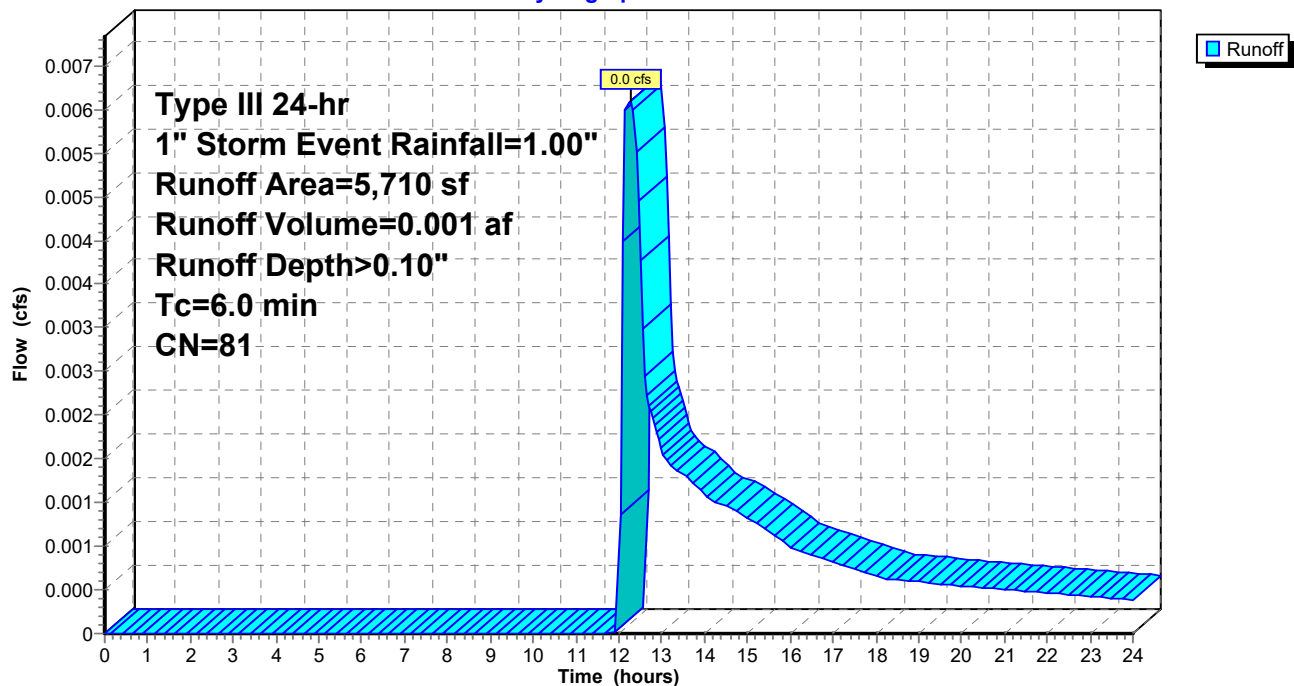
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
4,084	98	Paved parking, HSG A
809	39	Grass cover, Good, HSG A
* 817	40	Porous Pavement
5,710	81	Weighted Average
1,626		28.48% Pervious Area
4,084		71.52% Impervious Area

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

Subcatchment 7S: POST-7

Hydrograph



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Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Subcatchment 8S: POST-8

Runoff = 0.0 cfs @ 14.78 hrs, Volume= 0.000 af, Depth> 0.02"

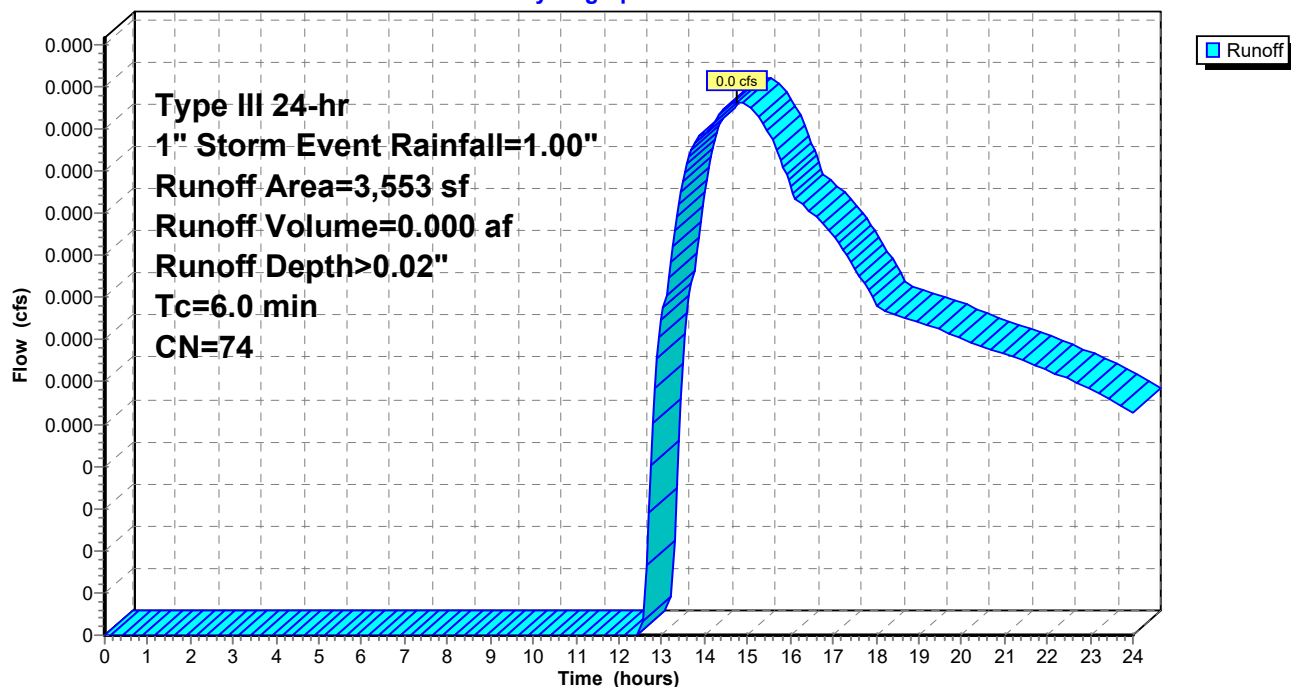
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
2,084	98	Paved parking, HSG A
1,469	39	Grass cover, Good, HSG A
3,553	74	Weighted Average
1,469		41.35% Pervious Area
2,084		58.65% Impervious Area

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

Subcatchment 8S: POST-8

Hydrograph



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Summary for Subcatchment 9S: POST-9

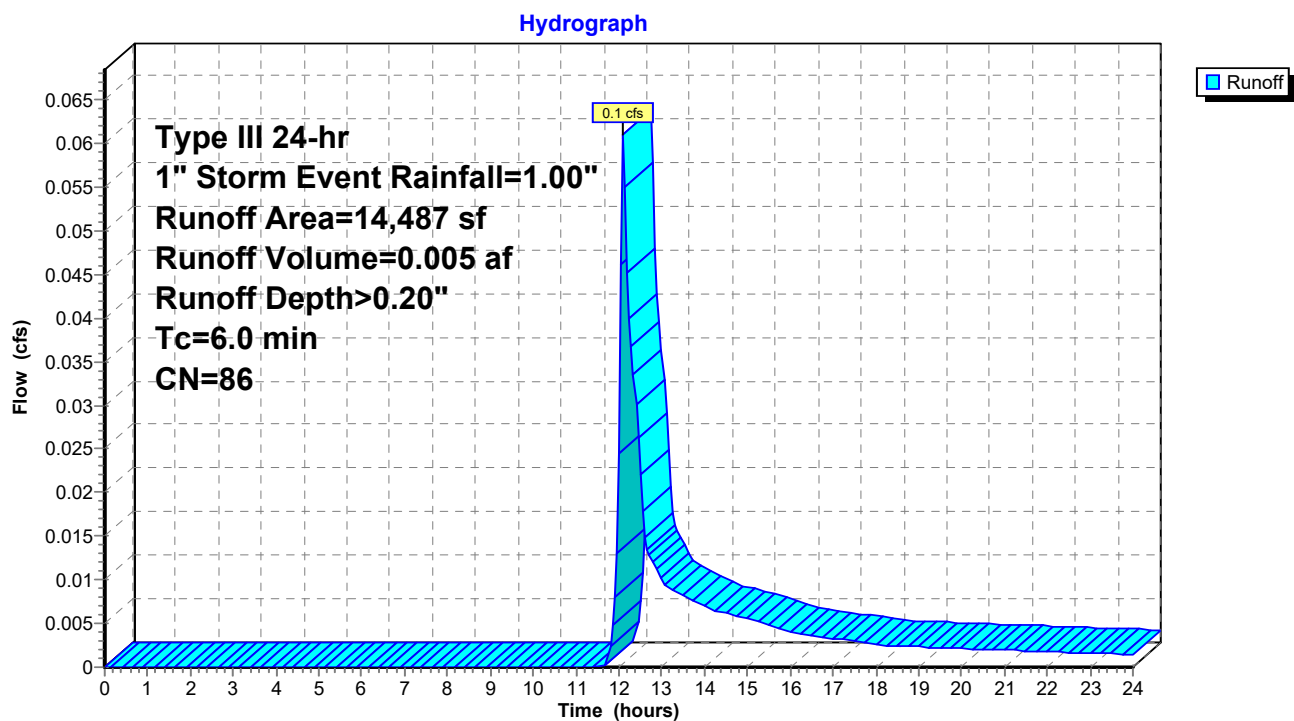
Runoff = 0.1 cfs @ 12.11 hrs, Volume= 0.005 af, Depth> 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
11,494	98	Paved parking, HSG A
2,993	39	Grass cover, Good, HSG A
14,487	86	Weighted Average
2,993		20.66% Pervious Area
11,494		79.34% Impervious Area

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

Subcatchment 9S: POST-9



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Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Subcatchment 10S: POST-10

Runoff = 0.0 cfs @ 12.14 hrs, Volume= 0.002 af, Depth> 0.13"

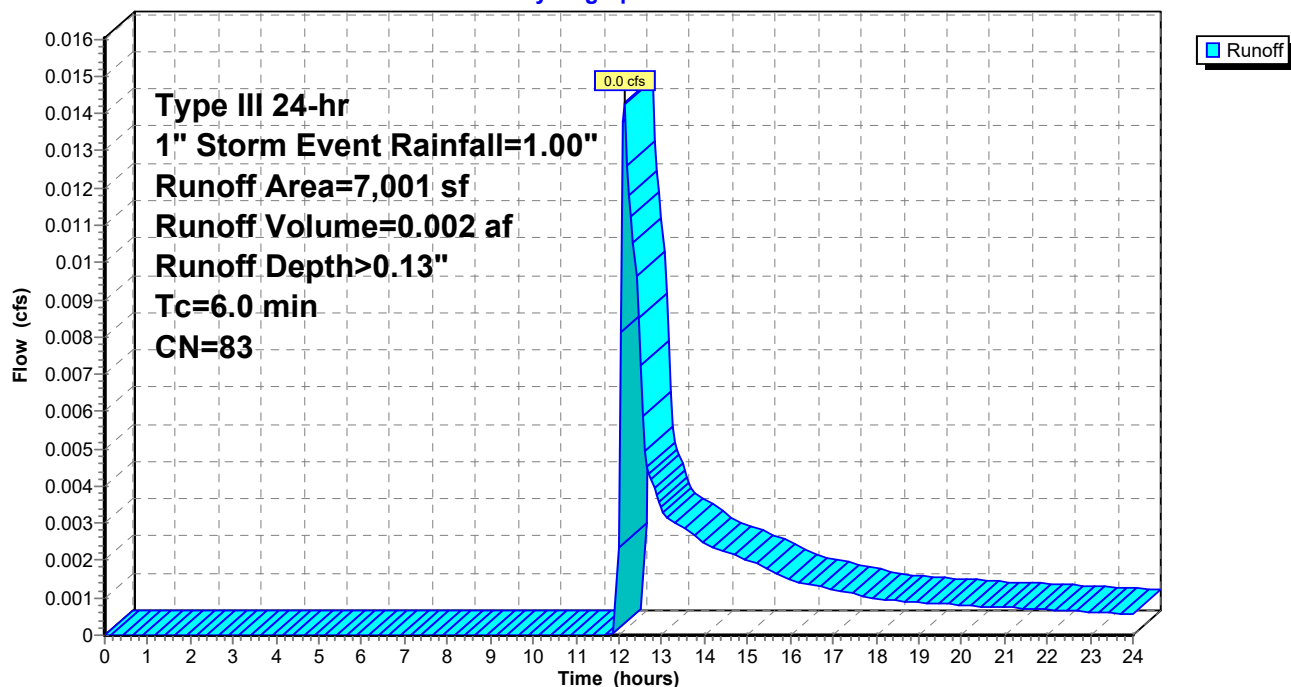
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
5,185	98	Paved parking, HSG A
1,816	39	Grass cover, Good, HSG A
7,001	83	Weighted Average
1,816		25.94% Pervious Area
5,185		74.06% Impervious Area

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

Subcatchment 10S: POST-10

Hydrograph



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POST
Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Subcatchment 11S: POST-11

Runoff = 0.0 cfs @ 12.16 hrs, Volume= 0.002 af, Depth> 0.11"

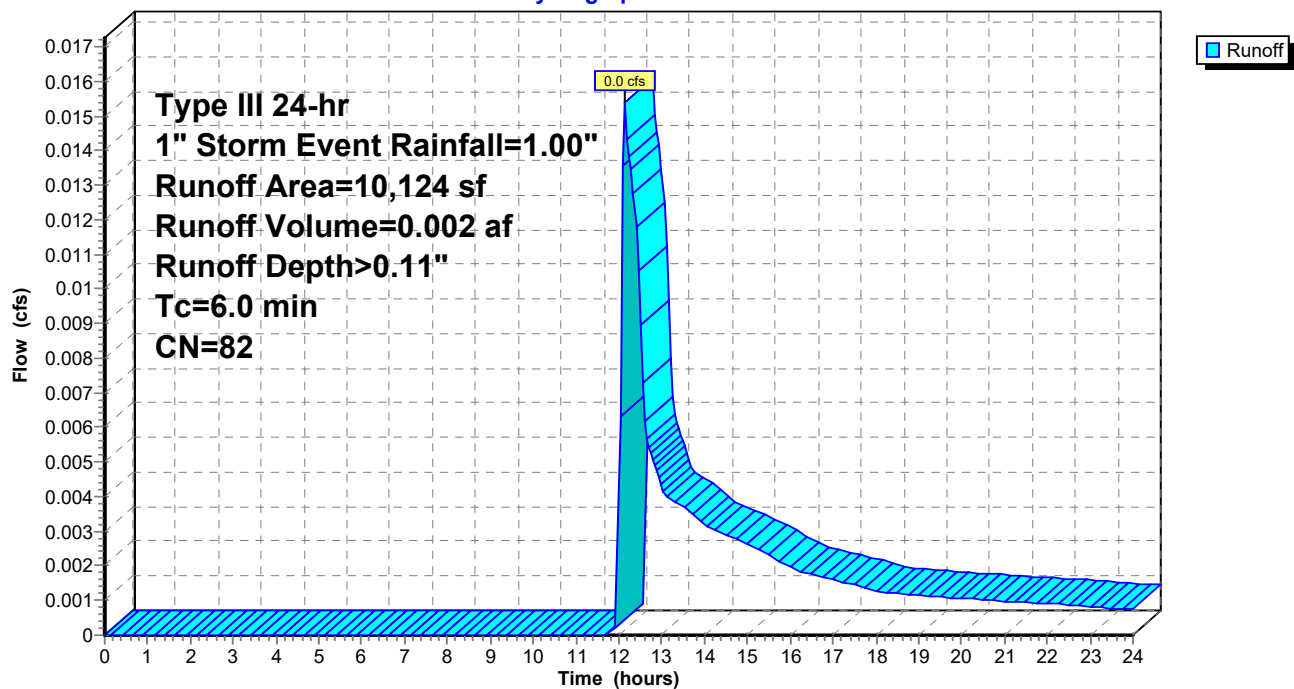
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
7,416	98	Paved parking, HSG A
2,708	39	Grass cover, Good, HSG A
10,124	82	Weighted Average
2,708		26.75% Pervious Area
7,416		73.25% Impervious Area

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

Subcatchment 11S: POST-11

Hydrograph



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Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Subcatchment 12S: POST-12

Runoff = 0.0 cfs @ 13.77 hrs, Volume= 0.001 af, Depth> 0.03"

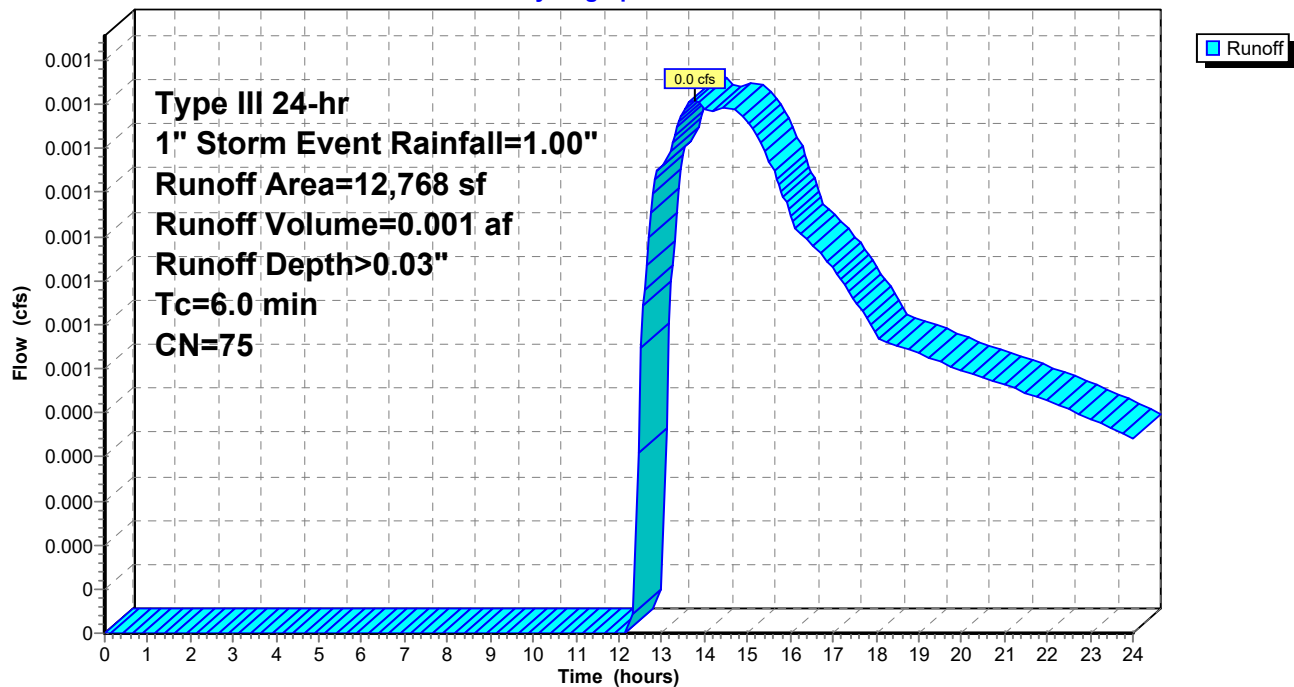
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
7,727	98	Paved parking, HSG A
5,041	39	Grass cover, Good, HSG A
12,768	75	Weighted Average
5,041		39.48% Pervious Area
7,727		60.52% Impervious Area

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

Subcatchment 12S: POST-12

Hydrograph



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Summary for Subcatchment 13S: POST-13

Runoff = 0.0 cfs @ 12.32 hrs, Volume= 0.002 af, Depth> 0.08"

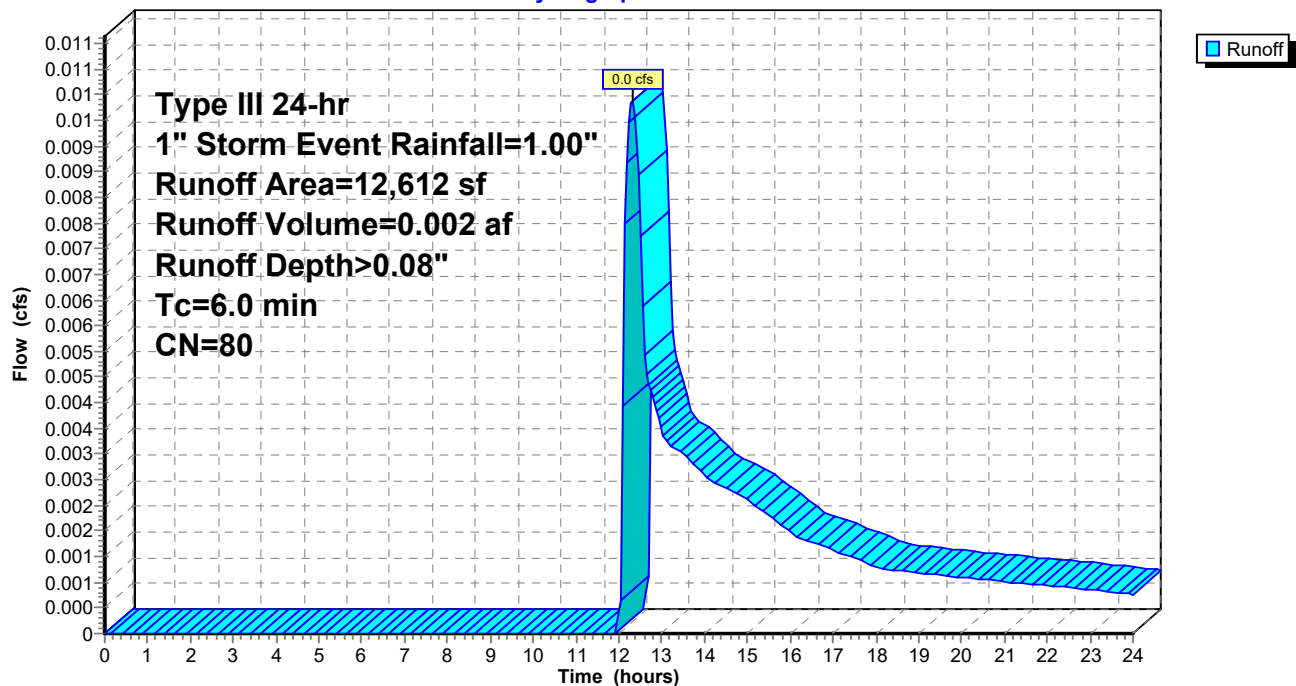
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Storm Event Rainfall=1.00"

Area (sf)	CN	Description
8,813	98	Paved parking, HSG A
3,299	39	Grass cover, Good, HSG A
* 500	40	Porous Pavement
12,612	80	Weighted Average
3,799		30.12% Pervious Area
8,813		69.88% Impervious Area

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

Subcatchment 13S: POST-13

Hydrograph



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Summary for Pond 1P: CB1

Inflow Area = 0.13 ac, 70.24% Impervious, Inflow Depth > 0.10" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.27 hrs, Volume= 0.001 af
Outflow = 0.0 cfs @ 12.27 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.27 hrs, Volume= 0.001 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 18.39' @ 12.17 hrs

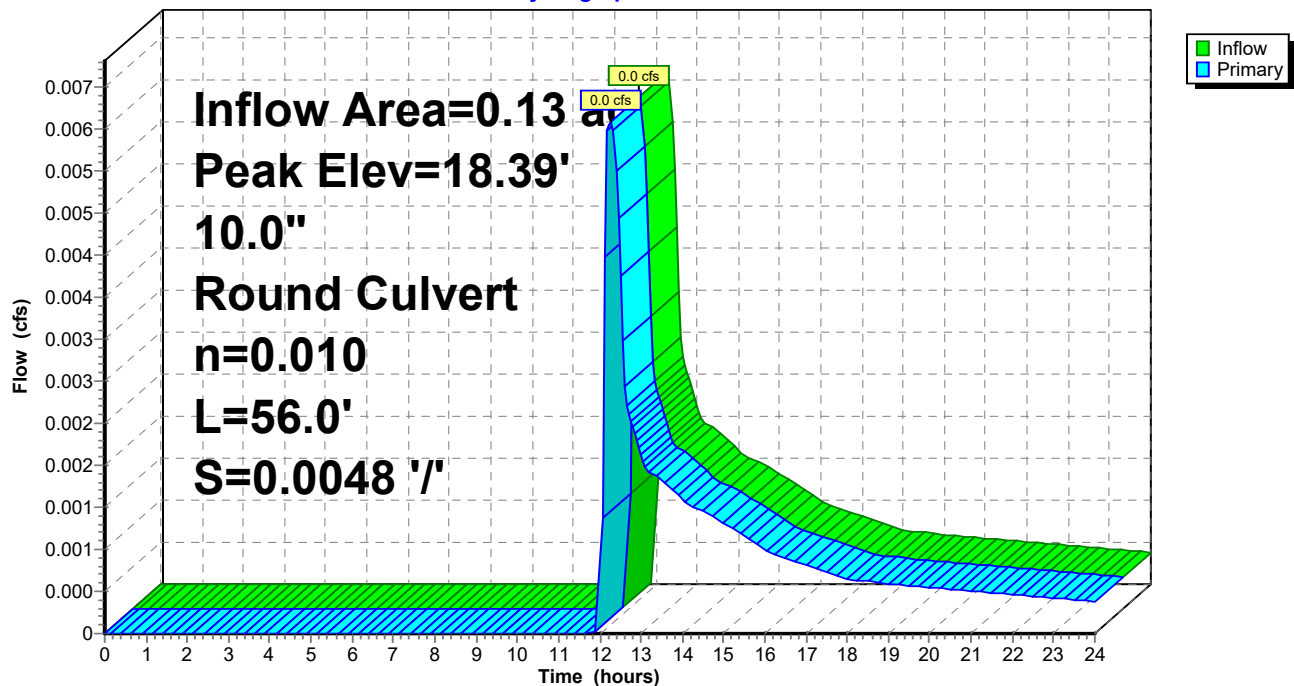
Flood Elev= 22.34'

Device	Routing	Invert	Outlet Devices
#1	Primary	18.34'	10.0" Round Culvert L= 56.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.34' / 18.07' S= 0.0048 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.0 cfs @ 12.27 hrs HW=18.39' TW=18.12' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 0.0 cfs @ 0.79 fps)

Pond 1P: CB1

Hydrograph



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Summary for Pond 2P: CB2

Inflow Area = 0.35 ac, 85.14% Impervious, Inflow Depth > 0.35" for 1" Storm Event event
Inflow = 0.1 cfs @ 12.10 hrs, Volume= 0.010 af
Outflow = 0.1 cfs @ 12.10 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min
Primary = 0.1 cfs @ 12.10 hrs, Volume= 0.010 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 18.18' @ 12.10 hrs

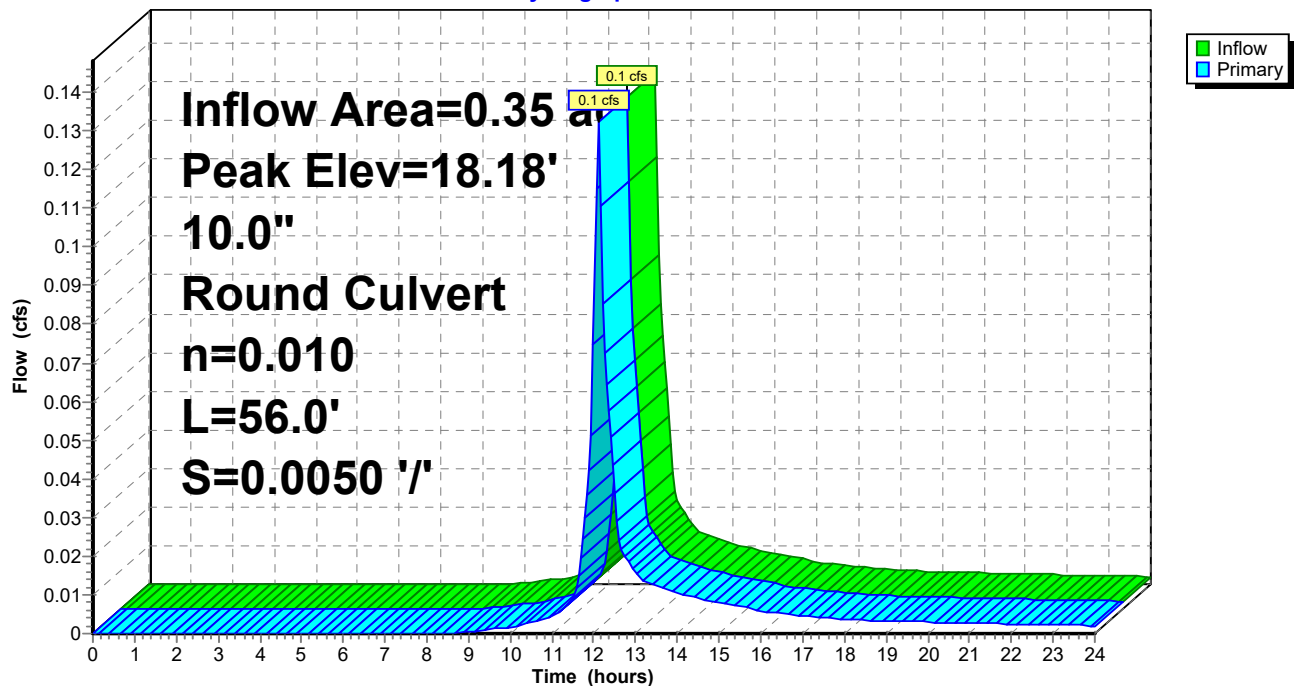
Flood Elev= 22.31'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.97'	10.0" Round Culvert L= 56.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.97' / 17.69' S= 0.0050 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.1 cfs @ 12.10 hrs HW=18.18' TW=17.85' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 0.1 cfs @ 1.23 fps)

Pond 2P: CB2

Hydrograph



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Summary for Pond 3P: CB3

Inflow Area = 0.70 ac, 85.93% Impervious, Inflow Depth > 0.34" for 1" Storm Event event
Inflow = 0.3 cfs @ 12.10 hrs, Volume= 0.020 af
Outflow = 0.3 cfs @ 12.10 hrs, Volume= 0.020 af, Atten= 0%, Lag= 0.0 min
Primary = 0.3 cfs @ 12.10 hrs, Volume= 0.020 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.85' @ 12.10 hrs

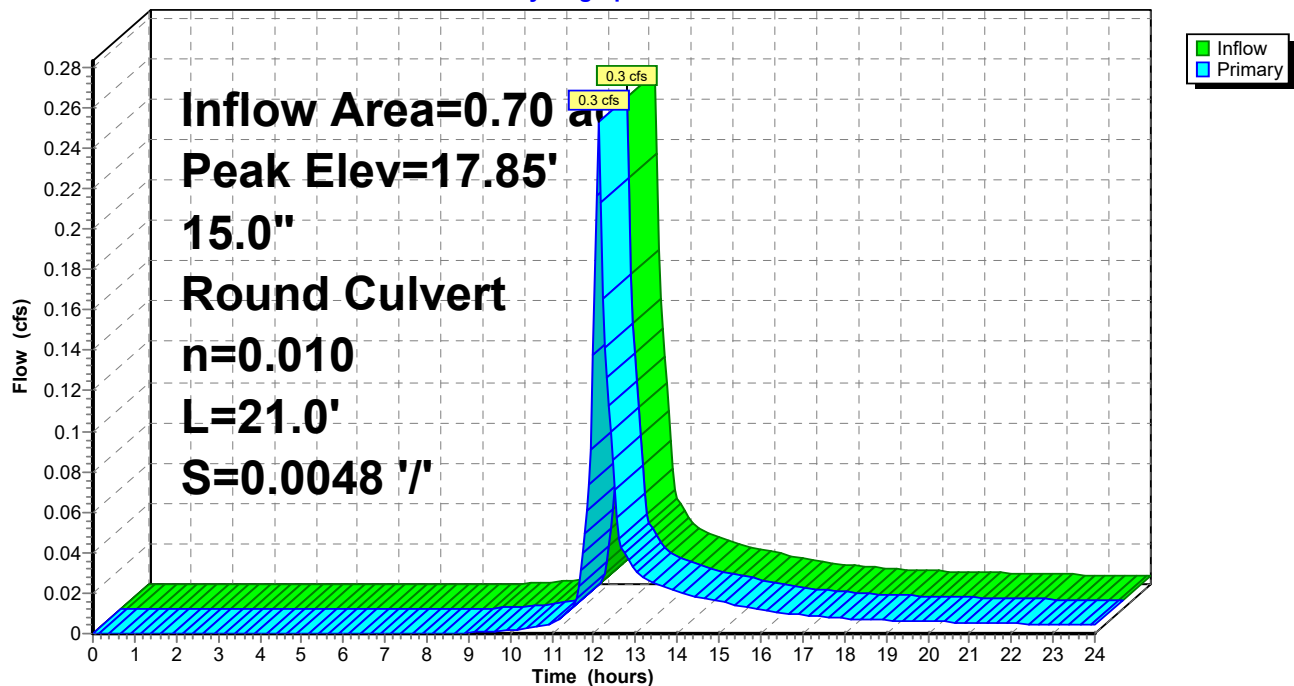
Flood Elev= 22.36'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.58'	15.0" Round Culvert L= 21.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.58' / 17.48' S= 0.0048 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.3 cfs @ 12.10 hrs HW=17.85' TW=16.33' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 0.3 cfs @ 1.94 fps)

Pond 3P: CB3

Hydrograph



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Summary for Pond 4P: CB4

Inflow Area = 0.50 ac, 83.05% Impervious, Inflow Depth > 0.31" for 1" Storm Event event
Inflow = 0.2 cfs @ 12.10 hrs, Volume= 0.013 af
Outflow = 0.2 cfs @ 12.10 hrs, Volume= 0.013 af, Atten= 0%, Lag= 0.0 min
Primary = 0.2 cfs @ 12.10 hrs, Volume= 0.013 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.59' @ 16.15 hrs

Flood Elev= 21.87'

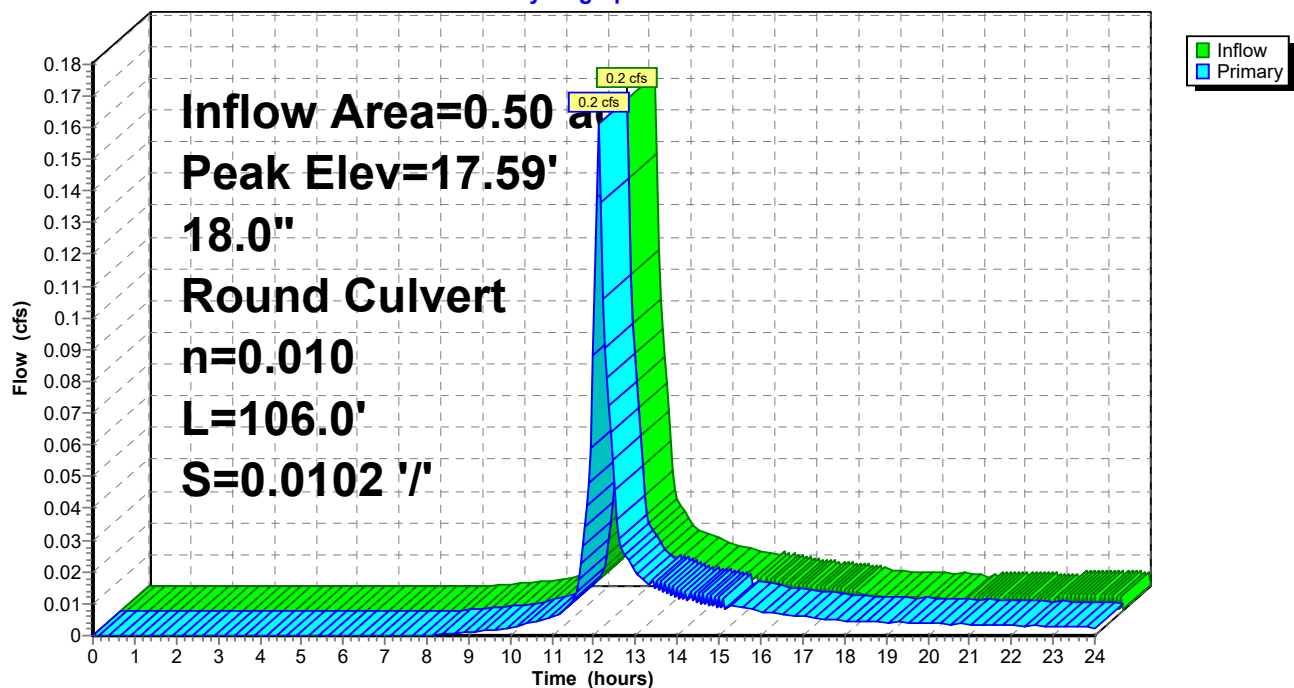
Device	Routing	Invert	Outlet Devices
#1	Primary	15.72'	18.0" Round Culvert L= 106.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.72' / 14.64' S= 0.0102 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.10 hrs HW=16.23' TW=16.33' (Dynamic Tailwater)

↑1=Culvert (Controls 0.0 cfs)

Pond 4P: CB4

Hydrograph



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Summary for Pond 5P: CB5

Inflow Area = 0.35 ac, 86.25% Impervious, Inflow Depth > 0.39" for 1" Storm Event event
Inflow = 0.1 cfs @ 12.10 hrs, Volume= 0.011 af
Outflow = 0.1 cfs @ 12.10 hrs, Volume= 0.011 af, Atten= 0%, Lag= 0.0 min
Primary = 0.1 cfs @ 12.10 hrs, Volume= 0.011 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.64' @ 15.32 hrs

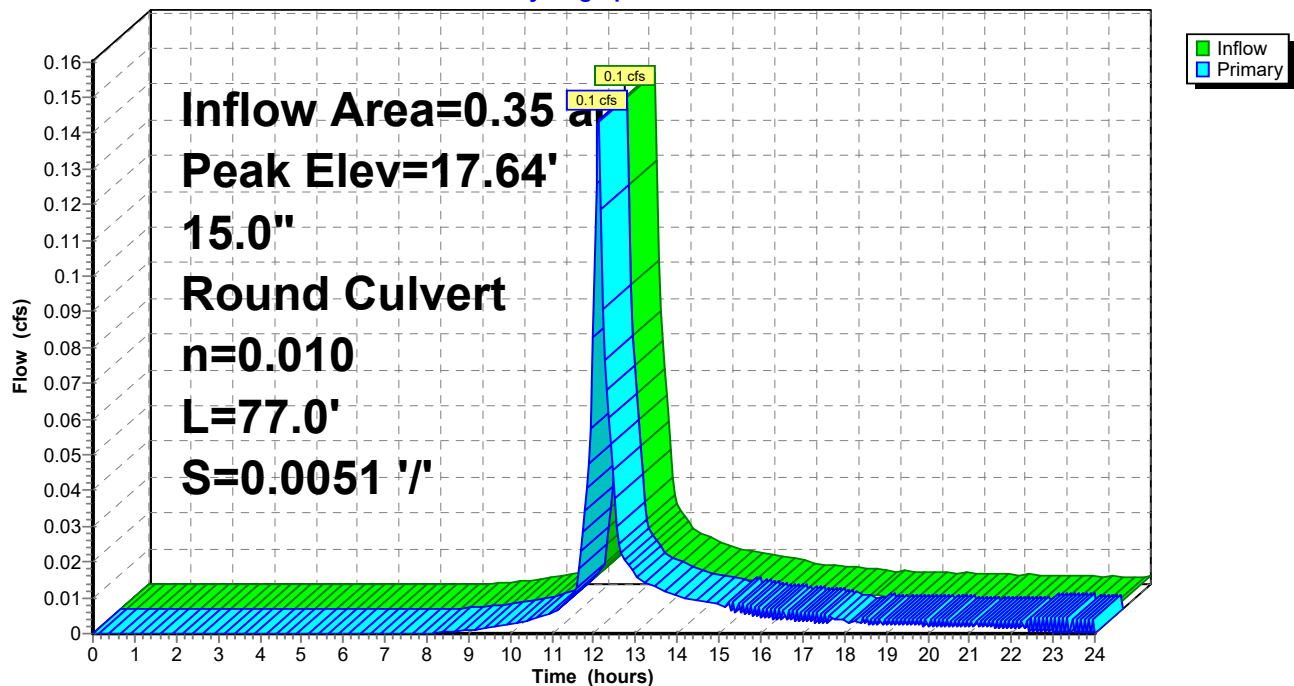
Flood Elev= 21.28'

Device	Routing	Invert	Outlet Devices
#1	Primary	16.90'	15.0" Round Culvert L= 77.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.90' / 16.51' S= 0.0051 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.1 cfs @ 12.10 hrs HW=17.09' TW=16.23' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 0.1 cfs @ 1.18 fps)

Pond 5P: CB5

Hydrograph



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Summary for Pond 6P: CB6

Inflow Area = 0.13 ac, 71.52% Impervious, Inflow Depth > 0.10" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.27 hrs, Volume= 0.001 af
Outflow = 0.0 cfs @ 12.27 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.27 hrs, Volume= 0.001 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.57' @ 15.05 hrs

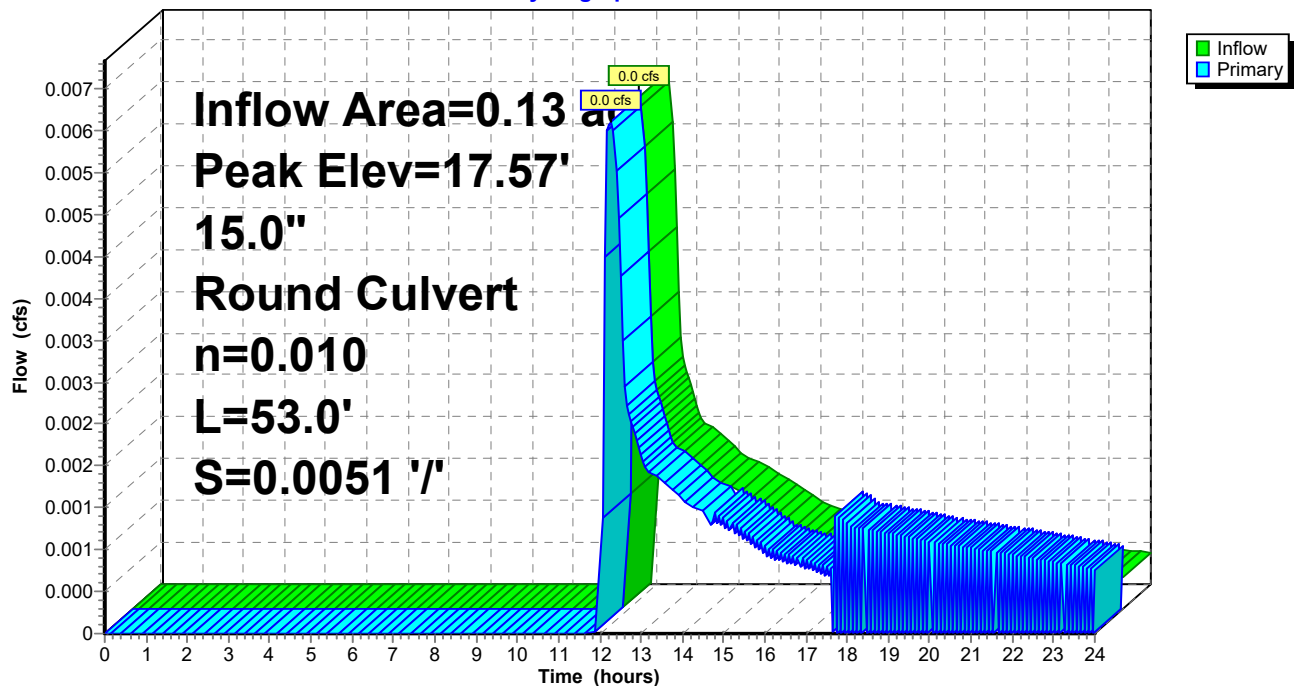
Flood Elev= 21.28'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.28'	15.0" Round Culvert L= 53.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.28' / 17.01' S= 0.0051 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.0 cfs @ 12.27 hrs HW=17.32' TW=17.04' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 0.0 cfs @ 0.78 fps)

Pond 6P: CB6

Hydrograph



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Summary for Pond 7P: CB7

Inflow Area = 0.29 ac, 60.52% Impervious, Inflow Depth > 0.03" for 1" Storm Event event
Inflow = 0.0 cfs @ 13.77 hrs, Volume= 0.001 af
Outflow = 0.0 cfs @ 13.78 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.6 min
Primary = 0.0 cfs @ 13.78 hrs, Volume= 0.001 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.42' @ 13.75 hrs

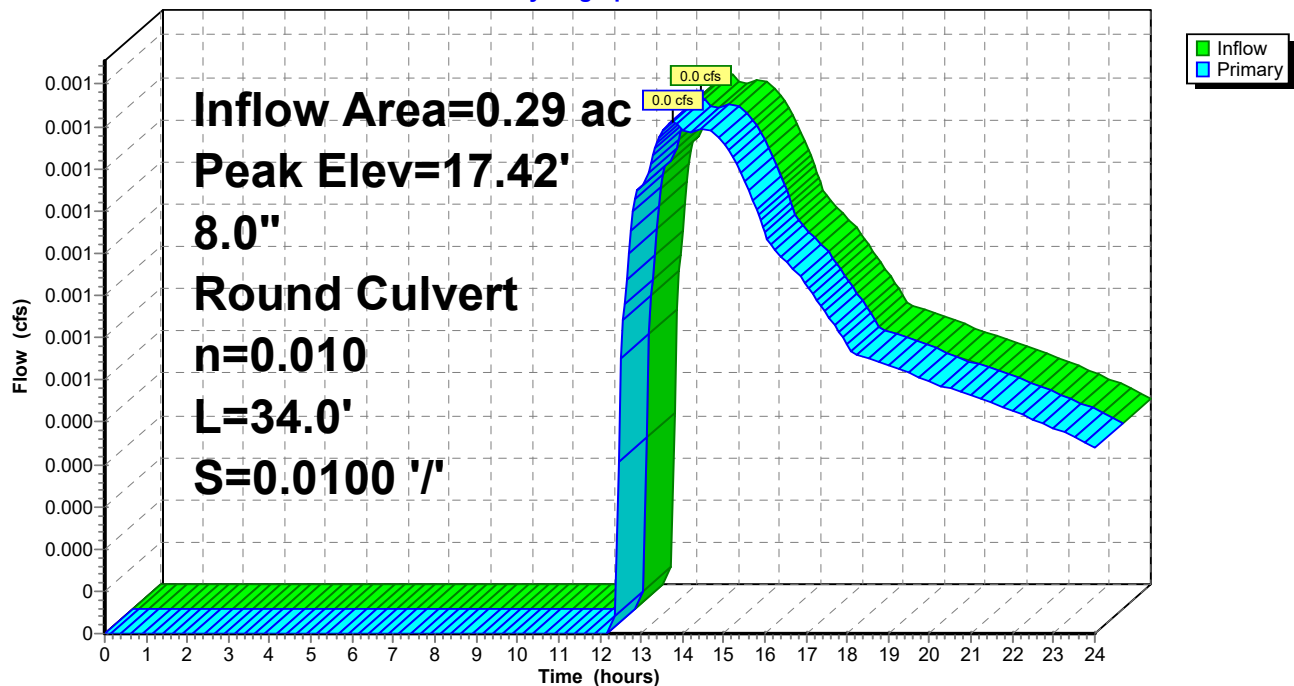
Flood Elev= 23.82'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.40'	8.0" Round Culvert L= 34.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.40' / 17.06' S= 0.0100 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.0 cfs @ 13.78 hrs HW=17.42' TW=17.17' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 0.0 cfs @ 0.59 fps)

Pond 7P: CB7

Hydrograph



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Summary for Pond 8P: CB8

Inflow Area = 0.29 ac, 69.88% Impervious, Inflow Depth > 0.08" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.32 hrs, Volume= 0.002 af
Outflow = 0.0 cfs @ 12.32 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.32 hrs, Volume= 0.002 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 14.91' @ 12.32 hrs

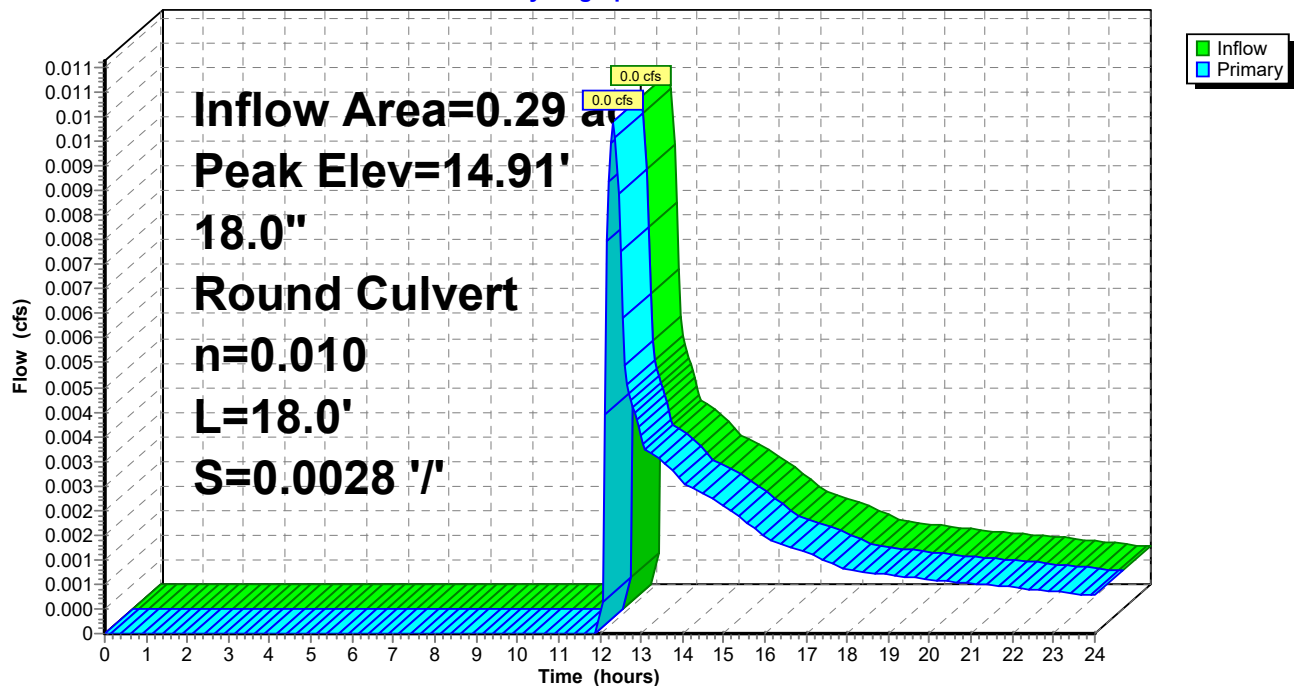
Flood Elev= 23.39'

Device	Routing	Invert	Outlet Devices
#1	Primary	14.85'	18.0" Round Culvert L= 18.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.85' / 14.80' S= 0.0028 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.32 hrs HW=14.91' TW=14.67' (Dynamic Tailwater)
↑1=Culvert (Barrel Controls 0.0 cfs @ 0.72 fps)

Pond 8P: CB8

Hydrograph



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Summary for Pond 9P: DMH1

Inflow Area = 1.20 ac, 84.73% Impervious, Inflow Depth > 0.33" for 1" Storm Event event
Inflow = 0.4 cfs @ 12.10 hrs, Volume= 0.033 af
Outflow = 0.4 cfs @ 12.10 hrs, Volume= 0.033 af, Atten= 0%, Lag= 0.0 min
Primary = 0.4 cfs @ 12.10 hrs, Volume= 0.033 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.62' @ 16.10 hrs

Flood Elev= 22.85'

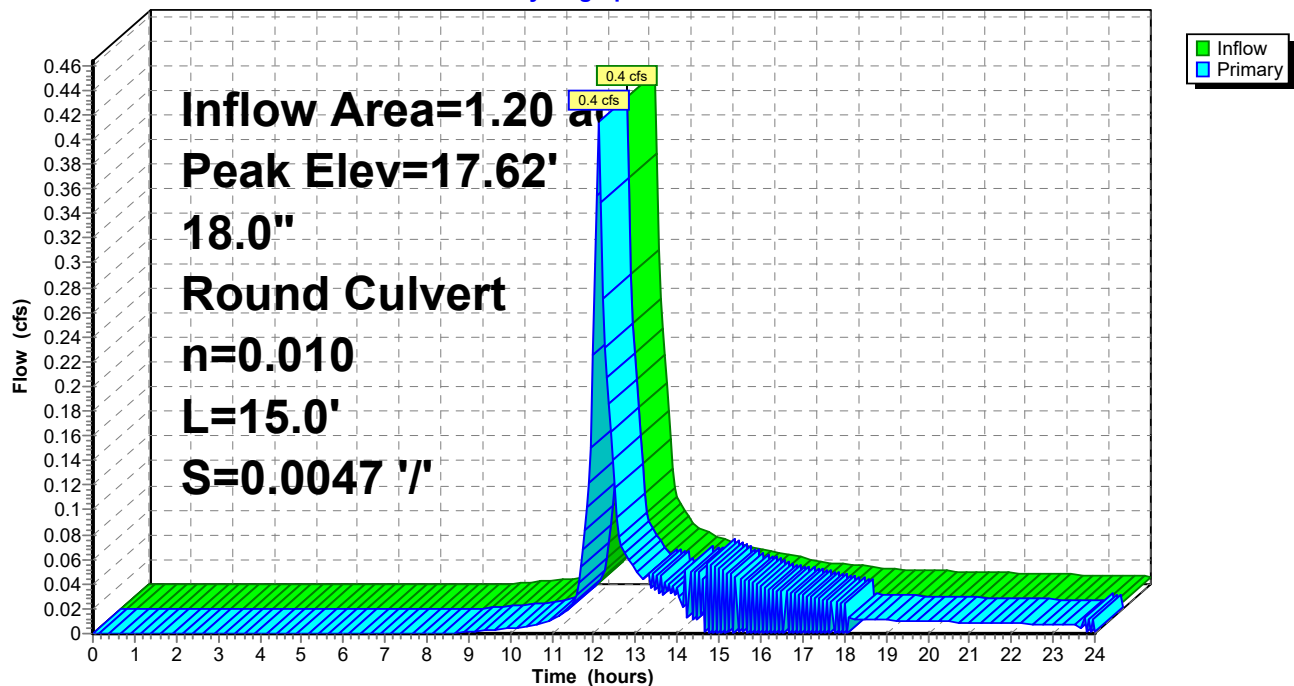
Device	Routing	Invert	Outlet Devices
#1	Primary	15.78'	18.0" Round Culvert L= 15.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.78' / 15.71' S= 0.0047 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.10 hrs HW=16.33' TW=16.46' (Dynamic Tailwater)

↑1=Culvert (Controls 0.0 cfs)

Pond 9P: DMH1

Hydrograph



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Summary for Pond 11P: Ex CB1

Inflow Area = 0.39 ac, 73.58% Impervious, Inflow Depth > 0.12" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.15 hrs, Volume= 0.004 af
Outflow = 0.0 cfs @ 12.15 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.15 hrs, Volume= 0.004 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 18.56' @ 12.15 hrs

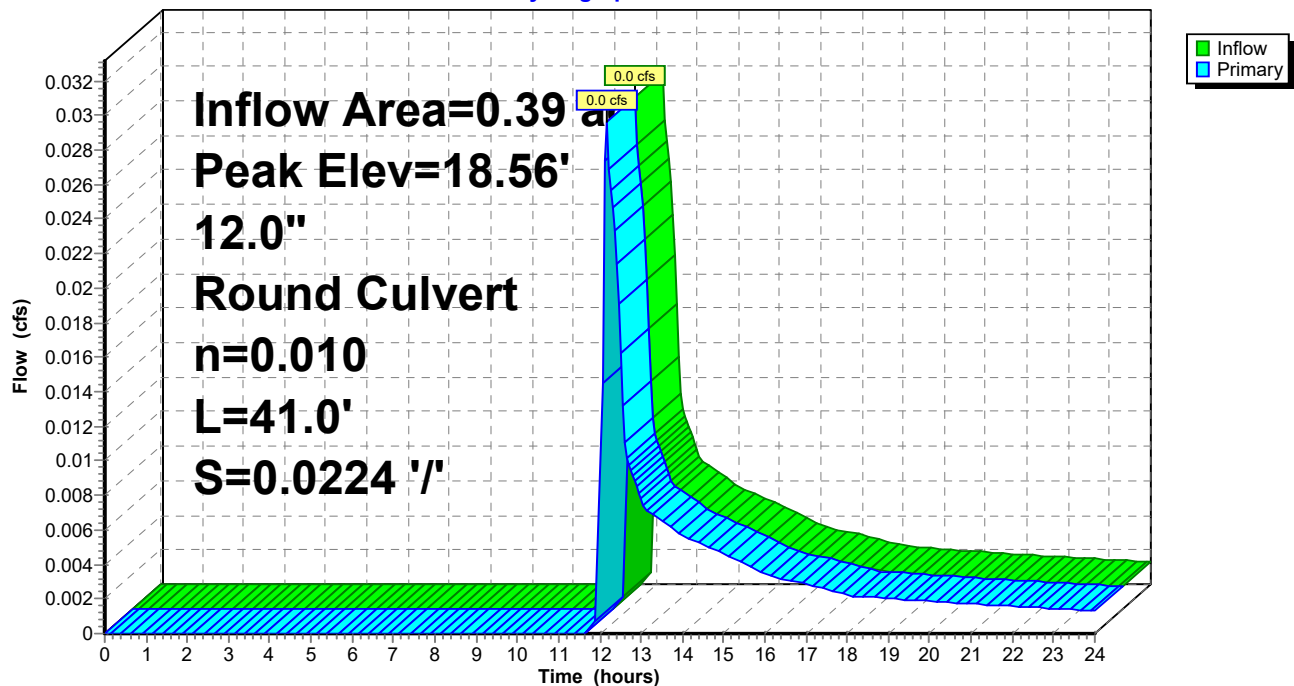
Flood Elev= 22.02'

Device	Routing	Invert	Outlet Devices
#1	Primary	18.47'	12.0" Round Culvert L= 41.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.47' / 17.55' S= 0.0224 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.0 cfs @ 12.15 hrs HW=18.56' TW=17.56' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 0.0 cfs @ 0.82 fps)

Pond 11P: Ex CB1

Hydrograph



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Summary for Pond 12P: Ex CB2

Inflow Area = 0.08 ac, 58.65% Impervious, Inflow Depth > 0.02" for 1" Storm Event event
Inflow = 0.0 cfs @ 14.78 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 14.79 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.9 min
Primary = 0.0 cfs @ 14.79 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 18.15' @ 14.79 hrs

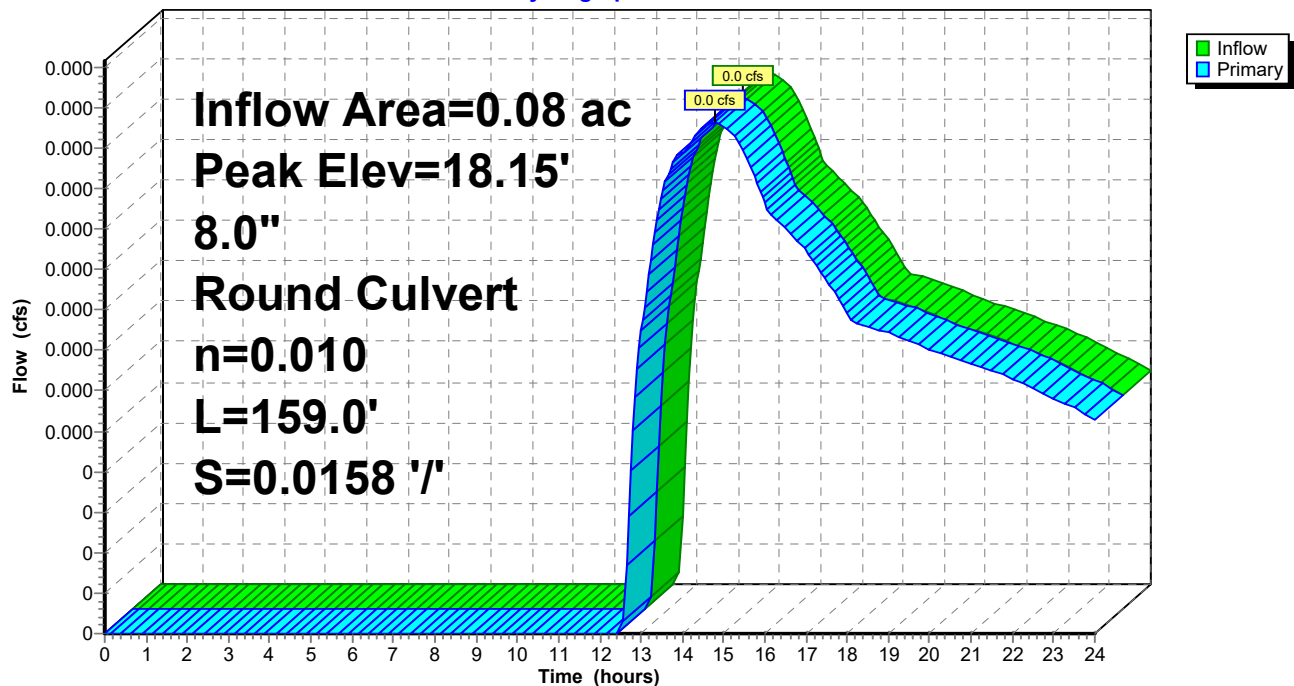
Flood Elev= 22.15'

Device	Routing	Invert	Outlet Devices
#1	Primary	18.14'	8.0" Round Culvert L= 159.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.14' / 15.62' S= 0.0158 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.0 cfs @ 14.79 hrs HW=18.15' TW=0.00' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 0.0 cfs @ 0.26 fps)

Pond 12P: Ex CB2

Hydrograph



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Summary for Pond 13P: CMP Peak Detention

Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 14.71' @ 0.00 hrs Surf.Area= 696 sf Storage= 0 cf

Flood Elev= 23.00' Surf.Area= 696 sf Storage= 2,403 cf

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

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

Volume	Invert	Avail.Storage	Storage Description
#1A	14.71'	0 cf	8.00'W x 87.00'L x 6.00'H Field A 4,176 cf Overall - 2,403 cf Embedded = 1,773 cf x 0.0% Voids
#2A	14.71'	2,403 cf	CMP Round 72 x 4 Inside #1 Effective Size= 72.0"W x 72.0"H => 28.27 sf x 20.00'L = 565.5 cf Overall Size= 72.0"W x 72.0"H x 20.00'L Row Length Adjustment= +5.00' x 28.27 sf x 1 rows
		2,403 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	14.71'	18.0" Round Culvert L= 20.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 14.71' / 14.33' S= 0.0190 ' S= 0.0190 ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf
#2	Device 1	14.71'	6.1" Vert. Orifice/Grate C= 0.600
#3	Device 1	17.21'	5.7" Vert. Orifice/Grate C= 0.600
#4	Device 1	18.79'	4.8" Vert. Orifice/Grate C= 0.600
#5	Device 1	20.05'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 5.34 5.40 5.46 5.52 5.58 5.64 5.70 5.76 5.82 5.88 5.94 6.00 Width (feet) 3.75 3.60 3.43 3.26 3.06 2.85 2.62 2.35 2.05 1.68 1.19 0.00

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=14.71' TW=14.05' (Dynamic Tailwater)

1=Culvert (Controls 0.0 cfs)
 2=Orifice/Grate (Controls 0.0 cfs)
 3=Orifice/Grate (Controls 0.0 cfs)
 4=Orifice/Grate (Controls 0.0 cfs)
 5=Custom Weir/Orifice (Controls 0.0 cfs)

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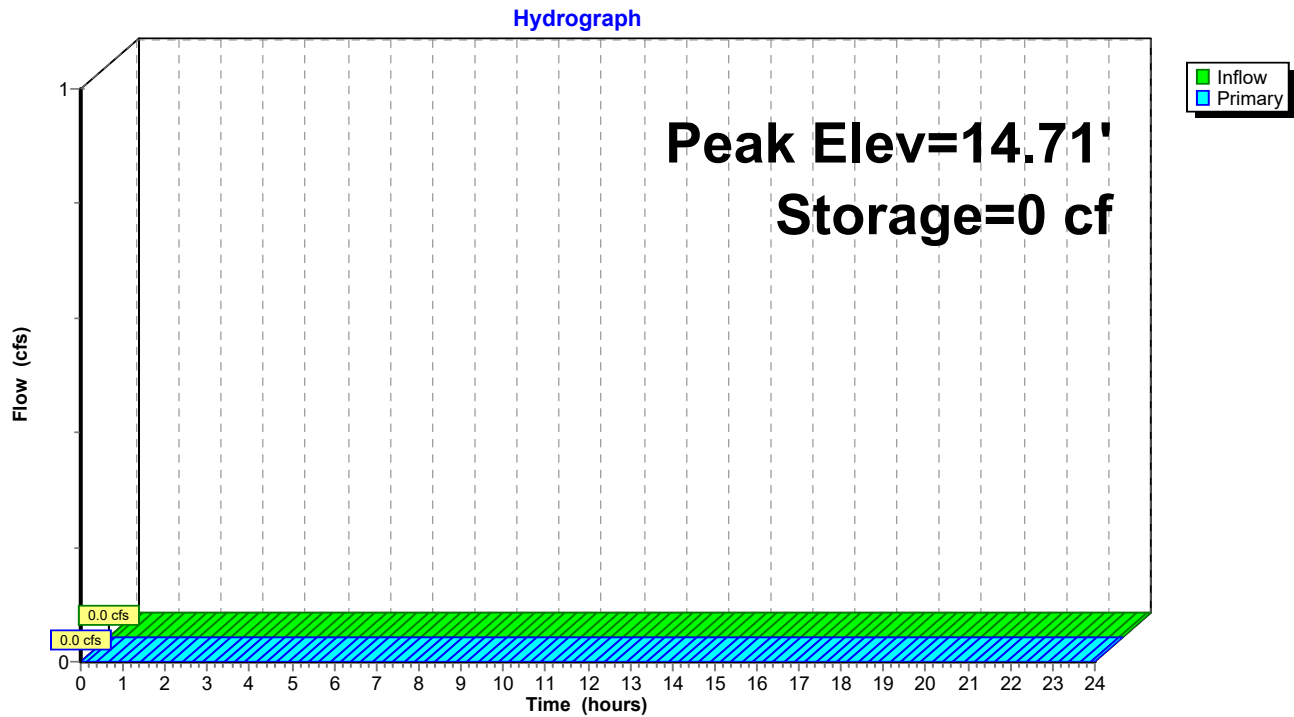
POST

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Pond 13P: CMP Peak Detention



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Summary for Pond 14P: CONTECH WQv CMP Det & SF System

Inflow Area = 1.20 ac, 84.73% Impervious, Inflow Depth > 0.33" for 1" Storm Event event
 Inflow = 0.4 cfs @ 12.10 hrs, Volume= 0.033 af
 Outflow = 0.0 cfs @ 16.07 hrs, Volume= 0.019 af, Atten= 96%, Lag= 238.0 min
 Primary = 0.0 cfs @ 16.07 hrs, Volume= 0.019 af
 Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Starting Elev= 15.71' Surf.Area= 683 sf Storage= 96 cf

Peak Elev= 17.62' @ 16.07 hrs Surf.Area= 683 sf Storage= 892 cf (797 cf above start)

Flood Elev= 23.00' Surf.Area= 683 sf Storage= 2,114 cf (2,019 cf above start)

Plug-Flow detention time= 373.4 min calculated for 0.017 af (52% of inflow)

Center-of-Mass det. time= 201.4 min (1,050.4 - 849.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	15.21'	0 cf	7.50'W x 91.00'L x 5.50'H Field A 3,754 cf Overall - 2,114 cf Embedded = 1,639 cf x 0.0% Voids
#2A	15.21'	2,114 cf	CMP Round 66 x 4 Inside #1 Effective Size= 66.0"W x 66.0"H => 23.76 sf x 20.00'L = 475.2 cf Overall Size= 66.0"W x 66.0"H x 20.00'L Row Length Adjustment= +9.00' x 23.76 sf x 1 rows
		2,114 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	14.71'	Tube/Siphon/Float Valve X 6.00 Starts@17.76' Breaks@15.38' 0.336" Diameter, C= 0.600, 0.263" Trickle Diameter
#2	Device 1	15.71'	12.0" Round CMP_Round 12" L= 10.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 15.71' / 15.68' S= 0.0030 ' / Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#3	Secondary	19.78'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 4.57 4.62 4.67 4.73 4.79 4.84 4.89 4.95 5.00 5.06 5.12 5.17 5.22 5.28 5.33 5.39 5.45 5.50 Width (feet) 4.13 4.03 3.93 3.82 3.70 3.57 3.44 3.30 3.15 2.98 2.81 2.61 2.40 2.16 1.88 1.54 1.09 0.00

Primary OutFlow Max=0.0 cfs @ 16.07 hrs HW=17.62' TW=14.12' (Dynamic Tailwater)↑ **1=Tube/Siphon/Float Valve** (Orifice Controls 0.0 cfs @ 8.22 fps)↑ **2=CMP_Round 12"** (Passes 0.0 cfs of 4.5 cfs potential flow)**Secondary OutFlow** Max=0.0 cfs @ 0.00 hrs HW=15.71' TW=14.71' (Dynamic Tailwater)↑ **3=Custom Weir/Orifice** (Controls 0.0 cfs)

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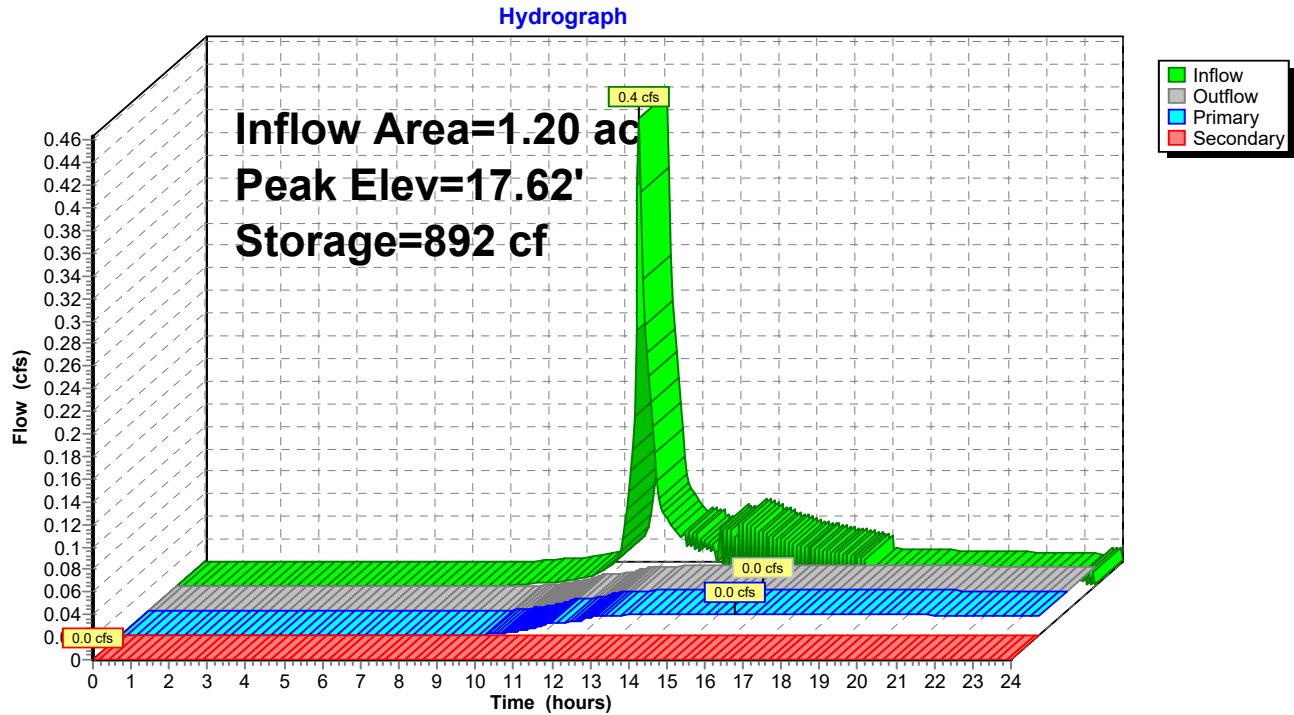
POST

Type III 24-hr 1" Storm Event Rainfall=1.00"

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Pond 14P: CONTECH WQv CMP Det & SF System



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Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Pond 21P: Ex DMH1

Inflow Area = 0.29 ac, 69.88% Impervious, Inflow Depth > 0.08" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.32 hrs, Volume= 0.002 af
Outflow = 0.0 cfs @ 12.32 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.32 hrs, Volume= 0.002 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

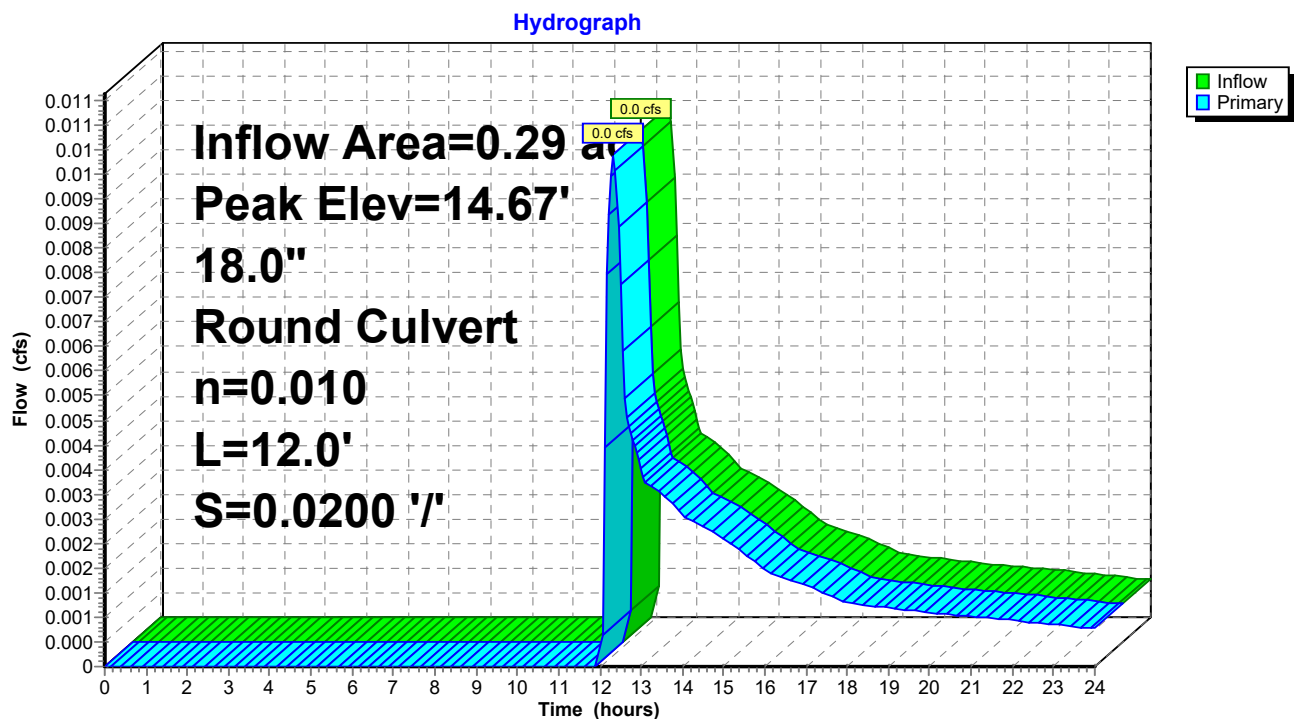
Peak Elev= 14.67' @ 12.32 hrs

Flood Elev= 23.72'

Device	Routing	Invert	Outlet Devices
#1	Primary	14.62'	18.0" Round Culvert L= 12.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.62' / 14.38' S= 0.0200 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.32 hrs HW=14.67' TW=14.39' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 0.0 cfs @ 0.59 fps)

Pond 21P: Ex DMH1



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Type III 24-hr 1" Storm Event Rainfall=1.00"

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Summary for Pond 22P: Ex DMH2

Inflow Area = 0.69 ac, 68.00% Impervious, Inflow Depth > 0.08" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.15 hrs, Volume= 0.005 af
Outflow = 0.0 cfs @ 12.15 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.15 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

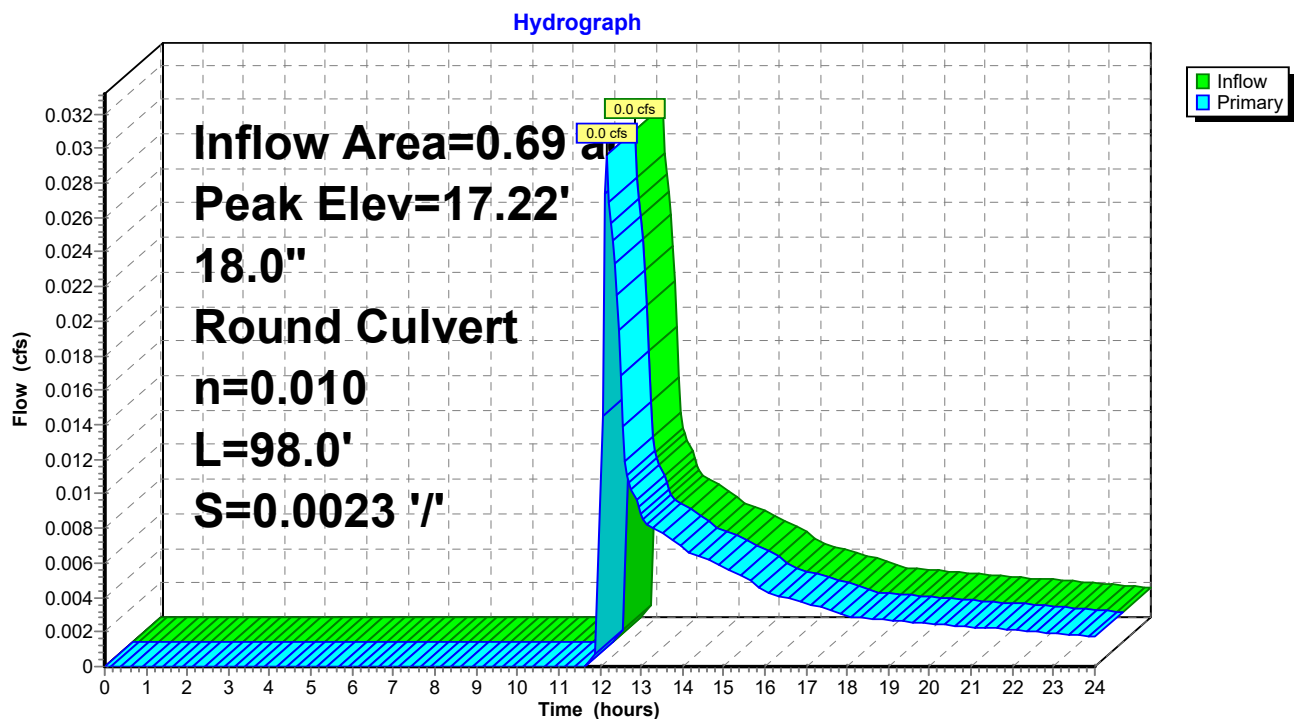
Peak Elev= 17.22' @ 12.15 hrs

Flood Elev= 24.92'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.12'	18.0" Round Culvert L= 98.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.12' / 16.89' S= 0.0023 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.15 hrs HW=17.22' TW=16.85' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 0.0 cfs @ 0.94 fps)

Pond 22P: Ex DMH2



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Summary for Pond 23P: Ex CB3

Inflow Area = 1.20 ac, 84.73% Impervious, Inflow Depth > 0.19" for 1" Storm Event event
Inflow = 0.0 cfs @ 16.07 hrs, Volume= 0.019 af
Outflow = 0.0 cfs @ 16.07 hrs, Volume= 0.019 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 16.07 hrs, Volume= 0.019 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 14.12' @ 16.07 hrs

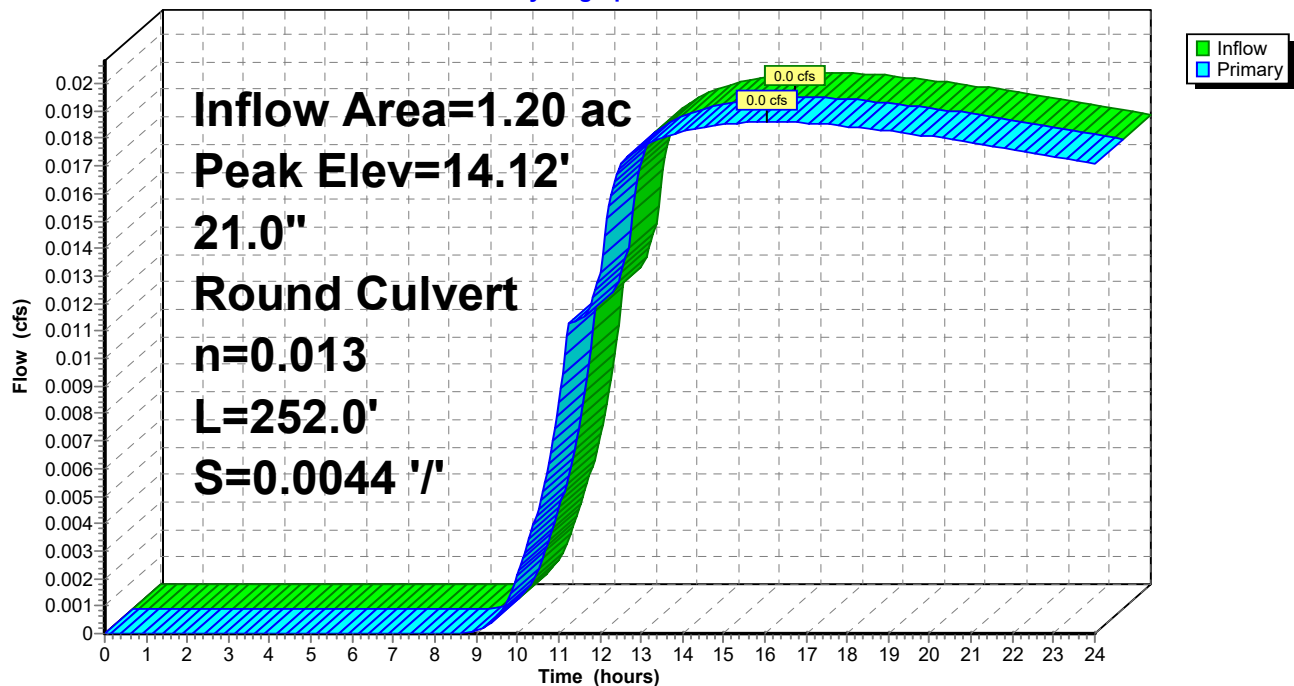
Flood Elev= 23.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	14.05'	21.0" Round Culvert L= 252.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.05' / 12.94' S= 0.0044 '/ Cc= 0.900 n= 0.013 Cast iron, coated, Flow Area= 2.41 sf

Primary OutFlow Max=0.0 cfs @ 16.07 hrs HW=14.12' TW=0.00' (Dynamic Tailwater)
↑1=Culvert (Barrel Controls 0.0 cfs @ 0.83 fps)

Pond 23P: Ex CB3

Hydrograph



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Summary for Pond 24P: Ex DMH4

Inflow Area = 0.69 ac, 68.00% Impervious, Inflow Depth > 0.08" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.15 hrs, Volume= 0.005 af
Outflow = 0.0 cfs @ 12.15 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.15 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

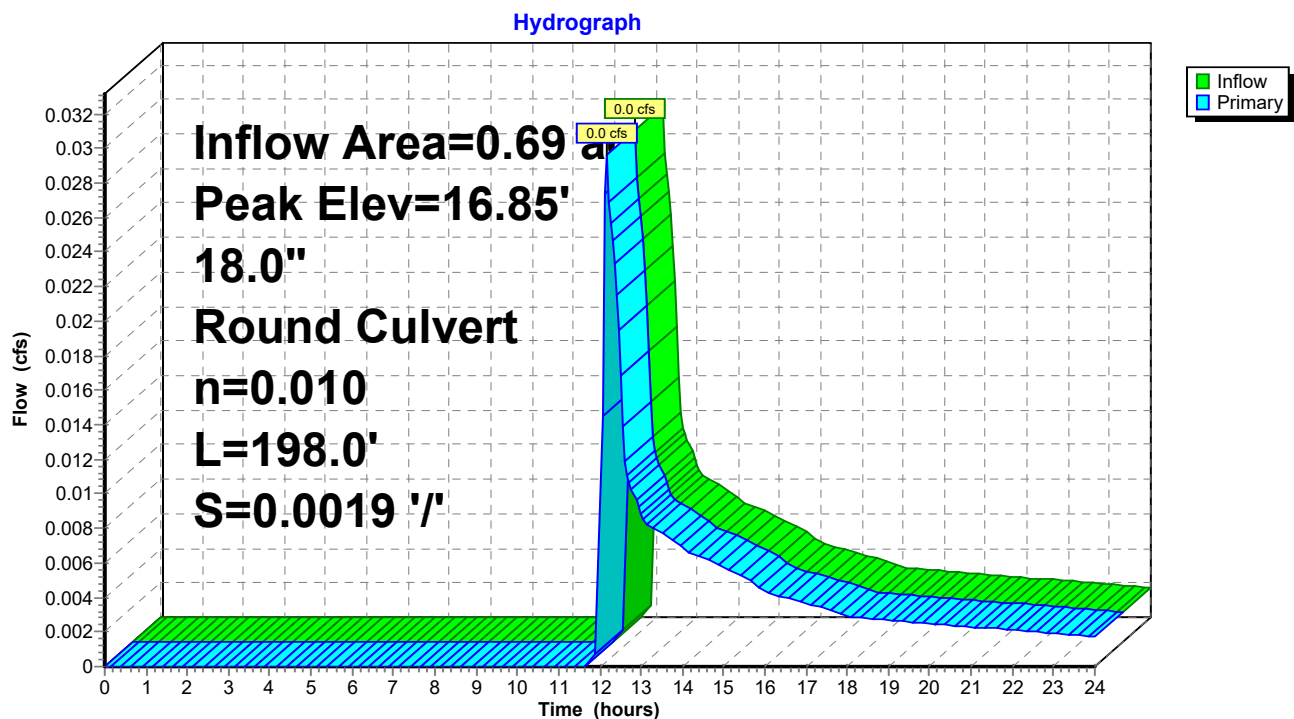
Peak Elev= 16.85' @ 12.15 hrs

Flood Elev= 25.38'

Device	Routing	Invert	Outlet Devices
#1	Primary	16.75'	18.0" Round Culvert L= 198.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.75' / 16.38' S= 0.0019 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.15 hrs HW=16.85' TW=15.52' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 0.0 cfs @ 0.87 fps)

Pond 24P: Ex DMH4



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Summary for Pond 25P: Ex DMH5

Inflow Area = 0.69 ac, 68.00% Impervious, Inflow Depth > 0.08" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.15 hrs, Volume= 0.005 af
Outflow = 0.0 cfs @ 12.15 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.15 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.52' @ 12.15 hrs

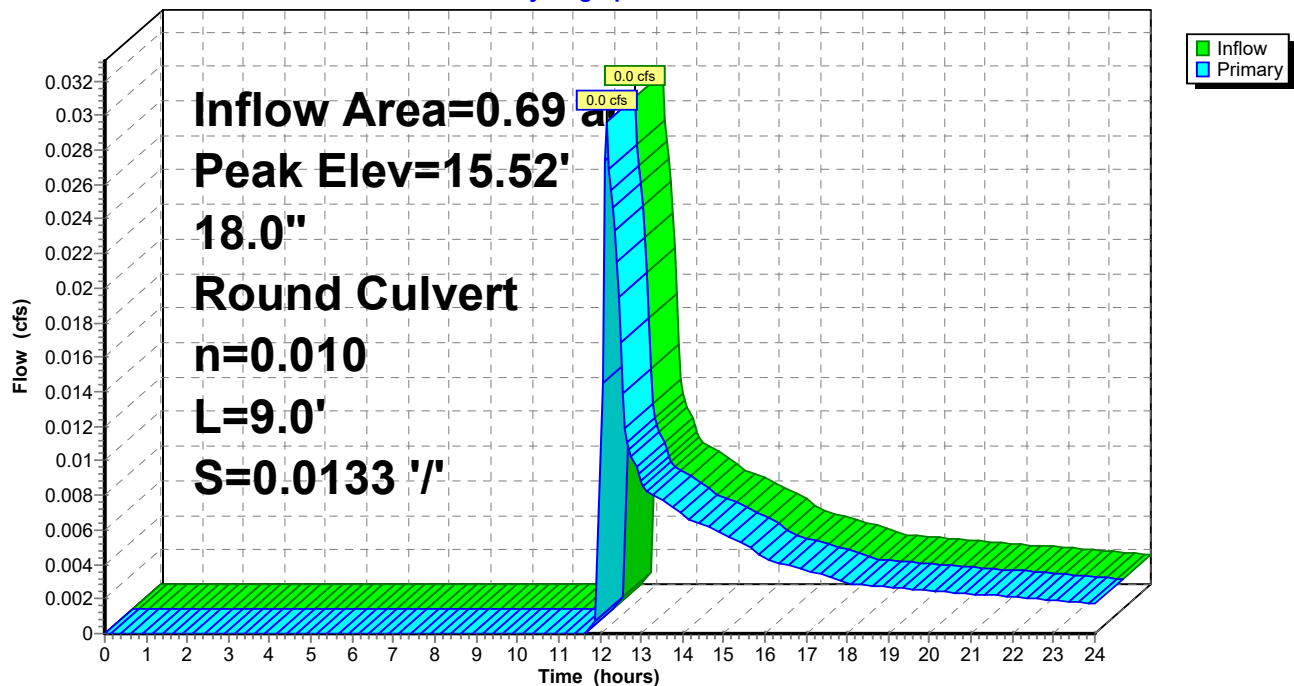
Flood Elev= 23.84'

Device	Routing	Invert	Outlet Devices
#1	Primary	15.44'	18.0" Round Culvert L= 9.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.44' / 15.32' S= 0.0133 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.15 hrs HW=15.52' TW=14.39' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 0.0 cfs @ 0.77 fps)

Pond 25P: Ex DMH5

Hydrograph



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Summary for Pond 26P: Ex DMH6

Inflow Area = 0.98 ac, 68.56% Impervious, Inflow Depth > 0.08" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.16 hrs, Volume= 0.007 af
Outflow = 0.0 cfs @ 12.16 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.16 hrs, Volume= 0.007 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 14.39' @ 12.17 hrs

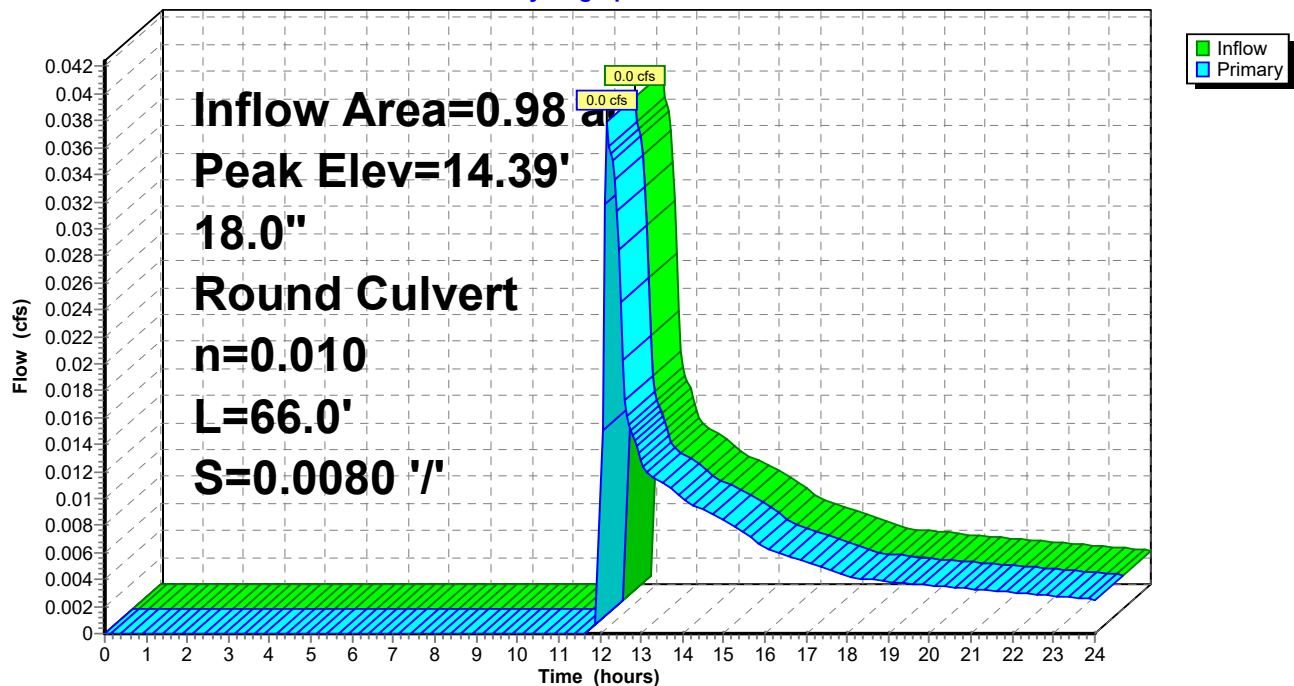
Flood Elev= 23.95'

Device	Routing	Invert	Outlet Devices
#1	Primary	14.30'	18.0" Round Culvert L= 66.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.30' / 13.77' S= 0.0080 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.16 hrs HW=14.39' TW=13.82' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 0.0 cfs @ 0.82 fps)

Pond 26P: Ex DMH6

Hydrograph



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Summary for Pond 27P: Ex DMH7

Inflow Area = 0.98 ac, 68.56% Impervious, Inflow Depth > 0.08" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.16 hrs, Volume= 0.007 af
Outflow = 0.0 cfs @ 12.16 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.16 hrs, Volume= 0.007 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 13.82' @ 12.17 hrs

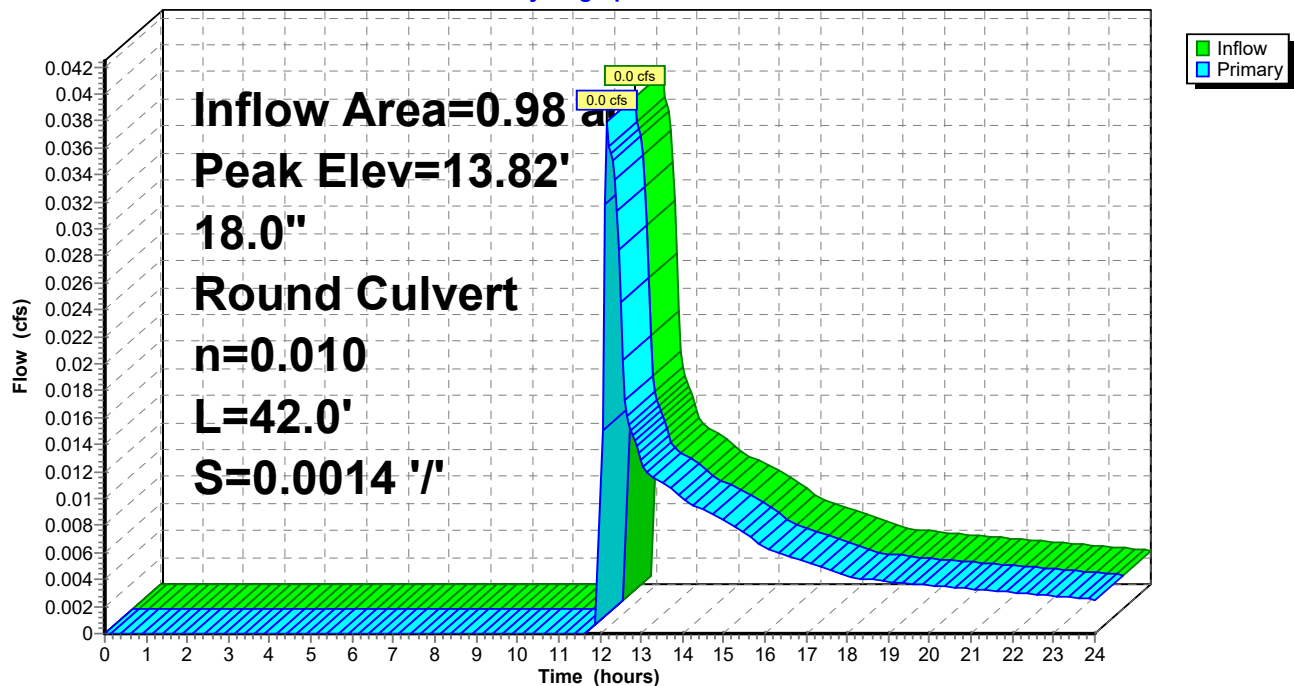
Flood Elev= 24.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	13.70'	18.0" Round Culvert L= 42.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.70' / 13.64' S= 0.0014 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.16 hrs HW=13.82' TW=0.00' (Dynamic Tailwater)
↑1=Culvert (Barrel Controls 0.0 cfs @ 0.88 fps)

Pond 27P: Ex DMH7

Hydrograph



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Summary for Pond 29P: Ex DMH9

Inflow Area = 0.39 ac, 73.58% Impervious, Inflow Depth > 0.12" for 1" Storm Event event
Inflow = 0.0 cfs @ 12.15 hrs, Volume= 0.004 af
Outflow = 0.0 cfs @ 12.15 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.15 hrs, Volume= 0.004 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

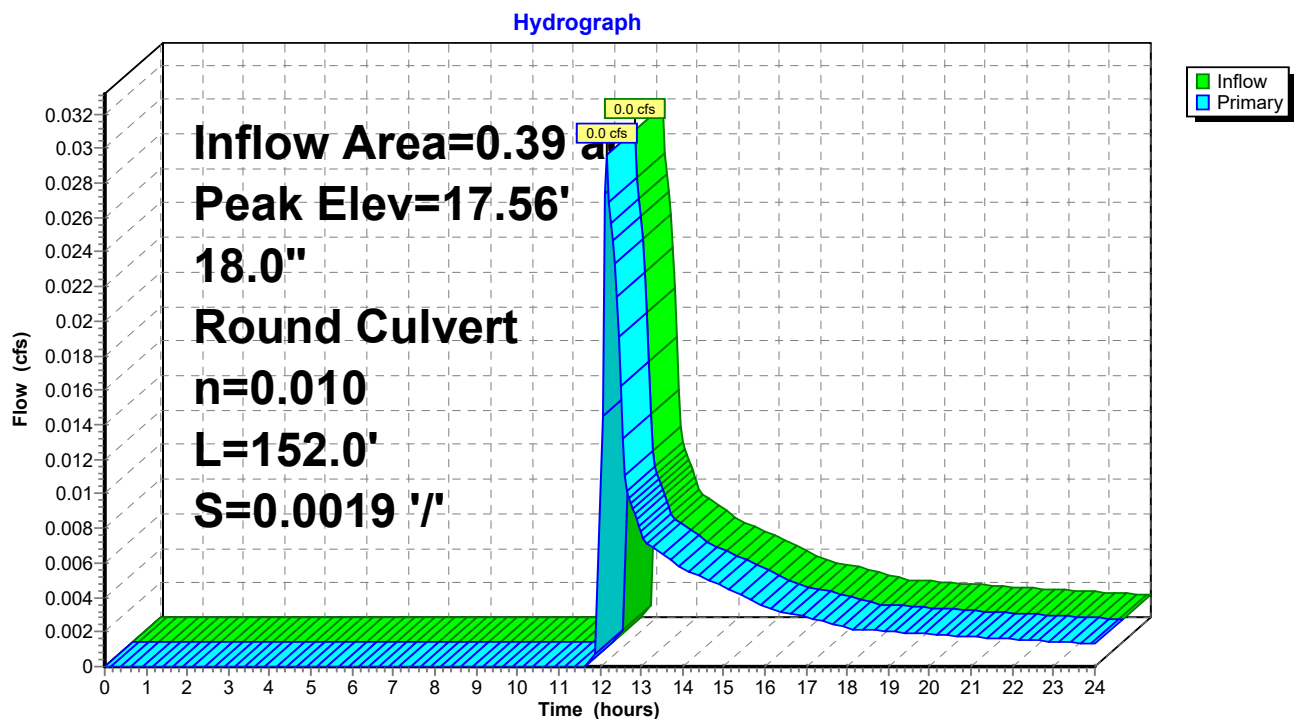
Peak Elev= 17.56' @ 12.15 hrs

Flood Elev= 23.44'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.46'	18.0" Round Culvert L= 152.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.46' / 17.17' S= 0.0019 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.15 hrs HW=17.56' TW=17.22' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 0.0 cfs @ 0.88 fps)

Pond 29P: Ex DMH9



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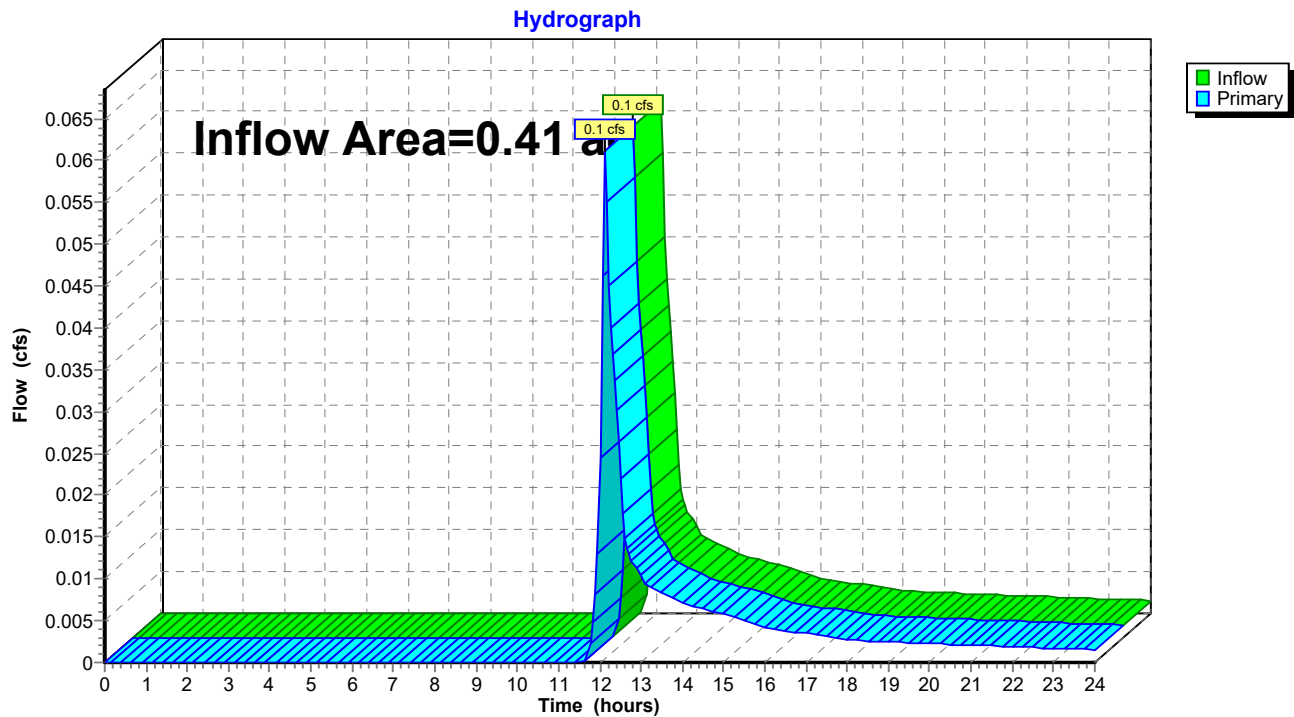
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Summary for Link SP1: Forest Ave Storm Drain

Inflow Area = 0.41 ac, 75.27% Impervious, Inflow Depth > 0.16" for 1" Storm Event event
Inflow = 0.1 cfs @ 12.11 hrs, Volume= 0.006 af
Primary = 0.1 cfs @ 12.11 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP1: Forest Ave Storm Drain



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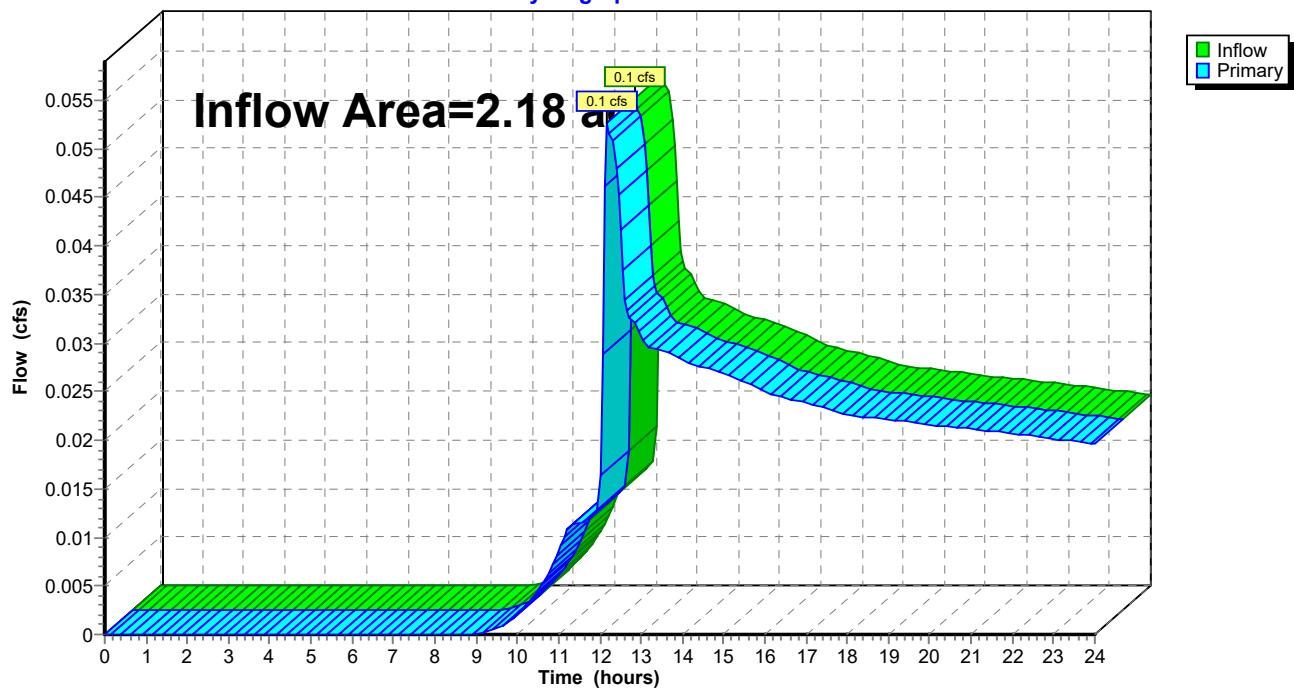
Summary for Link SP2: Combined Sewer

Inflow Area = 2.18 ac, 77.47% Impervious, Inflow Depth > 0.14" for 1" Storm Event event
Inflow = 0.1 cfs @ 12.15 hrs, Volume= 0.026 af
Primary = 0.1 cfs @ 12.15 hrs, Volume= 0.026 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP2: Combined Sewer

Hydrograph



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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: POST-1	Runoff Area=5,692 sf 70.24% Impervious Runoff Depth>1.39" Tc=6.0 min CN=81 Runoff=0.2 cfs 0.015 af
Subcatchment2S: POST-2	Runoff Area=9,641 sf 93.94% Impervious Runoff Depth>2.45" Tc=6.0 min CN=94 Runoff=0.6 cfs 0.045 af
Subcatchment3S: POST-3	Runoff Area=15,050 sf 86.74% Impervious Runoff Depth>2.07" Tc=6.0 min CN=90 Runoff=0.8 cfs 0.060 af
Subcatchment5S: POST-5	Runoff Area=6,810 sf 75.96% Impervious Runoff Depth>1.60" Tc=6.0 min CN=84 Runoff=0.3 cfs 0.021 af
Subcatchment6S: POST-6	Runoff Area=9,346 sf 95.25% Impervious Runoff Depth>2.55" Tc=6.0 min CN=95 Runoff=0.6 cfs 0.046 af
Subcatchment7S: POST-7	Runoff Area=5,710 sf 71.52% Impervious Runoff Depth>1.39" Tc=6.0 min CN=81 Runoff=0.2 cfs 0.015 af
Subcatchment8S: POST-8	Runoff Area=3,553 sf 58.65% Impervious Runoff Depth>0.97" Tc=6.0 min CN=74 Runoff=0.1 cfs 0.007 af
Subcatchment9S: POST-9	Runoff Area=14,487 sf 79.34% Impervious Runoff Depth>1.75" Tc=6.0 min CN=86 Runoff=0.7 cfs 0.048 af
Subcatchment10S: POST-10	Runoff Area=7,001 sf 74.06% Impervious Runoff Depth>1.53" Tc=6.0 min CN=83 Runoff=0.3 cfs 0.020 af
Subcatchment11S: POST-11	Runoff Area=10,124 sf 73.25% Impervious Runoff Depth>1.46" Tc=6.0 min CN=82 Runoff=0.4 cfs 0.028 af
Subcatchment12S: POST-12	Runoff Area=12,768 sf 60.52% Impervious Runoff Depth>1.03" Tc=6.0 min CN=75 Runoff=0.3 cfs 0.025 af
Subcatchment13S: POST-13	Runoff Area=12,612 sf 69.88% Impervious Runoff Depth>1.32" Tc=6.0 min CN=80 Runoff=0.4 cfs 0.032 af
Pond 1P: CB1	Peak Elev=20.43' Inflow=0.2 cfs 0.015 af 10.0" Round Culvert n=0.010 L=56.0' S=0.0048 '/ Outflow=0.2 cfs 0.015 af
Pond 2P: CB2	Peak Elev=20.42' Inflow=0.8 cfs 0.060 af 10.0" Round Culvert n=0.010 L=56.0' S=0.0050 '/ Outflow=0.8 cfs 0.060 af
Pond 3P: CB3	Peak Elev=20.32' Inflow=1.6 cfs 0.120 af 15.0" Round Culvert n=0.010 L=21.0' S=0.0048 '/ Outflow=1.6 cfs 0.120 af
Pond 4P: CB4	Peak Elev=20.27' Inflow=1.1 cfs 0.081 af 18.0" Round Culvert n=0.010 L=106.0' S=0.0102 '/ Outflow=1.1 cfs 0.081 af

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Pond 5P: CB5

Peak Elev=20.28' Inflow=0.8 cfs 0.061 af
15.0" Round Culvert n=0.010 L=77.0' S=0.0051 '/' Outflow=0.8 cfs 0.061 af

Pond 6P: CB6

Peak Elev=20.28' Inflow=0.2 cfs 0.015 af
15.0" Round Culvert n=0.010 L=53.0' S=0.0051 '/' Outflow=0.2 cfs 0.015 af

Pond 7P: CB7

Peak Elev=17.83' Inflow=0.3 cfs 0.025 af
8.0" Round Culvert n=0.010 L=34.0' S=0.0100 '/' Outflow=0.3 cfs 0.025 af

Pond 8P: CB8

Peak Elev=15.22' Inflow=0.4 cfs 0.032 af
18.0" Round Culvert n=0.010 L=18.0' S=0.0028 '/' Outflow=0.4 cfs 0.032 af

Pond 9P: DMH1

Peak Elev=20.25' Inflow=2.7 cfs 0.201 af
18.0" Round Culvert n=0.010 L=15.0' S=0.0047 '/' Outflow=2.7 cfs 0.201 af

Pond 11P: Ex CB1

Peak Elev=18.94' Inflow=0.7 cfs 0.049 af
12.0" Round Culvert n=0.010 L=41.0' S=0.0224 '/' Outflow=0.7 cfs 0.049 af

Pond 12P: Ex CB2

Peak Elev=18.32' Inflow=0.1 cfs 0.007 af
8.0" Round Culvert n=0.010 L=159.0' S=0.0158 '/' Outflow=0.1 cfs 0.007 af

Pond 13P: CMP Peak Detention

Peak Elev=17.13' Storage=905 cf Inflow=2.7 cfs 0.114 af
Outflow=1.4 cfs 0.114 af

Pond 14P: CONTECHWQv CMP Det & SF

Peak Elev=20.14' Storage=1,999 cf Inflow=2.7 cfs 0.201 af
Primary=0.0 cfs 0.047 af Secondary=2.7 cfs 0.114 af Outflow=2.8 cfs 0.162 af

Pond 21P: Ex DMH1

Peak Elev=15.01' Inflow=0.4 cfs 0.032 af
18.0" Round Culvert n=0.010 L=12.0' S=0.0200 '/' Outflow=0.4 cfs 0.032 af

Pond 22P: Ex DMH2

Peak Elev=17.68' Inflow=1.0 cfs 0.074 af
18.0" Round Culvert n=0.010 L=98.0' S=0.0023 '/' Outflow=1.0 cfs 0.074 af

Pond 23P: Ex CB3

Peak Elev=14.66' Inflow=1.5 cfs 0.162 af
21.0" Round Culvert n=0.013 L=252.0' S=0.0044 '/' Outflow=1.5 cfs 0.162 af

Pond 24P: Ex DMH4

Peak Elev=17.32' Inflow=1.0 cfs 0.074 af
18.0" Round Culvert n=0.010 L=198.0' S=0.0019 '/' Outflow=1.0 cfs 0.074 af

Pond 25P: Ex DMH5

Peak Elev=15.96' Inflow=1.0 cfs 0.074 af
18.0" Round Culvert n=0.010 L=9.0' S=0.0133 '/' Outflow=1.0 cfs 0.074 af

Pond 26P: Ex DMH6

Peak Elev=14.91' Inflow=1.4 cfs 0.106 af
18.0" Round Culvert n=0.010 L=66.0' S=0.0080 '/' Outflow=1.4 cfs 0.106 af

Pond 27P: Ex DMH7

Peak Elev=14.42' Inflow=1.4 cfs 0.106 af
18.0" Round Culvert n=0.010 L=42.0' S=0.0014 '/' Outflow=1.4 cfs 0.106 af

Pond 29P: Ex DMH9

Peak Elev=17.96' Inflow=0.7 cfs 0.049 af
18.0" Round Culvert n=0.010 L=152.0' S=0.0019 '/' Outflow=0.7 cfs 0.049 af

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Link SP1: Forest Ave Storm DrainInflow=0.8 cfs 0.055 af
Primary=0.8 cfs 0.055 af**Link SP2: Combined Sewer**Inflow=2.7 cfs 0.267 af
Primary=2.7 cfs 0.267 af

Total Runoff Area = 2.59 ac Runoff Volume = 0.362 af Average Runoff Depth = 1.68"
22.88% Pervious = 0.59 ac 77.12% Impervious = 2.00 ac

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Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Subcatchment 1S: POST-1

Runoff = 0.2 cfs @ 12.10 hrs, Volume= 0.015 af, Depth> 1.39"

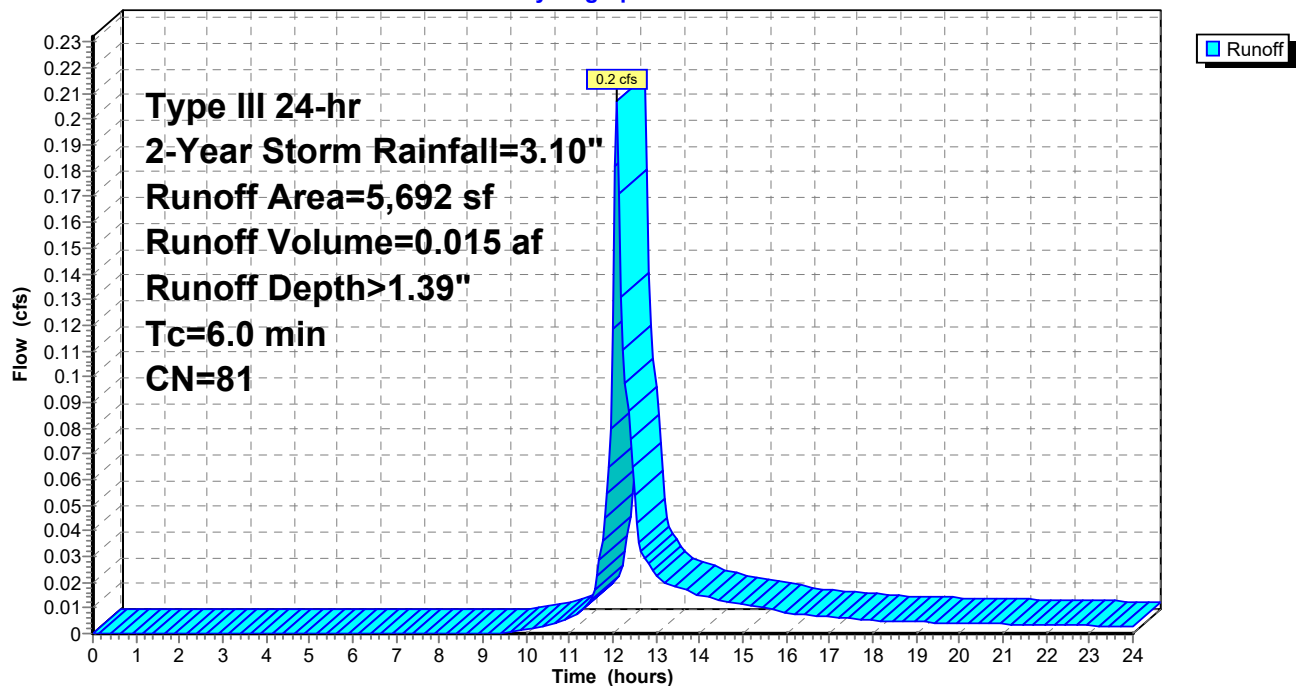
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
3,998	98	Paved parking, HSG A
830	39	Grass cover, Good, HSG A
* 864	40	Porous Pavement
5,692	81	Weighted Average
1,694		29.76% Pervious Area
3,998		70.24% Impervious Area

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

Subcatchment 1S: POST-1

Hydrograph



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POST
Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Subcatchment 2S: POST-2

Runoff = 0.6 cfs @ 12.09 hrs, Volume= 0.045 af, Depth> 2.45"

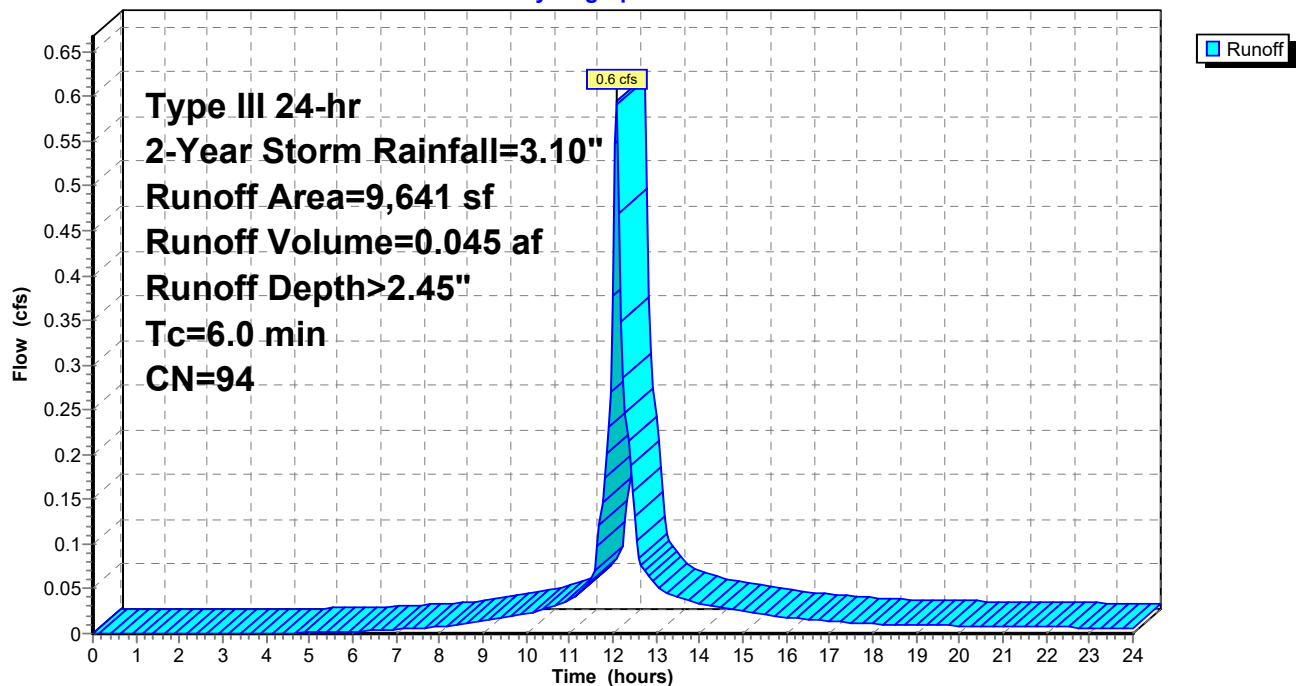
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
9,057	98	Paved parking, HSG A
502	39	Grass cover, Good, HSG A
* 82	40	Porous Pavement
9,641	94	Weighted Average
584		6.06% Pervious Area
9,057		93.94% Impervious Area

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

Subcatchment 2S: POST-2

Hydrograph



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POST
Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Subcatchment 3S: POST-3

Runoff = 0.8 cfs @ 12.09 hrs, Volume= 0.060 af, Depth> 2.07"

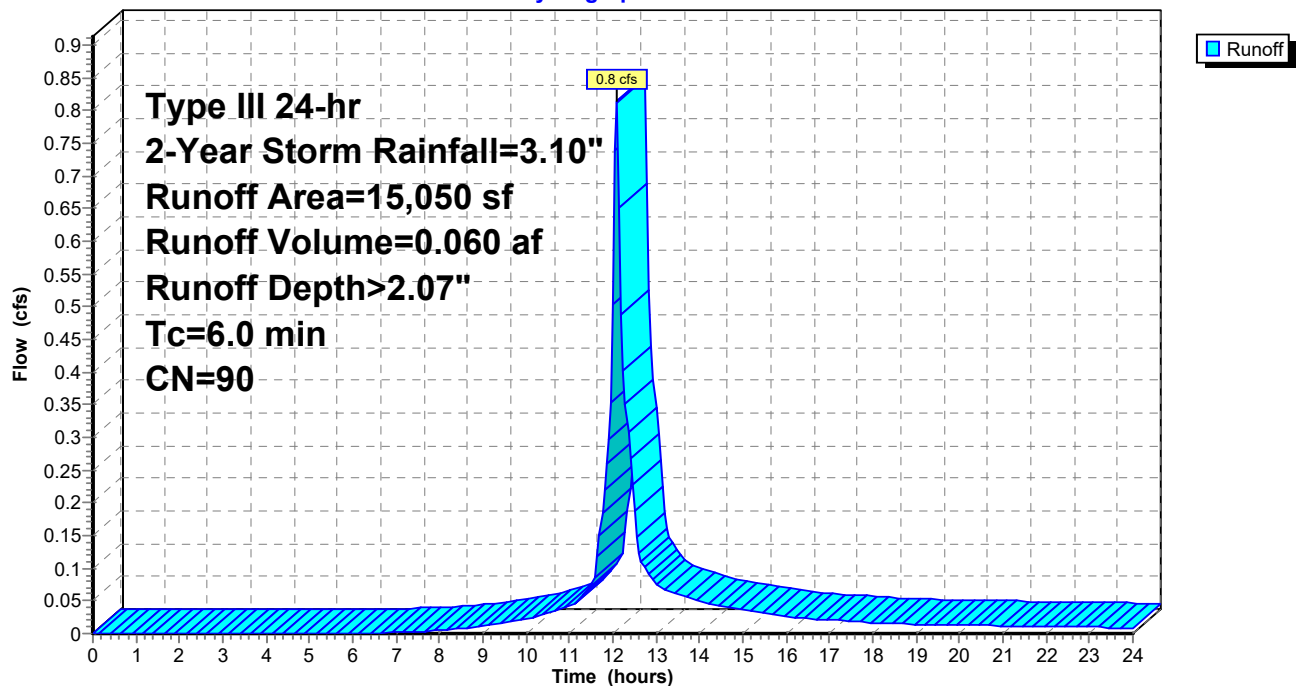
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
13,054	98	Paved parking, HSG A
1,909	39	Grass cover, Good, HSG A
* 87	40	Porous Pavement
15,050	90	Weighted Average
1,996		13.26% Pervious Area
13,054		86.74% Impervious Area

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

Subcatchment 3S: POST-3

Hydrograph



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POST
Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Subcatchment 5S: POST-5

Runoff = 0.3 cfs @ 12.09 hrs, Volume= 0.021 af, Depth> 1.60"

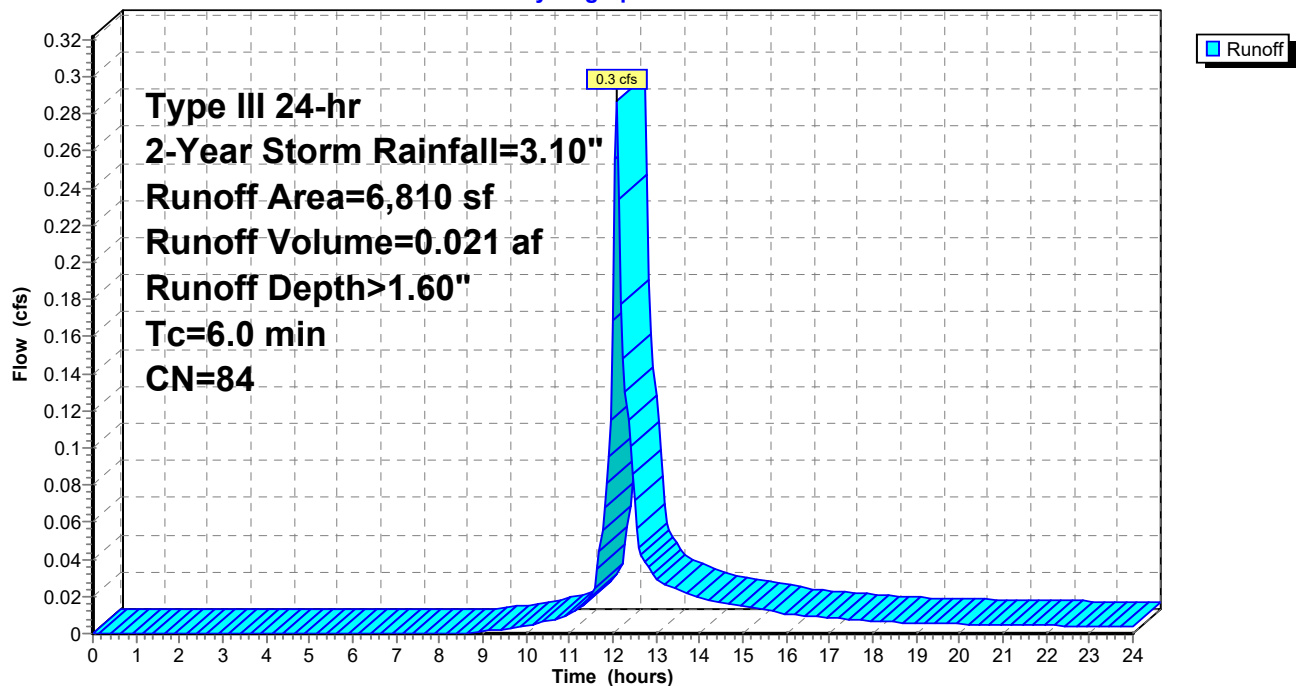
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
5,173	98	Paved parking, HSG A
1,547	39	Grass cover, Good, HSG A
* 90	40	Porous Pavement
6,810	84	Weighted Average
1,637		24.04% Pervious Area
5,173		75.96% Impervious Area

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

Subcatchment 5S: POST-5

Hydrograph



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POST
Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Subcatchment 6S: POST-6

Runoff = 0.6 cfs @ 12.09 hrs, Volume= 0.046 af, Depth> 2.55"

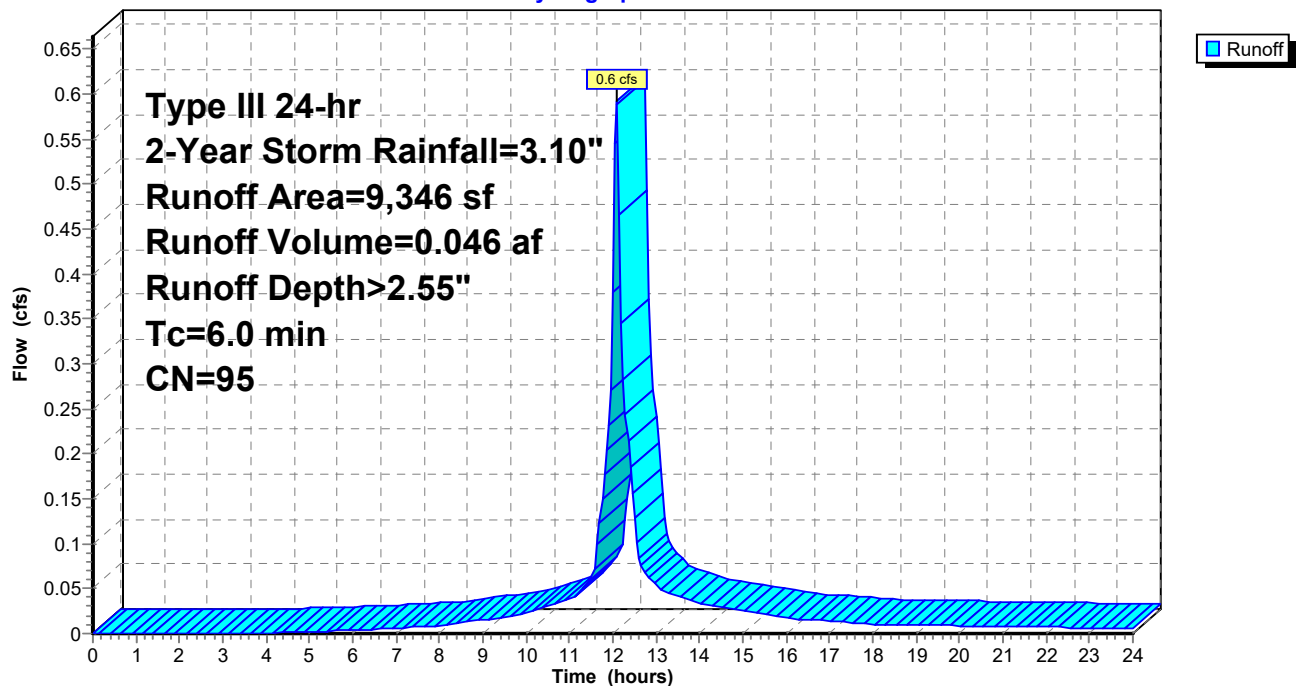
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
8,902	98	Paved parking, HSG A
351	39	Grass cover, Good, HSG A
* 93	40	Porous Pavement
9,346	95	Weighted Average
444		4.75% Pervious Area
8,902		95.25% Impervious Area

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

Subcatchment 6S: POST-6

Hydrograph



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POST
Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Subcatchment 7S: POST-7

Runoff = 0.2 cfs @ 12.10 hrs, Volume= 0.015 af, Depth> 1.39"

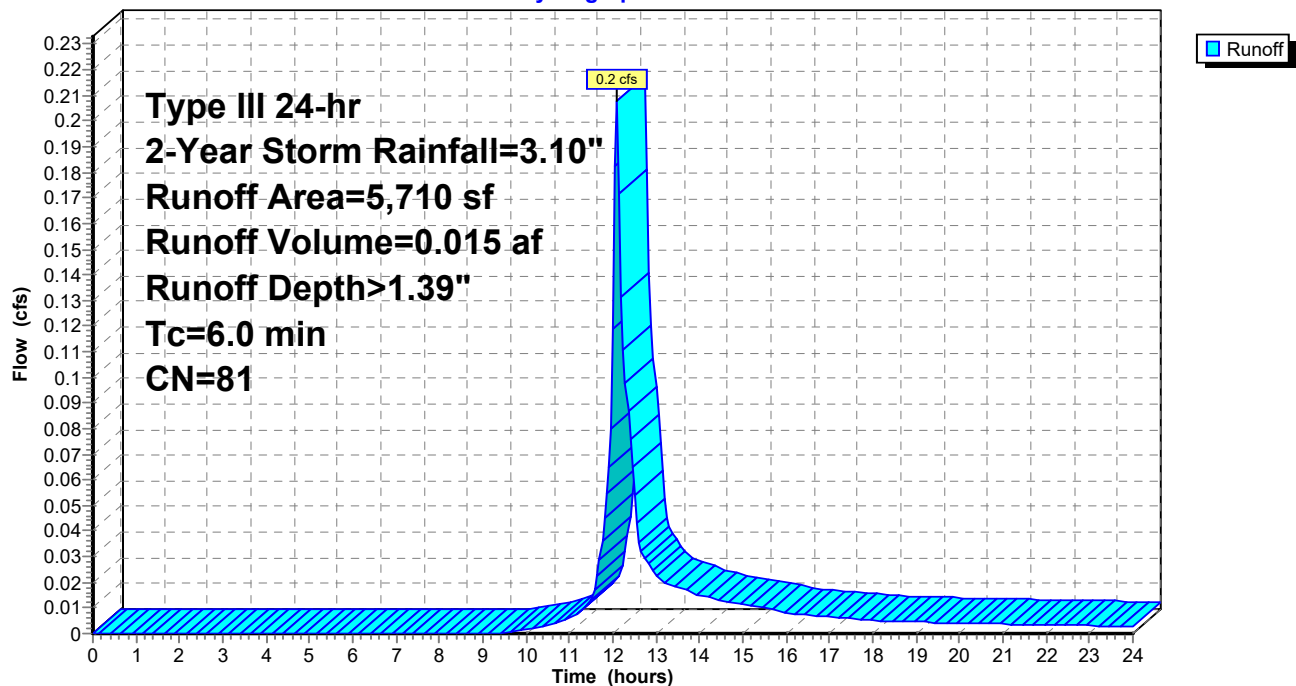
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
4,084	98	Paved parking, HSG A
809	39	Grass cover, Good, HSG A
* 817	40	Porous Pavement
5,710	81	Weighted Average
1,626		28.48% Pervious Area
4,084		71.52% Impervious Area

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

Subcatchment 7S: POST-7

Hydrograph



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Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Subcatchment 8S: POST-8

Runoff = 0.1 cfs @ 12.10 hrs, Volume= 0.007 af, Depth> 0.97"

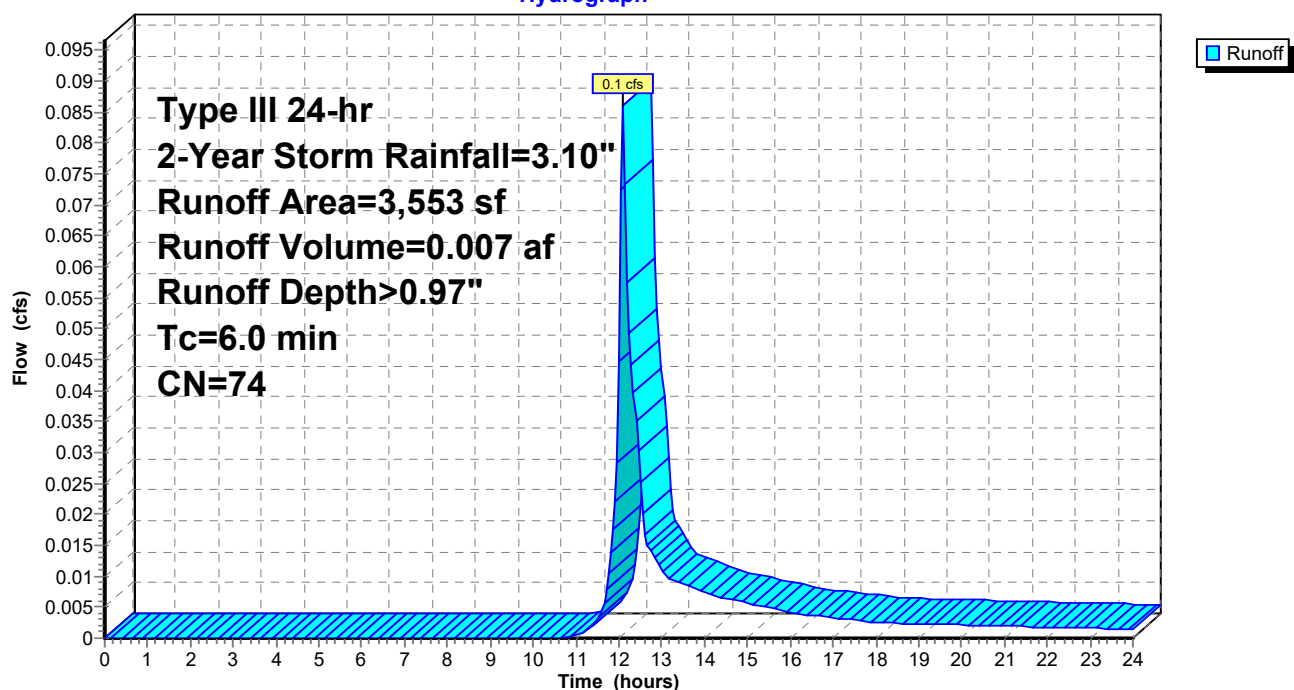
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
2,084	98	Paved parking, HSG A
1,469	39	Grass cover, Good, HSG A
3,553	74	Weighted Average
1,469		41.35% Pervious Area
2,084		58.65% Impervious Area

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

Subcatchment 8S: POST-8

Hydrograph



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Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Subcatchment 9S: POST-9

Runoff = 0.7 cfs @ 12.09 hrs, Volume= 0.048 af, Depth> 1.75"

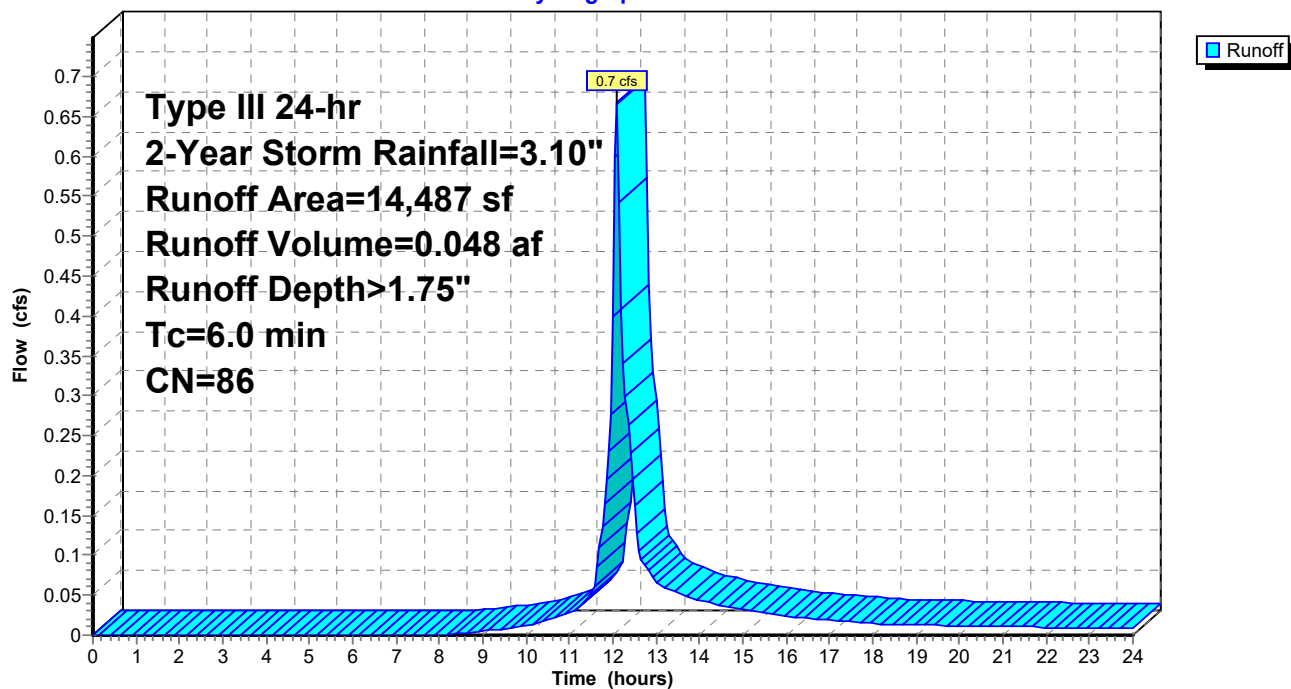
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
11,494	98	Paved parking, HSG A
2,993	39	Grass cover, Good, HSG A
14,487	86	Weighted Average
2,993		20.66% Pervious Area
11,494		79.34% Impervious Area

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

Subcatchment 9S: POST-9

Hydrograph



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Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Subcatchment 10S: POST-10

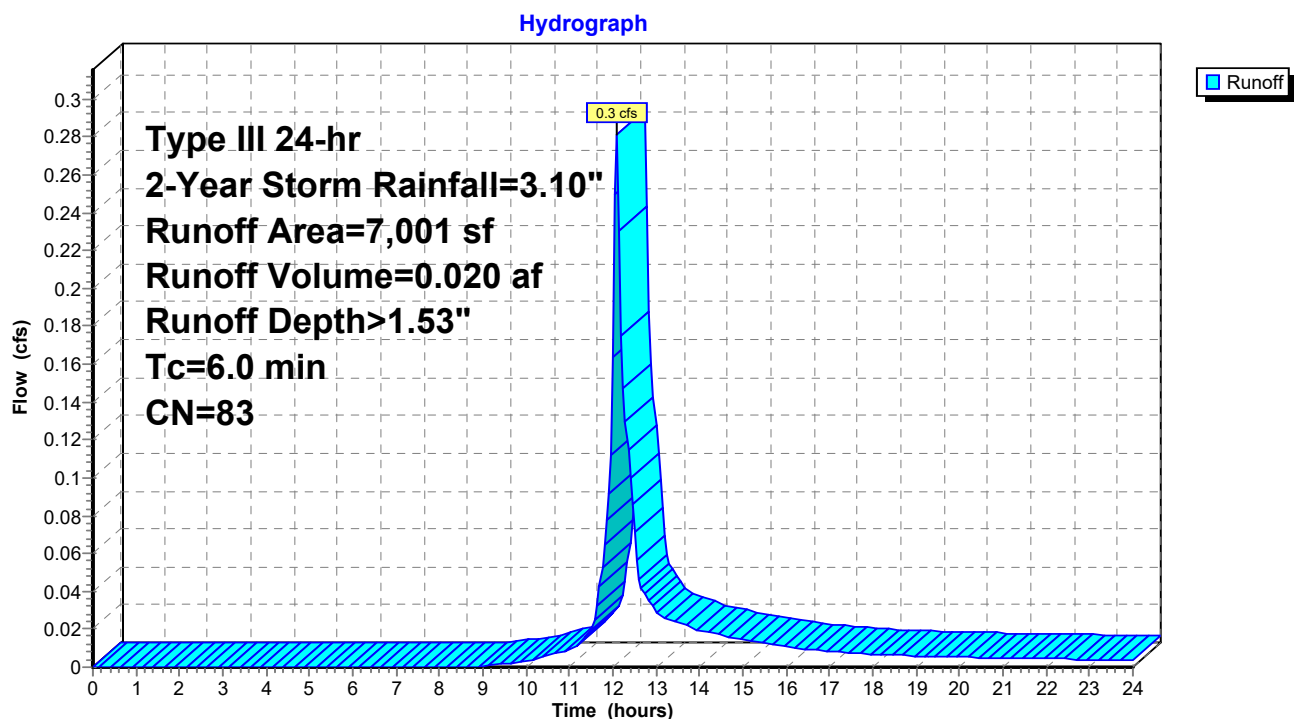
Runoff = 0.3 cfs @ 12.09 hrs, Volume= 0.020 af, Depth> 1.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
5,185	98	Paved parking, HSG A
1,816	39	Grass cover, Good, HSG A
7,001	83	Weighted Average
1,816		25.94% Pervious Area
5,185		74.06% Impervious Area

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

Subcatchment 10S: POST-10



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Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Subcatchment 11S: POST-11

Runoff = 0.4 cfs @ 12.09 hrs, Volume= 0.028 af, Depth> 1.46"

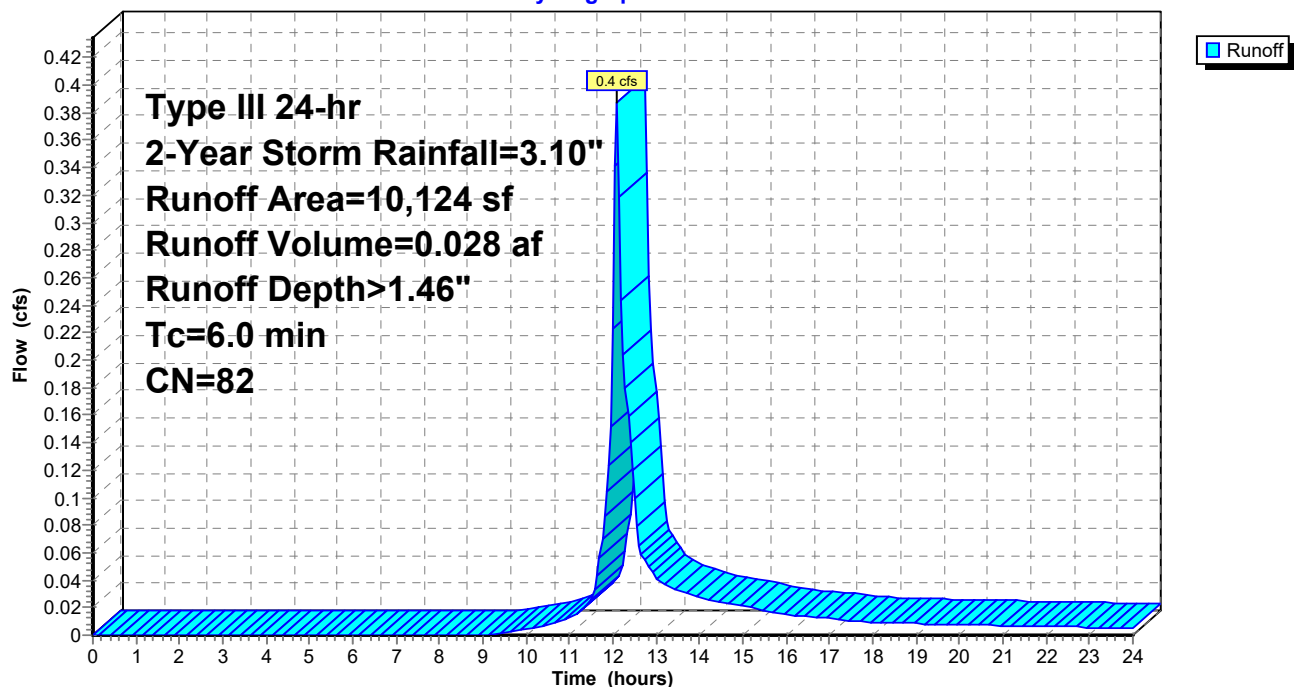
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
7,416	98	Paved parking, HSG A
2,708	39	Grass cover, Good, HSG A
10,124	82	Weighted Average
2,708		26.75% Pervious Area
7,416		73.25% Impervious Area

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

Subcatchment 11S: POST-11

Hydrograph



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Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Subcatchment 12S: POST-12

Runoff = 0.3 cfs @ 12.10 hrs, Volume= 0.025 af, Depth> 1.03"

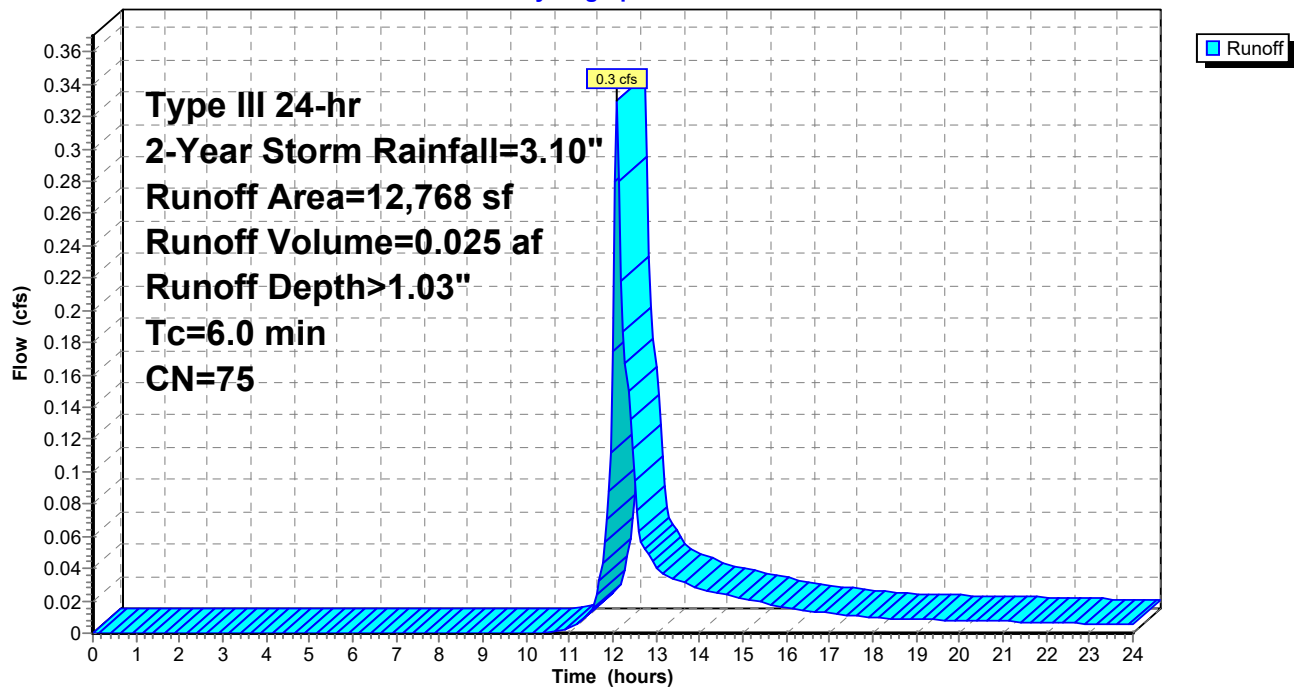
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
7,727	98	Paved parking, HSG A
5,041	39	Grass cover, Good, HSG A
12,768	75	Weighted Average
5,041		39.48% Pervious Area
7,727		60.52% Impervious Area

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

Subcatchment 12S: POST-12

Hydrograph



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Summary for Subcatchment 13S: POST-13

Runoff = 0.4 cfs @ 12.10 hrs, Volume= 0.032 af, Depth> 1.32"

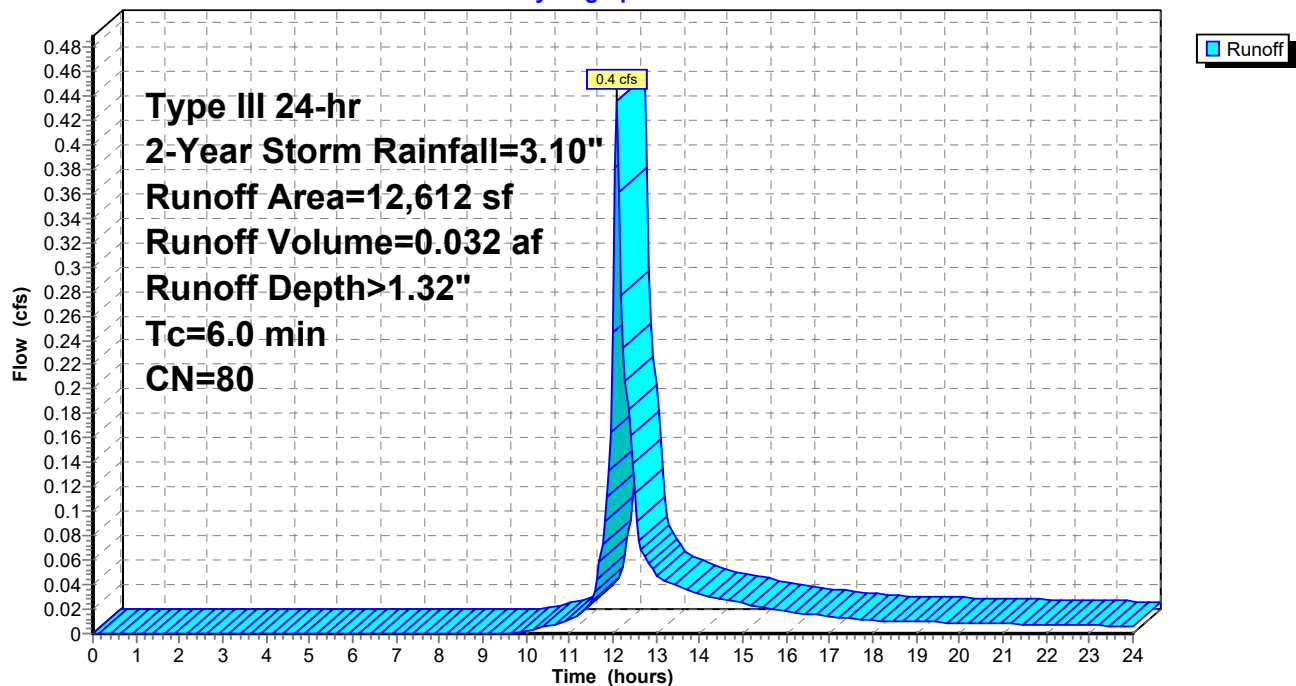
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.10"

Area (sf)	CN	Description
8,813	98	Paved parking, HSG A
3,299	39	Grass cover, Good, HSG A
* 500	40	Porous Pavement
12,612	80	Weighted Average
3,799		30.12% Pervious Area
8,813		69.88% Impervious Area

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

Subcatchment 13S: POST-13

Hydrograph



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Summary for Pond 1P: CB1

Inflow Area = 0.13 ac, 70.24% Impervious, Inflow Depth > 1.39" for 2-Year Storm event
Inflow = 0.2 cfs @ 12.10 hrs, Volume= 0.015 af
Outflow = 0.2 cfs @ 12.10 hrs, Volume= 0.015 af, Atten= 0%, Lag= 0.0 min
Primary = 0.2 cfs @ 12.10 hrs, Volume= 0.015 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 20.43' @ 12.22 hrs

Flood Elev= 22.34'

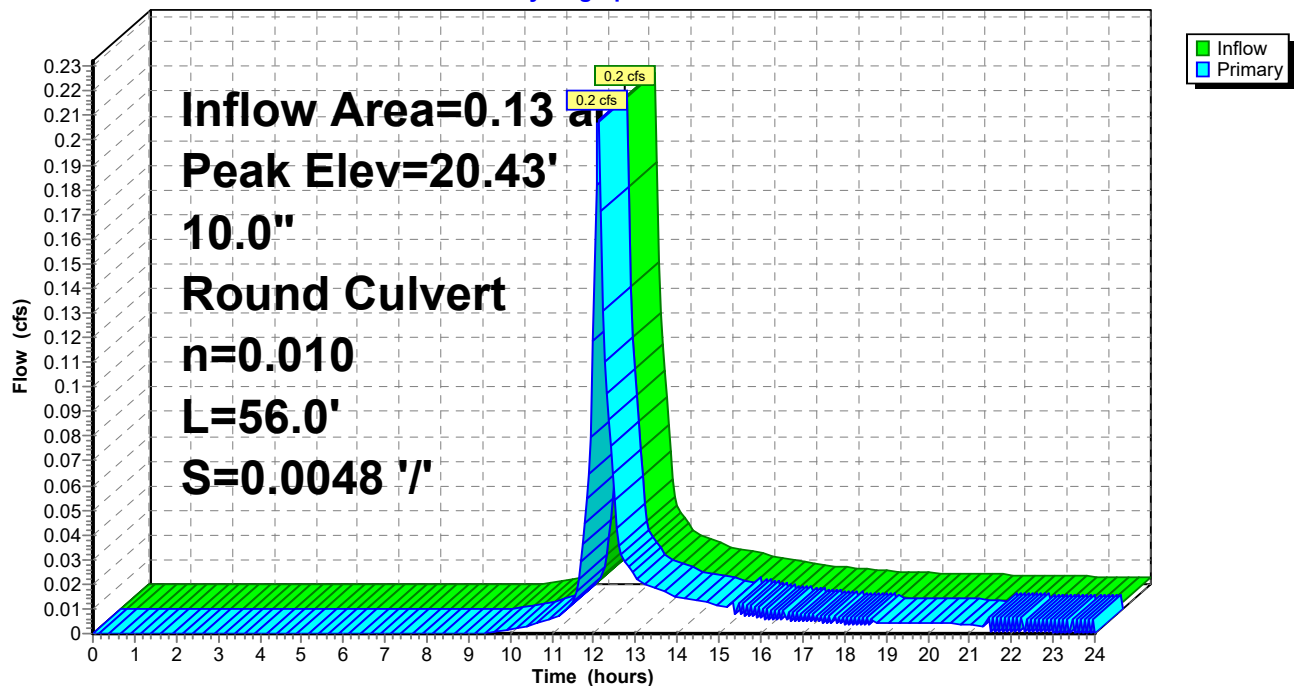
Device	Routing	Invert	Outlet Devices
#1	Primary	18.34'	10.0" Round Culvert L= 56.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.34' / 18.07' S= 0.0048 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.0 cfs @ 12.10 hrs HW=19.48' TW=20.04' (Dynamic Tailwater)

↑1=Culvert (Controls 0.0 cfs)

Pond 1P: CB1

Hydrograph



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Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Pond 2P: CB2

Inflow Area = 0.35 ac, 85.14% Impervious, Inflow Depth > 2.05" for 2-Year Storm event
Inflow = 0.8 cfs @ 12.09 hrs, Volume= 0.060 af
Outflow = 0.8 cfs @ 12.09 hrs, Volume= 0.060 af, Atten= 0%, Lag= 0.0 min
Primary = 0.8 cfs @ 12.09 hrs, Volume= 0.060 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 20.42' @ 12.17 hrs

Flood Elev= 22.31'

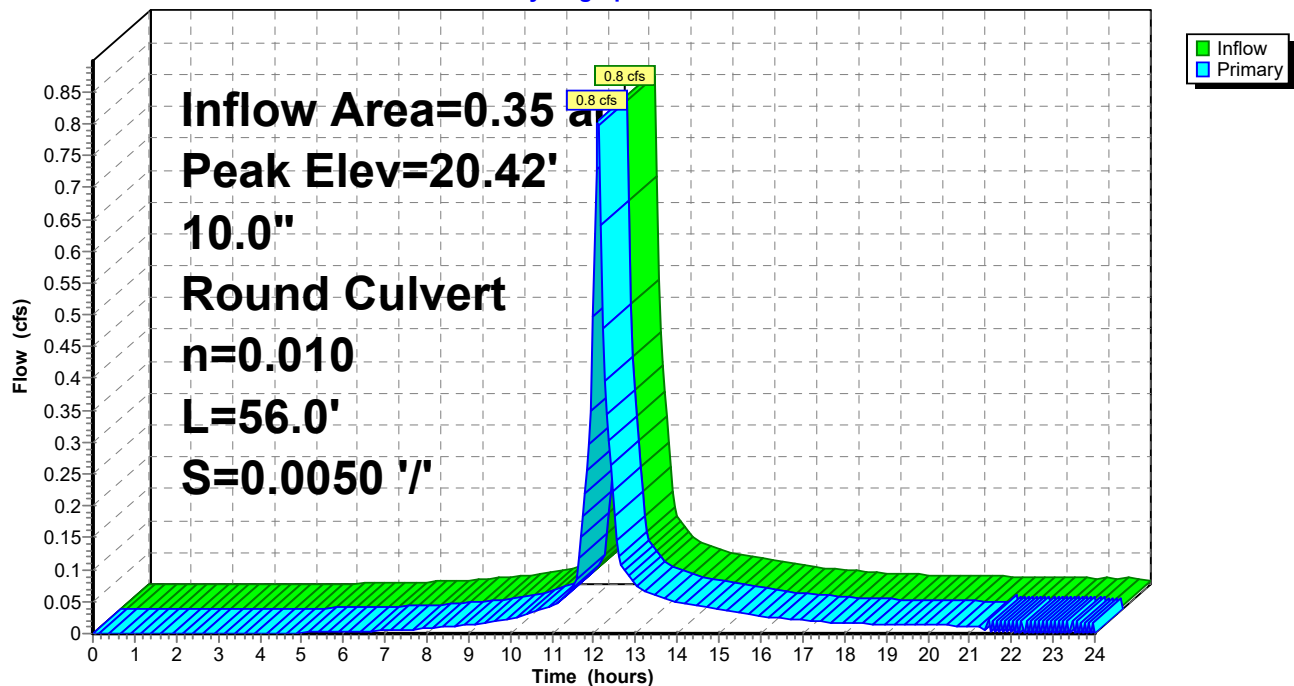
Device	Routing	Invert	Outlet Devices
#1	Primary	17.97'	10.0" Round Culvert L= 56.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.97' / 17.69' S= 0.0050 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.0 cfs @ 12.09 hrs HW=19.98' TW=20.23' (Dynamic Tailwater)

↑1=Culvert (Controls 0.0 cfs)

Pond 2P: CB2

Hydrograph



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Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Pond 3P: CB3

Inflow Area = 0.70 ac, 85.93% Impervious, Inflow Depth > 2.06" for 2-Year Storm event
Inflow = 1.6 cfs @ 12.09 hrs, Volume= 0.120 af
Outflow = 1.6 cfs @ 12.09 hrs, Volume= 0.120 af, Atten= 0%, Lag= 0.0 min
Primary = 1.6 cfs @ 12.09 hrs, Volume= 0.120 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 20.32' @ 12.15 hrs

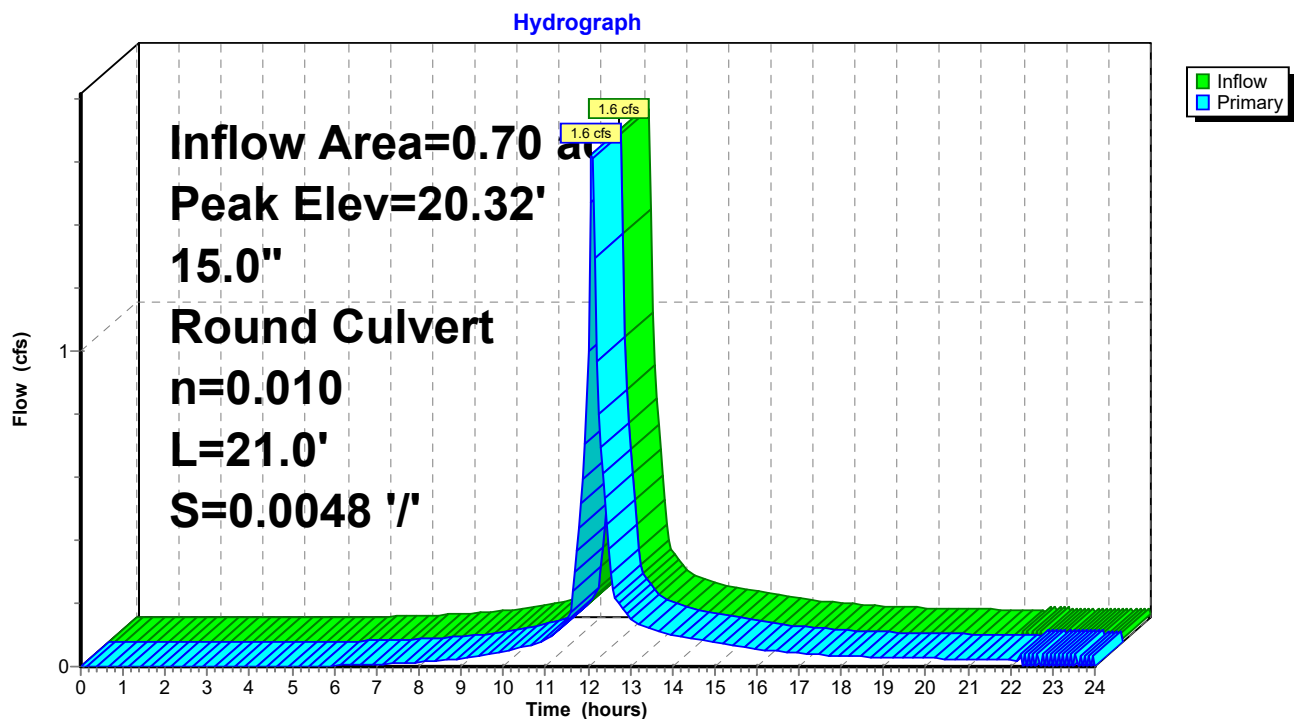
Flood Elev= 22.36'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.58'	15.0" Round Culvert L= 21.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.58' / 17.48' S= 0.0048 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.0 cfs @ 12.09 hrs HW=20.23' TW=20.23' (Dynamic Tailwater)

↑1=Culvert (Controls 0.0 cfs)

Pond 3P: CB3



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Summary for Pond 4P: CB4

Inflow Area = 0.50 ac, 83.05% Impervious, Inflow Depth > 1.95" for 2-Year Storm event
Inflow = 1.1 cfs @ 12.09 hrs, Volume= 0.081 af
Outflow = 1.1 cfs @ 12.09 hrs, Volume= 0.081 af, Atten= 0%, Lag= 0.0 min
Primary = 1.1 cfs @ 12.09 hrs, Volume= 0.081 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 20.27' @ 12.17 hrs

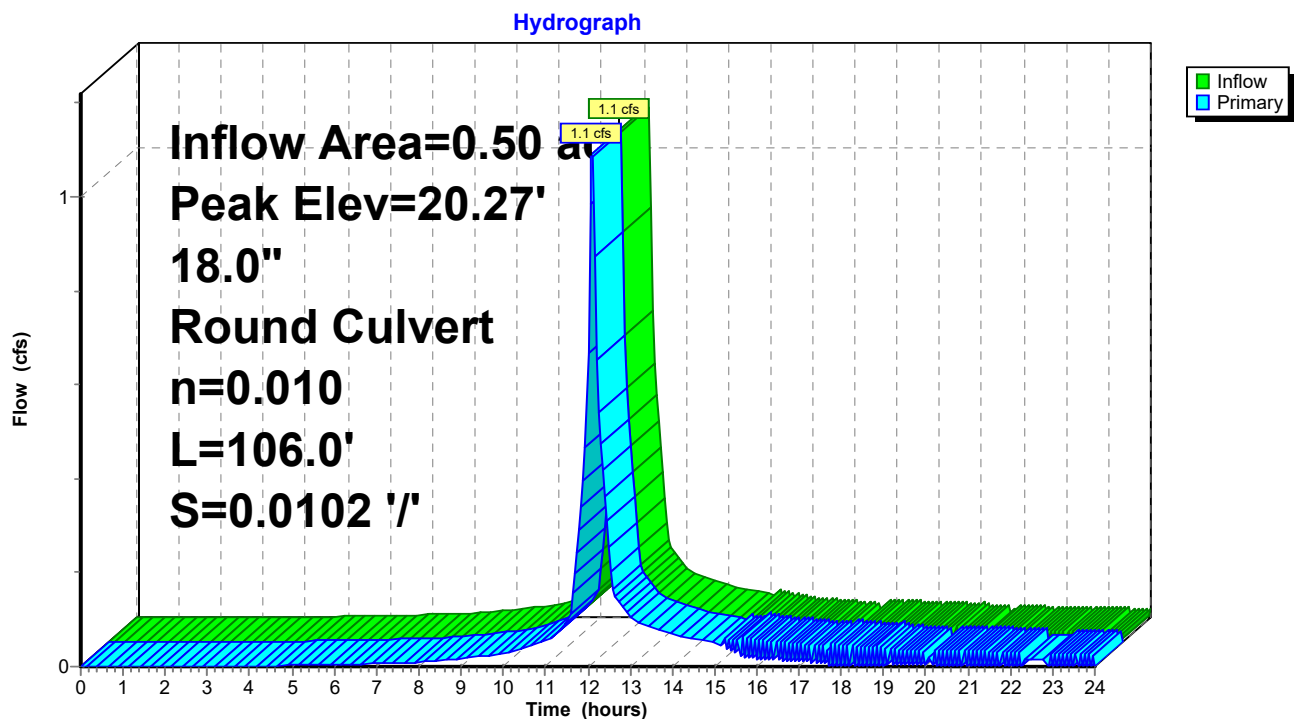
Flood Elev= 21.87'

Device	Routing	Invert	Outlet Devices
#1	Primary	15.72'	18.0" Round Culvert L= 106.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.72' / 14.64' S= 0.0102 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.09 hrs HW=20.14' TW=20.23' (Dynamic Tailwater)

↑1=Culvert (Controls 0.0 cfs)

Pond 4P: CB4



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Summary for Pond 5P: CB5

Inflow Area = 0.35 ac, 86.25% Impervious, Inflow Depth > 2.11" for 2-Year Storm event
Inflow = 0.8 cfs @ 12.09 hrs, Volume= 0.061 af
Outflow = 0.8 cfs @ 12.09 hrs, Volume= 0.061 af, Atten= 0%, Lag= 0.0 min
Primary = 0.8 cfs @ 12.09 hrs, Volume= 0.061 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 20.28' @ 12.22 hrs

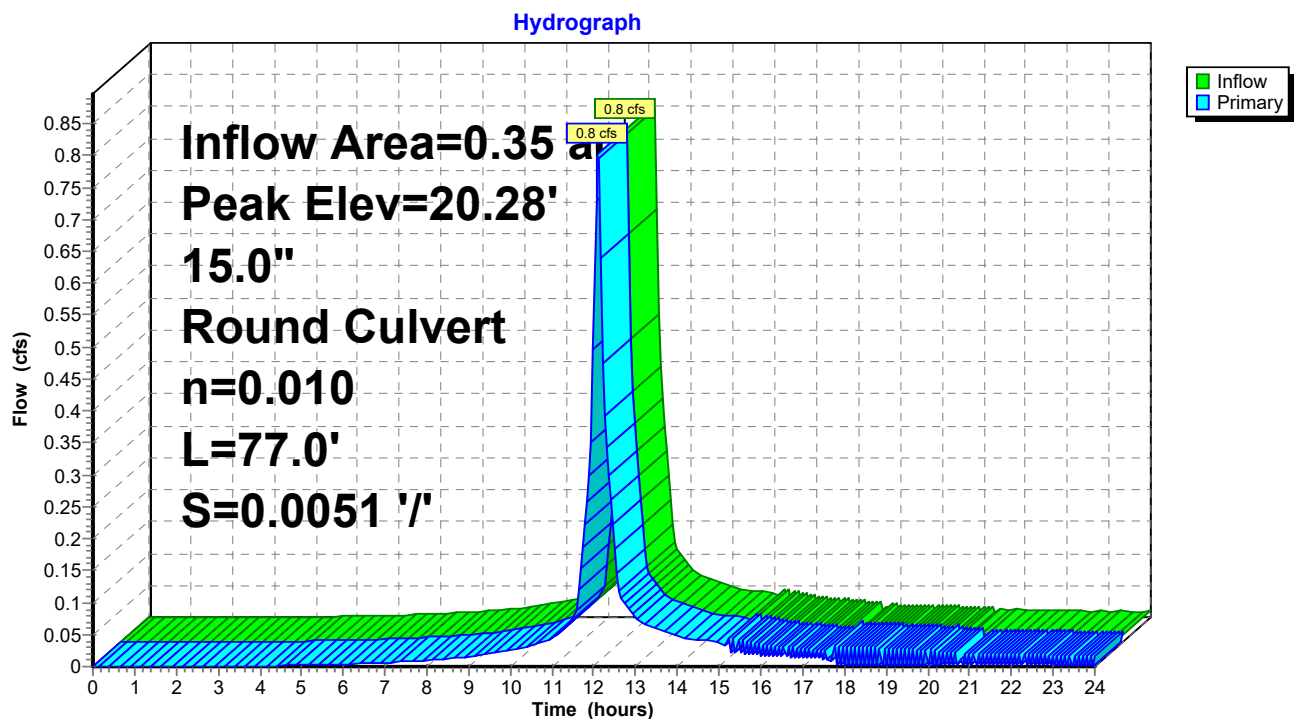
Flood Elev= 21.28'

Device	Routing	Invert	Outlet Devices
#1	Primary	16.90'	15.0" Round Culvert L= 77.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.90' / 16.51' S= 0.0051 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.0 cfs @ 12.09 hrs HW=19.79' TW=20.14' (Dynamic Tailwater)

↑1=Culvert (Controls 0.0 cfs)

Pond 5P: CB5



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Summary for Pond 6P: CB6

Inflow Area = 0.13 ac, 71.52% Impervious, Inflow Depth > 1.39" for 2-Year Storm event
Inflow = 0.2 cfs @ 12.10 hrs, Volume= 0.015 af
Outflow = 0.2 cfs @ 12.10 hrs, Volume= 0.015 af, Atten= 0%, Lag= 0.0 min
Primary = 0.2 cfs @ 12.10 hrs, Volume= 0.015 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 20.28' @ 12.27 hrs

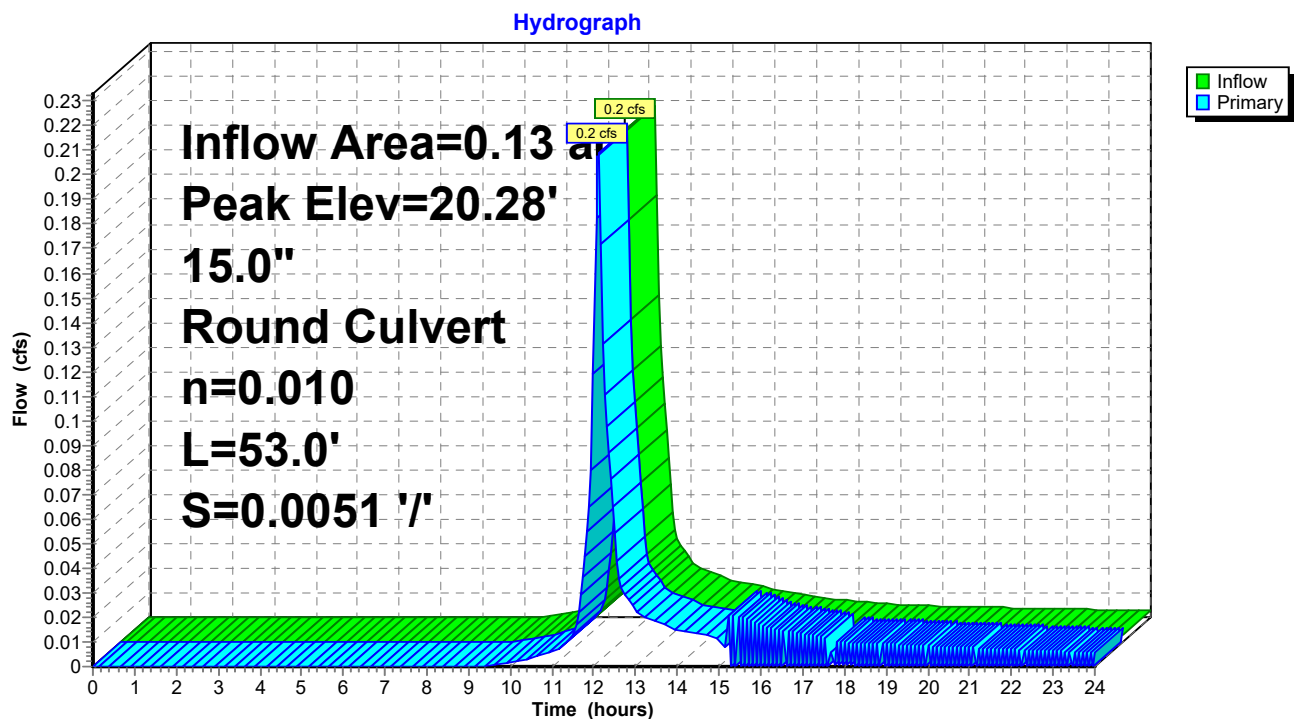
Flood Elev= 21.28'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.28'	15.0" Round Culvert L= 53.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.28' / 17.01' S= 0.0051 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.0 cfs @ 12.10 hrs HW=19.35' TW=19.85' (Dynamic Tailwater)

↑1=Culvert (Controls 0.0 cfs)

Pond 6P: CB6



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Type III 24-hr 2-Year Storm Rainfall=3.10"

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Summary for Pond 7P: CB7

Inflow Area = 0.29 ac, 60.52% Impervious, Inflow Depth > 1.03" for 2-Year Storm event
Inflow = 0.3 cfs @ 12.10 hrs, Volume= 0.025 af
Outflow = 0.3 cfs @ 12.10 hrs, Volume= 0.025 af, Atten= 0%, Lag= 0.0 min
Primary = 0.3 cfs @ 12.10 hrs, Volume= 0.025 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.83' @ 12.12 hrs

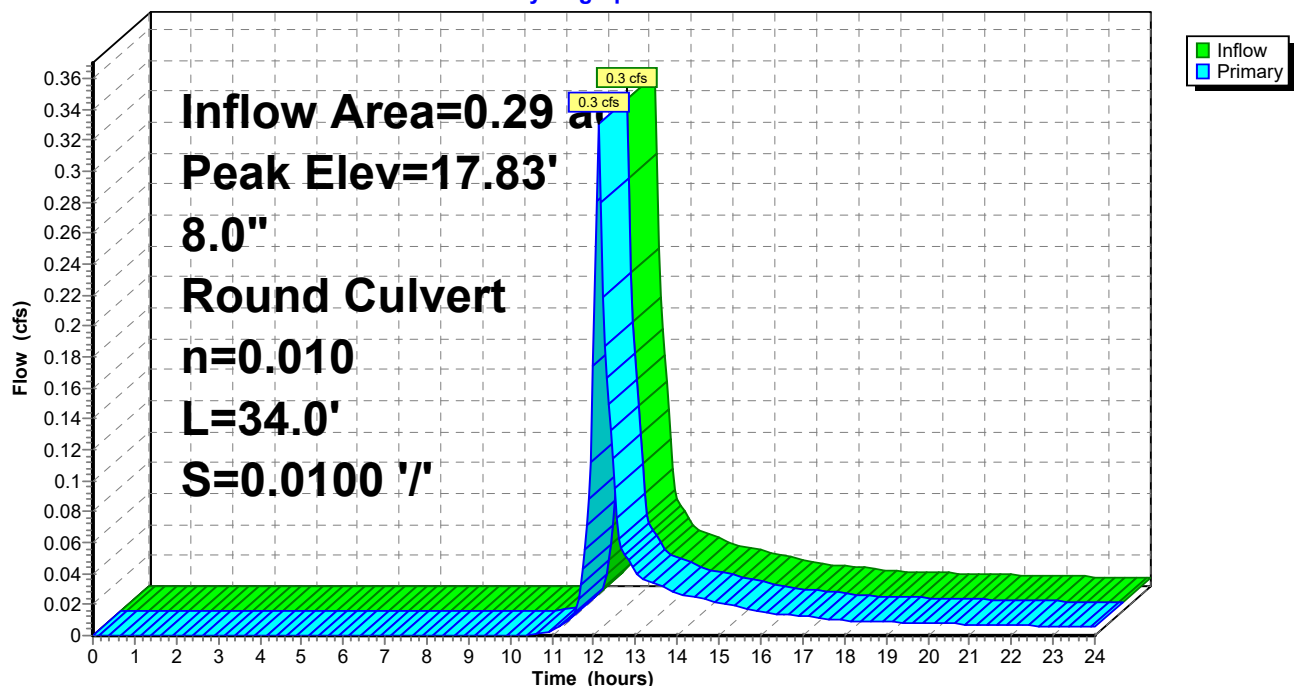
Flood Elev= 23.82'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.40'	8.0" Round Culvert L= 34.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.40' / 17.06' S= 0.0100 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.3 cfs @ 12.10 hrs HW=17.83' TW=17.68' (Dynamic Tailwater)
↑1=Culvert (Outlet Controls 0.3 cfs @ 1.78 fps)

Pond 7P: CB7

Hydrograph



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Summary for Pond 8P: CB8

Inflow Area = 0.29 ac, 69.88% Impervious, Inflow Depth > 1.32" for 2-Year Storm event
Inflow = 0.4 cfs @ 12.10 hrs, Volume= 0.032 af
Outflow = 0.4 cfs @ 12.10 hrs, Volume= 0.032 af, Atten= 0%, Lag= 0.0 min
Primary = 0.4 cfs @ 12.10 hrs, Volume= 0.032 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.22' @ 12.10 hrs

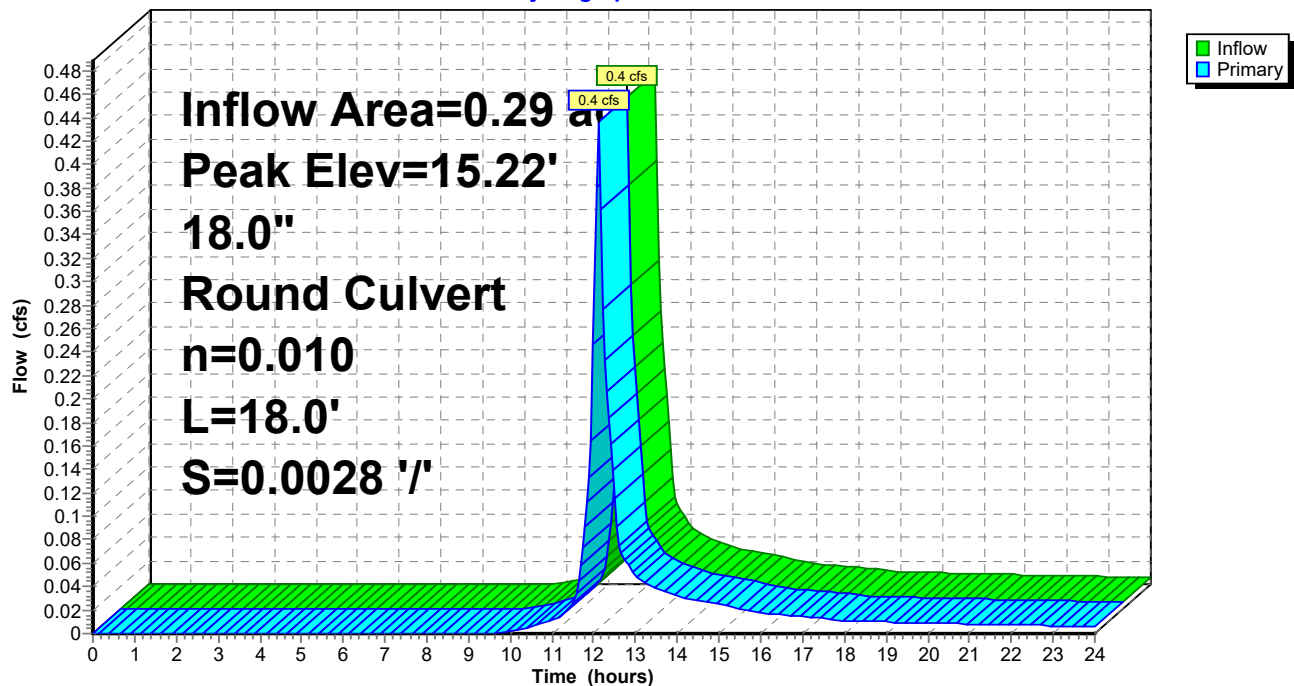
Flood Elev= 23.39'

Device	Routing	Invert	Outlet Devices
#1	Primary	14.85'	18.0" Round Culvert L= 18.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.85' / 14.80' S= 0.0028 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.4 cfs @ 12.10 hrs HW=15.22' TW=14.99' (Dynamic Tailwater)
↑1=Culvert (Barrel Controls 0.4 cfs @ 1.93 fps)

Pond 8P: CB8

Hydrograph



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Summary for Pond 9P: DMH1

Inflow Area = 1.20 ac, 84.73% Impervious, Inflow Depth > 2.01" for 2-Year Storm event
Inflow = 2.7 cfs @ 12.09 hrs, Volume= 0.201 af
Outflow = 2.7 cfs @ 12.09 hrs, Volume= 0.201 af, Atten= 0%, Lag= 0.0 min
Primary = 2.7 cfs @ 12.09 hrs, Volume= 0.201 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 20.25' @ 12.12 hrs

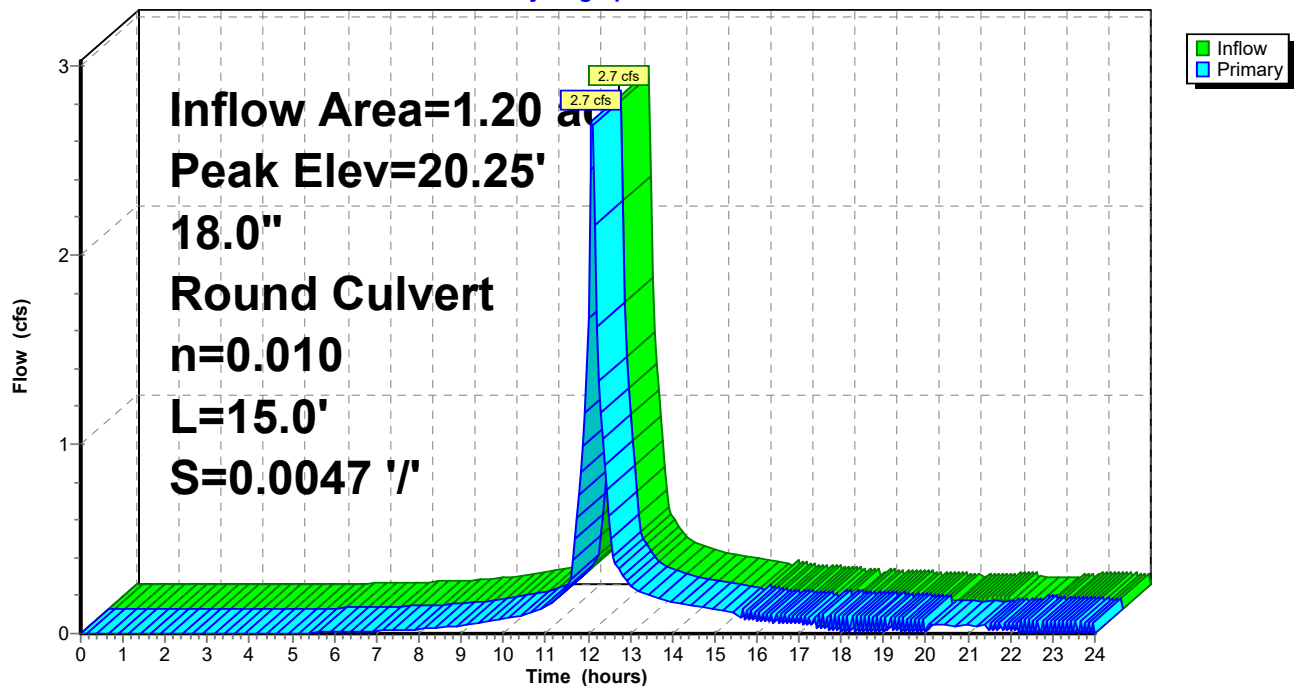
Flood Elev= 22.85'

Device	Routing	Invert	Outlet Devices
#1	Primary	15.78'	18.0" Round Culvert L= 15.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.78' / 15.71' S= 0.0047 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.1 cfs @ 12.09 hrs HW=20.23' TW=20.13' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 2.1 cfs @ 1.22 fps)

Pond 9P: DMH1

Hydrograph



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Summary for Pond 11P: Ex CB1

Inflow Area = 0.39 ac, 73.58% Impervious, Inflow Depth > 1.49" for 2-Year Storm event
Inflow = 0.7 cfs @ 12.09 hrs, Volume= 0.049 af
Outflow = 0.7 cfs @ 12.09 hrs, Volume= 0.049 af, Atten= 0%, Lag= 0.0 min
Primary = 0.7 cfs @ 12.09 hrs, Volume= 0.049 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 18.94' @ 12.09 hrs

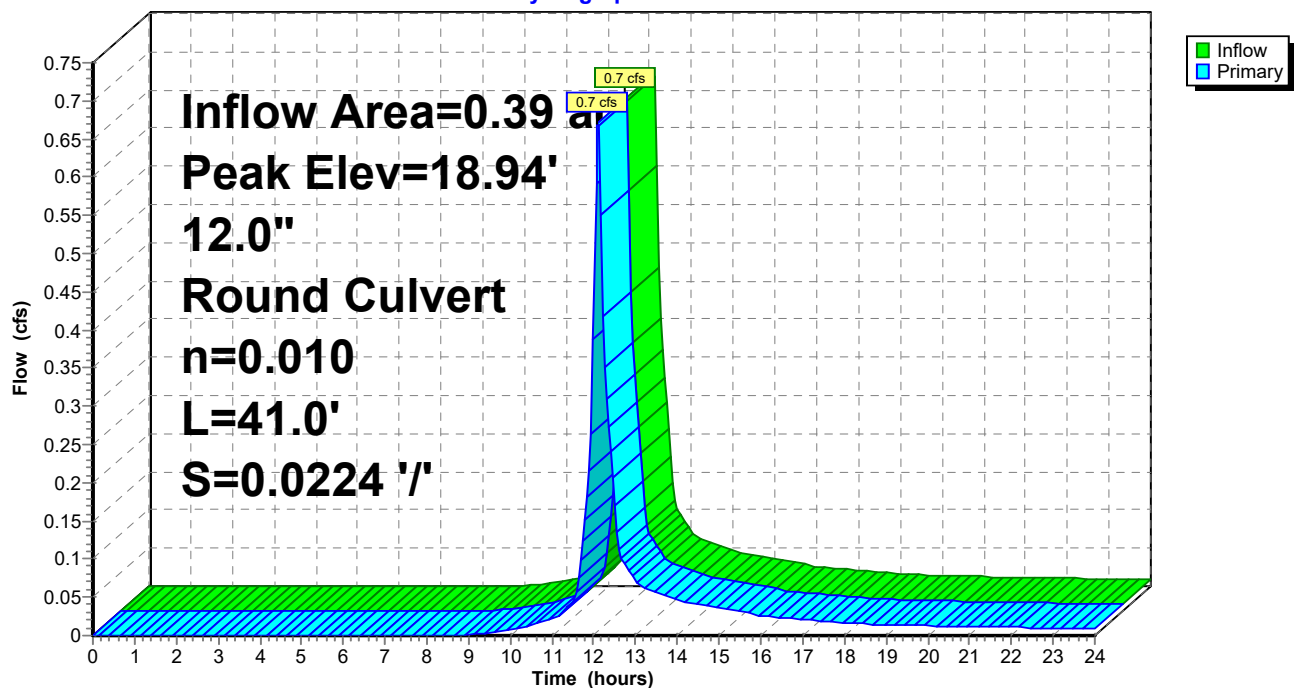
Flood Elev= 22.02'

Device	Routing	Invert	Outlet Devices
#1	Primary	18.47'	12.0" Round Culvert L= 41.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.47' / 17.55' S= 0.0224 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.7 cfs @ 12.09 hrs HW=18.94' TW=17.95' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 0.7 cfs @ 1.84 fps)

Pond 11P: Ex CB1

Hydrograph



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Summary for Pond 12P: Ex CB2

Inflow Area = 0.08 ac, 58.65% Impervious, Inflow Depth > 0.97" for 2-Year Storm event
Inflow = 0.1 cfs @ 12.10 hrs, Volume= 0.007 af
Outflow = 0.1 cfs @ 12.10 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min
Primary = 0.1 cfs @ 12.10 hrs, Volume= 0.007 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 18.32' @ 12.10 hrs

Flood Elev= 22.15'

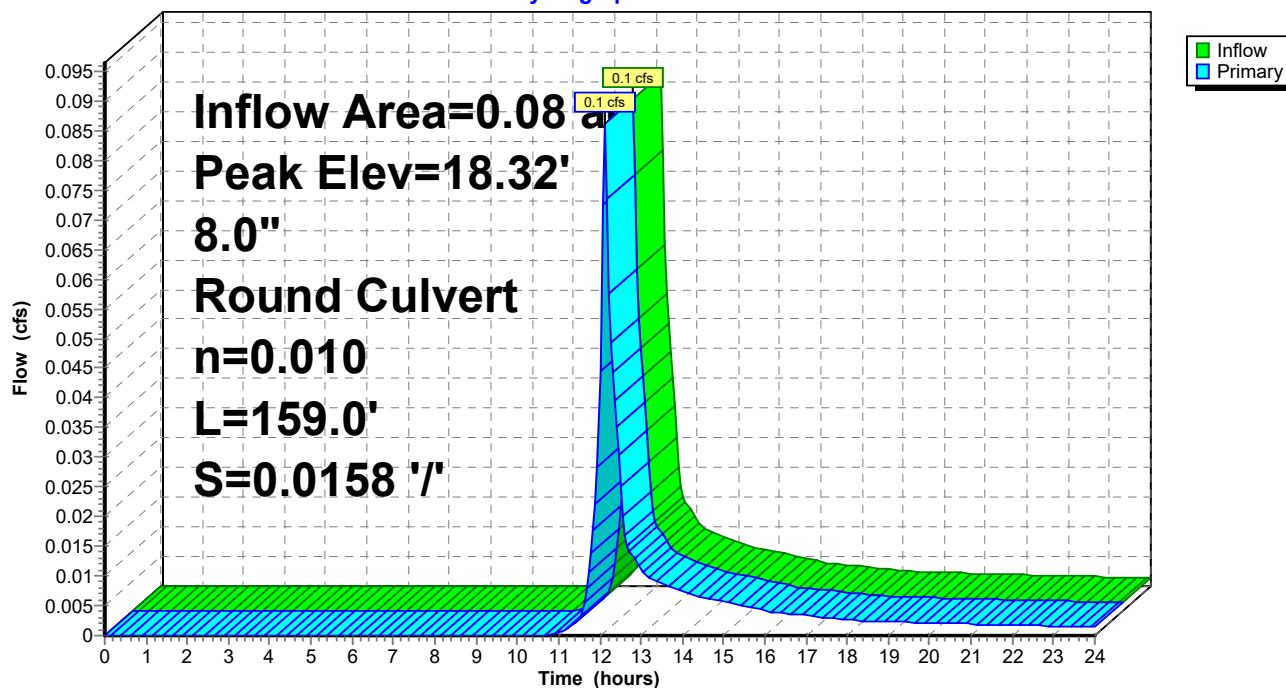
Device	Routing	Invert	Outlet Devices
#1	Primary	18.14'	8.0" Round Culvert L= 159.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.14' / 15.62' S= 0.0158 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.1 cfs @ 12.10 hrs HW=18.32' TW=0.00' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 0.1 cfs @ 1.14 fps)

Pond 12P: Ex CB2

Hydrograph



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Summary for Pond 13P: CMP Peak Detention

Inflow = 2.7 cfs @ 12.10 hrs, Volume= 0.114 af
 Outflow = 1.4 cfs @ 12.24 hrs, Volume= 0.114 af, Atten= 47%, Lag= 8.3 min
 Primary = 1.4 cfs @ 12.24 hrs, Volume= 0.114 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.13' @ 12.24 hrs Surf.Area= 696 sf Storage= 905 cf

Flood Elev= 23.00' Surf.Area= 696 sf Storage= 2,403 cf

Plug-Flow detention time= 6.6 min calculated for 0.114 af (100% of inflow)

Center-of-Mass det. time= 6.6 min (788.7 - 782.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	14.71'	0 cf	8.00'W x 87.00'L x 6.00'H Field A 4,176 cf Overall - 2,403 cf Embedded = 1,773 cf x 0.0% Voids
#2A	14.71'	2,403 cf	CMP Round 72 x 4 Inside #1 Effective Size= 72.0"W x 72.0"H => 28.27 sf x 20.00'L = 565.5 cf Overall Size= 72.0"W x 72.0"H x 20.00'L Row Length Adjustment= +5.00' x 28.27 sf x 1 rows
		2,403 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	14.71'	18.0" Round Culvert L= 20.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 14.71' / 14.33' S= 0.0190 ' S= 0.0190 ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf
#2	Device 1	14.71'	6.1" Vert. Orifice/Grate C= 0.600
#3	Device 1	17.21'	5.7" Vert. Orifice/Grate C= 0.600
#4	Device 1	18.79'	4.8" Vert. Orifice/Grate C= 0.600
#5	Device 1	20.05'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 5.34 5.40 5.46 5.52 5.58 5.64 5.70 5.76 5.82 5.88 5.94 6.00 Width (feet) 3.75 3.60 3.43 3.26 3.06 2.85 2.62 2.35 2.05 1.68 1.19 0.00

Primary OutFlow Max=1.4 cfs @ 12.24 hrs HW=17.12' TW=14.66' (Dynamic Tailwater)

- 1=Culvert (Passes 1.4 cfs of 11.0 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 1.4 cfs @ 7.07 fps)
- 3=Orifice/Grate (Controls 0.0 cfs)
- 4=Orifice/Grate (Controls 0.0 cfs)
- 5=Custom Weir/Orifice (Controls 0.0 cfs)

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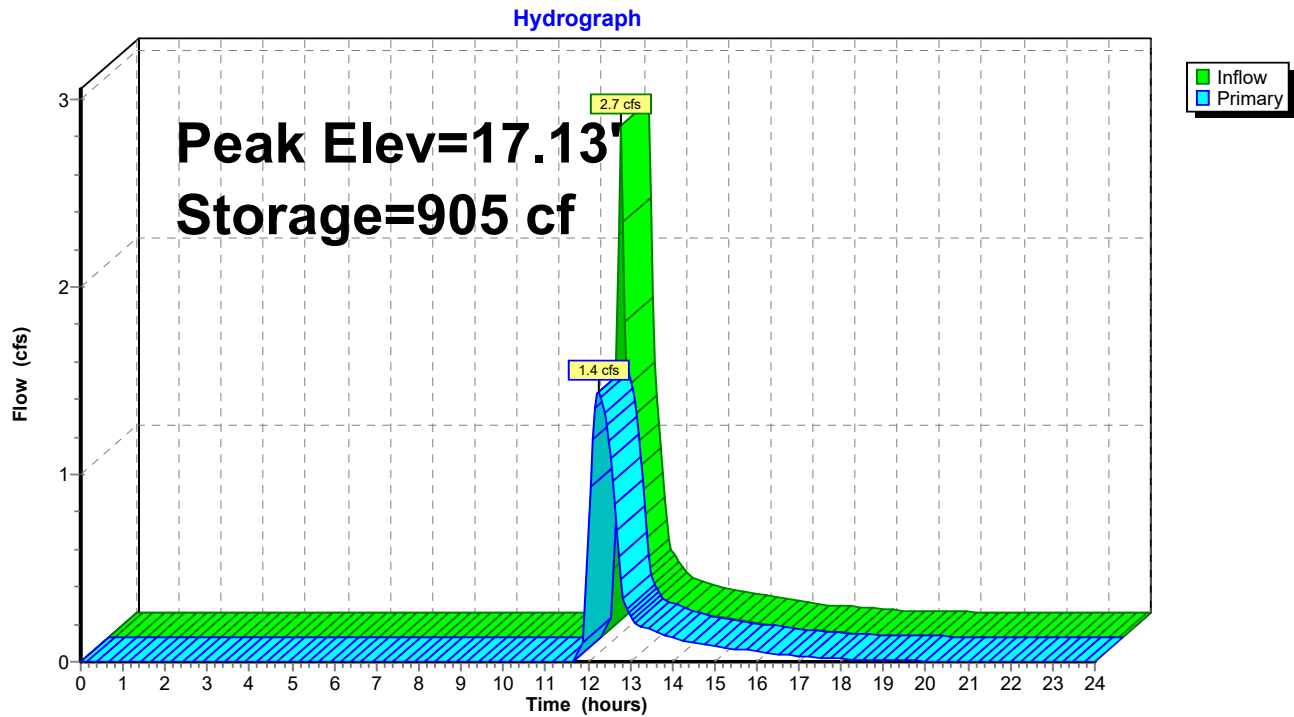
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Pond 13P: CMP Peak Detention



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Summary for Pond 14P: CONTECH WQv CMP Det & SF System

Inflow Area = 1.20 ac, 84.73% Impervious, Inflow Depth > 2.01" for 2-Year Storm event
 Inflow = 2.7 cfs @ 12.09 hrs, Volume= 0.201 af
 Outflow = 2.8 cfs @ 12.10 hrs, Volume= 0.162 af, Atten= 0%, Lag= 0.7 min
 Primary = 0.0 cfs @ 12.10 hrs, Volume= 0.047 af
 Secondary = 2.7 cfs @ 12.10 hrs, Volume= 0.114 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Starting Elev= 15.71' Surf.Area= 683 sf Storage= 96 cf

Peak Elev= 20.14' @ 12.10 hrs Surf.Area= 683 sf Storage= 1,999 cf (1,903 cf above start)

Flood Elev= 23.00' Surf.Area= 683 sf Storage= 2,114 cf (2,019 cf above start)

Plug-Flow detention time= 124.9 min calculated for 0.159 af (79% of inflow)

Center-of-Mass det. time= 41.8 min (845.8 - 804.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	15.21'	0 cf	7.50'W x 91.00'L x 5.50'H Field A 3,754 cf Overall - 2,114 cf Embedded = 1,639 cf x 0.0% Voids
#2A	15.21'	2,114 cf	CMP Round 66 x 4 Inside #1 Effective Size= 66.0"W x 66.0"H => 23.76 sf x 20.00'L = 475.2 cf Overall Size= 66.0"W x 66.0"H x 20.00'L Row Length Adjustment= +9.00' x 23.76 sf x 1 rows
		2,114 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	14.71'	Tube/Siphon/Float Valve X 6.00 Starts@17.76' Breaks@15.38' 0.336" Diameter, C= 0.600, 0.263" Trickle Diameter
#2	Device 1	15.71'	12.0" Round CMP_Round 12" L= 10.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 15.71' / 15.68' S= 0.0030 ' S= 0.0030 ' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#3	Secondary	19.78'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 4.57 4.62 4.67 4.73 4.79 4.84 4.89 4.95 5.00 5.06 5.12 5.17 5.22 5.28 5.33 5.39 5.45 5.50 Width (feet) 4.13 4.03 3.93 3.82 3.70 3.57 3.44 3.30 3.15 2.98 2.81 2.61 2.40 2.16 1.88 1.54 1.09 0.00

Primary OutFlow Max=0.0 cfs @ 12.10 hrs HW=20.14' TW=14.60' (Dynamic Tailwater)

↑1=Tube/Siphon/Float Valve (Orifice Controls 0.0 cfs @ 11.22 fps)

↑2=CMP_Round 12" (Passes 0.0 cfs of 7.5 cfs potential flow)

Secondary OutFlow Max=2.7 cfs @ 12.10 hrs HW=20.14' TW=16.46' (Dynamic Tailwater)

↑3=Custom Weir/Orifice (Weir Controls 2.7 cfs @ 2.00 fps)

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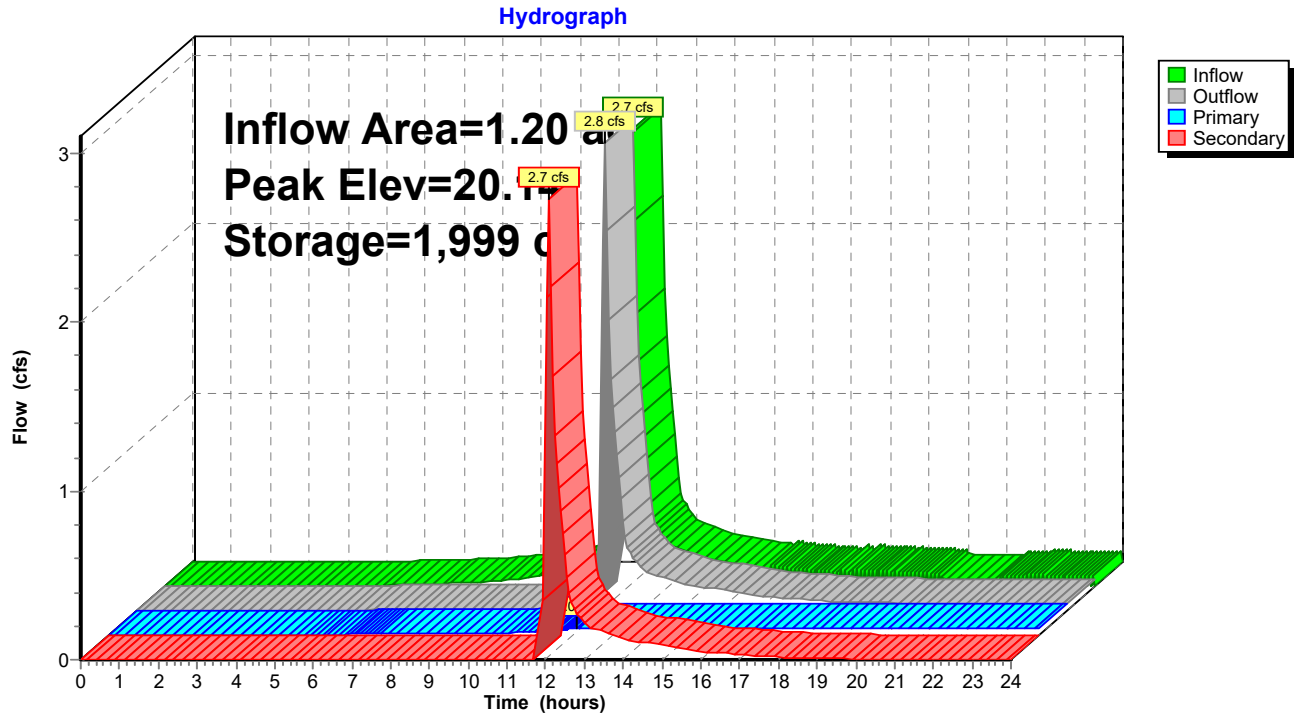
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Pond 14P: CONTECH WQv CMP Det & SF System



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Summary for Pond 21P: Ex DMH1

Inflow Area = 0.29 ac, 69.88% Impervious, Inflow Depth > 1.32" for 2-Year Storm event
Inflow = 0.4 cfs @ 12.10 hrs, Volume= 0.032 af
Outflow = 0.4 cfs @ 12.10 hrs, Volume= 0.032 af, Atten= 0%, Lag= 0.0 min
Primary = 0.4 cfs @ 12.10 hrs, Volume= 0.032 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.01' @ 12.13 hrs

Flood Elev= 23.72'

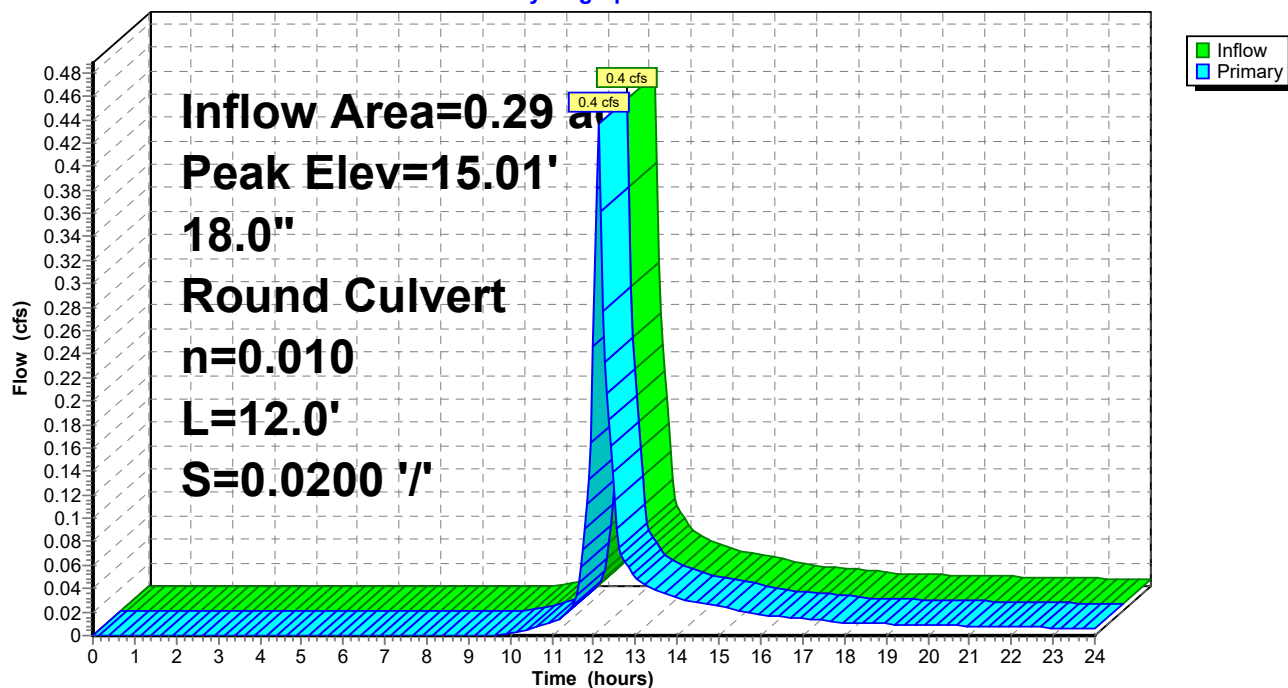
Device	Routing	Invert	Outlet Devices
#1	Primary	14.62'	18.0" Round Culvert L= 12.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.62' / 14.38' S= 0.0200 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.3 cfs @ 12.10 hrs HW=14.99' TW=14.91' (Dynamic Tailwater)

↑1=Culvert (Outlet Controls 0.3 cfs @ 1.51 fps)

Pond 21P: Ex DMH1

Hydrograph



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Summary for Pond 22P: Ex DMH2

Inflow Area = 0.69 ac, 68.00% Impervious, Inflow Depth > 1.29" for 2-Year Storm event
Inflow = 1.0 cfs @ 12.10 hrs, Volume= 0.074 af
Outflow = 1.0 cfs @ 12.10 hrs, Volume= 0.074 af, Atten= 0%, Lag= 0.0 min
Primary = 1.0 cfs @ 12.10 hrs, Volume= 0.074 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

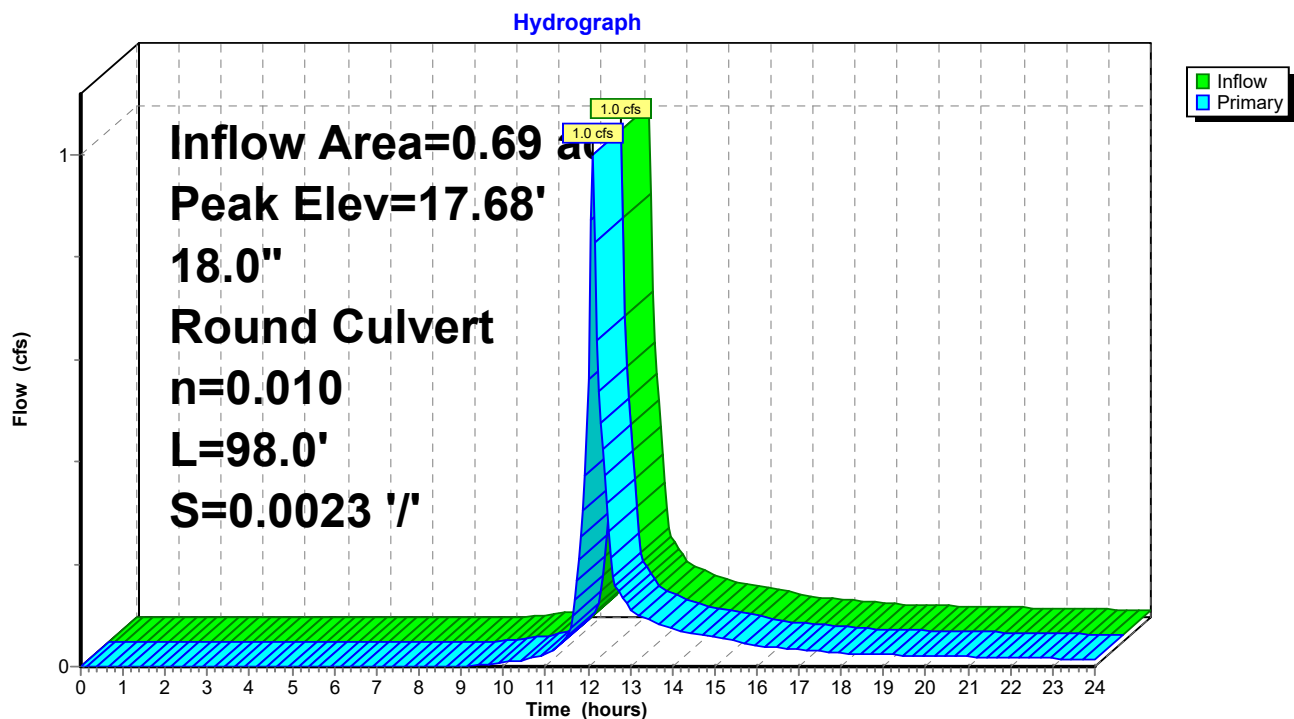
Peak Elev= 17.68' @ 12.10 hrs

Flood Elev= 24.92'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.12'	18.0" Round Culvert L= 98.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.12' / 16.89' S= 0.0023 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.0 cfs @ 12.10 hrs HW=17.67' TW=17.32' (Dynamic Tailwater)
↑ **1=Culvert** (Outlet Controls 1.0 cfs @ 2.45 fps)

Pond 22P: Ex DMH2



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Summary for Pond 23P: Ex CB3

Inflow Area = 1.20 ac, 84.73% Impervious, Inflow Depth > 1.62" for 2-Year Storm event
Inflow = 1.5 cfs @ 12.24 hrs, Volume= 0.162 af
Outflow = 1.5 cfs @ 12.24 hrs, Volume= 0.162 af, Atten= 0%, Lag= 0.0 min
Primary = 1.5 cfs @ 12.24 hrs, Volume= 0.162 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 14.66' @ 12.24 hrs

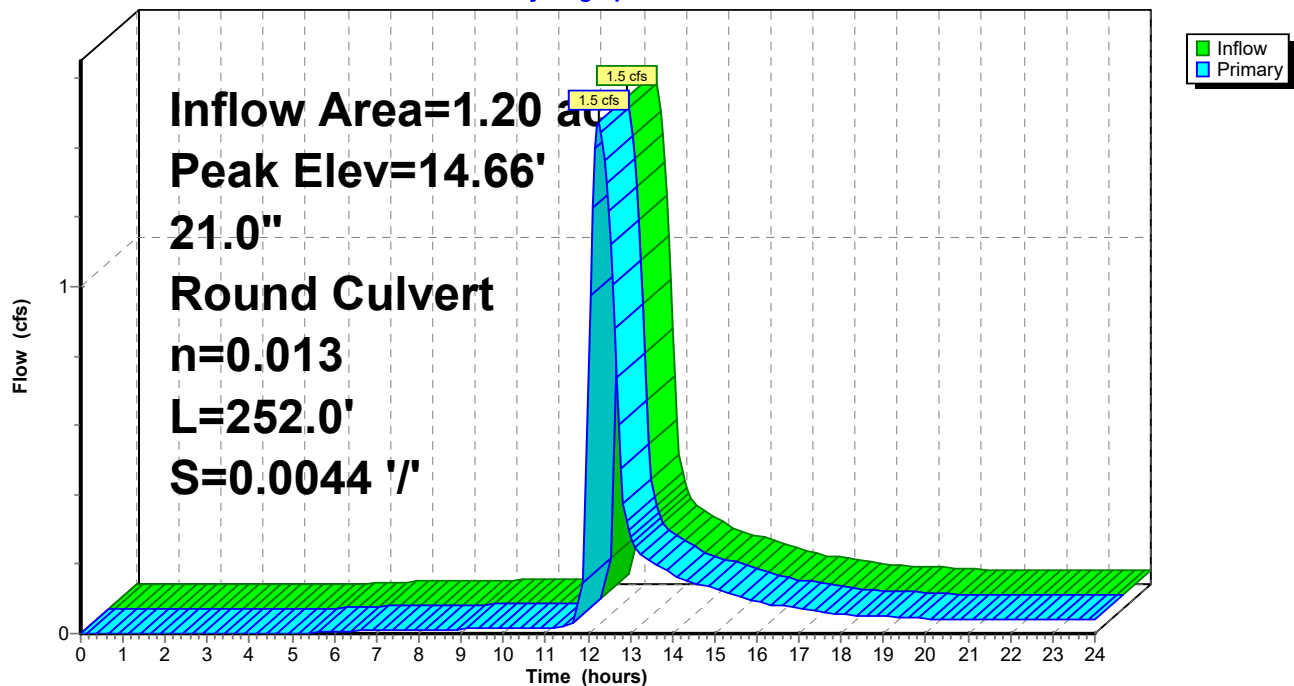
Flood Elev= 23.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	14.05'	21.0" Round Culvert L= 252.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.05' / 12.94' S= 0.0044 '/ Cc= 0.900 n= 0.013 Cast iron, coated, Flow Area= 2.41 sf

Primary OutFlow Max=1.5 cfs @ 12.24 hrs HW=14.66' TW=0.00' (Dynamic Tailwater)
↑1=Culvert (Barrel Controls 1.5 cfs @ 2.97 fps)

Pond 23P: Ex CB3

Hydrograph



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Summary for Pond 24P: Ex DMH4

Inflow Area = 0.69 ac, 68.00% Impervious, Inflow Depth > 1.29" for 2-Year Storm event
Inflow = 1.0 cfs @ 12.10 hrs, Volume= 0.074 af
Outflow = 1.0 cfs @ 12.10 hrs, Volume= 0.074 af, Atten= 0%, Lag= 0.0 min
Primary = 1.0 cfs @ 12.10 hrs, Volume= 0.074 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

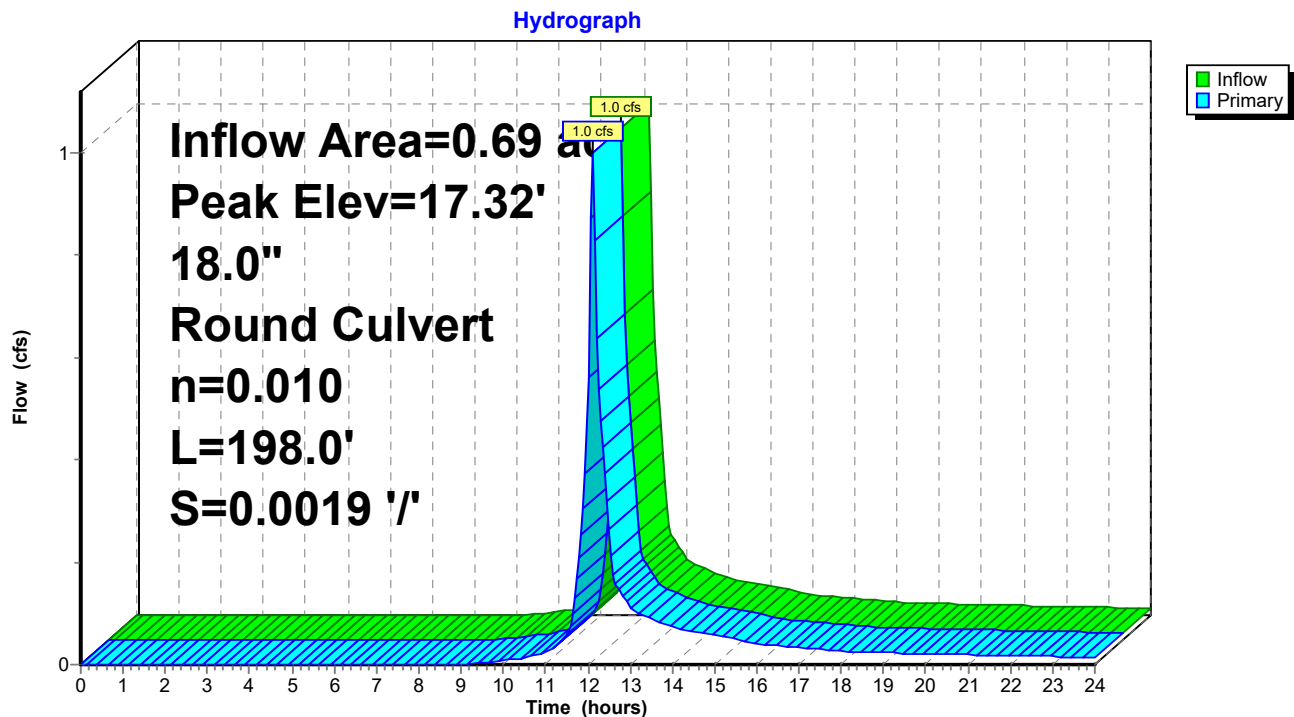
Peak Elev= 17.32' @ 12.10 hrs

Flood Elev= 25.38'

Device	Routing	Invert	Outlet Devices
#1	Primary	16.75'	18.0" Round Culvert L= 198.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.75' / 16.38' S= 0.0019 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.0 cfs @ 12.10 hrs HW=17.32' TW=15.95' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.0 cfs @ 2.41 fps)

Pond 24P: Ex DMH4



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Summary for Pond 25P: Ex DMH5

Inflow Area = 0.69 ac, 68.00% Impervious, Inflow Depth > 1.29" for 2-Year Storm event
Inflow = 1.0 cfs @ 12.10 hrs, Volume= 0.074 af
Outflow = 1.0 cfs @ 12.10 hrs, Volume= 0.074 af, Atten= 0%, Lag= 0.0 min
Primary = 1.0 cfs @ 12.10 hrs, Volume= 0.074 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

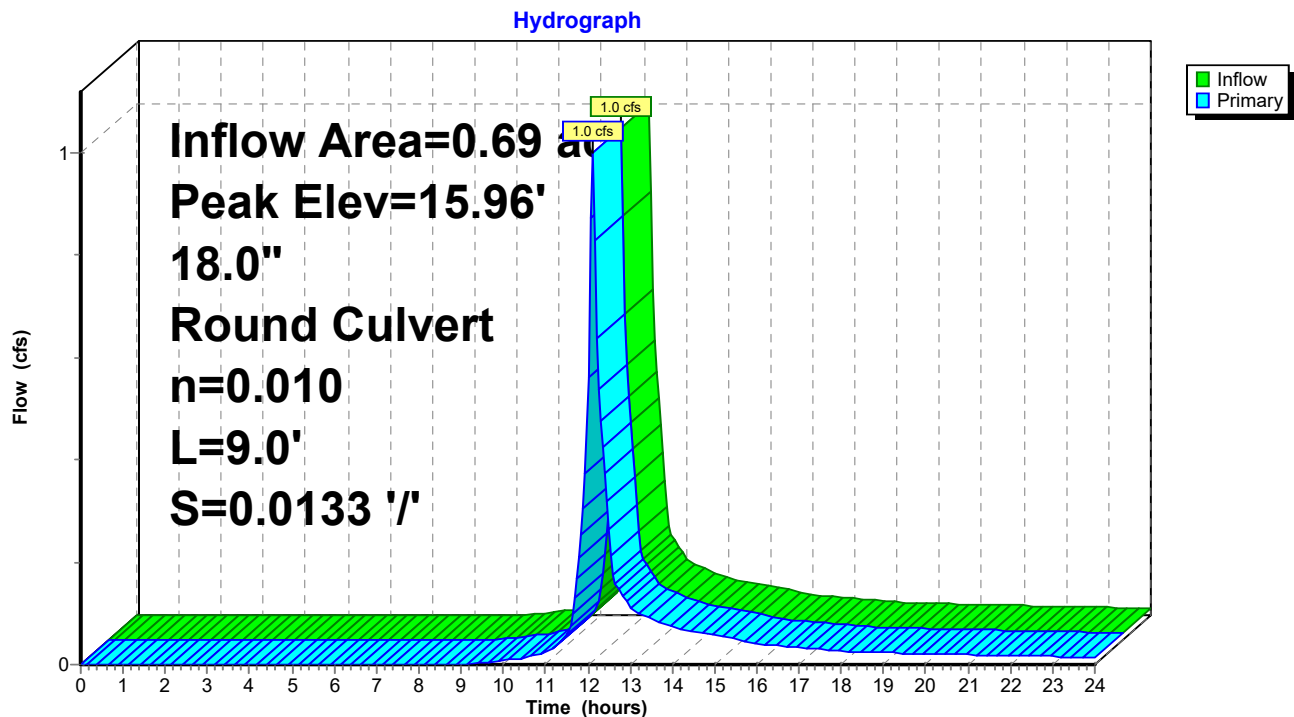
Peak Elev= 15.96' @ 12.10 hrs

Flood Elev= 23.84'

Device	Routing	Invert	Outlet Devices
#1	Primary	15.44'	18.0" Round Culvert L= 9.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.44' / 15.32' S= 0.0133 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.0 cfs @ 12.10 hrs HW=15.95' TW=14.91' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.0 cfs @ 2.76 fps)

Pond 25P: Ex DMH5



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Summary for Pond 26P: Ex DMH6

Inflow Area = 0.98 ac, 68.56% Impervious, Inflow Depth > 1.30" for 2-Year Storm event
Inflow = 1.4 cfs @ 12.10 hrs, Volume= 0.106 af
Outflow = 1.4 cfs @ 12.10 hrs, Volume= 0.106 af, Atten= 0%, Lag= 0.0 min
Primary = 1.4 cfs @ 12.10 hrs, Volume= 0.106 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 14.91' @ 12.10 hrs

Flood Elev= 23.95'

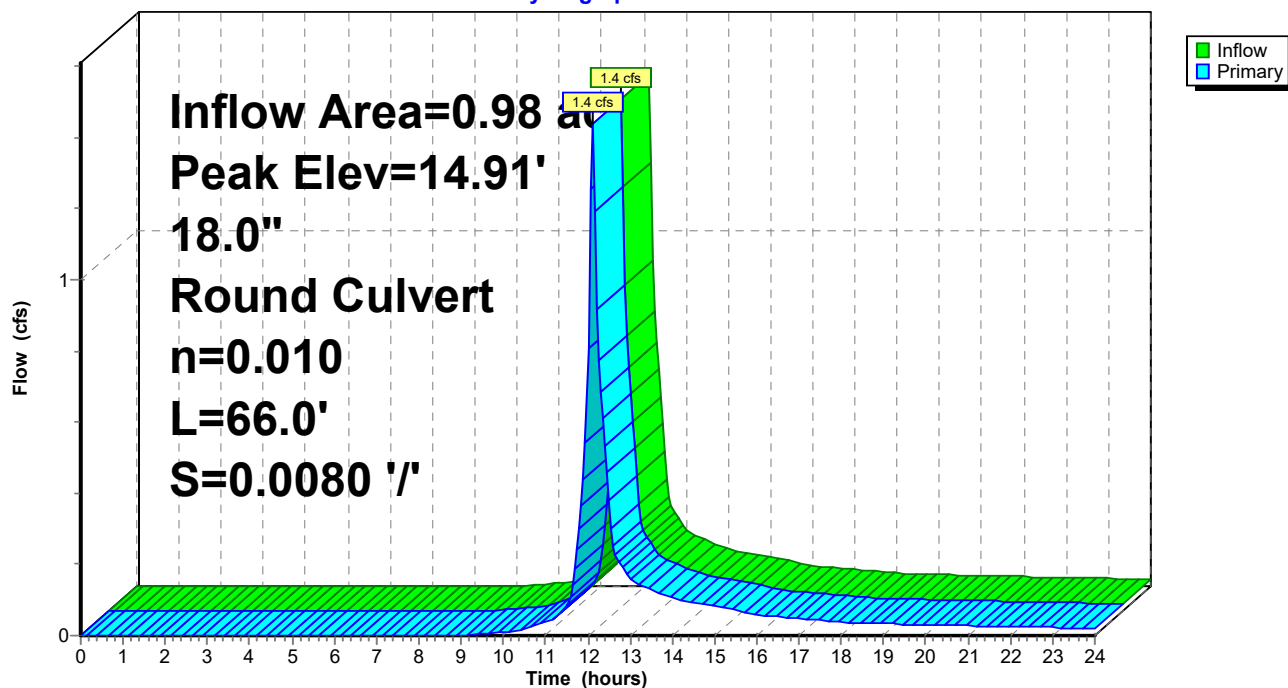
Device	Routing	Invert	Outlet Devices
#1	Primary	14.30'	18.0" Round Culvert L= 66.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.30' / 13.77' S= 0.0080 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.4 cfs @ 12.10 hrs HW=14.91' TW=14.42' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 1.4 cfs @ 2.10 fps)

Pond 26P: Ex DMH6

Hydrograph



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Summary for Pond 27P: Ex DMH7

Inflow Area = 0.98 ac, 68.56% Impervious, Inflow Depth > 1.30" for 2-Year Storm event
Inflow = 1.4 cfs @ 12.10 hrs, Volume= 0.106 af
Outflow = 1.4 cfs @ 12.10 hrs, Volume= 0.106 af, Atten= 0%, Lag= 0.0 min
Primary = 1.4 cfs @ 12.10 hrs, Volume= 0.106 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

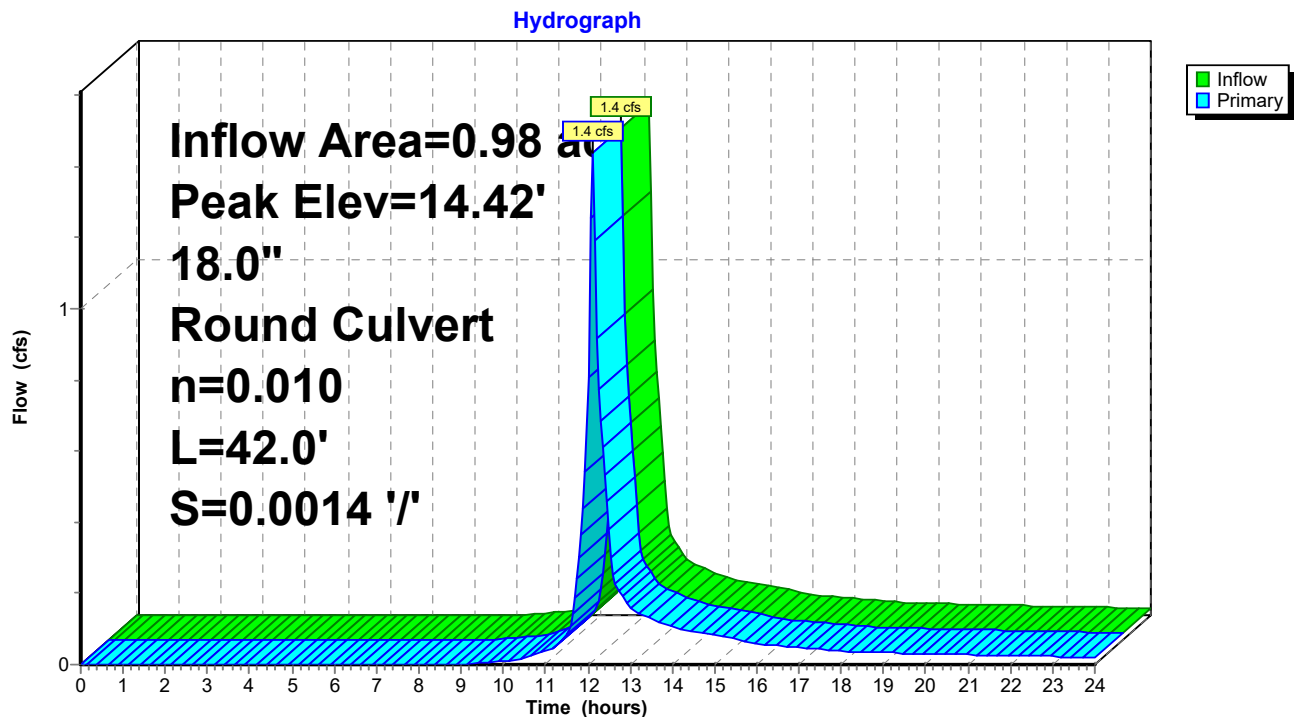
Peak Elev= 14.42' @ 12.10 hrs

Flood Elev= 24.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	13.70'	18.0" Round Culvert L= 42.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.70' / 13.64' S= 0.0014 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.4 cfs @ 12.10 hrs HW=14.42' TW=0.00' (Dynamic Tailwater)
↑1=Culvert (Barrel Controls 1.4 cfs @ 2.48 fps)

Pond 27P: Ex DMH7



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Summary for Pond 29P: Ex DMH9

Inflow Area = 0.39 ac, 73.58% Impervious, Inflow Depth > 1.49" for 2-Year Storm event
Inflow = 0.7 cfs @ 12.09 hrs, Volume= 0.049 af
Outflow = 0.7 cfs @ 12.09 hrs, Volume= 0.049 af, Atten= 0%, Lag= 0.0 min
Primary = 0.7 cfs @ 12.09 hrs, Volume= 0.049 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 17.96' @ 12.11 hrs

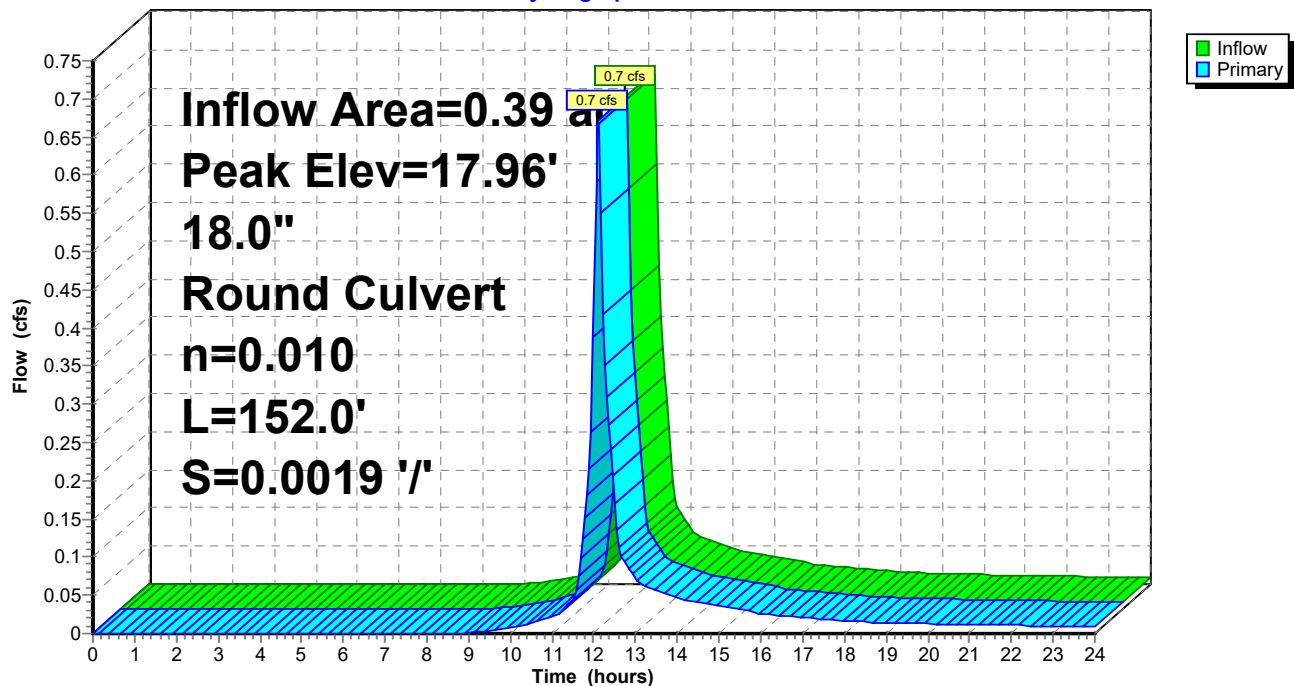
Flood Elev= 23.44'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.46'	18.0" Round Culvert L= 152.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.46' / 17.17' S= 0.0019 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.6 cfs @ 12.09 hrs HW=17.95' TW=17.67' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 0.6 cfs @ 1.83 fps)

Pond 29P: Ex DMH9

Hydrograph



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Type III 24-hr 2-Year Storm Rainfall=3.10"

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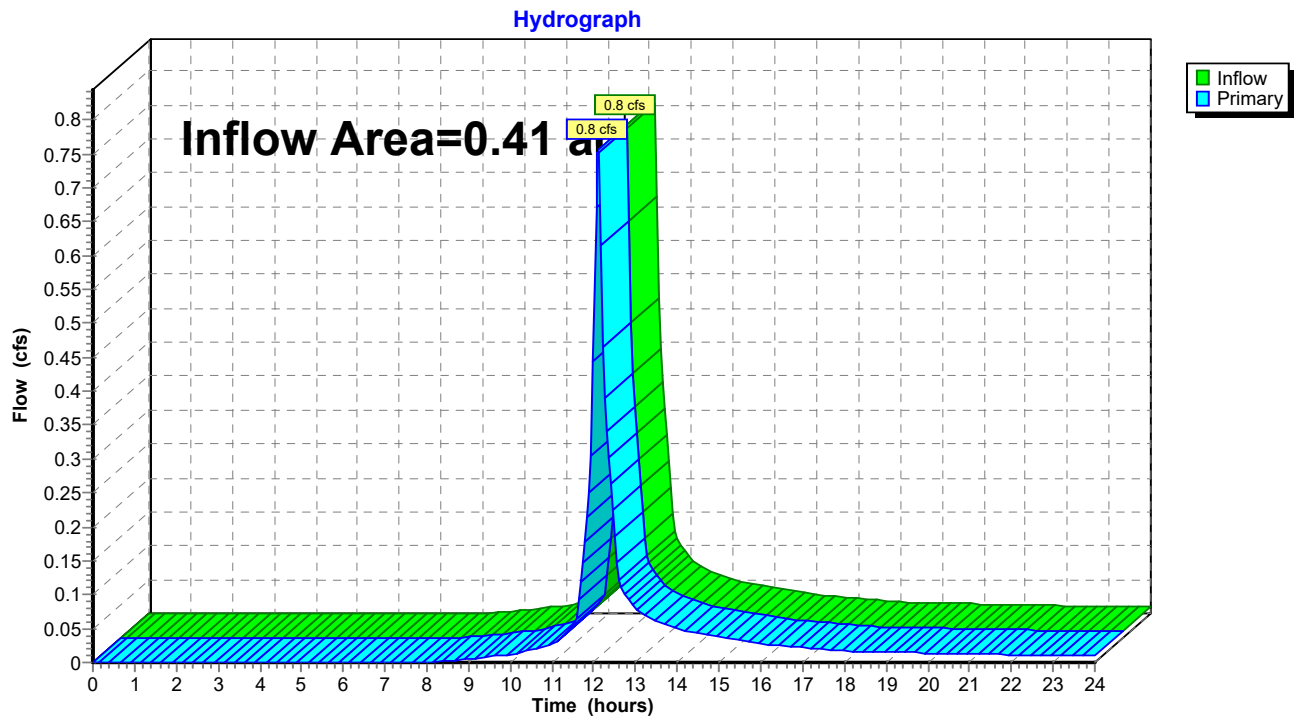
Page 80

Summary for Link SP1: Forest Ave Storm Drain

Inflow Area = 0.41 ac, 75.27% Impervious, Inflow Depth > 1.59" for 2-Year Storm event
Inflow = 0.8 cfs @ 12.09 hrs, Volume= 0.055 af
Primary = 0.8 cfs @ 12.09 hrs, Volume= 0.055 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP1: Forest Ave Storm Drain



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Type III 24-hr 2-Year Storm Rainfall=3.10"

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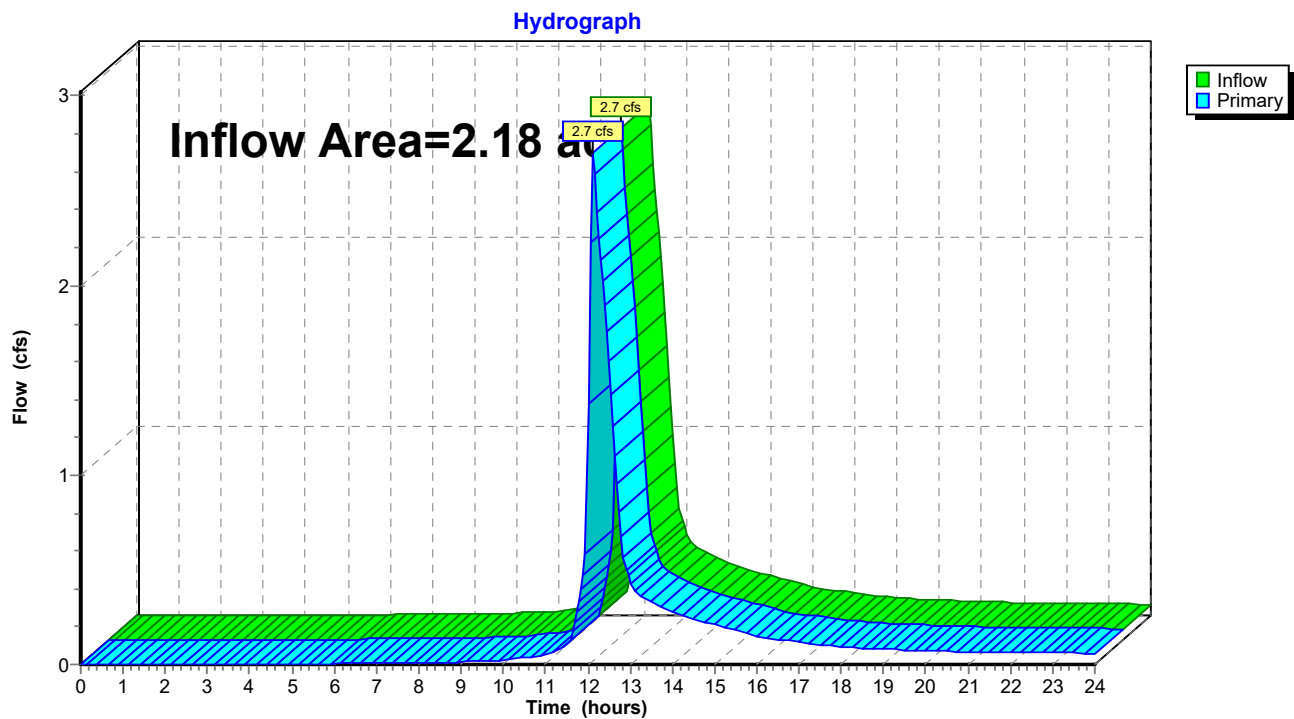
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Summary for Link SP2: Combined Sewer

Inflow Area = 2.18 ac, 77.47% Impervious, Inflow Depth > 1.47" for 2-Year Storm event
Inflow = 2.7 cfs @ 12.12 hrs, Volume= 0.267 af
Primary = 2.7 cfs @ 12.12 hrs, Volume= 0.267 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP2: Combined Sewer



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: POST-1	Runoff Area=5,692 sf 70.24% Impervious Runoff Depth>2.63" Tc=6.0 min CN=81 Runoff=0.4 cfs 0.029 af
Subcatchment2S: POST-2	Runoff Area=9,641 sf 93.94% Impervious Runoff Depth>3.91" Tc=6.0 min CN=94 Runoff=0.9 cfs 0.072 af
Subcatchment3S: POST-3	Runoff Area=15,050 sf 86.74% Impervious Runoff Depth>3.49" Tc=6.0 min CN=90 Runoff=1.3 cfs 0.100 af
Subcatchment5S: POST-5	Runoff Area=6,810 sf 75.96% Impervious Runoff Depth>2.90" Tc=6.0 min CN=84 Runoff=0.5 cfs 0.038 af
Subcatchment6S: POST-6	Runoff Area=9,346 sf 95.25% Impervious Runoff Depth>4.02" Tc=6.0 min CN=95 Runoff=0.9 cfs 0.072 af
Subcatchment7S: POST-7	Runoff Area=5,710 sf 71.52% Impervious Runoff Depth>2.63" Tc=6.0 min CN=81 Runoff=0.4 cfs 0.029 af
Subcatchment8S: POST-8	Runoff Area=3,553 sf 58.65% Impervious Runoff Depth>2.05" Tc=6.0 min CN=74 Runoff=0.2 cfs 0.014 af
Subcatchment9S: POST-9	Runoff Area=14,487 sf 79.34% Impervious Runoff Depth>3.09" Tc=6.0 min CN=86 Runoff=1.2 cfs 0.086 af
Subcatchment10S: POST-10	Runoff Area=7,001 sf 74.06% Impervious Runoff Depth>2.81" Tc=6.0 min CN=83 Runoff=0.5 cfs 0.038 af
Subcatchment11S: POST-11	Runoff Area=10,124 sf 73.25% Impervious Runoff Depth>2.72" Tc=6.0 min CN=82 Runoff=0.7 cfs 0.053 af
Subcatchment12S: POST-12	Runoff Area=12,768 sf 60.52% Impervious Runoff Depth>2.13" Tc=6.0 min CN=75 Runoff=0.7 cfs 0.052 af
Subcatchment13S: POST-13	Runoff Area=12,612 sf 69.88% Impervious Runoff Depth>2.54" Tc=6.0 min CN=80 Runoff=0.8 cfs 0.061 af
Pond 1P: CB1	Peak Elev=21.10' Inflow=0.4 cfs 0.029 af 10.0" Round Culvert n=0.010 L=56.0' S=0.0048 '/' Outflow=0.4 cfs 0.029 af
Pond 2P: CB2	Peak Elev=21.09' Inflow=1.3 cfs 0.101 af 10.0" Round Culvert n=0.010 L=56.0' S=0.0050 '/' Outflow=1.3 cfs 0.101 af
Pond 3P: CB3	Peak Elev=20.89' Inflow=2.7 cfs 0.201 af 15.0" Round Culvert n=0.010 L=21.0' S=0.0048 '/' Outflow=2.7 cfs 0.201 af
Pond 4P: CB4	Peak Elev=20.73' Inflow=1.8 cfs 0.138 af 18.0" Round Culvert n=0.010 L=106.0' S=0.0102 '/' Outflow=1.8 cfs 0.138 af

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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Pond 5P: CB5Peak Elev=20.75' Inflow=1.3 cfs 0.101 af
15.0" Round Culvert n=0.010 L=77.0' S=0.0051 '/' Outflow=1.3 cfs 0.101 af**Pond 6P: CB6**Peak Elev=20.76' Inflow=0.4 cfs 0.029 af
15.0" Round Culvert n=0.010 L=53.0' S=0.0051 '/' Outflow=0.4 cfs 0.029 af**Pond 7P: CB7**Peak Elev=18.17' Inflow=0.7 cfs 0.052 af
8.0" Round Culvert n=0.010 L=34.0' S=0.0100 '/' Outflow=0.7 cfs 0.052 af**Pond 8P: CB8**Peak Elev=15.38' Inflow=0.8 cfs 0.061 af
18.0" Round Culvert n=0.010 L=18.0' S=0.0028 '/' Outflow=0.8 cfs 0.061 af**Pond 9P: DMH1**Peak Elev=20.68' Inflow=4.5 cfs 0.340 af
18.0" Round Culvert n=0.010 L=15.0' S=0.0047 '/' Outflow=4.5 cfs 0.340 af**Pond 11P: Ex CB1**Peak Elev=19.14' Inflow=1.2 cfs 0.090 af
12.0" Round Culvert n=0.010 L=41.0' S=0.0224 '/' Outflow=1.2 cfs 0.090 af**Pond 12P: Ex CB2**Peak Elev=18.41' Inflow=0.2 cfs 0.014 af
8.0" Round Culvert n=0.010 L=159.0' S=0.0158 '/' Outflow=0.2 cfs 0.014 af**Pond 13P: CMP Peak Detention**Peak Elev=18.79' Storage=1,741 cf Inflow=4.5 cfs 0.247 af
Outflow=2.9 cfs 0.247 af**Pond 14P: CONTECHWQv CMP Det & SF**Peak Elev=20.29' Storage=2,042 cf Inflow=4.5 cfs 0.340 af
Primary=0.0 cfs 0.052 af Secondary=4.5 cfs 0.247 af Outflow=4.5 cfs 0.299 af**Pond 21P: Ex DMH1**Peak Elev=15.28' Inflow=0.8 cfs 0.061 af
18.0" Round Culvert n=0.010 L=12.0' S=0.0200 '/' Outflow=0.8 cfs 0.061 af**Pond 22P: Ex DMH2**Peak Elev=17.93' Inflow=2.0 cfs 0.142 af
18.0" Round Culvert n=0.010 L=98.0' S=0.0023 '/' Outflow=2.0 cfs 0.142 af**Pond 23P: Ex CB3**Peak Elev=14.93' Inflow=2.9 cfs 0.299 af
21.0" Round Culvert n=0.013 L=252.0' S=0.0044 '/' Outflow=2.9 cfs 0.299 af**Pond 24P: Ex DMH4**Peak Elev=17.57' Inflow=2.0 cfs 0.142 af
18.0" Round Culvert n=0.010 L=198.0' S=0.0019 '/' Outflow=2.0 cfs 0.142 af**Pond 25P: Ex DMH5**Peak Elev=16.21' Inflow=2.0 cfs 0.142 af
18.0" Round Culvert n=0.010 L=9.0' S=0.0133 '/' Outflow=2.0 cfs 0.142 af**Pond 26P: Ex DMH6**Peak Elev=15.21' Inflow=2.8 cfs 0.204 af
18.0" Round Culvert n=0.010 L=66.0' S=0.0080 '/' Outflow=2.8 cfs 0.204 af**Pond 27P: Ex DMH7**Peak Elev=14.75' Inflow=2.8 cfs 0.204 af
18.0" Round Culvert n=0.010 L=42.0' S=0.0014 '/' Outflow=2.8 cfs 0.204 af**Pond 29P: Ex DMH9**Peak Elev=18.18' Inflow=1.2 cfs 0.090 af
18.0" Round Culvert n=0.010 L=152.0' S=0.0019 '/' Outflow=1.2 cfs 0.090 af

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Link SP1: Forest Ave Storm Drain

Inflow=1.4 cfs 0.100 af
Primary=1.4 cfs 0.100 af

Link SP2: Combined Sewer

Inflow=5.4 cfs 0.502 af
Primary=5.4 cfs 0.502 af

Total Runoff Area = 2.59 ac Runoff Volume = 0.643 af Average Runoff Depth = 2.98"
22.88% Pervious = 0.59 ac 77.12% Impervious = 2.00 ac

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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Subcatchment 1S: POST-1

Runoff = 0.4 cfs @ 12.09 hrs, Volume= 0.029 af, Depth> 2.63"

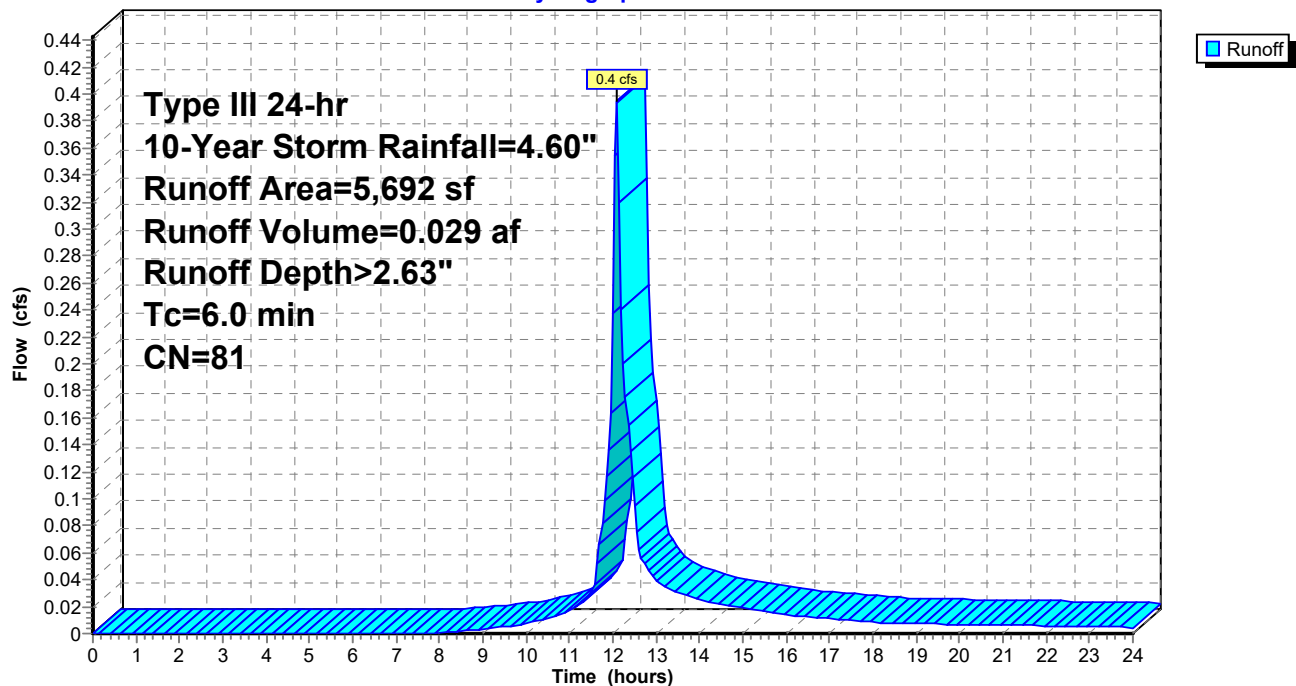
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
3,998	98	Paved parking, HSG A
830	39	Grass cover, Good, HSG A
* 864	40	Porous Pavement
5,692	81	Weighted Average
1,694		29.76% Pervious Area
3,998		70.24% Impervious Area

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

Subcatchment 1S: POST-1

Hydrograph



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Subcatchment 2S: POST-2

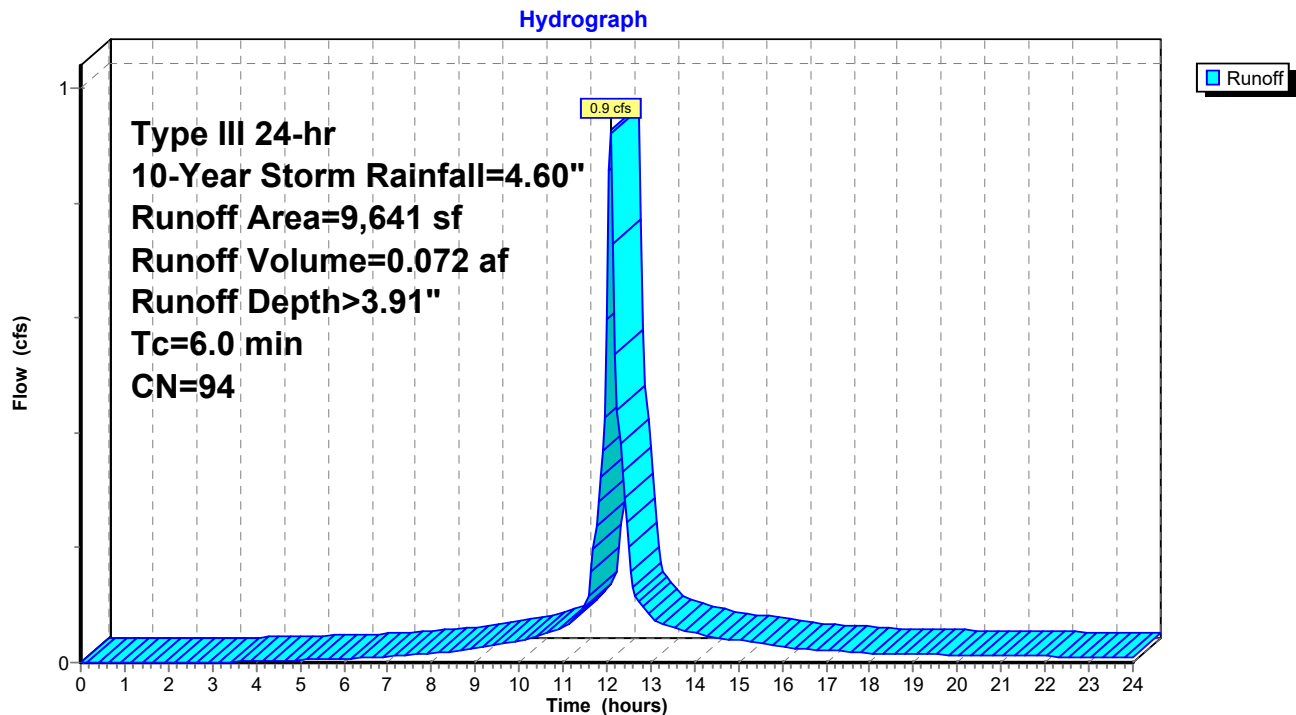
Runoff = 0.9 cfs @ 12.09 hrs, Volume= 0.072 af, Depth> 3.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
9,057	98	Paved parking, HSG A
502	39	Grass cover, Good, HSG A
* 82	40	Porous Pavement
9,641	94	Weighted Average
584		6.06% Pervious Area
9,057		93.94% Impervious Area

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

Subcatchment 2S: POST-2



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Subcatchment 3S: POST-3

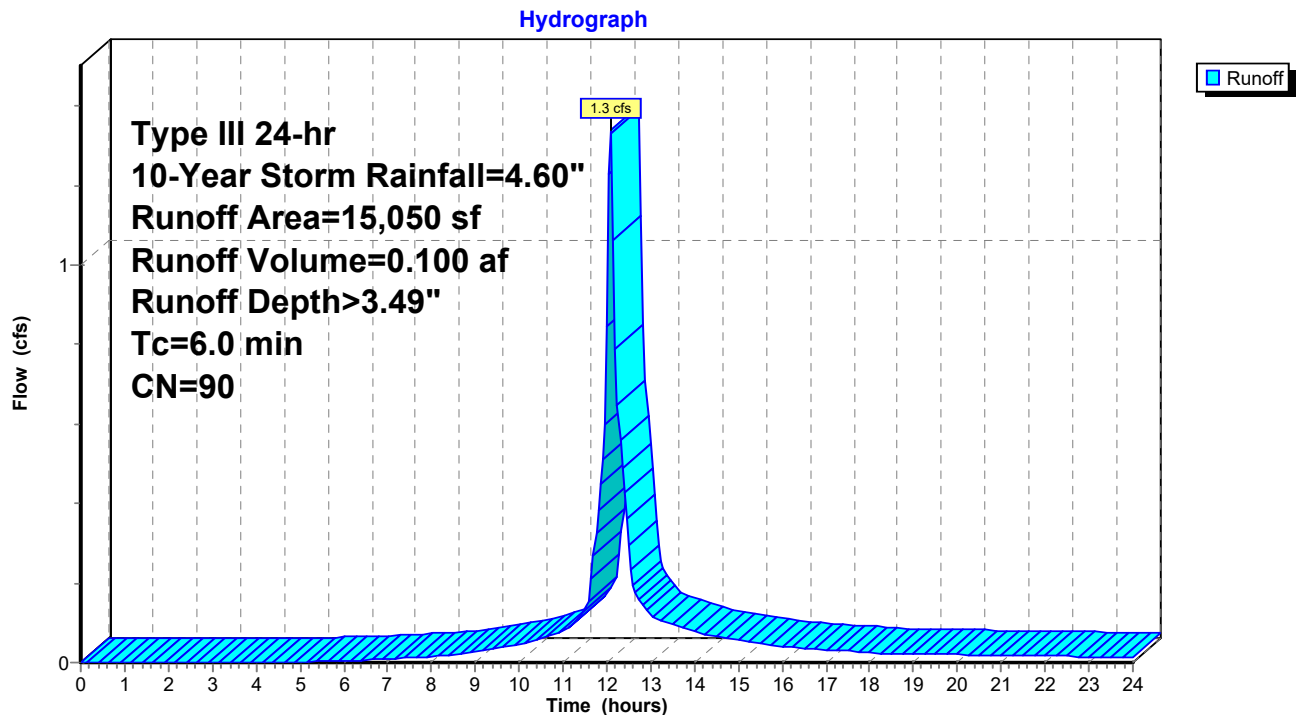
Runoff = 1.3 cfs @ 12.09 hrs, Volume= 0.100 af, Depth> 3.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
13,054	98	Paved parking, HSG A
1,909	39	Grass cover, Good, HSG A
* 87	40	Porous Pavement
15,050	90	Weighted Average
1,996		13.26% Pervious Area
13,054		86.74% Impervious Area

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

Subcatchment 3S: POST-3



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Subcatchment 5S: POST-5

Runoff = 0.5 cfs @ 12.09 hrs, Volume= 0.038 af, Depth> 2.90"

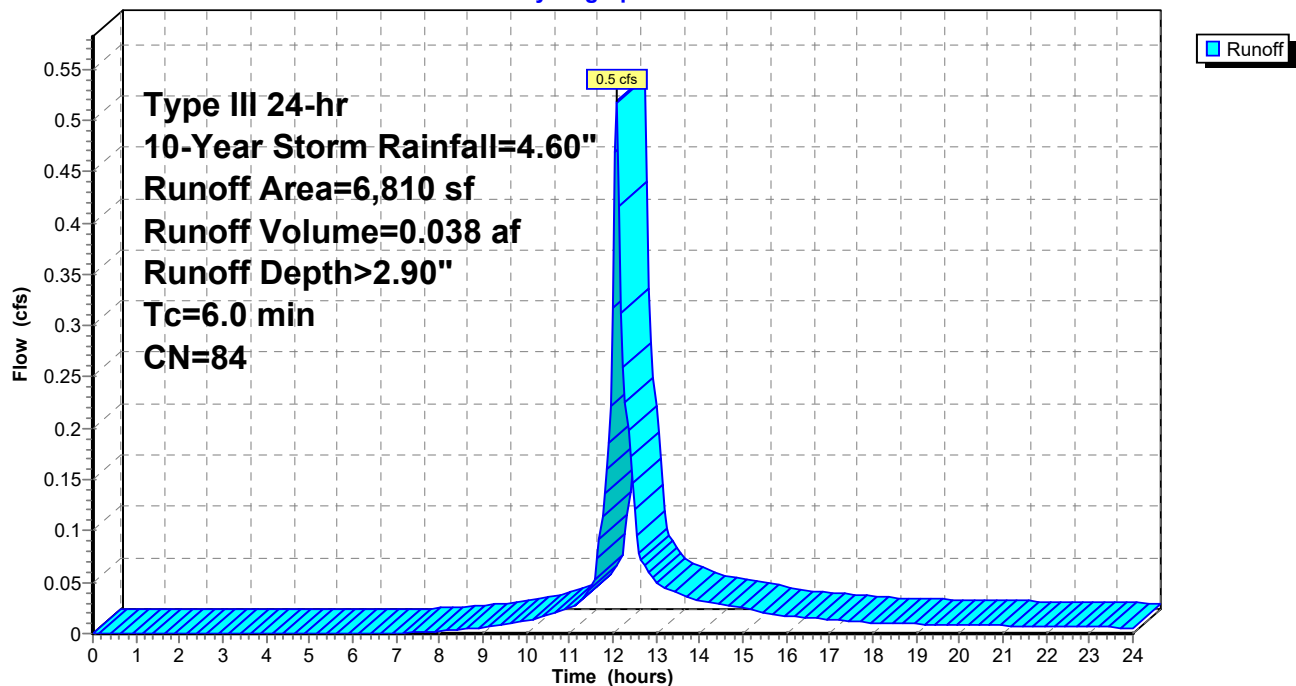
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
5,173	98	Paved parking, HSG A
1,547	39	Grass cover, Good, HSG A
* 90	40	Porous Pavement
6,810	84	Weighted Average
1,637		24.04% Pervious Area
5,173		75.96% Impervious Area

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

Subcatchment 5S: POST-5

Hydrograph



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Subcatchment 6S: POST-6

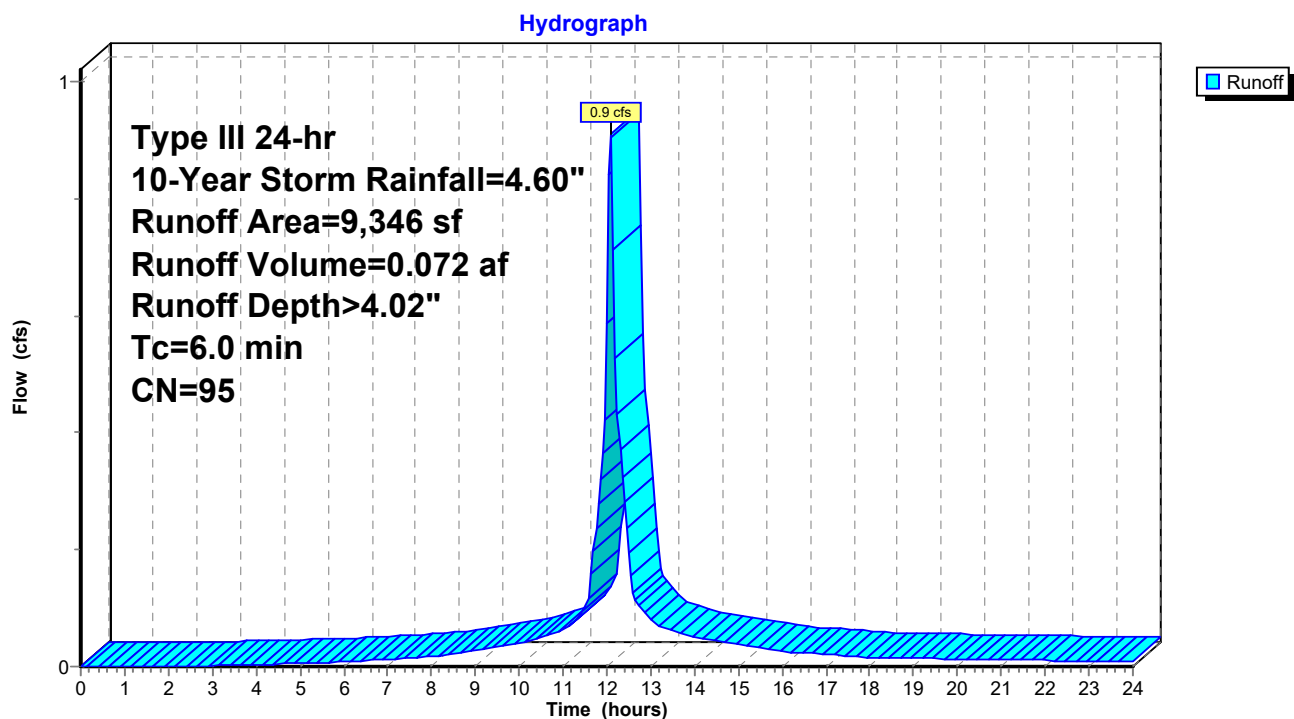
Runoff = 0.9 cfs @ 12.09 hrs, Volume= 0.072 af, Depth> 4.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
8,902	98	Paved parking, HSG A
351	39	Grass cover, Good, HSG A
* 93	40	Porous Pavement
9,346	95	Weighted Average
444		4.75% Pervious Area
8,902		95.25% Impervious Area

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

Subcatchment 6S: POST-6



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Subcatchment 7S: POST-7

Runoff = 0.4 cfs @ 12.09 hrs, Volume= 0.029 af, Depth> 2.63"

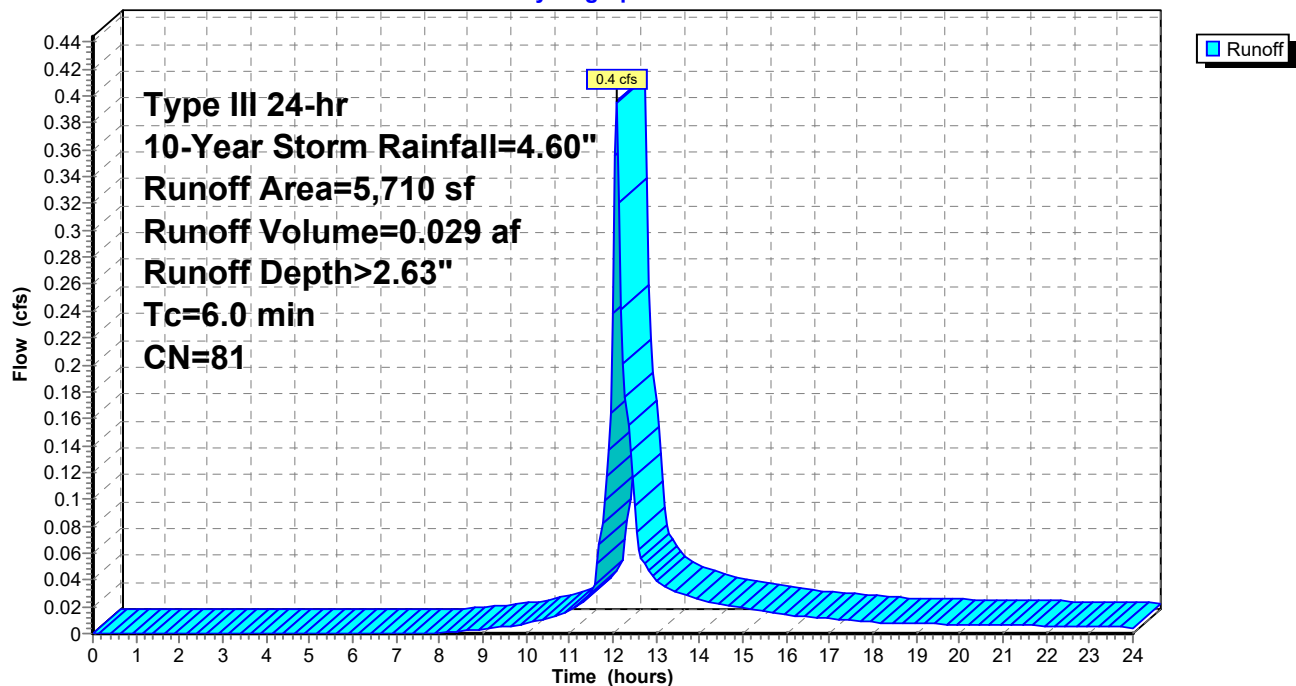
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
4,084	98	Paved parking, HSG A
809	39	Grass cover, Good, HSG A
* 817	40	Porous Pavement
5,710	81	Weighted Average
1,626		28.48% Pervious Area
4,084		71.52% Impervious Area

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

Subcatchment 7S: POST-7

Hydrograph



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POST
Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Subcatchment 8S: POST-8

Runoff = 0.2 cfs @ 12.10 hrs, Volume= 0.014 af, Depth> 2.05"

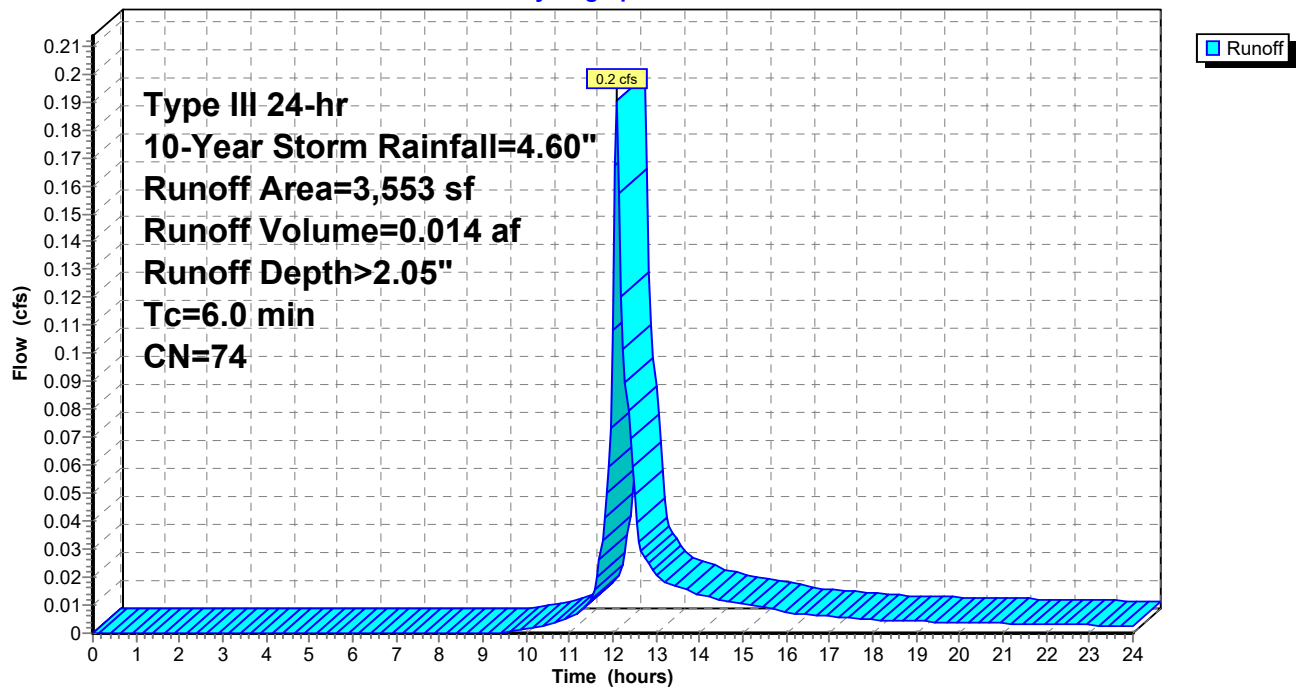
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
2,084	98	Paved parking, HSG A
1,469	39	Grass cover, Good, HSG A
3,553	74	Weighted Average
1,469		41.35% Pervious Area
2,084		58.65% Impervious Area

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

Subcatchment 8S: POST-8

Hydrograph



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Subcatchment 9S: POST-9

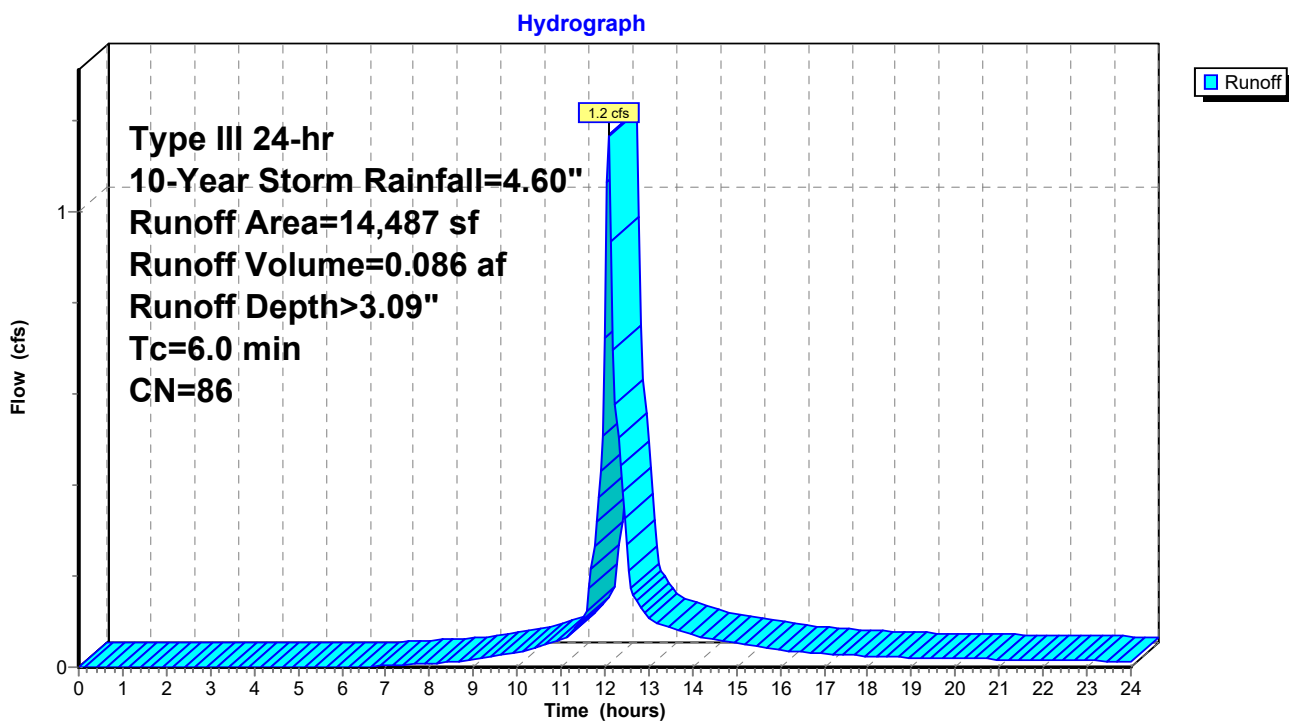
Runoff = 1.2 cfs @ 12.09 hrs, Volume= 0.086 af, Depth> 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
11,494	98	Paved parking, HSG A
2,993	39	Grass cover, Good, HSG A
14,487	86	Weighted Average
2,993		20.66% Pervious Area
11,494		79.34% Impervious Area

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

Subcatchment 9S: POST-9



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Subcatchment 10S: POST-10

Runoff = 0.5 cfs @ 12.09 hrs, Volume= 0.038 af, Depth> 2.81"

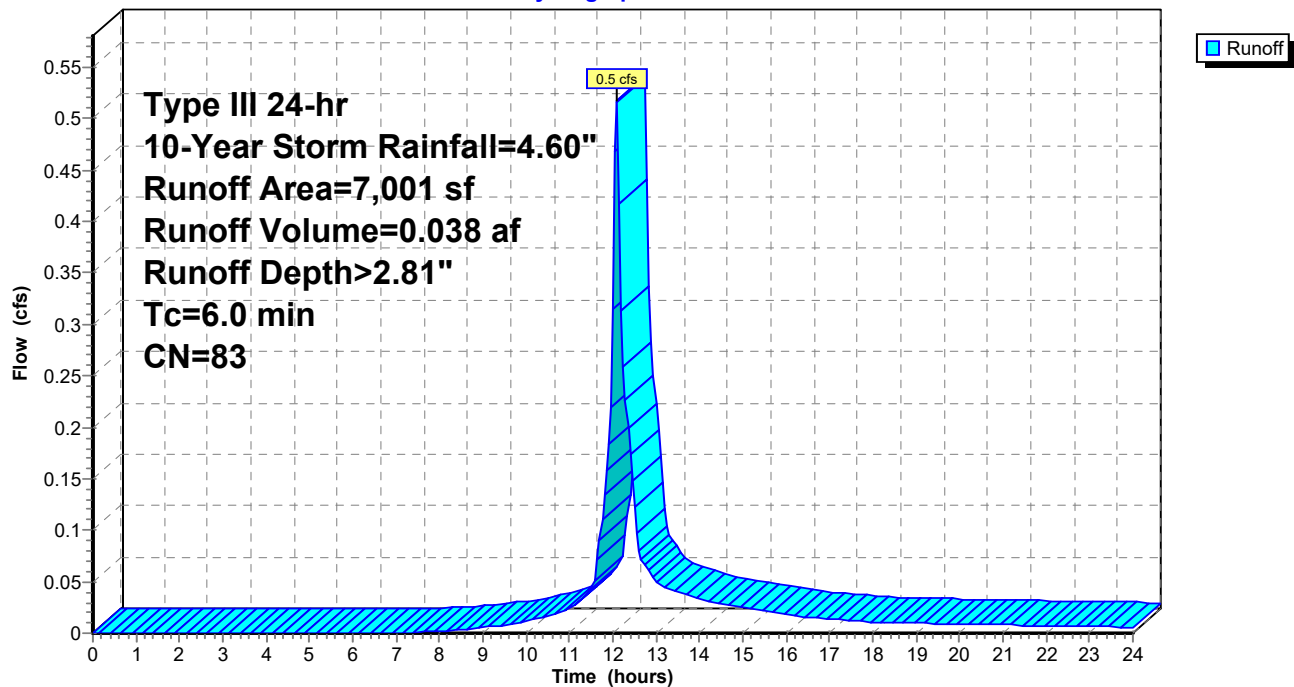
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
5,185	98	Paved parking, HSG A
1,816	39	Grass cover, Good, HSG A
7,001	83	Weighted Average
1,816		25.94% Pervious Area
5,185		74.06% Impervious Area

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

Subcatchment 10S: POST-10

Hydrograph



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POST
Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Subcatchment 11S: POST-11

Runoff = 0.7 cfs @ 12.09 hrs, Volume= 0.053 af, Depth> 2.72"

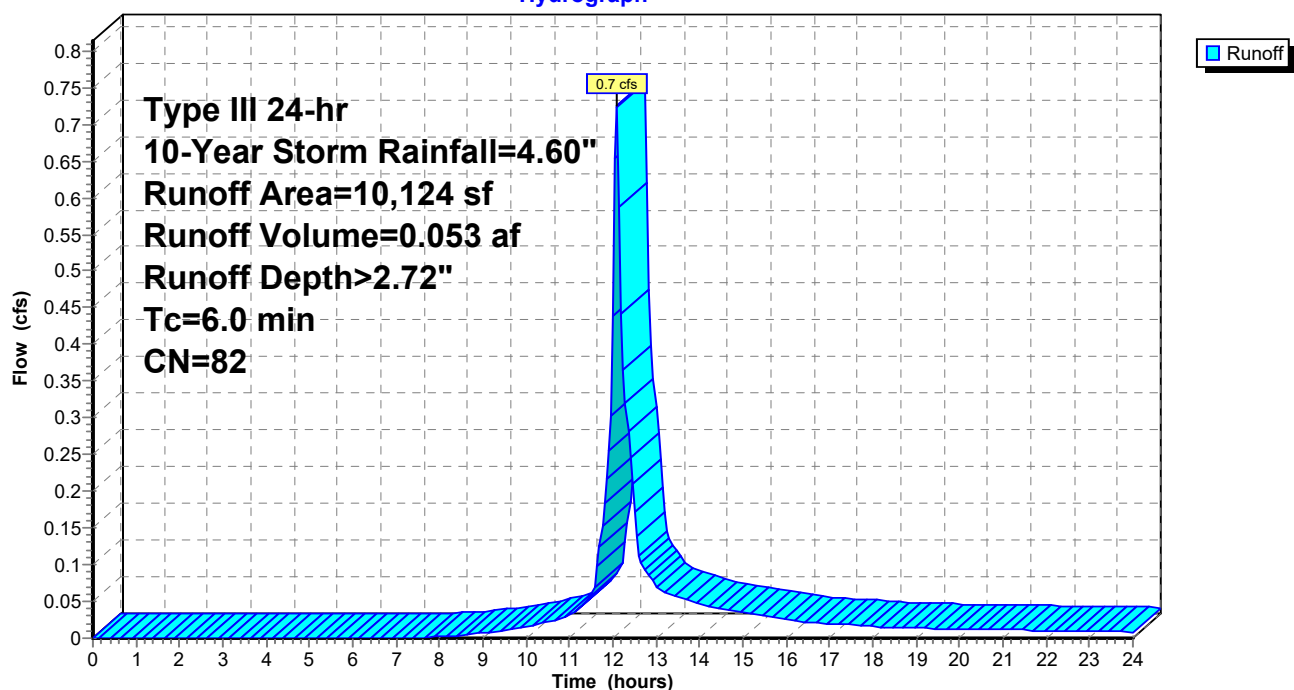
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
7,416	98	Paved parking, HSG A
2,708	39	Grass cover, Good, HSG A
10,124	82	Weighted Average
2,708		26.75% Pervious Area
7,416		73.25% Impervious Area

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

Subcatchment 11S: POST-11

Hydrograph



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POST
Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Subcatchment 12S: POST-12

Runoff = 0.7 cfs @ 12.10 hrs, Volume= 0.052 af, Depth> 2.13"

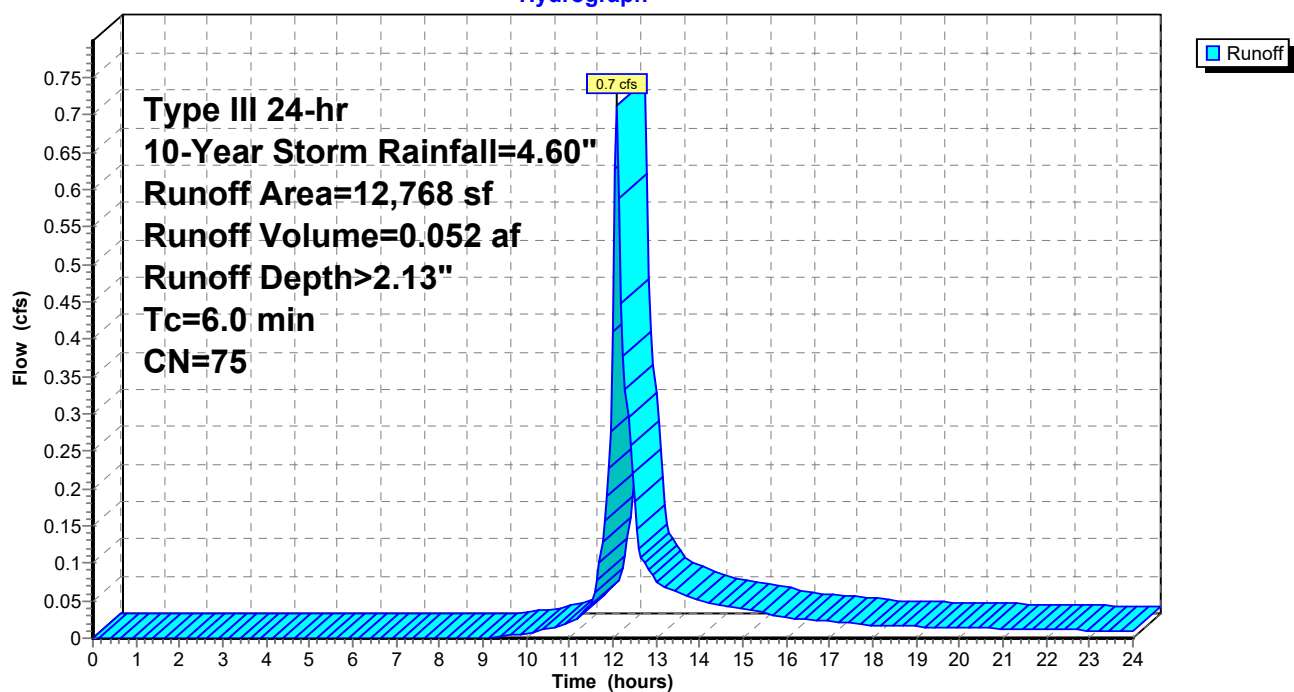
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
7,727	98	Paved parking, HSG A
5,041	39	Grass cover, Good, HSG A
12,768	75	Weighted Average
5,041		39.48% Pervious Area
7,727		60.52% Impervious Area

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

Subcatchment 12S: POST-12

Hydrograph



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Subcatchment 13S: POST-13

Runoff = 0.8 cfs @ 12.09 hrs, Volume= 0.061 af, Depth> 2.54"

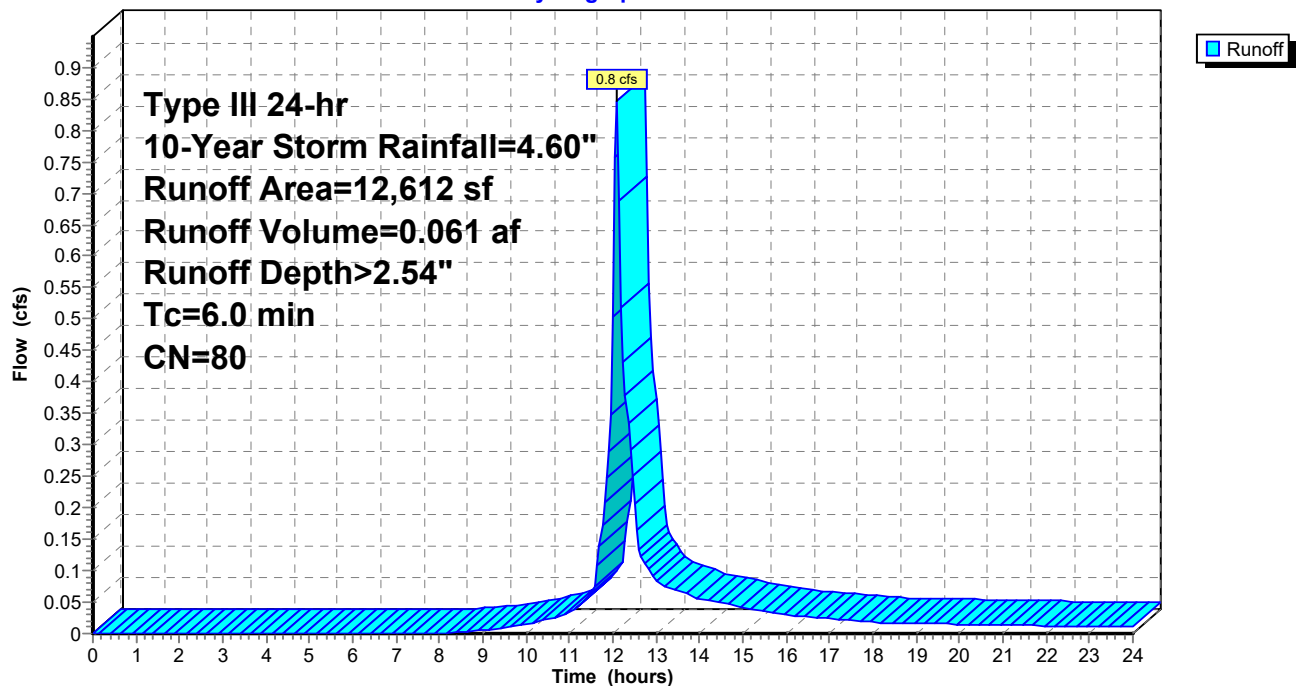
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=4.60"

Area (sf)	CN	Description
8,813	98	Paved parking, HSG A
3,299	39	Grass cover, Good, HSG A
* 500	40	Porous Pavement
12,612	80	Weighted Average
3,799		30.12% Pervious Area
8,813		69.88% Impervious Area

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

Subcatchment 13S: POST-13

Hydrograph



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Summary for Pond 1P: CB1

Inflow Area = 0.13 ac, 70.24% Impervious, Inflow Depth > 2.63" for 10-Year Storm event
Inflow = 0.4 cfs @ 12.09 hrs, Volume= 0.029 af
Outflow = 0.4 cfs @ 12.09 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.0 min
Primary = 0.4 cfs @ 12.09 hrs, Volume= 0.029 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 21.10' @ 12.21 hrs

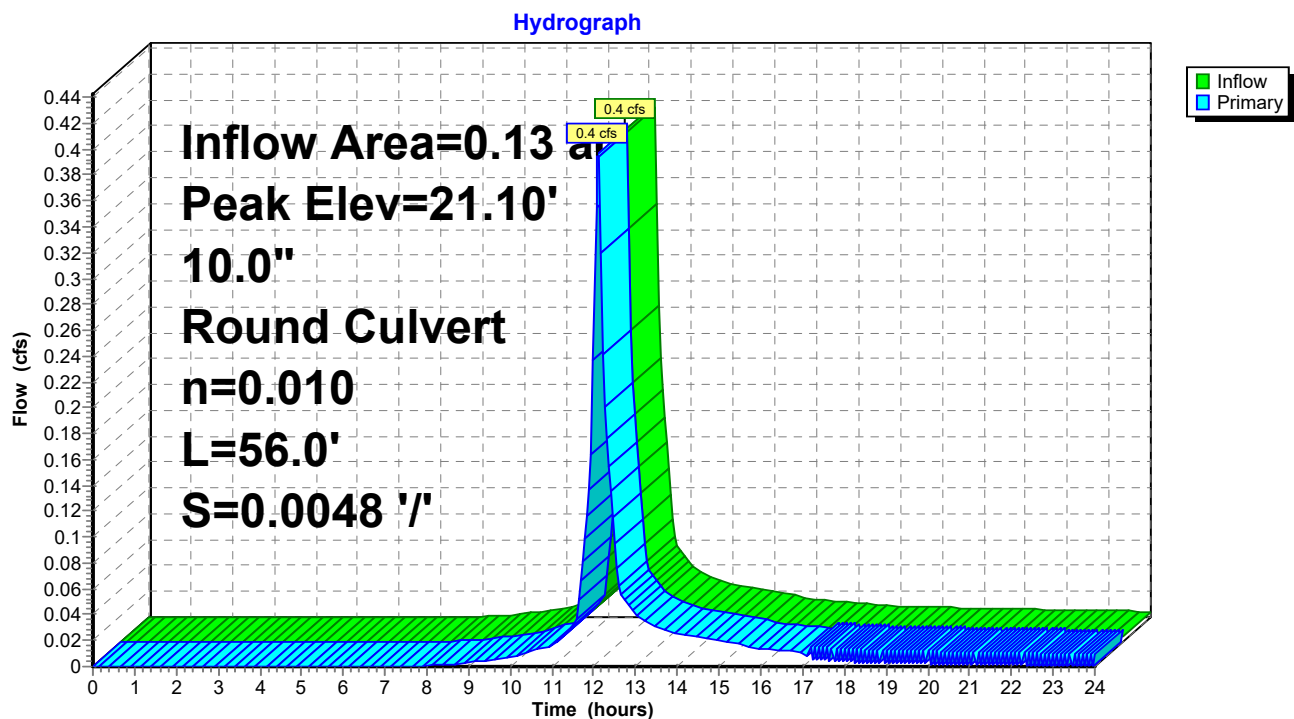
Flood Elev= 22.34'

Device	Routing	Invert	Outlet Devices
#1	Primary	18.34'	10.0" Round Culvert L= 56.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.34' / 18.07' S= 0.0048 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.0 cfs @ 12.09 hrs HW=20.58' TW=20.86' (Dynamic Tailwater)

↑1=Culvert (Controls 0.0 cfs)

Pond 1P: CB1



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Summary for Pond 2P: CB2

Inflow Area = 0.35 ac, 85.14% Impervious, Inflow Depth > 3.44" for 10-Year Storm event
Inflow = 1.3 cfs @ 12.09 hrs, Volume= 0.101 af
Outflow = 1.3 cfs @ 12.09 hrs, Volume= 0.101 af, Atten= 0%, Lag= 0.0 min
Primary = 1.3 cfs @ 12.09 hrs, Volume= 0.101 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

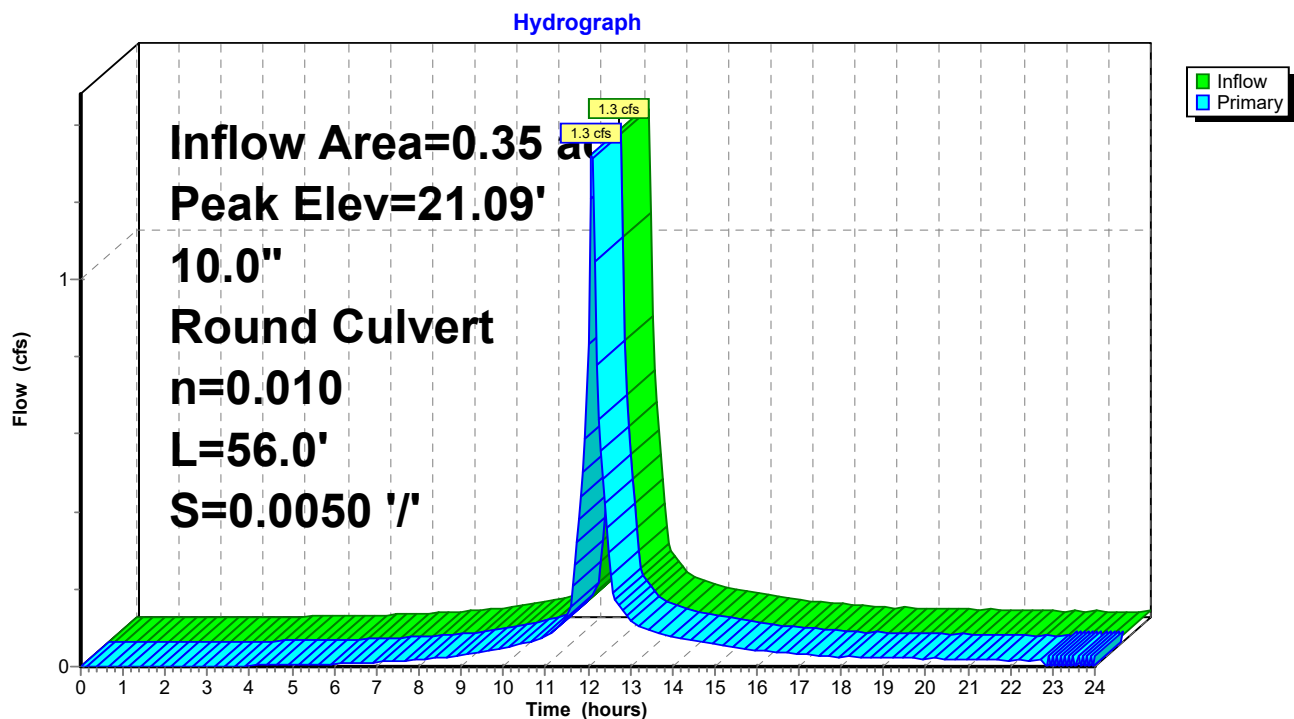
Peak Elev= 21.09' @ 12.16 hrs

Flood Elev= 22.31'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.97'	10.0" Round Culvert L= 56.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.97' / 17.69' S= 0.0050 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.6 cfs @ 12.09 hrs HW=20.84' TW=20.76' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 0.6 cfs @ 1.07 fps)

Pond 2P: CB2



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Pond 3P: CB3

Inflow Area = 0.70 ac, 85.93% Impervious, Inflow Depth > 3.46" for 10-Year Storm event
Inflow = 2.7 cfs @ 12.09 hrs, Volume= 0.201 af
Outflow = 2.7 cfs @ 12.09 hrs, Volume= 0.201 af, Atten= 0%, Lag= 0.0 min
Primary = 2.7 cfs @ 12.09 hrs, Volume= 0.201 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 20.89' @ 12.14 hrs

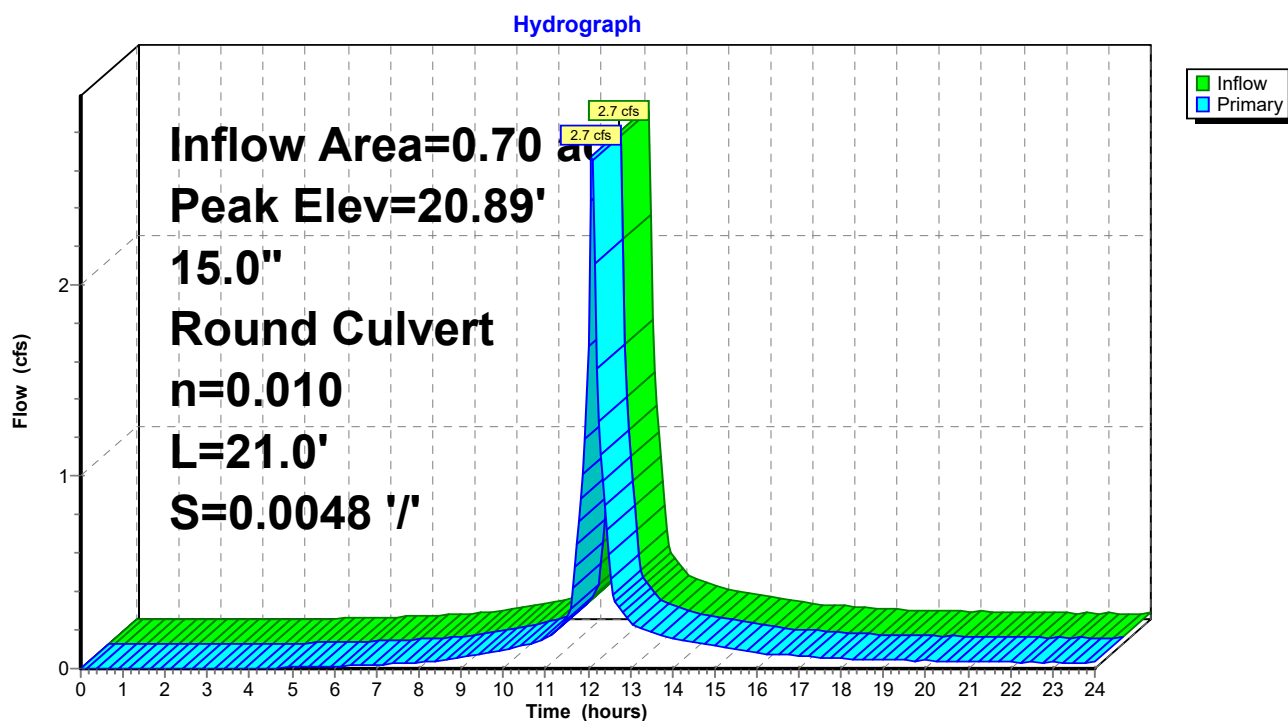
Flood Elev= 22.36'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.58'	15.0" Round Culvert L= 21.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.58' / 17.48' S= 0.0048 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.6 cfs @ 12.09 hrs HW=20.76' TW=20.64' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 1.6 cfs @ 1.30 fps)

Pond 3P: CB3



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Summary for Pond 4P: CB4

Inflow Area = 0.50 ac, 83.05% Impervious, Inflow Depth > 3.31" for 10-Year Storm event
Inflow = 1.8 cfs @ 12.09 hrs, Volume= 0.138 af
Outflow = 1.8 cfs @ 12.09 hrs, Volume= 0.138 af, Atten= 0%, Lag= 0.0 min
Primary = 1.8 cfs @ 12.09 hrs, Volume= 0.138 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 20.73' @ 12.15 hrs

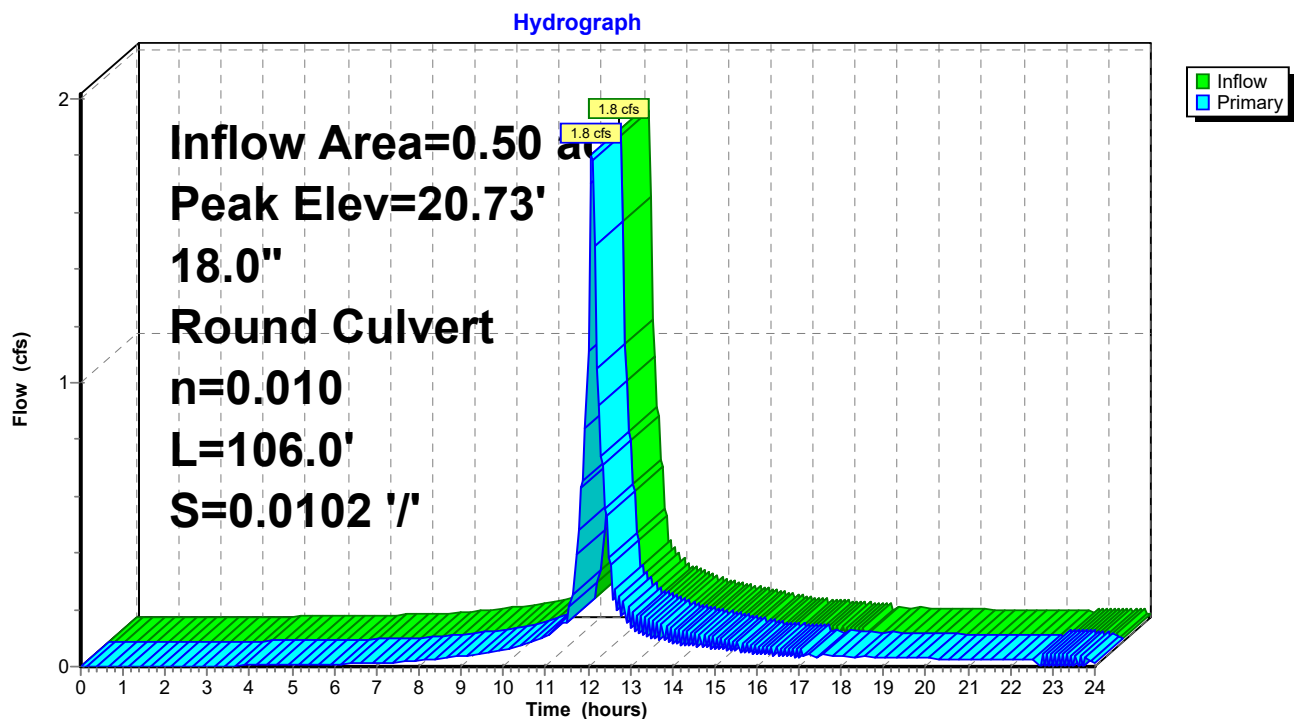
Flood Elev= 21.87'

Device	Routing	Invert	Outlet Devices
#1	Primary	15.72'	18.0" Round Culvert L= 106.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.72' / 14.64' S= 0.0102 1/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.09 hrs HW=20.50' TW=20.63' (Dynamic Tailwater)

↑1=Culvert (Controls 0.0 cfs)

Pond 4P: CB4



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Summary for Pond 5P: CB5

Inflow Area = 0.35 ac, 86.25% Impervious, Inflow Depth > 3.49" for 10-Year Storm event
Inflow = 1.3 cfs @ 12.08 hrs, Volume= 0.101 af
Outflow = 1.3 cfs @ 12.08 hrs, Volume= 0.101 af, Atten= 0%, Lag= 0.0 min
Primary = 1.3 cfs @ 12.08 hrs, Volume= 0.101 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 20.75' @ 12.20 hrs

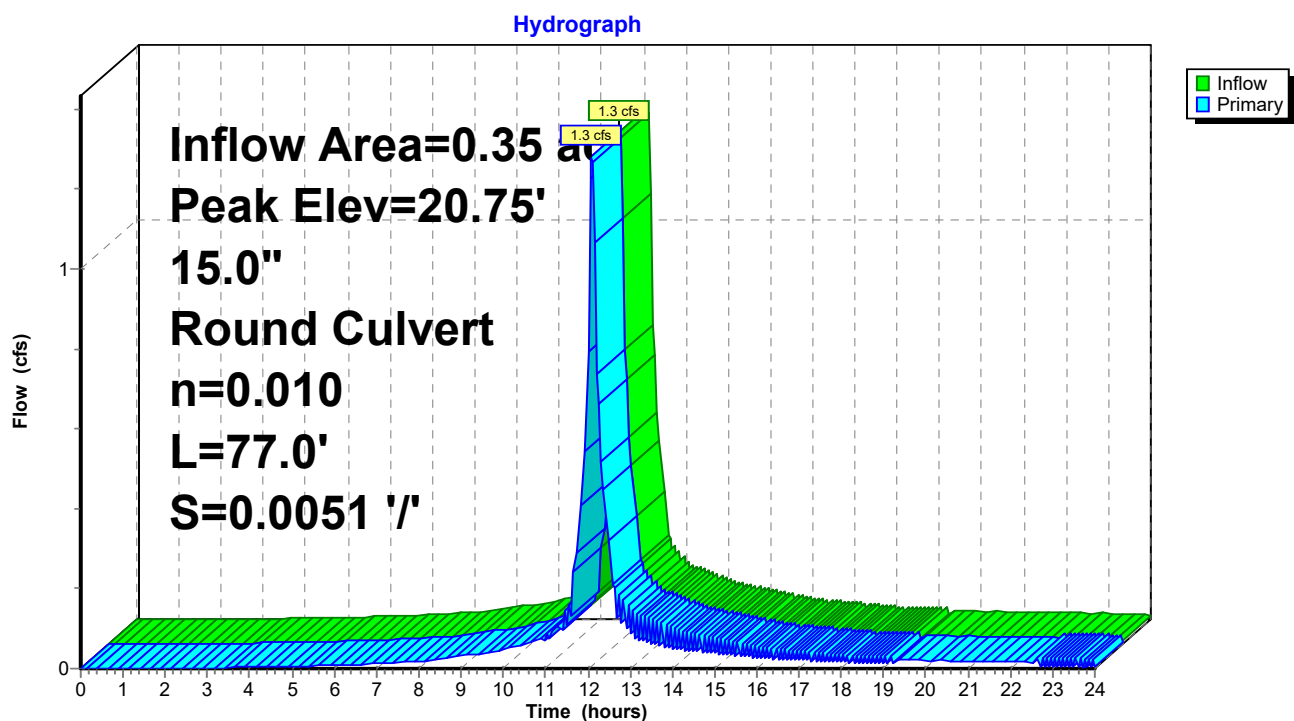
Flood Elev= 21.28'

Device	Routing	Invert	Outlet Devices
#1	Primary	16.90'	15.0" Round Culvert L= 77.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.90' / 16.51' S= 0.0051 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.0 cfs @ 12.08 hrs HW=20.32' TW=20.48' (Dynamic Tailwater)

↑1=Culvert (Controls 0.0 cfs)

Pond 5P: CB5



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Summary for Pond 6P: CB6

Inflow Area = 0.13 ac, 71.52% Impervious, Inflow Depth > 2.63" for 10-Year Storm event
Inflow = 0.4 cfs @ 12.09 hrs, Volume= 0.029 af
Outflow = 0.4 cfs @ 12.07 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.0 min
Primary = 0.4 cfs @ 12.07 hrs, Volume= 0.029 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 20.76' @ 12.25 hrs

Flood Elev= 21.28'

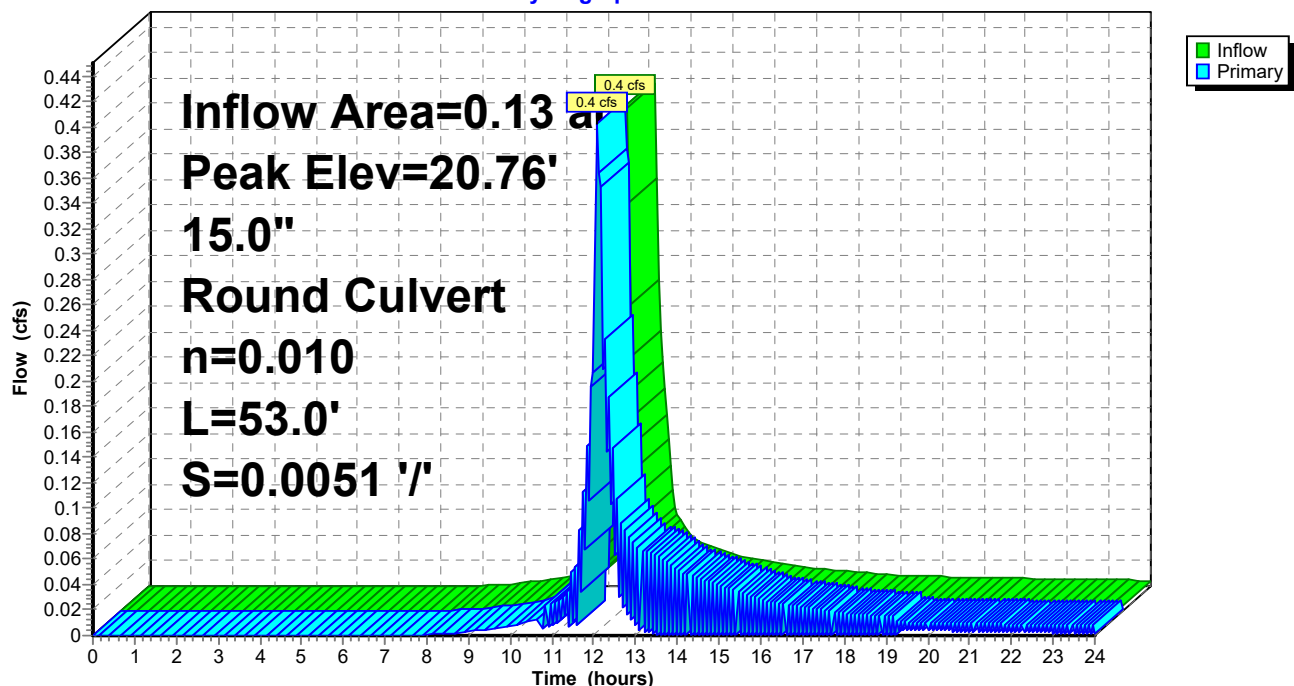
Device	Routing	Invert	Outlet Devices
#1	Primary	17.28'	15.0" Round Culvert L= 53.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.28' / 17.01' S= 0.0051 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.0 cfs @ 12.07 hrs HW=20.16' TW=20.28' (Dynamic Tailwater)

↑1=Culvert (Controls 0.0 cfs)

Pond 6P: CB6

Hydrograph



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Summary for Pond 7P: CB7

Inflow Area = 0.29 ac, 60.52% Impervious, Inflow Depth > 2.13" for 10-Year Storm event
Inflow = 0.7 cfs @ 12.10 hrs, Volume= 0.052 af
Outflow = 0.7 cfs @ 12.10 hrs, Volume= 0.052 af, Atten= 0%, Lag= 0.0 min
Primary = 0.7 cfs @ 12.10 hrs, Volume= 0.052 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

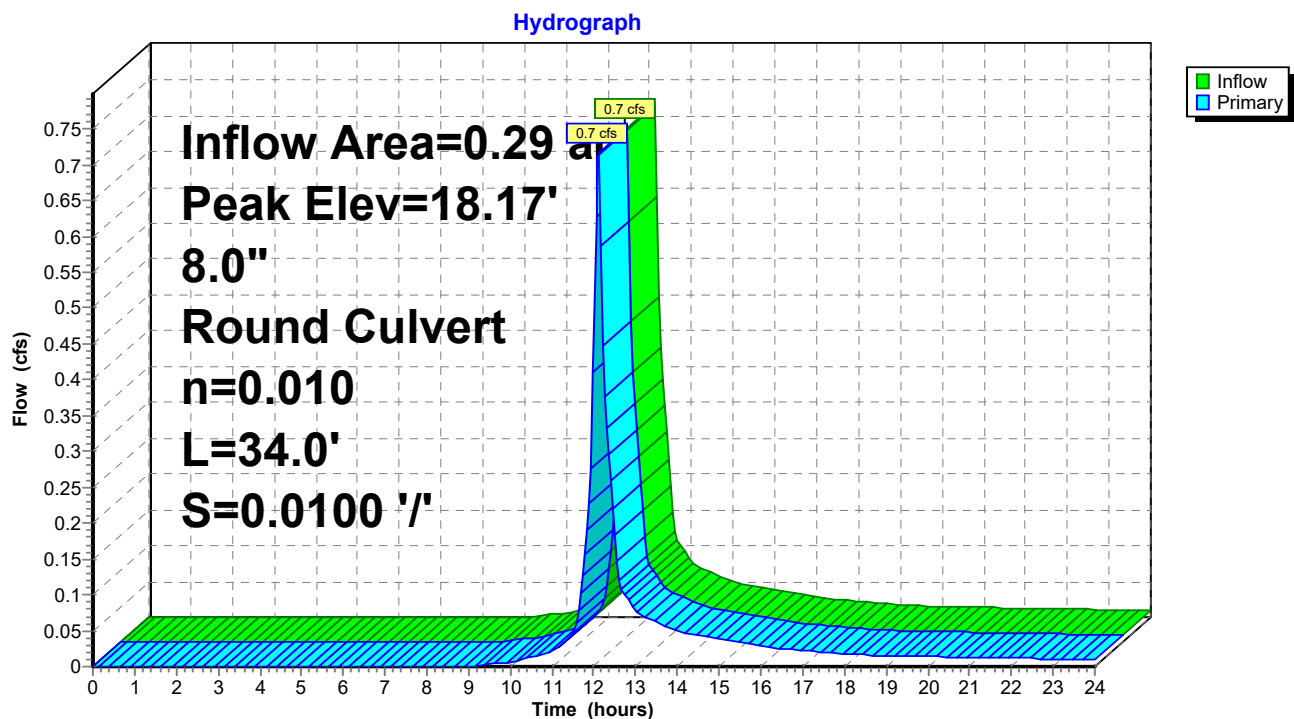
Peak Elev= 18.17' @ 12.12 hrs

Flood Elev= 23.82'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.40'	8.0" Round Culvert L= 34.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.40' / 17.06' S= 0.0100 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.6 cfs @ 12.10 hrs HW=18.15' TW=17.93' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 0.6 cfs @ 1.78 fps)

Pond 7P: CB7



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Summary for Pond 8P: CB8

Inflow Area = 0.29 ac, 69.88% Impervious, Inflow Depth > 2.54" for 10-Year Storm event
Inflow = 0.8 cfs @ 12.09 hrs, Volume= 0.061 af
Outflow = 0.8 cfs @ 12.09 hrs, Volume= 0.061 af, Atten= 0%, Lag= 0.0 min
Primary = 0.8 cfs @ 12.09 hrs, Volume= 0.061 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.38' @ 12.12 hrs

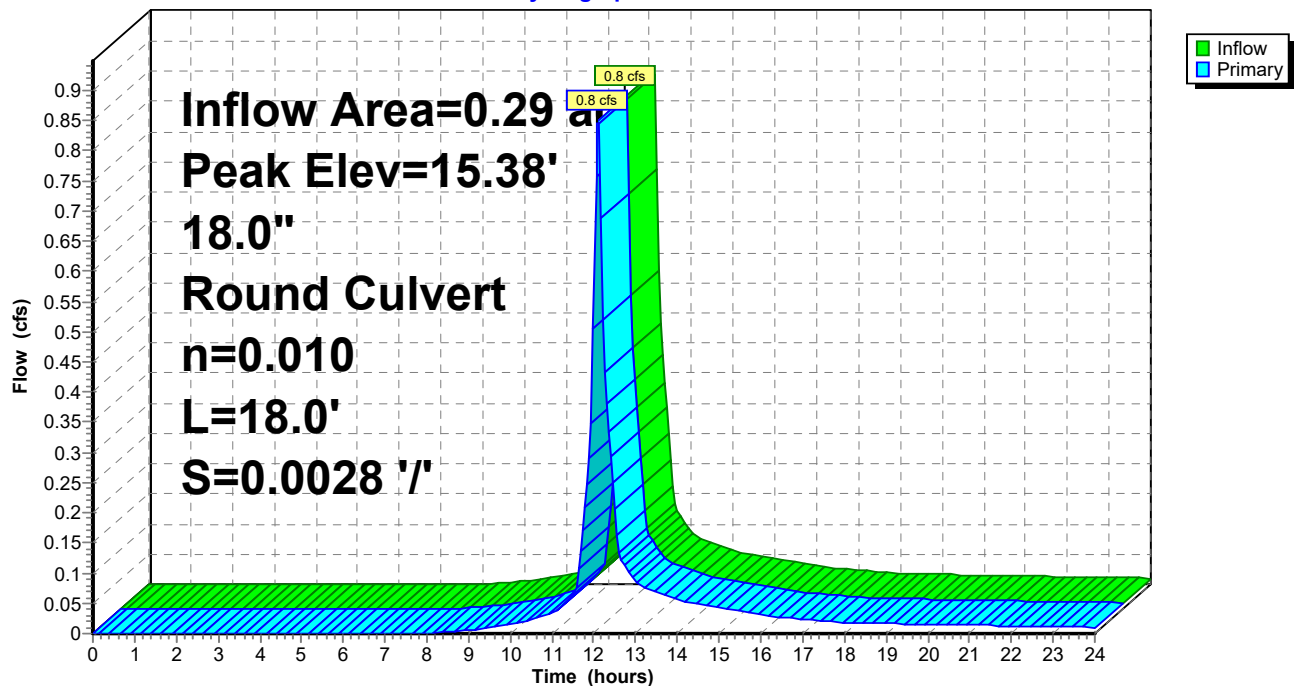
Flood Elev= 23.39'

Device	Routing	Invert	Outlet Devices
#1	Primary	14.85'	18.0" Round Culvert L= 18.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.85' / 14.80' S= 0.0028 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.7 cfs @ 12.09 hrs HW=15.37' TW=15.23' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.7 cfs @ 2.03 fps)

Pond 8P: CB8

Hydrograph



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Summary for Pond 9P: DMH1

Inflow Area = 1.20 ac, 84.73% Impervious, Inflow Depth > 3.40" for 10-Year Storm event
 Inflow = 4.5 cfs @ 12.09 hrs, Volume= 0.340 af
 Outflow = 4.5 cfs @ 12.09 hrs, Volume= 0.340 af, Atten= 0%, Lag= 0.0 min
 Primary = 4.5 cfs @ 12.09 hrs, Volume= 0.340 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 20.68' @ 12.11 hrs

Flood Elev= 22.85'

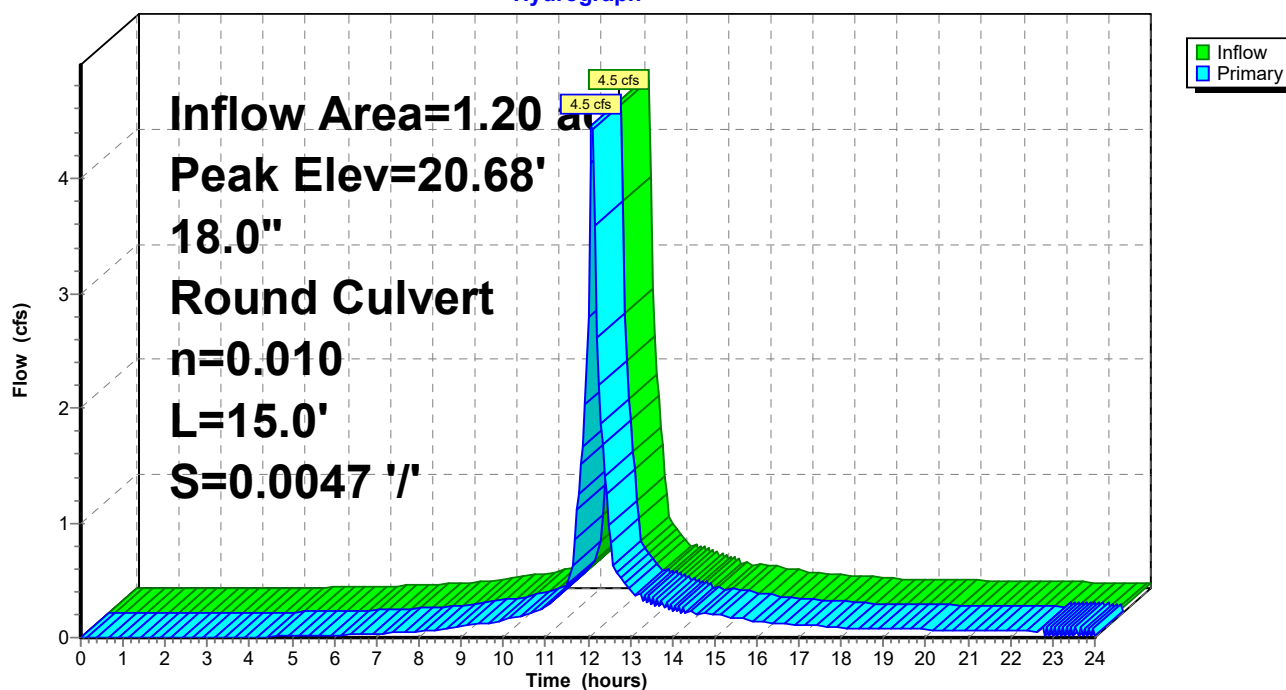
Device	Routing	Invert	Outlet Devices
#1	Primary	15.78'	18.0" Round Culvert L= 15.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.78' / 15.71' S= 0.0047 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.0 cfs @ 12.09 hrs HW=20.64' TW=20.28' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 4.0 cfs @ 2.27 fps)

Pond 9P: DMH1

Hydrograph



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Summary for Pond 11P: Ex CB1

Inflow Area = 0.39 ac, 73.58% Impervious, Inflow Depth > 2.76" for 10-Year Storm event
Inflow = 1.2 cfs @ 12.09 hrs, Volume= 0.090 af
Outflow = 1.2 cfs @ 12.09 hrs, Volume= 0.090 af, Atten= 0%, Lag= 0.0 min
Primary = 1.2 cfs @ 12.09 hrs, Volume= 0.090 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 19.14' @ 12.09 hrs

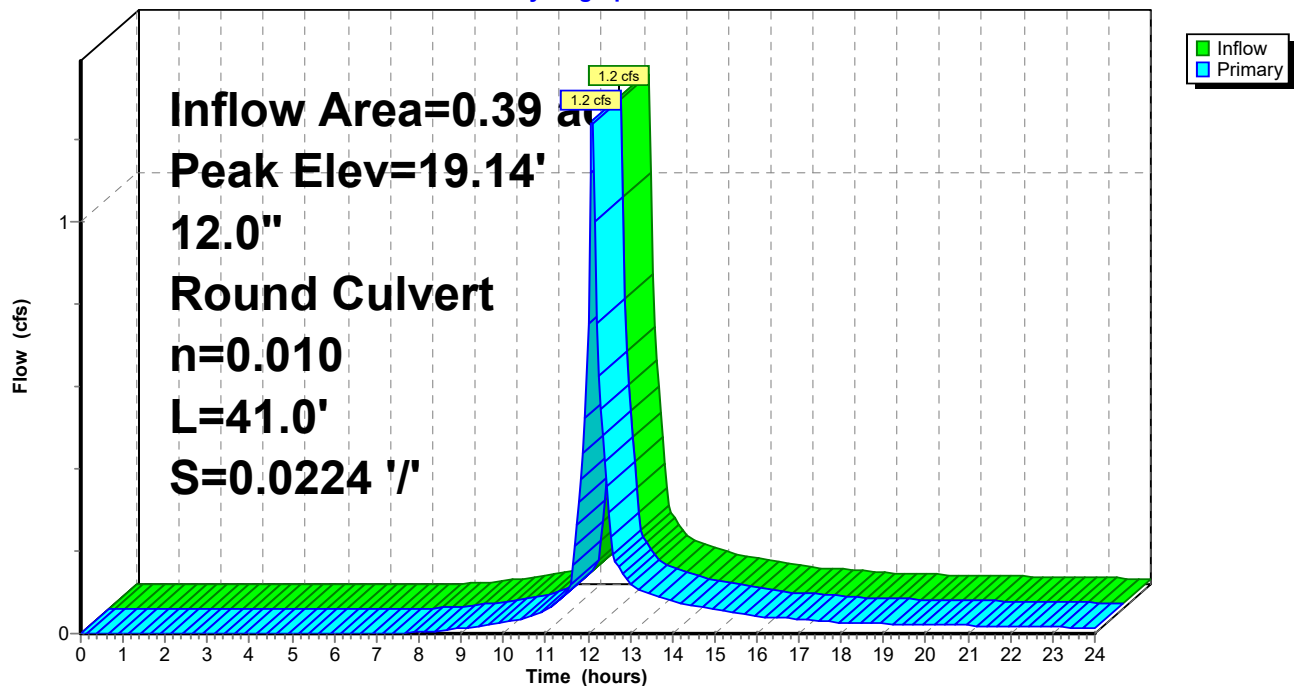
Flood Elev= 22.02'

Device	Routing	Invert	Outlet Devices
#1	Primary	18.47'	12.0" Round Culvert L= 41.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.47' / 17.55' S= 0.0224 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.2 cfs @ 12.09 hrs HW=19.14' TW=18.16' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 1.2 cfs @ 2.19 fps)

Pond 11P: Ex CB1

Hydrograph



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Summary for Pond 12P: Ex CB2

Inflow Area = 0.08 ac, 58.65% Impervious, Inflow Depth > 2.05" for 10-Year Storm event
Inflow = 0.2 cfs @ 12.10 hrs, Volume= 0.014 af
Outflow = 0.2 cfs @ 12.10 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min
Primary = 0.2 cfs @ 12.10 hrs, Volume= 0.014 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 18.41' @ 12.10 hrs

Flood Elev= 22.15'

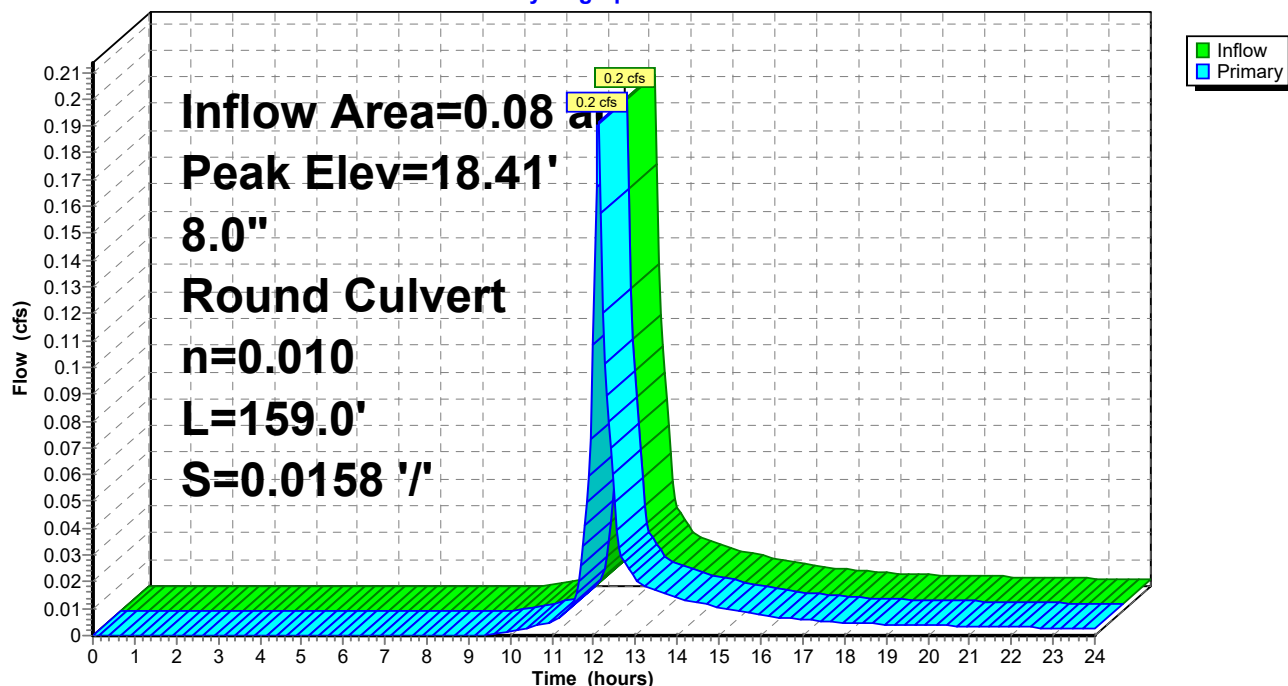
Device	Routing	Invert	Outlet Devices
#1	Primary	18.14'	8.0" Round Culvert L= 159.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.14' / 15.62' S= 0.0158 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.2 cfs @ 12.10 hrs HW=18.41' TW=0.00' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 0.2 cfs @ 1.40 fps)

Pond 12P: Ex CB2

Hydrograph



C2. Post

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Summary for Pond 13P: CMP Peak Detention

Inflow = 4.5 cfs @ 12.10 hrs, Volume= 0.247 af
 Outflow = 2.9 cfs @ 12.20 hrs, Volume= 0.247 af, Atten= 35%, Lag= 6.1 min
 Primary = 2.9 cfs @ 12.20 hrs, Volume= 0.247 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 18.79' @ 12.20 hrs Surf.Area= 696 sf Storage= 1,741 cf

Flood Elev= 23.00' Surf.Area= 696 sf Storage= 2,403 cf

Plug-Flow detention time= 7.0 min calculated for 0.246 af (100% of inflow)

Center-of-Mass det. time= 6.9 min (797.4 - 790.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	14.71'	0 cf	8.00'W x 87.00'L x 6.00'H Field A 4,176 cf Overall - 2,403 cf Embedded = 1,773 cf x 0.0% Voids
#2A	14.71'	2,403 cf	CMP Round 72 x 4 Inside #1 Effective Size= 72.0"W x 72.0"H => 28.27 sf x 20.00'L = 565.5 cf Overall Size= 72.0"W x 72.0"H x 20.00'L Row Length Adjustment= +5.00' x 28.27 sf x 1 rows
		2,403 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	14.71'	18.0" Round Culvert L= 20.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 14.71' / 14.33' S= 0.0190 ' S= 0.0190 ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf
#2	Device 1	14.71'	6.1" Vert. Orifice/Grate C= 0.600
#3	Device 1	17.21'	5.7" Vert. Orifice/Grate C= 0.600
#4	Device 1	18.79'	4.8" Vert. Orifice/Grate C= 0.600
#5	Device 1	20.05'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 5.34 5.40 5.46 5.52 5.58 5.64 5.70 5.76 5.82 5.88 5.94 6.00 Width (feet) 3.75 3.60 3.43 3.26 3.06 2.85 2.62 2.35 2.05 1.68 1.19 0.00

Primary OutFlow Max=2.9 cfs @ 12.20 hrs HW=18.79' TW=14.93' (Dynamic Tailwater)

- 1=Culvert (Passes 2.9 cfs of 15.5 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 1.9 cfs @ 9.41 fps)
- 3=Orifice/Grate (Orifice Controls 1.0 cfs @ 5.57 fps)
- 4=Orifice/Grate (Controls 0.0 cfs)
- 5=Custom Weir/Orifice (Controls 0.0 cfs)

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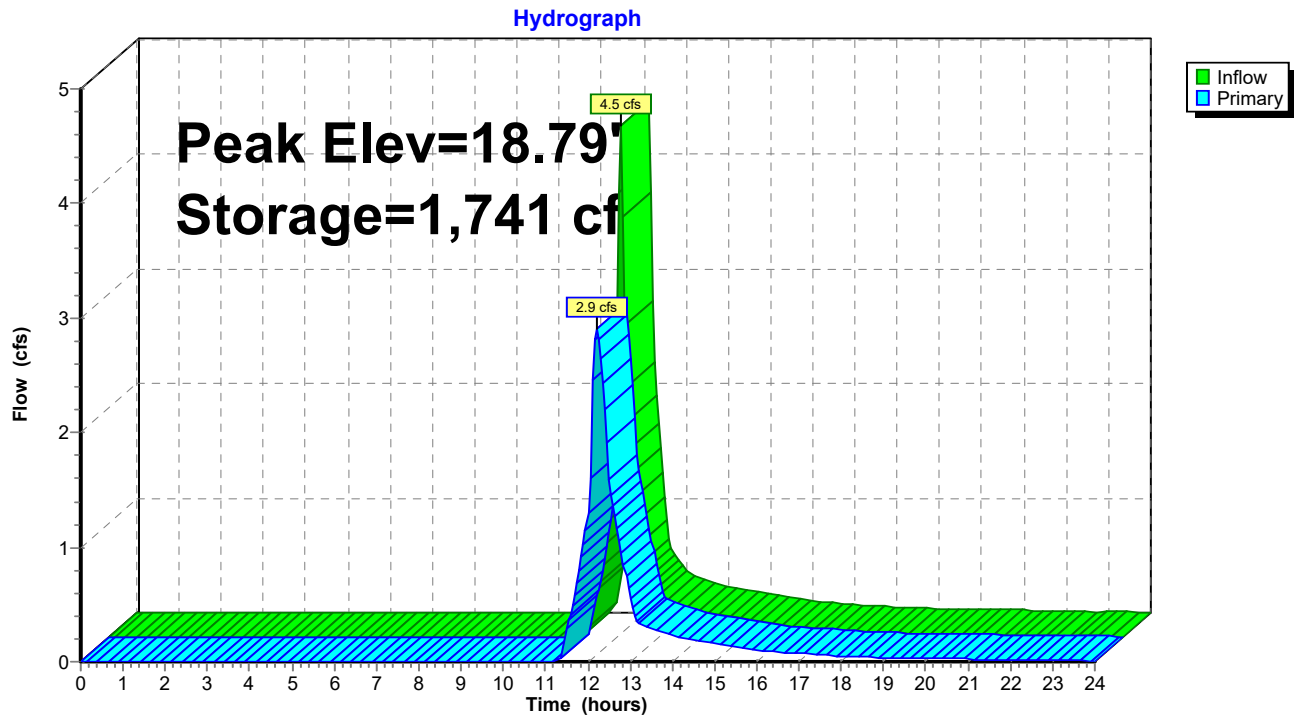
POST

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Pond 13P: CMP Peak Detention



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Summary for Pond 14P: CONTECH WQv CMP Det & SF System

Inflow Area = 1.20 ac, 84.73% Impervious, Inflow Depth > 3.40" for 10-Year Storm event
 Inflow = 4.5 cfs @ 12.09 hrs, Volume= 0.340 af
 Outflow = 4.5 cfs @ 12.10 hrs, Volume= 0.299 af, Atten= 0%, Lag= 0.5 min
 Primary = 0.0 cfs @ 12.08 hrs, Volume= 0.052 af
 Secondary = 4.5 cfs @ 12.10 hrs, Volume= 0.247 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Starting Elev= 15.71' Surf.Area= 683 sf Storage= 96 cf

Peak Elev= 20.29' @ 12.10 hrs Surf.Area= 683 sf Storage= 2,042 cf (1,946 cf above start)

Flood Elev= 23.00' Surf.Area= 683 sf Storage= 2,114 cf (2,019 cf above start)

Plug-Flow detention time= 88.7 min calculated for 0.296 af (87% of inflow)

Center-of-Mass det. time= 28.4 min (819.7 - 791.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	15.21'	0 cf	7.50'W x 91.00'L x 5.50'H Field A 3,754 cf Overall - 2,114 cf Embedded = 1,639 cf x 0.0% Voids
#2A	15.21'	2,114 cf	CMP Round 66 x 4 Inside #1 Effective Size= 66.0"W x 66.0"H => 23.76 sf x 20.00'L = 475.2 cf Overall Size= 66.0"W x 66.0"H x 20.00'L Row Length Adjustment= +9.00' x 23.76 sf x 1 rows
		2,114 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	14.71'	Tube/Siphon/Float Valve X 6.00 Starts@17.76' Breaks@15.38' 0.336" Diameter, C= 0.600, 0.263" Trickle Diameter
#2	Device 1	15.71'	12.0" Round CMP_Round 12" L= 10.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 15.71' / 15.68' S= 0.0030 ' / Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#3	Secondary	19.78'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 4.57 4.62 4.67 4.73 4.79 4.84 4.89 4.95 5.00 5.06 5.12 5.17 5.22 5.28 5.33 5.39 5.45 5.50 Width (feet) 4.13 4.03 3.93 3.82 3.70 3.57 3.44 3.30 3.15 2.98 2.81 2.61 2.40 2.16 1.88 1.54 1.09 0.00

Primary OutFlow Max=0.0 cfs @ 12.08 hrs HW=20.28' TW=14.80' (Dynamic Tailwater)↑ **1=Tube/Siphon/Float Valve** (Orifice Controls 0.0 cfs @ 11.27 fps)↑ **2=CMP_Round 12"** (Passes 0.0 cfs of 7.6 cfs potential flow)**Secondary OutFlow** Max=4.4 cfs @ 12.10 hrs HW=20.29' TW=18.09' (Dynamic Tailwater)↑ **3=Custom Weir/Orifice** (Weir Controls 4.4 cfs @ 2.42 fps)

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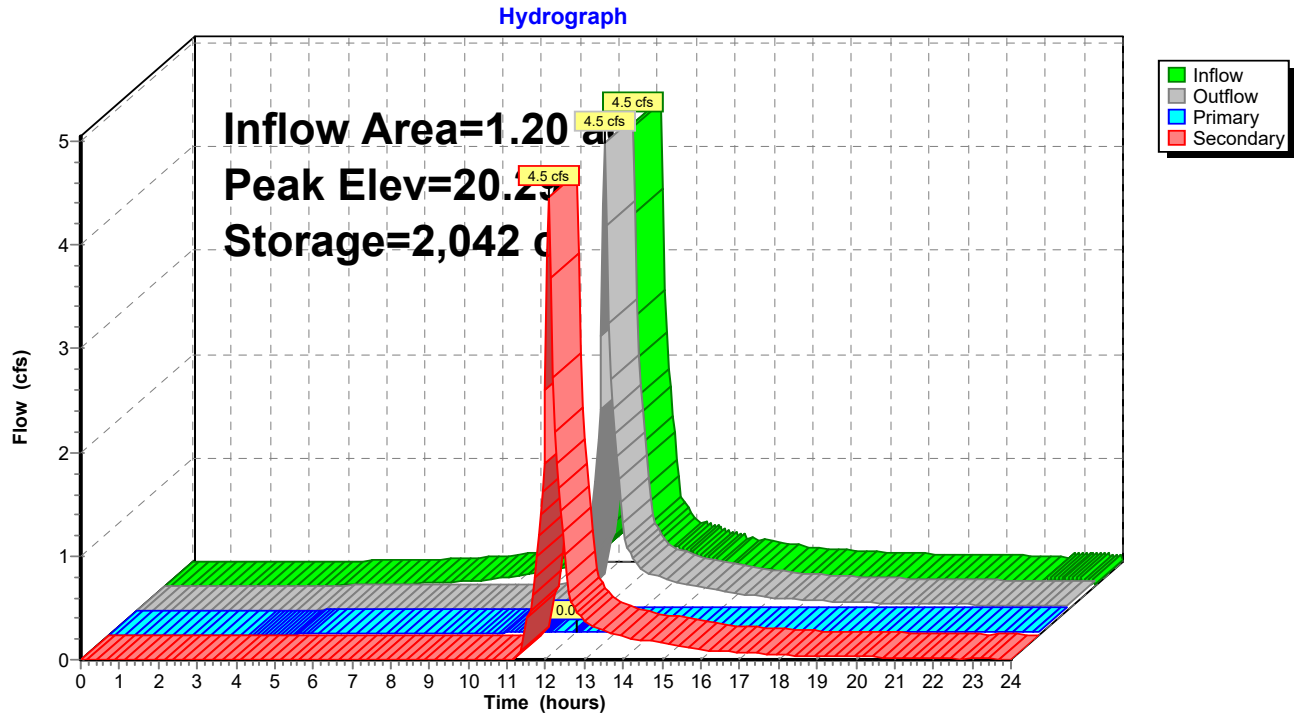
POST

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Pond 14P: CONTECH WQv CMP Det & SF System



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Summary for Pond 21P: Ex DMH1

Inflow Area = 0.29 ac, 69.88% Impervious, Inflow Depth > 2.54" for 10-Year Storm event
Inflow = 0.8 cfs @ 12.09 hrs, Volume= 0.061 af
Outflow = 0.8 cfs @ 12.09 hrs, Volume= 0.061 af, Atten= 0%, Lag= 0.0 min
Primary = 0.8 cfs @ 12.09 hrs, Volume= 0.061 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.28' @ 12.14 hrs

Flood Elev= 23.72'

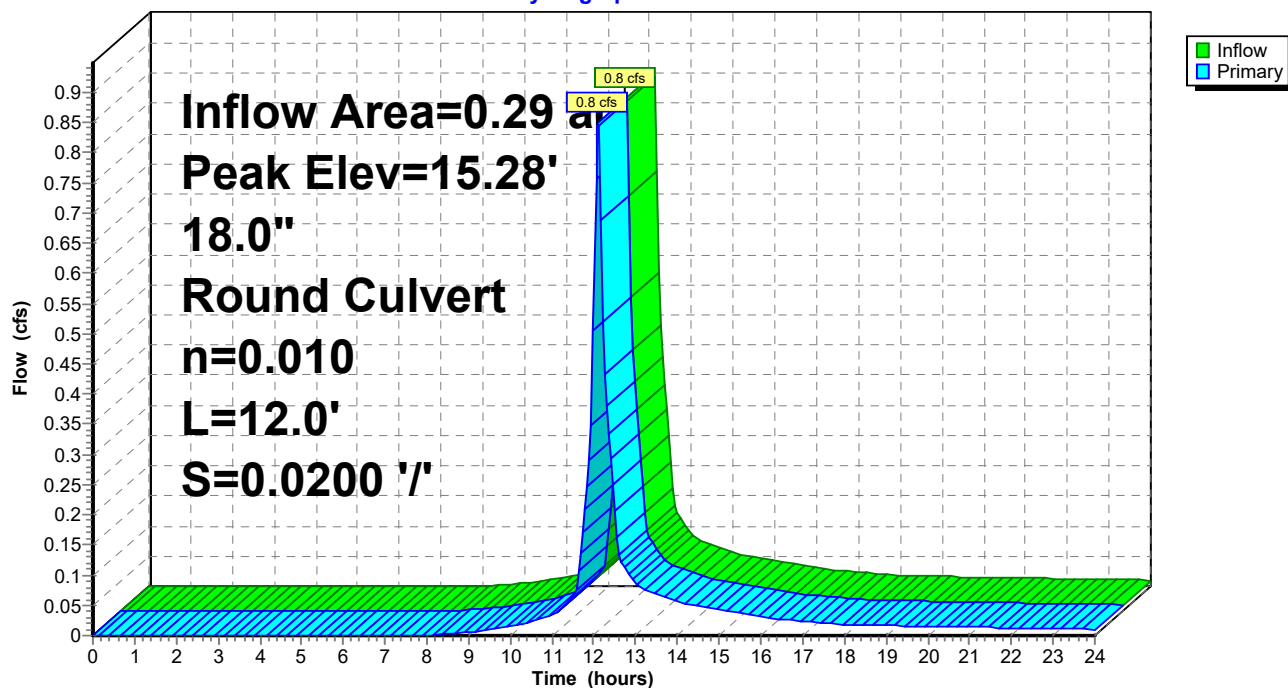
Device	Routing	Invert	Outlet Devices
#1	Primary	14.62'	18.0" Round Culvert L= 12.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.62' / 14.38' S= 0.0200 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.4 cfs @ 12.09 hrs HW=15.23' TW=15.20' (Dynamic Tailwater)

↑ **1=Culvert** (Outlet Controls 0.4 cfs @ 0.88 fps)

Pond 21P: Ex DMH1

Hydrograph



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POST
Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Pond 22P: Ex DMH2

Inflow Area = 0.69 ac, 68.00% Impervious, Inflow Depth > 2.49" for 10-Year Storm event
Inflow = 2.0 cfs @ 12.09 hrs, Volume= 0.142 af
Outflow = 2.0 cfs @ 12.09 hrs, Volume= 0.142 af, Atten= 0%, Lag= 0.0 min
Primary = 2.0 cfs @ 12.09 hrs, Volume= 0.142 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

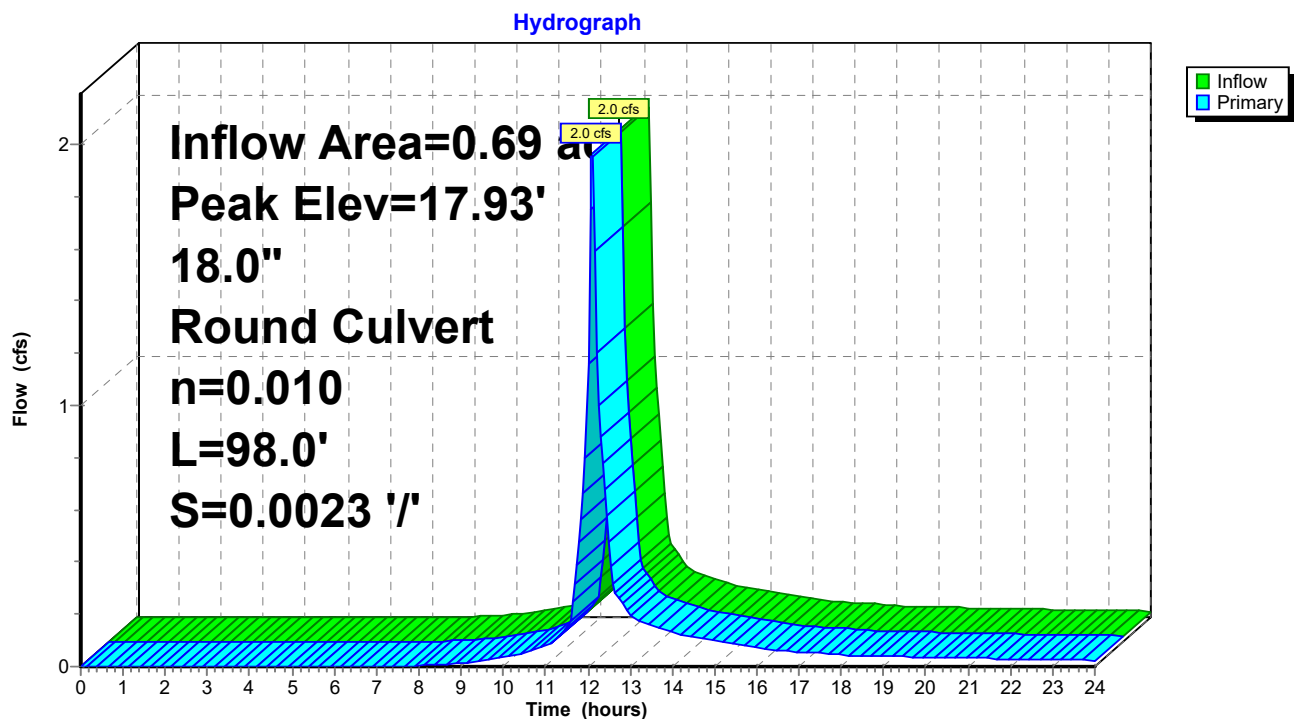
Peak Elev= 17.93' @ 12.10 hrs

Flood Elev= 24.92'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.12'	18.0" Round Culvert L= 98.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.12' / 16.89' S= 0.0023 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.8 cfs @ 12.09 hrs HW=17.92' TW=17.56' (Dynamic Tailwater)
↑1=Culvert (Outlet Controls 1.8 cfs @ 2.71 fps)

Pond 22P: Ex DMH2



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Pond 23P: Ex CB3

Inflow Area = 1.20 ac, 84.73% Impervious, Inflow Depth > 2.99" for 10-Year Storm event
Inflow = 2.9 cfs @ 12.20 hrs, Volume= 0.299 af
Outflow = 2.9 cfs @ 12.20 hrs, Volume= 0.299 af, Atten= 0%, Lag= 0.0 min
Primary = 2.9 cfs @ 12.20 hrs, Volume= 0.299 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 14.93' @ 12.20 hrs

Flood Elev= 23.60'

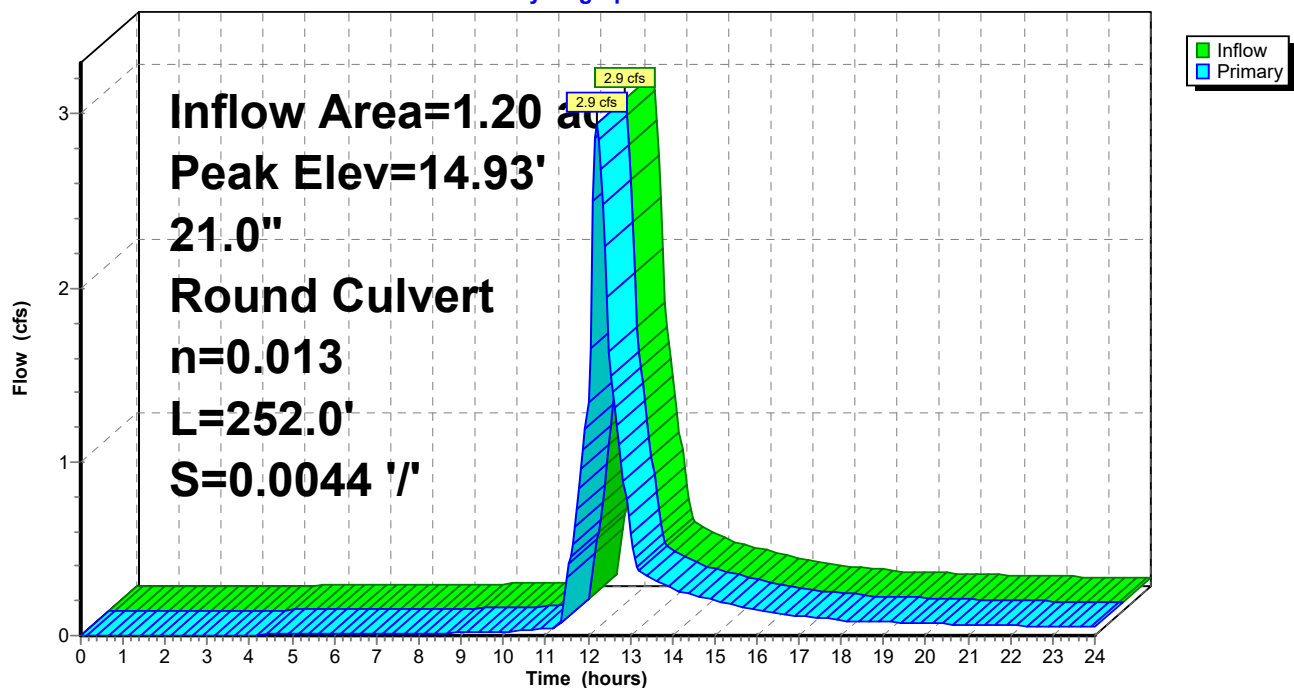
Device	Routing	Invert	Outlet Devices
#1	Primary	14.05'	21.0" Round Culvert L= 252.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.05' / 12.94' S= 0.0044 '/ Cc= 0.900 n= 0.013 Cast iron, coated, Flow Area= 2.41 sf

Primary OutFlow Max=2.9 cfs @ 12.20 hrs HW=14.93' TW=0.00' (Dynamic Tailwater)

↑**1=Culvert** (Barrel Controls 2.9 cfs @ 3.55 fps)

Pond 23P: Ex CB3

Hydrograph



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Pond 24P: Ex DMH4

Inflow Area = 0.69 ac, 68.00% Impervious, Inflow Depth > 2.49" for 10-Year Storm event
Inflow = 2.0 cfs @ 12.09 hrs, Volume= 0.142 af
Outflow = 2.0 cfs @ 12.09 hrs, Volume= 0.142 af, Atten= 0%, Lag= 0.0 min
Primary = 2.0 cfs @ 12.09 hrs, Volume= 0.142 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

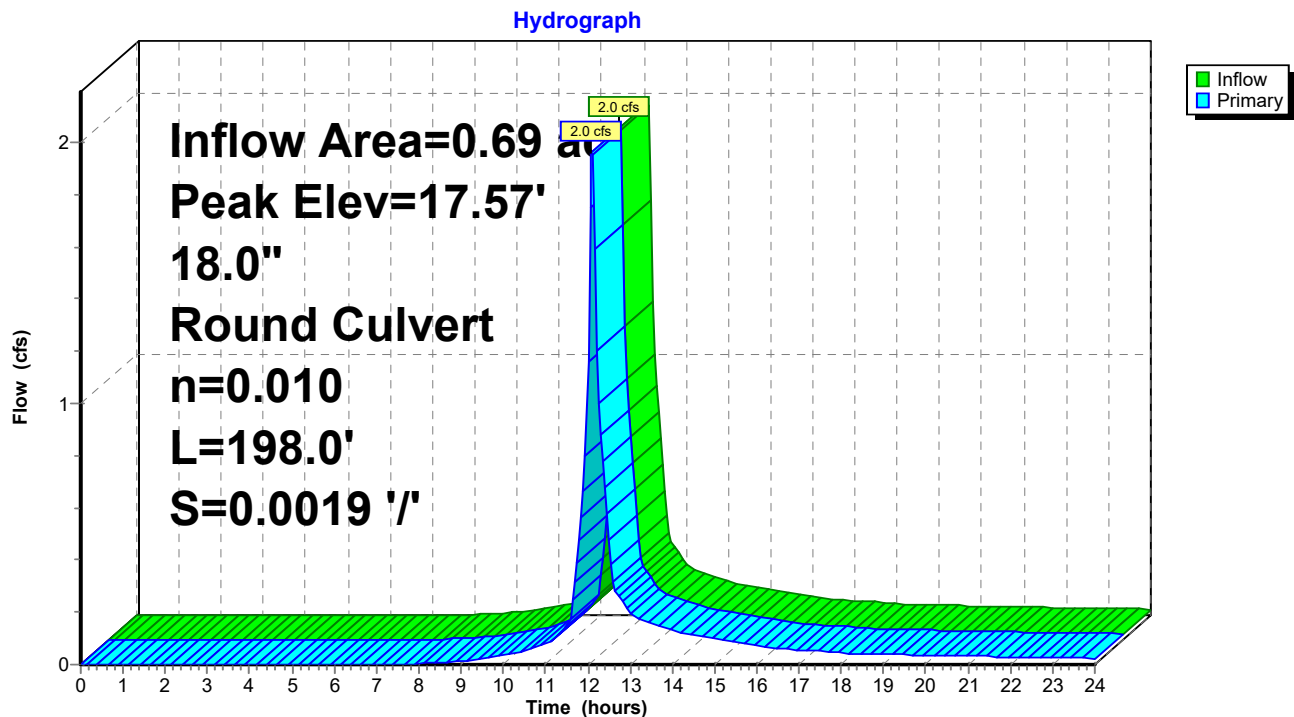
Peak Elev= 17.57' @ 12.09 hrs

Flood Elev= 25.38'

Device	Routing	Invert	Outlet Devices
#1	Primary	16.75'	18.0" Round Culvert L= 198.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.75' / 16.38' S= 0.0019 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.9 cfs @ 12.09 hrs HW=17.56' TW=16.20' (Dynamic Tailwater)
↑ **1=Culvert** (Barrel Controls 1.9 cfs @ 2.86 fps)

Pond 24P: Ex DMH4



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Pond 25P: Ex DMH5

Inflow Area = 0.69 ac, 68.00% Impervious, Inflow Depth > 2.49" for 10-Year Storm event
Inflow = 2.0 cfs @ 12.09 hrs, Volume= 0.142 af
Outflow = 2.0 cfs @ 12.09 hrs, Volume= 0.142 af, Atten= 0%, Lag= 0.0 min
Primary = 2.0 cfs @ 12.09 hrs, Volume= 0.142 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

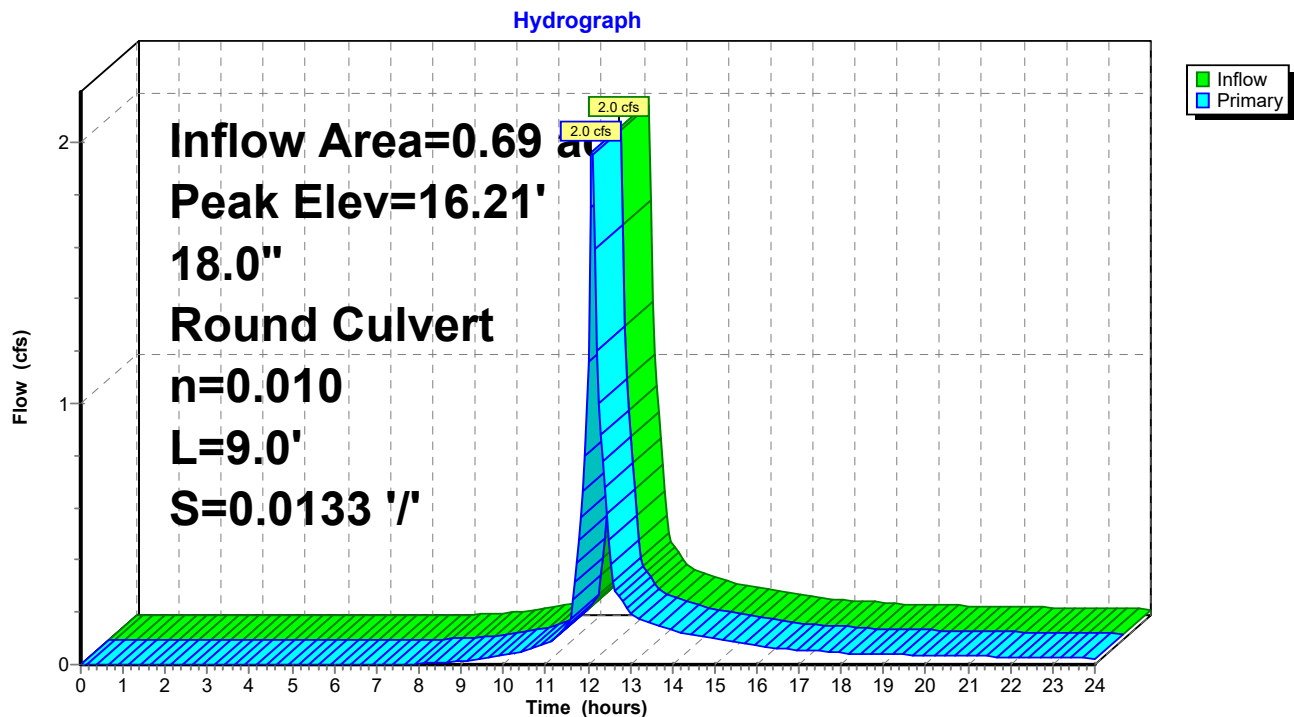
Peak Elev= 16.21' @ 12.09 hrs

Flood Elev= 23.84'

Device	Routing	Invert	Outlet Devices
#1	Primary	15.44'	18.0" Round Culvert L= 9.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.44' / 15.32' S= 0.0133 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.9 cfs @ 12.09 hrs HW=16.20' TW=15.20' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.9 cfs @ 3.14 fps)

Pond 25P: Ex DMH5



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Pond 26P: Ex DMH6

Inflow Area = 0.98 ac, 68.56% Impervious, Inflow Depth > 2.51" for 10-Year Storm event
Inflow = 2.8 cfs @ 12.09 hrs, Volume= 0.204 af
Outflow = 2.8 cfs @ 12.09 hrs, Volume= 0.204 af, Atten= 0%, Lag= 0.0 min
Primary = 2.8 cfs @ 12.09 hrs, Volume= 0.204 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.21' @ 12.10 hrs

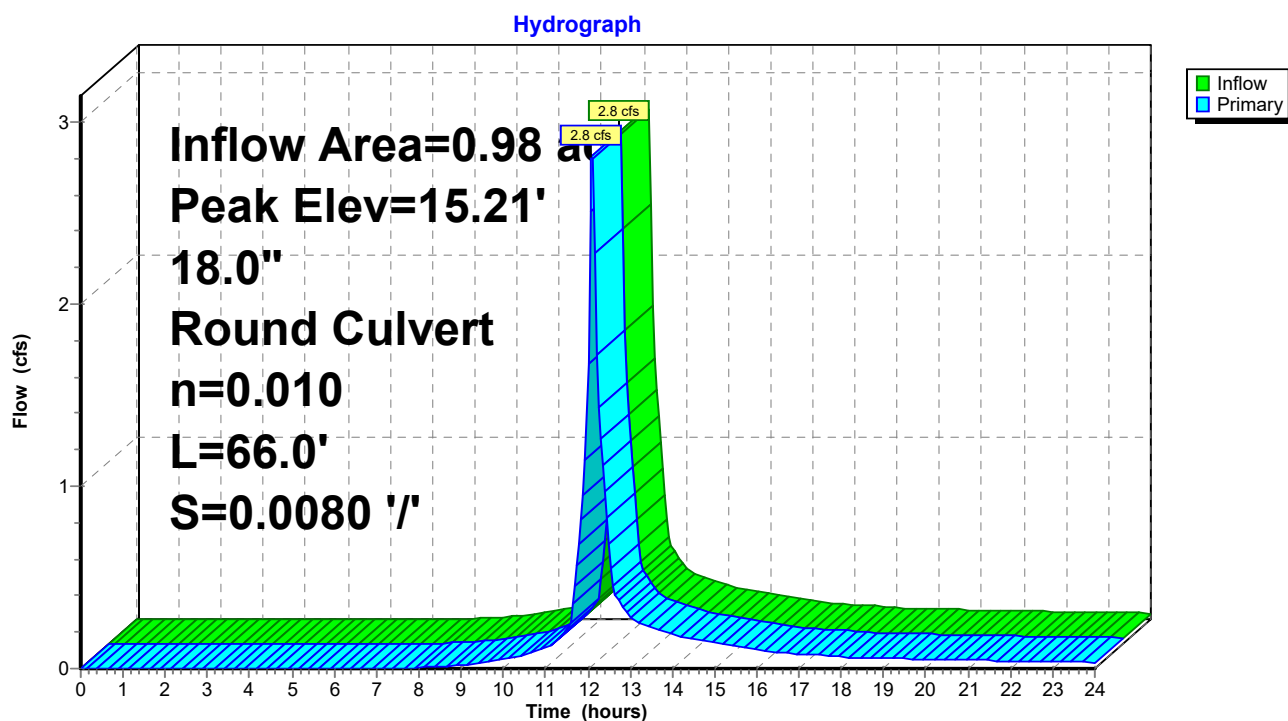
Flood Elev= 23.95'

Device	Routing	Invert	Outlet Devices
#1	Primary	14.30'	18.0" Round Culvert L= 66.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.30' / 13.77' S= 0.0080 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.6 cfs @ 12.09 hrs HW=15.20' TW=14.74' (Dynamic Tailwater)

1=Culvert (Outlet Controls 2.6 cfs @ 3.33 fps)

Pond 26P: Ex DMH6



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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Summary for Pond 27P: Ex DMH7

Inflow Area = 0.98 ac, 68.56% Impervious, Inflow Depth > 2.51" for 10-Year Storm event
Inflow = 2.8 cfs @ 12.09 hrs, Volume= 0.204 af
Outflow = 2.8 cfs @ 12.09 hrs, Volume= 0.204 af, Atten= 0%, Lag= 0.0 min
Primary = 2.8 cfs @ 12.09 hrs, Volume= 0.204 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 14.75' @ 12.09 hrs

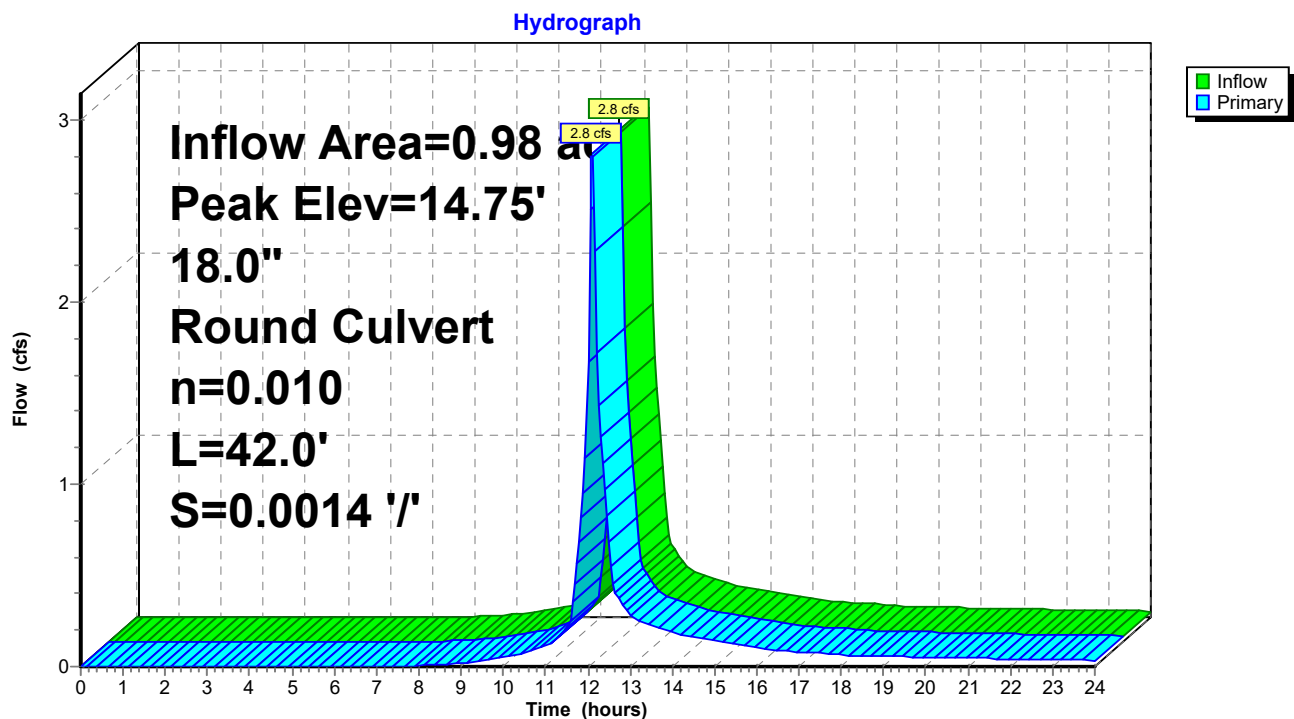
Flood Elev= 24.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	13.70'	18.0" Round Culvert L= 42.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.70' / 13.64' S= 0.0014 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.8 cfs @ 12.09 hrs HW=14.74' TW=0.00' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 2.8 cfs @ 2.97 fps)

Pond 27P: Ex DMH7



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Summary for Pond 29P: Ex DMH9

Inflow Area = 0.39 ac, 73.58% Impervious, Inflow Depth > 2.76" for 10-Year Storm event
Inflow = 1.2 cfs @ 12.09 hrs, Volume= 0.090 af
Outflow = 1.2 cfs @ 12.09 hrs, Volume= 0.090 af, Atten= 0%, Lag= 0.0 min
Primary = 1.2 cfs @ 12.09 hrs, Volume= 0.090 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

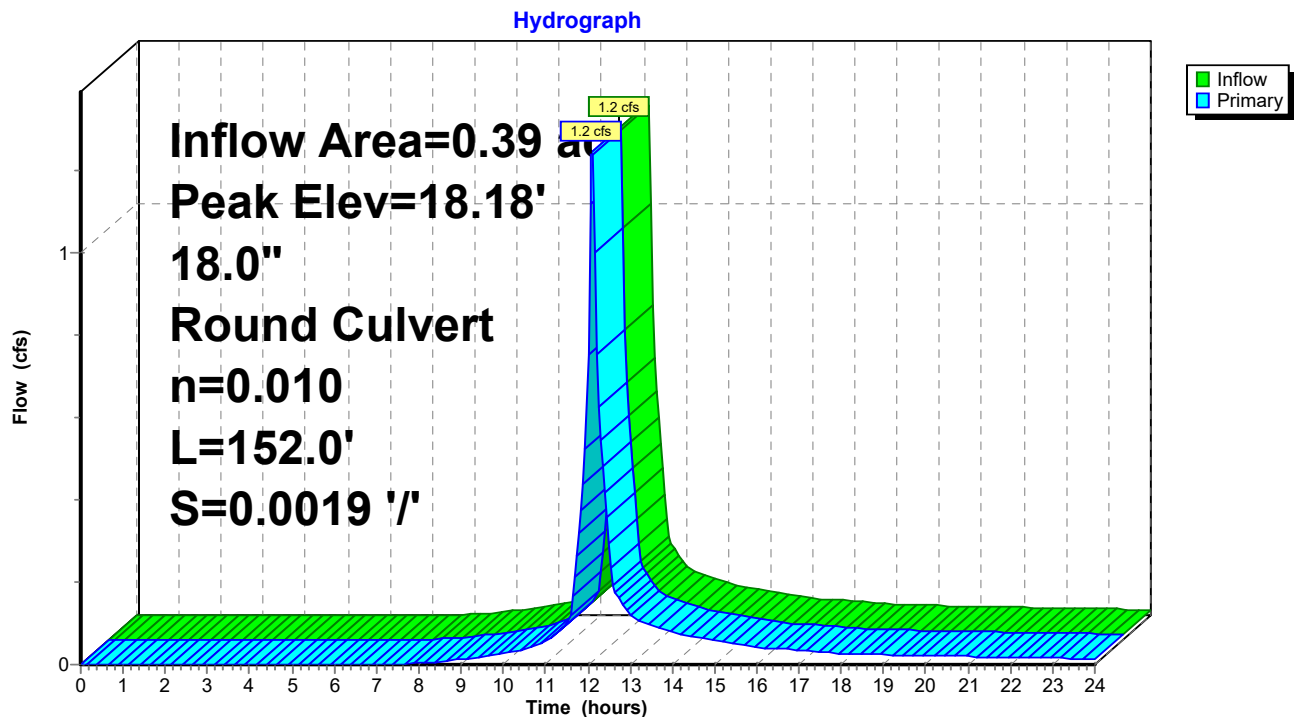
Peak Elev= 18.18' @ 12.11 hrs

Flood Elev= 23.44'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.46'	18.0" Round Culvert L= 152.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.46' / 17.17' S= 0.0019 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.1 cfs @ 12.09 hrs HW=18.16' TW=17.92' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 1.1 cfs @ 1.92 fps)

Pond 29P: Ex DMH9



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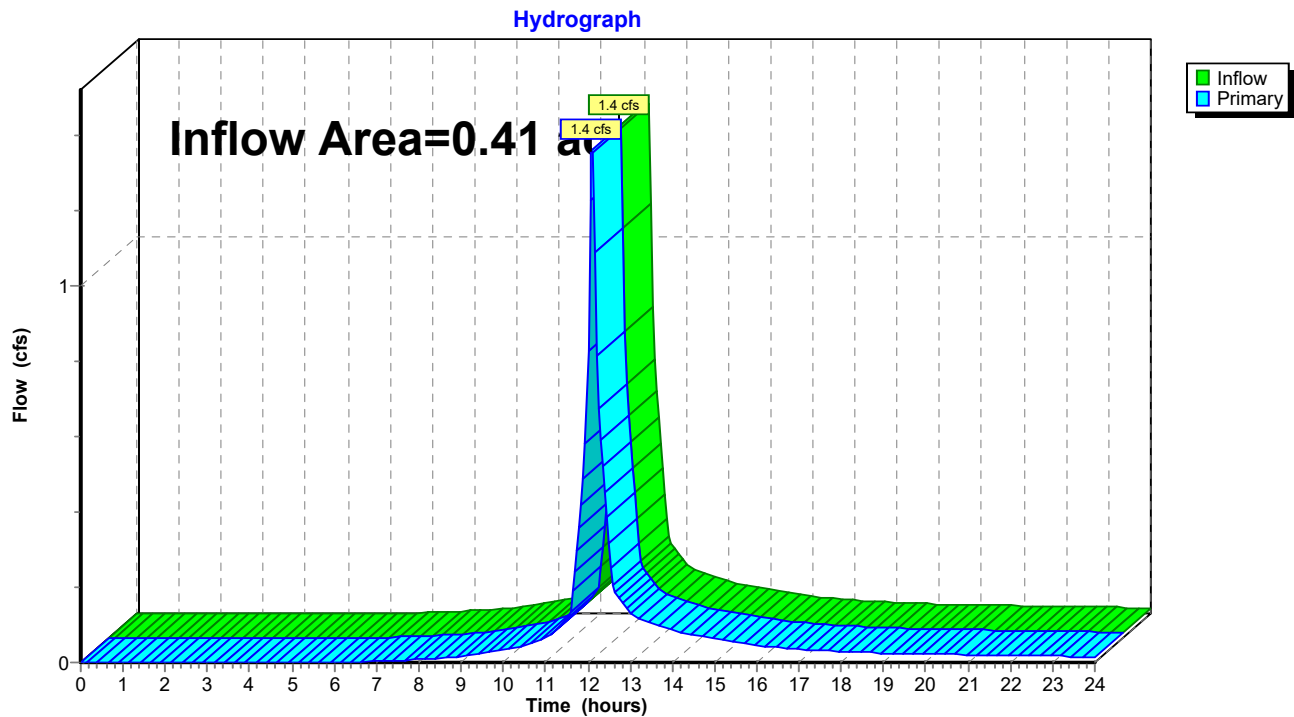
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Summary for Link SP1: Forest Ave Storm Drain

Inflow Area = 0.41 ac, 75.27% Impervious, Inflow Depth > 2.89" for 10-Year Storm event
Inflow = 1.4 cfs @ 12.09 hrs, Volume= 0.100 af
Primary = 1.4 cfs @ 12.09 hrs, Volume= 0.100 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP1: Forest Ave Storm Drain



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Type III 24-hr 10-Year Storm Rainfall=4.60"

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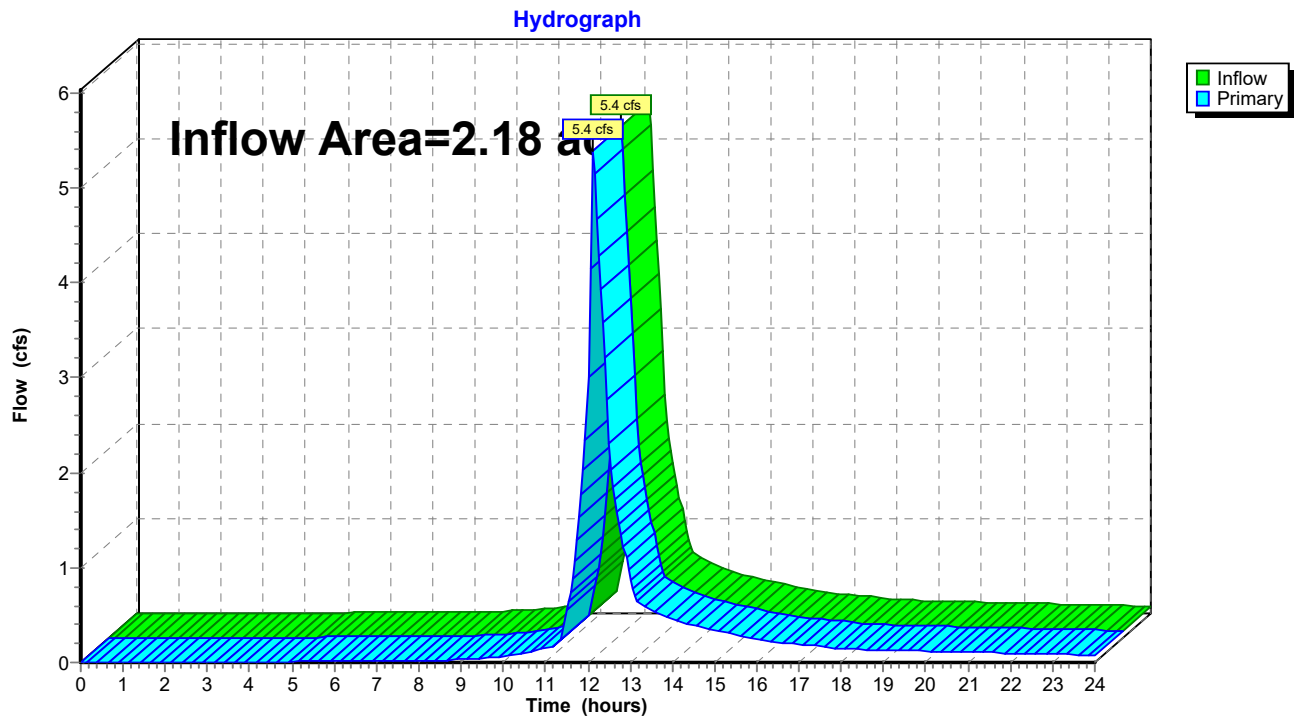
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Summary for Link SP2: Combined Sewer

Inflow Area = 2.18 ac, 77.47% Impervious, Inflow Depth > 2.77" for 10-Year Storm event
Inflow = 5.4 cfs @ 12.12 hrs, Volume= 0.502 af
Primary = 5.4 cfs @ 12.12 hrs, Volume= 0.502 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP2: Combined Sewer



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: POST-1	Runoff Area=5,692 sf 70.24% Impervious Runoff Depth>3.70" Tc=6.0 min CN=81 Runoff=0.6 cfs 0.040 af
Subcatchment2S: POST-2	Runoff Area=9,641 sf 93.94% Impervious Runoff Depth>5.10" Tc=6.0 min CN=94 Runoff=1.2 cfs 0.094 af
Subcatchment3S: POST-3	Runoff Area=15,050 sf 86.74% Impervious Runoff Depth>4.65" Tc=6.0 min CN=90 Runoff=1.8 cfs 0.134 af
Subcatchment5S: POST-5	Runoff Area=6,810 sf 75.96% Impervious Runoff Depth>4.01" Tc=6.0 min CN=84 Runoff=0.7 cfs 0.052 af
Subcatchment6S: POST-6	Runoff Area=9,346 sf 95.25% Impervious Runoff Depth>5.21" Tc=6.0 min CN=95 Runoff=1.2 cfs 0.093 af
Subcatchment7S: POST-7	Runoff Area=5,710 sf 71.52% Impervious Runoff Depth>3.70" Tc=6.0 min CN=81 Runoff=0.6 cfs 0.040 af
Subcatchment8S: POST-8	Runoff Area=3,553 sf 58.65% Impervious Runoff Depth>3.01" Tc=6.0 min CN=74 Runoff=0.3 cfs 0.020 af
Subcatchment9S: POST-9	Runoff Area=14,487 sf 79.34% Impervious Runoff Depth>4.22" Tc=6.0 min CN=86 Runoff=1.6 cfs 0.117 af
Subcatchment10S: POST-10	Runoff Area=7,001 sf 74.06% Impervious Runoff Depth>3.90" Tc=6.0 min CN=83 Runoff=0.7 cfs 0.052 af
Subcatchment11S: POST-11	Runoff Area=10,124 sf 73.25% Impervious Runoff Depth>3.80" Tc=6.0 min CN=82 Runoff=1.0 cfs 0.074 af
Subcatchment12S: POST-12	Runoff Area=12,768 sf 60.52% Impervious Runoff Depth>3.11" Tc=6.0 min CN=75 Runoff=1.0 cfs 0.076 af
Subcatchment13S: POST-13	Runoff Area=12,612 sf 69.88% Impervious Runoff Depth>3.60" Tc=6.0 min CN=80 Runoff=1.2 cfs 0.087 af
Pond 1P: CB1	Peak Elev=21.89' Inflow=0.6 cfs 0.040 af 10.0" Round Culvert n=0.010 L=56.0' S=0.0048 '/' Outflow=0.6 cfs 0.040 af
Pond 2P: CB2	Peak Elev=21.87' Inflow=1.7 cfs 0.134 af 10.0" Round Culvert n=0.010 L=56.0' S=0.0050 '/' Outflow=1.7 cfs 0.134 af
Pond 3P: CB3	Peak Elev=21.50' Inflow=3.5 cfs 0.268 af 15.0" Round Culvert n=0.010 L=21.0' S=0.0048 '/' Outflow=3.5 cfs 0.268 af
Pond 4P: CB4	Peak Elev=21.20' Inflow=2.4 cfs 0.186 af 18.0" Round Culvert n=0.010 L=106.0' S=0.0102 '/' Outflow=2.4 cfs 0.186 af

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Pond 5P: CB5Peak Elev=21.25' Inflow=1.7 cfs 0.134 af
15.0" Round Culvert n=0.010 L=77.0' S=0.0051 '/ Outflow=1.7 cfs 0.134 af**Pond 6P: CB6**Peak Elev=21.25' Inflow=0.6 cfs 0.040 af
15.0" Round Culvert n=0.010 L=53.0' S=0.0051 '/ Outflow=0.5 cfs 0.040 af**Pond 7P: CB7**Peak Elev=18.68' Inflow=1.0 cfs 0.076 af
8.0" Round Culvert n=0.010 L=34.0' S=0.0100 '/ Outflow=1.0 cfs 0.076 af**Pond 8P: CB8**Peak Elev=15.57' Inflow=1.2 cfs 0.087 af
18.0" Round Culvert n=0.010 L=18.0' S=0.0028 '/ Outflow=1.2 cfs 0.087 af**Pond 9P: DMH1**Peak Elev=21.12' Inflow=5.9 cfs 0.454 af
18.0" Round Culvert n=0.010 L=15.0' S=0.0047 '/ Outflow=5.9 cfs 0.454 af**Pond 11P: Ex CB1**Peak Elev=19.30' Inflow=1.7 cfs 0.126 af
12.0" Round Culvert n=0.010 L=41.0' S=0.0224 '/ Outflow=1.7 cfs 0.126 af**Pond 12P: Ex CB2**Peak Elev=18.48' Inflow=0.3 cfs 0.020 af
8.0" Round Culvert n=0.010 L=159.0' S=0.0158 '/ Outflow=0.3 cfs 0.020 af**Pond 13P: CMP Peak Detention**Peak Elev=20.03' Storage=2,253 cf Inflow=5.9 cfs 0.358 af
Outflow=4.2 cfs 0.358 af**Pond 14P: CONTECHWQv CMP Det & SF**Peak Elev=20.41' Storage=2,070 cf Inflow=5.9 cfs 0.454 af
Primary=0.0 cfs 0.055 af Secondary=5.9 cfs 0.358 af Outflow=6.0 cfs 0.413 af**Pond 21P: Ex DMH1**Peak Elev=15.51' Inflow=1.2 cfs 0.087 af
18.0" Round Culvert n=0.010 L=12.0' S=0.0200 '/ Outflow=1.2 cfs 0.087 af**Pond 22P: Ex DMH2**Peak Elev=18.13' Inflow=2.8 cfs 0.202 af
18.0" Round Culvert n=0.010 L=98.0' S=0.0023 '/ Outflow=2.8 cfs 0.202 af**Pond 23P: Ex CB3**Peak Elev=15.13' Inflow=4.2 cfs 0.413 af
21.0" Round Culvert n=0.013 L=252.0' S=0.0044 '/ Outflow=4.2 cfs 0.413 af**Pond 24P: Ex DMH4**Peak Elev=17.75' Inflow=2.8 cfs 0.202 af
18.0" Round Culvert n=0.010 L=198.0' S=0.0019 '/ Outflow=2.8 cfs 0.202 af**Pond 25P: Ex DMH5**Peak Elev=16.38' Inflow=2.8 cfs 0.202 af
18.0" Round Culvert n=0.010 L=9.0' S=0.0133 '/ Outflow=2.8 cfs 0.202 af**Pond 26P: Ex DMH6**Peak Elev=15.46' Inflow=4.0 cfs 0.289 af
18.0" Round Culvert n=0.010 L=66.0' S=0.0080 '/ Outflow=4.0 cfs 0.289 af**Pond 27P: Ex DMH7**Peak Elev=14.99' Inflow=4.0 cfs 0.289 af
18.0" Round Culvert n=0.010 L=42.0' S=0.0014 '/ Outflow=4.0 cfs 0.289 af**Pond 29P: Ex DMH9**Peak Elev=18.35' Inflow=1.7 cfs 0.126 af
18.0" Round Culvert n=0.010 L=152.0' S=0.0019 '/ Outflow=1.7 cfs 0.126 af

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Link SP1: Forest Ave Storm Drain

Inflow=1.9 cfs 0.137 af

Primary=1.9 cfs 0.137 af

Link SP2: Combined Sewer

Inflow=7.6 cfs 0.701 af

Primary=7.6 cfs 0.701 af

Total Runoff Area = 2.59 ac Runoff Volume = 0.880 af Average Runoff Depth = 4.08"
22.88% Pervious = 0.59 ac 77.12% Impervious = 2.00 ac

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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Subcatchment 1S: POST-1

Runoff = 0.6 cfs @ 12.09 hrs, Volume= 0.040 af, Depth> 3.70"

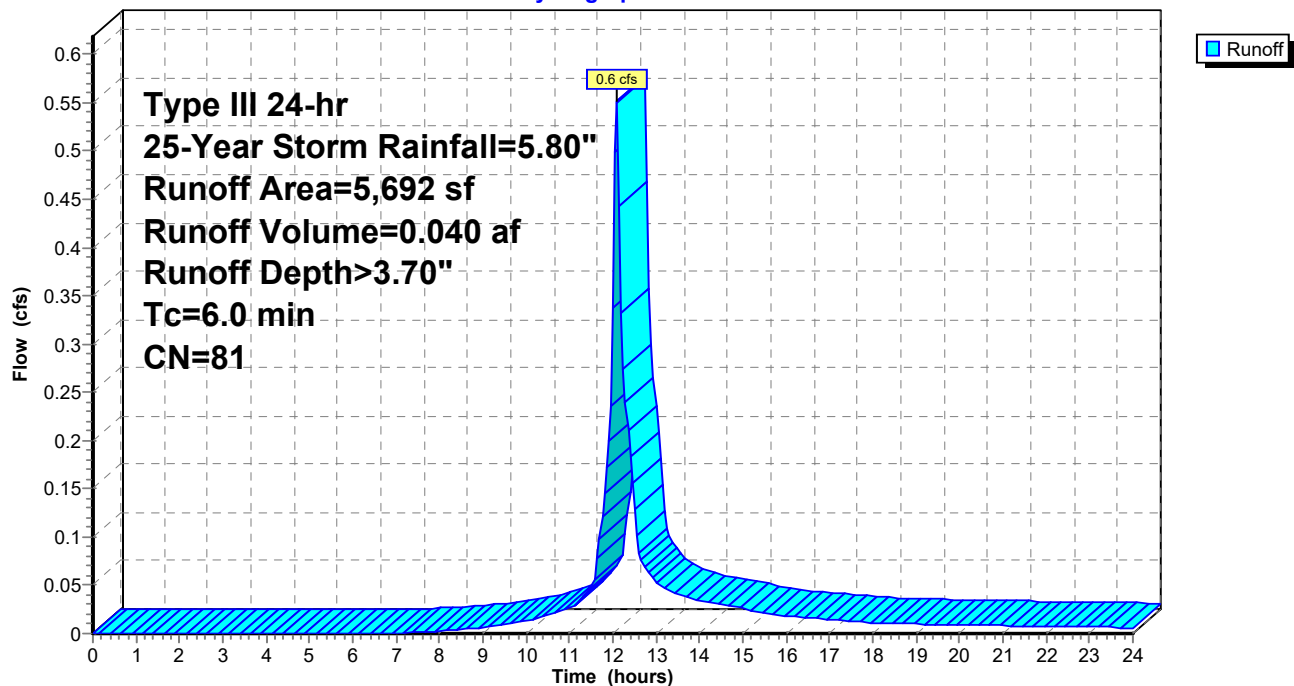
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
3,998	98	Paved parking, HSG A
830	39	Grass cover, Good, HSG A
* 864	40	Porous Pavement
5,692	81	Weighted Average
1,694		29.76% Pervious Area
3,998		70.24% Impervious Area

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

Subcatchment 1S: POST-1

Hydrograph



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Summary for Subcatchment 2S: POST-2

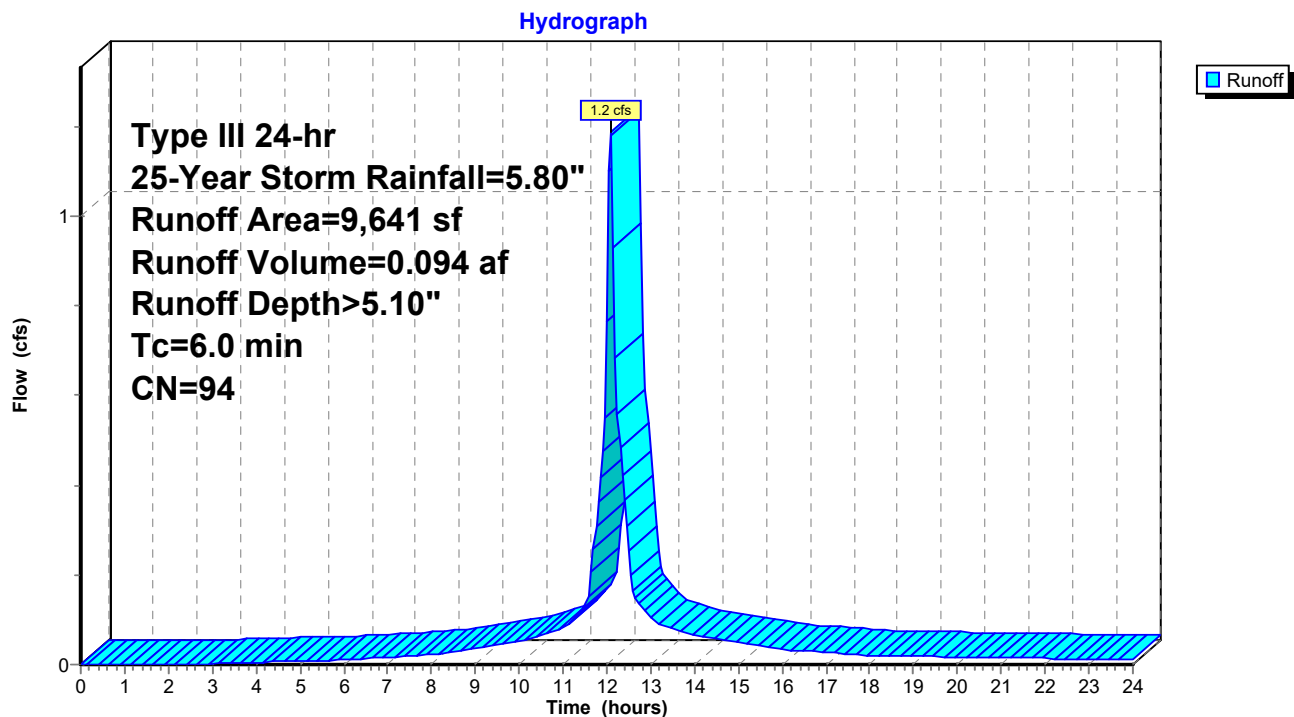
Runoff = 1.2 cfs @ 12.09 hrs, Volume= 0.094 af, Depth> 5.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
9,057	98	Paved parking, HSG A
502	39	Grass cover, Good, HSG A
* 82	40	Porous Pavement
9,641	94	Weighted Average
584		6.06% Pervious Area
9,057		93.94% Impervious Area

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

Subcatchment 2S: POST-2



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Subcatchment 3S: POST-3

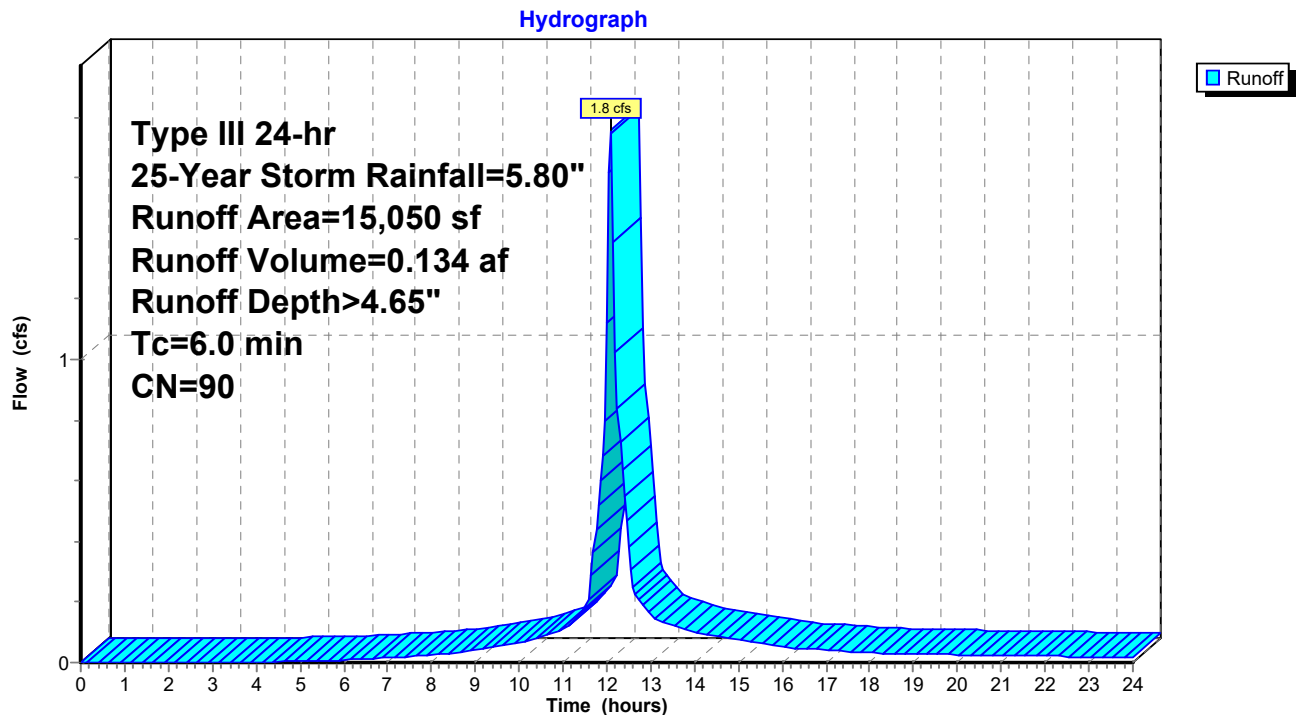
Runoff = 1.8 cfs @ 12.09 hrs, Volume= 0.134 af, Depth> 4.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
13,054	98	Paved parking, HSG A
1,909	39	Grass cover, Good, HSG A
* 87	40	Porous Pavement
15,050	90	Weighted Average
1,996		13.26% Pervious Area
13,054		86.74% Impervious Area

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

Subcatchment 3S: POST-3



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POST
Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Subcatchment 5S: POST-5

Runoff = 0.7 cfs @ 12.09 hrs, Volume= 0.052 af, Depth> 4.01"

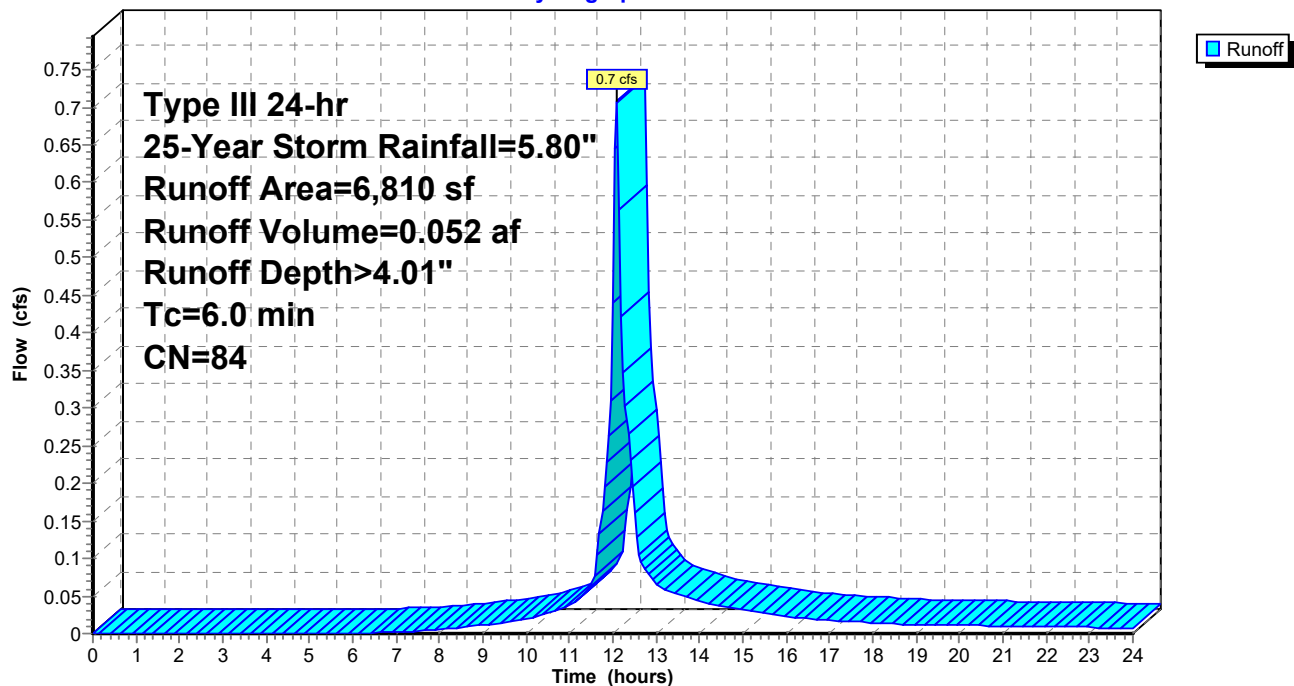
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
5,173	98	Paved parking, HSG A
1,547	39	Grass cover, Good, HSG A
* 90	40	Porous Pavement
6,810	84	Weighted Average
1,637		24.04% Pervious Area
5,173		75.96% Impervious Area

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

Subcatchment 5S: POST-5

Hydrograph



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POST
Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Subcatchment 6S: POST-6

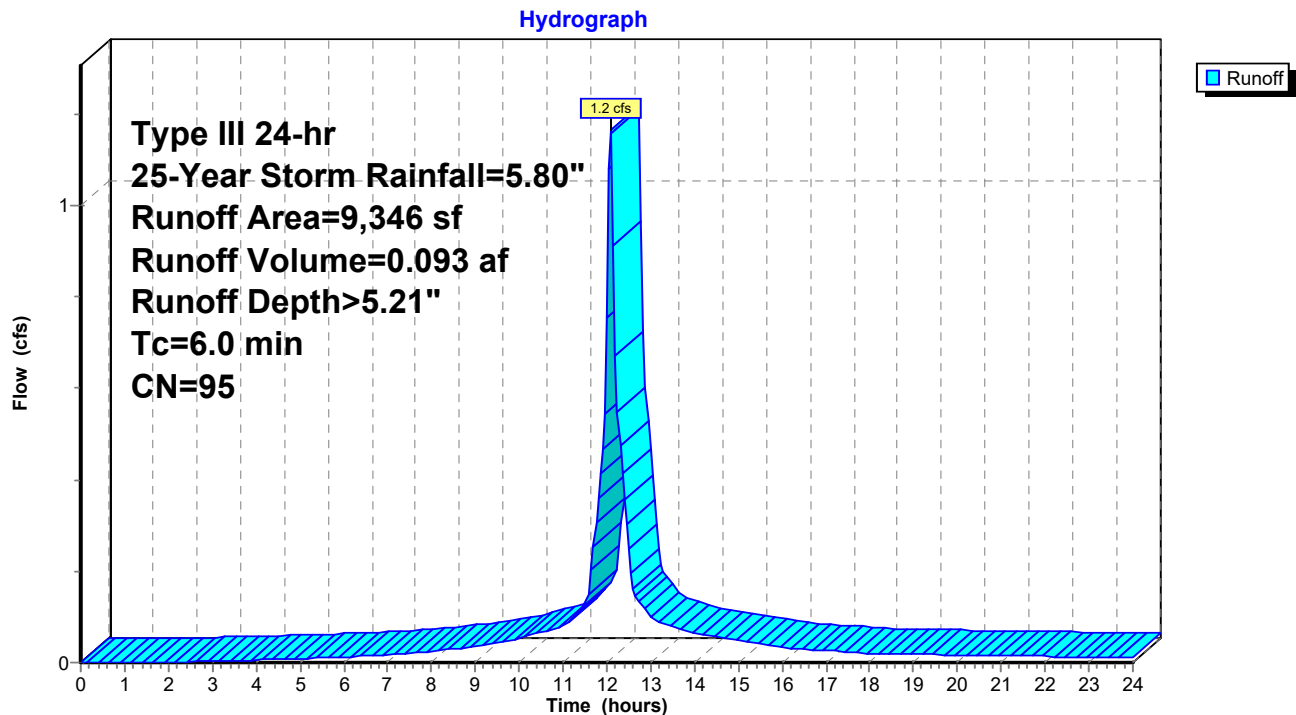
Runoff = 1.2 cfs @ 12.09 hrs, Volume= 0.093 af, Depth> 5.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
8,902	98	Paved parking, HSG A
351	39	Grass cover, Good, HSG A
* 93	40	Porous Pavement
9,346	95	Weighted Average
444		4.75% Pervious Area
8,902		95.25% Impervious Area

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

Subcatchment 6S: POST-6



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POST
Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Subcatchment 7S: POST-7

Runoff = 0.6 cfs @ 12.09 hrs, Volume= 0.040 af, Depth> 3.70"

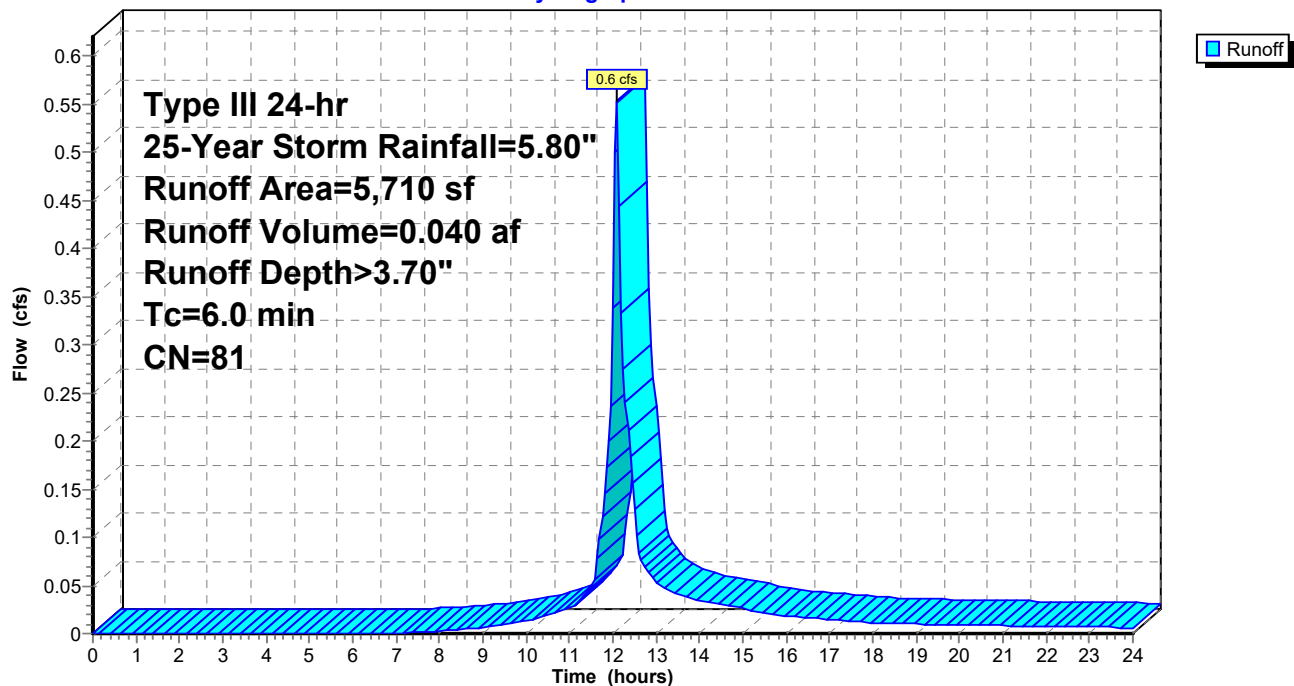
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
4,084	98	Paved parking, HSG A
809	39	Grass cover, Good, HSG A
* 817	40	Porous Pavement
5,710	81	Weighted Average
1,626		28.48% Pervious Area
4,084		71.52% Impervious Area

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

Subcatchment 7S: POST-7

Hydrograph



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POST
Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Subcatchment 8S: POST-8

Runoff = 0.3 cfs @ 12.09 hrs, Volume= 0.020 af, Depth> 3.01"

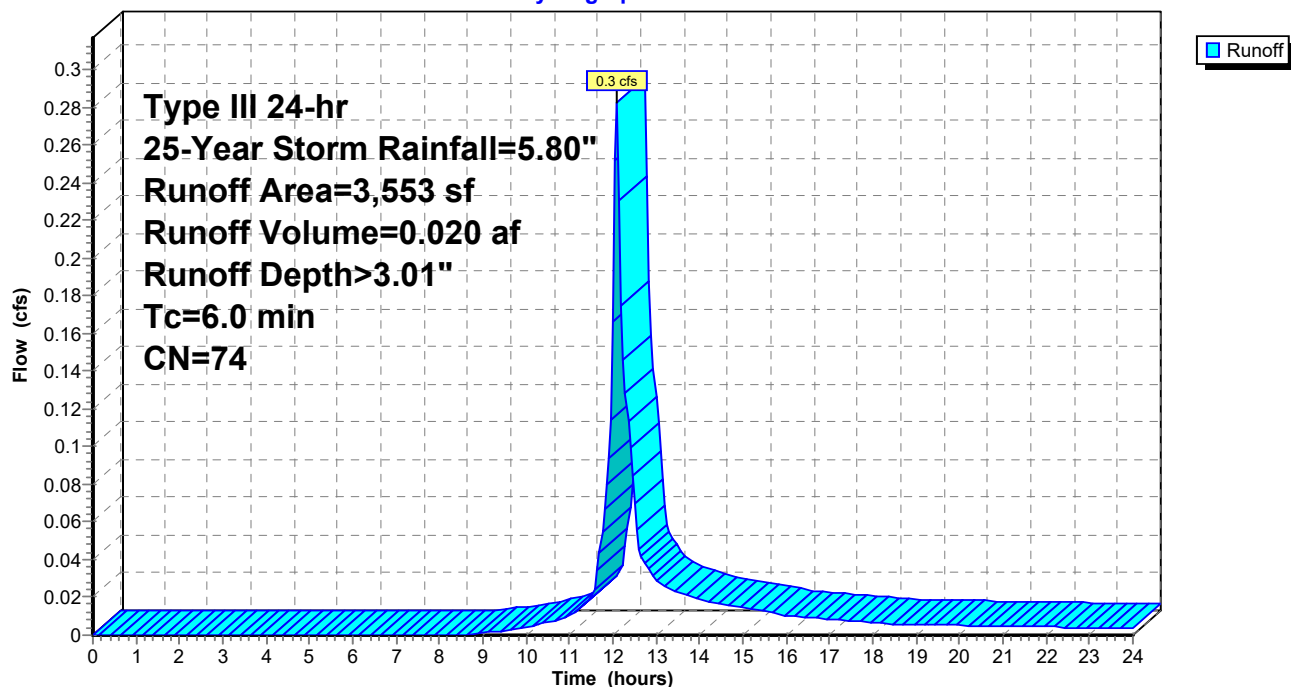
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
2,084	98	Paved parking, HSG A
1,469	39	Grass cover, Good, HSG A
3,553	74	Weighted Average
1,469		41.35% Pervious Area
2,084		58.65% Impervious Area

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

Subcatchment 8S: POST-8

Hydrograph



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Subcatchment 9S: POST-9

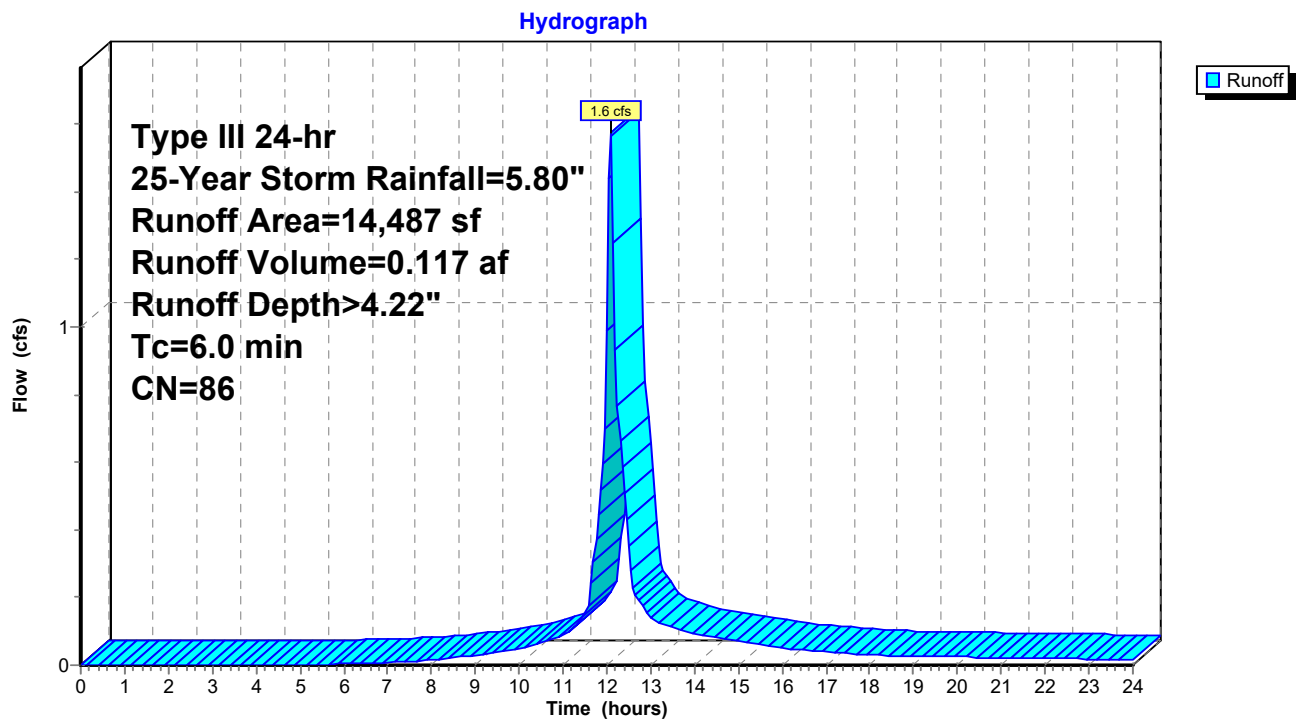
Runoff = 1.6 cfs @ 12.09 hrs, Volume= 0.117 af, Depth> 4.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
11,494	98	Paved parking, HSG A
2,993	39	Grass cover, Good, HSG A
14,487	86	Weighted Average
2,993		20.66% Pervious Area
11,494		79.34% Impervious Area

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

Subcatchment 9S: POST-9



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POST
Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Subcatchment 10S: POST-10

Runoff = 0.7 cfs @ 12.09 hrs, Volume= 0.052 af, Depth> 3.90"

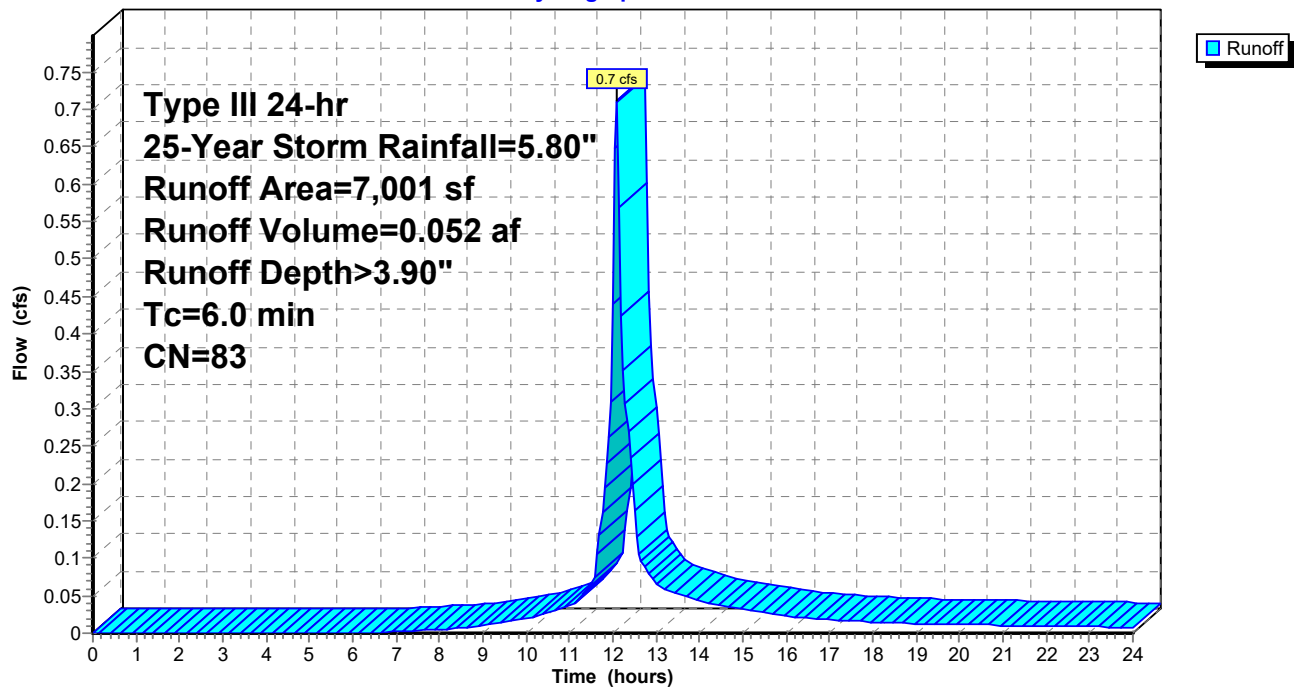
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
5,185	98	Paved parking, HSG A
1,816	39	Grass cover, Good, HSG A
7,001	83	Weighted Average
1,816		25.94% Pervious Area
5,185		74.06% Impervious Area

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

Subcatchment 10S: POST-10

Hydrograph



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POST
Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Subcatchment 11S: POST-11

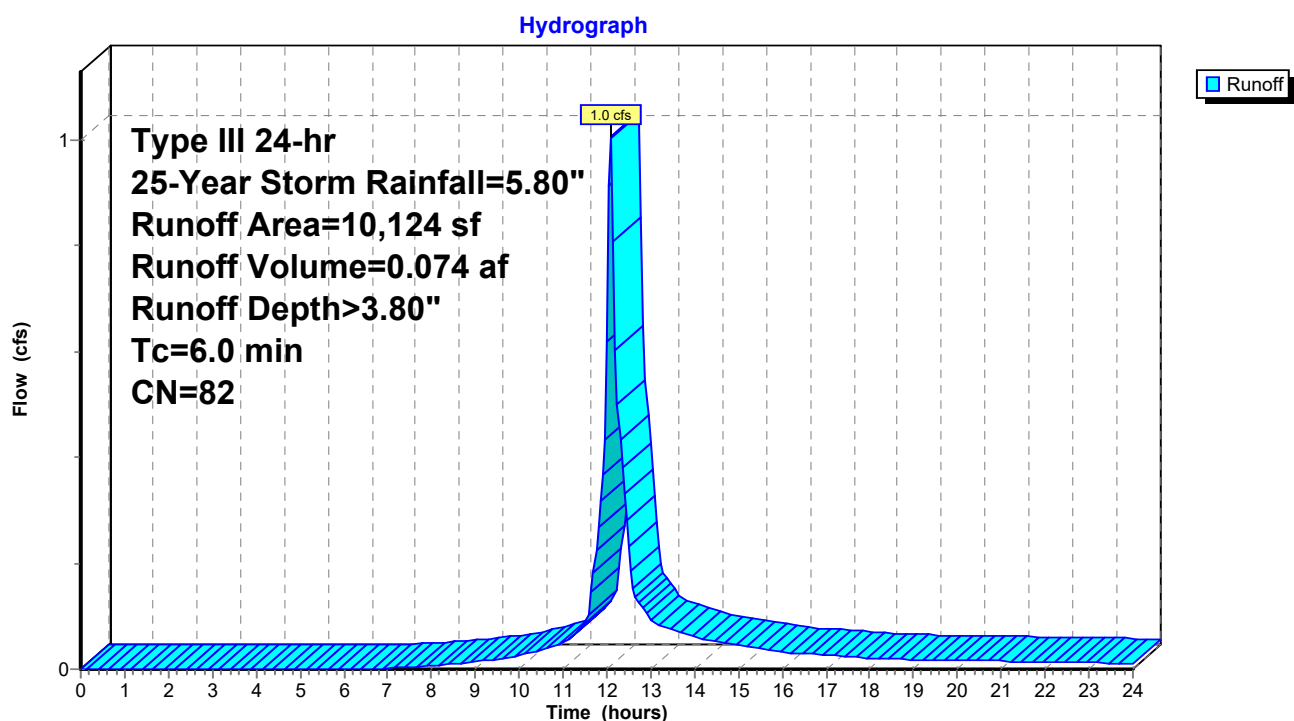
Runoff = 1.0 cfs @ 12.09 hrs, Volume= 0.074 af, Depth> 3.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
7,416	98	Paved parking, HSG A
2,708	39	Grass cover, Good, HSG A
10,124	82	Weighted Average
2,708		26.75% Pervious Area
7,416		73.25% Impervious Area

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

Subcatchment 11S: POST-11



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Subcatchment 12S: POST-12

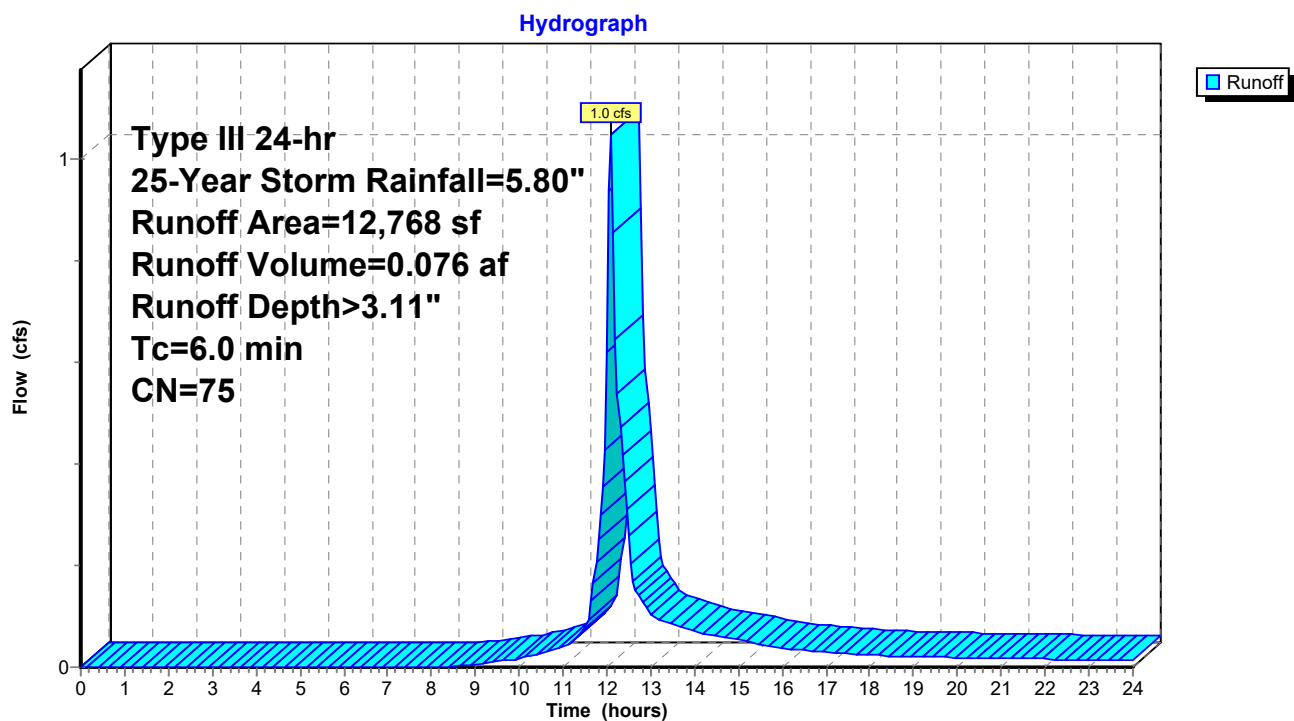
Runoff = 1.0 cfs @ 12.09 hrs, Volume= 0.076 af, Depth> 3.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
7,727	98	Paved parking, HSG A
5,041	39	Grass cover, Good, HSG A
12,768	75	Weighted Average
5,041		39.48% Pervious Area
7,727		60.52% Impervious Area

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

Subcatchment 12S: POST-12



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Summary for Subcatchment 13S: POST-13

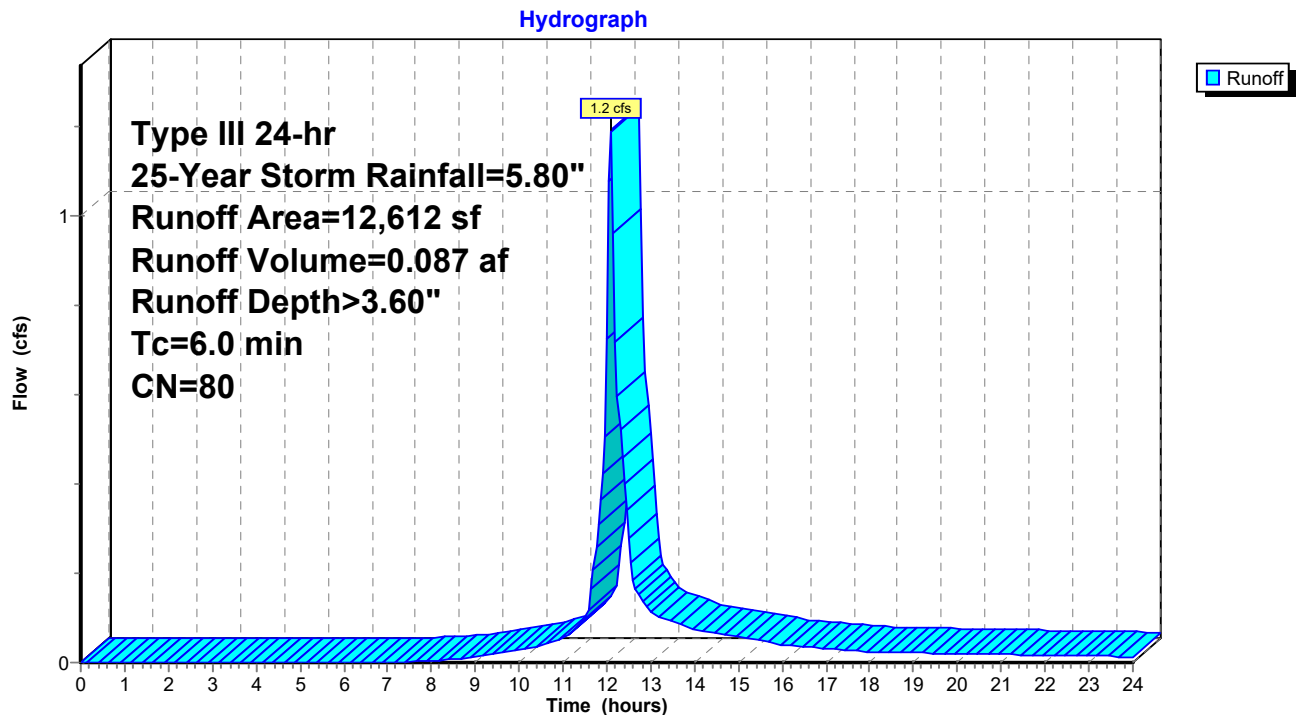
Runoff = 1.2 cfs @ 12.09 hrs, Volume= 0.087 af, Depth> 3.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=5.80"

Area (sf)	CN	Description
8,813	98	Paved parking, HSG A
3,299	39	Grass cover, Good, HSG A
* 500	40	Porous Pavement
12,612	80	Weighted Average
3,799		30.12% Pervious Area
8,813		69.88% Impervious Area

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

Subcatchment 13S: POST-13



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Summary for Pond 1P: CB1

Inflow Area = 0.13 ac, 70.24% Impervious, Inflow Depth > 3.70" for 25-Year Storm event
Inflow = 0.6 cfs @ 12.09 hrs, Volume= 0.040 af
Outflow = 0.6 cfs @ 12.09 hrs, Volume= 0.040 af, Atten= 0%, Lag= 0.0 min
Primary = 0.6 cfs @ 12.09 hrs, Volume= 0.040 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 21.89' @ 12.20 hrs

Flood Elev= 22.34'

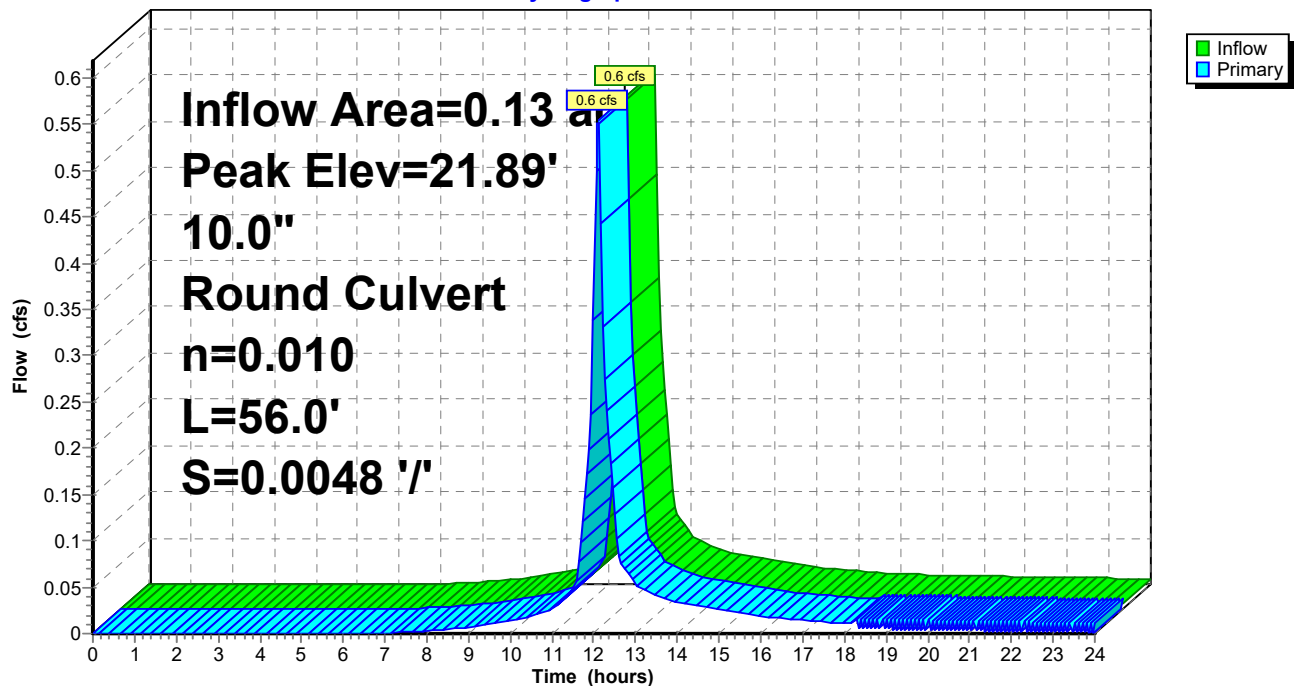
Device	Routing	Invert	Outlet Devices
#1	Primary	18.34'	10.0" Round Culvert L= 56.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.34' / 18.07' S= 0.0048 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.0 cfs @ 12.09 hrs HW=21.05' TW=21.51' (Dynamic Tailwater)

↑1=Culvert (Controls 0.0 cfs)

Pond 1P: CB1

Hydrograph



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Pond 2P: CB2

Inflow Area = 0.35 ac, 85.14% Impervious, Inflow Depth > 4.58" for 25-Year Storm event
Inflow = 1.7 cfs @ 12.09 hrs, Volume= 0.134 af
Outflow = 1.7 cfs @ 12.09 hrs, Volume= 0.134 af, Atten= 0%, Lag= 0.0 min
Primary = 1.7 cfs @ 12.09 hrs, Volume= 0.134 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

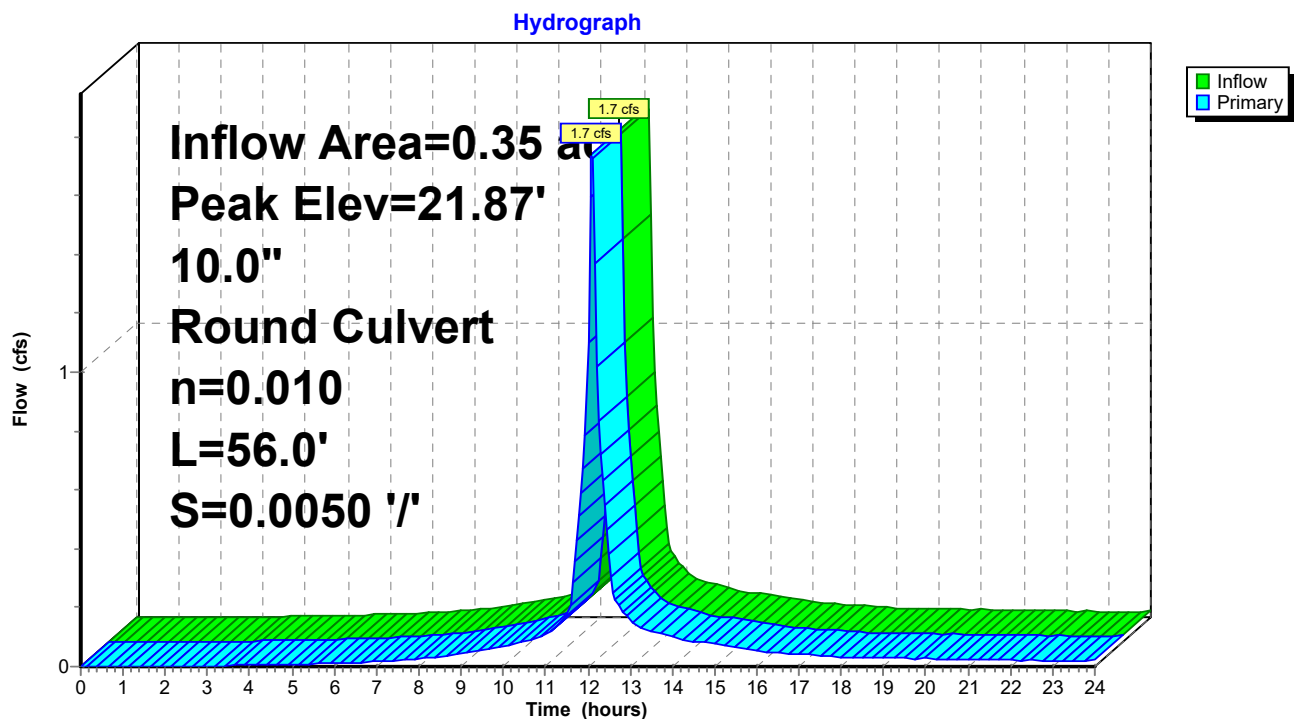
Peak Elev= 21.87' @ 12.16 hrs

Flood Elev= 22.31'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.97'	10.0" Round Culvert L= 56.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.97' / 17.69' S= 0.0050 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.9 cfs @ 12.09 hrs HW=21.48' TW=21.31' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 0.9 cfs @ 1.59 fps)

Pond 2P: CB2



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Pond 3P: CB3

Inflow Area = 0.70 ac, 85.93% Impervious, Inflow Depth > 4.61" for 25-Year Storm event
Inflow = 3.5 cfs @ 12.09 hrs, Volume= 0.268 af
Outflow = 3.5 cfs @ 12.09 hrs, Volume= 0.268 af, Atten= 0%, Lag= 0.0 min
Primary = 3.5 cfs @ 12.09 hrs, Volume= 0.268 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 21.50' @ 12.13 hrs

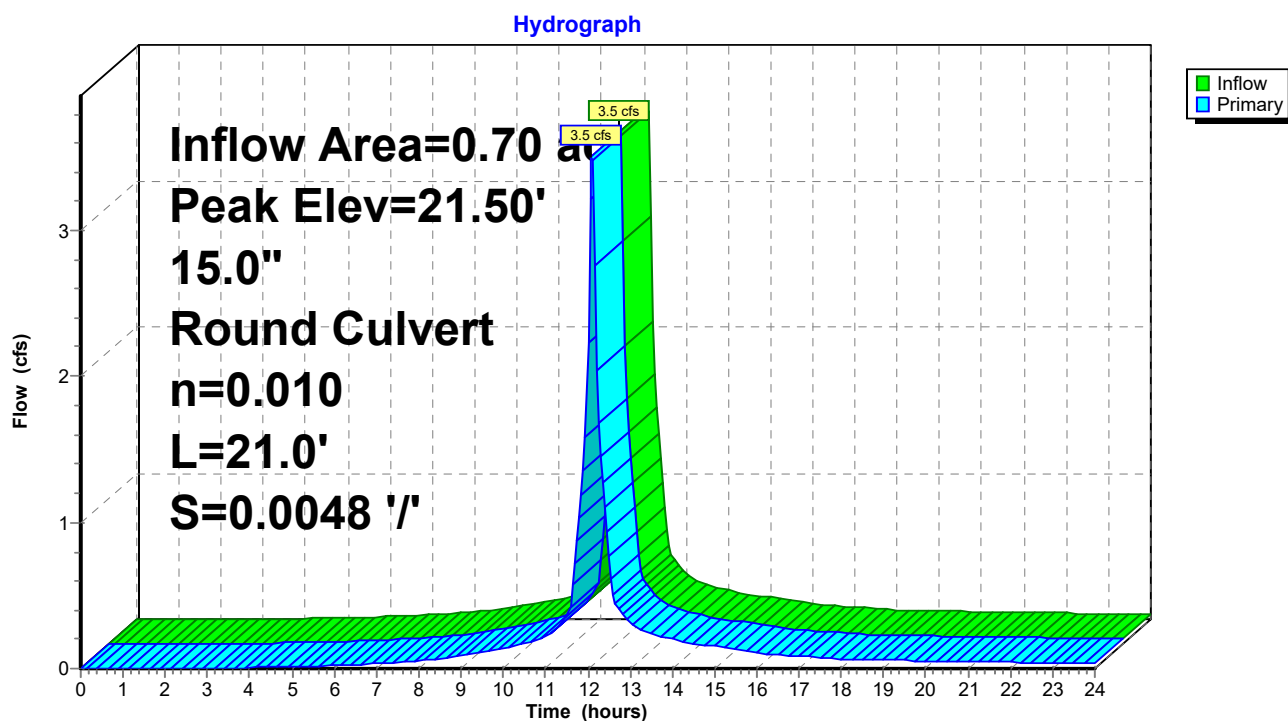
Flood Elev= 22.36'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.58'	15.0" Round Culvert L= 21.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.58' / 17.48' S= 0.0048 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.3 cfs @ 12.09 hrs HW=21.31' TW=21.06' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 2.3 cfs @ 1.89 fps)

Pond 3P: CB3



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Pond 4P: CB4

Inflow Area = 0.50 ac, 83.05% Impervious, Inflow Depth > 4.44" for 25-Year Storm event
Inflow = 2.4 cfs @ 12.09 hrs, Volume= 0.186 af
Outflow = 2.4 cfs @ 12.09 hrs, Volume= 0.186 af, Atten= 0%, Lag= 0.0 min
Primary = 2.4 cfs @ 12.09 hrs, Volume= 0.186 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 21.20' @ 12.15 hrs

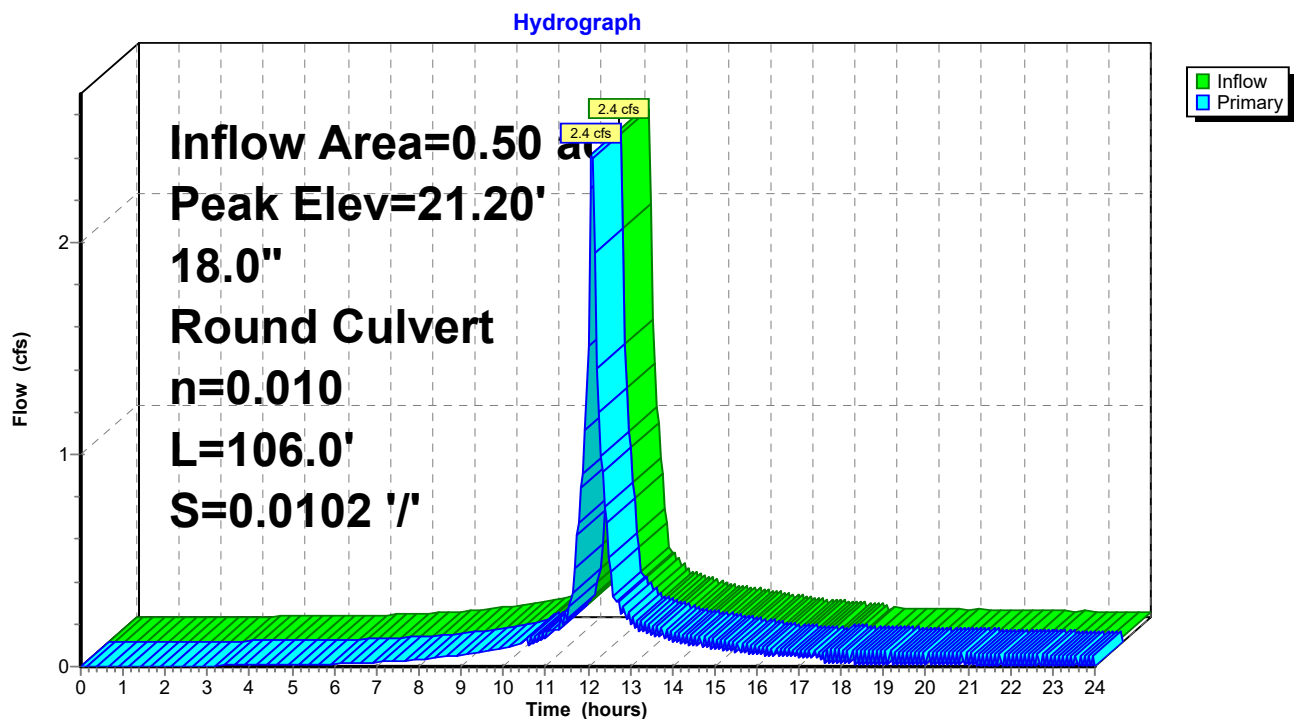
Flood Elev= 21.87'

Device	Routing	Invert	Outlet Devices
#1	Primary	15.72'	18.0" Round Culvert L= 106.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.72' / 14.64' S= 0.0102 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.09 hrs HW=20.88' TW=21.05' (Dynamic Tailwater)

↑1=Culvert (Controls 0.0 cfs)

Pond 4P: CB4



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Summary for Pond 5P: CB5

Inflow Area = 0.35 ac, 86.25% Impervious, Inflow Depth > 4.64" for 25-Year Storm event
Inflow = 1.7 cfs @ 12.09 hrs, Volume= 0.134 af
Outflow = 1.7 cfs @ 12.09 hrs, Volume= 0.134 af, Atten= 0%, Lag= 0.0 min
Primary = 1.7 cfs @ 12.09 hrs, Volume= 0.134 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 21.25' @ 12.19 hrs

Flood Elev= 21.28'

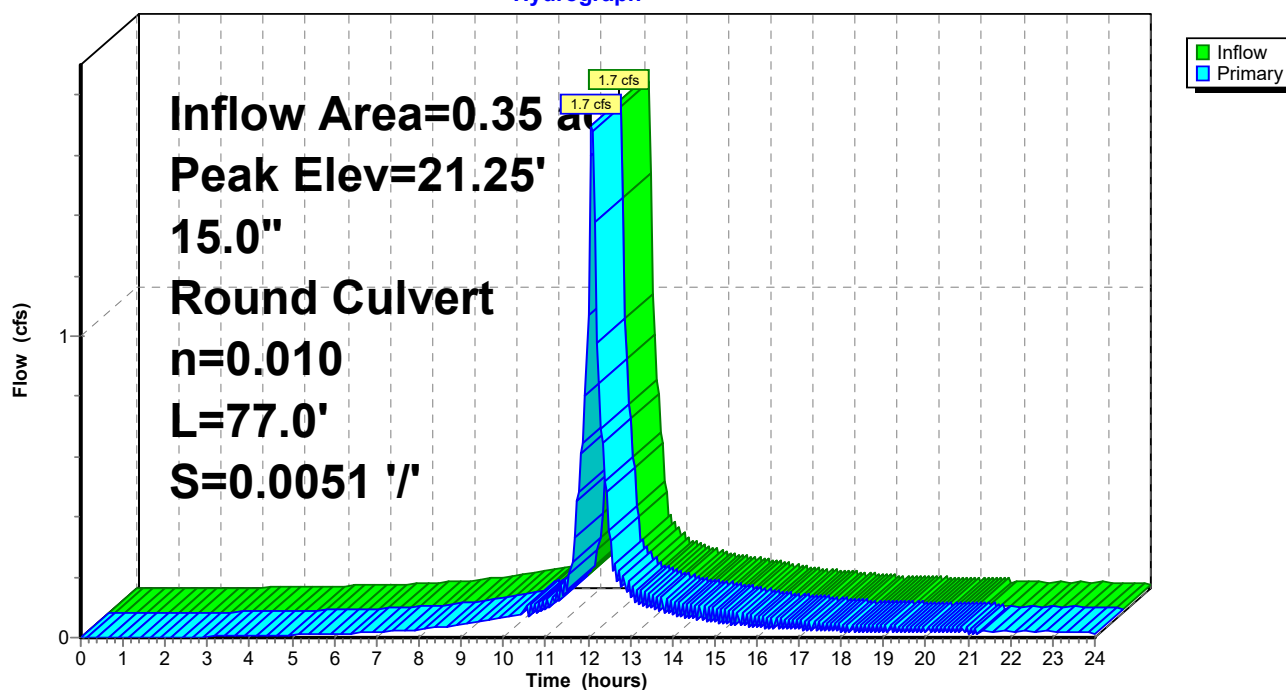
Device	Routing	Invert	Outlet Devices
#1	Primary	16.90'	15.0" Round Culvert L= 77.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.90' / 16.51' S= 0.0051 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.0 cfs @ 12.09 hrs HW=20.60' TW=20.87' (Dynamic Tailwater)

↑1=Culvert (Controls 0.0 cfs)

Pond 5P: CB5

Hydrograph



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Pond 6P: CB6

Inflow Area = 0.13 ac, 71.52% Impervious, Inflow Depth > 3.70" for 25-Year Storm event
Inflow = 0.6 cfs @ 12.09 hrs, Volume= 0.040 af
Outflow = 0.5 cfs @ 12.08 hrs, Volume= 0.040 af, Atten= 4%, Lag= 0.0 min
Primary = 0.5 cfs @ 12.08 hrs, Volume= 0.040 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 21.25' @ 12.24 hrs

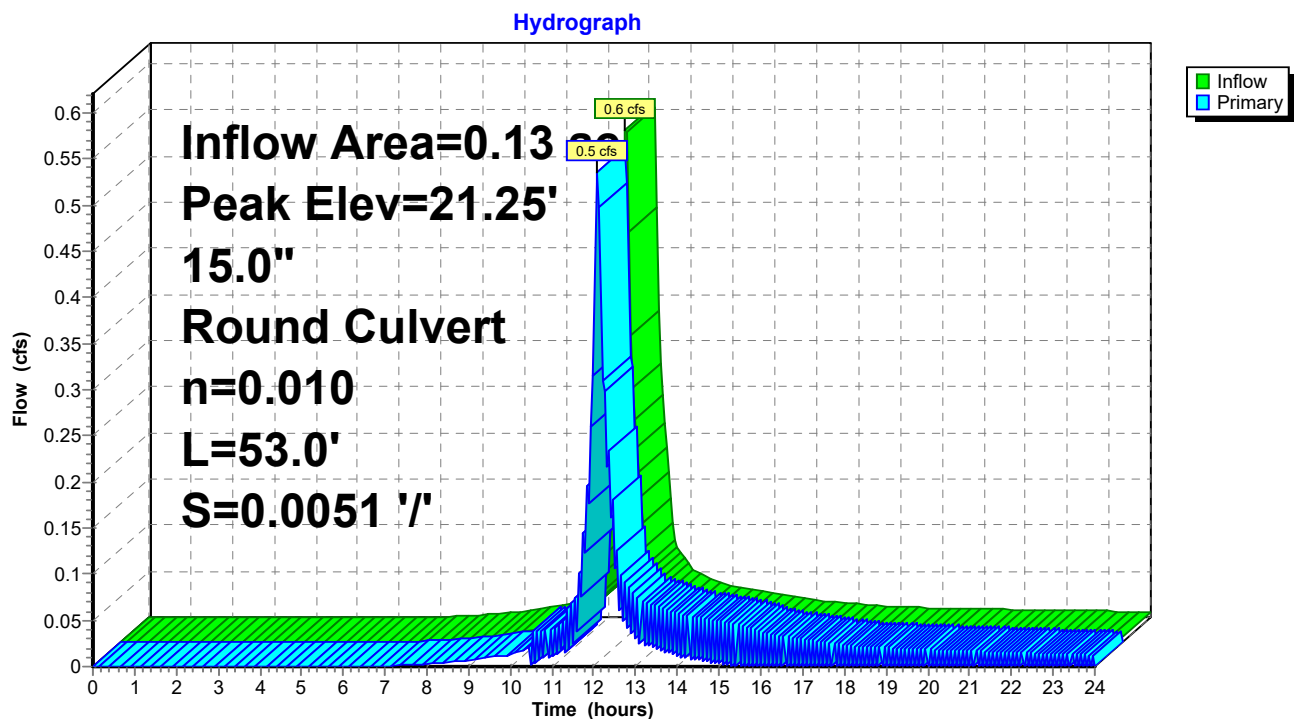
Flood Elev= 21.28'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.28'	15.0" Round Culvert L= 53.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.28' / 17.01' S= 0.0051 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.0 cfs @ 12.08 hrs HW=20.36' TW=20.57' (Dynamic Tailwater)

↑1=Culvert (Controls 0.0 cfs)

Pond 6P: CB6



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Summary for Pond 7P: CB7

Inflow Area = 0.29 ac, 60.52% Impervious, Inflow Depth > 3.11" for 25-Year Storm event
Inflow = 1.0 cfs @ 12.09 hrs, Volume= 0.076 af
Outflow = 1.0 cfs @ 12.09 hrs, Volume= 0.076 af, Atten= 0%, Lag= 0.0 min
Primary = 1.0 cfs @ 12.09 hrs, Volume= 0.076 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

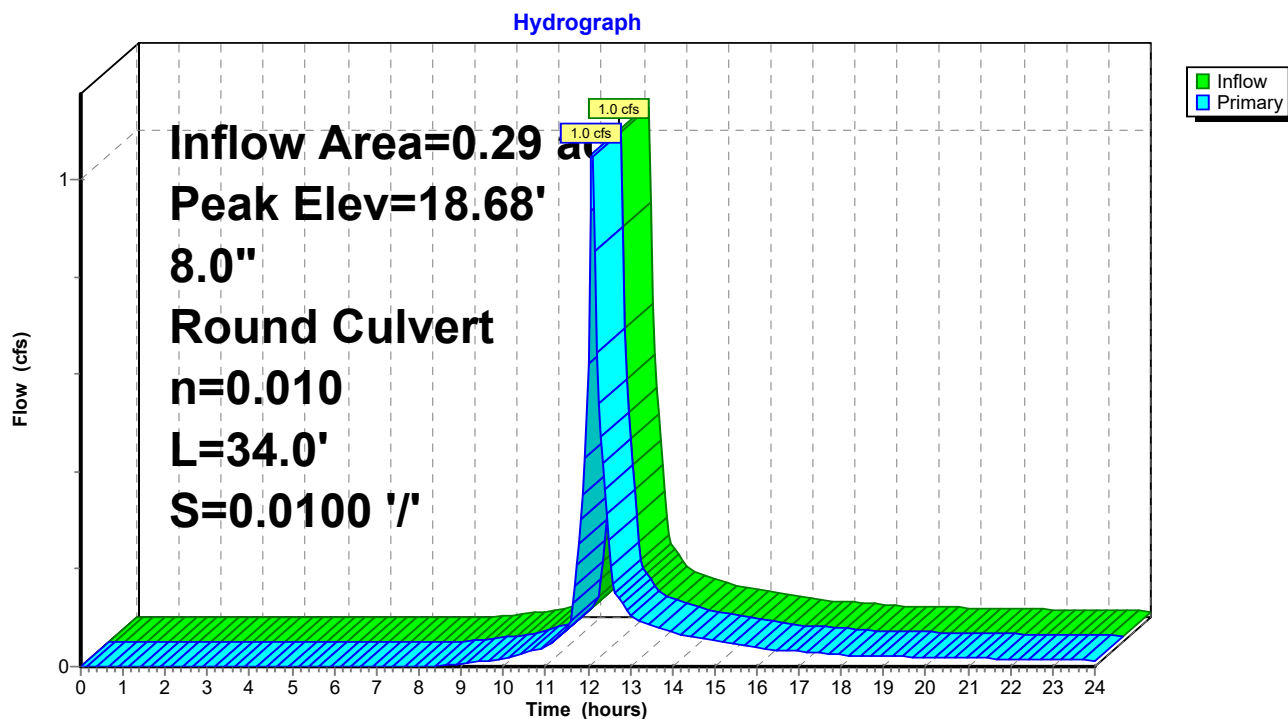
Peak Elev= 18.68' @ 12.11 hrs

Flood Elev= 23.82'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.40'	8.0" Round Culvert L= 34.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.40' / 17.06' S= 0.0100 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.9 cfs @ 12.09 hrs HW=18.62' TW=18.12' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 0.9 cfs @ 2.71 fps)

Pond 7P: CB7



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Summary for Pond 8P: CB8

Inflow Area = 0.29 ac, 69.88% Impervious, Inflow Depth > 3.60" for 25-Year Storm event
Inflow = 1.2 cfs @ 12.09 hrs, Volume= 0.087 af
Outflow = 1.2 cfs @ 12.09 hrs, Volume= 0.087 af, Atten= 0%, Lag= 0.0 min
Primary = 1.2 cfs @ 12.09 hrs, Volume= 0.087 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

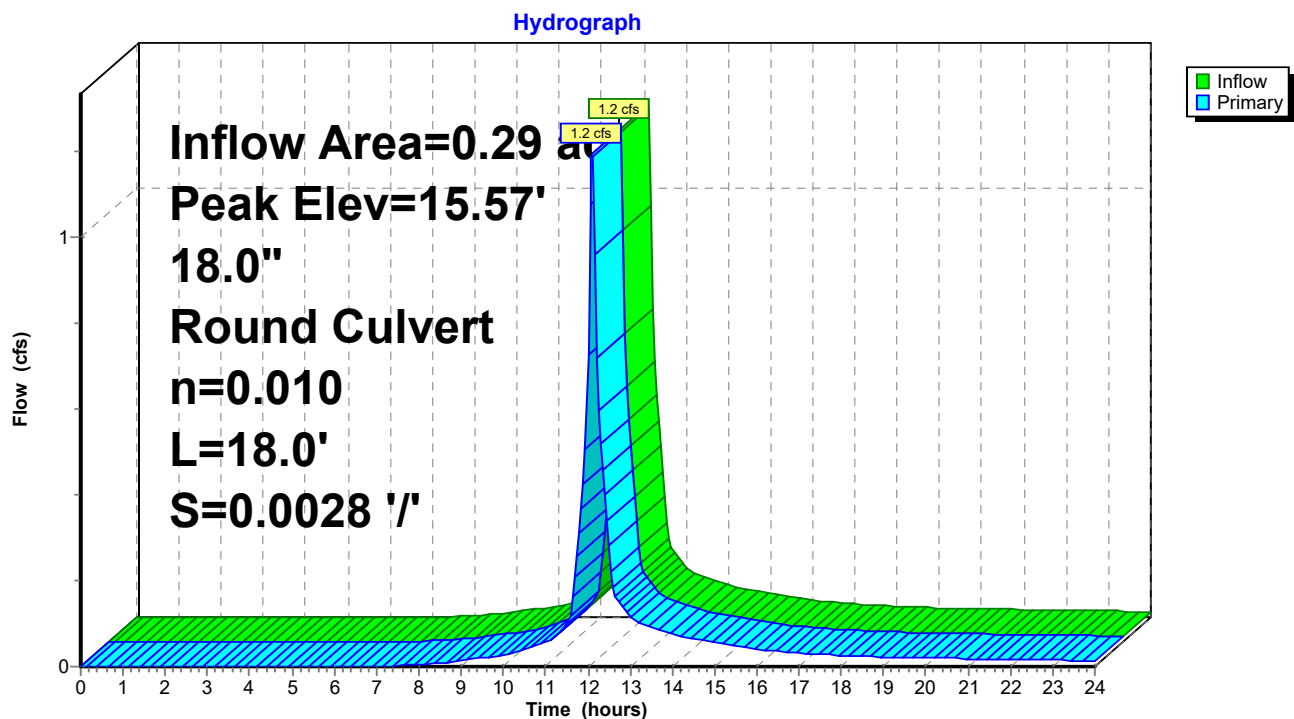
Peak Elev= 15.57' @ 12.19 hrs

Flood Elev= 23.39'

Device	Routing	Invert	Outlet Devices
#1	Primary	14.85'	18.0" Round Culvert L= 18.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.85' / 14.80' S= 0.0028 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.7 cfs @ 12.09 hrs HW=15.48' TW=15.41' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 0.7 cfs @ 1.42 fps)

Pond 8P: CB8



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Pond 9P: DMH1

Inflow Area = 1.20 ac, 84.73% Impervious, Inflow Depth > 4.54" for 25-Year Storm event
Inflow = 5.9 cfs @ 12.09 hrs, Volume= 0.454 af
Outflow = 5.9 cfs @ 12.09 hrs, Volume= 0.454 af, Atten= 0%, Lag= 0.0 min
Primary = 5.9 cfs @ 12.09 hrs, Volume= 0.454 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 21.12' @ 12.10 hrs

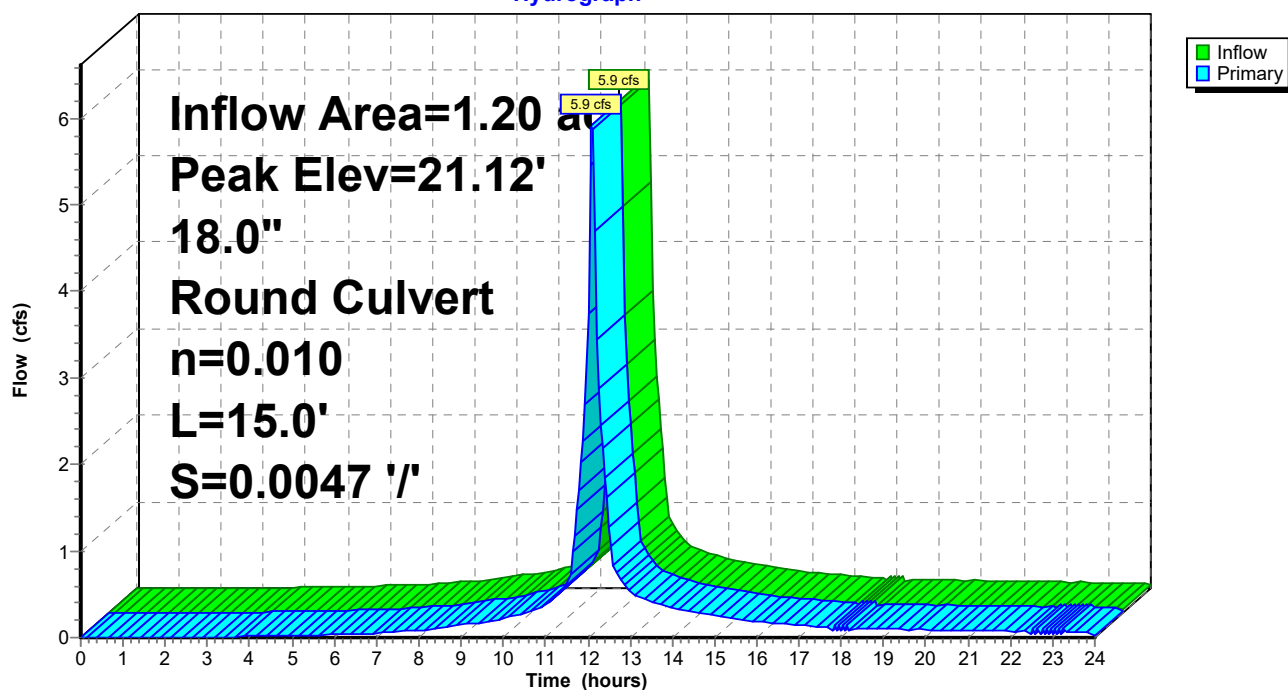
Flood Elev= 22.85'

Device	Routing	Invert	Outlet Devices
#1	Primary	15.78'	18.0" Round Culvert L= 15.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.78' / 15.71' S= 0.0047 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=5.4 cfs @ 12.09 hrs HW=21.06' TW=20.40' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 5.4 cfs @ 3.08 fps)

Pond 9P: DMH1

Hydrograph



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Summary for Pond 11P: Ex CB1

Inflow Area = 0.39 ac, 73.58% Impervious, Inflow Depth > 3.84" for 25-Year Storm event
Inflow = 1.7 cfs @ 12.09 hrs, Volume= 0.126 af
Outflow = 1.7 cfs @ 12.09 hrs, Volume= 0.126 af, Atten= 0%, Lag= 0.0 min
Primary = 1.7 cfs @ 12.09 hrs, Volume= 0.126 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 19.30' @ 12.09 hrs

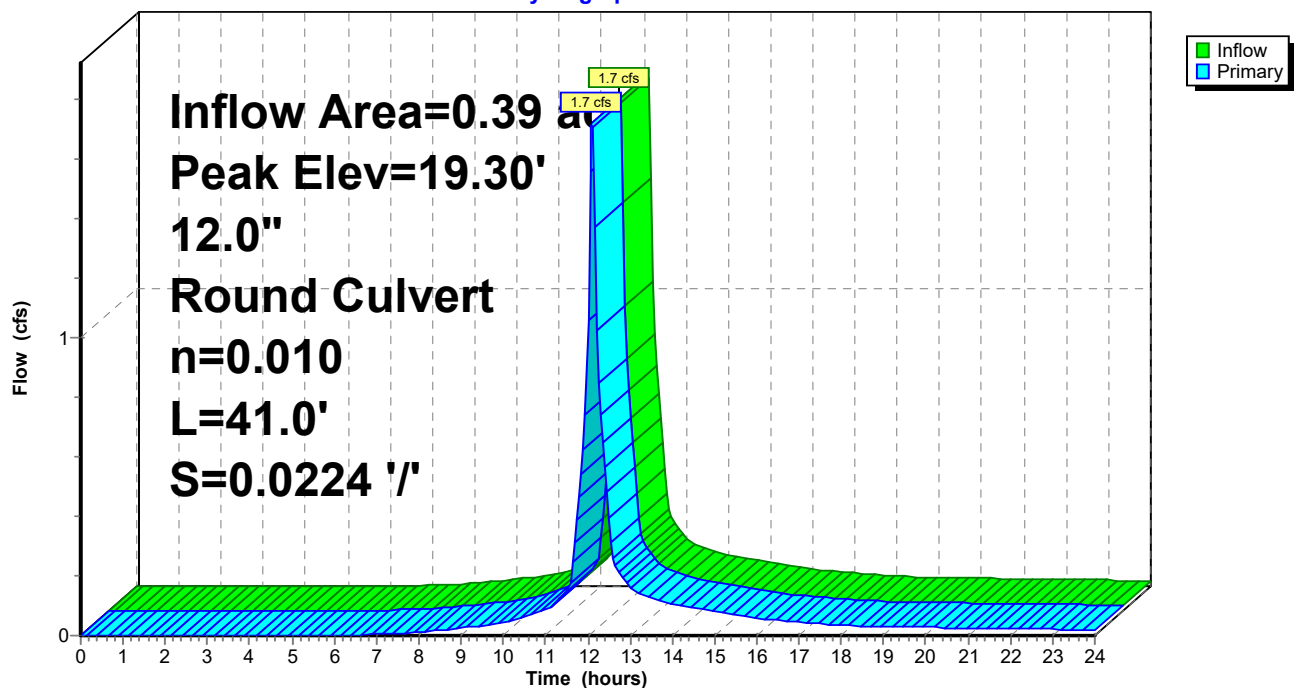
Flood Elev= 22.02'

Device	Routing	Invert	Outlet Devices
#1	Primary	18.47'	12.0" Round Culvert L= 41.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.47' / 17.55' S= 0.0224 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.7 cfs @ 12.09 hrs HW=19.29' TW=18.32' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 1.7 cfs @ 2.44 fps)

Pond 11P: Ex CB1

Hydrograph



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Summary for Pond 12P: Ex CB2

Inflow Area = 0.08 ac, 58.65% Impervious, Inflow Depth > 3.01" for 25-Year Storm event
Inflow = 0.3 cfs @ 12.09 hrs, Volume= 0.020 af
Outflow = 0.3 cfs @ 12.09 hrs, Volume= 0.020 af, Atten= 0%, Lag= 0.0 min
Primary = 0.3 cfs @ 12.09 hrs, Volume= 0.020 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 18.48' @ 12.09 hrs

Flood Elev= 22.15'

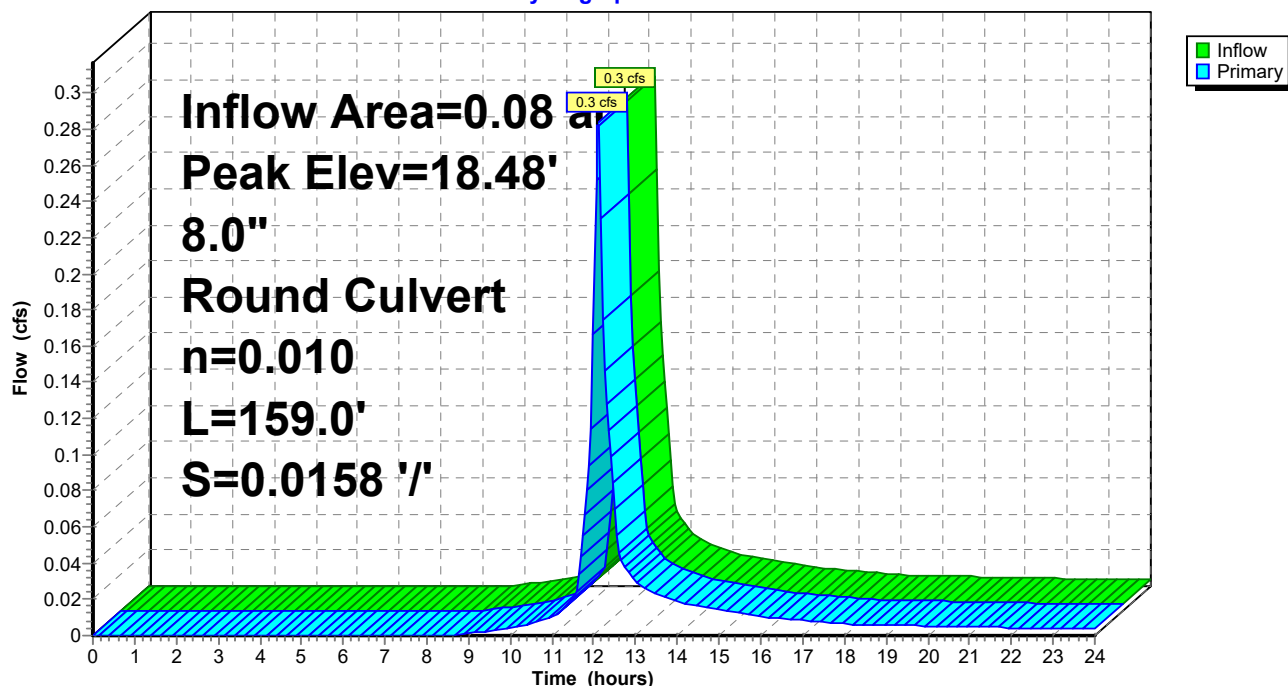
Device	Routing	Invert	Outlet Devices
#1	Primary	18.14'	8.0" Round Culvert L= 159.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.14' / 15.62' S= 0.0158 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.3 cfs @ 12.09 hrs HW=18.48' TW=0.00' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 0.3 cfs @ 1.56 fps)

Pond 12P: Ex CB2

Hydrograph



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Summary for Pond 13P: CMP Peak Detention

Inflow = 5.9 cfs @ 12.09 hrs, Volume= 0.358 af
Outflow = 4.2 cfs @ 12.17 hrs, Volume= 0.358 af, Atten= 29%, Lag= 4.8 min
Primary = 4.2 cfs @ 12.17 hrs, Volume= 0.358 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 20.03' @ 12.18 hrs Surf.Area= 696 sf Storage= 2,253 cf
Flood Elev= 23.00' Surf.Area= 696 sf Storage= 2,403 cf

Plug-Flow detention time= 6.9 min calculated for 0.358 af (100% of inflow)
Center-of-Mass det. time= 6.6 min (797.5 - 790.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	14.71'	0 cf	8.00'W x 87.00'L x 6.00'H Field A 4,176 cf Overall - 2,403 cf Embedded = 1,773 cf x 0.0% Voids
#2A	14.71'	2,403 cf	CMP Round 72 x 4 Inside #1 Effective Size= 72.0"W x 72.0"H => 28.27 sf x 20.00'L = 565.5 cf Overall Size= 72.0"W x 72.0"H x 20.00'L Row Length Adjustment= +5.00' x 28.27 sf x 1 rows
		2,403 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	14.71'	18.0" Round Culvert L= 20.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 14.71' / 14.33' S= 0.0190 ' S= 0.0190 ' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf
#2	Device 1	14.71'	6.1" Vert. Orifice/Grate C= 0.600
#3	Device 1	17.21'	5.7" Vert. Orifice/Grate C= 0.600
#4	Device 1	18.79'	4.8" Vert. Orifice/Grate C= 0.600
#5	Device 1	20.05'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 5.34 5.40 5.46 5.52 5.58 5.64 5.70 5.76 5.82 5.88 5.94 6.00 Width (feet) 3.75 3.60 3.43 3.26 3.06 2.85 2.62 2.35 2.05 1.68 1.19 0.00

Primary OutFlow Max=4.1 cfs @ 12.17 hrs HW=19.98' TW=15.12' (Dynamic Tailwater)

- 1=Culvert (Passes 4.1 cfs of 18.1 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 2.2 cfs @ 10.61 fps)
- 3=Orifice/Grate (Orifice Controls 1.4 cfs @ 7.66 fps)
- 4=Orifice/Grate (Orifice Controls 0.6 cfs @ 4.79 fps)
- 5=Custom Weir/Orifice (Controls 0.0 cfs)

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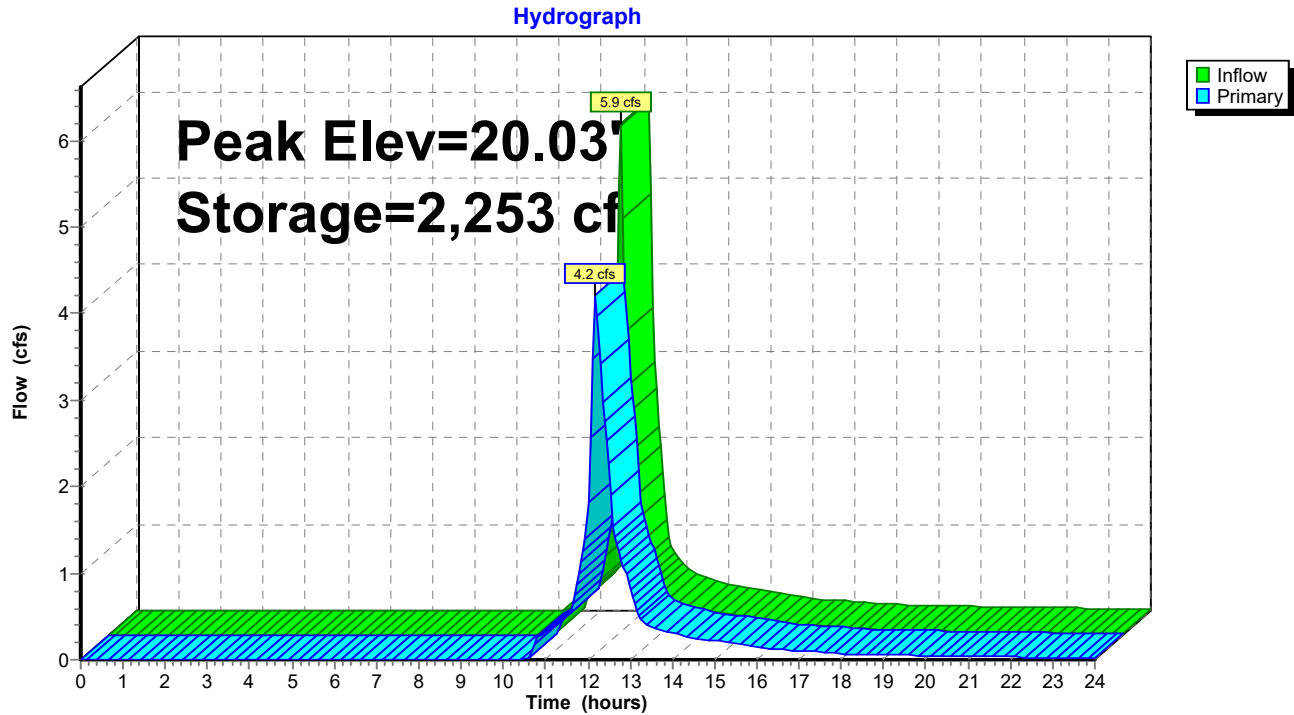
POST

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Pond 13P: CMP Peak Detention



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Summary for Pond 14P: CONTECH WQv CMP Det & SF System

Inflow Area = 1.20 ac, 84.73% Impervious, Inflow Depth > 4.54" for 25-Year Storm event
 Inflow = 5.9 cfs @ 12.09 hrs, Volume= 0.454 af
 Outflow = 6.0 cfs @ 12.09 hrs, Volume= 0.413 af, Atten= 0%, Lag= 0.4 min
 Primary = 0.0 cfs @ 12.05 hrs, Volume= 0.055 af
 Secondary = 5.9 cfs @ 12.09 hrs, Volume= 0.358 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Starting Elev= 15.71' Surf.Area= 683 sf Storage= 96 cf

Peak Elev= 20.41' @ 12.09 hrs Surf.Area= 683 sf Storage= 2,070 cf (1,975 cf above start)

Flood Elev= 23.00' Surf.Area= 683 sf Storage= 2,114 cf (2,019 cf above start)

Plug-Flow detention time= 74.7 min calculated for 0.410 af (90% of inflow)

Center-of-Mass det. time= 25.3 min (809.8 - 784.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	15.21'	0 cf	7.50'W x 91.00'L x 5.50'H Field A 3,754 cf Overall - 2,114 cf Embedded = 1,639 cf x 0.0% Voids
#2A	15.21'	2,114 cf	CMP Round 66 x 4 Inside #1 Effective Size= 66.0"W x 66.0"H => 23.76 sf x 20.00'L = 475.2 cf Overall Size= 66.0"W x 66.0"H x 20.00'L Row Length Adjustment= +9.00' x 23.76 sf x 1 rows
		2,114 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	14.71'	Tube/Siphon/Float Valve X 6.00 Starts@17.76' Breaks@15.38' 0.336" Diameter, C= 0.600, 0.263" Trickle Diameter
#2	Device 1	15.71'	12.0" Round CMP_Round 12" L= 10.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 15.71' / 15.68' S= 0.0030 ' / Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#3	Secondary	19.78'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 4.57 4.62 4.67 4.73 4.79 4.84 4.89 4.95 5.00 5.06 5.12 5.17 5.22 5.28 5.33 5.39 5.45 5.50 Width (feet) 4.13 4.03 3.93 3.82 3.70 3.57 3.44 3.30 3.15 2.98 2.81 2.61 2.40 2.16 1.88 1.54 1.09 0.00

Primary OutFlow Max=0.0 cfs @ 12.05 hrs HW=20.36' TW=14.89' (Dynamic Tailwater)↑ **1=Tube/Siphon/Float Valve** (Orifice Controls 0.0 cfs @ 11.26 fps)↑ **2=CMP_Round 12"** (Passes 0.0 cfs of 7.7 cfs potential flow)**Secondary OutFlow** Max=5.8 cfs @ 12.09 hrs HW=20.41' TW=19.16' (Dynamic Tailwater)↑ **3=Custom Weir/Orifice** (Weir Controls 5.8 cfs @ 2.72 fps)

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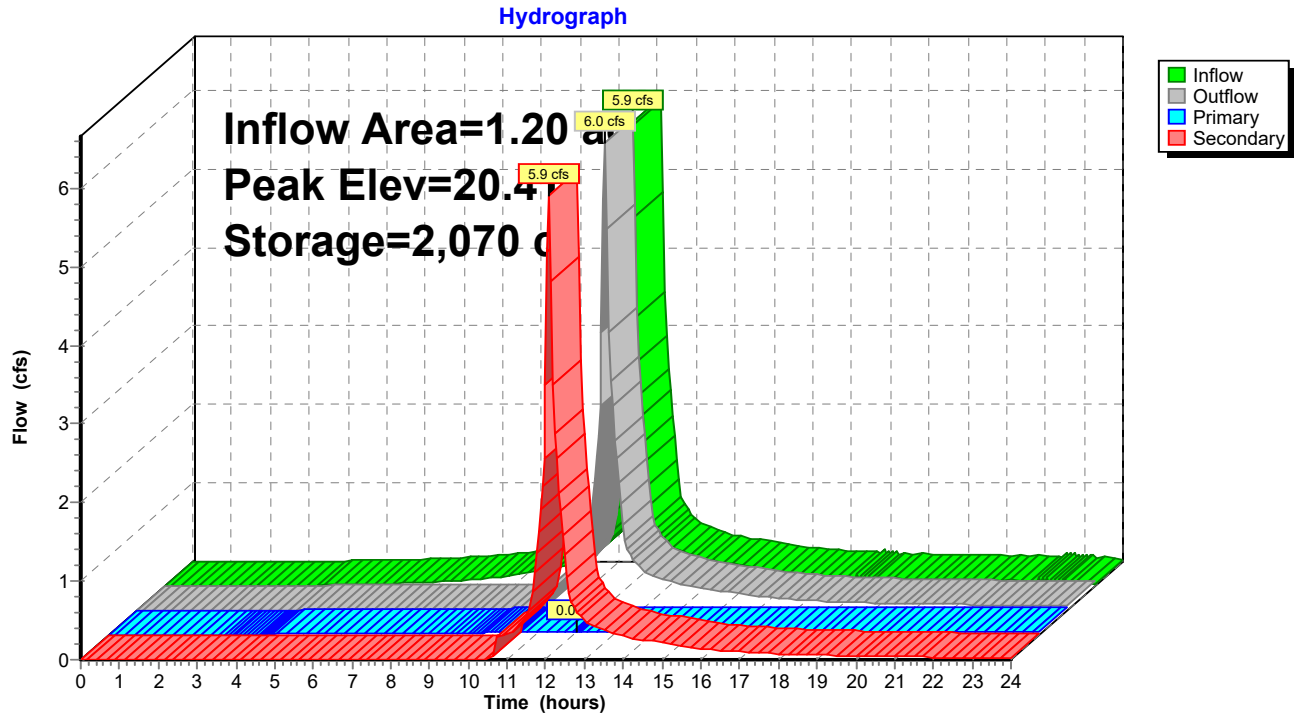
POST

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Pond 14P: CONTECH WQv CMP Det & SF System



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Summary for Pond 21P: Ex DMH1

Inflow Area = 0.29 ac, 69.88% Impervious, Inflow Depth > 3.60" for 25-Year Storm event
Inflow = 1.2 cfs @ 12.09 hrs, Volume= 0.087 af
Outflow = 1.2 cfs @ 12.09 hrs, Volume= 0.087 af, Atten= 0%, Lag= 0.0 min
Primary = 1.2 cfs @ 12.09 hrs, Volume= 0.087 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.51' @ 12.15 hrs

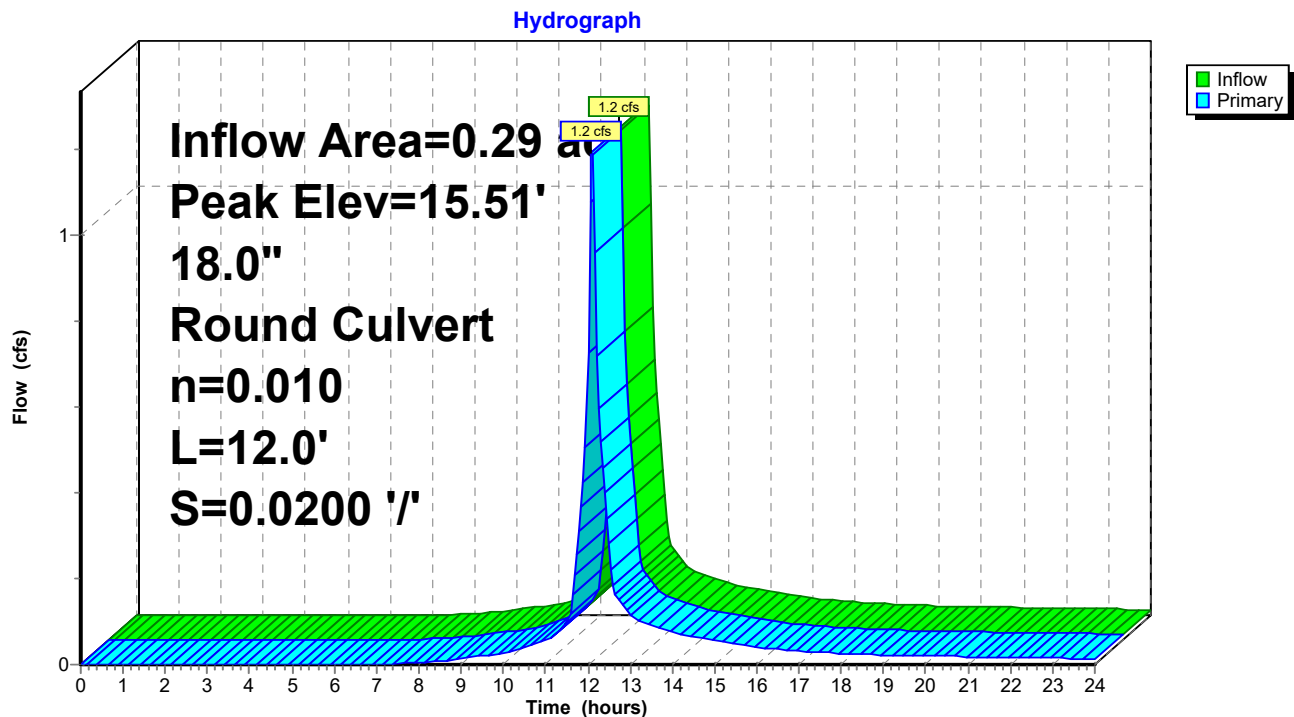
Flood Elev= 23.72'

Device	Routing	Invert	Outlet Devices
#1	Primary	14.62'	18.0" Round Culvert L= 12.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.62' / 14.38' S= 0.0200 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.0 cfs @ 12.09 hrs HW=15.41' TW=15.44' (Dynamic Tailwater)

↑1=Culvert (Controls 0.0 cfs)

Pond 21P: Ex DMH1



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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Summary for Pond 22P: Ex DMH2

Inflow Area = 0.69 ac, 68.00% Impervious, Inflow Depth > 3.53" for 25-Year Storm event
Inflow = 2.8 cfs @ 12.09 hrs, Volume= 0.202 af
Outflow = 2.8 cfs @ 12.09 hrs, Volume= 0.202 af, Atten= 0%, Lag= 0.0 min
Primary = 2.8 cfs @ 12.09 hrs, Volume= 0.202 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

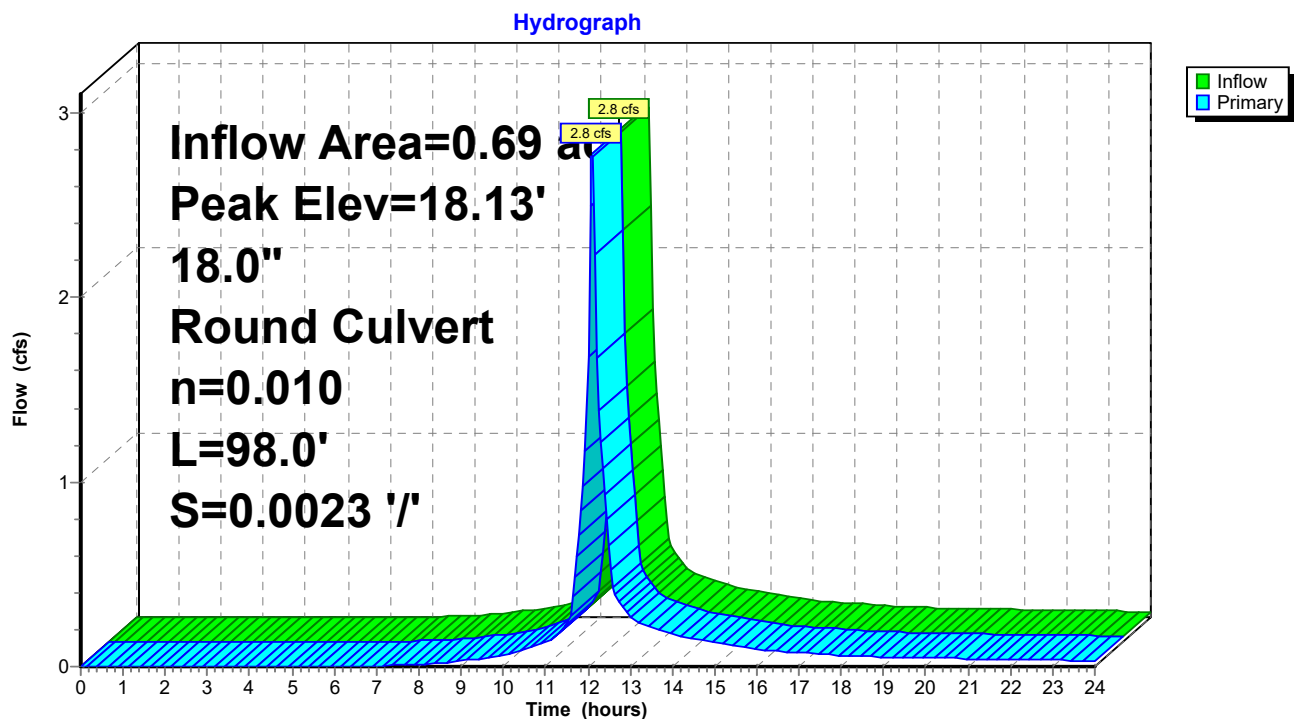
Peak Elev= 18.13' @ 12.11 hrs

Flood Elev= 24.92'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.12'	18.0" Round Culvert L= 98.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.12' / 16.89' S= 0.0023 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.5 cfs @ 12.09 hrs HW=18.11' TW=17.74' (Dynamic Tailwater)
↑ **1=Culvert** (Outlet Controls 2.5 cfs @ 2.86 fps)

Pond 22P: Ex DMH2



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Summary for Pond 23P: Ex CB3

Inflow Area = 1.20 ac, 84.73% Impervious, Inflow Depth > 4.13" for 25-Year Storm event
Inflow = 4.2 cfs @ 12.17 hrs, Volume= 0.413 af
Outflow = 4.2 cfs @ 12.17 hrs, Volume= 0.413 af, Atten= 0%, Lag= 0.0 min
Primary = 4.2 cfs @ 12.17 hrs, Volume= 0.413 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 15.13' @ 12.17 hrs

Flood Elev= 23.60'

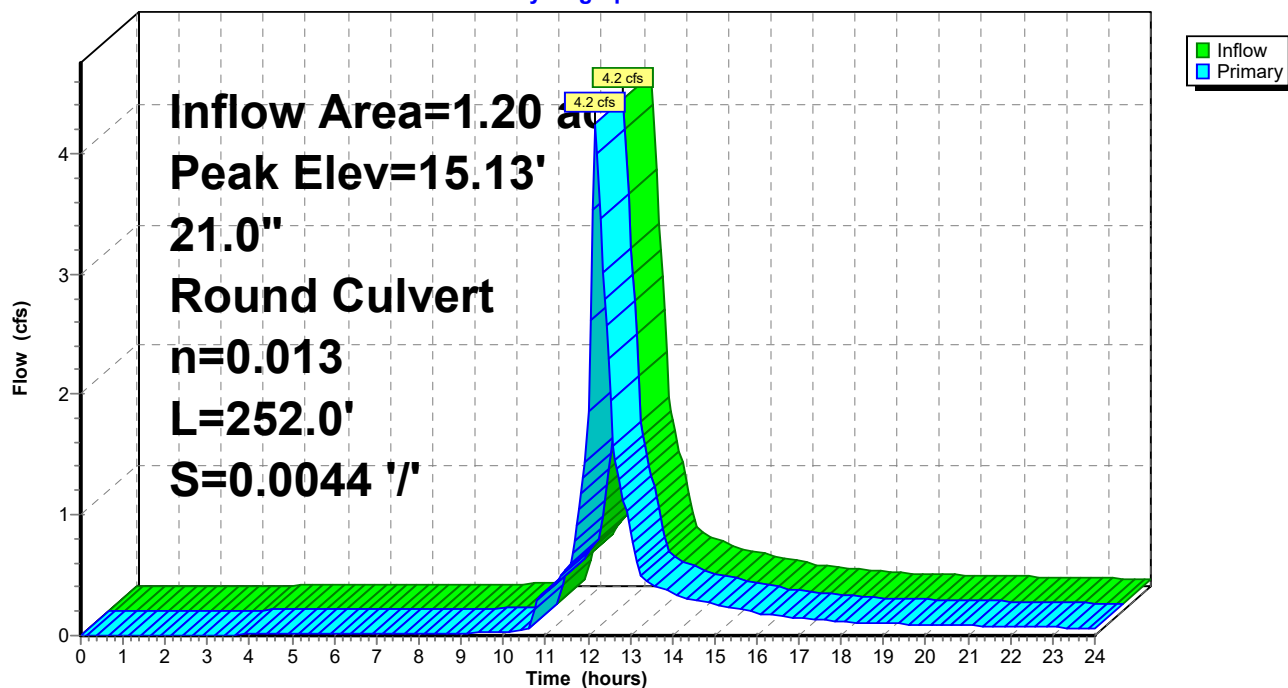
Device	Routing	Invert	Outlet Devices
#1	Primary	14.05'	21.0" Round Culvert L= 252.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.05' / 12.94' S= 0.0044 '/ Cc= 0.900 n= 0.013 Cast iron, coated, Flow Area= 2.41 sf

Primary OutFlow Max=4.2 cfs @ 12.17 hrs HW=15.12' TW=0.00' (Dynamic Tailwater)

↑**1=Culvert** (Barrel Controls 4.2 cfs @ 3.86 fps)

Pond 23P: Ex CB3

Hydrograph



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Summary for Pond 24P: Ex DMH4

Inflow Area = 0.69 ac, 68.00% Impervious, Inflow Depth > 3.53" for 25-Year Storm event
Inflow = 2.8 cfs @ 12.09 hrs, Volume= 0.202 af
Outflow = 2.8 cfs @ 12.09 hrs, Volume= 0.202 af, Atten= 0%, Lag= 0.0 min
Primary = 2.8 cfs @ 12.09 hrs, Volume= 0.202 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

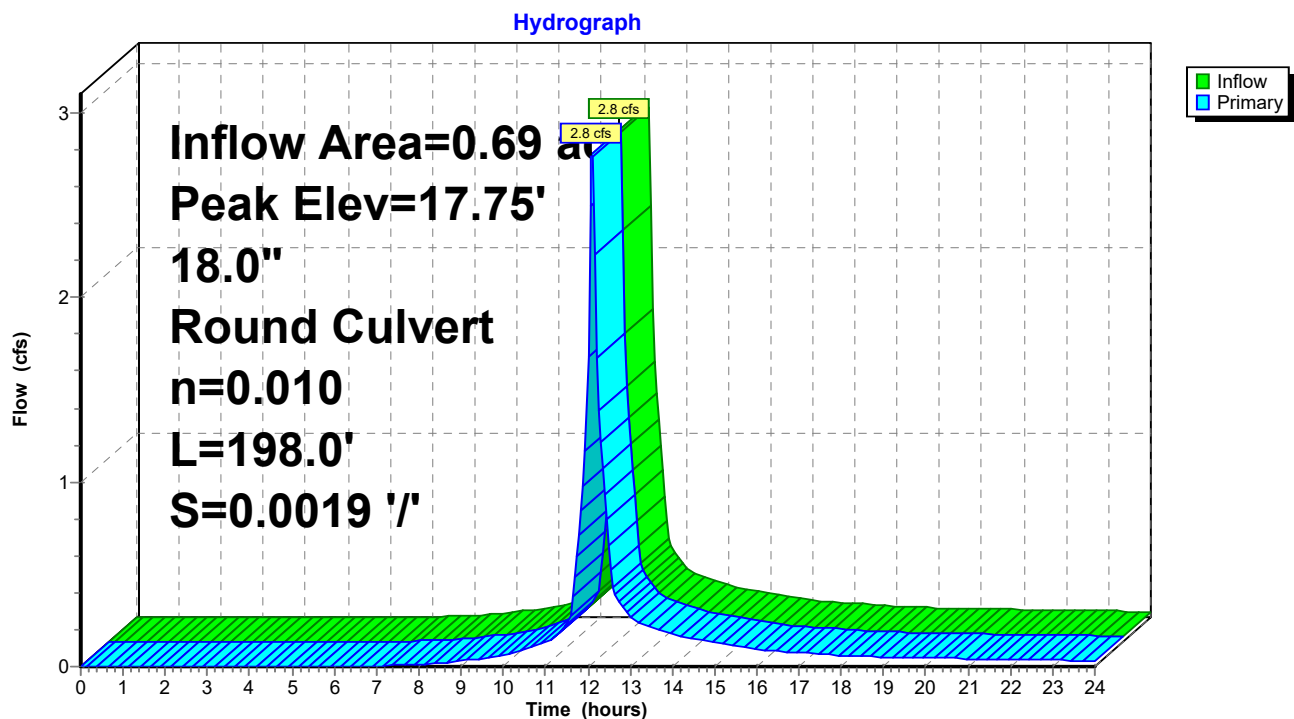
Peak Elev= 17.75' @ 12.09 hrs

Flood Elev= 25.38'

Device	Routing	Invert	Outlet Devices
#1	Primary	16.75'	18.0" Round Culvert L= 198.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.75' / 16.38' S= 0.0019 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.7 cfs @ 12.09 hrs HW=17.74' TW=16.37' (Dynamic Tailwater)
1=Culvert (Barrel Controls 2.7 cfs @ 3.12 fps)

Pond 24P: Ex DMH4



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Summary for Pond 25P: Ex DMH5

Inflow Area = 0.69 ac, 68.00% Impervious, Inflow Depth > 3.53" for 25-Year Storm event
 Inflow = 2.8 cfs @ 12.09 hrs, Volume= 0.202 af
 Outflow = 2.8 cfs @ 12.09 hrs, Volume= 0.202 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.8 cfs @ 12.09 hrs, Volume= 0.202 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 16.38' @ 12.09 hrs

Flood Elev= 23.84'

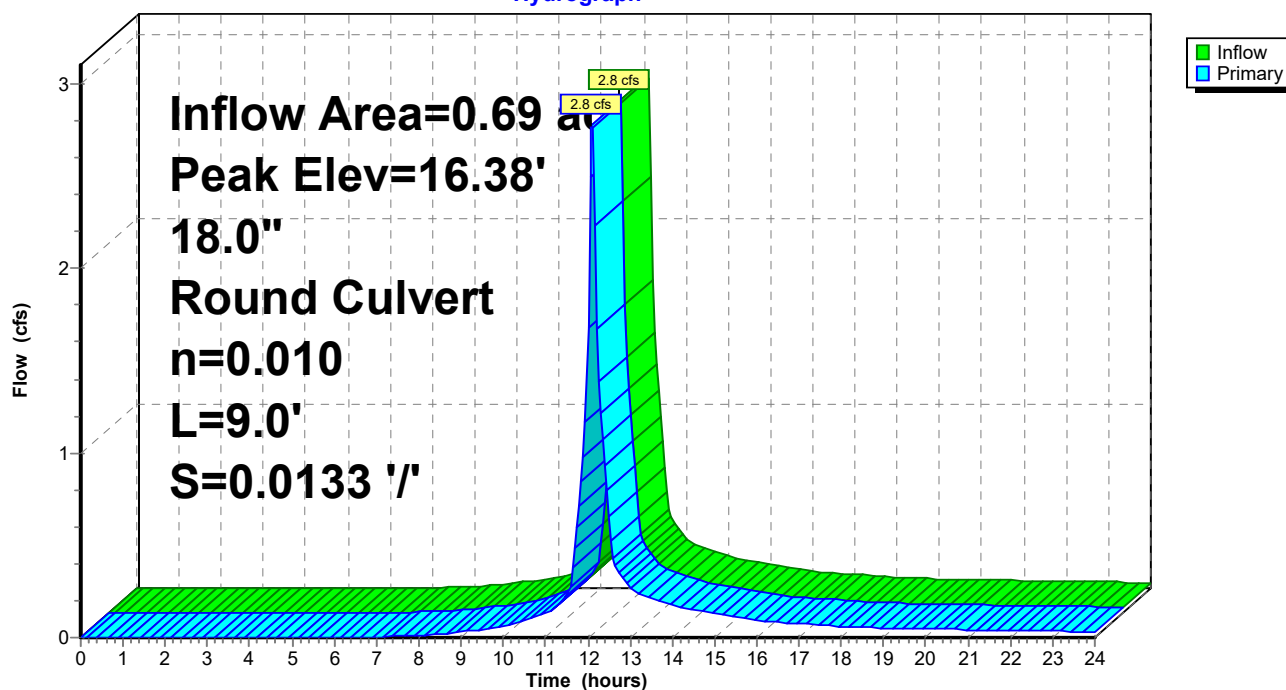
Device	Routing	Invert	Outlet Devices
#1	Primary	15.44'	18.0" Round Culvert L= 9.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 15.44' / 15.32' S= 0.0133 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.7 cfs @ 12.09 hrs HW=16.37' TW=15.44' (Dynamic Tailwater)

1=Culvert (Barrel Controls 2.7 cfs @ 3.37 fps)

Pond 25P: Ex DMH5

Hydrograph



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Summary for Pond 26P: Ex DMH6

Inflow Area = 0.98 ac, 68.56% Impervious, Inflow Depth > 3.55" for 25-Year Storm event
Inflow = 4.0 cfs @ 12.09 hrs, Volume= 0.289 af
Outflow = 4.0 cfs @ 12.09 hrs, Volume= 0.289 af, Atten= 0%, Lag= 0.0 min
Primary = 4.0 cfs @ 12.09 hrs, Volume= 0.289 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

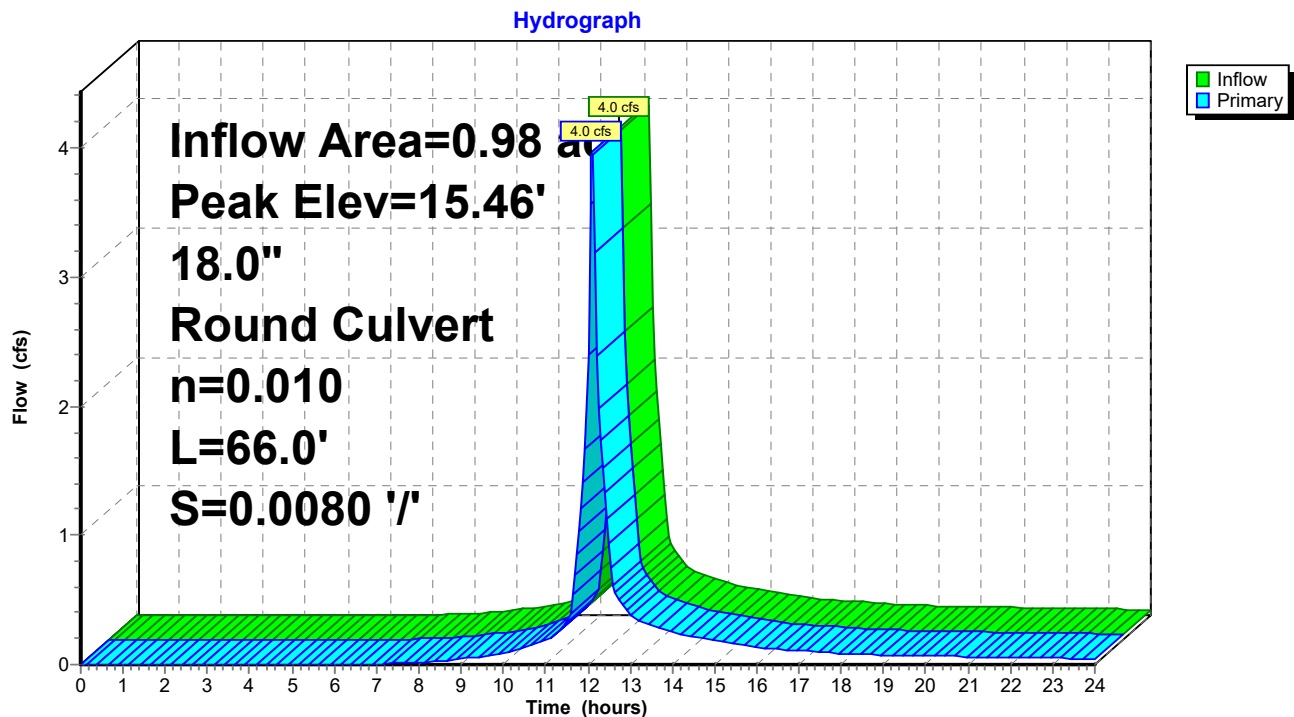
Peak Elev= 15.46' @ 12.11 hrs

Flood Elev= 23.95'

Device	Routing	Invert	Outlet Devices
#1	Primary	14.30'	18.0" Round Culvert L= 66.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 14.30' / 13.77' S= 0.0080 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.6 cfs @ 12.09 hrs HW=15.44' TW=14.97' (Dynamic Tailwater)
↑ **1=Culvert** (Outlet Controls 3.6 cfs @ 3.42 fps)

Pond 26P: Ex DMH6



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Summary for Pond 27P: Ex DMH7

Inflow Area = 0.98 ac, 68.56% Impervious, Inflow Depth > 3.55" for 25-Year Storm event
Inflow = 4.0 cfs @ 12.09 hrs, Volume= 0.289 af
Outflow = 4.0 cfs @ 12.09 hrs, Volume= 0.289 af, Atten= 0%, Lag= 0.0 min
Primary = 4.0 cfs @ 12.09 hrs, Volume= 0.289 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 14.99' @ 12.09 hrs

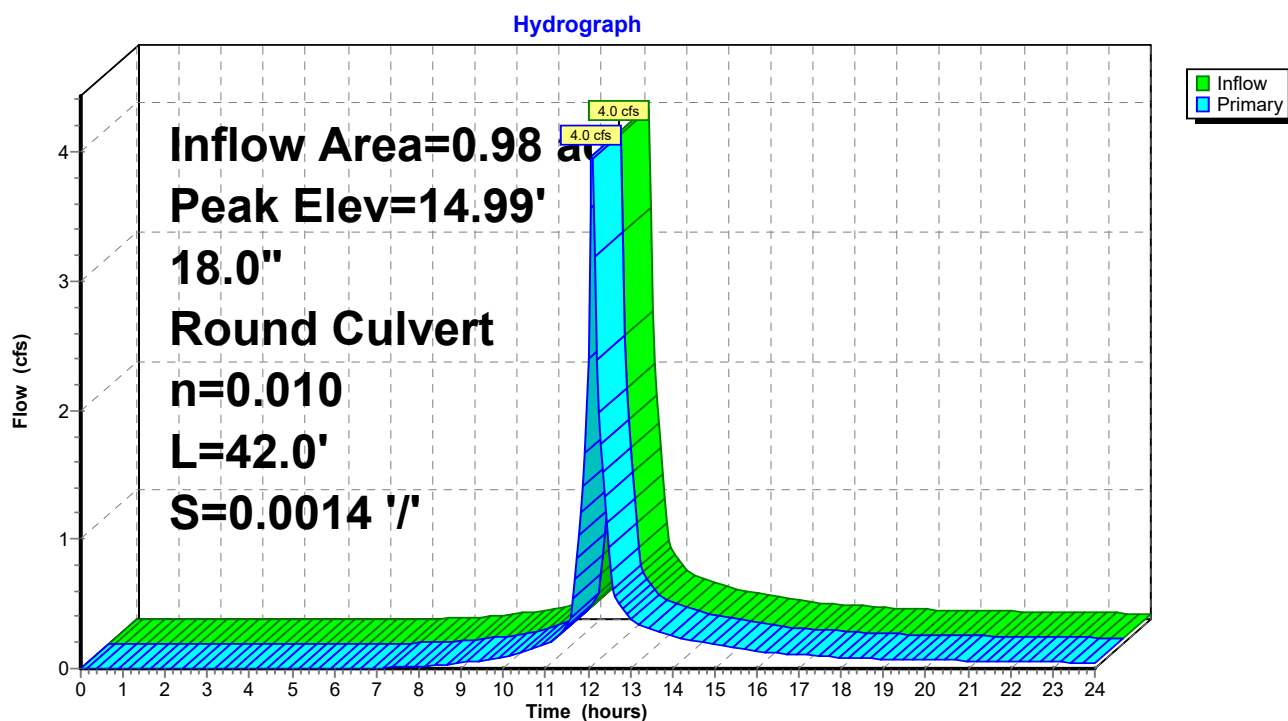
Flood Elev= 24.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	13.70'	18.0" Round Culvert L= 42.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 13.70' / 13.64' S= 0.0014 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.9 cfs @ 12.09 hrs HW=14.97' TW=0.00' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 3.9 cfs @ 3.27 fps)

Pond 27P: Ex DMH7



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Summary for Pond 29P: Ex DMH9

Inflow Area = 0.39 ac, 73.58% Impervious, Inflow Depth > 3.84" for 25-Year Storm event
Inflow = 1.7 cfs @ 12.09 hrs, Volume= 0.126 af
Outflow = 1.7 cfs @ 12.09 hrs, Volume= 0.126 af, Atten= 0%, Lag= 0.0 min
Primary = 1.7 cfs @ 12.09 hrs, Volume= 0.126 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

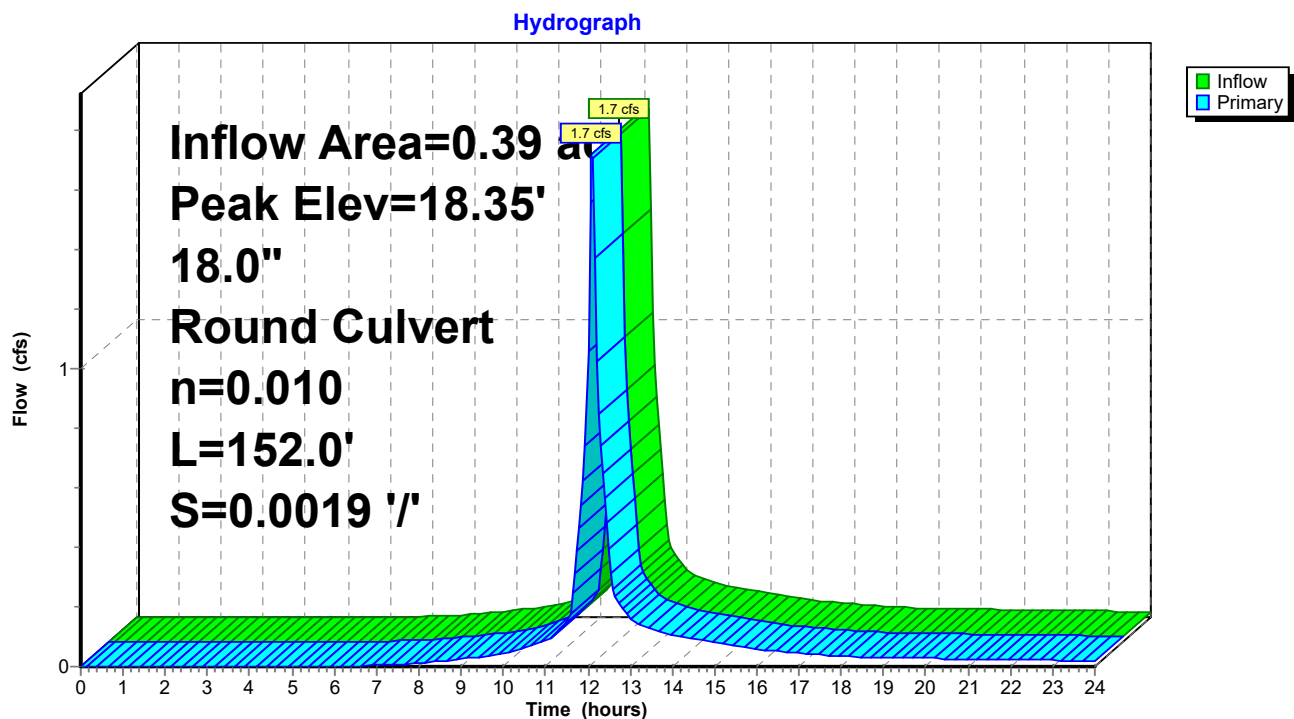
Peak Elev= 18.35' @ 12.12 hrs

Flood Elev= 23.44'

Device	Routing	Invert	Outlet Devices
#1	Primary	17.46'	18.0" Round Culvert L= 152.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.46' / 17.17' S= 0.0019 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.4 cfs @ 12.09 hrs HW=18.32' TW=18.11' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.4 cfs @ 1.90 fps)

Pond 29P: Ex DMH9



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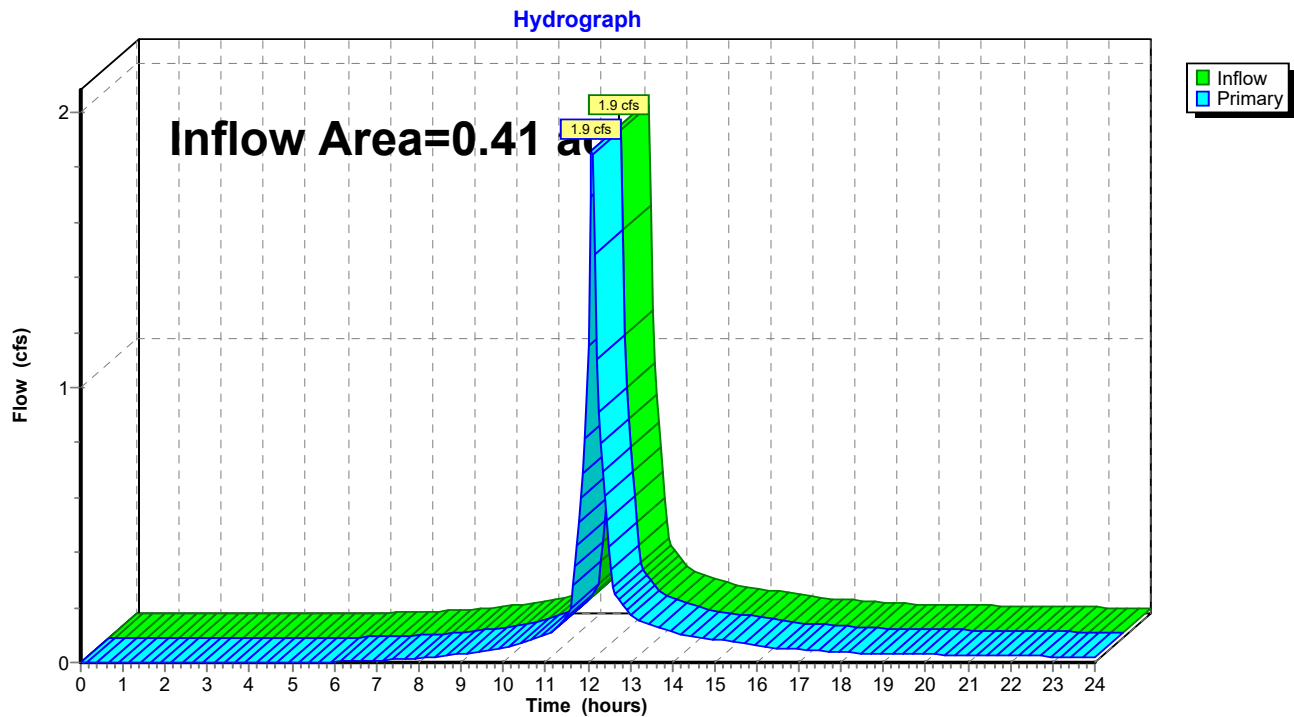
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Summary for Link SP1: Forest Ave Storm Drain

Inflow Area = 0.41 ac, 75.27% Impervious, Inflow Depth > 3.98" for 25-Year Storm event
Inflow = 1.9 cfs @ 12.09 hrs, Volume= 0.137 af
Primary = 1.9 cfs @ 12.09 hrs, Volume= 0.137 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP1: Forest Ave Storm Drain



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Type III 24-hr 25-Year Storm Rainfall=5.80"

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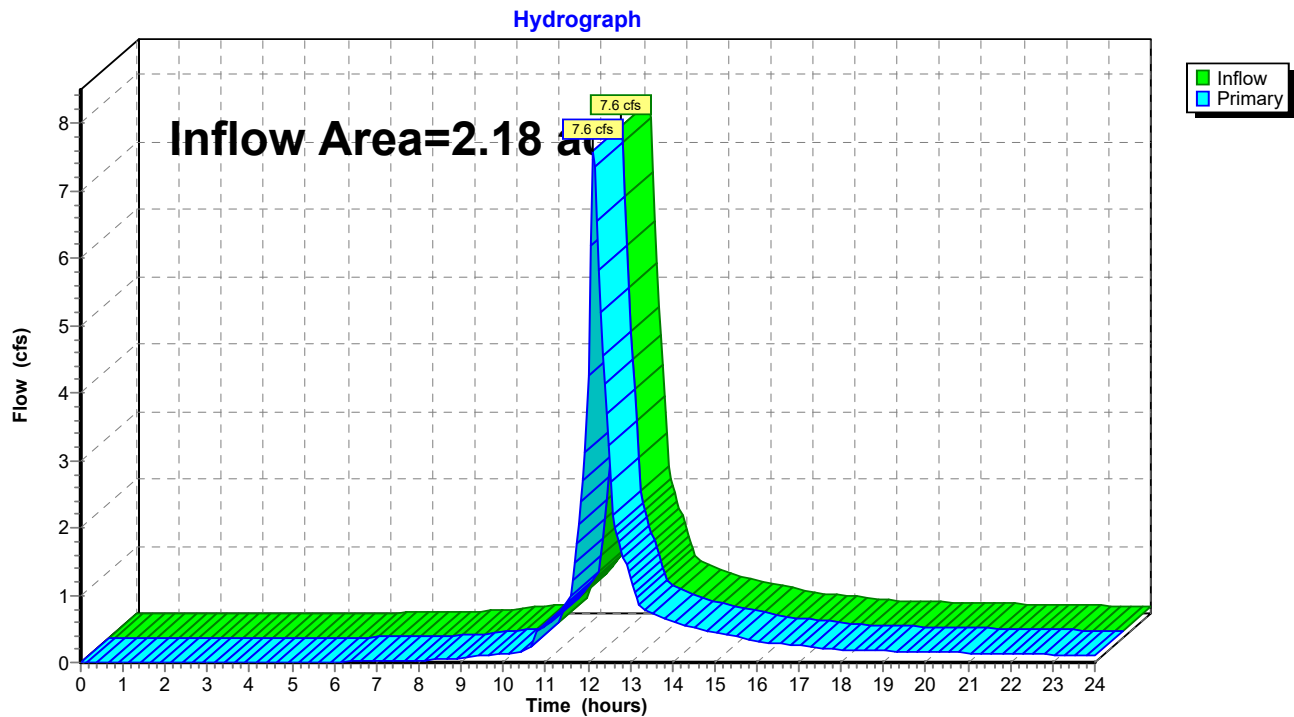
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Summary for Link SP2: Combined Sewer

Inflow Area = 2.18 ac, 77.47% Impervious, Inflow Depth > 3.87" for 25-Year Storm event
Inflow = 7.6 cfs @ 12.12 hrs, Volume= 0.701 af
Primary = 7.6 cfs @ 12.12 hrs, Volume= 0.701 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link SP2: Combined Sewer



APPENDIX D: FIGURES


 SUBCATCHMENT AREAS
 LIMIT OF DRAINAGE AREA
 STUDY POINT
 POND

[illegible]

POST-DEVELOPMENT STORMWATER FIGURE

UNIVERSITY OF SOUTHERN MAINE
PORTLAND, MAINE

WISHCAMPER PARKING LOT

JOB NO.:0232479.01
DATE:DECEMBER 2019
SCALE: 1"=20'
SHEET: 2 OF 2

POST

NOT FOR CONSTRUCTION

STORMWATER INSPECTION CHECKLIST

Inspection by: _____

Date: _____

Stormwater Management Feature	Condition						Comments
Subsurface Detention System	no siltation		some siltation		heavily silted in		
Subsurface Detention System	no clogging/flooding		some clogging/flooding		heavy clogging/flooding		
Subsurface Detention System	outlet free of erosion		some erosion at outlet		outlet heavily eroded		
Subsurface Detention System	inlet/outlet clear		some debris		completely blocked		
Subsurface Detention System	no corrosion/metal pipe damage		some corrosion/metal pipe damage		heavy corrosion/metal pipe damage		
StormFilter System*	Cartridges are in good condition		Cartridges in need of cleaning		Cartridges in need of replacement		
StormFilter System*	no clogging/flooding		some clogging/flooding		heavy clogging/flooding		
Porous Pavement	No sediment or debris accumulation		Some sediment or debris accumulation		Excessive sediment or debris accumulation		
Porous Pavement	Structure is in good condition.		Structure has small visible wear.		Structure has excessive visible wear.		

**See attached manufacturer's guidelines for StormFilter System maintenance and inspection.*

Recommended Actions: _____

Actions Completed: _____ Date: _____

Ashley Fletcher

From: Ashley Fletcher
Sent: Friday, April 17, 2020 12:06 PM
To: brad@portlandmaine.gov
Cc: Darrin Stairs
Subject: USM Wishcamper Parking Lot Connection to Existing Stormwater System
Attachments: USM Wishcamper Parking Lot Drainage Plan.pdf

Hi Brad,

We submitted a Site Plan Application to the City in January for the expansion of the USM Wishcamper Parking Lot. We will be connecting to an existing catch basin located on the southern side of the University's property which ultimately discharges to the City's combined sewer system west of the Site (a copy of the drainage plan is attached for your reference). As part of our Site Plan Application, we demonstrated that we would not be increasing the peak rate of stormwater runoff to this catch basin; Wright-Pierce has reviewed our HydroCAD analysis and agrees that the project will not result in an increase in the peak rate of runoff, but they have requested that we provide written confirmation from the Department of Public Works that the proposed connection is acceptable.

Please let me know if you have any questions or if the proposed connection is acceptable.

Thank you,

Ashley Fletcher, PE*
Project Engineer | Associate Principal
**Licensed in Maine*

Woodard & Curran
41 Hutchins Drive
Portland, ME 04102
(207)558-3665

www.woodardcurran.com

COMMITMENT & INTEGRITY DRIVE RESULTS

Att. Q

Via Electronic Mail

March 9, 2020



Department of Planning & Development
Attn: Andrew Tufts
City of Portland
389 Congress Street
Portland, ME 04101

Re: USM Wishcamper Parking Lot Neighborhood Meeting Certification

To Whom It May Concern:

I, Ashley Fletcher, PE of Woodard & Curran, hereby certify that a neighborhood meeting was held on March 4, 2020, at the Talbot Lecture Hall within Luther Bonney Hall on Bedford Street in Portland, ME, at 5:30pm regarding the Level III Site Plan Submittal for the proposed Wishcamper Parking Lot project located at 44 Bedford Street.

I also certify that on February 21, 2020, invitations were mailed to the following:

1. All addresses on the abutters list provided by the Planning Division which includes property owners within 500 feet of the proposed development.
2. Residents on the "interested parties" list.

Signed,

WOODARD & CURRAN INC.

A handwritten signature in black ink, appearing to read "Ashley Fletcher", written over a horizontal line.

Ashley Fletcher, PE
Project Engineer

Attached to this certification are:

1. Copy of the invitation sent
2. Sign-in sheet
3. Meeting Notes



February 21, 2020

Dear Neighbor:

On behalf of the University of Southern Maine (Applicant), please join us for a neighborhood meeting to discuss our plans for a parking lot located at 44 Bedford Street in Portland, Maine. A Level III Site Plan Application for the development has been filed with the City of Portland Planning Division on behalf of the Applicant.

Meeting Location: Talbot Lecture Hall within Luther Bonney Hall, Bedford Street, Portland, Maine

Meeting Date: Wednesday, March 4, 2020

Meeting Time: 5:30-6:30 PM

The 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. 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.

Accommodations are provided upon request. If you're in need of an accommodation, please contact Lisa Brissette Eddy at 780-5792 by February 26, 2020. If requests are received after this date, we may not have sufficient time to make necessary arrangements.

If you have any questions, please contact Ashley Fletcher at (207) 558-3665 or via email at aefletcher@woodardcurran.com.

Sincerely,

WOODARD & CURRAN INC.

Ashley Fletcher, PE
Project Engineer

Note: Under Section 14-32(C) and 14-524(a)d of the City Code of Ordinances, an applicant for a Level III development 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 plan was not submitted. The neighborhood meeting must be held at least seven days prior to the Planning Board public hearing on the proposal. Should you wish to offer additional comments on this proposed development, you may contact the Planning Division at 874-8721 or send written correspondence to the Planning and Urban Development Department, Planning Division, 4th Floor, 389 Congress Street Portland, ME 04101 or by email: to jrather@portlandmaine.gov.



MEMORANDUM

TO: City of Portland Planning Division
DATE: March 4, 2020
LOCATION: Talbot Lecture Hall within Luther Bonney Hall, Bedford Street, Portland, Maine
RE: Wishcamper Parking Lot Neighborhood Meeting Sign-in Sheet

Dear Neighbors,

Thank you for attending tonight's public Neighborhood Meeting for the proposed *Wishcamper Parking Lot Project* located at 44 Bedford Street in Portland, Maine. Please sign-in below:

Name

Email

Tom Blanchard

thomas.blanchard@maine.edu

Dawn Gray

dgray81@aol.com

Joe Gallant

joseph.gallant@maine.edu

Mike Eling

elingfam@gmail.com

Barry Sheff

BSHEFF@WOODARDCURRAN.COM

Steven Gregory

Steven.gregory2@gmail.com



MEMORANDUM

TO: City of Portland Planning Division
DATE: March 4, 2020
LOCATION: Talbot Lecture Hall within Luther Bonney Hall, Bedford Street, Portland, Maine
RE: Wishcamper Parking Lot Neighborhood Meeting Sign-in Sheet

Dear Neighbors,

Thank you for attending tonight's public Neighborhood Meeting for the proposed *Wishcamper Parking Lot Project* located at 44 Bedford Street in Portland, Maine. Please sign-in below:

Name

Ashley Fletcher (WIC)

Darrin Stairs (WIC)

Email

~~ASH~~ AFletcher@woodardcurran.com

DStairs@woodardcurran.com



NEIGHBORHOOD MEETING NOTES

PROJECT: USM Wishcamper Parking Lot

MEETING DATE: 3/4/2020

LOCATION: Talbot Lecture Hall within Luther
Bonney Hall, Bedford St. Portland

The meeting was attended by 2 “abutters” or interested members of the public and one individual that did not sign-in, along with members of the project team, including the owner University of Southern Maine (USM) and the engineer Woodard & Curran (W&C). The meeting began at 5:30pm, consistent with the meeting invitation/notice. Darrin Stairs provided an introduction of the project team and clarified that the meeting is for Wishcamper Parking Lot Project (not the Student Success Center and Residential Housing Project or the City of Portland Roundabout Project) and reminded everyone to sign-in.

Darrin Stairs (W&C) and Alec Porteous (USM) gave a brief presentation about the project and the University’s plans for future development. Alec explained how the existing Wishcamper parking lot area will be re-developed to provide a more efficient use of space in order to replace parking that will be displaced by future development. Below are some preliminary questions the public offered after the initial introduction to the project:

- One individual asked about the traffic associated with the parking lot and Darrin Stairs indicated that his questions might be addressed by the presentation; and
- Another individual asked about parking for the new Student Center Building, since in their opinion the Wishcamper Parking Lot would provide less than what will be needed for the new building; Alec Porteous clarified that the parking for the new building will be addressed with the Career and Student Success Center and Residential Housing Project application and at the Neighborhood Meeting for that project. Alec also reiterated that the proposed Wishcamper Parking Lot is just to help replace parking that will be displaced by future development and that, while the projects are related, the proposed parking lot is at this time not intended to serve the new building.

After the initial questions, Darrin Stairs provided a more detailed presentation of the proposed project, in addition to providing an overview of the site plan application process and the project schedule. Darrin provided an overview of the project area, existing conditions, proposed conditions, the proposed increase in parking, and plans for landscaping, lighting, and stormwater systems. Alec Porteous also referenced the results of the University’s parking demand study and noted that the University is currently near peak capacity. Alec also explained the issues the University has had with cars parking in undesignated parking areas during times of high demand. Alec noted how the proposed project would be a good use of a currently underused space, that will help to address safety issues and is an important first step for the University’s plans for future development.

Upon conclusion of the presentation, questions were received from attendees and recorded by Ashley Fletcher. Questions and comments were documented to the extent possible and are provided below. Where direct responses were provided by USM or W&C, the responses are provided below in italics.

Comments/Questions

- Will the project exacerbate the current issues with rush hour traffic around the Wishcamper Building and the parking garage? Have any considerations been made for a traffic light or roundabout in Bedford Street? What about the previous discussions to close Bedford Street to through traffic? There are concerns about the separation of this area from the main campus.



- *Alec Porteous noted that there may be some traffic impacts, but that the Bedford Street traffic should not be significantly impacted by the project. He also noted that the crosswalk across the existing parking lot entrance/exit drive at Bedford Street is something that the University will need to be mindful of and will consider additional signage. Finally, Alec noted that the future development projects the University has planned will help to address the uniformity of the campus and will change the nature of the campus to help pedestrian and vehicular flow.*
- There are concerns about there being insufficient pullout area around the Bedford Street bus stop, which causes people to drive across the raised median in Bedford Street.
 - *Alec Porteous noted that re-evaluating the bus stop area is worth considering. Darrin Stairs pointed out that it will be important to get other entities, such as the Greater Portland Metro and the City, to weigh in on this issue. Nancy Davis Griffin (USM) noted that the University has studied class schedules and will be changing the class schedules and re-locating classes next fall to help eliminate some of the clustered pedestrian and vehicular traffic. Alec Porteous also noted that they have engaged a traffic consultant (VHB) to develop a transportation demand management plan for the University that will help to identify areas where improvements should be made.*
- How will the parking be designated?
 - *Alec Porteous indicated that there would be no change in the parking designations from the existing lot.*
- How many ADA spaces will be provided?
 - *A total of 10 ADA spaces will be provided, which is more than what is required.*
- There are concerns about the Forest Avenue traffic light.
 - *Alec Porteous noted that the City of Portland Roundabout Project may help to address issues with this and that will be discussed at the Neighborhood Meeting for that project.*

The Neighborhood Meeting officially concluded at approximately 6:00 PM.

Att. R



MAINE HISTORIC PRESERVATION COMMISSION
55 CAPITOL STREET
65 STATE HOUSE STATION
AUGUSTA, MAINE
04333

JANET T. MILLS
GOVERNOR

KIRK F. MOHNEY
DIRECTOR

January 22, 2020

Ms. Ashley Fletcher
Woodard & Curran
41 Hutchins Drive
Portland, ME 04102

Project: MHPC #0121-20

University of Southern Maine; 44 Bedford Street
Parking Lot Expansion

Town: Portland, ME

Dear Ms. Fletcher:

In response to your recent request, I have reviewed the information received January 21, 2020 to initiate consultation on the above referenced project in accordance with the requirements of Maine Department of Environmental Protection.

Based on the information provided, I have concluded that there are no National Register listed or known eligible properties on or adjacent to the proposed project site. In addition, the parcel is not considered sensitive for archaeological resources.

Please contact Megan M. Rideout of our staff, at megan.m.rideout@maine.gov or 207-287-2992, if we can be of further assistance in this matter.

Sincerely,

A handwritten signature in black ink that reads "Kirk F. Mohney".

Kirk F. Mohney
State Historic Preservation Officer



STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
177 STATE HOUSE STATION
AUGUSTA, MAINE 04333

Att. S

JANET T. MILLS
GOVERNOR

AMANDA E. BEAL
COMMISSIONER

January 16, 2020

Ashley Fletcher
Woodard & Curran
41 Hutchins Drive
Portland, ME 04102

Via email: aefletcher@woodardcurran.com

Re: Rare and exemplary botanical features in proximity to: #023479.01, Wishcamper Parking Lot Expansion, University of Southern Maine, Portland, Maine

Dear Ms. Fletcher:

I have searched the Maine Natural Areas Program's Biological and Conservation Data System files in response to your request received January 16, 2020 for information on the presence of rare or unique botanical features documented from the vicinity of the project in Portland, Maine. Rare and unique botanical features include the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. Our review involves examining maps, manual and computerized records, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.

Our official response covers only botanical features. For authoritative information and official response for zoological features you must make a similar request to the Maine Department of Inland Fisheries and Wildlife, 284 State Street, Augusta, Maine 04333.

According to the information currently in our Biological and Conservation Data System files, there are no rare botanical features documented specifically within the project area. Based on the information in our files and the landscape context of this project, there is a low probability that rare or significant botanical features occur at this project location.

This finding is available and appropriate for preparation and review of environmental assessments, but it is not a substitute for on-site surveys. Comprehensive field surveys do not exist for all natural areas in Maine, and in the absence of a specific field investigation, the Maine Natural Areas Program cannot provide a definitive statement on the presence or absence of unusual natural features at this site.

The Maine Natural Areas Program (MNAP) is continuously working to achieve a more comprehensive database of exemplary natural features in Maine. We would appreciate the contribution of any information obtained should you decide to do field work. MNAP welcomes coordination with individuals or organizations proposing environmental alteration, or conducting environmental assessments. If, however, data provided by MNAP are to be published in any form, the Program should be informed at the outset and credited as the source.

MOLLY DOCHERTY, DIRECTOR
MAINE NATURAL AREAS PROGRAM
90 BLOSSOM LANE, DEERING BUILDING



PHONE: (207) 287-8044
WWW.MAINE.GOV/DACF/MNAP

The Maine Natural Areas Program has instituted a fee structure of \$75.00 an hour to recover the actual cost of processing your request for information. You will receive an invoice for \$150.00 for two hours of our services.

Thank you for using MNAP in the environmental review process. Please do not hesitate to contact me if you have further questions about the Natural Areas Program or about rare or unique botanical features on this site.

Sincerely,

A handwritten signature in cursive script, appearing to read "Krist Puryear".

Kristen Puryear | Ecologist | Maine Natural Areas Program
207-287-8043 | kristen.puryear@maine.gov



STATE OF MAINE
DEPARTMENT OF
INLAND FISHERIES & WILDLIFE
284 STATE STREET
41 STATE HOUSE STATION
AUGUSTA ME 04333-0041



Att. T

January 28, 2020

Ashley Fletcher
Woodard & Curran
41 Hutchins Drive
Portland, ME 04102

RE: Information Request – USM Wishcamper Parking Lot Expansion Project, Portland

Dear Ashley:

Per your request received on January 27, 2020, we have reviewed current Maine Department of Inland Fisheries and Wildlife (MDIFW) information for known locations of Endangered, Threatened, and Special Concern species; designated Essential and Significant Wildlife Habitats; and inland fisheries habitat concerns within the vicinity of the *USM Wishcamper Parking Lot Expansion* project in Portland.

Our information indicates no locations of Endangered, Threatened, or Special Concern species within the project area that would be affected by your project. Additionally, our Department has not mapped any Essential or Significant Wildlife Habitats or inland fisheries habitats that would be directly affected by your project.

This consultation review has been conducted specifically for known MDIFW jurisdictional features and should not be interpreted as a comprehensive review for the presence of other regulated features that may occur in this area. Prior to the start of any future site disturbance we recommend additional consultation with the municipality, and other state resource agencies including the Maine Natural Areas Program, Maine Department of Marine Resources, and Maine Department of Environmental Protection in order to avoid unintended protected resource disturbance.

Please feel free to contact my office if you have any questions regarding this information, or if I can be of any further assistance.

Best regards,

Becca Settele
Wildlife Biologist



March 25, 2020

Andrew Tufts, Planner
City of Portland Planning Division
389 Congress Street
Portland, ME 04101

Re: University of Southern Maine Wishcamper Parking Lot
Response to Planning Staff Comments

Dear Andrew:

Thank you for coordinating the review of the proposed parking lot located at 44 Bedford Street. The following letter compiles responses to comments received from the City, including the March 2, 2020, City letter with comments from Mike Tremblay and the February 13, 2020, email from Portland Trails. In addition, we have made other updates to the drawings and offer supplemental Application materials; those updates and materials are described herein and attached for your use.

Comments from City

The comments received to-date are provided below for your reference and our response follows each comment in italics:

March 2, 2020 City Letter

- The site plan provides the appropriate number of accessible spaces required by ADA. The number of compact spaces is below the threshold set by the City of Portland Technical Manual. The parking spaces on the east side of the site (the pull-in spaces just east of the parallel spaces) appear difficult to maneuver into from the west, but are more accessible from the northern part of the new parking lot if such circulation is permitted (see comment below). Overall, the provided parking meets city and ADA requirements.
 - *Noted.*
- It is unclear whether two-way circulation is permitted in the area just northeast of the parallel parking spaces. Any southwesterly circulation would need to reenter the new parking area at the southerly drive aisle near the parallel spaces. More markings are suggested; if two-way circulation is intended, then right-only arrow should direct motorists back into the parking area; if one-way circulation is intended, then left-only arrows should be painted at the stop bars.
 - *The enclosed drawings have been revised to clarify traffic circulation in this area. Two parallel parking spaces have been eliminated and proposed plantings have been adjusted to accommodate two-way circulation in the area northeast of the parallel parking spaces. Additional pavement markings and "Do Not Enter" signs have also been added to clarify circulation.*
- An accessible pedestrian connection should be provided between the central north-south walkway through the parking lot through the landscaped area to the crosswalk towards the Wishcamper Center; as this represents a direct desire line and is likely to be used as such, resulting in damage to the landscaped area.
 - *This landscaped area is part of an existing stormwater raingarden feature that currently provides stormwater treatment for the adjacent developed area; in order to continue managing and treating stormwater runoff from the rest of the Site, we are proposing to maintain and protect this raingarden from development.*



- The Applicant should be aware that the porous pavement sidewalk requires regular maintenance.
 - *Noted; the Stormwater Management Plan submitted as part of the Site Plan Application contains a Stormwater Inspection & Maintenance Plan, which includes provisions for porous pavement. The University is familiar with the maintenance required for this type of surfacing, as it is present elsewhere on the campus. Additionally, Woodard & Curran has provided 3rd party inspection of the University's stormwater BMPs since 2017, to support its recertification of Stormwater User Fee Non-Residential Credits.*
- The sidewalk ramps along the westerly edge of the parking area do not appear to have sufficient level landing areas. Ramps require a level landing at the top of the ramp that is 4'x4'. The landings provided appear smaller along the run of the sidewalk. Additionally, as designed, the majority of this sidewalk appears to be ramps, which is uncomfortable for all users. Shifting this sidewalk westward so that they can remain at street grade, with landscaping on either side of the sidewalk, is recommended. This may require moving the stop bars accordingly.
 - *The drawings have been revised to ensure that the sidewalk ramps along the westerly edge of the parking area will have sufficient level landing areas. In order to maximize the space available for parking, landscaping, and lighting features, we are proposing to maintain the previously proposed layout of the westerly walkways.*
- Relating to the above comment, the curb radii at the three westerly stop bars exiting the parking area appear to be rather large. Larger-than-required curb radii can facilitate faster-than-desirable vehicle speeds. Reducing these curb radii may provide sufficient room within each island to provide acceptable curb ramps without shifting the whole sidewalk. The applicant should also consider how likely it will be that any vehicle will be turning right into any of those driveways, as the parking lot appears to have a typical counterclockwise circulation pattern.
 - *The drawings have been revised and curb radii have been reduced, as suggested.*
- Curb ramps within sites do not require warning panels, but they can be provided if the Applicant wishes. It is advised that USM provide these panels in a predictable manner (e.g. at every ramp, at every ramp across a street, etc.) throughout their campus.
 - *Noted; warning panels will be provided at curb ramps consistent with the rest of the campus.*

February 13, 2020 Email from Portland Trails

- I saw the plans for the surface parking lot at 44 Bedford St and wanted to offer a suggestion related to pedestrian connectivity. I note that there is a very clear and heavily used pedestrian wear-path from Forest Ave. to the existing lot between Wishcamper and the garage. Since the proposed expanded parking lot is directly adjacent, it would make sense to include the formalization of this path in their plans. Additionally, extending the path along the entire edge of the lot and past the garage to make a connection with Surrenden/Washburn, would provide a functional connection to the neighborhood, and between Forest and Deering. This would repair one of the connections lost when 295 was built. I recognize that this may conflict with the site plan as presented, but urge a closer look at facilitating this connection.
 - *The University is not proposing any major changes to circulation in or around the Site at this time. The area between Forest Ave and the parking lot is not well lit and would require substantial site modifications outside of the proposed limit of work in order to formalize this path. The area behind the garage, between the proposed parking lot and Surrenden St, currently serves as an Emergency Fire Access Lane and an area for snow dump off the top level of the garage (per the Site Plan approval of the Community Education Center and Parking Garage in 2002); this area is not intended for uncontrolled pedestrian access or foot traffic. In order to promote pedestrian safety and*



maintain existing uses, the University prefers to encourage pedestrian traffic use the Bedford Street corridor. It should be noted that the University has engaged a traffic consultant (VHB) to develop a transportation demand management (TDM) plan that will help to identify areas where improvements may be made to encourage multimodal travel and better connectivity; such improvements would be proposed as part of future Site Plan Applications to the City.

Updates to Application Materials

Since submitting the Site Plan Application, the following updates have been made to the project:

- A neighborhood meeting was held on March 4, 2020, at the Talbot Lecture Hall within Luther Bonney Hall on Bedford Street in Portland, ME, at 5:30pm regarding the Level III Site Plan Submittal for the proposed Wishcamper Parking Lot project located at 44 Bedford Street; enclosed is a letter certifying that the neighborhood meeting was held, in addition to copies of the meeting invitation, sign-in sheets, and meeting notes.
- Responses were received from the Maine Historic Preservation Commission, Maine Department of Inland Fisheries & Wildlife, and the Maine Natural Areas Program regarding their review of the proposed project in accordance with Site Location of Development Act requirements and no issues have been identified; copies of the response letters are enclosed for your reference.
- The Grading and Drainage Plan has been revised to clarify the intent for the underdrains associated with the porous pavement, which is enclosed for your reference; all plan revisions are encircled by "clouds".
- Minor modifications have been made to the Landscaping Plan in order to avoid conflicts between trees and utilities, which is enclosed for your reference; all plan revisions are encircled by "clouds".

If you have any questions or require additional information, please do not hesitate to contact me at (207) 558-3665 or by email at aefletcher@woodardcurran.com.

Sincerely,

WOODARD & CURRAN INC.

Ashley Fletcher, PE
Project Engineer

cc: Joseph Gallant, University of Southern Maine

Enclosures: Revised Drawings
Neighborhood Meeting Materials
Agency Review Letters



May 7, 2020

Andrew Tufts, Planner
City of Portland Planning Division
389 Congress Street
Portland, ME 04101

Re: University of Southern Maine Wishcamper Parking Lot
Response to Wright Pierce Stormwater Review Comments

Dear Andrew:

Thank you for coordinating the review of the proposed parking lot located at 44 Bedford Street. We received the April 10, 2020, email from Andrew Tufts and the April 14, 2020, memo from Wright-Pierce (3rd party peer reviewer); the comments provided by the City and Wright-Pierce are provided below for your reference and our response follows each comment in italics:

April 10, 2020 Email from Andrew Tufts

- The applicant has stated that the rain garden on the north side of the site prevents a pedestrian path from being provided through the north-south pedestrian corridor towards the Wishcamper Center. I believe it is likely that pedestrians will walk through the rain garden if a formal walkway is not provided, potentially damaging the rain garden. The applicant should reevaluate.
 - *As previously discussed with the City, the enclosed drawings have been revised to include a walkway across the raingarden. The walkway will be constructed of porous pavement and will include two small culverts that will provide connectivity between the two sections of the raingarden. The subsurface raingarden filter layers and associated underdrain system beneath the porous walkway will be protected, the porous pavement will provide additional stormwater treatment and some storage, and the curve number of porous pavement (40) is nearly equal to the curve number of the existing grass cover (39), such that the short section of additional porous pavement is not anticipated to have any significant impacts on the previously submitted stormwater management plan. Based on previous discussions with the City, it is our understanding that this minor change does not impact the University's compliance with the City's standards for stormwater treatment and flood control, as demonstrated by the previously submitted Stormwater Management Plan.*

April 14, 2020 Memo from Wright-Pierce

Basic Standard

- Catch basin inlet protection should include catch basin throat inlet protection where necessary.
 - *Catch basin inlet protection will be provided as indicated on Sheet C-001 and as detailed on D-300; none of the existing catch basins within the project area have throat inlets.*
- Additional clarification is needed for blank spaces on the erosion control notes regarding the timeframe of application within the tables.
 - *The enclosed drawings have been revised to clarify the timeframe of mulch application within the Erosion and Sediment Control Notes table provided on Sheet D-300.*



General Standard

- A summary of pollutant rankings was provided by the applicant, reviewed, and it is agreed that the site required surface runoff treatment for 60% of the disturbed surface area for the proposed project. No further action necessary.
 - *Acknowledged.*
- High-pollutant surface areas should be prioritized to a practicable extent for stormwater treatment under the redevelopment standard. Please provide a calculation of what percentage of higher-ranking pollutants are being treated, and what site limitations are requiring the lower-ranking pollutants (sidewalk areas) to be treated instead of the remaining parking lot area.
 - *As indicated in the previously submitted redevelopment treatment calculations, of the 37,897 square-feet of redeveloped area that must be treated, only 2,614 square-feet of the redeveloped area being treated is sidewalk area. As such, 93.1% of the area being treated is high-pollutant surface area. The University has opted to utilize porous pavement for sidewalks (a Low Impact Development technique and a small percentage of the redeveloped area) consistent with previous development throughout the campus and as encouraged by the City of Portland. High-pollutant surface areas comprise the large majority of the treated area and have been prioritized to the extent practicable.*
- An executed maintenance contract for the BMP systems is required. Maintenance agreements may be provided as a condition of approval.
 - *We respectfully request that the requirement for providing an executed maintenance contract for the BMP systems be made a condition of approval.*

Porous Pavement, Stormfilter, and Subsurface Storage Design

- Porous pavement design for water quality volume is found to be in accordance with Chapter 500 requirements. The underdrain invert elevation is set near the surface of the parking elevation which arises some concern about frost upheaval and saturated conditions.
 - *The porous pavement cross-section (which specifies the underdrain depth) has been developed per Chapter 7.7 of Volume III of the MaineDEP Stormwater BMP Manual. The proposed porous pavement cross-section is similar to what was used to construct the existing porous pavement walkways located throughout the campus; the University has not experienced any issues with frost upheaval or saturated conditions with the existing porous pavement walkways.*
- Subsurface storage is adequate for the proposed site, modeled at inverts shown on the design drawings, and indicates runoff reduction to the regulated requirements per the Chapter 500 flooding standard, while also ensuring that the water quality volume is detained for 24-48 hours.
 - *Acknowledged.*
- A letter from the manufacturer is provided stating the StormFilter and storage conduit meets their approval for the specific project. The subsurface alignment is provided to remove a portion of granular solids prior to entering the treatment system.
 - *Acknowledged.*
- The applicant has indicated StormFilter treatment media shall meet the required alumina and zeolite requirements confirmed by the MaineDEP.
 - *Acknowledged.*
- The corrugated metal pipe detention does not have guidance from DEP on frequency for observation and maintenance ports. Please provide a statement about the ability for



maintenance staff to remove accumulated sediments/debris through the available observation ports, and their location to corners, weirs/baffles throughout the system.

- *The proposed corrugated metal pipe detection system was designed in direct collaboration with the manufacturer; proposed riser structures have been located at key points in the system such as corners and weirs to allow maintenance staff to access the system for inspection and maintenance activities.*
- Corrugated metal pipe is susceptible to rusting, especially in salted areas. Please indicate how this pipe will be protected against rust, such as cathodic protection, and indicate a check for rust or visual pipe damage in the stormwater treatment inspection list.
 - *The manufacturer of the proposed corrugated metal pipe system (Contech) specifies an Aluminized Steel Type 2 Pipe that is fabricated from steel that has been hot-dipped in commercially pure aluminum; aluminum does not rust. As indicated on Contech's website (<https://www.conteches.com/pipe/corrugated-metal-cmp/cmp-coatings>), they have over 50 years of field-testing demonstrating that this material offers 75 years or more of maintenance free service life. The enclosed stormwater inspection checklist has been revised to include a line item for signs of corrosion/pipe damage.*

Flooding Standard

- The applicant has submitted HydroCAD files indicating the pre-development runoff rates do not exceed the post-development runoff rates for the facility. No further action necessary.
 - *Acknowledged.*

Grading and Drainage

- The applicant has indicated Maine Construction General Permit will likely be required for the project due to the extent of disturbed surface area. No further action necessary.
 - *Acknowledged.*
- Typical details should show a maximum 2% cross-slope for sidewalks, crosswalks, and crosswalk portions of driveways and maintenance entrances.
 - *The enclosed drawings have been revised to specify a maximum 2% cross-slope for sidewalks, crosswalks, and crosswalk portions of driveways and maintenance entrances on the details provided on Sheet D-302.*
- For catch basin grates and frames to be re-set in the roadway, please provide a standard "dishpan" detail in accordance with the City Technical Manual.
 - *No catch basin grates or frames located in the City Right-of-Way will be reset as part of this project and the Technical Manual published on the City of Portland website does not currently contain a standard "dishpan" detail; the proposed parking lot will be graded to drain to all basins as shown on the Grading Plan.*

Utility Connections

- Ability to serve letters have not been provided for utilities impacted by the proposed project, but have been requested by the applicant for applicable utilities (electrical and drainage). The applicant has indicated that ability to serve letters will be submitted to Planning upon receipt.
 - *Acknowledged.*
- Standard design for the electrical utility has been provided.
 - *Acknowledged.*



- Connection to Existing Stormwater Systems: E-mail, or otherwise written, confirmation from the Department of Public Works accepting this connection is requested to confirm that this connection is appropriate under Land Use section 14-526 (b) 3 a. (iv); and 14-526 (c) 3 a., as well as adherence to MaineDEP Chapter 500.
 - *A copy of the email sent to the Department of Public Works on April 17, 2020, requesting confirmation that the proposed connection is acceptable is attached for your reference; a copy of the Department's response can be provided upon receipt. We respectfully request that providing the Department's response be made a condition of approval.*

If you have any questions or require additional information, please do not hesitate to contact me at (207) 558-3665 or by email at aefletcher@woodardcurran.com.

Sincerely,

WOODARD & CURRAN INC.

Ashley Fletcher, PE
Project Engineer

cc: University of Southern Maine

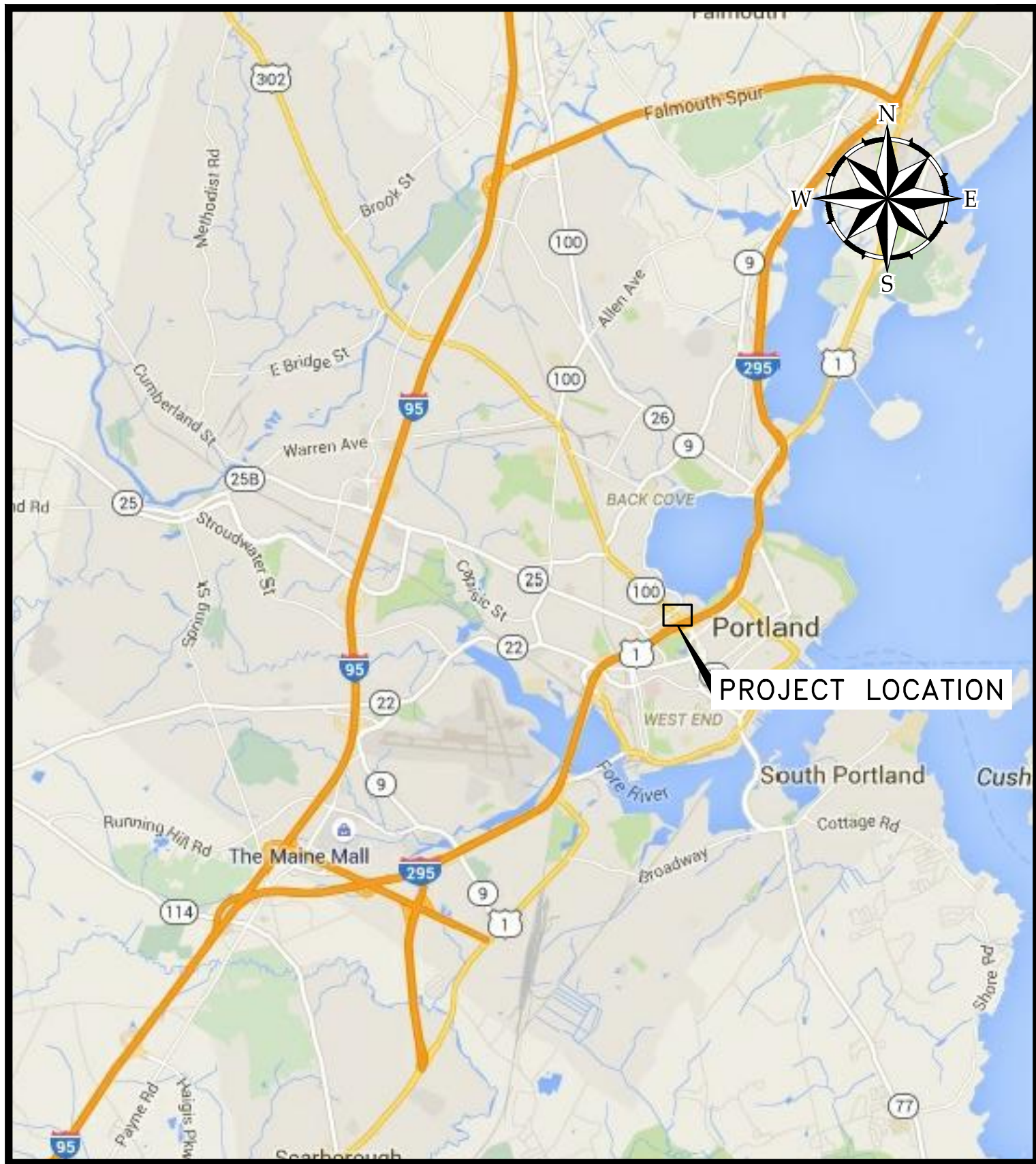
Enclosures: Revised Drawings
Revised Stormwater Inspection Checklist
Email Communications with Department of Public Works

UNIVERSITY OF SOUTHERN MAINE PORTLAND, MAINE

WISHCAMPER PARKING LOT

PROJECT NO.
0232479.01

DECEMBER 2019
NOT FOR CONSTRUCTION



PROJECT LOCATION MAP

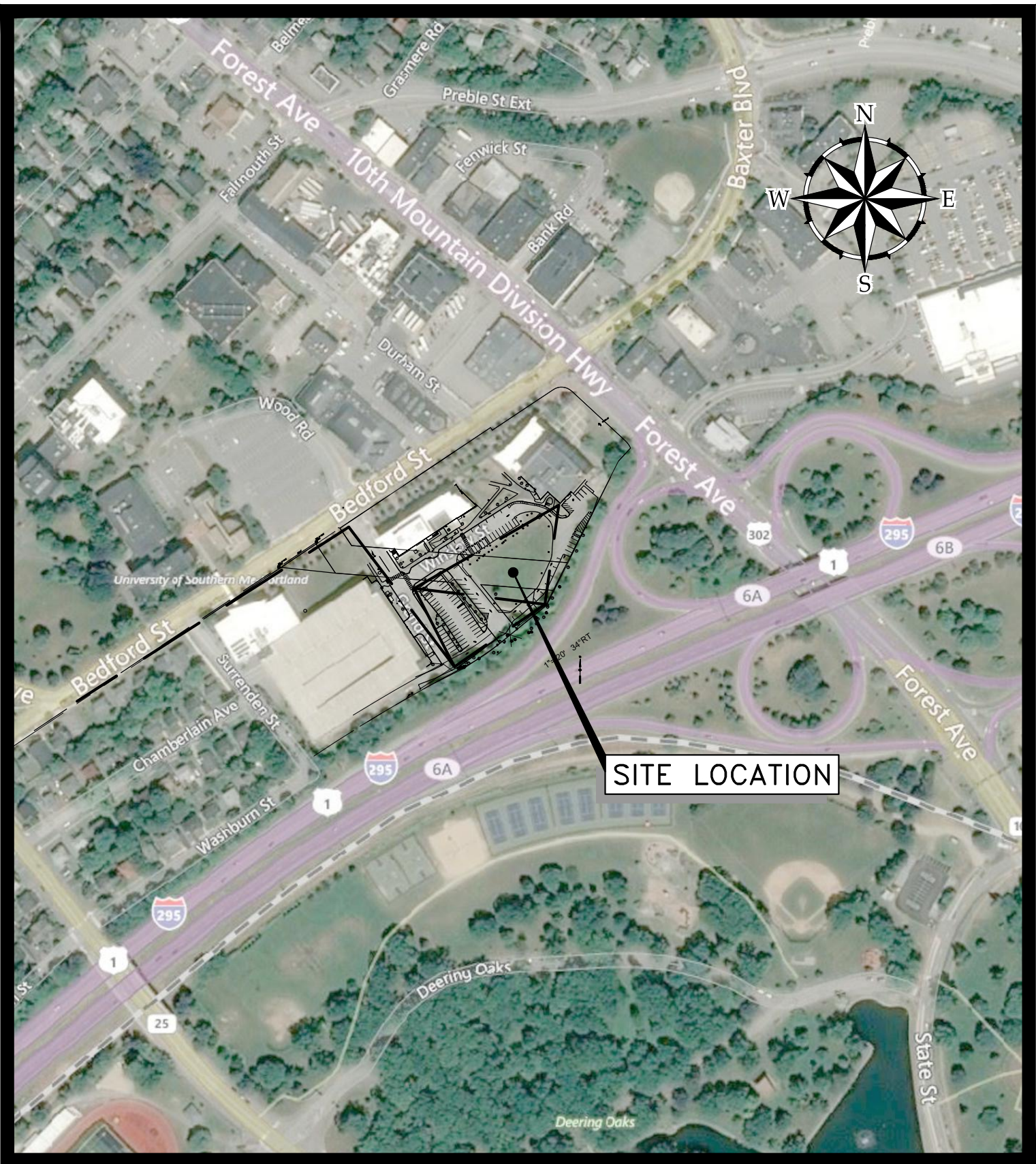


Sheet Index		
Sheet Number	Sheet Title	Sheet Description
COVER	G-000	
1	G-001	GENERAL NOTES & LEGEND
2	EC	EXISTING CONDITIONS SURVEY
3	C-001	DEMOLITION AND EROSION & SEDIMENT CONTROL PLAN
4	C-100	MATERIALS & LAYOUT SITE PLAN
5	C-101	GRADING & DRAINAGE PLAN
6	L-200	TREE PRESERVATION & REMOVALS PLAN
7	L-201	LANDSCAPE PLAN
8	L-202	LANDSCAPE DETAILS
9	D-300	CIVIL DETAILS - 1
10	D-301	CIVIL DETAILS - 2
11	D-302	CIVIL DETAILS - 3
12	D-303	CIVIL DETAILS - 4
13	D-304	CIVIL DETAILS - 5
14	E00.01	ELECTRICAL LEGEND
15	E05.01	ELECTRICAL DEMOLITION SITE PLAN
16	E05.02	ELECTRICAL SITE PLAN PROPOSED
17	E20.01	ELECTRICAL PHOTOMETRICS
18	E60.01	ELECTRICAL SCHEDULES
19	E80.01	ELECTRICAL DETAILS

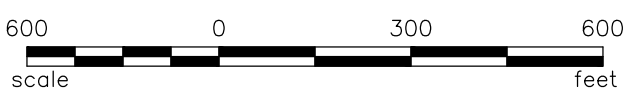
41 Hutchins Drive
Portland, Maine 04102
800.426.4262 | www.woodardcurran.com



COMMITMENT & INTEGRITY DRIVE RESULTS



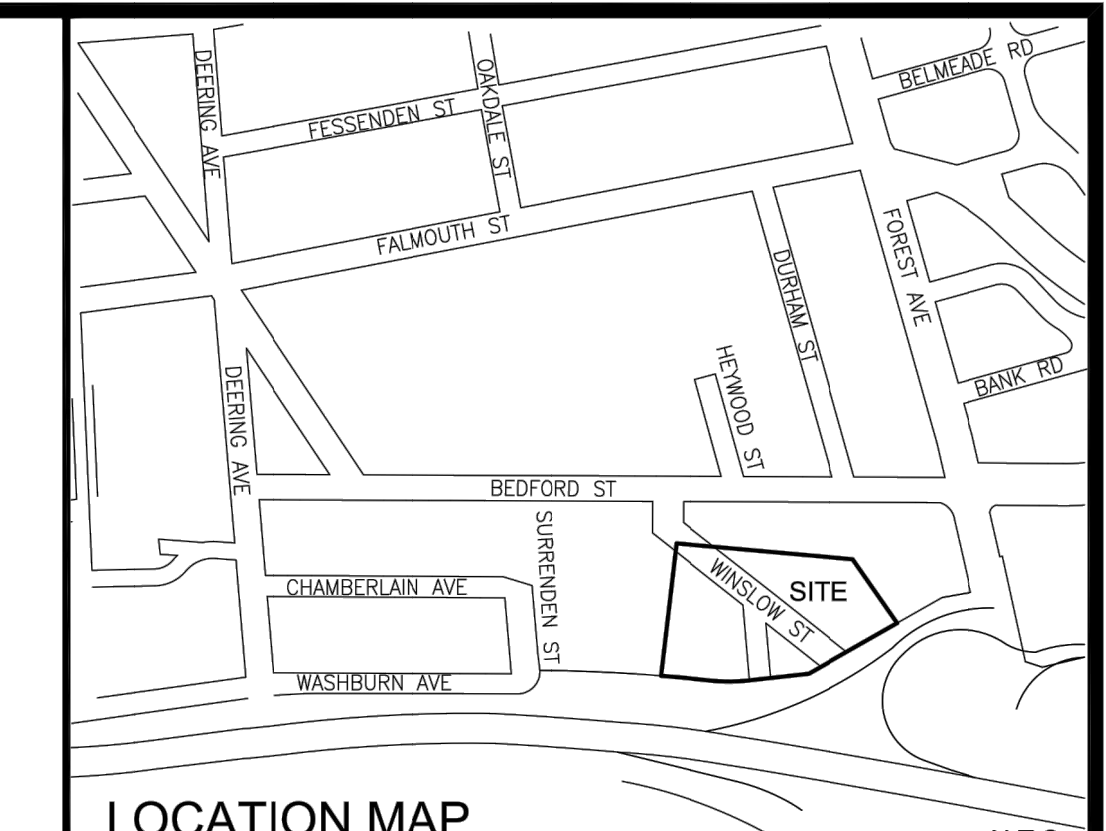
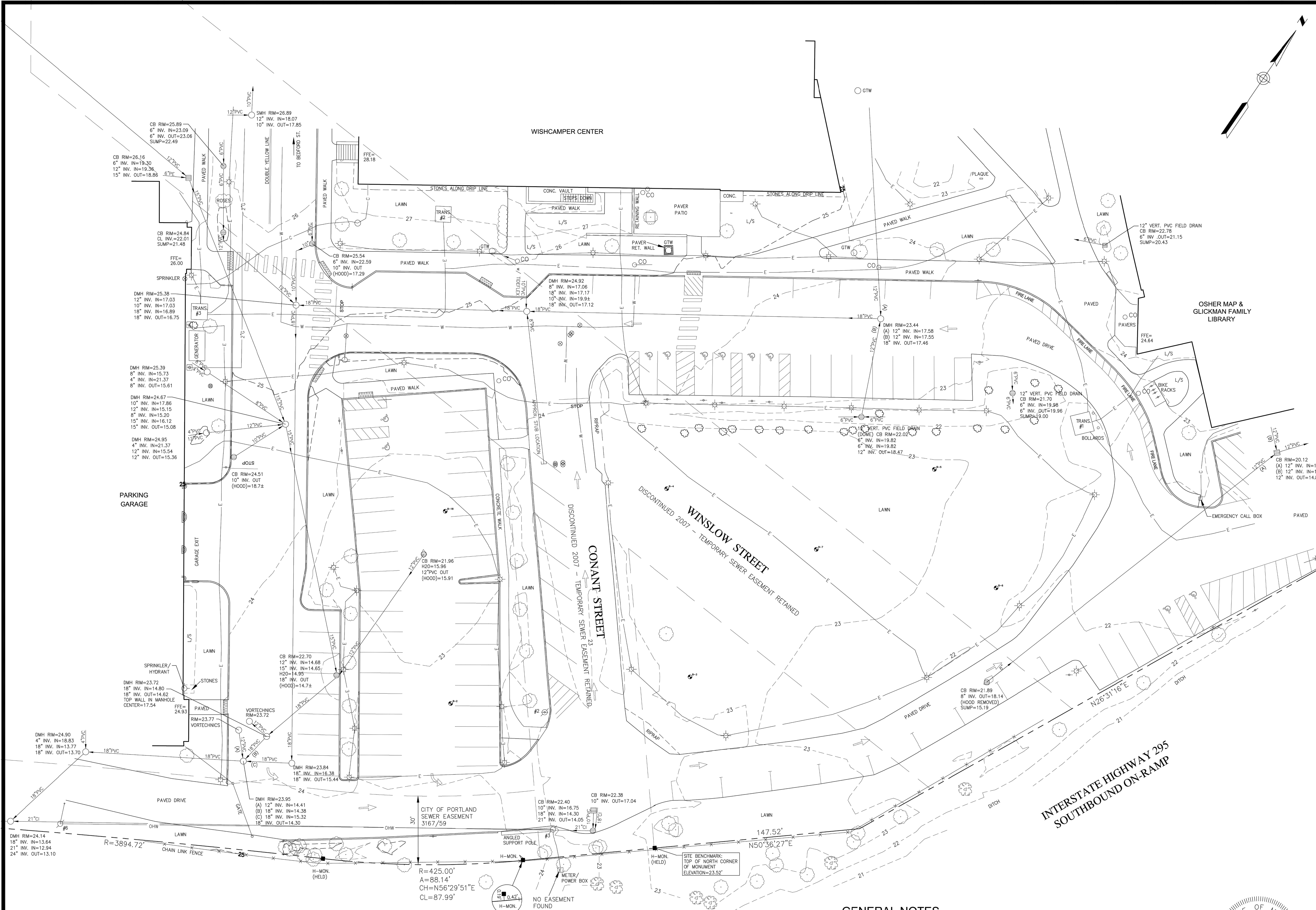
SITE LOCATION MAP





C-100

NOT FOR CONSTRUCTION



LEGEND	
●	IRON PIPE OR ROD FOUND
○	MONUMENT FOUND
○	UTILITY POLE
○	MANHOLE
□	ELECTRIC/GAS METER
□	SIGN
○	CATCH BASIN
○	HYDRANT
○	WATER VALVE OR SHUTOFF
○	GAS VALVE
○	LIGHT POLE
○	DECIDUOUS TREE
○	CONIFEROUS TREE
○	SHRUB / BUSH
○	GEOTHERMAL WELL
—X—X—	FENCE
—	CURB
—	OVERHEAD WIRES
—E—	UNDERGROUND POWER
—C—	COMMUNICATION
—W—	WATER LINE
—G—	GAS LINE
—T—	TELEPHONE
—SD—	STORM DRAIN
—SS—	SANITARY SEWER
—STM—	STEAM LINE
—	1' CONTOUR
IPF/IRF	IRON PIPE OR ROD FOUND
L/S	LANDSCAPED AREA
CONC.	CONCRETE
FFE	FINISHED FLOOR ELEVATION
THRES.	THRESHOLD
N/F	NOW OR FORMERLY
000/000	DEED BOOK / PAGE

UTILITY NOTE

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEY HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. CALL 1-888-DIGSAFE AT LEAST THREE BUSINESS DAYS BEFORE PERFORMING ANY CONSTRUCTION. DUE TO OSHA CONFINED SPACE REQUIREMENTS, ALL INVERTS AND PIPE SIZES MUST BE VERIFIED PRIOR TO ANY CONSTRUCTION.

PLAN REFERENCES

- "BOUNDARY & TOPOGRAPHIC PLAN ON BEDFORD STREET, USM CAMPUS, PORTLAND, MAINE MADE FOR WOODARD & CURRAN, INC." SEPTEMBER 08, 2005 REV. 5 11-02-06 BY OWEN HASKELL, INC.
- MAINE STATE HIGHWAY COMMISSION RIGHT OF WAY MAP, STATE HIGHWAY "295", PORTLAND, CUMBERLAND COUNTY, S.H.C. FILE NO. 3-185. SHEETS 57 REVISED AND 61

GENERAL NOTES

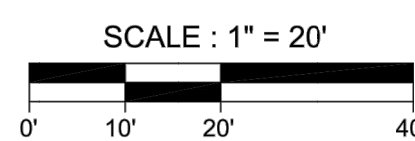
- OWNER OF RECORD: UNIVERSITY OF MAINE
TAX MAP 114 BLOCK A LOT 1
C.C.R.D. BOOK 29219 PAGE 218
BOOK 24387 PAGE 258
- BEARINGS ARE BASED ON MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE, NAD 83 PER COORDINATE DATA PROVIDED BY THE CITY OF PORTLAND DEPARTMENT OF PUBLIC WORKS.
- ELEVATIONS ARE BASED ON CITY OF PORTLAND DATUM, NGVD 29. BENCHMARK UTILIZED IS A COPPER BOLT IN 3 FOOT OFFSET MONUMENT LOCATED AT THE SOUTHWEST CORNER OF THE BRIGHTON AVENUE AND FALMOUTH STREET INTERSECTION.

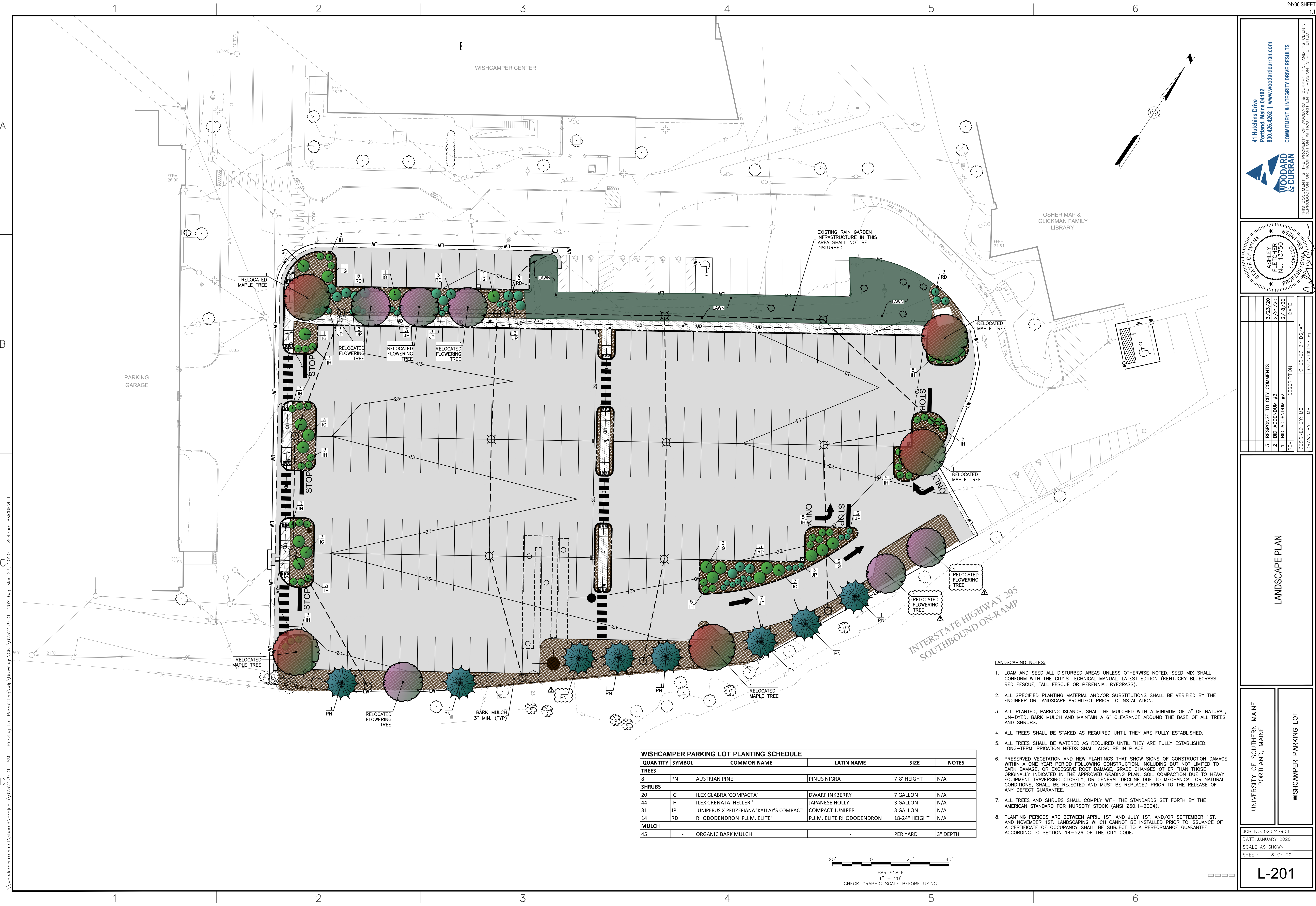


Existing Conditions Survey
USM Portland - Wishcamper Lot
Portland, Maine
Made for
Woodard & Curran
41 Hutchins Drive, Portland, Maine

OWEN HASKELL, INC.
PROFESSIONAL LAND SURVEYORS
390 US ROUTE 1, UNIT 10, FALMOUTH, ME 04105 TEL. 207-774-0424

DRAWN BY: SDG/JLW DATE: NOV. 11, 2019 JOB NO. 2019-267 P
CHECKED BY: SDG SCALE: 1" = 20' DRWG. NO. 1





WISHCAMPER PARKING LOT PLANTING SCHEDULE					
QUANTITY	SYMBOL	COMMON NAME	LATIN NAME	SIZE	NOTES
TREES					
8	PN	AUSTRIAN PINE	PINUS NIGRA	7-8' HEIGHT	N/A
SHRUBS					
20	IG	ILEX GLABRA 'COMPACTA'	DWARF INKBERRY	7 GALLON	N/A
44	IH	ILEX CRENATA 'HELLER'	JAPANESE HOLLY	3 GALLON	N/A
31	JP	JUNIPERUS X PFITZERIANA 'KALLAY'S COMPACT'	COMPACT JUNIPER	3 GALLON	N/A
14	RD	RHODODENDRON 'P.J.M. ELITE'	P.J.M. ELITE RHODODENDRON	18-24" HEIGHT	N/A
MULCH					
45	-	ORGANIC BARK MULCH	-	PER YARD	3" DEPTH

- LANDSCAPING NOTES:
- LOAM AND SEED ALL DISTURBED AREAS UNLESS OTHERWISE NOTED. SEED MIX SHALL CONFORM WITH THE CITY'S TECHNICAL MANUAL, LATEST EDITION (KENTUCKY BLUEGRASS, RED FESCUE, TALL FESCUE OR PERENNIAL RYEGRASS).
 - ALL SPECIFIED PLANTING MATERIAL AND/OR SUBSTITUTIONS SHALL BE VERIFIED BY THE ENGINEER OR LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
 - ALL PLANTED, PARKING ISLANDS, SHALL BE MULCHED WITH A MINIMUM OF 3" OF NATURAL, UN-DYED, BARK MULCH AND MAINTAIN A 6" CLEARANCE AROUND THE BASE OF ALL TREES AND SHRUBS.
 - ALL TREES SHALL BE STAKED AS REQUIRED UNTIL THEY ARE FULLY ESTABLISHED.
 - ALL TREES SHALL BE WATERED AS REQUIRED UNTIL THEY ARE FULLY ESTABLISHED. LONG-TERM IRRIGATION NEEDS SHALL ALSO BE IN PLACE.
 - PRESERVED VEGETATION AND NEW PLANTINGS THAT SHOW SIGNS OF CONSTRUCTION DAMAGE WITHIN A ONE YEAR PERIOD FOLLOWING CONSTRUCTION, INCLUDING BUT NOT LIMITED TO BARK DAMAGE, OR EXCESSIVE ROOT DAMAGE, GRADE CHANGES OTHER THAN THOSE ORIGINALLY INDICATED IN THE APPROVED GRADING PLAN, SOIL COMPACTION DUE TO HEAVY EQUIPMENT TRAVERSING CLOSELY, OR GENERAL DECLINE DUE TO MECHANICAL OR NATURAL CONDITIONS, SHALL BE REJECTED AND MUST BE REPLACED PRIOR TO THE RELEASE OF ANY DEFECT GUARANTEE.
 - ALL TREES AND SHRUBS SHALL COMPLY WITH THE STANDARDS SET FORTH BY THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1-2004).
 - PLANTING PERIODS ARE BETWEEN APRIL 1ST. AND JULY 1ST. AND/OR SEPTEMBER 1ST. AND NOVEMBER 1ST. LANDSCAPING WHICH CANNOT BE INSTALLED PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY SHALL BE SUBJECT TO A PERFORMANCE GUARANTEE ACCORDING TO SECTION 14-526 OF THE CITY CODE.

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COMMITMENT & INTEGRITY DRIVE RESULTS

STATE OF MAINE
LANDSCAPE ARCHITECT
ASHLEY FLETCHER
No. 13750

PROFESSIONAL SEAL

3	3/23/20	RESPONSE TO CITY COMMENTS
2	2/21/20	BID ADDENDUM #3
1	2/18/20	BID ADDENDUM #2

DESIGNED BY: MB	CHECKED BY: DS/AF
DRAWN BY: MB	022479.120x.dwg

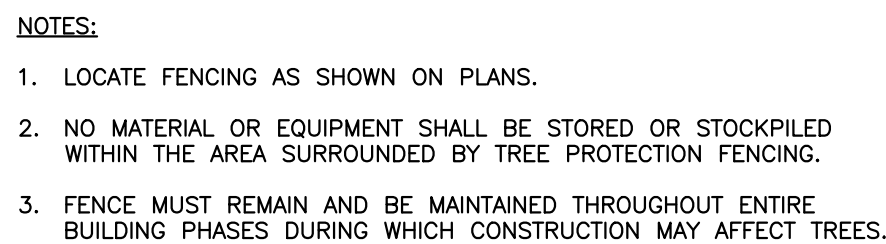
UNIVERSITY OF SOUTHERN MAINE
PORTLAND, MAINE

LANDSCAPE PLAN

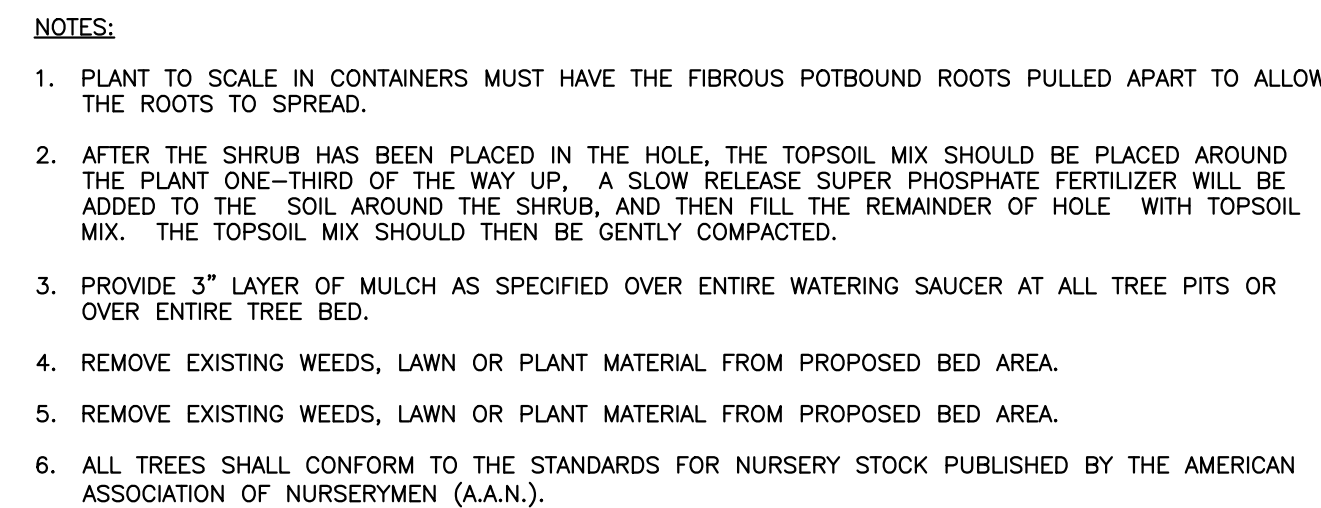
WISHCAMPER PARKING LOT

JOB NO.: 0232479.01
DATE: JANUARY 2020
SCALE: AS SHOWN
SHEET: 8 OF 20

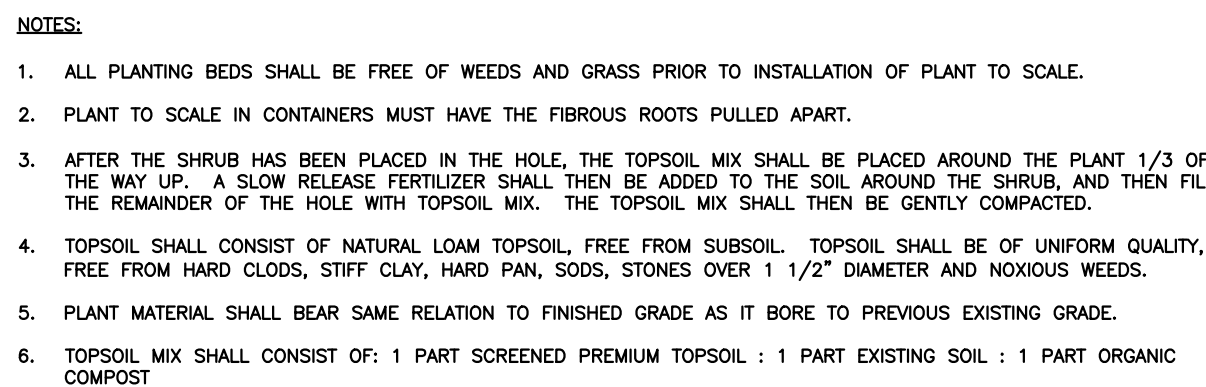
L-201



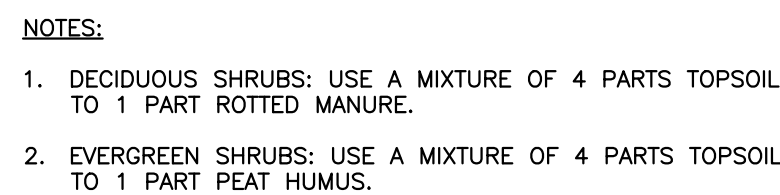
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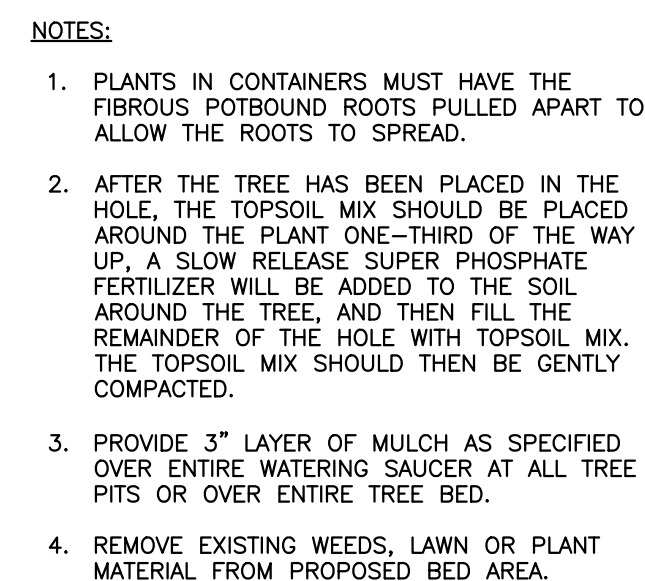
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NOT TO SCALE



NOT TO SCALE



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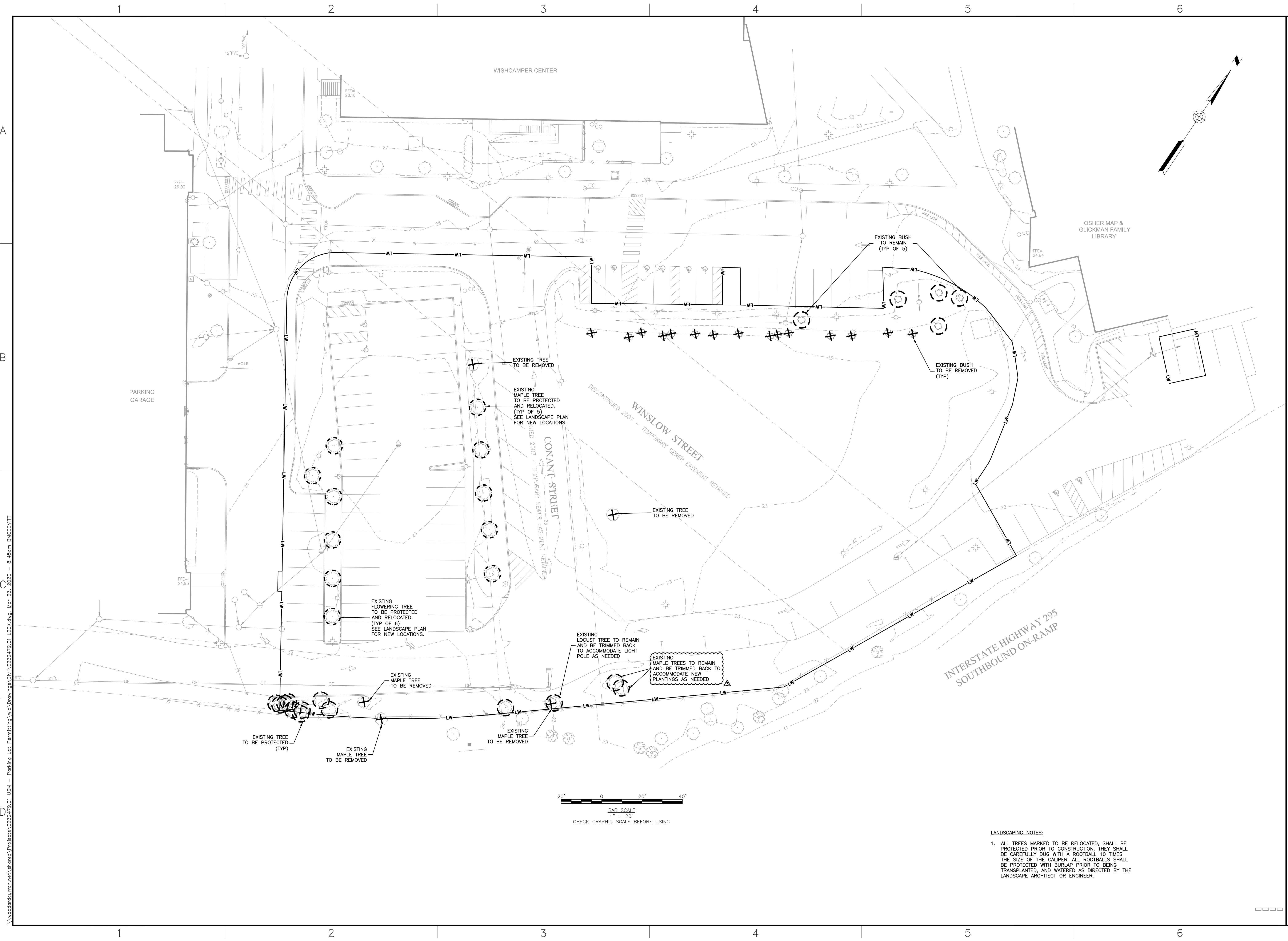
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		DESIGNED BY: MB	CHECKED BY: DS/AF
		DRAWN BY: MB	02/24/93 @ 12:00 pm

WISHCAMPER PARKING LOT

JOB NO.:0232479.01
DATE:DECEMBER 2019
SCALE: AS SHOWN
SHEET: 8 OF 19

L-202

NOT FOR CONSTRUCTION



\\woodardcurran.net\shared\Projects\0232479.01 USM - Parking Lot Permitting\vip\Drawings\Civil\0232479.01 L20X.dwg, Mar 23, 2020 - 8:45am BMCDEVTT

- LANDSCAPING NOTES:
1. ALL TREES MARKED TO BE RELOCATED, SHALL BE PROTECTED PRIOR TO CONSTRUCTION. THEY SHALL BE CAREFULLY DUG WITH A ROOTBALL 10 TIMES THE SIZE OF THE CALIPER. ALL ROOTBALLS SHALL BE PROTECTED WITH BURLAP PRIOR TO BEING TRANSPLANTED, AND WATERED AS DIRECTED BY THE LANDSCAPE ARCHITECT OR ENGINEER.

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STATE OF MAINE
ENGINEER
ASHLEY
FLETCHER
No. 13750
PROFESSIONAL LICENSE

REV	DESCRIPTION	DATE
3	RESPONSE TO CITY COMMENTS	3/23/20
2	BID ADDENDUM #3	2/21/20
1	BID ADDENDUM #2	2/18/20

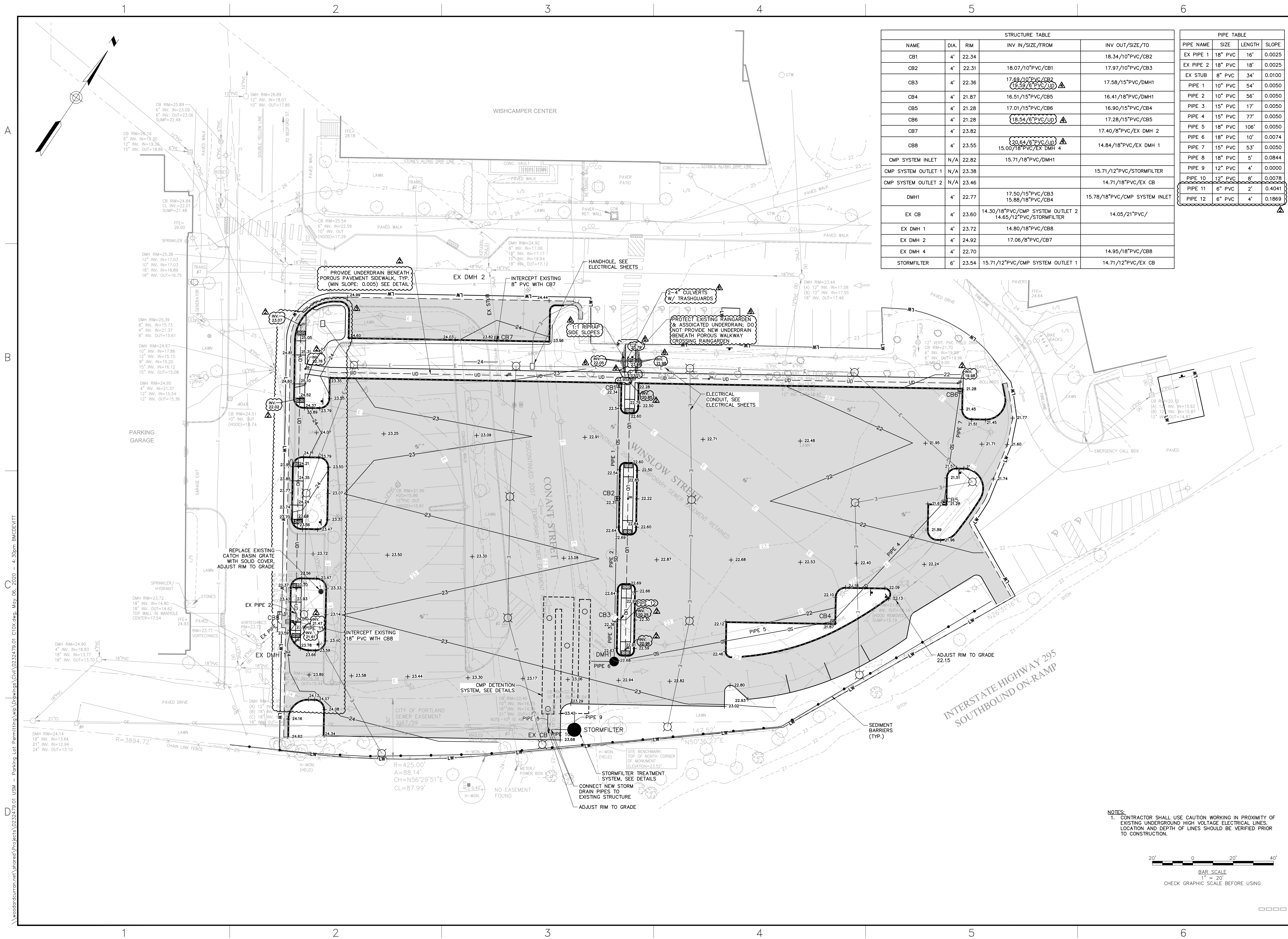
DESIGNED BY: MB
DRAWN BY: MB
CHECKED BY: DS/AF
02/23/20 L20X.dwg

UNIVERSITY OF SOUTHERN MAINE
PORTLAND, MAINE

WISHCAMPER PARKING LOT

JOB NO.: 0232479.01
DATE: JANUARY 2020
SCALE: AS SHOWN
SHEET: 7 OF 20

L-200



STRUCTURE TABLE				
NAME	DIA.	RIM	INV IN/SIZE/TO	INV OUT/SIZE/TO
CB1	4'	22.34		18.34/10"PVC/CB2
CB2	4'	22.31	18.07/10"PVC/CB1	17.97/10"PVC/CB3
CB3	4'	22.36	17.69/10"PVC/CB2 18.59/6"PVC/UD	17.58/15"PVC/DMH1
CB4	4'	21.87	16.51/15"PVC/CB5	16.41/18"PVC/DMH1
CB5	4'	21.28	17.01/15"PVC/CB6	16.90/15"PVC/CB4
CB6	4'	21.28	18.54/6"PVC/UD	17.28/15"PVC/CB5
CB7	4'	23.82		17.40/8"PVC/EX DMH 2
CB8	4'	23.55	20.64/6"PVC/UD 15.00/18"PVC/EX DMH 4	14.84/18"PVC/EX DMH 1
CMP SYSTEM INLET	N/A	22.82	15.71/18"PVC/DMH1	
CMP SYSTEM OUTLET 1	N/A	23.38		15.71/12"PVC/STORMFILTER
CMP SYSTEM OUTLET 2	N/A	23.46		14.71/18"PVC/EX CB
DMH1	4'	22.77	17.50/15"PVC/CB3 15.88/18"PVC/CB4	15.78/18"PVC/CMP SYSTEM INLET
EX CB	4'	23.60	14.30/18"PVC/CMP SYSTEM OUTLET 2 14.65/12"PVC/STORMFILTER	14.05/21"PVC/
EX DMH 1	4'	23.72	14.80/18"PVC/CB8	
EX DMH 2	4'	24.92	17.06/8"PVC/CB7	
EX DMH 4	4'	22.70		14.95/18"PVC/CB8
STORMFILTER	6'	23.54	15.71/12"PVC/CMP SYSTEM OUTLET 1	14.71/12"PVC/EX CB

PIPE TABLE				
PIPE NAME	SIZE	LENGTH	SLOPE	
EX PIPE 1	18" PVC	16'	0.0025	
EX PIPE 2	18" PVC	18'	0.0025	
EX STUB	8" PVC	34'	0.0100	
PIPE 1	10" PVC	54'	0.0050	
PIPE 2	10" PVC	56'	0.0050	
PIPE 3	15" PVC	17'	0.0050	
PIPE 4	15" PVC	77'	0.0050	
PIPE 5	18" PVC	106'	0.0050	
PIPE 6	18" PVC	10'	0.0074	
PIPE 7	15" PVC	53'	0.0050	
PIPE 8	18" PVC	5'	0.0844	
PIPE 9	12" PVC	4'	0.0000	
PIPE 10	12" PVC	8'	0.0078	
PIPE 11	6" PVC	2'	0.4041	
PIPE 12	6" PVC	4'	0.1869	

NOTES:
1. CONTRACTOR SHALL USE CAUTION WORKING IN PROXIMITY OF EXISTING UNDERGROUND HIGH VOLTAGE ELECTRICAL LINES. LOCATION AND DEPTH OF LINES SHOULD BE VERIFIED PRIOR TO CONSTRUCTION.



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STATE OF MAINE
REGISTERED PROFESSIONAL ENGINEER
ASHLEY FLETCHER
No. 13750

REVISIONS

NO.	DATE	DESCRIPTION
1	5/6/20	RESPONSE TO CITY COMMENTS
2	4/20/20	RESPONSE TO CITY STORMWATER COMMENTS
3	4/8/20	RESPONSE TO PRECAST SUBMITTAL
4	3/23/20	RESPONSE TO CITY COMMENTS
5	2/21/20	BID ADDENDUM #3
6	2/18/20	BID ADDENDUM #2

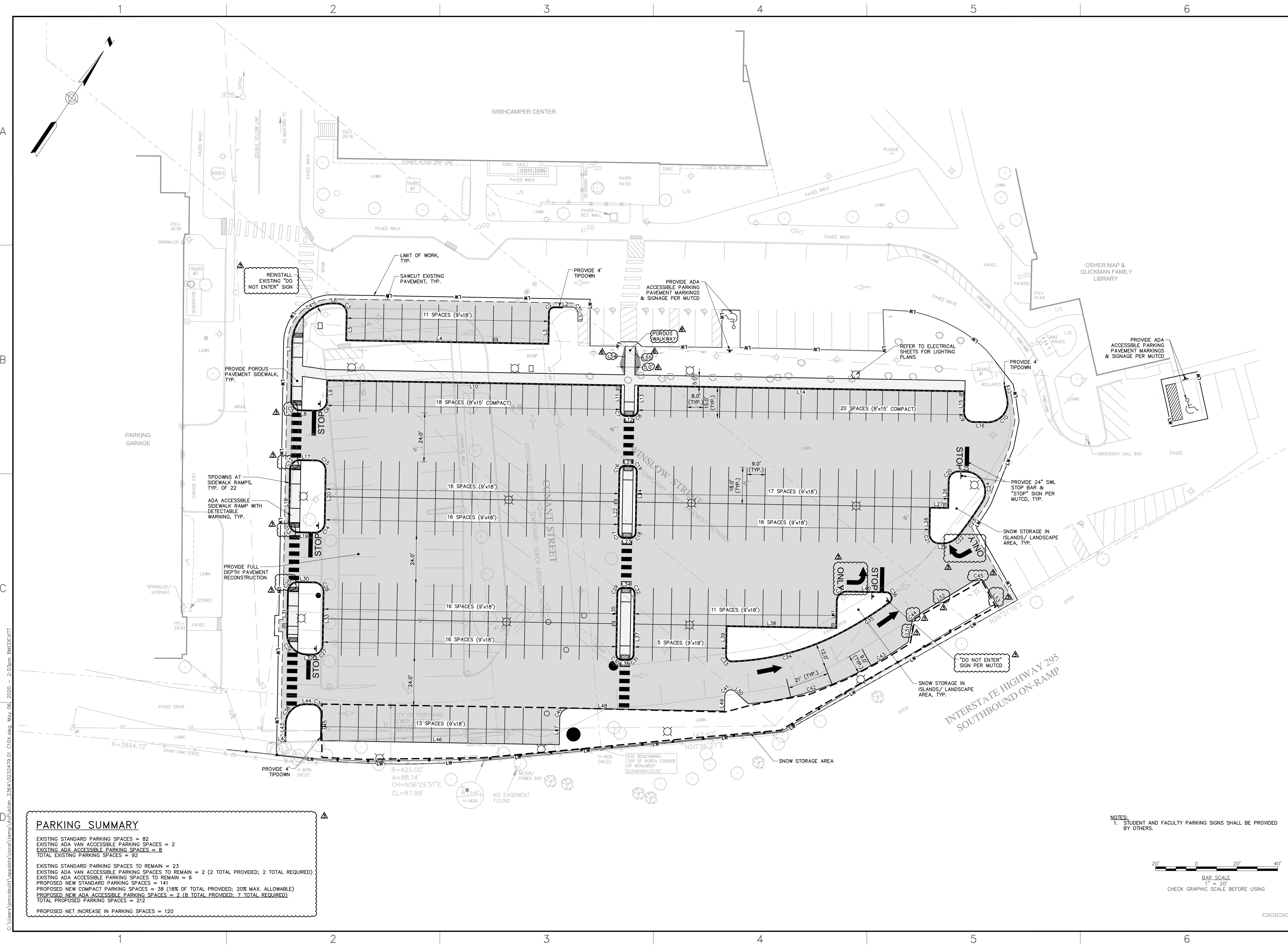
DESIGNED BY: ASF
CHECKED BY: DBS
DRAWN BY: BCM
DATE: 02/24/20

UNIVERSITY OF SOUTHERN MAINE
PORTLAND, MAINE

WISHCAMPER PARKING LOT

JOB NO.: 0232479.01
DATE: JANUARY 2020
SCALE: 1"=20'
SHEET: 6 OF 20

C-101



PARKING SUMMARY	
EXISTING STANDARD PARKING SPACES =	82
EXISTING ADA VAN ACCESSIBLE PARKING SPACES =	2
EXISTING ADA ACCESSIBLE PARKING SPACES =	8
TOTAL EXISTING PARKING SPACES =	92
EXISTING STANDARD PARKING SPACES TO REMAIN =	23
EXISTING ADA VAN ACCESSIBLE PARKING SPACES TO REMAIN =	2 (2 TOTAL PROVIDED; 2 TOTAL REQUIRED)
EXISTING ADA ACCESSIBLE PARKING SPACES TO REMAIN =	6
PROPOSED NEW STANDARD PARKING SPACES =	141
PROPOSED NEW COMPACT PARKING SPACES =	38 (18% OF TOTAL PROVIDED; 20% MAX. ALLOWABLE)
PROPOSED NEW ADA ACCESSIBLE PARKING SPACES =	2 (8 TOTAL PROVIDED; 7 TOTAL REQUIRED)
TOTAL PROPOSED PARKING SPACES =	212
PROPOSED NET INCREASE IN PARKING SPACES =	120

NOTES:
1. STUDENT AND FACULTY PARKING SIGNS SHALL BE PROVIDED BY OTHERS.

20' 0 20' 40'

BAR SCALE
1" = 20'

CHECK GRAPHIC SCALE BEFORE USING

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NO.	DATE	DESCRIPTION
1	2/18/20	BID ADDENDUM #2
2	2/21/20	BID ADDENDUM #3
3	3/23/20	RESPONSE TO CITY COMMENTS
4	4/8/20	RESPONSE TO PRECAST SUBMITTAL
5	4/20/20	RESPONSE TO CITY STORMWATER COMMENTS
6	5/6/20	RESPONSE TO CITY COMMENTS

DESIGNED BY: ASHLEY FLETCHER
DRAWN BY: BOM

CHECKED BY: DBS
DATE: 02/24/20

MATERIALS & LAYOUT SITE PLAN

UNIVERSITY OF SOUTHERN MAINE
PORTLAND, MAINE

WISHCAMPER PARKING LOT

JOB NO.: 0232479.01
DATE: JANUARY, 2020
SCALE: 1"=20'
SHEET: 4 OF 20

C-100

SHEET LEGEND

- REMOVE & DISPOSE OF PAVEMENT
(REMOVE PAVEMENT, CURB AND/OR
STRUCTURE WITHIN ZONE)
- REMOVE LANDSCAPED AREAS
- REMOVE & DISPOSE OF POROUS
PAVEMENT SIDEWALK
- UTILITY LINE DEMOLITION
- CATCH BASIN INLET PROTECTION
- SEDIMENT BARRIER

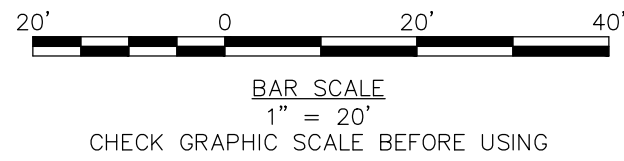
OSHER MAP &
GLICKMAN FAMILY
LIBRARY

WINSLOW STREET
DISCONTINUED 2007 - TEMPORARY SEWER EASEMENT RETAINED

INTERSTATE HIGHWAY 295
SOUTHBOUND ON-RAMP

PROVIDE CATCH BASIN
INLET PROTECTION, TYP.

- NOTES:
- CONTRACTOR SHALL USE CAUTION WORKING IN PROXIMITY OF
EXISTING UNDERGROUND HIGH VOLTAGE ELECTRICAL LINES.
LOCATION AND DEPTH OF LINES SHOULD BE VERIFIED PRIOR
TO CONSTRUCTION.
 - REFER TO LANDSCAPE PRESERVATION PLAN FOR EXISTING
VEGETATION TO BE PROTECTED OR REMOVED.
 - REFER TO ELECTRICAL DEMOLITION PLAN.



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STATE OF MAINE
PROFESSIONAL ENGINEER
ASHLEY
FLETCHER
No. 13750

REV	DESCRIPTION	DATE
3	RESPONSE TO CITY COMMENTS	3/23/20
2	BID ADDENDUM #3	2/21/20
1	BID ADDENDUM #2	2/18/20

DESIGNED BY: ACF
CHECKED BY: DBS
DRAWN BY: BCM
02/23/20 C:\DWG

DEMOLITION AND EROSION &
SEDIMENT CONTROL PLAN

UNIVERSITY OF SOUTHERN MAINE
PORTLAND, MAINE

WISHCAMPER PARKING LOT

JOB NO.: 0232479.01
DATE: JANUARY 2020
SCALE: 1"=20'
SHEET: 3 OF 20

C-001



- PROVIDE CAST-IN INSERTS IN PRECAST MANHOLE CONES AND FLAT TOPS. LOCATIONS TO MATCH HOLES IN GRADE RING.

- PROVIDE H OF 4" MIN. TO 12" MAX. AS REQUIRED TO BRING FRAME TO FINAL GRADE.

- FOR FRAME ADJUSTMENTS OF LESS THAN 4" USE APPROVED ALTERNATE MANHOLE FRAME AND/OR ATTACH FRAME DIRECTLY TO PRECAST MANHOLE CONE.

- CONTRACTOR MAY USE BRICKS TO BRING MANHOLE TO GRADE.



N.T.S.



N.T.S.



N.T.S.



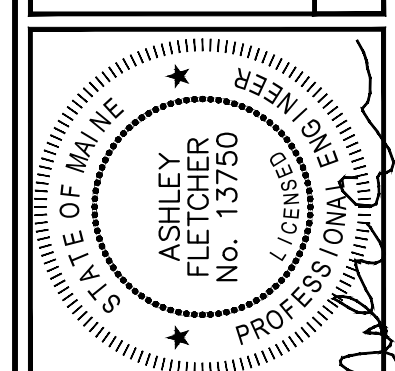
NOTES:

1. PRECAST CONCRETE STRUCTURES AND CASTINGS SHALL BE SUITABLE FOR HS-20 LOADINGS.
2. PRECAST CONCRETE STRUCTURES SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM C-478.
3. ALTERNATE TOP SLAB MAY BE USED AS DICTATED BY DESIGN AND/OR FIELD CONDITIONS.
4. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE BUTYL RUBBER.

N.T.S



MANHOLE FRAME FASTENING



REV	DESCRIPTION	DATE
	DESIGNED BY: AEF	CHECKED BY: EBS
	DRAWN BY: BCM	03/24/2001 03:00pmg

CIVIL DETAILS - 2

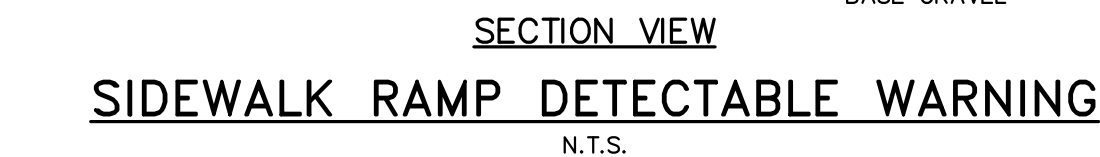
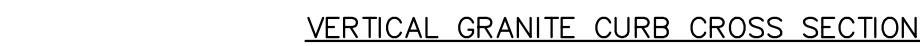
UNIVERSITY OF SOUTHERN MAINE
PORTLAND, MAINE

WISHCAMPER PARKING LOT

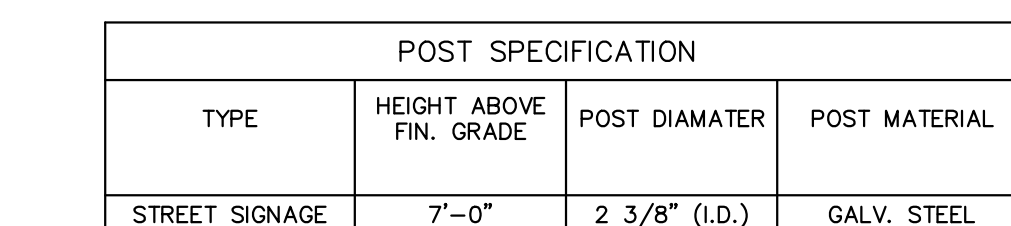
JOB NO.:0232479.01
DATE: DECEMBER 2019
SCALE: AS NOTED
SHEET: 10 OF 19

D-301

NOT FOR CONSTRUCTION

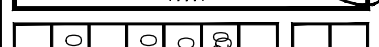


- NOTES:



N.T.S.

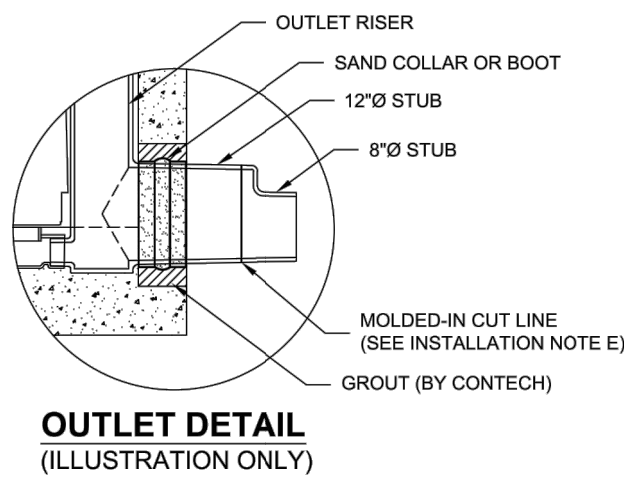
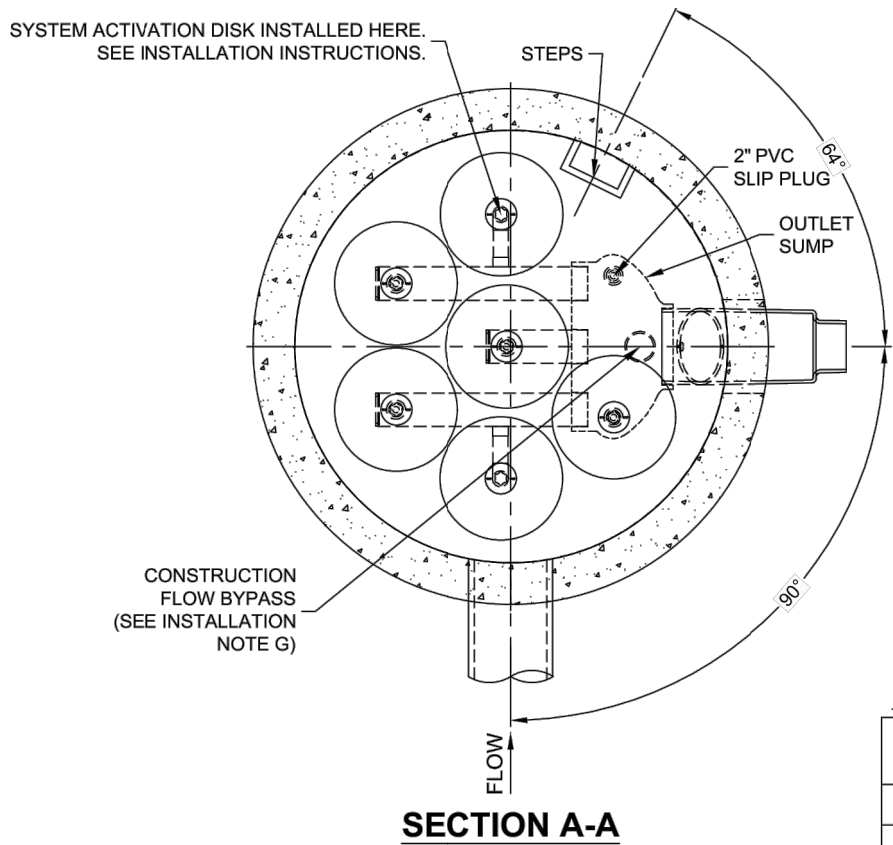
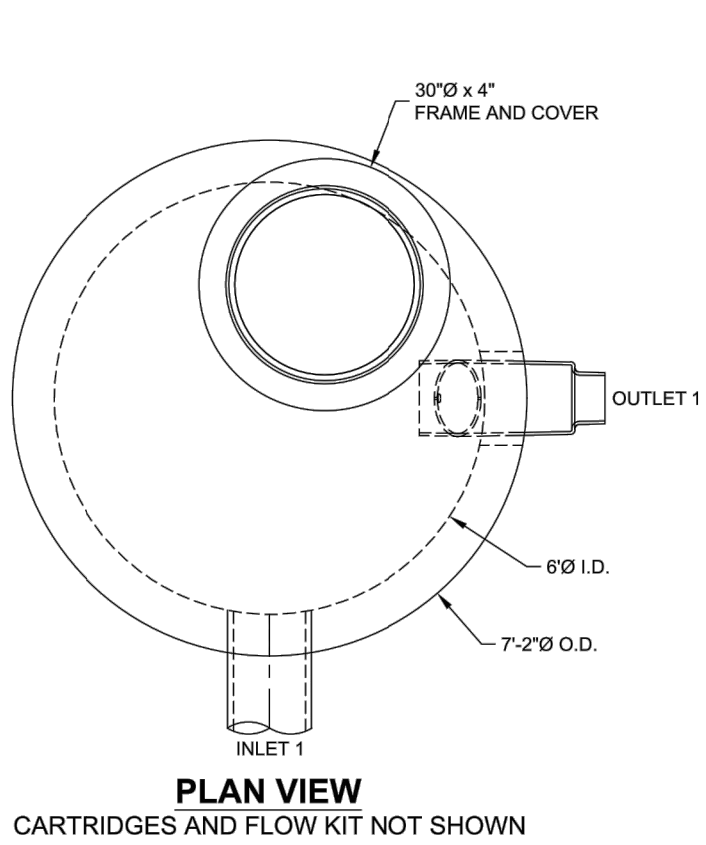
POST SPECIFICATION			
TYPE	HEIGHT ABOVE FIN. GRADE	POST DIAMETER	POST MATERIAL
STREET SIGNAGE	7'-0"	2 3/8" (I.D.)	GALV. STEEL



REV	DESCRIPTION	DATE
5	RESPONSE TO CITY STORMWATER COMMENTS	4/20/2020
4	RESPONSE TO PRECAST SUBMITTAL	4/18/2020
3	RESPONSE TO CITY COMMENTS	3/23/2020
2	BID ADDENDUM #3	2/21/2020
1	BID ADDENDUM #2	2/18/2020

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\\woodardcurran.net\shared\Projects\0232479.01 USM - Parking Lot Permitting\vip\Drawings\Civil\0232479.01_D30X.dwg, Jan 16, 2020 - 11:12am BMD\DEVTT



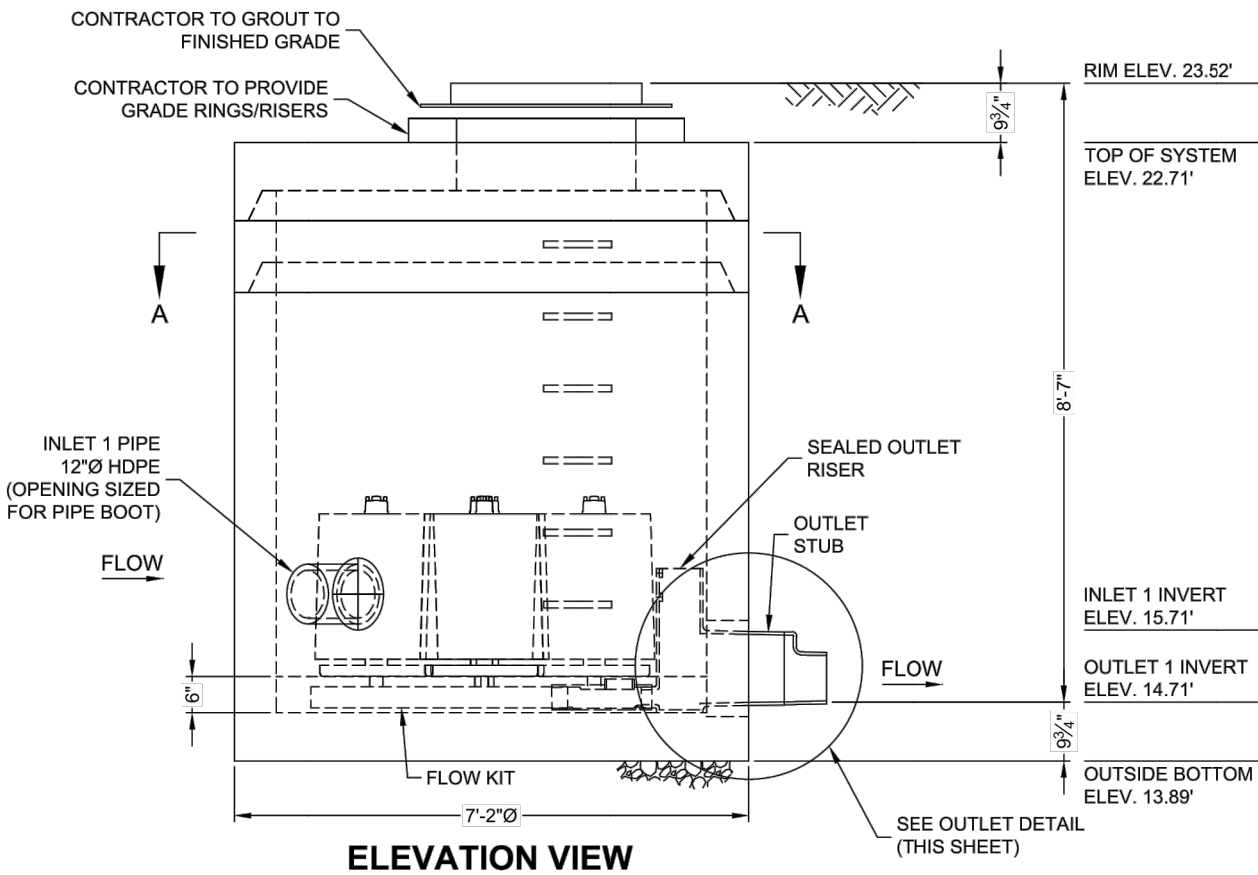
MATERIAL LIST (PROVIDED BY CONTECH)		
COUNT	DESCRIPTION	INSTALLED BY
6	27" ZEO-PSORB CARTRIDGE	CONTECH
7	RESTRICTOR DISK (0.25" BLK) 3 GPM PER CARTRIDGE	CONTECH
1	2" PVC SLIP PLUG	CONTECH
1	42A FLOWKIT	CONTECH
1	SF ACTIVATION DISK	CONTECH
1	SEALED OUTLET RISER	CONTECH
6	STEPS, P10CTS, LANE LADDER, OR EQUIV.	CONTECH
1	SEALANT FOR JOINTS	CONTRACTOR
1	30"Ø x 4" FRAME & COVER, EJ#41600484, OR EQUIV.	CONTRACTOR

PERFORMANCE SPECIFICATION
FILTER CARTRIDGES SHALL BE MEDIA-FILLED, PASSIVE, SIPHON ACTUATED, RADIAL FLOW, AND SELF CLEANING. **RADIAL MEDIA DEPTH SHALL BE 7-INCHES.** FILTER MEDIA CONTACT TIME SHALL BE AT LEAST **30 SECONDS.**
SPECIFIC FLOW RATE SHALL BE **0.25 GPM/SF (MAXIMUM).** SPECIFIC FLOW RATE IS THE MEASURE OF THE FLOW (GPM) DIVIDED BY THE MEDIA SURFACE CONTACT AREA (SF). MEDIA VOLUMETRIC FLOW RATE SHALL BE **6 GPM/CF OF MEDIA (MAXIMUM).**

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
3. STORMFILTER WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS-20 LOAD RATING. CASTINGS SHALL MEET AASHTO M306 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
5. STORMFILTER STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.

INSTALLATION NOTES
A. ANTI-FLOATATION PROVISIONS SHALL BE DESIGNED AND PROVIDED BY THE CONTRACTOR.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STORMFILTER STRUCTURE.
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET PIPE(S). ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
E. CONTRACTOR TO PROVIDE AND INSTALL CONNECTOR TO THE OUTLET RISER STUB. STORMFILTER EQUIPPED WITH A DUAL DIAMETER HDPE OUTLET STUB. IF OUTLET PIPE IS LARGER THAN 8 INCHES, CONTRACTOR TO REMOVE THE 8 INCH OUTLET STUB AT MOLDED IN CUT LINE. COUPLING BY FERRODO OR EQUAL AND PROVIDED BY CONTRACTOR.
F. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.
G. CONTRACTOR TO INSTALL SUPPLIED PLUG IN CONSTRUCTION FLOW BYPASS WHEN SYSTEM IS BROUGHT ON LINE (PRESSURE FIT ONLY, DO NOT GLUE).

STRUCTURE WEIGHT
APPROXIMATE HEAVIEST PICK = 4500 LBS. OF 3 PIECES
BASE SECTION SHIPPED WITH CARTRIDGES INSTALLED
MAX FOOTPRINT = 67'-2"



STORMFILTER DETAIL
N.T.S.

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

**WOODARD
& CURRAN**

COMMITMENT & INTEGRITY DRIVE RESULTS
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STATE OF MAINE
ENGINEER
ASHLEY
FLETCHER
No. 13750
PROFESSIONAL LICENSE

DESIGNED BY: ASF
DRAWN BY: BCM

CHECKED BY: DBS
02/28/2019 (D30X.dwg)

DATE

CIVIL DETAILS - 5

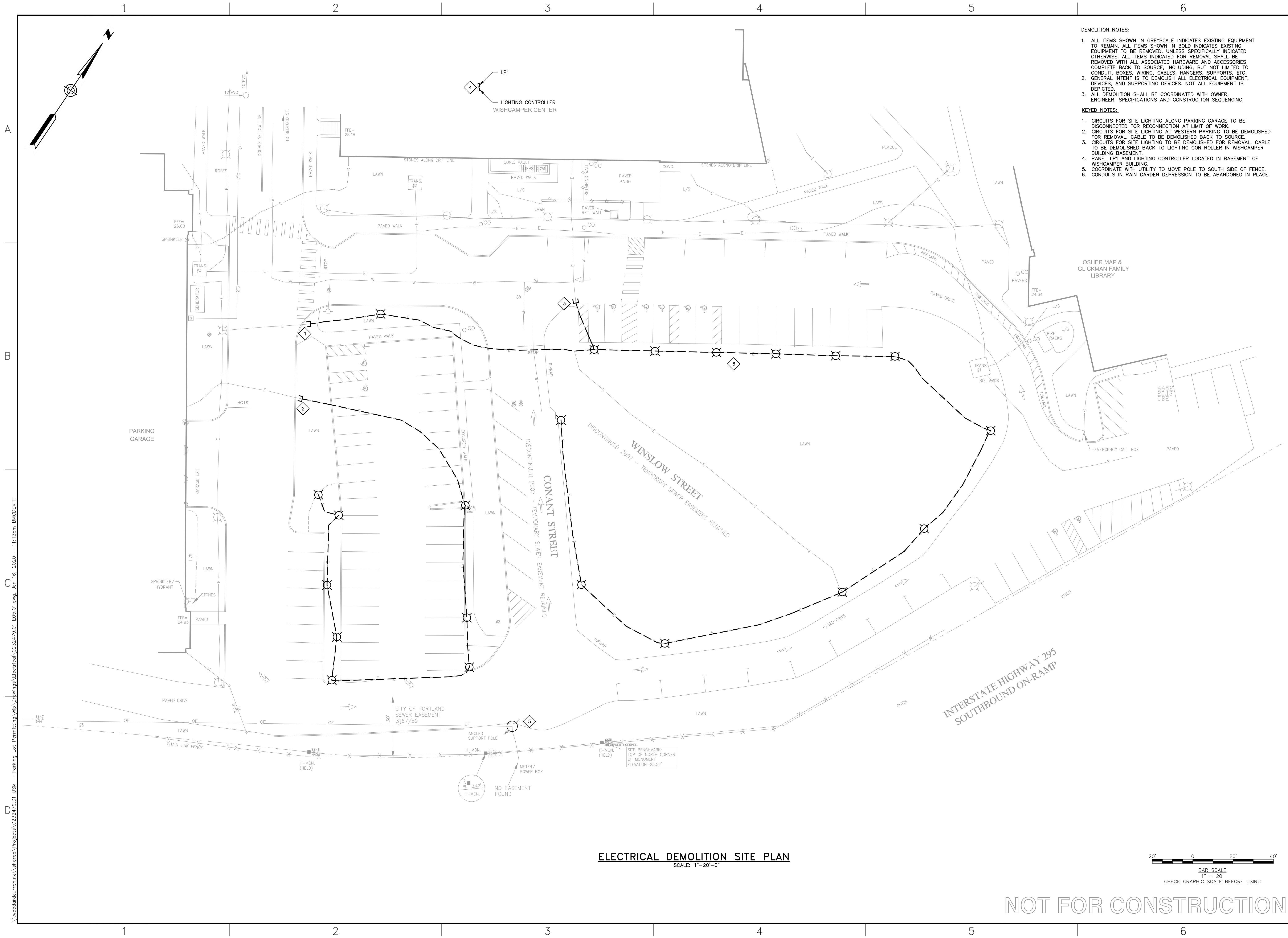
UNIVERSITY OF SOUTHERN MAINE
PORTLAND, MAINE

WISHCAMPER PARKING LOT

JOB NO.: 0232479.01
DATE: DECEMBER 2019
SCALE: AS NOTED
SHEET: 13 OF 19

D-304

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Portland, Maine 04102
800.426.4262 | www.woodardcurran.com

COMMITMENT & INTEGRITY DRIVE RESULTS

REV	DESCRIPTION	DATE

DESIGNED BY: SEH	CHECKED BY: PPH
DRAWN BY: SAA	02/24/20 05:01.dwg

ELECTRICAL DEMOLITION
SITE PLAN

UNIVERSITY OF SOUTHERN MAINE
PORTLAND, MAINE

WISHCAMPER PARKING LOT

JOB NO.: 0232479.01
DATE: DECEMBER 2019
SCALE: AS NOTED
SHEET: 15 OF 19

E05.01

1. ALL ITEMS SHOWN WITH LIGHT DESIGNATION INDICATES EXISTING. ALL ITEMS SHOWN WITH BOLD DESIGNATION INDICATES NEW WORK, UNLESS OTHERWISE NOTED.
2. ALL WORK SHOWN IS DIAGRAMMATIC. CONTRACTOR SHALL COORDINATE AND FIELD VERIFY EXACT LOCATIONS PRIOR TO EXECUTION OF WORK.

1. RECONNECT SITE LIGHTING ADJACENT TO PARKING GARAGE TO NEW LIGHTING CIRCUITS.
2. PANEL LP1 AND LIGHTING CONTROLLER LOCATED IN BASEMENT OF WISHCAMPER BUILDING.
3. FINAL LOCATION OF UTILITY POLE TO BE COORDINATED WITH UTILITY AND SERVICE OWNER.
4. EXTEND NEW CONDUIT FROM EXISTING CONDUIT.



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[illegible]ELECTRICAL SITE PLAN
PROPOSEDUNIVERSITY OF SOUTHERN MAINE
PORTLAND, MAINE

WISHCAMPER PARKING LOT

JOB NO.:0232479.01
DATE:DECEMBER 2019
SCALE: AS NOTED
SHEET: 16 OF 19

E05.02

A graphic scale bar with alternating black and white segments. It is marked with '20'' at the left end, '0' in the middle, and '20'' at the right end.

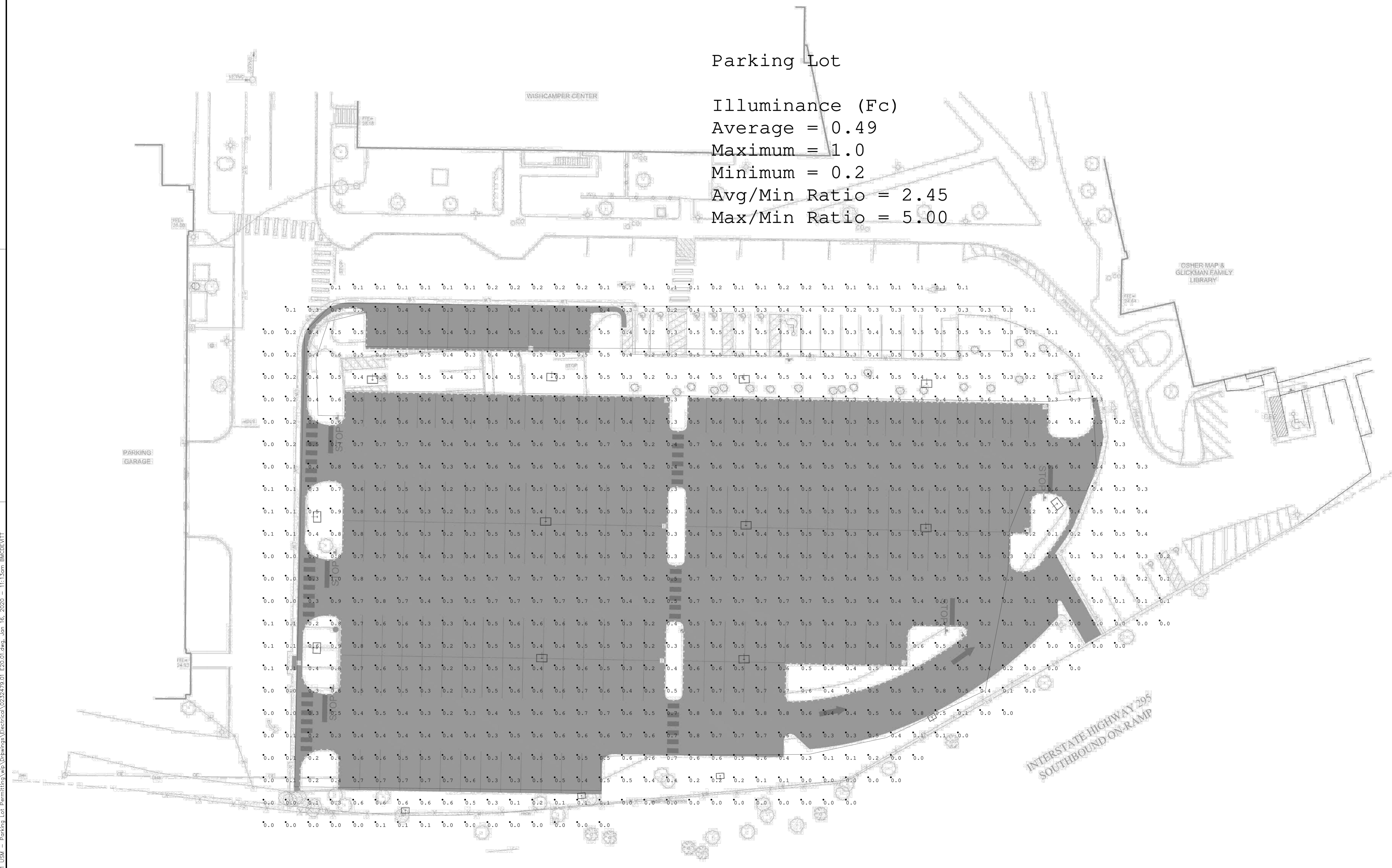
BAR SCALE

1" = 20'
CHECK GRAPHIC SCALE BEFORE USING

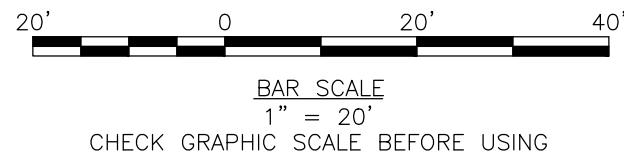
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Parking Lot

Illuminance (Fc)
Average = 0.49
Maximum = 1.0
Minimum = 0.2
Avg/Min Ratio = 2.45
Max/Min Ratio = 5.00



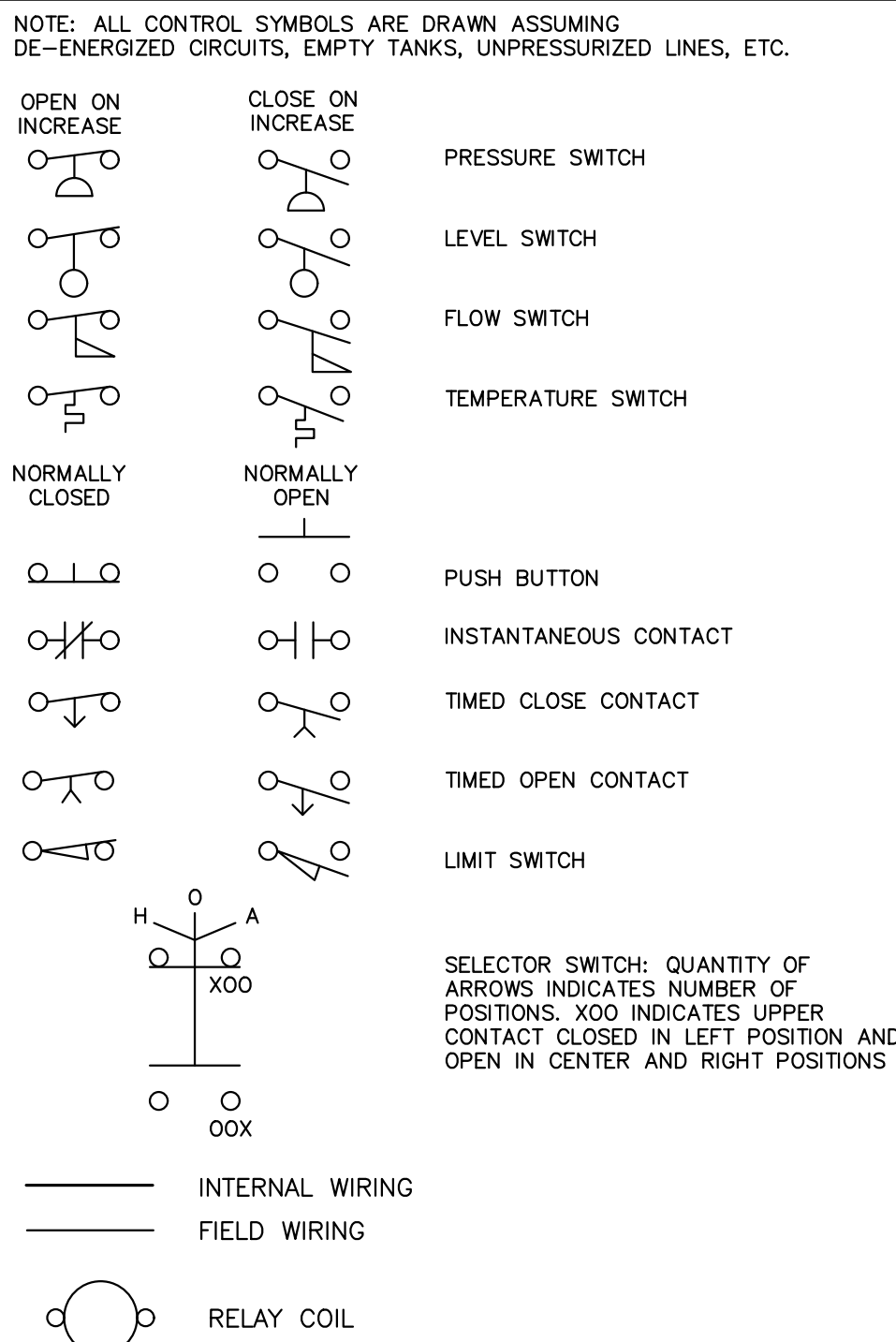
ELECTRICAL PHOTOMETRIC PLAN
SCALE: 1"=20'-0"



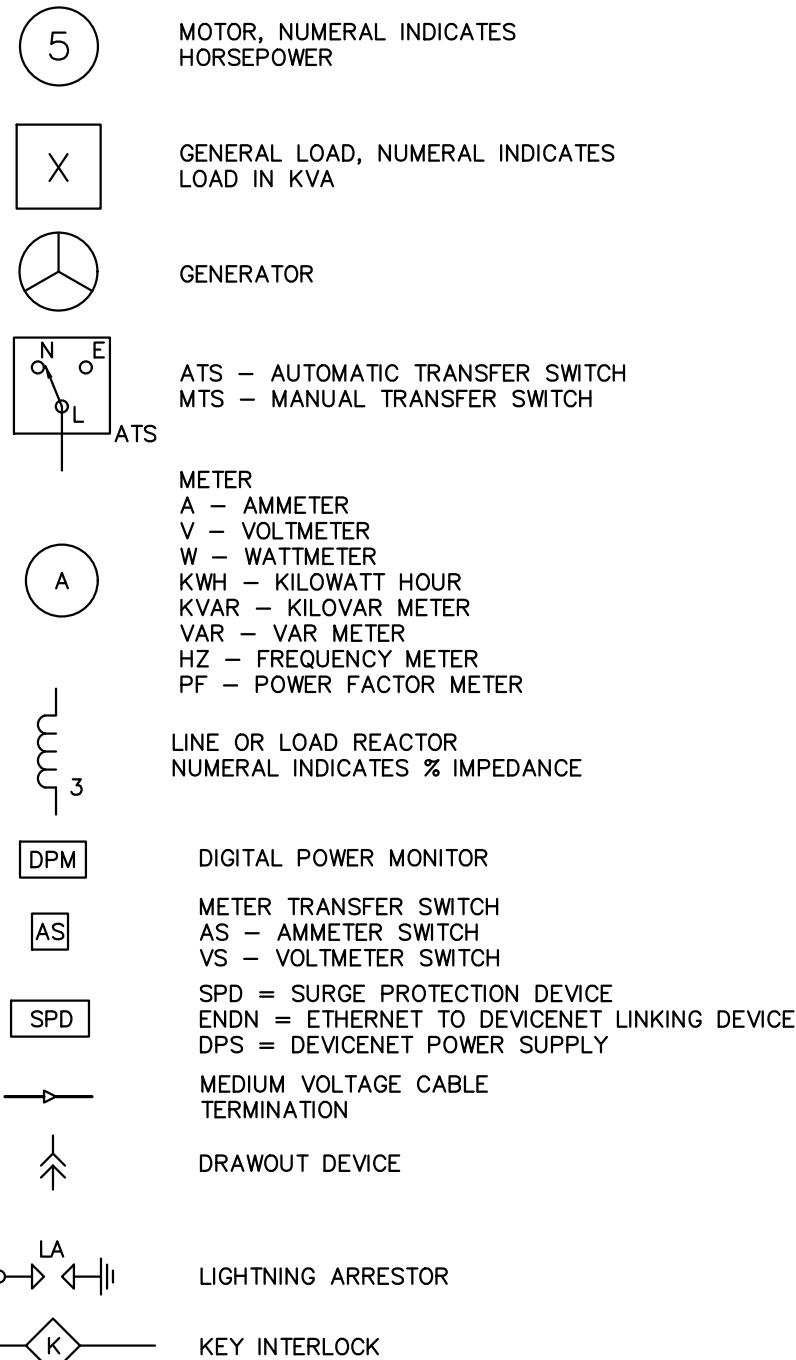
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41 Hutchins Drive Portland, Maine 04102 800.425.4262 www.woodardcurran.com		COMMITMENT & INTEGRITY DRIVE RESULTS	
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ELECTRICAL PHOTOMETRICS			
UNIVERSITY OF SOUTHERN MAINE PORTLAND, MAINE		WISHCAMPER PARKING LOT	
JOB NO.: 0232479.01		DATE: DECEMBER 2019	
SCALE: AS NOTED		SHEET: 17 OF 19	
E20.01			

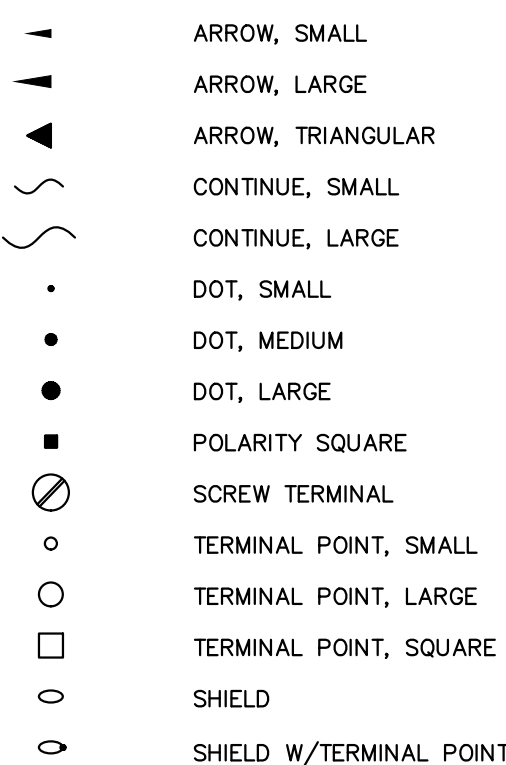
CONTROL DIAGRAM SYMBOLS



GROUNDING



GROUNDING



A,AMP	AMPERES
AC	ALTERNATING CURRENT
AF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AUI	AUTHORITY HAVING JURISDICTION
AIC	AMPERE INTERRUPT CAPACITY
AWG	AMERICAN WIRE GAUGE
BFG	BELOW FINISHED GRADE
CATV	CABLE TELEVISION
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CL	CENTER LINE
CKT	CIRCUIT
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CT	CURRENT TRANSFORMER
CU	COPPER
E,C	ELECTRICAL CONTRACTOR
EMT	ELECTRIC METALLIC TUBING
FAA	FIRE ALARM ANNUNCIATOR
FACP	FIRE ALARM CONTROL PANEL
FBO	FURNISHED BY OTHERS
FWE	FURNISHED WITH EQUIPMENT
GC	GENERAL CONTRACTOR
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
G,GND	GROUND
HP	HORSEPOWER
Hz	FREQUENCY IN CYCLES/SECOND
IG	ISOLATED GROUND
IMT	INTERMEDIATE METALLIC CONDUIT
JBOX	JUNCTION BOX
K	KILO
KOMIL	1000 CIRCULAR MILS
KVA	KILOVOLT AMPERE
KVAR	KILOVOLT AMPERE REACTIVE
KW	KILOWATT
KWH	KILOWATT HOUR
MCC	MOTOR CONTROL CENTER
MCB	MAIN CIRCUIT BREAKER
MFG	MANUFACTURER
MH	MANHOLE
MIS	MIS LOGS ONLY
MTD	MOUNTED
MTR	MOTOR
MV	MEDIUM VOLTAGE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NEUT	NEUTRAL
NO	NORMALLY OPEN
OL	OVERLOAD ELEMENT
PF	POWER FACTOR
PH	PHASE
PI	PRIMARY
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE
R	RIGID STEEL CONDUIT
RTD	RESISTANCE TEMPERATURE DETECTOR
SEC	SECONDARY
SS	STAINLESS STEEL
SV	SOLENOID VALVE
TEMP	TEMPERATURE
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TYPE	TYPICAL
UE	UNDERGROUND ELECTRIC
UG	UNDERGROUND
UPS	UNINTERRUPTED POWER SUPPLY
V	VOLTS
VA	VOLT-AMPERES
VAR	VOLT-AMPERE REACTIVE
W	WATT
WM	WATER METER
WP	WEATHER PROOF
XFMR	TRANSFORMER
XP	EXPLOSION PROOF

ELECTRICAL LEGEND

UNIVERSITY OF SOUTHERN MAINE
PORTLAND, MAINE

WISHCAMPER PARKING LOT

JOB NO.:0232479.01
DATE:DECEMBER 2019
SCALE: AS NOTED
SHEET: 14 OF 19

E00.01

NOT FOR CONSTRUCTION

		SUBTOTAL		0.00	0.00	0.00	SUBTOTAL	
VOLTAGE:	277/480	TOTAL KVA		0.00				PANEL NAME:
MAIN BREAKER:	MLO	TOTAL AMPS		0				LOCATION:
BUSES:	100							MOUNTING:
PH & WIRES:	3PH 4W							AIC RATING:
NOTES:								16 kAIC

SCALE: NO SCALE

DUCTBANK	TYPE	SIZE	FROM	TO	TYPE	DESCRIPTION
A	POWER	1"	LIGHTING CONTROLLER	LIGHT POLES	1	CIRCUIT C LIGHTING
	POWER	1"	LIGHTING CONTROLLER	LIGHT POLES		CIRCUIT D LIGHTING
	SPARE	1"	LIGHTING CONTROLLER	LIGHT POLES		SPARE



TYPE	MANUFACTURER	CATALOG NUMBER	LAMP TYPE	LAMP WATT	LAMP NO.	VOLTAGE	MTG.	BALLAST FACTOR	REMARKS/RECOMMENDATIONS
A1	POLE-MOUNTED LED SITE FIXTURE W/ TYPE V SQUARE MEDIUM DISTRIBUTION								
	KIM LIGHTING OR EQUAL	ALTI-28L-20-3K7-5GM-UNV-A34-PS	LED	20	-	120/277	POLE	NA	MOUNTING HEIGHT 20' ABOVE GRADE ON POLE PRA16-4188 OR EQUAL
A2	POLE-MOUNTED LED SITE FIXTURE W/ TYPE IV WIDE DISTRIBUTION AND BACKLIGHT CONTROL								
	KIM LIGHTING OR EQUAL	ALTI-28L-20-3K7-4W-UNV-A34-PS-BC	LED	20	-	120/277	POLE	NA	MOUNTING HEIGHT 20' ABOVE GRADE ON POLE PRA16-4188 OR EQUAL
A3	POLE-MOUNTED LED SITE FIXTURE W/ TYPE IV WIDE DISTRIBUTION								
	KIM LIGHTING OR EQUAL	ALTI-28L-20-3K7-4W-UNV-A34-PS	LED	20	-	120/277	POLE	NA	MOUNTING HEIGHT 20' ABOVE GRADE ON POLE PRA16-4188 OR EQUAL
A4	POLE-MOUNTED LED SITE FIXTURE W/ TYPE IV DISTRIBUTION AND BACKLIGHT CONTROL								
	KIM LIGHTING OR EQUAL	ALTI-28L-20-3K7-4-UNV-A34-PS-BC	LED	20	-	120/277	POLE	NA	MOUNTING HEIGHT 20' ABOVE GRADE ON POLE PRA16-4188 OR EQUAL
A5	POLE-MOUNTED LED SITE FIXTURE W/ TYPE IV DISTRIBUTION								
	KIM LIGHTING OR EQUAL	ALTI-28L-20-3K7-4-UNV-A34-PS	LED	20	-	120/277	POLE	NA	MOUNTING HEIGHT 20' ABOVE GRADE ON POLE PRA16-4188 OR EQUAL
A6	POLE-MOUNTED LED SITE FIXTURE W/ TYPE IV WIDE DISTRIBUTION AND BACKLIGHT CONTROL								
	KIM LIGHTING OR EQUAL	ALTI-28L-40-3K7-4W-UNV-A34-PS-BC	LED	40	-	120/277	POLE	NA	MOUNTING HEIGHT 20' ABOVE GRADE ON POLE PRA16-4188 OR EQUAL

NOT FOR CONSTRUCTION

1. FINAL DIMENSIONS OF PULL BOXES SHALL BE AS VERIFIED IN THE FIELD AND SHALL BE IN ACCORDANCE WITH NEC.
2. PULLBOX COVERS SHALL BE CAST IRON. PROVIDE EXTENSION AS REQUIRED.
3. PULLBOXES SHALL BE PRECAST EQUAL TO: GEORGE ROBERTS, BROOKS, OR A.C. MILLER.
4. REFER TO SPECIFICATIONS FOR FURTHER REQUIREMENTS.



1. THIS DETAIL IS APPLICABLE FOR POLES BASES WHERE LIGHT POLES MAY BE SUBJECT TO DAMAGE BY VEHICLES. DETAIL SHALL BE APPLICABLE FOR LIGHT FIXTURES LOCATED IN THE PAVED PARKING AREAS, AND NOT LOCATED WITHIN ISLANDS.

[illegible]

ELECTRICAL DETAILS

UNIVERSITY OF SOUTHERN MAINE
PORTLAND, MAINE

WISHCAMPER PARKING LOT

JOB NO.:0232479.01
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E80.01

