

CITY OF PORTLAND, MAINE

PLANNING BOARD



Maggie Stanley, Chair
Brandon Mazer, Vice Chair
Justin Barker
Marpheen Chann
Sean Murphy
David Silk
Austin Smith

AGENDA PORTLAND PLANNING BOARD MEETING

The Planning Board will hold a remote meeting on **Tuesday, March 22, 2022, 4:30 p.m.** This meeting will take place remotely using Zoom pursuant to the Remote Meeting Policy adopted by the Planning Board and as authorized under 1 M.R.S. 403-B because of the existence of an emergency or urgent issue that requires the committee to meet by remote methods. Allow your computer to install the free Zoom app to get the best meeting experience.

If you are not able to attend live, a recording will be available following the meeting. For public comment, you will need to use the "raise your hand" feature. To raise your hand via the telephone, please hit *9. You will be unmuted by the host when it is time for public comment.

For more information on how to access the meeting remotely and how to give public comment, please go to <http://www.portlandmaine.gov/remotepud>. Public comments will be taken for each item on the agenda during the estimated allotted time and written comments should be submitted to planningboard@portlandmaine.gov.

Please note that the placement of each item on the agenda is subject to change. Please check the Agenda & Minutes Center prior to the meeting for the item start time.

You are invited to a Zoom webinar.

When: Mar 22, 2022 04:30 PM Eastern Time (US and Canada)

Topic: Planning Board Workshop and Public Hearing 3-22-2022

Please click the link below to join the webinar:

<https://portlandmaine-gov.zoom.us/j/83014625017>

Or One tap mobile :

US: +19292056099,,83014625017# or +13017158592,,83014625017#

Or Telephone:

Dial(for higher quality, dial a number based on your current location):

US: +1 929 205 6099 or +1 301 715 8592 or +1 312 626 6799 or +1 669 900 6833 or +1 253 215 8782 or +1 346 248 7799

Webinar ID: 830 1462 5017

International numbers available: <https://portlandmaine-gov.zoom.us/j/83014625017>

WORKSHOP - 4:30 PM

- i. Zoning Map and Text Amendment; 716 Stevens Avenue; University of New England, Applicant. (estimated time 4:30 – 6:00 p.m.) The Planning Board will hold a remote workshop to discuss the creation of an Institutional Development Plan (IDP) and Institutional Overlay Zone (IOZ) for the University of New England's Portland campus. A total of 36 properties are located within the proposed IOZ area, which is currently zoned R-3 and R-5 Residential as well as I-H High Impact Industrial.
- ii. Major Site Plan; 57 Douglass Street; Douglass Commons, LLC., Applicant. (estimated time 6:00 – 7:00 p.m.) The Planning Board will hold a remote workshop on a proposal for a 120-unit affordable residential development under Planned Residential Unit Development (PRUD) standards with

112,900 square feet of floor area, along with associated improvements, at 57 (43-91) Douglass Street. The subject property is 3.34 acres in size and is zoned R-5a Residential.

PUBLIC HEARING - 7:00 PM

1. ROLL CALL AND DECLARATION OF QUORUM

2. COMMUNICATION AND REPORTS

3. REPORT OF ATTENDANCE AT THE MEETING HELD ON MARCH 8, 2022

- i. Afternoon Workshop
54 York Street: Chann, Mazer, Murphy, Silk, Stanley present; Barker and Smith absent.
- ii. Evening Hearing
33 McAlister Farm Road: Chann, Mazer, Murphy, Silk, Smith, and Stanley present; Barker absent.
50 Exchange Street: Chann, Murphy, Silk, Smith, and Stanley present; Barker absent; Mazer recused.
102 State Street: Chann, Mazer, Murphy, Silk, Smith, and Stanley present; Barker absent.

4. REPORTS OF DECISIONS AT THE MEETING HELD ON MARCH 8, 2022

- i. Subdivision; 33 McAlister Farm Road; PK Real Estate, LLC., Applicant. Mazer moved and Smith seconded a motion to approve the subdivision with two conditions of approval. Vote 6-0, Barker absent.
- ii. Major Site Plan; 50 Exchange Street; Edith Armstrong, Applicant. Chann moved and Smith seconded a motion to approve the site plan with three conditions of approval. Vote 5-0, Barker absent, Mazer recused.
- iii. Major Site Plan; 102 State Street; NewHeight Redfern, LLC, Applicant. Mazer moved and Chann seconded a motion to approve the site plan with four conditions of approval. Vote 6-0, Barker absent.

5. NEW BUSINESS

- i. Major Site Plan; 94 Portland Street; 94 Portland Street LLC, Applicant. (estimated time 7:00 p.m.) The Planning Board will hold a remote public hearing to consider an application for the conversion of lodging rooms within the existing building at 94 Portland Street into four apartment units totaling 3,163 square foot of floor area. The subject property is 4,675 square feet in size and is zoned B-2b Community Business.

To: Chair Stanley and Members of the Portland Planning Board
From: Matthew Grooms, Senior Planner
Date: March 22, 2022
Re: UNE request for IOZ designation: Draft Institutional Development Plan (IDP)
Applicant: The University of New England (UNE)

I. INTRODUCTION

The University of New England (UNE) has applied for a zoning amendment to create the UNE Institutional Overlay Zone (IOZ) in order to develop an updated and uniform regulatory framework for future development on the University's Portland Campus in Deering Center. This effort is in anticipation of future development planned for the University in the coming years, including a major new academic building, student housing, and recreational facility among others.



Figure 1: Aerial of UNE Portland Campus

The process for designation of an IOZ requires the institution to prepare an Institutional Development Plan, which is a proactive planning document for identifying and addressing anticipated change and growth by an institution. The IOZ also requires that a Regulatory Framework be submitted, to be included in the Land Use Code, which identifies the land area to be included on the zoning map as the Institutional Overlay Zone along with associated use, dimensional, performance and design requirements. The Planning Board is authorized to review and approve an Institutional Development Plan that is consistent with the IDP standards provided in Section 8.5.4.D of the City's Land Use Code. The Planning Board reviews and recommends to City Council the Regulatory Framework and the IOZ boundaries.

The Planning Board held its first workshop on this application on January 25, 2022, where the Board was provided with an initial overview of the proposal, and where staff indicated content areas of the IDP requiring additional content and further review. Since the first workshop, staff have held a series of meetings with the applicant to review and provide feedback on the proposed IDP, with focus areas being site design, historic preservation, interface with the surrounding neighborhood, transportation, utility infrastructure, and environmental impact. The focus of this second workshop will be transportation and utility infrastructure, with transportation and off-street parking impacts being identified as the principal concern of neighbors through public engagement. Given the narrow focus of this second workshop, the memo prepared by staff is narrowly focused on transportation and utility related IDP requirements and review standards. For a complete overview of the IOZ regulatory tool and UNE's proposal, please see staff's [January 25th memo](#).

The Planning and Urban Development Department mailed 116 notices advertising this meeting to property owners within 500 feet of the site. A legal advertisement ran in the March 11 and 12, 2022 editions of the *Portland Press Herald*.

II. UNE INSTITUTIONAL DEVELOPMENT PLAN

A. Development Plans

The UNE IDP identifies numerous projects which may be developed at the Portland Campus in the coming years, and in accordance with IOZ regulations, identifies short-, medium, and longer-term priorities. These projects are also categorized by identified campus needs, which include campus reorganization, new building and renovation need, educational improvements, and campus infrastructure needs. Those projects are as follows:

Table 1: Twenty-Year Development Program			
Priority 1: Short-Term Development Plan (0-5 years)			
Project	Square Footage	Height	Estimated Occupancy
New Institute for Inter-Professional Education and College of Osteopathic Medicine	110,000 SF	85 feet	160 offices
Renovation of rear area of Innovation Hall	24,000 SF	50 feet	2 offices
New Facilities Maintenance and Campus Services Building	15,000 SF	35 feet	12 offices
Building Renovation/Expansion of 812 Stevens Avenue	10,000 SF	35 feet	6 offices
Building Renovation of 1075 Forest Avenue	15,000 SF	35 feet	10 offices
Priority 2: Medium-Term Development Plan (5-10 years)			
Project	Square Footage	Height	Notes
Renovation of 79 College Street	720 SF	35 feet	2 offices
Renovation/Expansion of Bishop Street Lot Buildings	1,000 SF	35 feet	12 offices
Priority 3: Long-Term Development Plan (10-20 years)			
Project	Square Footage	Height	Notes
Graduate Housing Residence Hall	100,000 SF	65 feet	200 beds
New Academic Building	60,000 SF	65 feet	20 offices
Building Renovation/Expansion of Finley Gym	50,000 SF	50 feet	4 offices
New Recreation and Athletics Building	60,000 SF	50 feet	12 offices

In support of new anticipated development, the University is also looking to significantly reconfigure internal circulation on campus, with the majority of vehicle traffic parking at the Bishop Street lot now being directed to access the campus at the northernmost Steven's Avenue entrance, as opposed to from Bishop Street itself, which necessitated traffic flow through Morrill's Corner. With most traffic arriving at the campus from locations south and east, the applicant expects this change to alleviate traffic at the Morrill's Corner intersection. There, change is possible due to an existing internal driveway between the campus and the Bishop Street lot, which the applicant is proposing to improve to enable two-way vehicle traffic. Once parked, a shuttle will run continuously between the Bishop Street lot and Campus core.

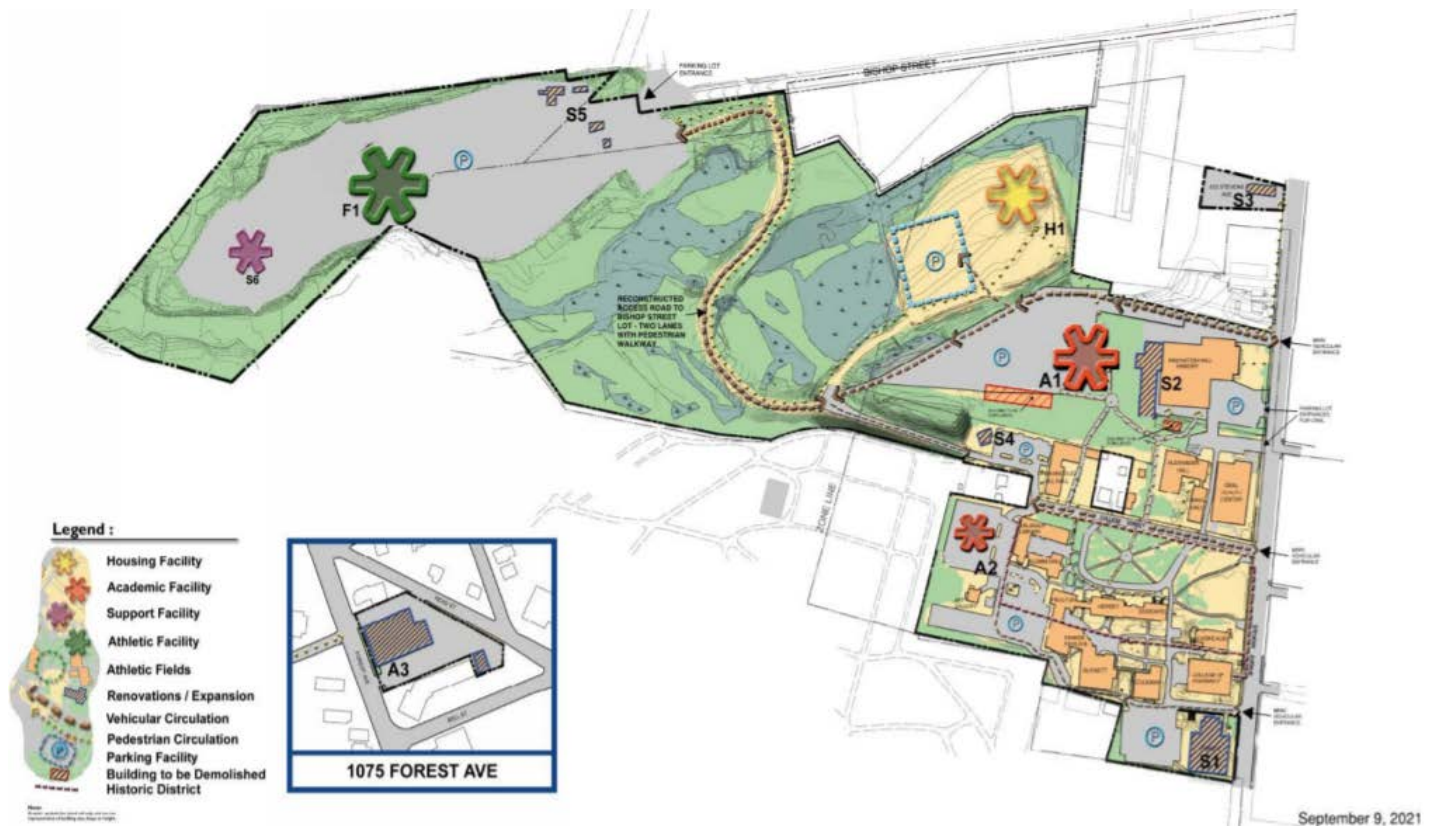


Figure 2: Campus Master Plan. Asterisks indicate the type of future development and are proportional to the proposed floor area.

The University is also proposing to close certain internal driveways to create a new open space on campus adjacent to what will be the new College of Osteopathic Medicine and Innovation Hall. This change is intended to improve the pedestrian experience. The IDP also identifies that sufficient utility infrastructure is present to provide service to future development, though on-site improvements will be necessary at each individual phase.

B. Impact Mitigation

1. **Traffic and Parking:** UNE states in their IDP that they have established existing transportation demand management (TDM) strategies in place that they will continue, which are effective at reducing overall parking demand on campus and trip counts to and from the campus. These include tools to promote car sharing, free transit passes, free parking for carpool vehicles, and raffles for free bicycles. The University provides bicycle parking at a rate of 1 bicycle rack space per 20 students. In addition, during the Covid-19 pandemic, the University has made use of remote work and remote learning to reduce the number of individuals on campus or in enclosed spaces. According to the IDP, remote work and learning will be continued to a certain degree moving forward as a TDM measure. According to the University, there is a TDM coordinator in place currently, who regularly surveys students, staff and faculty to monitor how individuals are accessing the campus, and to determine individual preferences so as to tailor TDM strategies moving forward. The University has indicated that they intend to work with Portland Trails to extend nearby trail connections through the University, which would offer pedestrians additional walking routes. At this time, the applicant has not provided evidence of any agreements, access or trail easements signed with Portland Trails.

With respect to traffic impact, the University notes that an existing Traffic Movement Permit (TMP) is in effect for the University, which accounts for significantly higher peak hour trip generation than currently exists, largely due to lower enrollment numbers over the past several years. While this count is expected to increase by 60 peak hour a.m. and p.m. trips, with the addition of 400 new students associated with the College of Osteopathic Medicine, expected to begin operating within the next five years, the projected trip count is still below the threshold set in the TMP. Citing this, the University states that no additional traffic mitigation is proposed.

The University's parking plan suggests reducing the on-campus capacity from 1,261 parking spaces down to 947 spaces, for a total reduction of 314 spaces. Based upon recent trends in parking demand, the University has calculated a minimum parking ratio of 0.58 spaces per student. This reduction would provide spaces at a rate of 0.61 parking spaces per student.

2. *Infrastructure:* The IDP contains sections on water and wastewater, natural gas, and energy conservation. With respect to utility infrastructure, the University acknowledges that utilities will need to be extended at each individual development phase to service new buildings, however no major improvements are required to facilitate their development. The IDP states that those improvements will be proposed at time of site plan review. A major element of this section pertains to energy conservation and green building principles. The University has employed a number of strategies to reduce its energy consumption and lower greenhouse gas emissions (GHGs), and closely monitors progress towards the University's goal of becoming carbon neutral. For example, all new buildings are built to US LEED Silver Certification Level. As stated in the IDP, through the use of clean energy, better conservation of energy, promotion of multi-modal transportation, the introduction of electric vehicle charging stations, and sustainable landscaping practices, the University has steadily lowered its carbon footprint.

III. NEIGHBORHOOD MEETINGS AND PUBLIC COMMENT

As required by the Land Use Code, the applicant has held two separate neighborhood meetings, the first, required to be held prior to submission of an IOZ application, was held in June of 2020. The second meeting, required to be held after submission of the application, was held in April of 2021. Topics raised in these meetings included requests for information on traffic and parking impacts of the new development, proposed lighting and noise mitigation schemes, the potential for area-wide trail improvements, and ongoing public engagement.

As of the writing of this memo, two written public comments have been received on this application, one of which requests that the University coordinate with the City on the development of pedestrian/bicycle bypass around Morrill's Corner through the Campus, the other of which requests that campus housing be factored more prominently into the Campus's institutional growth plan.

IV. STAFF REVIEW

A. Institutional Development Plan Content

Article 8.3.4.C of the City's Land Use Code lists all content required of an Institutional Development Plan, with specific content requirements related to both transportation and utility infrastructure; information that is critical to understanding anticipated impacts of the proposed development, which then may be used to develop mitigation strategies. IDP content specific to this discussion are as follows:

Baseline Information (**Note. Certain Content Applicable to Both Focus Areas.)	
Transportation	Utility Infrastructure
An inventory of current programs and services.	
A current census of the number of people using the institution (e.g., employees, enrollment, patients), with an indication of maximums and minimums over time.	
An inventory and/or plan of all existing property holdings within the main campus and within the City of Portland, including an indication of functional land use links between off-campus properties and the main campus (e.g. remote parking).	
An inventory and/or plan of existing facilities, including data on use, floor area, and any existing functional connections between facilities.	
A summary of the existing transportation system, including vehicular, pedestrian, transit, bicycle, and parking supply, demand, and utilization.	A summary of existing public infrastructure supporting the institution, including demand, utilization and any capacity issues.
Relevant municipal plans, projects, and studies that may influence the IDP study area and opportunities for integrating institutional growth.	
Assessment of Future Institutional Growth and Change (**Note. Certain Content Applicable to Both Focus Areas.)	
Transportation	Utility Infrastructure
A projected census of users (e.g., enrollment /employment/patient/visitor figures and anticipated variations over time).	
A development plan addressing anticipated or potential institutional needs and physical improvements, including the proposed boundary of the IOZ and any phasing of the development.	
An analysis of the projected changes in parking demand, supply, and impacts to the off-street and on-street parking capacity, including an explanation of the proposed parking plan.	An analysis of projected public utility demand and the capacity of associated infrastructure.
An analysis of the projected changes in vehicular, pedestrian, transit, and bicycle access routes and facilities, their capacity, and safety.	An analysis of projected public safety needs and projected impacts to the capacity of these services.
A transportation, access, and circulation plan, representing the synthesis of the analysis, and including a program of potential improvements or set of guidelines to address access deficiencies to and within the IOZ. The plan should outline proposed mechanisms and potential strategies to meet transportation objectives, including transportation demand management, phasing, and when a Traffic Movement Permit (TMP) may be required.	An infrastructure plan, representing the synthesis of the analysis and including a proposed program or set of guidelines to support sustainable growth.

B. Institutional Development Plan Review Standards

The IDP is subject to 13 separate review standards, five of which will be focused on in the course of this workshop. Certain review standards are applicable to all areas of focus within the IDP, and will be discussed further in future workshops. Review standards are intended to ensure that the IDP contains sufficient information to provide a reasonable, well-calculated depiction of what campus growth will look like in the subsequent 20-year period, providing a strong foundation and basis for the Regulatory Framework. The second principal element of the IDP is to accurately project impacts before development occurs, so as to facilitate timely and strategic improvements to minimize or mitigate those impacts. The six review standards most relevant to the topic of this workshop are listed below.

1. *Address all content requirements, unless explicitly modified by the planning authority or planning board.*

Staff Comment: The IDP will need to be revised to incorporate staff's feedback listed under the preceding 'Content' section of this memo, and as needed to address future Board and staff comments.

2. *Reflect the issues/topics identified in the required public process.*

Staff Comment: The primary concerns raised in the two neighborhood meetings held on this application have largely centered around traffic impacts associated with the new development, notably through Morrill's Corner, and off-site parking in surrounding neighborhoods. There are also two separate private properties located in the center of campus, off of College Street, which have raised concerns with construction impacts, noise, lighting, and building setbacks. The IDP clearly cites the concerns raised, and provides discussion on each topic. Staff have requested that the transportation section be updated to fully project new traffic resulting from future campus development.

3. *Demonstrate that traffic and parking impacts have been anticipated and that the proposed parking provision is justified as based on an assessment of options for reducing traffic and parking demands.*

Staff Comments (Attachment 1):

- Traffic volumes depicted on Figures 5 and 6 should include all driveways serving UNE along Stevens Avenue and on Bishop Street.
- The level of service analysis at Morrill's Corner does not represent existing field conditions. The analysis should include the Forest Avenue intersections with Stevens Avenue, Bishop Street, Allen Avenue and Warren Avenue. Some level of field observation/calibration should be performed to ensure the SimTraffic model is reasonably predicting conditions.
- The Warren Avenue/Bishop Street intersection has a failing level of service and investigation into possible mitigation strategies should be explored.
- The safety analysis should include the intersections of Forest Avenue/Allen Avenue and Forest Avenue/Warren Avenue. While the Forest Avenue/Bishop Street intersection is not classified as a high crash location, a review of crash patterns should be performed given the number of crashes.
- The Plan notes that according to recent traffic count data, campus traffic volumes are lower when comparing pre-COVID conditions to 2021 conditions. The applicant shall provide traffic counts and other data supporting this reduction.
- The Plan includes a list of Short-Term, Mid-Range and Long-Term project priorities. The applicant shall provide trip generation and parking demand estimates for the noted projects.
- The Plan notes that there will be an internal campus road connecting to Bishop Street allowing for direct access to Warren Avenue. The City would like to understand the function of this roadway and pros/cons for it being exclusive to UNE traffic versus allowing public travel.
- The applicant should provide the parking demand count data by parking lot. It is also requested that the applicant conduct a survey of UNE on-street usage to fully understand overall parking demand.
- A new/updated Transportation Demand Management Plan should be prepared as part of the IDP process. This was discussed with the applicant at a recent IOZ/IDP coordination call.
- The city is pursuing the development of the Riverton Neighborhood Byway which has as a key component the use of the current shuttle route from Bishop Street that would connect to an enhanced route(s) within Evergreen Cemetery and to the UNE campus and Stevens Avenue. The City has been coordinating with Portland Trails on this effort. Below is a conceptual route from the Riverton Community Center/Talbot Elementary School to UNE/Evergreen Cemetery to illustrate the concept. A key element is securing bicycle and pedestrian access along the existing and any future upgraded shuttle route. [Others have noted other potential utility of the route.]



Figure 3: Neighborhood Byway Concept Plan

4. Demonstrate that utility impacts have been anticipated and can be minimized or satisfactorily mitigated.

Staff Comment: Information on existing utility infrastructure is provided within this IDP, and is supplemented by information on utility upgrades that will be necessary to develop short-term development, anticipated to occur within the next five years. Utility requirements for longer-term projects however are not provided, and the IDP includes no comprehensive analysis of utility needs, nor strategic assessment of how such upgrades can be installed or constructed most efficiently. A complete list of comments is as follows (Attachment 2):

- Staff request that the applicant submit an infrastructure plan as required by the IOZ ordinance (Section 8.5.4.C.2.b.iii).
- The applicant has provided some general statements around infrastructure capacity and requirements associated with some of the anticipated work on the UNE campus. It is recommended that the Applicant consider how the proposed work will impact surrounding neighborhoods with regards to utilities and infrastructure. In particular, the Applicant has noted that the area has a combined sewer system. Will sewer and stormwater changes impact the system, reducing capacity that could impact the surrounding neighborhood? Does the City of Portland have any plans for improvements that could impact the combined sewer system, and in turn the proposed UNE work? As an example of something that could be evaluated further, the report notes that UNE's stormwater management system is primarily tributary to on-site infiltration systems.

The Applicant could evaluate this and the positive impact that it has on the combined sewer system, and potential improvements that could be made with additional work on campus.

- As noted above, the Applicant has provided a summary of utility capacity and needs. We recommend that further documentation of the capacity and detail on evaluation of needs be included for reference. This will be helpful in evaluation of projects as they occur relative to assumptions made as part of the IDP.
- The IDP does not provide any specific plan or guidelines surrounding infrastructure. It addresses some of the specific anticipated projects, but no comprehensive plan is presented and should be provided to meet this standard.
- An infrastructure plan should also include stormwater management. The IDP has general discussion of stormwater for the site, and this should be incorporated into the plan.

5. *Anticipate future off-site improvements that would support the integration of the institution into the community and citywide infrastructure.*

Staff Comment: The IDP does not identify specific off-site improvements that the University sees as being necessary to facilitate the future development listed. UNE notes that a financial contribution of \$29,000 was provided in association with a past site plan approval for improvements to Morrill's Corner, and that no additional contributions or improvements were likely necessary. As stated elsewhere in this report, impact projections resulting from future development should be more detailed, to determine whether any off-site improvements are warranted.

As stated under the preceding review standard, UNE has identified an interest in working with Portland Trails to extend trail access from Evergreen Cemetery across the UNE campus, to date the applicant has not provided evidence of any signed agreements. The IDP does not make specific recommendations for these improvements.

V. NEXT STEPS

- Address Staff and Board Comments
- Schedule future Planning Board workshop

VI. ATTACHMENTS

Memo Attachments from staff

1. Preliminary Transportation Review Comments
2. Preliminary Utility and Infrastructure Comments
3. Public Comment

Applicants Submittal

- A. UNE IOZ Application
- B. Project Description
- C. Institutional Development Plan
- D. Regulatory Framework
- E. Right, Title & Interest
- F. Property Description

Planning & Urban Development

Matthew Grooms

Senior Planner

RE: UNE IOZ Preliminary Review Comments

Date: March 8, 2022



Dear Mr. Mora, Mr. Thibeault and Mr. Saucier,

Based upon the meetings between the City and the applicant held on February 3rd (Campus Context and Design), February 10th (Transportation), and February 17th (Environment and Utilities), the City is providing preliminary review comments on the University of New England's Institutional Development Plan (IDP). Please review and feel free to follow up with me if you have any questions, or would like to meet to discuss any comments in more detail.

Transportation:

- Traffic volumes depicted on Figures 5 and 6 should include all driveways serving UNE along Stevens Avenue and on Bishop Street.
- The level of service analysis at Morrill's Corner does not represent existing field conditions. The analysis should include the Forest Avenue intersections with Stevens Avenue, Bishop Street, Allen Avenue and Warren Avenue. Some level of field observation/calibration should be performed to ensure the SImTraffic model is reasonably predicting conditions.
- The Warren Avenue/Bishop Street intersection has a failing level of service and investigation into possible mitigation strategies should be explored.
- The safety analysis should include the intersections of Forest Avenue/Allen Avenue and Forest Avenue/Warren Avenue. While the Forest Avenue/Bishop Street intersection is not classified as a high crash location, a review of crash patterns should be performed given the number of crashes.
- The Plan notes that according to recent traffic count data, campus traffic volumes are lower when comparing pre-COVID conditions to 2021 conditions. The applicant shall provide traffic counts and other data supporting this reduction.
- The Plan includes a list of Short-Term, Mid-Range and Long-Term project priorities. The applicant shall provide trip generation and parking demand estimates for the noted projects.
- The Plan notes that there will be an internal campus road connecting to Bishop Street allowing for direct access to Warren Avenue. The City would like to understand the function of this roadway and pros/cons for it being exclusive to UNE traffic versus allowing public travel.
- The applicant should provide the parking demand count data by parking lot. It is also requested that the applicant conduct a survey of UNE on-street usage to fully understand overall parking demand.
- A new/updated Transportation Demand Management Plan should be prepared as part of the IDP process. This was discussed with the applicant at a recent IOZ/IDP coordination call.
- The city is pursuing the development of the Riverton Neighborhood Byway which has as a key component the use of the current shuttle route from Bishop Street that would connect to an enhanced route(s) within Evergreen Cemetery and to the UNE campus and Stevens Avenue. We have been coordinating with Portland Trails on this effort. I've attached a conceptual route from

the Riverton Community Center/Talbot Elementary School to UNE/Evergreen Cemetery to illustrate the concept. A key element is securing bicycle and pedestrian access along the existing and any future upgraded shuttle route. [Others have noted other potential utility of the route.]

Once reviewed, all comments should be responded to in writing, with changes made to the IDP as necessary. Please note, Design and Environment comments are provided as separate attachments.

Regards,

Matthew Grooms, AICP

Att. 2

MEMORANDUM



TO: Matthew Grooms, Planner, City of Portland
FROM: Lauren Swett, PE
DATE: March 16, 2022
RE: UNE Institutional Overlay Zone Peer Review

Woodard & Curran has reviewed the proposed University of New England Institutional Overlay Zone proposed for the UNE Portland Campus. We have focused our review on Environment and Infrastructure components of the Institutional Development Plan and have framed our review around relevant sections of the City of Portland Land Use Code as outlined with our comments below.

We have reviewed the following materials:

- Institutional Development Plan, prepared by University of New England, dated January 19, 2022.

We provide the following comments. Sections of the Land Use Code relevant to our review on environment and infrastructure are listed in italics, with our comments following each.

- *8.5.1 B. Encourage proactive planning for institutional change and growth which identifies and addresses likely long-term institutional needs and cumulative impacts while leveraging potential benefits at the neighborhood, city, and regional level.*
8.5.1 C. Ensure that institutional change and growth both complements and, as appropriate, integrates adjacent or surrounding neighborhoods through carefully planned transitions.

The applicant has provided some general statements around infrastructure capacity and requirements associated with some of the anticipated work on the UNE campus. It is recommended that the Applicant consider how the proposed work will impact surrounding neighborhoods with regards to utilities and infrastructure. In particular, the Applicant has noted that the area has a combined sewer system. Will sewer and stormwater changes impact the system, reducing capacity that could impact the surrounding neighborhood? Does the City of Portland have any plans for improvements that could impact the combined sewer system, and in turn the proposed UNE work? As an example of something that could be evaluated further, the report notes that UNE's stormwater management system is primarily tributary to on-site infiltration systems. The Applicant could evaluate this and the positive impact that it has on the combined sewer system, and potential improvements that could be made with additional work on campus.

- *8.5.4 C. 1. c. A summary of the baseline characteristics of the existing campus and context of the institution, based on identified study areas, including:*
i. A summary of existing resources, such as historic, open space, and natural resources.

iii. A summary of existing public infrastructure supporting the institution, including demand, utilization and any capacity issues.

The Applicant has included a summary of utility information for sewer, water, and natural gas. They've noted some coordination has happened with utilities, and it is recommended that this be included as part of their documentation.

The Applicant has also included a list of natural resources including wetlands and vernal pools. Please provide documentation on the source of this information. It should be noted that there are jurisdictional limitations on wetland delineations, and while wetland features may be included as part of the IDP, that list shouldn't be considered comprehensive, as future field investigation may be necessary depending on the timing of projects.

- *8.5.4 C. 2. b Analysis and associated plans that address the following elements in terms of anticipated growth or potential impacts within the identified study area, and support the development parameters as set out in the regulatory framework, including:*
 - ii. Environment, with:*
 - a) An analysis of potential cumulative impacts on natural resources and open spaces.*
 - c) An environmental plan, representing the synthesis of the analysis and including a proposed program or set of guidelines for future preservation, enhancement, conservation, and/or mitigation.*

The Applicant has noted in the IDP that "there are currently no formal plans for future preservation, enhancement, conservation, or mitigation" noting that the proposed work will "not result in significant impacts to currently undeveloped areas"; however, the plan also notes that there will be impacts that will be permitted, meeting the standards. The plan also notes that "a strategy will be implemented to further enhance the Capisic Brook Watershed"; however, no additional detail is provided. Further information is required as part of the IDP to address the environmental impacts of proposed future development on the site, and the Applicant should consider if there is the potential for mitigation to help improve existing conditions.

- *iii. Infrastructure, with:*
 - a) An analysis of projected public utility demand and the capacity of associated infrastructure.*
 - c) An infrastructure plan, representing the synthesis of the analysis and including a proposed program or set of guidelines to support sustainable growth.*

As noted in our first comment, the Applicant has provided a summary of utility capacity and needs. We recommend that further documentation of the capacity and detail on evaluation of needs be included for reference. This will be helpful in evaluation of projects as they occur relative to assumptions made as part of the IDP.

The IDP does not provide any specific plan or guidelines surrounding infrastructure. It addresses some of the specific anticipated projects, but no comprehensive plan is presented and should be provided to meet this standard.



An infrastructure plan should also include stormwater management. The IDP has general discussion of stormwater for the site, and this should be incorporated into the plan.

In general, the IDP does not seem to have any specific guidelines or plan included for environmental and infrastructure considerations to help guide proposed future development. Our understanding is that the Land Use Code intended that this be included as part of an IDP. We understand that the City of Portland Water Resources team has provided some additional comments with regards to wetland impacts and environmental guidelines. We suggest that the Applicant continue to work with the City to provide for a plan surrounding environmental and infrastructure guidelines within their IDP.

Please contact our office if you have any questions.



Zoning Map/Text Amendment Application Portland, Maine

Planning and Urban Development Department
Planning Division and Planning Board

Portland's Planning and Urban Development Department coordinates the development review process for requests for zoning map amendments, zoning text amendments and contract or conditional re-zoning. The Division also coordinates site plan, subdivision and other applications under the City's Land Use Code. The **Application Process for a Zone Change** is summarized below under Section I and the associated costs for reviews are found under Section II, **Development Review Fees, Public Notices and Guarantees**, and are listed on the fee structure sheet.

I. APPLICATION SUBMITTAL

Pre-application meeting

Prior to submitting a zoning amendment application, the Planning Division recommends that the applicant or the designated representative schedule a pre-application meeting to discuss the review process and applicable standards for a proposal. Please contact Barbara Barhydt, Development Review Services Manager at 874-8699 to schedule a meeting.

Zoning Amendment Application

All plans and written application materials must be uploaded to a website for review. At the time of application, instructions for uploading the plans will be provided to the applicant. One paper set of the plans, written materials and application fee must be submitted to the Planning Division Office to start the review process.

- Submit one (1) complete paper set of the zoning amendment application with a concept plan and a written narrative. Contract and conditional rezoning applications must include site plans and written material that address physical development and operation of the property to ensure that the rezoning and subsequent development are consistent with the comprehensive plan, meet applicable land use regulations, and compatible with the surrounding neighborhood. Applications may be submitted between 8 a.m. and 4:30 p.m. Monday through Friday at the Planning Division on the 4th floor of City Hall, 389 Congress Street, Portland.
- All applications are processed in the order in which they are received.
- In order for the Planning Division's Administrative Staff to accept and log-in an application, the application form must be complete, it shall be signed by the applicant's or the applicant's designated representative, and all applicable fees paid at the time of submittal.
- The Land Use Code is available on the City's website at www.portlandmaine.gov.
- If the application is found to be incomplete, the applicant will be informed in writing of the required plans and materials.

II. DEVELOPMENT REVIEW FEES, PUBLIC NOTICES AND GUARANTEES

Zoning Application Fees

- Each application must be submitted with the applicable fees as listed in the fee structure on page 4. The fees cover general administrative processing costs.
- Application fees may be paid in cash or by check (addressed to the City of Portland).
- An application will not be processed without the required application fees.

Fee for City Review Services

- The City of Portland charges fees for service to cover the cost of reviews by Planning and Legal staff members. The charges will be billed at an hourly rate and will be invoiced monthly for reimbursement.
- Current billing rates: Planning services, \$40.00/ hour and Legal services: \$75.00/hour.

Fee for Third Party Review

- Portland contracts with local engineering firms to conduct engineering reviews of development proposals. The direct cost of all engineering services or third-party consultant reviews, such as the civil engineering review of stormwater management plans, traffic impact reviews and such other reviews as required under the City's Ordinances, will be included in the monthly invoices for reimbursement.

Public Notices

- Public notices must be sent to property owners within 500 for all proposals at the time an application is received. Zoning map amendments for Industrial zones require notices to be sent to property owners within 1,000 feet.
- In advance of a Planning Board workshop or public hearing, public notices for projects must be sent to property owners and are posted in a legal ad in the Portland Press Herald and on the City's web site.
- In addition, zoning map amendments, text amendments and conditional rezoning agreements require individual notices to be posted in the Portland Press Herald.
- The Planning Division mails public notices and posts notices in the newspaper. The applicant will be billed for actual or apportioned costs for advertising and sending mailed notices.
- The applicant is required to hold a neighborhood meeting under the City's regulations for zone change requests. The mailing labels must be purchased from the Planning Division for the neighborhood meeting invitation. A request for labels requires a minimum of two business days to generate the mailing labels and a charge of \$1.00 per sheet will be payable upon receipt of the labels.

Third Party Review Fees

- Engineer and Third Party Review Fees - The fees are assessed by the Consulting Engineers and Third Party Reviewers.
- Inspection Fee - This fee is 2% of the Performance Guarantee or as assessed by Planning or Public Works Engineer with \$300.00 being the minimum.

Noticing/Advertisements Planning Board/City Council Review

- Legal Advertisement: Percent of total bill
- Notices: .75 cents each
(notices are sent to neighbors upon receipt of an application, workshop and public hearing meetings for Planning Board and public hearing meeting for City Council)

Planning Division
Fourth Floor, City Hall
389 Congress Street
(207) 874-8721 or 874-8719

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

PROJECT ADDRESS: UNE Campus Stevens Avenue/Bishop Street

CHART/BLOCK/LOT: See attached IDP

DESCRIPTION OF PROPOSED ZONE CHANGE AND PROJECT:

Proposed Institutional Overlay Zone

CONTACT INFORMATION:

	Applicant's Contact for electronic plans Name: Tom Saucier e-mail Address tsaucier@sitedesignassociates.biz work # 207-449-4275
Applicant – must be owner, Lessee or Buyer Name: University of New England Contact Name, if applicable: Eric Mora Address: 11 Hills Beach Road City/State : Biddeford, ME Zip Code: 04005	Applicant Contact Information Work # 207-602-2365 Home# Cell # Fax# e-mail: emora@une.edu
Owner – (if different from Applicant) Name: Applicant Address: City/State : Zip Code:	Owner Contact Information Work # Home# Cell # Fax# e-mail:
Agent/ Representative Name: Tom Saucier/Site Design Associates Address: 23 Whitney Way City/State : Topsham, ME Zip Code: 04086	Agent/Representative Contact information Work # 207-449-4275 Cell # e-mail: tsaucier@sitedesignassociates.biz
Billing Information Name: Applicant Address: City/State : Zip Code:	Billing Information Work # Cell # Fax# e-mail:
Engineer Name: N.A. Address: City/State : Zip Code:	Engineer Contact Information Work # Cell # Fax# e-mail:

Surveyor Name: N.A. Address: City/State : Zip Code:	Surveyor Contact Information Work # Cell # Fax# e-mail:
Architect Name: N.A. Address: City/State : Zip Code:	Architect Contact Information Work # Cell # Fax# e-mail:
Attorney Name: James N. Katsiaficas Address: P.O. Box 426 City/State : Portland, ME Zip Code: 04112	Attorney Contact Information Work # 207-774-2635 Cell # Fax# e-mail: jkatsiaficas@perkinsthompson.com

Right, Title, or Interest: Please identify the status of the applicant's right, title, or interest in the subject property:

Owner

Provide documentary evidence, attached to this application, of applicant's right, title, or interest in the subject property. (For example, a deed, option or contract to purchase or lease the subject property.)

Vicinity Map: Attach a map showing the subject parcel and abutting parcels, labeled as to ownership and/or current use. (Applicant may utilize the City Zoning Map or Parcel Map as a source.) **See IDP**

Existing Use: Describe the existing use of the subject property:

Post secondary school and ancillary and supporting uses.
--

Current Zoning Designation(s):

R3, R5, I-H, I-M

Proposed Use of Property: Please describe the proposed use of the subject property. If construction or development is proposed, please describe any changes to the physical condition of the property.

Post secondary school and ancillary and supporting uses.

Site Plan: On a separate sheet, please provide a site plan of the property showing existing and proposed improvements, including such features as buildings, parking, driveways, walkways, landscape and property boundaries. This may be a professionally drawn plan, or a carefully drawn plan, to scale, by the applicant. (Scale to suit, range from 1" = 10' to 1" = 50'.) Contract and conditional rezoning applications may require additional site plans and written material that address physical development and operation of the property to ensure that the rezoning and subsequent development are consistent with the comprehensive plan, meet applicable land use regulations, and compatible with the surrounding neighborhood.

APPLICATION FEE:

Check the type of zoning review that applies. Payment may be made in cash or check payable to the City of Portland.

Zoning Map Amendment <u> x </u> \$2,000.00 (from <u> </u> zone to <u>IOZ</u> zone)	Fees Paid (office use) _____	The City invoices separately for the following: • Notices (\$.75 each) (notices are sent to neighbors upon receipt of an application, workshop and public hearing meetings for Planning Board and public hearing meeting for City Council) • Legal Ad (% of total Ad) • Planning Review (\$40.00 hour) • Legal Review (\$75.00 hour) Third party review is assessed separately.
Zoning Text Amendment <u> </u> \$2,000.00 (to Section 14- <u> </u>) (For a zoning text amendment, attach on a separate sheet the exact language being proposed, including existing relevant text, in which language to be deleted is depicted as crossed out (<u>example</u>) and language to be added is depicted as underline (<u>example</u>))	_____	
Combination Zoning Text Amendment and Zoning Map Amendment <u> </u> \$3,000.00	_____	
Conditional or Contract Zone <u> </u> \$3,000.00 (A conditional or contract rezoning map be requested by an applicant in cases where limitations, conditions, or special assurances related to the physical development and operation of the property are needed to ensure that the rezoning and subsequent development are consistent with the comprehensive plan, meet applicable land use regulations, and compatible with the surrounding neighborhood. Please refer to Division 1.5, Sections 14-60 to 62.)	_____	

Signature of Applicant: 	Date: 03-30-21
--	------------------------------

Further Information

In the event of withdrawal of the zoning amendment application by the applicant, a refund of two-thirds of the amount of the zone change fee will be made to the applicant as long as the request is submitted to the Planning Division prior to the advertisement being submitted to the news paper.



A Guide to Holding Neighborhood Meetings Portland, Maine

Planning and Urban Development Department
Planning Division and Planning Board

In order to improve communication between development applicants and neighbors, the City of Portland requires applicants, proposing certain types of projects, to hold a neighborhood meeting.

What type of development proposal requires a neighborhood meeting?

Neighborhood meetings, organized and hosted by the applicant, are required for the following development proposals:

- Proposed zone changes, contract zones and zoning text amendments that would result in major development;
- Subdivisions of five or more units or lots; and
- Level III site plan proposals for preliminary or final site plans:
 - Portland's new site plan ordinance went into effect in August, 2010. It now includes provisions for preliminary and final plans. Neighborhood meetings are to be held three weeks after submitting a preliminary plan or within two weeks of submitting a final plan, if a preliminary plan was not submitted.

Who must be invited to a neighborhood meeting?

Property owners within 500 feet of the proposed development (1000 feet for proposed industrial subdivisions and zone changes) as well as those people on a list of interested citizens and neighborhood groups must be invited to the planned neighborhood meeting.

The Planning Division provides the mailing labels for the neighborhood meeting invitation. We require at least 48 hours notice to generate the mailing labels and a charge of \$1.00 per sheet will be payable upon receipt of the labels.

When and where must the neighborhood meeting be held?

The neighborhood meeting must be held within three weeks of submitting a preliminary site plan. If an applicant chooses only to submit a final site plan, then the neighborhood meeting must be held within two weeks of submitting the final plan and not less than seven days prior to the Planning Board public hearing.

The meeting should be held in the evening, during the week, at a convenient location within the Portland neighborhood surrounding the proposed site. Community meeting spaces at libraries, schools or other places of assembly are recommended. Neighborhood schools are usually available for evening meetings.

Meetings should not be held on the same day as scheduled Planning Board or City Council meetings. The City Council generally meets on the first and third Monday of each month and the Planning Board generally meets on the second and fourth Tuesday of each month; however additional meetings may be scheduled. An updated schedule may be found on the City's website: www.portlandmaine.gov

When must invitations be sent?

Invitations to a neighborhood meeting must be sent no less than ten days (to include weekends) prior to the neighborhood meeting. If the notice is for a final site plan, then the neighborhood meeting must be held no less than seven days (to include weekends) prior to the public hearing. Notices may be sent by regular mail and do not need to be sent by certified mail.

What information should the invitation include?

A recommended invitation format is included in this packet of material.

Sign-up Sheets and Meeting Minutes

At the meeting, the applicant must circulate a sign-up sheet for those in attendance. The applicant must also keep accurate minutes of the meeting.

After holding the neighborhood meeting, the applicant must submit the sign-up sheet and meeting minutes to the Planning Division. The meeting minutes and sign-up sheet will be attached to the Planning Board report. A public hearing will not be scheduled until the meeting minutes and sign-up sheet are submitted to the Planning Division.

Certification

Included with this packet is a Certification to be completed and signed by the applicant. The applicant is required to certify when the invitations were sent out.

Please call the Planning Division at 874-8721 or 874-8719 if you have any questions.

Attachments

1. Neighborhood Meeting Invitation Format
2. Neighborhood Meeting Certification

~Applicant/Consultant: Please include all of the information listed below in the notice sent to neighbors~

Neighborhood Meeting Invitation Format

Applicant/Consultant Letterhead

(Date)

Dear Neighbor:

Please join us for a neighborhood meeting to discuss our plans for a (development proposal) located at (location/number and street address).

Meeting Location: _____

Meeting Date: _____

Meeting Time: _____

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, please call (telephone number of applicant or consultant).

Sincerely,

(Applicant)

Note:

Under Section 14-32(C) and 14-525 of the City Code of Ordinances, an applicant for a Level III development, subdivision of over five lots/units, or zone change is required to hold a neighborhood meeting within three weeks of submitting a preliminary application or two weeks of submitting a final site plan application, if a preliminary plans was not submit. The neighborhood meeting must be held at least seven days prior to the Planning Board public hearing on the proposal. Should you wish to offer additional comments on this proposed development, you may contact the Planning Division at 874-8721 or send written correspondence to the Planning and Urban Development Department, Planning Division 4th Floor, 389 Congress Street Portland, ME 04101 or by email: to bab@portlandmaine.gov

Neighborhood Meeting Certification

I, (applicant/consultant) hereby certify that a neighborhood meeting was held on (date) at (location) at (time).

I also certify that on (date at least seven days prior to the neighborhood meeting), invitations were mailed to all addresses on the mailing list provided by the Planning Division, including property owners within 500 feet of the proposed development or within 1000 feet of a proposed industrial subdivision or industrial zone change and the residents on the "interested parties" list.

Signed,

_____ (date)

Attached to this certification are:

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

University of New England

Institutional Overlay Zone

March 30, 2021

Project Description

University of New England is proposing an institutional overlay zone in accordance with Section 8.5 of the land use code. The parcels included in the zone are shown on the attached Appendix 1.1.

APPENDIX 1.1 List of Properties included in the UNE IOZ

(All properties within the green boundary shown on the IOZ Boundary (Figure 1.1) shall be included in the UNE IOZ)

Chart	Block	Lot	Address	Acreage	Ownership
144	A	005	684 Stevens Ave	0.141	UNE
144	A	006	684 Stevens Ave	0.275	UNE
144	A	007	684 Stevens Ave	0.371	UNE
144	A	008	684 Stevens Ave	0.256	UNE
144	A	009	684 Stevens Ave	0.586	UNE
145	A	001	706 Stevens Ave	0.450	UNE
145	A	002	710 Stevens Ave	0.165	UNE
145	A	003	714 Stevens Ave	9.231	UNE
145	A	006	714 Stevens Ave	0.250	UNE
145	A	007	710 Stevens Ave	0.006	UNE
145	A	008	710 Stevens Ave	0.036	UNE
145	A	009	714 Stevens Ave	0.356	UNE
145	A	010	714 Stevens Ave	0.338	UNE
145	B	001	1 College St	0.207	UNE
145	B	002	1 College St	1.830	UNE
145	B	006	31 College St	0.134	UNE
145	B	007001	33 College St	0.173	Owned by others
145	B	008001	37 College St	0.197	Owned by others
145	A	004	74 College St	0.416	Owned by others
145	B	009	41 College St	0.200	UNE
145	B	010	51 College St	0.383	UNE
145	B	011	63 College St	0.076	UNE
145	B	012	63 College St	0.114	UNE
145	B	013	63 College St	0.048	UNE
145	B	014	83 College St	0.366	UNE
145	B	018	772 Stevens Ave	8.603	UNE
145	B	027	83 College St	3.137	UNE
145	B	029	79 College St	0.258	UNE
145	B	042	1 College St	0.162	UNE
145	B	046	1 College St	0.138	UNE
281	A	003	0 Bishop St	10.555	UNE
290	A	003	83 College St	1.771	UNE
291	A	001	0 Bishop St	8.394	UNE
291	A	005	83 College St	17.972	UNE
291	A	007	83 College St	0.459	UNE
293	C	005	83 College St	1.574	UNE



INNOVATION FOR A HEALTHIER PLANET

INSTITUTIONAL DEVELOPMENT PLAN

January 19, 2022



Figure 0.1 – UNE Portland Campus Aerial View

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INTRODUCTION

The University of New England's Portland Campus has been a member of the Portland community and a provider of quality and inclusive education since its inception in 1831 as the Westbrook Seminary. The campus has been strategically transformed since its modest beginning, in both size and curriculum to meet the secondary educational and work force needs of the Portland, Maine area and beyond.

Mission, Vision and Core Values

The University of New England is directed by its Mission, Vision Statement and Core Values. These were utilized to create the Strategic Plan 2018-2023, *Our World, Our Future*.

Mission

The University of New England prepares students to thrive in a rapidly changing world and, in so doing, to improve the health of people, communities, and our planet.

Vision

We will realize this mission by committing to a distinctive approach to education that will make UNE among the most experientially driven institutions of higher education in the nation. We will provide teaching and learning that conjoins problem-based and hands-on learning, liberal education, and professional training to immerse students in an educational experience that prepares them with:

- Habits of mind, such as cultural, quantitative, and information literacy, critical thinking, tolerance for ambiguity, and problem solving;
- Discipline-based knowledge in their chosen programs of study; and
- Professional competencies, including emotional intelligence, the ability to collaborate in diverse teams, communicate persuasively, and be a thoughtful leader.

We will be an institution that challenges students to learn broadly, master their professional skills, and ask probing questions. In this way, they will prepare themselves for further study and successful careers, deeply rewarding lives, and meaningful contributions to their communities and the world.

Core Values

We are guided by the following values, essential to the culture of the UNE community.

Student Centeredness - We put the aspirations, needs, and success of our students at the center of all we do. Diversity, Inclusion, Connection We believe the benefits of a richly varied campus community arise not only from the diversity of its people but also from a sense of belonging and the context this creates to explore and celebrate differences in backgrounds, experiences, and perspectives, underpinned by a sense of cultural humility and a commitment to ethical ideals.

Relentless Inquiry - We take nothing for granted and view thoughtful—even uncomfortable—questioning as essential to the pursuit of knowledge, contribution to society, and a life worth living. Our commitment to University-wide academic freedom is fundamental to this value.

Boundary Crossing - Solutions to the complex and varied challenges we face in our personal and professional lives, our communities, and society will not be found in any single discipline, college, physical location, or individual. Thus, our ability to move easily across such boundaries in order to collaborate with colleagues makes us better problem solvers and more likely of success in whatever ventures we undertake.

Learning Everywhere - We believe that teaching and learning should occur beyond traditional classrooms and laboratories—in any place ripe for inquiry and experimentation, including clinics, environmental and field-study sites, online forums, libraries, museums, theaters, and places of civic engagement, among many others.

Progressive Change - We are not afraid to take thoughtful risks in the pursuit of our shared goals.

Stewardship of Our Planet - We recognize that the health of individuals, communities, and the natural environment is essential to the survival of the planet and its inhabitants and to a well-functioning society.

UNE is at an enviable point in our evolution, a point from which we are poised to leap to ever greater heights.

At the center of our new strategic plan, *Our World, Our Vision*, is a daring and expansive perspective on “health”: **We will establish UNE among the premier providers of education, expertise, and innovation for sustaining the health of our world’s people, communities, and natural environment.**

We are ready. Even a short list of our achievements demonstrates the force that UNE has become:

- We offer an exceptional return on our students’ educational investment. More than 93 percent of UNE undergraduates start a job or enter a graduate program within six months of receiving their diploma. The Brookings Institute ranks us number one among all of Maine’s colleges and universities for our ability to increase students’ career earnings.

- We prepare students to be culturally fluent members of an increasingly global workforce. UNE undergraduates study abroad at five-times the national average, spending semesters at UNE's very own campus in Tangier, Morocco, as well as at affiliated campuses in Spain, France, and Iceland.
- We are Maine's leading provider of health professionals. Offering our state's only medical school and Northern New England's only dental school, as well as programs in pharmacy, nursing, and a range of other health professions, UNE plays a leading role in meeting the health care needs of underserved communities throughout the Northeast and beyond.
- We are a national leader in interprofessional health care education (IPE). Research clearly demonstrates improved health outcomes when patients are cared for by teams of health care professionals—doctors, nurses, physician assistants, physical therapists, and social workers working side by side. UNE prepares aspiring health professionals for such collaborations by having them learn and work beside other students representing the full range of health professions programs.
- We engage in important research and scholarship. The work of UNE researchers has improved breast cancer detection, led to better understanding of how the Zika virus spreads, demonstrated how dehumanizing speech leads to violence and discrimination, uncovered how psychiatric medications can cause diabetes and bone fractures in children, and even unlocked the secret life of sharks. Our success is demonstrated by 800 percent growth in external funding over the past decade. More importantly, UNE students benefit, too. Just under half of all our undergraduates work with faculty on research projects (compared to 23 percent nationwide).
- We graduate students who possess real world experience. Virtually all UNE students engage in some form of hands-on experiential learning, gaining invaluable disciplinary knowledge and interpersonal skills through internships, clinical rotations, service learning, and countless other opportunities to apply classroom knowledge in community organizations, businesses, government offices, and many other work settings.
- We are committed to fostering a robust marketplace of ideas. In an era when society has found itself increasingly divided along partisan ideological lines, we foster an environment in which the hard conversations essential to a true education still occur, challenging members of our community to reach beyond their intellectual comfort zones. Our Center for Global Humanities, George and Barbara Bush Lecture Series, P.D. Merrill Business Ethics Lecture, and President's Forum, among many other events, offer venues where a diversity of ideas can thrive through civil and respectful discourse.

We are ambitious and restless—an institution that is of the world. Look around, and you will find our students, faculty, and professional staff in places as diverse as Morocco and Iceland, and in clinics and field sites across our nation's cities, villages, forests, and oceans. You will see us learning from experiences in communities representing every form of human difference. These cultural, personal, and geographic connections reflect the profound respect and concern that the UNE community holds for the health of our world—its people, its communities, and its physical

environment. We couple this concern with our nimbleness, flexibility, creativity, and sense of urgency to make UNE a powerful source of innovation for a healthier planet.

We have a strong legacy and a prestigious set of programs in the health sciences. But we are a comprehensive university, and creating a healthier planet requires more than talented health professionals. It requires leaders from all disciplines, including the natural and social sciences, humanities and arts, business, policy and more—bringing their diverse and complementary skills to bear on the most pressing challenges of our world.

We are seizing on our foundational strengths to:

- Expand active and collaborative teaching and learning through pedagogical innovation and enhanced technologies;
- Enhance our commitment to experiential learning;
- Create even more opportunities for students, faculty, and professional staff to work together across academic disciplines and professional programs; and
- Adapt and scale up the solutions we find working on problems in local communities in order to address similar challenges around the globe.

These steps chart a bold new course for UNE:

We will be one of the nation's top providers of education, expertise, and innovation for sustaining the health of our world's natural environment, people, and communities.

This broad perspective on health requires us to focus on interactions among individuals, communities, and the environment. Moreover, it demands that we look for solutions to our world's pressing challenges by drawing knowledge and expertise from many academic disciplines. This means exposing students to discipline-based knowledge, cross disciplinary habits of mind, and professional competencies that are discussed in this strategic plan. With these skills, UNE students will be ready to bring the fullest breadth of understanding and expertise to bear on improving the condition of people, society, and our planet.

Inspired by this vision and guided by this plan, UNE will empower students to anticipate and meet the challenges of this new world and to become active leaders in creating its future.

UNE — *For the health of our world.*

ABOUT UNIVERSITY OF NEW ENGLAND – Portland Campus

CAMPUS HISTORY

Although Westbrook College has always been located in the same geographic place, the neighborhood where it is located has been part of three different municipalities over the years: Westbrook (1831-1870), Deering (1871-1898), and Portland (1899-present). The college itself has had five name changes – Westbrook Seminary, Westbrook Junior College, Westbrook College, the Westbrook College Campus of the University of New England, and its current name the Portland Campus of the University of New England.

Westbrook Seminary

Westbrook Seminary, a co-educational boarding school that existed for 91 years, had its beginnings in September, 1830, when the Kennebec Association of Universalists resolved that a school that would promote “piety and morality” be established at the Steven’s Plains in Westbrook.

The charter for Westbrook Seminary was signed by Governor Daniel Smith on March 4, 1831. The campus’s original eight acres were a gift to the Association from Zachariah Stevens (Steven’s Plain and the present Stevens Avenue were named for him) and Oliver Buckley. Three years passed before the first class was held on June 9, 1834 in the newly constructed Seminary Building, which is now called Alumni Hall.



Figure 1.1 - Westbrook Seminary Building, circa 1834.

By the 1890's, the Seminary offered four courses of study: a three year English course and four-year programs titled scientific, ladies' classical, and preparatory. In the last part of the 19th century, the Seminary added chemistry and physics labs to Alumni Hall and promoted a serious interest in athletics that led to the construction of McArthur Gymnasium in 1900.

Other notable buildings constructed during this time support the expanding curriculum were Goddard Hall built in 1856, Ludcke Auditorium (originally a Unitarian Universalist church) built in 1867, and Hersey Hall built in 1869,

Westbrook Junior College

In 1925, the name was changed to Westbrook Junior College and the school became a career oriented women's two-year college which prepared students to transfer as juniors to four-year colleges or universities.

Enrollment increased steadily through the 1930's, 1940's, and 1950's. The college's Proctor Hall was built in 1951. In the 1960's, with the sustained growth and financial support from major grants and federal money, construction of six new buildings occurred. Coleman Hall (1961), Alexander Hall (1962), Linnell Hall (1962), McDougall Hall (1962), Ginn Hall (1962) and Blewett Hall (1967).

Westbrook College

Two major academic changes occurred in the 1970's. Looking toward the future, the college legally changed the institution's name to Westbrook College. Federal legislation mandated that federal funds could not be granted to colleges that practiced gender discrimination so Westbrook College returned to co-educational.

The first Westbrook College male students enrolled in the 1973 fall semester. In 1975, the Art Gallery was constructed and opened. In the 1980's and early 1990's the College continued to build upon the 1970's decisions and made a firm commitment to four-year programs that combined liberal arts with professional education. The new Abplanalp Library was constructed at rear of the existing McArthur Gymnasium and opened in 1986, contributing to the College's academic strength, while the new Finley Recreation Center was completed in 1989, providing sports and leisure opportunities.

University of New England – Portland Campus

In the late 1980's and early 1990's, the college found itself caught in national trend of reduced enrollment that especially hit small colleges hard. By the mid 1990's, the college began looking at other institutions for a possible merger.

In July 1996, Westbrook College and the University of New England in Biddeford merged, creating a larger, more diverse institution of higher learning. The merger took place under the original 1831 Westbrook College charter. When the documents were signed, the combined institutions became Westbrook College and Westbrook College changed its name to the University of New England.

Today the University of New England Portland Campus is home to four of the University's premier Colleges.

The recently renamed **Westbrook College of Health Professions** is a model for interdisciplinary health and wellness. With more than 1,000 students, faculty and staff working in graduate programs in Social Work, Physician Assistant, Occupational Therapy, Physical Therapy and Nurse Anesthesia and with undergraduate students in Nursing and Dental Hygiene, the WCHP honors the academic legacy of Westbrook College.

Westbrook College of Health Professions is also home to the Interprofessional Simulation and Innovation Center, which employs high tech patient simulators that are integrated with computer programs in real time so these "patients" can actually respond to students' actions and can even hold "discussions" surrounding their care. The Interprofessional Simulation and Innovation Center is also training health professionals from the region's healthcare institutions as well.

The **College of Pharmacy** is also housed on the Portland Campus and accepted its first class of 100 students in the fall of 2009 in a newly constructed building on Stevens Avenue. Offering a Pharm.D. Degree, the UNE College of Pharmacy sets itself apart by being heavily focused on research and development.

In the fall of 2013, the UNE **College of Dental Medicine** unveiled a state-of-the-art Oral Health Center, built on Stevens Avenue, as it welcomed its inaugural class of dental students on the Portland Campus.

The **College of Graduate and Professional Studies** is the University's on-line college, whose faculty and staff are also located on the Portland Campus.

The Portland Campus is also home to UNE's **Center for Global Humanities**, which brings to campus some of the leading thinkers of our time to engage with UNE students and members of the surrounding community.

Two important Portland cultural institutions are based on the Portland Campus. The **Maine Women Writers Collection**, a preeminent special collection of literary, cultural and social history sources by and about Maine women, was designated a national Literary Landmark and continues to host local women's studies programs and national conferences. The **Art Gallery** offers a series

of ongoing exhibitions of art and photography, which are open to the public, and houses a distinguished permanent collection.

UNE NORTH is housed at 1075 Forest Avenue. UNE NORTH – the Institute for North Atlantic Studies of the University of New England – connects researchers, educators, policymakers, and industry leaders from across Maine and the North Atlantic region to implement collaborative approaches to building resilient communities, health environments, and thriving economies. Grounded in the United Nations Sustainable Development Goals and with its growing network of regional partnerships including Iceland, Canada, Sweden, Norway, and the U.K, UNE NORTH will train a new generation of leaders, inform policy through research, promote interdisciplinarity and the co-creation of knowledge in all its activities, and support Maine’s leadership role in the North Atlantic.

UNE NORTH brings the University of New England’s strengths in the life, health, and social sciences to bear on the North Atlantic’s shared challenges and opportunities. Demographic, geographic, climatic, and cultural similarities between Maine and North Atlantic/Nordic states have created a need and enthusiasm for impactful regional relationships. Leveraging UNE’s research and education strengths and its culture of innovative partnership, UNE NORTH convenes stakeholders from across the region to bring their combined curiosity and creativity to bear on the region’s health, social, environmental, and economic challenges.

Current Campus Programming

The University of New England has three distinct campuses that combine to offer students a range of different learning experiences. Our two Maine campuses house our internationally renowned undergraduate, graduate and professional programs, while our campus in Tangier, Morocco is home to an innovative semester abroad program. Currently, the Portland Campus is primarily a graduate campus, focused on educating health professionals.

While the Portland Campus is home to the University’s On-line academic offerings, the following programs are currently offered, in person, on the University’s Portland Campus:

- Dental Medicine
- Dental Hygiene
- Nursing
- Nurse Anesthesia
- Occupational Therapy
- Pharmacy
- Physical Therapy
- Physician Assistant
- Professional Science Master in Ocean Food Systems
- Public Health
- Social Work

In addition to the academic offerings on campus, the University also operates two clinics on campus. The **Oral Health Center** is the clinical education center for UNE's College of Dental Medicine. At our state-of-the-art clinic, UNE dental students will address all oral health care needs under the supervision of our licensed faculty dentists, at low, affordable fees. The Oral Health Center offers comprehensive oral health care, which encompasses all major dental services, including emergency walk-in services. Our services include: cleanings, checkups, fillings, root canals, crowns, veneers, extractions, X-Rays, Partial Dentures, dentures, bridges, and implants. In 2019, the Oral Health Center provided low cost care totaling 18,400 patient visits.

The **Dental Hygiene Clinic** is the clinical education center for the University's Dental Hygiene program. At this state-of-the-art clinic, UNE dental hygiene students will address oral health care needs under the supervision of our licensed faculty dentists, at low, affordable fees. The Dental Hygiene Clinic offers oral inspections, nutritional counseling, scaling and plaque removal services, sealant placement, personalized oral hygiene instruction, blood pressure screenings, radiographic surveys (x-rays), fluoride treatments, and athletic mouth guard fabrication. In 2019, the Dental Hygiene Clinic provided low cost care totaling 6,600 patient visits.

Current Campus Populations

The Portland Campus is essentially a graduate, commuter (non-residential) campus, supporting Health Professions programs. All of these academic programs require clinical experience towards the awarding of a degree. Each program has different clinical criteria, in regards to timing and duration, and thus the student population on campus can fluctuate during the course of an academic year as the students rotate out into clinical settings. UNE has approximately 100 clinical affiliations, at 65 sites in Portland, and over 450 statewide.

For the fall of 2019, prior to the Covid-19 pandemic, the Fulltime Equivalent, FTE, student population on the Portland Campus was 1,247 students. During that time period, there were 456 full time faculty and professional staff on campus.

For the fall of 2020, during the Covid-19 pandemic, the Fulltime Equivalent, FTE, student population for the Portland Campus was 1,162 students and the full time faculty and professional staff count was 442. See below notes regarding the Covid-19 pandemic campus protocols adopted.

YEAR	Fulltime Equivalent Student Population	Fulltime Faculty and Professional Staff
Fall 2020	1,162	442
Fall 2019	1,247	456
Fall 2018	1,282	467
Fall 2017	1,304	472
Fall 2016	1,362	470

Figure 1.2 – FTE Student, Faculty and Professional Staff Data

Students generally complete their degree programming on one campus, and faculty and staff are generally assigned to one campus or the other. There is however, some commuting between campuses that occurs. With the advent of the COVID Pandemic, the University has:

- Changed its instructional model to a hybrid model, in which the classes are split in half and the students only come to campus every other class, with the other class being conducted remotely. This has essentially reduced the on campus population to about half the usual number. This should revert back to “normal” after the pandemic.
- Required all non-student facing personnel to work remotely whenever feasible, using telework and flex-work options. This has proven to be extremely effective in some areas, and will continue after the pandemic. Again, the daily population on campus is about half the “normal” expected.
- Extensively employed the use of ZOOM and other virtual meeting platforms. This has been extremely effective in conducting meetings and will continue to be utilized after the Pandemic. This will result in fewer faculty and staff travelling between the campuses for meetings, reducing traffic in the immediate area.

UNE regularly hosts special events and functions on its Portland campus utilizing some of its larger venues such as the large function halls in Innovation Hall, Ludke Hall, Parker Pavilion and at times outdoors on the main campus green. Most of these events and functions take place during non-University operational days and hours to minimize the impact to its core educational operations. Saturdays, Sundays and after 5pm on weekdays are the typical timing for these non-University events.

Projected Campus Populations

The University is projecting future growth in student, faculty and staff in one major area with the relocation of the College of Osteopathic Medicine (COM) from our Biddeford campus to the Portland campus. This is discussed in more detail in Chapter 2 – Campus Master Plan. The development/building to support this relocation is indicated as A1 on the Campus Master Plan (Figure 2.1) and in the Programming Building Blocks (Figure 2.2)

Currently the College of Osteopathic Medicine (COM) has 180 students per class. Years one and two are in-person/on campus curriculums. Years three and four are off campus residency with a participating health care facility and are not on campus. COM is planning to grow each class to a total of 200 students after their relocation to the Portland campus. This will result in an increase of FTE student population on the Portland campus of 400 students. Projected faculty and staff population will increase in Portland by 160.

As stated above, UNE will continue to utilize telework and flex-work options for a portion of its faculty and staff after the Covid-19 pandemic to reduce headcount on the campus. This will assist with reducing parking need, ease traffic around the campus and decrease office space requirement.

With the vast majority of its students enrolled in graduate degree programs, the University does not currently provide on campus housing for the students enrolled on the Portland campus, unlike its traditional aged, undergraduate students enrolled on its Biddeford campus where on campus housing is offered. The University does direct students to facilities offering housing to these typically, non-traditional students. That being said, the University will continue to evaluate if the creation of on campus housing is a viable option.

CAMPUS CONTEXT

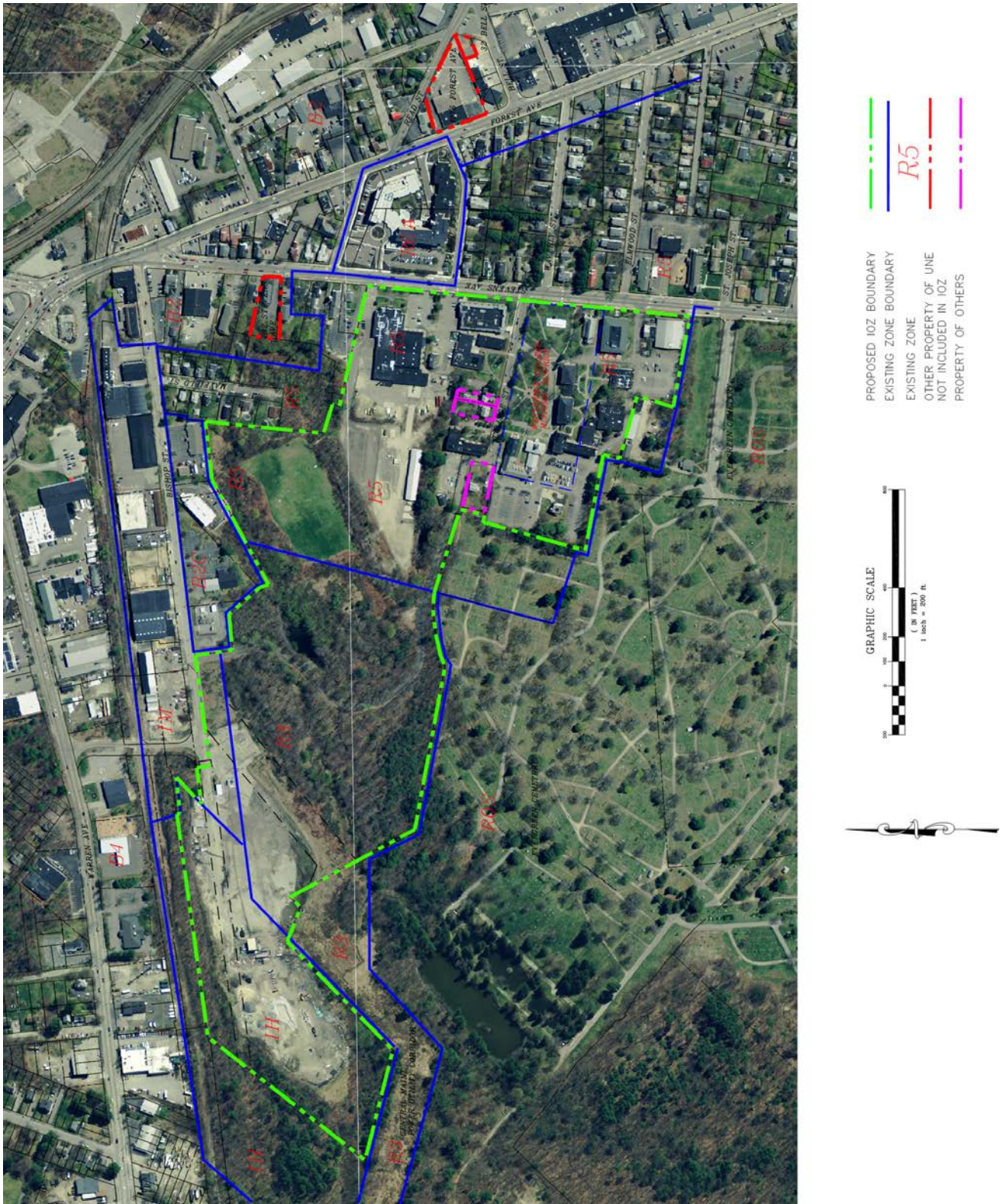


Figure 1.3 – UNE Context Plan

Current Campus Buildings (See Figure 1.4 Campus Map)

1. **Finley Recreation Center** - Constructed in 1990, this 20,000 SF, 36 foot tall, steel frame masonry veneer facility is used for recreational purposes. It contains a gymnasium and weight training and fitness rooms.
2. **College of Pharmacy Building** – This three story, 46,380 SF, 55 foot tall, academic/research facility was completed in 2009 and accepted its first class of pharmacy students in the fall of 2009.
3. **Ludcke Auditorium** - Built in 1867, this former 9,676 SF, 42 foot tall, wooden church, was renovated in 1986, and is currently used by UNE as a multi-function auditorium facility.
4. **Coleman Hall** - This 10,718 SF, 22 foot tall, wood/masonry split level facility is home to the Dental Hygiene Program and contains a Dental Hygiene Clinic, which provides services to the public. It was constructed in 1961 and was added onto in 1968 and 1976. The hygiene clinic was renovated in 2013.
5. **Goddard Hall** – This 12,696 SF, 48 foot tall, 1857 built masonry brick façade, wood framed building was completed renovated in 2011 and is used for academic support with classrooms and faculty offices.
6. **Hersey Hall** - This 22,170 SF, 55 foot tall, four story masonry structure with wood framing was originally built in 1869. The interior was completely renovated to academic offices in 2001.
7. **Blewett Hall** - This 31,650 SF, 32 foot tall, academic facility contains classrooms and laboratories to support all academic programs. This three story masonry facility was constructed in 1967, and had partial interior renovations in 1998 and 2001.
8. **Parker Pavilion** - The 6,600 SF, 22 foot tall, masonry/steel structure building was constructed in 2001, and is used for academic support.
9. **WCHP Lecture Hall** – This lecture hall located adjacent to the Parker Pavilion is a large, lecture style classroom the supports the health professions programs.
10. **Proctor Hall** - Completed in 1951, this 31,074 SF, 56 foot tall, four story masonry brick building is used for academic purposes with classrooms and lecture spaces. Renovations were completed in the late 1990's.
11. **Art Gallery** - Constructed in 1976, this three level, 2,890 SF, 30 foot tall, masonry building is used to exhibit works of fine art.
12. **Alumni Hall** - This 9,809 SF, 40 foot tall, three story brick bearing wall and wood frame masonry building with a rear wood framed addition, was constructed in 1834 and is capped by a bell tower that was relocated from Portland's Market House, which subsequently became the Portland City Hall, at the time of its construction. Alumni was completely renovated, the rear wooden framed addition removed and replaced, and re-opened in 2016 with a total 12,610 SF of space. The renovated facility houses senior administrative offices, meeting rooms and a student study lounge.
13. **Abplanalp Library** - Originally constructed in 1900, as the McArthur Gymnasium, this three level, 38 foot tall, wood frame and masonry building was renovated and expanded into a 26,636 SF library in 1986. A new central HVAC system was installed in 2001.
14. **Ginn and McDougall Halls** - This four story masonry complex of 34,091 SF and 40 foot tall, constructed in 1964 as a residence hall, is currently used for support offices for UNE. The central campus heating facility, completely updated in 2001, is located in its basement.
15. See above
16. **Safety and Security/Bus Terminal Building** – This two story, 720 SF, 20 foot tall building is currently utilized as office space for our Security Department along with a waiting area for our Bishop Street parking lot shuttle bus.

17. **Alexander Hall** - This 13,912 SF, 22 foot tall two story masonry building was constructed in 1962 and serves as the Student Union complex and also houses the Dining Hall and Campus Bookstore. Several interior renovations have taken place over the last several years.
18. **Linnell Hall** - This two story, 12,762 SF, 26 foot tall brick building, is used for support offices, and was originally constructed in 1962 as a residence hall. It currently houses our Student Health Clinic on the first floor and has administrative offices on the second floor.
19. **Oral Health Center** – This 40,300 SF, 42 foot tall, two story facility was completed in 2013. It houses the dental clinic and simulation lab for the College of Dental Medicine. It accepted its first dental students in the fall of 2013.
20. **Facilities Management Building** – This 2,300 SF, 30 foot tall building is currently utilized as offices and maintenance shop for the University’s Campus Services Department.
21. **Innovation Hall** – This two story, 66,794 SF, 34 foot tall, former National Guard Armory building was purchased in 2015 and fully renovated in 2016. It now houses several academic support offices, classrooms, student study spaces and a large multi-function meeting space.
22. **1075 Forest Avenue Building** – This 18,000 SF, 20 foot tall building located on Forest Avenue currently houses our UNE NORTH program and is also used for storage. Parking for this facility is provided on the site.
23. **812 Stevens Avenue** – This 3,500 SF, 24 foot tall facility was formerly a dental office, but was damaged in a fire and subsequently donated to UNE. The building is currently vacant, but the associated parking lot is utilized.

Bishop Street Intermodal Transportation Facility, located at the end of Bishop Street is currently used as a remote, free parking facility, with shuttle service to the core campus.

Current Campus Open Space and Natural Areas

The most prominent open space on the UNE campus is the large campus green located at the main entrance off of College Street. This open space is also part of the Westbrook College Historic District and is the main focal point and viewshed onto the campus from Stevens Avenue.

Several freshwater wetland areas are located in the largely undeveloped area located in the center of the campus between College Street and Bishop Street Extension (see Drawing NR-1). Two wetland areas are also located westerly of the parcel off Bishop Street Extension. There are perennial and intermittent streams located within the wetland areas. The wetlands are primarily forested and shrub wetlands

Three vernal pools are located on the campus, one westerly of the Bishop Street Extension parcel and one located southerly of the former armory property. Neither of the vernal pools meet the criteria to be considered as “significant vernal pools” by the regulatory agencies.

Directly abutting the campus is the 239-acre Evergreen Cemetery, a National Historic Landmark established by the city in 1854. The Evergreen Cemetery not only is of historical significance, but it also serves as an important open space resource for this neighborhood, used for walking, jogging and contemplation.

With the potential development identified in the Campus Master Plan, most of the current campus open space will remain as is. UNE is partnering with Portland Trails to extend their network of trails onto the Portland Campus, with the goal of providing more opportunities for the community to access Portland’s open spaces including those on UNE property. The new facility, A1, to support the relocation of the College of Osteopathic Medicine to the Portland campus, and in conjunction with the development of the Campus Services Building, S6, the intracampus pedestrian circulation in and around Innovation Hall will be improved and additional green space created, better connecting it to the core historic campus.

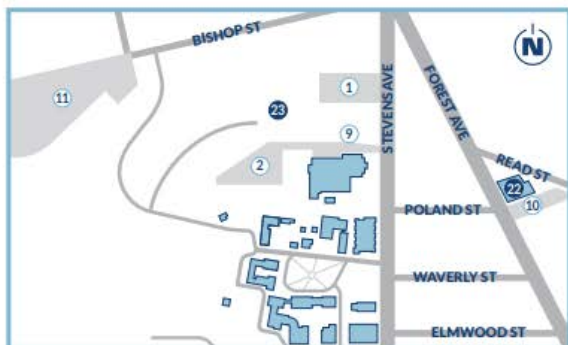
FACILITIES

- | | |
|-----------------------------------|--|
| 1 Finley Recreation Center | 12 Alumni Hall |
| 2 College of Pharmacy | 13 Abplanalp Library |
| 3 Ludcke Auditorium | 14 Ginn Hall |
| 4 Coleman Dental Hygiene Building | 15 McDougall Hall |
| 5 Goddard Hall | 16 Safety and Security/ Shuttle Terminal |
| 6 Hersey Hall | 17 Alexander Hall |
| 6A Graduate Admissions | 18 Linnell Hall |
| 7 Blewett Hall | 19 Oral Health Center |
| 8 Parker Pavilion | 20 Facilities Management |
| 9 WCHP Lecture Hall | 21 Innovation Hall |
| 10 Proctor Hall | 22 UNE North (see inset) |
| 11 Art Gallery | 23 Gulliver's Field (see inset) |

The UNE Portland Campus is proud to be on the National Register of Historic Places (1977) and to be the original home of Westbrook Seminary (1831-1929), Westbrook Junior College (1929-1970), and Westbrook College (1970-1996).

PARKING

- 3 Innovation Hall South: Patient Parking ONLY
4 Oral Health Center: Patient Parking ONLY
5 Behind Ginn/McDougall Halls
6 Behind Library
7 Behind Proctor Hall
8 Finley Recreation Center
Handicap Parking
- Additional UNE Parking Available (see inset)
1 812 Stevens Avenue
2 Innovation Hall Rear
9 Stevens Avenue Congregational Church (2 Middle Rows, Mon-Fri)
10 UNE North: 1075 Forest Avenue (South Side Only)
11 Bishop Street Extension Lot



PORTLAND CAMPUS

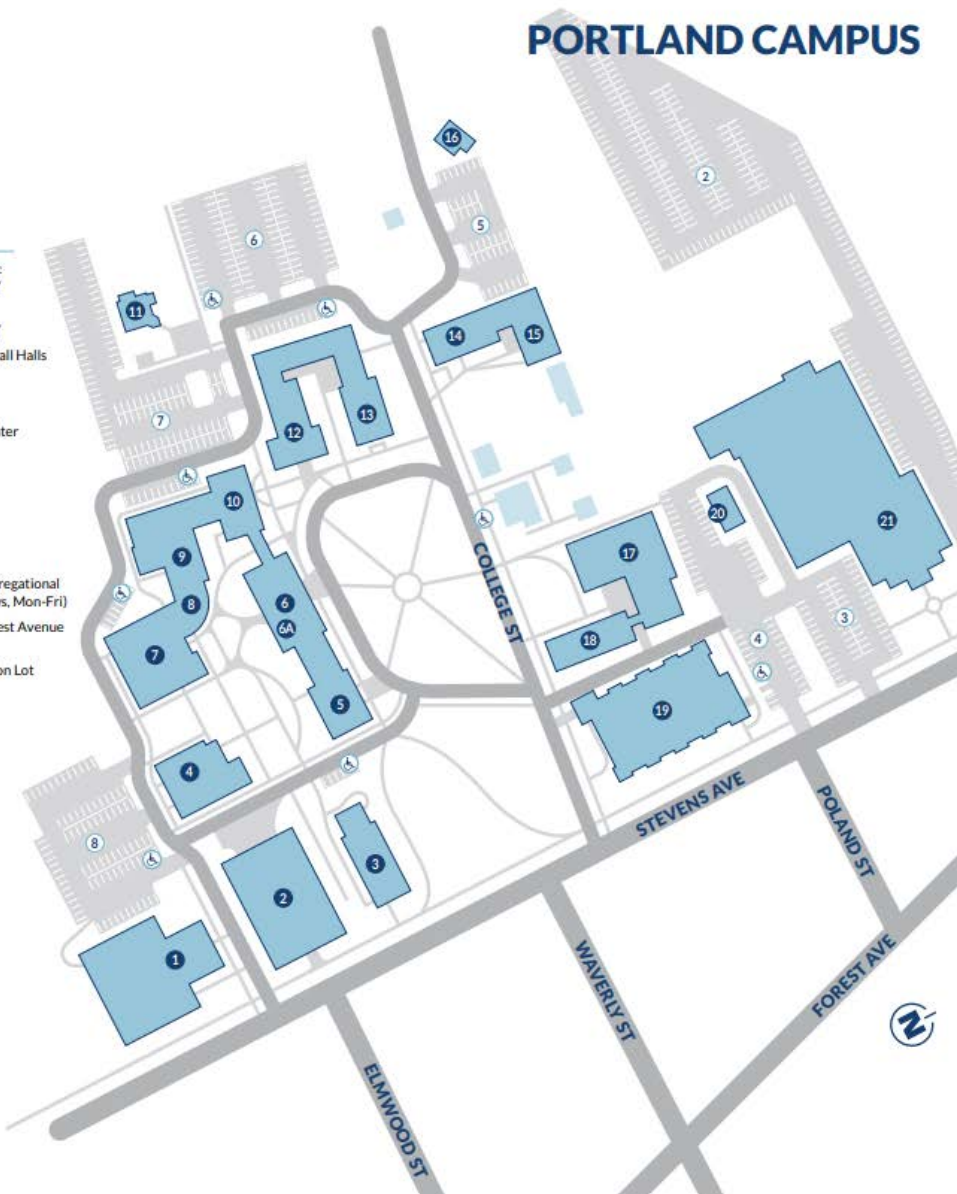


Figure 1.4 - UNE Campus Map

Neighborhood Context

The 70 acre University of New England Portland campus is located in the Deering Center area of the City of Portland, along the northern end of Stevens Avenue. The campus abuts the 239 acre Evergreen Cemetery, a National Historic Landmark which was established by the city in 1854. The campus serves, in many ways, as a transitional zone between areas with diverse character, land uses and demographics. Along with the Evergreen Cemetery, it is bordered by and in close proximity to residential neighborhoods (Mayfield Street off of Bishop Street, Stevens Avenue and the streets off of Stevens Avenue: College Street, Poland Street, Waverly Street, Elmwood Street and St. Joseph Street). An Assisted Living and Senior Housing complex (Park Danforth) across Stevens Avenue, two churches (Stevens Avenue Congregational Church and St. Joseph Catholic Church), a Catholic elementary school (St. Brigid) and several small businesses.

The UNE campus is accessed from Stevens and Forest Avenues from the south and downtown Portland, from Allen and Forest Avenues from the north and Warren Avenue from the west.

Access to the remote UNE parcels is along the city sidewalks. 812 Stevens Avenue, currently vacant but used for parking, can be accessed without crossing any roadways. 1075 Forest Avenue is accessible to the core campus via the sidewalks along Poland Street and across Forest Avenue with aid of a signalized crosswalk. 1075 Forest Avenue currently houses UNE's UNE NORTH program, which operates independently from the healthcare professions on the core campus. Students and staff assigned to that facility do not often spend time on the core campus. No anticipated public way improvements are required to support the use of these facilities.

Zoning Context

While the University's Portland campus remains in its original physical location, the City of Portland's zoning has never included Institutional Uses as permitted uses in the R5 zone that the core campus resides in. Institutional uses are only conditionally allowed in the R5 zone. With the most recent acquisitions of land holdings, abutting and proximal to the core campus, UNE's Portland campus currently resides in five different zoning districts: R3 and R5 which are residential zones; B2 which is a business community zone; IH which is an industrial – high impact zone; and IM which is an industrial – moderate impact zone. Development on the campus has been historically governed by these zones through conditional use. At the request of the City, and with input from its neighbors, UNE has developed this Institutional Development Plan (IDP) to support the new Institutional Overlay Zone (IOZ), see (Figure 1.5).

UNE Campus: Neighborhood and Zoning Context (Data Source: City of Portland GIS)

- UNE Institutional Overlay Zoning (IOZ) District Boundary - UNE Non IOZ Boundary

City of Portland Existing Zoning Districts:

 R3 – Residential	 B4 – Business Community
 R5 – Residential	 B2 – Business Community
 R6A – Residential	 B2C – Business Community
 RP – Residential Professional	 IL – Industrial – Low Impact
 IM – Industrial – Moderate Impact	 IH – Industrial – High Imp
 ROS– Residential Open Space	

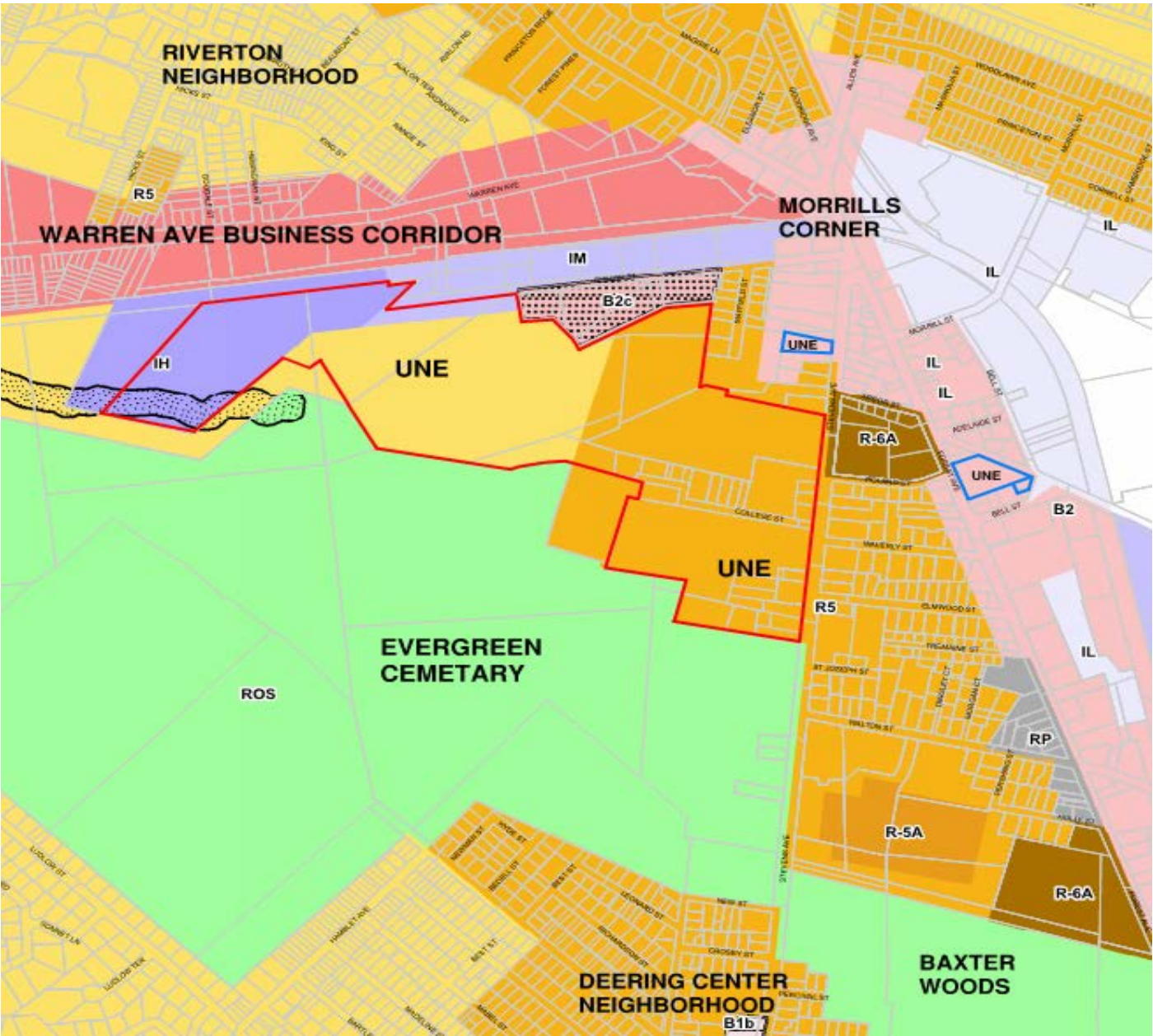


Figure 1.5 – Zoning Context Plan

Historic Resources

UNE's Portland campus includes one of the eleven locally-designated historic districts in the City of Portland that is known as the Westbrook College Historic District (see below for district boundary). This historic district includes six buildings on the UNE Portland Campus that were built between 1834 and 1951. These include Alumni Hall, Goddard Hall, Ludcke Hall, Hersey Hall, Abplanalp Library (Formerly McArthur Gymnasium) and Proctor Hall, as well as the adjacent college green which is bordered by College Street and Stevens Avenue. To date, Goddard Hall, Hersey Hall and Alumni Hall have been rejuvenated through full gut historical renovations permitted through the Historic Preservation Board. The exterior of these facilities have been maintained and or restored to their original grandeur and color. All work done to Ludcke Hall, Proctor Hall and the Abplanalp Library has been done with an effort to preserve the historical nature of these facilities and has also been permitted through the Historic Preservation Board. All other work on the campus considers the historic nature of the campus and is designed and constructed to accent or complement the existing historic district. Towards that end, there is now a "Westbrook College brick" manufactured and used in construction on campus.

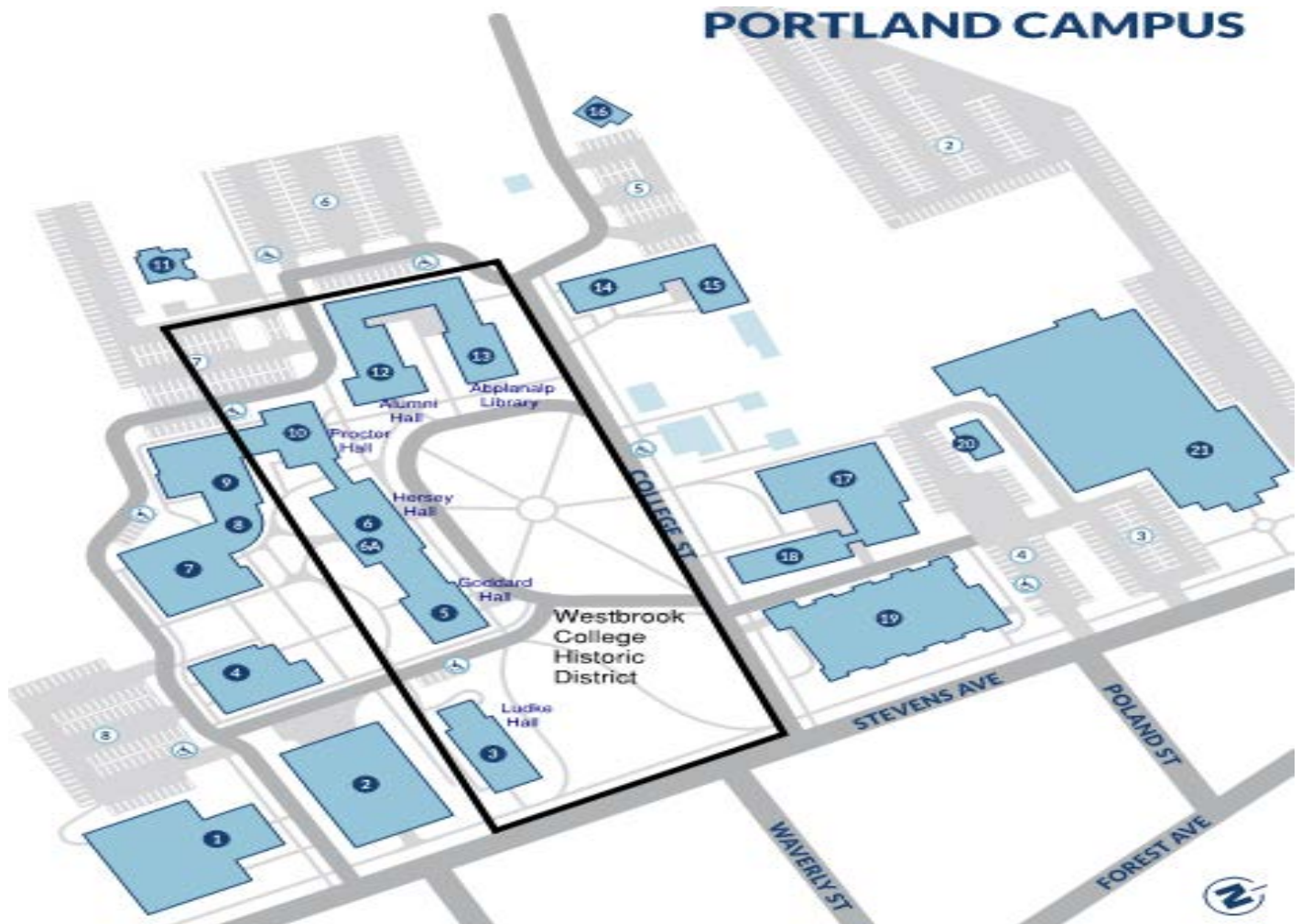


Figure 1.6 – Westbrook College Historic District Boundary Plan

COMPLIANCE WITH THE COMPREHENSIVE PLAN

University of New England has been a long term member of the City of Portland community and understands the overall goals for growth and change that the City has included in its most recent Comprehensive Plan along with the policy directives and goals for development incorporated within it. This Comprehensive Plan addresses areas such as commercial, business and industrial development; transportation resources; and commerce and residential housing plans.

UNE's Institutional Development Plan (IDP) and Regulatory Framework are in basic harmony with the City's Comprehensive Plan and the City's goals and policies expressed in that Plan. UNE has been able to incorporate the City's Comprehensive Plan goals and policies while at the same time supporting the University's priorities for growth and for improving the quality of the education it provides to Portland's residents and the local region. This incorporation and support is key to the flexibility that the City's recently drafted IOZ ordinance is meant to provide. The City's Comprehensive Plan for institutional growth has been put in place to "ensure that the growth of Portland's educational, medical and cultural institutions is integrated into Portland's urban fabric through the use of high-quality design, management of impacts, community partnerships, and innovative planning" (Comprehensive Plan, p.45). UNE has fully embraced this statement and has assimilated this vision into its development plans.

UNE's IDP – Compliance with the City's Comprehensive Plan

UNE has discussed, within this IDP, its key institutional needs – to upgrade and grow its programs on the Portland campus to support the continued requirements of the University to provide state of the art post-secondary and graduate studies in fields such as healthcare, dentistry and pharmacy to name a few. All of these programs have and will continue to support the growing need to deliver public services to the people of northern New England and in particular the City of Portland along with providing highly trained professionals to the local workforce. The City of Portland's 2030 Comprehensive Plan "promotes the orderly expansion of institutional uses, such as educational and hospital campuses, which are central to workforce development, employment, and the health of the local and regional economies" (City of Portland's Comprehensive Plan, p.45)

Environment

UNE is fully committed to the protection of the environment. It will continue efforts on its Portland campus to maintain and expand its initiatives and objectives to support this commitment. UNE will continue its work to improve water quality on and around its campus and will maintain its efforts to protect natural resources. UNE also will continue to implement stormwater best management practices and reduce impacts to adjacent wetlands. We remain committed to the design and construction of environmentally friendly, sustainable and high-performance buildings along with completing renovations to existing spaces that integrate energy efficient mechanical and electrical systems, such as energy-saving heating and air conditioning units, LED lighting, and water-saving plumbing fixtures. UNE has a Sustainability Department that works continuously to

reduce the University's impact upon the environment. Our Sustainability Department leads the effort to identify projects and processes that aim to reduce UNE's carbon footprint, manages the recycling program which targets the reduction of landfill waste and increases the amount of waste that gets reused and recycled, and promotes the environmental education efforts across all departments of UNE.

Chapter 4 includes more details on UNE's commitment to the environment and programs that are in place.

Historic Resources

The City of Portland's Comprehensive Plan has identified Portland as an **Enduring City** with an extraordinary rich history. The UNE Portland Campus is a prime example of this. With its beginnings in 1830, well before it became part of the Portland fabric, the buildings today look much like they did when they were originally constructed. Thoughtful and intentional planning has been done to maintain this rich past and re-purpose it to meet the needs of today's students. Other more recent buildings on campus have been designed and situated to complement the existing campus, which retains its quintessential New England college campus appeal.

Waterfront

The Portland Harbor and its working waterfront has been identified as a key component to the City's Comprehensive Plan. Ensuring the future of the marine industry through support for emerging marine industries and mitigation of market trends that could compromise the balance between marine industries and competing development is a primary goal, as is the development of public and private partnerships to promote the Port of Portland as an economic engine for the State of Maine. These are the primary reasons that UNE created UNE NORTH.

Economic Growth

The City of Portland's Comprehensive Plan promotes and supports expansion of educational campus uses that are central to workforce development and economic growth. UNE and particularly its Portland campus continues to expand and modernize its educational programs to provide the much needed workforce in Portland and surrounding areas, especially in the medical, dental and pharmaceutical fields, as well as the marine economy. Modernization and expansion of its facilities on the Portland campus is absolutely key to the continuation of its ability to provide highly skilled healthcare professionals to Portland and the surrounding area's workforce which will support the sustained health of its economy.

Chapter 6 of this IDP provides more detail on UNE's community benefits and its impact to the local economy.

Transportation

UNE has considered its transportation needs holistically and has incorporated into its future development planning alternative modes of transportation to and from the campus. UNE has implemented a Transportation Demand Management (TDM) plan since 2010. UNE is continually updating the plan and is always considering enhancements to encourage more walking, cycling and public transportation use by its students, faculty and staff.

UNE believes that its promotion of alternative modes of transportation and success in transportation demand management will positively impact the City's issues with traffic in and around the Morrill's Corner node and routes feeding to it. We are in full support of the City's efforts to ease traffic in this area and believe that UNE's implementation of programs will greatly improve traffic levels.

Chapter 3 of this IDP provides more detailed information on UNE's plans for transportation.

UNE's Regulatory Framework: Compliance with the Comprehensive Plan

UNE's IOZ Regulatory Framework provides a mechanism for thoughtful future development while maintaining the character of our unique and historical campus along with the adjacent Deering neighborhoods. UNE fully understands and appreciates the impacts of future development and has established its Regulatory Framework in keeping with the goals of the City's Comprehensive plan while looking at its key institutional needs for the future.

UNE recognizes that its Portland campus serves as a key element of this important area of the City and is committed to ensuring that its future development takes into account the neighborhood context in which it is situated.

Chapter 5 of this IDP provides more detail regarding design guidelines and neighborhood integration. The Regulatory Framework is also included with this IDP in Chapter 7.

Conclusion

Review of UNE's Institutional Development Plan (IDP) shows that it is consistent with the City's Comprehensive Plan and with the "purposes" stated within the City's Institutional Overlay Zone (IOZ) ordinance.

Analysis of the Regulatory Framework that accompanies UNE's IDP to help implement the IDP demonstrates that the Regulatory Framework is consistent and in "basic harmony" with the City's Comprehensive Plan and with UNE's IDP.

Priority Nodes & Corridors

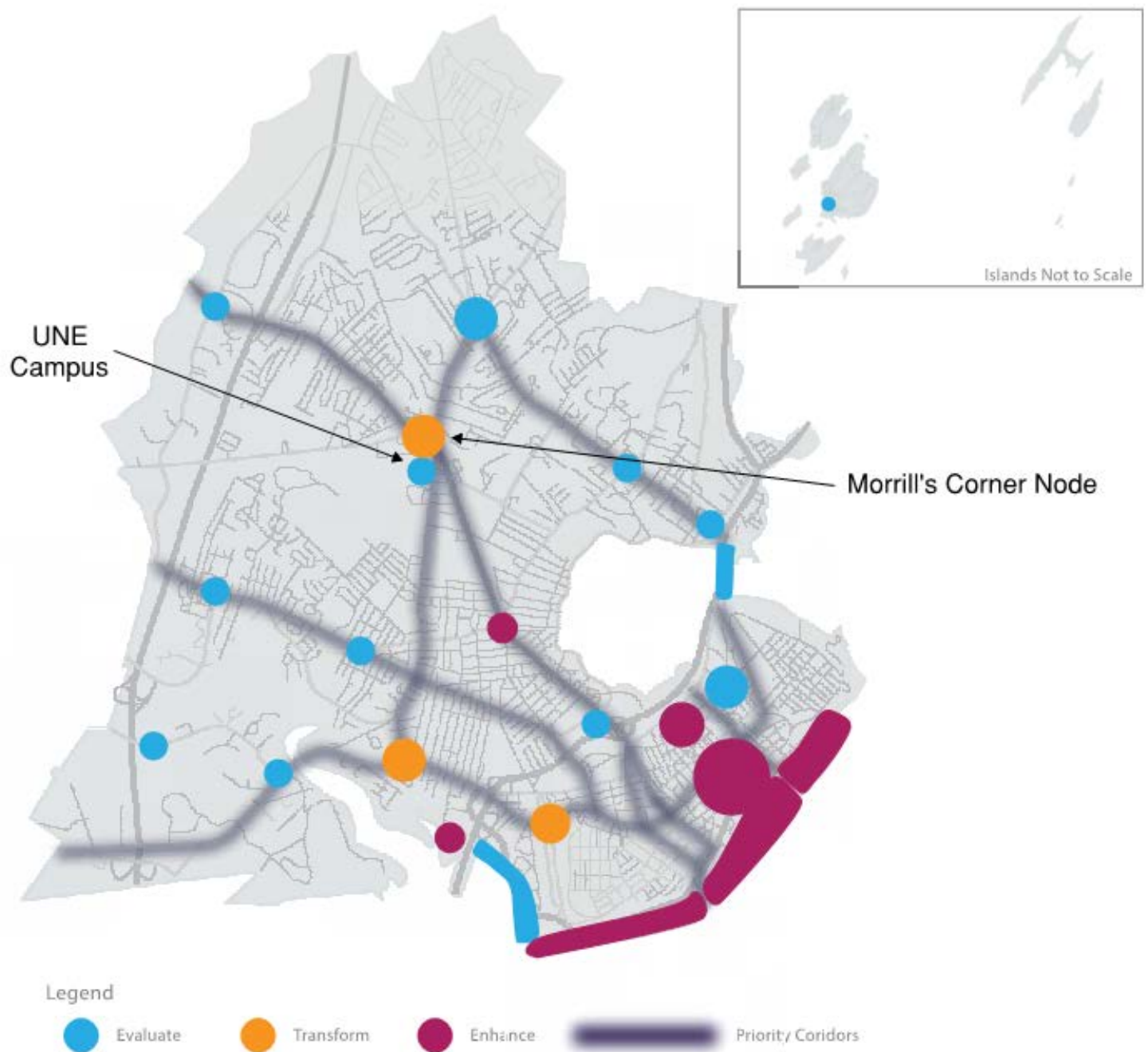


Figure 1.7 – Priority Nodes and Corridors, City of Portland Comprehensive Plan

PUBLIC INPUT ON INSTITUTIONAL DEVELOPMENT PLAN (IDP)

UNE understands the importance of open communication with its surrounding neighborhoods and of keeping its neighbors aware of its evolving development plans at its Portland campus. During earlier development, UNE involved the neighbors in meetings and informational sessions on the new buildings and campus improvements that were implemented. We are committed to continuing with this model and will continue to provide our neighbors with the ability to provide feedback on future projects.

UNE held the first of two neighborhood meetings required by the City of Portland's IOZ ordinance in late June 2020. This meeting was held via Zoom remote online meeting, in light of the on-going Covid-19 pandemic. In this meeting, UNE staff provided an overview of the IOZ process with the City, the key drivers for UNE's plans to implement the IOZ and its current IDP. This meeting provided time for participants to ask questions, voice opinions and receive answers. The minutes of this meeting were submitted for the record to the City.

UNE conducted its second neighborhood meeting in mid-April 2021 following the initial submission of this IDP and Regulatory Framework at the end of March 2021. At this meeting UNE provided further information on its IDP and introduced more details on its Regulatory Framework submission. The minutes of this second meeting were submitted for the record to the City.

Major Areas of Public Concern

UNE recognized that there would be concerns identified by neighbors that would require ongoing open communication and feedback. UNE is committed to working with its neighborhood residents and understand that there will be areas where UNE can implement suggestions from the public and other areas where there will be opinions of difference. UNE and the participants in this process have identified the following areas of major public concern:

1. By far, the largest concern with UNE's IDP revolves around traffic patterns and traffic congestion problems in the general vicinity of the Portland campus. This is also identified as an issue by the City of Portland in its Comprehensive Plan, which indicated the Morrill's Corner node as an area of transformation. Morrill's Corner is an area where the City has and will continue to develop plans to ease traffic issues. Towards this end, UNE has contributed \$29,000 to the City, earmarked specifically for improvements at this intersection. UNE's IDP works to ease the impact of future development plans as it relates to traffic load to this area of concern. Chapter 3 of this IDP provides further information on traffic, vehicular access and circulation.
2. The next major area of concern surrounds vehicular parking and in particular on-street parking on public ways in the surrounding neighborhoods. Several neighbors voiced concern about vehicular parking on the public streets they reside on. There were also concerns about the needed parking for increased headcount on the UNE campus with

future developments being shown on the IDP Campus Master Plan, Figure 2.2, especially the creation of the building identified as A1, which is an academic building, on that plan. This building would increase the student FTE headcount on campus by roughly 400. Chapter 3 of this IDP provides further information on future parking plans on the Portland campus.

3. Another area of concern is in regards to exterior lighting levels around the Portland campus and the proposed development areas, along with noise related to building mechanical equipment such as HVAC equipment and exhaust fans. Within Chapter 5 of this IDP we touch upon these concerns and describe how UNE will strive to alleviate both exterior light and noise issues through proper design and equipment usage for each specific building.
4. Several neighbors have asked about walking paths and trails around the campus and if UNE was planning to expand and allow further walking paths and trails with its proposed development plans. More about this will be discussed in Chapter 6 - Neighborhood Engagement, of this IDP, but UNE is actively engaged with Portland Trails on expanding new paths and trails and connecting these with existing paths and trails within the Evergreen Cemetery and potentially linking to other Portland Trails access routes in the area.
5. A neighbor questioned how they will get continued/ongoing communication when projects on the Master Plan proceed. As explained in depth in Chapter 6 – Neighborhood Engagement, UNE proposes to provide multiple ways for neighbors to stay connected and informed on current and upcoming projects. The UNE Campus Planning webpage will be maintained for the public to view information regarding projects, an email address has been setup for neighbors to send in questions, concerns and issues directly to the people that will be managing the projects and finally through this email project updates will be sent directly to the neighbors wishing to be added to the updates and alerts.

CAMPUS MASTER PLAN

University of New England continues to improve its ability to provide state of the art post-secondary and graduate studies in fields such as healthcare, dentistry and pharmacy in order to provide a highly skilled and much needed workforce to the City of Portland and local areas. UNE is Maine's leader in providing of health care professionals. UNE has recently announced plans to consolidate its College of Osteopathic Medicine onto its Portland campus to improve its Interprofessional Education (IPE) model to provide an even better prepared and more robust workforce in the future. UNE is engaged in campus master planning work to fully support this effort along with preparing its Portland Campus for future developments.



Figure 2.1 – UNE Master Planning Effort

CAMPUS MASTER PLANNING PROCESS

The objective of any university master planning process is to evaluate the suitability of the campus and its buildings to meet anticipated academic needs to deliver state of the art educational programs to its students. It also includes the ability to provide enough flexibility to be able to make accommodations for future modifications to support educational program changes, new cutting edge technology within the programs, and also the potential for adding new academic programs to its core curriculum. UNE's potential future development opportunities are identified within this IDP, however, UNE does not anticipate realization of all of these visions. If they are not represented here, then they cannot be realized.

Over the past decade or so, UNE's Portland Campus has grown not only in the educational programs it provides, but also in the complexity of how it delivers the education to its students, especially in the healthcare programs it offers. This growth has brought many changes in the infrastructure that is needed to support its mission to provide high level healthcare education here in the State of Maine, especially to the local Portland area. This includes the addition of the Oral Health Center and College of Pharmacy building.

UNE's CAMPUS MASTER PLAN – The Process

The following are facets of the master plan that have been reviewed to determine the projected growth and future requirements of UNE and its educational programs on the Portland campus.

Current Facility Assessment

UNE has evaluated its current campus and buildings to create a baseline for its Campus Master Plan. This evaluation included review of the age and condition of the existing buildings and current layouts within each building, along with the departmental allocation of all space in regards to the ability to support the current and potential future educational programs. The overall current campus infrastructure (utilities, roadways and walkways, parking lots, etc.) also was reviewed. Completing this assessment has allowed UNE to identify areas which must be further evaluated by future facility development.

Current and Future Program Requirements

UNE has continually made efforts to keep its healthcare educational programs on the cutting edge. Anticipating changes and allowing maximum flexibility are necessary to the success of these efforts, and providing a campus and buildings that permit this maximum flexibility to support future change is paramount. Technology, especially in the healthcare industry, is ever changing and improving, and the ability to support future programs, such as telemedicine and virtual simulation, will be vital to the success of UNE in providing the healthcare education that will be required by future healthcare professionals. UNE also has identified the importance of strengthening its Inter-Professional educational model which brings all of the healthcare related

programs together, on one campus, in an environment where there are co-educational opportunities to allow for real life interactions. Students and faculty from the College of Osteopathic Medicine will work and learn with students and faculty from the Westbrook College of Health Professions programs like physician assistant, nursing, physical and occupational therapy, social work and behavioral health, and pharmacy and with students from the oral health programs.

Adjacencies

UNE has identified program adjacencies as a major issue and it is a large driver of this Campus Master Plan, especially in support of strengthening its inter-professional educational model. Currently the College of Osteopathic Medicine is located on UNE's Biddeford campus and the majority of the Westbrook College of Health Professions programs are based on the Portland campus. Both colleges currently utilize space on both campuses, which causes large inefficiencies in the educational model and also requires students and faculty to travel long distances. One of the major aspects of this Campus Master Plan addresses these inefficiencies by bringing both colleges together on one campus and providing more appropriate building spaces to support educational programming for both the COM and WCHP colleges and to advance UNE's Inter-Professional model for into the future.

KEY INSTUTIONAL NEEDS

UNE's current and future facility needs can be summarized into 4 main categories:

1. Campus Reorganization
2. New Building and Renovation Need
3. Educational/Pedagogy Improvements Need
4. Campus Infrastructure Needs (Parking, Access, Utilities, Etc...)

CAMPUS REORGANIZATION

The establishment of a unique, nationally recognized Institute for Professional Education and Practice in Portland can only be achieved with the relocation of the College of Osteopathic Medicine from its current home on the Biddeford campus to the Portland campus. This reorganization is UNE's highest priority and will allow it to establish a world-class academic healthcare campus in Portland, oriented around inter-professional education, will allow UNE to strengthen its collaboration with clinical partners throughout the state. By introducing, strengthening and supporting Inter-Professional Practice with hospitals and healthcare networks such as Maine General, Maine Health, Northern Light and others, UNE will develop a distributed teaching hospital model, using telemedicine and digital health technologies to transform healthcare access and delivery across Maine, with a particular focus on Maine's underserved, rural population.

NEW BUILDING AND RENOVATION NEED

In order to support the transformation discussed above, UNE will need complete renovations to some existing buildings and construction of new facilities to house relocated educational programs and to improve its support departments, such as Information Technology Services, Campus Services and Facilities Management, to name a few. Building a new, state-of-the-art home for the College of Osteopathic Medicine on the Portland campus will “close the loop”, creating a comprehensive, fully integrated educational institution that can efficiently and effectively tackle Maine’s deepest healthcare problems through systemic, coordinated education and clinical practice. Moving the College of Osteopathic Medicine to the Portland campus also will afford the opportunity to repurpose spaces on the Biddeford campus to expand existing undergraduate programs and to develop new ones to address critical workforce needs for the State.

EDUCATIONAL/PEDAGOGY IMPROVEMENTS NEED

UNE continually endeavors to improve the way its faculty provides educational programs to its current and future students. Ever changing technology has also presented challenges for the University as it attempts to stay on the cutting edge in its efforts to provide world-class curriculums. Through its assessment of the current facilities on the Portland campus, it has become evident that UNE will need to undertake future facility projects to upgrade its current classroom, lecture, laboratory, and study spaces and to provide additional spaces with an emphasis on higher technology, such as virtual reality (VR), high definition simulation and media that supports telemedicine and digital health. Projects identified within this IDP reflect and support this need.

CAMPUS INFRASTRUCTURE NEED

Through its extensive evaluation of the existing campus, UNE has identified, along with the need to renovate existing buildings and building new facilities, the need to improve its overall campus infrastructure to support the campus reorganization and pedagogy improvements, which includes utilities such as electrical, water, and gas utilities that feed the campus; storm water systems; access roadways and sidewalks; and parking lots. Parking will be enhanced and expanded to support the additional faculty, staff and students. Further detail is discussed in this IDP in subsequent chapters regarding campus infrastructure improvements.

PROJECT PRIORITIES – Project Identification

This Campus Master Plan identifies the projects that are needed to support the key institutional needs that are outlined above. These projects are broken down to short term, mid-term and long term needs. The projects represent the possible future development on campus, but the realization of these will only occur if the financial and philanthropic plans can support them. Due to the various factors impacting our educational programs along with ever changing pedagogy methods and technology advancements in healthcare education, the priority of these projects proposed within this overall timeframe may vary accordingly. Below are projects currently identified by UNE based on priority (see next page for reference Campus Master Plan):

Priority 1 – Short Term: (0-5 years)

New Institute for Inter-Professional Education and College of Osteopathic Medicine Building
110,000 SF, 4 story academic building. Indicated as **A1** on the master facility plan

Renovation of Rear Area of the Existing Innovation Hall (former Armory Building)
24,000 SF, 2 story academic use area. Indicated as **S2** on the master facility plan

New Facilities Maintenance and Campus Services Building
15,000 SF, 1 story facilities maintenance building. Indicated as **S6** on the master facility plan

Building Renovation/Expansion of Existing 812 Stevens Avenue Building
10,000 SF, 2 story office/administrative building. Indicated as **S3** on the master facility plan

Building Renovation of Existing 1075 Forest Avenue Building
15,000 SF, 1 story office/administrative building. Indicated as **A3** on the master facility plan

Priority 2 - Mid-Range Term: (5-10 years)

Building Renovation of Existing 79 College Street Building
720 SF, 2 story office/administrative building, Indicated as **S4** on the master facility plan

Building Renovations/Expansions of Existing Bishop Street Lot Buildings
1,000 SF, 2 story support buildings, Indicated as **S5** on the master facility plan

Priority 3 - Long Term: (5-20 years)

New Graduate Housing Residence Building
100,000 SF, 4 story residential housing. Indicated as **H1** on the master facility plan

New Academic Building
60,000 SF, 4 story academic use building. Indicated as **A2** on the master facility plan

Building Renovation/Expansion of the Existing Recreation Center (Finley Gym)
50,000 SF, 2 story administrative/academic use building. Indicated as **S1** on the master facility plan

New Recreation and Athletics Building
60,000 SF, 2 story multi-use recreation and athletics building. Indicated as **F1** on the master facility plan

[illegible]

PORTLAND CAMPUS PROGRAMMING BUILDING BLOCKS

University of New England - Portland Campus							
Campus Development Plan Projections							
Programming Building Blocks							
HOUSING							
	Description	PRIORITY	APPROXIMATE FOOTPRINT (SQ. FT.)	STORIES	APPROXIMATE TOTAL (SQ. FT.)	ESTIMATED OCCUPANCY	HEIGHT**
H1	Residence Hall	3	25,000	4	100,000	200 (b)	65'
ACADEMICS							
	Description	PRIORITY	APPROXIMATE FOOTPRINT (SQ. FT.)	STORIES	APPROXIMATE TOTAL (SQ. FT.)	ESTIMATED OCCUPANCY	HEIGHT**
A1	Academic Building	1	27,500	4	110,000	160 (o)	85'
A2	Academic Building	3	15,000	4	60,000	20 (o)	65'
A3	UNE North Renovation - 1075 Forest Avenue	1	15,000	1	15,000	10 (o)	35'
SUPPORT							
	Description	PRIORITY	APPROXIMATE FOOTPRINT (SQ. FT.)	STORIES	APPROXIMATE TOTAL (SQ. FT.)	ESTIMATED OCCUPANCY	HEIGHT**
S1	Recreation Center	3	25,000	2	50,000	4 (o)	50'
S2	Innovation Hall - Rear	1	12,000	2	24,000	2 (o)	50'
S3	812 Stevens Ave. Renovation/Expansion	1	5,000	2	10,000	6 (o)	35'
S4	79 College Street Renovation/Expansion	2	720	1	720	2 (o)	35'
S5	Bishop Street Renovation/Expansion	2	1,000	1	1,000	0 (o)	35'
S6	Campus Services Building	1	15,000	1	15,000	12 (o)	35'
ATHLETICS							
	Description	PRIORITY	APPROXIMATE FOOTPRINT (SQ. FT.)	STORIES	APPROXIMATE TOTAL (SQ. FT.)	ESTIMATED OCCUPANCY	HEIGHT**
F1	Athletic Facility	3	45,000	2	60,000	12 (o)	50'
Occupancy Key:							
(b) = Beds							
(o) = Offices							
** All building heights are approximates							
Priority Key:							
1. = Short Term							
2. = Mid-Range Term							
3. = Long Term							

3/24/21

Figure 2.2 – Programming Building Blocks

TRANSPORTATION PLAN

The University of New England's Portland campus Transportation Plan has been developed with its main goal being to reduce vehicle trips and, thus, reduce the demand for on-site parking. UNE hopes to achieve this goal by increasing Transportation Demand Management (TDM) actions through the promotion and encouragement of alternative modes of transportation. Lowering the number of vehicular trips through TDM actions should lead to both a reduction in environmental impacts and in impacts on the area neighborhoods.

Overview

The University of New England is developing this Transportation Plan to reduce vehicle trips to its Portland campus, and to improve campus access and on-site circulation. The University has had a TDM Plan in place since 2010. With the oversight of the University's "Transportation Think Tank" committee, it is regularly updated to respond to changing conditions and campus modifications. It is focused on reducing vehicle trips to the campus and promoting alternative modes of transportation, in turn decreasing the demand for on-site parking. This reduces traffic impact both on campus and off-site, improving traffic flow in the surrounding area, as well as reducing UNE's Tier Three Carbon Emissions.

The campus is located off of Stevens Avenue, which is classified as a minor arterial. Nearby Forest Avenue is a principal arterial and Warren Avenue, to the north, is also a minor arterial. This location, within close proximity of these three arterials, provides convenient access to the Maine Turnpike (via Riverside Street), Warren Avenue and Bishop Street. Access to I-295 is provided by Forest Avenue (See Figure 3.1).

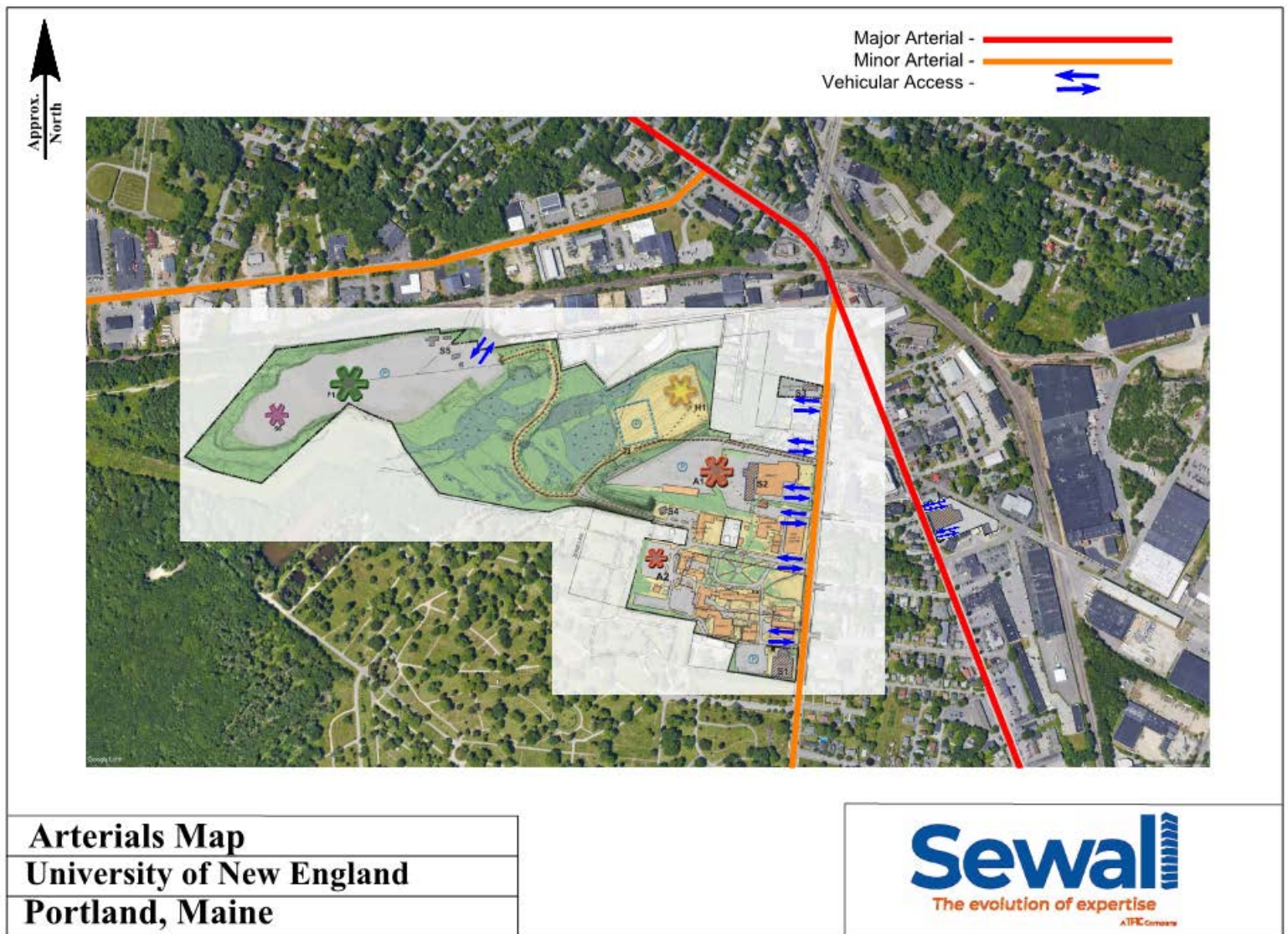


Figure 3.1 – Arterials Map

The University has traditionally located its programs so that it limits the travel between campuses by its community members. Thus, faculty and staff are generally assigned to only one campus and majors are generally offered/completed on one campus or the other. However, there are several programs that are currently required to travel between campuses to access the highly specific and state of the art facilities housed only on one of the two Maine campuses. For example, graduate students studying Dental Medicine in Portland are required to learn Gross Anatomy on the Biddeford Campus. Conversely, the Osteopathic Medicine students, located in Biddeford, are required to access the Simulation Center on the Portland Campus to learn from using the state of the art robotics and virtual reality health care programming offered there. This results in potentially hundreds of students commuting from Portland to Biddeford, during the day, several times a week.



Site Location Map
University of New England
Portland, Maine



Figure 3.2 – Site Location Map

ACCESS AND CIRCULATION

VEHICULAR ACCESS

Because the Portland campus currently has no on-campus housing, all students, faculty and staff arrive from Portland and surrounding communities by multiple unsignalized drives from Stevens Avenue, as well as from the Bishop Street Extension to the Bishop Street parking lot. This access point is generally determined by the parking permit acquired by each individual, as it relates to the parking lot they would have authorized access to park in.

TRANSPORTATION DEMAND MANAGEMENT PLAN

The TDM plan includes the provision of free Metro, South Portland City Bus Services, and Biddeford, Saco Old Orchard Beach Bus Transit (BSOOB) passes for all students and staff to encourage transit usage.

UNE utilizes the GoMaine website for both of their campuses to encourage carpooling to each campus as well as between campuses when required. The university provides free parking to carpoolers and dedicates some of the most convenient spaces to them as incentives. Additionally, the GoMaine program offers rewards to encourage participation. Lastly, UNE promotes bicycling and walking as convenient means to access campus for those students and staff that reside within the appropriate range.

UNE has performed several student and staff surveys to determine arrival and departure times and parking usage. The results have guided UNE in making adjustments to its TDM, including bus schedules and start/stop times.

UNE has a TDM coordinator who currently provides students and employees with links to:

- Portland Metro maps and schedules
- Intra-campus shuttle schedules
- GoMaine carpool and rideshare website
- UNE Carpooling and parking updates
- UNE TDM incentives program information

The coordinator, in conjunction with the University's Transportation Think Tank committee, also monitors the effectiveness of the TDM plan through semi-annual parking utilization surveys and observations of alternative mode usage and guides the ongoing revisions to the TDM.

Additionally, UNE provides both educational and promotional material regarding the advantages of alternative modes. The university has also provided employee recognition for efforts to reduce traffic impacts and parking demand.

ALTERNATIVE MODES OF TRANSPORTATION

UNE has continually promoted the use of alternative modes through incentives and promotions. These actions have included:

- Raffle of New Bicycles
- Free coffee and doughnuts to users of the Bishop Street Lot
- Electric vehicle charging stations on campus, FREE to the users
- Free public transit passes

TRANSIT SERVICE

Transit service is provided via Greater Portland Metro Route 9, which connects downtown Portland to North Deering via Stevens Avenue and also by Route 2 which connects downtown Portland to Riverton via Forest Avenue. There are two Route 9 Metro stops located on the Portland campus, both of which are equipped with shelters. The Route 2 stops on Forest Avenue are within 1,000 feet of the core campus and are immediately adjacent to the University's 1075 Forest Avenue property. UNE provides free bus passes to all students and staff to encourage Metro use, including the Metro Breeze from Portland to Brunswick, the Route 2 bus route to the Metro Pulse (the downtown hub). Additionally, the University provides free bus passes to the South Portland City Bus Services as well as the BSOOB Transit, including the ZOOM Express between Portland and Biddeford. Free public transportation is thus offered between the University's two Maine campuses, as well as to/from the Portland Transportation Center, the Saco Transportation Center, the Greyhound Bus terminal, and the Portland International Jetport.

With UNE's recent (January 2021) upgrade to the centralized automated fare payment system, Dirigo Touch Pass, for all of these transit services, enhanced ridership data will now be available to UNE and can be utilized in future TDM considerations. Previously, the ridership data was recorded manually or only allowed for the number of passes issued, and not actual rides utilized. Previously, UNE would procure and manually distribute hard copy passes, as community members requested them from the Student Affairs office. Thus, UNE community members were required to conscientiously obtain these in advance of their use. For 2019, UNE purchased and distributed monthly (40 rides per month) and weekly passes (10 rides per week) totaling approximately 10,590 rides. With the enhanced Dirigo Touch Pass enabled to **all** students, faculty and staff, they can now ride the buses for free, without first having to obtain an actual pass. UNE anticipates the ridership to increase, with the added ease and convenience of accessing these transit services.

SHUTTLE SERVICE

A shuttle bus is provided from the Bishop Street parking lot to the campus core to provide for convenient parking access. The overall campus location and existing transportation facilities are shown in Figure 3.3.



Bus Routes & Stops University of New England Portland, Maine

Bus	Stop	Route
UNE Shuttle	●	—
Metro Route 9A	●	—
Metro Route 9B	●	—
Metro Route 2	●	—



Figure 3.3 – Bus Routes and Stops Map

PEDESTRIAN ACCESS

Pedestrian access is provided by numerous sidewalks both on campus and off campus. Sidewalks are provided on both sides of Stevens Avenue and on both sides of Forest Avenue, as well as on the primary side streets between these arterials, including Poland Street which allows access to UNE's property at 1075 Forest Avenue. There are crosswalks across Stevens Avenue and Forest Avenue in the vicinity of the campus at both signalized and un-signalized locations, including direct signalized access to UNE's property at 1075 Forest Avenue. These area pedestrian facilities also provide for pedestrian access to other educational facilities, namely Longfellow Elementary School, Lincoln Middle School, and Deering High School, as well as the local businesses frequented by UNE community members.

The Portland Trails network of trails abuts the campus and could be utilized by some local community members to access the campus. UNE is working with Portland Trails to extend this

network across the UNE campus as the new access road is developed, which could provide additional alternative pedestrian access to the campus.

BICYCLE ACCESS

Stevens Avenue is a designated bicycle route in the City of Portland providing direct access to the campus. UNE provides bicycle racks at a ratio of 1 bicycle rack space per every 20 UNE community members. Additionally, there is access to showers and lockers in the Finley Recreation Center further facilitating bicycle commuting. The Stevens Avenue on road bike route connects to multiple other nearby bike routes, including Allen Avenue, Walton Street, Read Street, Woodford Street and Congress Street. These bike routes then connect to facilities with dedicated bicycle lanes, such as Forest Avenue.

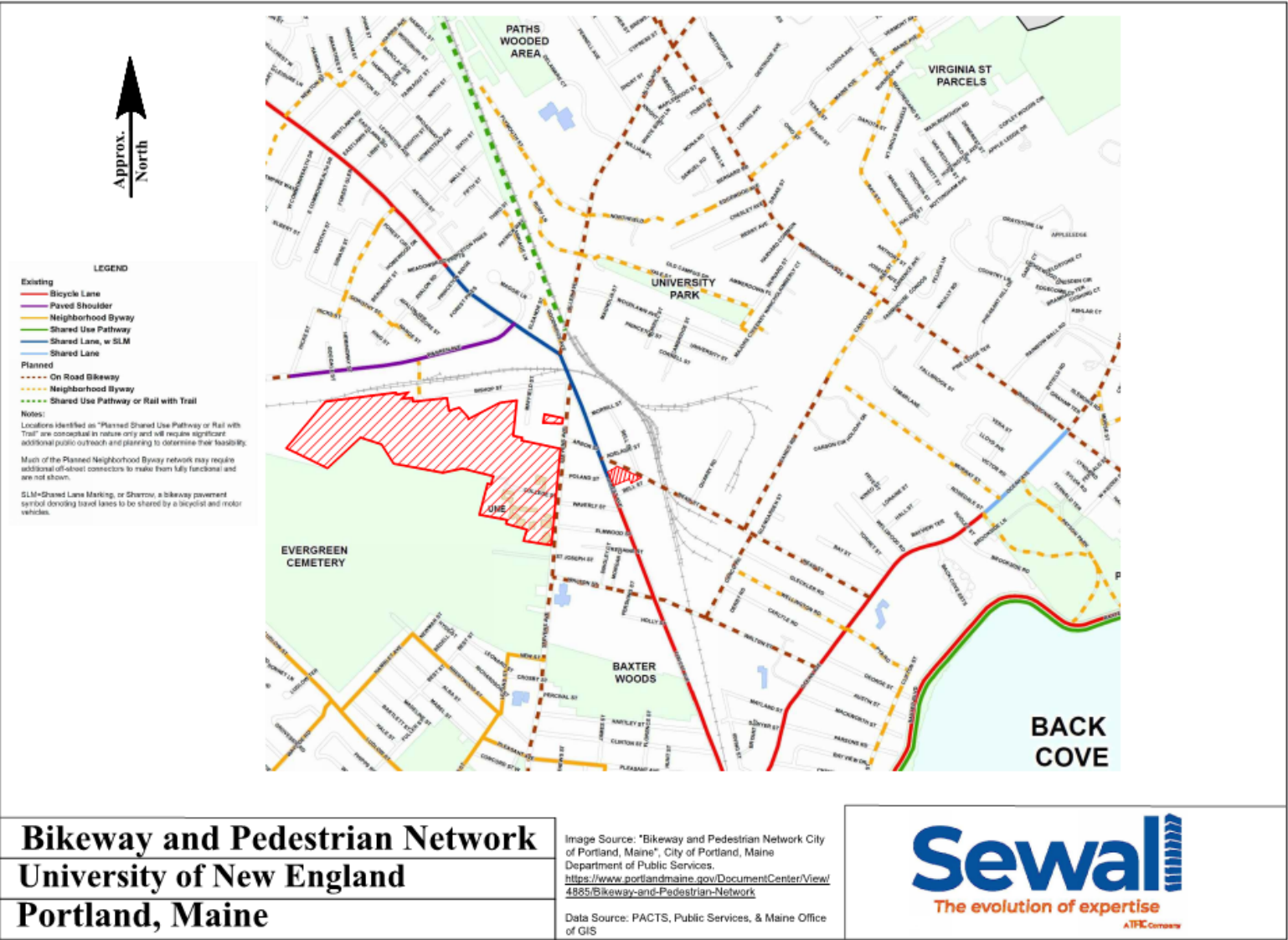


Figure 3.4 –Bikeway and Pedestrian Network Map

PROPOSED ACCESS AND CIRCULATION MODIFICATIONS

VEHICULAR ACCESS

The Campus Master Plan provides for a new road connecting the A1 lot and the Bishop Street lot. This new access road will allow vehicles, and pedestrians, to travel between the core campus on Stevens Avenue, through campus to the Bishop Street parking lot and on to Warren Avenue. This access road will eliminate unnecessary trips on Stevens Avenue, Forest Avenue, Bishop Street and Warren Avenue by allowing UNE community members to enter and exit the campus at the location most proximate to their origin/destination by either Bishop Street Extension or Stevens Avenue. More importantly, it will eliminate traffic that is currently routed through Morrill's Corner.

PEDESTRIAN ACCESS

The Portland Trails network of trails abuts the campus and could be utilized by some local community members to access the campus. UNE is working with Portland Trails to extend this network across the UNE campus as the new access road is developed, which could provide additional alternative pedestrian access to the campus.



Figure 3.5 – Pedestrian Access from Portland Trails Website

ALTERNATIVE MODES OF TRANSPORTATION

UNE will continue to offer free public transportation passes and incentives to encourage alternative modes. Through all of these actions, UNE has shown long-term dedication to reducing their overall single vehicle trips and associated traffic impacts and in being a good neighbor, as well as a reduction in its carbon footprint.

Traffic

EXISTING TRAFFIC VOLUMES

Turning movement and classification counts were conducted at several primary access intersections in the fall of 2019 during both the morning and afternoon/evening peak hour periods to determine existing volumes. These intersections included:

- Signalized Stevens Avenue and Walton Street
- Un-signalized Stevens Avenue and UNE's South Entrance at the Finley Center
- Un-signalized Stevens Avenue and College Street
- Signalized Forest Avenue, Stevens Avenue and Bishop Street
- Un-signalized Warren Avenue and Bishop Street Extension

The AM peak hour consistently occurred from 7:15 – 8:15 AM within the study area. The PM peak hour occurred in the period between 3:15 and 5:30, dependent upon location. The count data was seasonally factored to the first week in September, when peak volumes for a school and universities in Maine occur, using published MaineDOT group mean urban factors. The resulting 2019 peak hour volumes, expected to be representative of peak university volumes in September, are shown in Figures 3.6 and 3.7.

Existing average annual daily traffic (AADT) data for the vicinity of the campus was obtained from "Traffic Volume Counts, 2019, 2014 and 2012 Annual Reports", published by MaineDOT. This data is summarized below:

<u>Location</u>	<u>Average Annual Daily Traffic</u>				
	<u>2008</u>	<u>2010</u>	<u>2013</u>	<u>2016</u>	<u>2019</u>
Bishop Street, West of Forest Avenue	--	--	1650	--	--
Walton Street, West of Forest Avenue	--	2800	3120	2580	--
Forest Avenue, NW of Warren Avenue	20020	19010	19820	18140	--
Forest Avenue, North of Walton Street	--	--	21830	--	--
Forest Avenue, South of Walton Street	--	--	21710	--	--

Stevens Avenue, South of Walton Street	--	12510	11680	11620	--
Stevens Avenue, North of Walton Street	--	11170	10980	11180	--
Stevens Avenue, South of Forest Avenue	--	10360	10050	11230	--
Warren Avenue, SW of Forest Avenue	13370	11560	13130	11390	12380

As demonstrated above, traffic volumes in the vicinity of the campus have generally declined over the longer term 2008 to 2019 period. Over the most recent short term period, 2013 – 2016, traffic generally declined on Forest Avenue and Warren Avenue. Traffic volumes on Stevens Avenue generally remained steady in the area of Walton Street, while increasing slightly just south of Forest Avenue.

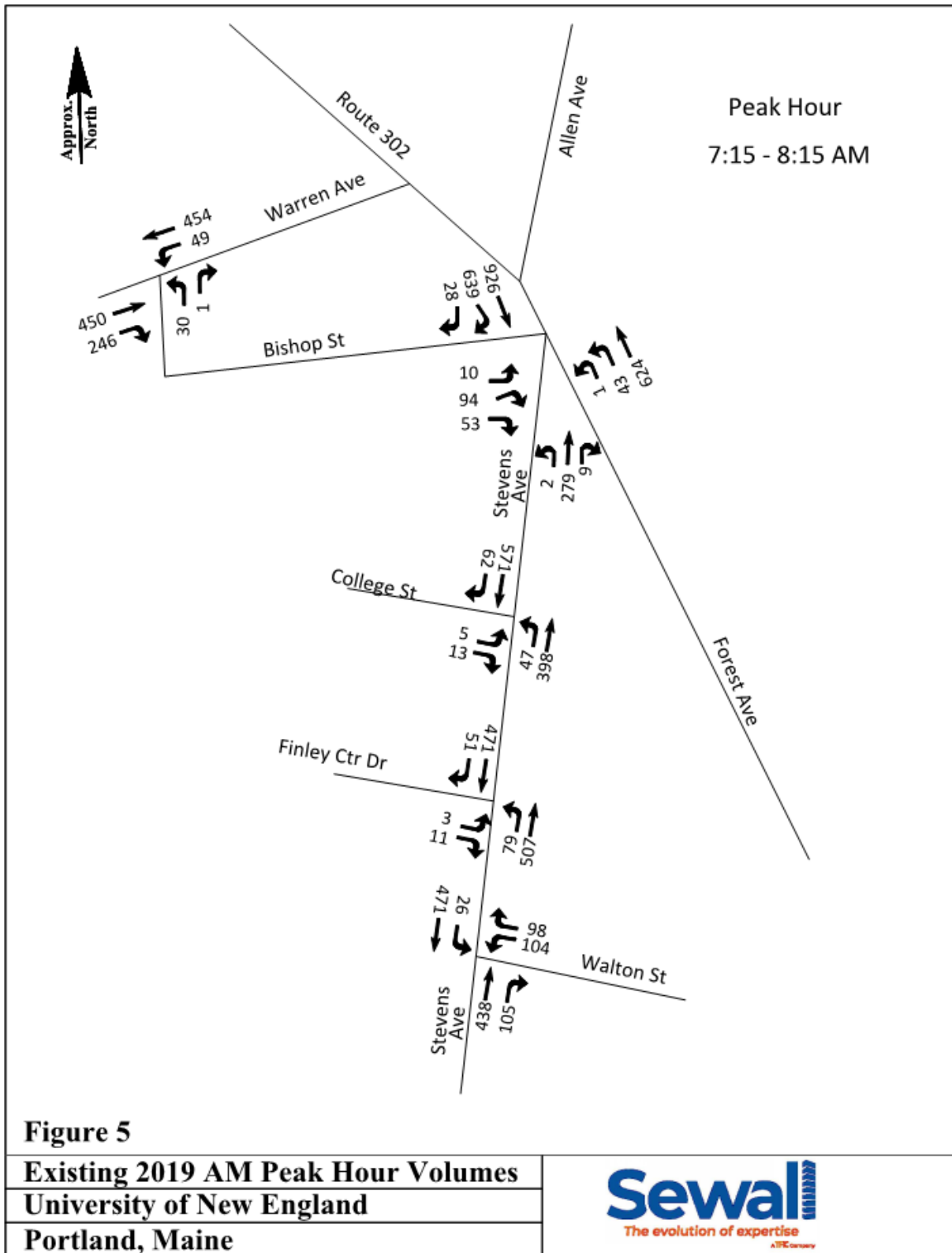


Figure 3.6 – AM Peak Hour Volumes – September 2019

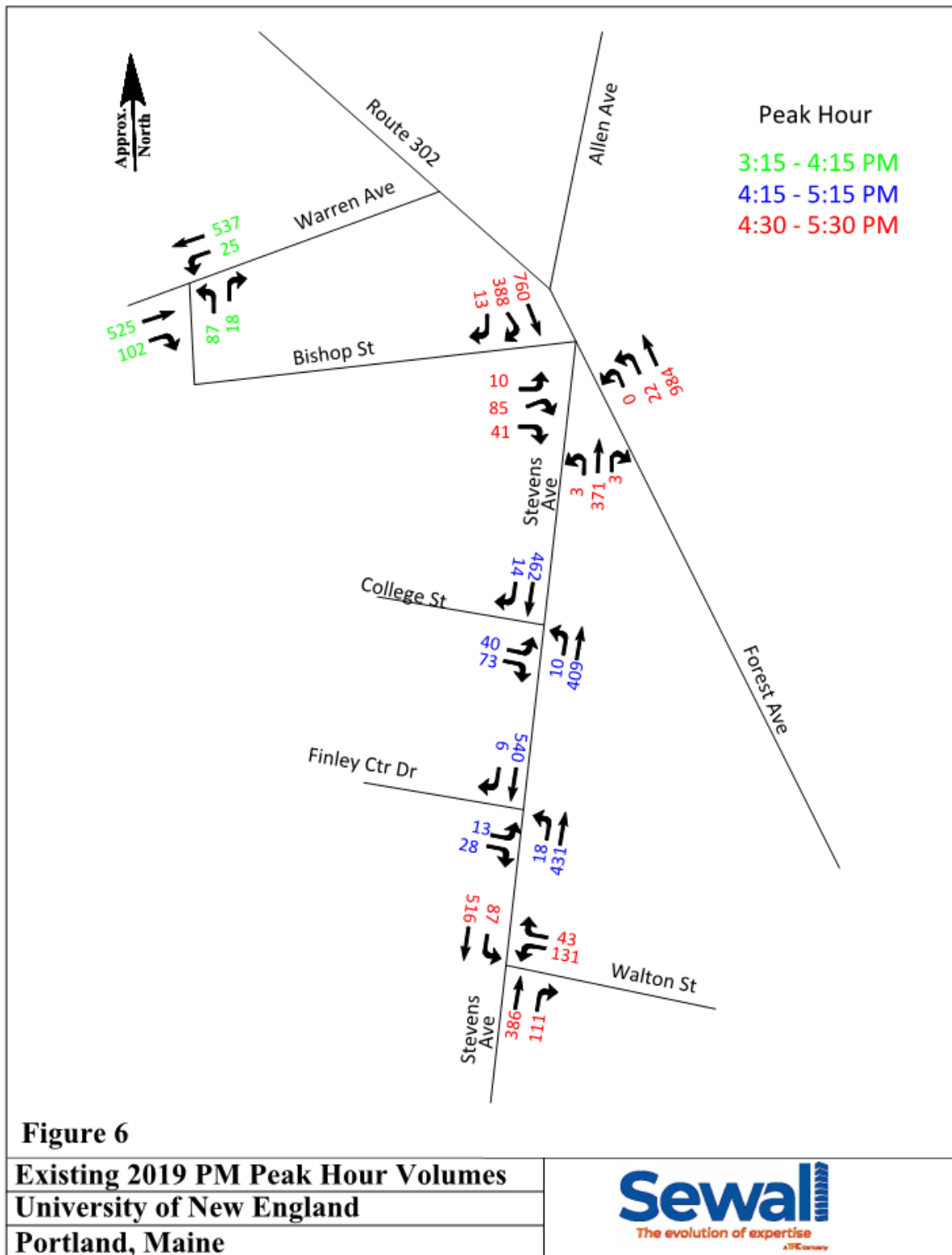


Figure 3.7 – PM Peak Hour Volumes – September 2019

TRAFFIC ANALYSIS

Traffic operations are evaluated in terms of level of service (LOS). Level of service is a qualitative measure that describes operations by letter designation. The levels range from A - very little delay to F - extreme delays. Level of service "D" is generally considered acceptable in urban locations while LOS "E" is generally considered the capacity of a facility and the minimum tolerable level. The level of service for signalized intersections is based upon the average control or signal delay per vehicle. These criteria are defined in the following table excerpted from the 2010 "Highway Capacity Manual"

Signalized Intersection Level of Service

<u>LOS</u>	<u>Delay Range</u>
A	< = 10.0 seconds
B	> 10.0 and <= 20.0
C	> 20.0 and <= 35.0
D	> 35.0 and <= 55.0
E	> 55.0 and <= 80.0
F	> 80.0

The level of service for un-signalized intersections is based upon average control delay per vehicle for each minor, opposed movement, as defined in the following table:

Unsignalized Intersection Level of Service

<u>LOS</u>	<u>Delay Range</u>
A	< = 10.0 seconds
B	> 10.0 and <= 15.0
C	> 15.0 and <= 25.0
D	> 25.0 and <= 35.0
E	> 35.0 and <= 50.0
F	> 50.0

EXISTING LEVELS OF SERVICE

An analysis of existing conditions in the vicinity of the Portland UNE campus was performed by Sewall. The level of service (LOS) was calculated for the two signalized intersections in the immediate vicinity of the campus, as well as for some of the un-signalized primary access drives. The analysis was performed for 2019 conditions using Synchro 10/SimTraffic to determine current operations. Note that traffic volumes are still down in 2020 from 2019 levels due to the Coronavirus pandemic so the 2019 results would be reflective of current conditions (or conservative given the current overall statewide decline of 11 -13 % from 2019). The existing signal timings and phasings were obtained from the City of Portland. Both signals are running under adaptive control, which was best simulated by optimizing timings. The results by approach are summarized in the following table for the AM and PM peak hour periods:

SIGNALIZED INTERSECTION ANALYSIS

EXISTING PEAK HOUR LEVELS OF SERVICE

<u>Approach</u>	Stevens Avenue, Forest Avenue & Bishop Street	
	<u>AM</u>	<u>PM</u>
Eastbound Bishop Street	C (26.4)	C (32.6)
Northbound Forest Overall	D (53.4)	C (26.6)
Southbound Forest Overall	D (37.1)	C (28.9)
Stevens Overall	C (27.7)	C (29.7)
Intersection Overall	D (37.9)	C (28.4)

<u>Approach</u>	Stevens Avenue & Walton Street	
	<u>AM</u>	<u>PM</u>
Westbound Walton Overall	C (26.5)	C (29.4)
Northbound Stevens Overall	B (15.2)	B (15.5)
Southbound Stevens Overall	A (8.2)	A (9.7)
Intersection Overall	B (14.7)	B (14.7)

As seen above, the two signalized intersections in the immediate vicinity of the campus on Stevens Avenue are operating acceptably by both approach and overall during both commuter peak hours showing no significant constraints.

UN-SIGNALIZED INTERSECTION ANALYSIS

EXISTING PEAK HOUR LEVELS OF SERVICE

<u>Approach/Lane</u>	Warren Avenue & Bishop Street Ext.	
	<u>AM</u>	<u>PM</u>
Eastbound Warren Overall	A (4.2)	A (2.0)
Westbound Warren Overall	A (2.7)	A (1.5)
Northbound Bishop St. Ext. Overall	C (23.5)	F (88.7)
Intersection Overall	A (4.2)	B (13.3)

<u>Approach/Lane</u>	Stevens Avenue & College Street	
	<u>AM</u>	<u>PM</u>
Eastbound College Street	C (19.6)	A (10.0)
Northbound Stevens Avenue	A (4.3)	A (0.8)
Southbound Stevens Avenue	A (3.4)	A (2.2)
Intersection Overall	A (4.1)	A (2.5)

<u>Approach/Lane</u>	Stevens Avenue & Finley Center Drive	
	<u>AM</u>	<u>PM</u>
Eastbound Finley Center Drive	A (18.8)	A (9.7)
Northbound Stevens Avenue	A (5.8)	A (2.5)
Southbound Stevens Avenue	A (1.6)	A (1.0)
Intersection Overall	A (4.2)	A (2.0)

As seen above, the analysis shows the major un-signalized university drive approaches all operate at LOS "C" or better during the AM peak hour period. Based upon the preliminary analysis the only un-signalized capacity constraint is the Bishop Street Extension approach to Warren Avenue during the PM peak hour. Future traffic impact studies for campus developments will evaluate the impact of any additional trips on this particular intersection and will evaluate potential improvement options to address this existing deficiency.

SAFETY ANALYSIS

The Maine Department of Transportation uses two criteria to determine high crash locations (HCLs). The first is the critical rate factor (CRF), which is a measure of the accident rate. A CRF greater than one indicates a location which has a higher-than-expected crash rate. The expected rate is calculated as a statewide average of similar facilities.

The second criterion, which must also be met, is based upon the number of accidents that occur at a particular location. Eight or more accidents must occur over the three-year study period for the location to be considered a high crash location. Accident data was obtained from MaineDOT for the vicinity of the campus. The CRF and number of accidents are summarized by location for the most recent three-year period, 2017 to 2019, in the following tables:

<u>Stevens Avenue Location Description</u>	<u># of Acc.</u>	<u>CRF</u>
Intersection of Walton Street	3	0.17
Between Walton and St. Joseph's Streets	1	0.27
Intersection of St. Joseph's Street	2	0.39
Between St. Joseph's and Elmwood Streets	3	0.55
Between Elmwood and Waverly Streets	2	0.45
Intersection of Waverly Street	4	0.76
Between College and Poland Streets	2	0.50
Between Poland and Arbor Streets	3	0.49
Intersection of Arbor Street	2	0.39
Between Arbor Street and 0.03 mile south of Forest Avenue/Bishop	7	1.00
0.03 mile south of Forest Avenue/Bishop Street	1	0.20
Intersection of Forest Avenue and Bishop Street	38	0.92

<u>Warren Avenue Location Description</u>	<u># of Acc.</u>	<u>CRF</u>
Between Bishop Street Extension and Hicks Street	6	0.33
Intersection of Hicks Street	1	0.19

<u>Bishop Street Location Description</u>	<u># of Acc.</u>	<u>CRF</u>
Between Morrill's corner and Mayfield Street	1	0.44
Between Mayfield Street and 0.22 mile west	2	0.53

<u>Bishop Street Extension Location Description</u>	<u># of Acc.</u>	<u>CRF</u>
Between Bishop Street and Warren Avenue	1	0.58

As seen above, there are no high crash locations within the vicinity of the UNE campus.

PROJECTED TRAFFIC IMPACT

Current plans project that student enrollment will increase by 400 due to the relocation of the COM program to the Portland campus in the short term. The following provides UNE's analysis of new trip generation and traffic patterns anticipated over the short term.

The 400 student enrollment increase will result in approximately 60 new one-way trips in the AM and PM peak hours based upon Institute of Transportation (ITE) trip generation rates. Capacity analysis of the impacts of these additional trips for a 2023 study year did not identify any additional capacity concerns. The level of service for the signalized Walton Street and Morrill's Corner intersections, both by approach and overall, with the additional UNE trips will remain at acceptable levels (LOS "D" or better) in 2023 as was reported in this plan for existing conditions. The unsignalized 2023 intersection analyses, with the additional UNE students, similarly did not identify any new capacity concerns. The only unsignalized constraint is northbound exits from Bishop Street Extension during the PM peak hour, as is the case under existing conditions.

The analyses were developed with 2019 volumes, collected pre-pandemic, and projected to 2023 utilizing a historical 0.5 % growth rate. The pandemic has reduced campus volumes as well as most urban arterial volumes in Portland. As a result, both the existing conditions analysis and the future analysis reported for this high-level analysis of the new COM trips are expected to be conservative. Recent 2021 counts indicate that campus volumes are currently down 28 % during the AM peak hour and 19 % during the PM peak hour due to the pandemic from 2019 levels. These decreases in campus trips, due to remote operations and hybrid learning platforms, if sustained, would offset most new trips due to the COM relocation.

While the Morrill's Corner intersection is operating acceptably overall and by approach there are some constraints for northbound left-turn movements off Forest Avenue. The long-term plan to provide an internal campus connector road from the primary campus to the Bishop Street lot will provide for reduced volumes at Morrill's Corner by allowing direct access to Warren Avenue, thus removing those campus trips from Morrill's Corner. The planned connector road will remove trips from the arterials where the only capacity concerns have been identified.

More detailed analysis of the study area intersections will be completed as campus building projects go through the City's site plan approval process. This will allow for the specific long-term pandemic impacts to be evaluated and assessed, such as reduced campus trip generation due to sustained remote learning and work options, and continued decreased arterial volumes. The need for any off-site improvements, such as turn lanes, increased queue storage or traffic signals, will be determined in these more detailed traffic impact studies. These analyses will utilize updated traffic volumes to assure the detailed analyses are reflective of conditions at the time given unknowns in sustained pandemic impacts. However, it is important to repeat, based upon the analyses already performed utilizing higher 2019 volumes, the short-term enrollment growth is not expected to have any significant impact on traffic conditions as no new capacity constraints were identified by the analyses. Hence, the short-term growth that the University anticipates due to the relocation of the COM should have no significant traffic impacts off-site on the surrounding arterials.

PARKING

EXISTING PARKING ANALYSIS

While there are several alternative transportation modes available to access the Portland campus, the majority of students and staff arrive by private vehicle. Based upon the most recent parking counts conducted in fall of 2019, parking demand generally peaks between 11:00 AM and 2:00 PM. There are currently eleven parking lots located on the UNE's Portland campus plus on-street parking along two campus roadways. The lot locations are shown in Figure 3.8. The number of spaces located in these lots is detailed below:

<u>Lot # - Description</u>	<u># of Spaces</u>
1 – 812 Stevens	30
2 – Innovation Hall Upper/Lower	101
3 – Innovation Hall Front	34
4 – Oral Health Center/Alexander	38
5 – Ginn/McDougal	28
6 – Library	104
7 – Proctor	121
8 – Finley Rec Center	85
9 – Stevens Avenue Church	36
10 – UNE North – 1075 Forest	77
11 – Bishop St. Extension Lot	600
X – Proctor Access Road	3
Y – Hersey Circle	4
	1,261 TOTAL



Figure 3.8 – Existing Parking Plan

Most campus lots require the display of parking permits, and the lots on the core campus require the purchase of a parking permit on a lottery basis. If a community member doesn't get a permit in the lottery process, they can park for free in more remote lots. The largest number of vehicles recorded during the fall 2019 counts in the university lots was 775. This represents 61.5 % of overall on campus capacity. This highest demand occurred on a Wednesday at 1:00 PM.

There is a shuttle bus provided between the more remote Bishop Street lot and the campus core to increase that lot's usage. There is a heated shelter with Wi-Fi at each end of the shuttle route to encourage ridership. Usage of the Bishop Street lot requires a FREE parking permit, to further encourage its use. The shuttle runs continuously from 7 AM to 7 PM with minimal wait times. With these incentives, parking in this more remote lot has increased significantly from 37 vehicles in 2012 to an average of 217 during the peak period (11:00 to 2:00) in 2019. The average peak daily use in this lot in 2019 was 233 vehicles.

In addition to the on campus parking, there is also on-street parking located on surrounding streets, which is available to UNE community members. This on-street parking includes College Street on campus and parking along both sides of Stevens Avenue off campus. The parking in

these on-street spaces was also recorded on the first days of the biannual parking counts. These on-street vehicles counts are informational only as the parking along these streets is also utilized by the general public with no UNE connection. The number of vehicles parked along College Avenue during the peak periods ranged from 18 to 22. These users are likely UNE community members. The number of vehicles recorded in the Stevens Avenue spaces during the peak periods ranged from 129 to 140. As previously noted not all of these users are UNE students, as there are private single and multifamily residences, local businesses, a daycare center, a school, a couple of churches, and a couple of larger housing complexes located along this stretch of road.

The City of Portland has implemented residential parking permits and one-hour parking restrictions on many side streets in the vicinity of campus, reducing the amount of on-street parking available to UNE community members. As long as there continues to be free on-street parking along Stevens Avenue, in close proximity to the campus core, continued use of these spaces by staff and students is expected given their convenience. UNE has, and will continue to support the city in its parking regulations in this area.

FUTURE PARKING NEEDS AND GOALS

The goals for UNE in terms of parking are to:

- Continue to provide an adequate parking supply on-campus
- Reduce parking needs over time through continued TDM actions
- Reduce neighborhood impact by reducing on-street parking usage by UNE students

In previous projects, as approved by the City, UNE's parking needs have been typically based on the student population, at a rate of 0.58 spaces per student. UNE intends to continue to monitor parking demand, with the goal being to reduce the parking supply rate over time. UNE expects to continue to provide the 0.58 space per student but will work towards reducing the parking supply rate over time.

Based on the potential master plan development, the future rearrangement of parking and addition of green space at Bishop Street and the Innovation Hall sites, and the future non-renewal of the leased parking at the Stevens Avenue church will result in a net loss of 199 spaces, leaving a total of 1062 spaces on campus.

Should building A2 comes online, up to 115 additional parking spaces will be displaced, leaving a total of approximately 947 parking spaces on campus. Based on the projected enrollment of 1562 students, the resulting ratio of parking spaces to student will be 0.61. As noted above, UNE and the city have agreed on a parking generation rate of 0.58 spaces per student. Although this higher is than the ITE parking generation rate for a University, the campus is a graduate student only campus, where its health professions students tend to spend most of their day on campus, resulting in a higher parking generation rate.

As noted, there will be a significant reduction of parking spaces due to the currently envisioned short term projects. Any further reduction in parking will need to be evaluated based on post-

pandemic transportation trends, as well as the development of any additional city programs to minimize on street parking by UNE associated vehicles along Stevens Avenue.

FUTURE PLANNING EFFORTS

UNE will continue to work with neighbors and neighborhood groups as campus development projects are planned to identify any neighborhood transportation issues and concerns so that they can be considered in the planning and design process. This will ensure that UNE will continue to be a good neighbor and minimize the impact on surrounding roadways as much as possible.

ENVIRONMENTAL AND INFRASTRUCTURE PLAN

UNE sees sustainable operations, supported by an effective and resilient system of infrastructure, as key to its efforts to protect natural resources on the campus and in the surrounding neighborhood environment.

Resource Protection

The UNE Portland campus contains and is located near several important existing resources: historic, open space and natural resources. UNE has extensive experience in development in and around these types of sensitive areas.

There are currently no formal plans for future preservation, enhancement, conservation, or mitigation. The projects proposed under this IDP will not result in significant impacts to currently undeveloped areas, and, in fact will occur primarily on existing de-vegetated areas. A strategy will be implemented to further enhance the Capisic Brook Watershed. This will involve revegetation of areas of the existing Bishop Street parcel as future projects are developed.

Natural Resources

With its Biddeford campus located at the mouth of the Saco River, and in the State designated “Biddeford/Kennebunk Vernal Pool Complex”, and with its nearby island land holdings, UNE has successfully designed, permitted and constructed many projects in or adjacent to these sensitive areas while minimizing the environmental impacts. UNE has a long standing, compliant track record with the Cities of Portland, Biddeford and Saco, Maine Department of Environmental Protection, Saco River Corridor Commission and the Army Corp of Engineers, be it developmental or operational. UNE’s offices for Planning, Facilities Management, Sustainability and Environmental Health and Safety stay current with regulations in all facets of our operations and we monitor and report compliance annually with our Board of Trustees.

On the Portland Campus:

- Several freshwater wetland areas are located in the largely undeveloped area located in the center of the campus between College Street and Bishop Street Extension. See Drawing NR-1. A total of five wetland areas have been mapped on this portion of the campus, shown as wetlands 1-5.

- Additionally, two wetland areas are located westerly of the parcel off Bishop Street Extension, shown as wetlands A and B. There are perennial and intermittent streams located within the wetland areas. The wetlands are primarily forested and shrub wetlands, with some emergent wetlands in wetland areas B and 5.
- Three vernal pools are located on the campus, one westerly of the Bishop Street Extension site, one located southerly of the former armory site, and one located northerly of the former armory site, shown as VP-1 VP-2, and VP-3 on drawing NR-1. None of the vernal pools meet the criteria to be considered as “significant vernal pools” by the regulatory agencies.
- As mentioned previously, directly abutting the campus is the 239-acre Evergreen Cemetery, a National Historic Landmark established by the city in 1854. The Evergreen Cemetery not only is of historical significance, but it also serves as an important open space resource for this neighborhood, used for walking, jogging and contemplation.
- The UNE Portland campus, with its traditional campus atmosphere, provides a transition to busier institutional, business, and residential areas and uses along Forest Avenue.
- With the potential development identified in the Campus Master Plan, most of the current campus open space will remain as is. UNE is partnering with Portland Trails to extend their network of trails onto the Portland Campus, with the goal of providing more opportunities for the community to access Portland’s open space.
- No significant impacts to existing forested areas are anticipated as a result of this IDP. As noted on the Master Plan layout all proposed development will take place on non-forested areas. There will be minor clearing associated with the connector road improvements.

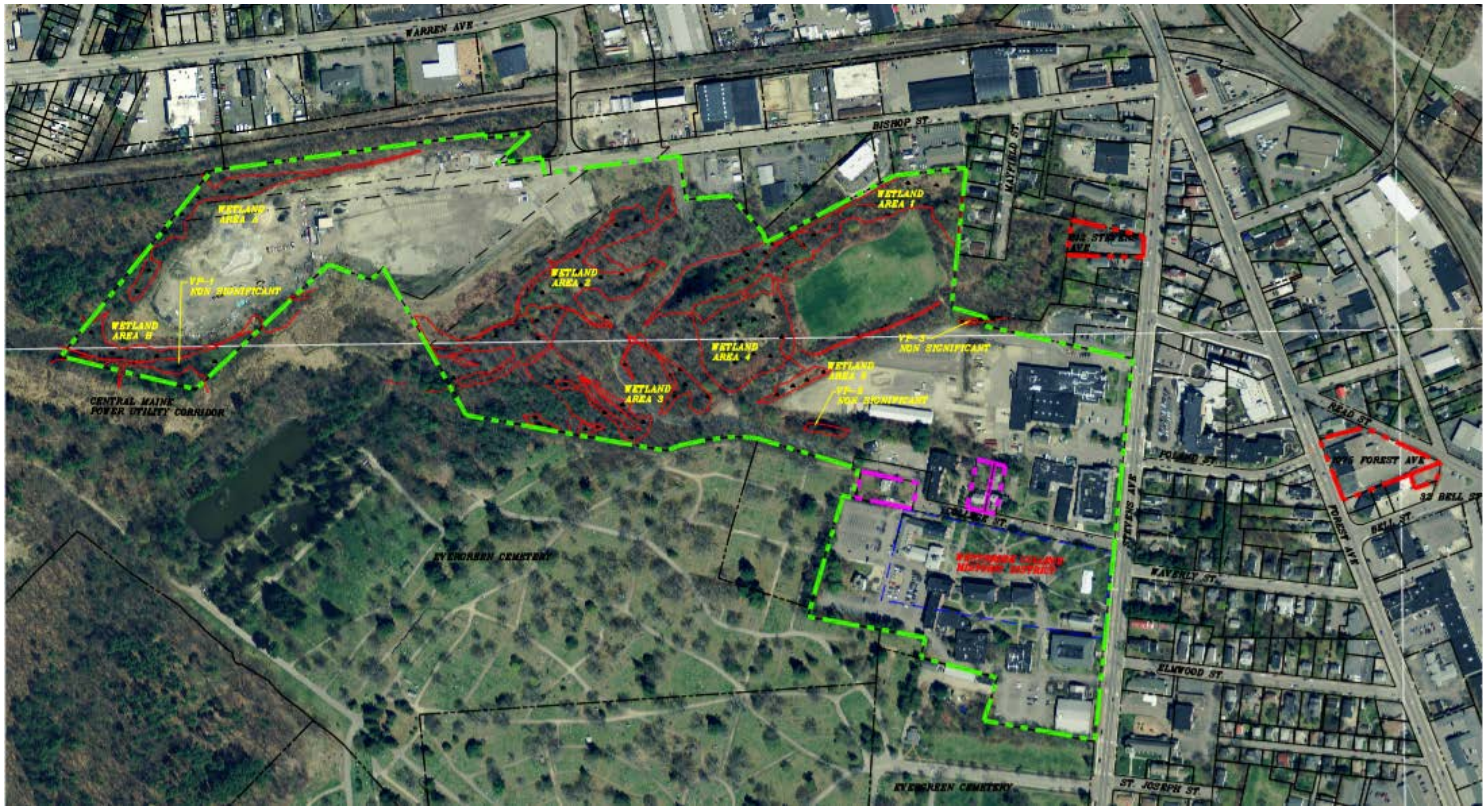


Figure 4.4 – Drawing NR-1: Natural Resources Plan

Potential cumulative impacts on historic, natural resources and open spaces will be minimized through careful planning of the location of planned future development, and by working closely with the regulators.

As noted on the Campus Master Plan, the majority of the proposed development will be located on existing developed areas. The proposed access road from the Bishop Street parking lot to the campus will generally follow the alignment of the existing access road, thus minimizing the potential impacts to the adjacent wetlands. Initial discussions with the Maine Department of Environmental Protection (DEP) indicate that a Natural Resources Protection Act (NRPA) permit may be necessary for the road improvements, and UNE will seek to minimize wetland impacts in that process. Aside from these road improvements, it is unlikely that additional wetland impacts and associated NRPA permitting will be required for the development outlined in the master plan.

Stormwater Management

Stormwater runoff from the majority of the developed main campus core is tributary to on-site infiltration systems, with a portion also tributary to the enclosed storm drain system in Stevens Avenue. Continuing with UNE's current practice, it is anticipated that stormwater runoff within

that watershed will likely be reduced as a result of the development through the use of additional infiltration systems.

The northwesterly portion of the campus is located in the Capisic Brook Watershed, which is listed as an urban impaired stream by DEP. See Drawing NR-1. The majority of the proposed development is located within this watershed. However, because the majority of the proposed development is located on existing developed areas, it is not expected that the potential Campus Master Plan development will significantly impact the peak rates of stormwater runoff from the campus. State stormwater runoff quantity and quality standards are more stringent for projects located within the watershed of an urban impaired stream. All development within the watershed will be required to meet the city's and state's stormwater management requirements relative to stormwater quantity and quality. UNE has successfully demonstrated its ability to design, permit, construct and operate these types of facilities, in environmentally sensitive areas and anticipates continuance of this success. The specific measures utilized to meet the regulatory requirements relative to stormwater runoff will be determined during the site plan review process for the specific projects being brought forward at that time. Currentl available Best Management Practices (BMP) will be utilized to fulfill local and state regulatory requirements related to stormwater runoff. Detailed design will be provided at the site plan review stage for each project. Specific measures cannot be identified until site plans are developed. Items in the BMP tool box include revegetation of currently impervious and devegetated areas, infiltration of stormwater where soil conditions permit, green roofs, and underdrained soil filters. UNE will attempt to manage the stormwater on site, whenever feasible, as opposed to introducing it into the city's enclosed stormwater system.

UNE has generally met, or in most cases exceeded the applicable stormwater runoff standards in place at the time of construction for every project that has been developed on the campus, and will endeavor to continue that record.

Infrastructure

Sanitary Sewer Flows

The UNE main campus sanitary waste flows are tributary to a combined sewer system in College Street and Stevens Avenue. UNE is in compliance with the City of Portland's Fats, Oils and Grease Program and actively maintains these systems to insure they are operated effectively. UNE actively manages its water consumption and utilizes only low flow fixtures as its standard. All water cooled systems on campus have been removed from operation. All X-ray equipment is digital, thus no chemical development processes are utilized on campus.

Fiscal year 2020 water/sewer usage on the Portland campus was 6244 ccf. Assuming similar usage, the potential estimated added water/sewer usage for the entire potential development would be 3921 ccf/yr. UNE is unaware of capacity issues in the existing system, and anticipates use of the city combined sewers for sanitary flows associated with the projects proposed. UNE understands that the site plan review process for individual projects may include measures that minimize the impact to the combined sewer system from new sanitary sewer flows. UNE will

request a capacity to serve letter from Portland Water District, for new projects during each site plan review process.

Water

Sufficient water supply is available through a 12" main in Stevens Avenue and a 12" main which runs through the Bishop Street property. An analysis for building A1, a 4 story priority 1 building, indicates that no improvements to the existing system are required to serve the building. Similarly, Portland Water District has indicated that no system improvements will be necessary to serve S6, the priority 1 Campus Services building at Bishop Street. The remaining priority 1 projects involve renovations to existing buildings and will not result in the need for upgraded water service. Each of the remaining projects included in the Building Blocks program are long term and these will be evaluated on a case-by-case basis under the site plan review process.

Natural Gas

Natural gas service exists in both Stevens Avenue and Bishop Street. An evaluation by Unitil has indicated that adequate capacity exists in the existing system to provide service to the proposed near-term projects. A new 4" natural gas service will be installed to provide service to F1 and S6 at Bishop Street. A new 4" service will be installed to provide natural gas service to A1 and H1. The remaining priority 1 projects involve renovations to existing buildings and will not result in the need for upgraded water service. Each of the remaining projects included in the Building Blocks program are long term and these will be evaluated on a case-by-case basis under the site plan review process.

Energy Conservation

UNE has been closely monitoring its Greenhouse Gas (GHG) generation and energy consumption for decades. The University's Carbon Monitoring Task Force has been charged with "making recommendations on energy demand, procurement, production, renewable technology implementation, emissions reductions and conservation". The Carbon Monitoring Task Force is comprised of a Provost Office representative, VP of University Operations, Director of Facilities Management, Director of University Budgeting, Director of Environmental Health and Safety, Director for Campus Planning, Environmental Studies Department faculty member, Environmental Council member, and a student government representative, with group facilitation by the Assistant Director of Sustainability. This cross section of the University is well situated to advise in regards to all aspects of the University's operations.

UNE became a signatory to the Carbon Commitment in 2008. This voluntary commitment is one of the Presidents' Climate Leadership commitments, managed by Second Nature and aimed at higher education to reduce and eventually eliminate greenhouse gas emissions from their operations and induced activities. As part of this commitment, UNE created its Climate Action Plan in 2010.

The UNE Climate Action Plan has set an aggressive carbon neutral goal of 2040, and has updated the Climate Action Plan in 2017. The 2017 CAP update includes goal reductions and activities to help us achieve these goals, including energy efficiency projects, renewable energy projects, building standards development, waste reduction strategies, alternative transportation initiatives, sustainability criteria integration into contracts, offset purchases, community-based marketing strategies aimed at individual sustainable behavior adoption, and integration of climate change and sustainability education across the curriculum.

UNE's Sustainability Office has been conducting GHG emissions inventories since 2008. Inventories are broken down into operational boundaries to include: scope 1 – on-site combustion, scope 2 – purchased electricity, and scope 3 – indirect emissions from travel and waste. Organizational boundaries include both Biddeford and Portland Campuses.

The University's Energy Subcommittee regularly reviews operational efficiencies and monitors energy consumption internally through its direct digital controls and utility statements. Fiscal year 2020 usage for the Portland Campus was as follows: 4,630,955 kWh of electricity, 1,730 gallons of #2 heating oil, 3,911 gallons of propane, and 278,847 CCF of natural gas burned in our central steam plant and natural gas condensing boilers throughout campus.

If the university realizes the full potential development identified in the Campus Master Plan, the potential future usages would be as follows: 5,250,000 kWh of electricity and 288,000 CCF of natural gas burned in our central steam plant and natural gas condensing boilers throughout campus, assuming similar operational conditions. However, with the University's commitment to carbon neutrality, the actual consumption should be significantly less than these projections. UNE is unaware of capacity issues in these existing distribution systems, and anticipates use of these system to supply the future development. UNE will request a capacity to serve letters from CMP and Unitol, for new projects during each site plan review process.

Green Building Design

UNE's Climate Action Plan has identified a strategy around developing a set of building standards to include energy efficiency and sustainable building materials. Over the past decade our building practices overall have become more focused on these criteria. The Sustainability Office and Campus Planning collaborate on elements of building projects to ensure increasing attention to sustainability attributes in building and renovation projects.

UNE has established design standards for new construction. All UNE facilities are designed with the goal of meeting the US Green Building Council's Leadership in Energy and Environmental Design, LEED, Silver Certification level. The process of LEED certification is time consuming and costly, so UNE has set the LEED Silver Certification level as a standard, but does not continue to seek certification. Additionally, the University will work with Efficiency Maine to maximize the energy efficiency in new construction projects, and has successfully been awarded several rebates. For example, during the design of the Oral Health Center, the University successfully partnered with Efficiency Maine to obtain a rebate based on the Core Performance Guidelines, which allowed UNE to maximize its energy efficiency.

The University’s College of Pharmacy building earned LEED Silver certification in 2010. While it is a science and research building with high energy demands, the building earned energy efficiency points for its innovative chilled beam HVAC system among other sustainability features. It was the first building in the state known to use this technology.

The Energy Subcommittee also oversees the University’s Green Revolving Fund, which was established to fund energy conservation projects. The Green Revolving Fund is funded through philanthropy and capturing incentives, rebates, and operational savings from the conservation projects. The efforts of the GRF are maximized with the application for Efficiency Maine rebate funding.

While UNE has establish the goal of being carbon neutral, progress is difficult to gauge as the campus has grown in both facilities and population. Although consumption has increased, MTCDE/sf has been decreasing year over year, illustrating that our policies are working towards carbon neutrality.

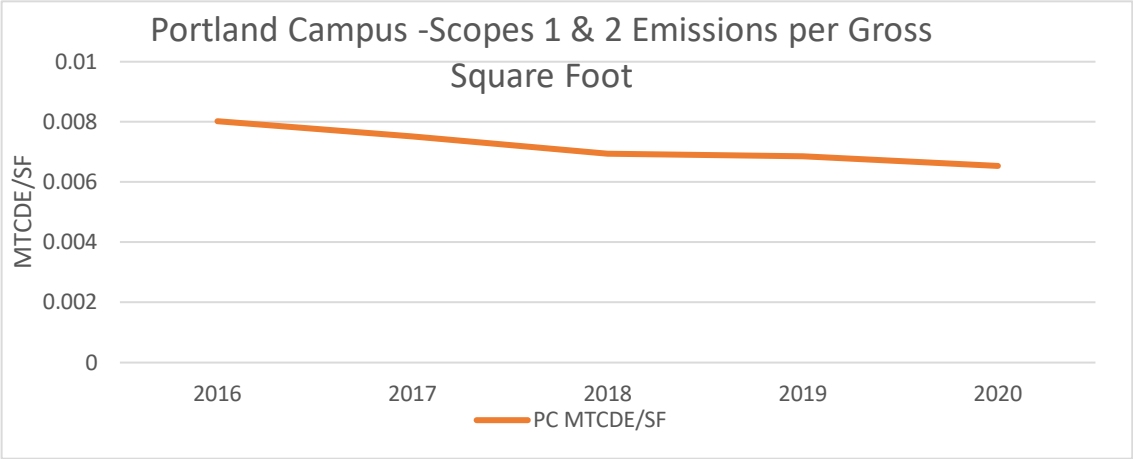


Figure 4.5 - MTCDE/SF

Operational Sustainability

- **Transportation** – UNE offers transportation alternatives designed to preserve the green spaces on our campuses and to practice one of the University's core values: stewardship of our environment.
 - o **Public Transit** – UNE faculty, staff, and students can ride Greater Portland Metro for FREE with their UNE identification cards. Through recent collaborative agreements with South Portland buses and Biddeford, Saco, Old Orchard Beach Transit (BSOOB Transit), the UNE community can take advantage of regional bus connections with use of their ID cards. Facilitating seamless and free transfers between transit systems is aimed at encouraging the use of public transit and minimizing single-occupancy vehicle use.
 - o **Electric Vehicle Charging Stations** – UNE provides FREE electric vehicle charging that is accessible to faculty, professional staff and students. Electric vehicle owners register for the program with the Sustainability Office, which provides them access to the contact information of the other UNE members in the program, allowing them to coordinate charging time so that charging capacity is maximized. While charging is FREE, drivers will still need the required parking permits.
 - o **Bicycles** – UNE's Portland Campus is located in a very bike-able community. We encourage the use of bicycles by providing ample bike racks throughout the campus and the use of showers in our Finley Community Center.
 - o **Carpool** – *GO MAINE Commuter Connections* is an online rideshare resource sponsored by the Maine Turnpike Authority and Maine Department of Transportation. These organizations have created a UNE-specific landing page for our faculty, professional staff, and students. The Sustainability Office provides a tip sheet to make registration and ride-matching easy. UNE participates annually in the Way2GoMaine worksite competition as a means to promote carpooling and alternative transportation modes. UNE offers preferential parking spaces for carpoolers.
- **Waste** – Waste minimization, reuse, and recycling reduce overall GHG emissions by decreasing the amount of energy that must be used in the production and transportation of goods and disposal of waste. Appropriate disposal of all forms of waste are a priority of the Sustainability and Environmental Health and Safety Departments at UNE.
 - o **Annual Waste Audit** – UNE partners with its contracted waste hauler to conduct annual waste audits of all municipal solid waste (MSW) dumpsters and single-sort recycling containers on campus. The waste audit spans three weeks in October, is weight-based, and is reported through the annual GHG emissions inventory on a fiscal year basis. For the fiscal year 2020, the Portland Campus of UNE disposed of an estimated 74 tons of MSW, and an additional estimated 17 tons of mixed single-sort recycling and cardboard were separated for recycling. If the university realizes the full potential development

identified in the Campus Master Plan, the potential future increases are estimated at 19 tons of MSW and 4.5 tons of mixed single-sort recycling and cardboard to be recycled.

- o **Recycling** – UNE encourages students, faculty, and staff to engage in recycling throughout campus operations. Single-sort recycling stations are available in all academic and business buildings and include a three-bin, color coded system: blue for returnable bottles and cans, green for single-sort recycling, and gray for trash. The green, single-sort recycling bins allow for the co-mingling of paper, plastics labeled #1-7, metal, and glass. Returnable bottles and cans are separated from the single-sort stream for the purpose of supporting the recycling program, as the funds collected help to purchase bins, labels, signs, and educational materials aimed at waste minimization.

Additionally campus recycling includes batteries, fluorescent light bulbs, computers and electronics through the universal waste program. Books and journals are either recycled through the single-sort program, or donated to Better World Books for literacy programs. Waste cooking oil is collected by Maine Standard BioFuels and incorporated into their BioHeat product. Ink and toner cartridges are recycled through our office supply contractor. Facilities staff recycle motor oil, scrap metal, tires, pallets and captured refrigerants as well. Unneeded, lightly used furniture is offered to other non-profits or municipalities.

- o **Composting** – Food waste from our dining facility (pre-and post-consumer) on the Portland Campus is collected by Garbage to Garden and brought to Benson Farm in Gorham for composting. In fiscal year 2020 over 7,000 gallons of food waste was composted from the Portland Campus alone. The Green Office certification program also encourages individual offices to participate in the program, and the Communications Department, Library, and College of Graduate and Professional Studies have collection locations for food waste in their kitchenette areas that are routinely collected by office staff and consolidated with the dining service waste.
- o **Hazardous Waste** – The University of New England's Portland campus is registered as a Small Quantity Generator (SQG) as defined by Chapter 851 of DEP's hazardous waste regulations. The Portland campus has SQG status because it generates less than 220 lbs. of hazardous waste a month and generates less than 1 pound of acute hazardous waste per month and does not accumulate more than 1 pound of acute hazardous waste at any one time. Most of our hazardous waste is generated gradually in research and academic laboratories in small amounts each time. With no increase in research or wet science laboratories planned, the University does not anticipate any significant increase in the generation of hazardous waste. Additionally, the future relocation of the Maine Army National Guard Vehicle Maintenance Facility, will reduce the presence of hazardous materials stored on campus.

All hazardous waste is labeled, stored, shipped and managed in accordance with regulations set forth in the DEP hazardous waste regulations, Chapters 850-852, 857,858. Lab managers are responsible for managing hazardous waste at the point of

generation while the school's Environmental Health & Safety Department (EH&S) oversees the program from generation, storage, transportation and ultimate disposal. All paperwork associated with transportation and disposal, including manifests and land disposal restriction forms, is maintained by EH&S.

UNE's EH&S conducts regular lab inspections to ensure that hazardous waste is accumulated in compliance with DEP regulations. EH&S also authors and routinely updates policies and procedures for Hazardous Waste Management, Communication, and Training. These policies and procedures are detailed in the Environmental Health and Safety Manual, Hazardous Waste Management Plan, UNE Exposure Control Plan for blood-borne pathogens, UNE Chemical Hygiene Plan, Spill Prevention Control and Countermeasures Plan.

EH&S is also responsible for maintaining our Hazardous Waste Contingency Plan and implementing it in the event of a hazardous waste spill. The plan lists the names of personnel and details their roles and responsibilities during an emergency and also lists outside state and local agencies and private vendors that may be contacted during an emergency.

UNE uses a web-based Chemical Management Inventory system with Vertere software. All chemicals are added to the software so we have an accurate, up-to-date list of what chemicals are on each campus, where they are located, who ordered them, and the quantity of each that is stored. Once they are added to the system, a unique bar code is created for each container and then affixed to the container for tracking purposes. This helps reduce duplicate orders and storage of unnecessary chemicals.

Oversight and management of the radiation safety program is the responsibility of the Radiation Safety Officer. The Radiation Safety section of UNE's Environmental Health and Safety Manual describes the management of ionizing radiation and establishes procedures related to control and safe use of radioactive materials and facilitates compliance with the University's radioactive material license and applicable state and federal regulations.

- o **Biomedical Waste** - UNE's Portland campus is registered with DEP as a large quantity biomedical waste generator (generates 50 lbs. or more of biomedical waste per month). All biomedical waste is generated, managed and disposed of in accordance of the regulations set forth by the DEP in Chapter 900, the Biomedical Waste Management Rules. Laboratory managers are responsible for the generation and packaging of biomedical waste while EH&S oversees the program from generation, storage, transportation and ultimate disposal. EH&S maintains all paperwork associated with the transportation and disposal of biomedical waste.

Two types of biomedical waste are generated at UNE. The first, generated from academic and research labs, consists mostly of solid cultures of media, disposable culture containers, and sharps. The second type, generated by medical services, consists of blood-soaked material, PPE, and other potentially infectious material. The

potential future projects identified in the Campus aster Plan should have a negligible impact on the biomedical waste generated on campus.

UNE has developed a biomedical waste management plan for the campus. The plan includes a description of the biomedical waste generated, packaging and handling procedures, training requirements, spill containment and clean up procedures, and contact information for persons responsible for biomedical waste management at the school.

- **Sustainable Landscaping** - There are two gardens on the Portland Campus of sustainable significance. The Medicinal Herbal Garden is located outside the College of Pharmacy and is a demonstration of the types of medicinal herbs used in phytotherapy. The Community Garden is managed by volunteer faculty and staff and produces vegetables for personal consumption and donation to local charities.
- **Noise Generation** – As an educational institution, UNE’s Portland campus generates noise at low levels that are consistent with the neighborhood, are within current zoning district limits and City of Portland Noise Code. Proposed future growth of facilities and programs should not substantially increase levels of noise generation. The design of future development and buildings will follow these current requirements. The only exception to this will be noise generated during construction, which is addressed in Chapter 6, Neighborhood Engagement.

DESIGN

Development Design Impact Considerations

The potential campus development at the University of New England's (UNE) draws its inspiration from its site, history, programmatic needs and most importantly the desire to create a sense of place. Within this framework, UNE aims to preserve the historic character of the existing campus yet provide the opportunity for new identities to develop that represent the modern delivery of healthcare and the future of UNE. The development at UNE will be planned to complement and enhance the community. Emphasis has and will continue to be placed on building siting and the use of buffers to minimize the potential impact to abutters. The majority of the potential development is planned to be internal to the campus, constructed on already developed areas and will have limited visual impact from public ways. This will also limit any issues related to shading or wind, and will allow for more compatible transitions to the neighboring properties. Existing buffers will be maintained, as much as possible, to keep the visual of the campus, from the public ways, in a similar fashion as it is today.

Neighborhood Integration Design Standards

These design standards shall foster the development of a visually and architecturally integrated campus that is safe, environmentally sensitive, and that minimizes the adverse impact of the campus on neighboring residential areas. The standards shall establish an integrated design theme for campus buildings that is harmonious with existing buildings while promoting a high level of design for new buildings. The standards shall address the scale and massing of buildings, appropriate materials and colors, rooflines, locations of building entrances, building linkages, architectural detailing, adjacent open spaces, campus circulation and similar features to create a visually attractive campus while minimizing impacts on surrounding residential communities.

A Sustainable and Resilient Campus

Universities are vital partners within the communities they serve. Due to this relationship, design modifications will further improve UNE's status as a resilient campus that provides a responsive exterior environment. Buildings will be situated and oriented to take advantage of natural light, air and views, coupled with the use of highly efficient building envelopes and mechanical systems. These drivers will reduce the energy necessary to operate the buildings, further increasing resilience in the face of unanticipated events.

Determining Maximum Heights: Overview of Methodology

UNE has used a multi-part methodology to determine the appropriate height profile for potential future development within the IOZ boundary:

1. **Project Definition.** - The *Building Blocks Plan (Figure 2.2)*, located in Chapter Two, has estimated heights for short-term and long-term projects, that reflect UNE's campus modernization needs. These approximate heights, which are expected to be refined through detailed design, were taken as a starting point to determine maximum heights for the proposed building sites.
2. **Design Analysis** - Height zones that are not identified for specific projects were determined using context-sensitive best practices, similar to those used to develop height zones for UNE's Biddeford campus. This included enabling larger and taller buildings within the campus core while providing height transitions, or expanded setbacks, to better align with the scale of residential and historic neighborhoods along campus edges (see "Transition Zones").

The resulting future height profiles are the basis of the maximum heights requested in the Regulatory Framework.

Transition Zones

UNE has identified "transition zones" along the edges of the IOZ boundary that abut public streets and residential zones where the height of new development can step down to better integrate with the character of local residential streets and neighborhoods.

Transition zones are designed to create a consistent scale of development on either side of a given public street or external property line. To achieve this goal, the transition zones dictate a height limit matching the maximum height allowed by the zone across the public street or external property line. The specific depth of the transition zone where the height limit applies along public ways is typically determined by using the "transitional height plane" test whereby a 45° angle line is extended inward from the maximum height line. This test ensures that taller structures on the inner side of the parcel do not negatively impact views from the public street whose character is being preserved.

UNE has used this widely accepted practice to identify and set a 50-ft depth to transition zones as part of the proposed Regulatory Framework.

Architectural Design Guidelines

Introduction

An educational institution's quality is often reflected in its buildings and campuses. To enrich and to provide architectural continuity to the University of New England's campus in Portland, the following Architectural Design Guidelines have been established. These guidelines will preserve and enhance the image of the University's quality, beauty, durability and history.

The University of New England has developed a Master Plan and guidelines to enhance its campuses and help it fulfill its greatest potential. The Master Plan generally locates potential future building sites within similar use groupings, allows for a fairly dense development of the campus while creating/reinforcing outdoor spaces, and creates functional linkages with surrounding facilities. The Architectural Design Guidelines are to be used in conjunction with the master plan to give consistency with the Portland campus in order to enable one to identify the campus buildings at a glance while still allowing for individual design. The Master Plan and the Architectural Design Guidelines incorporate several concepts to give the University a visual identity through building location, mass and consistent use of materials.

The first important step is to hire a qualified architectural and engineering team that is able to deliver a structure within the budget, meet the desirable parameters identified during programming and adhere to the University's established Architectural Design Guidelines. In order to facilitate these requirements, it is important that the design team be familiar with the campus on which they are working. The design team will need to preserve and enhance the architectural concepts, which serve as the basis for design while meeting the goals of University's Master Plan.

These guidelines are intended to assist future development in the IOZ to meet the goals and vision for the UNE campus and create context-sensitive buildings.

General Guidelines

UNE will follow these general guidelines for building design within the IOZ boundary:

Historic Preservation and Impact on Future Designs

UNE's Portland campus includes one of the eleven locally-designated historic districts in the City of Portland that is known as the Westbrook College Historic District. UNE has successfully designed, permitted and renovated several historical facilities on the Portland Campus. To date, Goddard Hall, Hersey Hall and Alumni Hall have been rejuvenated through full historical renovations permitted through the Historic Preservation Board. The exterior of these facilities have been maintained and or restored to their original grandeur and color. All work done to Ludcke Hall, Proctor Hall and the Abplanalp Library has been done with an effort to preserve the historical nature of these facilities and has also been permitted through the Historic Preservation Board. An

example of this would be UNE's renovation of Alumni Hall, which was recognized as an outstanding example of historic preservation by Maine Preservation, with its 2016 Honor Award.

The historic nature of the buildings located within the Westbrook College Historic District has provided guidance on the design characteristics of recently completed buildings such as the College of Pharmacy and College of Dental Medicine buildings located directly on Stevens Avenue. The use of matching College Blend brick and mortar, sizing of windows and doors, building corner and roof edge details on the facades along with the scale of these newer buildings match those within the historic district to compliment and not take away from the viewshed from Stevens Avenue. The University will continue to utilize all of these predominant characteristics of its historic district and the buildings within it to guide its designs for future development and buildings. The recent construction of both the College of Dental Medicine and the College of Pharmacy buildings reflect this commitment.



Figure 4.1 – Alumni Hall, Circa 1834



Figure 4.2 – Alumni Hall, Circa 1930 - 2015



Figure 4.3 - Alumni Hall, 2016 - Present

Universal Design

All new buildings and major renovations will be designed to be in accordance with the American with Disabilities Act. The University is committed to making its spaces accessible to the public, by employing Universal Design. Universal Design is the design and composition of an environment so that it can be accessed, understood and utilized to the greatest extent possible by all people regardless of their age, size, ability or disability.

Quality of Material

The American Society for Testing and Materials (ASTM) is recognized as the industry standard for establishing the performance requirements for various building materials. It is recognized that adherence to ASTM standards for design criteria, material performance and construction made available through the various building trade guidelines, will do much to control quality levels while eliminating untested / unproven materials, products and systems from consideration on future projects. Construction material testing will be utilized to confirm the quality of materials utilized in the construction of these UNE projects.

Healthy Building Design

The University will consider WELL Building design and U.S. Green Building Council, USGBC, design features in its projects. Considerations on eliminating or limiting regulated building products will be given. No asbestos containing materials, lead, PCB's or mercury will be allowed in construction. UNE will strive to eliminate release of volatile organic compounds to the extent practicable. During construction, dust control measures will be implemented, including the utilization of HEPA filtration and covering of ducts to limit contamination, towards maintaining the health of the construction workers and future occupants.

Energy Efficiency

The focus on energy-efficient design will continue to influence the delivery of new and renovated buildings well into the next century. The University has adopted the Maine Energy Code. Whenever economically feasible, new and renovated buildings will be designed with approaches targeting energy conservation and energy efficiency. The baseline UNE utilizes is the USGBC LEED Silver rating for energy efficiencies and sustainability. UNE is a signatory of the Carbon Commitment, and is striving for carbon neutrality.

Life Cycle Costs

Life Cycle Costing (LCC) is a process used to select the most appropriate and durable material based upon the owner's ability to initially purchase it, evaluate the materials' longevity, and its expected maintenance costs. LCC systems principally address mechanical, electrical and plumbing. Analysis of architectural, civil and structural materials is more of a "judgment" call based upon past performance, life, history and/or environmental factors that change from location to location. The University's life cycle expectations are based on a 40-year building.

Scale and Proportion

The concept of scale and proportion is composed of many separate elements, most notably the personal scale, pedestrian orientation of circulation and frequent placement of open spaces and

places to congregate on campus. The perceived proportion of both individual and collective buildings needs to be well balanced, with deliberate designer efforts to avoid architectural competition between neighboring exterior elevations. The Architectural Design Guidelines offer some well-known aids to create and reinforce the concept of human scale on any new building or addition.

Graphics and Signage

The University employs a comprehensive and consistent interior/exterior signage system on campus. All signs comply with ADA Guidelines.

Safety Standards

The safety standards identified in the Architectural Design Guidelines reflect the most recent safety guidelines established for materials and building systems. They also recognize and reference the importance of adhering to building code requirements in the design and construction of campus facilities.

Building Siting and Linkages

The Master Plan identifies potential building sites and maintained open areas. The design team should follow Architectural Design Guidelines to reinforce the University's Master Plan while creating a cohesive campus. Access for emergency and maintenance vehicles, ADA issues, the relationship of new facilities with respect to adjacent facilities and the surrounding natural environment must all be considered and maintained by the individual design teams.

Building sites should carefully maintain the concept of the Master Plan and work to maintain a relationship to existing buildings, as well as, creating systems of pedestrian pathways, which are a part of the University.

Temporary Buildings

Temporary buildings are defined as structures that provide program support space in anticipation of the construction of new buildings. Temporary structures should be sited so as to minimize their view from public streets, to the extent reasonably practical.

Lightning Protection

A UL Master Label lightning protection system will be installed when practical or whenever economically feasible.

ARCHITECTURAL DESIGN GUIDELINES

The Architectural Design Guidelines (ADG) were developed to address the following requirements and needs of the University of New England. These guidelines are intended to provide general guidance and direction and are not intended to supersede any local, state, or federal codes. It is the architect's responsibility to comply with all applicable codes.

1. Building Siting:

The first consideration in building design is the building siting including locations for entrances. While each building will have a primary entrance(s), all entrances should consider connections with neighboring buildings, the orientation to views and protection from inclement weather. The University requires coordination with its Campus Master Plan for new building sites.

- **Building Linkages:** New structures should respond to connections to existing buildings and to existing circulation paths. Ideally, buildings serving the needs of similar departments or colleges should be located in close proximity to one another with paths linking them to reinforce the concept of the pedestrian campus.
- **Enhance Pedestrian Activity Areas:** Main entrances of new buildings should be oriented toward pedestrian-oriented activity areas including parking areas to facilitate safe and barrier free access.
- **Outdoor spaces:** Buildings should reinforce and embrace existing and newly created exterior space.
- **Respect Pedestrian Circulation Routes:** New buildings should be sited to provide convenient connections for pedestrians. As much as possible, buildings should not be located in such a way as to block pedestrian corridors or compromise the ability to provide safe pedestrian corridors.
- **Orient Buildings to Take Advantage of Views:** Ideally, buildings should be sited to take advantage of views, and natural lighting.
- **Consider Placement of Parking.** Parking areas should not detract from the overall visual quality of the campus. As much as possible, parking areas should be sited to help diminish their visual impact from a public way.
- **Utility Lines, Connections and Ancillary Equipment:** Utility connections, including electric and tele-communications, should be located underground. Ideally, the location of transformers or meters should not be placed on exterior power poles or hung on the outside of a new building located in highly visible locations. Preferably, transformers, pump stations and other utility structures should be placed at grade and screened from view.

- **Location of Utilities:** The University requires a site analysis for new building sites that includes the availability and proximity of utilities. Potential structure locations may not be feasible due to their distance from existing utilities.
- **Service and Material Storage Areas:** Ideally, service and material storage areas should be located at the side or rear of buildings in order to be screened from public view. Consideration for the movement of traffic, access to drives and parking areas should be evaluated.
- **Loading Docks:** Loading docks, where required, should, if practical, be located to minimize their visual impact, or appropriately screened.
- **Existing Trees:** Existing trees and existing tree canopy that have either historical or sentimental importance to the campus should be respected whenever possible.
- **Topography:** The site selection requires the designer to evaluate the local topography of a site including the presence of ledge. In some cases, it will not be feasible to build on existing topography, while other locations may be suited for taking advantage of topography to enhance the building and allow two different levels of entrance.
- **Soils and Wetland Constraints:** Soil and Wetland conditions need to be assessed for every building site in order to comply with State and Local regulations.
- **Site Features:** There are many existing natural and manmade site features including existing open space that should be retained or reinforced by new structures, if possible, without comprising functional sites that are essential to programs.
- **Snow Removal Areas:** Care needs to be taken with the design to allow for easy snow removal and adequate space must be provided for the containment of excess snow.

2. **Materials:**

The materials standards are created to help designers choose acceptable materials for any new or renovated building as they relate to adjacent buildings. In its assessment of any materials the design team will consider the durability, maintainability, and compatibility to the adjacent structures.

- **Color and Texture:** A material's color and texture can affect a person's perception of a building or of a working environment. Care should be used when selecting finishes to aid in the person's interaction with the space. Colors should also be used to denote similar uses and emphasize entries and special features.
- **Detailing:** All new or renovated building exteriors should relate to neighboring buildings in the level of detailing while considering current materials and technologies. Detailing may include brick pilasters, high water lines, dentils, and window trim. The following decorative elements may be incorporated where appropriate: brickwork patterning, coursing, window opening and entry rhythms, as well as medallions and reliefs.

- **Durability:** Materials exposed to weather, harsh cleaning, and physical abuse must be given special consideration and need to be detailed carefully. The design team should review the potential for fading or bleaching by UV exposure and salt air, resistance to acid rain, runoff from staining or corrosive materials, contraction/expansion, as well as vehicular, and pedestrian traffic.
- **Maintenance and Cleaning:** Consideration should be given where possible to the maintenance and cleaning of materials and fixtures incorporated in a design. For example, wall hung toilets and minimal horizontal surfaces make cleaning more efficient for janitorial staff.
- **Materials should remain honest.** There are many imitations of various materials. The substitution of materials must be disclosed and supported by a cost benefit analysis showing the rationale for a diminution of quality and substance.
- **Energy Efficiency:** Lighter, more reflective materials can reduce the heat load of the building. Additionally, lighter colored materials can be used in association with light shelves to bring indirect day lighting into the interior of the building, thereby reducing lighting loads.
- **Lights:** New or renovated buildings should have adequate exterior lighting to insure that entrances and surrounding areas are safe. See campus lighting standards.
- **Standardized interior materials:** Standardize interior materials with those that are currently used throughout the campus.

3. Massing:

While each building has its own functional program demands, it must also be sensitive to its neighboring context. Massing, fenestration and entries should be used to create interest and shall be sympathetic to adjoining structures. Building mass should be articulated both horizontally and vertically as much as possible. Fenestration and detailing should emphasize human scale and help to define the use and levels of the building.

- **Massing:** Building mass should have a 'base', 'building' and 'top'. The scale of materials usually diminishes as it is used at each of these points. Changes in material, coursing and fenestration help to define various levels of buildings. Cornices, roof forms, parapets, gables and crenellation add interest to building tops by drawing the eye upward.
- **Proportion:** New projects, in context with existing buildings, should strive to improve the relationship of fenestration, facades, coursing lines and materials. Buildings and other exterior elements should be scaled and proportioned to human dimension to help to impart a sense of comfort and well-being.
- **Height:** Where heights are much different than the context, care should be taken to match important horizontal building elements as bases, fenestration, cornices and parapet lines. Any future buildings should also take into consideration the scale of adjacent buildings.

- **Roofs:** Unless justified by a cost analysis, roofs should be sheathed with forty-year asphalt shingles, EPDM, slate or approved metal roofing.
- **Spaces Characteristics:** The relationships and the character of spaces should begin from the exterior and move to the interior with similar spaces flowing into each other. The exterior of a building should allude to interior spaces by reinforcing building functions on the facades. Most inhabited spaces should have natural light. Windows are preferred but in some cases, skylights can be substituted. As much as possible, formal and public spaces should have windows that look out on the nicer local features and not at the back of other buildings or parking lots. There should be a hierarchy of spaces that should begin at the entrance and flow down hallways to any space. Formal and informal meeting spaces should be sited in quiet contemplative locations.
- **Mechanical equipment:** As much as practical or economically feasible, equipment on roofs should be hidden from view from the ground by centering on the roof or hidden by canted parapets or screening as appropriate.
- **Facade Treatment:** Due to the very public nature of most campus buildings, it is important to give the same quality of design effort to all of a project's facades and to embrace existing building features and historical significance. There should not be a 'rear' elevation per se. New projects should also endeavor to invite the public into the University at all major entrances of the building through design elements.
- **Lighting:** All new exterior lighting will be selected to provide lighting levels that meet the safety criteria of the Illuminating Engineers Society of North America, IESNA. Consideration will be given to limit light trespass and glare to the extent possible.
- **Public Safety:** Public spaces should be designed to facilitate building evacuation and maximize accessibility by fire, police and other emergency personnel and equipment. Consideration needs to be made for emergency equipment such as emergency phones.
- **Security:** All design concepts should be directed to keeping people easily observable. To do this, any structure or feature should not limit visibility of people, parking areas and building entrances, doors and windows should look out on to paths and parking areas; pedestrian-friendly sidewalks and streets; the provision for emergency call boxes; and finally, all these spaces require adequate nighttime lighting.
- **Sight Distance:** New construction should not be located in areas that will obstruct sight distance clear zones essential for safe vehicular and pedestrian movement. Landscaping and entrance signage should be setback and kept clear of these zones especially at intersections



Figure 4.4 – Example of Building Massing for Proposed A1 Academic Building behind Existing Innovation Hall. View from Stevens Avenue



Figure 4.5 – Example of Building Siting, Materials and Massing for Proposed A1 Academic Building behind Existing Innovation Hall. View from New Proposed Green Space



Figure 4.6 – Example of Building Massing for Proposed A1 Academic Building behind Existing Innovation Hall. View from Stevens Avenue



Figure 4.7 – Example of Building Massing for Proposed A1 Academic Building behind Existing Innovation Hall. View from College Street between Alexander Hall and Residence



Figure 4.4 – Example of Building Massing for Proposed A2 Academic Building behind Abplanalp Library. View from end of College Street.

4. Sustainable Design:

Whenever possible and economically feasible, the University practices Sustainable Design by Reduce Reuse Recycle. The design team should consider: energy efficiency, the removal and replacement of trees, and the use of materials that conserve natural resources during their production and usage. The guidelines also encourage the incorporation of the building siting with respect to the orientation to the sun, wind and the coast to minimize energy use. The University, where possible, follows the criteria set forth by the United States Green Building Council (USGBC) and its LEED Program.

- Sustainable Materials: Materials should be chosen for their value in energy cost savings and renewable ability.
- Orientation: Building orientation, when it can, should be done in such a way as to make the most out of the site in order to gain solar benefits and enhance views, while also considering other issues such as building and pathway relationships etc.
- Building Envelope: A tight building envelope allows for increased energy efficiency and thereby decreases the impact on the environment.
- Proper Insulation: Maintain a standard set of R-values to prevent energy loss and meet or exceed Maine energy codes.
- Recycle Materials: Whenever possible or economically feasible, existing materials should be recycled or reused within the renovation.

5. External circulation:

Internal circulation needs to be coordinated with external access and egress points in order that main entrances to buildings relate to the campus Master Plan.

- Vehicular Circulation and Access: When possible coordinate vehicular access points to individual building sites with existing or proposed median breaks and/or curb cuts on the opposite side of the roadway. Shared access drives between adjacent sites are encouraged.
- Drop-Off Zones and Parking: Drop-off zone and parking should be located near main entrances.
- Parking: Parking areas should be arranged in a logical, efficient manner to minimize the land area dedicated to parking access.
- Curbs and Pavement: All driveways, surface parking and other vehicular use areas should be paved in asphalt concrete in conformance with the University's

Construction Standards. Care should be given in the design and layout of curbs to facilitate snow removal.

- **Dimensions and Striping:** Parking lot dimensions will meet local code.
- **Handicap Parking:** All parking lots must conform to federal handicapped accessibility requirements (ADA) Standards. Slopes in the handicap spaces should be 2% maximum in all directions. All handicap spaces must have adequate signage. Handicap spaces should be located near accessible entrances in renovated buildings and the main entrances on new structures.
- **Outdoor Spaces:** Building designs should strive to include a variety of open spaces and activities ranging from small intimate courtyards for contemplative study to open lawn areas for informal recreation and outdoor classes. Where applicable, provision should be made during the programming and conceptual design of new facilities to provide opportunities for outdoor use of open space as part of the site and for integration within the larger open space/conservation network.
- **Natural features:** A variety of natural features ranging from conservation areas, passive open space and vegetative areas should be retained as much as practicable on any future development site. Site criteria for proposed new construction should provide early assessments to minimize potential impact and unnecessary work.

6. **Buffering:**

Various methods of separation may be used to foster compatibility between differing land and building uses within the campus as well as on the perimeter to form separation from the neighbors.

- **Visual Separation:** Maintain visual separation from neighbors and roadways by means of landscaping and topography.
- **Tree Removal:** Existing trees and existing tree canopy that have either historical or sentimental importance to the campuses should be respected whenever possible. For more information about which trees need to be preserved, see facilities management. Tree removal must be disclosed as part of any site evaluation process.
- **Physical Separation:** Maintain physical separation, where possible, between non-compatible buildings or areas.
- **Screening of Service and Utility Areas and Waste Containers:** Service areas and waste container locations should be located out of public view and in an inconspicuous but accessible location.

7. Crime Prevention Through Environmental Design (CPTED):

UNE aims to create a safe environment for all in and around its campus. Our Campus Safety and Security Department monitors our campuses through in-person patrols and CCTV cameras and provides response to any situations that may arise, 24 hours a day/7 days a week.

UNE has currently incorporated some or all of the following design strategies on its Portland campus that have been demonstrated to deter criminal activity. It is the intent to continue to integrate these strategies on future developments on the campus:

- Providing a clean and aesthetically pleasing campus environment that is designed with vandal-resistant materials
- Providing clear and properly-sized signs in safe locations to ensure safe wayfinding
- Ensuring that paths from transit stops, bike storage areas, and parking areas to main pedestrian entrances are well-lit, with clear sight lines
- Designing street-level elevations and landscaping areas to minimize potential hideouts
- Call boxes with blue lights for easy identification
- Installation of CCTV to monitor remote areas
- Insure adequate lighting levels on walkways, parking lots and roadways.

UNE's Campus Safety and Security Department provides a yearly Clery Report that reports the past year's offense/crime statistics on each of its campuses. Over the past 3 years there have been no events reported related to issues stemming from CPTED deficiencies on the Portland campus. The University feels that active CPTED during the planning of projects has contributed to this.

NEIGHBORHOOD ENGAGEMENT

The University of New England makes every effort to be a respectable and understanding neighbor to all of its adjacent and local communities. An open exchange of information, ideas and ongoing dialog is important for the University and its neighbors. It is key to a successful relationship that UNE is looking to build off of in the coming years.



Figure 6.1 – UNE Community Programming Meeting

ONGOING COMMUNITY ENGAGEMENT

UNE's Portland campus is located within a diverse section of the City and in a significant way plays an integral part as a buffer between commercial and industrial businesses in the Forest Avenue, Morrill's Corner and Warren Avenue corridors and the residential neighborhoods of Deering Center, Stevens Avenue and Mayfield Street. UNE understands that its vision of growth depends on its success as a respectable member of the community and this begins with community engagement and communication. UNE values its role with both the local residential communities and the area businesses and strives to be fully supportive of the health and vitality of its neighbors.

UNE is committed to maintaining an open dialog with its neighbors, to quickly and fairly resolve disputes, and to ensure that its growth not only provides a robust, highly educated future workforce but enhances the neighborhood's unique diversity, economy and livability. To do this, UNE is committed to building and maintaining trust by clearly and consistently engaging its neighbors on both the institution's core mission and neighborhood concerns.

UNE proposes the following ongoing community engagement initiatives to ensure the surrounding neighbors are kept apprised of UNE's future development plans and to gather any feedback from the public related to projects or operations on the UNE campus.

- Develop a comprehensive Construction Management Plan utilizing the City of Portland's template to provide information on maintaining normal campus operations, providing continual public safety and minimizing impacts to areas surrounding the campus during project construction. More information on the Construction Management Plan below in this chapter.
- Provide high level monthly project updates for all current/active projects on the Campus Planning page of the University of New England's web page (www.une.edu/campus/campus-planning). This web page will be accessible to the public.
- Creation of a dedicated email address (uneprojects@une.edu) to allow neighbors to forward questions, concerns or feedback directly to UNE's Planning Department and project team members. These emails will be answered in a timely fashion by the people directly involved in the construction activities. This email will also be utilized to send out specific project updates and potential impacts to its neighbors on current projects. Email updates will be sent out to neighbors who request to be included on the updates.
- Attend regularly scheduled local community neighborhood association meetings, like the Deering Center Neighborhood Association (DCNA), to present and review future development plans and receive ideas and feedback.

UNE COMMUNITY BENEFITS

UNE is Maine's largest private university and the state's largest educator of health care professionals. In addition to its leadership in higher education, UNE is a major employer for the state and ranks in the top quartile of Maine workplaces for the size of its workforce. UNE's community impact is broad and deep in Portland, Cumberland County, Maine and the region, with particular impacts in health care services, student and faculty volunteer initiatives for the marginalized and underserved, and educational benefits for residents.

Economic Impact

The University of New England (UNE) is a large, complex and growing enterprise with far-reaching economic and fiscal impacts across the State of Maine. For the academic year 2016, the last year UNE conducted a formal analysis, its total economic impact on the State of Maine exceeded \$1 billion. UNE-generated economic activities and their indirect impacts generated sales of nearly \$470 million for businesses all across the state. These sales supported the full-time equivalent of 3,800 jobs earning total compensation of nearly \$172 million. These activities generated over \$22 million in tax and fee revenues for Maine state and local governments. In addition, and perhaps most importantly, the education and skills embodied in the new employees brought to Maine by UNE in 2016 and the graduates beginning careers in Maine in 2016 represent an investment of nearly \$500 million in Maine's human capital.

Health Care Education and Health Culture

UNE's Portland Campus is home to the College of Dental Medicine and Westbrook College of Health Professions, as well as the College of Graduate and Professional Studies and Maine Area Health Education Center. The Westbrook College of Health Professions offers degrees in Pharmacy, Physician Assistant, Nursing, Nurse Anesthesia, Social Work, Physical Therapy, Occupational Therapy, and Dental Hygiene on the Portland Campus, as well as Athletic Training, Applied Exercise Science, Nutrition, Health/Wellness/Occupational Studies, and Public Health on the Biddeford Campus. Four of UNE's health-related Research Centers of Excellence — Aging and Health, Collaborative Education, Public Health, and Digital Health, are also housed in Portland. Faculty and students embrace UNE's health culture, demonstrated by over 5,000 monthly visits to UNE's Finley Gymnasium located adjacent to Evergreen Cemetery. With the move of UNE's College of Osteopathic Medicine to the historic Portland Campus, existing benefits to Portland's residents will be strengthened and expanded.

Oral Health Clinical Services

UNE provides reduced cost oral health services to residents in two Portland Campus locations, the College of Dental Medicine Oral Health Center located at 750 Stevens Avenue and the Dental Hygiene Patient Clinic located in the Grace Coleman building. UNE's Dental Hygiene Clinic has been serving Portland and the surrounding community for 60 years, delivering high quality, low-cost oral hygiene care to local residents while also providing essential clinical experiences for over 100 UNE dental hygiene students annually. In addition to oral exams, scaling/plaque removal,

fluoride treatments, sealants, and x-rays, students and their faculty instructors also provide blood pressure screening, nutrition counseling, and athletic mouth guard fabrication. With 20 dental operatories available and hours of operation that include both daytime and evenings, the Dental Hygiene Clinic is an accessible resource that has an active patient base of 11,000, with over 5,000 Portland residents receiving care during the clinic's long history. The patient population includes MaineCare eligible patients, several hundred children, and residents from marginalized and underserved communities. In addition, the UNE Dental Hygiene Clinic offers special reduced cost weeks for veterans and children during the academic year. Dedicated, on-campus patient parking adjacent to the clinic is also available for patients.

UNE's Oral Health Center is a state-of-the-art dental education facility that serves as the clinical home for Maine's only College of Dental Medicine. The dental school enrolls 64 doctoral candidates annually, each of whom provides patient care in the Oral Health Center at the clinical level appropriate for their class year. Dental students are supervised by clinical faculty who serve as instructors and mentors in each student's development. Patients are integral to student education and enjoy a mutually beneficial and reciprocal relationship: the patient receives excellent oral health care at competitive rates in a convenient location with ample parking, and students achieve clinical skills while also fostering relationships with neighbors from the Portland community and beyond. Comprehensive services include cleanings, oral exams, fillings, root canals, crowns, extractions, dentures, bridges, and implants. In addition, an emergency walk-in clinic is available. Since 2015, the Oral Health Center has developed an impressive patient base of over 5,000 people, 1,300 of whom are Portland residents. About one in three patients are MaineCare eligible, and nearly half have no dental insurance. In addition to its lower cost fee structure, the College of Dental Medicine regularly participates in events to expand access to treatment for underserved Mainers, such as Dentists Who Care for ME and Give Kids a Smile. Patients also receive free treatment through student clinical skill examinations through the Commission on Dental Competency Assessments.

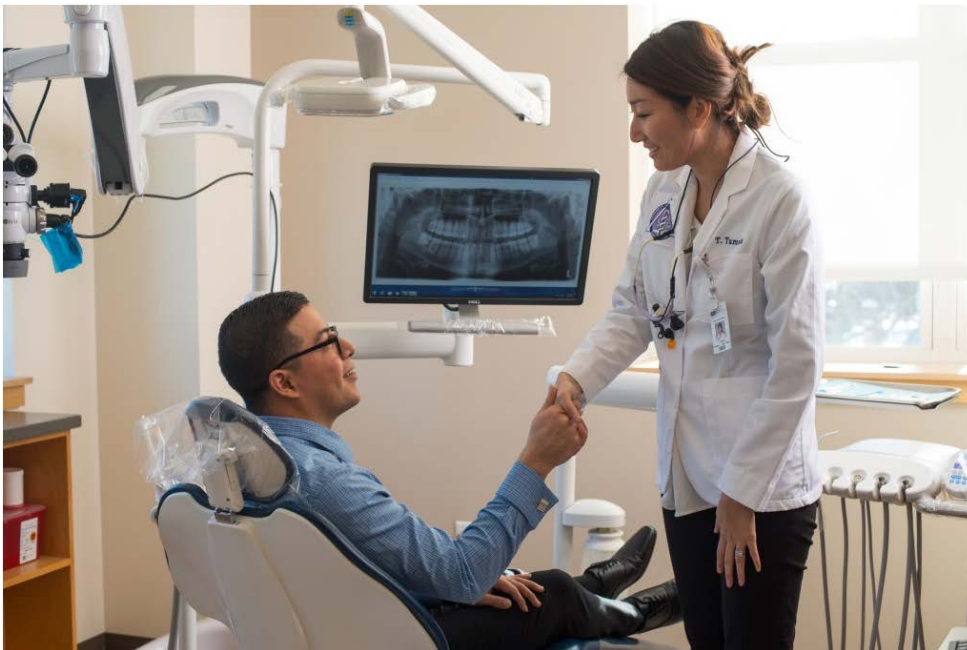


Figure 6.2 – UNE Dental Health Clinic

In addition to on-site care in their clinical environments, dental and dental hygiene students and their faculty mentors work closely with community agencies on projects to benefit marginalized community members in Portland and beyond. UNE's Dental Hygiene Program owns portable, suitcase-style equipment that has been used to provide services for children in the Portland area and surrounding communities where access to oral health care is challenged. As part of continuing outreach to the community, the College of Dental Medicine has developed strong service-driven relationships with The Root Cellar, Maine Behavioral Health, Park Danforth, the Cedars, and Preble Street Resource Center, among others. UNE's dental students also complete clinical rotations at Greater Portland Health, a Federally Qualified Health Center serving lower-income residents. Since 2017, UNE dental externs have provided care to over 1,700 Greater Portland Health patients.

Medical and Health Professions Student Clinical Rotations

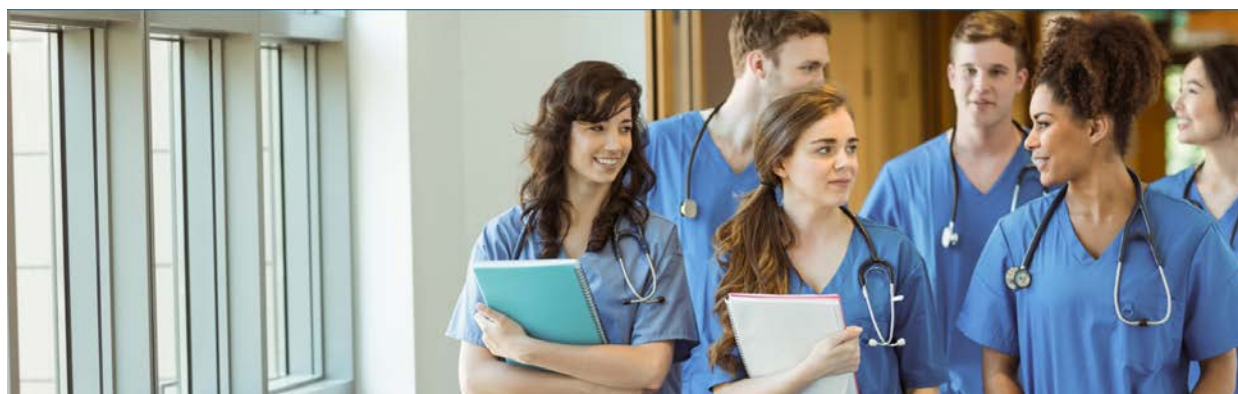


Figure 6.3 – Student Clinical Rotations

UNE educates approximately 2,500 health professions students annually, nearly all of whom advance their clinical knowledge and skills by completing student practicums with health care affiliates in Portland, across Maine, and throughout New England. UNE has well established, long term academic and clinical partnerships with over 65 organizations in Portland alone, including major health systems, retail pharmacies, elder care facilities, agencies supporting disadvantaged residents, physical therapy businesses, and the Portland School System, among many others. During academic year 2015-16, students in UNE's professional programs provided approximately 1.4 million hours of clinical service worth nearly \$44 million.

These complementary relationships serve the University and its students by providing expert, experiential environments for learning, while also facilitating opportunities for employers in the health care and social services systems to observe potential candidates for employment and recruit them to practice. This is an excellent benefit for the Portland, Maine community, given the aging population of Maine's health care workforce and well-documented projected shortages in specific health care professions such as nurses, dentists, and physicians. In one example of annual impact, 65 students in UNE's School of Social Work provided Portland-based social service agencies with over 35,000 hours to help support clients facing behavioral health challenges, intimate partner violence, sexual assault, homelessness, and well as address the needs of immigrants and refugees.

Grant-Funded Initiatives



The University of New England is a competitive applicant for federal and state grants, many of which have a direct impact on members of the Portland community. UNE is the implementing agency for the U.S. Supplemental Nutrition and Obesity Prevention program (SNAP-ED), administered by the Maine Department of Health and Human Services. In this role, the University partners with local community coalitions such as The Opportunity Alliance and City of Portland's Public Health Division to improve nutrition and obesity prevention services to low-income people, providing free classes on budget-conscious purchases and preparation of healthy foods. SNAP-ED also employs a systems approach, creating local policies and seeking changes in the environment to foster healthy behaviors, such as exercise, that contribute to wellness.

UNE's School of Nursing and Population Health has collaborated closely with the City of Portland, Greater Portland Health (formerly Portland Community Health Center), and the Portland Housing Authority to improve the lives and health of Portlanders with limited access to financial resources. Major federally-funded partnerships include a \$1.3 million grant through which UNE strengthened its cultural competency education for nursing students while collaborating on development of a new community clinic located in the Riverton neighborhood. The new clinic's opening made healthcare more accessible for Riverton Park – a neighborhood of more than 140 apartments – and better prepared UNE's health professionals to deliver care to the City of Portland's underserved neighbors, including immigrants and refugees. Today, Riverton Health Center is open five days per week and provides an array of primary care and behavioral health services.

In response to the opioid epidemic and dramatic need for evidence-based responses to addiction and addiction prevention, UNE received a three-year federal SBIRT grant (Screening, Brief Intervention, and Referral for Treatment) to identify, reduce and prevent problematic use, abuse, and dependence on alcohol and illicit drugs. The Maine Harm Reduction Conference has been a highlight of this initiative, with over 900 statewide attendees on UNE's Portland Campus, including several hundred representatives from Portland organizations that support some of our most vulnerable residents – the homeless, human trafficking victims, and others who access the City of Portland's social and medical supports. UNE is an active participant in building model solutions for the region's and state's most chronic health care challenges.

UNE's Portland Campus is also home to the Maine Area Health Education Center (AHEC) Network, funded by the U.S. Health Resources and Services Administration. The mission of Maine AHEC Network is to enhance the quality of and access to health care among underserved populations

through experience-based learning, and interprofessional and multidisciplinary partnerships. Specifically in the Portland area, AHEC implements programs including a high school pipeline program, clinical placements, and community based activities. The Maine AHEC Network pipeline program at Deering High School supports students with an interest in a health profession career. The program provides hands-on learning, tutoring, mentoring and other activities to encourage and prepare high school students for further education and training in the health professions. The participants in the pipeline program are diverse, including many students from immigrant and refugee backgrounds. As part of our Care of the Underserved Pathway (CUP) Scholar Program, undergraduate and graduate health profession students participate in a number of service learning experiences including vaccinating residents at community flu vaccine clinics, working with Portland Public Health's needle exchange program, participating in SNAP-Education workshops, helping with Drug Take Back Day, and other community based programs. In addition, we place a number of medical and PA students in healthcare settings throughout Portland for experiences caring for the underserved urban population. AHEC has also coordinated much-needed UNE volunteers to assist with COVID-19 vaccine clinics in Portland.

Private philanthropy has also played a role in UNE's grant-funded initiatives. UNE's Center for Excellence in Aging and Health (CEAH) was launched with the support of a generous donor committed to ensuring older adults maintain a meaningful and vibrant life. One of the Center's key initiatives, the Legacy Scholars Program, engages adults 55+ from Portland, Maine, and the region to participate in research on wellness in aging. Community members become active volunteers in shared scholarship and service, working directly with UNE students and faculty expanding the body of knowledge on healthy aging. In addition to research, Legacy Scholars gather several times a year for fellowship and lifelong learning, discussing topics from Maine's lobster fisheries to spousal loss. During the pandemic, the Center has been an important resource by linking teams of UNE health professions students with older adults via Zoom to interrupt social isolation and examine how tele-wellness contact can be a benefit. This is only a small snapshot of the Center's expansive work. Given Maine's rank as the oldest state in the nation, the Center for Excellence in Aging and Health will continue to be an important resource not only for Portland, but also for the state and region.

Student Service Learning and Volunteerism

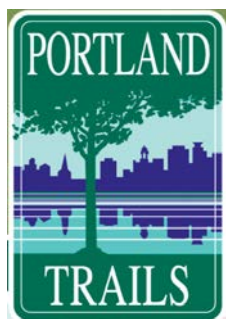
Community engagement is a core component of all UNE health professions programs. Through structured service learning and volunteer opportunities, UNE students play an active role in promoting health, with an emphasis on serving Portland's vulnerable citizens. More than 700 health professions students annually provide hundreds of hours to non-profits across the city, often in interdisciplinary team-based groups that maximize the impact to community members. Medical, social work, pharmacy, and physician assistant students collaborated closely with Cumberland County Jail in 2020 to develop training videos for CCJ Corrections Officers on medically assisted treatment for inmates, for example. In response to Covid-19, dental, physical therapy, and physician assistant students and their faculty members procured supplies, assembled, and sewed hundreds of masks for the Greater Portland community over the past year. UNE students also coordinated and collected the donation of thousands of items for Portland residents facing homelessness and addiction, stuffed them into backpacks in an initiative known

as “Cram the Van,” and delivered them to Milestone Recovery. A total of 64 backpacks were delivered, filled with snacks, hand sanitizer, face masks, socks, journals, and notes of encouragement. Located directly across the street from UNE’s Portland Campus, Park Danforth residents also enjoy programming with UNE, such as the “Visual Voices” project that used art to explore social and developmental issues such as identity and aging in collaboration with occupational health and public health students.

Human Capital Impact

UNE has an important human capital and economic impact on Portland and the State of Maine, with approximately 1,100 full-time equivalent employees. More than four in ten UNE employees work on its Portland Campus, and nearly 200 live in the city itself. As a thriving institution of higher education, UNE attracts new, younger, and highly skilled employees to the Portland area from both within Maine and out of state. This pipeline is essential to the vitality of Maine’s workforce as older professionals begin to retire. In addition, UNE’s on-campus Portland Campus enrollment exceeds 1,200 undergraduate, masters, and doctoral level students. Over one quarter of these students indicate a Portland address at the time of application, suggesting UNE serves to both bring new people to the area as well as serve existing residents who aspire to a health professions degree. Both employees and students contribute to Portland’s thriving economy, patronizing local businesses, participating in the real estate market through home ownership and apartment rentals, and engaging in Portland’s wonderful cultural scene. Finally, UNE’s alumni database includes hundreds of graduates who both live and work in Portland and its surrounding suburbs. These include physicians, physician assistants, pharmacists, physical therapists, dentists and dental hygienists, and social workers, among others, making an important difference to and for Portland residents and the region.

Commitment to the Portland Trails System



UNE is committed to partnering with Portland Trails to extend their nearly 70-mile trail system through UNE property in an effort to safely link the Evergreen Cemetery section of walking paths to those in North Deering. Currently, several large sections of the Portland Trail system are adjacent to UNE’s Portland campus in the Baxter Woods Park and Evergreen Cemetery. Hikers and walkers wishing to move from the Evergreen Cemetery area to the North Deering section of Portland must first traverse busy streets like Stevens and Allen Avenues, through Morrill’s Corner, in order to reach the next trailhead. As part of UNE’s initiative to construct the Institute for Interprofessional

Education and Practice on its Portland Campus, the access road that links College Street to UNE's Bishop Street parking lot will be improved, with additional lighting and features to improve safety. This will be an excellent opportunity to plan for and develop the additional trails needed to bridge the Evergreen Cemetery and North Deering areas in collaboration with partners at Portland Trails. In addition, the area has a number of natural features such as a pond and wetlands that support an abundant amount of wildlife, flora, and fauna of interest to walkers and hikers. UNE looks forward to engaging with the Portland Trails System on this next step, in keeping with its commitment to health and wellness and the community in which it operates.

CONSTRUCTION MANAGEMENT PRINCIPLES AND PLAN

The following section provides an overview of the construction management principles that UNE has identified and will implement to minimize impacts to its surrounding neighborhoods from noise, vibrations, ground movement, truck traffic, dust control and other construction related factors. UNE will strive to schedule and undertake construction operations in a way that will minimize, to the extent feasible, the disturbance to the public and occupants of buildings in the adjacent area.

Communication Initiatives

UNE will provide a method of communication between adjacent neighbors, the City of Portland and the construction teams based on the projected impact of future construction projects.

UNE will utilize a dedicated email address to enable communications with its surrounding neighbors so that questions or concerns may be transmitted directly to UNE. These emails will be answered in a time manner by UNE staff responsible for future projects. This email address will also be providing, proactively, monthly updates to neighbors that want to be included on updates on project status and receive important alerts for activities that may impact adjacent roadways, may create dust, vibration and noise, and impact traffic in and around the campus. This information will also be posted on its web site on the Campus Planning page on the UNE web page (www.une.edu)

UNE is also amenable to providing on-going updates to any of its adjacent neighborhood associations, like the Deering Center Neighborhood Association (DCNA), by attending and speaking at regularly scheduled meetings regarding any current or upcoming planned projects.

Construction Schedule

UNE will provide estimated master project schedules at the beginning of any large construction project it moves forward with in the future. Regular updates of this master project schedules will occur during the construction period reflecting any changes to dates. These updates will be provided based on the project's assessed impact on the surrounding neighborhoods and areas. These updates will be provided through the communication initiatives stated above.

Construction Management Plan

During the planning stages and prior to start of construction on any large construction project, UNE will develop an overall Logistics and Safety Plan which will be shared with the neighbors and the City of Portland. The goal of this plan will be to continue and support normal campus operations, maintain public safety and minimize impacts to areas surrounding the campus. UNE will utilize the City's Construction Management Plan template to develop its Construction Management Plan that will be submitted with each future project's Site Plan application.

Project Work Hours

Project construction work hours will be included in the Construction Management Plans that get submitted for each future project. Each project's work hours will be created to minimize the impact on surrounding areas and neighbors while allowing completing the project work expediently while following the City of Portland code of ordinances that regulate noise and work hours.

Public Safety and Access

Safety is the utmost area of concern for UNE and it will be reviewed extensively and be part of its Construction Management Plans for future projects. Pedestrian walkways and vehicular access routes will be clearly marked with appropriate signage and will be maintained throughout the construction duration.

Safety fencing and lockable gates will be utilized to isolate the construction zones from public spaces. Access to these fenced construction zones will be limited to authorized construction personnel, construction deliveries and construction project team members. UNE maintains a Safety and Security Department on its Portland campus and personnel from this group will be utilized to oversee safety and access to these construction zones during non-work hours.

Construction Noise Impacts

UNE is committed to mitigating as much construction noise impacts to surrounding areas as possible. Construction projects inherently have noise as a result of some of the necessary tasks along the duration of the project. UNE and its construction project team members will provide advanced notice of any abnormal noise creating activities, such as blasting or pile driving, through its updates discussed above.

Construction Traffic and Parking Impacts during Projects

Construction Truck Routes and Volume – UNE and its construction project team will create construction vehicle access routes to and from construction zones as far as possible from residential and other sensitive areas. Construction vehicles will be brought directly into the fenced construction areas and not queued on public roadways by managing the frequency and volume of deliveries during the construction timeline. Clear markings and signage will be installed at strategic areas directing construction traffic accordingly. Specifics for each future project will be included in the Construction Management Plans that will be submitted for each project.

Construction Staging Areas – Construction staging areas for material and equipment delivered to the project sites will be within fenced construction zones for each project and kept as far away as possible from residential and other sensitive areas.

Construction Personnel Parking – Jobsite personnel will be directed to park within the fenced construction zones for each project or remotely in UNE’s Bishop Street parking lot. The construction project team and its subcontractors shall encourage the use of public transportation by their workers to minimize the impact to the surrounding area.

Construction Air Quality Impacts

To mitigate dust issues and minimize impacts on the local environment from its project sites, UNE and its project team will adhere to several strictly enforced measures. These include the utilization of wetting agents to control airborne dust from construction access drives and construction zones, covering of soil stockpiles as needed, having transport trucks utilize covers while moving materials that are dust creating and construction zones will be periodically swept and cleaned.

City of Portland Construction Management Plan General Template

Below is the standardized City of Portland template that will be used for each future project to establish a clear and concise plan and open lines of communications with the City and its neighbors.

Construction Management Plan General Template [Applicant and Project Name]

Construction Management Plans shall depict the overall planning, coordination, and control of a construction site, including phases as applicable, from beginning to completion. The City’s goal for a construction management plan is to support a safe construction site and protect the public safety, accessibility (including preserving accessible pedestrian, bicycle, and vehicular modes of transport throughout the city), and welfare during construction. In addition, the construction management plan shall minimize construction impacts in their

duration and magnitude to the surrounding area and develop an effective communication process for resolving concerns and conflicts.

The Construction Management Plan will be submitted as part of the Site Plan Review and it shall address the construction logistics for a project. The Construction Management Plan shall include the following submissions:

- 1) a construction management site plan;
- 2) a construction schedule (time frame); and
- 3) a written narrative addressing the categories below.

A. Construction Management Principles

The following narrative provides an overview of the construction management principles that the [Applicant and Contractor] has identified to minimize impacts from the construction, such as noise, vibrations, ground movement, truck traffic, and other construction related factors to the surrounding building and communities.

B. Development Review of Construction Management Plan

[Applicant and Contractor] shall submit a construction management plan that provides a comprehensive logistics and safety program for the construction project, which will be reviewed and approved as part of the site plan review process. Minimizing impacts to areas surrounding the building/construction site will be primary considerations in the process.

The Planning Authority and the Department of Public Works have the right to seek revisions to an approved Construction Management Plan or require a condition of approval that states an applicant shall coordinate a project's construction schedule with the timing of nearby construction activity, in order to avoid cumulative impacts on a neighborhood. Such a condition may involve a delay in commencement of construction, if necessary.

The following details define the intended approach to the successful management of the project construction and the construction management plan will address the general conditions contained below.

C. Performance Guarantees, Inspection Fees, Preconstruction Meeting, and Permits

Prior to scheduling a preconstruction meeting and the issuance of any city required permits, [Applicant and Contractor] shall meet all of the requirements contained in Section 14-530. Development review fees and post approval requirements and 14-532. General requirements and enforcement of Portland's Land Use Code.

Other permits, as applicable, include

1. **Street Opening and Street Occupancy Permits:** Construction activity in the public right-of-way are controlled by Chapter 25 and sewer and stormwater system connections are controlled by Chapters 24 and 32 of the Land Use Code. All required permits shall be obtained through the Department of Public Works and the requests shall conform with the approved construction management plan.
2. **Blasting:** Blasting, if required, shall conform with all measures of Article VIII. Regulation of Explosives in the Land Use Code and Section 3.7 Standards for Blasting and Regulation of Explosives in Portland's Technical Manual.
3. **Building Code:** Employ the best practices, as applicable, of Chapter 33 Safeguards During Construction, from the 2009 International Building Code.

D. Construction Administration and Communication

[Applicant and Contractor] will work diligently to implement a communication strategy as outlined below. The communication strategy is intended to ensure that all construction operations are performed in accordance with all agreements, ordinances and special permits applicable to this project. The 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.

E. Construction Schedule

1. The contractor shall submit a schedule or time line for the construction project, including any Phasing.
2. Hours of Construction. Construction may occur during the daytime hours as defined in Section 17-18. Construction Activities for Building permit (Attachment 1) and Section 25-129. Noise, dust and debris (Attachment 2).
3. Extended Hours or Night Work: Pursuant to Section 17-18, this section not apply to emergency utility work or “Situations where the public works authority or the office of building inspections determines that the construction activity is of a unique character which cannot reasonably be completed or performed during the permitted hours and which is not of a recurring nature, provided that prior to engaging in such activity the contractor or his representatives gives notice of the time and scope of such proposed activity, the notice to be given in a manner approved by the public works authority.”
4. Material Deliveries: Schedule and designated location for delivery of materials and boxed goods.

F. Security & Public Safety

1. The Construction Management Plan will depict all proposed fencing or other barriers and access gates (with Knox locking devices) with the intent of separating pedestrian and vehicle circulation from the construction site.
2. Structures undergoing construction, alteration, or demolition operations, including those in underground locations, shall comply with NFPA 1 Chapter 16. *Safeguarding Construction, Alteration, and Demolition Operations*.
3. Fire Safety Program. An overall construction of demolition fire safety program shall be developed. Essential items to be emphasized include the following:
 - Good Housekeeping ○ On-site security
 - Installation of new fire protection systems as construction progresses ○ Preservation of existing systems during demolition ○ Organization and training of an on-site fire brigade ○ Development of a pre-fire plan with the local fire department ○ Rapid communication
 - Consideration of special hazards resulting from previous occupancies ○ Protection of existing structures and equipment from exposure fires resulting from construction, alteration, and demolition operations
4. Blasting, if required, shall conform with all measures of Article VIII. Regulation of Explosives in the Land Use Code and Section 3.7 Standards for Blasting and Regulation of Explosives in Portland’s Technical Manual.
5. Any proposed temporary security lighting shall be shown on CMP and all fixtures shall be full cutoffs.

G. Construction Permitting and Traffic Control Plans

1. Construction Activity in Public Streets: Construction activity in the public right-of-way is controlled by Chapter 25 Article VII of the City Code of Ordinances. Required licenses and permits, restrictions on activity, and fees & area are outlined in that Chapter. Rules and Regulations for Excavation Activity are available through the Street Opening Clerk at the Department of Public Works. At no time can construction activity including delivery vehicles close or block streets or affect public safety access without prior notice and approval of the Department of Public Works.
2. Sewer and Stormwater: Sewer and stormwater water system connections are controlled by Chapters 24 and 32 of the City Code of Ordinance. Required permits for new connections and/or abandonment of existing connections are available through the Street Opening Clerk at the Department of Public Works. Rules and Regulations for these utility systems are available through the City Engineer's office of the Department of Public Works and in Section II of the Technical Manual.
3. Traffic Control Plans: Construction activity that impacts the existing public street system must be controlled to protect the safety of the construction workers and all modes of the traveling public. Projects are required to submit a satisfactory 'maintenance of traffic' (MOT) plan prior to any site plan, subdivision, or street opening permit approval. MOT plans may be required for projects that have impacts on local streets.

Maintenance of Traffic (MOT) plans shall provide for the safe passage of the public through or along the construction work zone. On a case-by-case basis, applicants may be allowed to close a street and/or detour a mode of traffic when absolutely necessary for safety. MOT plans shall employ the appropriate techniques and devices as called for in the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). In addition:

- Construction speed signing may be used as needed to slow traffic
- Traffic Control signs shall not be placed where they are an obstruction to bicycles or pedestrians.
- In some situations, flaggers may be required.
- Police details may be required at lighted intersections and may be requested by the City's transportation engineer or his designee.

All existing modes of travel in work zone area shall be accommodated if impacted by the activity. The safe passage of pedestrians, bicyclists, transit providers, and motorists are of equal importance when planning out the work zone; no pre-existing travel mode may be eliminated without the express approval of the Department of Public Works. The MOT should also address on-street parking impacts, including deliveries and parking for adjoining businesses and property owners, analysis of roadway capacity or diversion capacity if street closure or change to roadway capacity is required, and coordination with other on-going or future construction or utility projects in the vicinity.

- Traffic control of bicycle and pedestrian facilities or routes through work zones shall be maintained until the bicycle and pedestrian facilities or routes are ready for safe operation. Traffic control will not be removed to allow auto travel at the expense of bicycle and pedestrians.
- Barrier systems utilized to separate the construction activity from the public street and /or sidewalk shall not inhibit sight distances, particularly for visibility of pedestrians and bicyclists.

- ADA compliance shall be maintained.

Use of public parking spaces or the blockage of any portion of sidewalk for the purpose of construction activity shall require an occupancy permit and appropriate fee as assessed by the Department of Public Works.

H. Site Management and Controls

The final Construction Management Plan will address maintaining the site in a safe condition and will include the following:

1. Regular trash and debris removal
2. Street cleaning and damage controls
3. Dust controls- The construction shall comply with Portland's requirements under Section 25-129 on Noise, dust and debris (Attachment 2).
4. Noise: The construction shall comply with Portland's requirements under Section 1718 of the City Code (Attachment 1) and Section 25-129 on Noise, dust and debris Attachment 2).
5. Rodent Control will be provided, if applicable, by a professional exterminator and consistent with Chapter 22 of the City Code.
6. Snow Removal: Pursuant to Section 25-173 Contractors to ensure a safe means of travel within the work zone.
 - 1) Snow/ice removal or commence automatically from (1" of snow and up) or Ice 2) Remove snow as needed within the work zone, including parking spaces & not to block any driveways or sight lines with the piles of snow.
 - 3) Clear all walks & ramps with the work zone
 - 4) Sand or Salt as needed
 - 5) Clear all basin or drainage to help snow melt
 - 6) This would include Monday-Friday Sat/Sunday/Holidays

I. Erosion Control and Preservation of Trees

1. The [contractor] shall install all erosion and sedimentation controls as depicted on the approved erosion and sedimentation control plan prior to the pre-construction meeting for inspection by the City. The contractor shall regularly inspect the control measures, no less than weekly and after significant storm events, and maintain any installed temporary or permanent stormwater management systems in working order. The contractor shall document all inspection activities and corrective actions and be prepared to provide these documents for inspection by the City, Maine Department of Environmental Protection or the U.S. Environmental Protection Agency upon request.
2. The [contractor] shall maintain all tree and landscaping preservation measures as depicted on the landscaping plan (Exhibit) within the area of construction.
3. The storage of materials shall be identified and avoid being located under/near trees.

J. Construction Staging Area

1. The Construction Management Plan shall depict location of the material staging areas, the location on onsite temporary construction trailers, the location on onsite truck delivery holding areas, the location onsite truck washing stations, masonry mixing stations, the general location of the construction security fence and the general location of temporary construction dumpsters. An open storage areas shall be shown on the plan.
2. Delivery Truck Holding Areas On-Site: The delivery holding area shall be shown on the plan and shall not be blocked during construction. On days when the construction activities require multiple truck deliveries, these deliveries will be carefully scheduled so that there is always adequate on-site area for the holding of the trucks until they can be unloaded. Once at the site all

vehicles well be brought within the fence line and will make every attempt to avoid queueing on public streets.

3. Delivery Truck Holding Areas Off-Site: In the event that adequate on-site area for holding of trucks is not available, an off-site marshalling area will be utilized for trucking. The designated off-site location will be identified in the construction management plan.

K. Parking During Construction

1. Construction Parking: Adequate parking for construction workers shall be provided on site or arrangements for off-street parking at an off-site location shall be provided. The parking arrangements shall be included in the construction management plan.

2. Parking: Where existing facilities are remaining in operation during construction, the construction management plan shall identify how the parking for employees and others shall be managed.

3. Truck Routes and Volumes: The Construction Management Plan shall address the designated truck routes and expected truck volumes.

L. Dewatering Plans

A basic dewatering plan for any construction work is required. The plan must cover construction sites where groundwater is not expected but 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.

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 course of action if treatment is necessary. Approval for all discharges to City infrastructure is required.

The proposed 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 discharge and/or prior to storage and treatment. There will be no discharge allowed during precipitation events.

M. 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.



UNE Institutional Overlay Zone (IOZ)

Regulatory Framework

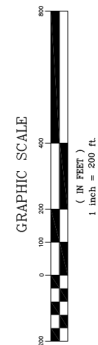
Approved by Portland City Council _____

A. APPLICABILITY

All development proposed by University of New England (UNE) within the boundary of the Institutional Overlay Zone (IOZ) shall be consistent with the approved Institutional Development Plan (IDP), consistent with the Comprehensive Plan, and meet applicable standards of the Land Use Code, unless such standards are superseded by the following Regulatory Framework. This Regulatory Framework shall govern future development by UNE within the IOZ unless amended by the Portland City Council upon formal application of UNE.

The UNE IOZ shall have the boundaries depicted in Figure 1.1, and shall include the properties listed in Appendix 1.1.

Under Section 8.5.5B of the Ordinance, "Properties located within the IOZ not subject to right, title or interest of the eligible institution shall continue to be governed by the regulations of the underlying zoning designation."



B. UPDATES, AMENDMENTS and ASSIGNABILITY

1. It is intended that the IDP will be updated on a regular basis to ensure that the data is current and that the document remains accurate. Accordingly, UNE shall file monitoring reports every five (5) years with the Planning Authority and shall include a summary of progress on IDP implementation and progress towards targets established in UNE's Transportation Demand Management Plan (TDM), and of acquisitions and divestment since the date of IDP approval. At the time of the submission of the monitoring report, UNE shall identify any updates to the IDP which may result from updated master planning, changes in baseline information, or changes in the adjacent neighborhoods which affect UNE, to allow the IDP to remain current. Updates and minor amendments not described in Sub-section 2 and 3 below shall be reviewed administratively by the Planning Authority.
2. Minor amendments that impact phasing of the development or change the approach to parking, transportation, neighborhood engagement, or design shall be reviewed by the Planning Board for consistency with the objectives of the IDP. In addition to consistency with the objectives of the IDP, review of phasing and development program amendments shall focus on integration with the campus and impacts on transportation or infrastructure. This review may occur simultaneously with the site plan review of an anticipated project.
3. Major amendments shall be reviewed by the Planning Board and are required under the following circumstances:
 - a. A change to the IOZ boundary or Regulatory Framework is required;
 - b. The IDP is no longer representative of the institutional mission or approach to community as a result of redevelopment in the area or City upgrades to neighborhood planning (such as, but not limited to, roadway changes, infrastructure upgrades, community design, lighting); or,
 - c. Development proposed by UNE is inconsistent with the Campus Master Plan, Transportation Plan intent, Design Plan intent, or Environment and Infrastructure plan intent identified in the IDP.
4. Proposed amendments to the IOZ boundary or regulatory framework must also be adopted by the City Council subject to the provisions of the Land Use Code.

C. USES

In addition to the uses permitted in the underlying zone, the uses in Table 2.1 are permitted as a matter of right. Post-secondary school development fronting onto Stevens Avenue shall, to the extent reasonably possible, include features that also provide public benefit, including but not limited to, landscaped gardens, active building entrances, pocket parks on the ground or other publicly accessible level, consistent with the design intent contained in the approved IDP.

TABLE 2.1 - List of Uses Permitted by Right within the IOZ

Post-secondary school uses including, but not limited to, the following ancillary and/or supporting uses:

1. Classrooms
2. Laboratory facilities;
3. Research facilities;
4. Student unions;
5. Dining halls;
6. Bookstores;
7. Auditoriums;
8. Concert halls;
9. Lecture halls;
10. Gymnasiums;
11. Indoor recreational facilities;
12. Libraries;
13. Art galleries;
14. Museums;
15. Athletic fields and facilities;
16. Outdoor use areas such as “quads”, greens, parks, gardens, art installations, and other active and passive noncommercial recreation spaces;
17. Faculty housing;
18. Student housing;
19. Congregate Care Facility*;
20. Intermediate Care Facility*;
21. Long-term Care Facility*;
22. Parking lots;
23. Parking garages and decks;
24. Community meeting spaces;
25. Administrative offices;
26. Faculty offices;
27. Transportation facilities;
28. Maintenance facilities;
29. Utility buildings;
30. Daycare facilities, nursery schools, and kindergartens operated in conjunction with university programs or serving students, faculty, or staff of the university and their families, with associated outdoor play areas;
31. Medical and dental clinics;
32. Intermodal transportation facilities;
33. Other buildings, structures, and uses customarily incidental to a post-secondary school.

* Any Congregate Care, Intermediate Care or Long-term Care Facility use shall be in conjunction with the post-secondary school use for education purposes, such as direct clinical experience.

D. DIMENSIONAL REQUIREMENTS

The UNE IOZ shall have the dimensional requirements listed in Table 3.1 below:

TABLE 3.1 - List of Dimensional Requirements

Maximum Building Heights	Maximum building heights for new buildings within the IOZ shall be governed by the Maximum Buildings Heights Map, Figure 4.1 and by the Transition Zones clause of this table (see below) for those buildings located in Transition Zones.
Minimum Building Heights	25 Feet
Minimum Building Setbacks	Minimum building setbacks for new buildings within the IOZ shall be governed by Figure 4.2 or by the Transition Zones clause of this table for buildings and structures located in the Transition Zones.
Transition Zones	Transition Zones apply to new buildings within the IOZ. These Transition Zones are identified inside the IOZ boundary in locations where the IOZ abuts or is located across a public right-of-way from a residential zone. See Figure 4.2 for location of Transition Zones. Transition Zones shall extend fifty (50) feet into the IOZ from the parcel boundary. Transition Zones that abut a Residential zone with or without an intervening public right-of-way shall have a maximum height limit that matches the maximum height permitted within that Residential zone. Where the IOZ abuts a Residential zone without an intervening public right of way, minimum side and rear yard requirements of the abutting Residential zone apply within the IOZ boundary, unless noted otherwise in Figure 4.2.
Minimum Lot Area	N/A
Maximum Lot Coverage	Maximum lot coverage shall be 50%.
Minimum Lot Width	N/A
Maximum Impervious Surface Ratio	Maximum impervious surface ratio shall be 75% of the total land area within the UNE IOZ.
Minimum Street Frontage	N/A

Note – For the purposes of this regulatory framework, “lot” is defined as the contiguous combination of such lots under UNE ownership, including land separated by a public or private right of way. The lot boundary is as shown in Figure 1.1.

Figure 4.1 - Maximum Building Heights Map

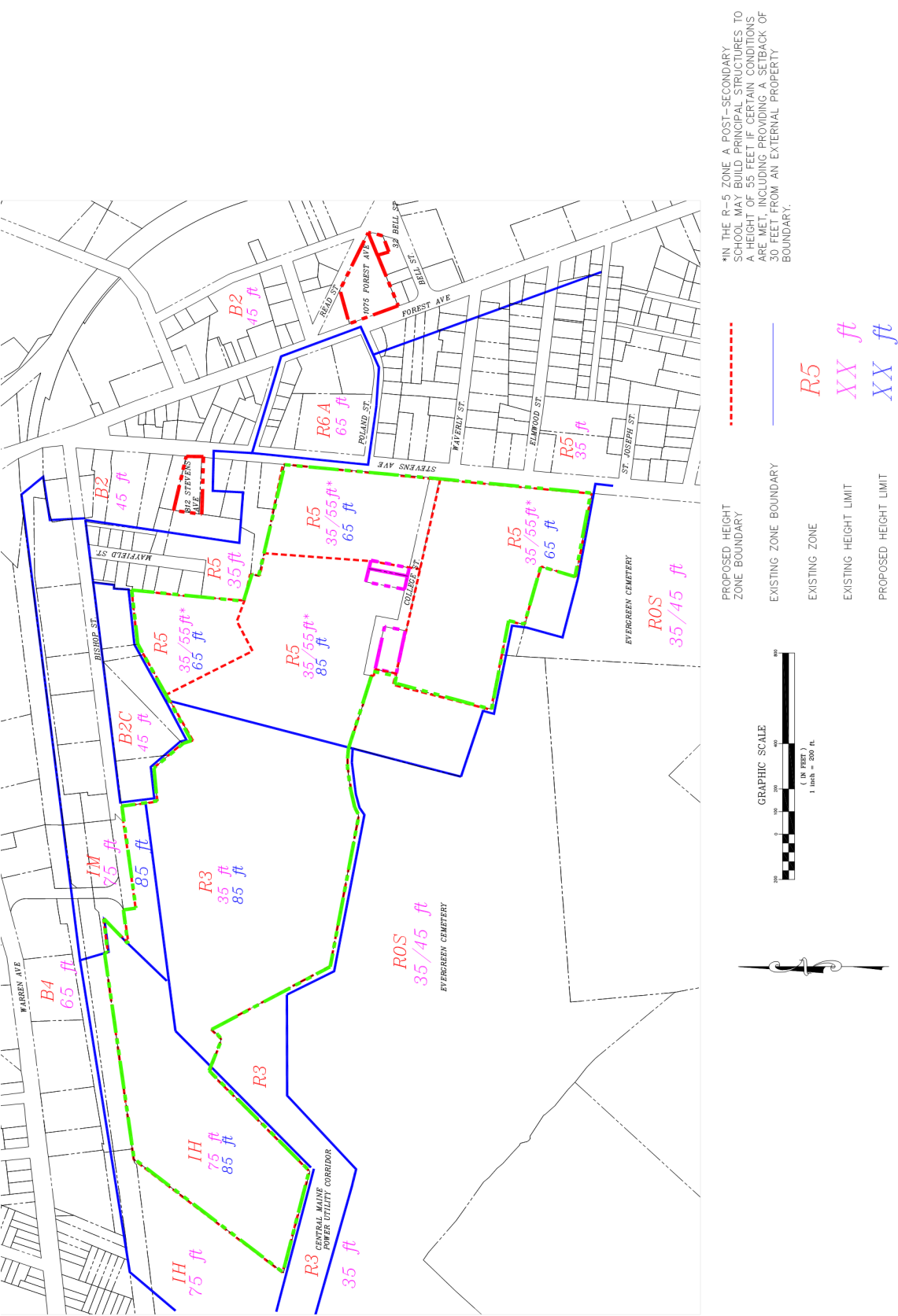
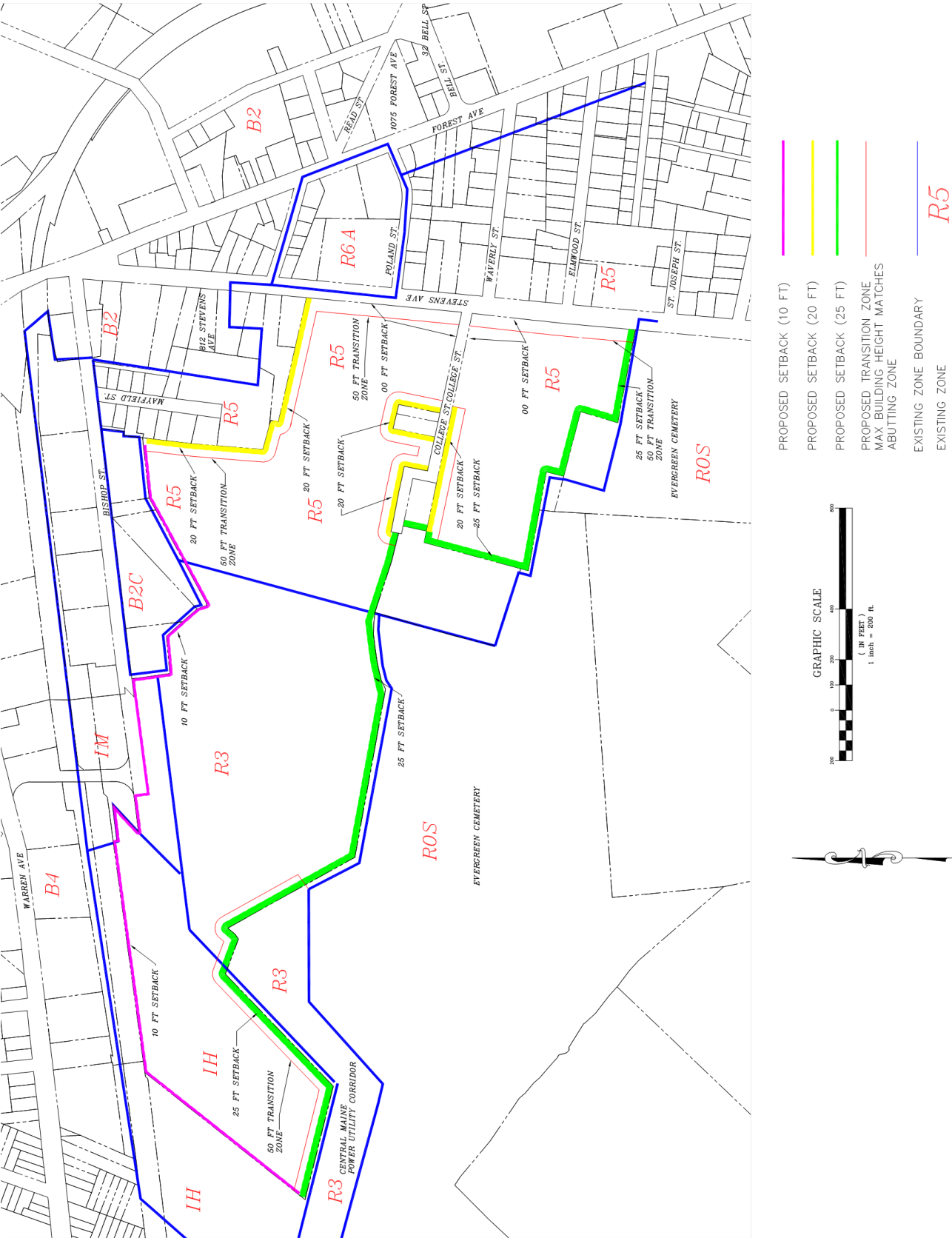


Figure 4.2 - Minimum Setbacks and Transition Zone Map



E. DESIGN

1. New buildings within the IOZ shall adhere to the Design Guidelines set forth in Chapter 5: Design of the IDP and the site plan standards of Article 14.

F. SIGNS

1. At the time of first site plan review following IDP approval, a unified campus-wide Signage Plan shall be submitted for review and approval by the Planning Authority. Any update to such plan due to a change in graphics shall not require amendment to the IDP.
2. Signs shall be designed in accordance with the campus-wide Signage Plan. All signs shall be designed in proportion and character with building facades and adjacent street typology. All signs shall be coordinated with the building and landscaping design and be constructed of appropriate permanent, high quality materials and finishes.

G. TRANSPORTATION

1. Transportation Demand Management (TDM):

- a. At the time of the first site plan review following IDP approval, UNE shall submit a campus-wide TDM Plan substantially in accordance with those TDM objectives and strategies identified in the approved IDP. The TDM Plan will be updated with each subsequent application for site plan approval to allow for progressive and responsive implementation over time.
- b. The TDM Plan shall be designed to provide transportation choice with the goal of reducing parking demand and single-occupancy vehicle trips to and from UNE by employees, students and visitors.
- c. The TDM Plan shall establish parking and trip reduction targets as well as a data collection plan.

The TDM Plan shall include parameters to ensure pedestrian, vehicular, bicycle and public transit access and safety.

2. Parking:

- a. Parking requirements in the IOZ shall be established at the time of site plan review based on a parking study that includes a campus-wide analysis of demand and supply. The parking demand study shall determine any additional parking requirements and shall be sufficient to alleviate the subsequent parking pressure on surrounding neighborhoods.
- b. Parking studies developed by UNE shall integrate parking and trip reduction achievements and data contained in the TDM Plan.

H. ENVIRONMENT

Development proposed by UNE shall be designed to integrate with and preserve the surrounding context, including open space and pedestrian networks and infrastructure.

I. MITIGATION MEASURES

Neighborhood meetings, meetings with City staff, and UNE's experience in operating the Portland Campus have shown that the particular issues associated with UNE and its surrounding neighborhood are traffic, parking, and stormwater impacts of development and operations. UNE shall assess traffic, parking, and stormwater impacts of development through the site plan process. UNE shall assess operational traffic, parking, and stormwater impacts in the monitoring reports it will provide to the City every 5 years. In the site plan process and in the monitoring reports, UNE shall establish thresholds at which mitigation of these impacts will occur. UNE then shall mitigate those impacts in a manner proportionate to those impacts, with specific mitigation measures to be presented in greater detail in the site plan process.

Mitigation may include financial or in-kind contributions to existing or planned City projects focused on mitigating the traffic, parking, and stormwater impacts of UNE development and operations. Mitigation contribution to such City projects shall be determined based on the City's standard procedure in effect at the time of site plan review. Any impact fees charged as part of the UNE development shall be counted towards any financial or in-kind contributions required under this Section.

J. NEIGHBORHOOD INTEGRATION AND ENGAGEMENT

For the purpose of keeping surrounding residential areas apprised of its future development plans, and to address any neighborhood issues related to the operations of the UNE campus, UNE shall adhere to the ongoing community engagement principles identified in the approved IDP.

UNE shall attend regularly scheduled meetings of the Deering Center Neighborhood Association at least twice per year to present and review future development plans and receive ideas and feedback. UNE shall also create a dedicated email address to allow neighbors to forward questions, concerns or feedback directly to UNE's Planning Department.

K. CONSTRUCTION MANAGEMENT

For each development requiring site plan review, at the time of site plan review, UNE shall submit a Construction Management Plan substantially in accordance with those construction management principles identified in the approved IDP for review and approval by the Planning Authority.

The Construction Management Plan shall include a construction schedule, as well as strategies for managing neighborhood communication and noise, air quality, traffic, and parking impacts associated with the construction as set forth on the Construction Management Plan Template developed by the City and incorporated in the IDP in Chapter 6.

APPENDIX 1.1 List of Properties included in the UNE IOZ

(All properties within the green boundary shown on the IOZ Boundary (Figure 1.1) shall be included in the UNE IOZ)

Chart	Block	Lot	Address	Acreage	Ownership
144	A	005	684 Stevens Ave	0.141	UNE
144	A	006	684 Stevens Ave	0.275	UNE
144	A	007	684 Stevens Ave	0.371	UNE
144	A	008	684 Stevens Ave	0.256	UNE
144	A	009	684 Stevens Ave	0.586	UNE
145	A	001	706 Stevens Ave	0.450	UNE
145	A	002	710 Stevens Ave	0.165	UNE
145	A	003	714 Stevens Ave	9.231	UNE
145	A	006	714 Stevens Ave	0.250	UNE
145	A	007	710 Stevens Ave	0.006	UNE
145	A	008	710 Stevens Ave	0.036	UNE
145	A	009	714 Stevens Ave	0.356	UNE
145	A	010	714 Stevens Ave	0.338	UNE
145	B	001	1 College St	0.207	UNE
145	B	002	1 College St	1.830	UNE
145	B	006	31 College St	0.134	UNE
145	B	007001	33 College St	0.173	Owned by others
145	B	008001	37 College St	0.197	Owned by others
145	A	004	74 College St	0.416	Owned by others
145	B	009	41 College St	0.200	UNE
145	B	010	51 College St	0.383	UNE
145	B	011	63 College St	0.076	UNE
145	B	012	63 College St	0.114	UNE
145	B	013	63 College St	0.048	UNE
145	B	014	83 College St	0.366	UNE
145	B	018	772 Stevens Ave	8.603	UNE
145	B	027	83 College St	3.137	UNE
145	B	029	79 College St	0.258	UNE
145	B	042	1 College St	0.162	UNE
145	B	046	1 College St	0.138	UNE
281	A	003	0 Bishop St	10.555	UNE
290	A	003	83 College St	1.771	UNE
291	A	001	0 Bishop St	8.394	UNE
291	A	005	83 College St	17.972	UNE
291	A	007	83 College St	0.459	UNE
293	C	005	83 College St	1.574	UNE

WARRANTY DEED
(Maine Statutory Short Form)

KNOW ALL MEN BY THESE PRESENTS, that **PIKE INDUSTRIES, INC.**, a Delaware corporation with a place of business and mailing address at 58 Main Street, Westbrook, Maine 04092 ("Grantor"), for consideration paid, hereby grants to **UNIVERSITY OF NEW ENGLAND**, a Maine non-profit corporation with a mailing address of 11 Hills Beach Road, Biddeford, Maine 04005 ("Grantee"), with **WARRANTY COVENANTS**, those certain lots or parcels of land, together with any buildings and improvements thereon, situated in Portland, Cumberland County, Maine, being more particularly described on **Exhibit A** attached hereto and incorporated herein by reference (the "Premises").

The following restrictions shall run with the land, shall inure to the benefit of the Grantor, and its successors and assigns, and shall be binding upon the Grantee, and its successors and assigns:

1. The Grantee covenants and agrees that the Premises shall not be used for excavation of earth materials, crushing of rock and other materials, production of hot-mix asphalt or other similar products (e.g., cement, ready mix concrete, etc.), storage of earth materials and/or hot-mix, cement or ready-mix products or the sale (retail or wholesale) and distribution of such materials from the Premises or the use of such material or existing processed material unless such excavation and/or use of such materials is for the benefit of the Grantee on the Premises or on contiguous land in common ownership of the Grantee.
2. In the event of a violation of any or all of this restrictive covenant, the Grantor, in addition to all other remedies available to it, may obtain an injunction against the Grantee issued by a court of competent jurisdiction enjoining such breach and shall be entitled to recover its costs and expenses, including, but not limited to, reasonable attorney's fees in the enforcement or defense of the restrictions or any of them.

Being parcels 2 and 3 in the deed of Oldcastle Materials, Inc. to Pike Industries, Inc. dated March 20, 2002, and recorded in the Cumberland County Registry of Deeds in Book 17835, Page 301.

IN WITNESS WHEREOF, the Grantor has caused this instrument to be signed and sealed this 28th day of February, 2012.

WITNESS:

PIKE INDUSTRIES, INC.

By: Brian J. Donovan
Print/type name: Brian J. Donovan
Its: Authorized Agent

MAINE REAL ESTATE TAX PAID

STATE OF MAINE
CUMBERLAND, ss.

February 28, 2012

Then personally appeared the above named Brian J. Donovan, its Authorized Agent, of Pike Industries, Inc. who acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of said Pike Industries, Inc.

Before me,

Peter J. Van Hemel
~~Notary Public~~ / Maine Attorney-at-Law
Name Printed: Peter J. Van Hemel
My Commission Expires: _____

H:\DOCS\RATTEYPIKE\UNE 39662\MSFWDEED3.DOC

EXHIBIT A

TRACT 1

A certain lot or parcel of land in the Morrill's Corner region of Portland, County of Cumberland and State of Maine, bounded and described as follows:

Commencing at a point or stake standing on the old southerly line of the Portland & Rochester Railroad, now the Portland Terminal Company, and at a point where the same intersects with land formerly of Franklin M. Purington,

THENCE South $65 \frac{3}{4}^{\circ}$ West 108 Rods 15 Links, more or less, to land now owned by the City of Portland;

THENCE North $24 \frac{1}{4}^{\circ}$ West 5 Rods 16 Links, more or less, to a stake;

THENCE South $65 \frac{3}{4}^{\circ}$ West 34 Rods 9 Links, more or less, to a stake standing on land owned by said City;

THENCE North 11° West 11 Rods 7 Links, more or less, to a stake, standing on land formerly owned by Hiram Sawyer;

THENCE North $61 \frac{1}{2}^{\circ}$ East 107 Rods, more or less, to line of said location of Portland & Rochester Railroad;

THENCE by the line of said Railroad on its southerly side as aforesaid $83 \frac{1}{4}^{\circ}$ East 38 $\frac{1}{2}$ Rods, more or less, to the place of beginning.

EXCEPTING from the above described premises, the premises conveyed by Adam W. Wilson to City of Portland by deed dated March 25, 1889, and recorded in the Cumberland County Registry of Deeds in Book 556, Page 132; and the premises conveyed by Adam W. Wilson to Boston & Maine Railroad by deed dated April 4, 1907, and recorded in said Registry in Book 803, Page 232, and by deed dated August 5, 1910, and recorded in said Registry in Book 863, Page 137.

TRACT II

Another certain lot or parcel of land situated near Morrill's Corner in that part of Portland that was formerly Deering, in the County of Cumberland and State of Maine, lying adjacent to and lying northwesterly of the above described premises, being bounded and described as follows:

Beginning at the northwesterly corner of land formerly of one Smith, on the southerly side of land formerly of Portland & Rochester Railroad, now the Portland Terminal Company, and running South 62° West 106 Rods to land of Portland Cemetery;

THENCE northwesterly by said Cemetery lot 30 Rods to the Old Kenney lot;

THENCE North 52 1/2° East by said Kenney's lot 49 Rods 2 Links to the Portland Terminal Company railroad land, formerly of the Portland & Rochester Railroad;

THENCE southeasterly by said Portland Terminal Company location 70 Rods to the first mentioned bounds or place of beginning.

EXCEPTING, however, from the above described premises two certain pieces or parcels of land, that first being 200 feet in length by 28 feet in width and lying parallel with the above-mentioned railroad, said parcel being conveyed by F.O.J. Bodge to Boston & Maine Railroad by warranty deed November 20, 1907, and recorded in the Cumberland County Registry of Deeds in Book 817, Page 29; and the second being a strip along a portion of the southeasterly and southwesterly side thereof, being conveyed by Lewis Lumber Co. to Central Maine Power Company by deed dated November 23, 1951, and recorded in said Registry in Book 2067, Page 107.

Both tracts are conveyed subject to the rights acquired for a sewer by the City of Portland by taking dated May 26, 1944, and recorded in the office of the City Clerk of the City of Portland, Maine, in Vol. 66, Page 263.

Also excepting the land described in the deed from Tilcon Minerals, Inc. to the City of Portland dated November 22, 1996, recorded in the Cumberland County Registry of Deeds in Book 12886, Page 212.

The premises are conveyed subject to the following rights and easements:

1. Rights and easements granted by Warren Bros. Roads Co. to Central Maine Power Company by instrument dated June 19, 1952, and recorded in the Cumberland County Registry of Deeds in Book 2097, Page 221.
2. Rights and easements granted by Warren Brothers Roads Company to Central Maine Power Company and New England Telephone and Telegraph Company by instrument dated January 27, 1967, and recorded in the Cumberland County Registry of Deeds in Book 2996, Page 102.
3. Rights and easements granted by Warren Brothers Co. to Portland Water District by instrument dated December 15, 1977, and recorded in the Cumberland County Registry of Deeds in Book 4150, Page 72.
4. Rights and easements granted by Warren Bros., a Div. of Ashland-Warren Inc. to Central Maine Power Company and New England Telephone and Telegraph Company by instrument dated January 31, 1978, and recorded in the Cumberland County Registry of Deeds in Book 4239, Page 326.
5. Rights and easements granted by Tilcon Minerals, Inc. to the City of Portland by deed dated November 22, 1996, and recorded in the Cumberland County Registry of Deeds in Book 12886, Page 214.

6. Rights and easements granted by Lewis Lumber Company to Central Maine Power Company by instrument dated November 23, 1951, and recorded in the Cumberland County Registry of Deeds in Book 2067, Page 106.
7. Rights, easements, and exceptions set forth in deed from Rosa Lewis to Warren Brothers Roads Company dated May 26, 1962, recorded in said Registry of Deeds in Book 2676, Page 74.

H:\DOCS\RATTEY\Pike\UNE 39662\EXHIBIT A.docx

Received
Recorded Register of Deeds
Mar 02, 2012 11:36:47A
Cumberland County
Pamela E. Lovley

QUITCLAIM DEED

THE STATE OF MAINE DEPARTMENT OF DEFENSE, VETERANS AND EMERGENCY MANAGEMENT successor in interest to the **STATE OF MAINE**, acting by and through the Acting Adjutant General pursuant to 37-B M.R.S.A. § 264, (the "Grantor"), FOR CONSIDERATION PAID, grants to the **UNIVERSITY OF NEW ENGLAND**, a Maine non-profit corporation, whose mailing address is 716 Stevens Avenue Portland, ME 04103 (the "Grantee"), certain real property, together with any improvements thereon, located at 760-780 Stevens Avenue, in the City of Portland, County of Cumberland and State of Maine, more particularly describes as follows:

A certain lot or parcel of land with the buildings thereon situated on the westerly side of Stevens Avenue in the City of Portland in said County of Cumberland and State of Maine, being the same premises conveyed by Elizur B. Forbes to Portland and Forest Avenue Rail Road Company by deed dated March 22, 1864, and recorded in Cumberland County Registry of Deeds in Book 326, Page 212, in which deed said premises were bounded as follows:

"A certain parcel of land fronting on the principal street at Stevens's Plains in Westbrook aforesaid, bounded as follows; beginning on said street at the southeast corner of land formerly of Jeremiah Beedle, now of Woodbury Polleys; thence running North sixty-four and a half degrees West five hundred seven and a half feet; thence North twenty-five and a half degrees East, thirty three feet; thence North sixty-three degrees West one hundred twenty-five feet; thence South seventy-five degrees forty-five minutes West seven hundred twenty feet; thence South sixty-four degrees east nine hundred ten and a half feet; thence North twenty and a quarter degrees east one hundred forty and a half feet; thence South sixty-six and a half degrees east, three hundred twenty four feet to the street or Stevens's Plains road before mentioned; thence North (by the line of the Street) nineteen degrees and three quarters east, two hundred ninety feet to the place of beginning - estimated to contain about nine and one quarter acres."

Meaning and intending to convey the same premises delineated on the Plan of Property in Portland, Maine made for the Adjutant General, Augusta, Maine prepared by H.I. & E.C. Jordan dated August 22, 1958.

For Grantor's source of title see: Warranty Deed from Portland Rail Road Company to the State of Maine dated October 14, 1940 and recorded at the York County Registry of Deeds in Book 1619, Page 299.

MAINE REAL ESTATE TAX PAID

By his signature hereon, the Acting Adjutant General certifies that the premises being conveyed in compliance with 37-B MRSA § 264, Section 6, Subsection 5 constitutes the Portland Armory, that he has designated an officer to inspect the premises, that he has determined the property to be unfit for military use, and has condemned the premises and furthermore that the premises are not being sold for less than appraised value as determined by a person licensed as a real estate appraiser under Title 32, chapter 123 and that the State of Maine Department of Defense, Veterans and Emergency Management is the successor in interest to the State Military Defense Commission of the State of Maine.

IN WITNESS WHEREOF, the State of Maine has caused this instrument to be executed in its name by Brigadier General Gerard F. Bolduc in his capacity as the Acting Adjutant General of the Maine National Guard, pursuant to 37-B M.R.S.A. § 264, this 11 day of June, 2015.

JA.
Witness

STATE OF MAINE

By: Gerard F. Bolduc

Gerard F. Bolduc
Brigadier General, The Acting Adjutant General

State of Maine
County of Kennebec, ss

June 11, 2015

The personally appeared the above-named Brigadier General Gerard F. Bolduc, The Acting Adjutant General of the Maine National Guard, and acknowledged the foregoing instrument to be his free act and deed and, pursuant to authorization of the Maine Legislature as found in 37-B M.R.S.A. § 264, the free act and deed of the State of Maine.

Before me,

Stacy M. Bradbury

Notary Public/Attorney-at-Law

Commission Expires:

Print Name: Stacy M. Bradbury

Under authority of
37-B MRSA 390-C.
Attorney at Law

Received
Recorded Register of Deeds
Jun 17, 2015 08:54:11A
Cumberland County
Nancy A. Lane

Abstract of Title to the following described land:

A certain lot or parcel of land with the building thereon, situated number 374 Stevens Avenue in that part of said Portland formerly Deering, and being bounded and described as follows:

~~Beginning at a stone post standing on the northerly side of College~~
Street, formerly Seminary Street, one hundred and fifty-eight (158) feet more or less from the northwesterly corner of said College Street and Stevens Avenue, and running north, twenty-four and one-fourth ($24 \frac{1}{4}$) degrees east, one hundred and forty-eight and one-half ($148 \frac{1}{2}$) feet to land now or late of Captain Sargent; thence south, seventy (70) degrees east by said Sargent's land one hundred and forty-one and one half ($141 \frac{1}{2}$) feet more or less to said Stevens Avenue; thence southerly by said Stevens Avenue seventy-four (74) feet to land now or late of Arabella W. Roberts; thence westerly by land now or late of said Roberts in a line parallel with said College Street one hundred (100) feet; thence southerly again by land now or late of said Roberts in a line parallel with said Stevens Avenue ninety (90) feet to said College Street; and thence westerly by said College Street to point of beginning; be any or all of said measurements more or less, or however otherwise bounded, measured or described.

Being the same premises conveyed by Lydia J. Snow to Thalia L. Clement, formerly Thalia L. Scamman, by warranty deed dated April 22, 1902, and recorded in Cumberland County Registry of Deeds, Book 716, Page 326.

bounded, measured or described.

Being the same premises conveyed by Lydia J. Snow to Thalia L. Clement, formerly Thalia L. Scamman, by warranty deed dated April 22, 1902, and recorded in Cumberland County Registry of Deeds, Book 716, Page 326.

Excepting that certain lot or parcel of land conveyed by the said Thalia L. Clement to Victor Brewster by warranty deed dated October 19, 1908, and recorded in Cumberland County Registry of Deeds, Book 831, Page 38.

APPROPRIATE OF LISTS TO THE BOTTOM ARE DESCRIBED TOP:

377-518.

(Elizur)

Eleazer B. Forbes to Joseph C. Snow;

Warranty; July 29, 1870;

Tract embracing lot described.

478-428.

Joseph C. Snow to Lydia J. Snow, wife;

Warranty; December 13, 1880;

Same tract as 377-518.

716-326.

Lydia J. Snow to Thalia L. Scamman;

Warranty, April 22, 1902.

721-20.

Thalia L. Scamman to Portland Savings Bank;

Mortgage; September 30, 1902; Discharged on margin

Mar. 2, 1905.

Thalia L. Clement to Portland Savings Bank, June 10, 1910.

Mortgage;

Discharged on margin September 22, 1914.

At the present time there are no encumbrances of record.

Dated at Portland, Maine, this fifth day of April,

A.D. 1919.

Quibbee Quibbee

Quit-Claim Deed

CORPORATION — WITH COVENANT

FROM

ALL SOULS UNIVERSALIST CHURCH OF
 PORTLAND, MAINE
 (ALL SOULS CHURCH PARISH)

TO

WESTBROOK SEMINARY AND JUNIOR COLLEGE

Dated February 9, 1940

State of Maine.

Cumberland ME Registry of Deeds

Received FEB 9 1940

at 2 P. M., 26, 27, and

recorded in Book 1599 Page 276

Attest
[Signature]
 REGISTER

FROM THE OFFICE OF

Bradley, Linnell, Nulty & Brown
 192 Middle Street
 Portland, Maine

MARTIN'S, PORTLAND, MAINE — LAW OFFICE SUPPLIES AND EQUIPMENT

MARTIN'S FORM NO. 9

To have and to hold the same, together with all the privileges and appurtenances thereunto belonging, to it, the said Westbrook Seminary and Junior College, its successors

~~Hereby~~ and Assigns forever.

And the said Grantor Corporation does warrant with the said Westbrook Seminary and Junior College, its successors

~~Hereby~~ and Assigns, that it will Warrant and Forever Defend the premises to it, the said Grantee, its successors

~~Hereby~~ and Assigns forever, against the lawful claims and demands of all persons claiming by, through, or under it.

In Witness Whereof, the said All Souls Universalist Church of Portland, Maine (All Souls Church Parish)

has caused this instrument to be sealed with its ~~corporate~~ seal

and signed in its corporate name by *Herbert B. Seal, President of its Board of Trustees,*

thereunto duly authorized, this *9th* day of February

in the year one thousand nine hundred and forty.

Signed, Sealed and Delivered
in presence of

E. F. Perkins

ALL SOULS UNIVERSALIST CHURCH OF
PORTLAND, MAINE
(ALL SOULS CHURCH PARISH)

By *Herbert B. Seal*
Its President of
Board of Trustees.

~~CORPORATE SEAL~~

State of Maine.

CUMBERLAND,

February 9, 1940.

Personally appeared the above named *Herbert B. Seal, President*
of the Board of Trustees of said Grantor Corporation
as aforesaid, and acknowledged the foregoing instrument to be his
free act and deed in his said capacity, and the free act and deed of
said corporation.



Before me,

Elliott P. Perkins
Justice of the Peace

Depth Priority

WALTER G. WHITMAN

10

Dated _____ 1940

Exercises

Cumberland ss. Registry of Deeds

Received MAR 28 1940 44

at 4 H., 55 M., 0 M., and

recorded in Book 1603 Page 98

Attest:
Charles L. Smith
 Register

FROM THE OFFICE OF

Bradley, Linnell, Nulty & Brown
192 Middle Street
Portland, Maine

MARTIN'S FORM NO. 1 — STANDARD REGISTRY FORM



Indeke

Know all Men by these Presents

That ALL SOULS UNIVERSALIST CHURCH OF PORTLAND, MAINE, a religious society duly organized under the laws of the State of Maine and located at Portland, in the County of Cumberland and State of Maine, formerly known as and called ALL SOULS CHURCH PARISH,
~~a corporation organized and existing under the laws of the State~~

~~of~~

~~xxxxxxxxxxxx~~

~~xxxxxxxxxxxx~~

~~xxxxxxxxxxxx~~

in consideration of one dollar and other valuable consideration

paid by WESTBROOK SEMINARY AND JUNIOR COLLEGE, a corporation organized and existing under the laws of the State of Maine and located at said Portland,

the receipt whereof it does hereby acknowledge, does hereby remise,
 release, bargain, sell and convey, and forever quit-claim unto the said

Westbrook Seminary and Junior College, its successors

~~back~~ and assigns forever,

the following described premises situated in said Portland:

1. A certain lot or parcel of land situated in said Portland and bounded and described as follows: Beginning at an iron stake at the northwesterly corner of the lot of land conveyed by Ella Louise Fernald to Susie Whitman by deed dated May 11, 1908 and recorded in Cumberland County Registry of Deeds in Book 826, Page 72; thence by land conveyed to said Whitman as aforesaid and by land conveyed to said Whitman by Cordelia S. Pierce by deed dated August 3, 1892 and recorded in said Registry of Deeds, Book 593, Page 236, on a course of South sixty-four degrees forty-two minutes East (S. 64° 42' E.) two hundred thirty-three (233) feet to an iron stake; thence by other land of said Grantor on a course of North twenty-one degrees fifty-six minutes East (N. 21° 56' E.) sixty-eight and fifty-five hundredths (68.55) feet to the Southeasterly corner of the lot of land next hereinafter described and conveyed; thence by said lot of land next hereinafter described and conveyed on a course of North sixty-four degrees fifty-five minutes West (N. 64° 55' W.) two hundred twenty-one and three tenths (221.3) feet to other land of said Grantee; thence by land of said Grantee on a course of South thirty-one degrees forty-five minutes West (S. 31° 45' W.) sixty-eight and one tenth (68.1) feet to the point of beginning.

Said above described lot is subject to the life lease to Ella L. Perry as granted to her by All Souls Church Parish by lease dated October 17, 1924 and recorded in said Registry in Book 1204, Page 65.

2. A certain other lot or parcel of land in said Portland was devised and land which Cordelia S. Pierce devised to All Souls Universalist Church of Portland, Maine under the name of Society of All Souls Church by her last will and testament.

Westbrook Seminary and Junior College, its successors

hereby and assigns forever,

the following described premises situated in said Portland:

1. A certain lot or parcel of land situated in said Portland and bounded and described as follows: Beginning at an iron stake at the northwesterly corner of the lot of land conveyed by Ella Louise Fernald to Susie Whitman by deed dated May 11, 1908 and recorded in Cumberland County Registry of Deeds in Book 826, Page 72; thence by land conveyed to said Whitman as aforesaid and by land conveyed to said Whitman by Cordelia S. Pierce by deed dated August 3, 1892 and recorded in said Registry of Deeds, Book 593, Page 236, on a course of South sixty-four degrees forty-two minutes East (S. 64° 42' E.) two hundred thirty-three (233) feet to an iron stake; thence by other land of said Grantor on a course of North twenty-one degrees fifty-six minutes East (N. 21° 56' E.) sixty-eight and fifty-five hundredths (68.55) feet to the Southeasterly corner of the lot of land next hereinafter described and conveyed; thence by said lot of land next hereinafter described and conveyed on a course of North sixty-four degrees fifty-five minutes West (N. 64° 55' W.) two hundred twenty-one and three tenths (221.3) feet to other land of said Grantee; thence by land of said Grantee on a course of South thirty-one degrees forty-five minutes West (S. 31° 45' W.) sixty-eight and one tenth (68.1) feet to the point of beginning.

Said above described lot is subject to the life lease to Ella L. Perry as granted to her by All Souls Church Parish by lease dated October 17, 1924 and recorded in said Registry in Book 1204, Page 86.

2. A certain other lot or parcel of land in said Portland and bounded and described as follows: Beginning at a stake on the northerly line of the lot of land which Cordelia S. Pierce devised to All Souls Universalist Church of Portland, Maine under the name of Society of All Souls Church by her last will and testament, an abstract of which is recorded in Cumberland County Registry of Deeds in Book 757, Page 136, said stake being distant one hundred forty-five (145) feet westerly of the westerly line of Stevens Avenue as established by deed from Westbrook Seminary to the City of Portland dated May 29, 1917 and recorded in said Registry in Book 1086, Page 449; thence by other land of said Grantor on a course of South twenty-one degrees fifty-six minutes West (S. 21° 56' W.) sixty-eight and fifty-five hundredths (68.55) feet to the northerly line of the lot of land next hereinafter described and conveyed; thence by said lot of land next hereinafter described and conveyed on a course of North sixty-four degrees fifty-five minutes West (N. 64° 55' W.) two hundred twenty-one and three tenths (221.3) feet to land of said Grantee; thence by land of said Grantee on a course of North thirty-one degrees forty-five minutes East (N. 31° 45' E.) sixty-eight and one tenth (68.1) feet to a stake; thence by land of said Grantee on a course of South sixty-five degrees eight minutes East (S. 65° 08' E.) two hundred nine and sixty-four hundredths (209.64) feet to the point of beginning.

Said aforementioned courses are magnetic and of the date of 1935.

Being a part of the property devised to All Souls Universalist Church of Portland, Maine under the name of Society of All Souls Church by the last will and testament of Cordelia S. Pierce, an abstract thereof being recorded in said Registry of Deeds in Book 757, Page 136.

On ~~Now~~ and in ~~Full~~ the aforegranted and bargained premises with all the privileges and appurtenances thereof, to the said

Westbrook Seminary and Junior College, its successors ~~heirs~~ and assigns, to its and their use and behoof forever.

And I do covenant with the said Grantee, its ^{successors} ~~heirs~~ and assigns, that I am lawfully seized in fee of the premises, that they are free of all incumbrances; 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, its ^{successors} ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons except as aforesaid.

In ~~Witness Whereof~~. I, the said Walter G. Whitman,

and I, Grace B. Whitman,

wife of the said

Walter G. Whitman,

Joining in this deed as Grantor, and relinquishing and conveying all right by descent and all other rights in the above described premises, have hereunto set our hands and seals this 26th day of March in the year of our Lord one thousand nine hundred and forty.

Signed, Sealed and Delivered
in presence of

Sumner Y. Wheeler



Walter G. Whitman
Grace B. Whitman

premises, have not come

day of *March*

in the year of our Lord one thousand nine

hundred and forty.

Signed, Sealed and Delivered
in presence of*Sumner Y. Wheeler**Walter S. Whitman**Grace B. Whitman*COMMONWEALTH OF MASSACHUSETTS,
~~Essex, ss.~~

Essex,

ss.

March 26, 1940.

Personally appeared the above named

Walter G. Whitman

and acknowledged

the foregoing instrument to be his

free act and deed.

Before me,

Charles A. Metcalf

Justice of the Peace

Notary Public

My commission expires Apr. 28, 1949

00000

KNOW ALL MEN BY THESE PRESENTS, That the CITY OF PORTLAND, a body politic^o and corporate located in the County of Cumberland and State of Maine, in consideration of One Dollar (\$1.00) and other good and valuable considerations, paid by Westbrook College, a corporation organized and existing under the laws of the State of Maine and located at 716 Stevens Avenue in said Portland in said County and State, the receipt whereof it does hereby acknowledge, does hereby give, grant, bargain, sell and convey, unto the said Westbrook College, its successors and assigns forever, certain real estate located in said Portland, lying Westerly of College Street and Southerly of Bishop Street, bounded and described as follows:

Beginning at a point on the Northerly line of the land of Portland Railroad Company where the same intersects with land hereby conveyed and land formerly of George H. Smardon, commonly known as the Smardon Gravel Pit, formerly Read's Gravel Pit; thence from said point North 19° 30' East 28.68 rods; thence North 60° West Seven and thirty-two hundredths (7.32) rods to a point; thence South 74° 45' West Thirty-six and sixty-four hundredths (36.64) rods to a point; thence North 5° West Two and fifty-six hundredths (2.56) rods; thence North 30° West Twenty-four and four tenths (24.4) rods; thence South 65° West Forty-seven and twelve hundredths (47.12) rods to center of ditch; thence up the center of said ditch towards what is known as pasture Two Hundred Ninety-eight (298) feet; thence in a straight line to a point in line of Evergreen Cemetery indicated by a spruce stump, said stump being at the intersection between land of said Cemetery and land conveyed by Luther B. Roberts to the said City of Portland; thence from said stump North 80° 21' East Three Hundred Seventy-one and two tenths (372.2) feet to an angle; thence from said angle North 76° 8' East, Five Hundred Ninety-six and twenty-two hundredths (596.22) feet to an angle; thence from said last named angle at a right angle South 12° 52' East Seventy-five (75) feet to land of said Portland Railroad Company; thence about North 76° 8' East by said Portland Railroad Company's land to the point of beginning.

Also a certain other parcel of land, abutting the above described premises and bounded and described as follows: Beginning at the center of the ditch

Two Hundred Ninety-eight (298) feet; thence in a straight line to a point in line of Evergreen Cemetery indicated by a bridge stump; said stump being at the intersection of the land of said Cemetery and land conveyed by Luther B. Roberts to the said City of Portland; thence from said stump North $80^{\circ} 21'$ East Three Hundred Seventy-one and two tenths (372.2) feet to an angle; thence from said angle North $76^{\circ} 8'$ East, Five Hundred Ninety-six and twenty-two hundredths (596.22) feet to an angle; thence from said last named angle at a right angle South $12^{\circ} 52'$ East Seventy-five (75) feet to land of said Portland Railroad Company; thence about North $76^{\circ} 8'$ East by said Portland Railroad Company's land to the point of beginning.

Also a certain other parcel of land, abutting the above described premises and bounded and described as follows: Beginning at the center of the ditch between the hereinabove described premises and the land hereby conveyed and in line of land now or formerly owned by Adam Wilson and running Southerly by land of said Wilson to the Westerly corner of land of Evergreen Cemetery; thence South Twenty-four (24°) degrees East by land of said Cemetery One hundred and seventy-five (175) feet to a point; thence by land formerly of Dennis F. Gulliver, and being the premises hereinabove described, in a straight line to a point in the center of said ditch; said point being Two Hundred Ninety-eight (298) feet from the point of beginning; thence down the center of said ditch to the point of beginning.

256

- 2 -

Excepting and reserving from the above described premises that portion thereof conveyed by the Grantor to Central Maine Power Company by deed dated February 26, 1967, recorded in said Registry of Deeds in Book 2989, Page 13.

This conveyance is made subject to the right-of-way or easement granted by the Grantor to Central Maine Power Company by deed dated December 13, 1951, recorded in said Registry of Deeds in Book 2055, Page 463.

Reserving to the Grantor, its successors and assigns, the right perpetually to enter at any and all times upon a strip of land fifty (50) feet in width lying equally on either side of the storm drain and upon a strip of land fifty (50) feet in width lying equally on either side of the brook presently located on the premises herein conveyed and the right perpetually to maintain, repair, rebuild, relocate, or remove said storm drain and brook with all necessary fixtures and appurtenances within said strips of land, granting to the Grantee, its successors and assigns, the use and enjoyment of said strips of land for such purposes only as will in no way interfere with the perpetual use thereof by the Grantor, its successors and assigns, for the purposes above mentioned, except that no buildings or structures may be erected within said strips of land. Also reserving to the Grantor, its successors and assigns, the right perpetually to enter at any and all times upon the premises herein conveyed for the purpose of access and egress by itself, its servants and/or agents to and from said strips of land.

Being the same premises conveyed to the Grantor by deed of James Gulliver, Administrator, d.b.n.c.t.a., of the Estate of Stephen Gulliver by deed dated August 23, 1935, recorded in said Registry of Deeds in Book 1476, Page 441.

Also a certain lot of land lying in the rear of College Street, in the City of Portland, bounded and described as follows, to wit:

Beginning at a point on the Northerly side line of College Street and at the Westerly corner of land belonging to Francis L. Stone; thence North 25° 22' east by land of said Stone eighty-seven and nineteen one hundredths (87.19) feet to land of the Portland Railroad Company; thence North 62° 26' west by land of said Portland Railroad Company four hundred and thirty-one and ninety three one hundredths (431.93) feet

Seventy-one and two tenths (372.2) feet to an angle; thence from said angle North $76^{\circ} 8'$ East, Five Hundred Ninety-six and twenty-two hundredths (596.22) feet to an angle; thence from said last named angle at a right angle South $12^{\circ} 52'$ East Seventy-five (75) feet to land of said Portland Railroad Company; thence about North $76^{\circ} 8'$ East by said Portland Railroad Company's land to the point of beginning.

Also a certain other parcel of land, abutting the above described premises and bounded and described as follows: Beginning at the center of the ditch between the hereinabove described premises and the land hereby conveyed and in line of land now or formerly owned by Adam Wilson and running Southerly by land of said Wilson to the Westerly corner of land of Evergreen Cemetery; thence South Twenty-four (24°) degrees East by land of said Cemetery One hundred and seventy-five (175) feet to a point; thence by land formerly of Dennis F. Gulliver, and being the premises hereinabove described, in a straight line to a point in the center of said ditch; said point being Two Hundred Ninety-eight (298) feet from the point of beginning; thence down the center of said ditch to the point of beginning.

APPENDIX 1.1 List of Properties included in the UNE IOZ

(All properties within the green boundary shown on the IOZ Boundary (Figure 1.1) shall be included in the UNE IOZ)

Chart	Block	Lot	Address	Acreage	Ownership
144	A	005	684 Stevens Ave	0.141	UNE
144	A	006	684 Stevens Ave	0.275	UNE
144	A	007	684 Stevens Ave	0.371	UNE
144	A	008	684 Stevens Ave	0.256	UNE
144	A	009	684 Stevens Ave	0.586	UNE
145	A	001	706 Stevens Ave	0.450	UNE
145	A	002	710 Stevens Ave	0.165	UNE
145	A	003	714 Stevens Ave	9.231	UNE
145	A	006	714 Stevens Ave	0.250	UNE
145	A	007	710 Stevens Ave	0.006	UNE
145	A	008	710 Stevens Ave	0.036	UNE
145	A	009	714 Stevens Ave	0.356	UNE
145	A	010	714 Stevens Ave	0.338	UNE
145	B	001	1 College St	0.207	UNE
145	B	002	1 College St	1.830	UNE
145	B	006	31 College St	0.134	UNE
145	B	007001	33 College St	0.173	Owned by others
145	B	008001	37 College St	0.197	Owned by others
145	A	004	74 College St	0.416	Owned by others
145	B	009	41 College St	0.200	UNE
145	B	010	51 College St	0.383	UNE
145	B	011	63 College St	0.076	UNE
145	B	012	63 College St	0.114	UNE
145	B	013	63 College St	0.048	UNE
145	B	014	83 College St	0.366	UNE
145	B	018	772 Stevens Ave	8.603	UNE
145	B	027	83 College St	3.137	UNE
145	B	029	79 College St	0.258	UNE
145	B	042	1 College St	0.162	UNE
145	B	046	1 College St	0.138	UNE
281	A	003	0 Bishop St	10.555	UNE
290	A	003	83 College St	1.771	UNE
291	A	001	0 Bishop St	8.394	UNE
291	A	005	83 College St	17.972	UNE
291	A	007	83 College St	0.459	UNE
293	C	005	83 College St	1.574	UNE

Public Comment UNE Overlay Zone: IOZ Plan is Bad Urbanism

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0 views

**George Rheault**

12:48 PM (24 minutes ago)

to Planning Board, Christine Grimando, kkraft, jra...@portlandmaine.gov, jmy, Abigail Reed, Matthew Grooms

Attached is a copy of UNE's residential resource page for its Portland campus commuters which prompts a lot of questions about the development of the proposed IOZ.

- 1.) Is the IOZ meant to promote healthy urbanism or simply ward off uprisings of NIMBYs in the vicinity of the campus?
- 2.) Why are residential options (for UNE students, faculty and staff and their families) not being aggressively promoted and incentivized as part of the IOZ?
- 3.) Proposed height limits are silly. Nearby Deering Pavilion is an 11-story mid-rise senior living option built circa 1973 by an arm of the Catholic Church. WHY ARE MID-RISE BUILDINGS GREATER THAN 85 FEET NOT BEING PERMITTED AS PART OF THE IOZ?
- 4.) Can UNE or Greater Portland METRO provide ridership data for the last several years for UNE campus users? Ideally data for 2021-2020-2019 should be examined, especially to see what COVID restrictions might have done to ridership.
- 5.) Does UNE have good data on the commuter profile of its students, faculty and staff?

Visit *UNE Onward* for updates and information on UNE's response to COVID-19 →

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LIVING OFF CAMPUS

List an Apartment

UNE graduate and professional students make great tenants. If you have a property to rent in Portland and its neighboring towns, you may complete and submit an application to add it to our listings. To keep our listings current, please notify us when your unit is rented.

HOUSING RESOURCES

As a student on UNE's Portland Campus, you will be a commuter student. The Graduate and Professional Student Affairs Office is here to help connect you with resources for locating an apartment and/or finding a roommate. For additional help with answers to questions not found on this website contact us at (207) 221-4212 or pcstudentaffairs@une.edu.

Find an Apartment

Look for an apartment using our customizable Listing Directory.

Warning: Individuals are attempting rental scams in the Portland area by posing as landlords/property managers. Please exercise caution.

[HOUSING DISCLAIMER \(PDF\) →](#)

Find a Roommate

We can help connect you with other UNE students who are looking for housing or a roommate. Complete our survey using your UNE username and password to gain access to a searchable database.

Visit our password portal if you have yet to activate your UNE username and password.

Off-Campus Resources

- Maine Attorney General's Office
- City of Portland
- Maine Housing Authority
- Rights of Tenants in Maine
- Tips Before You Rent
- Maine Housing Search
- What to do after your address is established

- Student Renter's Guide



TRANSPORTATION

Are you going to be living in Portland without a vehicle? UNE students can ride the Greater Portland Metro, Portland's public transportation system, for free. Your UNE student ID is your bus pass, just show your UNE ID to the driver and tap it on the card reader when getting on the bus.

Maps and Schedules

A full listing of bus route maps and schedules are available at Greater Portland Metro.

Intercampus Shuttle

Due to COVID-19, intercampus shuttle service has been suspended until further notice.

Christian MilNeil <c.neal.milneil@gmail.com>

Jan 25, 2022, 3:33:49 PM (5 days ago)

to planningboard@portlandmaine.gov, tsaucier@sitedesignassociates.biz, mgrooms@portlandmaine.gov, Catherine Buxton, Bobbi K

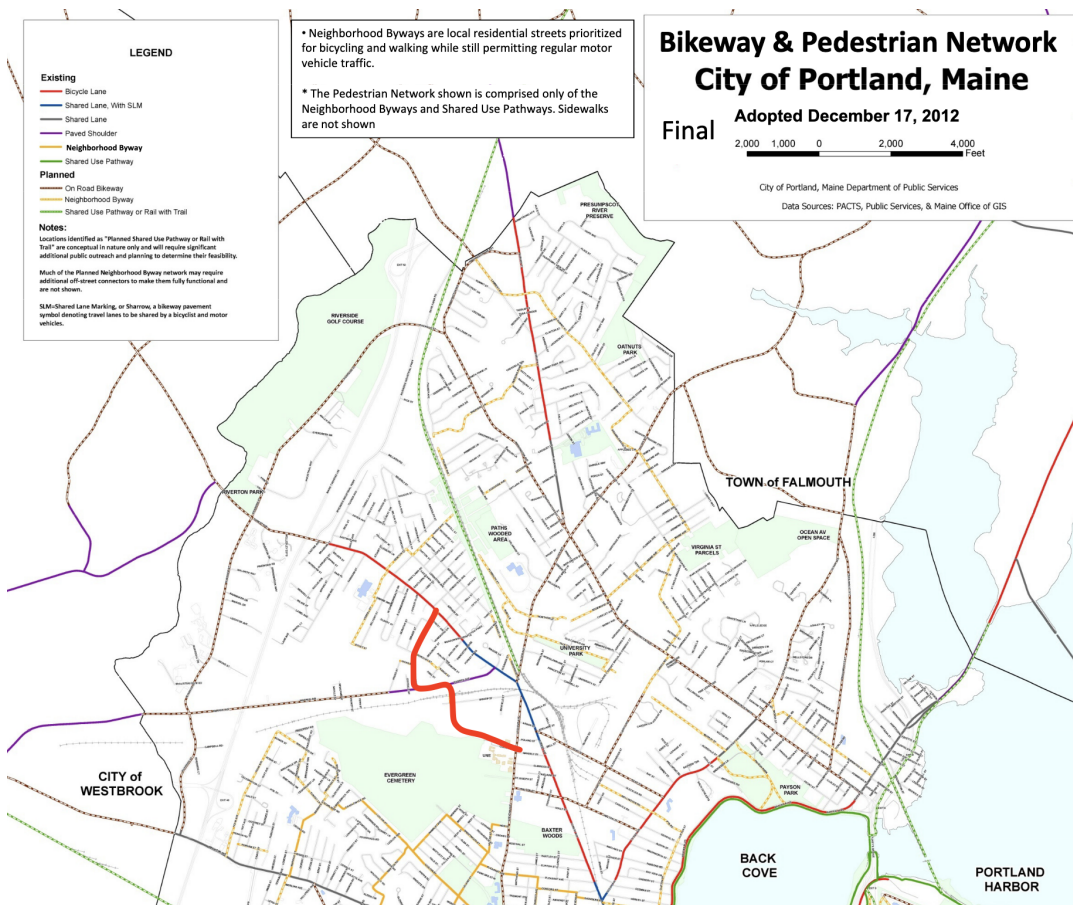
To the Planning Board and City of Portland planning staff:

As members of the Portland Bike and Pedestrian Advisory Committee (PBPAAC), we would like to offer a friendly suggestion to the University of New England's Institutional Master Plan on this evening's workshop agenda (the PBPAAC has not had a chance to formally meet since the materials for this application were made publicly available, so this letter does not necessarily reflect the views of the entire committee, but we felt that it was important to weigh in as individuals).

The UNE campus holds great potential to provide a bike- and pedestrian-friendly bypass route around Morrill's Corner to connect Deering Center to Riverton to the northwest.

UNE already has an access road that connects the campus to Bishop Street, but it's gated and signage indicates that the public is not welcomed there.

Nevertheless, this roadway could be a great way to bypass the congested and stressful Morrill's Corner area for bike riders and pedestrians traveling between Deering Center and Riverton. It leads through the campus, to Bishop St; from there, one can take a short hop on Warren Ave. to Hemingway and Hicks Streets to Forest Ave. in the Riverton neighborhood. The route (highlighted in red below) is particularly obvious when overlaid on Portland's bike network master plan:



Indeed, the Bike Network Master Plan (see page 20) designates Bishop Street Extension as a "Planned Neighborhood Byway," in anticipation of future development on the land now owned by UNE that would eventually build out street connectivity between Bishop Street and Stevens Avenue.

We therefore would like to request that the UNE, the Planning Board, and the City of Portland:

1. Commit to providing a safe, public, and ADA-accessible connection for bikes and pedestrians between Stevens Avenue and Bishop Street, including sidewalk and crosswalk connections to Warren Avenue – either in the form of sidewalks and bike lanes along public streets and the existing access road between the campus and Bishop Street, or in the form of a dedicated, paved, well-lit off-street shared-use pathway along a parallel route (the latter could provide the advantage of providing a more direct route to Bishop St. Extension).
2. Commit to clearing this bike and pedestrian route of snow and ice in the winter months;
3. And, in the short term, establish a public access easement along the Bishop Street access road to allow for public bike and pedestrian travel, and modify the existing gates on the access road to allow for barrier-free, ADA-accessible access to that roadway for bikes and wheelchair users.

Thank you for your attention to these details, which will help UNE and the City of Portland meet their joint goals for reducing traffic and air pollution.

Yours,

Christian MilNeil, Bobbi Keppel, Catherine Buxton, and Michael O'Neal

To: Chair Stanley & Members of the Planning Board
From: Jimmy Dealaman, Planner
Date: March 18, 2022
Re: Douglass Commons Redevelopment
Project ID: PL-001888-2021; CU-001900-2022
CBL: 078 B007001; 078 C002001
Meeting Date: March 22, 2022

I. INTRODUCTION

Maine Cooperative Development Partners and the Szanton Company have submitted a Major Site Plan and Inclusionary Zoning Conditional Use applications to facilitate construction of eight new residential buildings totaling approximately 120,345 square feet of floor area and creating 120 affordable units at 43 and 91 Douglass Street (57 Douglass Street). The proposed development includes two separate phases of construction including 1) a 63-unit, five-story multifamily residential building and; 2) seven two to three-story townhome-style buildings comprising of 57 units. Each phase includes associated site improvements including but not limited to parking, landscaping, and a new shared-street “woonerf” along the center of the site. The site is located in the Libbytown neighborhood and within the R-5a Residential zone.



Figure 1: Approximate Development Site

This application is being referred to the Planning Board for compliance with the City of Portland’s Land Use Code Site Plan Standards, Section 14.1 and Inclusionary Zoning Conditional Use Standards, Section 18.2.3.

The Planning and Urban Development Department mailed 101 notices advertising this meeting to property owners within 500 feet of the site. A legal advertisement ran in the March 11 and 12, 2022 editions of the *Portland Press Herald*.

Applicants: Maine Cooperative Development Partners; The Szanton Company
Engineer: Sam Lebel, Acorn Engineering
Architects: Kaplan Thompson Architects; Archetype Architects
Landscape Architect: Seth Kimball, Aceto Landscape Architects



Figure 2: Aerial View of Site (facing north)

II. REQUIRED REVIEWS

<i>Review</i>	<i>Applicable Standards</i>
Site Plan	Section 14.6
Inclusionary Zoning Conditional Use	Section 18.2.3
Design Review	City of Portland Design Manual Section (h) Planned Residential Unit Development (PRUD)

<i>Waiver Requests</i>	<i>Applicable Standards</i>
Request: To waive the required maximum percentage of compact spaces to allow 28 percent compact parking	Technical Manual, Section 1.14.2: Parking lots with greater than 10 spaces may be comprised of up to 20 percent compact parking spaces.
Request: To reduce drive aisle width from 24 feet to 22 feet	Technical Manual, Section 1.14.3.: Parking lot layout shall provide a minimum drive aisle of 24 feet.

III. PROJECT DATA

Existing Zoning	R-5a Residential
Property Size	146,011 square feet (3.34 acres)
Existing Use	Vacant Lot
Proposed Use	Planned Residential Unit Development (PRUD), Multi-family housing

	<i>Existing</i>	<i>Proposed</i>	<i>Net Change</i>
Building Footprint	0	33,510 SF	+33,510 SF
Building Floor Area	0	120,345 SF	+120,345 SF
Impervious Surface Area	94,185 SF	78,359 SF	-15,826 SF
Parking Spaces	0	69	+69 spaces
Bicycle Parking Spaces	0	28	+28 spaces
EV Charging Stations	0	14	+14 stations

IV. BACKGROUND

On December 16, 2019, the City Council approved the sale of the property (Resolve 10-19/20) located at 43 and 91 Douglass Street based on a recommendation from the City's Housing Committee to market the property to help meet the City's goals of constructing housing.

A. RFP for Disposition of 43 & 91 Douglass Street

In 2020, the City of Portland released an RFP to dispose of three separate City-owned properties, with the property at 43 and 91 Douglass Street being among them (Attachment 1). The criteria for consideration centered around the ability to provide high quality and age-inclusive affordable housing at-scale, and integrated with the surrounding community.

Aside from affordability requirements, the RFP requires that the development be designed in accordance with Portland's Green Building Code, and in a manner that is compatible with the pattern, scale, massing and materials of surrounding development.

The Szanton Company was selected as the winning bid, and Douglass Commons LLC entered into a purchase and sale agreement with the City on May 21, 2021 for development of this site.

B. Purchase and Sales Agreement for 43 & 91 Douglass Street

On May 21st, 2021 the applicant entered into a Purchase and Sale agreement with the City, and shortly after identified that a zoning map amendment was necessary to complete the project as presented in their bid. The Purchase and Sale Agreement (Attachment C) has been signed and both Environmental Assessments are now completed. The sale is contingent upon a number of conditions, one of which requires an 18-month due diligence period, so the transfer of the property from the City to the applicant is expected to occur no later than November of 2022.

The agreement specifies that the developer shall be responsible for the creation of a certain number of residential units, with a portion of those being deed restricted.

C. Zoning Map Amendment

On September 14th, 2021 the Planning Board recommended to the city council a zoning map amendment application (#ZN-001640-2021) to change the existing R-5 Residential zoning to R-5a Residential to facilitate an increase in density in a transit accessible location with access to services.

On October 18, 2021 the City Council approved an amendment to the City's Zoning Map (Order 72-21/22) as recommended by the Planning Board for both parcels located at 43 and 91 Douglass Street (Attachment 2). The zoning map amendment became effective October 28th, 2021.

V. EXISTING CONDITIONS AND SURROUNDING AREA

The subject property is comprised of two vacant city-owned parcels at 91 and 43 Douglass Street (Plan 3). The property is bounded by City-owned Dougherty Field to the north, property owned by Maine Department of Transportation (MDOT) to the east and south, and to the west the site is bordered by a mix of 11 residential properties made up of four 3-Family, two 2 Family, and five single family homes built between 1850 and 1930s.

Historically, the site consisted of salt marches and wetlands until sometime prior to 1866. Until 1900 the site was used as a brick yard, with a portion of the site also containing a residential structure. The City acquired both parcels around the late 1930s through mid-1940s. In 1962, the West School was built and

used as an elementary school until being used as an adult educational facility beginning in the mid-1980s, which was eventually vacated in 2013, as the building had reportedly fallen into significant disrepair. The West School building was eventually demolished in 2016.

The site is proximate to a number of commercial uses (zoned B-2 Community Business) which are along Congress Street to the south. The surrounding area also includes the Kiwanis Community Pool on the upper portion of Dougherty Field to the north. A B-1 Neighborhood Business zone is mapped at the intersection of Douglass Street, Brighton Avenue, and St. John Street. There are also a number of commercial/industrial land use types that exist along St James Street to the north east which are zoned I-M Industrial. To the west there is approximately four blocks of mid density (R-5) residential neighborhood that becomes lower density (R-3) residential zoning heading further west, which together provide a primarily residential context. Also serving these neighborhoods, at the end of Stevens Avenue, a priority corridor identified in the City's Comprehensive Plan, is the Westgate Shopping Center (zoned B-2 Community Business), a roughly 13-minute walk from the development site.

The site is in close proximity to Portland METRO bus routes 1, 5, 9A, and 9B, which run along Congress Street, Park Avenue, and the Fore River Parkway. The site is also 0.5 miles from the Portland Transportation Center – Amtrak Downeaster and Concord Coach Station. Further south, beyond the Portland Transportation Center is Thompson's Point, a large-scale mixed-use development including light industrial, restaurant, and venue space as well as the Portland Children's Museum.

Prior to this application, there was a recent zoning map amendment in the vicinity approved by the City Council on May 3, 2021 (Order No. 226-20/21) rezoning a property at 1217 Congress Street and adjacent parcels from a B-1 Neighborhood Business zone to a B-2 Community Business zone.

The adjacent Dougherty Field park complex at 107 Douglass Street was also recently administratively approved for site work (PL-001867-2021) involving a new basketball court and playground replacements which will have a pathway connection coordinated with the development at 57 Douglass Street.



Figure 3: Aerial View (facing West) Showing Surrounding Uses



Figure 4: Perspective Rendering Facing North (Co-op buildings on left and 5-story building on right)

VI. PROPOSED DEVELOPMENT

The applicant has provided an overall development plan (Plan 5) proposing a joint infill development of eight new buildings creating 120 affordable residential units combined. Maine Cooperative Development Partners and the Szanton Company are each developing a portion of the project, and proposing a phased site plan in order for each phase to be independent of subsequent phases. Section 14.9.1 of the City's Land Use Code allows for phasing major site plans and requires that each phase of the project must demonstrate being at least 20 percent of the total development, show the entire tract/parcel, and demonstrate that each phase conforms to all applicable site plan standards in the event that subsequent phases do not go forward (e.g. providing all necessary infrastructure, landscaping, parking, etc.).

At this time the applicant has submitted a Phase 1 plan and currently in the process of submitting a Phase 2 plan which will continue to be reviewed by staff. The full development proposal includes a combined total of 120 residential units, 69 parking spaces, 14 EV charging stations, and 33,520 square feet of open space area which may be accomplished with either Phase 1 or Phase 2 being constructed individually in any order or concurrently. Each segmented phase of the applicant's development proposal is described below:



Phase 1 of the proposal includes constructing a five-story apartment building (Building E) with 63 residential units (approximately 64,615 SF) toward the eastern portion of the site along the 295 interchange. The building will be comprised of a mix of 35 one-bedroom, 18 two-bedroom, and 10 three-bedroom rental units managed by the Szanton Company.

Phase 1 proposes 46 deed restricted workforce housing units (at or below 60% AMI) pursuant to the Inclusionary Zoning requirements (Section 18.2.3).

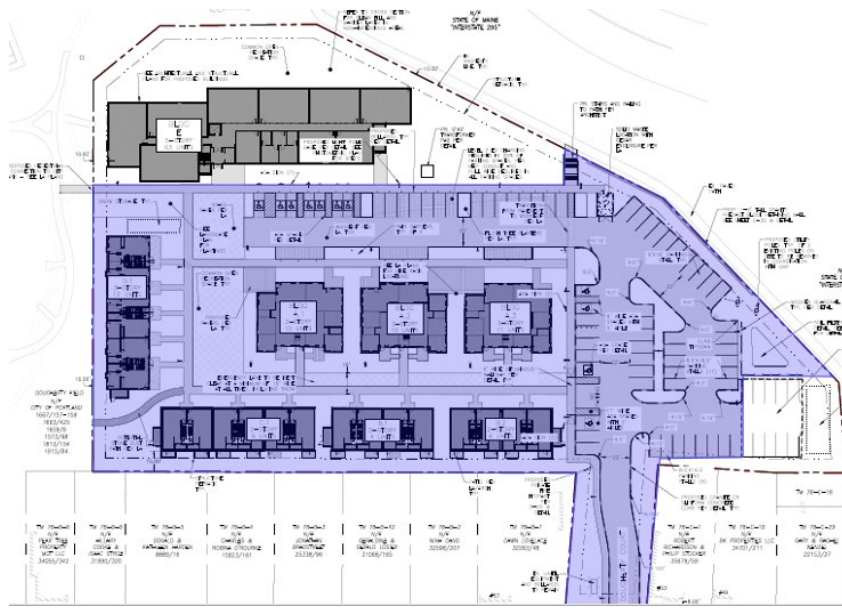


Figure 6: Approximate Phase 2 Development Area

B. PHASE 2 (shown in purple) – BLDGS. A1, A2, A3, B1, B2, C1, D1

Phase 2 of the proposal includes constructing a collection of seven townhome-style buildings totaling 57 residential units with approximately 55,730 square feet under a limited equity cooperative model managed by Maine Cooperative Development Partners. The buildings include three new 2-story townhouses each with six units behind the existing Douglass Street houses, three 3-story courtyard flats each with 10 to 11 units at the center of the site, and one 3-story building with row houses made up of 12 units off of Dougherty Park to the north of the site. Phase 2 includes a total of 19 one-bedroom, 15 two-bedroom, and 23 three-bedroom units, as well as approximately 40,000 square feet of common open recreation space (which includes Phase 1 areas being grassed and landscaped if constructed first).

A pedestrian-only walkway is proposed running through the Phase 2 site leading to an open-space common area and connecting back to the shared-street portion of the site. Although plans for Phase 2 must still be reviewed by staff, whichever phase commences site work first will be required to provide internal site circulation for the shared parcel which would include developing the private shared-street described above under Phase 1. Phase 2 is also includes providing site improvements in order to meet site plan requirements such as providing required landscaping, stormwater management, and a total of 43 parking spaces and 9 EV charging stations, etc.

Phase 2 proposes to provide 15 deed restricted workforce housing units (at or below 80% AMI) pursuant to the Inclusionary Zoning requirements (Section 18.2.3).

VII. RIGHT, TITLE, & INTEREST

The owner of the property is currently the City of Portland. The applicant has entered into a Purchase and Sale Agreement with the City (Attachment 2) which serves as sufficient right-title-interest documentation for the purposes of reviewing a site plan application.

The applicant's existing conditions survey (Plan 3) indicates the property has one easement present on site which was granted by Public Works in 2016 to Northern Utilities, Inc. for an anode bed (Book 33292, Page

266). The anode bed easement is currently in the process of being amended by the City's attorney to accommodate the development proposal as part of the sale of the property.

VIII. FINANCIAL & TECHNICAL CAPACITY

The applicant has submitted a letter of financial capacity from each applicant's financial institutions as well as documentation from the Secretary of State stating both applicants are in good standing (Attachment G).

The applicant's representatives have also provided descriptions and examples of technical capacity demonstrating their ability to undertake the project (Attachment H).

IX. ZONING ANALYSIS

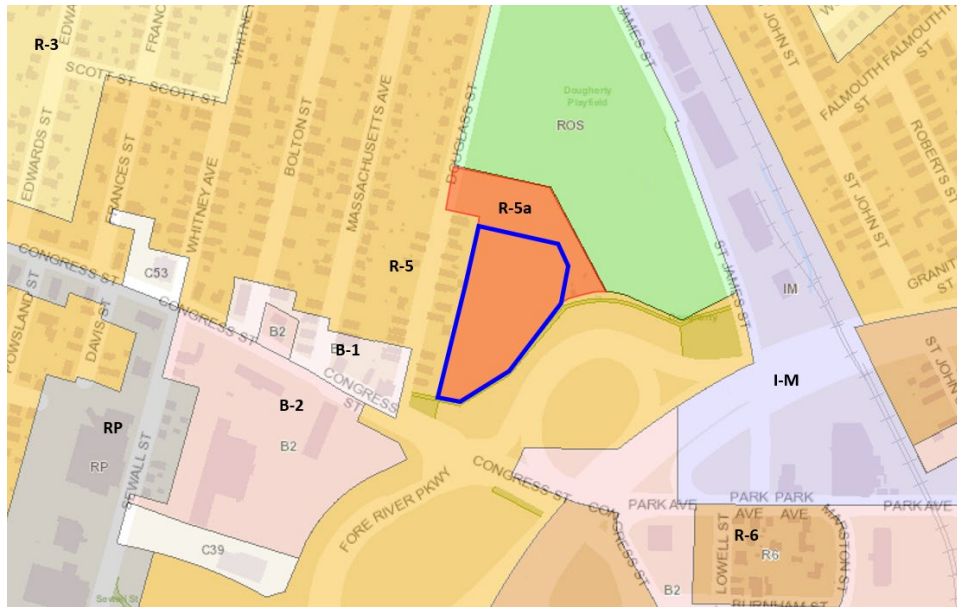


Figure 5: Zoning Map with Subject Parcel Outlined in Blue

The subject property is located in the R-5a Residential zone (Figure 5).

The proposed development proposes two uses; Phase 1 proposes a building with 63 units of housing which falls under the multifamily use and Phase 2 proposes seven buildings under a Planned Residential Unit Development (PRUD) use. According to Land Use Code Table 6-A, both multifamily and PRUD are permitted uses in the R-5a Residential zone.

Under Table 7-A of the City's Land Use Code, in the R-5a zone PRUD standards apply to multi-family development of four or more units, so the proposal is subject to Table 7-A except where superseded by Table 7-B with PRUD dimensional standards.

The project provides more than 50% of the units as low-income or workforce units for rent or for sale (See Section X below) and therefore it may utilize dimensional bonuses available to PRUD developments under Article 18 of the City's Land Use Code, which is incorporated into the zoning review. Staff analyzed the proposal and found that the project complies with all dimensional requirements for principal structures which are summarized below:

<i>R-5a Residential Zone</i>	<i>Permitted</i>	<i>PRUD Dimensional Bonus Applied¹</i>	<i>Proposed</i>
Street Frontage (min.)	50 feet	N/A	60 feet
Lot Width (min.)	60 feet	N/A	247 feet
Front Setback (min.)	25 feet	10 feet	10 feet
Rear Setback (min.)	25 feet	10 feet	10 feet
Right Side Setback (min.)	14-16 feet (varies)	10 feet	10 feet
Left Side Setback (min.)	14-16 feet (varies)	10 feet	10 feet
Stepbacks	N/A	N/A	N/A
Lot Coverage (max.)	30%	N/A	23%
Off Street Parking Spaces			69 spaces
Lot Area (min.)	2 acres	N/A	3.34 acres
Net land area per dwelling unit (min.)	1,600 sq. ft.	800 sq. ft.	1,217 sq. ft.
Units per building (max)	N/A	N/A	N/A
Average number of units per building	N/A	N/A	N/A
Structure Height	55 feet	N/A	53 feet
Building length	N/A	N/A	N/A
Bldg setback from external subdivision property lines (min.) for bldg. length 100 ft. or less	25 ft.	10 feet	10 feet
Bldg setback from external subdivision property lines (min.) for bldg. length greater than 100 ft.	35 ft.	10 feet	10 feet
Distance between detached PRUD dwelling units (min.)	N/A	N/A	N/A
Common recreation open space area (min.)	200 sq.ft./D.U	(Minimum contiguous size and setbacks do not apply and shall be set through site plan review)	280 sq. ft./D.U.

X. CONDITIONAL USE INCLUSIONARY ZONING (IZ)

As required by Section 18.2.3 of the City's Land Use Code, the City's Inclusionary Zoning Ordinance, residential developments with ten or more units are required to provide a minimum of twenty-five percent of the dwelling units as Workforce Housing units. Alternatively, the applicant may pay a fee-in-lieu for those units.

Given the project proposes a total of 120 units, a minimum of 30 workforce housing units are required to meet the IZ requirement. The applicant proposes making 61 (51%) of the units workforce (at or below 80% AMI) and 59 (49%) as market rate.

The City's Housing Program Manager reviewed the application (Attachment 4) and determined

¹ Planned Residential Unit Developments (PRUD) developments with more than 50% of the units as low-income or workforce units for rent or for sale may utilize dimensional bonuses and changes listed under Land Use Code Section 18.2.4.B.

the proposed project would meet the minimum requirements set forth in Section 18.2.3 by creating a minimum of 13 one-bedroom, 9 two-bedroom, and 8 three- bedrooms within a minimum of 30 workforce units or pay a fee-in-lieu alternative.

Given that the project is proposing more than 50 percent of the units as workforce units for sale or rent, the project is eligible for the following dimensional bonuses and changes outlined in Section 18.2.4.B:

- Minimum lot area per dwelling unit is reduced by 50%.
 - R-5a PRUD Net land area per dwelling unit: 1,600 SF
 - R-5a PRUD Net land area per Dwelling unit with Affordable Bonus: 800 SF
- Maximum number of units and maximum length of buildings do not apply but may be set through site plan review.
- Minimum building setbacks may be reduced to 10 feet.
- The PRUD may cross public rights of way provided that the right of way does not count towards minimum lot size nor towards any open space requirements.
- Minimum recreation open space area is reduced to 200 square feet per dwelling unit of common area designated for recreational purposes by the residents. Minimum contiguous size setbacks do not apply and shall be set through site plan review.
- The Planning Board's *Design Manual*, design standards, and guidelines with respect to PRUDs shall apply in full to PRUDs utilizing this subsection.

XI. SITE PLAN REVIEW STANDARDS (Section 14.6)

The proposed development has been reviewed by staff for conformance with the relevant review standards of the City of Portland's Site Plan Ordinance, Section 14.6. Staff comments are below.

1. Transportation Standards (Section 14.6.1)

A. Impact on surrounding street systems

The proposed development is located off of Douglass Street, a local street, which connects two principal arterial roadways, Congress Street to the south and Brighton Avenue to the north. Both arterials are two priority corridors identified in the City's Comprehensive Plan. The application anticipates increasing traffic by moderate levels, with 69 parking spaces proposed, and a peak hour trips occurring on the weekend, primarily on Saturday with 54 peak hours trips expected.

The applicant's traffic analysis has been reviewed by the City's Consulting Traffic Engineer and finds it to be reasonable, and reports that there are no high crash locations in the vicinity and based on the applicant's trip generation estimate does not recommend a traffic study being required (Attachment 3). In general, the City's traffic consultant finds the egress and circulation to be acceptable for vehicles and pedestrians and not expected to substantially increase congestion or provide hazard to the surrounding street network. However, please see Section B below regarding additional review comments on internal vehicle circulation.

B. Access and circulation

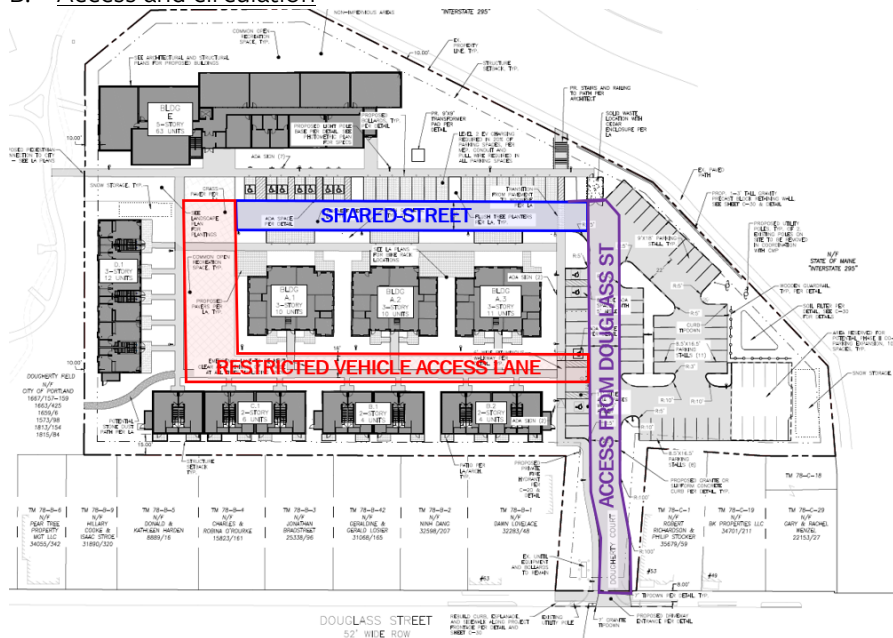


Figure 6: Overall Site Plan with Internal Circulation Highlighted

The application proposes continuing to utilize the existing access drive entrance which will become a two-way private street, Douglass Court, for access to the site, and discontinuing egress via the existing drive to the north. New site circulation through the site includes a main drive aisle connecting to a shared street and parking areas throughout the site, as well as a restricted access lane kept clear for emergency vehicles and pedestrians which runs through the site looping back to the shared street. (Figure 6). No drive-up services or loading needs are proposed. The application also includes providing common open recreation areas with grass pavers, pathway connections to Dougherty Field, stair connection to the adjacent trail system, and bituminous pavement sidewalks throughout the site connecting to the existing sidewalk on Douglass Street for pedestrian access.

The applicant has requested two waivers relevant to the parking lot and space design:

Technical Manual Section 1.14.2 – Compact Spaces

The first waiver relevant to the parking lot and parking spaces design is to provide 28 percent of the proposed parking space as compact spaces. The City's Technical Manual Section 1.14.2 allows for parking lots greater than 10 spaces to be comprised of up to 20 percent compact parking spaces. The applicant proposes 69 parking spaces with 19 compact spaces (28 percent). The waiver would allow the project to exceed the standard by five additional compact spaces by, approximately 8 percent). The applicant has provided justification that *'due to the urban environment and tendency to drive smaller, compact cars, the parking layout has been tailored to minimize impervious area.'*

Technical Manual Section 1.14.3 – Drive Aisle Width

The second waiver requested is to reduce the drive aisle width from 24 feet to 22 feet. Section 1.14.3 of the City's Technical Manual requires a minimum drive aisle of 24 feet. The applicant has provided justification that *'based on the proposed land use and residents' tendency to become familiar with their*

parking spot, along with a low rate of turnover, a width of 24' is not necessary to accommodate a functional parking lot. 22' allows for a reduction in impervious area.'

The City's Consulting Traffic Engineer has reviewed the proposal and comments that reductions of parking aisle width are typically justified by site or other constraints and the current justification is not currently supported and requires the applicant to provide more information and details that prevent the application from meeting City Standards. While generally supporting the waiver for compact parking spaces due to the likelihood of low parking space turnover, the City's Consulting Traffic Engineer asks the applicant to submit more information and details to justify the waiver. Once received staff will continue to review the project for compliance with the City's Technical Manual standards and additional comment will be forthcoming at the next public meeting.

The staff will continue to review site circulation, but at this time request the Board's feedback on the two waivers on parking lot space and design.

C. Public transit access

Not applicable. The site is not proposed along an existing public transit route.

D. Parking

The application proposes 69 parking spaces to meet the demand of the proposed, which is a ratio of 0.58 spaces per unit, which the applicant feels is an appropriate amount for the 120 new residential units.

In general, residential units are required to provide one parking space per dwelling unit unless the project is eligible for parking requirement exceptions listed in Table 19-B of the Land Use Code. The Planning Board may establish a parking requirement that is less than one space per workforce or low income housing unit, regardless of the size of the structure. The application includes providing 61 affordable units and 59 market rate units. In addition, for major site plans the Planning Board shall establish the off-street parking requirement based on a parking study. Given that the application includes both market rate and affordable housing units, staff recommend the applicant submit a parking study for review to justify the proposed amount of parking being under the required 1:1 parking space required per unit. However, at this time, staff are seeking the Board's feedback if the amount of parking less than the required 120 spaces is supported.

The applicant proposes 30 bicycle spaces and snow storage areas throughout the south and north ends of the site.

E. Transportation demand management (TDM)

Not Applicable. Although the project consists of more than 20 dwelling units, the development is not proposed along an existing public transit route.

2. Environmental Quality Standards (Section 14.6.2)

A. Preservation of significant natural features

Not applicable. The applicant has indicated that there are no significant natural features present on site.

B. Landscape preservation

The project includes removing 13 existing trees onsite all of which are under 10 inch caliper which does not trigger a tree replacement requirement. The City's Arborist continues to review the applicants plans, and at this time has no concerns with the plan for tree removals.

C. Site landscaping and buffers

The applicant has submitted a Landscape/Planting (Plan 20) plan which includes planting approximately 110 trees and 400 shrubs throughout the site. The site includes a landscaped buffer of sugar maple trees along the adjacent trail to the east. To the west of the site, at the rear of the townhouse buildings, the landscaping plan provides a landscaped buffer from existing Douglass Street residences proposing 10 upright Armstrong maple trees, and dense mix of evergreen trees and other shrubs. An existing tree buffer at the rear of the existing Douglass Street properties is expected to remain to further buffer the development from the existing neighborhood.

Various other plantings and landscaping are proposed throughout the site including grass paver common areas, and a deciduous plantings along the main access roadway and throughout the parking lot areas.

The proposal includes screening the proposed transformer with a combination of trees and evergreen landscaping. The proposed solid waste container will be screened by a cedar fencing perimeter as well as tree planting and arborvitae landscaping.

The creation of 120 residential units requires either planting total of 120 street trees of acceptable alternative as recommended by the City Arborist. The current plan currently proposes planting 24 trees along the public trail to the north and four trees within the street entrance to the site for a total of 28 trees that are either planted along a public way or within the vicinity of public spaces and walkways. The applicant is required to provide an alternative for the remaining 92 required trees.

The City Arborist continues to review the applicants landscaping and planting plan and will provide additional feedback at the next public meeting.

D. Water quality/storm water management/erosion control

The project proposes managing stormwater by a series of systems including an underdrained soil filter, proprietary rain gardens, and routing all stormwater from the site to a separated storm drain on Douglass Street. Overall, the applicant has stated that the site improvements will decrease the amount of impervious area on the site and reduce the overall runoff from the site.

The applicant has submitted a Stormwater Management Report and Erosion and Sedimentation Control Report, which are being reviewed by the City's consulting civil engineer for compliance with MDEP Chapter 500 requirements as part of the City's delegated stormwater review and will have additional information available at the next public meeting.

3. Public Infrastructure and Community Safety Standards (Section 14.6.3)**A. Consistency with City Master Plans**

Portland's Plan 2030

Comprehensive Plan goals and policies (state and local) relevant to the proposed development are included below. The development proposal aligns with these vision statements and goals, by creating a new opportunity for an affordable, and well-connected new housing development accessible to public transit and within walking distance to a variety of services supporting the Plans goal of *Complete Neighborhoods, and increasing, preserving, and modifying the overall supply of housing city-wide*. In addition, the proposed project supports the City's desire to *leverage underused properties* owned by the City. The proposed development allows for maximizing development on an underutilized lot, which creates the opportunity to provide affordable homes, with access to public transit, services, and open space. Relevant Comprehensive Plan goals have been excerpted below:



Vision Statements:

- Secure - We will be committed to accessible housing and healthy food for all our residents.
- Authentic - The uniqueness and integrity of our neighborhoods will be maintained and enhanced.
- Connected - We will foster accessible linkages between where we live, work, shop, and play.
- Connected - We will enable meaningful access to the natural world and recreational opportunities as a central component of community health.

Housing: A Livable City

- Increase, preserve, and modify the overall supply of housing city-wide to meet the needs, preferences and financial capabilities of all Portland residents.
- Pursue policies to enable people who work in Portland to have the option to live in Portland.
- Reinforce existing housing tools, policies, and programs while continuing to explore emerging best practices.
- Evaluate whether current zoning allows for new development consistent with historic patterns of form, density, and/or use, as well as whether it allows for priority growth areas.
- Consider the sale of City-owned land that may be appropriate for housing development.
- Consider incentivizing affordability restrictions as part of City-owned property transactions, as well as the potential to return improved properties to the City's tax rolls.
- Create, promote, and facilitate safe, affordable, and practical housing solutions that will meet the evolving needs of Portland residents as they age.

Recreation & Open Space

- Pursue opportunities, in collaboration with partners, to create new open spaces in areas that are currently underserved.
- Pursue opportunities for new and enhanced walking and biking trails as a means of filling existing gaps and investigate paper streets, vacant land, medians, and other often overlooked areas for the potential for park linkages, trails, and other improvements to the urban landscape.
- Prioritize open space acquisition and programming toward creating linkages where there are gaps in the network, particularly between Stroudwater and the Fore River; Evergreen Cemetery and the Presumpscot River; Portland Transportation Center and Bayside; Martin's Point and the Back Cove; and the Western Waterfront and the Fore River.

Future Land Use

- *Complete Neighborhood* – Portland’s Plan recognizes that strong, complete neighborhoods are fundamental to the city’s overall health. Portland’s intent for its predominantly residential neighborhoods is one where all residents regardless of age, ability, or income have access to the basic necessities of daily life - high quality and affordable housing, schools and other civic functions, food, open space, other amenities and services - within a walkable, bikeable distance.
- *Connecting the Chain* – Portland’s Plan recognizes that physically integrated transportation systems, utilities, and open spaces provide the structure for the city’s growth, and that a well-connected system is more efficient and more resilient. An integrated transportation system allows residents to access jobs, food, healthcare, and recreation from their homes while planning for an unbroken network of open space connects neighborhoods and improves access to the outdoors.
- *One Portland* - Portland’s Plan is a vision for One Portland, where the form and characteristics of neighborhoods vary, but the city functions as a cohesive whole. No one area of the city carries all the expectations for accommodating development and all areas can expect appropriate City services and amenities.

B. Public safety and fire prevention

The applicant has stated that the site has been designed to promote safe and inviting public access connections to walking trails within Dougherty Field, as well as providing adequate emergency access to new builds via the restricted access loop road.

The proposal includes a new private hydrant to serve the buildings onsite and will be within 450 feet from the furthest structure.

The City’s Fire Marshall continues to review the application materials, but generally finds the project has incorporated the Fire Department’s feedback by providing for access of emergency vehicles.

C. Availability and capacity of public utilities

The applicant proposes installing a new 8 inch PVC lateral throughout the site with a doghouse manhole to accept the wastewater from each unit. In addition to the submitted utilities plan, the applicant has submitted a Wastewater Capacity Application to Public Works and confirmation will be available by the next public meeting in order to confirm capacity to manage wastewater.

Additionally, the applicant proposes retiring the existing 2 inch service line to the site and proposing to tap an 8 inch fire line as well as a 4 inch domestic line off the existing 8 inch ductile iron water main within Douglass Street, as well as a private fire hydrant will be installed to serve the buildings on site. The applicant has submitted has written the Portland Water District requesting an Ability to Serve letter to confirm adequate water is available to support the development, and this documentation should be available at the next public meeting.

4. Site Design Standards (Section 14.6.4)

A. Massing, ventilation, and wind impact

The massing of the proposed townhouse, rowhouses and courtyard flats structures are generally consistent with the existing 2-3 story buildings heights found in the vicinity. Although the massing of the proposed five-story structure is sized larger than the typical of the neighborhood, the building is

separated by a street and the site design provides permeability between other structures to accommodate ventilation between structures. Staff do not have concerns that the proposed structures will result in unsafe ventilation or wind impact to users of the site or adjacent public spaces.

B. Shadows

Staff continue to review the standards of this section as they relate to the adjacent public open space. More information will be forthcoming at the next public meeting.

C. Snow and ice loading

The applicant has indicated respective snow storage areas and stated that structures will not distribute snow and ice onto adjacent properties. Staff will continue to review the application for compliance with this standard in conjunction with reviewing the stormwater management standards above.

D. View corridors

There are no designated view corridors within the project vicinity.

E. Historic resources

The proposed development is not located in or within a 100 feet of a historic district or historic landmark.

F. Exterior lighting

The applicant has submitted a lighting plan (Plan O) and lighting cut sheets proposed new site lighting. Staff continue to review these materials and more information will be forthcoming at the next public meeting.

G. Noise and vibration

No adverse impacts related to noise and vibration are anticipated as mechanical equipment is either screened and located away from residential properties. The applicant has stated that the HVAC system will meet the applicable state and federal emissions requirements and will also be screened and directed away from abutters.

H. Signage and wayfinding

No wayfinding signage is currently proposed, and only signage shown on plans is related to vehicular access.

I. Zoning-related design standards

The proposal is subject to meeting the applicable PRUD design standards under Section (h) of the City's Design Manual. The applicant has submitted elevations, renderings with an accompanying architectural narrative (Plans P).

The project was reviewed by a design review team made up of three Planning staff which provided preliminary design comments to the applicant (Attachment 5). Staff comment/recommendation included the following:

- Providing additional long views of the development in the surrounding context
- More clarification on materiality for the proposed housing types

- Reducing the number of material types to promote a more cohesive identity between the buildings and neighborhood character
- Creating a closer continuity between color scheme of each phase
- Increasing fenestration that faces open spaces
- Exploring additional opportunities for communal open space as well as for private open space (i.e. balconies) for residents in the 5-story building.
- Introducing variation in roof and façade character

XII. PUBLIC COMMENT

At the time this report was written Planning staff have received one written comment from the Libbytown Neighborhood Association with questions and answers to and from the developers (PC1). In general feedback centered around concerns of an overabundance of parking, supporting repurposing parking areas for a community space such as a parklet, seeking more information about snow management operations, encouraging the applicant to pursue a TDM plan. The Association recommends a professional Traffic Demand Management study be conducted giving special attention to utilizing on-street parking and reducing parking onsite.

XIII. NEXT STEPS

At this time staff are specifically seeking Board feedback on the two parking lot design waivers, design feedback, and if the Board supports a reduced parking requirement.

Following the workshop, the application will:

1. Continue to address staff and Board review comments
2. Prepare follow-up plan submission
3. Schedule and hold a second Planning Board workshop

XIV. ATTACHMENTS

REPORT ATTACHMENTS

1. Request for Proposals #2020-2
2. City Council Order 72-21_22
3. Comments from Consulting Traffic Engineer (dated 3.17.2022)
4. Comments from Housing Program Manager (dated 3.17.2022)
5. Preliminary Design Comments (dated 3.1.2022)

APPLICANT'S SUBMITTAL

- A. Douglass Commons Cover Letter
- B. Major Site Plan Checklist
- C. Douglass Commons Purchase and Sale Agreement
- D. Zoning Assessment
- E. Easements
- F. Waivers
- G. Financial Capacity
- H. Technical Capacity
- I. Conformity with Land Use Ordinance

- J. Soil Survey
- K. Stormwater Management Report
- L. Erosion & Sedimentation Control
- M. Fire Department Letter
- N. Wastewater Capacity
- O. Lighting
- P. Architectural Narrative
- Q. Utilities
- R. Construction Management Plan
- S. Solid Waste
- T. Traffic Memo
- U. Stormwater Management Law Delegated Review Application

PLANS

- Plan 1. Cover Sheet & Legend
- Plan 2. General Notes
- Plan 3. Boundary & Topographic Survey
- Plan 4. Construction Management Plan
- Plan 5. Site Plan
- Plan 6. Interim Phase I Site Plan
- Plan 7. Utility Plan
- Plan 8. Interim Phase I Utility Plan
- Plan 9. Grading & Drainage Plan
- Plan 10. Interim Phase I Grading & Drainage Plan
- Plan 11. Site Details - 1
- Plan 12. Site Details - 2
- Plan 13. Utility Details - 1
- Plan 14. Utility Details - 2
- Plan 15. Drainage Details - 1
- Plan 16. Drainage Details - 2
- Plan 17. Erosion & Sedimentation Details & Control Notes
- Plan 18. Erosion & Sedimentation Details & Control Notes
- Plan 19. Landscaping Materials Plan
- Plan 20. Landscaping Planting Plan
- Plan 21. Landscaping Planting Details
- Plan 22. Landscaping Site Details - 1
- Plan 23. Landscaping Site Details - 2
- Plan 24. Community Flats Ground Floor Plan A1-A2
- Plan 25. Community Flats Ground Floor Plan A3
- Plan 26. Community Flats Second Floor Plan A1-A3
- Plan 27. Community Flats Third Floor Plan A1-A3
- Plan 28. Townhomes Floor Plans B1-B2-C1
- Plan 29. Rowhome Floor Plans D1
- Plan 30. Community Flats and Rowhome Elevations
- Plan 31. Cooperative Buildings Materials Options
- Plan 32. Site Elevations
- Plan 33. Townhome Elevations

Plan 34.1 Sections A1-A3
Plan 35.2 Sections B-C-D
Plan 36. Cooperative Rendering 1
Plan 37. Cooperative Rendering 2
Plan 38. Cooperative Rendering 3
Plan 39. Five-Story Basement Plan
Plan 40. Five-Story First Floor Plan
Plan 41. Five-Story Typical Floor Plan
Plan 42. Five-Story Fifth Floor Plan
Plan 43. Five-Story Building Elevations - 1
Plan 44. Five-Story Building Elevations - 2
Plan 45. Five-Story Rendering 1
Plan 46. Five-Story Rendering 2
Plan 47. Five-Story Rendering 3
Plan 48. Subdivision Plat

PUBLIC COMMENT

PC1. Maureen Morse 1-26-2022

CITY of PORTLAND, MAINE
Request for Proposals for Disposition of City-Owned Property
Located at 43 & 91 Douglass Street
RFP #2020-2

I. NOTICE AND SPECIFICATIONS

The City of Portland, Maine seeks proposals from qualified developers for the creation of residential housing at 43 & 91 Douglass Street. The site is designated on the City of Portland Tax Assessor's Map as lot CBL 078 C002 & 078 B007.

Sealed proposals for the project, including an original, seven (7) copies, and one (1) digital copy, as specified herein, will be received by the Purchasing Office, Room 103, City Hall, 389 Congress Street, Portland, Maine 04101, until 3:15 p.m., Tuesday, June 16, 2020, at which time they will be publicly opened.

Proposals shall be submitted, and returned in sealed envelopes plainly marked on the outside "Disposition and Development of Property Located at 43 & 91 Douglass Street".

Proposals that are late, unsigned or submitted via fax will not be accepted. Proposals from individuals not registered with the Purchasing Office may be rejected; receipt of this document directly from the City of Portland indicates registration. Should a person receive this Request from a source other than the City, please contact 207-874-8654 to ensure that you are listed as a recipient for this proposal.

All questions must be submitted in writing to the Purchasing Office. These may be mailed, hand delivered, faxed to (207) 874-8652 or e-mailed to mff@portlandmaine.gov and be received no later than five (5) business days prior to the opening date. Questions received after this time will not be addressed. Any interpretation, correction, or change of this document will be made only by written addenda. Changes in any other manner will not be binding on the City and proposers should not rely on. Proposers should not have contact with any City staff with regard to this proposal unless to obtain general public information as specified in the document.

The disposal of this real estate shall be on the basis of a negotiated proposal, with the City of Portland reserving the right to refuse any and all proposals. *All proposers are advised that the property will be sold "as-is" and "where is", in its existing condition, with no warranties either expressed or implied.* The City makes no representations or warranties about any of the information about the property set forth herein, which is provided to proposers for their convenience only. The successful proposer shall be responsible to inspect the property, or to hire its own professionals to do so. The City, and its agents, make no representations or warranties with respect to the title of the property, the accuracy of any statement as to boundaries or acreage, or as to any other matters contained in any description of the property, or as to the fitness of the property for a particular purpose, or as to development rights, merchantability, habitability, or as to any other matter, including without limitation, land use, zoning and subdivision issues or the environmental, mechanical, or structural condition of the property. The City disclaims any and all responsibility for injury to proposers, their agents or others while examining the property or at any other time. The City will not be responsible for any broker's commission.

Any and all improvements made to said property must be done in accordance with existing City Codes and Ordinances.

II. GENERAL INFORMATION

Summary of Request:

The City of Portland is committed to providing housing opportunities and has set a goal to evaluate the use of City-owned property to construct housing. As one-step in accomplishing this goal, the City of Portland will accept proposals for the development of housing on the lot located at 43 & 91 Douglass Street, which currently is a vacant lot but was the former site of the West School.

This request for proposals results from the December 16, 2019 approval by the Portland City Council (Resolve 10-19/20) on the recommendation of the Housing Committee to market the City-owned vacant property located at 43 and 91 Douglass Street.

The City of Portland uses the RFP process to ensure that public resources are utilized for maximum public benefit while accomplishing specific objectives and providing fair access to all applicants.

Site Information:

- a. Location:** 43 & 91 Douglass Street, as identified in the City of Portland Assessor's records as lot CBL 078 C002 and 078 B007, in the R-5 zone. The lot includes the former site of the West School. The site for disposition includes a portion of 91 Douglass Street, but not the entire lot (See Attachment 2).
- b. Existing Conditions:** 43 & 91 Douglass Street is located on two parcels with frontage on Douglass Street in the Libbytown neighborhood. A right-of-way bisects the two parcels. The surrounding context is predominantly residential with the majority of homes in the area being one and multi-family structures. Dougherty Play Field abuts the property to the north.
- c. Current use:** Vacant lot.
- d. General Dimensions:** 43 Douglass Street (estimated at .3981 acres), and an estimated 2.85-acre portion of 91 Douglass Street.
- e. Current Zoning:** R-5. The minimum lot size in the R-5 zone is 6,000 square feet for residential development (single-family and two-family), 9,000 square feet for a multi-plex development (three-family or more), and 2 acres for a planned residential unit development (PRUD). This parcel would allow for residential, multi-family, and PRUD development. The minimum lot area per unit in a PRUD is 3,000 square feet; the maximum units per building is 12 units. At an estimated 141,570 square feet, the maximum number of residential units that could be developed within a PRUD is 47 units. For complete zoning requirements, please refer to Chapter 14, Land

Use, of the City Code.

- f. **Rezoning:** Higher density zoning that furthers exceptional projects and other city goals as outlined in Section III may be considered. It should be noted that changes to zoning require both Planning Board and City Council approval.
- g. **Condition of the property at the time of sale:** This parcel is the location of a former city-dump, and later the West School. A natural gas line and gas company easement are located in the right-of-way and the 43 Douglass Street parcel thus precluding development over these sites. A 40' wide sewer easement is also identified in the unbuildable portion of the site.
- h. **Environmental Conditions:** A Phase II Environmental Site Assessment (ESA) has been completed to evaluate current environmental conditions. Based on findings, special soil disposal restrictions may be required. Participation in the Maine DEP Voluntary Response Action Program (VRAP) should be considered. The Phase II ESA will be available on-line.
- i. Proposers are urged to investigate water sources and utility connection requirements with the Department of Public Works.

III. CITY GOALS

The City's primary goals for the use of the property are:

1. Developments shall provide mixed income units. All units must be affordable to households earning 60% to 120% of the area median income (AMI). Currently, 60% AMI for a family of four is \$55,800 and 120% AMI for a family of four is \$111,600.

Affordable means that the percentage of income a household is charged in rent and other housing expenses including utilities, or must pay in monthly mortgage payments (including real estate taxes, mortgage insurance, condominium/HOA fees, insurance and utilities), does not exceed 30% of a household's gross income, or other amount established in city regulations that does not vary significantly from this amount.

Restrictions on the affordability of units must be in place for a minimum of 30 years for homeownership units, and the longest period allowed by law for rental units.

2. Development of mixed income homeownership or rental housing of excellent building and site design. Design principles should promote efficient use of land to create a development that is compatible with the existing pattern, scale, massing, and materials of the surrounding neighborhood. The development's buildings shall be designed to meet the City's Green Building Code.
3. Rezoning may be considered to support increase housing development opportunities or maximize the number of allowable housing units on the property.
4. Developments shall create housing options that are age inclusive.

The general terms for this real estate transaction include:

- Units must be used as the principal residence of the owner/tenant and owner/tenant shall not use the unit for the conduct of business (except for a home occupation allowed under the City of Portland zoning ordinance) or as an investment property. Units shall not be rented for short-term periods of one to thirty days.
- Property Sale Price. The City expects to receive Fair Market Value (“FMV”) for the property.
- Alternative Ownership Models. Alternative ownership models that will encourage a mixed income community with long term affordability for the maximum number of units, such as limited equity units, co-housing, cooperative, or a community land trust, may be considered in order to ensure the units affordability over time.
- Proposals must outline how they will maintain affordability.
- Other City Incentives. Other city financial incentives may be considered to support increase housing development opportunities or maximize the number of allowable housing units on the property.

IV. PROPOSED SCORING

An internal staff Committee will review proposals received, and will apply the following selection criteria in reviewing and scoring the applications.

Proposed use to achieve the City of Portland's goals

40 points

1. Market Demand - 20 points
 - a. 20 points - all units meet the City’s Goals and Terms noted in Section III
 - b. 15 points - at least 75% of the units meet the City’s Goals and Terms noted in Section III
 - c. 10 points - at least 50% of the units meet the City’s Goals and Terms noted in Section III
 - d. 0 points - project does not meet the City’s Goals and Terms noted in Section III
2. Economic diversity - 10 points
 - a. 10 points - creates housing options which promote economic diversity in the neighborhood in which the development is located
 - b. 0 points - does not promote economic diversity
3. Age Inclusive – 10 points
 - a. 10 points – creates housing which is age inclusive
 - b. 0 points – does not create housing which is age inclusive

Impact on surrounding neighborhood, including design.

25 points

1. Project Design -15 points
 - a. 15 points - the proposal is consistent with design characteristics
 - b. 10 points - the proposal is an adequate fit with neighborhood characteristics
 - c. 0 points - the design is a significant outlier
2. Amenities and unit design - 10 points
 - a. 10 points - amenities & unit design are well thought out and appropriate for residents
 - b. 5 points - amenities & unit design are adequate

- c. 0 points - amenities and unit design raise significant concerns that resident needs will not be adequately addressed

Applicant's ability to complete project, including financial feasibility, development team experience, capacity, and timeframe for completion.

35 points

1. Readiness to proceed - 15 points
 - a. 15 points - all projected sources of funding include letters of commitment or interest are projected at terms and conditions consistent with the City's prior experience with the funder
 - b. 10 points - most projected sources of funding include letters of commitment, letters of interest, or, if no letter is included, are projected at terms and conditions consistent with the City's prior experience with this funder
 - c. 0 points - one or more sources are projected on terms that are not consistent with the City's prior experience with the funder and are not documented by letter(s) from funder(s)
2. Track record of development team - 10 points
 - a. 10 points - every development team member has a successful track record with this type of project and at this scale
 - b. 8 points - all but one development team members have a successful track record with this type of project and at this scale; one development team member has relevant experience but at a smaller scale or not of this project type
 - c. 5 points - two development team members, while having relevant experience, are new to this type of project or this scale of development
 - d. 0 points - the development team does not meet the criteria above
3. Current Capacity of development team - 10 points
 - a. 10 points - development team members have exceptional depth of human and financial resources to complete this project
 - b. 8 points - development team members have the human and financial resources to complete this project
 - c. 5 points - development team has a staffing gap in a significant role and a plan to address that gap, OR there are some concerns about the financial resources of the team to move the development forward
 - d. 0 points - the development team does not meet the criteria described above

SUBMISSION INFORMATION

Interested parties are asked to submit a concept development (including preliminary drawings) and a brief description of the project, no longer than two pages, to include the number and type of units, occupants (owners/renters) to be served, special features, the impact on the neighborhood and other ways the proposal meets the primary goals of the City. A general project budget with projected funding sources, development timeline, and development team qualifications and financial capabilities is also required. This RFP does not require detailed architectural drawings or development pro formas.

Photographs and maps of the site and area are required.

- a) **Developer:** Name, address, telephone, email, fax number of the proposed owner/developer and the name(s) of an alternative contact person(s).
- b) **Proposal:** Each proposal submitted must specifically outline the proposed use of the property and any proposed rezoning requests.

- c) **Financial Feasibility:** Provide a business plan, which shall include prospective and committed sources of funding, development and operating budgets; a letter from a lending institution indicating the applicant's ability to finance the projected costs; and provide examples of prior projects that indicate the proven ability to develop a project of similar type and scale from a fiscal perspective.
- d) **Timetable:** Provide an overview of how the proposal will be implemented. Include approximate schedule for completion of each element, closing, construction start-up, substantial completion, final completion, and occupancy. Include applications for public or private financing.
- e) **Developer Capacity:** Identify the qualifications and experience of the development team for the project including a list of previously completed projects similar to the proposed project. This team may include key staff of the developer, architect, general contractor and future property management. Also, discuss the ability to complete the project including the qualifications of the development team, management plan, experience, capacity, project readiness to proceed, and timeframe for completion.
- f) **Occupancy and Management Plan:** Present a plan detailing the ownership structure (condominium, cooperative, etc.), resale restrictions and resale process, to ensure mixed income and long-term affordability.
- g) **Purchase Price:** Proposed purchase price for the property.
- h) **Copies:** Seven (7) copies, with the original so marked, and one (1) digital copy of each proposal shall be submitted.

V. SALE INFORMATION

After proposals are opened, city staff will make a recommendation to the City Council's Economic Development Committee (EDC) and the Housing Committee (HC). The EDC and HC will make a recommendation to the City Council.

VI. OTHER INFORMATION

Confidentiality: Proposals received by the City shall become a matter of public record, subject to public inspection, except to the extent, which an applicant designates in writing, proprietary data to be confidential and submits that data under separate cover, such information, may, to the extent permitted by law, be held from public inspection, as provided in applicable Maine law, including, without limitation, 5 MRS Sections 13119-A and 13119-B.

VII. LEGAL REQUIREMENTS

The contract for the disposition of the property will be executed only after review and final approval by the City Council.

VIII. RESERVATION of RIGHTS

The City of Portland reserves the right, at its sole discretion, to award as well as reject any and all proposals for the city-owned property, based on the quality and merits of the proposals received, or when it is determined to be in the public interest to do so. Furthermore, the City may extend deadlines and timeframes, as needed.

The City reserves the right to substantiate any proposer's qualifications, capability to perform, availability, past performance records, and to verify that the proposer is current in its financial obligations to the City.

The City of Portland, Maine, reserves the right to waive any informalities in proposals, to accept any proposal or portion thereof, and, to reject any and all proposals, as well as negotiate with the successful proposer(s) should it be in the best interest of the City to do so for a final purchase and sale agreement and ultimate sale of the property.

Pursuant to City procurement policy and ordinance, the City is unable to contract with businesses or individuals who are delinquent in their financial obligations to the City. These obligations may include but are not limited to real estate and personal property taxes and sewer user fees.

Proposers who are delinquent in their financial obligations to the City must do one of the following: bring the obligation current, negotiate a payment plan with the City's Treasury office, or agree to an offset, which shall be established by the contract, which shall be issued to the successful proposer

April 10, 2020

Matthew F. Fitzgerald
Purchasing Manager

Attachments:

- A. Proposal Signature
- B. Portland Assessor's Record
- C Site Map
- D Phase II ESA available online

PROPOSAL**NOTE: THIS PAGE IS TO BE COMPLETED AND RETURNED**

The UNDERSIGNED hereby declares that he/she or they are the only person(s), firm or corporation interested in this proposal as principal, which it is made without any connection with any other person(s), firm or corporation submitting a proposal for the same.

The UNDERSIGNED hereby declares that they have read and understand all conditions as outlined in the Request for Proposals, and that the proposal is made in accordance with same.

The UNDERSIGNED hereby declares that any person(s) employed by the City of Portland, Maine, who has direct or indirect personal or financial interest in this proposal or in any portion of the profits which may be derived therefrom has been identified and the interest disclosed by separate attachment. (Please include in your disclosure any interest which you know of. An example of a direct interest would be a City employee who would be paid to perform services under this proposal. An example of an indirect interest would be a City employee who is related to any officers, employees, principal or shareholders of your firm or to you. If in doubt as to status or interest, please disclose to the extent known).

The proposer acknowledges the receipt of Addenda numbered _____
If Applicable

COMPANY NAME: _____
(Individual, Partnership, Corporation, Joint Venture)

AUTHORIZED SIGNATURE: _____ DATE: _____
(Officer, Authorized Individual or Owner)

PRINT NAME & TITLE: _____

ADDRESS: _____

TELEPHONE: _____ E-MAIL: _____

FEDERAL TAX ID #: _____ DUNS #: _____

STATE OF INCORPORATION _____

(If incorporated in another State, businesses must be authorized to do business in the State of Maine.)

In your organizations preceding completed fiscal year, did the organization receive:

(1) 80 percent or more of its annual gross revenues in U.S. federal contracts, subcontracts, loans, grants, subgrants, and/or cooperative agreements; AND

(2) \$25,000,000 or more in annual gross revenues from U.S. federal contracts, subcontracts, loans, grants, subgrants, and/or cooperative agreements? ☐ Yes ☐ No

Does the public have access to information about the compensation of the executives in the organization through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (18 U.S.C. 78m(a), 78o(d) or section 6104 of the Internal Revenue Code of 1986? ☐ Yes ☐ No

NOTE: All bids must bear the handwritten signature of a duly authorized member or employee of the organization making the bid. **This sheet must be signed and returned with the application package.**

This page contains a detailed description of the Parcel ID you selected.

New Search!

Current Owner Information:

CBL	078 C002001
Land Use Type	GOVERNMENTAL
Verify legal use with Inspections Division	
Property Location	43 DOUGLASS ST
Owner Information	CITY OF PORTLAND 389 CONGRESS ST PORTLAND ME 04101
Book and Page	
Legal Description	78-C-2 DOUGLASS ST 43-53 REAR PROPOSED ST 17340SF
Rental Registration	No
Acres	0.3981

Current Assessed Valuation:

TAX ACCT NO.	10005	OWNER OF RECORD AS OF APRIL 2019
LAND VALUE	\$49,000.00	CITY OF PORTLAND
BUILDING VALUE	\$0.00	389 CONGRESS ST
MUNICIPAL TYPE	(\$49,000.00)	PORTLAND ME 04101
NET TAXABLE - REAL ESTATE	\$0.00	
TAX AMOUNT	\$0.00	

Any information concerning tax payments should be directed to the Treasury office at 874-8490 or [e-mailed](#).

This page contains a detailed description of the Parcel ID you selected.

New Search!

Current Owner Information:

CBL	078 B007001
Land Use Type	GOVERNMENTAL
Verify legal use with Inspections Division	
Property Location	91 DOUGLASS ST
Owner Information	CITY OF PORTLAND 389 CONGRESS ST PORTLAND ME 04101
Book and Page	
Legal Description	78-B-7 DOUGLASS ST 91-105 195648 SF
Rental Registration	No
Acres	4.4915

Current Assessed Valuation:

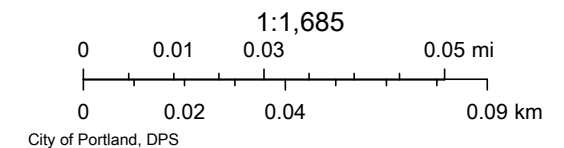
TAX ACCT NO.	10005	OWNER OF RECORD AS OF APRIL 2019
LAND VALUE	\$489,100.00	CITY OF PORTLAND
BUILDING VALUE	\$0.00	389 CONGRESS ST
MUNICIPAL TYPE	(\$489,100.00)	PORTLAND ME 04101
NET TAXABLE - REAL ESTATE	\$0.00	
TAX AMOUNT	\$0.00	

Any information concerning tax payments should be directed to the Treasury office at 874-8490 or [e-mailed](#).



3/10/2020, 12:45:58 PM

■ Override 1



Order 72-21/22

Passage: 7-0 (Fournier absent) on 10/18/2021

Effective 10/28/2021

KATE SNYDER (MAYOR)
BELINDA S. RAY (1)
SPENCER R. THIBODEAU (2)
TAE Y. CHONG (3)
ANDREW ZARRO (4)

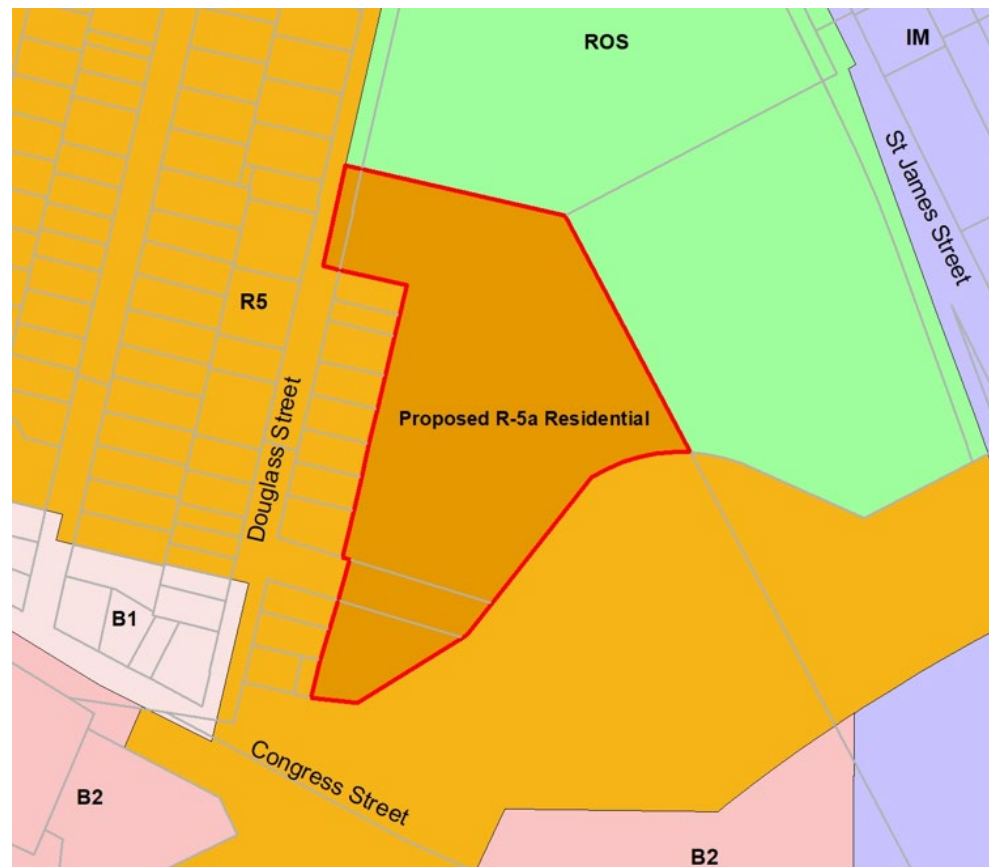
**CITY OF PORTLAND
IN THE CITY COUNCIL**

MARK DION (5)
APRIL D. FOURNIER(A/L)
PIOUS ALI (A/L)
NICHOLAS M. MAVODONES, JR (A/L)

**AMENDMENT TO ZONING MAP
RE: 43 AND 91 DOUGLASS STREET
FROM R-5 RESIDENTIAL TO R-5A RESIDENTIAL**

**BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF PORTLAND, MAINE
IN CITY COUNCIL ASSEMBLED AS FOLLOWS:**

That the Zoning Map of the City of Portland, dated December 2000, as amended and on file in the Department of Planning and Urban Development, and incorporated by reference into the Zoning Ordinance by §14-49, be and hereby is amended by adopting the attached map change amendment and specifically rezoning property at 43 and 91 Douglass Street from R-5 Residential to R-5a Residential as shown in the bordered area in the map below.





Jimmy Dealaman <jdealaman@portlandmaine.gov>

57 Douglass Street - Preliminary Traffic Comments

Tom Errico <thomas.errico@tylin.com>

Thu, Mar 17, 2022 at 9:39 AM

To: James Dealaman <jdealaman@portlandmaine.gov>

Cc: Jeremiah Bartlett <jbartlett@portlandmaine.gov>

Hi Jimmy – I have reviewed the application materials and offer the following preliminary traffic comments.

- I reviewed the applicant's trip generation estimate and I generally find the methodology to be reasonable. Given trip credits for the former school, the project does not require a Traffic Movement Permit. I also investigated the presence of High Crash Locations on Douglass Street between Congress Street and Brighton Avenue. There are no High Crash Locations. Based upon the trip generation estimate, the preparation of a traffic study is not recommended.
- The applicant shall conduct a parking study to document the adequacy of the proposed parking supply. The parking study can be based on ITE and local data from similar type residential developments.
- In general, I find access and egress and circulation to be acceptable.
- I do not support the applicant's justification for parking aisle width reduction. Waivers from the City's Technical Standards in most cases are justified by site or other constraints. The applicant shall present information that details site constraints that prevents them from meeting City Standards.
- I generally support a waiver for the number of compact parking spaces given the likelihood of low parking space turnover due to it being a residential development with the expectation of tenants using alternative transportation. But like the previous comment, the applicant shall present information that details site constraints that prevents them from meeting City Standards.

If you have any questions, please contact me.

Best regards,

Tom Errico, PE

NE TRAFFIC ENGINEERING DIRECTOR

T +1 207.347.4354

M +1 207.400.0719

E thomas.errico@tylin.com

TYLin

12 Northbrook Drive Building A, Suite One
Falmouth, ME 04105, United States

[TYLin.com](https://www.tylin.com)





Jimmy Dealaman <jdealaman@portlandmaine.gov>

57 Douglass Street: Inclusionary Zoning

Victoria Volent <vvolent@portlandmaine.gov>

Thu, Mar 17, 2022 at 11:30 AM

To: James Dealaman <jdealaman@portlandmaine.gov>

Hi Jimmy,

57 Douglass Street proposes the construction of 120 units of housing over two phases. The project triggers Inclusionary Zoning as it would create ten or more new dwelling units through new construction. Per Section 18.2.3 C 3, "projects shall not be segmented or phases to avoid compliance with these provisions."

Phase I proposes the construction of one five-story building with 63 units of housing containing 35 one-bedroom, 18 two-bedroom, and 10 three-bedroom units.

Phase II proposes the construction of; one three-story townhouse containing 6 one-bedroom units and 6 three-bedroom units for a total of 12 units; three townhouses the first of which would contain 6 units (with 6 three-bedrooms), the second and third building would contain 4 units each for a total of 8 units (with a total of 8 three-bedroom units); three courtyard flats made up of 2 three-story building containing a total of 20 units (with 8 one-bedroom, 10 two-bedroom and 2 three-bedroom units) and a third three-story building containing 11 units (with 1 studio, 4 one-bedroom, 5 two-bedroom, and 1 three-bedroom units). The total bedroom count for Phase II is: 1 studio unit, 18 one-bedroom units, 15 two-bedroom units, and 23 three-bedroom units.

Phase I proposes to provide 46 units at or below 60% AMI (23 one-bedroom and 14 two-bedroom units) and 17 units at market rate. 46 out of 63 units equals 74% of the total units as deed restricted.

Phase II proposes to provide 25% of the cooperative units (15 units) deed restricted to households at or below 80% AMI.

25% of all one-bedroom units equals 13 one-bedroom units; 25% of all two-bedroom units equals 9 two-bedroom units; and 25% of all three bedroom units equals 8 bedroom units.

Based on the material presented, [57 Douglass Street](#) would comply with section 18.2 by providing 30 workforce units with 13 one-bedroom units, 9 two-bedroom units, and 8 three-bedroom units; In compliance with section 18.2, 57 Douglass Street has chosen to provide 61 units (50% of the total units) at or below 80% AMI.

Thank you,

Victoria

Victoria Volent
Housing Program Manager
[City of Portland](#)
[389 Congress Street](#)
Phone: 207-482-5028
[www.portlandmaine.gov](#)



Design Review Planning and Urban Development Department



Subject: 57 Douglass Street
Zone: R-5a
Date of Review: Tuesday, March 1, 2022
Reviewer(s): Sean King (Urban Designer), Jimmy Dealaman (Planner), Kevin Kraft (Deputy Director)
Project ID: PL-001838-2021

I. INTRODUCTION

The proposed Douglass Commons development is a new, family-oriented neighborhood providing both affordable home ownership and rental home opportunities with a plan to create a community of 108 households. Design principles proposed for the new neighborhood include a balance of green space, transit-orientation, walkability, community, privacy, and affordability.

II. DESIGN REVIEW COMMENTS

(h) Planned Residential Unit Development (PRUDs) in the R-5a Residential Zones

Standard (1) a. Design relationship to the site

Building placement, orientation and arrangement are responsive to surrounding neighborhood street network along with southern solar exposure to provide morning / evening light between proposed building types (community flats, townhomes, rowhomes, and apartment building). The proposed neighborhood has a new primary roadway access from Douglass Street, interior roadways are limited for vehicles to access parking while prioritizing pedestrian connections with walkways to residential entryways and open spaces. The location of parking and drainage facilities are proposed at the southern edge of the property to create the close proximity of buildings that promote a neighborhood quality for community interactions. The proposed development provides an interior network of open spaces with communal, shared and private spaces with three (3) pedestrian walkways that connect to public recreation and trail, in addition to one (1) sidewalk to Douglass Street.

Standard (1) b. Internal design character and relationship to the surrounding neighborhood

Context: The surrounding neighborhood contains a variety of residential housing types that range from single-family, two-family and multi-family dwelling units. The proximity of existing residential housing to each other is evident by the dimensional standard setbacks within the R-5 zone that also maintains a clear orientation to the street. Existing buildings include a majority of gable roofs, flat roofs utilized in multi-family units, entryway porches and simple windows. Other adjacent uses that border the property include Dougherty Field recreation area, Dougherty Field Path, and Interstate I-295 on/off ramps which do not reinforce the neighborhood form and must address adequate buffers from existing uses. **Applicant to provide additional 3-dimensional views from outside the property from Dougherty Field, Congress Street and Douglass Street.**

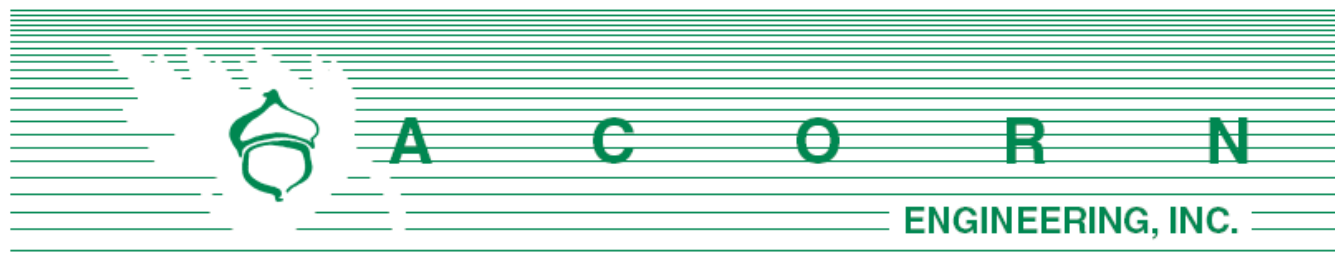
Architectural character: The overall design character should seek to reinforce the neighborhood development of multiple housing types that relate cohesively through the connectivity of materials. The characteristics of the four (4) proposed housing types (Courtyard flats, townhouses, rowhouses and apartments) include a range in siding material – cedar shiplap, reverse board and batten, traditional lap with reveal variation and color, HPL phenolic panel, fiber cement lap siding and paneling, in addition to shared entrance canopies of various form / material, and mixed pattern of fenestrations. **Applicant to provide clarification on materiality of lap siding, cornice and trim detailing for all housing types. Physical materials are encouraged to understand durability of proposed exterior finishes. To promote a strong cohesive identity of the proposed neighborhood character, a reduction in material types is recommended as well as color scheme continuity between Phase 1 & Complete Master Plan build-out**

buildings. Applicant to increase window fenestrations that face open space and parking lots to allow for greater visibility and natural light, specifically at Apartment building south façade at interior stairwell, Courtyard Flats A.1 & A.3, Townhouses B.2 & C.1, Rowhouses D.

Height, scale, and massing: The design and layout of buildings exhibit a cohesive design character expressed by a diversity of housing types, roof types and exterior facades to create a unique neighborhood. The transition in building heights from existing residential buildings along Douglass Street is appropriate, with taller building heights proposed interior to the property. **Because the building contains more than 2 units, the project must provide variation in roof and façade character through changes in façade setback, roof configuration, and projecting or recessed building elements. Applicant shall provide additional variation (ie. vestibule / shared porch recessed, façade projections, or cable roof configurations) in façade and/or roof form for building lengths greater than forty (40) feet, specifically the Apartments west façade, Rowhouse D.1 south façade, Townhouse B.1, B.2 & C.1 east façade.**

Standard (1) c. Recreation and open space

1. External buffers: Sufficient landscape buffers as screening provided around perimeter. **Applicant to address potential future parking expansion with an interim solution to include additional tree plantings or other screen planting to help buffer property from State of Maine Interstate 295 adjacent use.**
2. Internal buffers: Effective privacy between unit entryways, screening of utilities, roadways and waste collection provide sufficient planting proposed.
3. Passive recreational open space: Opportunities for passive recreational open space includes paved walkways, stone bench seating, lawn spaces and paved communal patio spaces. **Applicant to consider additional opportunities for communal open space at Apartment building, potentially at basement level with door access from shared Laundry Room to an outdoor amenity (ie patio, trellis, seating, planting etc.) that is easily accessible for residents.**
4. Active recreational open space: Master landscape plan promotes connection to existing recreational area at Dougherty Field. **Applicant to consider addition of site lighting to distinguish all property entry points, specifically at proposed pedestrian walkways & stairs connections to Dougherty Field and Path.**
5. Private open spaces: Proposed private open spaces include shared porches / entryways at Rowhouses, Townhouse, Courtyard Flats and Apartments. Individual unit patios proposed at back of Townhouses. Balconies proposed at Courtyard Flats. **Applicant to consider additional opportunities for private open space for residents (ie. balconies) at Apartment building.**



Planning Division
Attn: James Rather, Development Review Manager
City of Portland, Maine
389 Congress Street, 4th Floor
Portland, ME 04101

December 22, 2021

Subject: Major Site Plan & Subdivision Application
Douglass Commons Redevelopment

James:

On behalf of Douglass Commons, LLC and the design team, we are pleased to submit the accompanying package of materials related to the proposed redevelopment of the former West School at 43/91 Douglass Street in the Libbytown neighborhood. The 3.34-acre parcel was recently put under a Purchase & Sale agreement between the City and the developer after a competitive public RFP process. Since then, the design team has held numerous neighborhood meetings and informational sessions, as well as achieved a map amendment, extending the R-5a zoning district to include the subject parcel.

The project includes a total of 120 affordable residential units and falls under the Planned Residential Unit Development (PRUD) standards in addition to capitalizing on affordable housing incentives. The design includes a five story 63-unit building managed by the Szanton Company as well as a collection of townhome-style buildings comprising 57 units under a Co-Op model managed by Maine Cooperative Development Partners. This joint infill redevelopment will feature a phased project with each portion being seamlessly integrated into the overall development, creating a harmonious site design. A focal point of the project includes a woonerf, a European technique designed to encourage community gathering and prioritize the pedestrian experience. The project has also been coordinated with the abutting park redevelopment to provide a cohesive connection.

We are excited to submit this application to the Planning Department as it falls directly in line with the comprehensive plan by creating quality affordable housing while transforming the dilapidated infill site into an attractive, multi-generational housing community.

Sincerely,

Samuel J. Lebel, 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: Major Site Plan Application & Checklist
- Section C: Right, Title, Interest
- Section D: Zoning Assessment
- Section E: Easements
- Section F: Waiver Table
- 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: Traffic Report
- Section T: Stormwater Management Law Delegated Review Application

Drawings:

- Civil Site Plan Set, dated 12/22/21
- Architectural Plan Set, dated 12/22/21



CITY OF PORTLAND
Planning & Urban Development Department

MAJOR SITE PLAN GENERAL DOCUMENT AND DRAWINGS CHECKLIST Please submit each document as a separate PDF file. Please confirm by electronically checking the boxes in the left-hand column. ** PLEASE FILL OUT AND UPLOAD THE ZONING ASSESSMENT TABLE AND WAIVER TABLE SEPARATELY AS NOTED BELOW ** At the time of application submission, please contact the Department of Public Works regarding E-911 addressing for your project.	
GENERAL APPLICATION DOCUMENTS	
Yes ☒ NA	Project Description Cover letter with detailed project description
Yes ☒ NA	Completed Checklist (this document)
Yes ☒ NA	Evidence of 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 (see Zoning Assessment Table) Summary of compliance with use and dimensional standards of the land use code
Yes ☒ NA	Site Plan Standards Assessment (see Section 14.6 of the land use code) Summary of project compliance with site plan standards of the land use code
Yes ☒ NA	Summary of Existing and/or Proposed Easements or Covenants, applicable. Evidence of existing easements and any proposed easements, covenants, public or private rights-of-way
Yes ☒ NA	Waiver Requests (see Waiver Table) Written request for waiver describing request and compliance with applicable waiver standards
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

MAJOR 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 ☒	Impact on Surrounding Street Systems (14-14.6.1(A)) Describe incremental volume of traffic impacts and mitigation measures. If needed
Yes ☒ NA	Access and Circulation (14-14.6.1(B)) Identify and describe the following: - Site access and internal circulation, including ADA access - Drive-up features, if applicable - Loading and servicing needs, routes, and geometry, providing turning templates for delivery vehicles, if applicable - Sidewalks and condition along street frontages and internal walkways - Engineered details for ADA ramps and public sidewalks, meeting sidewalk material policy and construction requirements (Technical Manual, Section 1)
Yes ☒ NA	Public Transit (14-14.6.1(C)), if applicable Identify and describe the following: Existing available transit service and proposed transit improvements, including design details, such as easement, pad base, and shelter
Yes ☒ NA	Off-Street Parking (14-14.6.1(D)), if applicable Identify and describe the following: - Proposed vehicular and bicycle parking supply (including ADA-compliant parking) in relation to applicable parking requirements in Article 19 of the land use code - Curb cut separation and parking layout (Technical Manual, Section 1) - Construction details for bicycle racks - Management plan for snow storage and removal
Yes NA ☒	Transportation Demand Management (TDM) (14-14.6.1(E)), if applicable Provide TDM plan drafted in accordance with Technical Manual Section 1 requirements

ENVIRONMENTAL			
Yes	NA	X	Preservation of Significant Natural Features (14-14.6.2(A)), if applicable Identify and describe the following: • High and moderate value waterfowl and wading habitat • Aquifers (for Casco Bay Islands) • Waterbodies (including wetlands, watercourses, significant vernal pools and floodplains) • Proposed preservation areas and protection measures • Documentation from environmental compliance consultants and determinations from applicable state and federal agencies
Yes	X	NA	Landscape Preservation (14-14.6.2(B)) Identify and describe the following: • Measures to preserve trees, including within required zoning setbacks (Technical Manual, Section 4) • Measures to protect existing vegetation during construction
Yes	X	NA	Site Landscaping and Buffers (14-14.6.2(C)) Identify and describe the following: • Overall landscaping approach and consistency with standards • The use of screening and buffering of service areas and between non-residential and residential uses • Existing Heritage or Feature Trees on site and measures to preserve • Compliance with street tree requirements
Yes	X	NA	Water Quality, Stormwater Management, and Erosion Control (14-14.6.2(D)) Identify and describe the following: • Erosion and sedimentation control plan and measures • Evidence of compliance with Urban Impaired Stream Standards pursuant to DEP Chapter 500 stormwater law, as applicable • Subsurface sanitary sewage disposal and groundwater protection measures

PUBLIC INFRASTRUCTURE AND COMMUNITY SAFETY	
Yes ☒ NA	Consistency with City Master Plans (14-14.6.3(A)) Describe proposed easements, rights and improvements to connect or continue off-premises public infrastructure, as applicable
Yes ☒ NA	Public Safety and Fire Prevention (14-14.6.3(B)) Identify and describe the following: - Compliance with Crime Prevention through Environmental Design (CPTED) requirements (Technical Manual, Section 3) - Emergency vehicle access - Consistency with public safety standards (Technical Manual, Section 3)
Yes ☒ NA	Availability and Adequacy of Public Utilities (14-14.6.3(C)) (Technical Manual, Sections 2 & 9) Identify and describe the following: - Electrical services, including providing underground services - Existing and proposed connections for public utilities and required public utility upgrades - Sewer line connections
SITE DESIGN	
Yes NA ☒	Massing, Ventilations and Wind Impact (14-14.6.4(A)) Identify and describe the following: - Wind and ventilation impacts on adjoining structures and/or adjacent public spaces, including wind study, if applicable - Bulk, location, or height impacts on adjoining structures
Yes NA ☒	Shadows (14-14.6.4(B)), if applicable Provide shadow analysis of impacts on publicly accessible open space (Technical Manual, Section 11)
Yes NA ☒	Snow and Ice Loading (14-14.6.4(C)) Describe building design measures to prevent snow and ice from loading or falling onto adjacent properties or public ways
Yes NA ☒	View Corridors (14-14.6.4(D)), if applicable Describe any protection of designated view corridors (Portland Design Manual, Appendix. 1)
Yes NA ☒	Historic Resources (14-14.6.4(E)), if applicable Identify and describe the following: - The site's status as a designated landmark, within a historic district or historic landscape district, or within 100 feet of any designated landmark, historic district, or historic landscape district - Compliance with standards for preservation and documentation of archaeological resources

Yes ☒ NA	Exterior Lighting (14-14.6.4(F)) Describe how the proposed site lighting will adhere to photometrics requirements as it relates to light trespass and full cutoff fixture design, pursuant to Technical Manual Section 12
Yes NA ☒	Noise and Vibration (14-14.6.4(G)) Provide data on noise levels for HVAC and other mechanical equipment, such as design specifications, to demonstrate consistency with state and federal noise emissions requirements as well as City code
Yes NA ☒	Signage and Wayfinding (14-14.6.4(H)), if applicable - Provide signage plan showing the location, dimensions, height and setback of all existing and proposed signs - Provide drawings of all commercial and directional signage on site
Yes ☒ NA	Zone-Related Design Standards (14-14.6.4(I)) Address any applicable design review standards by zone, including compliance with Design Manual

MAJOR SITE PLAN DRAWINGS CHECKLIST

Please upload the following DRAWINGS with the listed details into e-Plan as separate pdfs.

All drawings must be submitted in a 24 x 36 sheet size.

BOUNDARY SURVEY (stamped by a Maine Licensed Surveyor and drawn as per Technical Manual Sec. 13)

SITE PLAN(S) (stamped by a Maine Licensed Professional Engineer) including:

All sheets – Include a title block with project title and the following information:

- Project street address
- Name and address of property owner & applicant
- Licensed design professional, incl firm that produced plans
- North arrow
- Date of preparation and revision history block
- Tax parcel (chart, block, and lot) number

Existing Conditions Plan with the following:

- Existing structures, with distance from primary building façade(s) to the property line
- Approximate location of structures on abutting properties
- All streets and intersections adjacent to the site
- Existing driveways, pedestrian ways, and bicycle infrastructure, including dimensions and materials
- Existing public transit infrastructure
- Existing vehicle & bicycle parking areas
- Existing utilities on site and within adjacent rights-of-way
- Existing grades (two-foot contours preferred)
- Location of water courses, wetlands, and vegetation, or other significant natural features
- Existing soil conditions and location of test pits and borings
- Zoning boundary lines, including overlays
- Location of all existing easements and rights-of-way

Proposed Site Plan with the following:

- Proposed structures, including distance from primary building façade(s) to property lines
- Ground floor area, and finished floor elevations for all buildings
- Any proposed geometric modifications to streets and intersections adjacent to site
- Location, dimensions and materials of all 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, including turning templates
- Proposed transit infrastructure with dimensions/ engineering specifications
- Location of vehicle and bicycle parking with dimensions and engineering specifications
- Location of all snow storage areas
- Exterior lighting (please see Technical Manual Sec. 12 for photometrics requirements)
- Location of fire hydrants

• Location of solid waste management receptacles • Location of all proposed HVAC and mechanical equipment, including proposed screening, where applicable • Location of proposed easements and rights-of-way, including dimensions • Please utilize color-coding and/or hatches and shading to delineate changes between the pre and post development condition as needed
UTILITY PLAN including:
• Proposed electrical infrastructure • Location, sizing and directional flows of all proposed sewer and stormwater infrastructure • Location and dimensions of off-premises public or publicly accessible infrastructure adjacent to site • Electric utility infrastructure
GRADING AND DRAINAGE PLAN including:
• Proposed grades • Proposed stormwater management measures meeting Technical Manual (Section 5) standards • Any proposed alteration of a watercourse or wetlands • Any groundwater protection measures • Proposed buffers and preservation measures for wetlands or significant natural features
LANDSCAPE PLAN including:
• Existing vegetation to be preserved and preservation measures • Proposed landscaping, screening, and street trees, including caliper widths for trees • Planting schedule, including street trees
ARCHITECTURAL PLANS AND RENDERINGS including:
• Exterior building elevations, color renderings, illustrations of all sides • Axonometric and street-level views for structures greater than three stories in height • Provide context drawings, if applicable (Design Manual, page 1) • Floor plans
CONSTRUCTION MANAGEMENT PLAN including:
• Specifics on traffic control, sidewalk sheds, and pedestrian rerouting • Include a drawing and written narrative
OTHER
• Details and cross-sections, as necessary

C. Right, Title, & Interest

Please find attached the Purchase and Sale Agreement between the City of Portland and Douglass Commons, LLC.



PURCHASE AND SALE AGREEMENT

THIS PURCHASE AND SALE AGREEMENT (this “Agreement”) is made this 21st day of May, 2021 (the “Effective Date”) by and between the CITY OF PORTLAND, a body politic and corporate located in Cumberland County, Maine, (hereinafter referred to as “Seller” or “City”), and Douglass Commons, LLC, a Maine limited liability company having a mailing address as provided below (hereinafter referred to as “Buyer”).

RECITALS

WHEREAS, the CITY is the owner of approximately 3.40 acres of land at or near 43 & 91 Douglass Street, Portland, Maine (the “Premises”) and did advertise RFP #20067 dated April 10, 2020, entitled Request for Proposals for Disposition and Development of City-Owned Property Located at 43 and 91 Douglass Street, a copy of which is attached hereto as Exhibit A and incorporated herein (the “Request for Proposals”) (the Premises is identified in the City’s tax records as CBL 078 C002 and a portion of 078 B007 together with the 60 ft. wide proposed street situated between the two parcels, as is generally depicted on the Boundary Survey dated March 1, 2021 prepared by Owen Haskell, Inc. for The Szanton Company, a copy of which is attached as Exhibit B); and

WHEREAS, Buyer submitted a proposal dated June 15, 2020 in response to the Request for Proposals, a copy of which is attached hereto as Exhibit C and incorporated herein (the “Proposal”); and

WHEREAS, Buyer desires to purchase and develop the Premises, and the City desires to convey the Premises to Buyer, subject to the terms and conditions set forth herein.

NOW THEREFORE, in consideration of the foregoing and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties, intending to be legally bound, hereby agree as follows:

1. **SALE.** City agrees to sell the Premises to Buyer, and Buyer agrees to purchase the Premises in accordance with the terms and conditions set forth in this Agreement. This Agreement is for the sale of land only.
2. **CONSIDERATION.** The purchase price for the Premises shall be Four Hundred Seventy-Five Thousand Dollars (\$475,000.00) (the “Purchase Price”), subject to the following cost adjustments and conditions:
 - a. Buyer shall deliver to the City the sum of Ten Thousand Dollars (\$10,000.00) (the “Deposit”) within 3 business days after the full execution of this Agreement, which the City shall hold in a non-interest bearing account. The Deposit shall be governed by the terms and conditions of this Agreement and shall be fully refundable until the end of the Due Diligence Period as that term is defined below.
 - b. The Buyer shall pay the remainder of the Purchase Price to the City by wire transfer (or as otherwise reasonably requested by the City) at closing.

3. TITLE AND DUE DILIGENCE.

- a. Due Diligence Period. Buyer will have from the Effective Date until 4:00 PM Eastern Time on the day that is eighteen (18) months after the Effective Date (the “Due Diligence Period”) to complete any surveys, environmental review, inspections, and title examinations, and to obtain any zone change, site plan approval, and any other permits and regulatory approvals required for the Project. Buyer may, in its sole discretion, notify the City in writing that the Buyer elects to terminate the Due Diligence Period sooner and proceed to closing. Within ten days of the Effective Date, the City shall provide copies of, or reasonable access to, all known, non-confidential City files regarding the Premises, including without limitation title files.
- b. Property Description. The legal description of the Premises contained in the deed will be a survey description based upon a survey plan that will more specifically describe the Premises. The parties acknowledge and agree that the survey attached as Exhibit B is a preliminary draft prepared by Buyer and is subject to change after review, amendment, and approval by both parties. The City will notify Buyer of any objections to the survey within 30 days after the Effective Date. Within 10 days after receipt of any such objection, the Buyer will either provide the City with a revised survey addressing City’s objections to City’s satisfaction, or notify the City that Buyer will not change the survey, in which case the City, will have the right to terminate this Agreement, return the Deposit to Buyer, and neither party shall have any further obligation to the other. Upon City’s acceptance of the survey, Buyer will provide the City with a draft legal description for the Premises, which shall be based on the survey and be subject to the City’s review and approval. The survey and description of the Premises will be prepared by the Buyer at its sole expense. The parties will work together in good faith to complete their review and approval of the survey and legal description on or before the day that is 90 days after the Effective Date.
- c. Rezoning Contingency. Buyer proposes to obtain the Portland City Council’s approval to rezone the Premises (the “Rezoning Approval”) to increase residential density for its development of the Premises as described in the Proposal (the “Project”). The Buyer will be responsible for obtaining, at its sole expense, the Rezoning Approval and any other regulatory approvals required for the Project prior to Closing. Buyer may terminate this Agreement and receive a full refund of the Deposit if the Rezoning Approval is not received.
- d. Financing Contingency. The Buyer’s obligation to close is contingent on obtaining construction and permanent financing for the Project that the Buyer, in its discretion, determines is sufficient to put the Project on a sound financial footing. That financing is anticipated to include, but not be limited to, the following: (i) for the residential rental portion of the project an allocation of Federal low-income housing tax credits (“LIHTCs”), other

financing provided by Maine State Housing Authority (“MaineHousing”) and affordable housing tax increment financing from the City including a Credit Enhancement Agreement and (ii) for the cooperative housing portion of the project permanent financing under the U.S. Department of Housing and Urban Development section 213 program and affordable housing tax increment financing from the City including a Credit Enhancement Agreement. Buyer may terminate this Agreement and receive a full refund of the Deposit if the financing contingency described above is not met during the Due Diligence Period.

- e. Title and Survey Objections. Buyer will have until the end of the Due Diligence Period to deliver to City any written objections to title, environmental, or survey matters (other than the permitted exceptions identified herein) that materially affect insurability or use. Objections not made prior to the end of the Due Diligence Period will be deemed waived; provided, however, that objections pertaining to matters of record environmental, or survey matters first appearing after the end of the Due Diligence Period may be made at any time prior to the closing.
- f. Option to Cure. In the event of a title or survey objection, City will have the option, but not the obligation, to cure the objection and will notify Buyer of its election within ten (10) business days after receipt of the objection. In the event that the City elects to cure the objection, it will have sixty (60) days from the date of the notice of election, or such other reasonable time as the parties may agree, to cure the objection. In the event that the City does not elect to cure the objection, or, having elected to cure the objection fails to timely do so to Buyer’s reasonable satisfaction, Buyer will have the option to (1) terminate this Agreement and obtain a refund of the Deposit (after which neither party will have any further obligation or liability to the other under this Agreement), (2) waive the objection and close, or (3) undertake the cure of such objection at its own expense (in which case it shall have 60 days to do so).
- g. Deed. City shall convey the Premises to Buyer at the closing in fee simple by a municipal quitclaim deed without covenant. Title shall be good and insurable title, free and clear of all encumbrances except (i) easements of record and easements described herein, including, without limitation, an easement to be reserved by, and in form and substance satisfactory to the City and Buyer, the City for access to, and maintenance, repair, and replacement of, the trail located between the Premises and the I-295 corridor; (ii) easements for utilities servicing the property, in form and substance satisfactory to the City and Buyer, including, without limitation, Utility and sewer (iii) zoning ordinances, and (iv) real estate taxes not yet due and payable. Further, Buyer acknowledges that the deed shall contain a restriction stating that in the event that the Premises or any portion thereof shall be exempt from real and personal property taxes, by transfer, conversion, or otherwise, then the then-owner of the exempt portion shall make annual payments to the City in lieu of taxes in the amount equal to

the amount of property taxes that would have been assessed on the exempt portion of the real and personal property situated on the Premises had such property remained taxable. Such restriction shall also confirm that Buyer and its successors and assigns shall possess and be vested with all rights and privileges as to abatement and appeal of valuations, rates, and the like as are accorded owners of real and personal property in Maine. The City shall provide a draft of the deed, and of any declaration of covenants and restrictions pursuant to section 11, to Buyer one month before the end of the Due Diligence Period, and the City and Buyer shall in good faith endeavor to agree on the form of the deed prior to the end of the Due Diligence Period.

- h. Existing Natural Gas Equipment and Easement. The City has informed Buyer that the City believes that all or a portion of the existing natural gas pipe and other equipment depicted on Exhibit B may be actually located outside of the easement provided by the City to Unitil. The City shall use best efforts to work with Unitil to resolve the actual location of the gas pipeline and equipment and amend the easement, if necessary, within three months of the Effective Date. If City is unable to amend the Unitil easement to Buyer's satisfaction, Buyer shall have the right to terminate this Agreement as set forth in subsection (i) below.
- i. Buyer's Right to Terminate. The Buyer may terminate this Agreement at any time during the Due Diligence Period if, in the exercise of its sole discretion, it decides to not proceed with the Project by giving written notice of termination to the City in which case the City shall return the Deposit to Buyer and neither party shall have any further obligations to the other.

4. INSPECTIONS.

- a. During the Due Diligence Period, Buyer and its employees, consultants, contractors and agents shall have the right, at Buyer's expense, to enter on the Premises at reasonable times in order to (i) inspect the same, (ii) conduct engineering studies, percolation tests, geotechnical exams, environmental assessments, and other such studies, tests, exams, and assessments, and (iii) do such other things as Buyer determines, it is sole discretion, to be required to determine the suitability of the Premises for Buyer's intended use (collectively, the "Inspections"). The City acknowledges that such Inspections may include the digging of test pits, which the City hereby approves.
- b. Buyer agrees to defend, indemnify and hold harmless the City against any mechanics liens that may arise from the activities of Buyer and its employees, consultants, contractors and agents on the Premises.
- c. Buyer shall exercise the access and inspection rights granted hereunder at its sole risk and expense, and Buyer hereby releases the City from, and

agrees to indemnify, defend, and hold the City harmless against, any and all losses, costs, claims, expenses and liabilities (including without limitation reasonable attorney fees and costs) (collectively, "Damages") suffered by the City on account of any injury to person or damage to property arising out of the exercise by Buyer of its rights hereunder, except to the extent that such Damages result from the act or omission of the City.

- d. Buyer shall cause any contractors, consultants or any other party conducting the Inspections to procure automobile insurance, if applicable, and commercial general liability insurance coverage in amounts of not less than Four Hundred Thousand Dollars (\$400,000.00) per occurrence for bodily injury, death and property damage, listing the City as an additional insured thereon, and also Workers' Compensation Insurance coverage to the extent required by law; the forms of all such insurance to be subject to City's Corporation Counsel's reasonable satisfaction.
- e. In the event that Buyer does not purchase the Premises, Buyer agrees to either return the Premises as nearly as possible to its original condition after conducting the Inspections; provided, however, the City hereby acknowledges and agrees Buyer shall have no obligation to clean-up, remove or take any other action with respect to any disturbance of any pre-existing environmental contamination on the Premises caused by such inspections, studies, tests, exams, and assessments, and that Buyer shall have no obligation to clean-up, remove or take any other action with respect to any pre-existing environmental contamination disturbed thereby.
- f. The parties hereto acknowledge and agree that it is a condition to Buyer's obligations under this Agreement that the results of the Inspections be acceptable to Buyer in its sole discretion. If the results of such due diligence are not acceptable to Buyer in its sole discretion, and if Buyer exercises its right to terminate this Agreement, and neither party shall have any further obligations or liabilities under this Agreement except as expressly set forth in this Agreement.

- 5. **REAL ESTATE TAXES, PRORATIONS AND TRANSFER TAX.** Buyer shall be liable for all real estate taxes beginning as of the start of fiscal year following the closing and continuing thereafter. Because the Property is currently owned by the City of Portland, which is exempt from real estate taxes, no taxes were assessed or will be due for any portion of the tax year during which the closing occurs, and no taxes will be prorated at the closing. Any utilities for the Property shall be prorated as of the closing. The Maine real estate transfer tax shall be paid for by Buyer in accordance with 36 M.R.S.A. § 4641-A. City is exempt from paying the transfer tax pursuant to 36 M.R.S.A. § 4641-C. The recording fee for the deed of conveyance and any expenses relating to Buyer's financing or closing shall be paid for by Buyer.
- 6. **DEFAULT AND REMEDIES.** Prior to Closing, in the event that Buyer defaults hereunder for a reason other than the default of the City, the City may terminate this Agreement and retain the Deposit, and neither party shall have any further obligation

to the other. In the event that Buyer defaults on any matters addressed in this Agreement that survive Closing, Seller may pursue all available legal and equitable remedies. In the event City defaults under this Agreement, and if Buyer is not then in default hereunder, Buyer shall have the right to pursue specific performance or terminate this Agreement and elect in substitution therefor, as its sole remedy, the right to a return of the Deposit.

7. **RISK OF LOSS.** The risk of loss or damage to the Premises by fire, eminent domain, condemnation, or otherwise, until transfer of title hereunder, is assumed by the City. The Premises is to be delivered in substantially the same condition as of the Effective Date unless otherwise stated. In the event City is not able to deliver the Premises as stated, Buyer may terminate this Agreement, obtain a return of the Deposit, and neither party shall have any further obligations or liabilities under this Agreement except as expressly set forth in this Agreement.
8. **PROPERTY SOLD "AS IS, WHERE IS."** Buyer acknowledges that Buyer has had an opportunity to inspect the Premises, and to hire professionals to do so, and that Premises will be sold "as is, where is" and "with all faults." City, and its agents, make no representations or warranties with respect to the accuracy of any statement as to boundaries or acreage, or as to any other matters contained in any description of the Premises, or as to the fitness of the Premises for a particular purpose, or as to development rights, merchantability, habitability, or as to any other matter, including without limitation, land use, zoning and subdivision issues or the environmental, mechanical, or structural condition of the Premises. Acceptance by Buyer of the Deed at closing and payment of the purchase price shall be deemed to be full performance and discharge by the City of every agreement and obligation contained herein.
9. **ENVIRONMENTAL INDEMNIFICATION.** Buyer covenants and agrees to indemnify, defend, and hold the City harmless from and against any and all claims, damages, losses, liabilities, obligations, settlement payments, penalties, assessments, citations, directives, claims, litigation, demands, defenses, judgments, costs, or expenses of any kind, including, without limitation, reasonable attorneys', consultants', and experts' fees incurred in investigating, defending, settling, or prosecuting any claim, litigation or proceeding, that may at any time be imposed upon, incurred by or asserted or awarded against Buyer or the City and relating directly or indirectly to the violation of or compliance with any federal, state, or local environmental laws, rules, or regulations governing the release, handling or storage of hazardous wastes or hazardous materials and affecting all or any portion of the Premises, except to the extent that such a claim results directly from the City's release, handling or storage of hazardous wastes or hazardous materials on the Premises. This duty to indemnify, defend, and hold harmless shall be included in a covenant in the deed and shall run with the land conveyed and be binding upon Buyer's successors, assigns, and transferees.
10. **CLOSING.** Time is of the essence in the performance of this agreement. The closing shall be held at the offices of Buyer's counsel at a date and time specified by

two weeks' written notice from Buyer to the City on or before the day that is twenty (20) months after the Effective Date (the "Closing Date"). At the Closing:

- a. The City shall execute, acknowledge and deliver to Buyer a municipal quitclaim deed conveying to Buyer good and insurable title to the Premises, free and clear of all encumbrances except as otherwise set forth herein.
- b. Buyer shall deliver the Purchase Price to the City.
- c. Each party shall deliver to the other such other documents, certificates and the like as may be required herein or as may be necessary to carry out the obligations under this Agreement.
- d. Buyer shall deliver evidence, reasonably satisfactory to City's Corporation Counsel, that the entity receiving title to the Premises is in good standing under Maine law, and that the individuals acting at Closing and executing documents on behalf of Buyer are authorized to do so.

11. BUYER'S POST CLOSING OBLIGATIONS; RIGHTS OF CITY TO REPURCHASE PROPERTY.

As set forth in the Proposal, the Project includes a rental housing project and a limited equity cooperative housing project (hereinafter referred to as the "Rental Housing Project" and the "Cooperative Housing Project," respectively). Within thirty-two (32) months of the Effective Date, Buyer shall commence construction of both the Rental Housing Project and the Cooperative Housing Project.

a. Rental Housing Project.

- i. The Rental Housing Project will consist of an apartment building including no less than 56 units, with a mixture of one-, two- and three-bedroom units. In no event shall the Rental Housing Project include fewer than 17 two-bedroom units and 10 three-bedroom units.
- ii. For a period of 99 years after the Rental Housing Project has been completed, at least 40 units in the Rental Housing Project shall be affordable to households earning less than or equal to 60% of the area median income (AMI), adjusted for family size, based on figures published annually by HUD for the Portland Metropolitan Statistical Area. If at a time in the future, HUD no longer provides these annual figures, the City will identify another similar method of determining income guidelines for affordability. For purposes of this Agreement, "affordable" means that the percentage of income a household is charged in rent and other housing expenses including utilities, shall not exceed 30% of the household's gross monthly income, except as provided below if the Project is financed with the LIHTC program. Minimum household size allowed per unit and the formula for calculating maximum allowable monthly rent is detailed on Exhibit D, which is attached hereto and made a part hereof. However, if the Rental Housing Project is financed under the Federal Low Income Housing Tax Credit (LIHTC) Program, maximum allowable rent shall

be the maximum allowable rent under the Federal LIHTC Program during the applicable time period for that Program. Upon expiration of any affordability restrictions recorded in the Cumberland County Registry of Deeds under the Federal LIHTC Program, the provisions of Exhibit D shall apply to the Rental Housing Project for the remainder of the 99-year period.

b. Cooperative Housing Project.

- i. The Cooperative Housing Project will include at least 52 units, with a mixture of one-, two-, and three-bedroom units owned by a Limited Equity Cooperative Corporation (the “Co-op”) and leased individually to the resident shareholders of the Co-op (the holding of a Co-op share and lease agreement together constituting a resident’s “cooperative interest”). In no event shall the Cooperative Housing Project include fewer than 12 two-bedroom units and 22 three-bedroom units.
- ii. Upon the issuance of a certificate of occupancy for all or a portion of the Cooperative Housing Project, or at such earlier or later time as the Buyer, in its discretion, may determine, the Buyer shall convey the Cooperative Housing Project to the Co-op organized in accordance with the Maine Cooperative Affordable Housing Ownership Act, 13 M.R.S.A. §1741-1762, as may be amended or any successor provisions thereto (the “Act”). References below to particular provisions of the Act include any successor provisions to the provisions referenced.
- iii. Rent Restrictions. For a period of 99 years after the Cooperative Housing Project has been completed, all residential units in the Cooperative Housing Project shall be affordable to households earning less than or equal to 100% of the area median income (AMI), adjusted for family size, based on figures published annually by HUD for the Portland Metropolitan Statistical Area. If, at a time in the future, HUD no longer provides these annual figures, the City will identify another similar method of determining income guidelines for affordability. For purposes of this Agreement, “affordable” means that the percentage of income a household is charged in connection with (i) its cooperative interest and other housing expenses, including utilities, shall not exceed 30% of the household’s gross monthly income or (ii) its rent and other housing expenses, including utilities, shall not exceed 30% of the household’s gross income. Minimum household size allowed per unit and the formula for calculating maximum allowable purchase price and monthly rent is detailed on Exhibit D, which is attached hereto and made a part hereof.
- iv. Income Restrictions. Except as provided below regarding the initial sale of cooperative interests, a household may only purchase a cooperative interest in a unit or if its income is not more than 100% of the AMI, adjusted for family size, as published by the U.S. Department of Housing and Urban Development (“HUD”) at the time of purchase. This income test will be used only at the time of the household’s purchase. No income test shall apply for subsequent

transfers to family members (as reasonably defined by the Co-Op Entity) or to a cooperative membership interest which is inherited or transferred upon death to a beneficiary. At the time of the initial sale of cooperative membership interests in the Co-op, up to 20% of the cooperative membership interest may be sold to households earning up to 120% AMI. All subsequent sales must be to households earning no more than 100% of AMI.

- v. The articles of organization for the Co-op shall provide that in the event the Co-op shall be dissolved, its assets will be distributed in accordance with §1754 (6) of the Act. In such dissolution, the Co-Op's assets will be used first to pay all debts and other obligations of the Co-op, then to make any distributions to members required under the Co-Op's limited equity organizational documents, then any remaining balance shall be paid to the City or, at the Buyer's option with the consent of the City not to be unreasonably withheld, to another organization permitted under §1754 (6) of the Act.

c. **Option to Repurchase All or a Portion of the Premises.**

(i) If Buyer, its successors, assigns, or transferees commences no construction of any portion of the Project to be located on the Premises within 32 months of the Effective Date, the City shall have the right, but not the obligation, to repurchase the Premises and all improvements thereon (collectively, the "Property") at the Purchase Price (the "Property Repurchase Price") plus all commercially reasonable and documented, design, development, construction, and regulatory approval expenses ("Approved Expenses") incurred by Buyer, or successors, to the date on which the City notifies Buyer, its successors or assigns, of its intent to exercise its option to repurchase the Property. The parties acknowledge and agree that the Approved Expenses are intended to include only costs incurred directly in connection with the development of the Property for documents, agreements, designs, plats, plans, approvals, and construction, the rights to which may be assigned or transferred to the City. In no event shall the **Approved** Expenses include salaries, developer fees, or the like paid by Buyer, its successors or assigns to their members, shareholders, partners, employees, or agents.

(ii) If Buyer conveys a portion of the Property (the "Co-Op Site"), which conveyance may be by creating and conveying a land condominium unit, to a separate entity (the "Co-Op Entity") for purposes of that entity developing the Cooperative Housing Project, and the Co-Op Entity fails to commence construction of the Cooperative Housing Project within 32 months of the date of this agreement or fails to complete construction of the Cooperative Housing Project within fifty (50) months of the date of this agreement, the City shall have the right, but not the obligation, to purchase the Co-Op Site and all improvements thereon for a price equal to One Hundred Thousand Dollars (\$100,000) ("Co-Op Repurchase Price") plus Approved Expenses incurred by Buyer, or successors, for purposes of developing the Co-Op Site to the date on which the City notifies Buyer, its

successors or assigns, of its intent to exercise its option to repurchase. Any conveyance of the Co-Op Site to the City will (i) be subject to any and all rights of the Rental Housing Entity (defined below) or pursuant to any condominium documents that affect or burden the Co-Op Site and (ii) include any and all rights of the Co-Op Entity over the Rental Housing Site (as defined below) or pursuant to any condominium documents.

(iii) If Buyer conveys a portion of the Property (the “Rental Housing Site”), which conveyance may be by creating and conveying a land condominium unit, to a separate entity (the “the Rental Housing Entity”) for purposes of that entity developing the Rental Housing Project, and the Rental Housing Entity fails to commence construction of the Rental Housing Project within 32 months of the date of this agreement or fails to complete construction of the Rental Housing Project within fifty (50) months of the date of this agreement, the City shall have the right, but not the obligation, to purchase the Rental Housing Site and all improvements thereon for a price equal to \$375,000 (the “Rental Housing Repurchase Price”) plus Approved Expenses incurred by Buyer, or successors, for purposes of developing the Rental Housing Site to that the date on which the Property is conveyed to the City. Any conveyance of the Rental Housing Site to the City will (i) be subject to any and all rights of the Co-Op Housing Entity (defined below) or pursuant to any condominium documents that affect or burden the Rental Housing Site and (ii) include any and all rights of the Rental Housing Entity over the Co-Op Site (as defined below) or pursuant to any condominium documents.

(iv) Any conveyance to the City pursuant to the City’s option to purchase shall be subject to all mortgages of record placed by Buyer, its successors and assigns, but only if such mortgages secure financing of the development of the Premises (the “Permitted Mortgages”). In the event that there are any Permitted Mortgages on the Property, or portion thereof, at the time City exercises its right to repurchase, the parties agree that the City shall have the option to pay the applicable Repurchase Price and Approved Expenses to the first priority mortgagee. City and its successors and assigns agrees to enter into such agreements on reasonable commercial terms as may be requested by the lenders and/or investors of Buyer, its successors and assigns, to provide such lenders or investors notice and cure rights. In furtherance, but not in limitation of the foregoing, as long as MaineHousing holds a Permitted Mortgage on the Premises, no notice given by the City to the Buyer, its successors and assigns under the City’s deed shall be valid unless and until a copy of the notice is given to MaineHousing at Maine Housing at Maine State Housing Authority, 26 Edison Drive, Augusta, Maine 04330, Attn: Legal Department. MaineHousing shall have the right, but not the obligation, to cure any default or perform any obligation under the City’s deed for thirty (30) days beyond any period during which Buyer, its successors and assigns may cure any default or perform any obligation under the City’s deed. If the City exercises any of the above right to purchase, Buyer or its successor

shall convey the Property to the City, free and clear of all encumbrances other than the Permitted Mortgages and any utility easements granted by Buyers its successors and assigns, and assign to the City all contracts, plans, and other documents related to the design, construction, and regulatory approvals for the Project. The City agrees to make reasonable modifications to the provisions regarding the City's repurchase rights to facilitate mortgage and development financing for the Project. The rights to purchase shall be assignable by the City.

(v) Buyer anticipates that the Co-Op entity will grant a mortgage on the Co-Op Site to a lender or investor to finance the purchase of the Co-Op Site and preconstruction development costs including the Co-Op's \$100,000 portion of the acquisition price, Approved Expenses and related customary and commercially reasonable financing costs (such financing is referred to as the "Pre-Development Mortgage Loan"). Buyer, for itself, its successors, and assigns, including the Co-Op Entity, agrees that it will not encumber the Co-Op Site with mortgages other than the mortgage securing Pre-Development Mortgage Loan and that such mortgage shall not exceed in the aggregate the Co-Op Pre-Development Appraised Value (as defined below) at any time prior to the closing of the full construction financing for the Cooperative Housing Project (the "Co-Op Construction Loan Closing"). Prior to the Co-Op Construction Loan Closing, notwithstanding any other provision of this Agreement, the total amount that the City is required to pay to repurchase the Co-Op Site upon exercise of its option as provided above, including Approved Expenses, shall be limited to the then-outstanding balance of the mortgage securing the Pre-Development Mortgage Loan.

The term "Co-Op Pre-Development Appraised Value" means the appraised value of the Co-Op Site as determined by an appraisal, made in accordance with all applicable professional standards, obtained by the lender making the pre-development mortgage loan to the Co-Op entity. The Co-Op entity agrees to provide a copy of that appraisal to the City prior to entering into such mortgage loan.

The provisions of this Section 11(c)(v) shall cease to apply as of the Co-Op Construction Loan Closing.

- d. For all purposes of this Section 11, construction will be deemed completed for a portion of the Project upon the issuance of a Certificate of Occupancy by the City for that portion. Upon termination of the City's option with respect to a portion of the Project, the City will, at the request of the Buyer, its successors and assigns execute and record an affidavit indicating that the City's option has terminated with respect to all or a portion of the Project. Notwithstanding anything else to the contrary in this Section 11, in the event that the City fails to give the notice exercising the City's option on or before the date that is 31 months after the Closing Date, then the City's

option shall terminate automatically without the need for further writing or recording.

- e. Notwithstanding the above provisions, if after closing, Buyer, or its successors, assigns, or transferees determines that it is not feasible to develop the Property as a rental housing project using Maine State Housing Authority financing or as a cooperative leasing/ownership structure, Buyer may develop the Property using a different financing or leasing/ownership structure so long as the unit mix and affordability criteria provided in this Agreement are satisfied. If the Buyer or its successors does so within the time periods specified, the City shall not have the right to repurchase the Property.
- f. The provisions of this Section 11 will survive closing and will be included in greater detail in the City's deed to Buyer or in a declaration of covenants, conditions and restrictions executed before or at the time of Closing, which shall be recorded in the Cumberland County Registry of Deeds.

- 12. **ENTIRE AGREEMENT.** This Agreement represents the entire and complete Agreement and understanding between the parties and supersedes any prior agreement or understanding, written or oral, between the parties with respect to the acquisition or exchange of the Property hereunder. This Agreement cannot be amended except by written instrument executed by City and Buyer.
- 13. **NON-WAIVER.** No waiver of any breach of any one or more of the conditions of this Agreement by either party shall be deemed to imply or constitute a waiver of any succeeding or other breach hereunder.
- 14. **HEADINGS AND CAPTIONS.** The headings and captions appearing herein are for the convenience of reference only and shall not in any way affect the substantive provisions hereof.
- 15. **BINDING EFFECT.** This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective heirs, administrators, successors and assigns.
- 16. **TIME.** The City and Buyer each confirm and agree that each of the time periods set forth herein are essential provisions of the terms of this Agreement.
- 17. **GOVERNING LAW.** This Agreement shall be construed in all respects in accordance with, and governed by, the laws of the State of Maine. All parties hereto hereby consent to the exclusive jurisdiction of the Superior Court for the County of Cumberland in the State of Maine, for all actions, proceedings and litigation arising from or relating directly or indirectly to this Agreement or any of the obligations hereunder, and any dispute not otherwise resolved as provided herein shall be litigated solely in said Court. If any provision of this Agreement is determined to be invalid or unenforceable, it shall not affect the validity or enforcement of the remaining provisions hereof.

18. NOTICE. All notices, demands and other communications hereunder shall be in writing and shall be deemed to have been duly given on the date of service if served personally on the party to whom notice is to be given, or on the first business day after the notice is delivered to an overnight delivery service with delivery confirmation, addressed to the recipients at the addresses set forth below. Either party may change addresses for purposes of this paragraph by giving the other party notice of the new address in the manner described herein.

FOR THE CITY: City of Portland
ATTN: City Manager
389 Congress Street
Portland, ME 04101

With a copy to: The Office of the Corporation Counsel at the same address.

FOR BUYER: Douglass Commons LLC
c/o The Szanton Company
482 Congress, Suite 203
Portland, ME 04101

And to:

Maine Cooperative Development Partners, LLC
c/o Brian Eng
6 City Center, Fl. 3
Portland, ME 04101

With a copy to: John S. Kaminski
Drummond Woodsum
84 Marginal Way, Suite 600
Portland, ME 04101

19. SIGNATURES; MULTIPLE COUNTERPARTS. This Agreement may be executed in any number of counterparts and by different parties in separate counterparts. Each counterpart when so executed shall be deemed to be an original and all of which together shall constitute one and the same agreement.

20. BROKERS. The City and Buyer each represent and warrant that they have not dealt with a real estate broker in connection with this transaction. Buyer agrees to indemnify and hold harmless City from any claims made by any broker should Buyer's representation in this paragraph be false. Subject to the limitations of liability set forth in the Maine Tort Claims Act, City agrees to indemnify and hold harmless Buyer from any claims made by any broker should City's representation in this paragraph be false. The foregoing indemnities shall include all legal fees and costs incurred in defense against any such claim, and shall survive closing.

21. RECITALS INCORPORATED BY REFERENCE. The recitals set forth above are incorporated herein by reference and made a part of this Agreement.

IN WITNESS WHEREOF, the parties have caused this instrument to be executed on their behalf by their duly authorized offices or representatives, on the day and year first written above.


WITNESS

CITY OF PORTLAND


Jon P. Jennings
Its City Manager


WITNESS

DOUGLASS COMMONS, LLC

By: 
Printed Name: Nathan S. Szanton
Its Manager

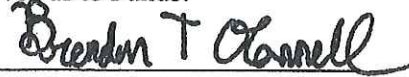
Approved as to Form:


City Corporation Counsel's Office

and

By: 
Printed Name: Brian Eng
Its Manager

Approved as to Funds:


City Finance Department

CITY of PORTLAND, MAINE
Request for Proposals for Disposition of City-Owned Property
Located at 43 & 91 Douglass Street
RFP #20067

I. NOTICE AND SPECIFICATIONS

The City of Portland, Maine seeks proposals from qualified developers for the creation of residential housing at 43 & 91 Douglass Street. The site is designated on the City of Portland Tax Assessor's Map as lot CBL 078 C002 & 078 B007.

Sealed proposals for the project, including an original, seven (7) copies, and one (1) digital copy, as specified herein, will be received by the Purchasing Office, Room 103, City Hall, 389 Congress Street, Portland, Maine 04101, until 3:15 p.m., Tuesday, June 16, 2020, at which time they will be publicly opened.

Proposals shall be submitted, and returned in sealed envelopes plainly marked on the outside "Disposition and Development of Property Located at 43 & 91 Douglass Street".

Proposals that are late, unsigned or submitted via fax will not be accepted. Proposals from individuals not registered with the Purchasing Office may be rejected; receipt of this document directly from the City of Portland indicates registration. Should a person receive this Request from a source other than the City, please contact 207-874-8654 to ensure that you are listed as a recipient for this proposal.

All questions must be submitted in writing to the Purchasing Office. These may be mailed, hand delivered, faxed to (207) 874-8652 or e-mailed to mff@portlandmaine.gov and be received no later than five (5) business days prior to the opening date. Questions received after this time will not be addressed. Any interpretation, correction, or change of this document will be made only by written addenda. Changes in any other manner will not be binding on the City and proposers should not rely on. Proposers should not have contact with any City staff with regard to this proposal unless to obtain general public information as specified in the document.

The disposal of this real estate shall be on the basis of a negotiated proposal, with the City of Portland reserving the right to refuse any and all proposals. *All proposers are advised that the property will be sold "as-is" and "where is", in its existing condition, with no warranties either expressed or implied.* The City makes no representations or warranties about of any of the information about the property set forth herein, which is provided to proposers for their convenience only. The successful proposer shall be responsible to inspect the property, or to hire its own professionals to do so. The City, and its agents, make no representations or warranties with respect to the title of the property, the accuracy of any statement as to boundaries or acreage, or as to any other matters contained in any description of the property, or as to the fitness of the property for a particular purpose, or as to development rights, merchantability, habitability, or as to any other matter, including without limitation, land use, zoning and subdivision issues or the environmental, mechanical, or structural condition of the property. The City disclaims any and all responsibility for injury to proposers, their agents or others while examining the property or at any other time. The City will not be responsible for any broker's commission.

Any and all improvements made to said property must be done in accordance with existing City Codes and Ordinances.

II. GENERAL INFORMATION

Summary of Request:

The City of Portland is committed to providing housing opportunities and has set a goal to evaluate the use of City-owned property to construct housing. As one-step in accomplishing this goal, the City of Portland will accept proposals for the development of housing on the lot located at 43 & 91 Douglass Street, which currently is a vacant lot but was the former site of the West School.

This request for proposals results from the December 16, 2019 approval by the Portland City Council (Resolve 10-19/20) on the recommendation of the Housing Committee to market the City-owned vacant property located at 43 and 91 Douglass Street.

The City of Portland uses the RFP process to ensure that public resources are utilized for maximum public benefit while accomplishing specific objectives and providing fair access to all applicants.

Site Information:

- a. Location:** 43 & 91 Douglass Street, as identified in the City of Portland Assessor's records as lot CBL 078 C002 and 078 B007, in the R-5 zone. The lot includes the former site of the West School. The site for disposition includes a portion of 91 Douglass Street, but not the entire lot (See Attachment 2).
- b. Existing Conditions:** 43 & 91 Douglass Street is located on two parcels with frontage on Douglass Street in the Libbytown neighborhood. A right-of-way bisects the two parcels. The surrounding context is predominantly residential with the majority of homes in the area being one and multi-family structures. Dougherty Play Field abuts the property to the north.
- c. Current use:** Vacant lot.
- d. General Dimensions:** 43 Douglass Street (estimated at .3981 acres), and an estimated 2.85-acre portion of 91 Douglass Street.
- e. Current Zoning:** R-5. The minimum lot size in the R-5 zone is 6,000 square feet for residential development (single-family and two-family), 9,000 square feet for a multi-plex development (three-family or more), and 2 acres for a planned residential unit development (PRUD). This parcel would allow for residential, multi-family, and PRUD development. The minimum lot area per unit in a PRUD is 3,000 square feet; the maximum units per building is 12 units. At an estimated 141,570 square feet, the maximum number of residential units that could be developed within a PRUD is 47 units. For complete zoning requirements, please refer to Chapter 14, Land

Use, of the City Code.

- f. **Rezoning:** Higher density zoning that furthers exceptional projects and other city goals as outlined in Section III may be considered. It should be noted that changes to zoning require both Planning Board and City Council approval.
- g. **Condition of the property at the time of sale:** This parcel is the location of a former city-dump, and later the West School. A natural gas line and gas company easement are located in the right-of-way and the 43 Douglass Street parcel thus precluding development over these sites. A 40' wide sewer easement is also identified in the unbuildable portion of the site.
- h. **Environmental Conditions:** A Phase II Environmental Site Assessment (ESA) has been completed to evaluate current environmental conditions. Based on findings, special soil disposal restrictions may be required. Participation in the Maine DEP Voluntary Response Action Program (VRAP) should be considered. The Phase II ESA will be available on-line.
- i. Proposers are urged to investigate water sources and utility connection requirements with the Department of Public Works.

III. CITY GOALS

The City's primary goals for the use of the property are:

1. Developments shall provide mixed income units. All units must be affordable to households earning 60% to 120% of the area median income (AMI). Currently, 60% AMI for a family of four is \$55,800 and 120% AMI for a family of four is \$111,600.

Affordable means that the percentage of income a household is charged in rent and other housing expenses including utilities, or must pay in monthly mortgage payments (including real estate taxes, mortgage insurance, condominium/HOA fees, insurance and utilities), does not exceed 30% of a household's gross income, or other amount established in city regulations that does not vary significantly from this amount.

Restrictions on the affordability of units must be in place for a minimum of 30 years for homeownership units, and the longest period allowed by law for rental units.

2. Development of mixed income homeownership or rental housing of excellent building and site design. Design principles should promote efficient use of land to create a development that is compatible with the existing pattern, scale, massing, and materials of the surrounding neighborhood. The development's buildings shall be designed to meet the City's Green Building Code.
3. Rezoning may be considered to support increase housing development opportunities or maximize the number of allowable housing units on the property.
4. Developments shall create housing options that are age inclusive.

The general terms for this real estate transaction include:

- Units must be used as the principal residence of the owner/tenant and owner/tenant shall not use the unit for the conduct of business (except for a home occupation allowed under the City of Portland zoning ordinance) or as an investment property. Units shall not be rented for short-term periods of one to thirty days.
- Property Sale Price. The City expects to receive Fair Market Value (“FMV”) for the property.
- Alternative Ownership Models. Alternative ownership models that will encourage a mixed income community with long term affordability for the maximum number of units, such as limited equity units, co-housing, cooperative, or a community land trust, may be considered in order to ensure the units affordability over time.
- Proposals must outline how they will maintain affordability.
- Other City Incentives. Other city financial incentives may be considered to support increase housing development opportunities or maximize the number of allowable housing units on the property.

IV. PROPOSED SCORING

An internal staff Committee will review proposals received, and will apply the following selection criteria in reviewing and scoring the applications.

Proposed use to achieve the City of Portland's goals

40 points

1. Market Demand - 20 points
 - a. 20 points - all units meet the City’s Goals and Terms noted in Section III
 - b. 15 points - at least 75% of the units meet the City’s Goals and Terms noted in Section III
 - c. 10 points - at least 50% of the units meet the City’s Goals and Terms noted in Section III
 - d. 0 points - project does not meet the City’s Goals and Terms noted in Section III
2. Economic diversity - 10 points
 - a. 10 points - creates housing options which promote economic diversity in the neighborhood in which the development is located
 - b. 0 points - does not promote economic diversity
3. Age Inclusive – 10 points
 - a. 10 points – creates housing which is age inclusive
 - b. 0 points – does not create housing which is age inclusive

Impact on surrounding neighborhood, including design.

25 points

1. Project Design -15 points
 - a. 15 points - the proposal is consistent with design characteristics
 - b. 10 points - the proposal is an adequate fit with neighborhood characteristics
 - c. 0 points - the design is a significant outlier
2. Amenities and unit design - 10 points
 - a. 10 points - amenities & unit design are well thought out and appropriate for residents
 - b. 5 points - amenities & unit design are adequate

- c. 0 points - amenities and unit design raise significant concerns that resident needs will not be adequately addressed

Applicant's ability to complete project, including financial feasibility, development team experience, capacity, and timeframe for completion.

35 points

1. Readiness to proceed - 15 points
 - a. 15 points - all projected sources of funding include letters of commitment or interest are projected at terms and conditions consistent with the City's prior experience with the funder
 - b. 10 points - most projected sources of funding include letters of commitment, letters of interest, or, if no letter is included, are projected at terms and conditions consistent with the City's prior experience with this funder
 - c. 0 points - one or more sources are projected on terms that are not consistent with the City's prior experience with the funder and are not documented by letter(s) from funder(s)
2. Track record of development team - 10 points
 - a. 10 points - every development team member has a successful track record with this type of project and at this scale
 - b. 8 points - all but one development team members have a successful track record with this type of project and at this scale; one development team member has relevant experience but at a smaller scale or not of this project type
 - c. 5 points - two development team members, while having relevant experience, are new to this type of project or this scale of development
 - d. 0 points - the development team does not meet the criteria above
3. Current Capacity of development team - 10 points
 - a. 10 points - development team members have exceptional depth of human and financial resources to complete this project
 - b. 8 points - development team members have the human and financial resources to complete this project
 - c. 5 points - development team has a staffing gap in a significant role and a plan to address that gap, OR there are some concerns about the financial resources of the team to move the development forward
 - d. 0 points - the development team does not meet the criteria described above

SUBMISSION INFORMATION

Interested parties are asked to submit a concept development (including preliminary drawings) and a brief description of the project, no longer than two pages, to include the number and type of units, occupants (owners/renters) to be served, special features, the impact on the neighborhood and other ways the proposal meets the primary goals of the City. A general project budget with projected funding sources, development timeline, and development team qualifications and financial capabilities is also required. This RFP does not require detailed architectural drawings or development pro formas.

Photographs and maps of the site and area are required.

- a) **Developer:** Name, address, telephone, email, fax number of the proposed owner/developer and the name(s) of an alternative contact person(s).
- b) **Proposal:** Each proposal submitted must specifically outline the proposed use of the property and any proposed rezoning requests.

- c) **Financial Feasibility:** Provide a business plan, which shall include prospective and committed sources of funding, development and operating budgets; a letter from a lending institution indicating the applicant's ability to finance the projected costs; and provide examples of prior projects that indicate the proven ability to develop a project of similar type and scale from a fiscal perspective.
- d) **Timetable:** Provide an overview of how the proposal will be implemented. Include approximate schedule for completion of each element, closing, construction start-up, substantial completion, final completion, and occupancy. Include applications for public or private financing.
- e) **Developer Capacity:** Identify the qualifications and experience of the development team for the project including a list of previously completed projects similar to the proposed project. This team may include key staff of the developer, architect, general contractor and future property management. Also, discuss the ability to complete the project including the qualifications of the development team, management plan, experience, capacity, project readiness to proceed, and timeframe for completion.
- f) **Occupancy and Management Plan:** Present a plan detailing the ownership structure (condominium, cooperative, etc.), resale restrictions and resale process, to ensure mixed income and long-term affordability.
- g) **Purchase Price:** Proposed purchase price for the property.
- h) **Copies:** Seven (7) copies, with the original so marked, and one (1) digital copy of each proposal shall be submitted.

V. SALE INFORMATION

After proposals are opened, city staff will make a recommendation to the City Council's Economic Development Committee (EDC) and the Housing Committee (HC). The EDC and HC will make a recommendation to the City Council.

VI. OTHER INFORMATION

Confidentiality: Proposals received by the City shall become a matter of public record, subject to public inspection, except to the extent, which an applicant designates in writing, proprietary data to be confidential and submits that data under separate cover, such information, may, to the extent permitted by law, be held from public inspection, as provided in applicable Maine law, including, without limitation, 5 MRS Sections 13119-A and 13119-B.

VII. LEGAL REQUIREMENTS

The contract for the disposition of the property will be executed only after review and final approval by the City Council.

VIII. RESERVATION of RIGHTS

The City of Portland reserves the right, at its sole discretion, to award as well as reject any and all proposals for the city-owned property, based on the quality and merits of the proposals received, or when it is determined to be in the public interest to do so. Furthermore, the City may extend deadlines and timeframes, as needed.

The City reserves the right to substantiate any proposer's qualifications, capability to perform, availability, past performance records, and to verify that the proposer is current in its financial obligations to the City.

The City of Portland, Maine, reserves the right to waive any informalities in proposals, to accept any proposal or portion thereof, and, to reject any and all proposals, as well as negotiate with the successful proposer(s) should it be in the best interest of the City to do so for a final purchase and sale agreement and ultimate sale of the property.

Pursuant to City procurement policy and ordinance, the City is unable to contract with businesses or individuals who are delinquent in their financial obligations to the City. These obligations may include but are not limited to real estate and personal property taxes and sewer user fees.

Proposers who are delinquent in their financial obligations to the City must do one of the following: bring the obligation current, negotiate a payment plan with the City's Treasury office, or agree to an offset, which shall be established by the contract, which shall be issued to the successful proposer

April 10, 2020

Matthew F. Fitzgerald
Purchasing Manager

Attachments:

- A. Proposal Signature
- B. Portland Assessor's Record
- C Site Map
- D Phase II ESA available online

PROPOSAL**NOTE: THIS PAGE IS TO BE COMPLETED AND RETURNED**

The UNDERSIGNED hereby declares that he/she or they are the only person(s), firm or corporation interested in this proposal as principal, which it is made without any connection with any other person(s), firm or corporation submitting a proposal for the same.

The UNDERSIGNED hereby declares that they have read and understand all conditions as outlined in the Request for Proposals, and that the proposal is made in accordance with same.

The UNDERSIGNED hereby declares that any person(s) employed by the City of Portland, Maine, who has direct or indirect personal or financial interest in this proposal or in any portion of the profits which may be derived therefrom has been identified and the interest disclosed by separate attachment. (Please include in your disclosure any interest which you know of. An example of a direct interest would be a City employee who would be paid to perform services under this proposal. An example of an indirect interest would be a City employee who is related to any officers, employees, principal or shareholders of your firm or to you. If in doubt as to status or interest, please disclose to the extent known).

The proposer acknowledges the receipt of Addenda numbered _____
If Applicable

COMPANY NAME: _____
(Individual, Partnership, Corporation, Joint Venture)

AUTHORIZED SIGNATURE: _____ DATE: _____
(Officer, Authorized Individual or Owner)

PRINT NAME & TITLE: _____

ADDRESS: _____

TELEPHONE: _____ E-MAIL: _____

FEDERAL TAX ID #: _____ DUNS #: _____

STATE OF INCORPORATION _____

(If incorporated in another State, businesses must be authorized to do business in the State of Maine.)

In your organizations preceding completed fiscal year, did the organization receive:

(1) 80 percent or more of its annual gross revenues in U.S. federal contracts, subcontracts, loans, grants, subgrants, and/or cooperative agreements; AND

(2) \$25,000,000 or more in annual gross revenues from U.S. federal contracts, subcontracts, loans, grants, subgrants, and/or cooperative agreements? ☐ Yes ☐ No

Does the public have access to information about the compensation of the executives in the organization through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (18 U.S.C. 78m(a), 78o(d) or section 6104 of the Internal Revenue Code of 1986? ☐ Yes ☐ No

NOTE: All bids must bear the handwritten signature of a duly authorized member or employee of the organization making the bid. **This sheet must be signed and returned with the application package.**

This page contains a detailed description of the Parcel ID you selected.

New Search!

Current Owner Information:

CBL	078 C002001
Land Use Type	GOVERNMENTAL
Verify legal use with Inspections Division	
Property Location	43 DOUGLASS ST
Owner Information	CITY OF PORTLAND 389 CONGRESS ST PORTLAND ME 04101
Book and Page	
Legal Description	78-C-2 DOUGLASS ST 43-53 REAR PROPOSED ST 17340SF
Rental Registration	No
Acres	0.3981

Current Assessed Valuation:

TAX ACCT NO.	10005	OWNER OF RECORD AS OF APRIL 2019
LAND VALUE	\$49,000.00	CITY OF PORTLAND
BUILDING VALUE	\$0.00	389 CONGRESS ST
MUNICIPAL TYPE	(\$49,000.00)	PORTLAND ME 04101
NET TAXABLE - REAL ESTATE	\$0.00	
TAX AMOUNT	\$0.00	

Any information concerning tax payments should be directed to the Treasury office at 874-8490 or [e-mailed](#).

This page contains a detailed description of the Parcel ID you selected.

New Search!

Current Owner Information:

CBL	078 B007001
Land Use Type	GOVERNMENTAL
Verify legal use with Inspections Division	
Property Location	91 DOUGLASS ST
Owner Information	CITY OF PORTLAND 389 CONGRESS ST PORTLAND ME 04101
Book and Page	
Legal Description	78-B-7 DOUGLASS ST 91-105 195648 SF
Rental Registration	No
Acres	4.4915

Current Assessed Valuation:

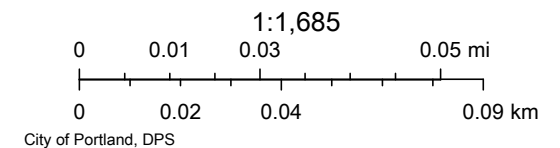
TAX ACCT NO.	10005	OWNER OF RECORD AS OF APRIL 2019
LAND VALUE	\$489,100.00	CITY OF PORTLAND
BUILDING VALUE	\$0.00	389 CONGRESS ST
MUNICIPAL TYPE	(\$489,100.00)	PORTLAND ME 04101
NET TAXABLE - REAL ESTATE	\$0.00	
TAX AMOUNT	\$0.00	

Any information concerning tax payments should be directed to the Treasury office at 874-8490 or [e-mailed](#).



3/10/2020, 12:45:58 PM

■ Override 1



Portland, Maine



Yes. Life's good here.

Planning & Urban Development Department

ZONING ANALYSIS Relevant Zone(s) R5-a - PRUD

All Projects:

	Required	Proposed
Lot Size	None	3.34 acres
Area Per Dwelling Unit	None	0.030
Minimum Street Frontage	50'	60'
Front Yard Minimum	N/A	N/A
Front Yard Maximum	10'	10'
Rear Yard	10'	10'
Yard Right	10'	10'
Yard Left	10'	10'
Side Street Setback	N/A	N/A
Step Back	N/A	N/A
Maximum Lot Coverage	30%	23%
Minimum Lot Coverage	N/A	N/A
Maximum Height	55'	53'
Open Space	200 S.F / D.U.	280 S.F/D.U.
Maximum Impervious Area	N/A	N/A
Pavement Setback	N/A	N/A
Floor Area Ratio	N/A	N/A
Off Street Parking Spaces	N/A	69
Loading Bays	N/A	N/A
Other 1		
Other 2		
Other 3		



ISSUED FOR	BY
SITE PLAN REVIEW	DATE
	SJL
	1/11/22

DRAWING NAME:	OPEN SPACE AREA EXHIBIT
PROJECT NAME:	DOUGLASS COMMONS
CLIENT:	THE SZANTON COMPANY, LLC 10 FREE STREET, PORTLAND, ME 04101



ACORN
ENGINEERING, INC.

65 HANOVER STREET
PORTLAND, MAINE 04104
(207) 775-2655

FILE:	1154_CIVIL
JN:	1154
SCALE:	1' : 50'
DESIGN BY:	SJL
DRAWN BY:	AWG
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.
EX.

E. Summary of Written Easements

Existing easements on site as identified by Owen Haskell, Inc. include:

- Anode Bed Easement Douglass Street at Dougherty Field by City Of Portland Public Works Department Engineering Division Dated 09/30/2016, City Plan 882/53.
- Maine State Highway Commission Right of Way Map State Highway "295" Portland Cumberland County Federal Aid Project No. I-295-3(24)8(25) Dated May 1967.

Proposed Easements:

- No easements are proposed as part of the project.



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 1.14.2	20% Compact Space allowance	We are requesting that 27% of the proposed 69 parking spaces be compact.	Due to the urban environment and tendency to drive smaller, compact cars, the parking layout has been tailored to minimize impervious area
Technical Manual 1.7.2.3	24' Drive Aisle Width	We are requesting to reduce the drive aisle width from 24' to 22'.	Based on the proposed land use and residents' tendency to become familiar with their parking spot, along with a low rate of turnover, a width of 24' is not necessary to accommodate a functional parking lot. 22' allows for a reduction in impervious area.

G. Financial Capacity

Please find attached the status of good standing from the Secretary of State for The Szanton Company and the Maine Cooperative Development Partners and letters of financial capacity from the Applicant's banks.





December 9, 2021

The City of Portland
Planning Department
389 Congress Street
Portland, ME 04101

RE: 43 & 91 Douglass Street

To Whom It May Concern:

On behalf of Bangor Savings Bank I am pleased to provide this letter in support of The Szanton Company for the above-referenced project. Based on our review of the financial elements of the proposal for the development site, we believe that that the applicant has the ability to finance projected costs and develop a project of similar type and scale from a fiscal perspective.

While this letter of support is not a commitment to lend, Bangor Savings Bank would welcome the opportunity to be a resource to The Szanton Company for financing and sponsorship of any equity awards necessary in connection with this project. Please feel free to call me with any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Ronald B. Hunt". The signature is fluid and cursive, with a stylized "H" and a trailing flourish.

Ronald B Hunt
Vice President
Bangor Savings Bank - Commercial Lending
280 Fore Street, Suite 200
Portland, ME 04101
(207) 420-3967



MAINE

Department of the Secretary of State
Bureau of Corporations, Elections and Commissions

Corporate Name Search

Information Summary

[Subscriber activity report](#)

This record contains information from the CEC database and is accurate as of: Fri Jan 07 2022 11:03:33. Please print or save for your records.

Legal Name	Charter Number	Filing Type	Status
THE SZANTON COMPANY	20001684 D	BUSINESS CORPORATION	GOOD STANDING

Filing Date	Expiration Date	Jurisdiction
03/03/2000	N/A	MAINE

Other Names (A=Assumed ; F=Former)

NONE

Clerk/Registered Agent

DREW A. ANDERSON
P.O. BOX 9785
PORTLAND, ME 04104 5085

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December 13, 2021

Matthew Peters
Principal
MCDP Douglass LLC
6 City Center, Suite 300
Portland, ME 04101

RE: Douglas Commons Cooperative

To whom it may concern:

Centennial Mortgage has been engaged by MCDP Douglass LLC to secure mortgage insurance through the FHA 213 program for cooperative housing and fund a construction/permanent mortgage for Douglas Commons Cooperative, a new cooperative housing project in Portland, ME. We have reviewed a financing request, including initial plans, pro forma operating budget, the construction budget and initial market information for Douglas Commons Cooperative in Portland, ME. In addition, we have reviewed the experience of the overall development team. Based on this review, we feel that this project is an excellent candidate for financing and will conform to all the requirements to qualify for construction and permanent financing through the FHA 213 program. We feel that this is the right time and place to create a new affordable cooperative given the advantages this particular form of housing provides to its members, primarily affordable home ownership and a greater sense of community.

We have now entered the formal application stage for the FHA 213 mortgage insurance and believe that Douglas Commons Cooperative has a high likelihood of obtaining a 40-year, low interest loan for the project. Additional subordinated financing would serve to further increase that likelihood. We also believe that success at Douglas Commons Cooperative will open an entirely new avenue for affordable housing finance in the state of Maine by making the FHA 213 program finance accepted in the market.

Centennial Mortgage has substantial expertise and experience completing FHA financing transactions. We are very active in lending to cooperative housing projects throughout the country. Personally, I have been involved in cooperative housing for over 20 years, through financing and serving on the board of the National Association of Housing Cooperatives.

We encourage other funding sources to join us in supporting this innovative project and creating up to 98% leverage for future projects through this program. Please let me know should you have any questions or require any additional information.

Sincerely,

A handwritten signature in blue ink, appearing to read "H. Jeffers", is written over a light blue circular background.

Hugh Jeffers
Vice President of Originations



MAINE

Department of the Secretary of State
Bureau of Corporations, Elections and Commissions

Corporate Name Search

Information Summary

[Subscriber activity report](#)

This record contains information from the CEC database and is accurate as of: Fri Jan 07 2022 11:04:29. Please print or save for your records.

Legal Name	Charter Number	Filing Type	Status
MAINE COOPERATIVE DEVELOPMENT PARTNERS LLC	20212626DC	LIMITED LIABILITY COMPANY (DOMESTIC)	GOOD STANDING

Filing Date	Expiration Date	Jurisdiction
10/01/2020	N/A	MAINE

Other Names (A=Assumed ; F=Former)

NONE

Clerk/Registered Agent

DAVID C. PIERSON
PO BOX 15235

PORTLAND, ME 04112 5235

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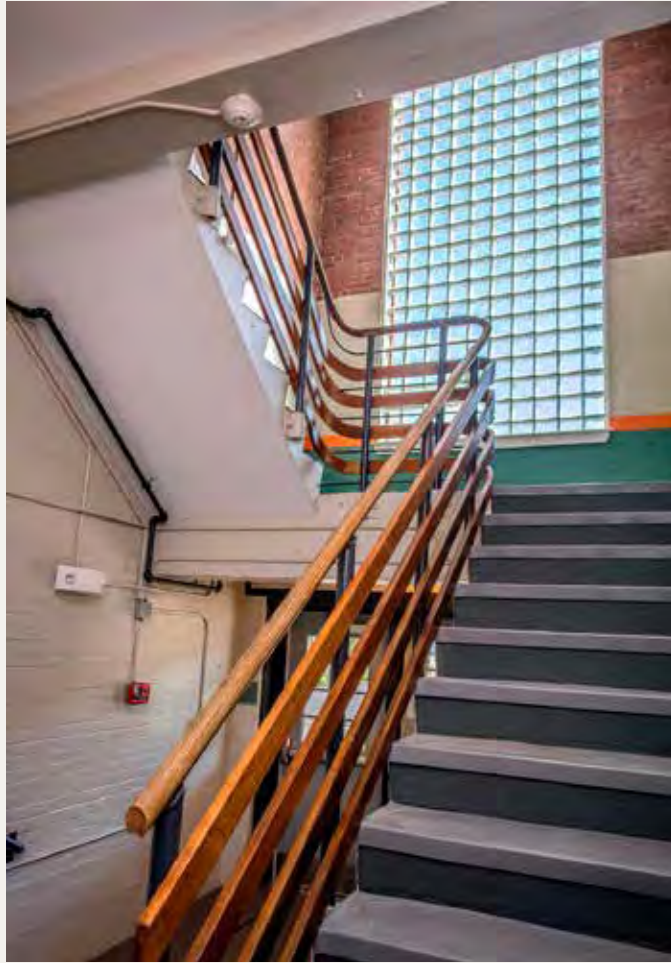
H. Technical Capacity

Please find attached descriptions and examples of technical capacity for The Szanton Company, the Maine Cooperative Development Partners, Acorn Engineering, Aceto Landscape Architects, Archetype Architects, and Credere Associates.



THE SZANTON COMPANY

an Affiliate of the Monks Companies



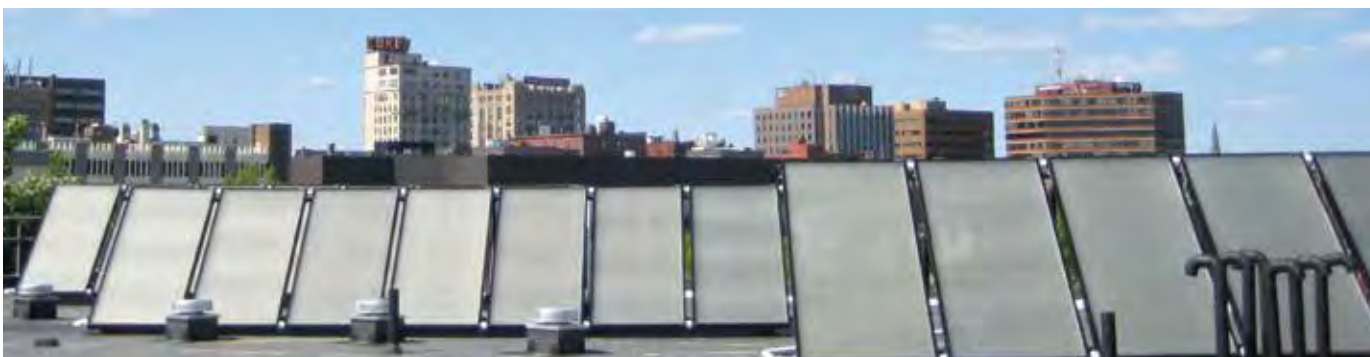
ABOUT THE SZANTON COMPANY

The Szanton Company, an affiliate of the Monks Companies, specializes in developing mixed-income rental housing in or near downtowns. We have completed eight apartment projects in Maine and New Hampshire totaling 393 units.

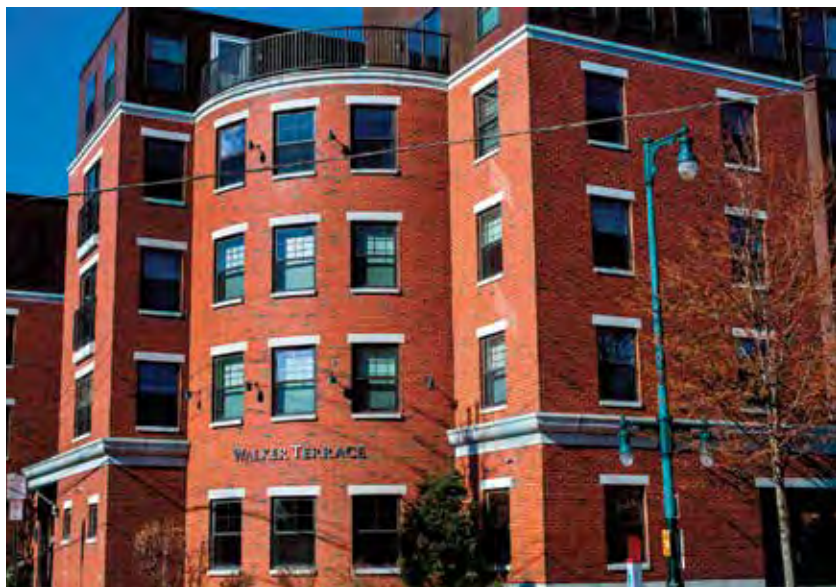
The mission of The Szanton Company is to create attractive and affordable rental housing that our residents are proud to call home. We do this by:

- Creating beautiful apartments of high quality in locations in or near downtowns, adding vitality to our cities and towns;
- Developing properties which provide a consistent, long-term return to their owners, thus ensuring their stability for residents, lenders, and neighborhoods;
- Serving people with diverse incomes;
- Creating amenities for our residents which enhance the quality of their lives;
- Incorporating environmental and energy sustainability in our properties, thereby reducing their impact on the earth's environment.

The Szanton Company is committed to long-term ownership of our apartment assets. In 2013, we founded Saco Falls Management, our property management arm, to ensure the highest standards of visual appearance and livability for our residents, neighbors, and communities.



Rooftop solar panels at 53 Danforth



PRINCIPALS & STAFF

NATHAN SZANTON, PRESIDENT

Nathan founded the company in 1996. Since then he has been responsible for developing 617 apartment units in 24 projects. As manager or principal partner in these projects, Nathan has successfully navigated the process of market research, site acquisition, design, regulatory approvals, financing, construction, and marketing.

He has committed himself to creating comfortable and affordable rental homes for residents with diverse incomes. Some of these have been adaptive reuses for underused historic buildings; others have been thoughtfully designed new construction. Nathan holds a B.A. from Harvard University and a J.D. from the University of Maine School of Law.



ROBERT C.S. MONKS, PRINCIPAL

Robert C.S. Monks is an active capital partner and also provides a deep understanding of real estate development and financing. Throughout his career he has founded, led, and grown 19 businesses in the financial services, real estate, technology and communications sectors.

In 2011, Bobby became an owner and Chairman of Spinnaker Trust, a Maine based trust company managing over \$1 billion in assets. Bobby attended Duke University and graduated from the University of Southern Maine with a Bachelor's Degree in Political Science.

Above: Walker Terrace

Left: The Mill at Saco Falls

Facing Page: The Lofts at Bates Mill

AMY CULLEN, VICE PRESIDENT AND PROJECT PARTNER

Amy joined The Szanton Company in 2006. Her responsibilities include: discovering new project locations, creating financing packages, and working with all development team members to help projects come to life.

Amy also serves as president of our sister company, Saco Falls Management, where she oversees all operations.

Prior to joining The Szanton Company, Amy was on active duty with the U.S. Army for six years, and served as a Training Program Manager for the Department of Defense in Minneapolis, MN. She holds a Bachelors of Science Degree in Accounting from Husson University.

KRISTIN MARTIN, DEVELOPMENT OFFICER

Kristin joined our company in 2013. Her responsibilities include finding and researching sites for new projects, preparing financial analyses, and evaluating development options. She coordinates with lenders, attorneys, architects, engineers, contractors and others on all aspects of The Szanton Company's development projects from concept to completion.

Prior to joining The Szanton Company as a Development Officer, Kristin worked for Saco Falls Management as an Assistant Development Officer, Property Manager and Director of Property Management. She holds a Bachelor of Health Science and a Masters of Occupational Therapy from Quinnipiac University.



ABOUT SACO FALLS MANAGEMENT

HISTORY

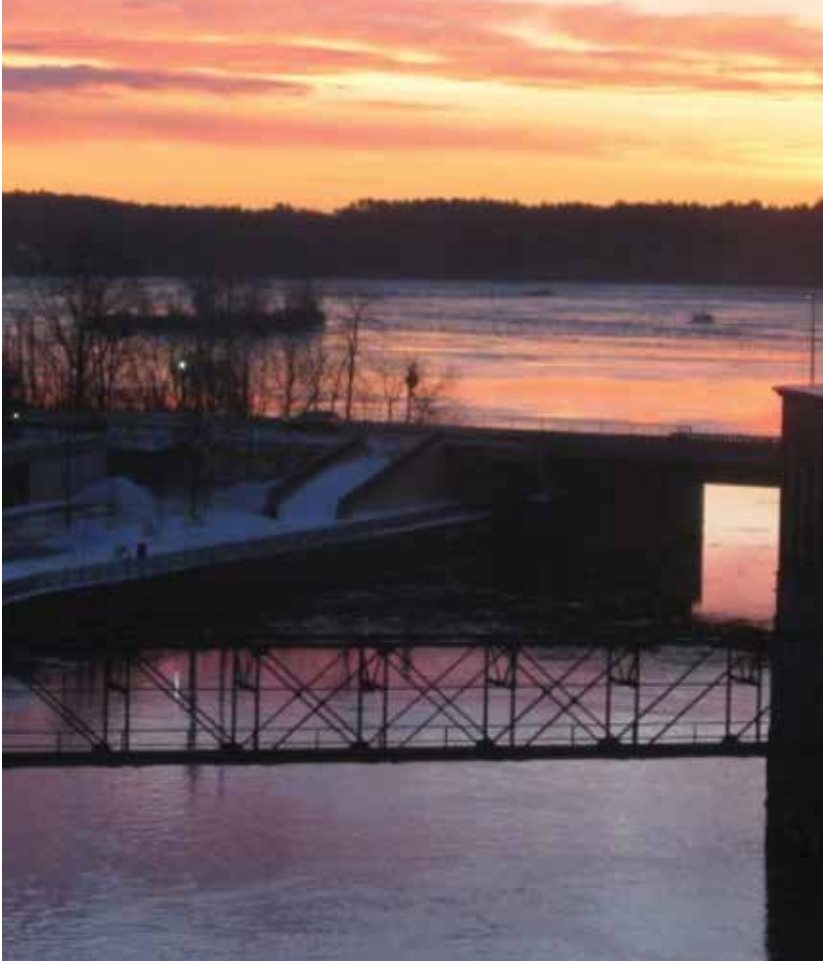
Saco Falls Management is a full-service management company formed by The Szanton Company in 2013 to manage its rental properties, both residential and retail. Since then, the physical condition of the buildings has improved, tenant satisfaction has increased, and the profitability of the properties has grown. We are committed to managing our properties for the long-term with the highest sense of responsibility to our residents, financial partners, and host communities.

OUR MISSION

Our mission is creating rental properties that exceed expectations. We are guided by the following core values: honesty, integrity, candor, high standards of quality, respect for all with whom we deal, openness to new ideas, and a culture of continuous learning and enhancement of our knowledge and skills.



Walker Terrace



View from an apartment at The Mill at Saco Falls

RESIDENT SELECTION

Saco Falls Management Company complies with all state, local, and federal laws regarding fair housing practices or occupancy and resident selection procedures. In addition to program-specific requirements, all adult applicants are screened by our management staff. To be considered for residency at one of our properties, all applicants must have:

- References from prior landlords that show a history of good tenancy. This includes paying rent on time, keeping their unit in good repair and being a good neighbor by following the community rules.
- A favorable credit report.
- An absence of criminal history. We run a criminal background check on all applicants. Any applicant with a history of public disturbances, arrests, criminal activity, listing on the sex offender registry or other law enforcement problems that may indicate behavior inconsistent with lease obligations will be denied.

CASCO TERRACE

41 STATE STREET, PORTLAND, MAINE



Above Left: Casco Terrace, after. Right: Casco Terrace, before

*Facing page: Top: Casco Terrace from State Street
Bottom: Casco Terrace interior*



**“...CITY OFFICIALS SAY THE STATE-FINANCED PROJECT IS THE
KIND OF DEVELOPMENT PORTLAND NEEDS...”** —*Portland Press Herald*

CASCO TERRACE is a 27-unit vertical addition on an existing 27-car parking garage (see before and after photos opposite). The pre-construction newspaper story below describes the project's highlights and the need it addresses in a city desperate for affordable housing.

From the *Portland Press Herald*, May 28, 2003:

“It began as one of the first parking garages in Portland, at a time when few people owned cars ...

...City officials say the state-financed project is the kind of development Portland needs to help stem suburban sprawl and provide affordable rental housing for its workforce. They also give it high marks for being attractive and practical, and making the most of an under-used lot with desirable views of the waterfront.

...‘It’s a project with a lot going for it’, said Mark Adelson, Executive Director, Portland Housing Authority.”

YEAR COMPLETED: 2004

UNITS: 27 (14 Market-Rate + 13 Income-Restricted)

ARCHITECT: Archetype, P.A.

CONSTRUCTION MANAGER: Wright-Ryan Construction

FINANCING: MaineHousing and TD Bank



THE HARTLEY BLOCK

155 LISBON STREET, LEWISTON, MAINE



Above: The Hartley Block
Left: Historic images of same location

Facing Page Top: The Hartley Block façade
Facing Page Bottom: Before construction

“WE ARE THRILLED THAT THE SZANTON COMPANY WILL BE REINFORCING OUR DOWNTOWN HISTORIC AND COMMERCIAL CORRIDOR BY BUILDING THIS IMPORTANT PROJECT.”

—Lewiston Mayor Shane Bouchard

THE HARTLEY BLOCK brings new life to a prominent 175' x 100' empty lot on downtown Lewiston's Lisbon Street. In 2004 and 2006, four connected historic buildings on Lisbon Street suffered extensive fire damage and were condemned and demolished, leaving a gaping hole in the city's most iconic street. One of the buildings was the site of the 1906 art studio of Marsden Hartley, an important early modern American painter born and raised in Lewiston.

A mixed-use, mixed-income project, The Hartley Block features 63 apartments aimed at a diversity of income groups and 4,000 sq. ft. of retail space along Lisbon Street. The project includes a fitness center, community room, children's playroom, dedicated bike storage, wi-fi and covered parking directly behind the building. The site is within easy walking distance of the public library (across the street), shops, restaurants, cafes, and two major parks.

This project adds momentum to downtown Lewiston's resurgence, including street-level public art at the entrance. Two 9-foot mosaic tile works, after Marsden Hartley paintings, animate its façade.



YEAR COMPLETED: 2019

UNITS: 63 (22 Market-Rate + 41 Income-Restricted)

ARCHITECT: Platz Associates

CONSTRUCTION MANAGER: Hebert Construction

FINANCING: MaineHousing; TD Bank; Northern New England Housing Investment Fund; City of Lewiston.

48 HAMPSHIRE

48 HAMPSHIRE STREET, AUBURN, MAINE



Located at the corner of Hampshire and Troy Streets, 48 HAMPSHIRE will aid the revitalization of downtown Auburn's important Hampshire Street corridor by bringing 53 high-quality new apartments to the neighborhood.

These will be a mixture of one, two and three-bedroom units, varying in size from 590-950 square feet. Included in the rent are heat and hot water, off-street parking, wi-fi, fitness center, community room and indoor bike storage.

48 Hampshire is located within easy walking distance of the public library, YMCA, shops, restaurants, grocery store, drugstores, and all the amenities of downtown Auburn.

The Szanton Company broke ground in March 2019 and expects to open to residents in April 2020.



Above: Rendering of completed project
Left: Same location, prior to construction

“WE ARE LOOKING FORWARD TO WATCHING YET ANOTHER MAJOR CONSTRUCTION PROJECT IN OUR DOWNTOWN TAKE SHAPE — ONE THAT WILL PROVIDE QUALITY WORKFORCE HOUSING, INJECT CAPITAL INTO OUR LOCAL ECONOMY, AND ENHANCE THE IMAGE OF AUBURN AS WE BECOME THE BEST SMALL CITY IN NEW ENGLAND”

—Auburn Mayor Jason Levesque



Above: Rendering of East elevation

PROJECTED COMPLETION: 2020

UNITS: 53 (11 Market-Rate + 42 Income-Restricted)

ARCHITECT: Platz Associates

CONSTRUCTION MANAGER: Benchmark Construction

FINANCING: MaineHousing; Boston Financial;
NBT Bank; City of Auburn.

THE FURMAN BLOCK

100 PARRIS STREET, PORTLAND, MAINE



Above: Rendering of completed project, from corner of Kennebec and Brattle Streets

Right: Before construction, Nathan Szanton and Amy Cullen on project site



“I THINK THIS IS THE NEXT BIG STEP IN CREATING A MULTI-USE NEIGHBORHOOD IN THIS PART OF BAYSIDE. IT’S PRETTY EXCITING TO GET THIS MOVING.”

—Portland City Councilor David Brenerman

THE FURMAN BLOCK is The Szanton Company’s first mixed-income project specifically for seniors, ages 55 and over. Located in the heart of Portland’s West Bayside neighborhood, it’s a short walk to Whole Foods and Trader Joe’s, small restaurants and delis, the 3.5 mile trail that loops around Back Cove and a few blocks from downtown Congress Street’s arts, business, and shopping district.

The property will feature 46 1-bedroom and five studio apartments. Some residents will have water views of Back Cove; others will enjoy views of Deering Oaks Park or Portland’s downtown. All will have abundant natural light. Included in rent are heat and hot water, a fitness center, indoor bike storage and wi-fi. The property also features a community room and coin-op laundry. The street-level commercial space, to be owned and managed by Ross Furman, will be a combination of artists’ studios and gallery space.

Repurposing an empty gravel lot at the corner of Parris and Kennebec Streets, The Furman Block contributes to the revitalization of this former industrial neighborhood.

PROJECTED COMPLETION: 2020

UNITS: 51 (11 Market-Rate + 40 Income-Restricted)

ARCHITECT: Archetype, P.A.

CONSTRUCTION MANAGER: Hebert Construction

FINANCING: MaineHousing; Northern New England Housing Investment Fund; City of Portland.



Above: Rendering of completed project, from corner of Kennebec and Parris Streets

REFERENCES

AUBURN

PETER CRICHTON

City Manager

207-333-6601, pcrichton@auburnmaine.gov

MICHAEL CHAMMINGS

Director of Economic and Community Development

207-333-6601, mchammings@auburnmaine.gov

BATH

PETER OWEN

City Manager

207-443-8330, powen@cityofbath.com

BIDDEFORD

JOHN BUBIER

Former City Manager

207-846-1515, john.bubier@gmail.com

ALAN CASAVANT

Mayor

207-284-4690, acasavant@biddefordmaine.org

GREG TANSLEY

City Planner

207-284-9115, gtansley@biddefordmaine.org

EXETER

RUSSELL DEAN

Town Manager

603-773-6102, rdean@exeternh.gov

DOUG EASTMAN

Building Code Enforcement Officer

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LEWISTON

ED BARRETT

City Administrator

207-513-3200, ebarrett@lewistonmaine.gov

DAVID HEDIGER

Director of Planning and Code Enforcement

207-513-3222, dhediger@lewistonmaine.gov

LINCOLN JEFFERS

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207-513-3014, ljeffers@lewistonmaine.gov

PORTLAND

MARY DAVIS

Director of Housing and Community
Development Division

207-874-8711, mpd@portlandmaine.gov

JILL DUSON

City Councilor

207-878-0769, jduson@portlandmaine.gov

NICK MAVODONES

City Councilor

207-774-0257, nmm@portlandmaine.gov





Maine Cooperative Development Partners

MAINE COOPERATIVE DEVELOPMENT PARTNERS

build neighborhoods where the elements that constitute quality of life—access to green space, healthy lifestyles, community, privacy, and affordability—are not at odds with each other. Grounding principles for this work are creating equitable communities; complementing walkable neighborhoods; building healthy buildings; and celebrating beauty, art, and the natural environment. We use Limited Equity Cooperatives as a form of ownership to create options for people of all ages, backgrounds, and incomes to live in harmony with nature and their neighbors.

WE ENVISION small towns, urban neighborhoods, and suburban neighborhood centers that are walkable to daily needs and adjacent to recreational facilities, trails, and transit corridors; homes that use energy efficient construction, and shared gardens, patios, and play spaces for people to get to know and enjoy their neighbors.

WE GIVE BACK by partnering with organizations that support trails and green space, transit, local businesses, social equity, and efforts to mainstream energy efficient building and land use.



PRINCIPALS



MATTHEW PETERS has been involved in the completion of over 20 new construction, major rehab, and acquisition deals. Matt worked for eight years at Avesta Housing, one of Northern New England's largest non-profit housing developers and owners, project managing affordable housing developments, building out and overseeing the Asset Management department, and ending in an executive role overseeing the entire development and acquisitions pipeline as Vice President of Real Estate Services. In 2018 he began to consult for Housing Authorities, housing non-profits, and Community Development Finance Institutions in Maine supporting these organizations in acquisition, ground-up development, and underwriting of affordable housing properties. Matt also is the Executive Director of Freeport Housing Trust based in Freeport, Maine. He has strong working relationships with MaineHousing, Rural Development, lenders, tax credit syndicators, and other professionals in the design and construction field, holds a Masters in Urban Planning from the University of Washington, and certifications such as Spectrum's C3P and Rural Development STAR trainings and LEED Accredited Professional.



BRIAN ENG is a real estate investor who has worked on commercial projects in Florida, Connecticut, New Jersey, and Maine. He has worked as a principal on developments of over 200 units, is a principal on redeveloping the MERC site in Biddeford, and has redeveloped several smaller properties in Portland. He brings strong expertise in financials, fundraising, advocacy, and public speaking. He grew up in a co-op in New York City, and is on the board of UHAB, the entity that manages 20,000 units of cooperative housing in New York.



LIZ TRICE is a policy professional who builds multidisciplinary partnerships across real estate, economic development, entrepreneurship, and public health. Liz holds a masters degree in Public Policy & Management with a certificate in Community Planning & Development from the Muskie School at the University of Southern Maine. She has worked on multi-unit projects in Portland to obtain zone changes, lead the public engagement process with neighboring residents and businesses, apply for TIFs and grants, and direct the design of shared spaces. Her work includes award-winning research on the regulatory barriers to people living alone achieving home ownership, leading the process to redesign Bramhall Square, and working with medical and economic development institutions to develop strategic plans. Her projects to re-envision urban spaces for livability and natural ecosystems won two of three awards given by the 2019 Portland Society of Architecture's Complete City Competition. Liz trained as a cohousing developer and Passive House Design Consultant and has visited over 20 cohousing developments in the United States. She is currently the owner of PelotonLabs, a coworking space in Portland.



PROJECTS



M NORTH ORLANDO—As a principal of Clay Cove Capital, Brian was the control capital partner in the ground-up development of M North in Orlando, a \$37.1M, 288-unit multifamily development in Orlando, Florida. www.mnorthorlando.com



BIDDEFORD MERC REDEVELOPMENT Brian worked with Jim Brady of Fathom Companies, to serve as master developer of city-owned land on the former Maine Energy Recovery Corp. incinerator through a public-private partnership with the City of Biddeford.



6 CITY CENTER IN PORTLAND—Brian redeveloped and retented a largely vacant Old Port mixed use building including executive office suites. www.sixcitycenter.com, and bringing in a law firm condo, law firm tenant, Lio Restaurant, and HE Paintbar nail salon.



1685 CONGRESS IN PORTLAND—Brian redeveloped a 50% vacant office/medical building and retented it including Maine Plastic Surgery Center and Maxim Healthcare. www.maineplasticsurgery.com

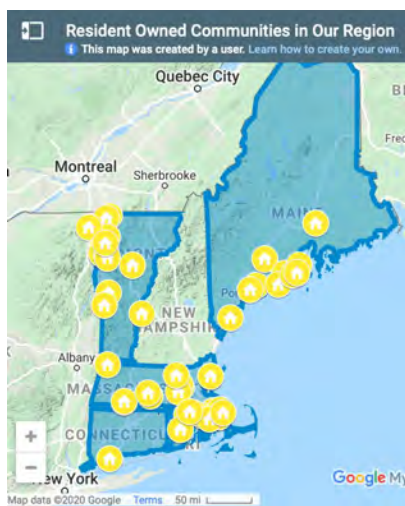


645 CONGRESS STREET—This former downtown college dormitory was converted to 55 one-bedroom and studio apartments with retail on the first floor. Liz worked for developers Shinberg and Alford on the initial concept, conducted a market analysis, developed relationships and communication with neighbors and businesses, creating a bike storage and parking plan, created a community management plan, and assisted with lease-up.



The Cooperative Development Institute (CDI) is a regional 501(c)3 non-profit founded in 1994 by co-op leaders in the Northeast. CDI's mission is to build a cooperative economy through the creation and development of successful cooperative enterprises. We are transforming ownership of our economy, so all people can meet their basic needs. CDI has 30 staff across the Northeast including six staff members in Southern Maine.

New England Resident Owned Community Projects (NEROC)



One of our primary activities is creating cooperative housing in Maine and the Northeast. When a park is for sale we help residents form a cooperative, get financing to buy the park, and learn how to run it with democratic resident control. This program gives residents control of the land beneath their homes and protects the affordability of their housing.

The Resident Owned Community (ROC) model began in NH with the NH Community Loan Fund and became a national model with the formation of ROC USA in 2008. The program has helped people in over 50 parks – comprising more than 4,800 homes — convert to resident ownership. Those communities are part of the ROC USA Network, which has helped secure over 15,000 units of affordable housing

nation-wide. CDI provides ongoing support as trainers and advisers for the ROCs and other cooperatives in the region. We assist in governance, management, financial oversight, communications, conflict resolution, compliance, and securing financing.

Charter Oaks Village Cooperative



With the support and technical assistance of the Cooperative Development Institute (CDI), the residents of Charter Oaks Village acquired the land on the 40 unit Arundel manufactured housing park on June 11, 2019 for \$1,170,000, helping to preserve the affordable housing community within it.

Charter Oaks Village joins nine other Maine manufactured housing communities supported by CDI and financed by Genesis Community Loan Fund, representing 440 homes now under resident control. The newly formed housing cooperative was a recipient of a GrowSmart Maine's honorary 2019 Smart Growth Award.

Mountainside Community Cooperative



CDI's newest Maine Cooperative is the 52-unit Mountainside Community Cooperative in Camden, Maine. Securing affordable housing in a community like Camden is increasingly challenging as housing costs escalate and its population ages. The residents of Mountainside Community purchased the community on December 11, 2019 for \$1,900,000 with financing provided by Camden National Bank, Genesis Community Loan Fund and the Local Enterprise

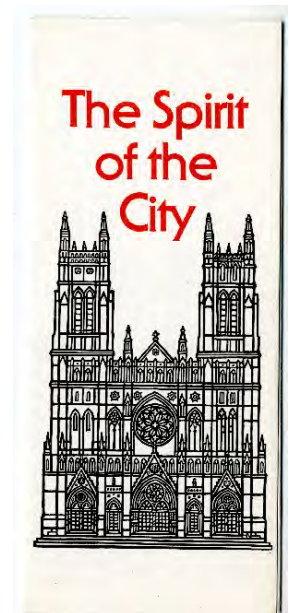
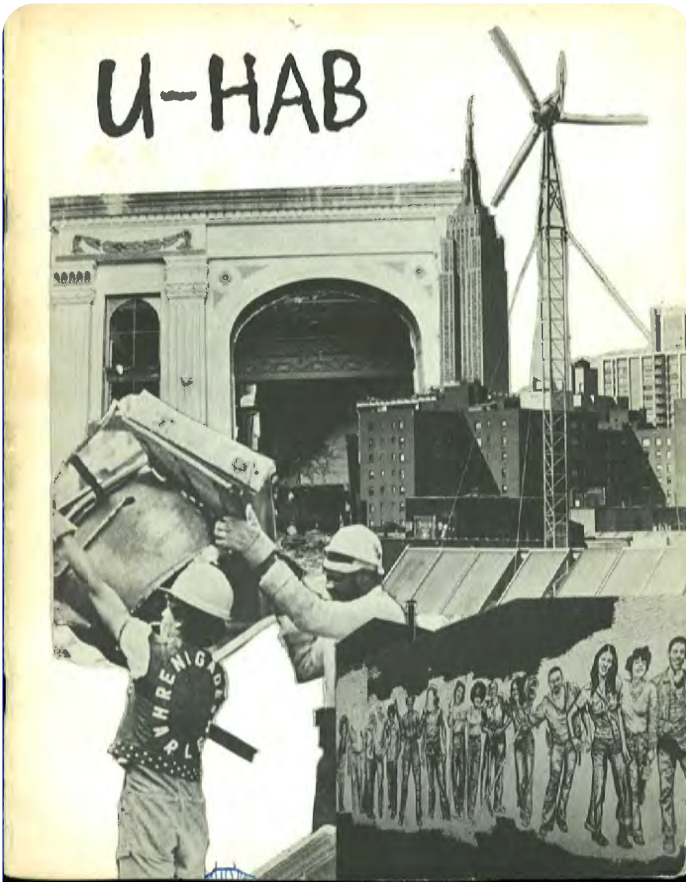
Assistance Fund. "We are so pleased to be able to help the residents of the Mountainside Community Cooperative become property owners today," said Bill Floyd, Executive Director of the Genesis Fund.

Wardtown Mobile Home Cooperative



The residents of the 60-unit Wardtown Mobile Home Cooperative voted to form the cooperative and purchase the community in May 2015, with assistance from CDI, and combined financing from Maine State Housing and The Genesis Community Loan Fund. As with all of the CDI's Resident Owned Communities (ROCs), Wardtown members continue to engage in extensive training and organizational development. As Bill Hodgkins, Cooperative Treasurer explains, "We all gained valuable new skill sets as we went through the process of establishing and financing our

cooperative...Now we have a very strong board of directors and feel very organized, to the point we are able to assist other ROC mobile home parks with advice about the process."



2019 UHAB ANNUAL REPORT

Building for Us

This year, UHAB made a considerable effort to build an archive. In doing so, the lesson we learned from decades of growth is very simple: what has always mattered most for affordable housing is community. It is the strength and support that comes from the community inside a co-op that is just as essential as the affordable housing itself.

With this in mind, UHAB is proud to offer new and expanded programs to low-income homeowners with a refined lens on our work. We have more data and research than ever on the long-term impacts of redlining policies and how communities of color have been resilient in their efforts to remain in their homes, whether in the 1970s or today. By building new affordable co-ops, strengthening tenants' rights statewide, making share loans through our HomeOwnership Lending program, and working in cooperation with our Interboro Community Land Trust partners to create the first Citywide CLT in New York City, we are actively working to dismantle the detrimental legacies of redlining and community disinvestment.

As we look toward the future, our work is expanding in several ways. We are offering more services like Co-ops Go Solar and our energy programs that are tackling the most pressing issue of our lifetime: the climate crisis. Without renewable energy and carbon reduction, low-income residents more than anyone will be affected. Most importantly, we need to recognize that it is not just low-income communities, but people of color in particular who are disproportionately affected by this crisis, just as they have been marginalized from fair and stable housing. UHAB's CDFI, HomeOwnership Lending, helps ensure that a family is not denied the opportunity to purchase because they don't have the money to be an all cash buyer. This program makes small loans where other lenders are reluctant and in this way supporting our HDFC and Mitchell Lama co-op communities in continuing to provide affordable housing.

The interest in co-ops and our work is expanding not just in New York City, but in upstate New York where residents can securely remain in their mobile homes; to New Haven, CT where the nearly 50-year old Seabury Co-op struggles to keep up with its aging infrastructure; and to Seattle, WA where a new permanently affordable co-op is being created. UHAB is excited to be assisting a new City financed co-op development program in Oakland, CA and we continue to meet with organizations and officials in other cities who are seriously considering the limited-equity model.

We have come a long way and welcome our next chapter of growth.

Sincerely,

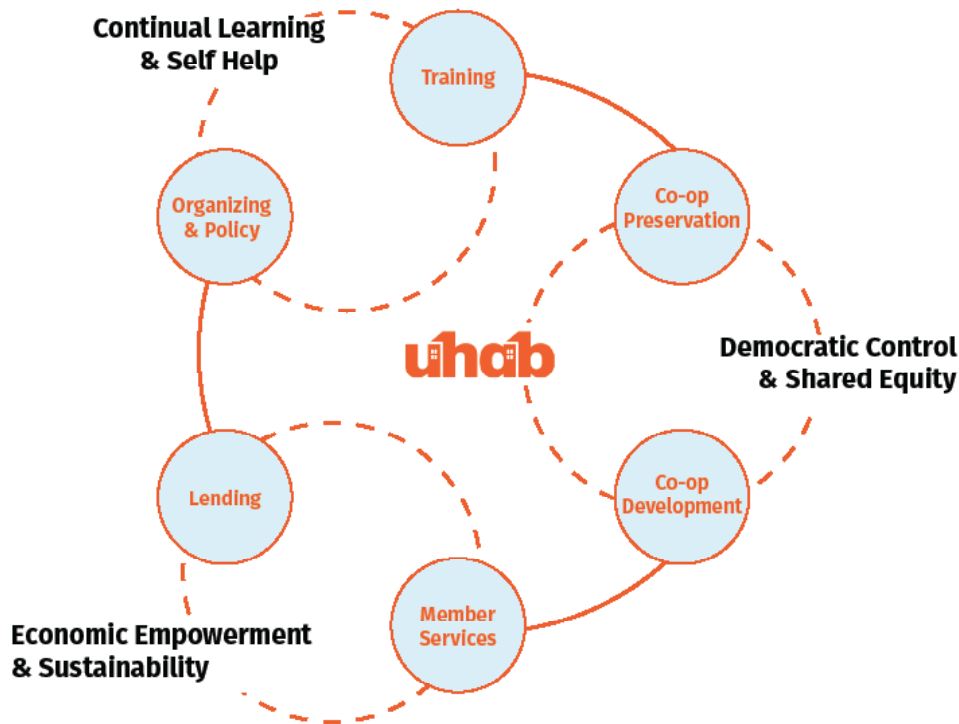
A handwritten signature in blue ink, appearing to read 'A. Reicher', with a stylized flourish at the end.

Andrew Reicher, Executive Director

Community through Cooperation

UHAB empowers low- to moderate-income residents to take control of their housing and enhance communities by creating strong tenant associations and lasting affordable co-ops.

Our Principles



I. Continual Learning & Self Help

When residents take the lead on everything from creating, managing, and preserving their own co-ops to advocating for affordable housing policy reform, this not only improves buildings and neighborhoods, but it transforms lives as well. Ongoing education and training is the key to preserving affordable housing cooperatives and strong tenant associations.

II. Democratic Residential Control & Shared Equity

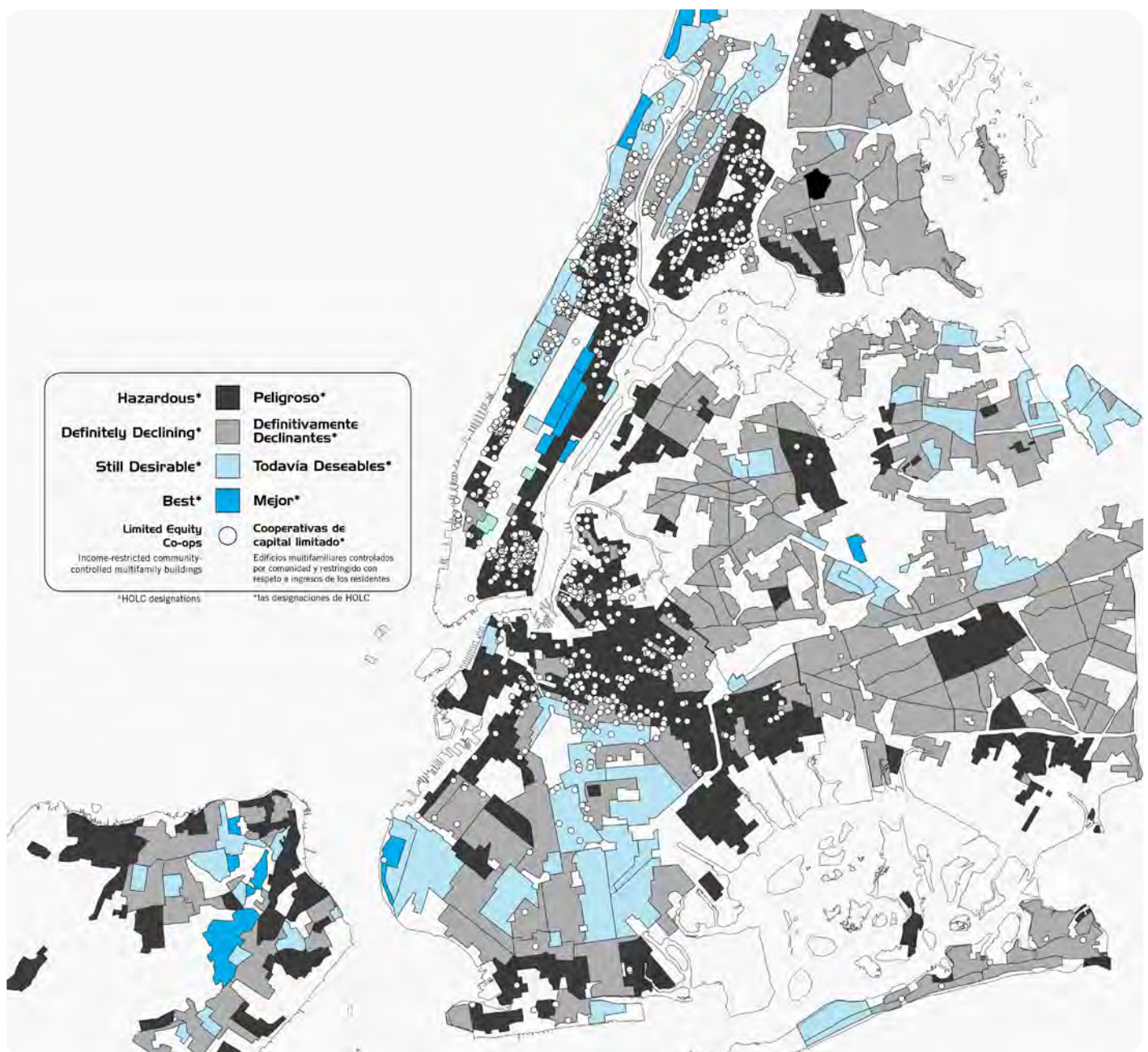
Transparent leadership and the participation of a majority of residents—each contributing unique skills and perspectives—make democratic governing and organizing possible. This collective control of housing helps prioritize a shared equity that keeps affordability manageable for future incoming residents.

III. Economic Empowerment & Sustainability

UHAB provides access to affordable, high-quality resources covering areas of energy, finance, democratic participation and education. These tools help residents maintain lower costs of living while helping to demystify financial technicalities. With support and guidance, all residents should be able to read and manage their finances, in order to make informed decisions about their operating costs.

Housing Justice is Racial Justice

This map overlays the location of modern-day HDFC co-ops with redlined neighborhoods from the 1930s. Redlining was a discriminatory housing practice that devalued neighborhoods where people of color lived and made it difficult for people of color to secure safe, affordable housing. In this map, the deepest shade of grey represents the least economically desirable neighborhoods. In the 1970s and 1980s, landlord abandonment and arson led to City foreclosure on thousands of occupied buildings in these same neighborhoods, creating the conditions for the self-help housing movement and the creation of thousands of HDFCs.



Through organizing and self-help initiatives, community-controlled housing arose as a way for low-income people and people of color to take control of their housing solutions when the government and private sector would not. Today, neighborhoods like Harlem, the South Bronx, and Central Brooklyn still struggle with the legacy of redlining; high air pollution, increased heat waves, higher poverty rates, and gentrification all threaten to displace longtime residents from neighborhoods that were once widely abandoned.

Through it all, community control remains a tool to provide New Yorkers with decent, affordable housing. HDFC co-ops are anchors in their neighborhoods, providing a safe haven to raise families and age in place. Tenant unions build power among renters and win victories like stronger rent laws.

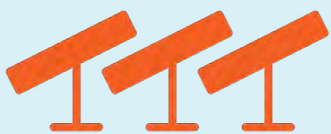


Through our work, UHAB helps people of color control, manage, and improve their homes. We know from experience that most of the low- to moderate- income residents in the buildings we serve are Black or Latinx. Our goal is to have as many people from the communities we serve reflected in our organization's leadership and programs.

Currently, around 60% of our Board and program staff are people of color, and more than half of our organization is bilingual in English and Spanish, fulfilling an essential need for our Spanish-speaking HDFC board members and residents. We provide our technical assistance, homeownership advisement, energy advisement, bookkeeping services, quarterly newsletter, and entire training curriculum in both English and Spanish.

UHAB BY THE NUMBERS: 2019

125 fair elections monitored
in practice of democratic
community control



9 HDFCs
adopted solar,
bringing the total
number to
28

3,500,000 tenants protected
under stronger rent laws



115 budgets planned to
preserve HDFCs' financial
stability & affordability



5
affordable
homeowner-
ship loans
totaling
\$242,011

203
trainings for
affordable
co-op
residents



\$9,197,000
secured in loans to
help HDFCs make
capital
improvements



Our Co-op
Preservation
team helped
15 co-ops
secure necessary
loans to avoid City
foreclosure last year.

This represents over
350 families
that were able to
retain their equity
and control of their
homes through
technical assistance
and guidance
from
UHAB staff.



To date, UHAB is the
foremost developer of
limited-equity housing
co-ops in NYC. we have
developed **over**
1,300 units of
affordable housing
with the support of a
variety of City and State
programs.



FIRM BIO



ACETO LANDSCAPE ARCHITECTS

ALA is a process-driven, landscape architecture and urban design firm committed to thoughtful, creative intervention at the intersection of environment, economics, art, and culture. ALA was founded on the notion that great design is a product of careful listening, inclusive decision-making, and unrelenting passion for enduring built spaces. We believe landscape architecture lies at the nexus of the built form and the ephemeral qualities of an ever-changing environment. ALA's team offers a unique set of skills and perspective, well-equipped to harmonize and reconcile the roles and value systems of varied design disciplines. We integrate expertise and intuition to craft powerful places, built upon a commitment to resiliency and sustainability. Our studio's passion for craft and technical savvy affords us the opportunity to collaborate across a broad geographic range and myriad project scales from intimate private spaces to large-tract master plans.

ALA was founded in 2014 by Principal, Nick Aceto. ALA has 5 employees, all of which are landscape architects, licensed in the states of Maine, Massachusetts, New York and Colorado.

PROJECT TEAM KEY PERSONNEL



NICK ACETO, PLA, ASLA

ACETO LANDSCAPE ARCHITECTS

FOUNDING PARTNER, LANDSCAPE ARCHITECT | NA@ACETOLA.COM

Nick is a licensed landscape architect and urban designer with a deep passion for the creative process. Nick believes in landscape as a framework for organizing the patterns and behaviors through which we live. From the private garden to the region, Nick has the ability to recognize and translate patterns into visual narratives which tell the unique story of a place through built form. Nick grew up in Portland, Maine where he developed a deep appreciation for the rich and varied New England landscape, from rocky shorelines of the Atlantic to the forested peaks of the Appalachians. As both a consummate urbanist and adventure-seeking outdoorsman, Nick is intrigued by the interplay between urban form, economics, wild nature, and ecology.



CAITLIN ACETO, PLA, ASLA

ACETO LANDSCAPE ARCHITECTS

FOUNDING PARTNER, LANDSCAPE ARCHITECT | CA@ACETOLA.COM

Caitlin is a licensed landscape architect in the states of Maine, New Hampshire, and Colorado, who's passion for art and design began in the Chicagoland area where she was exposed to the architectural works of Frank Lloyd Wright and Olmsted's historic planned community of Riverside. Caitlin's project experience ranges in scale from circulation and wayfinding design at Grand Canyon National Park, to security barrier conceptualization for the Thomas Jefferson Memorial, to signage programming and design. Caitlin brings a distilled clarity to design that strives to embody the contextual heritage, textural richness and cultural integrity of place.



SETH KIMBALL, PLA, ASLA

ACETO LANDSCAPE ARCHITECTS

PRINCIPAL, LANDSCAPE ARCHITECT | SK@ACETOLA.COM

Seth has been practicing Landscape Architecture for over 15 years. He has a Bachelor's degree in Landscape Architecture from the University of Massachusetts Amherst. Seth's project experience includes serving as project manager/lead designer for a master plan for the new Al Guhair University in Dubai, the Al Ain Oasis Cultural Quarter Master Plan in Abu Dhabi, institutional experience including Phillips Andover Academy, Bates College, George Stevens Academy, and Southern New Hampshire University, and a range of residential project including homes in Texas, Idaho, Montana, New York, Arizona, and several throughout the northeast. Seth joined ALA in 2018, bringing to the practice his experience in civic, institutional, and residential projects. further ALA's commitment to achieve sustainable and resilient project outcomes.



LIST OF SELECT CURRENT & ONGOING OR COMPLETED ALA PROJECTS

ALA has been fortunate to have made meaningful contributions to a vast array of projects across a wide gamut of scales over the last 5-6 years. Below is an abbreviated list of select project examples intended to provide a sense of our professional skill set, experience, and range as a design studio. We would be happy to provide more information about any of the below projects upon request.

RESIDENTIAL

DBX 11 RESIDENCE	ASPEN, CO
WHITE HORSE SPRINGS RESIDENCE	ASPEN, CO
TELLURIDE AGUIRRE ROAD RESIDENCE	TELLURIDE, CO
PRIVATE RESIDENCE	SOUTH FREEPORT, ME
SHADOW MOUNTAIN CONDOMINIUMS	ASPEN, CO
SMYTH RESIDENCE	SNOWMASS, CO

COMMERCIAL/CAMPUS

100 FORE STREET OFFICE BUILDING	PORTLAND, ME
66 STATE STREET	PORTLAND, ME
LAAM 525 LIVE-WORK	BASALT, CO
HOTEL ASPEN	ASPEN, CO
MEMORIAL PLAZA	QUANTICO, VA
CUMBERLAND CLUB SITE PLAN	PORTLAND, ME
RIVERSIDE LIVE-WORK	PORTLAND, ME
WILLITS BEND LIVE-WORK	BASALT, CO
RED HAWK ELEMENTARY SCHOOL	ERIE, CO
CSU UNDERPASS STUDY	FORT COLLINS, CO
ANDERSON RANCH ARTS CAMPUS	SNOWMASS VILLAGE, CO

HOUSING & DEVELOPMENT

SCARBOROUGH DOWNS MASTER PLAN	SCARBOROUGH, ME
THE TREE FARM	BASALT CO
66 STATE STREET	PORTLAND, ME
BLOCK 11 MASTER PLAN	BRECKENRIDGE, CO
BROKEN COMPASS BREWERY	BRECKENRIDGE, CO
RIVERBEND COMMERCIAL CENTER	TIMNATH, CO
CUMBERLAND MULTI-GEN	CUMBERLAND, ME

PUBLIC

COMMERCIAL STREET TRANS. STUDY	PORTLAND, ME
LIBBYTOWN PLAYSCAPE	PORTLAND, ME
PORTLAND DOWNTOWN SQUARE	PORTLAND, ME
BASALT POST SIGNAGE	BASALT, CO
TOWN WAYFINDING SIGNAGE	BASALT, CO
BAYSIDE ADAPTS MASTER PLAN	PORTLAND, ME
ARBANEY PARK MASTER PLAN	BASALT, CO
BASALT OUR TOWN	BASALT, CO
TIMNATH COMMUNITY PARK	TIMNATH, CO
PACTS SMART CORRIDOR STUDY	PORTLAND, ME
LIBBYTOWN VISIONING	PORTLAND, ME
BERTHOUD PARKS & OPEN SPACE PLAN	BERTHOUD, CO

REFERENCES

CAITLIN CAMERON

CITY OF PORTLAND, URBAN DESIGNER
207-874-8901
CCAMERON@PORTLANDMAINE.GOV

"In my capacity as Urban Designer for the City of Portland, I interacted with Aceto Landscape Architects (ALA) on the 100 Fore Street project where they demonstrated thoughtful and creative design strategies for a challenging urban site. Speaking from my experience working with a diversity of landscape and urban design professionals in Southern Maine, I found ALA to have an innovative approach that demonstrates a value for and understanding of the role of public space and urban landscape for the livability and resiliency of cities and towns." - Caitlin Cameron

BRUCE HYMAN

CITY OF PORTLAND, TRANSPORTATION PROGRAM MANAGER
207-874-8717
BHYMAN@PORTLANDMAINE.GOV

"Aceto Landscape Architecture's compelling graphics as part of the Portland-South Portland Smart Corridor Plan effort in 2017 enabled the public to readily visualize the benefits and trade-offs of various transportation alternatives being considered and highlighted the opportunities those alternatives could also have for placemaking, a key goal of the Plan." - Bruce Hyman

RICH CIECIUCH

PROJECT WORKSHOP
970-729-0126
RICH@PROJECT-WORKSHOP.COM

"ALA is a key design collaborator in our design build approach, helping to navigate complex approval issues, participating seamlessly in the iterative design process that succeeds best when site attribute identification and organization melds with building design concepts. They are excellent listeners and always come back with creative and unexpected solutions. Community and Neighbor impacts of any development must be carefully contemplated and negotiated to a successful outcome, and ALA has all the skills and experience to shape and illustrate how new projects relate to the existing fabric of community and neighborhoods." - Rich Ciecuch

DAN BACON

DEVELOPMENT DIRECTOR MR.HOLDINGS
207.232.5154
DBACON@MR.HOLDINGS

MARK RUDOLF

PRINCIPAL / OWNER VELLUM ARCHITECTS
970 618 1889
MARK@VELLUMAD.COM

JAY CHACE

PLANNING DIRECTOR, TOWN OF SCARBOROUGH
207-730-4042
JCHACE@SCARBOROUGHMAINE.ORG

TROY MOON

CITY OF PORTLAND SUSTAINABILITY COORDINATOR
THM@PORTLANDMAINE.GOV
207.756.8362



THE DOWNS | 510-ACRE MASTER PLAN & TOWN CENTER SCARBOROUGH ME

ALA has worked collaboratively with Gorrell Palmer Consulting Engineers along with a large team of consultants and stakeholders in developing a master plan for this 500+ acre former harness racing facility. The project was recently granted a TIF agreement based in large part on the attributes ALA visualized in their plans for the proposed Town Center which included a 4 acre community park with music venue, playground, and sport courts.

KEY STAFF SERVICES STATUS REFERENCE

Nick Aceto, Seth Kimball
Master Planning, Urban Design, Landscape Architecture, Visualization
Planned
Jay Chace, Planning Director, Town of Scarborough | Jchace@Scarboroughmaine.org

ALA worked closely with an experienced Southern Maine builder to develop a neighborhood plan which begins to challenge conventional subdivision development rules with a compact pattern and highly walkable streetscape organized around a central woodland preserve which serves as a neighborhood playscape.

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FRONTRUNNER PARK

SCARBOROUGH ME

This third phase of The Downs master plan includes over 200 homes across a broad range of affordability including compact, lane-loaded single family and pocket homes as well as more than 75 apartment units and ground floor office space. The plan is organized around a series of small parks and a highly-walkable street grid.

KEY STAFF

Nick Aceto, Seth Kimball

SERVICES

Master Planning, Urban Design, Landscape Architecture, Visualization

STATUS

Permitted, Expected Construction Fall 2020

REFERENCE

Jay Chace, Planning Director, Town of Scarborough | Jchace@Scarboroughmaine.org



LAAM 525

BASALT CO

Aceto Landscape Architects worked closely with architect, owner and contractor on this urban infill development, providing creative streetscape and urban plaza design interventions. The project included 8 affordable residential units, 5,000 SF of commercial / light industrial space, parking, and integration with the town's transit system.

KEY STAFF

Caitlin Aceto, Nick Aceto

SERVICES

Landscape Architecture, Urban Design

STATUS

Under Way Summer 2020

REFERENCE

Glenn Rappaport | grappa@blackshack.net



FREEPORT LIVE-WORK

FREEPORT ME

Freeport Live-Work is a community master plan envisioned as a series of mixed-density neighborhoods including more compact, single-family pocket homes as well as mixed-use townhomes and commercial-office buildings

KEY STAFF	Nick Aceto, Caitlin Aceto
SERVICES	Landscape Architecture, Urban Design, Planning
STATUS	Planned
REFERENCE	Undisclosed



BASALT ON-CALL PLANNING

BASALT CO

ALA was tasked with the study of two parcels within the Town of Basalt Growth Management Area for feasibility of alternative 'affordable' housing development options. ALA explored options for pocket neighborhoods, compact lot scenarios, and consolidation of infrastructure as a means to offset development cost and in turn reduce home pricing.

KEY STAFF

Lisa Cowan, Caitlin Aceto

SERVICES

Landscape Architecture, Visualization

STATUS

Planning Document Complete 2016

REFERENCE

Undisclosed | Undisclosed

Blackstone Senior Living

Location: Falmouth, Maine

Completion Date: February 2018

Size: 15,000 square feet new

Program: 19 units new, 1-bedroom, and 2- bedroom apartments to Passive House performance levels; plus significant rehabilitation of 20 existing units

Cost: \$185 / sf

Scope: New Construction and rehabilitation

Reference:

Catherine Elliott

Avesta Housing

(207) 553-7780

CElliott@avestahousing.org





48 Union Wharf | Portland, ME. 04101 | tel. 207.772.6022

www.archetype-architects.com

Company Background and History

Archetype Architects has, since 1983, developed an extensive portfolio of building projects in Maine and New England. We are a commercial architectural firm specializing in business, retail and housing developments. Our areas of service include master- planning, architectural design, and interior design. Prior to 1983 David Lloyd and Bill Hopkins maintained separate practices after having begun their careers in Boston and New York, respectively.

Archetype regularly designs and completes commercial projects in a very diverse field of typologies. Everything from hospitality and multi-family residential to offices and light industrial projects is well within our purview.

Personnel:

Principals: David Lloyd
William Hopkins

Architects: David Mele
Barry Yudaken
Virginie Stanley
Katherine Detmer
James Broadbent

Architectural Associates: Michael Hutchins
Mike Coyne
Devin Cough

Architectural Interns: Maryna Nelson
Sam Berry

Interior Designer: Sally Anderson

Office Manager: Susan Geffers

Registration Status:

Maine, New Hampshire, Massachusetts, Connecticut, New York, New Jersey, RI and US Virgin Islands

Professional Affiliations:

National Council of Architectural Registration Board
International Building Code
National Fire Protection Association

RELATED PROJECT EXPERIENCE

Archetype has provided Design Services for the following residential projects.

Project & Location	Type of Project	Client
Osprey Circle S. Portland, ME	48 Units Apartments 2 large multi-unit buildings	Kevin Bunker - Developers Collaborative (207) 766-1632 - bunker.kevin@gmail.com
Oriole Way Ellsworth, ME	50 Units Apartments 7 Buildings, Flats and Townhouses	Kevin Bunker - Developers Collaborative (207) 766-1632 - bunker.kevin@gmail.com
Webster Point Orono, ME	15 Units Condos 7 Buildings Townhouses	Kevin Bunker - Developers Collaborative (207) 766-1632 - bunker.kevin@gmail.com
Summer Street Gardiner, ME	15 Units Apartments 2 Buildings, Flats and Townhouses	Kevin Bunker - Developers Collaborative (207) 766-1632 - bunker.kevin@gmail.com
Minot Ave. Auburn, ME	36 Units Apartments 3 Buildings, Flats and Townhouses	Kevin Bunker - Developers Collaborative (207) 766-1632 - bunker.kevin@gmail.com
Maple Street Augusta, ME	29 Units Apartments 3 Buildings, Flats and Townhouses	Kevin Bunker - Developers Collaborative (207) 766-1632 - bunker.kevin@gmail.com
Deering Place Portland, ME	75 Units Apartments	Avesta Housing (207) 553-7780
Motherhouse Portland, ME	88 Units Elderly Apartments	Kevin Bunker - Developers Collaborative (207) 766-1632 - bunker.kevin@gmail.com
Fox School S. Paris, ME	12 Units Elderly Apartments	Avesta Housing (207) 553-7780
Larrabee Commons Westbrook, ME	38 Units Elderly Apartments	Christopher LaRoche – Westbrook Housing (207) 854-6805-claroche@westbrookhousing.org
Millbrook Estates Westbrook, ME	38 Units Elderly Apartments	Christopher LaRoche – Westbrook Housing (207) 854-6805-claroche@westbrookhousing.org
St. Ignatius Sanford, ME	66 Units Apartments	Kevin Bunker - Developers Collaborative (207) 766-1632 - bunker.kevin@gmail.com
Eliot Housing Eliot, ME	38 Units Elderly Apartments HUD	David Bateman - Bateman Partners, LLC (207) 772-2992-David@batemanpartnersllc.com
Carleton Street Portland, ME	37 Units Apartments	Avesta Housing (207) 553-7780
Huse School Bath, ME	58 Units Apartments	Nathan Szanton - The Szanton Company (207) 8719811- nszanton@szantoncompany.com
Hodgkins School Augusta, Me	47 Units Apartments	Amanda Bartlett - Augusta Housing amanda.bartlett@augustahousing.org
134 Washington Ave. Portland, ME	18 Units Veterans Housing	Avesta Housing (207) 553-7780

RELATED PROJECT EXPERIENCE

Archetype has provided Design Services for the following residential projects.

Project & Location	Type of Project	Client
Village Green Cumberland, ME	38 Units Apartments	David Bateman - Bateman Partners, LLC (207) 772-2992-David@batemanpartnersllc.com
Sanford Mill Sanford, ME	36 Units Apartments	Northland Enterprises, LLC Rex Bell
Danforth on High Portland, ME	30 Units Apartments	Random Orbit, Inc. Peter Bass
Hyacinth Place Westbrook, ME	37 Units Apartments	Avesta Housing (207) 553-7780
Sullivan School Apartments South Berwick, ME	34 Units Apartments	David Bateman - Bateman Partners, LLC (207) 772-2992-David@batemanpartnersllc.com
Emery School Apartments Biddeford, ME	24 Units Apartments	Avesta Housing (207) 553-7780
The Mill at Saco Falls Biddeford, ME	66 Units Apartments	The Szanton Company (207) 8719811- nszanton@szantoncompany.com
Spring Crossing Elderly Housing Westbrook, ME	34 Elderly Apartments	Christopher LaRoche – Westbrook Housing (207) 854-6805-claroche@westbrookhousing.org
53 Danforth Portland, ME	43 Units Apartments	The Szanton Company (207) 8719811- nszanton@szantoncompany.com
Walker Terrace Portland, ME	40 Units Apartments	The Szanton Company (207) 8719811- nszanton@szantoncompany.com
Casco Terrace Portland, ME	27 Units Apartments	The Szanton Company (207) 8719811- nszanton@szantoncompany.com





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Acorn Engineering, Inc. is a Portland-based civil and environmental engineering firm of nine full-time employees and four construction inspectors. Acorn's team has a diverse portfolio providing Maine with quality engineering and environmental services as well as state-wide construction administration on behalf of the Maine Department of Transportation.

A cornerstone of Acorn Engineering is the attention to quality and exceptional level of service on every project, regardless of size. Our engineers and scientists pride themselves on their extensive experience, which is backed by a broad knowledge of civil and environmental engineering practices from smaller residential projects to larger commercial projects that integrate environmental assessment and site redevelopment.

Acorn Engineering has demonstrated the ability to breakdown and synthesize widely disseminated regulations into accepted engineering practices and practical site assessment and development. As a result of Acorn's efforts, the Cumberland County Soil & Water Conservation District recently recognized Acorn as the Contractor of the Year. This was the first award associated with the nationally recognized Long Creek Restoration Project and the first time the Cumberland County Soil & Water Conservation District ever recognized an engineering firm as their Contractor of the Year.

Acorn's expertise covers the areas of: civil/site design, evaluation, development, and permitting; and construction phase services such as construction administration, construction documents, project bidding, and site inspection including erosion and sedimentation control. Acorn's experience also includes the field of environmental engineering and compliance such as: Phase I and Phase II environmental site assessments, soil and groundwater remediation planning and design; Maine's Voluntary Response Action Program (VRAP); and stormwater treatment system design and permitting.

Acorn's engineers have designed, permitted, and overseen construction on numerous single-family and multifamily residential projects including traditional subdivision designs featuring on-site sewage/septic disposal and drilled wells. Furthermore, Acorn has demonstrated extensive experience and capabilities with municipalities, the Maine Department of Transportation (MDOT), Maine Department of Environmental Protection (MDEP), soil & water conservation districts, conservation commissions, municipalities, and the private sector on environmental and site development projects as demonstrated by the following:

- Listed on Maine DEP's Pre-Qualified Vendor List for Environmental Consulting Services
- Listed on Maine DOT's Pre-Qualified Consultants for eight service areas (listed under Section I.D)
- Cumberland County Soil & Water Conservation District Contractor of the Year for work on the Long Creek Restoration Project

- **Public Works Redevelopment – Meeting House Hill**

Over the past two years, Acorn Engineering has worked in close association with the City of South Portland, neighbors, and private clients on the redevelopment of the former Public Works facility. The 6-acre site is nestled in the middle of the Meeting House Hill residential neighborhood and is currently



a mix of storage buildings, fuel fill stations, miscellaneous stockpiles, and pavement. The site will be redeveloped into a mix of multifamily townhomes and single-family dwellings comprising 38 units along with a public park and community gardens.

In addition to the environmental remediation, Voluntary Response Action Program (VRAP), and other environmental considerations given the previous land use, the project is subject to a Maine DEP stormwater management law. The redevelopment design results in a reduction in impervious area of over 50% and reduces land use intensity across the site. Though not required, several stormwater BMP's have been implemented into the site as a best practice, further attenuating and treating stormwater runoff. In addition to the significant redevelopment plan, Acorn has designed an infrastructure plan to separate the storm and sewer mains. This will include installing 400 feet of new storm drain along the existing O'Neil Street right-of-way and 700 feet of new storm drain along the proposed O'Neil Street right-of-way extension. Overall, this effort will reduce the effects of combined sewer overflows (CSO) into Casco Bay which occur due to wet-weather events and the wastewater treatment plant's inability to provide capacity for both storm and sanitary sewer flows.

As part of this project, Acorn held a multitude of meetings with the City including the assistant City manager, the former Mayor, the entire planning division, and the chief engineer of Public Works. Furthermore, Acorn has collaborated with department heads of the Fire, Parks, Public Works, and Water Resource departments to ensure a feasible and ideal project for all parties. As a result, the process was truly a collaborative effort with a number of stakeholders weighing in on the design.

- **Munjoy Heights**

Acorn provided civil/site engineering and permitting for the design of Munjoy Heights – a six townhome, 29-unit development on the steep slopes of Munjoy Hill in the City of Portland. Acorn designed and developed construction drawings for the sanitary sewers, storm drains, water mains, driveways and pedestrian circulation, retaining wall locations, building locations, and drainage infrastructure to be built in compliance with City standards.



A key component to the project was coordinating with the City on the future combined sewer separation project and the site's overall stormwater management. Additionally, discussions with neighbors and stakeholders were paramount in the project's success.

The innovative urban infill project compliments the Munjoy Hill neighborhood with a communal design and plentiful native landscaping that replaced invasive species which previously dominated the eroding banks prior to the development. The \$22 million project features a courtyard, terraced landscaping, a Portland Trails-maintained path that connects the redevelopment to the existing trail system, and low impact development (LID) techniques that meet MDEP Chapter 500 regulations. The stormwater management includes an underdrained sand filter and chambers that detain and treat stormwater on site in tandem with strategically placed rain gardens.

The project required extensive coordination and collaboration between the client, City of Portland, Portland Trails, the structural engineer, the architect, and the contractor to successfully complete the project with the first "woonerf" in the state and maintaining the existing public walking path through the property.

- **200 Valley St**

Working with Avesta Housing, Acorn Engineering provided civil engineering and permitting for Avesta's 60-unit project in the St. John Valley neighborhood. This urban infill project replaces the existing single-family house and abutting vacant lots into new affordable housing opportunities with two levels of covered parking, amenities, and a rebuilt project frontage with new sidewalks, street trees, and bicycle hitches.



As part of the project, Acorn developed a transportation and parking analysis to ensure that the provided parking will adequately serve the redevelopment. Furthermore, the design team identified and implemented multiple strategies to encourage residents to efficiently utilize the many modes of transportation available on the Portland peninsula.

- **Little Dolphin Drive & Jocelyn Place**

In collaboration with the South Portland Housing Authority and Risbara Holdings, Acorn provided civil engineering design and permitting of a multi-use subdivision at the end of Little Dolphin Drive in Scarborough. Proposed uses include a two-story office building and a three-story 60-unit senior housing facility with associated parking and landscaped areas.



In addition to a voluntary neighborhood meeting, the project went through a 3-step master plan phase with the Town of Scarborough in which the project was collaborated on with Planning Staff, the Planning Board, and neighbors.

The project is subject to Maine DEP and US Army Corps permits. To adequately treat stormwater on the site, Acorn has designed multiple stormwater BMPs meeting Maine DEP Chapter 500 regulations resulting in a low impact design.

- **89 Anderson Street**

In collaboration with Redfern properties and the East Bayside neighborhood, Acorn developed the civil/site engineering design of a mixed use 53-unit redevelopment of an existing under-utilized, urban infill lot in the East Bayside neighborhood. Acorn's scope of services included in the initial phase applying for and obtaining a zone change and



conducting Phase I and Phase II Environmental Site Assessments to evaluate potential environmental contamination at the site.

After conducting the environmental remediation efforts, Acorn developed the site layout and design of sanitary sewers, storm drains, water mains, site driveway, retaining wall locations, building locations, parking lot design, building drainage structures, utility connections and landscaping plan (with a landscape architecture subconsultant) to meet the City of Portland Technical Standards. Acorn also integrated sidewalk and improvements associated with the project into the City's Anderson Street ByWay project. Furthermore, the project team worked with a non-profit organization, the Telling Room, to provide public art along the Fox Street streetcape in lieu of traditional fencing.

Overall, the project established an important mixed use building on a prominent corner lot adjacent to Kennedy Park which contains popular recreation space. The building houses a restaurant and the Gear Hub bicycle school on the first floor with residential apartments above which encourages an active street presence with housing, goods, and services that help tie the neighborhood together and keep eyes on the street.

- **667 Congress Street – The Hiawatha**

The \$28 million project included the civil/site engineering design for the 8-story, first floor retail and 139-unit apartment building on Congress Street in Portland. Vehicle parking is served by two levels with separate access from Vernon and Avon St. The project featured building and site design in an historic district adjacent to Longfellow Square.

Services included, but is not limited to, permitting with the City of Portland, layout and design of sanitary sewers, storm drains, water mains, pedestrian and vehicle entrances, building locations, parking lot design, and parking garage grading and drainage. Acorn provided significant coordination between the Architect, Structural Engineer, Geotechnical Engineer, Construction Management Company, Owner, and the City.





CREDERE

ASSOCIATES, LLC

Brownfield Assessment & Cleanup

Credere specializes in redevelopment planning, engineering, and environmental sciences with a goal of providing services that positively impact the community, economy, and environment using Smart Growth principles. Credere is SBA certified 8(a); DOT certified DBE in ME, NH and MA; and Self-Certified EDWOSB/WOSB.

The word “credere” means “to believe” in Italian. Credere is also an acronym for community revitalization, economic development, environmental remediation, and engineering. It was very important to Theresa and Rip Patten when naming the company that the name communicates something more than crediting the owners. The name should embody the company mission: what the company believes, what it aspires to do for its clients, and the means through which it can be achieved. To us, Credere is the perfect name. We believe that we can use our engineering education and our knowledge of environmental remediation to help our clients achieve community revitalization by successful completion of redevelopment projects. It is our small way to make the world a little better. Credere works with planning commissions, municipalities, economic development boards, private developers, and local and federal government agencies to overcome environmental issues that are hindering the redevelopment process.

Credere’s mission is to provide services that positively impact the community, economy, and environment that our clients and employees work, live and play.

Credere has extensive experience in completing long-term, sustainable Brownfields Programs and private redevelopment projects, which use smart growth principles. The projects include various tasks, such as, environmental assessment, re-use planning and remediation and redevelopment engineering.



Marada Adams School – 48 Moody Street, Portland, Maine

The 1.5-acre Marada Adams Community School was used as an educational facility from 1958 until 2006, when the school was closed and the property was vacated. Historically, the property contained a complex of buildings occupied by the Portland Railroad Company and a trolley railroad crossed the middle of the site. During the late 1800s, a portion

of the property was also used as the Burgess, Forbes & Company White Lead & Color Works facility (a can and hand grenade manufacturer). Credere performed a Phase I assessment at the property in anticipation of a transfer of ownership from the City of Portland to a private non-profit affordable housing developer, AVESTA Housing. Following the sale of the property, Credere performed Phase II activities to investigate potential hazardous building materials and contaminated soil. Based on the Phase II data, the developer was able to anticipate concerns with worker and future residential exposure, and waste soil disposal. Credere helped the development team minimize the financial and logistical impact of these issues through the re-design of the site layout, enrollment in the Maine DEP VRAP program, and attainment of a \$200,000 Brownfields cleanup grant. Between 2012 and 2013, Credere oversaw the remediation of hazardous building materials, contaminated soils, and the redevelopment of this site into 16 units of affordable homeownership housing, a public greenway and a playground. The project transformed an underutilized Brownfields site located in an otherwise vibrant neighborhood and returned it to the community.



Thornton Heights Commons – 611 Main Street, South Portland, Maine

The South Portland Housing Authority acquired the former St. John parish church, rectory (i.e. a residence for clergy), and a church school in Thornton Heights or South Portland, Maine. The buildings on the 1.81-acre site were severely dilapidated and contained substantial hazardous

building materials including lead, asbestos, and PCBs, and soil was contaminated from lead paint around all of the Site buildings. Credere performed several phases of environmental investigation, geotechnical investigation, assisted the housing authority in obtaining a \$500,000 EPA Brownfields cleanup grant, and cleanup and redevelopment planning. In 2020, Credere oversaw the solicitation of bids from cleanup contractors and subsequently implemented the abatement and remediation of the site, demolition of the Site buildings, and preparation of the site for redevelopment. The project is currently moving to construction of a 46,000 square foot four-story mixed-use affordable housing projected that will include parking for seventy vehicles,

a 10,000 s.f. community open space, and three new single-family house lots. The building will consist of 42 apartments on the three upper floors, a community space, and 7,000 s.f. of commercial space on the ground floor.

State Street School – 261 Center Street, Brewer, Maine

The State Street School was a 6,630-square foot two-story building that was constructed in 1948. The Site building was operated as an elementary school from 1948 until June 2011 and was vacant thereafter. Based on assessment work completed at the Site by Credere and others, asbestos, lead, and universal and/or hazardous waste were considered to be contaminants of concern. Credere assisted the City in remediation planning and environmental clean activities, which included abatement and removal of asbestos; universal, special, and hazardous waste; and lead-based paint building debris in accordance with the Maine DEP VRAP. To support the redevelopment of the Site, Credere completed a geotechnical engineering evaluation and provided recommendations for the design and construction of the 48-unit Community Housing of Maine (CHOM) affordable housing development. This was the first multi-family passive building in ME and in New England, and at the time, was the largest passive housing building anywhere in the country. As part of this work, Credere conducted a subsurface exploration program, which included laboratory testing, evaluating subsurface conditions, and completing geotechnical engineering analyses including settlement and bearing capacity calculations and limited stability assessment of proposed excavations.

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 mixed-use residential buildings have been designed to conform to City standards where possible, as well as improve upon existing non-conformities. This project conforms with the majority of the applicable standards of Portland's Land Use Ordinance Section 14-526 as demonstrated in the following narrative.

(a) Transportation Standards

1. Impact on Surrounding Street Systems:

The site is located along Douglass Street. It is classified as a local street according to the City of Portland Federal Street Classification map. A moderate traffic increase is expected for this project due to the change in use of the property. Congestion or worsening of the intersections is not anticipated.

2. Access and Circulation:

a. Site Access and Circulation:

This project conforms with the design standards of Section 14-526 as demonstrated in the following standards:

- (i) The development will provide safe access and internal circulation for both pedestrians, vehicles and emergency vehicles as seen on the Site Plan.
- (ii) The proposed parking areas can be accessed from the existing access drive from Douglass Street.
- (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. The site is access

c. Sidewalks:

- (i) Bituminous pavement sidewalks are proposed throughout the site, as seen on the Site Plan, to connect the existing sidewalk on Douglass Street to the site for pedestrian access.
- (ii) The existing sidewalks that will be disturbed during construction and utility



activities at the entrance to the site are proposed to be rebuilt in conformance with City standards.

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 will provide 79 parking spaces which is anticipated to meet the requirements of the proposed uses within the new buildings.
- (ii) Although not specifically required within this zone or land use, Transportation Demand Management (TDM) strategies will be implemented as identified in Section U.
- (iii) The project is within a quarter mile of a transit facility and therefore is not technically required to provide any parking; however, at a ratio of 0.66 spaces per unit, the project team feels this proposal is appropriate.
- (iv) The parking space and aisle dimensions are in conformance with the Technical Standards with the exception of a waiver request to reduce the drive aisle width from 24' to 22' given the residential use and low turnover rate. Please refer to the Site Plan for more information.
- (v) The driveway and parking areas will be constructed of bituminous pavement which will drain water without eroding.

b. Location and Required Number of Bicycle Parking Spaces:

- (i) A minimum of 30 bicycle spaces are proposed for the 120 residential units. Please refer to the Landscape Plan for more information.

c. Motorcycles and Scooter Parking:

- (i) There are no areas specifically designated for motorcycles or scooters at this time; however, parking is available through the on-site parking stalls.

d. Snow Storage:

- (i) Snow storage area is provided on the south and north ends of the site. The Owner will be responsible for managing snow at their discretion and/or



coordinating snow removal from the site when necessary.

(ii) Not applicable.

5. Transportation Demand Management (TDM):

a. Not applicable.

b. Not applicable.

c. Not applicable.

(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) There are 13 existing trees on site, all of which will be removed for construction activities.

(ii) There are no trees 10 inches DBH or greater within the property.

(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. The solid waste location will be located adjacent to the parking lot on the east side of the development. The proposed transformer and solid waste container are anticipated to be screened by a decorative fencing, screening, or landscape plantings.

b. Landscaping has been incorporated into the site design as such. Please refer to the Landscape/Planting plan.



- c. Not applicable.
- d. Not applicable.

(ii) Parking Lot Landscaping:

- a. The proposed development will include one (1) tree and three (3) shrubs for every five (5) parking spaces within landscaped islands to screen shade and break up parking.
- b. A landscape island is provided to ensure uninterrupted parking will not exceed forty (40) parking spaces.
- c. Parking landscape islands will be curbed and a minimum of seven (7) feet in width.
- d. Not applicable.

(iii) Street Trees:

- a. Not applicable
- 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 runoff created from the site will be collected and directed to the MS4 within Douglass Street. Impervious area on the site will be decreased, reducing overall runoff from the site.
 - (ii) Provisions will be in place to ensure stormwater from the development will not exceed the pre-development flows.
 - (iii) The runoff from the site into the public way will not increase from the pre-development condition.
 - (iv) The runoff to the MS4 is anticipated to be of an increase, but is anticipated to be easily accommodated in the existing 60 inch storm drain within Douglass Street. When looking at all analysis points, the cumulative runoff from the site will be reduced.
- 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 Erosion & Sedimentation Control and Stormwater Management 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. The site plan will enhance and blend with the surrounding land and paved walking trails compared to its existing condition.

2. Public Safety and Fire Prevention:

- a. The site has been designed to promote safe and inviting public access including connections to walking trails within Douglass Park.
- b. Adequate emergency access has been provided. Fire trucks and ambulance will be able to access all of the site and buildings through a loop road.
- c. The project will include a proposed private hydrant to serve the buildings on site and will be within 450 feet of the furthest structure.

3. Availability and Adequate Capacity of Public Utilities:

- a. Ability to Serve letters have been sent to the respective companies. Responses are forthcoming.
- b. The electrical service will be wired underground via a new pad-mounted transformer as shown on the Utility Plan.
- c. The new sewer and stormwater infrastructure will meet the provisions of the Technical Manual.
- d. The project will be served by connection to the public sewer system within



Douglass 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. A space allocated for solid waste storage can be seen on the Site Plan (C-10). The solid waste containers will be fully enclosed and screened from the public view.

(d) Site Design Standards

1. Massing, Ventilation and Wind Impact:
 - a. Please refer to Section O, Architectural Design Narrative.
 - b. Please refer to Section O, Architectural Design Narrative.
 - c. Please refer to Section O, Architectural Design Narrative.
2. Shadows:
 - a. Not applicable.
3. Snow and Ice Loading:
 - a. The structure will not distribute snow and ice onto adjacent properties.
4. View Corridors:
 - a. Please refer to Section O, Architectural Design Narrative.
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.
 - 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.



- (ii) The proposed buildings on site will employ house-side shielding to prevent adjacent residential properties from being adversely affected by exterior lighting.
 - 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) Signage will only be related to vehicular access.
 - (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-5A zone. Please refer to the Site Plan for more information on the Space & Bulk Standards.





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



November 4, 2021

Custom Soil Resource Report
Soil Map



Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Au	Au Gres loamy sand	0.3	7.8%
DeB	Deerfield loamy fine sand, 3 to 8 percent slopes	3.7	92.2%
Totals for Area of Interest		4.0	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

Au—Au Gres loamy sand

Map Unit Setting

National map unit symbol: blgr
Elevation: 200 to 1,800 feet
Mean annual precipitation: 34 to 50 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 90 to 130 days
Farmland classification: Not prime farmland

Map Unit Composition

Au gres and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Au Gres

Setting

Landform: Outwash plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy glaciofluvial deposits derived from granite and gneiss

Typical profile

H1 - 0 to 10 inches: loamy sand
H2 - 10 to 32 inches: loamy sand
H3 - 32 to 65 inches: sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: About 0 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Hydric soil rating: Yes

DeB—Deerfield loamy fine sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2xfg9

Elevation: 0 to 1,190 feet

Mean annual precipitation: 36 to 71 inches

Mean annual air temperature: 39 to 55 degrees F

Frost-free period: 145 to 240 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Deerfield and similar soils: 85 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Deerfield

Setting

Landform: Kame terraces, outwash plains, outwash terraces, outwash deltas

Landform position (three-dimensional): Tread

Down-slope shape: Concave, convex, linear

Across-slope shape: Convex, linear, concave

Parent material: Sandy outwash derived from granite, gneiss, and/or quartzite

Typical profile

Ap - 0 to 9 inches: loamy fine sand

Bw - 9 to 25 inches: loamy fine sand

BC - 25 to 33 inches: fine sand

Cg - 33 to 60 inches: sand

Properties and qualities

Slope: 3 to 8 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Runoff class: Very 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: About 15 to 37 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)

Sodium adsorption ratio, maximum: 11.0

Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

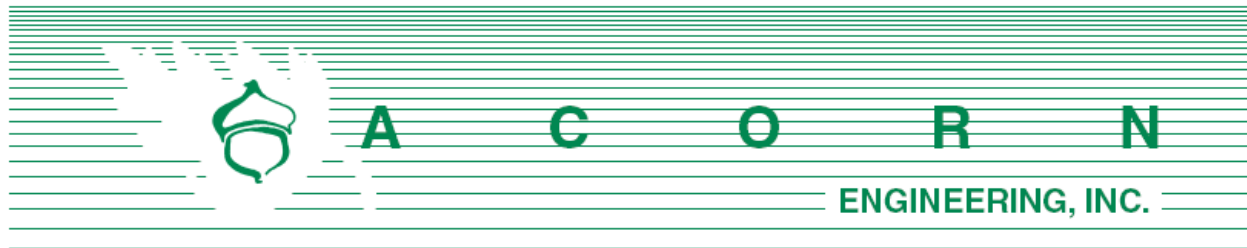
Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: A

Ecological site: F144AY027MA - Moist Sandy Outwash

Hydric soil rating: No



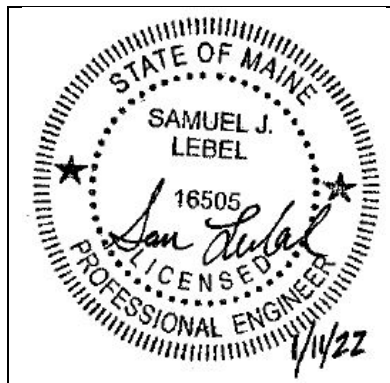
STORMWATER MANAGEMENT **REPORT**

Prepared For:

**Douglass Commons, LLC.
57 Douglass Street
Portland, Maine 04101**

Prepared By:

**Acorn Engineering, Inc.
PO Box 3372
Portland, Maine 04104**



January 2022



INTRODUCTION

Acorn Engineering, Inc. has been retained by Douglass Commons, LLC. to provide civil engineering services for the proposed redevelopment of 57 Douglass Street located within the R-5A Zoning District in Portland, Maine. The 3.34-acre parcel was previously the site of a school building and is now vacant. The built-out site will consist of eight stand-alone buildings comprising 120 residential units, the majority of which will be deed-restricted for affordability.

A stormwater analysis was 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 General (Redevelopment) Standards.

The property consists of approximately 3.34 acres of land in Portland's Libbytown neighborhood. The site is currently composed of approximately 2.16 acres impervious area. The proposed project will decrease the impervious area by approximately 0.36 acres to 1.90 acres. The project will result in redevelopment of non-roof impervious area greater than 5,000 SF and therefore will be required to provide treatment for a portion of the site.

EXISTING CONDITIONS

The proposed project site is located at 57 Douglass Street. A Boundary & Topographic Survey has been prepared by Owen Haskell, Inc., dated March 1, 2021.

The existing property is covered by approximately 65% impervious surfaces, whereupon a school and its associated infrastructure was formerly located. The existing site is vacant and has moderate slopes within the center of the site that form a plateau, grading down to perimeter. The site is split into three subcatchments, two larger and one smaller. Subcatchment 1 drains the gently sloping northerly portion of the site and a small section of the existing access driveway to the MS4 within Douglass Street. Subcatchment 2 drains the southerly portion of the site to a basin shared with the off-site drainage of residences and the western flanks of I-295, which were also modeled. Subcatchment 3 is a small section of the eastern part of the site that drains to the playing fields east and north of the site.

The project team is not aware of the presence of any existing significant natural features located on the site. Given the urban setting and existing impervious surfaces, a field inventory of significant natural features was not undertaken. The project is not located within a watershed classified as an Urban Impaired Stream.



PROPOSED DEVELOPMENT

The project features the development of a planned residential unit development (PRUD) and generally follows the principles of cluster subdivision planning where infrastructure is denser and more efficient and as a result, greater uninterrupted open space opportunities are available. The site will consist of eight separate residential buildings with a total of 120 dwelling units. Each building will be served with associated parking and utilities. Pedestrian access to the site will be provided along the access drive from Douglass Street and through paved foot paths from Dougherty Park. The development will be served by Portland Water District, Department of Public Works (sewer/storm), Unitil (natural gas), CMP (electric), Charter (cable), and Fairpoint (telephone).

The site has been graded to slope with the existing topography while providing for appropriate slopes in the parking lot. The slopes on the outside of the parking areas that are not part of a stormwater system will be appropriately stabilized per the specifications in the plans and are anticipated to be heavily landscaped for further slope protection and buffering. The majority of the site's runoff, including 100% of the new impervious area, will be collected via a storm drain system and directed to the Douglass Street Municipal Separated Storm Sewer System (MS4).

The proposed project will decrease the site's impervious area by approximately 0.36 acres, but will include redevelopment of non-roof impervious area greater than 5,000 square feet, triggering the City's water quality treatment requirement. Water quality treatment will be provided by collecting the runoff on over 75% of the parking lot area and allowing it to flow to a vegetated underdrained soil filter (VUSF) system and proprietary high-flow rain gardens for treatment prior to discharging into the MS4 within Douglass Street. The project has been designed to meet and exceed the Chapter 500 General Standards.

BASIC STANDARDS – EROSION & SEDIMENTATION CONTROL

The development shall provide erosion and sedimentation control, inspection and maintenance, and housekeeping standards as specified in the attached Exhibit K: Erosion and Sedimentation Control Report. Grading and construction activity will not impede or otherwise alter drainageways to have an unreasonable adverse impact on an adjacent downgradient parcels.

GENERAL STANDARDS - WATER QUALITY

When analyzing the Maine DEP Redevelopment Standards and the associated ranked impacts, the project results in a negative number and therefore treatment is not required per State law. However, the development will provide water quality treatment for no less than 50% of the non-roof redeveloped impervious area, consistent with the City of Portland's technical manual. Water quality treatment will be provided using an under-drained soil filter system and proprietary high-flow media rain gardens, which are approved systems per Appendix B of the Maine Stormwater BMP Manual. Filtration BMPs have been shown to be very effective at removing a wide range of pollutants from stormwater runoff. The rain gardens are based off a Focal Point system manufactured by ACF Environmental, but may be substituted at the time of construction for an approved



equal such as a Filterra manufactured by Contech. The footprint of the filter media is 20 square feet and has an infiltration rate of 100 inches per hour. Above the media, the garden will allow for 6 inches of ponding before overflowing into an overflow beehive grate which bypasses the filter media. Given the site is reducing the net peak flow leaving the site and is discharging to a 60" MS4 that freely flows to a major river segment, storage tanks are not being proposed below the rain gardens. From a stormwater perspective, the focus is on providing water quality treatment given the watershed's discharge and conveyance system are not overburdened.

The treatment of the impervious areas are as follows:

Table 1 – Impervious Area Treatment Table				
Existing Impervious Area (SF)	Total Proposed Impervious Area (SF)	Non-Roof Redeveloped Impervious Area (SF)	Proposed Non-Roof Impervious Area with Treatment (SF)	Treated Non-Roof Redeveloped Area
94,185	78,656	43,757	23,370	53%

As shown above, the project anticipates meeting the required treatment for new impervious and developed surfaces with the soil filter BMPs.

Filter Area Sizing

A calculation for filter area is necessary to meet the requirements below the surface of the VUSF. As defined in the Volume III: BMPs Technical Design Manual, Chapter 7, the surface area of the filter shall be no less than the sum of 5% of the tributary impervious area and 2% of the tributary vegetated area. The filter area is calculated by the following formula:

$$[(\text{Imp. SF} \times 0.05) + (\text{Veg. SF} \times 0.02)] = \text{Filter Area (SF)}$$

Table 2 – Total Filter Surface Area, displays the proposed USSF sizing requirements, actual size and the percentage of required area.

Table 2 – Total Filter Surface Area		
	Required Filter Area (SF)	Actual Filter Area (SF)
VUSF 1	465	465

As shown above, the project anticipates meeting and exceeding the required treatment for 50% of the redeveloped impervious surfaces.

Water Quality Volume

In accordance with the Volume III: BMPs Technical Design Manual, a water quality volume of 1.0 inches times the tributary impervious area plus 0.4 inches times the tributary vegetated area is required to be treated by the VUSF. The required water quality volume is calculated by the following formula:

$$\left(\frac{\text{Imp. SF} \times 1.0''}{12''/1'} \right) + \left(\frac{\text{Veg. SF} \times 0.4''}{12''/1'} \right) = \text{Treatment Volume (CF)}$$

Table 3 – Water Quality Volume				
	Tributary Impervious Area (SF)	Tributary Pervious Area (SF)	Water Quality Volume Required (CF)	System Storage Volume Provided (CF)
VUSF 1	8,274	2,578	775	1,052

As seen above, the provide water quality volume above the soil filter and below the overflow grate exceeds the requirement. Values from the HydroCAD calculations are attached to this report to demonstrate compliance with this standard.

As shown above, the project anticipates meeting and exceeding the required treatment for new impervious surfaces using the VUSF and proprietary high-flow media rain gardens.

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.

Time of Concentration (Tc)

The times of concentration for subcatchments in both the pre and post conditions were calculated by entering the flow path with the associated ground cover and slopes. HydroCAD then calculated the Tc's and incorporated the total Tc for each subcatchment into the model. When the calculated Tc was less than six minutes (0.1 hours), a direct entry of six minutes was used as advised by the TR-55 model. Consistent with previous submissions and best practices, the sheet flow length for any Tc path was capped at 100 feet.

Curve Number (CN)

Within the pre-development model, the vegetated areas were considered grass cover in fair or good condition, depending on the area. as demonstrated by aerial images and site visits. The post development landscaped areas were given a good rating all within the A hydrologic soil group. This is assumption is reinforced given the aggressive landscape plan which will feature more porous conditions that are appropriately mulched along with future extensive root systems and canopy cover that will exist once the landscaping has matured.



HydroCAD Adjustments

A simulation water quality outlet (vertical orifice) is modeled to mimic the minimum 24-hour release time through the soil filter media. This is completed by adjusting the rainfall amount in HydroCAD until the inflow volume is equal to or greater than the calculated water quality volume. The storm events are modeled as type III, 24-hour storm events in HydroCAD.

Pre-development Calculations

The site consists of gravel and grassed areas in the predevelopment condition. For the purposes of this analysis, the land has been divided into three sub-catchments. Sub-catchment 1 drains the gently sloping northerly portion of the site and a small section of the existing access driveway, terminating in the storm drains and MS4 within Douglass Street (POI #1). Subcatchment 2 drains the southerly portion of the site to a basin shared with the off-site drainage of residences and the western flanks of I-295, which were also modeled. The slopes are in the 5-10% range. There is an existing culvert under the State's paved pathway that divides I-295 land with the proposed site, that facilitates flow from the grassed basin to the Site under the pathway. This low point was modeled as POI #2. Subcatchment 3 is a small section of the eastern part of the site with 2-5% slopes that drains to the playing fields east and north of the site which was modeled as POI #3.

Peak flow rates for the pre-development storm events are as follows:

Table 5 – Pre-Development Peak Stormwater Flows			
Drainage Area	2-Year Storm Event (cfs)	10-Year Storm Event (cfs)	25-Year Storm Event (cfs)
POI #1	3.2	5.4	7.3
POI #2	0.4	1.8	3.5
POI #3	0.7	1.5	2.1

Post-development Calculations

In the post development condition, over 95% of runoff from the site will be collected in stormwater infrastructure and piped to the MS4 within Douglass Street. The proposed project will decrease the site's impervious area by approximately 0.36 acres. Water quality treatment will be provided by collecting the runoff on over 75% of the parking lot area and allowing it to flow to an under-drained soil filter system and proprietary high-flow media rain gardens for treatment prior to discharging into the combined sewer within Douglass Street.

The post-development calculations include changes to the land use, and the compensation provided by the VUSF, rain gardens, and associated engineered orifices. The following table represents comparison of pre- development and post-development condition peak runoff rates for the proposed development and tributary areas.



Table 6 – Post-Development Peak Stormwater Flows			
Drainage Area	2-Year Storm Event (cfs)	10-Year Storm Event (cfs)	25-Year Storm Event (cfs)
POI #1	3.8	7.7	11.0
POI #2	0	0.1	0.3
POI #3	0	0	0

Table 7 – Comparison of Peak Flows						
Drainage Area	2-Year Storm Event (cfs)		10-Year Storm Event (cfs)		25-Year Storm Event (cfs)	
	<i>Pre</i>	<i>Post</i>	<i>Pre</i>	<i>Post</i>	<i>Pre</i>	<i>Post</i>
POI #1	3.2	3.8	5.4	7.7	7.3	11.0
POI #2	0.4	0	1.8	0.1	3.5	0.3
POI #3	0.7	0	1.5	0	2.1	0
POI #4 (Total Peak Discharge)	4.3	3.8	8.7	7.8	12.9	11.3

As shown in Tables 6 and 7, the net impact of the post development peak flows will remain 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 is sourced from the *Soil Conservation Service Medium Intensity Soil Survey for Cumberland County consistent with the USDA Soil Survey*.

The area within and surrounding the project includes soils types listed in the table below.

Table 8 – Hydrologic Soil Group	
Soils Type	HSG
Deerfield Loamy Fine Sand, 3-8% slopes	A

The HSG for the soils, listed above, show soils having a high infiltration rate (low runoff potential). These consist mainly of deep, well drained sands, with a high rate of water transmission.

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. The proposed project as designed is not anticipated to cause flooding or erosion problems within the subject site, abutters' sites, nor within the right-of-way.



Attachments

Attachment A: Pre-Development Watershed Map

Attachment B: Post-Development Watershed Map

Attachment C: Non-Roof Redevelopment Impervious Area Exhibit

Attachment D: HydroCAD Calculations

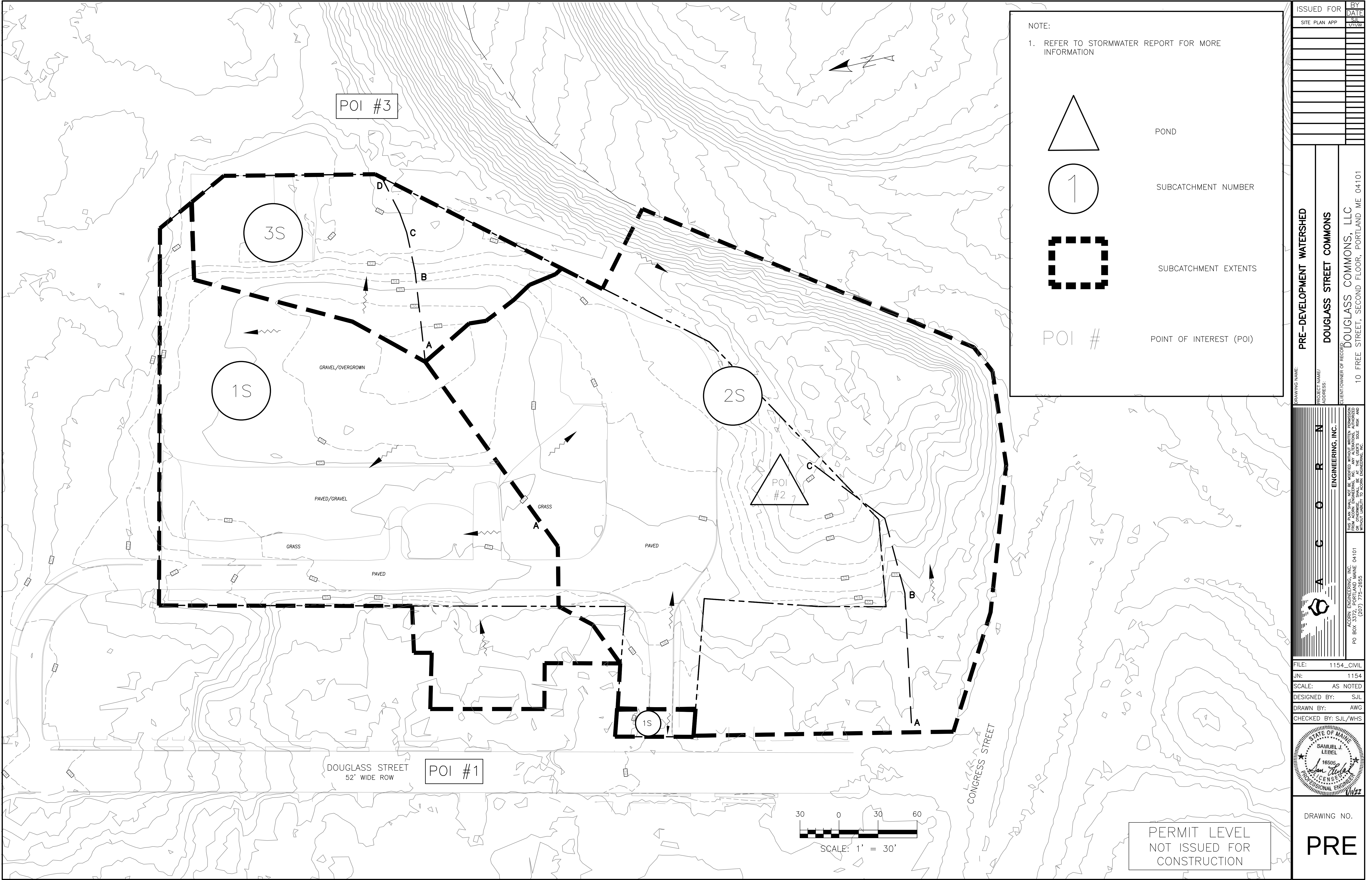
Attachment E: Soil Survey



Attachment A

Pre-Development Watershed Map





NOTE:
1. REFER TO STORMWATER REPORT FOR MORE INFORMATION

△ POND

① SUBCATCHMENT NUMBER

▣ SUBCATCHMENT EXTENTS

POI # POINT OF INTEREST (POI)

ISSUED FOR	BY
SITE PLAN APP	SJL
	1/11/22

DRAWING NAME	PROJECT NAME/ ADDRESS	CLIENT/OWNER OF RECORD
PRE-DEVELOPMENT WATERSHED	DOUGLASS STREET COMMONS	DOUGLASS COMMONS, LLC
		10 FREE STREET, SECOND FLOOR, PORTLAND ME 04101

FILE:	1154_CIVIL
JN:	1154
SCALE:	AS NOTED
DESIGNED BY:	SJL
DRAWN BY:	AWG
CHECKED BY:	SJL/WHs

ACORN ENGINEERING, INC.

PO BOX 3372, PORTLAND MAINE 04101

(207) 775-6555

STATE OF MAINE

SAMUEL J. LABEL

16505

PROFESSIONAL ENGINEER

1/11/22

DRAWING NO.

PRE

Attachment B

Post-Development Watershed Map



Attachment C

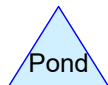
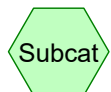
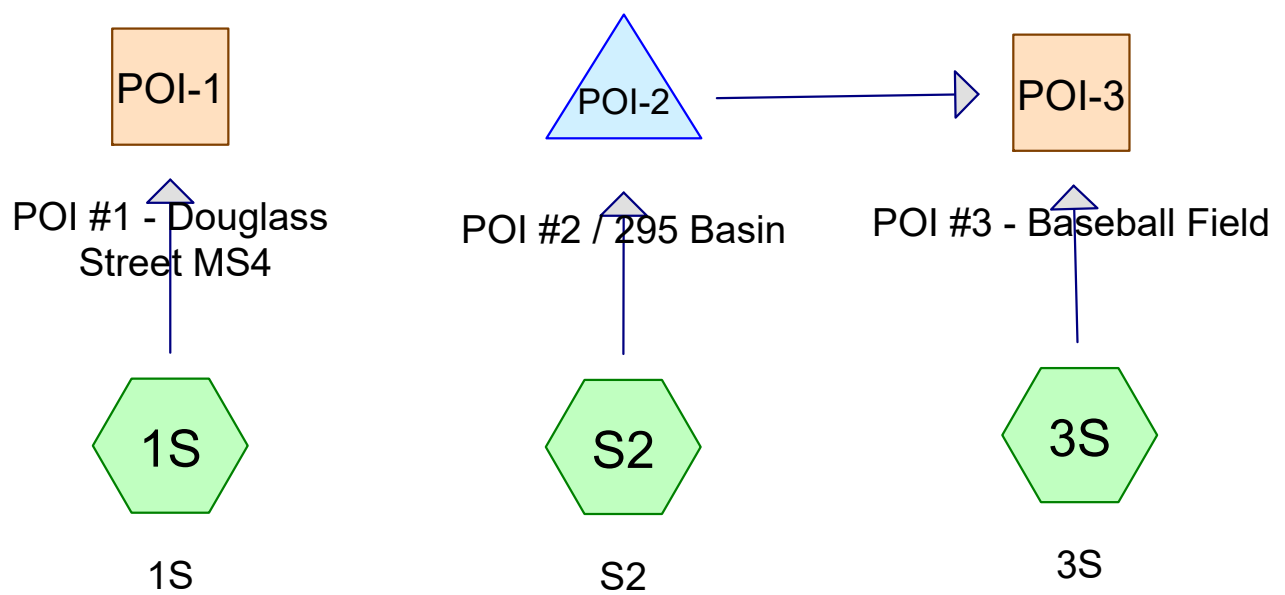
Non-Roof Redevelopment Impervious Area Exhibit



Attachment D

HydroCAD Calculations





Routing Diagram for Pre Development 1.11
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.204	77	1/8 acre lots, 65% imp, HSG A (1S)
1.085	49	50-75% Grass cover, Fair, HSG A (1S, 3S, S2)
0.571	96	Gravel (S2)
0.636	96	Gravel surface (1S)
0.353	96	Gravel surface, HSG A (3S)
0.072	98	Paved walking path (S2)
0.496	98	Pavement / Roof (1S)
0.321	98	Single family roofs and driveways (S2)
1.212	32	Woods/grass comb., Good, HSG A (S2)
4.951	70	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
2.855	HSG A	1S, 3S, S2
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
2.096	Other	1S, S2
4.951		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
0.204	0.000	0.000	0.000	0.000	0.204	1/8 acre lots, 65% imp	1 S
1.085	0.000	0.000	0.000	0.000	1.085	50-75% Grass cover, Fair	1 S, 3 S, S 2
0.000	0.000	0.000	0.000	0.571	0.571	Gravel	S 2
0.353	0.000	0.000	0.000	0.636	0.990	Gravel surface	1 S, 3 S
0.000	0.000	0.000	0.000	0.072	0.072	Paved walking path	S 2
0.000	0.000	0.000	0.000	0.496	0.496	Pavement / Roof	1 S
0.000	0.000	0.000	0.000	0.321	0.321	Single family roofs and driveways	S 2
1.212	0.000	0.000	0.000	0.000	1.212	Woods/grass comb., Good	S 2
2.855	0.000	0.000	0.000	2.096	4.951	TOTAL AREA	

Pre Development 1.11*Type III 24-hr 2-year Rainfall=3.10"*

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Time span=1.00-36.00 hrs, dt=0.10 hrs, 351 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: 1S

Runoff Area=68,602 sf 39.93% Impervious Runoff Depth=1.83"
Tc=6.0 min CN=87 Runoff=3.16 cfs 0.240 af

Subcatchment3S: 3S

Runoff Area=24,703 sf 0.00% Impervious Runoff Depth=1.20"
Tc=6.0 min CN=78 Runoff=0.73 cfs 0.057 af

SubcatchmentS2: S2

Runoff Area=122,360 sf 14.00% Impervious Runoff Depth=0.31"
Flow Length=233' Tc=16.0 min CN=58 Runoff=0.38 cfs 0.072 af

Reach POI-1: POI #1 - Douglass Street MS4

Inflow=3.16 cfs 0.240 af
Outflow=3.16 cfs 0.240 af

Reach POI-3: POI #3 - Baseball Field

Inflow=0.73 cfs 0.057 af
Outflow=0.73 cfs 0.057 af

Pond POI-2: POI #2 / 295 Basin

Peak Elev=27.00' Storage=1,609 cf Inflow=0.38 cfs 0.072 af
Discarded=0.05 cfs 0.061 af Primary=0.00 cfs 0.000 af Outflow=0.05 cfs 0.061 af

Total Runoff Area = 4.951 ac Runoff Volume = 0.368 af Average Runoff Depth = 0.89"
79.36% Pervious = 3.929 ac 20.64% Impervious = 1.022 ac

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

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Summary for Subcatchment 1S: 1S

Runoff = 3.16 cfs @ 12.10 hrs, Volume= 0.240 af, Depth= 1.83"

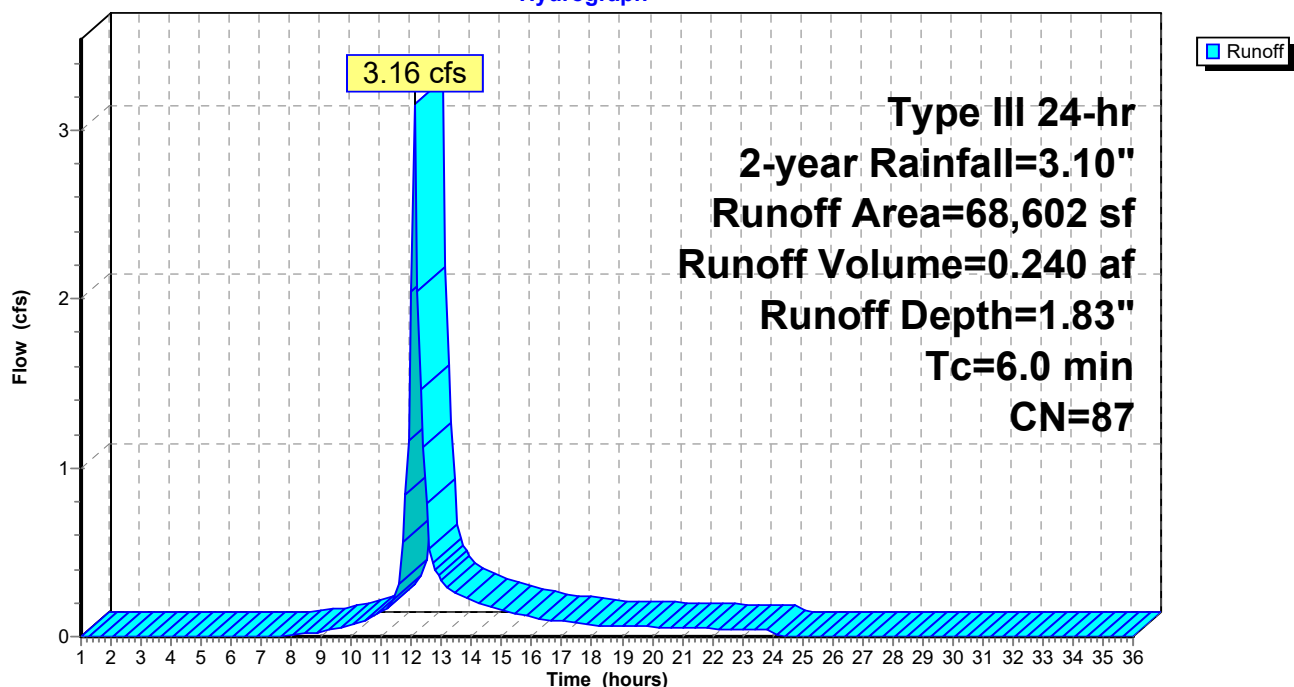
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	21,601	98	Pavement / Roof
*	27,720	96	Gravel surface
	10,373	49	50-75% Grass cover, Fair, HSG A
	8,908	77	1/8 acre lots, 65% imp, HSG A
	68,602	87	Weighted Average
	41,211		60.07% Pervious Area
	27,391		39.93% Impervious Area

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

Subcatchment 1S: 1S

Hydrograph



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

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Summary for Subcatchment 3S: 3S

Runoff = 0.73 cfs @ 12.11 hrs, Volume= 0.057 af, Depth= 1.20"

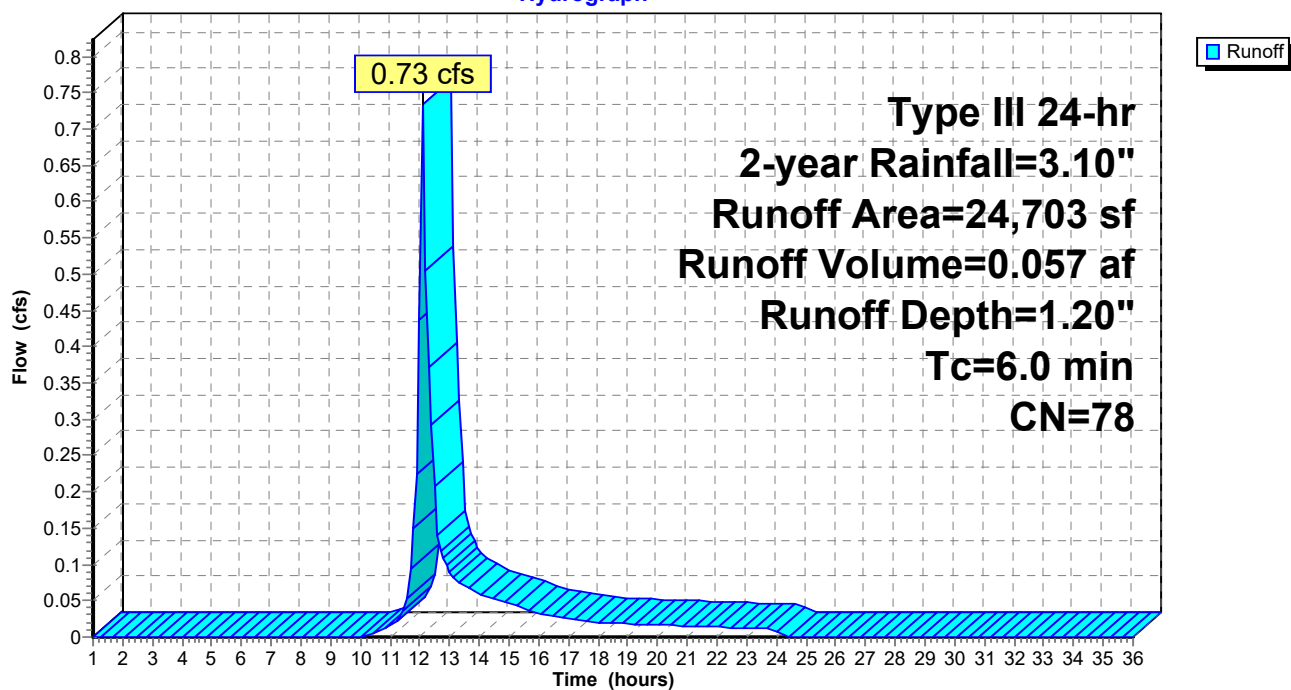
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs
Type III 24-hr 2-year Rainfall=3.10"

Area (sf)	CN	Description
15,393	96	Gravel surface, HSG A
9,310	49	50-75% Grass cover, Fair, HSG A
24,703	78	Weighted Average
24,703		100.00% Pervious Area

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

Subcatchment 3S: 3S

Hydrograph



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

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Summary for Subcatchment S2: S2

Runoff = 0.38 cfs @ 12.44 hrs, Volume= 0.072 af, Depth= 0.31"

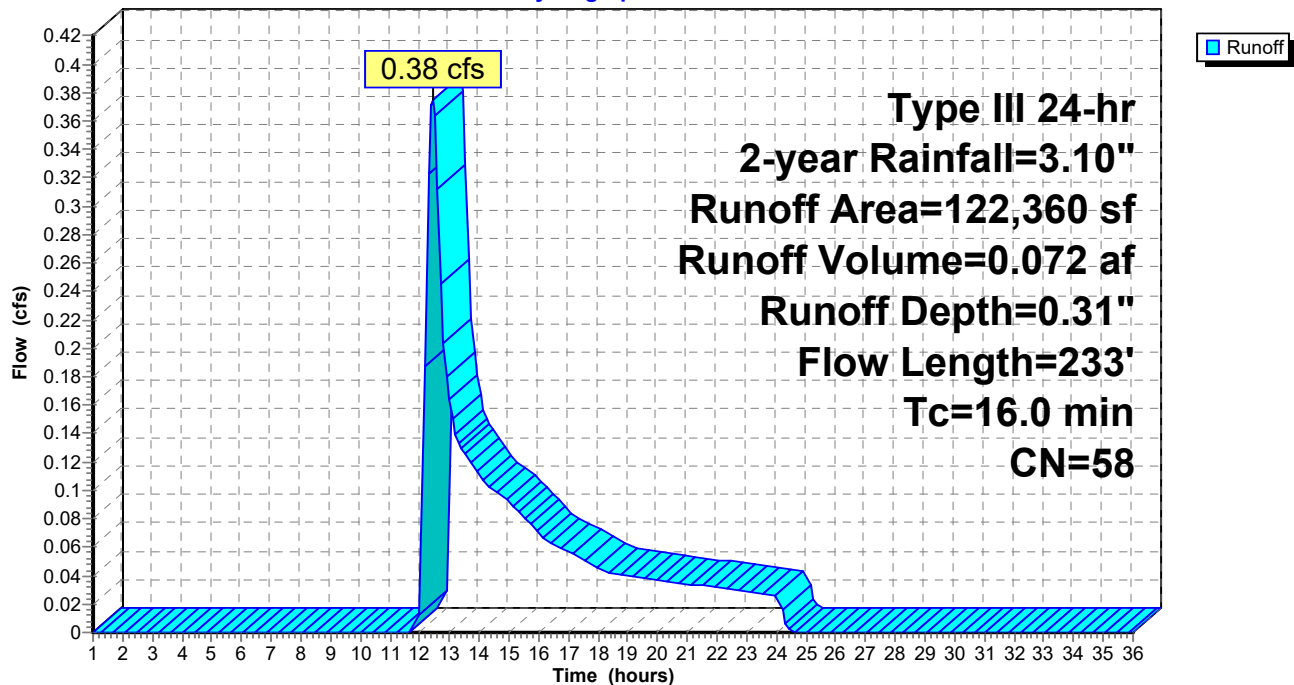
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	13,972	98	Single family roofs and driveways
*	3,155	98	Paved walking path
	52,792	32	Woods/grass comb., Good, HSG A
*	24,853	96	Gravel
	27,588	49	50-75% Grass cover, Fair, HSG A
	122,360	58	Weighted Average
	105,233		86.00% Pervious Area
	17,127		14.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	100	0.0500	0.11		Sheet Flow, A to B Woods: Light underbrush n= 0.400 P2= 3.27"
1.3	133	0.0600	1.71		Shallow Concentrated Flow, B to C (capped 100' sheet flow) Short Grass Pasture Kv= 7.0 fps
16.0	233	Total			

Subcatchment S2: S2

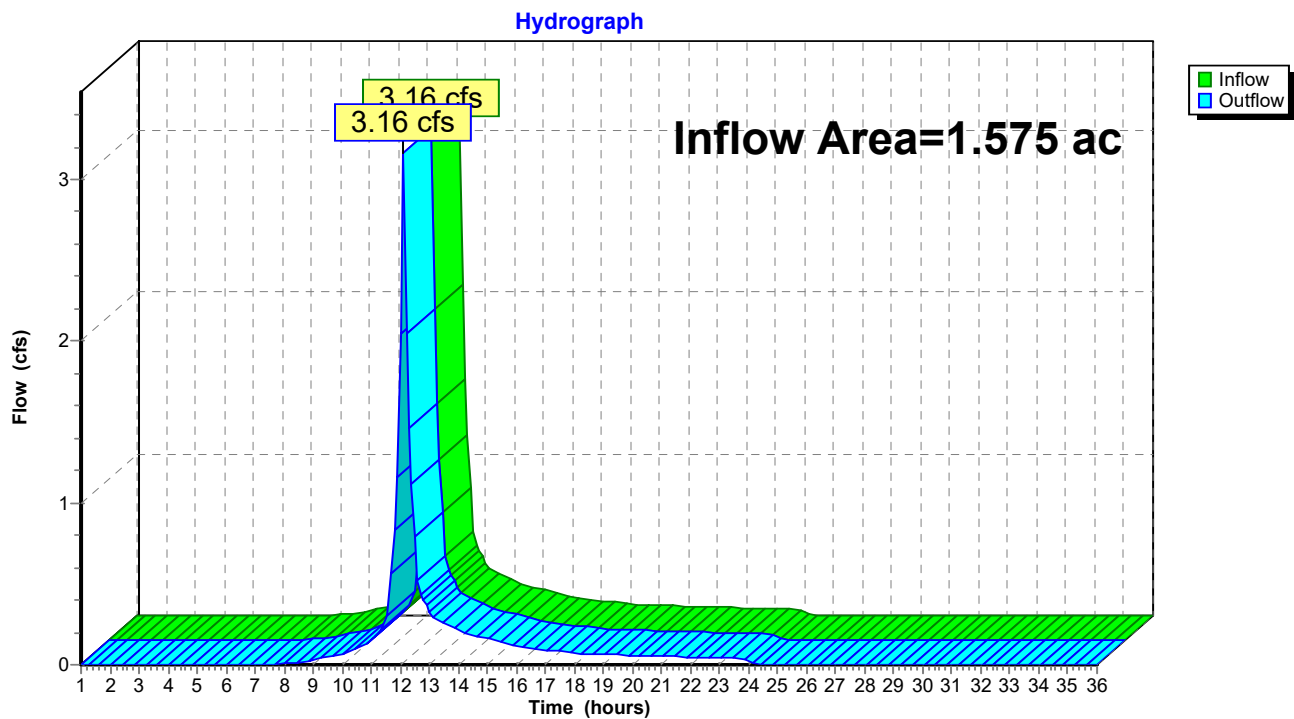
Hydrograph



Summary for Reach POI-1: POI #1 - Douglass Street MS4

Inflow Area = 1.575 ac, 39.93% Impervious, Inflow Depth = 1.83" for 2-year event
Inflow = 3.16 cfs @ 12.10 hrs, Volume= 0.240 af
Outflow = 3.16 cfs @ 12.10 hrs, Volume= 0.240 af, Atten= 0%, Lag= 0.0 min

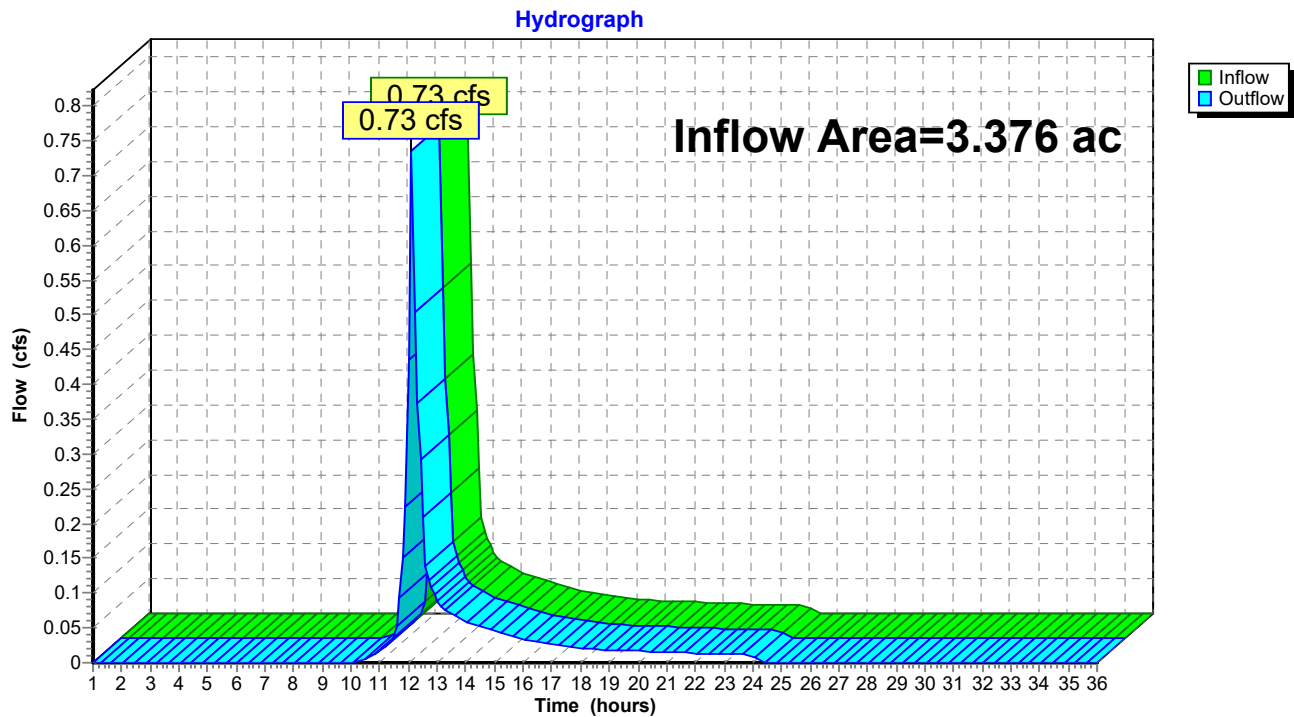
Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs

Reach POI-1: POI #1 - Douglass Street MS4

Summary for Reach POI-3: POI #3 - Baseball Field

Inflow Area = 3.376 ac, 11.65% Impervious, Inflow Depth = 0.20" for 2-year event
Inflow = 0.73 cfs @ 12.11 hrs, Volume= 0.057 af
Outflow = 0.73 cfs @ 12.11 hrs, Volume= 0.057 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs

Reach POI-3: POI #3 - Baseball Field

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

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Summary for Pond POI-2: POI #2 / 295 Basin

Inflow Area = 2.809 ac, 14.00% Impervious, Inflow Depth = 0.31" for 2-year event
 Inflow = 0.38 cfs @ 12.44 hrs, Volume= 0.072 af
 Outflow = 0.05 cfs @ 17.91 hrs, Volume= 0.061 af, Atten= 88%, Lag= 328.3 min
 Discarded = 0.05 cfs @ 17.91 hrs, Volume= 0.061 af
 Primary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs
 Peak Elev= 27.00' @ 17.91 hrs Surf.Area= 4,488 sf Storage= 1,609 cf

Plug-Flow detention time= 445.4 min calculated for 0.061 af (85% of inflow)
 Center-of-Mass det. time= 381.4 min (1,328.8 - 947.4)

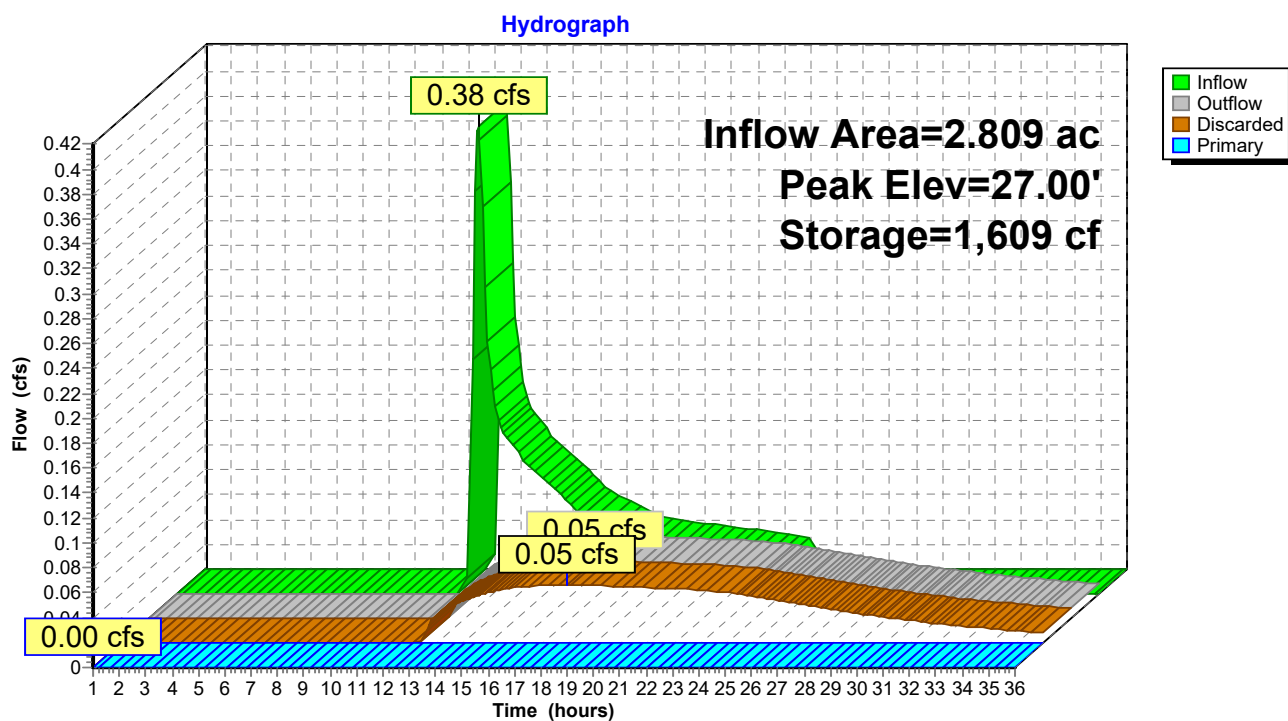
Volume	Invert	Avail.Storage	Storage Description
#1	26.30'	274,731 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.30	100	0	0
27.00	4,475	1,601	1,601
28.00	12,191	8,333	9,934
29.00	18,000	15,096	25,030
30.00	32,600	25,300	50,330
33.00	41,943	111,815	162,144
35.00	70,644	112,587	274,731

Device	Routing	Invert	Outlet Devices
#1	Primary	32.40'	20.0' long x 15.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	26.60'	0.800 in/hr Exfiltration over Surface area above 26.60' Excluded Surface area = 1,975 sf

Discarded OutFlow Max=0.05 cfs @ 17.91 hrs HW=27.00' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=0.00 cfs @ 1.00 hrs HW=26.30' TW=0.00' (Dynamic Tailwater)
 ↑**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond POI-2: POI #2 / 295 Basin



Pre Development 1.11*Type III 24-hr 10-year Rainfall=4.60"*

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Time span=1.00-36.00 hrs, dt=0.10 hrs, 351 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: 1S

Runoff Area=68,602 sf 39.93% Impervious Runoff Depth=3.19"
Tc=6.0 min CN=87 Runoff=5.43 cfs 0.419 af

Subcatchment3S: 3S

Runoff Area=24,703 sf 0.00% Impervious Runoff Depth=2.38"
Tc=6.0 min CN=78 Runoff=1.48 cfs 0.112 af

SubcatchmentS2: S2

Runoff Area=122,360 sf 14.00% Impervious Runoff Depth=0.96"
Flow Length=233' Tc=16.0 min CN=58 Runoff=1.84 cfs 0.224 af

Reach POI-1: POI #1 - Douglass Street MS4

Inflow=5.43 cfs 0.419 af
Outflow=5.43 cfs 0.419 af

Reach POI-3: POI #3 - Baseball Field

Inflow=1.48 cfs 0.112 af
Outflow=1.48 cfs 0.112 af

Pond POI-2: POI #2 / 295 Basin

Peak Elev=27.59' Storage=5,560 cf Inflow=1.84 cfs 0.224 af
Discarded=0.13 cfs 0.192 af Primary=0.00 cfs 0.000 af Outflow=0.13 cfs 0.192 af

Total Runoff Area = 4.951 ac Runoff Volume = 0.755 af Average Runoff Depth = 1.83"
79.36% Pervious = 3.929 ac 20.64% Impervious = 1.022 ac

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

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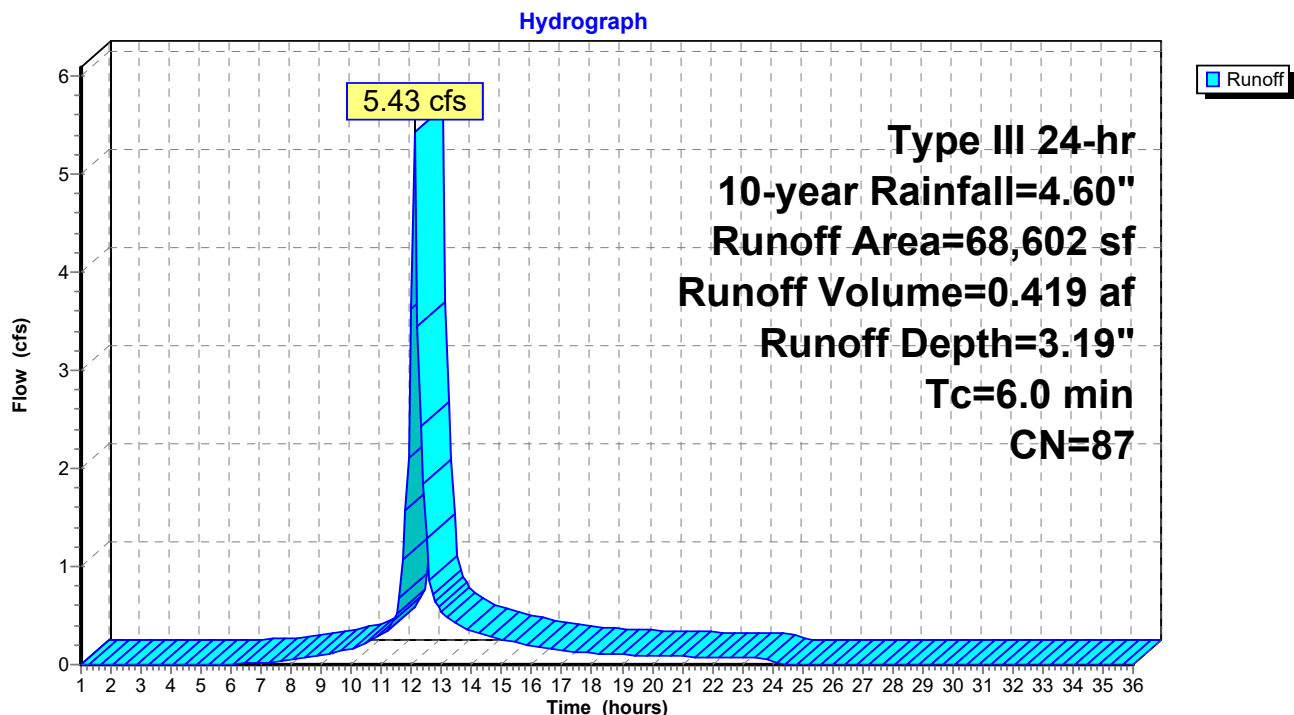
Summary for Subcatchment 1S: 1S

Runoff = 5.43 cfs @ 12.10 hrs, Volume= 0.419 af, Depth= 3.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs
Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
*	21,601	98	Pavement / Roof
*	27,720	96	Gravel surface
	10,373	49	50-75% Grass cover, Fair, HSG A
	8,908	77	1/8 acre lots, 65% imp, HSG A
	68,602	87	Weighted Average
	41,211		60.07% Pervious Area
	27,391		39.93% Impervious Area

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

Subcatchment 1S: 1S

Pre Development 1.11

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

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Summary for Subcatchment 3S: 3S

Runoff = 1.48 cfs @ 12.10 hrs, Volume= 0.112 af, Depth= 2.38"

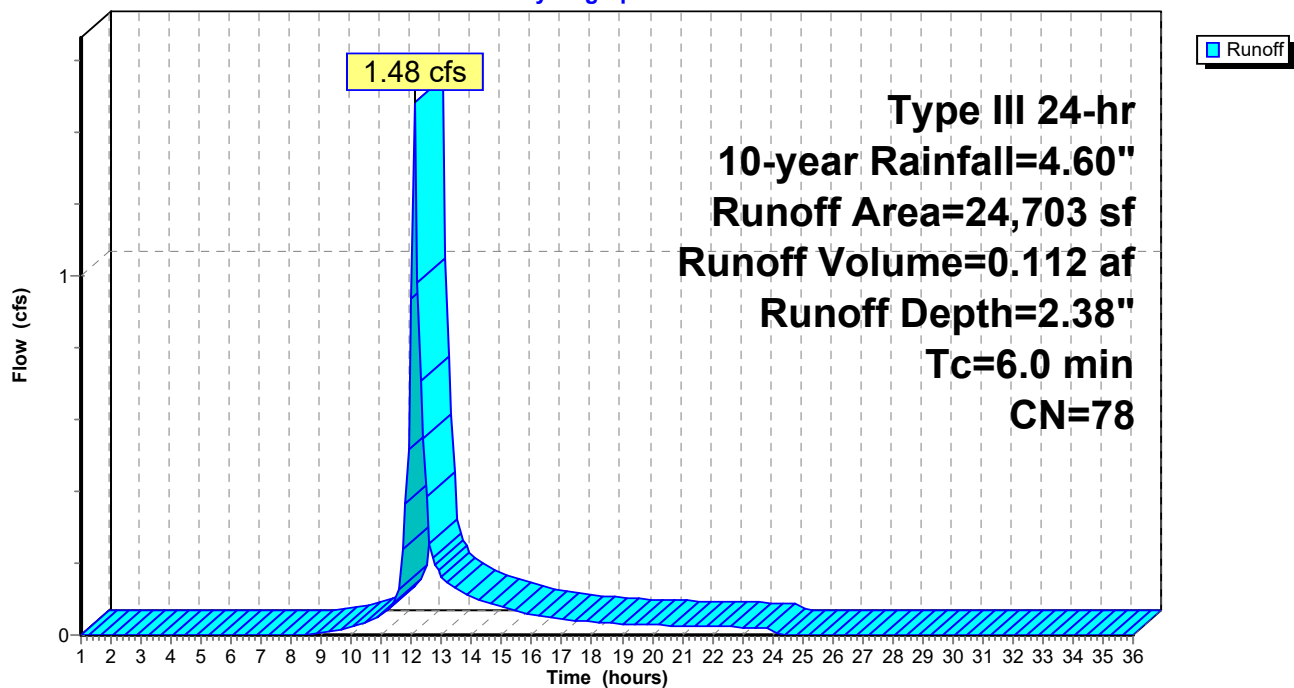
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
15,393	96	Gravel surface, HSG A
9,310	49	50-75% Grass cover, Fair, HSG A
24,703	78	Weighted Average
24,703		100.00% Pervious Area

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

Subcatchment 3S: 3S

Hydrograph



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

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Summary for Subcatchment S2: S2

Runoff = 1.84 cfs @ 12.29 hrs, Volume= 0.224 af, Depth= 0.96"

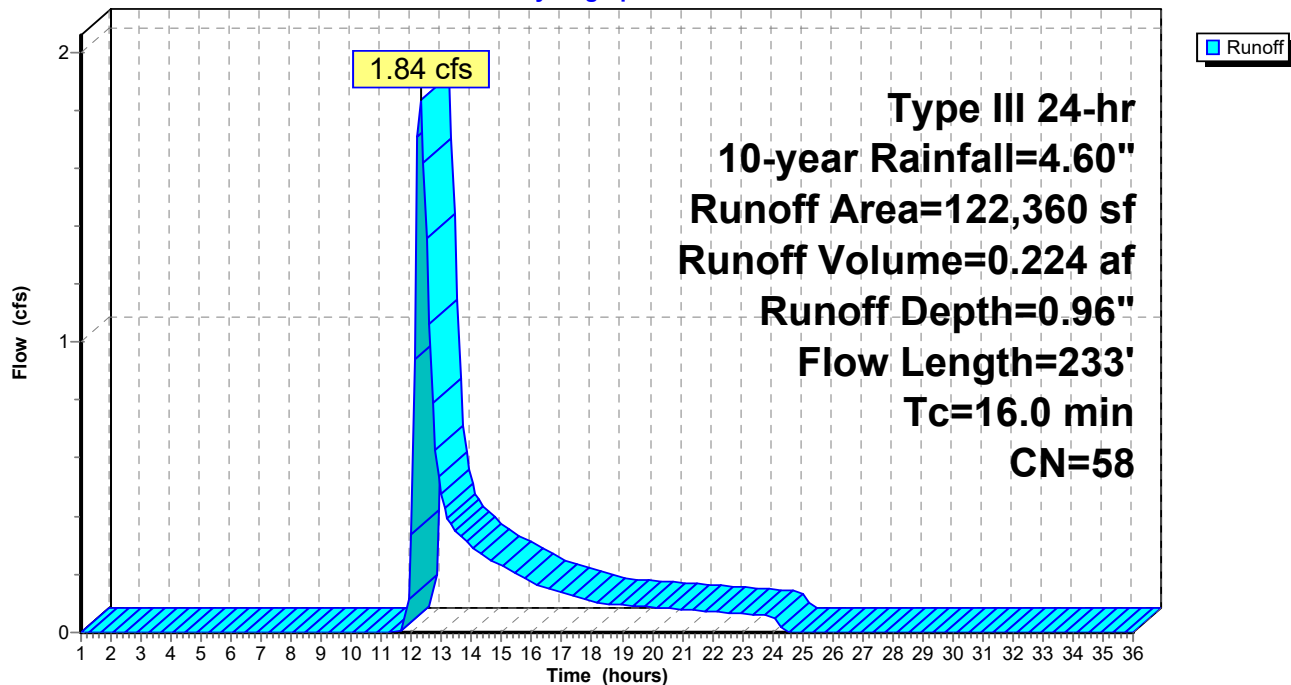
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs
Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
*	13,972	98	Single family roofs and driveways
*	3,155	98	Paved walking path
	52,792	32	Woods/grass comb., Good, HSG A
*	24,853	96	Gravel
	27,588	49	50-75% Grass cover, Fair, HSG A
	122,360	58	Weighted Average
	105,233		86.00% Pervious Area
	17,127		14.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	100	0.0500	0.11		Sheet Flow, A to B Woods: Light underbrush n= 0.400 P2= 3.27"
1.3	133	0.0600	1.71		Shallow Concentrated Flow, B to C (capped 100' sheet flow) Short Grass Pasture Kv= 7.0 fps
16.0	233	Total			

Subcatchment S2: S2

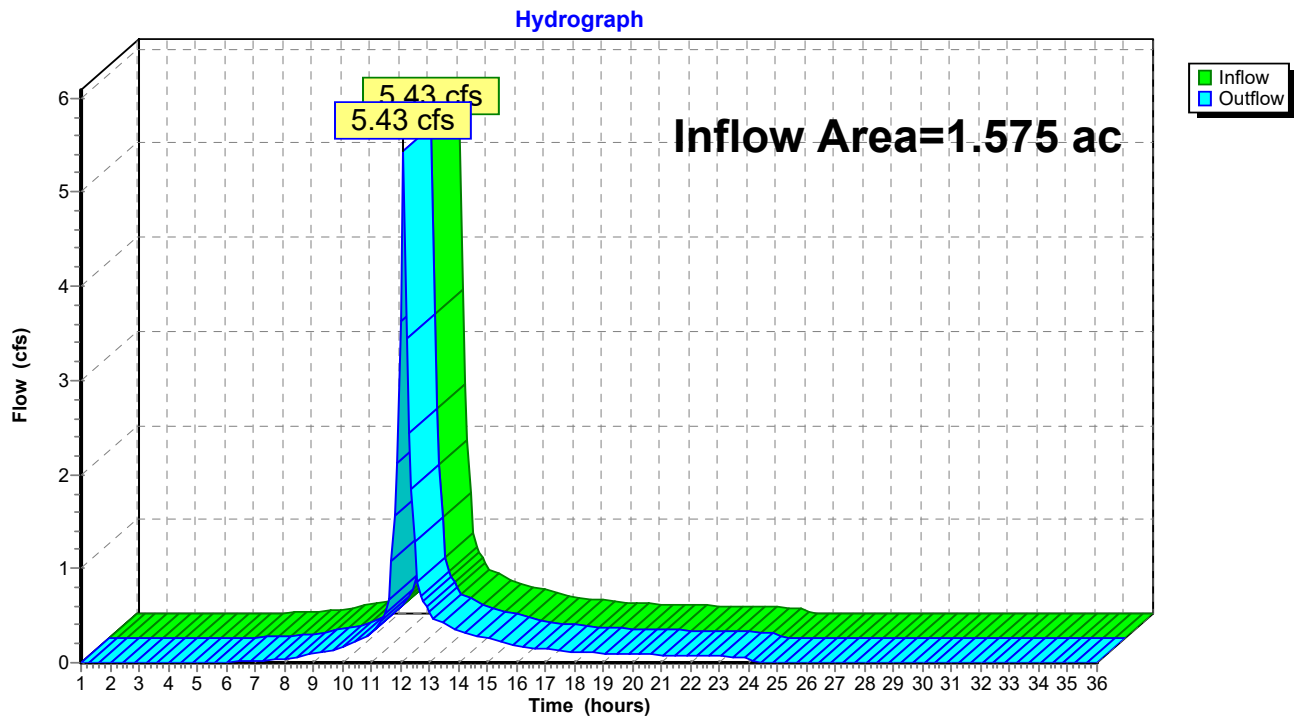
Hydrograph



Summary for Reach POI-1: POI #1 - Douglass Street MS4

Inflow Area = 1.575 ac, 39.93% Impervious, Inflow Depth = 3.19" for 10-year event
Inflow = 5.43 cfs @ 12.10 hrs, Volume= 0.419 af
Outflow = 5.43 cfs @ 12.10 hrs, Volume= 0.419 af, Atten= 0%, Lag= 0.0 min

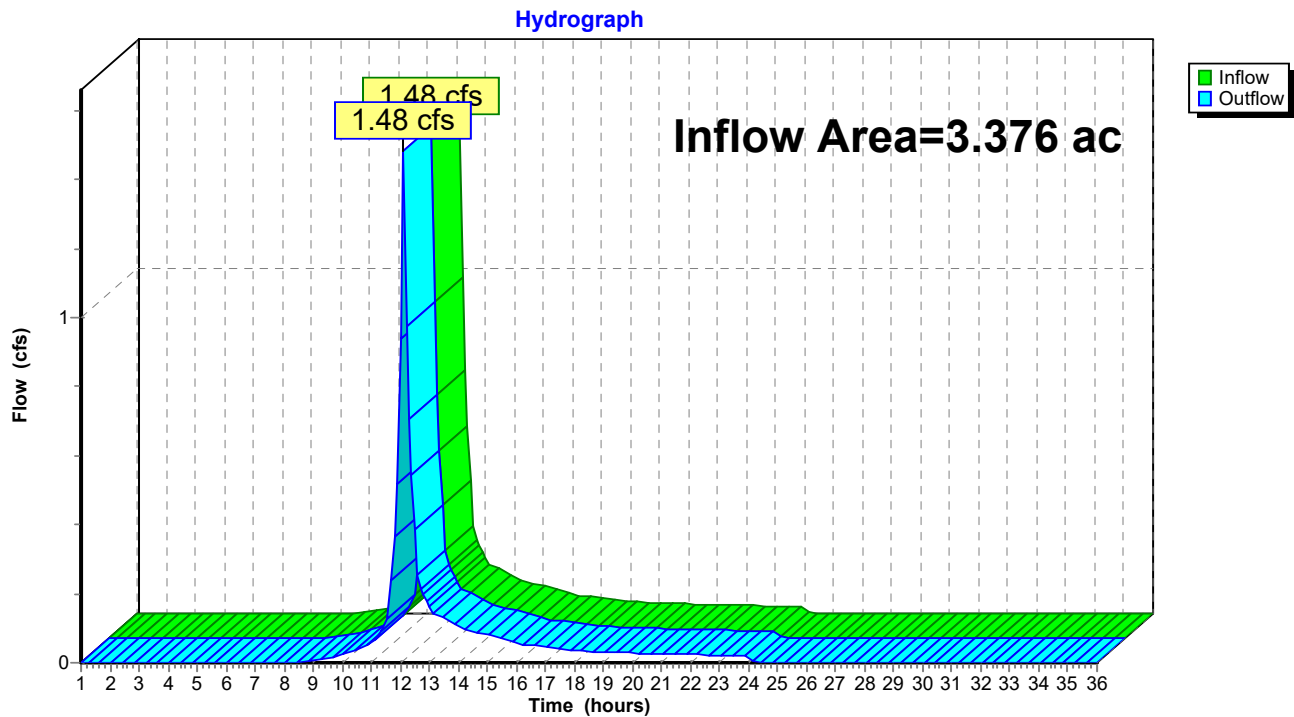
Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs

Reach POI-1: POI #1 - Douglass Street MS4

Summary for Reach POI-3: POI #3 - Baseball Field

Inflow Area = 3.376 ac, 11.65% Impervious, Inflow Depth = 0.40" for 10-year event
Inflow = 1.48 cfs @ 12.10 hrs, Volume= 0.112 af
Outflow = 1.48 cfs @ 12.10 hrs, Volume= 0.112 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs

Reach POI-3: POI #3 - Baseball Field

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

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Summary for Pond POI-2: POI #2 / 295 Basin

Inflow Area = 2.809 ac, 14.00% Impervious, Inflow Depth = 0.96" for 10-year event
 Inflow = 1.84 cfs @ 12.29 hrs, Volume= 0.224 af
 Outflow = 0.13 cfs @ 17.22 hrs, Volume= 0.192 af, Atten= 93%, Lag= 296.0 min
 Discarded = 0.13 cfs @ 17.22 hrs, Volume= 0.192 af
 Primary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs

Peak Elev= 27.59' @ 17.22 hrs Surf.Area= 9,006 sf Storage= 5,560 cf

Plug-Flow detention time= 513.4 min calculated for 0.192 af (86% of inflow)

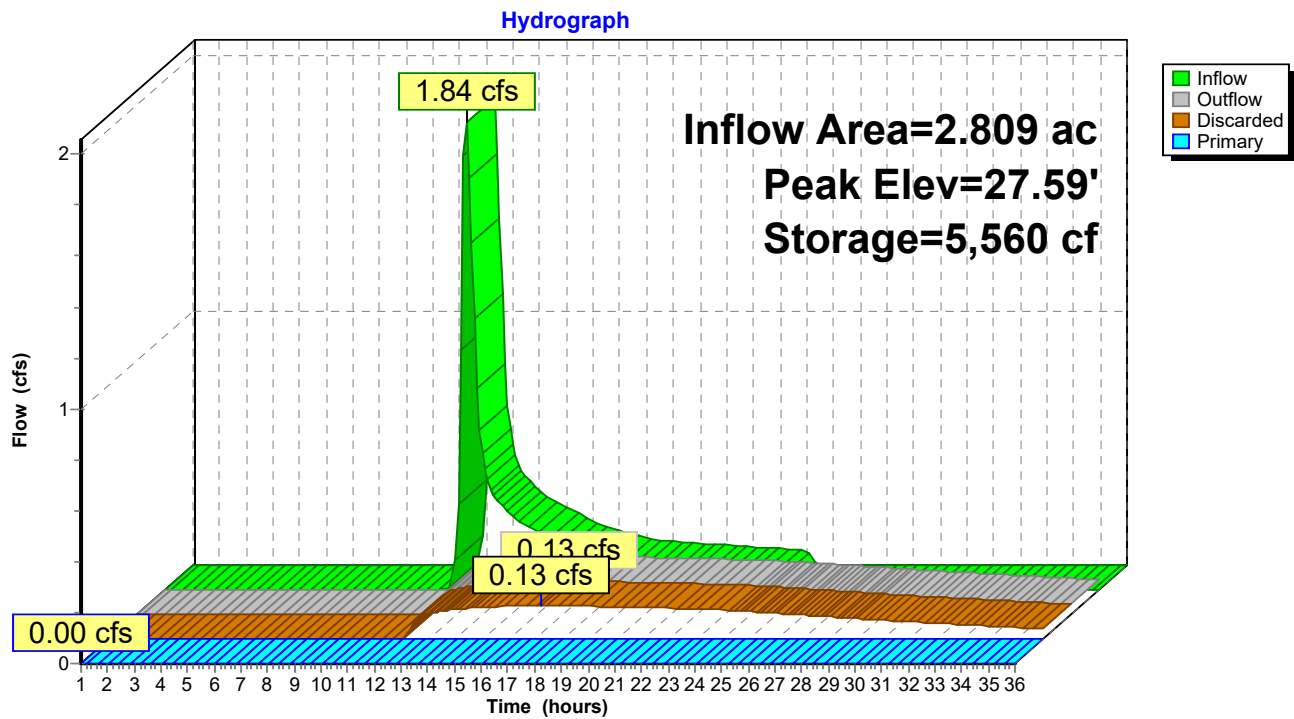
Center-of-Mass det. time= 448.5 min (1,346.9 - 898.3)

Volume	Invert	Avail.Storage	Storage Description
#1	26.30'	274,731 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.30	100	0	0
27.00	4,475	1,601	1,601
28.00	12,191	8,333	9,934
29.00	18,000	15,096	25,030
30.00	32,600	25,300	50,330
33.00	41,943	111,815	162,144
35.00	70,644	112,587	274,731

Device	Routing	Invert	Outlet Devices
#1	Primary	32.40'	20.0' long x 15.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	26.60'	0.800 in/hr Exfiltration over Surface area above 26.60' Excluded Surface area = 1,975 sf

Discarded OutFlow Max=0.13 cfs @ 17.22 hrs HW=27.59' (Free Discharge)↑**2=Exfiltration** (Exfiltration Controls 0.13 cfs)**Primary OutFlow** Max=0.00 cfs @ 1.00 hrs HW=26.30' TW=0.00' (Dynamic Tailwater)↑**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond POI-2: POI #2 / 295 Basin



Pre Development 1.11*Type III 24-hr 25-year Rainfall=5.80"*

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Time span=1.00-36.00 hrs, dt=0.10 hrs, 351 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: 1S

Runoff Area=68,602 sf 39.93% Impervious Runoff Depth=4.33"
Tc=6.0 min CN=87 Runoff=7.26 cfs 0.568 af

Subcatchment3S: 3S

Runoff Area=24,703 sf 0.00% Impervious Runoff Depth=3.40"
Tc=6.0 min CN=78 Runoff=2.12 cfs 0.161 af

SubcatchmentS2: S2

Runoff Area=122,360 sf 14.00% Impervious Runoff Depth=1.63"
Flow Length=233' Tc=16.0 min CN=58 Runoff=3.47 cfs 0.382 af

Reach POI-1: POI #1 - Douglass Street MS4

Inflow=7.26 cfs 0.568 af
Outflow=7.26 cfs 0.568 af

Reach POI-3: POI #3 - Baseball Field

Inflow=2.12 cfs 0.161 af
Outflow=2.12 cfs 0.161 af

Pond POI-2: POI #2 / 295 Basin

Peak Elev=28.03' Storage=10,289 cf Inflow=3.47 cfs 0.382 af
Discarded=0.19 cfs 0.308 af Primary=0.00 cfs 0.000 af Outflow=0.19 cfs 0.308 af

Total Runoff Area = 4.951 ac Runoff Volume = 1.111 af Average Runoff Depth = 2.69"
79.36% Pervious = 3.929 ac 20.64% Impervious = 1.022 ac

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

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Summary for Subcatchment 1S: 1S

Runoff = 7.26 cfs @ 12.10 hrs, Volume= 0.568 af, Depth= 4.33"

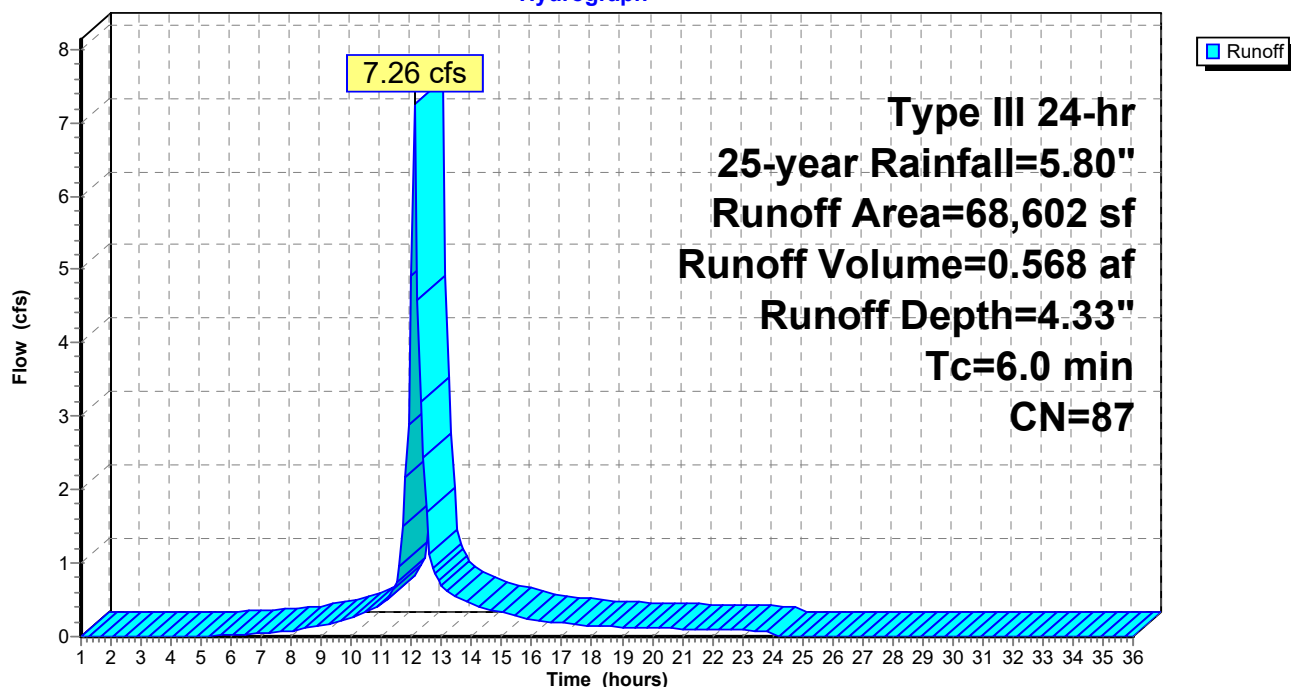
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs
Type III 24-hr 25-year Rainfall=5.80"

	Area (sf)	CN	Description
*	21,601	98	Pavement / Roof
*	27,720	96	Gravel surface
	10,373	49	50-75% Grass cover, Fair, HSG A
	8,908	77	1/8 acre lots, 65% imp, HSG A
	68,602	87	Weighted Average
	41,211		60.07% Pervious Area
	27,391		39.93% Impervious Area

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

Subcatchment 1S: 1S

Hydrograph



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

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Summary for Subcatchment 3S: 3S

Runoff = 2.12 cfs @ 12.10 hrs, Volume= 0.161 af, Depth= 3.40"

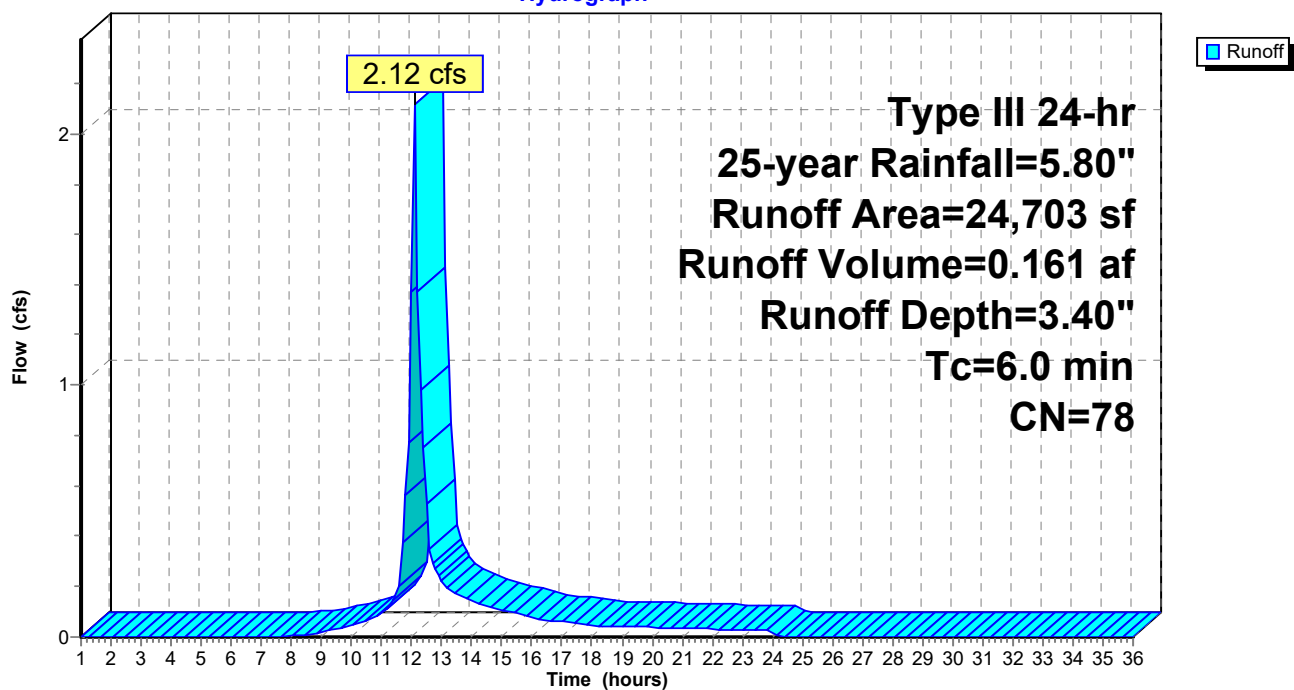
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs
Type III 24-hr 25-year Rainfall=5.80"

Area (sf)	CN	Description
15,393	96	Gravel surface, HSG A
9,310	49	50-75% Grass cover, Fair, HSG A
24,703	78	Weighted Average
24,703		100.00% Pervious Area

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

Subcatchment 3S: 3S

Hydrograph



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

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Summary for Subcatchment S2: S2

Runoff = 3.47 cfs @ 12.25 hrs, Volume= 0.382 af, Depth= 1.63"

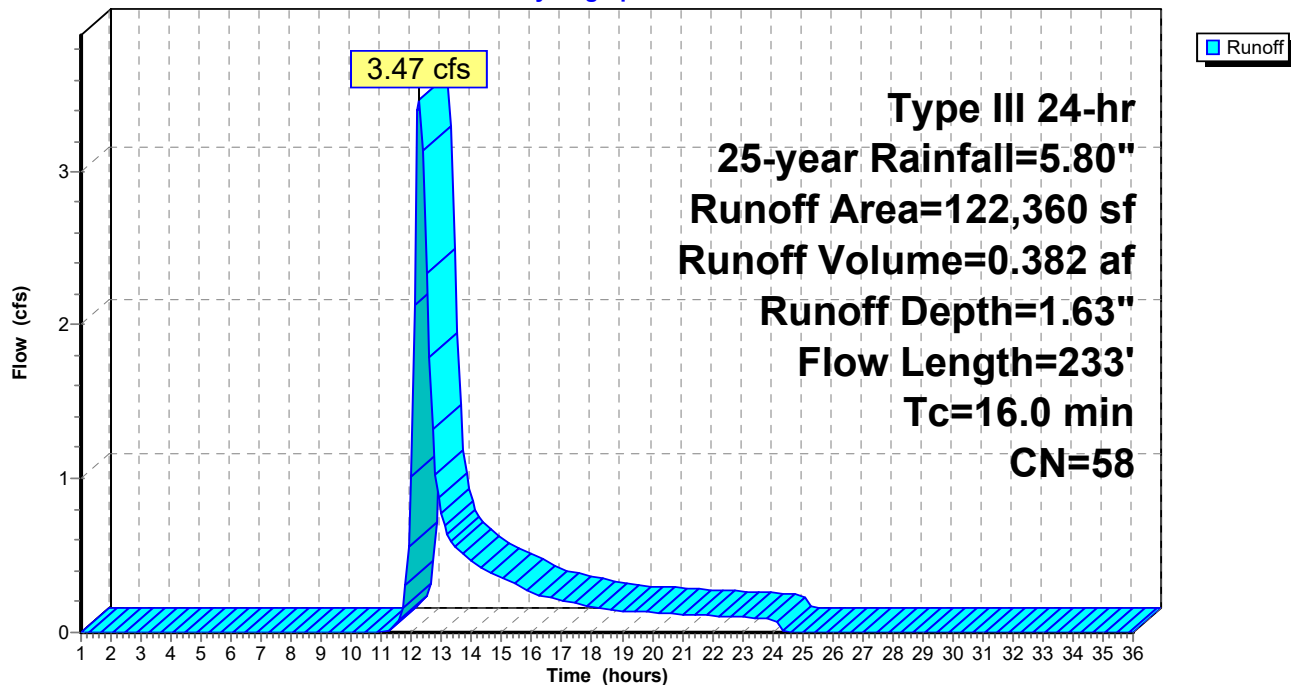
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs
Type III 24-hr 25-year Rainfall=5.80"

	Area (sf)	CN	Description
*	13,972	98	Single family roofs and driveways
*	3,155	98	Paved walking path
	52,792	32	Woods/grass comb., Good, HSG A
*	24,853	96	Gravel
	27,588	49	50-75% Grass cover, Fair, HSG A
	122,360	58	Weighted Average
	105,233		86.00% Pervious Area
	17,127		14.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	100	0.0500	0.11		Sheet Flow, A to B Woods: Light underbrush n= 0.400 P2= 3.27"
1.3	133	0.0600	1.71		Shallow Concentrated Flow, B to C (capped 100' sheet flow) Short Grass Pasture Kv= 7.0 fps
16.0	233	Total			

Subcatchment S2: S2

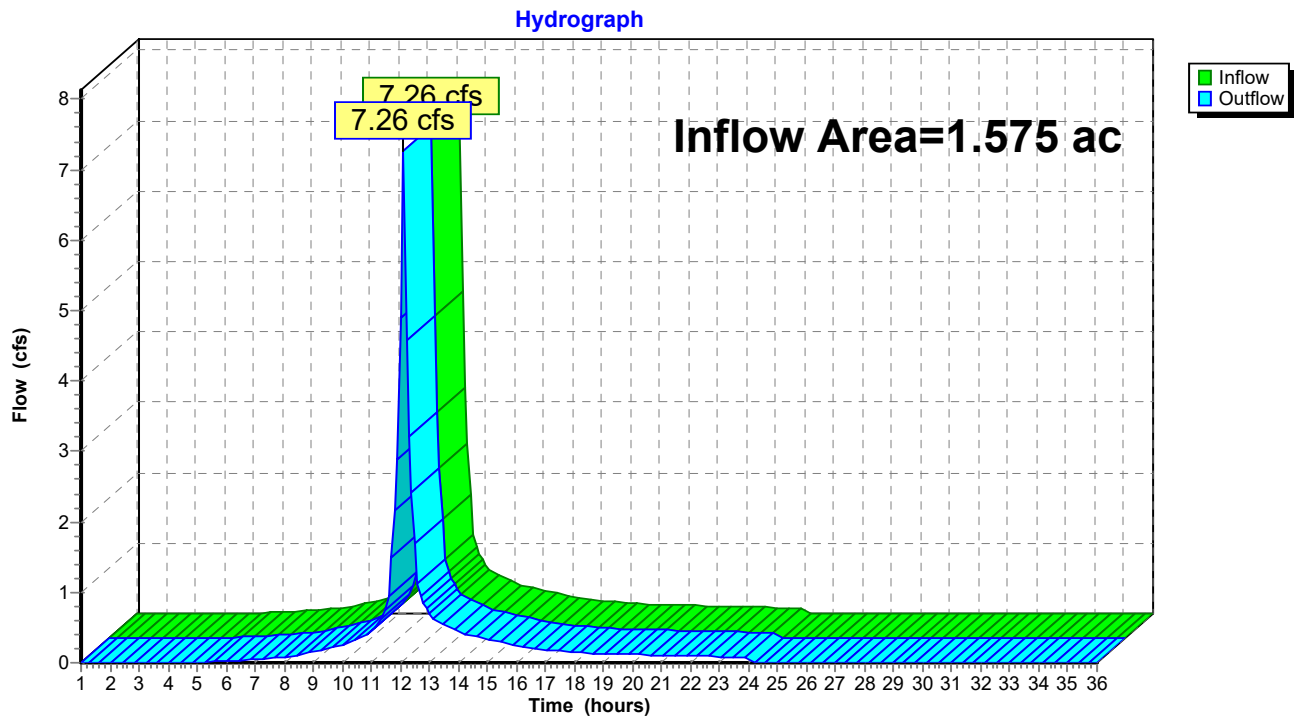
Hydrograph



Summary for Reach POI-1: POI #1 - Douglass Street MS4

Inflow Area = 1.575 ac, 39.93% Impervious, Inflow Depth = 4.33" for 25-year event
Inflow = 7.26 cfs @ 12.10 hrs, Volume= 0.568 af
Outflow = 7.26 cfs @ 12.10 hrs, Volume= 0.568 af, Atten= 0%, Lag= 0.0 min

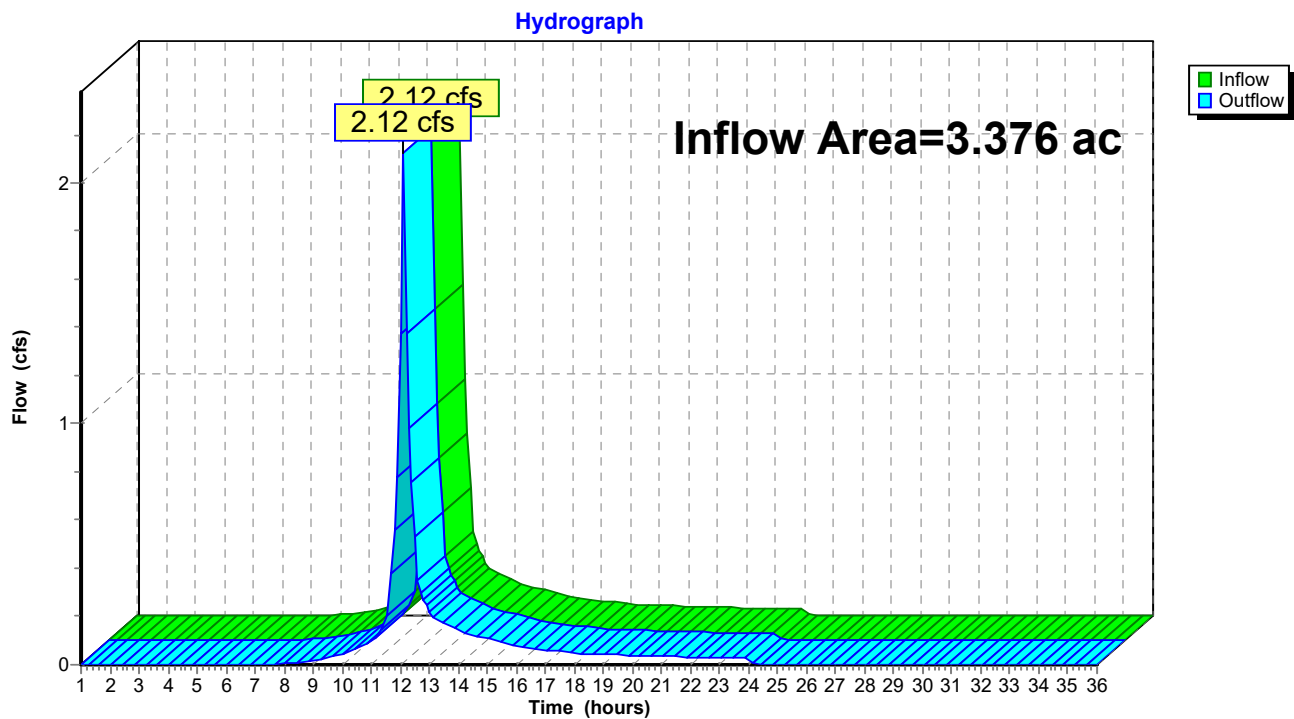
Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs

Reach POI-1: POI #1 - Douglass Street MS4

Summary for Reach POI-3: POI #3 - Baseball Field

Inflow Area = 3.376 ac, 11.65% Impervious, Inflow Depth = 0.57" for 25-year event
Inflow = 2.12 cfs @ 12.10 hrs, Volume= 0.161 af
Outflow = 2.12 cfs @ 12.10 hrs, Volume= 0.161 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs

Reach POI-3: POI #3 - Baseball Field

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

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Summary for Pond POI-2: POI #2 / 295 Basin

Inflow Area = 2.809 ac, 14.00% Impervious, Inflow Depth = 1.63" for 25-year event
 Inflow = 3.47 cfs @ 12.25 hrs, Volume= 0.382 af
 Outflow = 0.19 cfs @ 17.36 hrs, Volume= 0.308 af, Atten= 94%, Lag= 306.6 min
 Discarded = 0.19 cfs @ 17.36 hrs, Volume= 0.308 af
 Primary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs
 Peak Elev= 28.03' @ 17.36 hrs Surf.Area= 12,359 sf Storage= 10,289 cf

Plug-Flow detention time= 575.0 min calculated for 0.307 af (80% of inflow)
 Center-of-Mass det. time= 495.9 min (1,375.8 - 879.9)

Volume	Invert	Avail.Storage	Storage Description
#1	26.30'	274,731 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

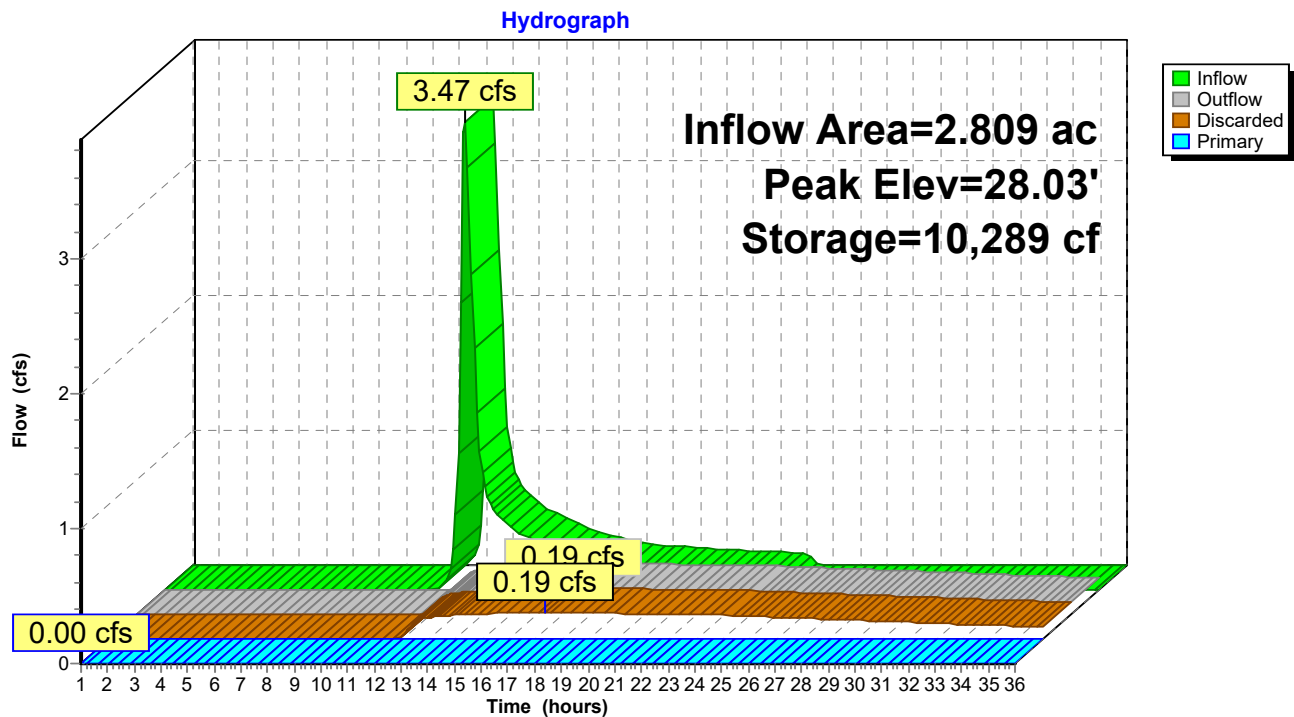
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.30	100	0	0
27.00	4,475	1,601	1,601
28.00	12,191	8,333	9,934
29.00	18,000	15,096	25,030
30.00	32,600	25,300	50,330
33.00	41,943	111,815	162,144
35.00	70,644	112,587	274,731

Device	Routing	Invert	Outlet Devices
#1	Primary	32.40'	20.0' long x 15.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	26.60'	0.800 in/hr Exfiltration over Surface area above 26.60' Excluded Surface area = 1,975 sf

Discarded OutFlow Max=0.19 cfs @ 17.36 hrs HW=28.03' (Free Discharge)
 ↑ **2=Exfiltration** (Exfiltration Controls 0.19 cfs)

Primary OutFlow Max=0.00 cfs @ 1.00 hrs HW=26.30' TW=0.00' (Dynamic Tailwater)
 ↑ **1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond POI-2: POI #2 / 295 Basin



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Type III 24-hr WQ Rainfall=1.00"

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Time span=1.00-36.00 hrs, dt=0.10 hrs, 351 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: 1S

Runoff Area=68,602 sf 39.93% Impervious Runoff Depth=0.22"
Tc=6.0 min CN=87 Runoff=0.33 cfs 0.029 af

Subcatchment3S: 3S

Runoff Area=24,703 sf 0.00% Impervious Runoff Depth=0.06"
Tc=6.0 min CN=78 Runoff=0.01 cfs 0.003 af

SubcatchmentS2: S2

Runoff Area=122,360 sf 14.00% Impervious Runoff Depth=0.00"
Flow Length=233' Tc=16.0 min CN=58 Runoff=0.00 cfs 0.000 af

Reach POI-1: POI #1 - Douglass Street MS4

Inflow=0.33 cfs 0.029 af
Outflow=0.33 cfs 0.029 af

Reach POI-3: POI #3 - Baseball Field

Inflow=0.01 cfs 0.003 af
Outflow=0.01 cfs 0.003 af

Pond POI-2: POI #2 / 295 Basin

Peak Elev=26.30' Storage=0 cf Inflow=0.00 cfs 0.000 af
Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Total Runoff Area = 4.951 ac Runoff Volume = 0.032 af Average Runoff Depth = 0.08"
79.36% Pervious = 3.929 ac 20.64% Impervious = 1.022 ac

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Type III 24-hr WQ Rainfall=1.00"

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Summary for Subcatchment 1S: 1S

Runoff = 0.33 cfs @ 12.12 hrs, Volume= 0.029 af, Depth= 0.22"

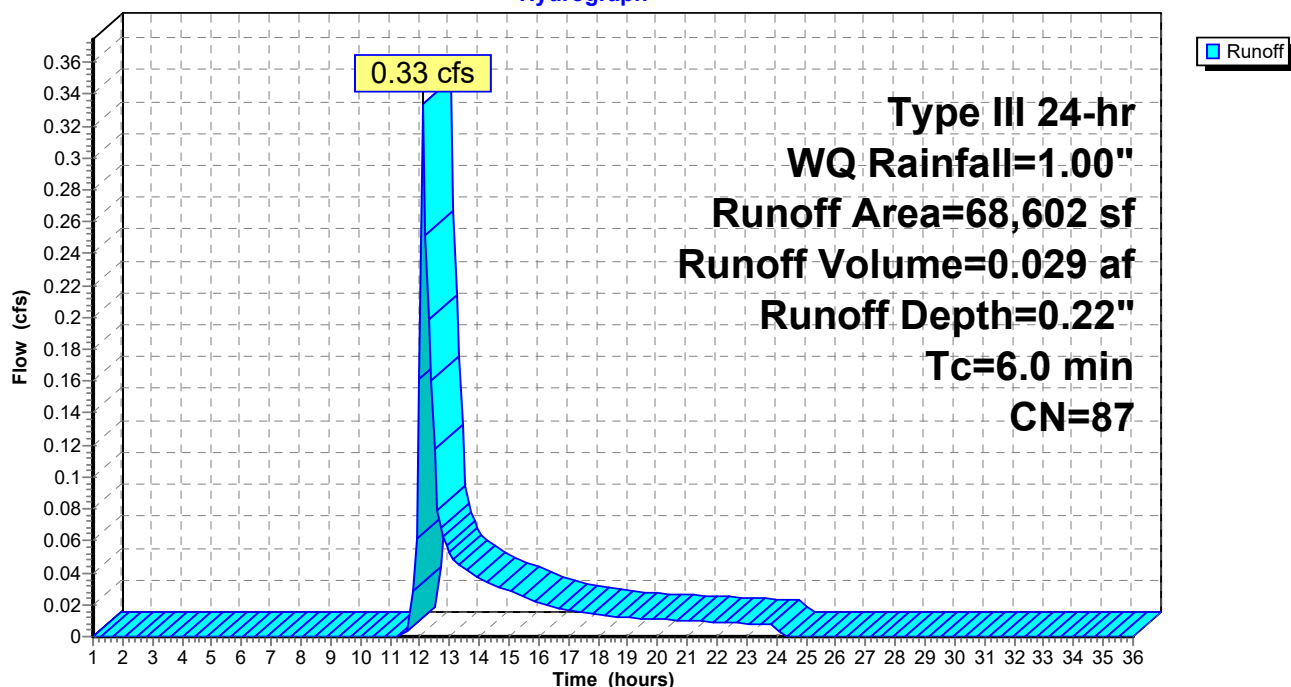
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs
Type III 24-hr WQ Rainfall=1.00"

	Area (sf)	CN	Description
*	21,601	98	Pavement / Roof
*	27,720	96	Gravel surface
	10,373	49	50-75% Grass cover, Fair, HSG A
	8,908	77	1/8 acre lots, 65% imp, HSG A
	68,602	87	Weighted Average
	41,211		60.07% Pervious Area
	27,391		39.93% Impervious Area

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

Subcatchment 1S: 1S

Hydrograph



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Type III 24-hr WQ Rainfall=1.00"

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Summary for Subcatchment 3S: 3S

Runoff = 0.01 cfs @ 12.40 hrs, Volume= 0.003 af, Depth= 0.06"

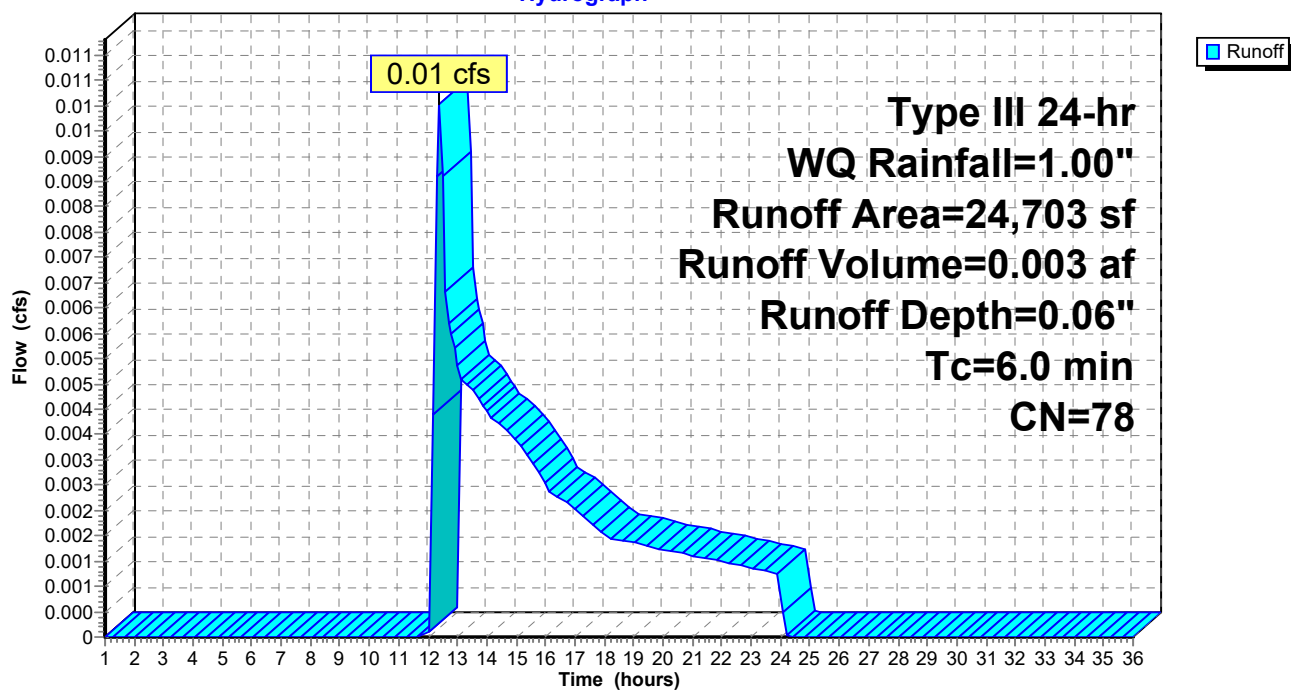
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs
Type III 24-hr WQ Rainfall=1.00"

Area (sf)	CN	Description
15,393	96	Gravel surface, HSG A
9,310	49	50-75% Grass cover, Fair, HSG A
24,703	78	Weighted Average
24,703		100.00% Pervious Area

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

Subcatchment 3S: 3S

Hydrograph



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Type III 24-hr WQ Rainfall=1.00"

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Summary for Subcatchment S2: S2

Runoff = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Depth= 0.00"

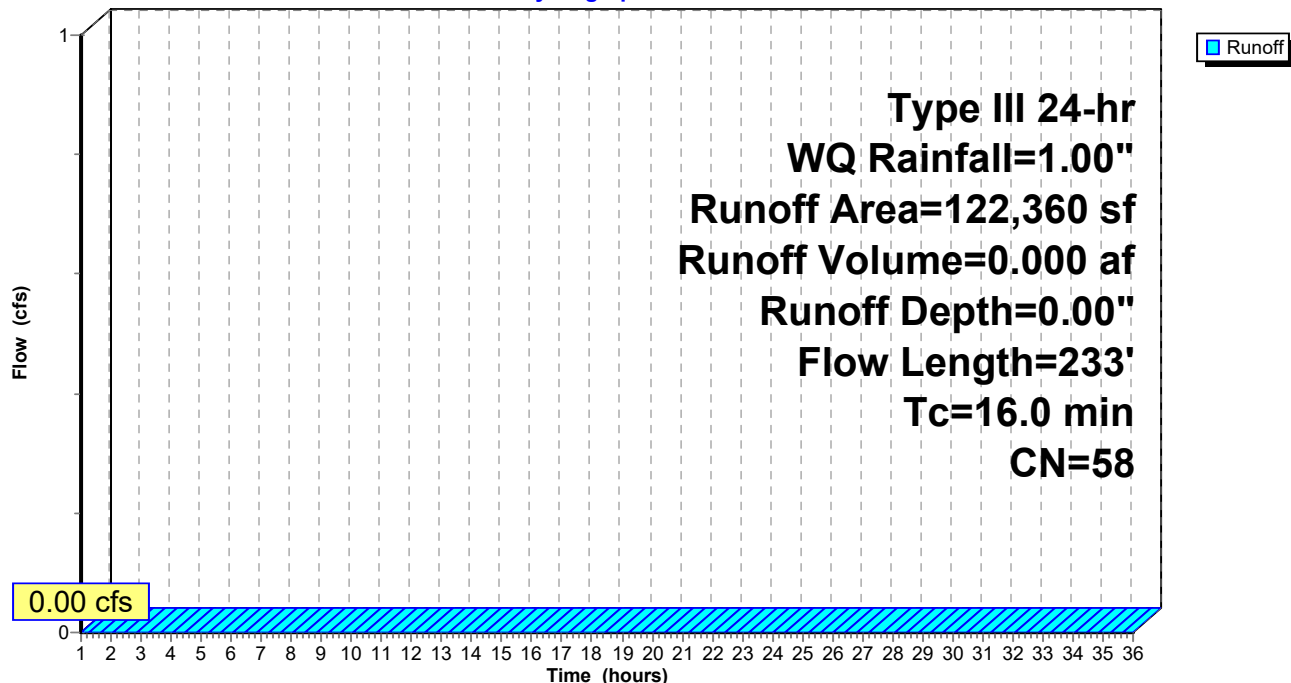
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs
Type III 24-hr WQ Rainfall=1.00"

	Area (sf)	CN	Description
*	13,972	98	Single family roofs and driveways
*	3,155	98	Paved walking path
	52,792	32	Woods/grass comb., Good, HSG A
*	24,853	96	Gravel
	27,588	49	50-75% Grass cover, Fair, HSG A
	122,360	58	Weighted Average
	105,233		86.00% Pervious Area
	17,127		14.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	100	0.0500	0.11		Sheet Flow, A to B Woods: Light underbrush n= 0.400 P2= 3.27"
1.3	133	0.0600	1.71		Shallow Concentrated Flow, B to C (capped 100' sheet flow) Short Grass Pasture Kv= 7.0 fps
16.0	233	Total			

Subcatchment S2: S2

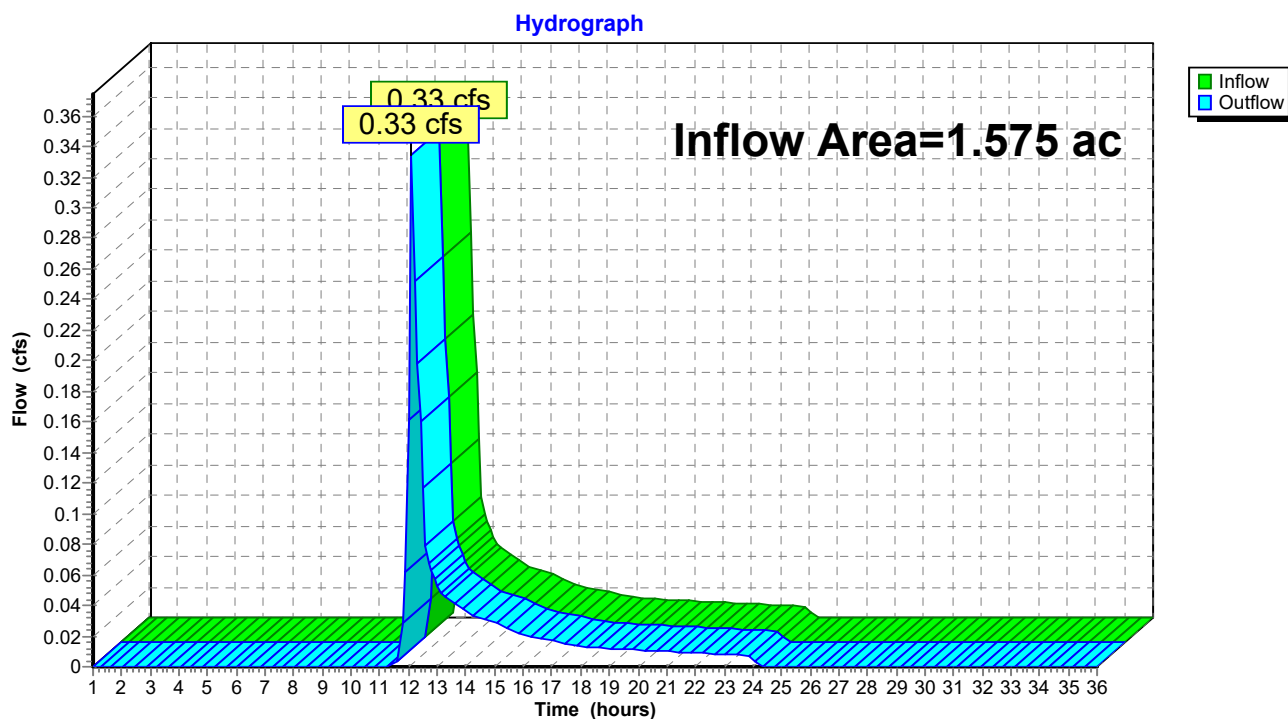
Hydrograph



Summary for Reach POI-1: POI #1 - Douglass Street MS4

Inflow Area = 1.575 ac, 39.93% Impervious, Inflow Depth = 0.22" for WQ event
Inflow = 0.33 cfs @ 12.12 hrs, Volume= 0.029 af
Outflow = 0.33 cfs @ 12.12 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.0 min

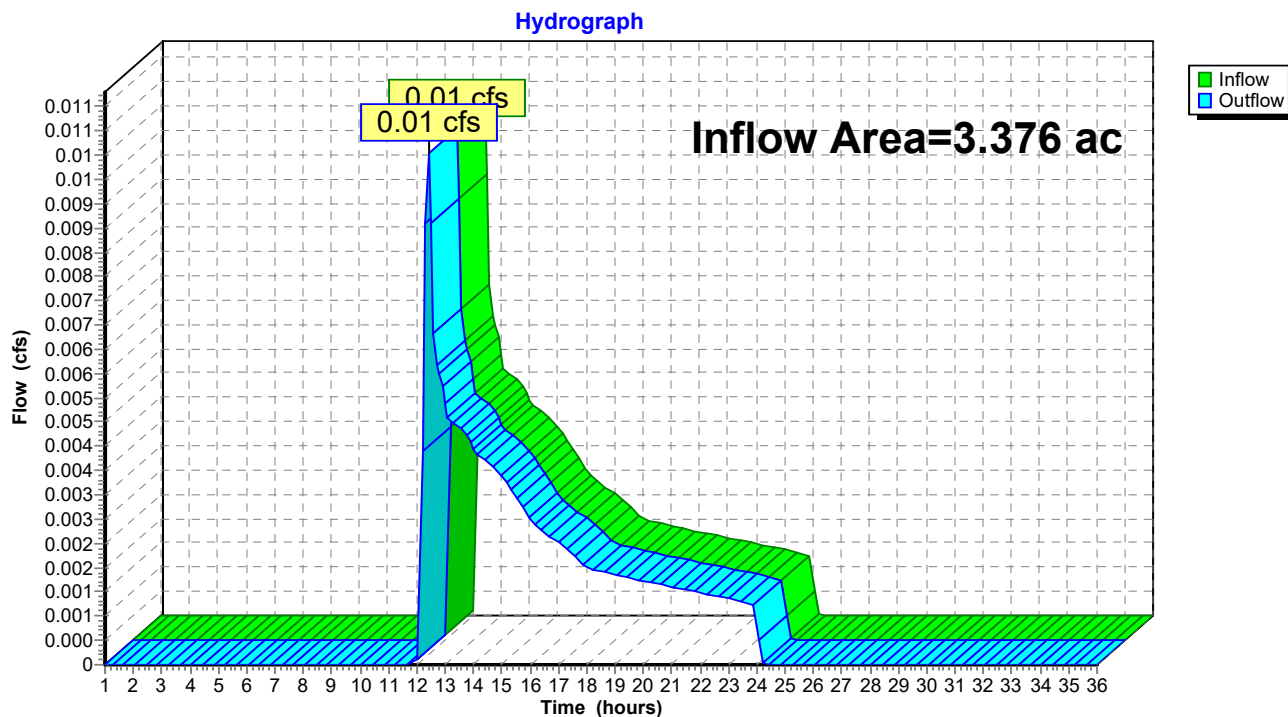
Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs

Reach POI-1: POI #1 - Douglass Street MS4

Summary for Reach POI-3: POI #3 - Baseball Field

Inflow Area = 3.376 ac, 11.65% Impervious, Inflow Depth = 0.01" for WQ event
Inflow = 0.01 cfs @ 12.40 hrs, Volume= 0.003 af
Outflow = 0.01 cfs @ 12.40 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs

Reach POI-3: POI #3 - Baseball Field

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Type III 24-hr WQ Rainfall=1.00"

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Summary for Pond POI-2: POI #2 / 295 Basin

Inflow Area = 2.809 ac, 14.00% 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
 Discarded = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af
 Primary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs

Peak Elev= 26.30' @ 1.00 hrs Surf.Area= 100 sf Storage= 0 cf

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

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

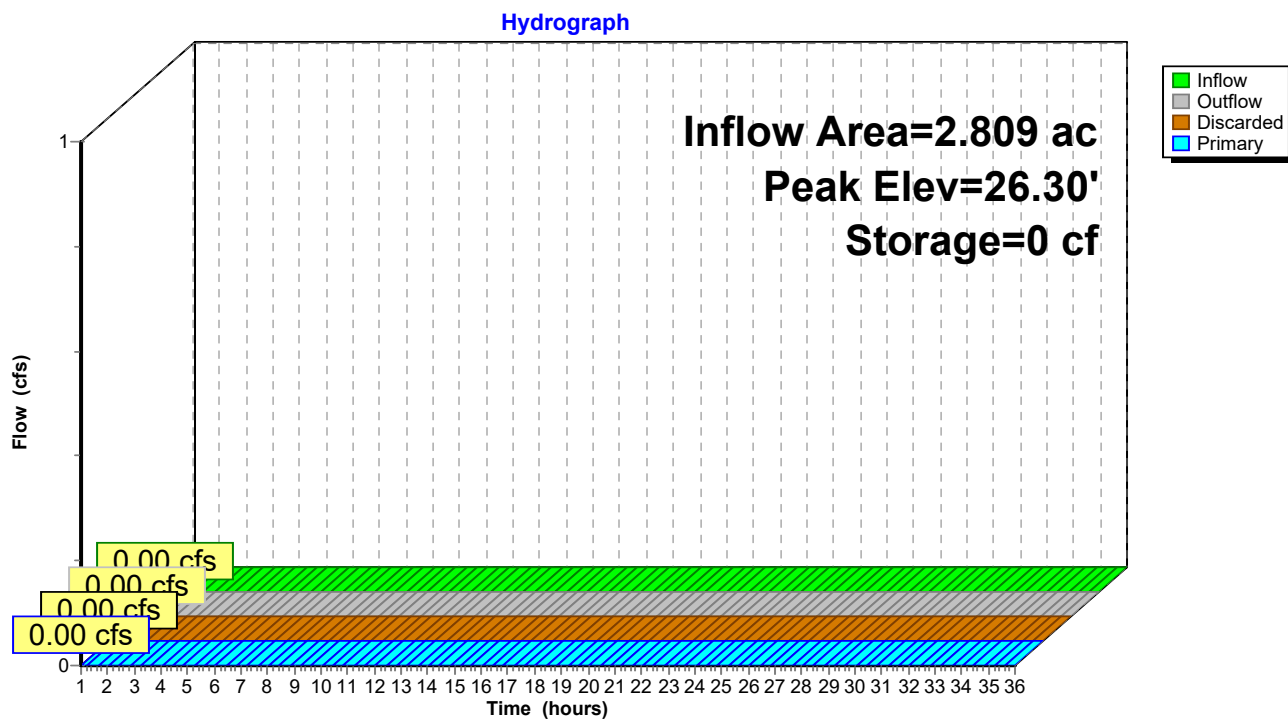
Volume	Invert	Avail.Storage	Storage Description
#1	26.30'	274,731 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

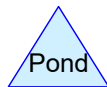
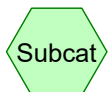
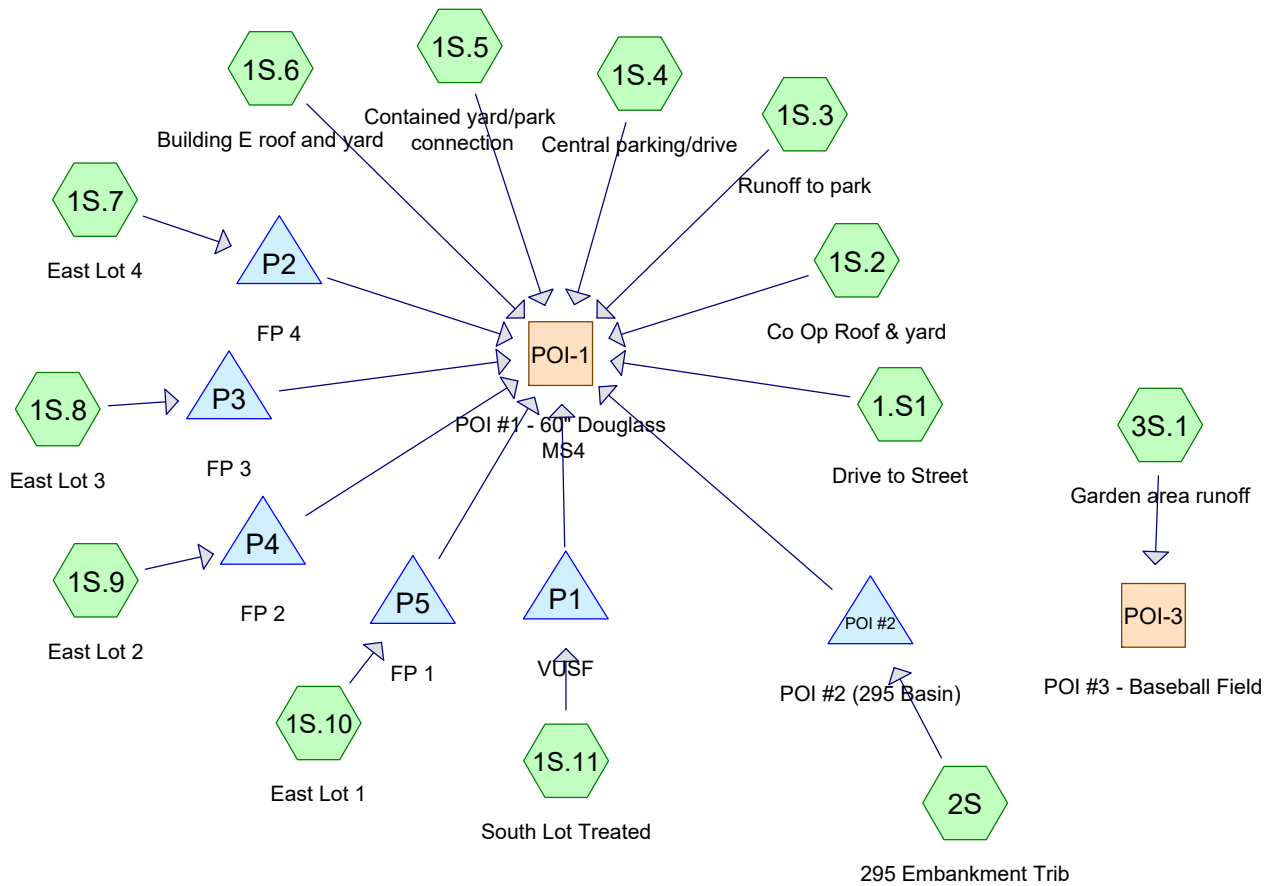
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.30	100	0	0
27.00	4,475	1,601	1,601
28.00	12,191	8,333	9,934
29.00	18,000	15,096	25,030
30.00	32,600	25,300	50,330
33.00	41,943	111,815	162,144
35.00	70,644	112,587	274,731

Device	Routing	Invert	Outlet Devices
#1	Primary	32.40'	20.0' long x 15.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	26.60'	0.800 in/hr Exfiltration over Surface area above 26.60' Excluded Surface area = 1,975 sf

Discarded OutFlow Max=0.00 cfs @ 1.00 hrs HW=26.30' (Free Discharge)↑**2=Exfiltration** (Controls 0.00 cfs)**Primary OutFlow** Max=0.00 cfs @ 1.00 hrs HW=26.30' TW=0.00' (Dynamic Tailwater)↑**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond POI-2: POI #2 / 295 Basin





Routing Diagram for Post Development 1.13 FINAL
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.210	77	1/8 acre lots, 65% imp, HSG A (1S.2)
1.112	39	>75% Grass cover, Good, HSG A (1.S1, 1S.10, 1S.2, 1S.3, 1S.5, 1S.6, 1S.7, 1S.8, 1S.9, 2S)
0.309	30	Brush, Good, HSG A (1S.11, 1S.4, 3S.1)
0.126	98	Homes/driveways (2S)
0.072	98	Path (2S)
0.364	98	Paved parking (1S.11, 1S.7, 1S.8)
0.110	98	Paved parking, patio, sidewalk (1S.9)
0.428	98	Pavement (1.S1, 1S.10, 1S.4)
0.485	98	Roofs (1S.2)
0.005	98	Stairs (2S)
1.212	32	Woods/grass comb., Good, HSG A (2S)
0.014	98	patios (1S.2)
0.120	98	pavers (1S.2)
0.275	98	roof (1S.6)
0.108	98	sidewalks (1S.2, 1S.5)
4.952	63	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
2.842	HSG A	1.S1, 1S.10, 1S.11, 1S.2, 1S.3, 1S.4, 1S.5, 1S.6, 1S.7, 1S.8, 1S.9, 2S, 3S.1
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
2.110	Other	1.S1, 1S.10, 1S.11, 1S.2, 1S.4, 1S.5, 1S.6, 1S.7, 1S.8, 1S.9, 2S
4.952		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
0.210	0.000	0.000	0.000	0.000	0.210	1/8 acre lots, 65% imp	1S.2
1.112	0.000	0.000	0.000	0.000	1.112	>75% Grass cover, Good	1S.1, 1S.1 0, 1S.2, 1S.3, 1S.5, 1S.6, 1S.7, 1S.8, 1S.9, 2S
0.309	0.000	0.000	0.000	0.000	0.309	Brush, Good	1S.1 1, 1S.4, 3S.1
0.000	0.000	0.000	0.000	0.126	0.126	Homes/driveways	2S
0.000	0.000	0.000	0.000	0.072	0.072	Path	2S
0.000	0.000	0.000	0.000	0.364	0.364	Paved parking	1S.1 1, 1S.7, 1S.8
0.000	0.000	0.000	0.000	0.110	0.110	Paved parking, patio, sidewalk	1S.9
0.000	0.000	0.000	0.000	0.428	0.428	Pavement	1S.1, 1S.1 0, 1S.4
0.000	0.000	0.000	0.000	0.485	0.485	Roofs	1S.2
0.000	0.000	0.000	0.000	0.005	0.005	Stairs	2S
1.212	0.000	0.000	0.000	0.000	1.212	Woods/grass comb., Good	2S
0.000	0.000	0.000	0.000	0.014	0.014	patios	1S.2
0.000	0.000	0.000	0.000	0.120	0.120	pavers	1S.2
0.000	0.000	0.000	0.000	0.275	0.275	roof	1S.6
0.000	0.000	0.000	0.000	0.108	0.108	sidewalks	1S.2, 1S.5

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Ground Covers (all nodes) (continued)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
2.842	0.000	0.000	0.000	2.110	4.952	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	P1	27.00	26.75	60.0	0.0042	0.010	12.0	0.0	0.0
2	P2	32.35	32.00	70.0	0.0050	0.010	10.0	0.0	0.0
3	P3	31.90	31.50	70.0	0.0057	0.010	10.0	0.0	0.0
4	P4	31.40	31.00	70.0	0.0057	0.010	10.0	0.0	0.0
5	P5	30.90	30.53	75.0	0.0049	0.010	10.0	0.0	0.0
6	POI #2	26.60	26.51	16.0	0.0056	0.012	12.0	0.0	0.0

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

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Time span=1.00-36.00 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

Subcatchment 1S.1: Drive to Street	Runoff Area=1,131 sf 55.00% Impervious Runoff Depth=0.82" Tc=6.0 min CN=71 Runoff=0.02 cfs 0.002 af
Subcatchment 1S.10: East Lot 1	Runoff Area=3,754 sf 84.98% Impervious Runoff Depth=1.99" Tc=6.0 min CN=89 Runoff=0.20 cfs 0.014 af
Subcatchment 1S.11: South Lot Treated	Runoff Area=10,852 sf 76.24% Impervious Runoff Depth=1.46" Tc=6.0 min CN=82 Runoff=0.42 cfs 0.030 af
Subcatchment 1S.2: Co Op Roof & yard	Runoff Area=56,422 sf 65.80% Impervious Runoff Depth=1.20" Tc=6.0 min CN=78 Runoff=1.78 cfs 0.130 af
Subcatchment 1S.3: Runoff to park	Runoff Area=2,081 sf 0.00% Impervious Runoff Depth=0.00" Flow Length=264' Tc=9.0 min CN=39 Runoff=0.00 cfs 0.000 af
Subcatchment 1S.4: Central parking/drive	Runoff Area=19,043 sf 77.98% Impervious Runoff Depth=1.53" Tc=6.0 min CN=83 Runoff=0.78 cfs 0.056 af
Subcatchment 1S.5: Contained yard/park	Runoff Area=3,023 sf 16.84% Impervious Runoff Depth=0.09" Tc=6.0 min CN=49 Runoff=0.00 cfs 0.001 af
Subcatchment 1S.6: Building E roof and	Runoff Area=22,599 sf 53.10% Impervious Runoff Depth=0.77" Tc=6.0 min CN=70 Runoff=0.41 cfs 0.033 af
Subcatchment 1S.7: East Lot 4	Runoff Area=7,618 sf 53.01% Impervious Runoff Depth=0.77" Tc=6.0 min CN=70 Runoff=0.14 cfs 0.011 af
Subcatchment 1S.8: East Lot 3	Runoff Area=6,694 sf 52.99% Impervious Runoff Depth=0.77" Tc=6.0 min CN=70 Runoff=0.12 cfs 0.010 af
Subcatchment 1S.9: East Lot 2	Runoff Area=5,956 sf 80.74% Impervious Runoff Depth=1.83" Tc=6.0 min CN=87 Runoff=0.29 cfs 0.021 af
Subcatchment 2S: 295 Embankment Trib	Runoff Area=69,848 sf 12.70% Impervious Runoff Depth=0.00" Flow Length=233' Tc=16.0 min CN=41 Runoff=0.00 cfs 0.000 af
Subcatchment 3S.1: Garden area runoff	Runoff Area=6,670 sf 0.00% Impervious Runoff Depth=0.00" Flow Length=82' Tc=6.9 min CN=30 Runoff=0.00 cfs 0.000 af
Reach POI-1: POI #1 - 60" Douglass MS4	Inflow=3.76 cfs 0.286 af Outflow=3.76 cfs 0.286 af
Reach POI-3: POI #3 - Baseball Field	Inflow=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af
Pond P1: VUSF	Peak Elev=30.91' Storage=530 cf Inflow=0.42 cfs 0.030 af Discarded=0.04 cfs 0.022 af Primary=0.01 cfs 0.009 af Outflow=0.06 cfs 0.030 af

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Pond P2: FP 4

Peak Elev=35.95' Storage=0 cf Inflow=0.14 cfs 0.011 af
10.0" Round Culvert n=0.010 L=70.0' S=0.0050 '/' Outflow=0.14 cfs 0.011 af

Pond P3: FP 3

Peak Elev=36.10' Storage=0 cf Inflow=0.12 cfs 0.010 af
10.0" Round Culvert n=0.010 L=70.0' S=0.0057 '/' Outflow=0.12 cfs 0.010 af

Pond P4: FP 2

Peak Elev=35.90' Storage=0 cf Inflow=0.29 cfs 0.021 af
10.0" Round Culvert n=0.010 L=70.0' S=0.0057 '/' Outflow=0.29 cfs 0.021 af

Pond P5: FP 1

Peak Elev=35.70' Storage=0 cf Inflow=0.20 cfs 0.014 af
10.0" Round Culvert n=0.010 L=75.0' S=0.0049 '/' Outflow=0.20 cfs 0.014 af

Pond POI #2: POI #2 (295 Basin)

Peak Elev=26.36' Storage=20 cf Inflow=0.00 cfs 0.000 af
Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Total Runoff Area = 4.952 ac Runoff Volume = 0.308 af Average Runoff Depth = 0.75"
54.64% Pervious = 2.706 ac 45.36% Impervious = 2.246 ac

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

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Summary for Subcatchment 1.S1: Drive to Street

Runoff = 0.02 cfs @ 12.10 hrs, Volume= 0.002 af, Depth= 0.82"

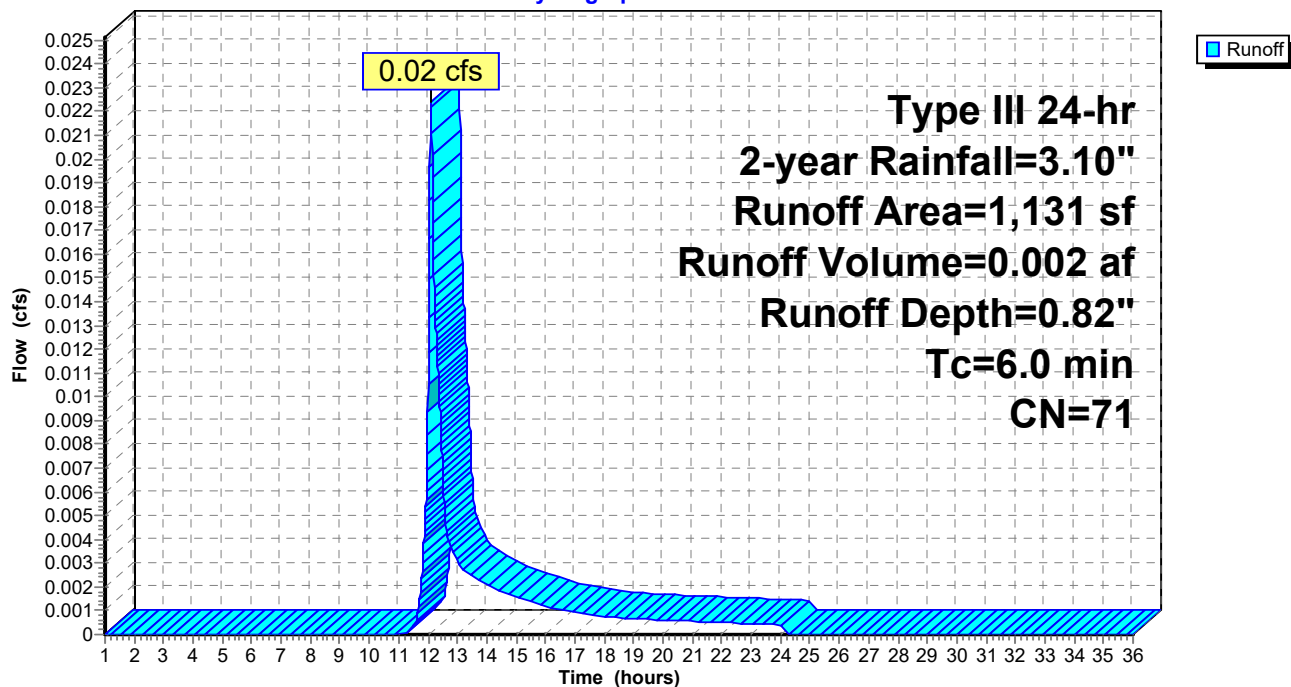
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	622	98	Pavement
	509	39	>75% Grass cover, Good, HSG A
	1,131	71	Weighted Average
	509		45.00% Pervious Area
	622		55.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1.S1: Drive to Street

Hydrograph



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

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Summary for Subcatchment 1S.10: East Lot 1

Runoff = 0.20 cfs @ 12.09 hrs, Volume= 0.014 af, Depth= 1.99"

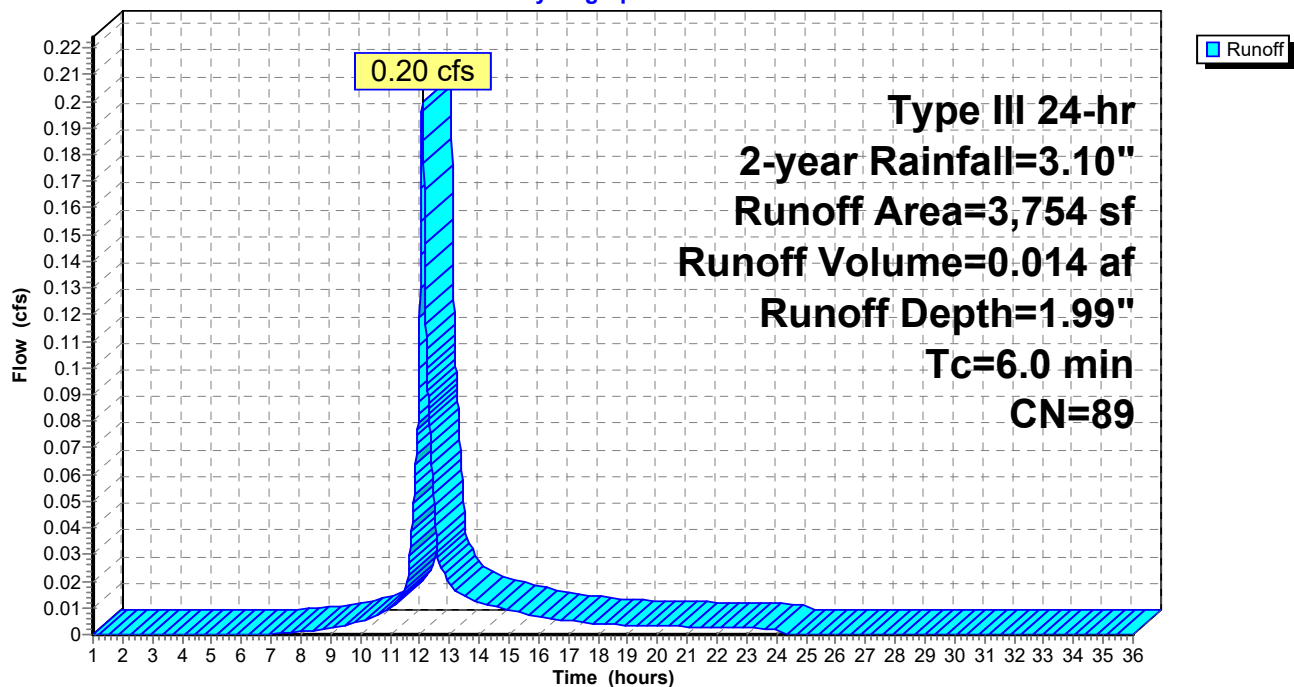
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	3,190	98	Pavement
	564	39	>75% Grass cover, Good, HSG A
	3,754	89	Weighted Average
	564		15.02% Pervious Area
	3,190		84.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1S.10: East Lot 1

Hydrograph



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

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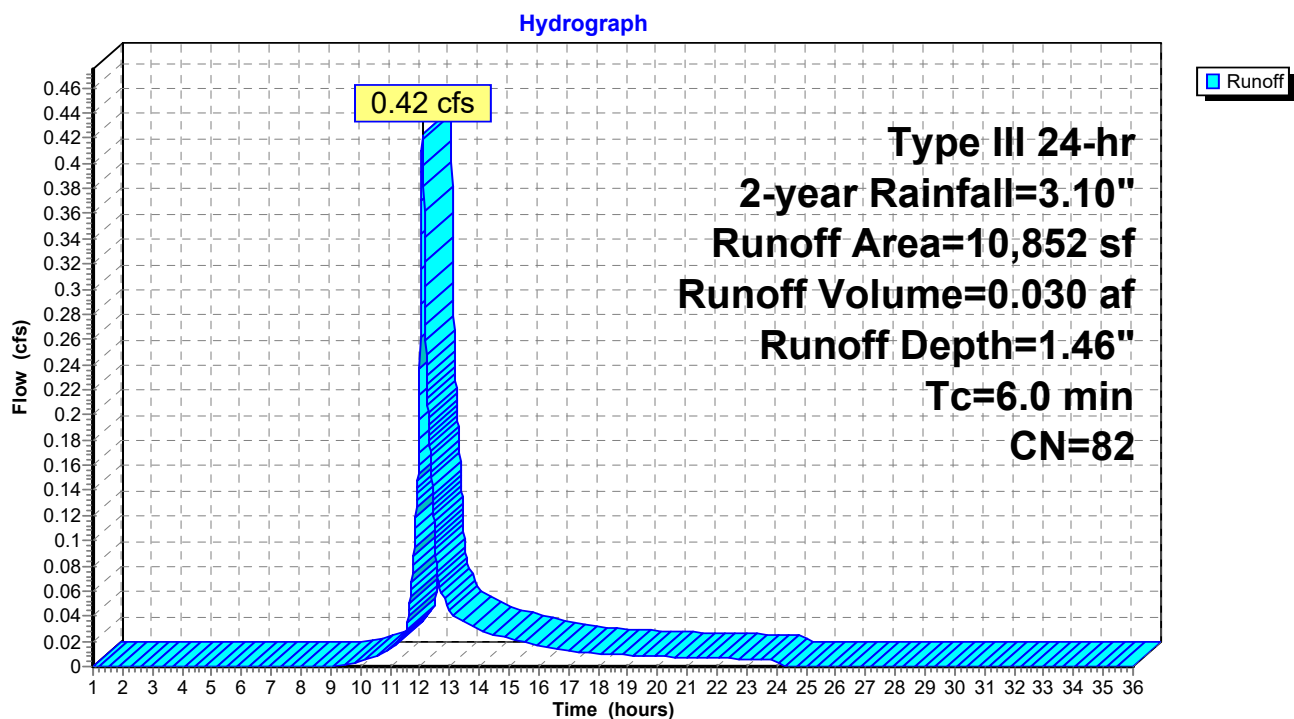
Summary for Subcatchment 1S.11: South Lot Treated

Runoff = 0.42 cfs @ 12.09 hrs, Volume= 0.030 af, Depth= 1.46"

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
*	8,274	98	Paved parking
	2,578	30	Brush, Good, HSG A
	10,852	82	Weighted Average
	2,578		23.76% Pervious Area
	8,274		76.24% Impervious Area

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

Subcatchment 1S.11: South Lot Treated

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

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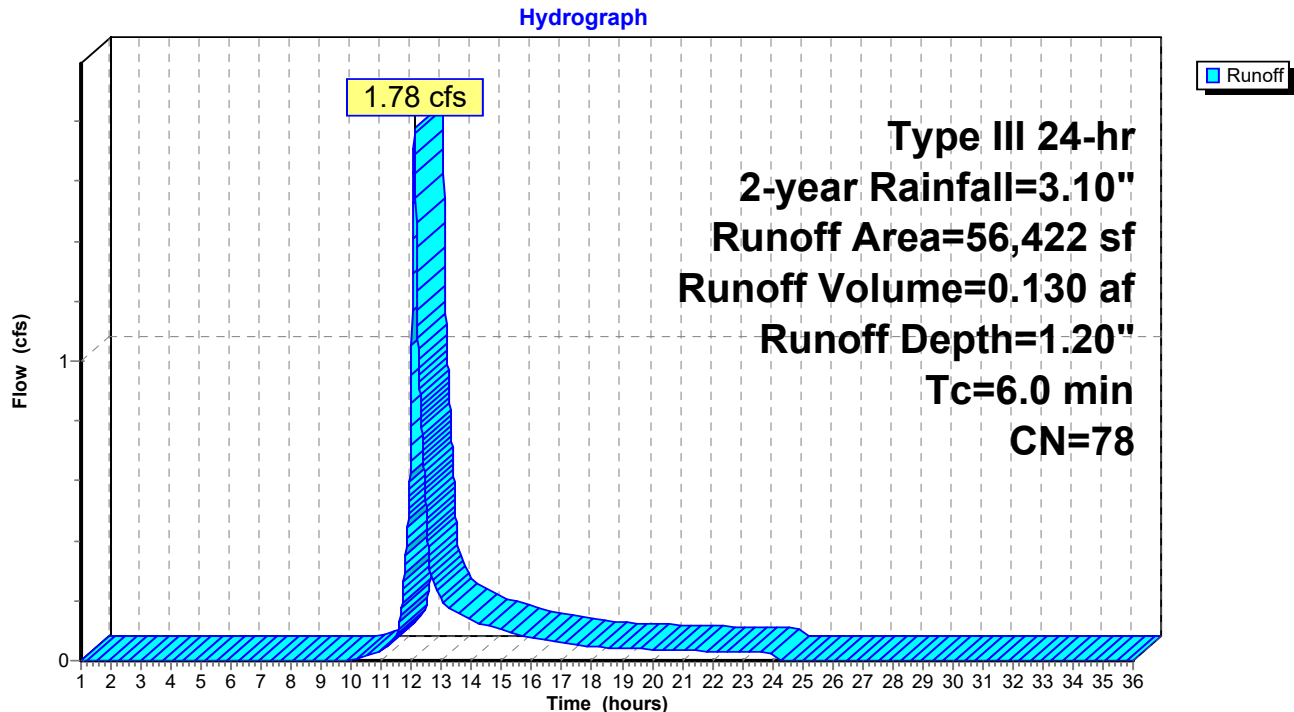
Summary for Subcatchment 1S.2: Co Op Roof & yard

Runoff = 1.78 cfs @ 12.09 hrs, Volume= 0.130 af, Depth= 1.20"

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
*	5,239	98	pavers
	16,100	39	>75% Grass cover, Good, HSG A
*	21,137	98	Roofs
*	4,191	98	sidewalks
*	618	98	patios
	9,137	77	1/8 acre lots, 65% imp, HSG A
	56,422	78	Weighted Average
	19,298		34.20% Pervious Area
	37,124		65.80% Impervious Area

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

Subcatchment 1S.2: Co Op Roof & yard

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

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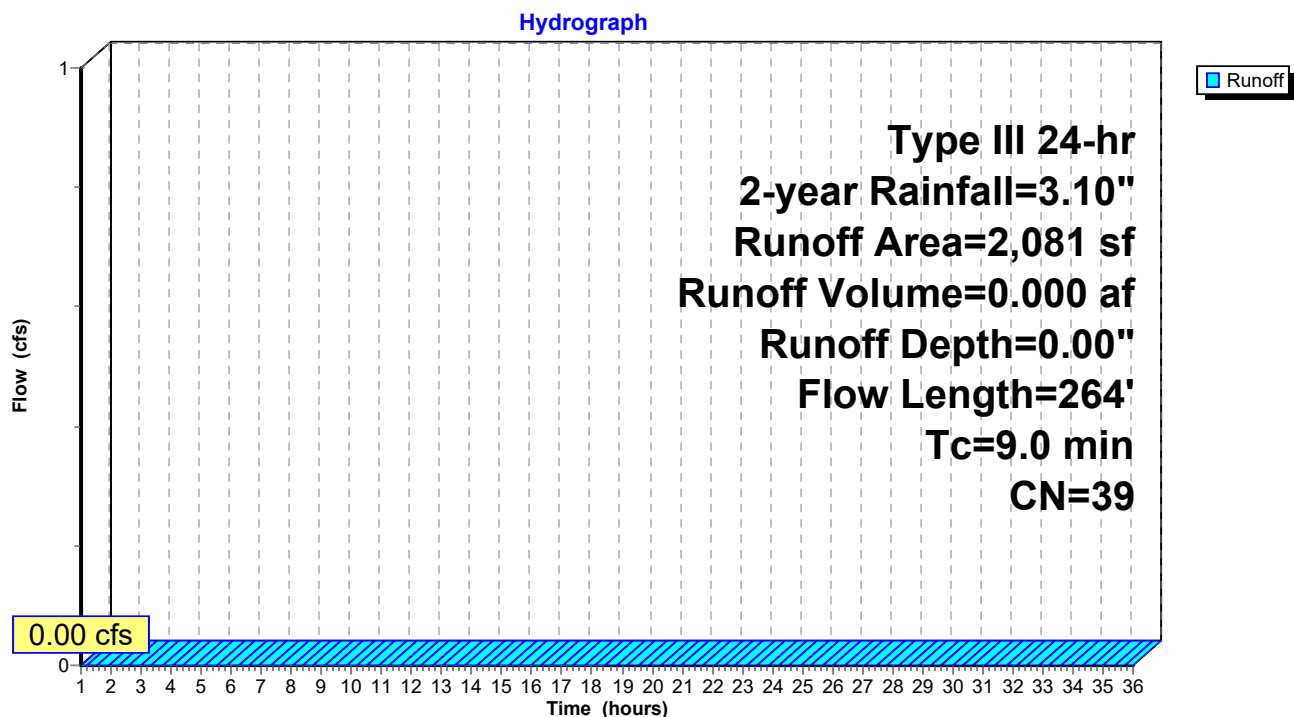
Summary for Subcatchment 1S.3: Runoff to park

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= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

Area (sf)	CN	Description
2,081	39	>75% Grass cover, Good, HSG A
2,081		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	100	0.0600	0.27		Sheet Flow, A to B Grass: Short n= 0.150 P2= 3.27"
2.8	164	0.0200	0.99		Shallow Concentrated Flow, B to C Short Grass Pasture Kv= 7.0 fps
9.0	264	Total			

Subcatchment 1S.3: Runoff to park

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

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Summary for Subcatchment 1S.4: Central parking/drive

Runoff = 0.78 cfs @ 12.09 hrs, Volume= 0.056 af, Depth= 1.53"

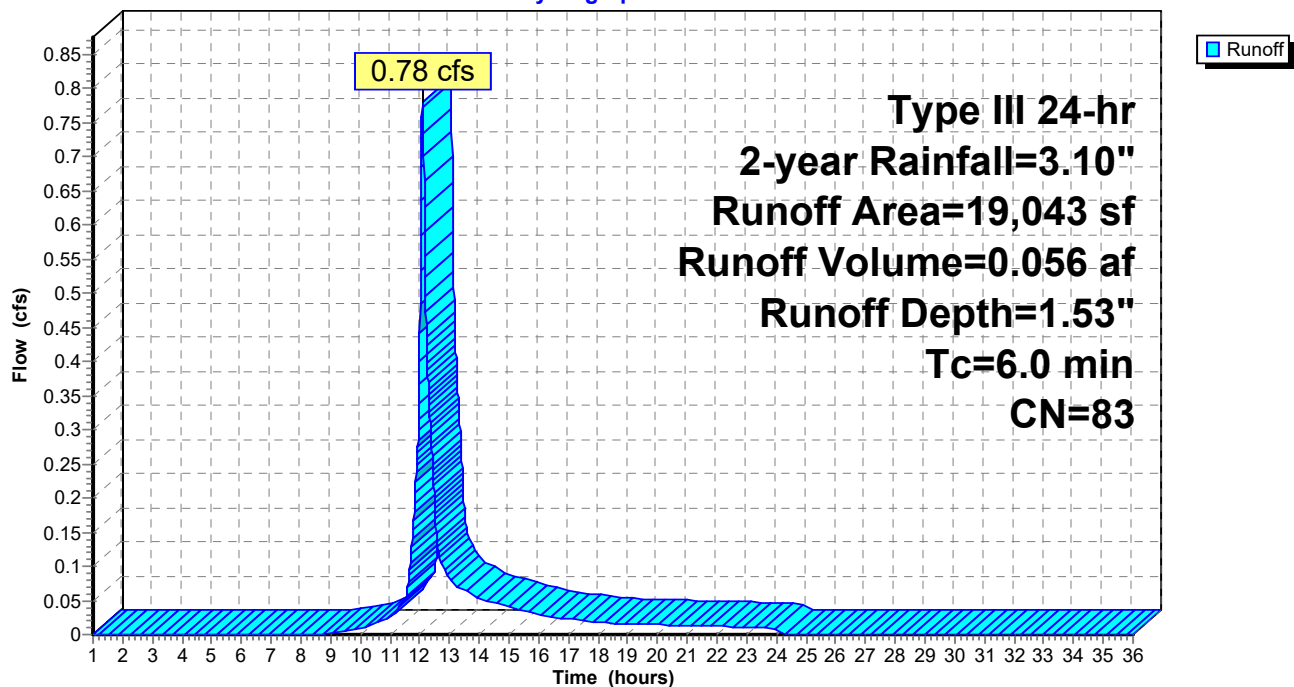
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	14,850	98	Pavement
	4,193	30	Brush, Good, HSG A
	19,043	83	Weighted Average
	4,193		22.02% Pervious Area
	14,850		77.98% Impervious Area

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

Subcatchment 1S.4: Central parking/drive

Hydrograph



Summary for Subcatchment 1S.5: Contained yard/park connection

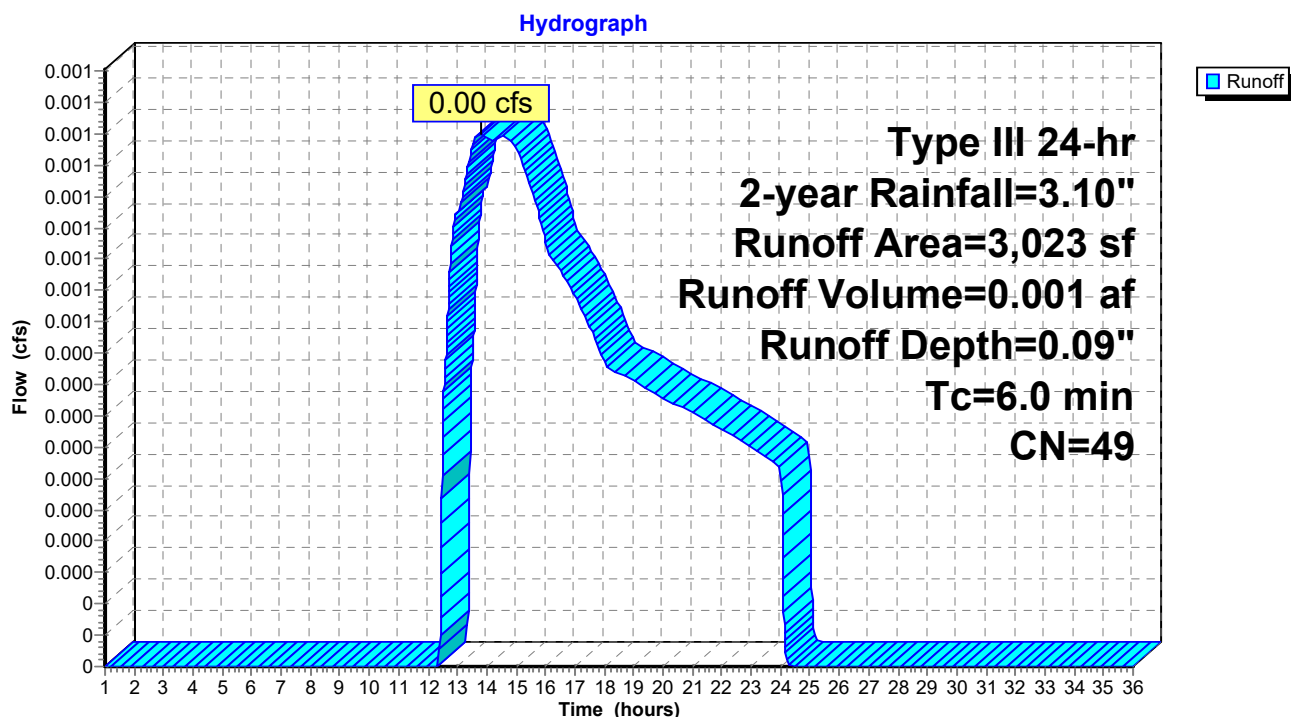
Runoff = 0.00 cfs @ 13.78 hrs, Volume= 0.001 af, Depth= 0.09"

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
2,514	39	>75% Grass cover, Good, HSG A
* 509	98	sidewalks
3,023	49	Weighted Average
2,514		83.16% Pervious Area
509		16.84% Impervious Area

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

Subcatchment 1S.5: Contained yard/park connection



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

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Summary for Subcatchment 1S.6: Building E roof and yard

Runoff = 0.41 cfs @ 12.10 hrs, Volume= 0.033 af, Depth= 0.77"

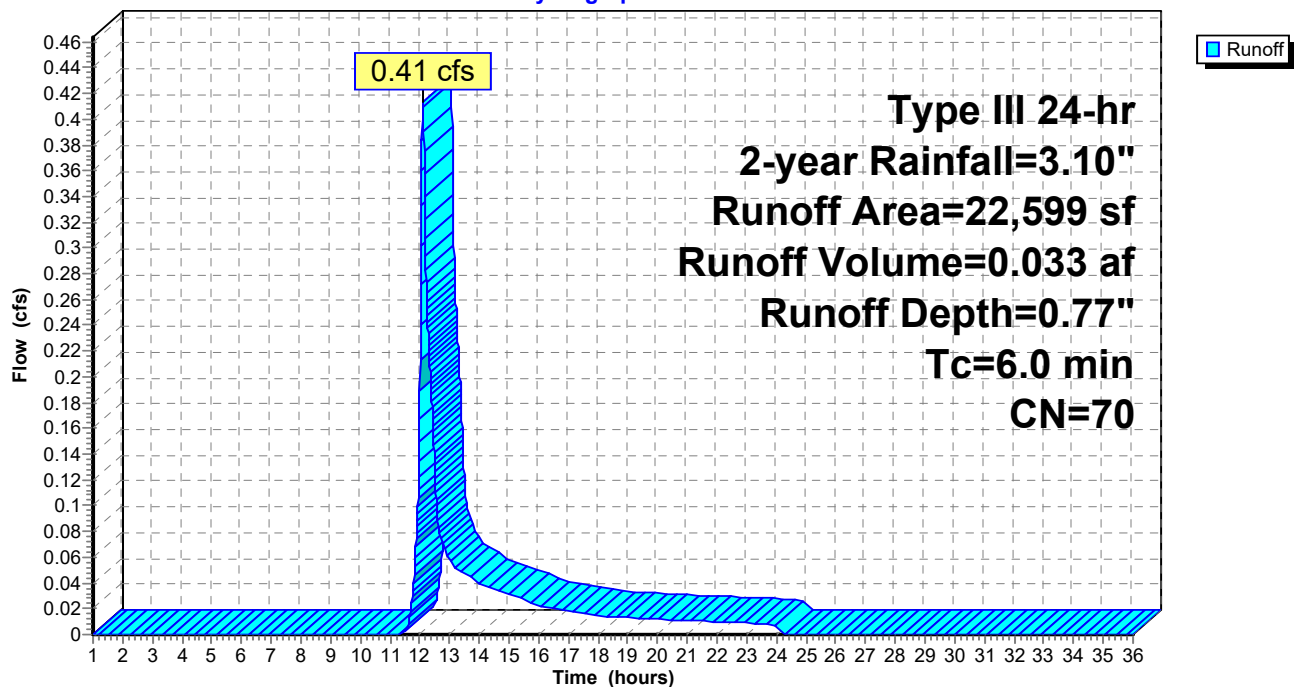
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
	10,599	39	>75% Grass cover, Good, HSG A
*	12,000	98	roof
	22,599	70	Weighted Average
	10,599		46.90% Pervious Area
	12,000		53.10% Impervious Area

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

Subcatchment 1S.6: Building E roof and yard

Hydrograph



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

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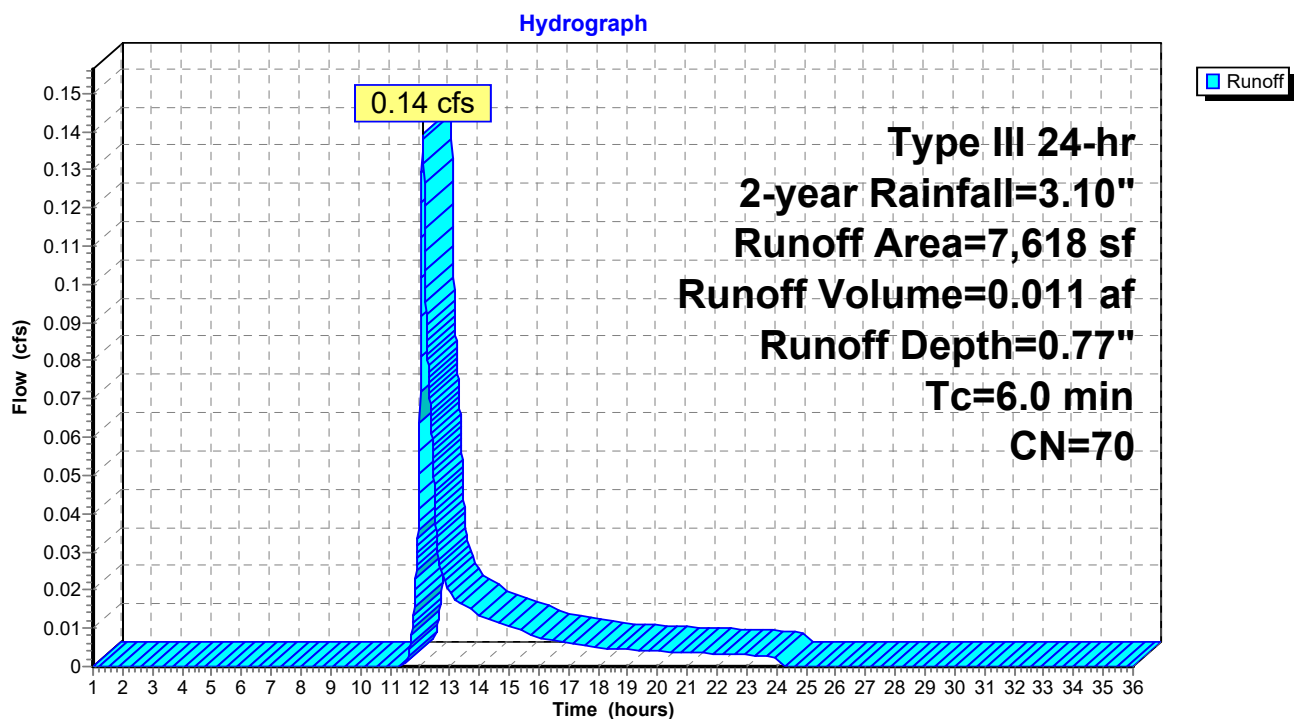
Summary for Subcatchment 1S.7: East Lot 4

Runoff = 0.14 cfs @ 12.10 hrs, Volume= 0.011 af, Depth= 0.77"

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
*	4,038	98	Paved parking
	3,580	39	>75% Grass cover, Good, HSG A
	7,618	70	Weighted Average
	3,580		46.99% Pervious Area
	4,038		53.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1S.7: East Lot 4

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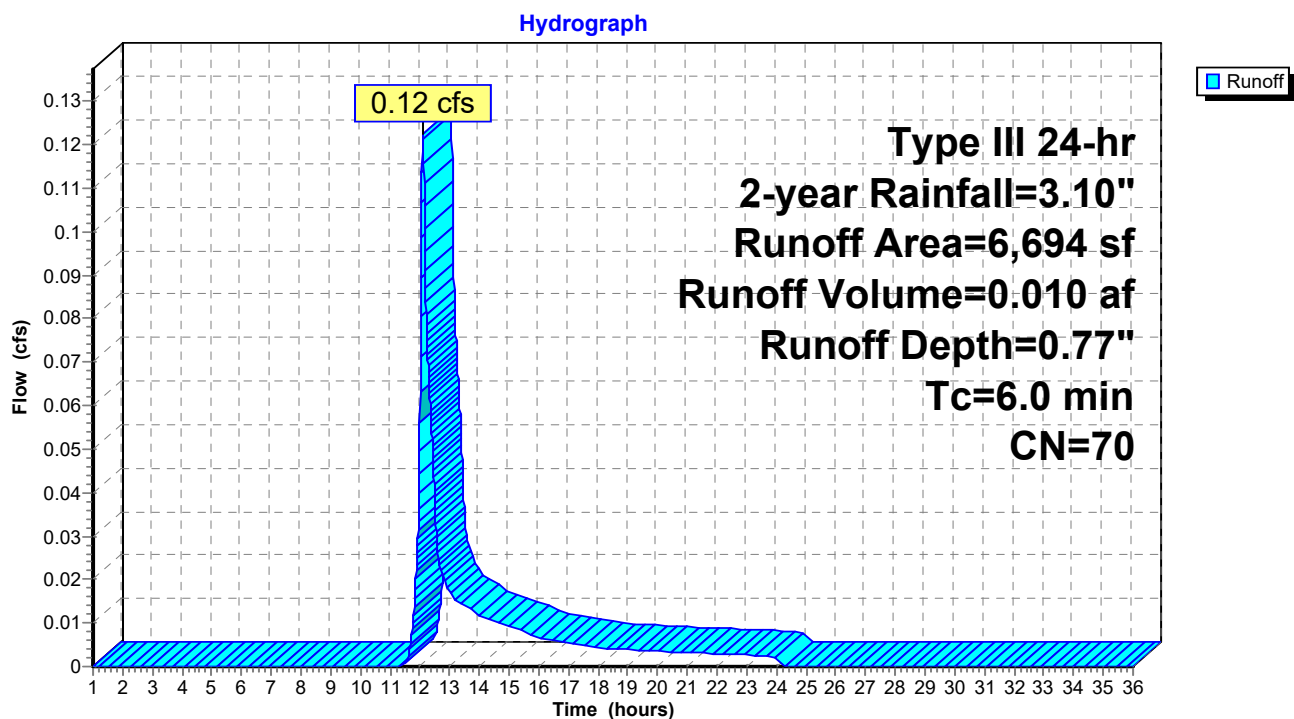
Summary for Subcatchment 1S.8: East Lot 3

Runoff = 0.12 cfs @ 12.10 hrs, Volume= 0.010 af, Depth= 0.77"

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
*	3,547	98	Paved parking
	3,147	39	>75% Grass cover, Good, HSG A
	6,694	70	Weighted Average
	3,147		47.01% Pervious Area
	3,547		52.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1S.8: East Lot 3

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

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Summary for Subcatchment 1S.9: East Lot 2

Runoff = 0.29 cfs @ 12.09 hrs, Volume= 0.021 af, Depth= 1.83"

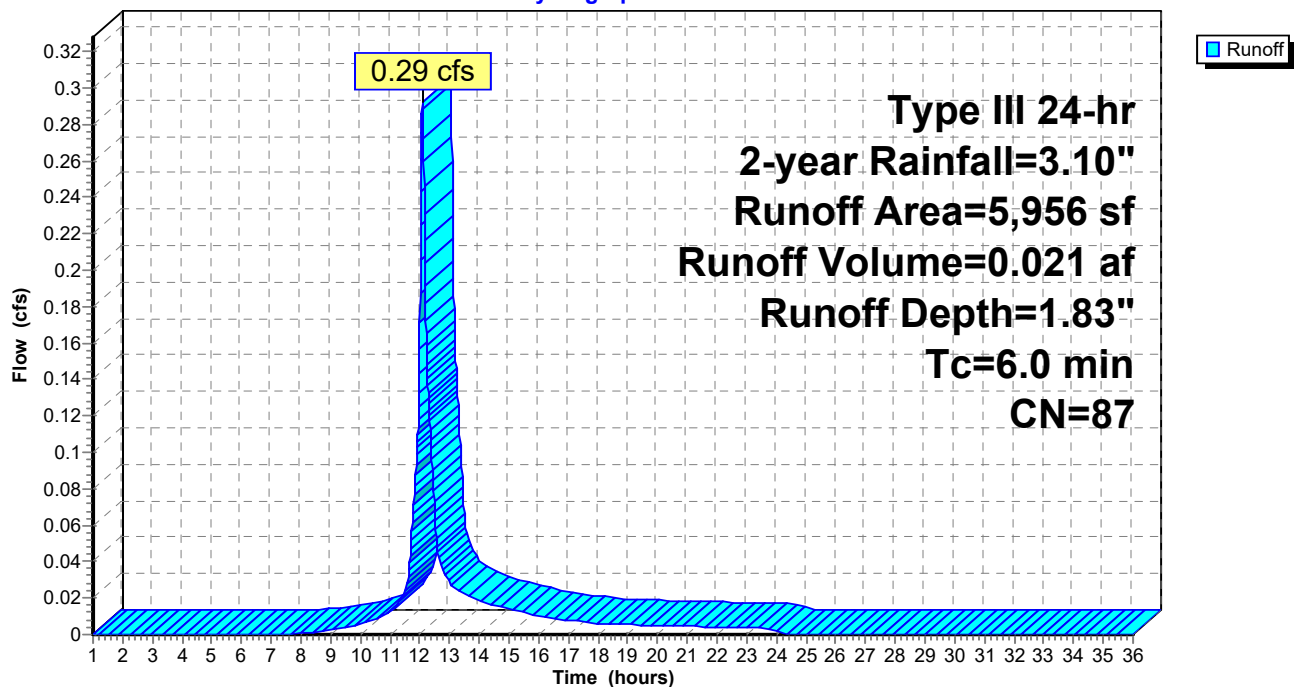
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	4,809	98	Paved parking, patio, sidewalk
	1,147	39	>75% Grass cover, Good, HSG A
	5,956	87	Weighted Average
	1,147		19.26% Pervious Area
	4,809		80.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1S.9: East Lot 2

Hydrograph



Summary for Subcatchment 2S: 295 Embankment Trib

Runoff = 0.00 cfs @ 23.91 hrs, Volume= 0.000 af, Depth= 0.00"

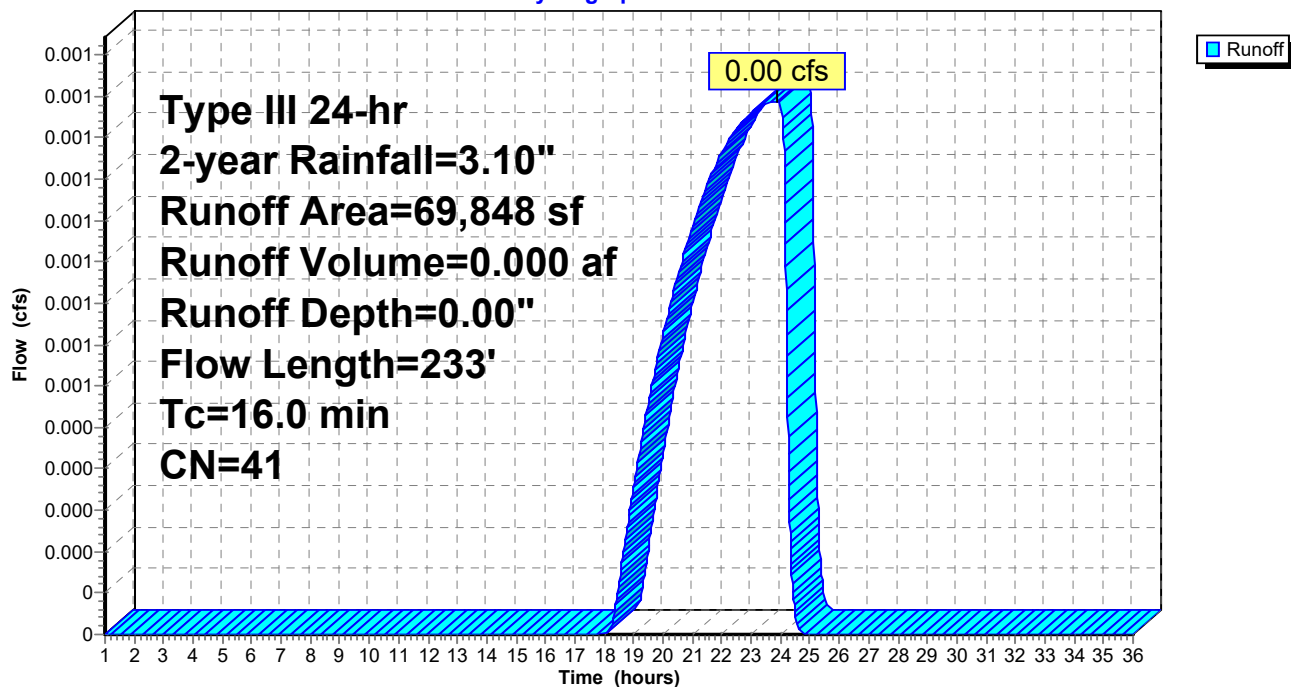
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
	8,183	39	>75% Grass cover, Good, HSG A
*	230	98	Stairs
*	3,155	98	Path
*	5,488	98	Homes/driveways
	52,792	32	Woods/grass comb., Good, HSG A
	69,848	41	Weighted Average
	60,975		87.30% Pervious Area
	8,873		12.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	100	0.0500	0.11		Sheet Flow, A to B Woods: Light underbrush n= 0.400 P2= 3.27"
1.3	133	0.0600	1.71		Shallow Concentrated Flow, B to C Short Grass Pasture Kv= 7.0 fps
16.0	233	Total			

Subcatchment 2S: 295 Embankment Trib

Hydrograph



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

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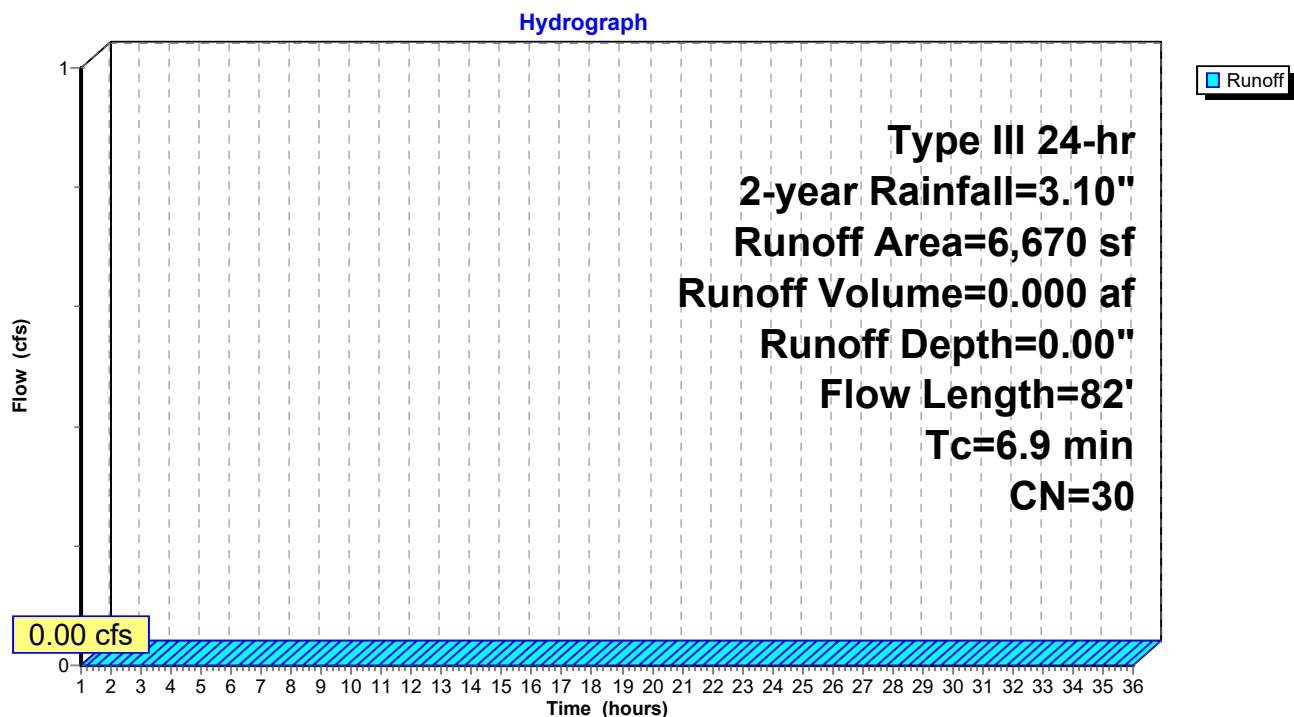
Summary for Subcatchment 3S.1: Garden area runoff

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= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

Area (sf)	CN	Description
6,670	30	Brush, Good, HSG A
6,670		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	28	0.3330	0.28		Sheet Flow, A to B
					Grass: Dense n= 0.240 P2= 3.27"
5.2	54	0.0700	0.17		Sheet Flow, B to C
					Grass: Dense n= 0.240 P2= 3.27"
6.9	82	Total			

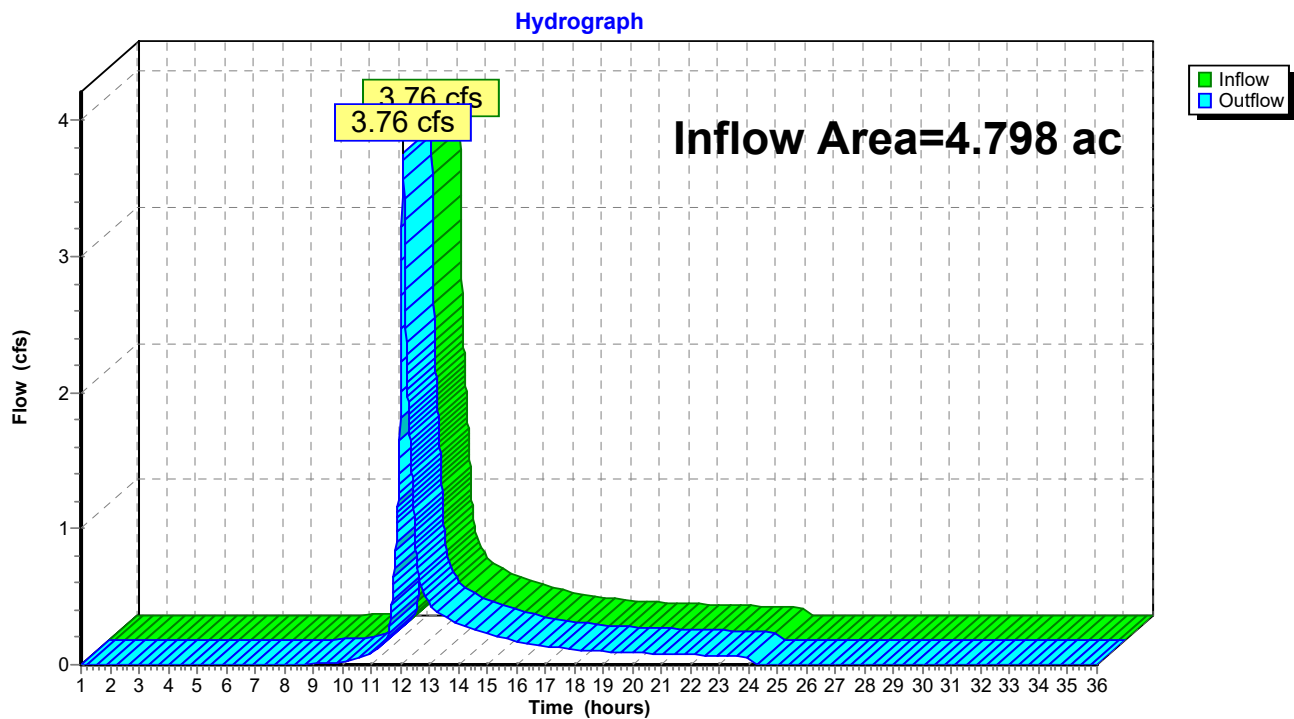
Subcatchment 3S.1: Garden area runoff

Summary for Reach POI-1: POI #1 - 60" Douglass MS4

Inflow Area = 4.798 ac, 46.81% Impervious, Inflow Depth = 0.71" for 2-year event
 Inflow = 3.76 cfs @ 12.09 hrs, Volume= 0.286 af
 Outflow = 3.76 cfs @ 12.09 hrs, Volume= 0.286 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 POI-1: POI #1 - 60" Douglass MS4

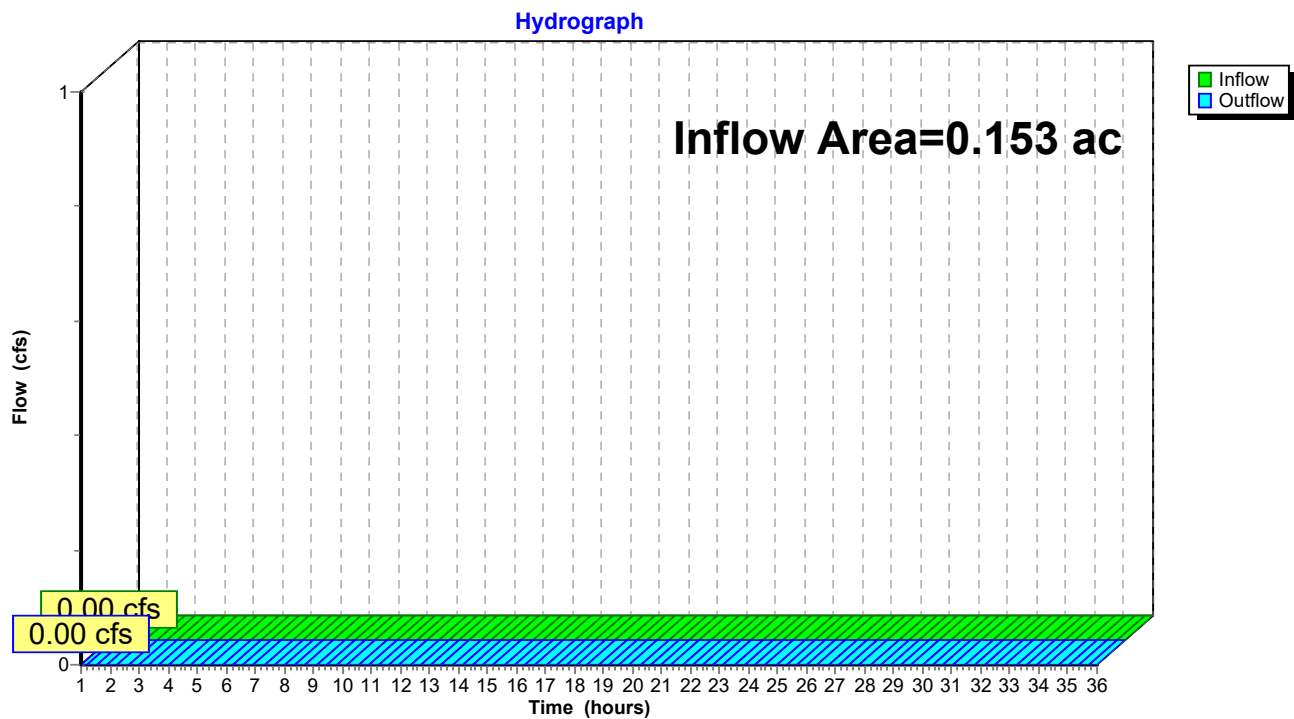


Summary for Reach POI-3: POI #3 - Baseball Field

Inflow Area = 0.153 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-year 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= 1.00-36.00 hrs, dt= 0.01 hrs

Reach POI-3: POI #3 - Baseball Field



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

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Summary for Pond P1: VUSF

Inflow Area = 0.249 ac, 76.24% Impervious, Inflow Depth = 1.46" for 2-year event
 Inflow = 0.42 cfs @ 12.09 hrs, Volume= 0.030 af
 Outflow = 0.06 cfs @ 12.76 hrs, Volume= 0.030 af, Atten= 87%, Lag= 39.9 min
 Discarded = 0.04 cfs @ 12.76 hrs, Volume= 0.022 af
 Primary = 0.01 cfs @ 12.76 hrs, Volume= 0.009 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Peak Elev= 30.91' @ 12.76 hrs Surf.Area= 1,889 sf Storage= 530 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= 171.8 min (1,009.6 - 837.8)

Volume	Invert	Avail.Storage	Storage Description
#1	30.75'	1,899 cf	Ponding (Prismatic) Listed below (Recalc)
#2	29.25'	69 cf	Filter Media/Loam (Prismatic) Listed below (Recalc) 687 cf Overall x 10.0% Voids
#3	28.92'	30 cf	Transition Gravel (Prismatic) Listed below (Recalc) 151 cf Overall x 20.0% Voids
#4	27.00'	349 cf	Crushed Stone (Prismatic) Listed below (Recalc) 879 cf Overall - 6 cf Embedded = 873 cf x 40.0% Voids
#5	27.10'	5 cf	4.0" Round Pipe Storage x 2 Inside #4 L= 30.0' S= 0.0005 '/ 6 cf Overall - 0.2" Wall Thickness = 5 cf
		2,353 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.75	465	0	0
32.25	945	1,058	1,058
33.00	1,300	842	1,899

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
29.25	458	0	0
30.75	458	687	687

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.92	458	0	0
29.25	458	151	151

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
27.00	458	0	0
28.92	458	879	879

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

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Device	Routing	Invert	Outlet Devices
#1	Primary	27.00'	12.0" Round Culvert L= 60.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 27.00' / 26.75' S= 0.0042 '/' Cc= 0.600 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf
#2	Device 1	27.10'	0.5" Vert. Soil Filter Media Drawdown Effect C= 0.600
#3	Device 1	32.35'	24.0" Horiz. Beehive Outlet C= 0.600 Limited to weir flow at low heads
#4	Discarded	27.00'	1.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.04 cfs @ 12.76 hrs HW=30.91' (Free Discharge)

↳ **4=Exfiltration** (Exfiltration Controls 0.04 cfs)

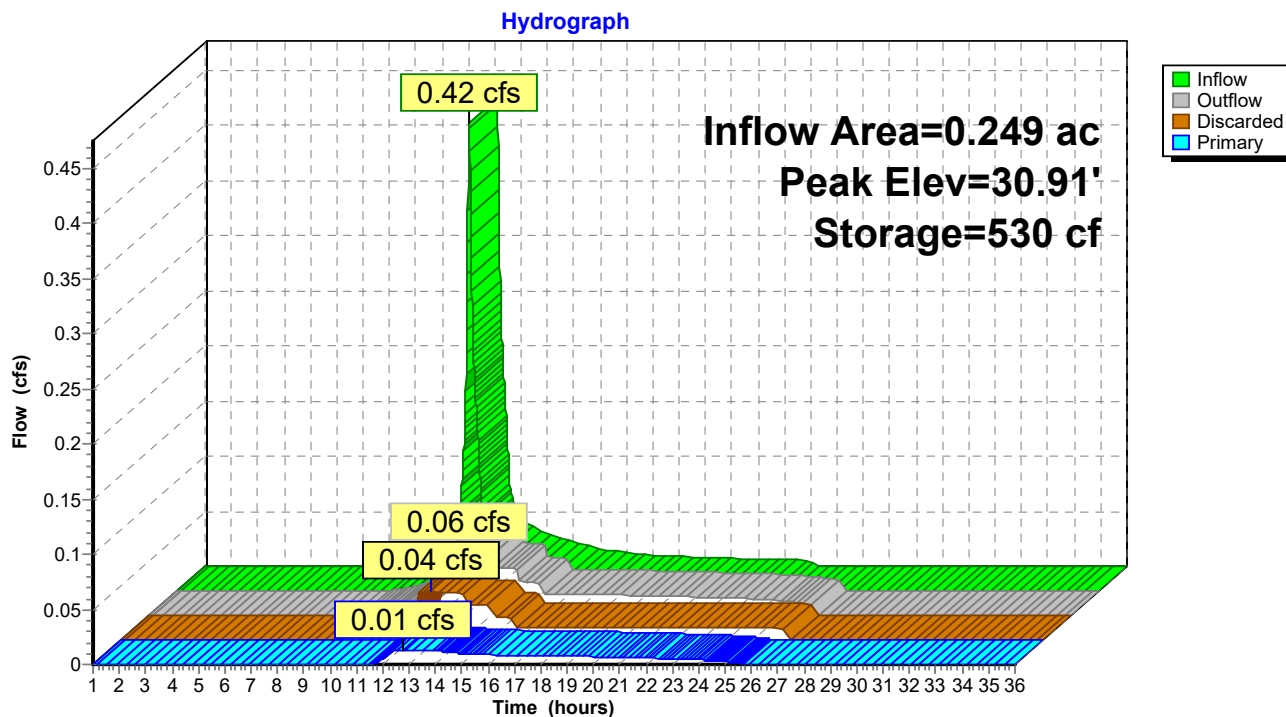
Primary OutFlow Max=0.01 cfs @ 12.76 hrs HW=30.91' TW=0.00' (Dynamic Tailwater)

↳ **1=Culvert** (Passes 0.01 cfs of 3.67 cfs potential flow)

↳ **2=Soil Filter Media Drawdown Effect** (Orifice Controls 0.01 cfs @ 9.37 fps)

↳ **3=Beehive Outlet** (Controls 0.00 cfs)

Pond P1: VUSF



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

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Summary for Pond P2: FP 4

Inflow Area = 0.175 ac, 53.01% Impervious, Inflow Depth = 0.77" for 2-year event
 Inflow = 0.14 cfs @ 12.10 hrs, Volume= 0.011 af
 Outflow = 0.14 cfs @ 12.10 hrs, Volume= 0.011 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.14 cfs @ 12.10 hrs, Volume= 0.011 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 35.95' @ 1.00 hrs Surf.Area= 40 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 0.0 min (878.2 - 878.2)

Volume	Invert	Avail.Storage	Storage Description
#1	35.95'	14 cf	4.00'W x 5.00'L x 3.60'H Media/Stone 72 cf Overall x 20.0% Voids
#2	35.95'	38 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		52 cf	Total Available Storage

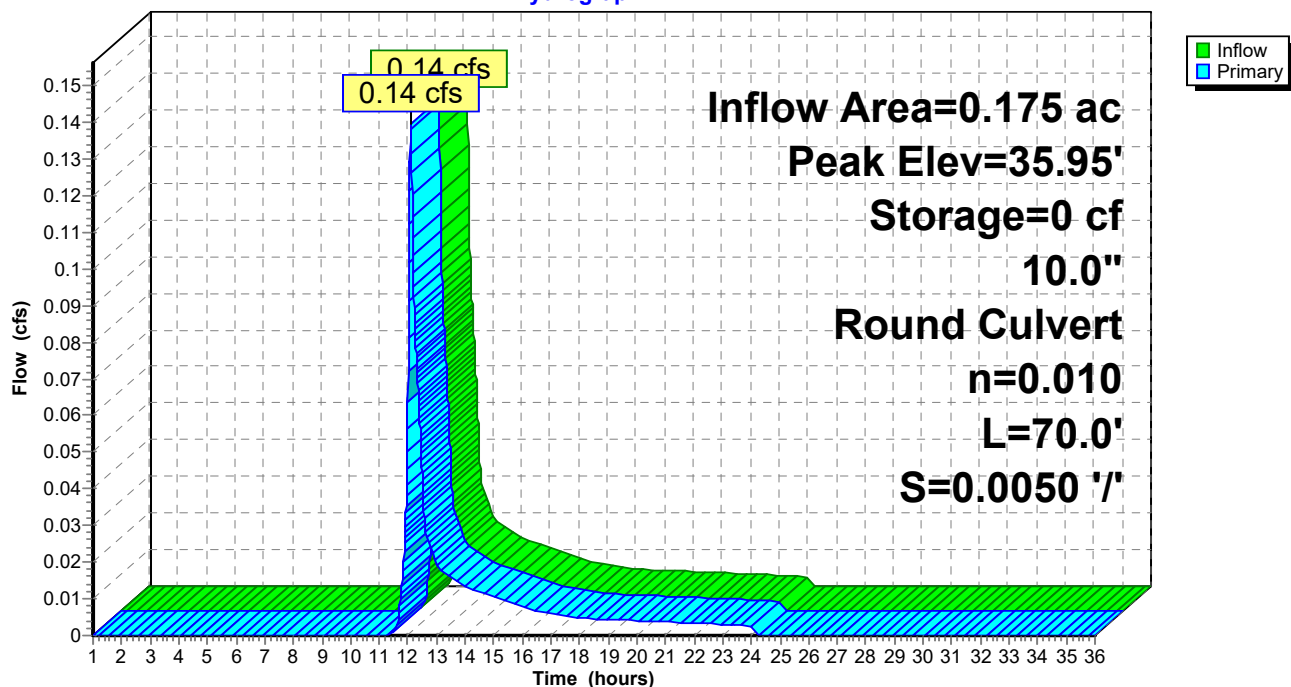
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
35.95	20	0	0
36.95	56	38	38

Device	Routing	Invert	Outlet Devices
#1	Primary	32.35'	10.0" Round Culvert L= 70.0' Ke= 1.000 Inlet / Outlet Invert= 32.35' / 32.00' S= 0.0050 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 12.10 hrs HW=35.95' TW=0.00' (Dynamic Tailwater)
 ↑**1=Culvert** (Passes 0.00 cfs of 3.51 cfs potential flow)

Pond P2: FP 4

Hydrograph



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

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Summary for Pond P3: FP 3

Inflow Area = 0.154 ac, 52.99% Impervious, Inflow Depth = 0.77" for 2-year event
 Inflow = 0.12 cfs @ 12.10 hrs, Volume= 0.010 af
 Outflow = 0.12 cfs @ 12.10 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.12 cfs @ 12.10 hrs, Volume= 0.010 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 36.10' @ 1.00 hrs Surf.Area= 50 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 0.0 min (878.2 - 878.2)

Volume	Invert	Avail.Storage	Storage Description
#1	36.10'	21 cf	5.00'W x 5.00'L x 4.20'H Media/Stone 105 cf Overall x 20.0% Voids
#2	36.10'	45 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		66 cf	Total Available Storage

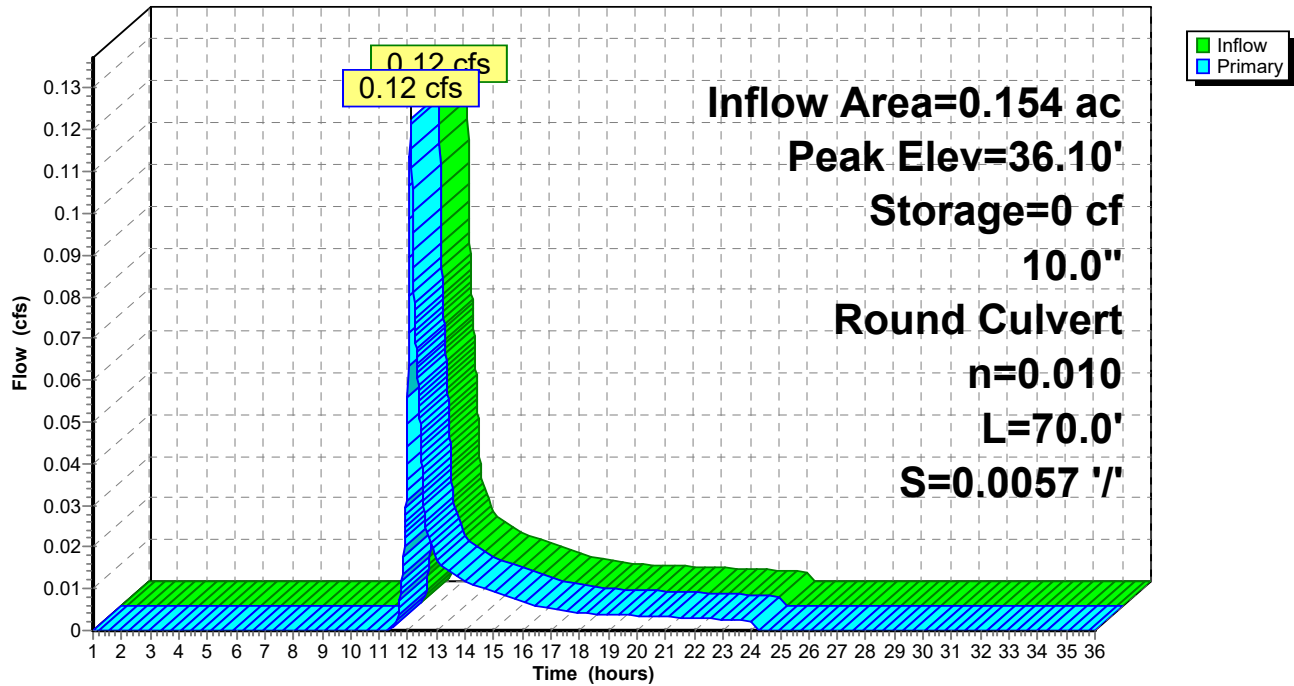
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.10	25	0	0
37.10	64	45	45

Device	Routing	Invert	Outlet Devices
#1	Primary	31.90'	10.0" Round Culvert L= 70.0' Ke= 1.000 Inlet / Outlet Invert= 31.90' / 31.50' S= 0.0057 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 12.10 hrs HW=36.10' TW=0.00' (Dynamic Tailwater)
 ↑**1=Culvert** (Passes 0.00 cfs of 3.83 cfs potential flow)

Pond P3: FP 3

Hydrograph



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

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Summary for Pond P4: FP 2

Inflow Area = 0.137 ac, 80.74% Impervious, Inflow Depth = 1.83" for 2-year event
 Inflow = 0.29 cfs @ 12.09 hrs, Volume= 0.021 af
 Outflow = 0.29 cfs @ 12.09 hrs, Volume= 0.021 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.29 cfs @ 12.09 hrs, Volume= 0.021 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 35.90' @ 1.00 hrs Surf.Area= 50 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	35.90'	23 cf	5.00'W x 5.00'L x 4.50'H Media/Stone 113 cf Overall x 20.0% Voids
#2	35.90'	45 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		67 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
35.90	25	0	0
36.90	64	45	45

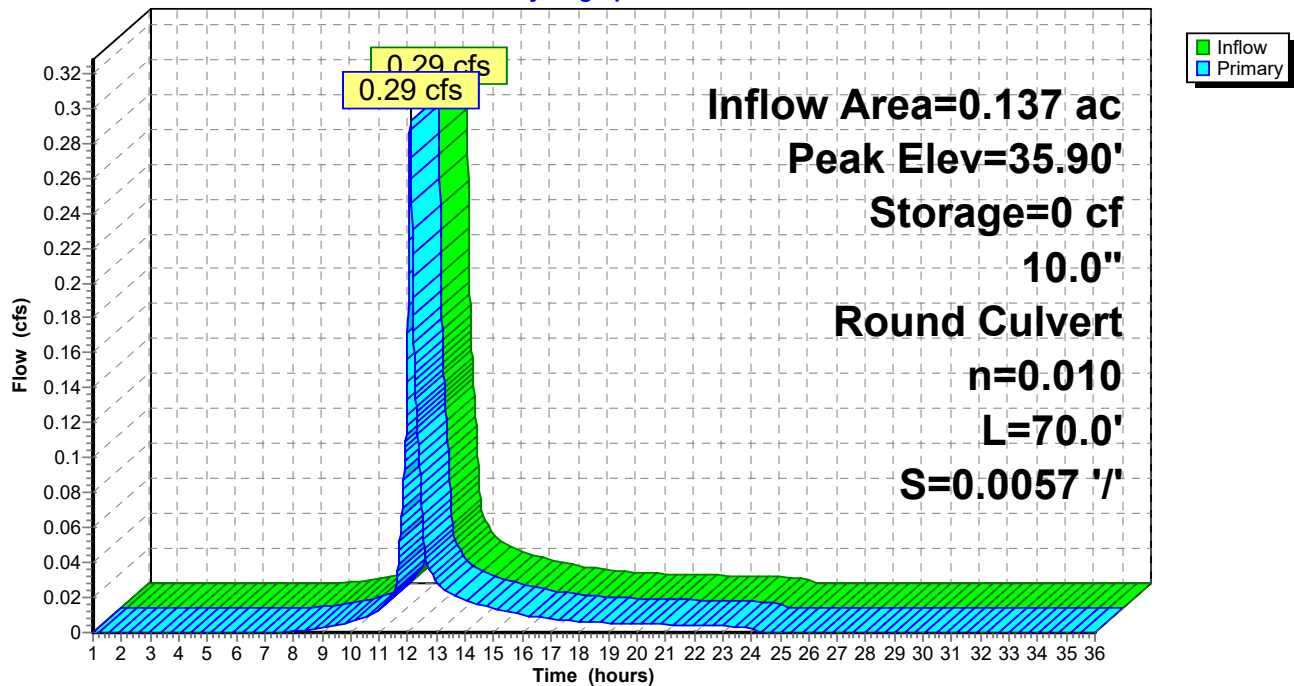
Device	Routing	Invert	Outlet Devices
#1	Primary	31.40'	10.0" Round Culvert L= 70.0' Ke= 1.000 Inlet / Outlet Invert= 31.40' / 31.00' S= 0.0057 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=35.90' TW=0.00' (Dynamic Tailwater)

↑**1=Culvert** (Passes 0.00 cfs of 3.98 cfs potential flow)

Pond P4: FP 2

Hydrograph



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

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Summary for Pond P5: FP 1

Inflow Area = 0.086 ac, 84.98% Impervious, Inflow Depth = 1.99" for 2-year event
 Inflow = 0.20 cfs @ 12.09 hrs, Volume= 0.014 af
 Outflow = 0.20 cfs @ 12.09 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.20 cfs @ 12.09 hrs, Volume= 0.014 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 35.70' @ 1.00 hrs Surf.Area= 40 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	35.70'	19 cf	4.00'W x 5.00'L x 4.80'H Media/Stone 96 cf Overall x 20.0% Voids
#2	35.70'	38 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		57 cf	Total Available Storage

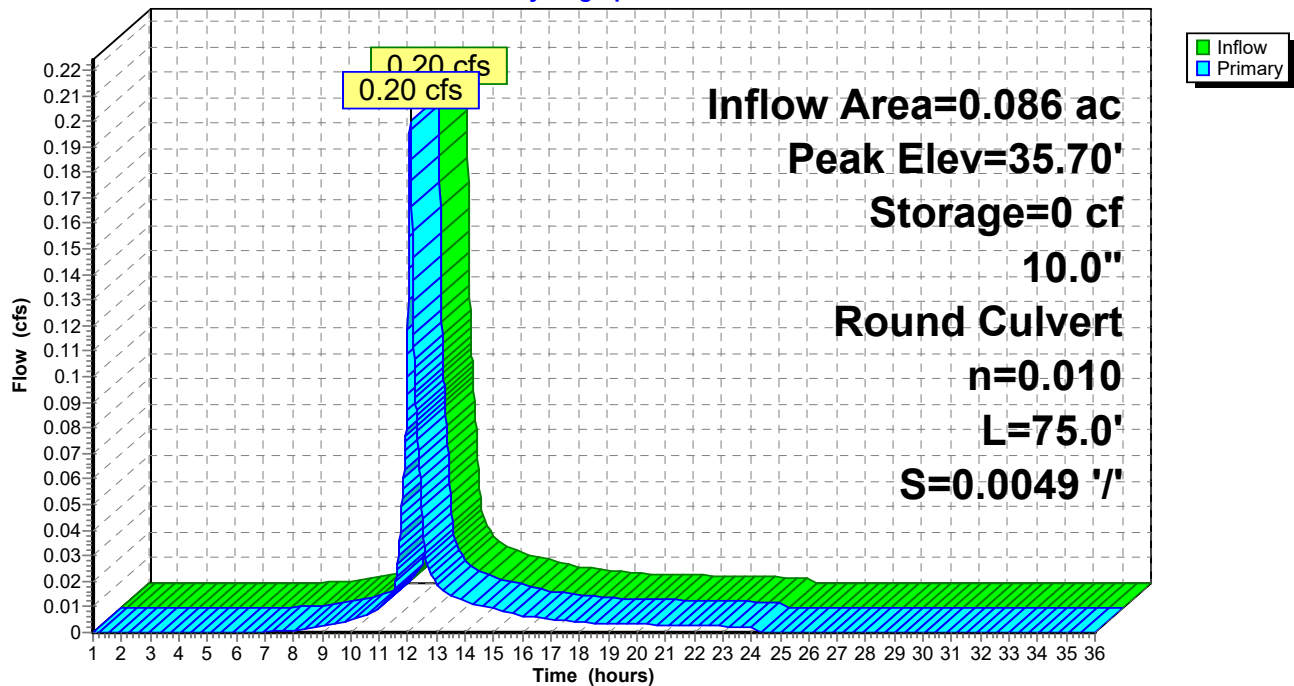
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
35.70	20	0	0
36.70	56	38	38

Device	Routing	Invert	Outlet Devices
#1	Primary	30.90'	10.0" Round Culvert L= 75.0' Ke= 1.000 Inlet / Outlet Invert= 30.90' / 30.53' S= 0.0049 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=35.70' TW=0.00' (Dynamic Tailwater)
 ↑**1=Culvert** (Passes 0.00 cfs of 4.12 cfs potential flow)

Pond P5: FP 1

Hydrograph



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

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Summary for Pond POI #2: POI #2 (295 Basin)

Inflow Area = 1.603 ac, 12.70% Impervious, Inflow Depth = 0.00" for 2-year event
 Inflow = 0.00 cfs @ 23.91 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af
 Primary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af
 Secondary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Peak Elev= 26.36' @ 24.90 hrs Surf.Area= 505 sf Storage= 20 cf

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

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

Volume	Invert	Avail.Storage	Storage Description
#1	26.30'	105,037 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

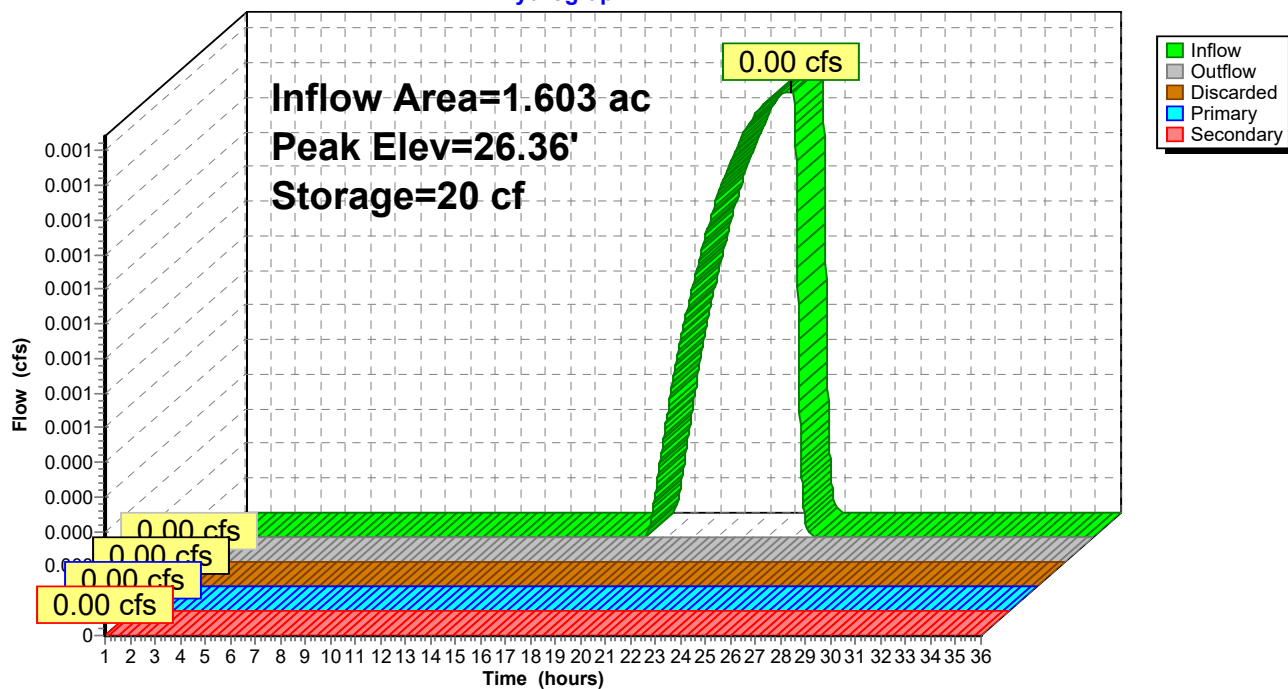
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.30	100	0	0
27.00	4,475	1,601	1,601
28.00	10,120	7,298	8,899
29.00	14,131	12,126	21,024
30.00	17,326	15,729	36,753
32.00	24,023	41,349	78,102
33.00	29,847	26,935	105,037

Device	Routing	Invert	Outlet Devices
#1	Primary	26.60'	12.0" Round Culvert L= 16.0' Ke= 0.600 Inlet / Outlet Invert= 26.60' / 26.51' S= 0.0056 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	32.40'	20.0' long x 15.0' breadth Overflow Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Discarded	26.60'	1.000 in/hr Exfiltration over Surface area above 26.60' Excluded Surface area = 1,975 sf

Discarded OutFlow Max=0.00 cfs @ 1.00 hrs HW=26.30' (Free Discharge)↑**3=Exfiltration** (Controls 0.00 cfs)**Primary OutFlow** Max=0.00 cfs @ 1.00 hrs HW=26.30' TW=0.00' (Dynamic Tailwater)↑**1=Culvert** (Controls 0.00 cfs)**Secondary OutFlow** Max=0.00 cfs @ 1.00 hrs HW=26.30' (Free Discharge)↑**2=Overflow** (Controls 0.00 cfs)

Pond POI #2: POI #2 (295 Basin)

Hydrograph



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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

Subcatchment 1S.1: Drive to Street	Runoff Area=1,131 sf 55.00% Impervious Runoff Depth=1.82" Tc=6.0 min CN=71 Runoff=0.05 cfs 0.004 af
Subcatchment 1S.10: East Lot 1	Runoff Area=3,754 sf 84.98% Impervious Runoff Depth=3.39" Tc=6.0 min CN=89 Runoff=0.33 cfs 0.024 af
Subcatchment 1S.11: South Lot Treated	Runoff Area=10,852 sf 76.24% Impervious Runoff Depth=2.72" Tc=6.0 min CN=82 Runoff=0.80 cfs 0.057 af
Subcatchment 1S.2: Co Op Roof & yard	Runoff Area=56,422 sf 65.80% Impervious Runoff Depth=2.38" Tc=6.0 min CN=78 Runoff=3.61 cfs 0.256 af
Subcatchment 1S.3: Runoff to park	Runoff Area=2,081 sf 0.00% Impervious Runoff Depth=0.13" Flow Length=264' Tc=9.0 min CN=39 Runoff=0.00 cfs 0.001 af
Subcatchment 1S.4: Central parking/drive	Runoff Area=19,043 sf 77.98% Impervious Runoff Depth=2.81" Tc=6.0 min CN=83 Runoff=1.44 cfs 0.103 af
Subcatchment 1S.5: Contained yard/park	Runoff Area=3,023 sf 16.84% Impervious Runoff Depth=0.49" Tc=6.0 min CN=49 Runoff=0.02 cfs 0.003 af
Subcatchment 1S.6: Building E roof and	Runoff Area=22,599 sf 53.10% Impervious Runoff Depth=1.74" Tc=6.0 min CN=70 Runoff=1.03 cfs 0.075 af
Subcatchment 1S.7: East Lot 4	Runoff Area=7,618 sf 53.01% Impervious Runoff Depth=1.74" Tc=6.0 min CN=70 Runoff=0.35 cfs 0.025 af
Subcatchment 1S.8: East Lot 3	Runoff Area=6,694 sf 52.99% Impervious Runoff Depth=1.74" Tc=6.0 min CN=70 Runoff=0.31 cfs 0.022 af
Subcatchment 1S.9: East Lot 2	Runoff Area=5,956 sf 80.74% Impervious Runoff Depth=3.19" Tc=6.0 min CN=87 Runoff=0.50 cfs 0.036 af
Subcatchment 2S: 295 Embankment Trib	Runoff Area=69,848 sf 12.70% Impervious Runoff Depth=0.18" Flow Length=233' Tc=16.0 min CN=41 Runoff=0.05 cfs 0.025 af
Subcatchment 3S.1: Garden area runoff	Runoff Area=6,670 sf 0.00% Impervious Runoff Depth=0.00" Flow Length=82' Tc=6.9 min CN=30 Runoff=0.00 cfs 0.000 af
Reach POI-1: POI #1 - 60" Douglass MS4	Inflow=7.65 cfs 0.573 af Outflow=7.65 cfs 0.573 af
Reach POI-3: POI #3 - Baseball Field	Inflow=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af
Pond P1: VUSF	Peak Elev=31.87' Storage=1,177 cf Inflow=0.80 cfs 0.057 af Discarded=0.05 cfs 0.043 af Primary=0.01 cfs 0.014 af Outflow=0.07 cfs 0.057 af

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Pond P2: FP 4

Peak Elev=35.95' Storage=0 cf Inflow=0.35 cfs 0.025 af
10.0" Round Culvert n=0.010 L=70.0' S=0.0050 '/' Outflow=0.35 cfs 0.025 af

Pond P3: FP 3

Peak Elev=36.10' Storage=0 cf Inflow=0.31 cfs 0.022 af
10.0" Round Culvert n=0.010 L=70.0' S=0.0057 '/' Outflow=0.31 cfs 0.022 af

Pond P4: FP 2

Peak Elev=35.90' Storage=0 cf Inflow=0.50 cfs 0.036 af
10.0" Round Culvert n=0.010 L=70.0' S=0.0057 '/' Outflow=0.50 cfs 0.036 af

Pond P5: FP 1

Peak Elev=35.70' Storage=0 cf Inflow=0.33 cfs 0.024 af
10.0" Round Culvert n=0.010 L=75.0' S=0.0049 '/' Outflow=0.33 cfs 0.024 af

Pond POI #2: POI #2 (295 Basin)

Peak Elev=26.67' Storage=464 cf Inflow=0.05 cfs 0.025 af
Discarded=0.01 cfs 0.008 af Primary=0.01 cfs 0.009 af Secondary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.017 af

Total Runoff Area = 4.952 ac Runoff Volume = 0.631 af Average Runoff Depth = 1.53"
54.64% Pervious = 2.706 ac 45.36% Impervious = 2.246 ac

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

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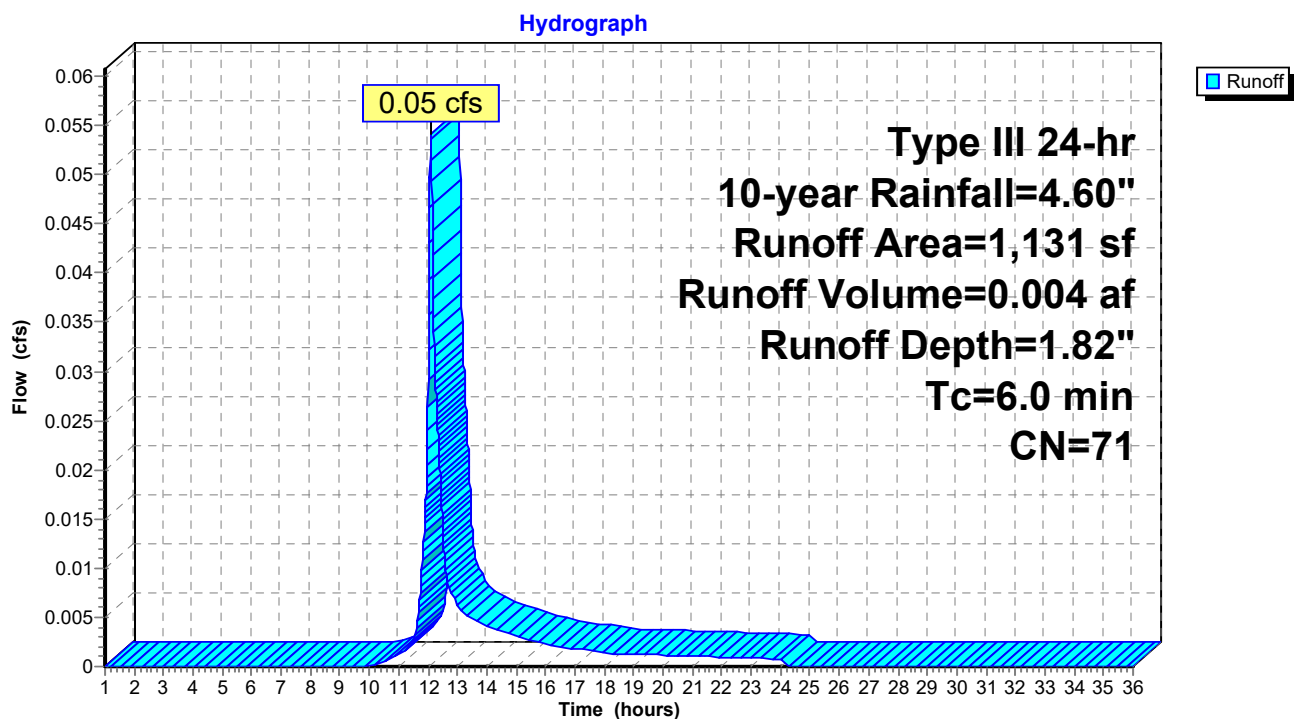
Summary for Subcatchment 1.S1: Drive to Street

Runoff = 0.05 cfs @ 12.09 hrs, Volume= 0.004 af, Depth= 1.82"

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
*	622	98	Pavement
	509	39	>75% Grass cover, Good, HSG A
	1,131	71	Weighted Average
	509		45.00% Pervious Area
	622		55.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1.S1: Drive to Street

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

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Summary for Subcatchment 1S.10: East Lot 1

Runoff = 0.33 cfs @ 12.09 hrs, Volume= 0.024 af, Depth= 3.39"

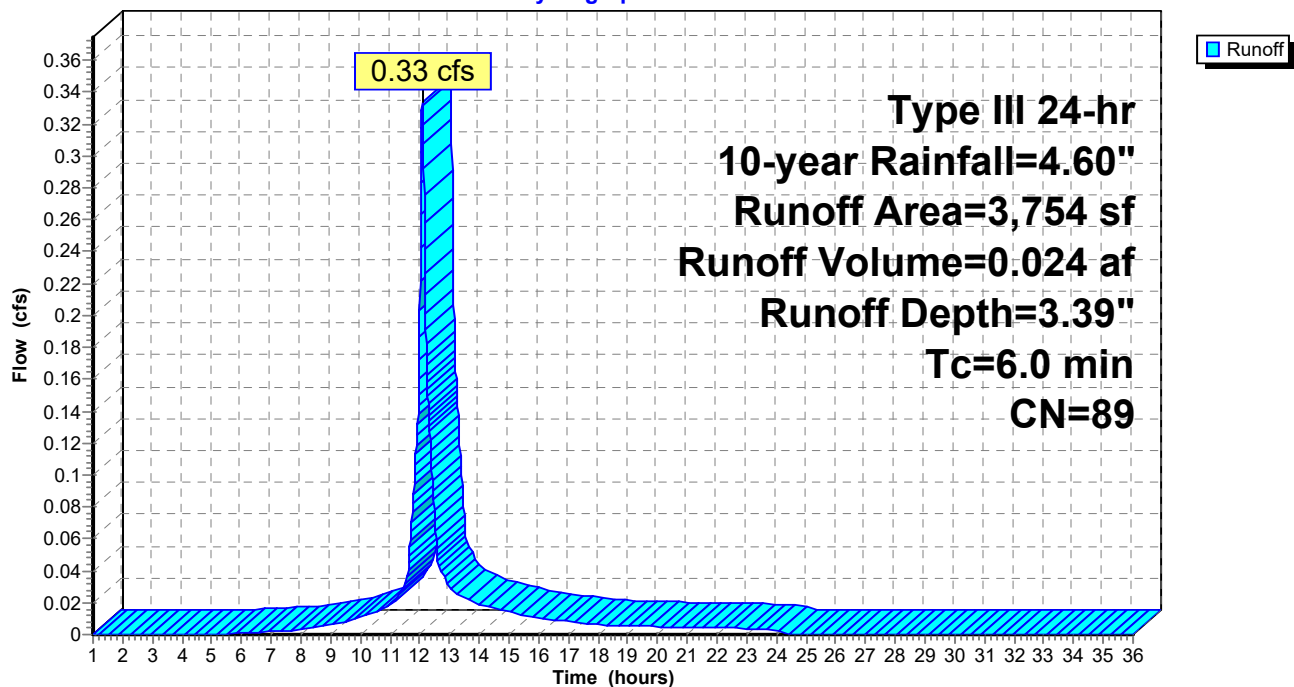
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
*	3,190	98	Pavement
	564	39	>75% Grass cover, Good, HSG A
	3,754	89	Weighted Average
	564		15.02% Pervious Area
	3,190		84.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1S.10: East Lot 1

Hydrograph



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

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Summary for Subcatchment 1S.11: South Lot Treated

Runoff = 0.80 cfs @ 12.09 hrs, Volume= 0.057 af, Depth= 2.72"

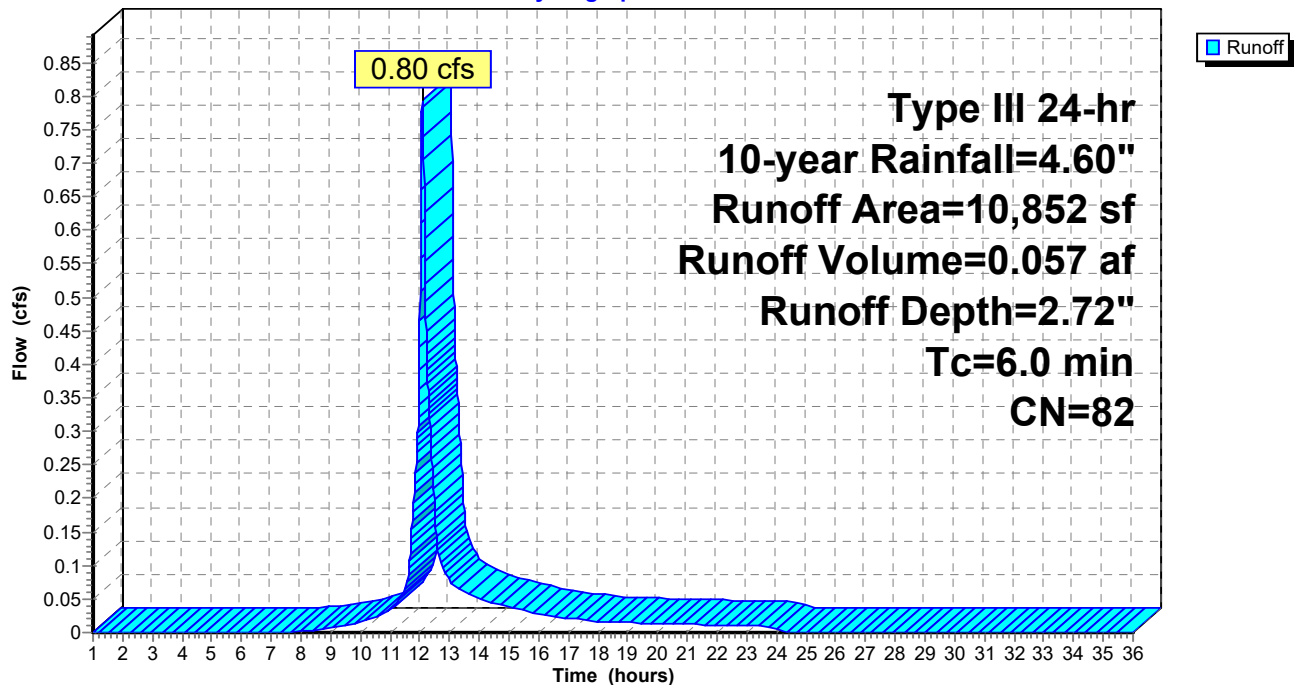
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
*	8,274	98	Paved parking
	2,578	30	Brush, Good, HSG A
	10,852	82	Weighted Average
	2,578		23.76% Pervious Area
	8,274		76.24% Impervious Area

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

Subcatchment 1S.11: South Lot Treated

Hydrograph



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

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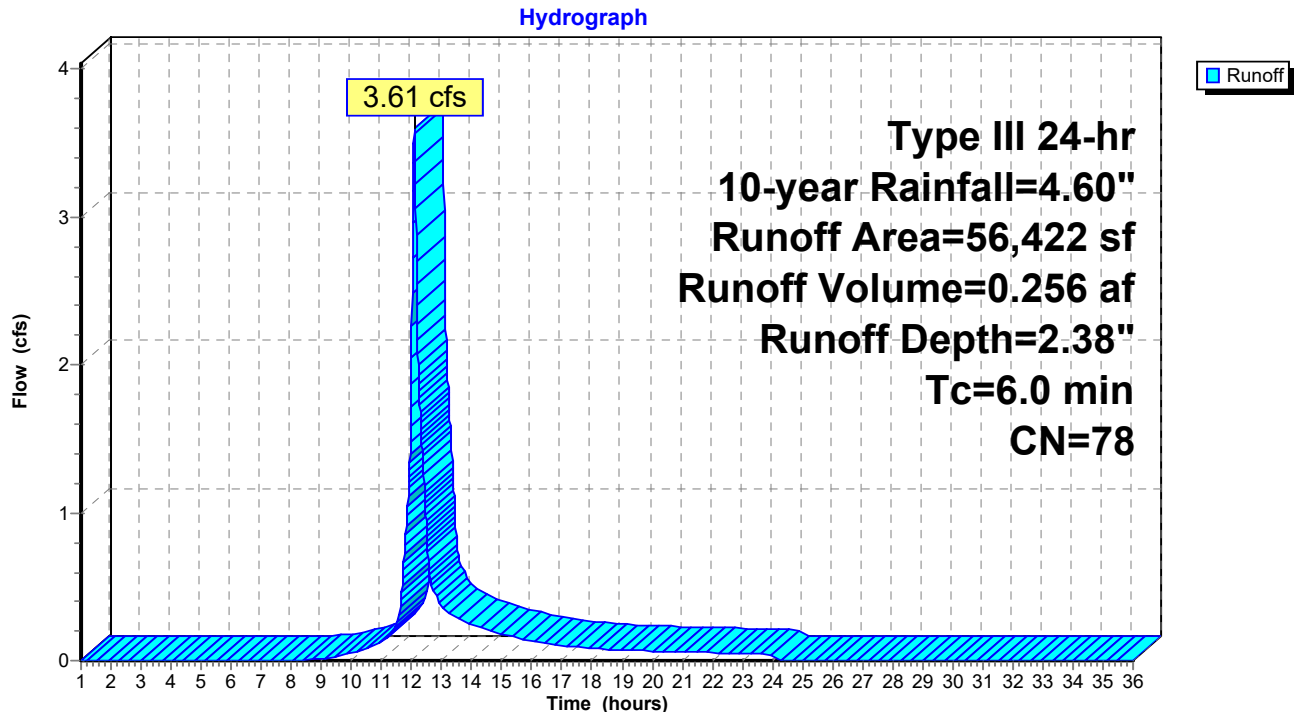
Summary for Subcatchment 1S.2: Co Op Roof & yard

Runoff = 3.61 cfs @ 12.09 hrs, Volume= 0.256 af, Depth= 2.38"

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
*	5,239	98	pavers
	16,100	39	>75% Grass cover, Good, HSG A
*	21,137	98	Roofs
*	4,191	98	sidewalks
*	618	98	patios
	9,137	77	1/8 acre lots, 65% imp, HSG A
	56,422	78	Weighted Average
	19,298		34.20% Pervious Area
	37,124		65.80% Impervious Area

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

Subcatchment 1S.2: Co Op Roof & yard

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

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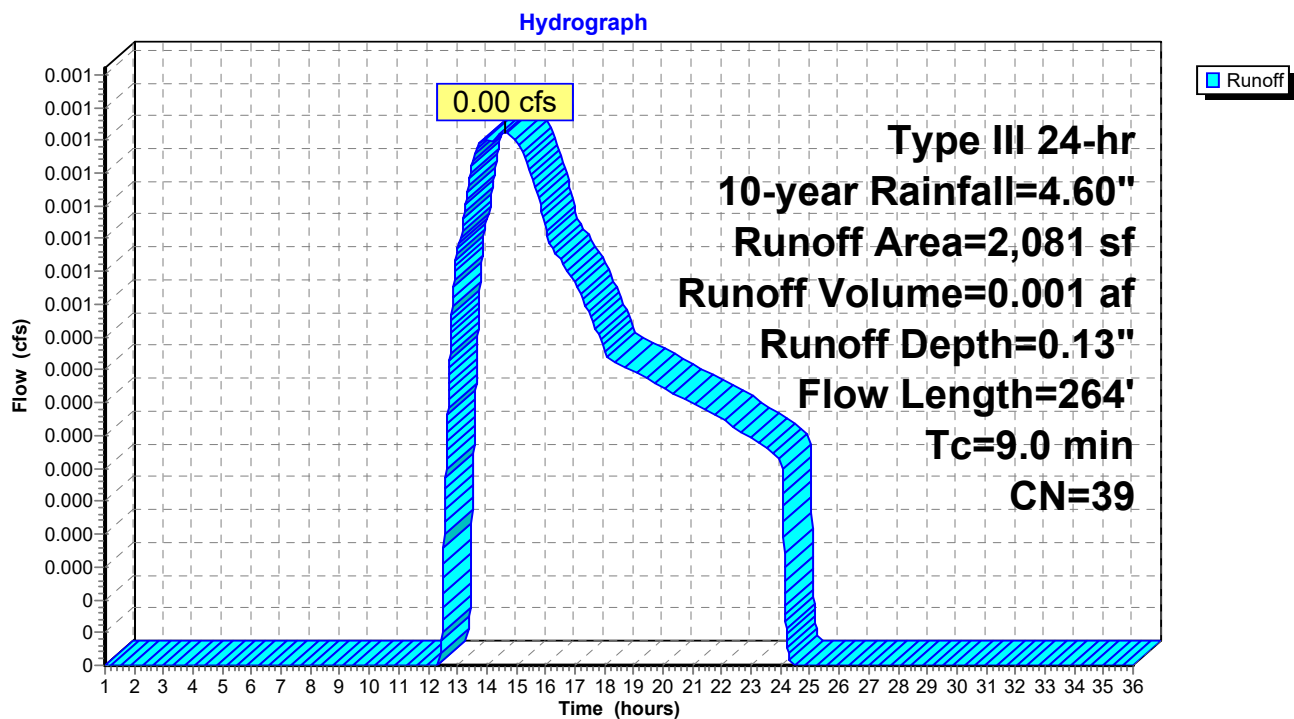
Summary for Subcatchment 1S.3: Runoff to park

Runoff = 0.00 cfs @ 14.63 hrs, Volume= 0.001 af, Depth= 0.13"

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
2,081	39	>75% Grass cover, Good, HSG A
2,081		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	100	0.0600	0.27		Sheet Flow, A to B Grass: Short n= 0.150 P2= 3.27"
2.8	164	0.0200	0.99		Shallow Concentrated Flow, B to C Short Grass Pasture Kv= 7.0 fps
9.0	264	Total			

Subcatchment 1S.3: Runoff to park

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

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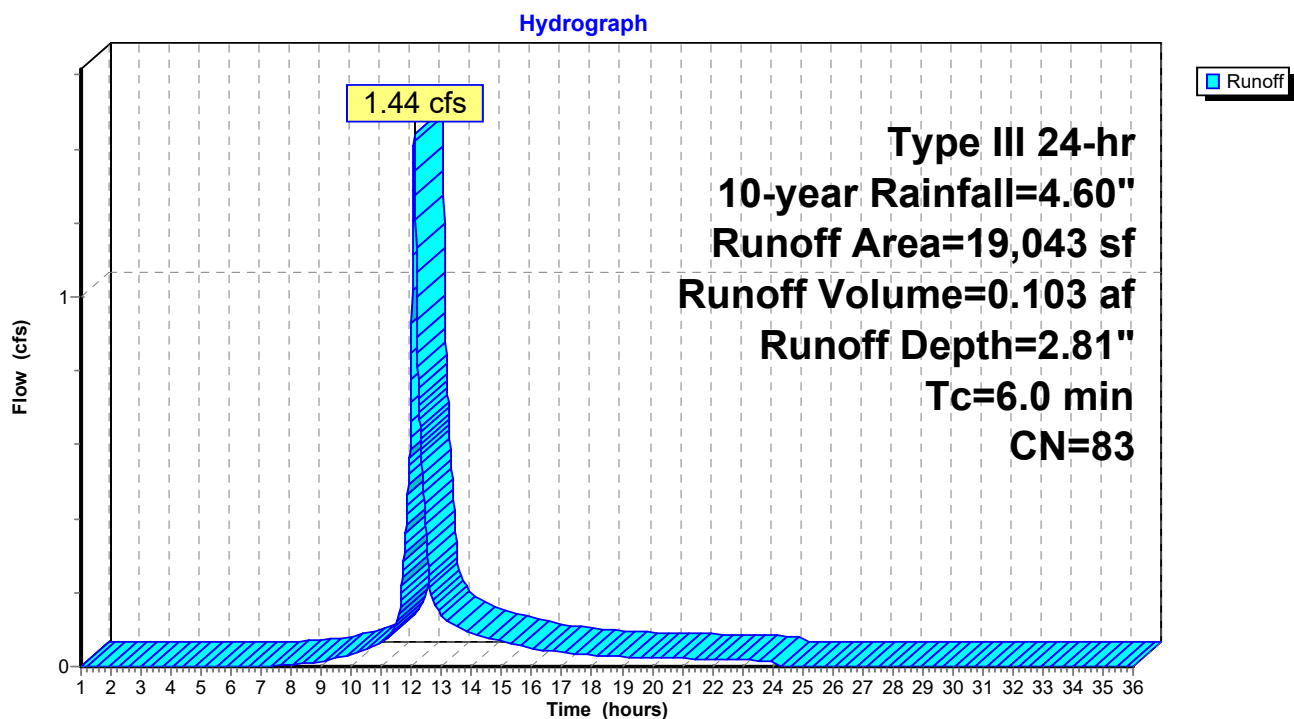
Summary for Subcatchment 1S.4: Central parking/drive

Runoff = 1.44 cfs @ 12.09 hrs, Volume= 0.103 af, Depth= 2.81"

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
*	14,850	98	Pavement
	4,193	30	Brush, Good, HSG A
	19,043	83	Weighted Average
	4,193		22.02% Pervious Area
	14,850		77.98% Impervious Area

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

Subcatchment 1S.4: Central parking/drive

Summary for Subcatchment 1S.5: Contained yard/park connection

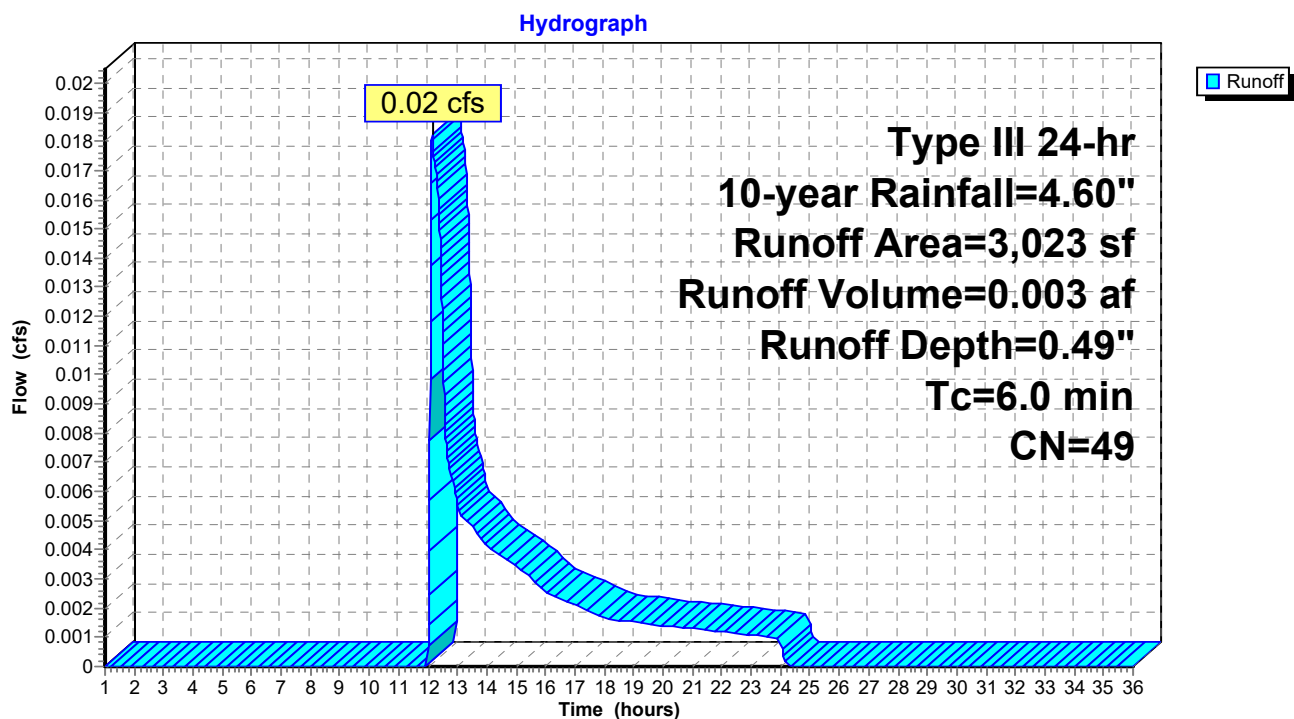
Runoff = 0.02 cfs @ 12.14 hrs, Volume= 0.003 af, Depth= 0.49"

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
2,514	39	>75% Grass cover, Good, HSG A
* 509	98	sidewalks
3,023	49	Weighted Average
2,514		83.16% Pervious Area
509		16.84% Impervious Area

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

Subcatchment 1S.5: Contained yard/park connection



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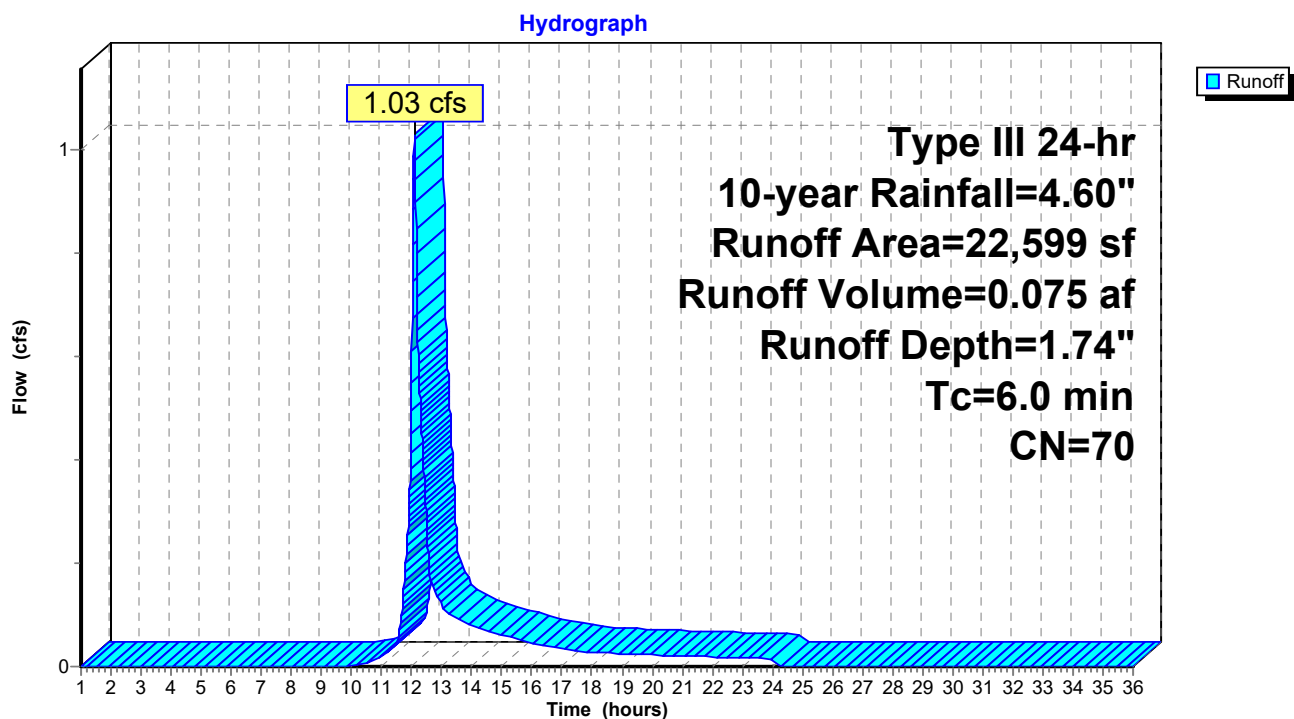
Summary for Subcatchment 1S.6: Building E roof and yard

Runoff = 1.03 cfs @ 12.09 hrs, Volume= 0.075 af, Depth= 1.74"

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
10,599	39	>75% Grass cover, Good, HSG A
* 12,000	98	roof
22,599	70	Weighted Average
10,599		46.90% Pervious Area
12,000		53.10% Impervious Area

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

Subcatchment 1S.6: Building E roof and yard

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

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Summary for Subcatchment 1S.7: East Lot 4

Runoff = 0.35 cfs @ 12.09 hrs, Volume= 0.025 af, Depth= 1.74"

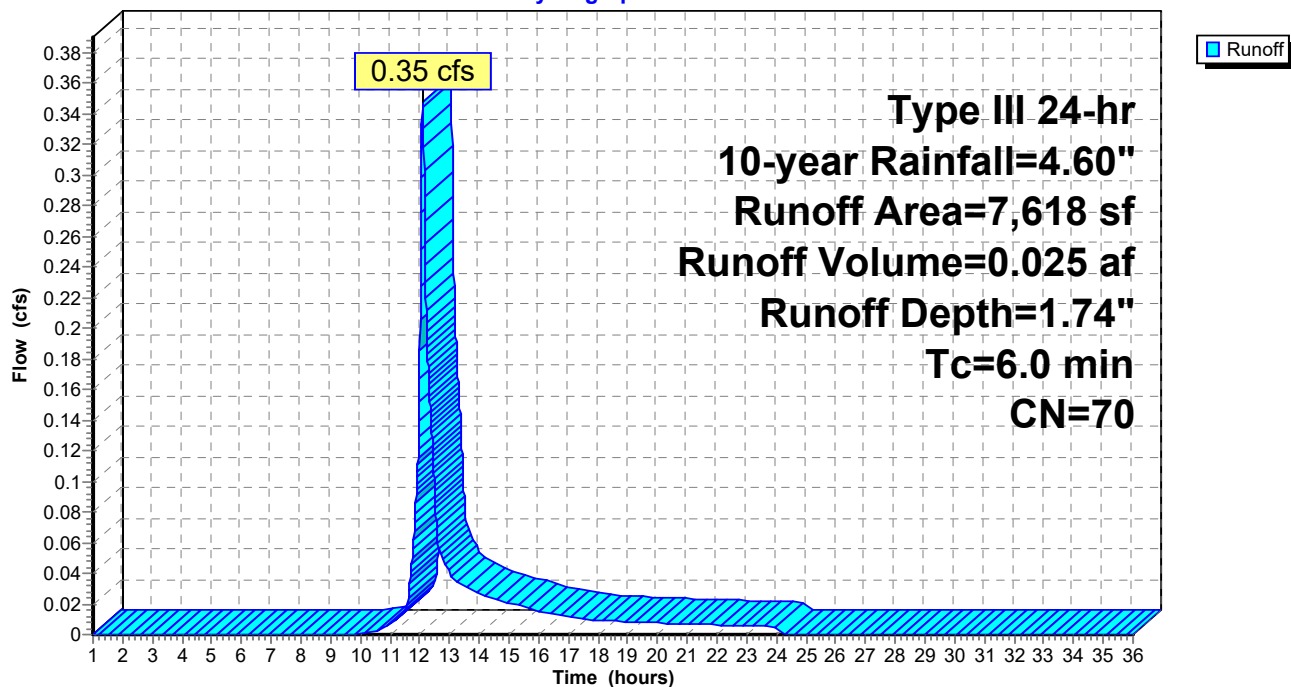
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
*	4,038	98	Paved parking
	3,580	39	>75% Grass cover, Good, HSG A
	7,618	70	Weighted Average
	3,580		46.99% Pervious Area
	4,038		53.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1S.7: East Lot 4

Hydrograph



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

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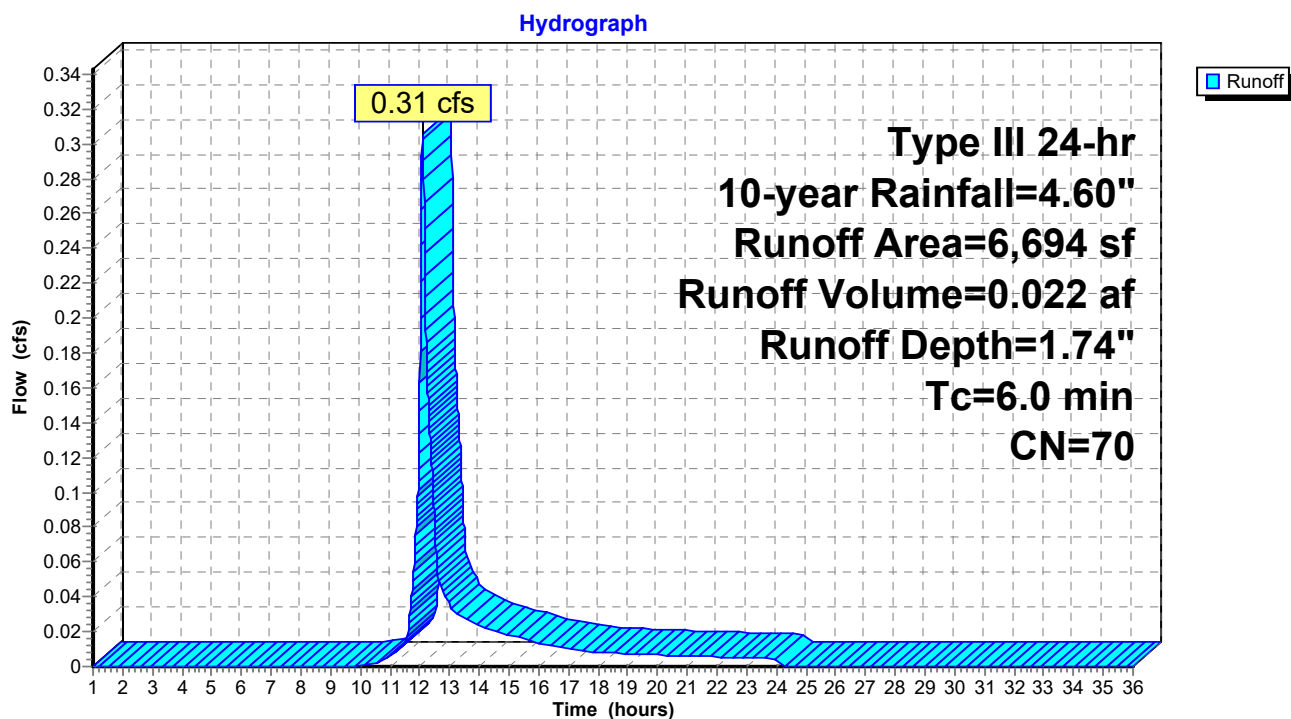
Summary for Subcatchment 1S.8: East Lot 3

Runoff = 0.31 cfs @ 12.09 hrs, Volume= 0.022 af, Depth= 1.74"

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
*	3,547	98	Paved parking
	3,147	39	>75% Grass cover, Good, HSG A
	6,694	70	Weighted Average
	3,147		47.01% Pervious Area
	3,547		52.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1S.8: East Lot 3

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

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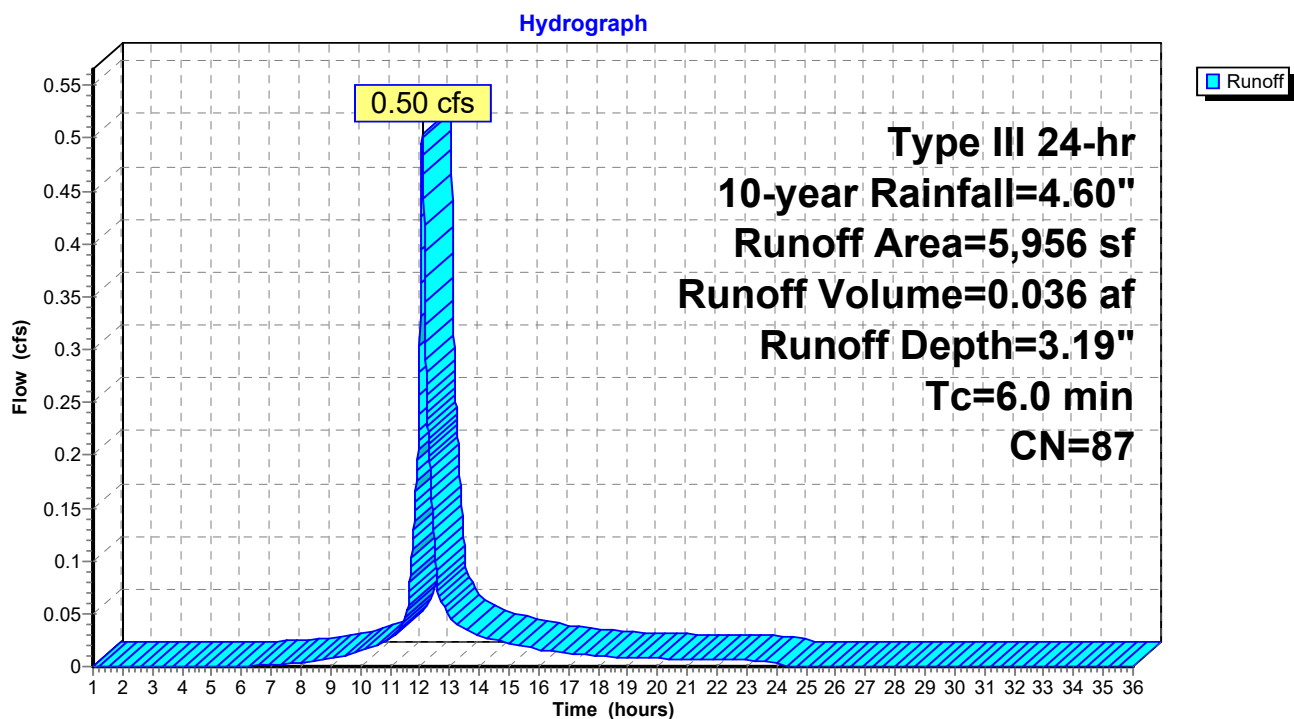
Summary for Subcatchment 1S.9: East Lot 2

Runoff = 0.50 cfs @ 12.09 hrs, Volume= 0.036 af, Depth= 3.19"

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
*	4,809	98	Paved parking, patio, sidewalk
	1,147	39	>75% Grass cover, Good, HSG A
	5,956	87	Weighted Average
	1,147		19.26% Pervious Area
	4,809		80.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1S.9: East Lot 2

Summary for Subcatchment 2S: 295 Embankment Trib

Runoff = 0.05 cfs @ 12.65 hrs, Volume= 0.025 af, Depth= 0.18"

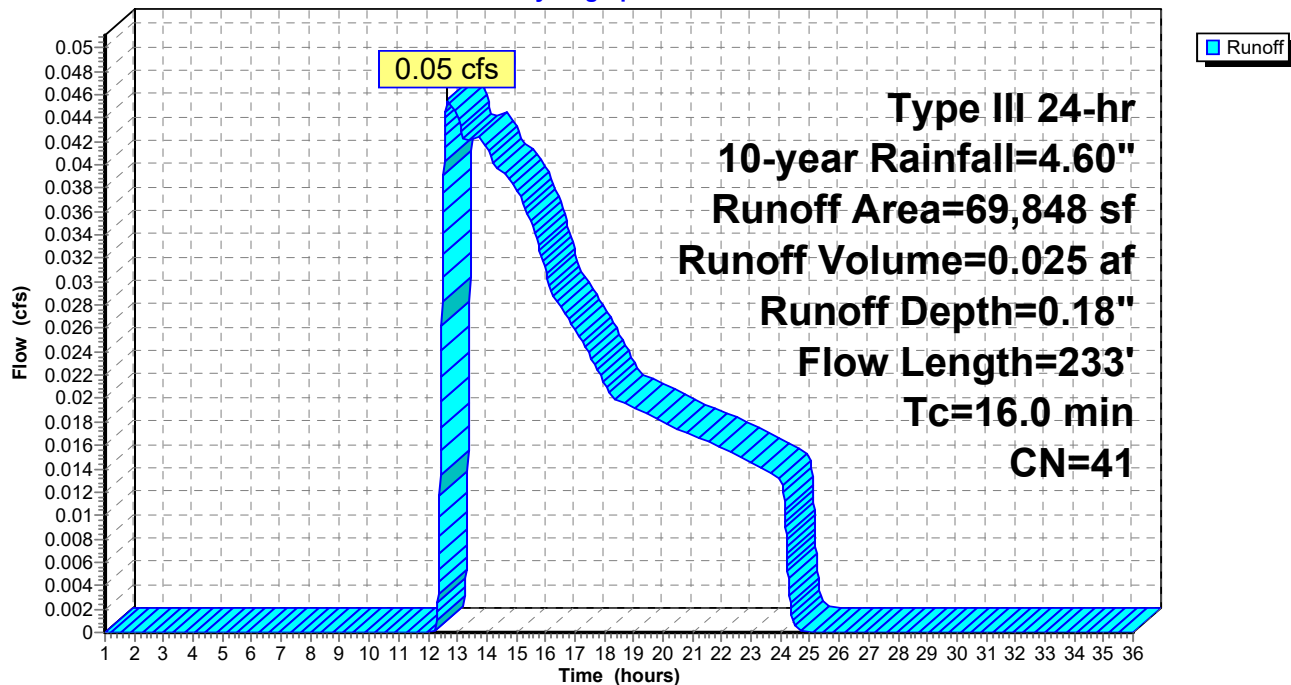
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
8,183	39	>75% Grass cover, Good, HSG A
* 230	98	Stairs
* 3,155	98	Path
* 5,488	98	Homes/driveways
52,792	32	Woods/grass comb., Good, HSG A
69,848	41	Weighted Average
60,975		87.30% Pervious Area
8,873		12.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	100	0.0500	0.11		Sheet Flow, A to B Woods: Light underbrush n= 0.400 P2= 3.27"
1.3	133	0.0600	1.71		Shallow Concentrated Flow, B to C Short Grass Pasture Kv= 7.0 fps
16.0	233	Total			

Subcatchment 2S: 295 Embankment Trib

Hydrograph



Summary for Subcatchment 3S.1: Garden area runoff

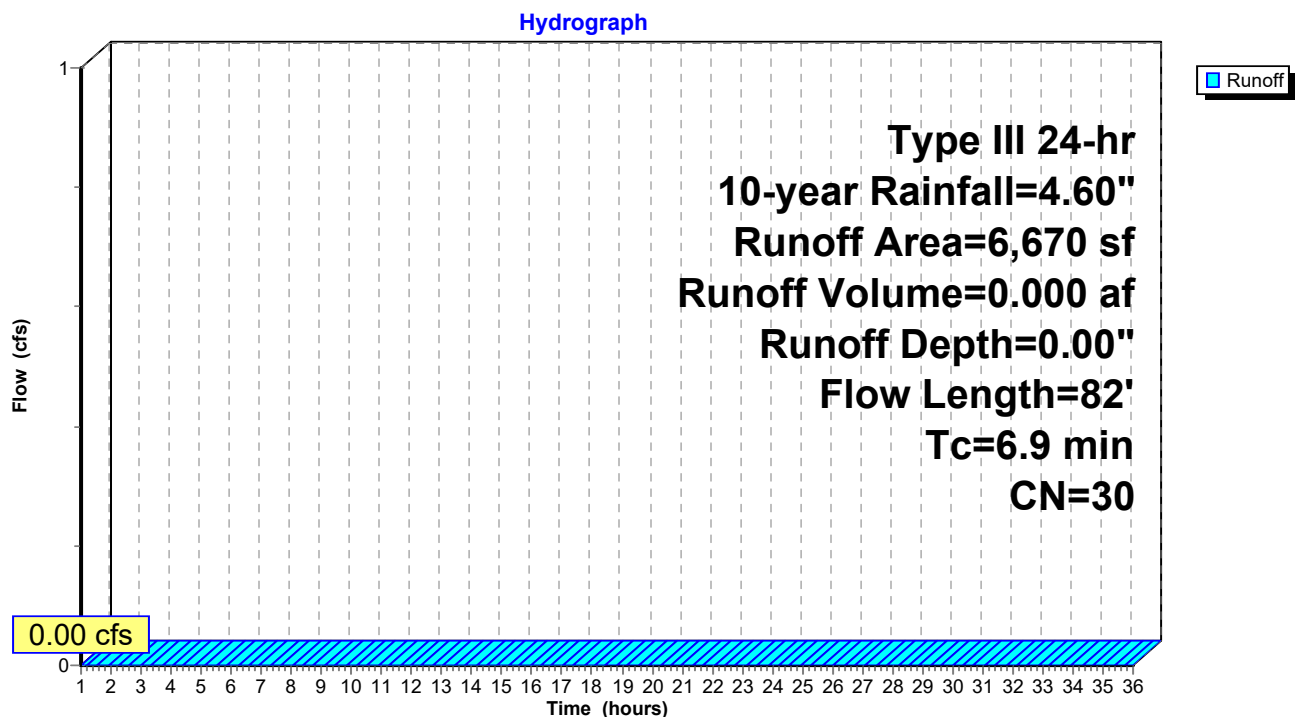
Runoff = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
6,670	30	Brush, Good, HSG A
6,670		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	28	0.3330	0.28		Sheet Flow, A to B
					Grass: Dense n= 0.240 P2= 3.27"
5.2	54	0.0700	0.17		Sheet Flow, B to C
					Grass: Dense n= 0.240 P2= 3.27"
6.9	82	Total			

Subcatchment 3S.1: Garden area runoff

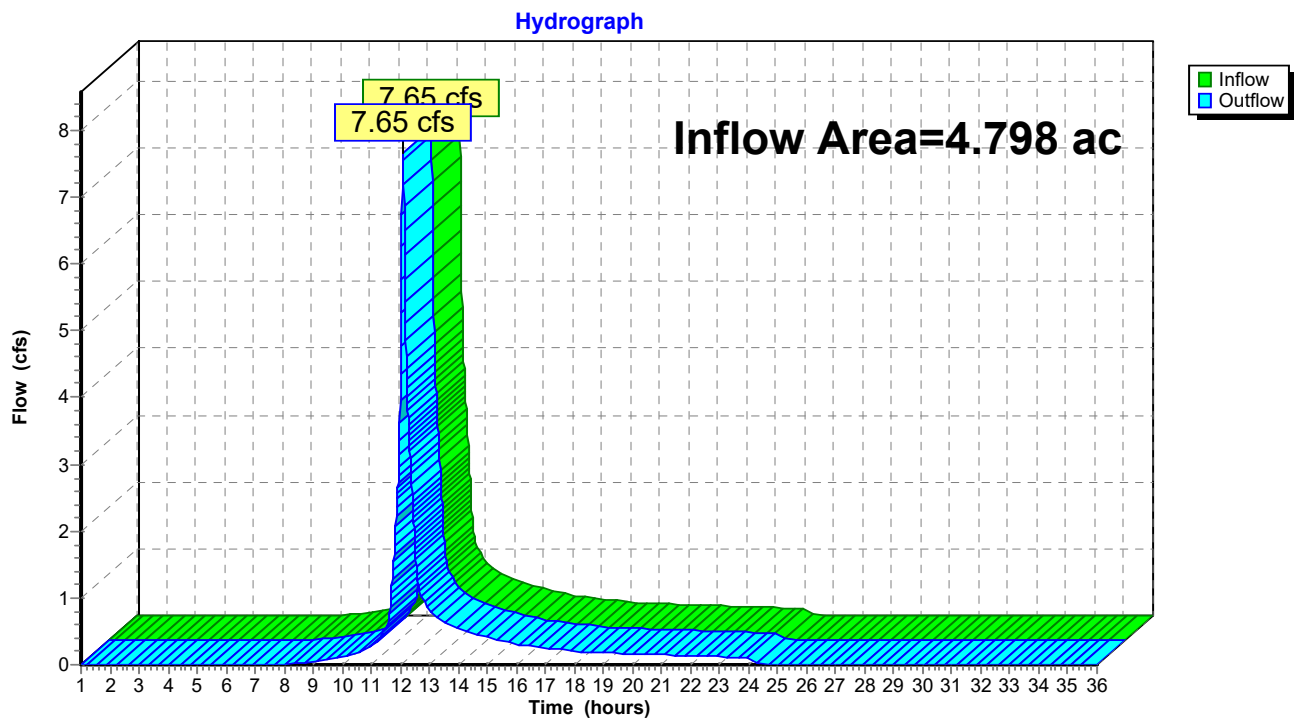


Summary for Reach POI-1: POI #1 - 60" Douglass MS4

Inflow Area = 4.798 ac, 46.81% Impervious, Inflow Depth = 1.43" for 10-year event
 Inflow = 7.65 cfs @ 12.09 hrs, Volume= 0.573 af
 Outflow = 7.65 cfs @ 12.09 hrs, Volume= 0.573 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 POI-1: POI #1 - 60" Douglass MS4

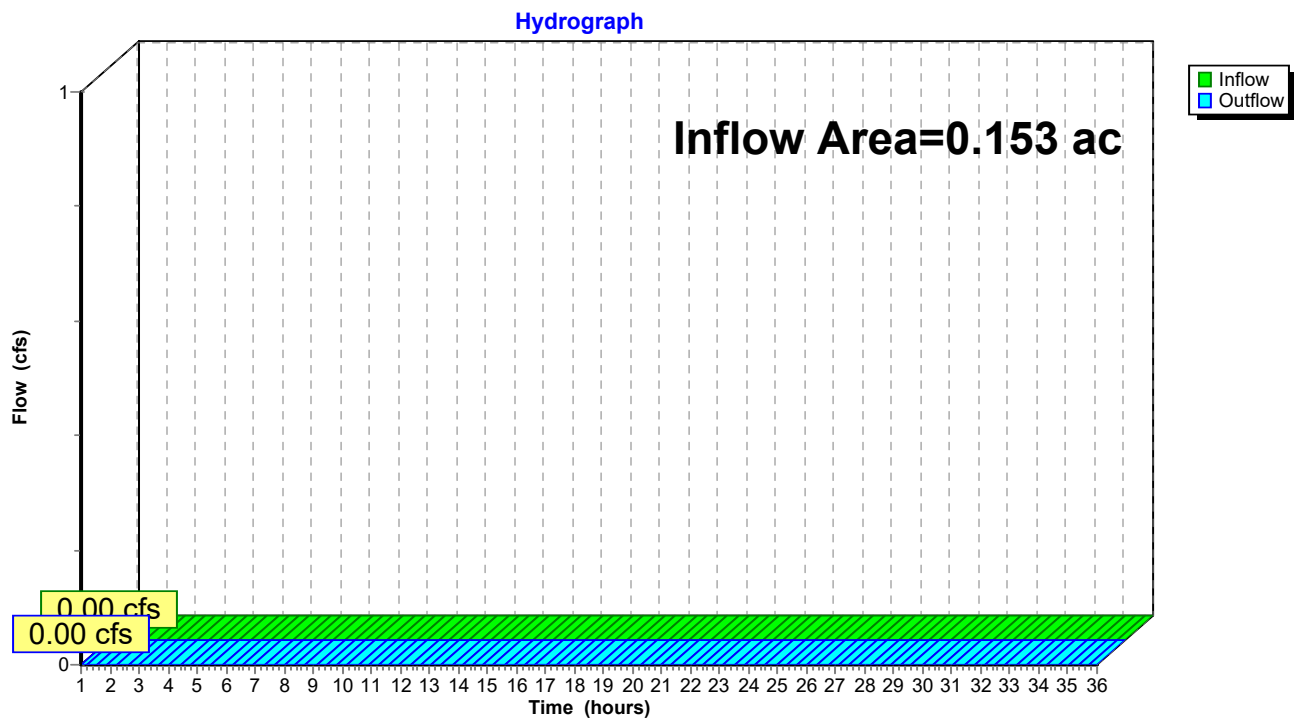


Summary for Reach POI-3: POI #3 - Baseball Field

Inflow Area = 0.153 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-year 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= 1.00-36.00 hrs, dt= 0.01 hrs

Reach POI-3: POI #3 - Baseball Field



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Summary for Pond P1: VUSF

Inflow Area = 0.249 ac, 76.24% Impervious, Inflow Depth = 2.72" for 10-year event
 Inflow = 0.80 cfs @ 12.09 hrs, Volume= 0.057 af
 Outflow = 0.07 cfs @ 13.29 hrs, Volume= 0.057 af, Atten= 92%, Lag= 72.1 min
 Discarded = 0.05 cfs @ 13.29 hrs, Volume= 0.043 af
 Primary = 0.01 cfs @ 13.29 hrs, Volume= 0.014 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Peak Elev= 31.87' @ 13.29 hrs Surf.Area= 2,198 sf Storage= 1,177 cf

Plug-Flow detention time= 220.8 min calculated for 0.057 af (100% of inflow)

Center-of-Mass det. time= 220.8 min (1,040.6 - 819.8)

Volume	Invert	Avail.Storage	Storage Description
#1	30.75'	1,899 cf	Ponding (Prismatic) Listed below (Recalc)
#2	29.25'	69 cf	Filter Media/Loam (Prismatic) Listed below (Recalc) 687 cf Overall x 10.0% Voids
#3	28.92'	30 cf	Transition Gravel (Prismatic) Listed below (Recalc) 151 cf Overall x 20.0% Voids
#4	27.00'	349 cf	Crushed Stone (Prismatic) Listed below (Recalc) 879 cf Overall - 6 cf Embedded = 873 cf x 40.0% Voids
#5	27.10'	5 cf	4.0" Round Pipe Storage x 2 Inside #4 L= 30.0' S= 0.0005 '/ 6 cf Overall - 0.2" Wall Thickness = 5 cf
		2,353 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.75	465	0	0
32.25	945	1,058	1,058
33.00	1,300	842	1,899

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
29.25	458	0	0
30.75	458	687	687

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.92	458	0	0
29.25	458	151	151

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
27.00	458	0	0
28.92	458	879	879

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

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Device	Routing	Invert	Outlet Devices
#1	Primary	27.00'	12.0" Round Culvert L= 60.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 27.00' / 26.75' S= 0.0042 ' / ' Cc= 0.600 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf
#2	Device 1	27.10'	0.5" Vert. Soil Filter Media Drawdown Effect C= 0.600
#3	Device 1	32.35'	24.0" Horiz. Beehive Outlet C= 0.600 Limited to weir flow at low heads
#4	Discarded	27.00'	1.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.05 cfs @ 13.29 hrs HW=31.87' (Free Discharge)

↳ **4=Exfiltration** (Exfiltration Controls 0.05 cfs)

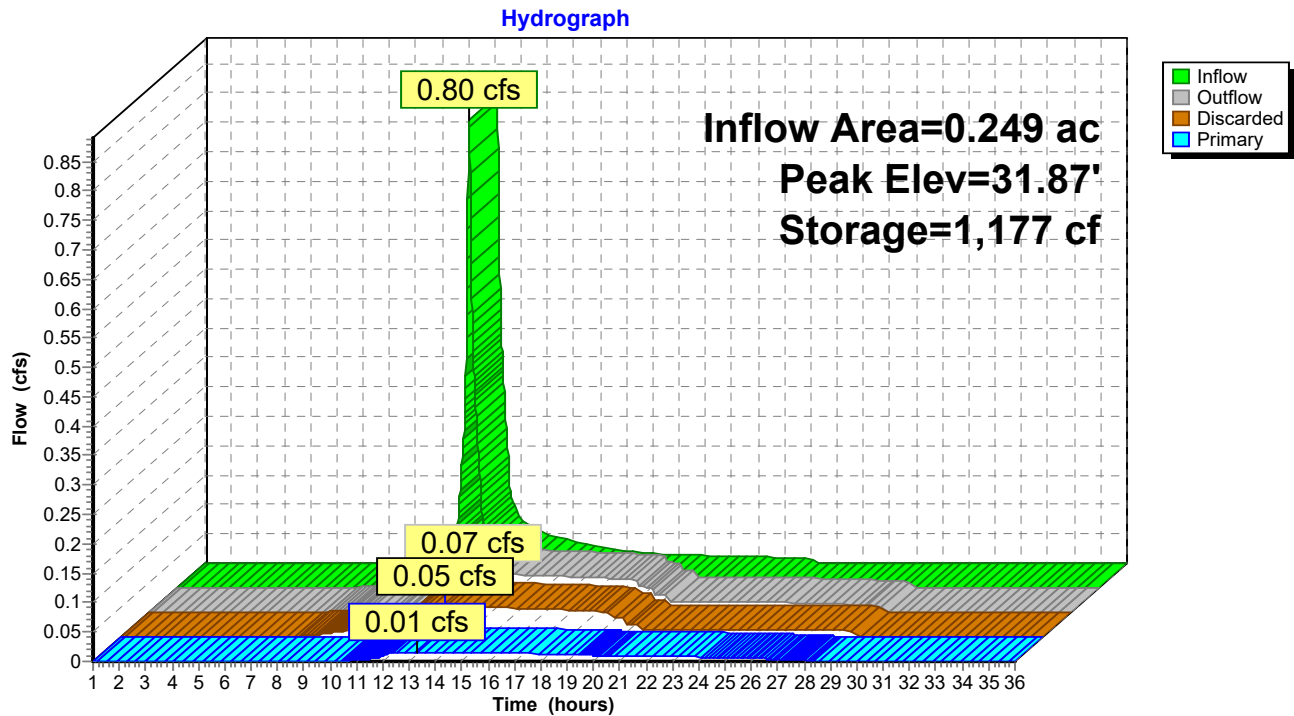
Primary OutFlow Max=0.01 cfs @ 13.29 hrs HW=31.87' TW=0.00' (Dynamic Tailwater)

↳ **1=Culvert** (Passes 0.01 cfs of 4.16 cfs potential flow)

↳ **2=Soil Filter Media Drawdown Effect** (Orifice Controls 0.01 cfs @ 10.50 fps)

↳ **3=Beehive Outlet** (Controls 0.00 cfs)

Pond P1: VUSF



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

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Summary for Pond P2: FP 4

Inflow Area = 0.175 ac, 53.01% Impervious, Inflow Depth = 1.74" for 10-year event
 Inflow = 0.35 cfs @ 12.09 hrs, Volume= 0.025 af
 Outflow = 0.35 cfs @ 12.09 hrs, Volume= 0.025 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.35 cfs @ 12.09 hrs, Volume= 0.025 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 35.95' @ 1.00 hrs Surf.Area= 40 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	35.95'	14 cf	4.00'W x 5.00'L x 3.60'H Media/Stone 72 cf Overall x 20.0% Voids
#2	35.95'	38 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		52 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
35.95	20	0	0
36.95	56	38	38

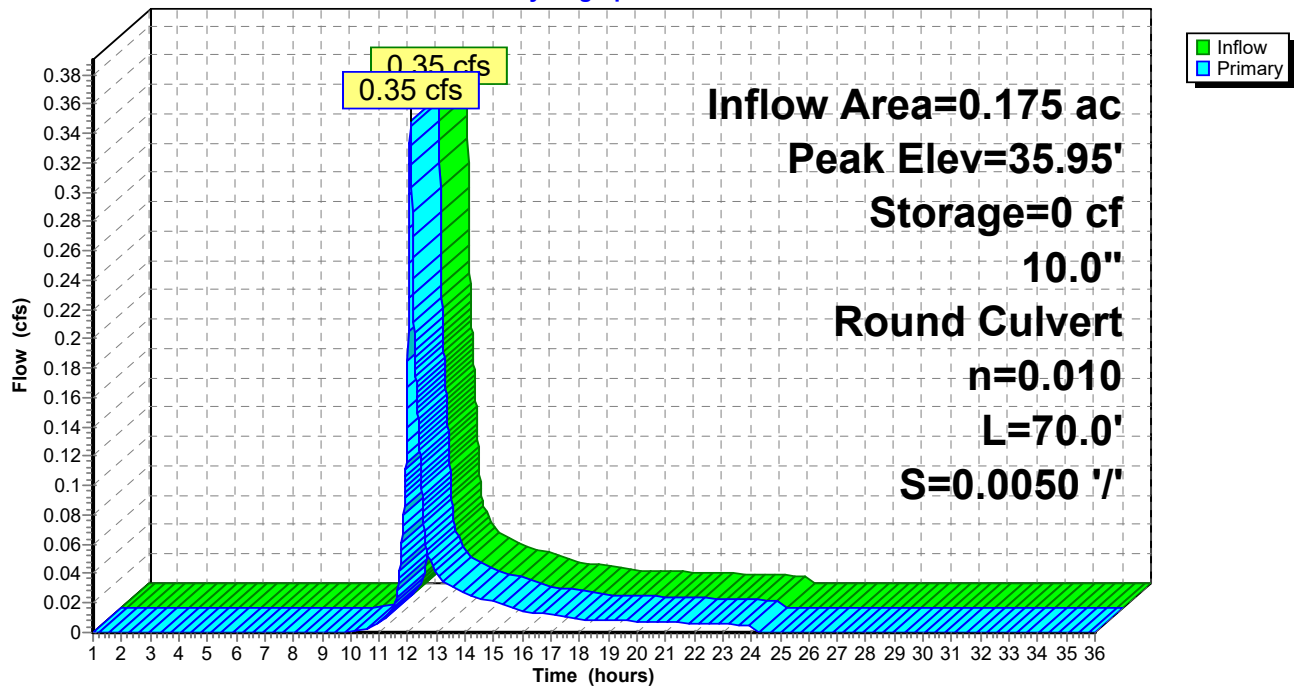
Device	Routing	Invert	Outlet Devices
#1	Primary	32.35'	10.0" Round Culvert L= 70.0' Ke= 1.000 Inlet / Outlet Invert= 32.35' / 32.00' S= 0.0050 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=35.95' TW=0.00' (Dynamic Tailwater)

↑**1=Culvert** (Passes 0.00 cfs of 3.51 cfs potential flow)

Pond P2: FP 4

Hydrograph



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

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Summary for Pond P3: FP 3

Inflow Area = 0.154 ac, 52.99% Impervious, Inflow Depth = 1.74" for 10-year event
 Inflow = 0.31 cfs @ 12.09 hrs, Volume= 0.022 af
 Outflow = 0.31 cfs @ 12.09 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.31 cfs @ 12.09 hrs, Volume= 0.022 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 36.10' @ 1.00 hrs Surf.Area= 50 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	36.10'	21 cf	5.00'W x 5.00'L x 4.20'H Media/Stone 105 cf Overall x 20.0% Voids
#2	36.10'	45 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		66 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.10	25	0	0
37.10	64	45	45

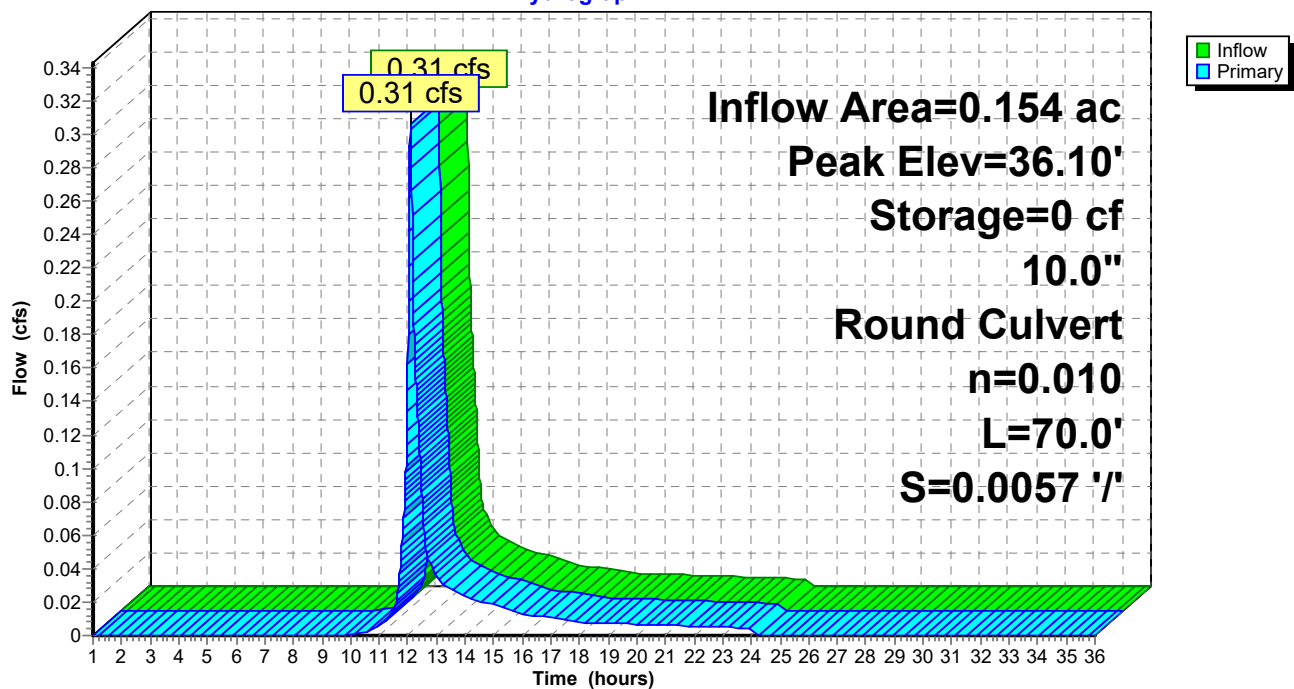
Device	Routing	Invert	Outlet Devices
#1	Primary	31.90'	10.0" Round Culvert L= 70.0' Ke= 1.000 Inlet / Outlet Invert= 31.90' / 31.50' S= 0.0057 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=36.10' TW=0.00' (Dynamic Tailwater)

↑**1=Culvert** (Passes 0.00 cfs of 3.83 cfs potential flow)

Pond P3: FP 3

Hydrograph



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

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Summary for Pond P4: FP 2

Inflow Area = 0.137 ac, 80.74% Impervious, Inflow Depth = 3.19" for 10-year event
 Inflow = 0.50 cfs @ 12.09 hrs, Volume= 0.036 af
 Outflow = 0.50 cfs @ 12.09 hrs, Volume= 0.036 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.50 cfs @ 12.09 hrs, Volume= 0.036 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 35.90' @ 1.00 hrs Surf.Area= 50 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	35.90'	23 cf	5.00'W x 5.00'L x 4.50'H Media/Stone 113 cf Overall x 20.0% Voids
#2	35.90'	45 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		67 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
35.90	25	0	0
36.90	64	45	45

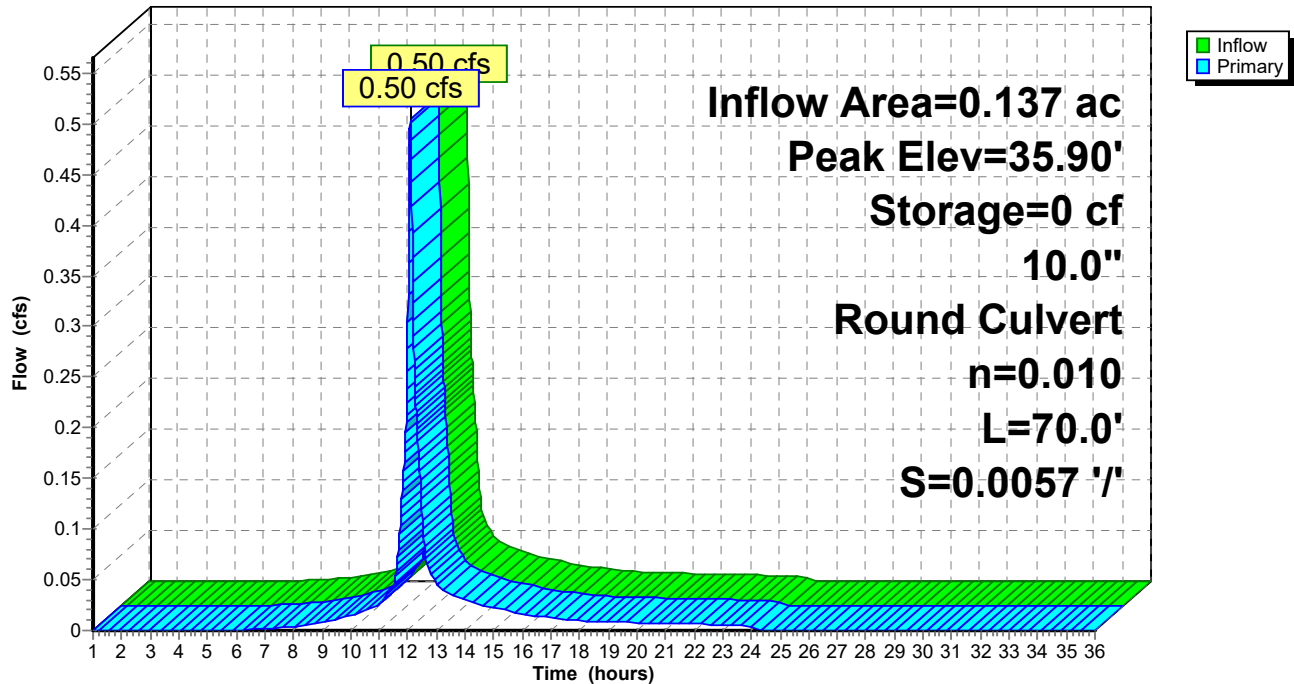
Device	Routing	Invert	Outlet Devices
#1	Primary	31.40'	10.0" Round Culvert L= 70.0' Ke= 1.000 Inlet / Outlet Invert= 31.40' / 31.00' S= 0.0057 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=35.90' TW=0.00' (Dynamic Tailwater)

↑**1=Culvert** (Passes 0.00 cfs of 3.98 cfs potential flow)

Pond P4: FP 2

Hydrograph



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

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Summary for Pond P5: FP 1

Inflow Area = 0.086 ac, 84.98% Impervious, Inflow Depth = 3.39" for 10-year event
 Inflow = 0.33 cfs @ 12.09 hrs, Volume= 0.024 af
 Outflow = 0.33 cfs @ 12.09 hrs, Volume= 0.024 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.33 cfs @ 12.09 hrs, Volume= 0.024 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 35.70' @ 1.00 hrs Surf.Area= 40 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 0.0 min (797.3 - 797.3)

Volume	Invert	Avail.Storage	Storage Description
#1	35.70'	19 cf	4.00'W x 5.00'L x 4.80'H Media/Stone 96 cf Overall x 20.0% Voids
#2	35.70'	38 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		57 cf	Total Available Storage

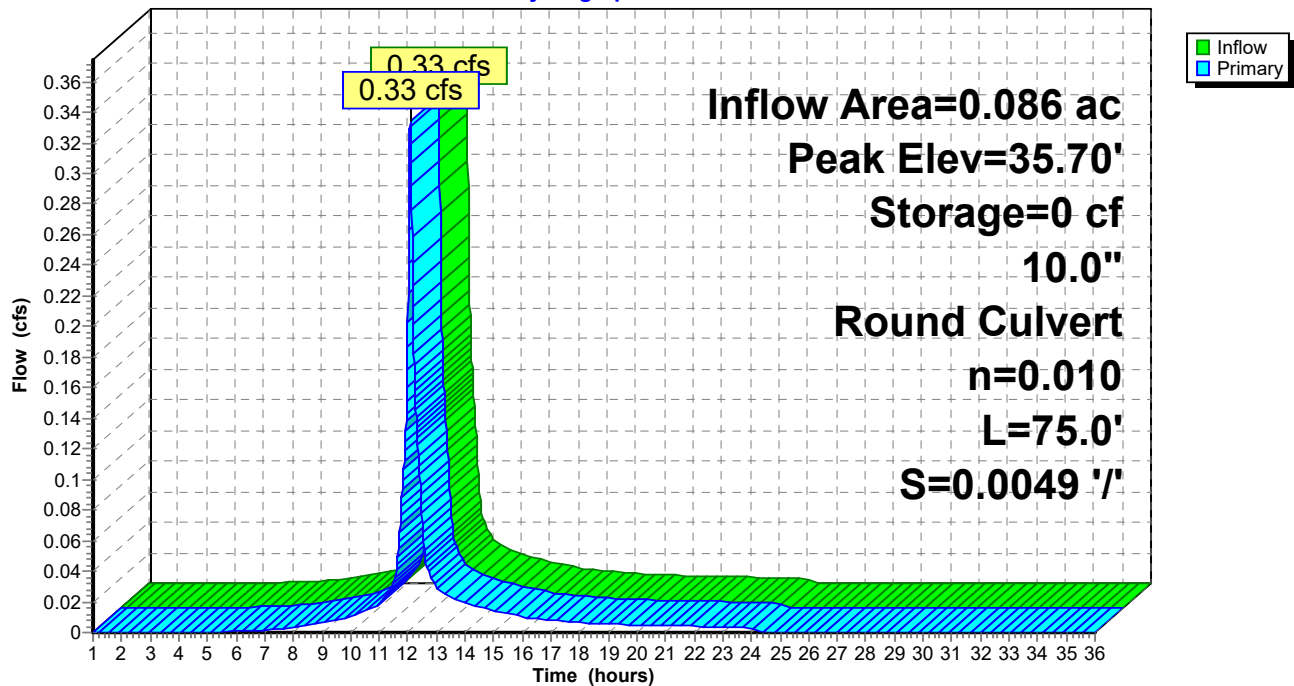
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
35.70	20	0	0
36.70	56	38	38

Device	Routing	Invert	Outlet Devices
#1	Primary	30.90'	10.0" Round Culvert L= 75.0' Ke= 1.000 Inlet / Outlet Invert= 30.90' / 30.53' S= 0.0049 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=35.70' TW=0.00' (Dynamic Tailwater)
 ↑**1=Culvert** (Passes 0.00 cfs of 4.12 cfs potential flow)

Pond P5: FP 1

Hydrograph



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

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Summary for Pond POI #2: POI #2 (295 Basin)

Inflow Area = 1.603 ac, 12.70% Impervious, Inflow Depth = 0.18" for 10-year event
 Inflow = 0.05 cfs @ 12.65 hrs, Volume= 0.025 af
 Outflow = 0.02 cfs @ 17.23 hrs, Volume= 0.017 af, Atten= 45%, Lag= 274.8 min
 Discarded = 0.01 cfs @ 17.23 hrs, Volume= 0.008 af
 Primary = 0.01 cfs @ 17.23 hrs, Volume= 0.009 af
 Secondary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Peak Elev= 26.67' @ 17.23 hrs Surf.Area= 2,411 sf Storage= 464 cf

Plug-Flow detention time= 310.4 min calculated for 0.017 af (71% of inflow)

Center-of-Mass det. time= 201.5 min (1,221.1 - 1,019.6)

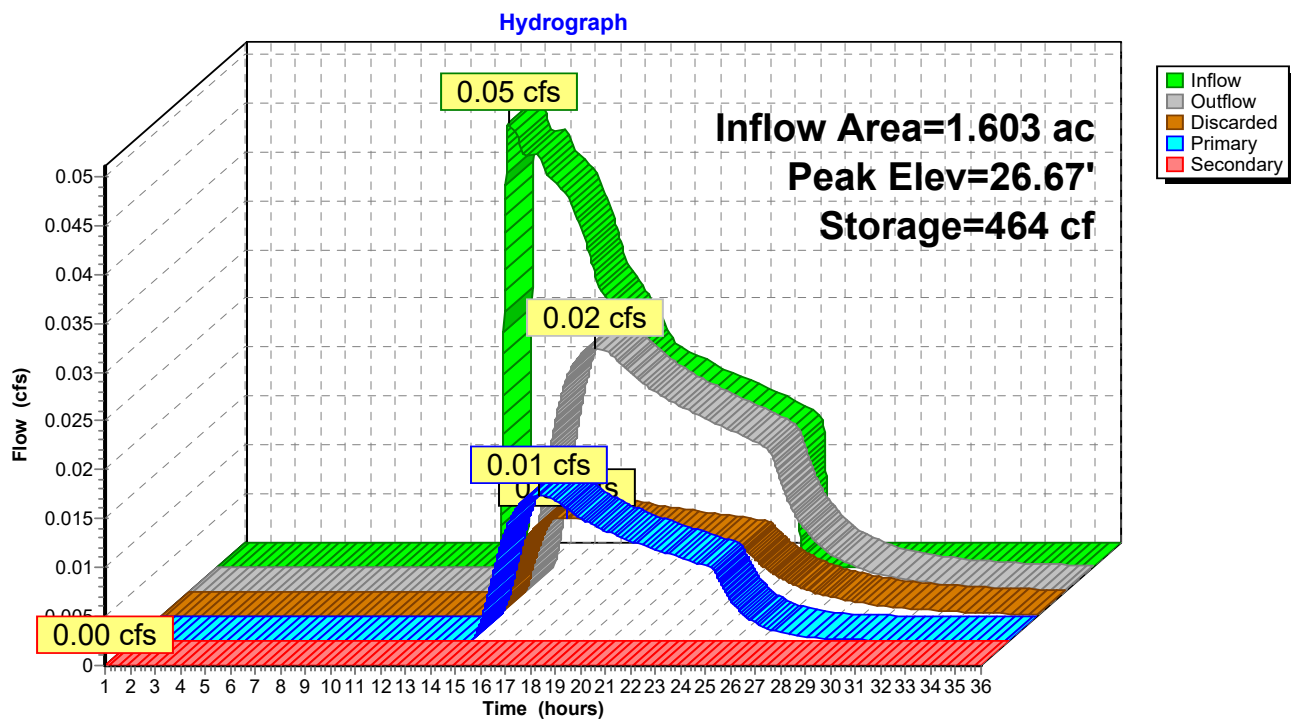
Volume	Invert	Avail.Storage	Storage Description
#1	26.30'	105,037 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.30	100	0	0
27.00	4,475	1,601	1,601
28.00	10,120	7,298	8,899
29.00	14,131	12,126	21,024
30.00	17,326	15,729	36,753
32.00	24,023	41,349	78,102
33.00	29,847	26,935	105,037

Device	Routing	Invert	Outlet Devices
#1	Primary	26.60'	12.0" Round Culvert L= 16.0' Ke= 0.600 Inlet / Outlet Invert= 26.60' / 26.51' S= 0.0056 ' S= 0.0056 ' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	32.40'	20.0' long x 15.0' breadth Overflow Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Discarded	26.60'	1.000 in/hr Exfiltration over Surface area above 26.60' Excluded Surface area = 1,975 sf

Discarded OutFlow Max=0.01 cfs @ 17.23 hrs HW=26.67' (Free Discharge)↑**3=Exfiltration** (Exfiltration Controls 0.01 cfs)**Primary OutFlow** Max=0.01 cfs @ 17.23 hrs HW=26.67' TW=0.00' (Dynamic Tailwater)↑**1=Culvert** (Barrel Controls 0.01 cfs @ 0.95 fps)**Secondary OutFlow** Max=0.00 cfs @ 1.00 hrs HW=26.30' (Free Discharge)↑**2=Overflow** (Controls 0.00 cfs)

Pond POI #2: POI #2 (295 Basin)



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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

Subcatchment 1S.1: Drive to Street	Runoff Area=1,131 sf 55.00% Impervious Runoff Depth=2.74" Tc=6.0 min CN=71 Runoff=0.08 cfs 0.006 af
Subcatchment 1S.10: East Lot 1	Runoff Area=3,754 sf 84.98% Impervious Runoff Depth=4.54" Tc=6.0 min CN=89 Runoff=0.44 cfs 0.033 af
Subcatchment 1S.11: South Lot Treated	Runoff Area=10,852 sf 76.24% Impervious Runoff Depth=3.80" Tc=6.0 min CN=82 Runoff=1.10 cfs 0.079 af
Subcatchment 1S.2: Co Op Roof & yard	Runoff Area=56,422 sf 65.80% Impervious Runoff Depth=3.40" Tc=6.0 min CN=78 Runoff=5.17 cfs 0.367 af
Subcatchment 1S.3: Runoff to park	Runoff Area=2,081 sf 0.00% Impervious Runoff Depth=0.39" Flow Length=264' Tc=9.0 min CN=39 Runoff=0.01 cfs 0.002 af
Subcatchment 1S.4: Central parking/drive	Runoff Area=19,043 sf 77.98% Impervious Runoff Depth=3.91" Tc=6.0 min CN=83 Runoff=1.98 cfs 0.142 af
Subcatchment 1S.5: Contained yard/park	Runoff Area=3,023 sf 16.84% Impervious Runoff Depth=0.98" Tc=6.0 min CN=49 Runoff=0.06 cfs 0.006 af
Subcatchment 1S.6: Building E roof and	Runoff Area=22,599 sf 53.10% Impervious Runoff Depth=2.65" Tc=6.0 min CN=70 Runoff=1.60 cfs 0.114 af
Subcatchment 1S.7: East Lot 4	Runoff Area=7,618 sf 53.01% Impervious Runoff Depth=2.65" Tc=6.0 min CN=70 Runoff=0.54 cfs 0.039 af
Subcatchment 1S.8: East Lot 3	Runoff Area=6,694 sf 52.99% Impervious Runoff Depth=2.65" Tc=6.0 min CN=70 Runoff=0.47 cfs 0.034 af
Subcatchment 1S.9: East Lot 2	Runoff Area=5,956 sf 80.74% Impervious Runoff Depth=4.33" Tc=6.0 min CN=87 Runoff=0.68 cfs 0.049 af
Subcatchment 2S: 295 Embankment Trib	Runoff Area=69,848 sf 12.70% Impervious Runoff Depth=0.49" Flow Length=233' Tc=16.0 min CN=41 Runoff=0.31 cfs 0.066 af
Subcatchment 3S.1: Garden area runoff	Runoff Area=6,670 sf 0.00% Impervious Runoff Depth=0.05" Flow Length=82' Tc=6.9 min CN=30 Runoff=0.00 cfs 0.001 af
Reach POI-1: POI #1 - 60" Douglass MS4	Inflow=11.03 cfs 0.854 af Outflow=11.03 cfs 0.854 af
Reach POI-3: POI #3 - Baseball Field	Inflow=0.00 cfs 0.001 af Outflow=0.00 cfs 0.001 af
Pond P1: VUSF	Peak Elev=32.38' Storage=1,639 cf Inflow=1.10 cfs 0.079 af Discarded=0.06 cfs 0.057 af Primary=0.13 cfs 0.022 af Outflow=0.18 cfs 0.079 af

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Pond P2: FP 4

Peak Elev=35.95' Storage=0 cf Inflow=0.54 cfs 0.039 af
10.0" Round Culvert n=0.010 L=70.0' S=0.0050 '/' Outflow=0.54 cfs 0.039 af

Pond P3: FP 3

Peak Elev=36.10' Storage=0 cf Inflow=0.47 cfs 0.034 af
10.0" Round Culvert n=0.010 L=70.0' S=0.0057 '/' Outflow=0.47 cfs 0.034 af

Pond P4: FP 2

Peak Elev=35.90' Storage=0 cf Inflow=0.68 cfs 0.049 af
10.0" Round Culvert n=0.010 L=70.0' S=0.0057 '/' Outflow=0.68 cfs 0.049 af

Pond P5: FP 1

Peak Elev=35.70' Storage=0 cf Inflow=0.44 cfs 0.033 af
10.0" Round Culvert n=0.010 L=75.0' S=0.0049 '/' Outflow=0.44 cfs 0.033 af

Pond POI #2: POI #2 (295 Basin)

Peak Elev=26.76' Storage=709 cf Inflow=0.31 cfs 0.066 af
Discarded=0.02 cfs 0.018 af Primary=0.08 cfs 0.041 af Secondary=0.00 cfs 0.000 af Outflow=0.10 cfs 0.059 af

Total Runoff Area = 4.952 ac Runoff Volume = 0.937 af Average Runoff Depth = 2.27"
54.64% Pervious = 2.706 ac 45.36% Impervious = 2.246 ac

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

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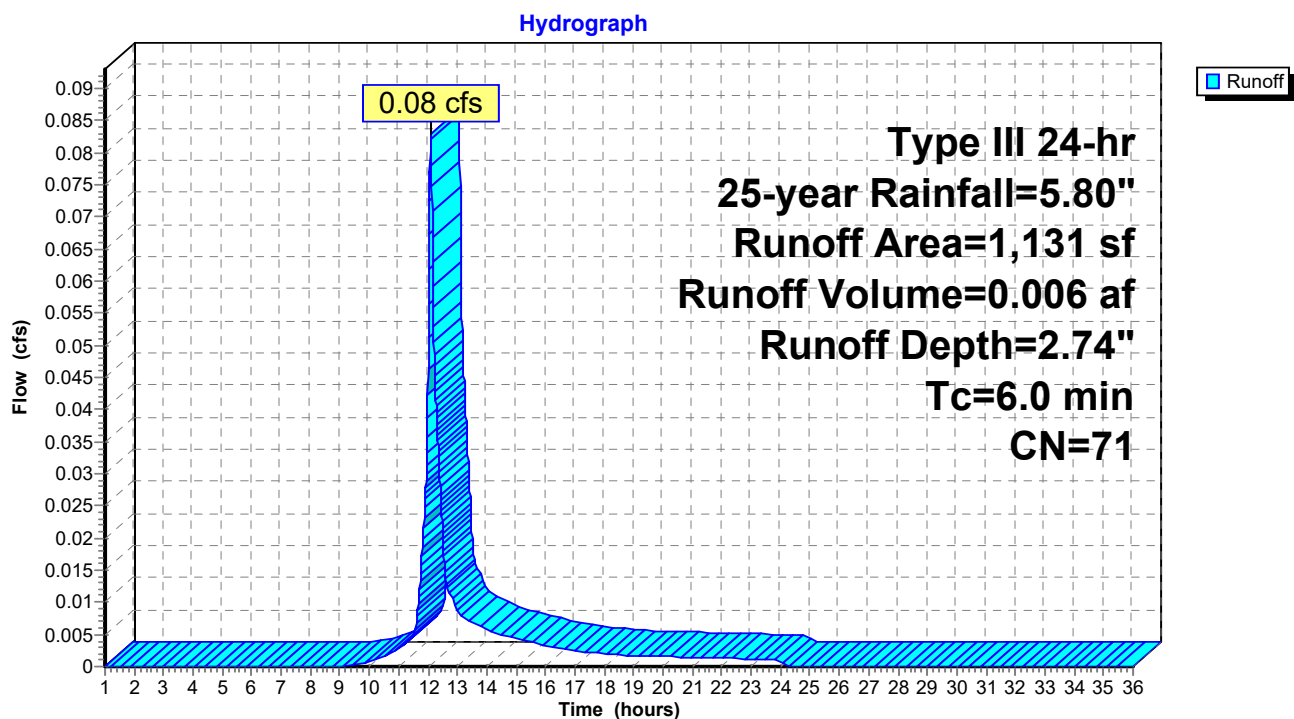
Summary for Subcatchment 1.S1: Drive to Street

Runoff = 0.08 cfs @ 12.09 hrs, Volume= 0.006 af, Depth= 2.74"

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
*	622	98	Pavement
	509	39	>75% Grass cover, Good, HSG A
	1,131	71	Weighted Average
	509		45.00% Pervious Area
	622		55.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1.S1: Drive to Street

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

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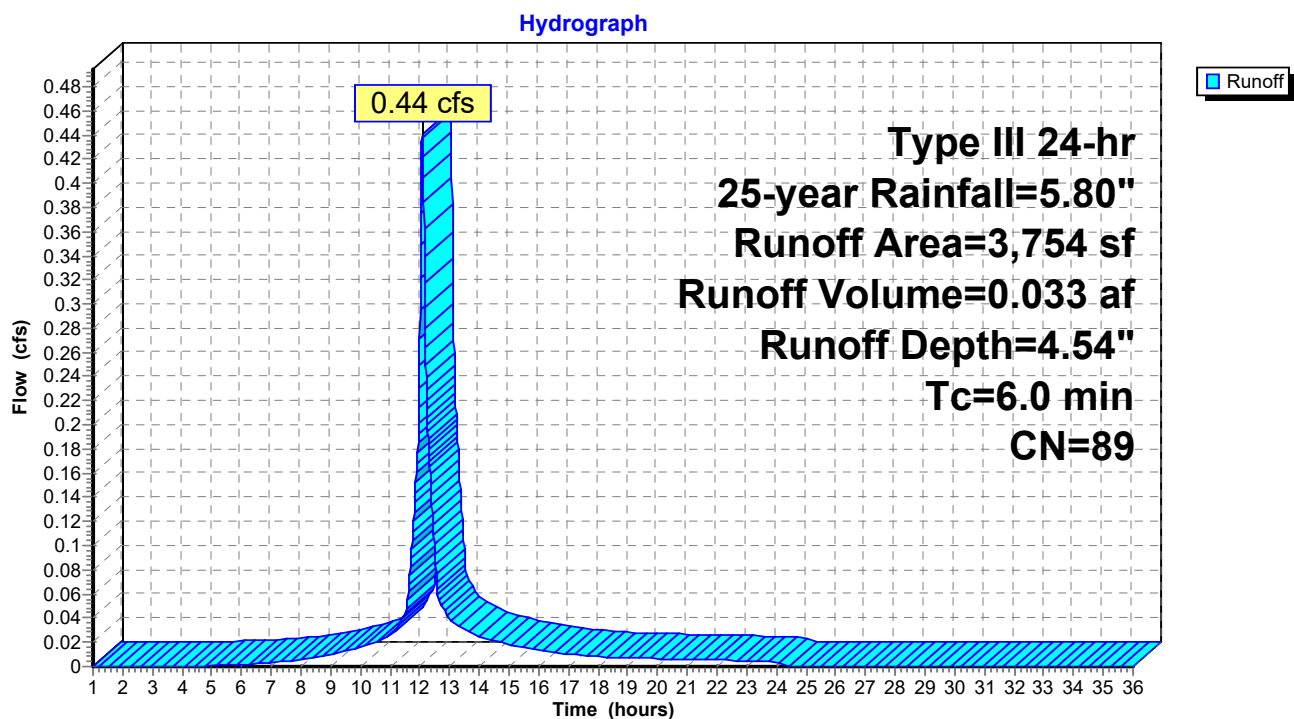
Summary for Subcatchment 1S.10: East Lot 1

Runoff = 0.44 cfs @ 12.08 hrs, Volume= 0.033 af, Depth= 4.54"

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
*	3,190	98	Pavement
	564	39	>75% Grass cover, Good, HSG A
	3,754	89	Weighted Average
	564		15.02% Pervious Area
	3,190		84.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1S.10: East Lot 1

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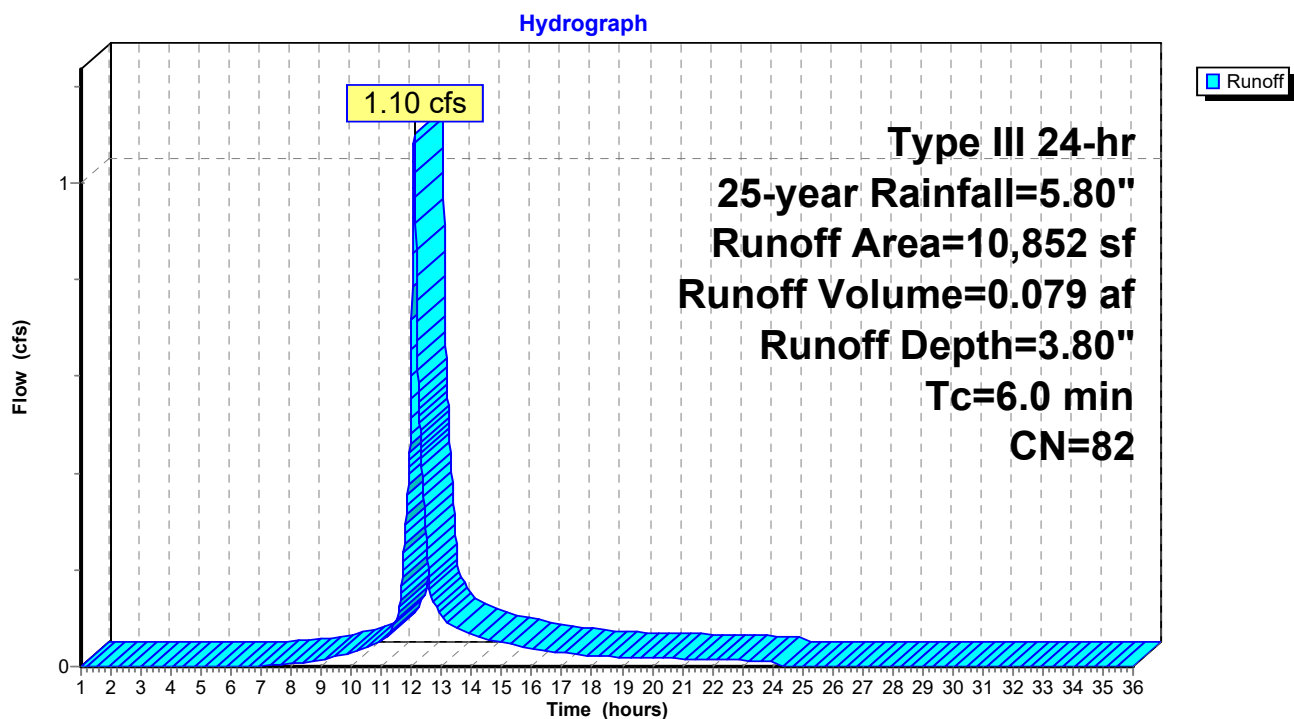
Summary for Subcatchment 1S.11: South Lot Treated

Runoff = 1.10 cfs @ 12.09 hrs, Volume= 0.079 af, Depth= 3.80"

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
*	8,274	98	Paved parking
	2,578	30	Brush, Good, HSG A
	10,852	82	Weighted Average
	2,578		23.76% Pervious Area
	8,274		76.24% Impervious Area

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

Subcatchment 1S.11: South Lot Treated

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

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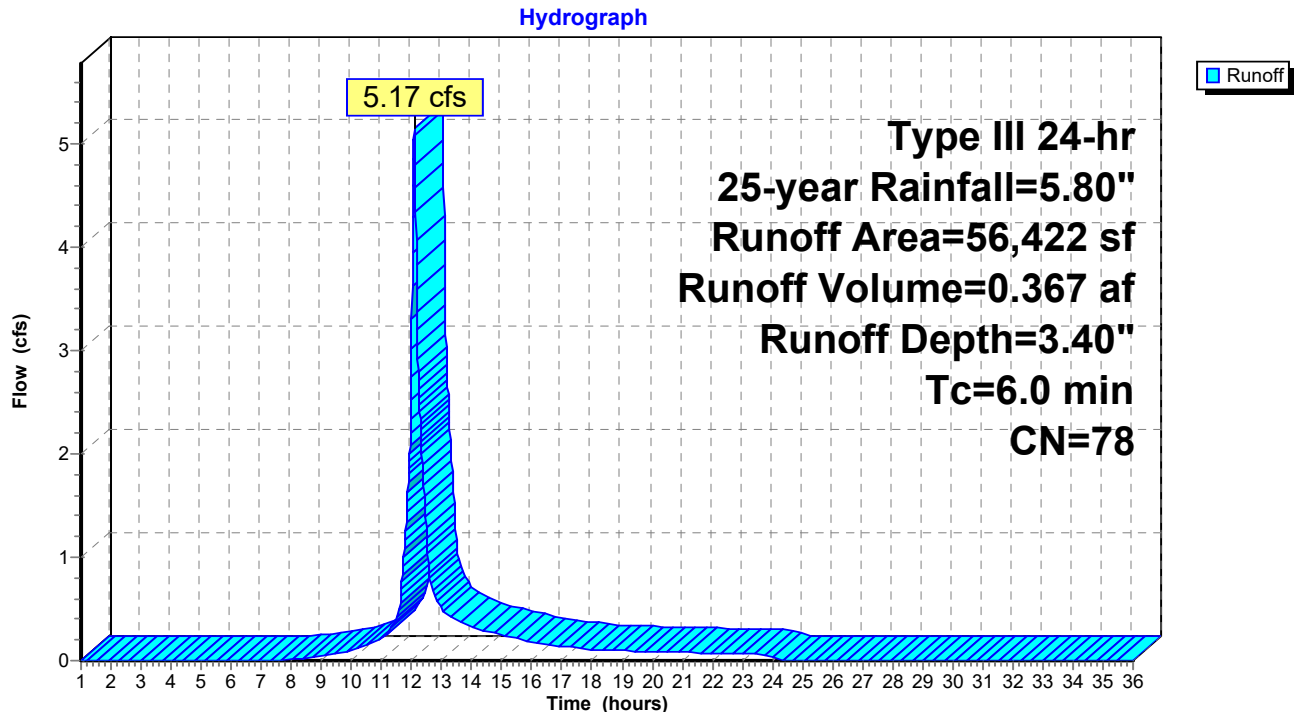
Summary for Subcatchment 1S.2: Co Op Roof & yard

Runoff = 5.17 cfs @ 12.09 hrs, Volume= 0.367 af, Depth= 3.40"

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
*	5,239	98	pavers
	16,100	39	>75% Grass cover, Good, HSG A
*	21,137	98	Roofs
*	4,191	98	sidewalks
*	618	98	patios
	9,137	77	1/8 acre lots, 65% imp, HSG A
	56,422	78	Weighted Average
	19,298		34.20% Pervious Area
	37,124		65.80% Impervious Area

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

Subcatchment 1S.2: Co Op Roof & yard

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

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Summary for Subcatchment 1S.3: Runoff to park

Runoff = 0.01 cfs @ 12.41 hrs, Volume= 0.002 af, Depth= 0.39"

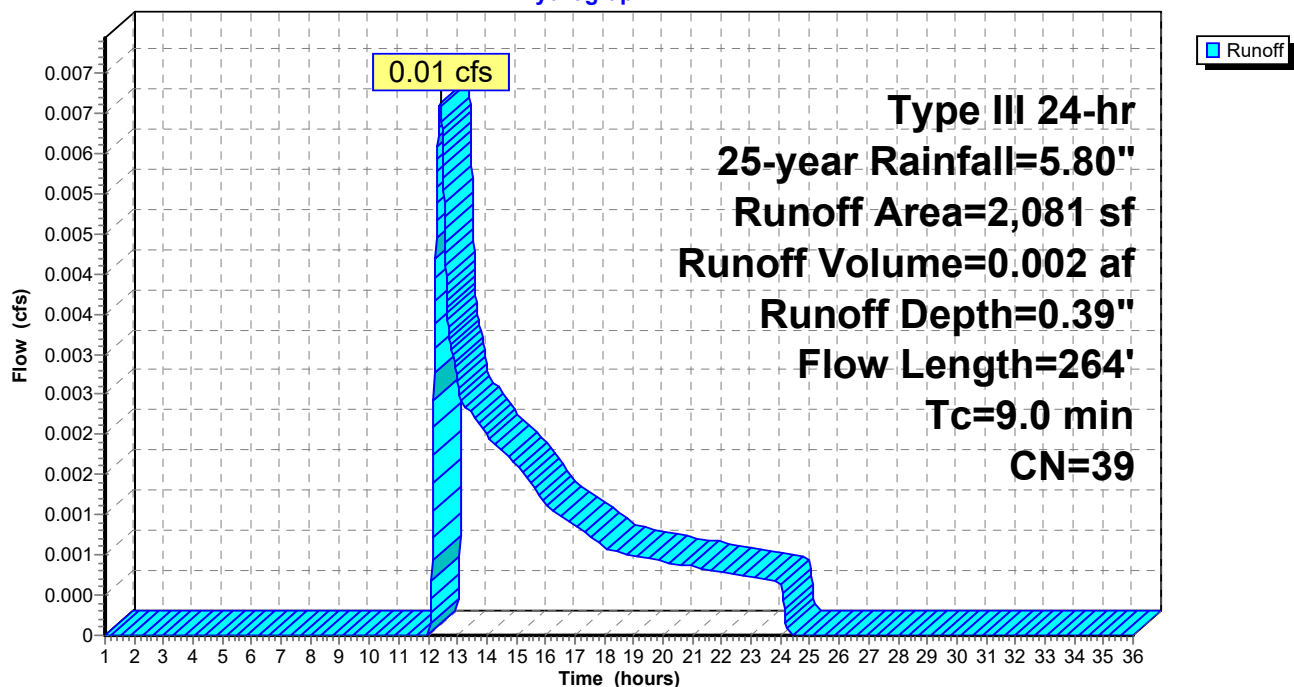
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

Area (sf)	CN	Description
2,081	39	>75% Grass cover, Good, HSG A
2,081		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	100	0.0600	0.27		Sheet Flow, A to B Grass: Short n= 0.150 P2= 3.27"
2.8	164	0.0200	0.99		Shallow Concentrated Flow, B to C Short Grass Pasture Kv= 7.0 fps
9.0	264	Total			

Subcatchment 1S.3: Runoff to park

Hydrograph



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

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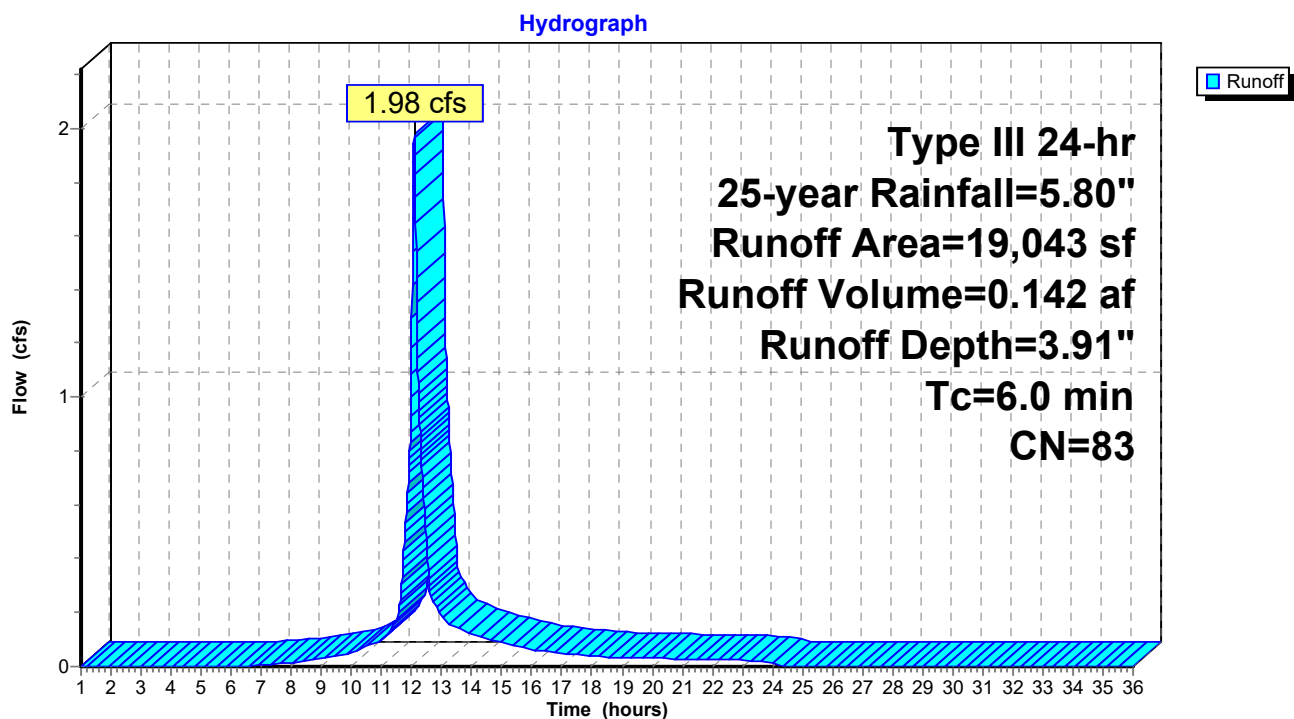
Summary for Subcatchment 1S.4: Central parking/drive

Runoff = 1.98 cfs @ 12.09 hrs, Volume= 0.142 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 25-year Rainfall=5.80"

	Area (sf)	CN	Description
*	14,850	98	Pavement
	4,193	30	Brush, Good, HSG A
	19,043	83	Weighted Average
	4,193		22.02% Pervious Area
	14,850		77.98% Impervious Area

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

Subcatchment 1S.4: Central parking/drive

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

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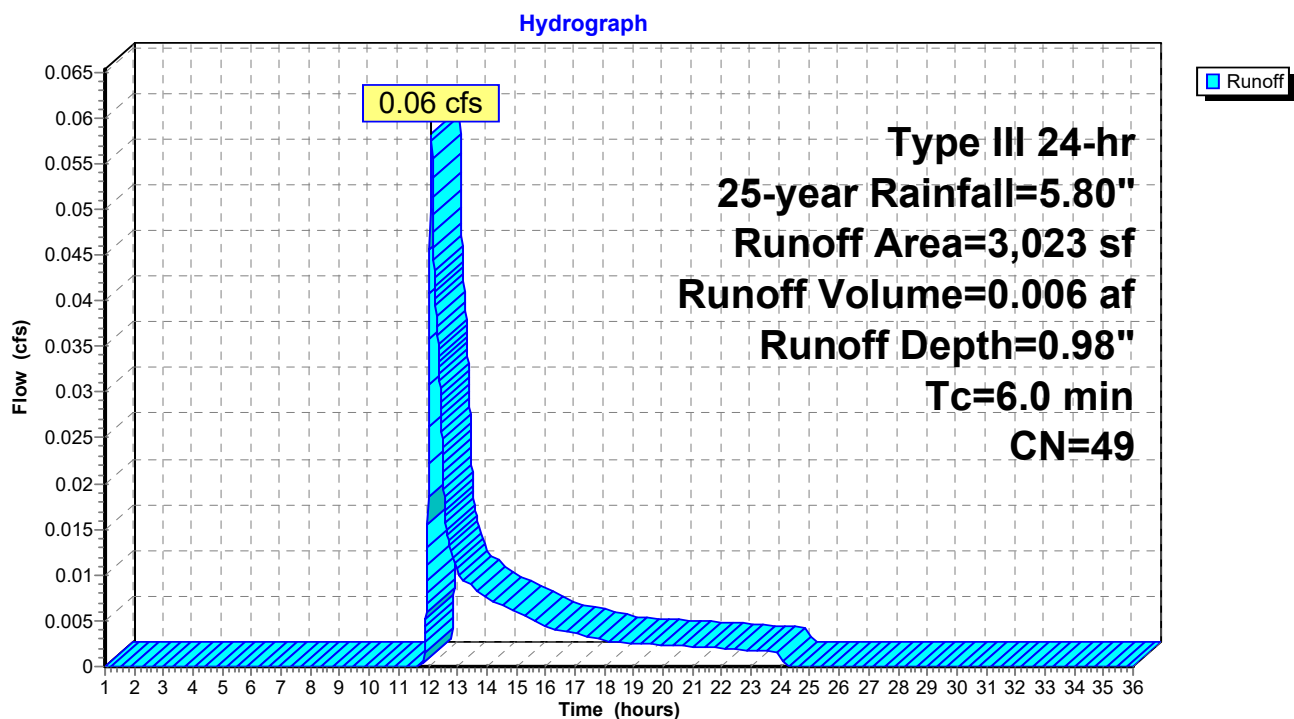
Summary for Subcatchment 1S.5: Contained yard/park connection

Runoff = 0.06 cfs @ 12.11 hrs, Volume= 0.006 af, Depth= 0.98"

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
2,514	39	>75% Grass cover, Good, HSG A
* 509	98	sidewalks
3,023	49	Weighted Average
2,514		83.16% Pervious Area
509		16.84% Impervious Area

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

Subcatchment 1S.5: Contained yard/park connection

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

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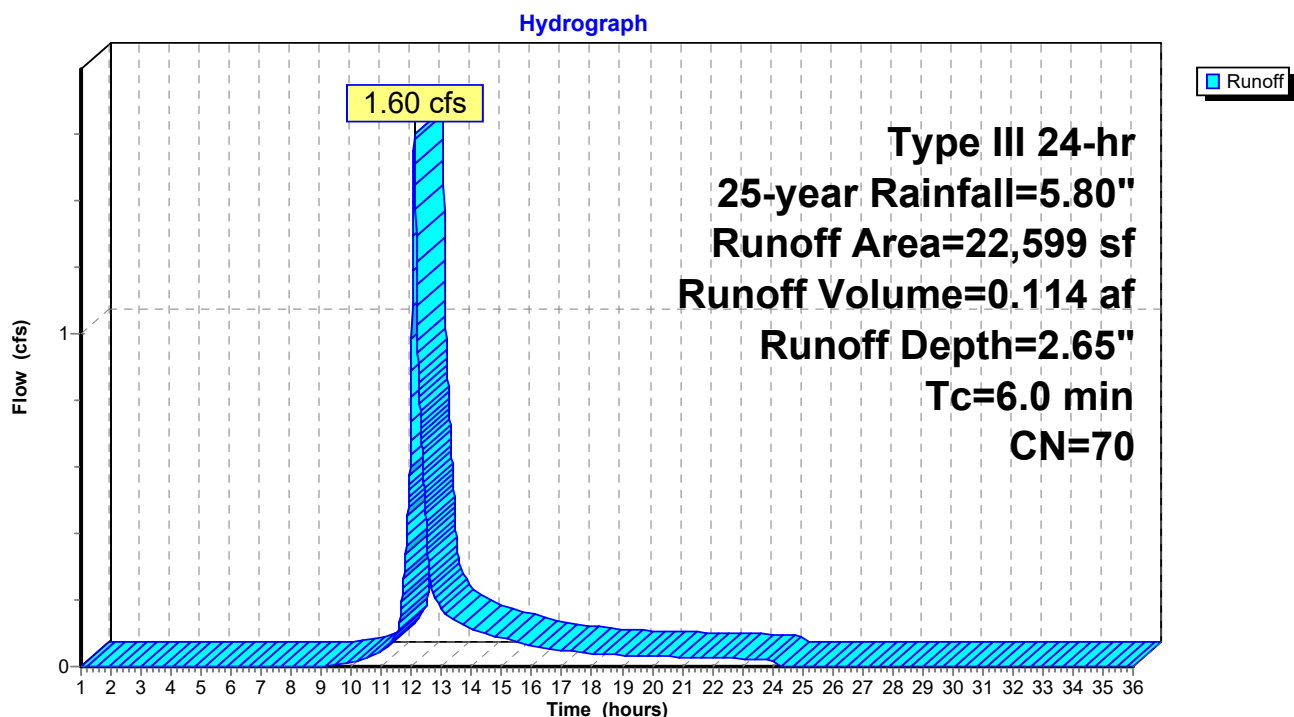
Summary for Subcatchment 1S.6: Building E roof and yard

Runoff = 1.60 cfs @ 12.09 hrs, Volume= 0.114 af, Depth= 2.65"

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
10,599	39	>75% Grass cover, Good, HSG A
* 12,000	98	roof
22,599	70	Weighted Average
10,599		46.90% Pervious Area
12,000		53.10% Impervious Area

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

Subcatchment 1S.6: Building E roof and yard

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

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Summary for Subcatchment 1S.7: East Lot 4

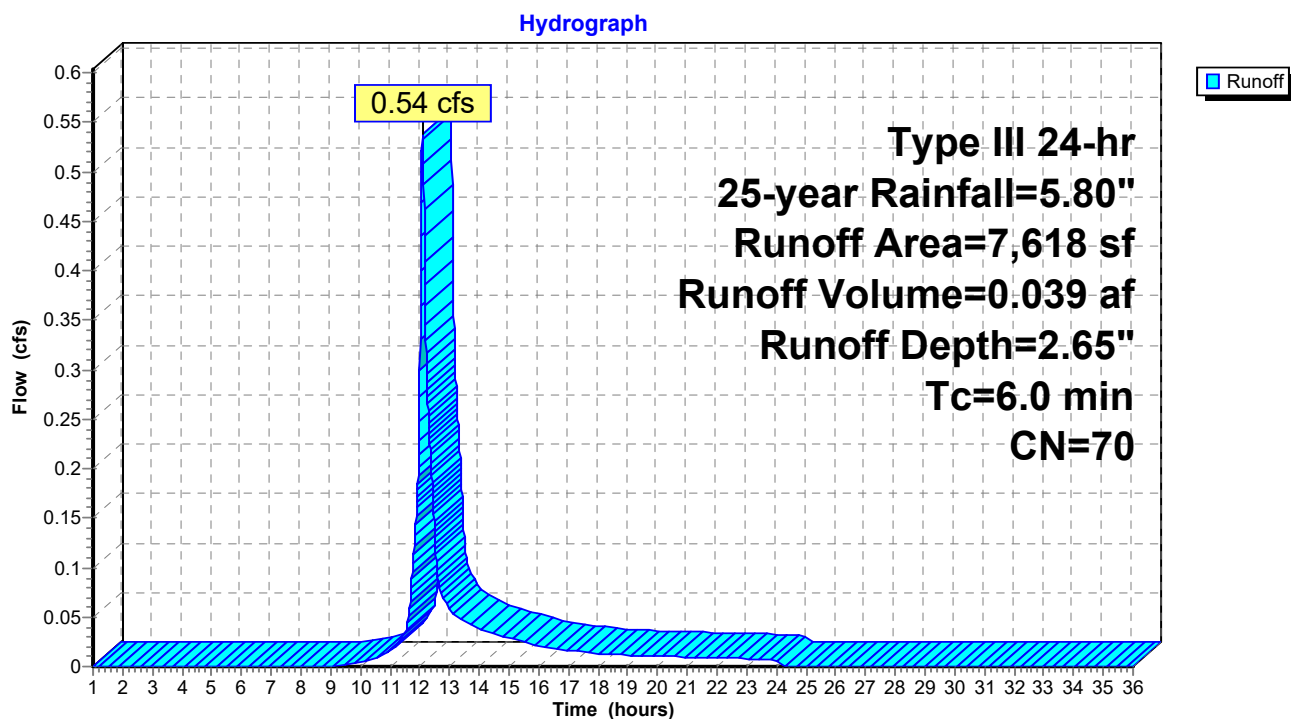
Runoff = 0.54 cfs @ 12.09 hrs, Volume= 0.039 af, Depth= 2.65"

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
*	4,038	98	Paved parking
	3,580	39	>75% Grass cover, Good, HSG A
	7,618	70	Weighted Average
	3,580		46.99% Pervious Area
	4,038		53.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1S.7: East Lot 4



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

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Summary for Subcatchment 1S.8: East Lot 3

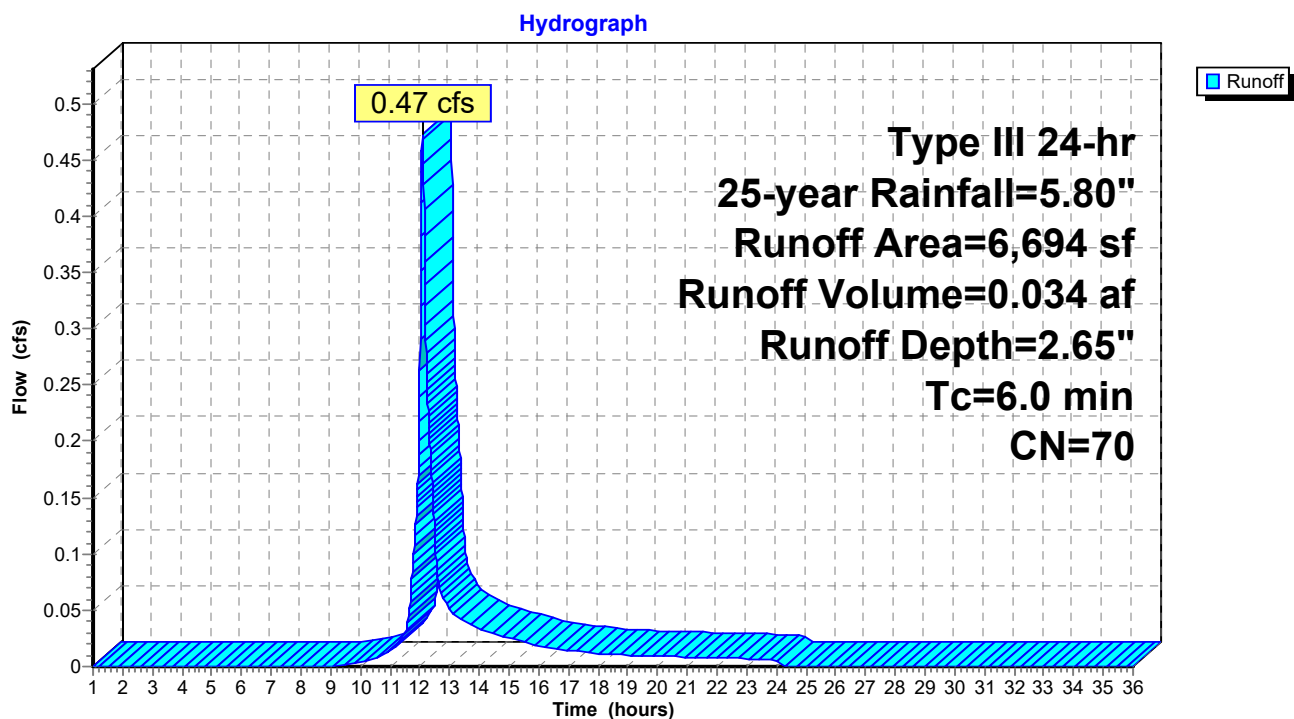
Runoff = 0.47 cfs @ 12.09 hrs, Volume= 0.034 af, Depth= 2.65"

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
*	3,547	98	Paved parking
	3,147	39	>75% Grass cover, Good, HSG A
	6,694	70	Weighted Average
	3,147		47.01% Pervious Area
	3,547		52.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1S.8: East Lot 3



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

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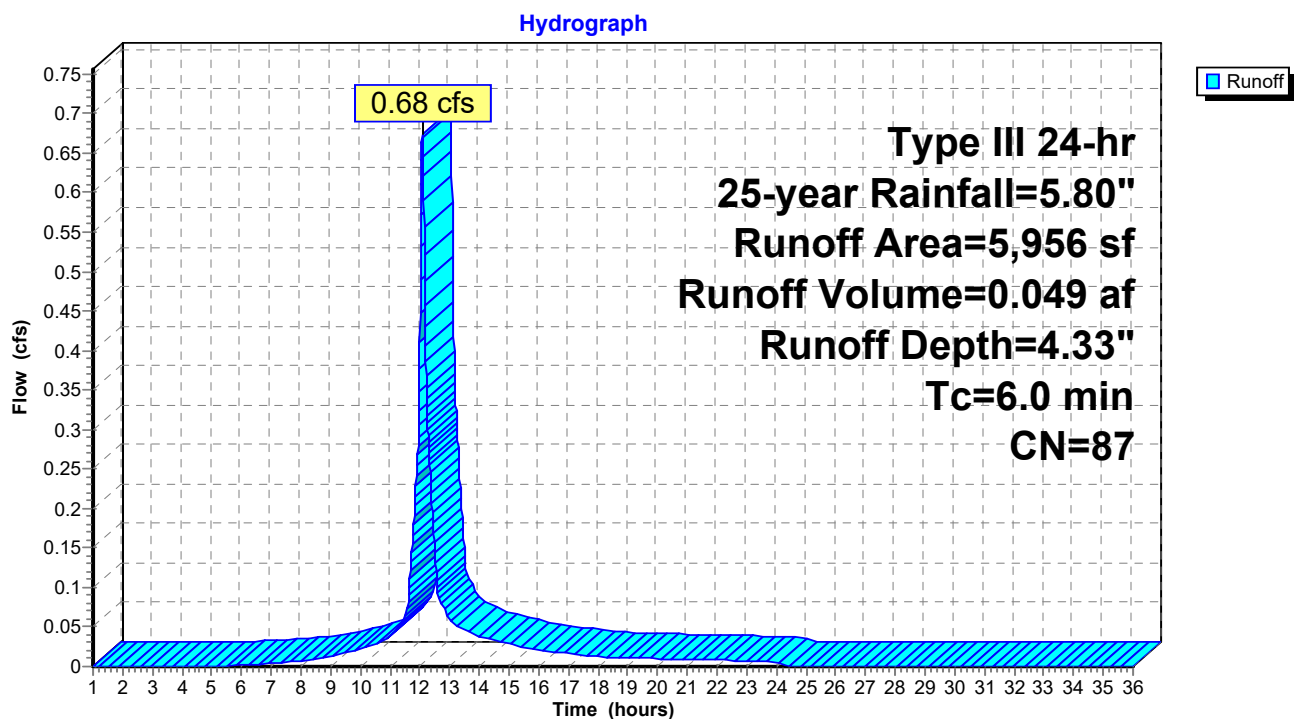
Summary for Subcatchment 1S.9: East Lot 2

Runoff = 0.68 cfs @ 12.09 hrs, Volume= 0.049 af, Depth= 4.33"

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
*	4,809	98	Paved parking, patio, sidewalk
	1,147	39	>75% Grass cover, Good, HSG A
	5,956	87	Weighted Average
	1,147		19.26% Pervious Area
	4,809		80.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1S.9: East Lot 2

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

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Summary for Subcatchment 2S: 295 Embankment Trib

Runoff = 0.31 cfs @ 12.47 hrs, Volume= 0.066 af, Depth= 0.49"

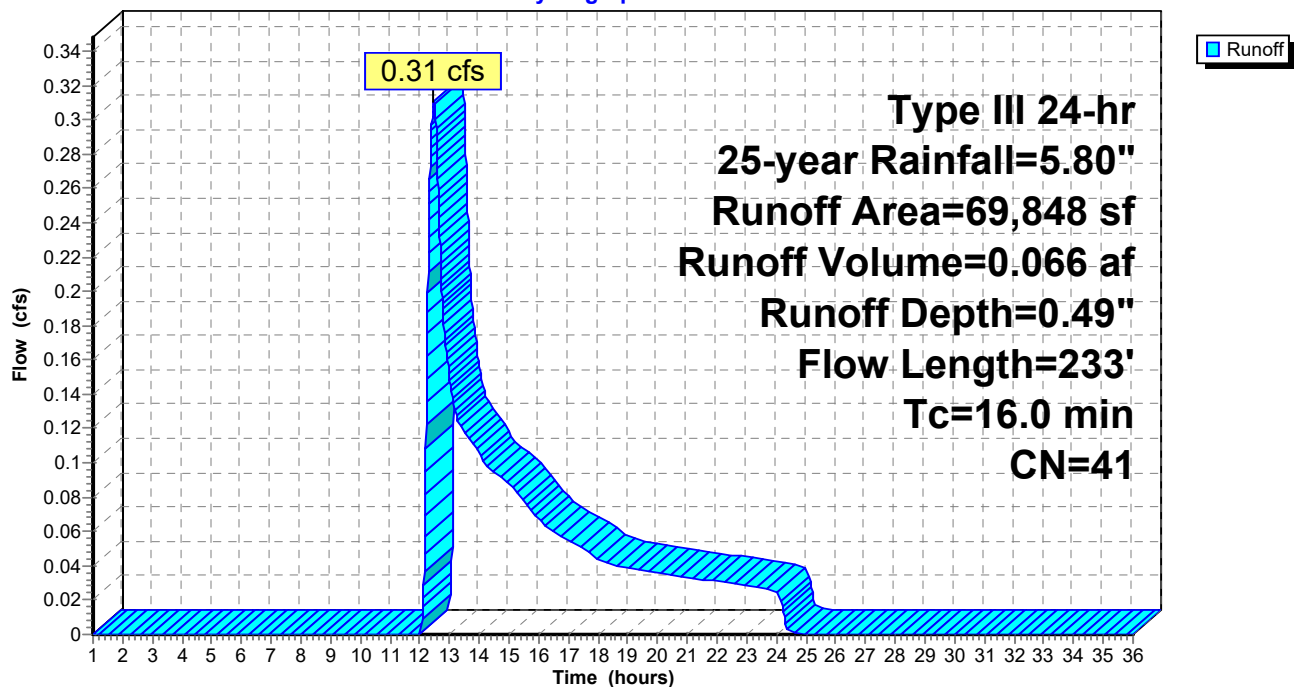
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

Area (sf)	CN	Description
8,183	39	>75% Grass cover, Good, HSG A
* 230	98	Stairs
* 3,155	98	Path
* 5,488	98	Homes/driveways
52,792	32	Woods/grass comb., Good, HSG A
69,848	41	Weighted Average
60,975		87.30% Pervious Area
8,873		12.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	100	0.0500	0.11		Sheet Flow, A to B Woods: Light underbrush n= 0.400 P2= 3.27"
1.3	133	0.0600	1.71		Shallow Concentrated Flow, B to C Short Grass Pasture Kv= 7.0 fps
16.0	233	Total			

Subcatchment 2S: 295 Embankment Trib

Hydrograph



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

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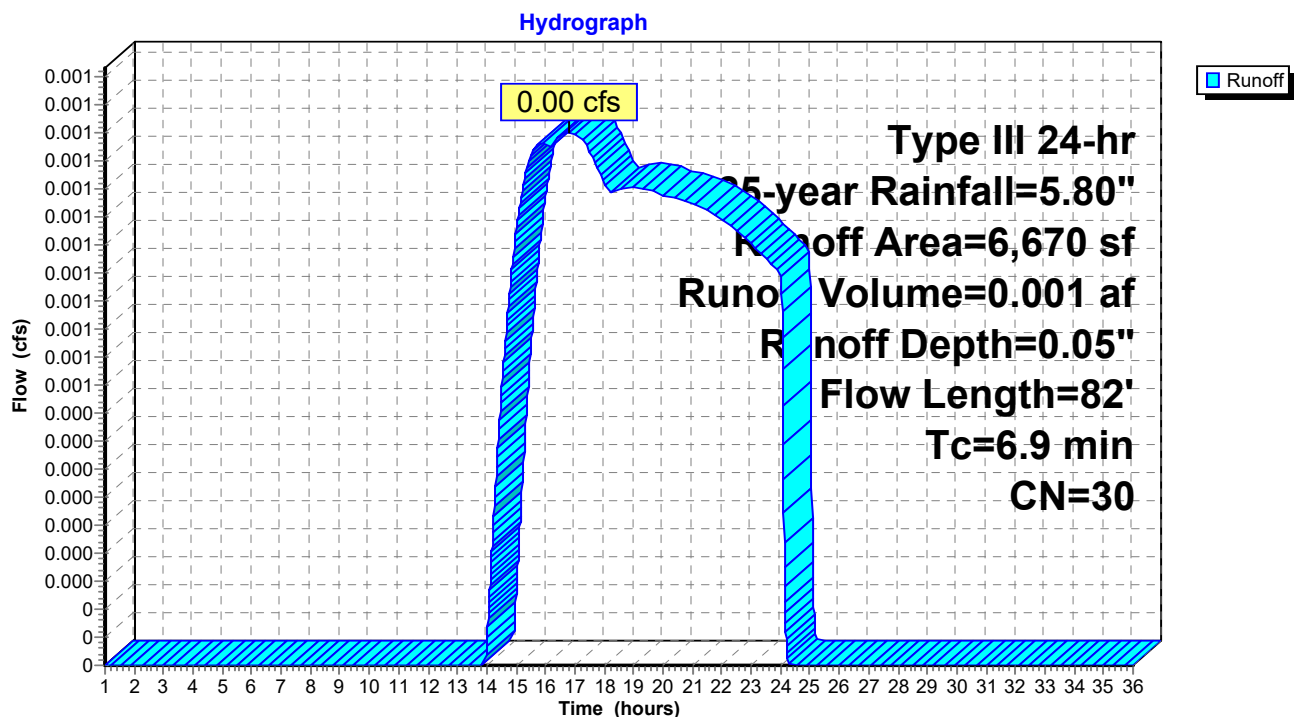
Summary for Subcatchment 3S.1: Garden area runoff

Runoff = 0.00 cfs @ 16.80 hrs, Volume= 0.001 af, Depth= 0.05"

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
6,670	30	Brush, Good, HSG A
6,670		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	28	0.3330	0.28		Sheet Flow, A to B Grass: Dense n= 0.240 P2= 3.27"
5.2	54	0.0700	0.17		Sheet Flow, B to C Grass: Dense n= 0.240 P2= 3.27"
6.9	82	Total			

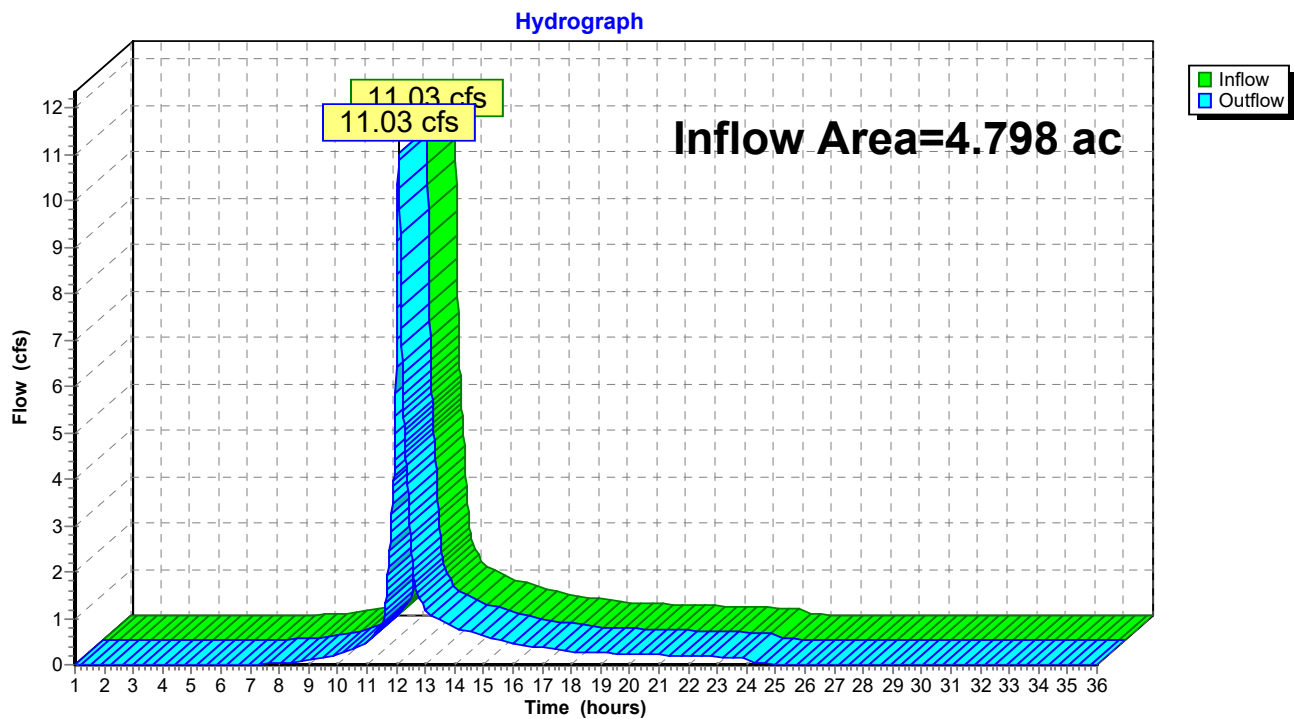
Subcatchment 3S.1: Garden area runoff

Summary for Reach POI-1: POI #1 - 60" Douglass MS4

Inflow Area = 4.798 ac, 46.81% Impervious, Inflow Depth = 2.14" for 25-year event
 Inflow = 11.03 cfs @ 12.09 hrs, Volume= 0.854 af
 Outflow = 11.03 cfs @ 12.09 hrs, Volume= 0.854 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 POI-1: POI #1 - 60" Douglass MS4

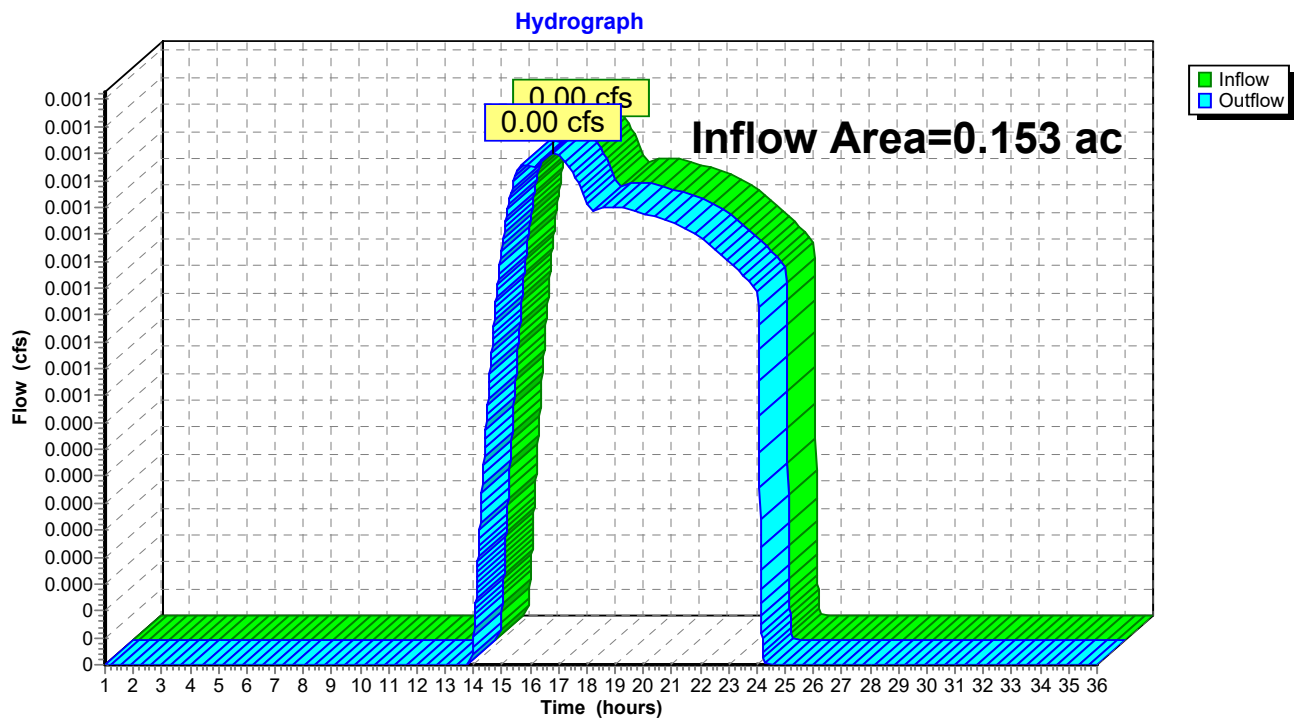


Summary for Reach POI-3: POI #3 - Baseball Field

Inflow Area = 0.153 ac, 0.00% Impervious, Inflow Depth = 0.05" for 25-year event
 Inflow = 0.00 cfs @ 16.80 hrs, Volume= 0.001 af
 Outflow = 0.00 cfs @ 16.80 hrs, Volume= 0.001 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 POI-3: POI #3 - Baseball Field



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Summary for Pond P1: VUSF

Inflow Area = 0.249 ac, 76.24% Impervious, Inflow Depth = 3.80" for 25-year event
 Inflow = 1.10 cfs @ 12.09 hrs, Volume= 0.079 af
 Outflow = 0.18 cfs @ 12.57 hrs, Volume= 0.079 af, Atten= 83%, Lag= 28.8 min
 Discarded = 0.06 cfs @ 12.57 hrs, Volume= 0.057 af
 Primary = 0.13 cfs @ 12.57 hrs, Volume= 0.022 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 32.38' @ 12.57 hrs Surf.Area= 2,381 sf Storage= 1,639 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= 254.7 min (1,064.9 - 810.3)

Volume	Invert	Avail.Storage	Storage Description
#1	30.75'	1,899 cf	Ponding (Prismatic) Listed below (Recalc)
#2	29.25'	69 cf	Filter Media/Loam (Prismatic) Listed below (Recalc) 687 cf Overall x 10.0% Voids
#3	28.92'	30 cf	Transition Gravel (Prismatic) Listed below (Recalc) 151 cf Overall x 20.0% Voids
#4	27.00'	349 cf	Crushed Stone (Prismatic) Listed below (Recalc) 879 cf Overall - 6 cf Embedded = 873 cf x 40.0% Voids
#5	27.10'	5 cf	4.0" Round Pipe Storage x 2 Inside #4 L= 30.0' S= 0.0005 '/ 6 cf Overall - 0.2" Wall Thickness = 5 cf
		2,353 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.75	465	0	0
32.25	945	1,058	1,058
33.00	1,300	842	1,899

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
29.25	458	0	0
30.75	458	687	687

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.92	458	0	0
29.25	458	151	151

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
27.00	458	0	0
28.92	458	879	879

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

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Device	Routing	Invert	Outlet Devices
#1	Primary	27.00'	12.0" Round Culvert L= 60.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 27.00' / 26.75' S= 0.0042 ' / ' Cc= 0.600 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf
#2	Device 1	27.10'	0.5" Vert. Soil Filter Media Drawdown Effect C= 0.600
#3	Device 1	32.35'	24.0" Horiz. Beehive Outlet C= 0.600 Limited to weir flow at low heads
#4	Discarded	27.00'	1.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.06 cfs @ 12.57 hrs HW=32.38' (Free Discharge)

↳ **4=Exfiltration** (Exfiltration Controls 0.06 cfs)

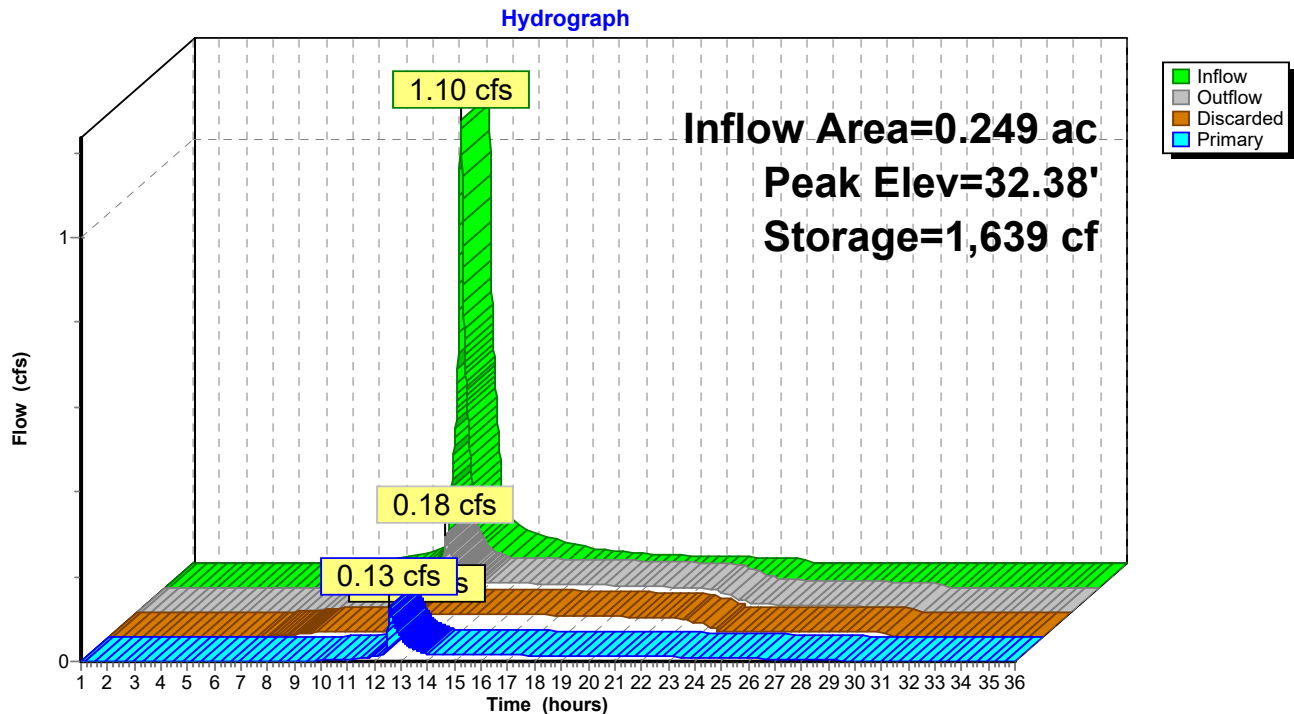
Primary OutFlow Max=0.13 cfs @ 12.57 hrs HW=32.38' TW=0.00' (Dynamic Tailwater)

↳ **1=Culvert** (Passes 0.13 cfs of 4.40 cfs potential flow)

↳ **2=Soil Filter Media Drawdown Effect** (Orifice Controls 0.02 cfs @ 11.04 fps)

↳ **3=Beehive Outlet** (Weir Controls 0.11 cfs @ 0.58 fps)

Pond P1: VUSF



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

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Summary for Pond P2: FP 4

Inflow Area = 0.175 ac, 53.01% Impervious, Inflow Depth = 2.65" for 25-year event
 Inflow = 0.54 cfs @ 12.09 hrs, Volume= 0.039 af
 Outflow = 0.54 cfs @ 12.09 hrs, Volume= 0.039 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.54 cfs @ 12.09 hrs, Volume= 0.039 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 35.95' @ 1.00 hrs Surf.Area= 40 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	35.95'	14 cf	4.00'W x 5.00'L x 3.60'H Media/Stone 72 cf Overall x 20.0% Voids
#2	35.95'	38 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		52 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
35.95	20	0	0
36.95	56	38	38

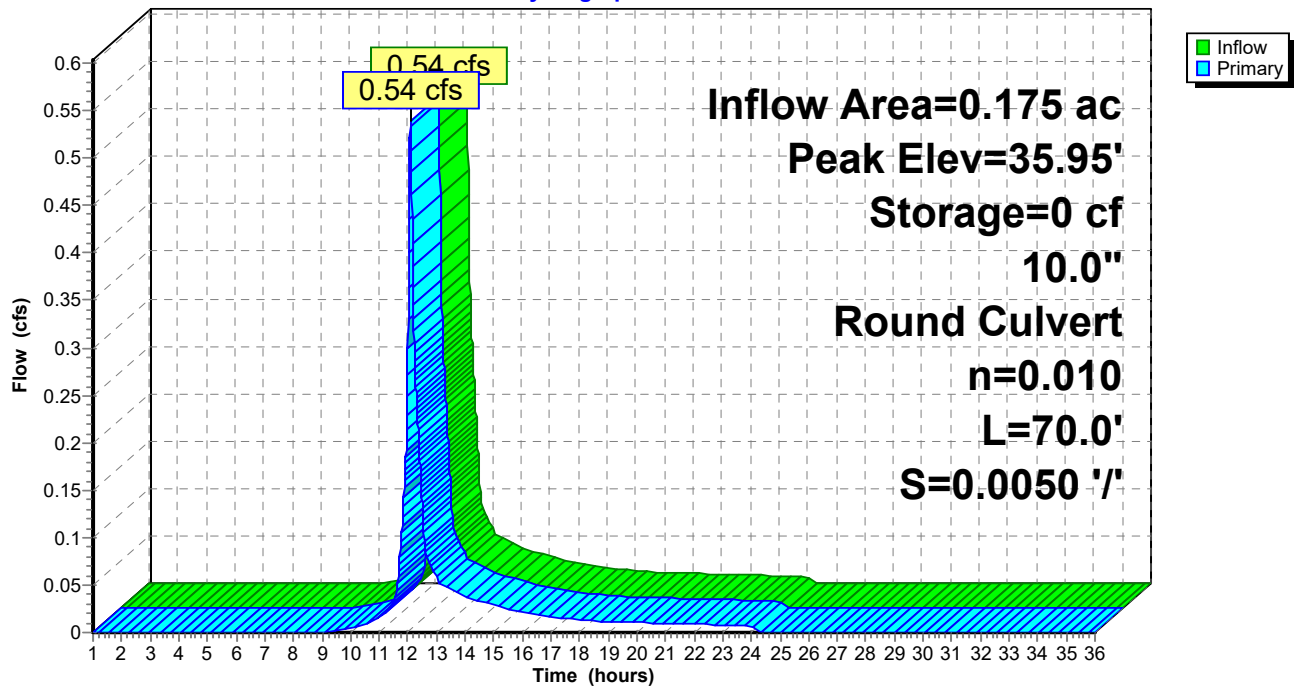
Device	Routing	Invert	Outlet Devices
#1	Primary	32.35'	10.0" Round Culvert L= 70.0' Ke= 1.000 Inlet / Outlet Invert= 32.35' / 32.00' S= 0.0050 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=35.95' TW=0.00' (Dynamic Tailwater)

↑**1=Culvert** (Passes 0.00 cfs of 3.51 cfs potential flow)

Pond P2: FP 4

Hydrograph



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

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Summary for Pond P3: FP 3

Inflow Area = 0.154 ac, 52.99% Impervious, Inflow Depth = 2.65" for 25-year event
 Inflow = 0.47 cfs @ 12.09 hrs, Volume= 0.034 af
 Outflow = 0.47 cfs @ 12.09 hrs, Volume= 0.034 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.47 cfs @ 12.09 hrs, Volume= 0.034 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 36.10' @ 1.00 hrs Surf.Area= 50 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 0.0 min (839.9 - 839.9)

Volume	Invert	Avail.Storage	Storage Description
#1	36.10'	21 cf	5.00'W x 5.00'L x 4.20'H Media/Stone 105 cf Overall x 20.0% Voids
#2	36.10'	45 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		66 cf	Total Available Storage

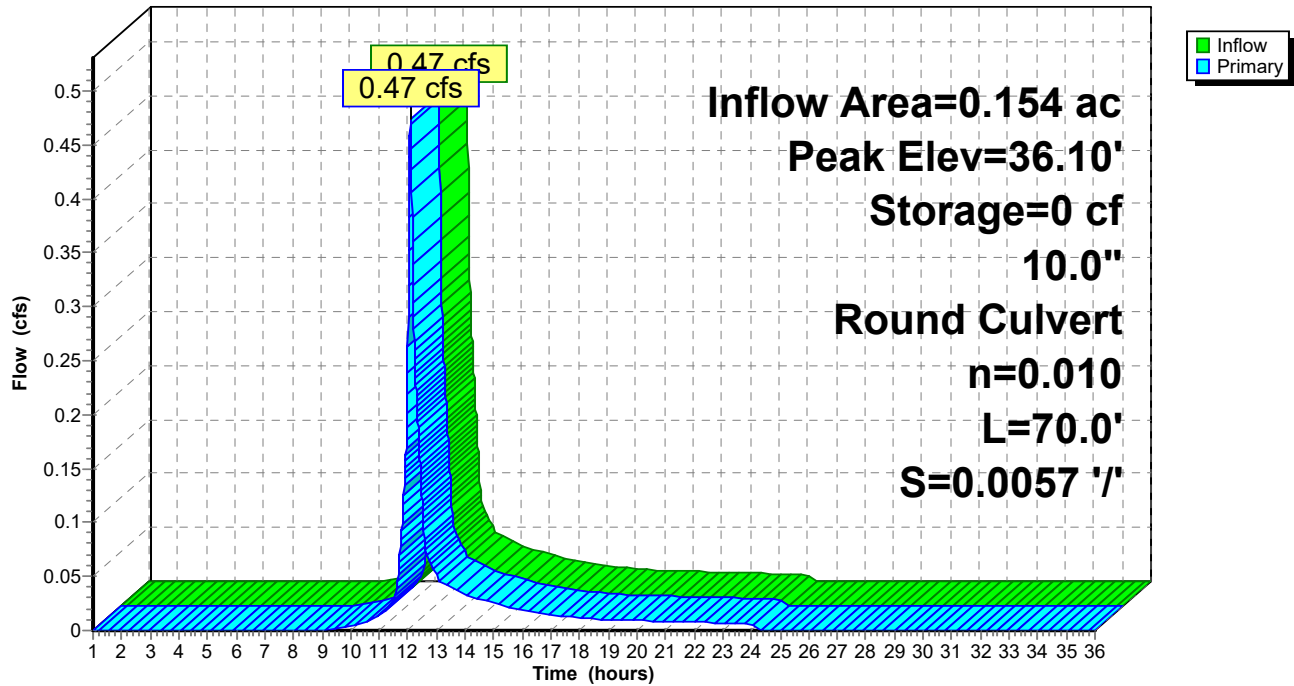
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.10	25	0	0
37.10	64	45	45

Device	Routing	Invert	Outlet Devices
#1	Primary	31.90'	10.0" Round Culvert L= 70.0' Ke= 1.000 Inlet / Outlet Invert= 31.90' / 31.50' S= 0.0057 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=36.10' TW=0.00' (Dynamic Tailwater)
 ↑**1=Culvert** (Passes 0.00 cfs of 3.83 cfs potential flow)

Pond P3: FP 3

Hydrograph



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Summary for Pond P4: FP 2

Inflow Area = 0.137 ac, 80.74% Impervious, Inflow Depth = 4.33" for 25-year event
 Inflow = 0.68 cfs @ 12.09 hrs, Volume= 0.049 af
 Outflow = 0.68 cfs @ 12.09 hrs, Volume= 0.049 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.68 cfs @ 12.09 hrs, Volume= 0.049 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 35.90' @ 1.00 hrs Surf.Area= 50 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 0.0 min (795.9 - 795.9)

Volume	Invert	Avail.Storage	Storage Description
#1	35.90'	23 cf	5.00'W x 5.00'L x 4.50'H Media/Stone 113 cf Overall x 20.0% Voids
#2	35.90'	45 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		67 cf	Total Available Storage

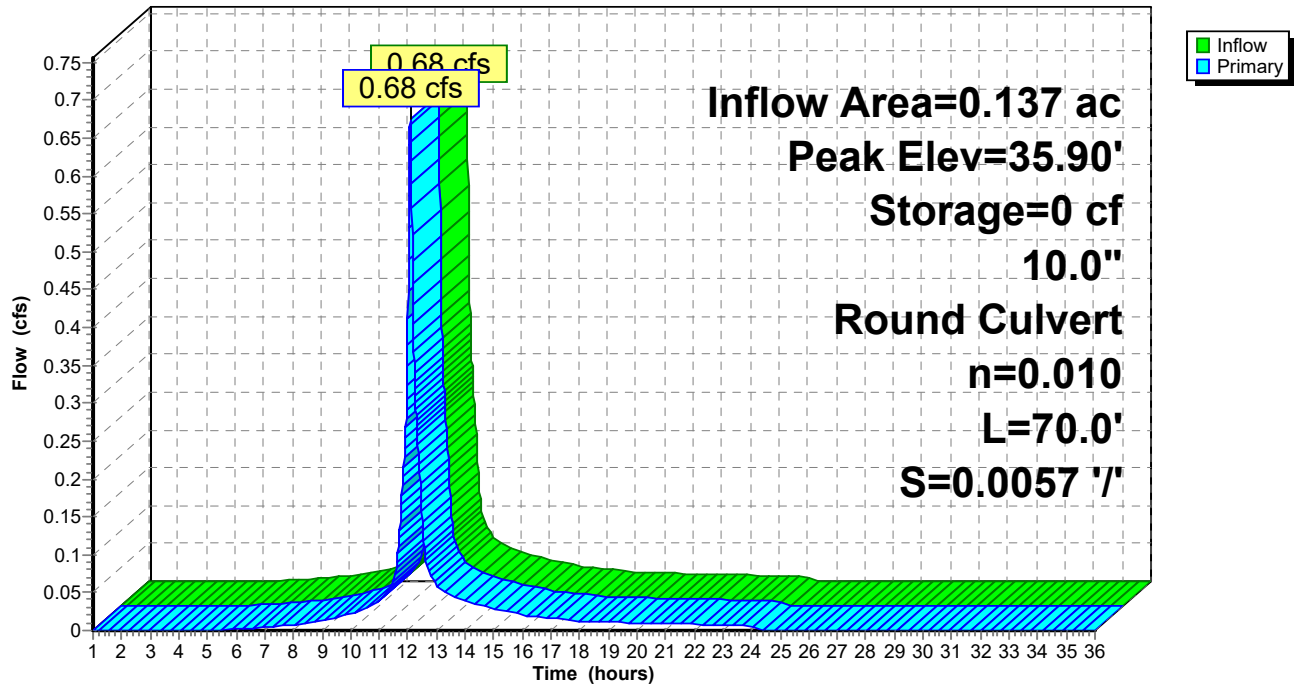
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
35.90	25	0	0
36.90	64	45	45

Device	Routing	Invert	Outlet Devices
#1	Primary	31.40'	10.0" Round Culvert L= 70.0' Ke= 1.000 Inlet / Outlet Invert= 31.40' / 31.00' S= 0.0057 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=35.90' TW=0.00' (Dynamic Tailwater)
 ↑**1=Culvert** (Passes 0.00 cfs of 3.98 cfs potential flow)

Pond P4: FP 2

Hydrograph



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Summary for Pond P5: FP 1

Inflow Area = 0.086 ac, 84.98% Impervious, Inflow Depth = 4.54" for 25-year event
 Inflow = 0.44 cfs @ 12.08 hrs, Volume= 0.033 af
 Outflow = 0.44 cfs @ 12.08 hrs, Volume= 0.033 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.44 cfs @ 12.08 hrs, Volume= 0.033 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 35.70' @ 1.00 hrs Surf.Area= 40 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 0.0 min (789.3 - 789.3)

Volume	Invert	Avail.Storage	Storage Description
#1	35.70'	19 cf	4.00'W x 5.00'L x 4.80'H Media/Stone 96 cf Overall x 20.0% Voids
#2	35.70'	38 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		57 cf	Total Available Storage

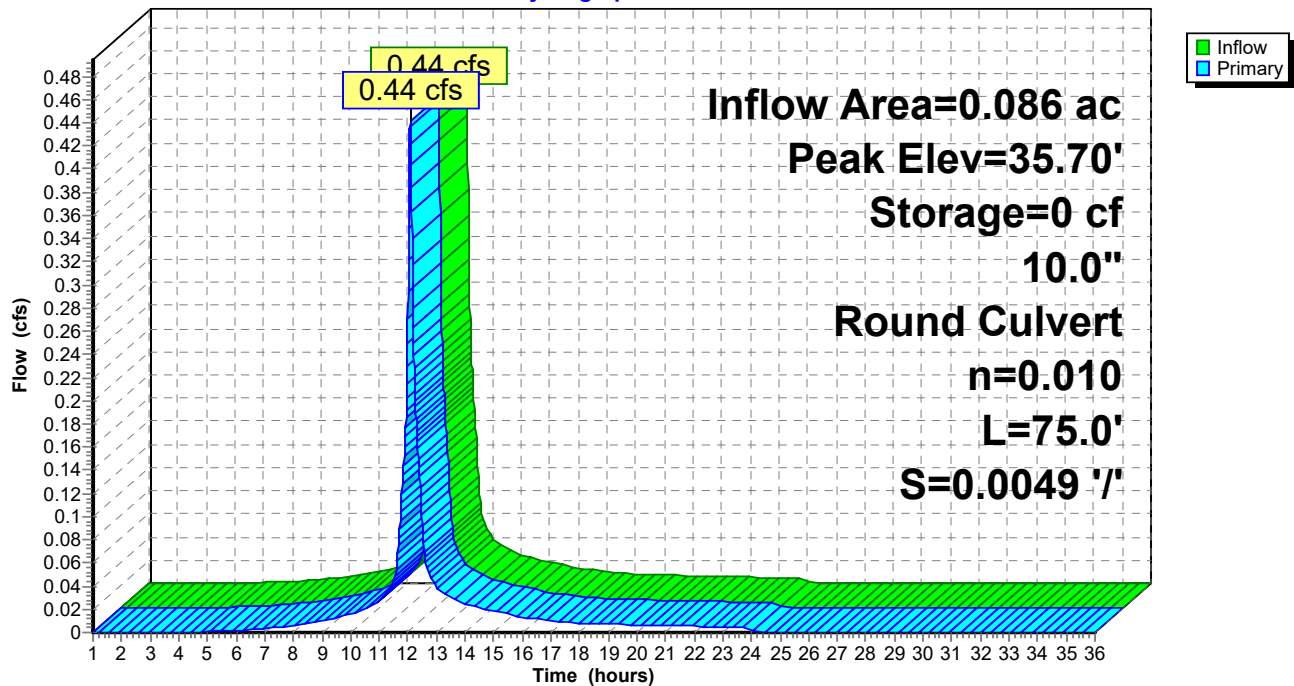
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
35.70	20	0	0
36.70	56	38	38

Device	Routing	Invert	Outlet Devices
#1	Primary	30.90'	10.0" Round Culvert L= 75.0' Ke= 1.000 Inlet / Outlet Invert= 30.90' / 30.53' S= 0.0049 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 12.08 hrs HW=35.70' TW=0.00' (Dynamic Tailwater)
 ↑1=Culvert (Passes 0.00 cfs of 4.12 cfs potential flow)

Pond P5: FP 1

Hydrograph



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Summary for Pond POI #2: POI #2 (295 Basin)

Inflow Area = 1.603 ac, 12.70% Impervious, Inflow Depth = 0.49" for 25-year event
 Inflow = 0.31 cfs @ 12.47 hrs, Volume= 0.066 af
 Outflow = 0.10 cfs @ 14.06 hrs, Volume= 0.059 af, Atten= 67%, Lag= 95.5 min
 Discarded = 0.02 cfs @ 14.06 hrs, Volume= 0.018 af
 Primary = 0.08 cfs @ 14.06 hrs, Volume= 0.041 af
 Secondary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Peak Elev= 26.76' @ 14.06 hrs Surf.Area= 2,978 sf Storage= 709 cf

Plug-Flow detention time= 154.2 min calculated for 0.059 af (89% of inflow)

Center-of-Mass det. time= 105.0 min (1,063.5 - 958.5)

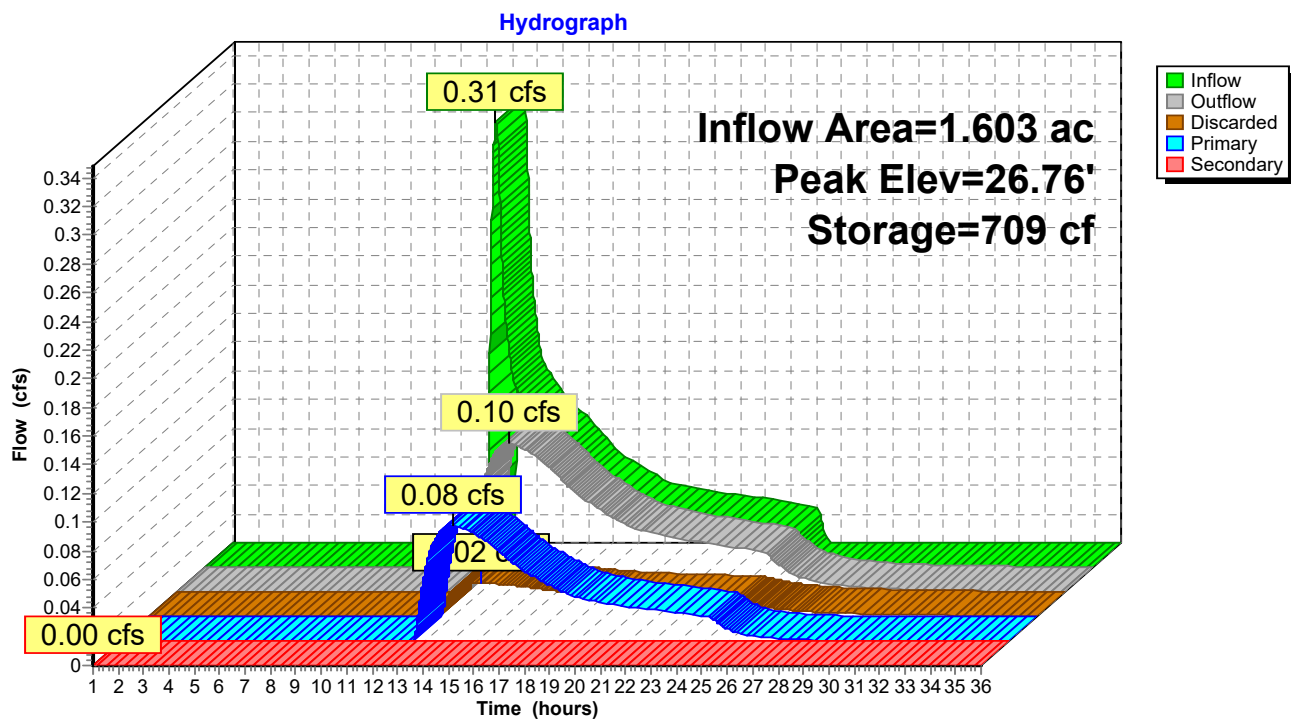
Volume	Invert	Avail.Storage	Storage Description
#1	26.30'	105,037 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.30	100	0	0
27.00	4,475	1,601	1,601
28.00	10,120	7,298	8,899
29.00	14,131	12,126	21,024
30.00	17,326	15,729	36,753
32.00	24,023	41,349	78,102
33.00	29,847	26,935	105,037

Device	Routing	Invert	Outlet Devices
#1	Primary	26.60'	12.0" Round Culvert L= 16.0' Ke= 0.600 Inlet / Outlet Invert= 26.60' / 26.51' S= 0.0056 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	32.40'	20.0' long x 15.0' breadth Overflow Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Discarded	26.60'	1.000 in/hr Exfiltration over Surface area above 26.60' Excluded Surface area = 1,975 sf

Discarded OutFlow Max=0.02 cfs @ 14.06 hrs HW=26.76' (Free Discharge)↑**3=Exfiltration** (Exfiltration Controls 0.02 cfs)**Primary OutFlow** Max=0.08 cfs @ 14.06 hrs HW=26.76' TW=0.00' (Dynamic Tailwater)↑**1=Culvert** (Barrel Controls 0.08 cfs @ 1.50 fps)**Secondary OutFlow** Max=0.00 cfs @ 1.00 hrs HW=26.30' (Free Discharge)↑**2=Overflow** (Controls 0.00 cfs)

Pond POI #2: POI #2 (295 Basin)



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Type III 24-hr WQ Rainfall=1.00"

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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

Subcatchment 1S.1: Drive to Street	Runoff Area=1,131 sf 55.00% Impervious Runoff Depth=0.01" Tc=6.0 min CN=71 Runoff=0.00 cfs 0.000 af
Subcatchment 1S.10: East Lot 1	Runoff Area=3,754 sf 84.98% Impervious Runoff Depth=0.28" Tc=6.0 min CN=89 Runoff=0.03 cfs 0.002 af
Subcatchment 1S.11: South Lot Treated	Runoff Area=10,852 sf 76.24% Impervious Runoff Depth=0.11" Tc=6.0 min CN=82 Runoff=0.02 cfs 0.002 af
Subcatchment 1S.2: Co Op Roof & yard	Runoff Area=56,422 sf 65.80% Impervious Runoff Depth=0.06" Tc=6.0 min CN=78 Runoff=0.02 cfs 0.006 af
Subcatchment 1S.3: Runoff to park	Runoff Area=2,081 sf 0.00% Impervious Runoff Depth=0.00" Flow Length=264' Tc=9.0 min CN=39 Runoff=0.00 cfs 0.000 af
Subcatchment 1S.4: Central parking/drive	Runoff Area=19,043 sf 77.98% Impervious Runoff Depth=0.13" Tc=6.0 min CN=83 Runoff=0.04 cfs 0.005 af
Subcatchment 1S.5: Contained yard/park	Runoff Area=3,023 sf 16.84% Impervious Runoff Depth=0.00" Tc=6.0 min CN=49 Runoff=0.00 cfs 0.000 af
Subcatchment 1S.6: Building E roof and	Runoff Area=22,599 sf 53.10% Impervious Runoff Depth=0.00" Tc=6.0 min CN=70 Runoff=0.00 cfs 0.000 af
Subcatchment 1S.7: East Lot 4	Runoff Area=7,618 sf 53.01% Impervious Runoff Depth=0.00" Tc=6.0 min CN=70 Runoff=0.00 cfs 0.000 af
Subcatchment 1S.8: East Lot 3	Runoff Area=6,694 sf 52.99% Impervious Runoff Depth=0.00" Tc=6.0 min CN=70 Runoff=0.00 cfs 0.000 af
Subcatchment 1S.9: East Lot 2	Runoff Area=5,956 sf 80.74% Impervious Runoff Depth=0.22" Tc=6.0 min CN=87 Runoff=0.03 cfs 0.003 af
Subcatchment 2S: 295 Embankment Trib	Runoff Area=69,848 sf 12.70% Impervious Runoff Depth=0.00" Flow Length=233' Tc=16.0 min CN=41 Runoff=0.00 cfs 0.000 af
Subcatchment 3S.1: Garden area runoff	Runoff Area=6,670 sf 0.00% Impervious Runoff Depth=0.00" Flow Length=82' Tc=6.9 min CN=30 Runoff=0.00 cfs 0.000 af
Reach POI-1: POI #1 - 60" Douglass MS4	Inflow=0.10 cfs 0.016 af Outflow=0.10 cfs 0.016 af
Reach POI-3: POI #3 - Baseball Field	Inflow=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af
Pond P1: VUSF	Peak Elev=27.03' Storage=5 cf Inflow=0.02 cfs 0.002 af Discarded=0.01 cfs 0.002 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.002 af

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Pond P2: FP 4

Peak Elev=35.95' Storage=0 cf Inflow=0.00 cfs 0.000 af
10.0" Round Culvert n=0.010 L=70.0' S=0.0050 '/' Outflow=0.00 cfs 0.000 af

Pond P3: FP 3

Peak Elev=36.10' Storage=0 cf Inflow=0.00 cfs 0.000 af
10.0" Round Culvert n=0.010 L=70.0' S=0.0057 '/' Outflow=0.00 cfs 0.000 af

Pond P4: FP 2

Peak Elev=35.90' Storage=0 cf Inflow=0.03 cfs 0.003 af
10.0" Round Culvert n=0.010 L=70.0' S=0.0057 '/' Outflow=0.03 cfs 0.003 af

Pond P5: FP 1

Peak Elev=35.70' Storage=0 cf Inflow=0.03 cfs 0.002 af
10.0" Round Culvert n=0.010 L=75.0' S=0.0049 '/' Outflow=0.03 cfs 0.002 af

Pond POI #2: POI #2 (295 Basin)

Peak Elev=26.30' Storage=0 cf Inflow=0.00 cfs 0.000 af
Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Total Runoff Area = 4.952 ac Runoff Volume = 0.018 af Average Runoff Depth = 0.04"
54.64% Pervious = 2.706 ac 45.36% Impervious = 2.246 ac

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Type III 24-hr WQ Rainfall=1.00"

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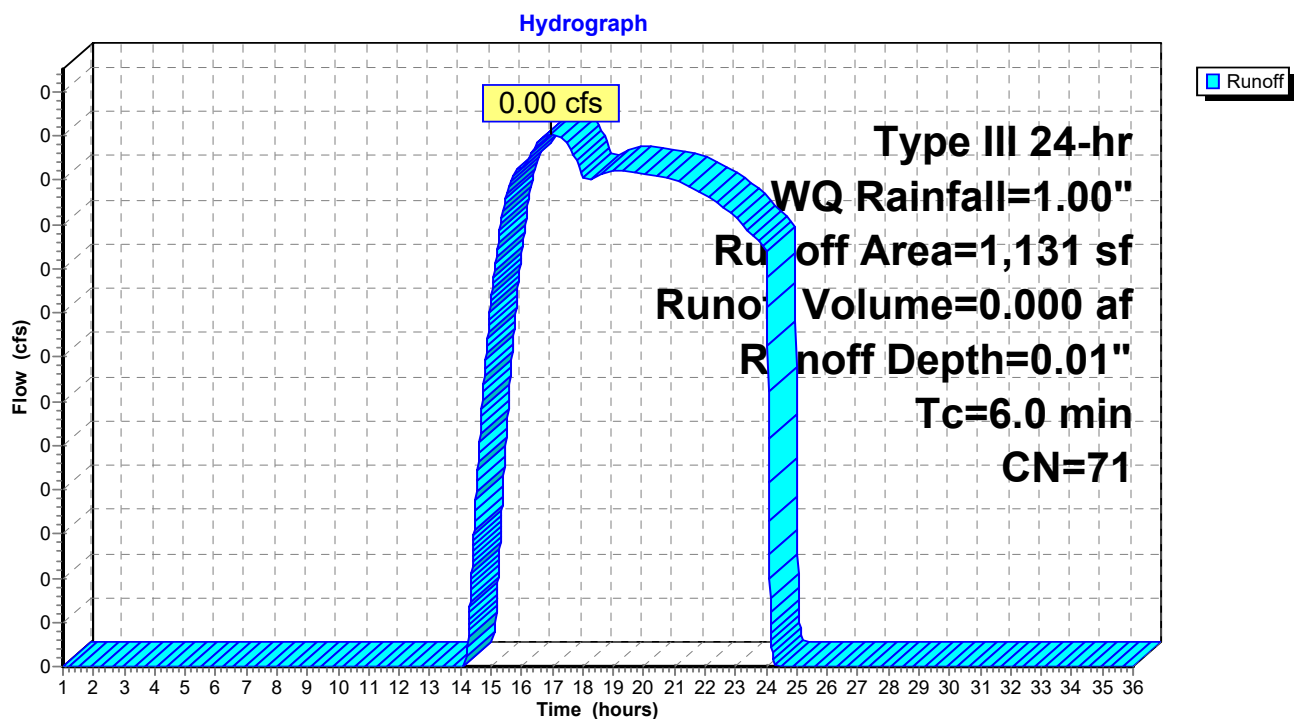
Summary for Subcatchment 1.S1: Drive to Street

Runoff = 0.00 cfs @ 16.98 hrs, Volume= 0.000 af, Depth= 0.01"

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 WQ Rainfall=1.00"

	Area (sf)	CN	Description
*	622	98	Pavement
	509	39	>75% Grass cover, Good, HSG A
	1,131	71	Weighted Average
	509		45.00% Pervious Area
	622		55.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1.S1: Drive to Street

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Type III 24-hr WQ Rainfall=1.00"

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Summary for Subcatchment 1S.10: East Lot 1

Runoff = 0.03 cfs @ 12.10 hrs, Volume= 0.002 af, Depth= 0.28"

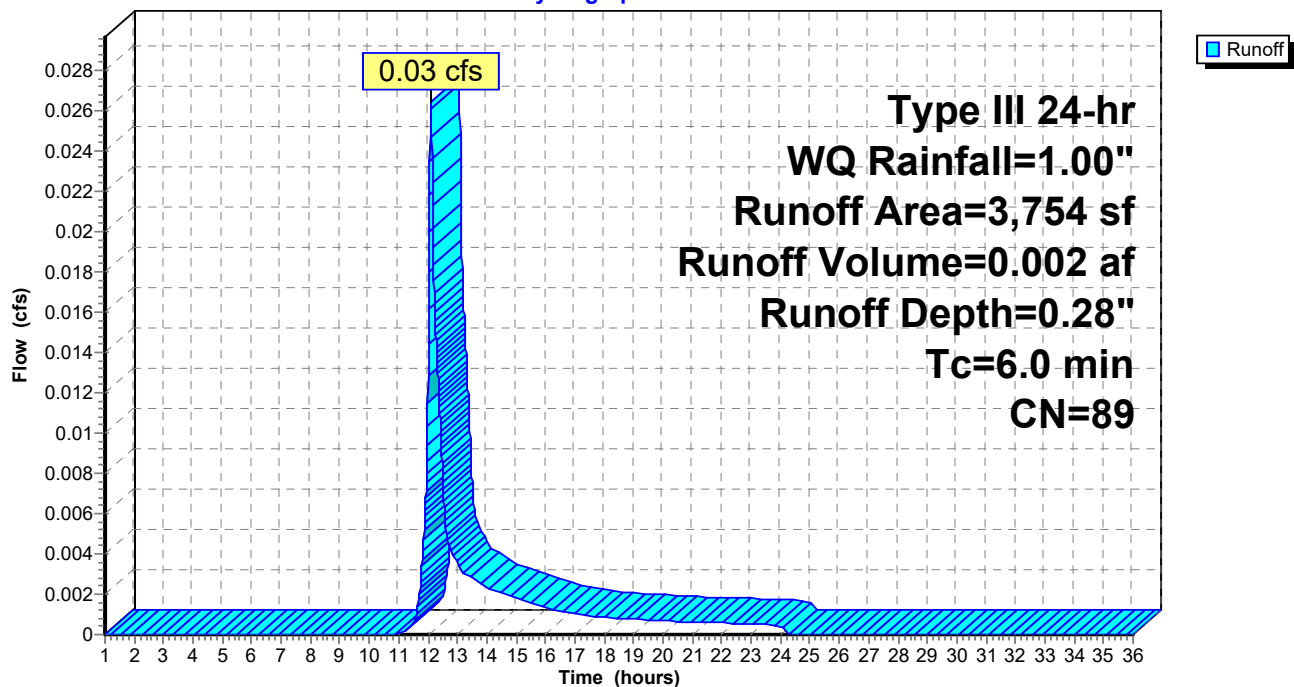
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr WQ Rainfall=1.00"

	Area (sf)	CN	Description
*	3,190	98	Pavement
	564	39	>75% Grass cover, Good, HSG A
	3,754	89	Weighted Average
	564		15.02% Pervious Area
	3,190		84.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1S.10: East Lot 1

Hydrograph



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Type III 24-hr WQ Rainfall=1.00"

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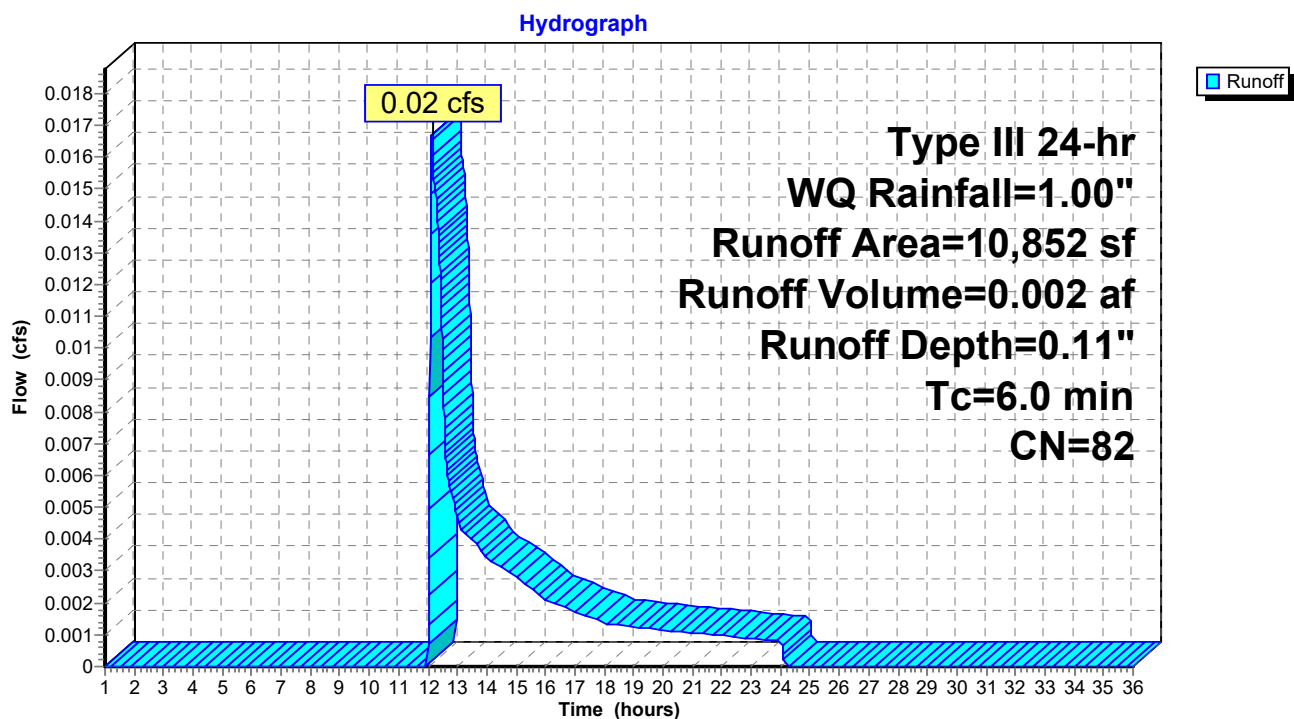
Summary for Subcatchment 1S.11: South Lot Treated

Runoff = 0.02 cfs @ 12.14 hrs, Volume= 0.002 af, Depth= 0.11"

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 WQ Rainfall=1.00"

	Area (sf)	CN	Description
*	8,274	98	Paved parking
	2,578	30	Brush, Good, HSG A
	10,852	82	Weighted Average
	2,578		23.76% Pervious Area
	8,274		76.24% Impervious Area

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

Subcatchment 1S.11: South Lot Treated

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Type III 24-hr WQ Rainfall=1.00"

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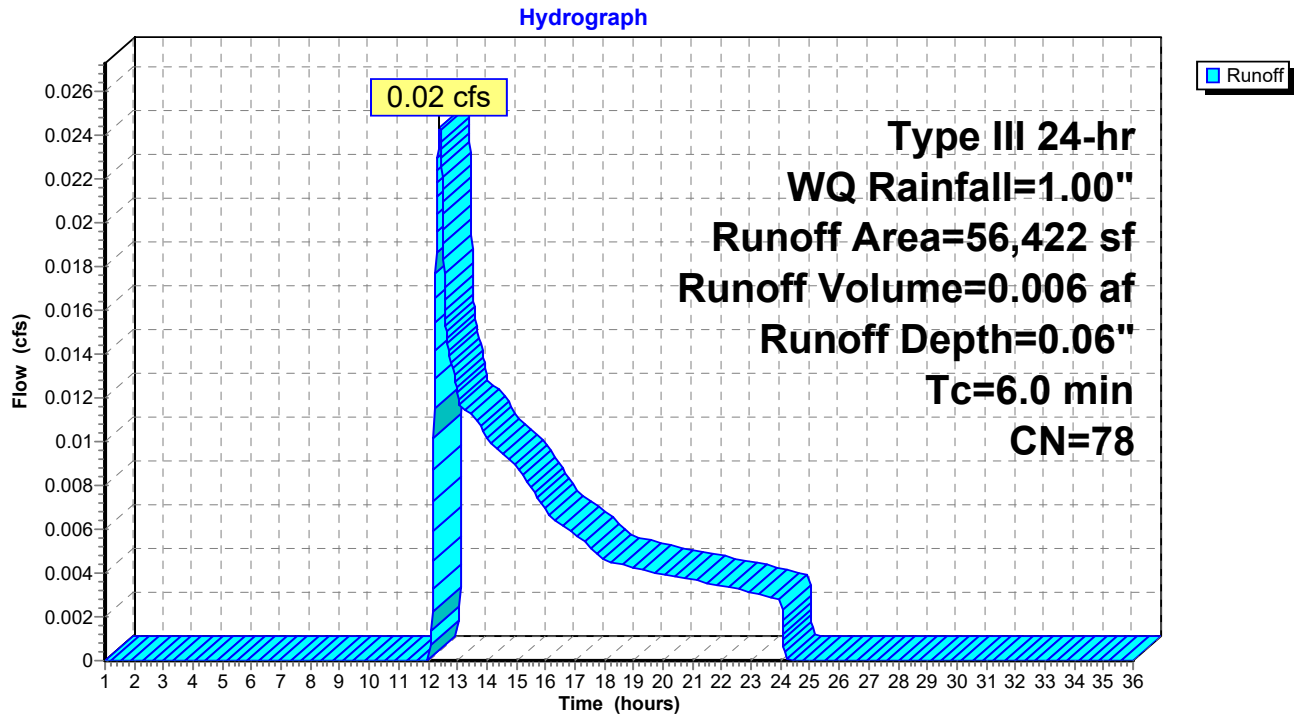
Summary for Subcatchment 1S.2: Co Op Roof & yard

Runoff = 0.02 cfs @ 12.39 hrs, Volume= 0.006 af, Depth= 0.06"

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 WQ Rainfall=1.00"

	Area (sf)	CN	Description
*	5,239	98	pavers
	16,100	39	>75% Grass cover, Good, HSG A
*	21,137	98	Roofs
*	4,191	98	sidewalks
*	618	98	patios
	9,137	77	1/8 acre lots, 65% imp, HSG A
	56,422	78	Weighted Average
	19,298		34.20% Pervious Area
	37,124		65.80% Impervious Area

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

Subcatchment 1S.2: Co Op Roof & yard

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Type III 24-hr WQ Rainfall=1.00"

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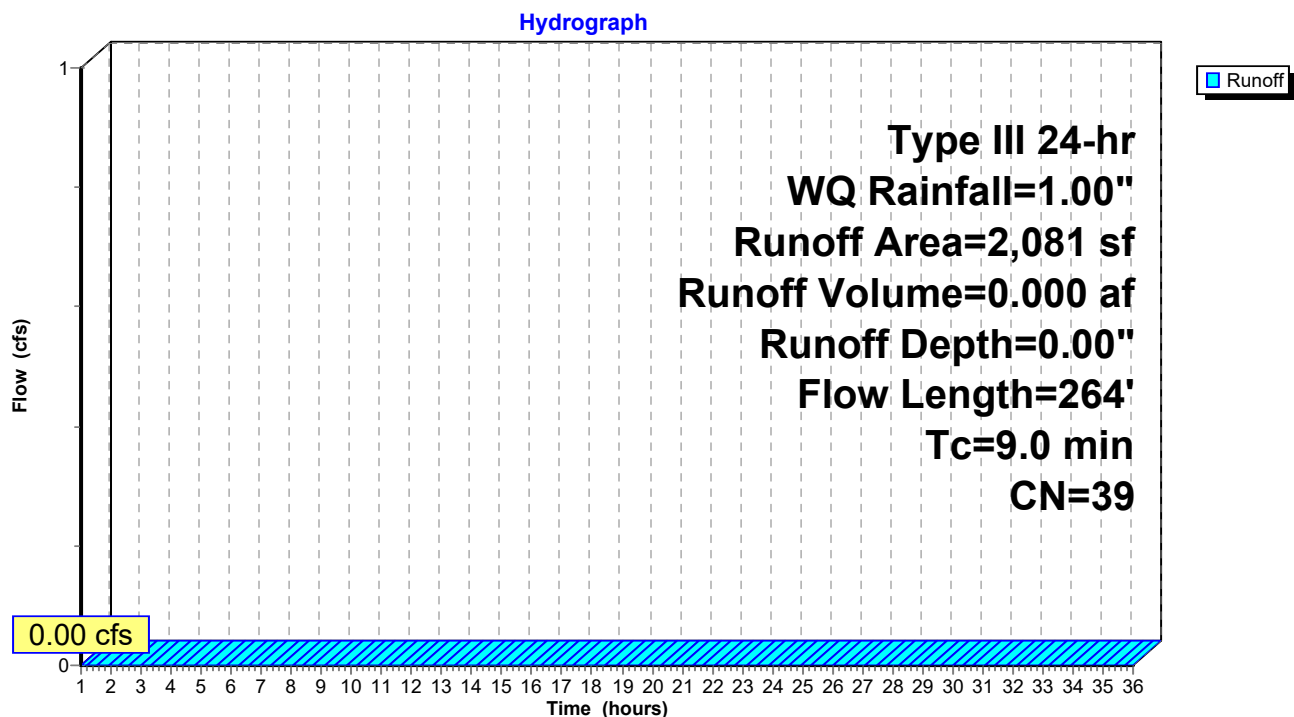
Summary for Subcatchment 1S.3: Runoff to park

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= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr WQ Rainfall=1.00"

Area (sf)	CN	Description
2,081	39	>75% Grass cover, Good, HSG A
2,081		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	100	0.0600	0.27		Sheet Flow, A to B Grass: Short n= 0.150 P2= 3.27"
2.8	164	0.0200	0.99		Shallow Concentrated Flow, B to C Short Grass Pasture Kv= 7.0 fps
9.0	264	Total			

Subcatchment 1S.3: Runoff to park

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Type III 24-hr WQ Rainfall=1.00"

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Summary for Subcatchment 1S.4: Central parking/drive

Runoff = 0.04 cfs @ 12.13 hrs, Volume= 0.005 af, Depth= 0.13"

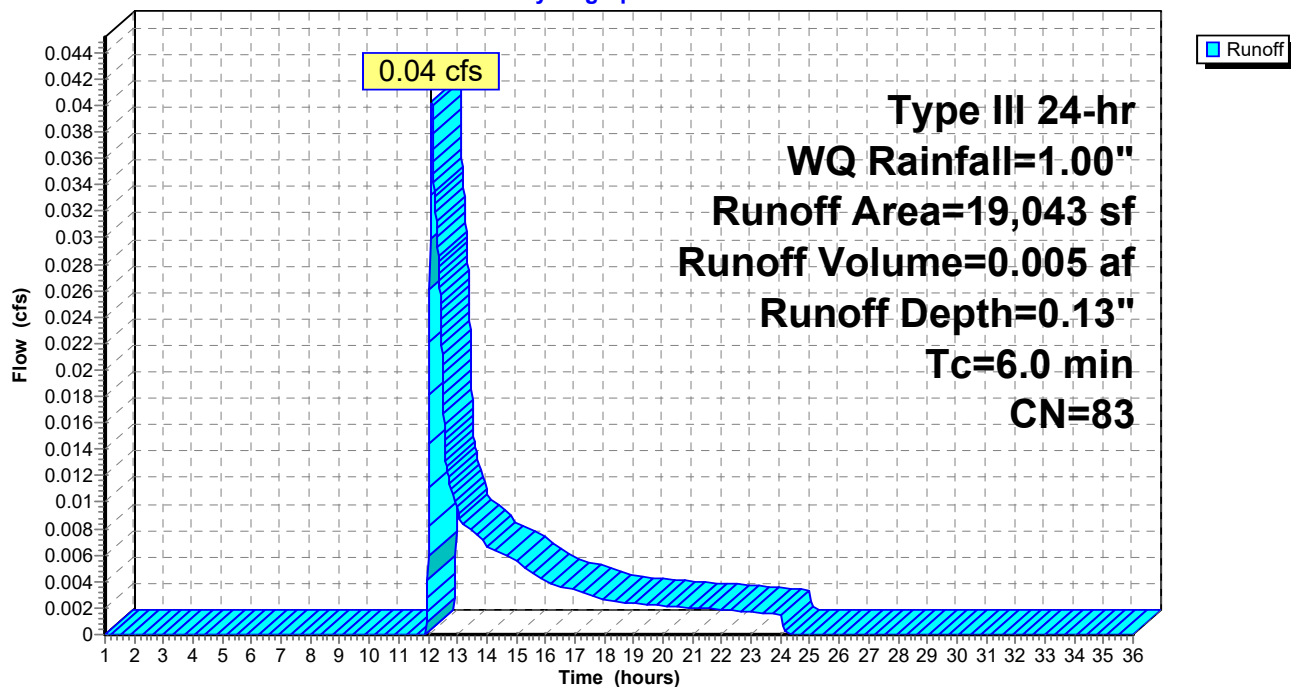
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr WQ Rainfall=1.00"

	Area (sf)	CN	Description
*	14,850	98	Pavement
	4,193	30	Brush, Good, HSG A
	19,043	83	Weighted Average
	4,193		22.02% Pervious Area
	14,850		77.98% Impervious Area

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

Subcatchment 1S.4: Central parking/drive

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Type III 24-hr WQ Rainfall=1.00"

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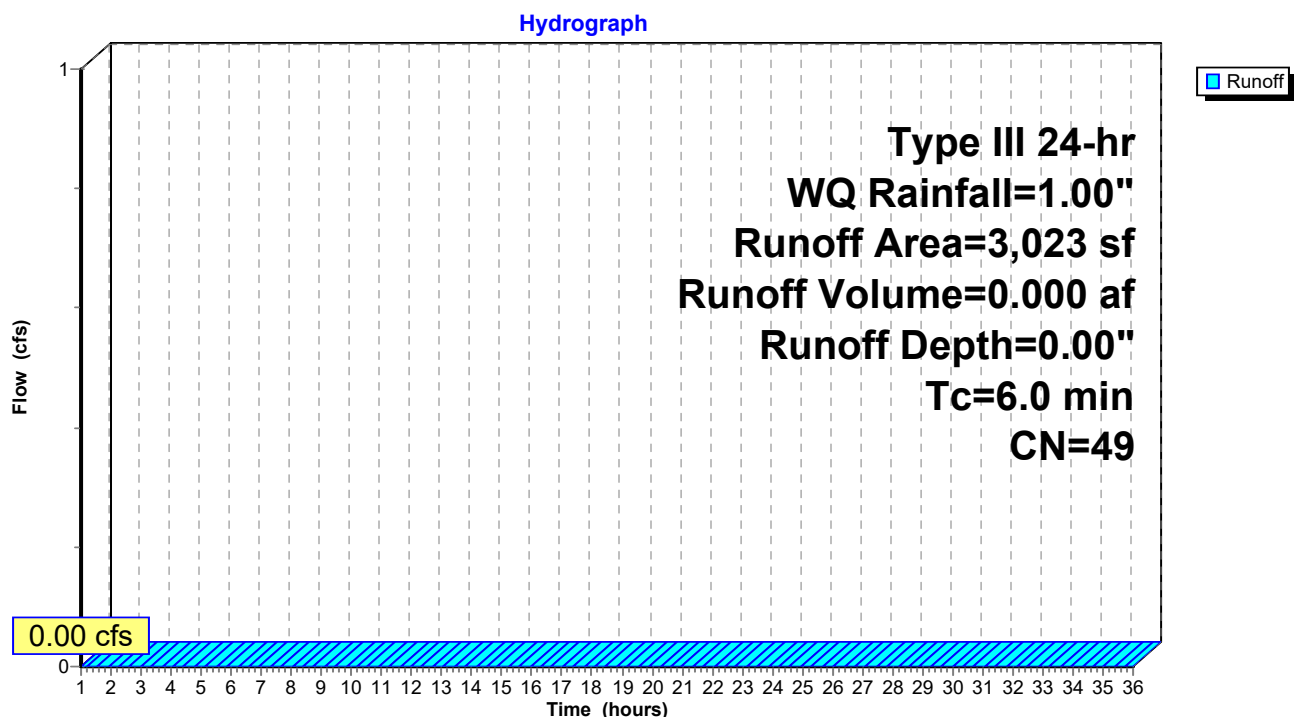
Summary for Subcatchment 1S.5: Contained yard/park connection

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= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr WQ Rainfall=1.00"

Area (sf)	CN	Description
2,514	39	>75% Grass cover, Good, HSG A
* 509	98	sidewalks
3,023	49	Weighted Average
2,514		83.16% Pervious Area
509		16.84% Impervious Area

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

Subcatchment 1S.5: Contained yard/park connection

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Type III 24-hr WQ Rainfall=1.00"

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Summary for Subcatchment 1S.6: Building E roof and yard

Runoff = 0.00 cfs @ 21.34 hrs, Volume= 0.000 af, Depth= 0.00"

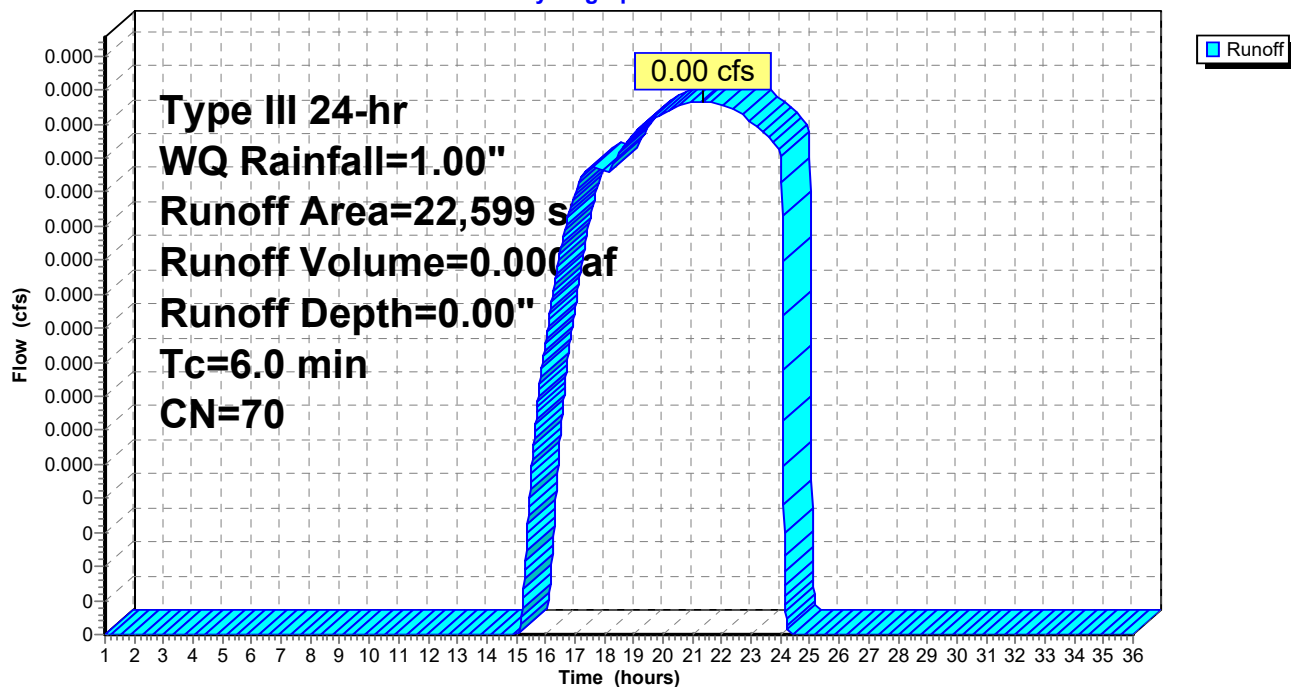
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr WQ Rainfall=1.00"

Area (sf)	CN	Description
10,599	39	>75% Grass cover, Good, HSG A
* 12,000	98	roof
22,599	70	Weighted Average
10,599		46.90% Pervious Area
12,000		53.10% Impervious Area

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

Subcatchment 1S.6: Building E roof and yard

Hydrograph



Summary for Subcatchment 1S.7: East Lot 4

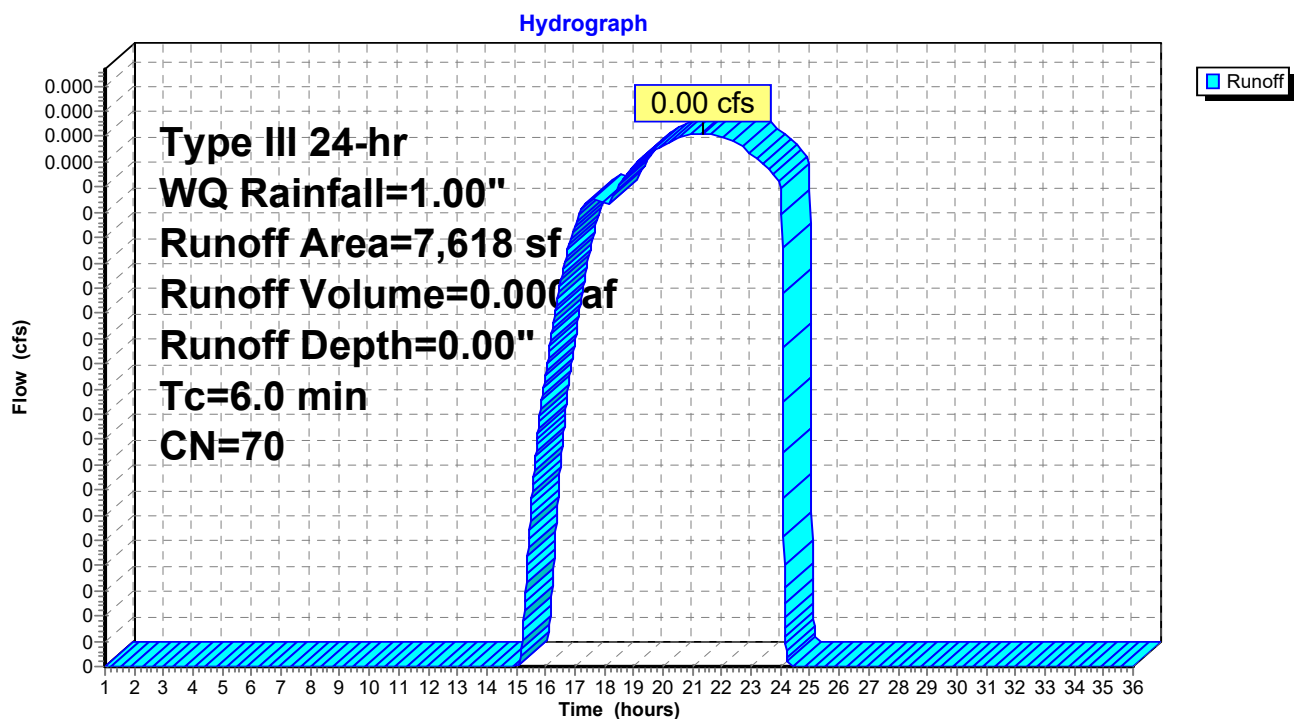
Runoff = 0.00 cfs @ 21.34 hrs, Volume= 0.000 af, Depth= 0.00"

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 WQ Rainfall=1.00"

	Area (sf)	CN	Description
*	4,038	98	Paved parking
	3,580	39	>75% Grass cover, Good, HSG A
	7,618	70	Weighted Average
	3,580		46.99% Pervious Area
	4,038		53.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1S.7: East Lot 4



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Type III 24-hr WQ Rainfall=1.00"

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Summary for Subcatchment 1S.8: East Lot 3

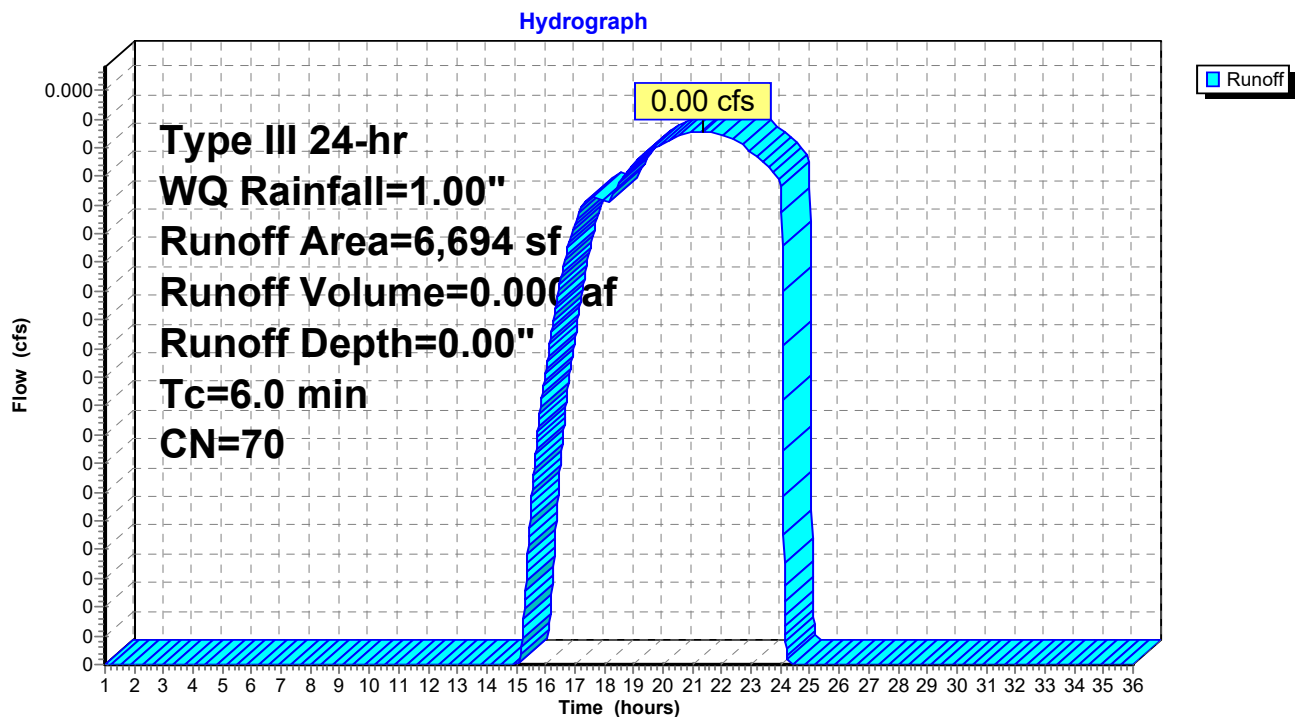
Runoff = 0.00 cfs @ 21.34 hrs, Volume= 0.000 af, Depth= 0.00"

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 WQ Rainfall=1.00"

	Area (sf)	CN	Description
*	3,547	98	Paved parking
	3,147	39	>75% Grass cover, Good, HSG A
	6,694	70	Weighted Average
	3,147		47.01% Pervious Area
	3,547		52.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1S.8: East Lot 3



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Summary for Subcatchment 1S.9: East Lot 2

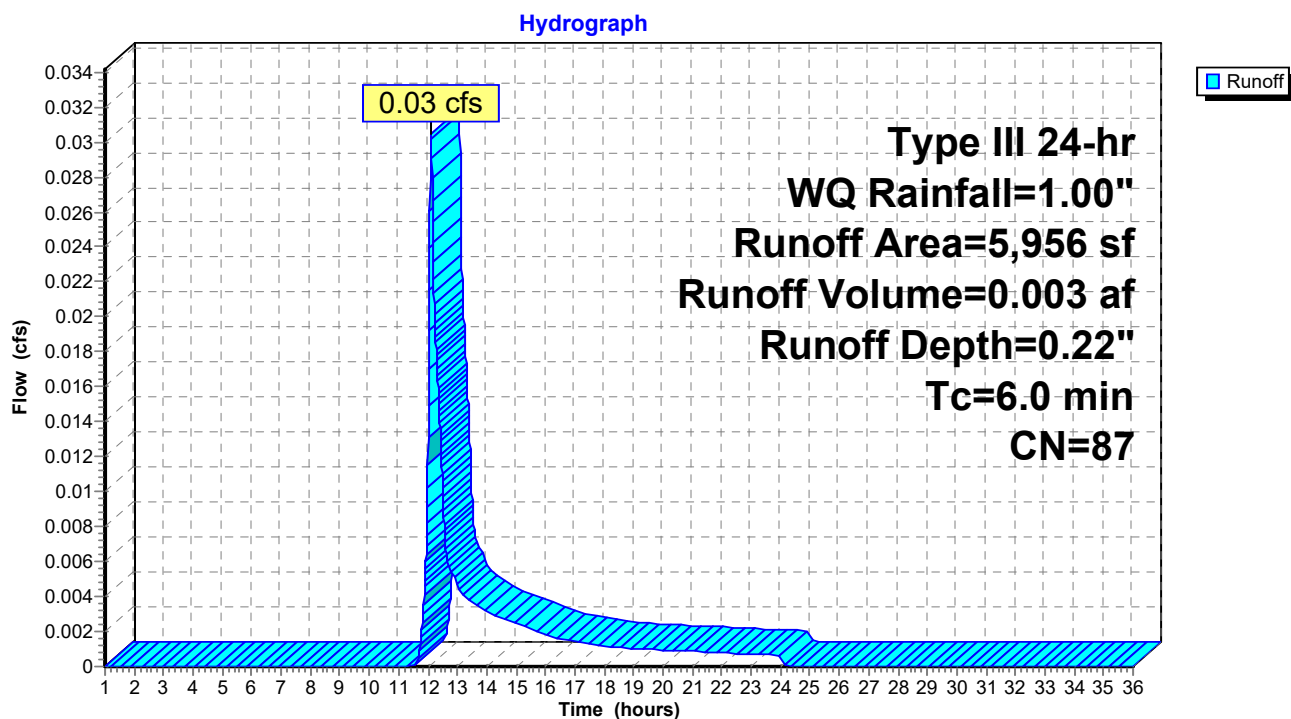
Runoff = 0.03 cfs @ 12.10 hrs, Volume= 0.003 af, Depth= 0.22"

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 WQ Rainfall=1.00"

	Area (sf)	CN	Description
*	4,809	98	Paved parking, patio, sidewalk
	1,147	39	>75% Grass cover, Good, HSG A
	5,956	87	Weighted Average
	1,147		19.26% Pervious Area
	4,809		80.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1S.9: East Lot 2



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Type III 24-hr WQ Rainfall=1.00"

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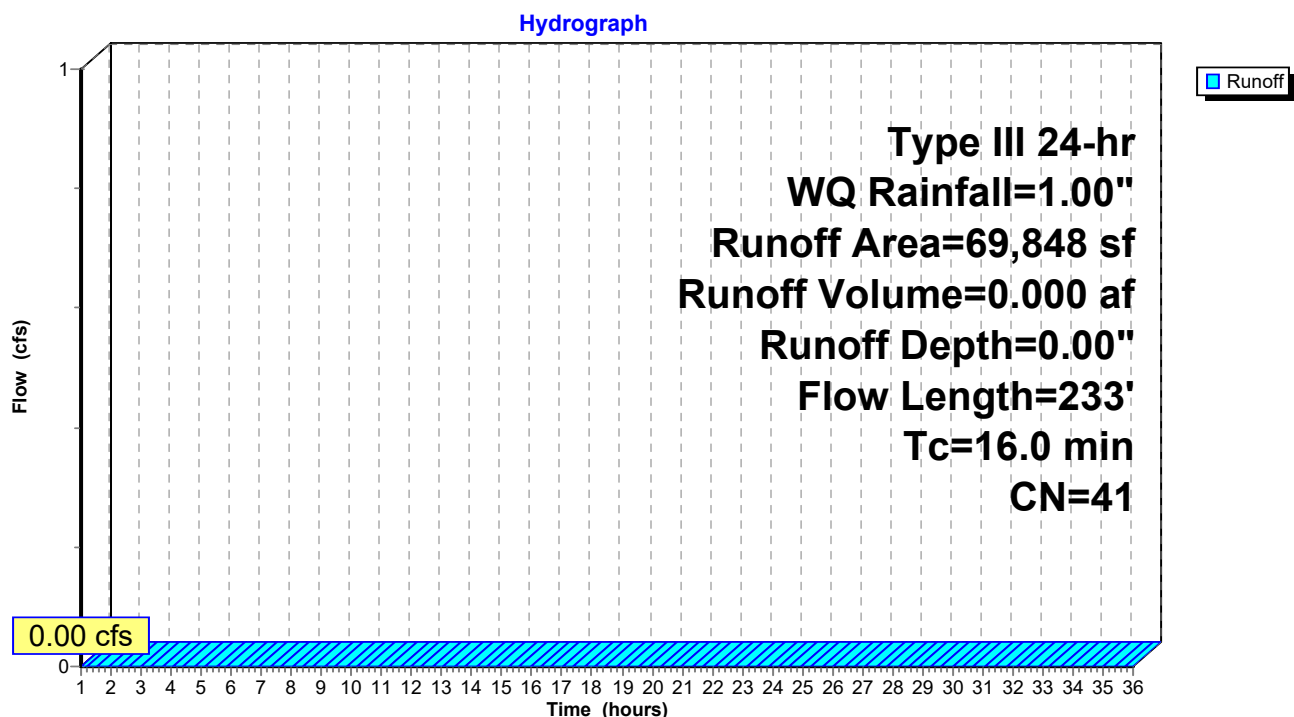
Summary for Subcatchment 2S: 295 Embankment Trib

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= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr WQ Rainfall=1.00"

Area (sf)	CN	Description
8,183	39	>75% Grass cover, Good, HSG A
* 230	98	Stairs
* 3,155	98	Path
* 5,488	98	Homes/driveways
52,792	32	Woods/grass comb., Good, HSG A
69,848	41	Weighted Average
60,975		87.30% Pervious Area
8,873		12.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	100	0.0500	0.11		Sheet Flow, A to B Woods: Light underbrush n= 0.400 P2= 3.27"
1.3	133	0.0600	1.71		Shallow Concentrated Flow, B to C Short Grass Pasture Kv= 7.0 fps
16.0	233	Total			

Subcatchment 2S: 295 Embankment Trib

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Type III 24-hr WQ Rainfall=1.00"

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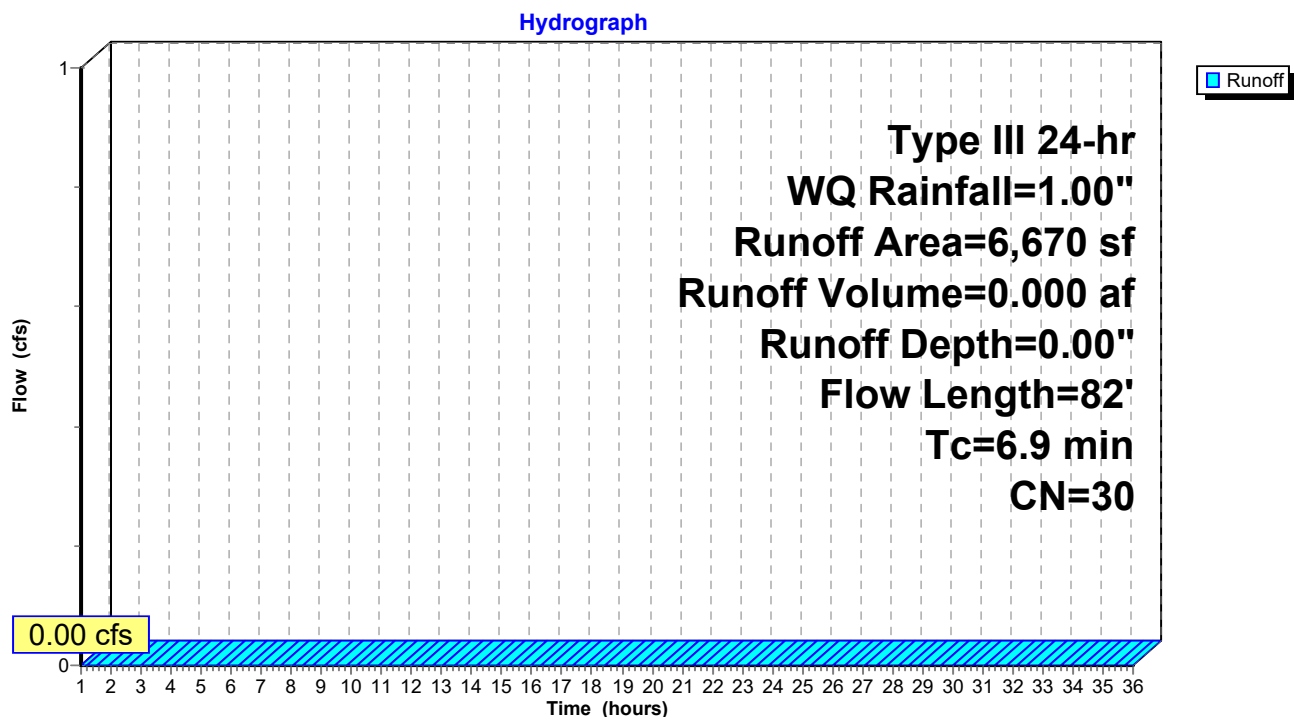
Summary for Subcatchment 3S.1: Garden area runoff

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= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr WQ Rainfall=1.00"

Area (sf)	CN	Description
6,670	30	Brush, Good, HSG A
6,670		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	28	0.3330	0.28		Sheet Flow, A to B
					Grass: Dense n= 0.240 P2= 3.27"
5.2	54	0.0700	0.17		Sheet Flow, B to C
					Grass: Dense n= 0.240 P2= 3.27"
6.9	82	Total			

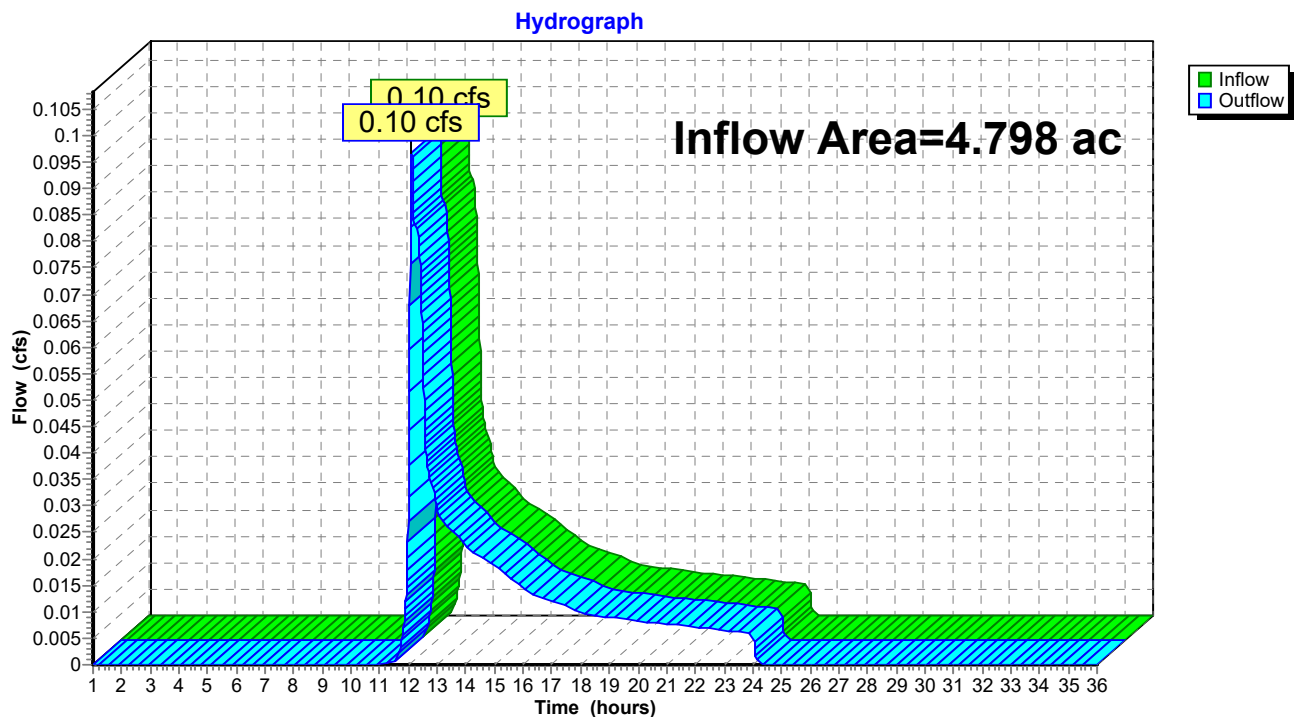
Subcatchment 3S.1: Garden area runoff

Summary for Reach POI-1: POI #1 - 60" Douglass MS4

Inflow Area = 4.798 ac, 46.81% Impervious, Inflow Depth = 0.04" for WQ event
 Inflow = 0.10 cfs @ 12.11 hrs, Volume= 0.016 af
 Outflow = 0.10 cfs @ 12.11 hrs, Volume= 0.016 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 POI-1: POI #1 - 60" Douglass MS4

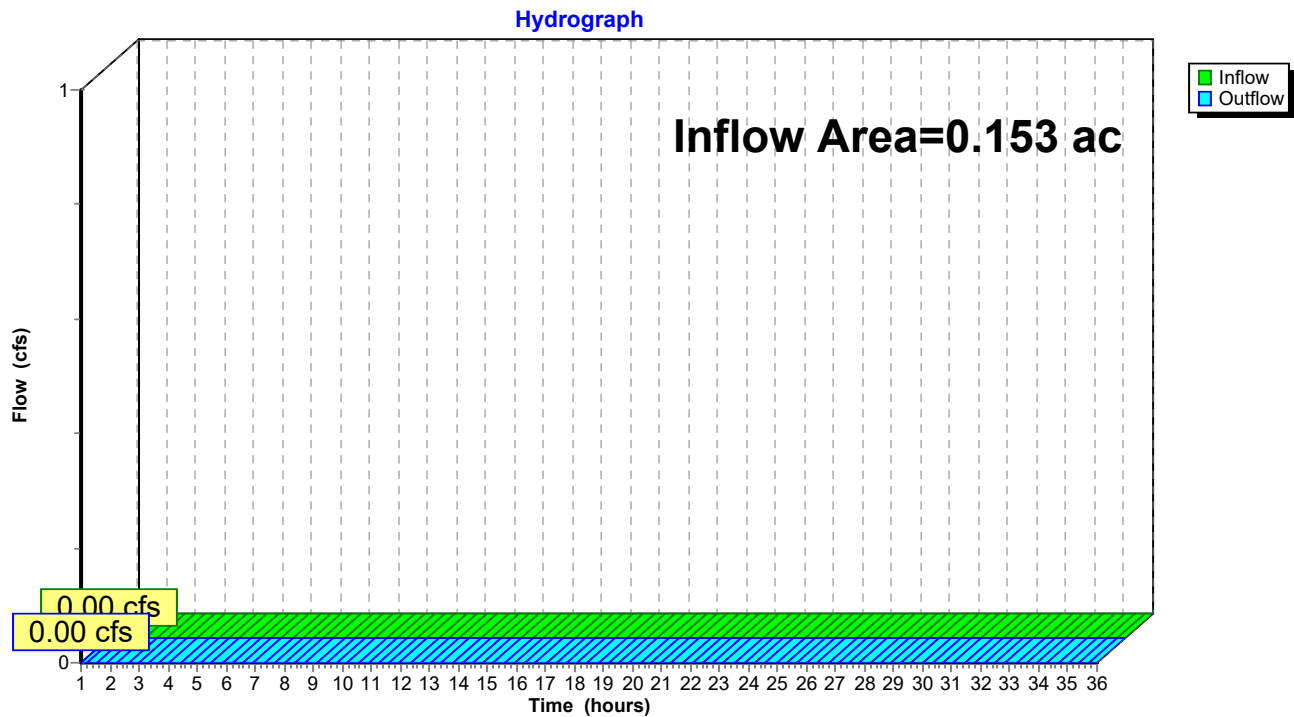


Summary for Reach POI-3: POI #3 - Baseball Field

Inflow Area = 0.153 ac, 0.00% 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= 1.00-36.00 hrs, dt= 0.01 hrs

Reach POI-3: POI #3 - Baseball Field



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Type III 24-hr WQ Rainfall=1.00"

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Summary for Pond P1: VUSF

Inflow Area = 0.249 ac, 76.24% Impervious, Inflow Depth = 0.11" for WQ event
 Inflow = 0.02 cfs @ 12.14 hrs, Volume= 0.002 af
 Outflow = 0.01 cfs @ 12.10 hrs, Volume= 0.002 af, Atten= 37%, Lag= 0.0 min
 Discarded = 0.01 cfs @ 12.10 hrs, Volume= 0.002 af
 Primary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Peak Elev= 27.03' @ 12.47 hrs Surf.Area= 458 sf Storage= 5 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= 1.5 min (929.5 - 928.0)

Volume	Invert	Avail.Storage	Storage Description
#1	30.75'	1,899 cf	Ponding (Prismatic) Listed below (Recalc)
#2	29.25'	69 cf	Filter Media/Loam (Prismatic) Listed below (Recalc)
			687 cf Overall x 10.0% Voids
#3	28.92'	30 cf	Transition Gravel (Prismatic) Listed below (Recalc)
			151 cf Overall x 20.0% Voids
#4	27.00'	349 cf	Crushed Stone (Prismatic) Listed below (Recalc)
			879 cf Overall - 6 cf Embedded = 873 cf x 40.0% Voids
#5	27.10'	5 cf	4.0" Round Pipe Storage x 2 Inside #4
			L= 30.0' S= 0.0005 '/'
			6 cf Overall - 0.2" Wall Thickness = 5 cf
		2,353 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.75	465	0	0
32.25	945	1,058	1,058
33.00	1,300	842	1,899

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
29.25	458	0	0
30.75	458	687	687

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.92	458	0	0
29.25	458	151	151

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
27.00	458	0	0
28.92	458	879	879

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Device	Routing	Invert	Outlet Devices
#1	Primary	27.00'	12.0" Round Culvert L= 60.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 27.00' / 26.75' S= 0.0042 '/' Cc= 0.600 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf
#2	Device 1	27.10'	0.5" Vert. Soil Filter Media Drawdown Effect C= 0.600
#3	Device 1	32.35'	24.0" Horiz. Beehive Outlet C= 0.600 Limited to weir flow at low heads
#4	Discarded	27.00'	1.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.01 cfs @ 12.10 hrs HW=27.00' (Free Discharge)

↳ **4=Exfiltration** (Exfiltration Controls 0.01 cfs)

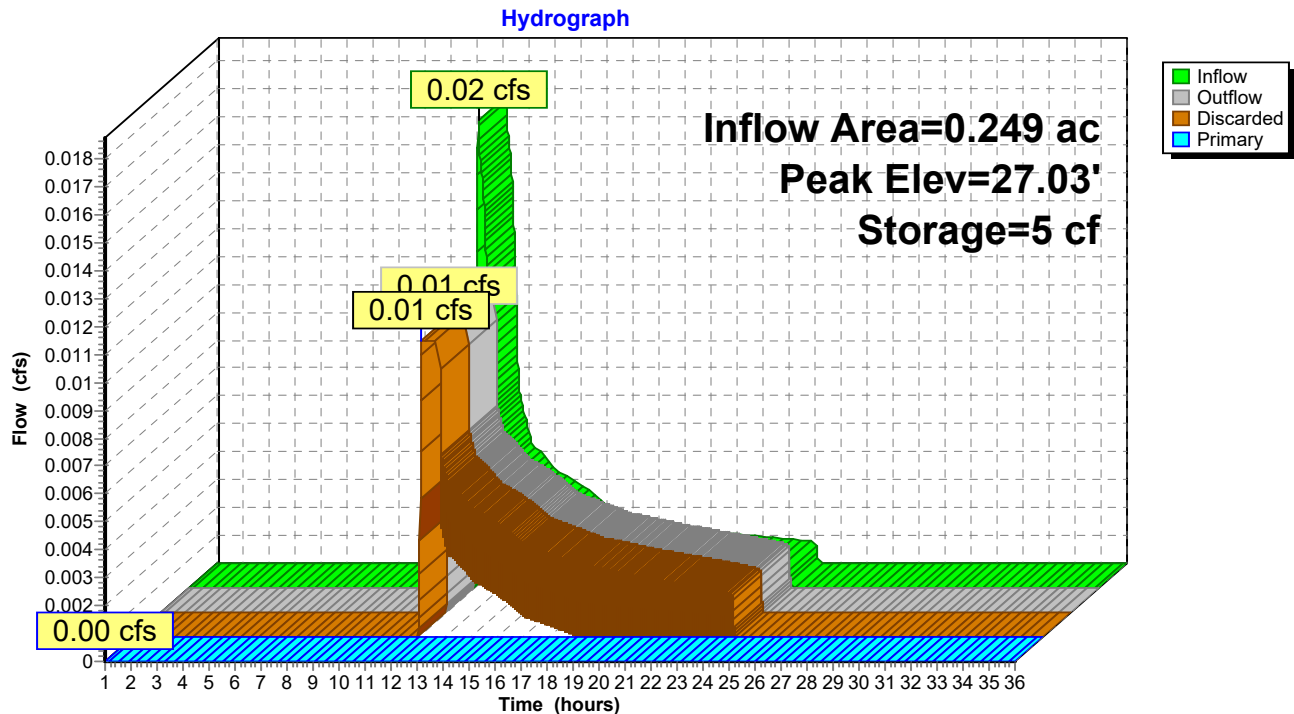
Primary OutFlow Max=0.00 cfs @ 1.00 hrs HW=27.00' TW=0.00' (Dynamic Tailwater)

↳ **1=Culvert** (Controls 0.00 cfs)

↳ **2=Soil Filter Media Drawdown Effect** (Controls 0.00 cfs)

↳ **3=Beehive Outlet** (Controls 0.00 cfs)

Pond P1: VUSF



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Summary for Pond P2: FP 4

Inflow Area = 0.175 ac, 53.01% Impervious, Inflow Depth = 0.00" for WQ event
 Inflow = 0.00 cfs @ 21.34 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 21.34 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 21.34 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 35.95' @ 1.00 hrs Surf.Area= 40 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 0.0 min (1,203.6 - 1,203.6)

Volume	Invert	Avail.Storage	Storage Description
#1	35.95'	14 cf	4.00'W x 5.00'L x 3.60'H Media/Stone 72 cf Overall x 20.0% Voids
#2	35.95'	38 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		52 cf	Total Available Storage

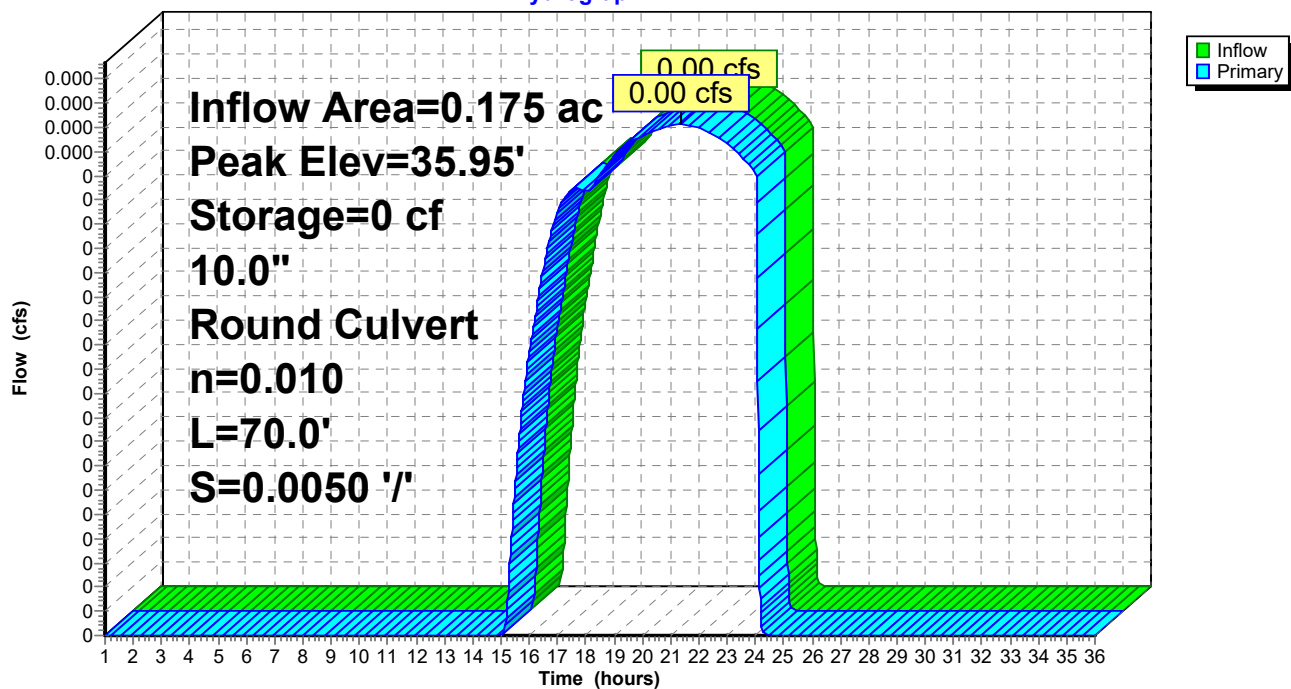
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
35.95	20	0	0
36.95	56	38	38

Device	Routing	Invert	Outlet Devices
#1	Primary	32.35'	10.0" Round Culvert L= 70.0' Ke= 1.000 Inlet / Outlet Invert= 32.35' / 32.00' S= 0.0050 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 21.34 hrs HW=35.95' TW=0.00' (Dynamic Tailwater)
 ↑**1=Culvert** (Passes 0.00 cfs of 3.51 cfs potential flow)

Pond P2: FP 4

Hydrograph



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Type III 24-hr WQ Rainfall=1.00"

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Summary for Pond P3: FP 3

Inflow Area = 0.154 ac, 52.99% Impervious, Inflow Depth = 0.00" for WQ event
 Inflow = 0.00 cfs @ 21.34 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 21.34 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 21.34 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 36.10' @ 1.00 hrs Surf.Area= 50 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 0.0 min (1,203.6 - 1,203.6)

Volume	Invert	Avail.Storage	Storage Description
#1	36.10'	21 cf	5.00'W x 5.00'L x 4.20'H Media/Stone 105 cf Overall x 20.0% Voids
#2	36.10'	45 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		66 cf	Total Available Storage

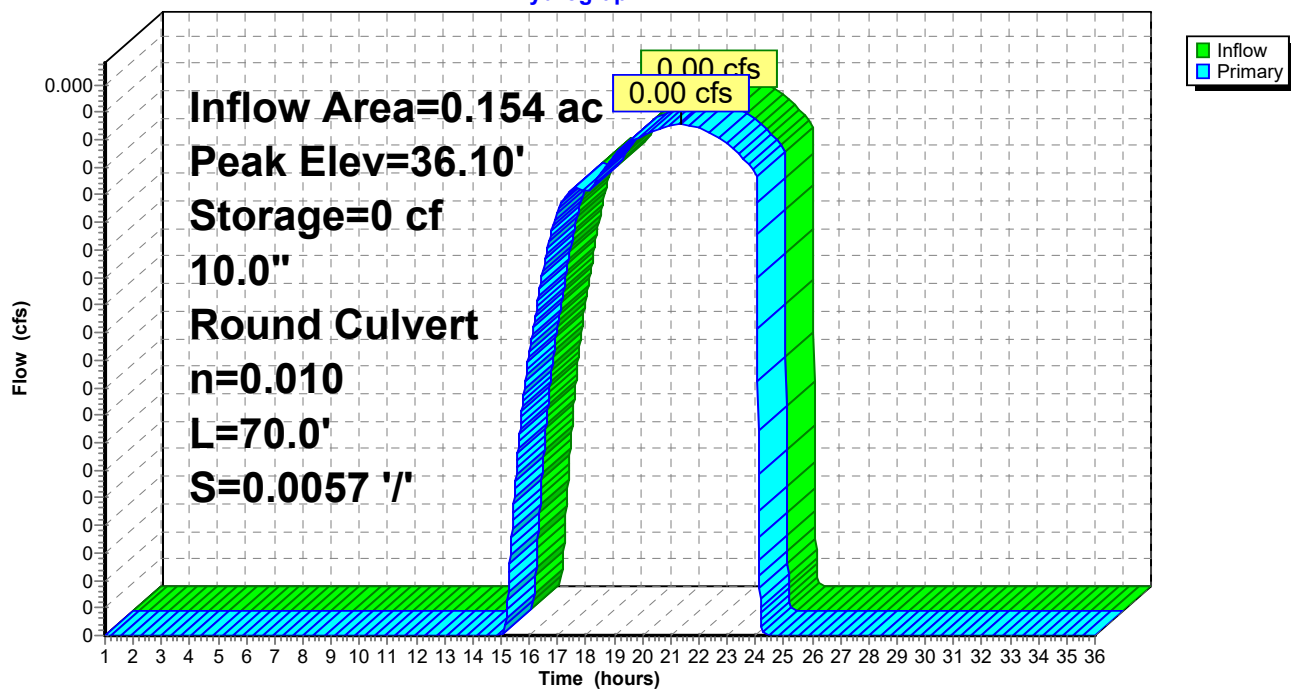
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.10	25	0	0
37.10	64	45	45

Device	Routing	Invert	Outlet Devices
#1	Primary	31.90'	10.0" Round Culvert L= 70.0' Ke= 1.000 Inlet / Outlet Invert= 31.90' / 31.50' S= 0.0057 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 21.34 hrs HW=36.10' TW=0.00' (Dynamic Tailwater)
 ↑**1=Culvert** (Passes 0.00 cfs of 3.83 cfs potential flow)

Pond P3: FP 3

Hydrograph



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Type III 24-hr WQ Rainfall=1.00"

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Summary for Pond P4: FP 2

Inflow Area = 0.137 ac, 80.74% Impervious, Inflow Depth = 0.22" for WQ event
 Inflow = 0.03 cfs @ 12.10 hrs, Volume= 0.003 af
 Outflow = 0.03 cfs @ 12.10 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.03 cfs @ 12.10 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 35.90' @ 1.00 hrs Surf.Area= 50 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	35.90'	23 cf	5.00'W x 5.00'L x 4.50'H Media/Stone 113 cf Overall x 20.0% Voids
#2	35.90'	45 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		67 cf	Total Available Storage

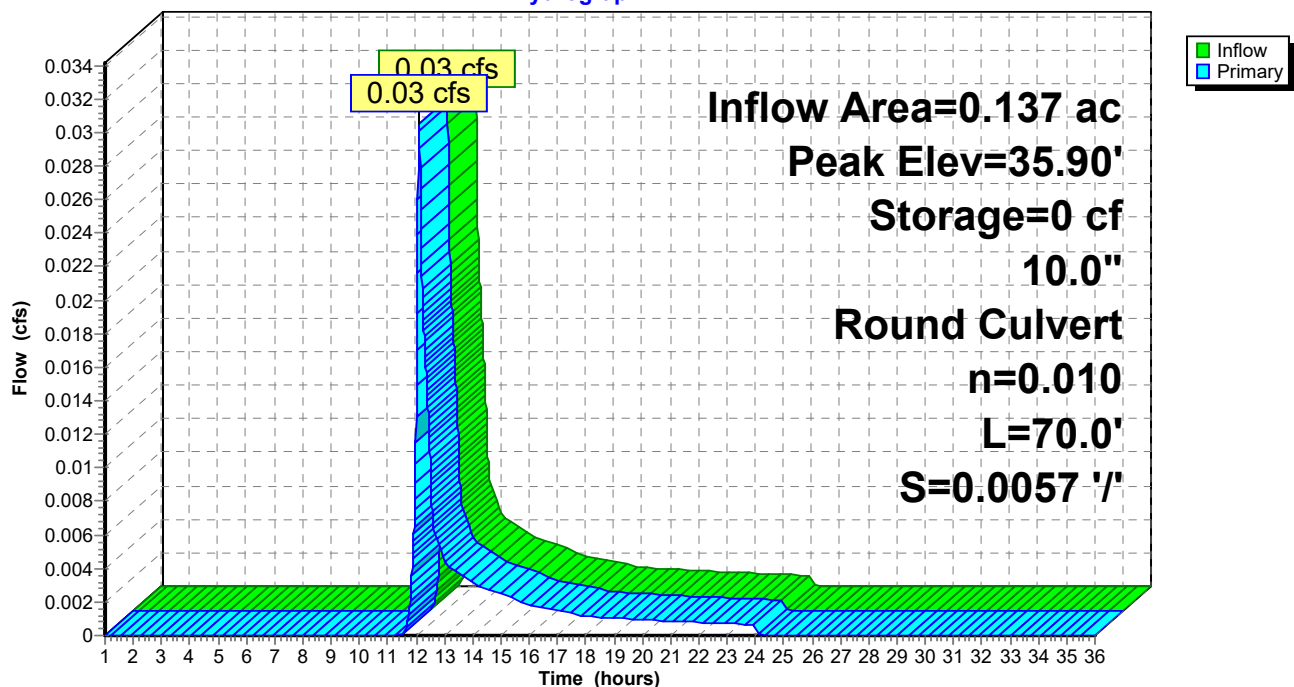
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
35.90	25	0	0
36.90	64	45	45

Device	Routing	Invert	Outlet Devices
#1	Primary	31.40'	10.0" Round Culvert L= 70.0' Ke= 1.000 Inlet / Outlet Invert= 31.40' / 31.00' S= 0.0057 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 12.10 hrs HW=35.90' TW=0.00' (Dynamic Tailwater)
 ↑**1=Culvert** (Passes 0.00 cfs of 3.98 cfs potential flow)

Pond P4: FP 2

Hydrograph



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Summary for Pond P5: FP 1

Inflow Area = 0.086 ac, 84.98% Impervious, Inflow Depth = 0.28" for WQ event
 Inflow = 0.03 cfs @ 12.10 hrs, Volume= 0.002 af
 Outflow = 0.03 cfs @ 12.10 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.03 cfs @ 12.10 hrs, Volume= 0.002 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 35.70' @ 1.00 hrs Surf.Area= 40 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 0.0 min (869.9 - 869.9)

Volume	Invert	Avail.Storage	Storage Description
#1	35.70'	19 cf	4.00'W x 5.00'L x 4.80'H Media/Stone 96 cf Overall x 20.0% Voids
#2	35.70'	38 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		57 cf	Total Available Storage

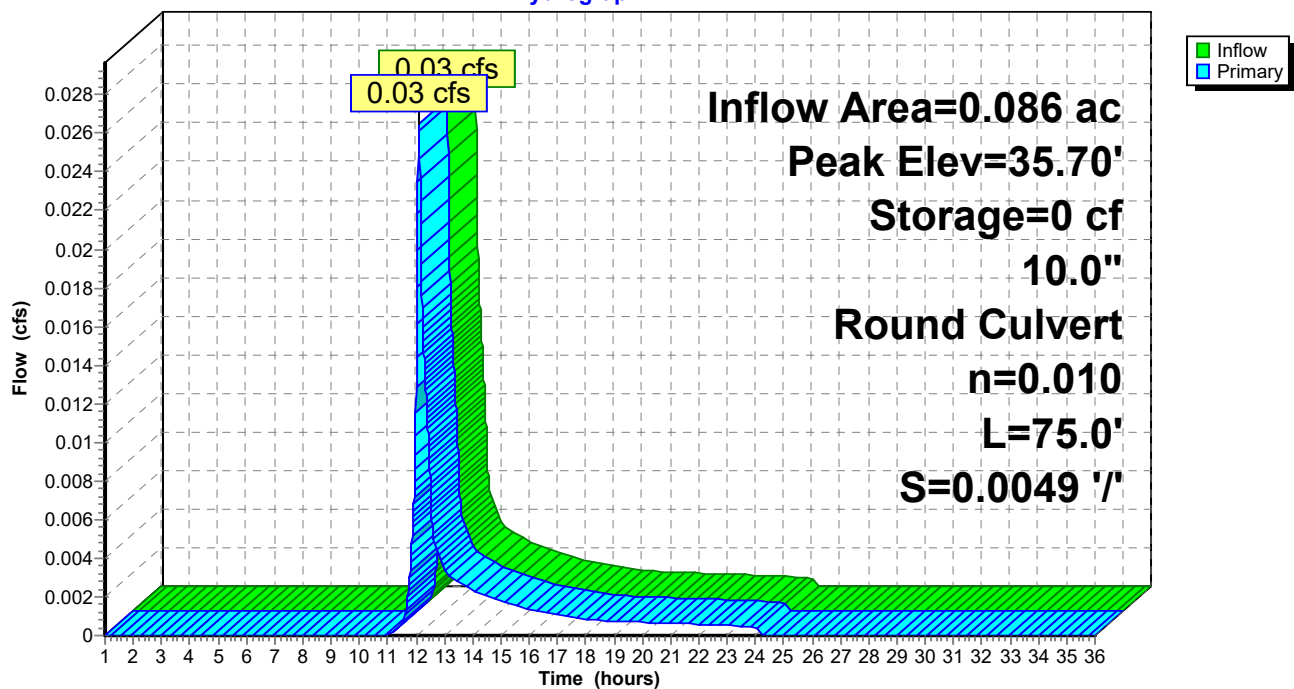
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
35.70	20	0	0
36.70	56	38	38

Device	Routing	Invert	Outlet Devices
#1	Primary	30.90'	10.0" Round Culvert L= 75.0' Ke= 1.000 Inlet / Outlet Invert= 30.90' / 30.53' S= 0.0049 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 12.10 hrs HW=35.70' TW=0.00' (Dynamic Tailwater)
 ↑**1=Culvert** (Passes 0.00 cfs of 4.12 cfs potential flow)

Pond P5: FP 1

Hydrograph



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Summary for Pond POI #2: POI #2 (295 Basin)

Inflow Area = 1.603 ac, 12.70% 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
 Discarded = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af
 Primary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af
 Secondary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Peak Elev= 26.30' @ 1.00 hrs Surf.Area= 100 sf Storage= 0 cf

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

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

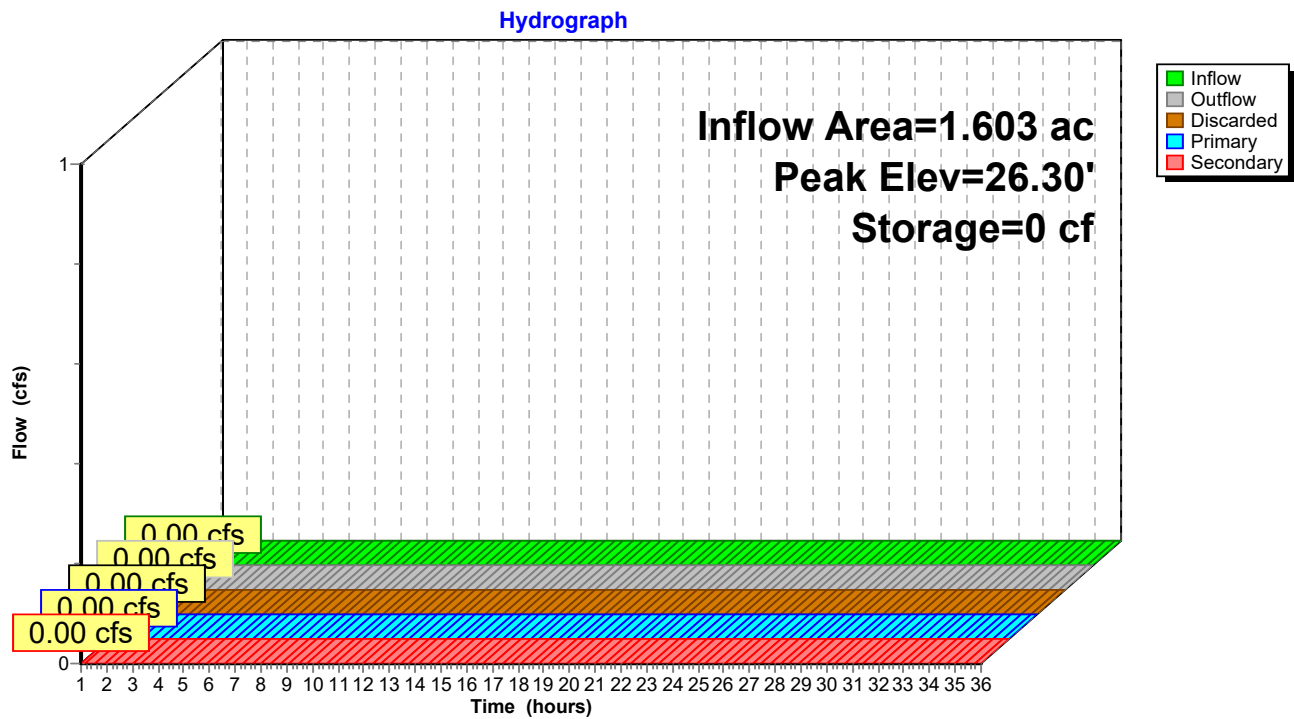
Volume	Invert	Avail.Storage	Storage Description
#1	26.30'	105,037 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.30	100	0	0
27.00	4,475	1,601	1,601
28.00	10,120	7,298	8,899
29.00	14,131	12,126	21,024
30.00	17,326	15,729	36,753
32.00	24,023	41,349	78,102
33.00	29,847	26,935	105,037

Device	Routing	Invert	Outlet Devices
#1	Primary	26.60'	12.0" Round Culvert L= 16.0' Ke= 0.600 Inlet / Outlet Invert= 26.60' / 26.51' S= 0.0056 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	32.40'	20.0' long x 15.0' breadth Overflow Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Discarded	26.60'	1.000 in/hr Exfiltration over Surface area above 26.60' Excluded Surface area = 1,975 sf

Discarded OutFlow Max=0.00 cfs @ 1.00 hrs HW=26.30' (Free Discharge)↑**3=Exfiltration** (Controls 0.00 cfs)**Primary OutFlow** Max=0.00 cfs @ 1.00 hrs HW=26.30' TW=0.00' (Dynamic Tailwater)↑**1=Culvert** (Controls 0.00 cfs)**Secondary OutFlow** Max=0.00 cfs @ 1.00 hrs HW=26.30' (Free Discharge)↑**2=Overflow** (Controls 0.00 cfs)

Pond POI #2: POI #2 (295 Basin)



Attachment E

Soil Survey





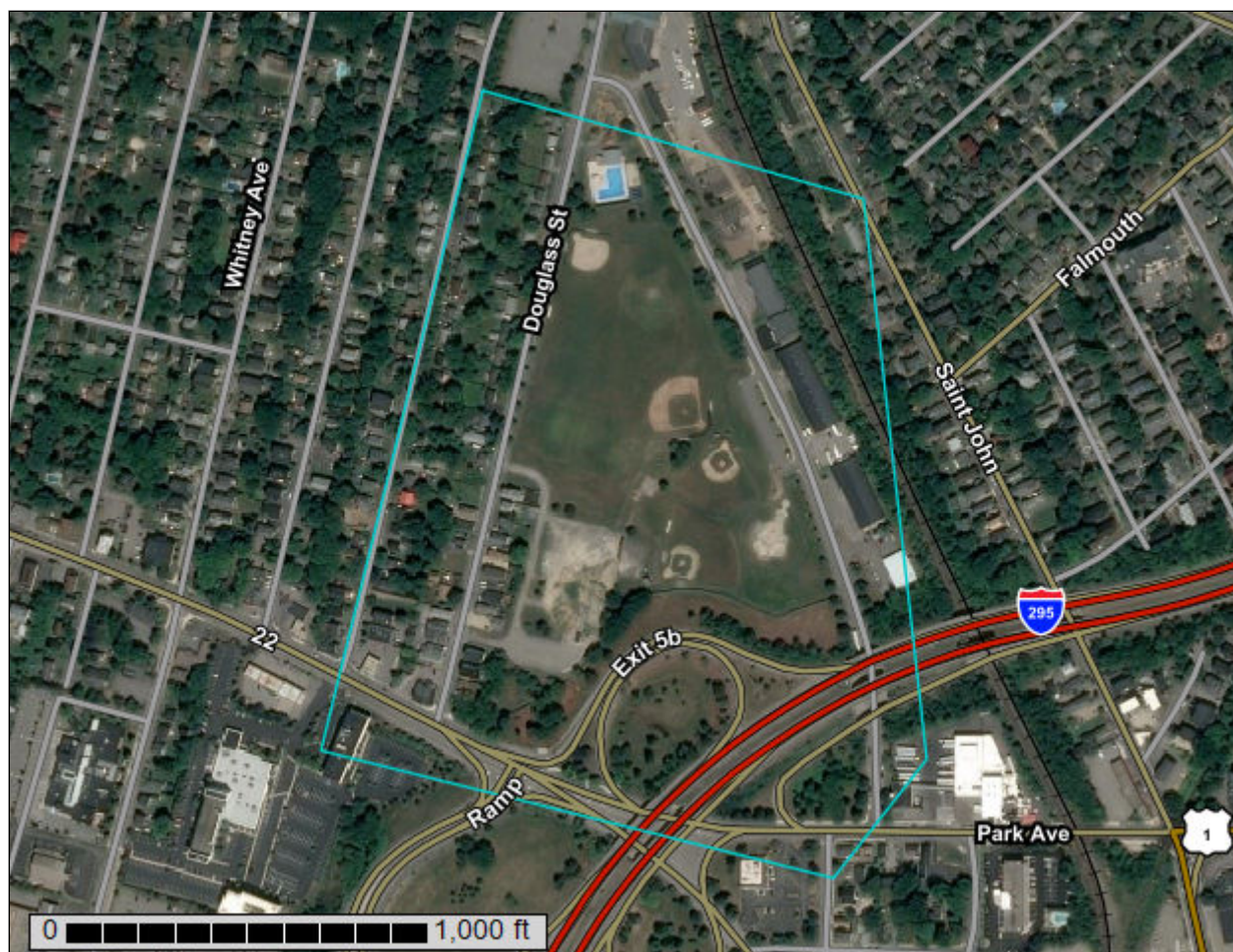
United States
Department of
Agriculture

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



December 16, 2021

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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BgC2—Nicholville very fine sandy loam, 8 to 15 percent slopes.....	14
DeB—Deerfield loamy fine sand, 3 to 8 percent slopes.....	15
Wa—Walpole fine sandy loam.....	16
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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

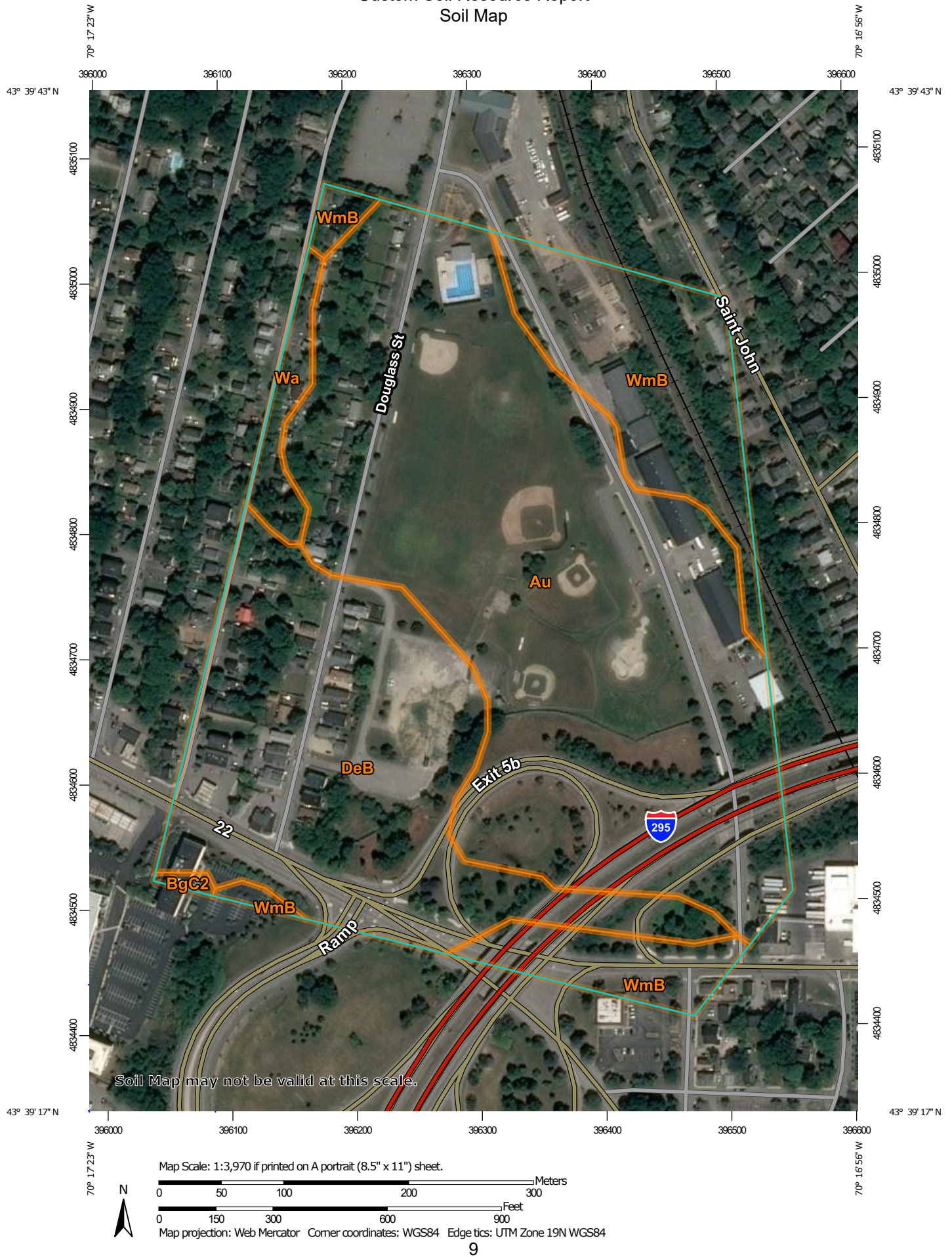
Custom Soil Resource Report

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



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 18, Aug 31, 2021

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
Au	Au Gres loamy sand	32.1	53.4%
BgC2	Nicholville very fine sandy loam, 8 to 15 percent slopes	0.1	0.2%
DeB	Deerfield loamy fine sand, 3 to 8 percent slopes	16.9	28.1%
Wa	Walpole fine sandy loam	1.3	2.2%
WmB	Windsor loamy sand, 0 to 8 percent slopes	9.7	16.1%
Totals for Area of Interest		60.2	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

Au—Au Gres loamy sand

Map Unit Setting

National map unit symbol: blgr
Elevation: 200 to 1,800 feet
Mean annual precipitation: 34 to 50 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 90 to 130 days
Farmland classification: Not prime farmland

Map Unit Composition

Au gres and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Au Gres

Setting

Landform: Outwash plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy glaciofluvial deposits derived from granite and gneiss

Typical profile

H1 - 0 to 10 inches: loamy sand
H2 - 10 to 32 inches: loamy sand
H3 - 32 to 65 inches: sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: About 0 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Hydric soil rating: Yes

BgC2—Nicholville very fine sandy loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2yig6
Elevation: 20 to 2,300 feet
Mean annual precipitation: 34 to 50 inches
Mean annual air temperature: 37 to 45 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Nicholville and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nicholville

Setting

Landform: Lakebeds (relict), eskers
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Coarse-silty glaciomarine deposits

Typical profile

Ap - 0 to 7 inches: very fine sandy loam
Bs - 7 to 19 inches: very fine sandy loam
BC - 19 to 30 inches: very fine sandy loam
C - 30 to 65 inches: loamy very fine sand

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.14 to 1.42 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: F144BY501ME - Loamy Slope (Northern Hardwoods)
Hydric soil rating: No

DeB—Deerfield loamy fine sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2xfg9

Elevation: 0 to 1,190 feet

Mean annual precipitation: 36 to 71 inches

Mean annual air temperature: 39 to 55 degrees F

Frost-free period: 145 to 240 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Deerfield and similar soils: 85 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Deerfield

Setting

Landform: Kame terraces, outwash plains, outwash terraces, outwash deltas

Landform position (three-dimensional): Tread

Down-slope shape: Concave, convex, linear

Across-slope shape: Convex, linear, concave

Parent material: Sandy outwash derived from granite, gneiss, and/or quartzite

Typical profile

Ap - 0 to 9 inches: loamy fine sand

Bw - 9 to 25 inches: loamy fine sand

BC - 25 to 33 inches: fine sand

Cg - 33 to 60 inches: sand

Properties and qualities

Slope: 3 to 8 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Runoff class: Very 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: About 15 to 37 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)

Sodium adsorption ratio, maximum: 11.0

Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: A

Ecological site: F144AY027MA - Moist Sandy Outwash

Hydric soil rating: No

Wa—Walpole fine sandy loam

Map Unit Setting

National map unit symbol: blk7
Elevation: 0 to 540 feet
Mean annual precipitation: 48 to 49 inches
Mean annual air temperature: 45 to 46 degrees F
Frost-free period: 145 to 165 days
Farmland classification: Not prime farmland

Map Unit Composition

Walpole and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Walpole

Setting

Landform: Outwash plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy glaciofluvial deposits

Typical profile

H1 - 0 to 8 inches: fine sandy loam
H2 - 8 to 20 inches: fine sandy loam
H3 - 20 to 65 inches: gravelly loamy sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: About 0 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Ecological site: F144BY303ME - Acidic Swamp
Hydric soil rating: Yes

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

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

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

Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)

Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2s

Hydrologic Soil Group: A

Ecological site: F144BY601ME - Dry Sand

Hydric soil rating: No

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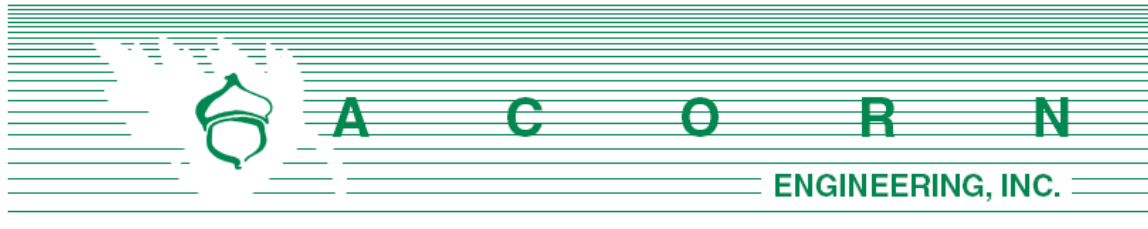
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K. EROSION & SEDIMENTATION **CONTROL REPORT**

Prepared For:

**Douglass Commons, LLC.
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Prepared By:

**Acorn Engineering, Inc.
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January 2022

INTRODUCTION

Acorn Engineering, Inc. has been retained by Douglass Commons, LLC. to provide civil engineering services for the proposed redevelopment of 57 Douglass Street located within the R-5a Zoning District in Portland, Maine. The 3.34-acre parcel was previously the site of a school building and is now vacant. The built-out site will consist of eight stand-alone buildings of 120 residential dwelling 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 off an access road from Douglass Street adjacent to Douglass Park and Interstate 295. A Boundary & Topographic Survey has been prepared by Owen Haskell, Inc., dated March 1, 2021.

The property is in the R-5A Residential Zone. Abutting Uses include:

- North Douglass Park
- West Residential
- South/East Route 295

The site is currently vacant and was once occupied by the West School. The site in its existing condition is split a ridge middle of the property that drains water in roughly two directions, to the north and south. A small portion of the site drains to the playing fields to the east. The adjacent I-295 corridor basin contributes run-off to the site through an existing culvert. The grades on-site are mostly gentle in the 1 to 5% range with some steeper slopes of 10-15% on the edges of the property in the east and south .

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
Au Gres Loamy Sand	.15	.15
Deerfield Loamy Fine Sand	.20	.20

The soil “K” value for the soil, listed above, shows a low susceptibility to erosion, as derived from the Soil Conservation Service Medium Intensity Soil Survey for Cumberland County. Although the soil “K” value shows a low susceptibility to erosion, implementation of the proposed Erosion & Sedimentation Measures by the contractor will be important to limit erosion during large storm events.

1.2 Existing Erosion Problems

There are no signs of erosion.

1.3 Critical Areas

There are no critical areas that require special attention during construction.

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. The West School was demolished on-site within the last few 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, 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 road ways.

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 Douglass 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 Construction Management & Erosion Control Plan is included within the plan set.

4.0 DETAILS AND SPECIFICATIONS

4.1 Erosion & Sedimentation 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 silt fence or erosion control berm.
3. Install all other erosion control devices as necessary throughout the remainder of this schedule.
4. Commence installation of drainage infrastructure.
5. Prioritize the downhill side to contain runoff within the site while providing an engineered outlet to the municipal storm drain system within Douglass Street.
6. Commence earthwork operations, associated with the parking lot construction.
7. Commence installation of utilities.
8. Continue earthwork and grading to subgrade as necessary for construction.
9. Complete installation of drainage infrastructure, as well as other utility work.
10. Complete remaining earthwork operations.
11. Install sub-base and base gravels in paved areas.
12. Install paving, curbing and brickwork.
13. Loam, lime, fertilize, seed and mulch disturbed areas and complete all landscaping.
14. Once the site is stabilized and mulching of landscape areas is complete, remove all temporary erosion control measures.
15. Touch up areas without a vigorous catch of grass with loam and seed.
16. Complete site signage and striping.
17. 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



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

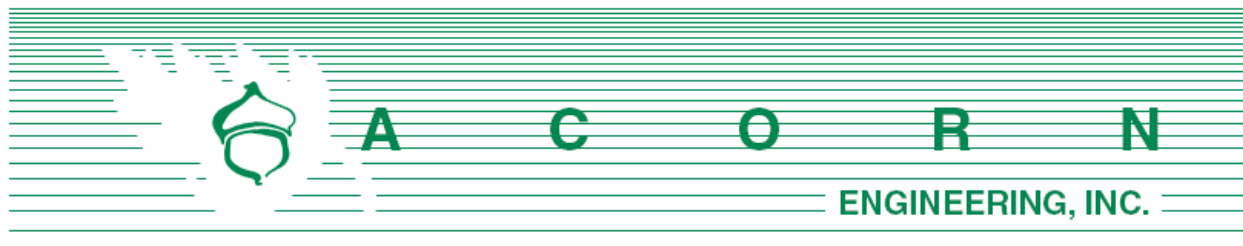
Mulching

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.





Chief Keith Gautreau
 City of Portland Fire Department
 380 Congress St.
 Portland, ME 04101

January 21, 2022

Subject: 57 Douglass St Redevelopment – Fire Department Checklist
 Section L of Application

On behalf of Douglass Commons, LLC, the design team is pleased to respond to the Portland Fire Department Site Review Checklist.

1. Name, address, telephone number of applicant

Douglass Commons, LLC.
 10 Free Street, 3rd Floor
 Portland, Maine 04101
 (207) 805-3578

2. Name, address, telephone number of architect

Kaplan Thompson
 102 Exchange Street
 Portland, ME 04101
 (207) 842-2888

Archetype PA
 48 Union Wharf
 Portland, ME 04101
 (207) 772-6022

3. Proposed uses of any structures [NFPA and IBC classification]

NFPA: Apartment Building IBC: B / R-2

4. Square footage of all structures, including decks [total and per story]

Existing Building		
1 st Floor	0	sf
Total	0	sf



Kaplan Thompson:

Proposed Building A (3)		
Ground	2,497	sf
2 nd Floor	2,582	sf
3 rd Floor	2,582	sf
Total	7,661	sf

Proposed Building B (2)		
Ground	2,124	sf
2 nd Floor	1,952	sf
Total	4,076	sf

Proposed Building C (1)		
Ground	3,186	sf
2 nd Floor	2,928	sf
Total	6,114	sf

Proposed Building D (1)		
Ground	3,186	sf
2 nd Floor	3,186	sf
3 rd Floor	2,928	sf
Total	9,300	sf

Archetype PA:

Proposed Building – E		
Ground	12,000	sf
1st Floor	12,000	sf
2 nd Floor	12,000	sf
3 rd Floor	12,000	sf
4 th Floor	12,000	sf
5 th Floor	12,000	sf
Total	72,000	sf

5. Elevation of all structures

The proposed building heights are consistent with the R5-a PRUD Zoning maximum allowance of 55':

A: 35'; B: 25'; C: 25'; D: 35'; E: 53'



6. Proposed fire protection of all structures

Building E will be serviced by a 6" sprinkler system while A, B, C, and D will be serviced with a 4" sprinkler line. Fire flows and requirements for system storage or booster pumping are subject to the fire professional design which will be performed prior the request for a building permit.

7. Hydrant locations

An existing hydrant is located at the corner of Congress and Douglass Streets, approximately 170' from the entrance to the site access road. The site anticipates the addition of a new hydrant within the development located 450' from the furthest proposed structure. 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 redevelopment will be serviced by the existing 8" Ductile Iron water main within Douglass Street.

9. Access to all structures [min. 2 sides]

Access to the structures are provided through an access driveway and corridors with ample room for maneuvering through the site.

10. Code summaries will be provided by the Architects upon request.

NFPA 1 – Chapter 18 Fire Department Access and Water Supply

18.2 Fire Department Access:

The project site is located behind a densely developed area with open areas on three other sides, and is accessed by a driveway. The following pavement street width is currently available:

- Douglass Street: 52 feet
- Access Driveway: 22 feet

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 access points to all of the structures.

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 emergency access conditions and provides for safe and efficient access along a circuitous route through the site 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 building will be provided with exterior doors that will be within 50' of a Fire Department access route.

3.4.5. Site access shall provide a minimum of nine (9) feet clearance height to accommodate ambulance access.

Response: The proposed site maintains the required clearance height of nine feet in all cases.

3.4.6. Elevators shall be sized to accommodate an 80 x 24-inch stretcher.

Response: The proposed elevator will meet this requirement.



3.4.7. All structures are required to display the assigned street number. Numbers shall be clearly visible from the public right of way.

Response: The applicant is currently working 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,



Sam Lebel, P.E.
Project Manager
Acorn Engineering, Inc.



M. Calculation of Wastewater Flowrate for 43 & 91 Douglass Redevelopment

The proposed project will include the redevelopment of a site that was formerly occupied by a school. The lot is proposed to be redeveloped with one (1) five-story building consisting of 63 residential units and a further seven (7) buildings consisting of 57 residential units.. Based upon Section 4 of the Maine Subsurface Wastewater Disposal Rules, the project anticipates the following daily flows:

Estimate of Design Flows			
Classification of Water Demand	Number of Units	Gallons per Day per Unit	Total Gallons per Day
<i>Existing</i>			
<i>Proposed</i>			
Multiple family dwelling unit (1-bedroom)	48	120	5,760
Multiple family dwelling unit (2-bedroom)	40	180	7,200
Multiple family dwelling unit (3-bedroom)	32	270	8,640
Total Existing			0
Total Proposed			21,600
Net Change			+21,600 GPD
*Values based on STATE OF MAINE: SUBSURFACE WASTEWATER DISPOSAL RULES, most recent edition			



CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

Portland Dept. of Public Works -
Water Resources
212 Canco Road
Portland, Maine 04103



Bradley Roland, P.E.
Water Resources Division
Department of Public Works
212 Canco Road
Portland, ME 04103

Date: 1/11/22

1. Please, Submit Utility, Site, and Locus Plans.

Site Address: 57 Douglass Street

Chart Block Lot Number: 078 B007001

Proposed Use: Residential

Previous Use: School

Existing Sanitary Flows: 0 GPD

Existing Process Flows: 0 GPD

Description and location of City sewer that is to
receive the proposed building sewer lateral.

Douglass Street (8" SS)

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: Douglass Commons, LLC.

Owner/Developer Address: 10 Free Street, 3rd Floor, Portland, ME 04101

Phone: (207) 805-3578 Fax: _____ E-mail: cszanton@szantoncompany.com

Engineering Consultant Name: Acorn Engineering

Engineering Consultant Address: 65 Hanover Street, Portland, ME 04010

Phone: 207-775-2655 Fax: _____ E-mail: slebel@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: +21,600 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.

Total Drainage Fixture Unit (DFU) Values:	N/A
Size of External Grease Interceptor:	
Retention Time:	
Peaking Factor/ Peak Times:	

N. Lighting

Please find attached the cut sheets and photometric plans for the proposed site lighting.



- NOTES:
- 1) EXACT MOUNTING DETAILS TO BE DETERMINED AT JOBSITE BY OTHERS.
 - 2) CALCULATIONS MAY or MAY NOT SHOW THE EFFECT OF SHADOWING CAUSED BY BUILDINGS AND OBJECTS WITHIN THE CALCULATED SPACE OR IN THE SITE AREA.
 - 3) READINGS SHOWN ARE INITIAL HORIZONTAL FOOTCANDLES ON A FLAT SITE WITHOUT REFLECTIONS OR OBSTRUCTIONS UNLESS OTHERWISE INDICATED.
 - 4) THIS CALCULATION IS BASED ON LIMITED INFORMATION SUPPLIED BY OTHERS TO SWANEY LIGHTING ASSOCIATES AND STANDARD ASSUMPTIONS OF THE SPACE AND/OR SITE.
 - 5) CONFORMANCE TO CODES AND OTHER LOCAL REQUIREMENTS AS DETERMINED BY THE AHJ ARE THE RESPONSIBILITY OF THE OWNER AND/OR THE OWNER'S REPRESENTATIVE.
 - 6) THIS LAYOUT DRAWING MUST BE COORDINATED WITH THE SITE LOCATION FOR CORRECT FIXTURE ORIENTATION.
 - 7) DOCUMENTS PRINTED OR PLOTTED FROM ELECTRONIC FILES MAY APPEAR AT OTHER THAN THE DESIRED OR ASSUMED GRAPHIC SCALES. IT IS THE RESPONSIBILITY OF THE RECIPIENT TO VERIFY THAT THE PRINTED OR PLOTTED-TO-SCALE DRAWING IS PRINTED TO SCALE.

Calculation Summary					
Label	Avg	Max	Min	Avg/Min	Max/Min
SITE	0.63	5.0	0.0	N.A.	N.A.

Luminaire Schedule (note fixture catalogue numbers are not complete)						
Type	Qty	Lumens	LLF	Watts	Mounting Ht (FT)	Description
A	42	1051	0.900	14.906	10	P810015-030-30
B	23	311	0.900	9.32	9	P5634 prorated
S24	1	4297	0.900	45.9	16	TWIN - K4X-T4-MO-5030
S3	7	3863	0.900	46.1	16	K4X-T3-MO-5030
S4	10	4297	0.900	45.9	16	K4X-T4-MO-5030
SP3	6	2563	0.900	32.7	12	MK4-T3-MO-3030

LED Flush Mount EdgeLit

Surface mounted • Wet location listed



Description:

EVERLUME Edgelit technology provides a large glare free, bright, and evenly illuminated surface for a variety of applications for both residential and commercial settings. Offering a very slim profile, the LED Edgelit flush mount is available in three sizes. The 7" fixture gives 1056 lumens (delivered), 90CRI and is 3000K. The integrated driver does not recess into junction box, allowing for easy install in 4" octagonal, 4" round PVC and 4-1/2" ceiling pan junction boxes. This fixture is wet location listed and offers a 50,000 hour LED life.

Specifications:

- White (-030) (painted)
- Polycarbonate Construction
- Frosted Polycarbonate lens
- 7 " EVERLUME Edgelit flush mount with LED technology 3,000K, 90 CRI, 1056 lumens (delivered)
- Simple installation to steel mounting plate
- Light weight non-conductive polycarbonate luminaire construction
- Polycarbonate diffuser controls glare and provides an evenly illuminated surface
- Integrated DC LED power supply capable of flicker-free dimming to 10% brightness with many Triac/Forward Phase dimmers
- Can be installed to 4" octagonal j-box, 4x1/2" round shallow j-box, 4" round PVC j-box and single gang switch boxes
- Can be mounted on ceiling or wall
- Suitable for use in clothes closets when installed in accordance with the NEC 410.16 spacing requirements.
- Suitable for use in IC or Non-IC applications
- Dimmable to 10% brightness (See Dimming Notes)
- Fixture covers a standard 4" octagonal recessed outlet box
- Mounting mounting plate for outlet box included
- 6" of wire supplied
- Complies with "Americans with Disabilities Act" - ADA
- ENERGY STAR® qualified
- Meets California Title 24 JA8-2016

Performance:

Number of Modules	1
Input Power	15w
Input Voltage	120 V
Input Frequency	60 Hz
Lumens/LPW (Source)	
Lumens/LPW (Delivered)	1056/70.4 (LM-79)
CCT	3000 K
CRI	90 CRI
Life (hours)	54,000 (L70/TM-21)
FCC	FCC Part 15 Class B
Min. Start Temp	-30 °C
Max. Operating Temp	30 °C
Warranty	5 Year Warranty
Labels	cCSAus Wet location listed
	ENERGY STAR® qualified
	Meets California Title 24 JA8-2016

P810015-030-30

Images:



Dimensions:

Diameter: 7"
Length: 7"
Height: 1-1/16"

Lens
Width: 6.03"
Length: 6.03"
Height: 0.039"

LED Flush Mount EdgeLit

Surface mounted • Wet location listed



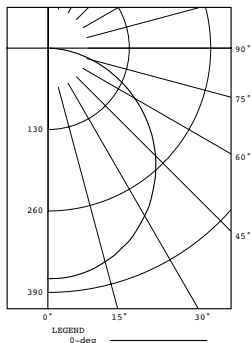
Photometrics:

P810015-030-30

ELECTRICAL DATA	P810015-030-30
Input Voltage	120 V
Input Frequency	60 Hz
Input Current	0.128 A
Input Power	15
Power Factor	0.968
THD	<20%
FCC	FCC Part 15 Class B
Operating Temperature	-30 °C to 30 °C
Dimming	Yes*
Over-voltage, over-current, short-circuit protected	
*See Dimming Notes for more information	

P810015-030-30

LED Light Engine: 3000K 90
System Wattage: 15
Fixture delivered lumens: 1051
Fixture Efficacy: 70
Spacing Criteria: 1.25



CANDELA DISTRIBUTION		
DEG	CANDELA	LUMENS
0	368	
5	367	35
15	353	100
25	327	151
35	289	181
45	243	187
55	189	169
65	131	130
75	73	77
85	20	22
90	0	

ZONAL ZONE	LUMEN LUMENS	SUMMARY %FIXT
0-30	285	27.1
0-40	466	44.3
0-60	822	78.2
0-90	1051	100.0
90-180	0	0.0
0-180	1051	100.0

Test 18.01777 Test Date 12/10/18

P810015-030-30

Dimming Notes:

P810015 is designed to be compatible with many Triac/Forward Phase or ELV/Reverse Phase controls.

The following is a partial list of known compatible dimmer controls.

Dimming Controls

Idevices_IDEV009

Leviton_LPI06-1LZ

Leviton_6672

Lutron_NTEVL-300

Lutron_DVELV-300P

Lutron_Caseta_Wireless

Lutron_AYCL-153P

Lutron_TGCL-153-PH-WH

Dimming capabilities will vary depending on the dimmer control, load, and circuit installation. Always refer to dimmer manufacturer instructions or a controls specialist for specific requirements.

Dimmer control brand names where identified above are trade names or registered trademarks of each respective company.

One-Light Wall Sconce W/HAL AC LED Module

Wall mounted • Wet location listed



Description:

Modern geometric outdoor LED sconces are designed to complement a range of residential and commercial architectural styles. ADA compliant. 9w LED is 3000K, 90+ CRI in a Black cast aluminum shade. Dark Sky compliant.

Specifications:

- Black (-31) (powder coat paint)
- Cast aluminum Construction
- Black cast aluminum shade, White acrylic Diffuser
- LED Module is replaceable (part # 93054049)
- Modern geometric outdoor LED sconces.
- Designed to complement a range of residential and commercial architectural styles.
- Dark Sky compliant.
- 623 lumens 69.2 lumens/watt per module (source)
- 3000K color temperature, 90+ CRI.
- Dimmable to 10% brightness (See Dimming Notes)
- Unit covers a standard 4" octagonal recessed outlet box
- Mounting strap for outlet box included
- 6" of wire supplied
- Complies with "Americans with Disabilities Act" - ADA
- ENERGY STAR® qualified
- Meets California Title 24 high efficacy requirements for outdoor use only

Performance:

Number of Modules	1
Input Power	9w
Input Voltage	120 V
Input Frequency	60 Hz
Lumens/LPW (Delivered)	388/49.7 (LM-79)
CCT	3000 K
CRI	90+
Life (hours)	60,000 (L70/TM-21)
FCC	Meets FCC Title 47, Part 15 Class B
Min. Start Temp	-30 °C
Max. Operating Temp	30 °C
Warranty	5 year warranty
Labels	cCSAus Wet location listed
	ENERGY STAR® qualified
	Meets California Title 24 high efficacy requirements for outdoor use only

P5634-3130K9

Images:



Dimensions:

Width: 5-1/4"
Depth: 4"
Height: 4-3/4"
H/CTR: 2-3/8"

Glass
Width: 4-1/16"
Length: 5-3/16"
Height: 4-11/16"
Glass 2
Width: 2-7/8"
Length: 2-7/8"
Height: 0-11/16"

P5634-3130K9

Dimming Notes:

P5634 is designed to be compatible with many ELV/Reverse Phase controls.

The following is a partial list of known compatible dimmer controls.

Dimming Controls

Lutron Nova T NTELV-300

Lutron Vienti VTELV-600

Lutron Ariadni AYCL-153P

Lutron Diva DVCL-153P

Lutron Maestro MAELV-600

Lutron spacer/system SPSELV-600

Leviton Renoir II AWRMG-EAW

Dimming capabilities will vary depending on the dimmer control, load, and circuit installation. Always refer to dimmer manufacturer instructions or a controls specialist for specific requirements.

Dimmer control brand names where identified above are trade names or registered trademarks of each respective company.

FEATURES

- Integral Motion Sensor
- Staggered twin mounting
- ANSI C136.31-2010 4G Rated
- IES Type II, III and IV distributions
- 3000K, 4000K, 5000K CCT
- Integral thermal protection



3000K and warmer CCTs only

See Certification Specifications

SPECIFICATIONS

CONSTRUCTION

- Housing shroud is made of fabricated 5052-H32 aluminum alloy with a rear mounting interface that is made of fabricated 304 stainless steel
- Housing mounting interface is a stamped silicone gasket
- Luminaire housing is free of any visible heat fins, hardware or fasteners
- Bracketry and hardware is made of stainless steel
- Base is made of cast aluminum #356 alloy and heat treated to a T-6 condition
- Shaft is extruded aluminum 6061 alloy and heat treated to a T-6 condition
- Anchor bolts are hot dip galvanized steel. Eight galvanized hex nuts and flat washers, and a bolt circle template are provided. Anchor bolt for poles are 3/4" x 24" x 3"
- Luminaire finish 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 meets the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance

LED/OPTICS

- LEDs are mounted to a metal printed circuit board assembly (MCPCB) with a uniform conformal coating over the panel surface and electrical features
- Optical lenses is made of clear injection molded PMMA acrylic
- Each MCPCB and optic are sealed to an extruded 6063-T6 aluminum alloy heat spreader and sealed with a continuous one piece injection molded silicone rubber gasket. IP66

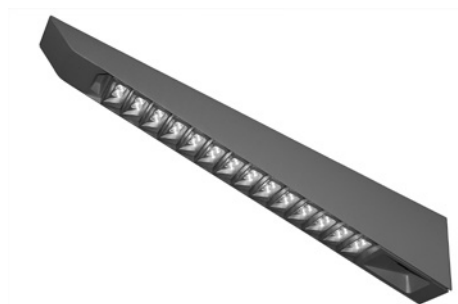
LED/OPTICS (CONTINUED)

- Patent Pending design of optical array is independently shielding each LED optic across the length of the aperture
- Optical surfaces are painted white unless the optional fixture finish (FO) or matte black finish (MO) is selected
- Optional matte black finish optics (MO) are required to meet UO classification with zero percent uplight
- Optional fixture finish optical surfaces (FO) do not exceed BUG ratings of the standard white finish and will be greater than or equal to the delivered lumens of the optional matte black optical surface finish (MO)

INSTALLATION

- Integral pole mount luminaires require assembly of fixture(s) to the pole, mounting hardware, anchor bolts and anchor bolt template is included. See page 6 for additional considerations specific to the integral pole
- Tenon mount luminaires require assembly of fixture(s) to the tenon adapter, mounting hardware is included. Tenon adapter secures to the tenon with eight 5/16-18 stainless steel set screws
- Side mount luminaires are supplied with hardware compatible with AAL mountings.
- Twin mounted staggered height fixtures are configured separately
- Service access to the optical array and driver assembly is via a tool-less internal latch and have an audible click.
- Optical array has to hang freely in an open service position for inspection of internal wire connections. Once in service position, the optical array is able to be removed for service by lifting the assembly up off the rear hinge and disconnecting the wiring plugs.
- Driver assembly is mounted to a prewired internal tray with quick disconnects for removal

KICK™



Kick Small

RELATED PRODUCTS

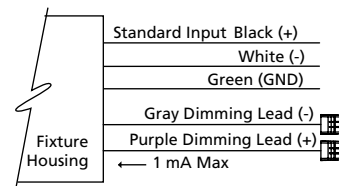
Ø [K5](#)

Ø [KM5](#)

Ø [K86](#)

ELECTRICAL

- Drivers are in direct contact with the aluminum housing across the entire surface area of the widest face for maximum thermal transfer
- Luminaires have integral surge protection that is 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 is wired in series
- Drivers are U.L. recognized
- Drivers are not compatible with current sourcing dimmers, consult factory for current list of known compatible dimming systems approved dimmers include Lutron Diva AVTV, Lutron Nova NFTV and NTFTV
- Luminaire are capable of operating at 100% brightness in a 40°C environment. Both driver and optical array 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 or ANSI C136 receptacle option are provided with 0-10 purple and gray dimming leads



continued on page 3

KEY DATA	
LUMEN RANGE	3,820–7,691
WATTAGE RANGE	46–64
EFFICACY RANGE (LPW)	79–120
WEIGHT	15 lbs 6.8 kg
EPA	1.03

DATE: 1/11/22	LOCATION:
TYPE:	PROJECT:
CATALOG #:	

ORDERING GUIDE

Example: K41-T2-FO-5040-MCPCR-SF-347-PS412-125-SBC-BLT

CATALOG #

Model (4" wide luminaire)	Optics (Distribution)	Optics Finish	Light Engine ¹	Control
K41 Single Fixture	T2 IES Type II	WO Standard White Finish	5030 3000K CCT, CRI 70, 46 Watts	MCPCR Multi-Channel 7-Pin Photocell Receptacle
K42 Two Fixtures 180° Apart	T3 IES Type III	FO Optics in Fixture Finish	5040 4000K CCT, CRI 70, 46 Watts	WIR wiScape Connectivity Ready
K43 Three Fixtures 90° Apart	T4 IES Type IV	MO Optics in Matte Black Finish	5050 5000K CCT, CRI 70, 46 Watts	WIRSC wiScape + Motion Sensor
K44 Four Fixtures 90° Apart			7030 3000K CCT, CRI 70, 64 Watts	SCP Motion Sensor + Photocell ²
			7040 4000K CCT, CRI 70, 64 Watts	SWP SiteSync Pre-commissioned ³
			7050 5000K CCT, CRI 70, 64 Watts	SWF SiteSync Field Commission ³
				SWPM SiteSync Pre-commissioned + Motion Sensor ³
				SWFM SiteSync Field Commission + Sensor ³
				SCPREMOTE Handheld Commissioning Tool ²
				SWUSB SiteSync loaded on USB flash drive (Windows® operating system only ⁴
				SWTAB SiteSync Window® based Tablet ⁴
				SWBRG SiteSync Wireless Bridge Node ⁴
				SW7PR SiteSync 7 Pin on fixture module On/Off/Dim, Daylight Sensor 120-480VAC

Fuse (may choose one)	Voltage	Mounting	Mounting Options	Fixture Finish
SF 120, 277, 347 Volt Input	120-277V 120-277V	Integral Pole	Twin mount at staggered heights	Standard Color
DF 208, 240, 480 Volt Input	347 347V	PS410-125 10' Luminaire Height	Mounting holes for a fixture at 180°, K41...PS4... only, may choose one	BLS Black Gloss Smooth
	480 480V	PS412-125 12' Luminaire Height		BLT Black Matte Textured
		PS414-125 14' Luminaire Height	TS8 8' from bottom	DBS Dark Bronze Gloss Smooth
		PS416-125 16' Luminaire Height	TS10 10' from bottom	DBT Dark Bronze Matte Textured
		PS418-125 18' Luminaire Height	TS12 12' from bottom	GTT Graphite Matte Texture
		PS420-125 20' Luminaire Height	TS14 14' from bottom	LGS Light Grey Gloss Smooth
		Tenon Mount	TS16 16' from bottom	LGT Light Grey Matte Textured
		TA23 Slips over a 2 3/8" / 60mm Ø x 4" / 102mm tall tenon	TS18 18' from bottom	PSS Platinum Silver Gloss Smooth
		Side Mount	Base Options	VGT Verde Green Matte Textured
		SMK Mounts to the side of a square pole, K41 only	SBC Standard Base Cover	WHS White Gloss Smooth
		Wall Mount	Pole Accessories(may choose one)	WHT White Matte Textured
		WMK K41 only	GFI GFCI receptacle, 24" from top of pole	CC Custom Color ⁵
			RBC Duplex receptacle box with clear cover, wiring device(s) not included	

Notes:

- 595nm monochromatic amber and or custom lumen package available by request
- Handheld commissioning tool is required to separately configure or adjust any number of SCP sensors
- Specify group and zone at time of order. See www.hubbellighting.com/sitesync for more details. Order at least one SiteSync interface accessory SWUSB or SWTAB. Each option contains SiteSync License, GUI, and 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
- Consult factory for custom color, marine and corrosive finish

SPECIFICATIONS (CONTINUED)

MODEL	HEIGHT OVERALL	POLE	SHAFT SECTION	WT	MAXIMUM ALLOWABLE EPA (MPH)							
					85	90	100	110	120	130	140	150
K4X-PS410-125	10' 7.5" / 3.24m	10'	4" SQ x .125"	28 lbs	15.4	13.5	10.4	8.1	6.4	5.0	4.0	3.1
K4X-PS412-125	12' 7.5" / 3.85m	12'	4" SQ x .125"45	32 lbs	11.8	10.2	7.6	5.7	4.3	3.2	2.3	1.6
K4X-PS414-125	14' 7.5" / 4.46m	14'	4" SQ x .125"	37 lbs	9.1	7.7	5.5	3.9	2.6	1.7	0.95	0.33
K4X-PS416-125	16' 7.5" / 5.07m	16'	4" SQ x .125"	42 lbs	6.9	5.7	3.8	2.3	1.3	0.46	-	-
K4X-PS418-125	18' 7.5" / 5.68m	18'	4" SQ x .125"	48 lbs	4.9	3.9	2.2	0.95	0.01	-	-	-
K4X-PS420-125	20' 7.5" / 6.29m	20'	4" SQ x .125"	53 lbs	3.2	2.2	0.75	-	-	-	-	-

* - Consult factory for thicker shaft profiles and or custom heights not shown above.

CONTROLS

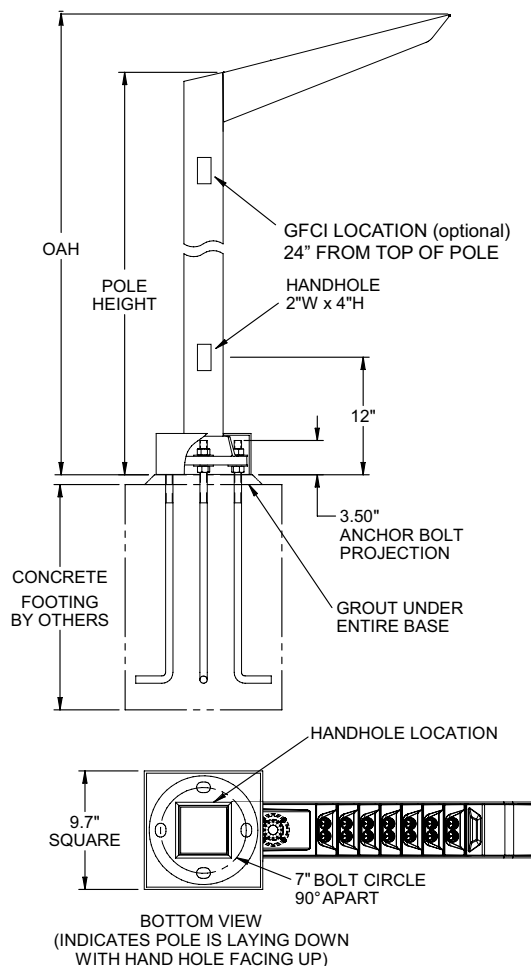
- Wireless enabled fixtures shall support bi-directional radio frequency (RF) communications utilizing IEEE 802.15.4 operating in the 2.4GHZ ISM band.
- Up to 1000' wireless range may be reduced by physical obstructions between lighting fixtures.
- Motion Sensor shall use passive infrared (PIR) sensing 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

CERTIFICATIONS

- Luminaire is listed with UL for outdoor, wet location use, UL1598, UL 8750 and Canadian CSA Std. C22.2 no.250
- ANSI C136.31-2010 4G Vibration tested and compliant
- IEC 66262 Mechanical Impact Code IK10
- IDA approved, 3000K and warmer CCTs only
- This product qualifies as a "designated country construction material" per FAR 52.225-11 Buy American-Construction Materials under Trade Agreements effective 6/06/2020. [See Buy American Solutions](#)

WARRANTY

- See [HLI Standard Warranty](#) for additional information



DATE: 1/11/22	LOCATION:
TYPE:	PROJECT:
CATALOG #:	

DELIVERED LUMENS

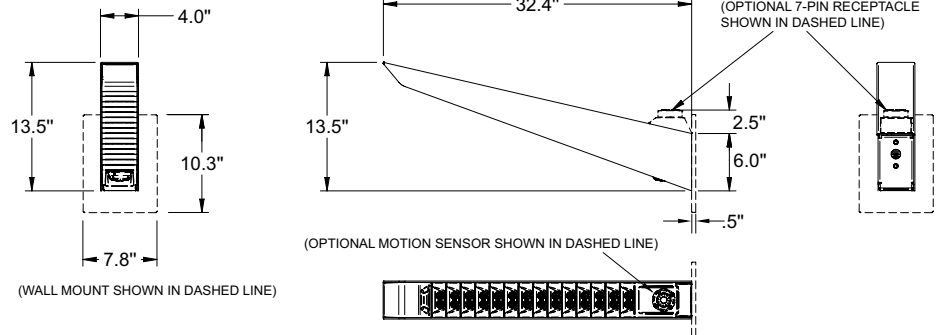
System Watts	Optical Finish	Distribution	Ordering Code	3000K 70CRI					4000K 70CRI					5000K 70CRI				
				Lumen	Bug Rating			Efficacy (Lm/W)	Lumen	Bug Rating			Efficacy (Lm/W)	Lumen	Bug Rating			Efficacy (Lm/W)
					B	U	G			B	U	G			B	U	G	
46	Standard White	Type 2	T2	4999	1	2	1	108	5234	2	2	1	114	5239	1	2	1	113
		Type 3	T3	4895	1	2	1	106	5125	1	2	1	112	5130	1	2	1	111
		Type 4	T4	5207	1	2	1	113	5451	1	2	1	118	5456	1	2	1	118
	Fixture Match	Type 2	T2-FO	3820	1	2	1	83	4010	2	2	1	87	4003	1	2	1	87
		Type 3	T3-FO	3863	1	2	1	84	4044	1	2	1	88	4048	1	2	1	88
		Type 4	T4-FO	4297	1	2	1	93	4524	1	2	1	98	4503	1	2	1	98
	Matte Black	Type 2	T2-MO	3820	1	0	1	83	4000	1	0	1	87	4003	1	0	1	87
		Type 3	T3-MO	3863	1	0	1	84	4045	1	0	1	88	4048	1	0	1	88
		Type 4	T4-MO	4297	1	0	1	93	4499	1	0	1	98	4503	1	0	1	98
64	Standard White	Type 2	T2	6536	2	2	2	102	6775	2	2	2	106	6932	2	2	2	108
		Type 3	T3	6554	1	2	1	102	6795	1	2	1	106	6952	1	2	1	108
		Type 4	T4	7250	2	2	1	113	7516	2	2	2	117	7691	2	2	2	120
	Fixture Match	Type 2	T2-FO	5292	2	2	2	83	5486	2	2	2	85	5614	2	2	2	87
		Type 3	T3-FO	5456	1	2	1	79	5646	1	2	1	82	5788	1	2	1	84
		Type 4	T4-FO	5780	2	2	1	90	5992	2	2	2	94	6131	2	2	2	96
	Matte Black	Type 2	T2-MO	5281	1	0	1	83	5475	2	0	1	86	5602	2	0	1	88
		Type 3	T3-MO	5442	1	0	1	85	5656	1	0	1	88	5773	1	0	1	90
		Type 4	T4-MO	5767	2	0	1	90	5979	2	0	1	93	6117	2	0	1	96

DIMENSIONS

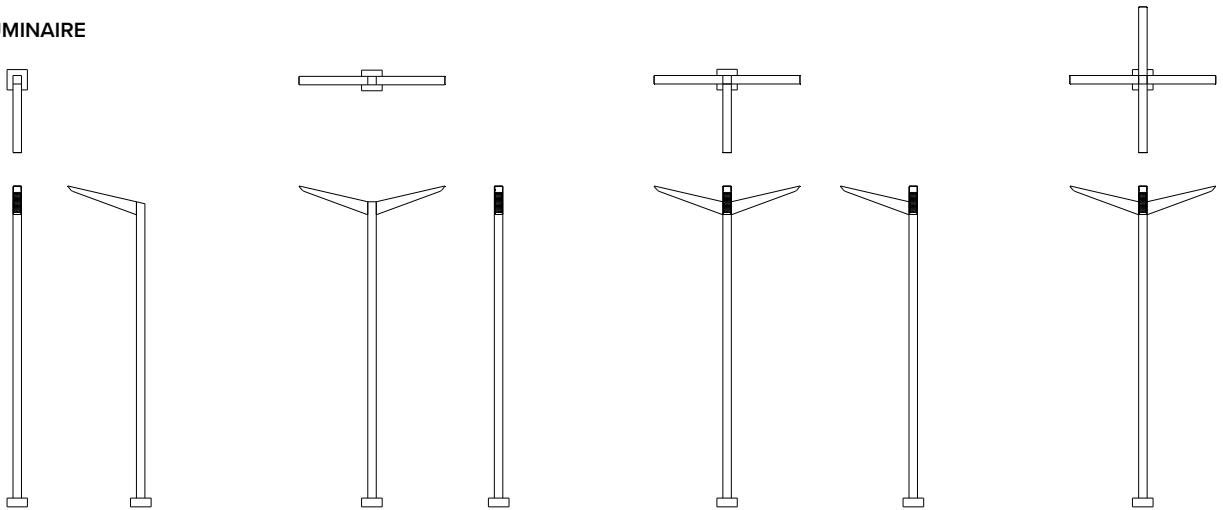
SIDE MOUNTED LUMINAIRE

Mounts to the side of 4"/102mm square pole.

MODEL	K41-...-SMK
OVERALL HEIGHT	13.5" / 343mm
OVERALL LENGTH	32.4" / 823mm
OVERALL WIDTH	4" / 102mm
WEIGHT	15 lbs.
EPA	1.03



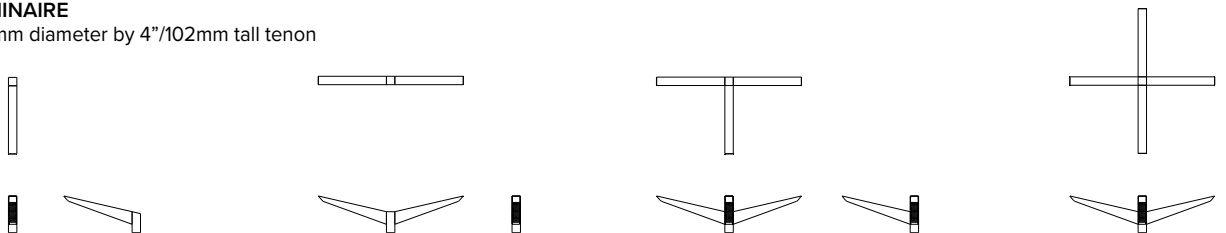
INTEGRAL POLE LUMINAIRE



MODEL	K41-...-PS4XX-125	K42-...-PS4XX-125	K43-...-PS4XX-125	K44-...-PS4XX-125
OVERALL LENGTH	36.4" / 925MM	10" / 254MM	36.4" / 925MM	68.9" / 1750MM
OVERALL WIDTH	10" / 254MM	68.9" / 1750MM	68.9" / 1750MM	68.9" / 1750MM
WEIGHT	15 LBS.	30 LBS.	45 LBS.	60 LBS.
EPA*	1.03	2.06	2.61	2.61

TENON MOUNT LUMINAIRE

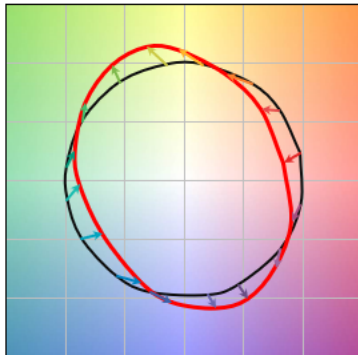
Slips over a 2 3/8"/60mm diameter by 4"/102mm tall tenon



MODEL	K41-...-TA23	K42-...-TA23	K43-...-TA23	K44-...-TA23
OVERALL HEIGHT	17.5" / 445MM	17.5" / 445MM	17.5" / 445MM	17.5" / 445MM
OVERALL LENGTH	36.4" / 925MM	10" / 254MM	36.4" / 925MM	68.9" / 1750MM
OVERALL WIDTH	4" / 102MM	68.9" / 1750MM	68.9" / 1750MM	68.9" / 1750MM
WEIGHT	18.5 LBS.	33.5 LBS.	48.5 LBS.	63.5 LBS.
EPA*	1.33	2.42	2.61	2.61

TM-30 DATA

COLOR VECTOR GRAPHIC

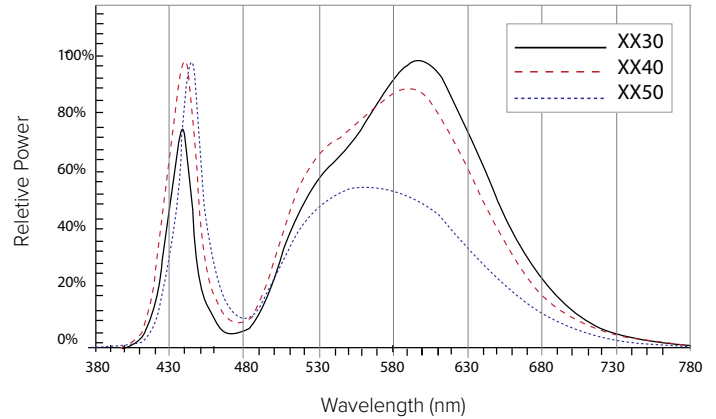


— Reference Illuminant — Test Source

TEST SOURCE

VALUE	ORDERING CODE		
	XX30	XX40	XX50
Rf	69	69	71
Rg	99	99	98
CCT(K)	3122	3852	5020
Duv	0.001	0.0004	0.0005
CIE Ra	74	73	74

SPECTRAL POWER DISTRIBUTION COMPARISON



ELECTRICAL CHARACTERISTICS

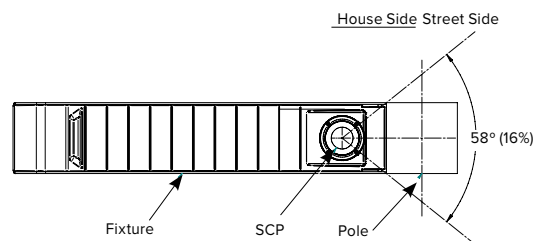
ORDERING CODE	LED CURRENT (MA)	SYSTEM WATTAGE (W)	INPUT					MIN. POWER FACTOR	MAX THD (%)	DIMMING RANGE (V)	SOURCE/ SINK CURRENT (MA)	INRUSH CURRENT PEAK							
			AMPS AC				HZ					(A)				T@50% (MS)			
			120	277	347	480						120	277	347	480	120	277	347	480
50XX	500	46	0.4	0.17	0.1	0.10	50/60	>0.9	20	0-10	1	15	32	41	63	50	155		
70XX	700	64	0.5	0.23	0.2	0.13													

TM-21 LIFETIME CALCULATION (500MA)

LUMEN PACKAGE	AMBIENT ENVIRONMENT °C	PROJECTED LUMEN MAINTENANCE (KHRS)					REPORTED L70
		25	50	60 (TM-21)	75	100	
2,500	25	98%	95%	94%	92%	90%	>60Khrs.
	40	98%	96%	95%	93%	91%	

SENSOR DETECTION RANGE

		SENSOR MOUNTING HEIGHT							RATIO
		8'	10'	12'	14'	16'	18'	20'	
COVERAGE DIAMETER	SCP	20'	25'	30'	35'	40'	45'	50'	1:2.5
	WIRSC	16'	20'	24'	28'	32'	36'	40'	1:2



FEATURES

- Integral Motion Sensor
- Staggered twin mounting
- ANSI C136.31-2010 4G Rated
- IES Type II, III and IV distributions
- 3000K , 4000K, 5000K CCT
- Integral thermal protection



3000K and warmer CCTs only

See Certification Specifications

SPECIFICATIONS

CONSTRUCTION

- Housing shroud is made of fabricated 5052-H32 aluminum alloy with a rear mounting interface that is made of fabricated 304 stainless steel
- Housing mounting interface is a stamped silicone gasket
- Luminaire housing is free of any visible heat fins, hardware or fasteners
- Bracketry and hardware is made of stainless steel
- Base is made of cast aluminum #356 alloy and heat treated to a T-6 condition
- Shaft is extruded aluminum 6061 alloy and heat treated to a T-6 condition
- Anchor bolts are hot dip galvanized steel. Eight galvanized hex nuts and flat washers, and a bolt circle template are provided. Anchor bolt for poles are 3/4" x 24" x 3"
- Luminaire finish 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 meets the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance

LED/OPTICS

- LEDs are mounted to a metal printed circuit board assembly (MCPCB) with a uniform conformal coating over the panel surface and electrical features
- Optical lenses is made of clear injection molded PMMA acrylic
- Each MCPCB and optic are sealed to an extruded 6063-T6 aluminum alloy heat spreader and sealed with a continuous one piece injection molded silicone rubber gasket. IP66

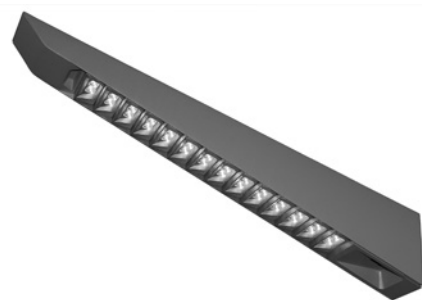
LED/OPTICS (CONTINUED)

- Patent Pending design of optical array is independently shielding each LED optic across the length of the aperture
- Optical surfaces are painted white unless the optional fixture finish (FO) or matte black finish (MO) is selected
- Optional matte black finish optics (MO) are required to meet UO classification with zero percent uplight
- Optional fixture finish optical surfaces (FO) do not exceed BUG ratings of the standard white finish and will be greater than or equal to the delivered lumens of the optional matte black optical surface finish (MO)

INSTALLATION

- Integral pole mount luminaires require assembly of fixture(s) to the pole, mounting hardware, anchor bolts and anchor bolt template is included. See page 6 for additional considerations specific to the integral pole
- Tenon mount luminaires require assembly of fixture(s) to the tenon adapter, mounting hardware is included. Tenon adapter secures to the tenon with eight 5/16-18 stainless steel set screws
- Side mount luminaires are supplied with hardware compatible with AAL mountings.
- Twin mounted staggered height fixtures are configured separately
- Service access to the optical array and driver assembly is via a tool-less internal latch and have an audible click.
- Optical array has to hang freely in an open service position for inspection of internal wire connections. Once in service position, the optical array is able to be removed for service by lifting the assembly up off the rear hinge and disconnecting the wiring plugs.
- Driver assembly is mounted to a prewired internal tray with quick disconnects for removal

KICK™



Mini Small

RELATED PRODUCTS

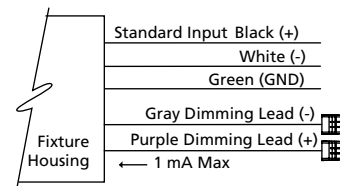
[K5](#)

[KM5](#)

[K6](#)

ELECTRICAL

- Drivers are in direct contact with the aluminum housing across the entire surface area of the widest face for maximum thermal transfer
- Luminaires have integral surge protection that is 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 is wired in series
- Drivers are U.L. recognized
- Drivers are not compatible with current sourcing dimmers, consult factory for current list of known compatible dimming systems approved dimmers include Lutron Diva AVTV, Lutron Nova NFTV and NTFTV
- Luminaire are capable of operating at 100% brightness in a 40°C environment. Both driver and optical array 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 or ANSI C136 receptacle option are provided with 0-10 purple and gray dimming leads



continued on page 3

KEY DATA	
LUMEN RANGE	1,9090–3,576
WATTAGE RANGE	24–33
EFFICACY RANGE (LPW)	77–115
WEIGHT	8.95 lbs 4.05 kg
EPA	0.56

DATE: 1/11/22	LOCATION:
TYPE:	PROJECT:
CATALOG #:	

ORDERING GUIDE

Example: KM41-T2-FO-2050-MCPCR-SF-347-PS412-125-SBC-BLT

CATALOG #	
-----------	--

Model (4" wide luminaire)	Optics (Distribution)	Optics Finish	Light Engine ¹	Control
KM41 Single Fixture	T2 IES Type II	WO Standard White Finish	2030 3000K CCT, CRI 70, 24 Watts	MCPCR Multi-Channel 7-Pin Photocell Receptacle
KM42 Two Fixtures 180° Apart	T3 IES Type III	FO Optics in Fixture Finish	2040 4000K CCT, CRI 70, 24 Watts	SCP Motion Sensor + Photocell ²
KM43 Three Fixtures 90° Apart	T4 IES Type IV	MO Optics in Matte Black Finish	2050 5000K CCT, CRI 70, 24 Watts	SWPM SiteSync Pre-commissioned + Motion Sensor ³
KM44 Four Fixtures 90° Apart			3030 3000K CCT, CRI 70, 33 Watts	SCPREMOTE Handheld Commissioning Tool ²
			3040 4000K CCT, CRI 70, 33 Watts	
			3050 5000K CCT, CRI 70, 33 Watts	

Fuse (may choose one)	Voltage	Mounting	Mounting Options	Fixture Finish
SF 120, 277, 347 Volt Input	120-277V 120-277V	Integral Pole	Twin mount at staggered heights	Standard Color
DF 208, 240, 480 Volt Input	347 347 VAC input 480 480 VAC input	Square Straight Aluminum, 10.5" Ø Bolt Circle PS410-125 10' Luminaire Height PS412-125 12' Luminaire Height PS414-125 14' Luminaire Height PS416-125 16' Luminaire Height PS418-125 18' Luminaire Height PS420-125 20' Luminaire Height Tenon Mount TA23 Slips over a 2 3/8" / 60mm Ø x 4" / 102mm tall tenon Side Mount SMK Mounts to the side of a square pole, KM41 only Wall Mount WMK KM41 only	TS8 8' from bottom TS10 10' from bottom TS12 12' from bottom TS14 14' from bottom TS16 16' from bottom TS18 18' from bottom Base Options SBC Standard Base Cover Pole Accessories(may choose one) GFI GFCI receptacle, 24" from top of pole RBC Duplex receptacle box with clear cover, wiring device(s) not included	BLS Black Gloss Smooth BLT Black Matte Textured DBS Dark Bronze Gloss Smooth DBT Dark Bronze Matte Textured GTT Graphite Matte Texture LGS Light Grey Gloss Smooth LGT Light Grey Matte Textured PSS Platinum Silver Gloss Smooth VGT Verde Green Matte Textured WHS White Gloss Smooth WHT White Matte Textured CC Custom Color ⁴

Notes:

- 595nm monochromatic amber and or custom lumen package available by request
- Handheld commissioning tool is required to separately configure or adjust any number of SCP sensors
- Specify group and zone at time of order. See www.hubbellighting.com/sitesync for more details. Order at least one SiteSync interface accessory SWUSB or SWTAB. Each option contains SiteSync License, GUI, and Bridge Node
- Consult factory for custom color, marine and corrosive finish

SPECIFICATIONS (CONTINUED)

MODEL	HEIGHT OVERALL	POLE	SHAFT SECTION	WT	MAXIMUM ALLOWABLE EPA (MPH)							
					85	90	100	110	120	130	140	150
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KM4X-PS412-125	12' 7.5" / 3.85m	12'	4" SQ x .125"45	32 lbs	11.8	10.2	7.6	5.7	4.3	3.2	2.3	1.6
KM4X-PS414-125	14' 7.5" / 4.46m	14'	4" SQ x .125"	37 lbs	9.1	7.7	5.5	3.9	2.6	1.7	0.95	0.33
KM4X-PS416-125	16' 7.5" / 5.07m	16'	4" SQ x .125"	42 lbs	6.9	5.7	3.8	2.3	1.3	0.46	-	-
KM4X-PS418-125	18' 7.5" / 5.68m	18'	4" SQ x .125"	48 lbs	4.9	3.9	2.2	0.95	0.01	-	-	-
KM4X-PS420-125	20' 7.5" / 6.29m	20'	4" SQ x .125"	53 lbs	3.2	2.2	0.75	-	-	-	-	-

* - Consult factory for thicker shaft profiles and or custom heights not shown above.

CONTROLS

- Wireless enabled fixtures shall support bi-directional radio frequency (RF) communications utilizing IEEE 802.15.4 operating in the 2.4GHZ ISM band.
- Up to 1000' wireless range may be reduced by physical obstructions between lighting fixtures.
- Motion Sensor shall 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.
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 - 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

CERTIFICATIONS

- Luminaire is listed with UL for outdoor, wet location use, UL1598, UL 8750 and Canadian CSA Std. C22.2 no.250
- ANSI C136.31-2010 4G Vibration tested and compliant
- IEC 66262 Mechanical Impact Code IK10
- IDA approved, 3000K and warmer CCTs only
- This product qualifies as a "designated country construction material" per FAR 52.225-11 Buy American-Construction Materials under Trade Agreements effective 6/06/2020. [See Buy American Solutions](#)

WARRANTY

- See [HLI Standard Warranty](#) for additional information

DATE: 1/11/22	LOCATION:
TYPE:	PROJECT:
CATALOG #:	

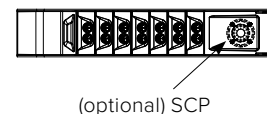
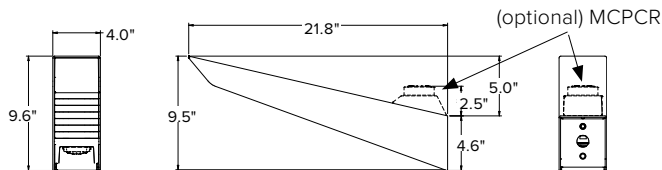
DELIVERED LUMENS

System Watts	Optical Finish	Distribution	Ordering Code	3000K 70CRI					4000K 70CRI					5000K 70CRI				
				Lumen	Bug Rating			Efficacy (Lm/W)	Lumen	Bug Rating			Efficacy (Lm/W)	Lumen	Bug Rating			Efficacy (Lm/W)
					B	U	G			B	U	G			B	U	G	
24	Standard White	Type 2	T2	2507	1	2	1	106	2613	1	2	1	111	2647	1	2	1	112
		Type 3	T3	2447	1	1	1	104	2555	1	1	1	108	2589	1	1	1	110
		Type 4	T4	2561	1	1	1	109	2670	1	1	1	113	2704	1	1	1	115
	Fixture Match	Type 2	T2-FO	1909	1	2	1	81	2058	1	2	1	87	2015	1	2	1	85
		Type 3	T3-FO	1930	1	1	1	82	2061	1	1	1	87	2038	1	1	1	86
		Type 4	T4-FO	2174	1	1	1	92	2343	1	1	1	99	2295	1	1	1	97
	Matte Black	Type 2	T2-MO	1909	1	0	0	81	2058	1	0	0	87	2015	1	0	0	85
		Type 3	T3-MO	1930	1	0	0	82	2081	1	0	0	88	2038	1	0	0	86
		Type 4	T4-MO	2174	1	0	0	92	2343	1	0	0	99	2295	1	0	0	97
33	Standard White	Type 2	T2	3315	1	2	1	101	3455	1	2	1	105	3500	1	2	1	106
		Type 3	T3	3242	1	2	1	99	3379	1	2	1	103	3423	1	2	1	104
		Type 4	T4	3387	1	1	1	103	3530	1	1	1	107	3576	1	1	1	109
	Fixture Match	Type 2	T2-FO	2535	1	2	1	77	2716	1	2	1	83	2676	1	2	1	81
		Type 3	T3-FO	2563	1	2	1	78	2746	1	2	1	83	2706	1	2	1	82
		Type 4	T4-FO	2886	1	1	1	88	3093	1	1	1	94	3047	1	1	1	93
	Matte Black	Type 2	T2-MO	2535	1	0	1	77	2716	1	0	1	83	2676	1	0	1	81
		Type 3	T3-MO	2563	1	0	0	78	2746	1	0	0	83	2706	1	0	0	82
		Type 4	T4-MO	2886	1	0	1	88	3093	1	0	1	94	3047	1	0	1	93

DIMENSIONS

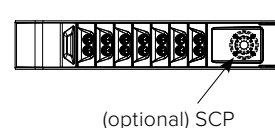
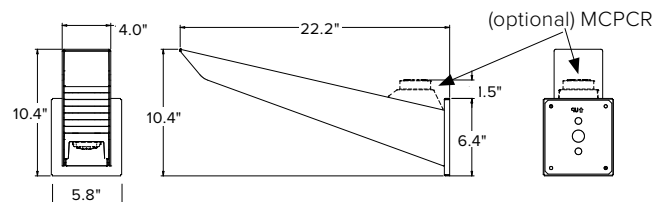
SIDE MOUNTED LUMINAIRE (S)

MODEL	KM4X-...-SMK
OVERALL HEIGHT	9.6" / 244mm
OVERALL LENGTH	21.8" / 554mm
OVERALL WIDTH	4" / 102mm
WEIGHT	8.95 lbs.
EPA	0.56

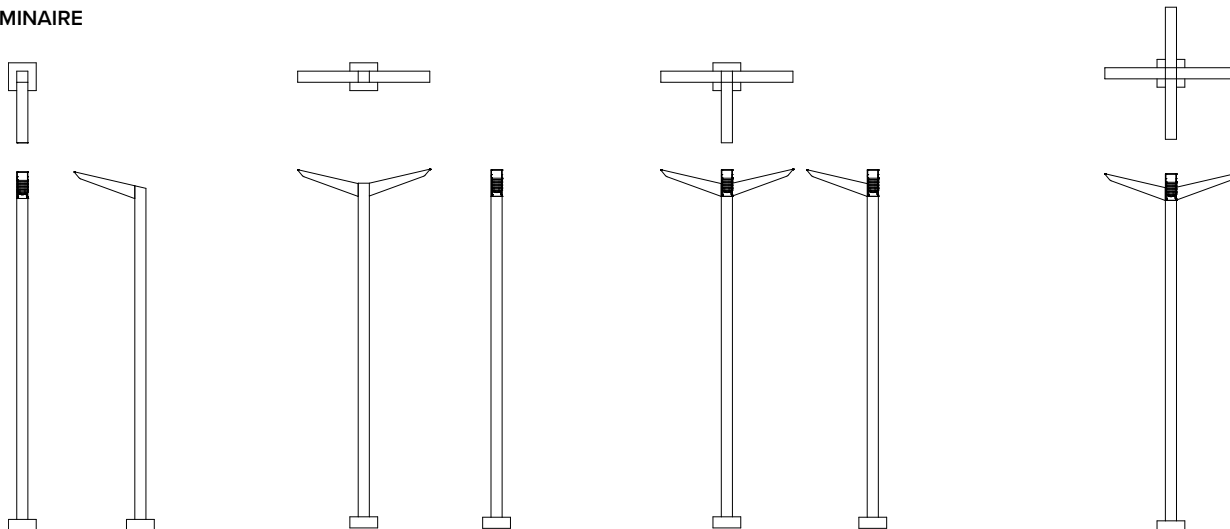


WALL MOUNTED LUMINAIRE (S)

MODEL	KM41-...-WMK
OVERALL HEIGHT	10.4" / 264mm
OVERALL LENGTH	22.2" / 564mm
OVERALL WIDTH	5.8" / 147mm
WEIGHT	10 lbs.



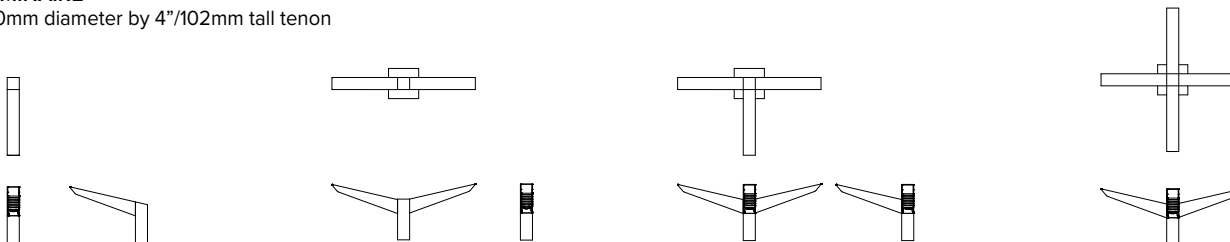
INTEGRAL POLE LUMINAIRE



MODEL	KM41-...-PS4XX-125	KM42-...-PS4XX-125	KM43-...-PS4XX-125	KM44-...-PS4XX-125
OVERALL LENGTH	25.8" / 655MM	10" / 254MM	25.8" / 655MM	47.5" / 1206MM
OVERALL WIDTH	10" / 254MM	47.5" / 1206MM	47.5" / 1206MM	47.5" / 1206MM
WEIGHT	8.95 LBS.	8.95 LBS.	8.95 LBS.	8.95 LBS.
EPA*	0.56	1.12	1.44	1.44

TENON MOUNT LUMINAIRE

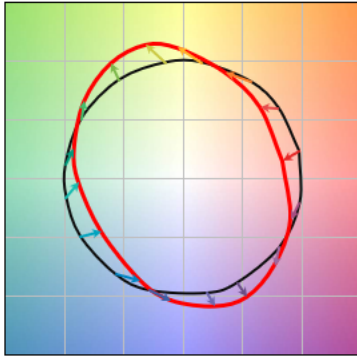
Slips over a 2 3/8"/60mm diameter by 4"/102mm tall tenon



MODEL	KM41-...-TA23	KM42-...-TA23	KM43-...-TA23	KM44-...-TA23
OVERALL HEIGHT	13.5" / 343MM	13.5" / 343MM	13.5" / 343MM	13.5" / 343MM
OVERALL LENGTH	25.8" / 655MM	10" / 254MM	25.8" / 655MM	47.5" / 1206MM
OVERALL WIDTH	4" / 102MM	47.5" / 1206MM	47.5" / 1206MM	47.5" / 1206MM
WEIGHT	8.95 LBS.	8.95 LBS.	8.95 LBS.	8.95 LBS.
EPA*	0.87	1.44	1.62	1.62

TM-30 DATA

COLOR VECTOR GRAPHIC

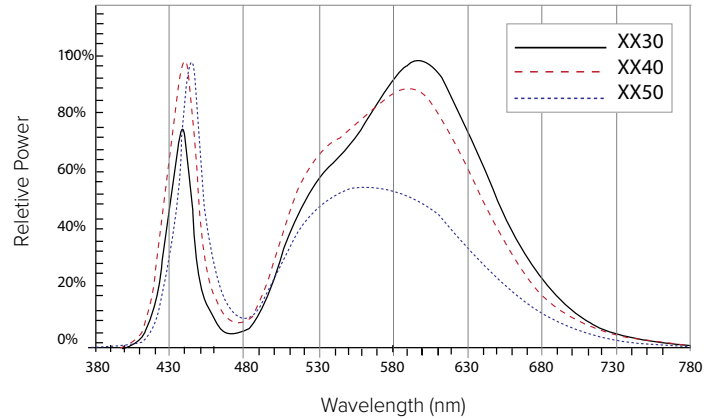


— Reference Illuminant — Test Source

TEST SOURCE

VALUE	ORDERING CODE		
	XX30	XX40	XX50
Rf	69	69	71
Rg	99	99	98
CCT(K)	3122	3852	5020
Duv	0.001	0.0004	0.0005
CIE Ra	74	73	74

SPECTRAL POWER DISTRIBUTION COMPARISON



ELECTRICAL CHARACTERISTICS

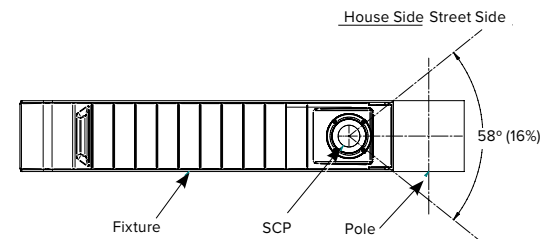
ORDERING CODE	LED CURRENT (MA)	SYSTEM WATTAGE (W)	LINE INPUT		INPUT		MIN. POWER FACTOR	MAX THD (%)	MIN. POWER	INRUSH CURRENT PEAK				DIMMING	
					AMPS AC					(A)		T@50% (MS)		DIMMING RANGE (V)	SOURCE/ SINK CURRENT (MA)
			VAC	HZ	120	277				120	277	120	277		
					20XX	500				24	120-277	50/60	0.2		
30XX	700	33	120-277	0.3	0.1										

TM-21 LIFETIME CALCULATION (500MA)

AMBIENT ENVIRONMENT °C	PROJECTED LUMEN MAINTENANCE (KHRS)					REPORTED L70
	25	50	60 (TM-21)	75	100	
25	98%	95%	94%	93%	90%	>60Khrs.
40	98%	96%	95%	93%	90%	

SENSOR DETECTION RANGE

		SENSOR MOUNTING HEIGHT										RATIO	
		8'	10'	12'	14'	16'	18'	20'	25'	30'	35'		40'
COVERAGE DIAMETER	SCP	20'	25'	30'	35'	40'	45'	50'	62.5'	75'	87.5'	100'	1:2.5



O. Architectural Design Narrative

Please find attached the design narrative completed by Kaplan Thompson & Archetype PA.



January 6, 2022

DOUGLASS COMMONS

Architectural Narrative

We are proposing three different building types on the site in addition to the five-story building to the east. The two-story Townhouses are arranged along the western property line behind the current residential neighborhood. Three-story Rowhouses line the northern edge, while the three-story Community Flats buildings occupy the central portion of the site. The intent is to gradually increase the scale of the buildings from west to east as you move through the site, keeping the shortest buildings closer to Douglass Street and the existing two-to-three-story homes.

Our approach to the roof form of the height-limited Community Flats building is to develop a series of low-pitched roof planes that undulate across the facade of the buildings and are occasionally tipped down to denote the entrances below. This undulating roof form carries across the site from building to building, which establishes a language that is reflected in the Townhouses and Rowhouses where roofs are occasionally tipped up to highlight corners and connections. The Townhouse entrances are highlighted by a simple entry canopy that matches the pitch of the larger Community Flats buildings. The Rowhouse has a more elaborate series of similarly pitched entrance canopies that dance along the facade to individualize the unit entries as well as to help reduce the scale of the overall building.

We intend to use common siding materials and alter their installation methods to help break up the facades by a change in texture, spacing, and orientation. There are shared cladding materials between buildings that reinforce their connection and establish the rhythm of textural and material changes at the unit entrances. We've also altered the heights of the windows at various locations in reference to the undulating roof forms.

The Community Flats buildings provide exterior deck spaces on the upper levels which add visual interest and provide a recessed area for a specific cladding treatment. The entry spaces are clad with a locally sourced natural Eastern White Cedar in locations where the building is experienced in close proximity.

The building's architectural design details, along with the careful attention to landscape design and public circulation spaces will provide a welcoming and interactive neighborhood experience for this unique site.



Phil Kaplan

Maine Licensed Architect, AIA

Kaplan Thompson Architects

ARCHETYPE ARCHITECTS

DOUGLASS COMMONS

ARCHITECTURE NARRATIVE

Although we are a campus-like setting, we feel strongly that all buildings do not need to be similar and there are many existing instances of campuses where unique architectural moments are what strengthen it. At the same time, we do believe there are color and material choices that do, in fact, relate the buildings but because the building type is quite different from those of Kaplan Thompson, we feel it is appropriate for it to carry its own language.

In response to the comments from city staff, we have increased the size of the windows on the stair element.

As for the material choices on our building, we believe it is crucial to our design to have the contrasting, yet complimentary materials. Because of the affordable aspect of the project, the phenolic application has to be limited to only a portion of the massing, but the design would also suffer if it were made more similar to the rest of the material choices. The colors of the remaining materials have been adjusted so they are more complimentary to the wood-look.

We have incorporated a stone base with clapboard and a building cap with metal shingle that has a well-established cornice helping to emphasize the base, middle and top of the building and allowing the phenolic elements to differentiate appropriately. The metal shingle also creates more interest in the façade as it changes with the lighting.

Finally, we have established a porch as an inviting feature to the building both visually and functionally.

Respectfully submitted,
David Lloyd

P. Utilities

The proposed project will include installation of multiple utility services to the proposed buildings.

Water:

The existing 2" service line to the site will be retired in accordance with Portland Water District standards. It is proposed to tap an 8" fire line as well as a 4" domestic line off the existing 8" ductile iron water main within Douglass Street. The 4" domestic line that will serve the site will require a meter pit. Both lines will run through an aboveground testable double-check backflow preventer. Additionally, a private fire hydrant will be installed to serve the buildings on site. Ability to serve confirmation will be submitted upon receipt.

Sewer:

A new 8" PVC lateral will be installed throughout the site in conjunction with a doghouse manhole to accept the wastewater from each unit.

Stormwater:

Overall, the impervious area will decrease by approximately 0.36 acres, effectively lowering the peak runoff on the site. The project will include redevelopment of non-roof impervious areas greater than 5,000 sf, triggering the City's water quality treatment requirement. Water quality treatment will be provided by allowing it to flow from a portion of the parking lot to an under-drained soil filter system and engineered rain gardens prior to discharging into the MS4 within Douglass Street. Please refer to the Grading & Drainage plans as well as the Stormwater Management Report for more information.

Electric/Communications:

Three-phase power is currently supplied cross-country to the site from Congress Street. It is proposed to replace the existing poles on site and with underground primaries to six (6) transformers on the site, some of which will be single-phase along with one 3-phase transformer to serve the 5-story building. New conduits are proposed for telephone, fiber, and cable that will run down from the existing utility pole on Douglass Street. See the Sheet C-20, Utility Plan, for more information.

Gas:

An existing gas main traverses the site and it is proposed tap this service to serve the 5-story building. See Sheet C-20, Utility Plan, for more information.

Ability to serve letters have been sent out to the respective utility companies in accordance with the City of Portland Code of Ordinances Chapter 14 Land Use, Section 14-527(g)(7). Responses from the utility companies are forthcoming.



Q. Construction Management Plan

Project Address:

57 Douglass Street

Project Description:

The proposed project includes the construction of eight stand-alone residential buildings to be occupied by 120 units. The project will include the construction of parking lots and stormwater management features.

Project Team Summary:

Owner:	Douglass Commons, LLC.
Owner's Representative:	TBD
General Contractor:	TBD
Civil & Environmental Engineer:	Acorn Engineering, Inc.
Architect:	Archetype & Kaplan Thompson Architects
Structural Engineer:	Structural Integrity Consulting Engineers
Geotechnical Engineer:	Summit Geoengineering Services

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 and Subcontractor contact information shall be posted somewhere along the project's street frontage. Additional signage necessary for communication shall be provided but will be temporary and removed upon completion of the project.

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. 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.



Deliveries will be scheduled between 7 am and 5 pm.

The estimated timeframe of the proposed project is outlined below:

<u>Project Start Date:</u>	Spring 2023
<u>Project End Date:</u>	Summer 2024

A more detailed work schedule shall be provided by the GC at or before the pre-construction meeting with the City.

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:
 - Good Housekeeping
 - On-site security
 - Installation of new fire protection systems as construction progresses
 - Preservation of existing systems during demolition
 - Organization and training of an on-site fire brigade
 - Development of a pre-fire plan with the local fire department
 - Rapid communication
 - Consideration of special hazards resulting from previous occupancies
 - Protection of existing structures and equipment from exposure fires resulting from construction, alteration, and demolition operations.
4. Blasting, if required, shall conform with all measures of Article VIII. Regulation of Explosives in the Land Use Code and Section 3.7 Standards for Blasting and Regulation of Explosives in Portland's Technical Manual.
5. 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.

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 Douglass 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 Douglass 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.

Use of public parking spaces or the blockage of any portion of sidewalk for the purpose of construction activity shall require an occupancy permit and appropriate fee as assessed by the Department of Public Works.

H. Site Management and Controls

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 on site 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 – 3,640 CY. Earthwork subcontractor(s) pit to project site.
 - Hot Mix Asphalt – 460 Tons. Paving subcontractor pit to project site.



L. Dewatering Plans

1. A basic dewatering plan for any construction work is required and shall be submitted by the Contractor. The plan must cover construction sites where groundwater is not expected but 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.
2. For construction work that will require frequent dewatering of groundwater from site, a dewatering plan must be prepared by the Contractor and approved by the Department of Public Works. Groundwater and/or soil testing may be required to determine course of action if treatment is necessary. Approval for all discharges to City infrastructure is required. The proposed 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 approve 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 discharge and/or prior to storage and treatment. There will be no discharge allowed during precipitation events.

M. Special Measures as Necessary

No special measures are necessary for the proposed reconstruction.

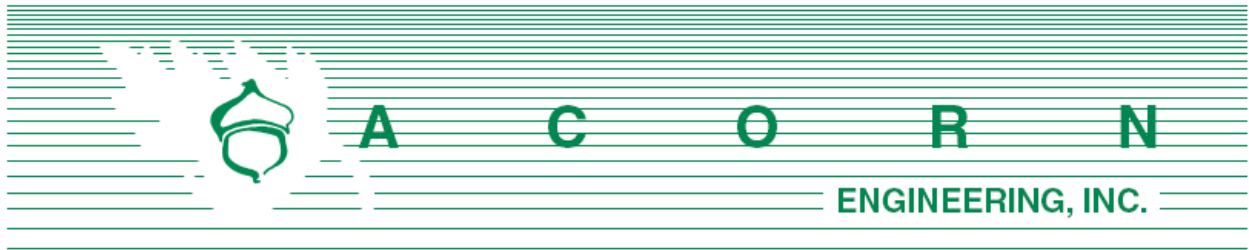


R. Solid Waste Disposal

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 as noted on the Site Plan (C-10).

The solid waste containers will be fully enclosed and screened from the public view.





T. Traffic Memo

Traffic Memo

The proposed 120-unit development is located at 57 Douglass Street and provides 79 parking spaces throughout the site via the paved parking and woonerf area. Pedestrian access to the site is provided with a connection to the Douglass St sidewalk. The site will be connected to the Portland Trails Network (Dougherty Field Path) by providing a hardscaped walking path to the east of the site for residents, additionally further pedestrian routes are provided as the internal sidewalk will connect to the public sidewalk along Douglass Street. Further multimodal transportation opportunities exist with multiple Metro Bus Lines making stops in proximity of the site along Congress Street. This will offer site users with a variety of transportation options other than standard vehicular travel. Also given the site's proximity to the Portland peninsula, we expect bicycle travel to be another major form of transportation for site users.

The trip generation for the proposed project has been estimated using the Institute of Transportation Engineers (ITE) "Trip Generation" 10th Edition publication. The land uses utilized in the calculations consists of residential low and mid-rise apartments, as well as a private K-12 school to model the previous and proposed trip generation produced from the site. Please note that this analysis slightly overestimates the total trip generation as 74 of the dwelling units will be workforce housing. Although the ITE has not yet published trip generation values for affordable housing, it's our understanding that these rates are forthcoming, consistent with the ITE parking generation for affordable housing that was recently added to the latest parking publication (Parking Generation 5th Edition). The parking generation for market rate vs affordable housing features a factor of 1.3. Based upon this factor, as well as demonstrated built affordable housing in the Greater Portland area, the following trip generation numbers are determined to be inflated to an extent due to lack of industry standard trip generation rates for affordable housing.

Trip Generation

Trip generation is based upon tables presented in the tenth edition of the Institute of Transportation's Engineers "TRIP GENERATION" manual. The following trip rates were applied:

Existing Land-Use #536: Private School

Weekday AM Peak Hour (Street)	= 0.80 trips/unit
Weekday PM Peak Hour (Street)	= 0.17 trips/unit
Weekday AM Peak Hour (Generator)	= 0.81 trips/unit
Weekday PM Peak Hour (Generator)	= 0.58 trips/unit

Proposed Land-Use #220: Multi-family Housing (Low-Rise)

Weekday AM Peak Hour (Street)	= 0.46 trips/unit
Weekday PM Peak Hour (Street)	= 0.56 trips/unit
Weekday AM Peak Hour (Generator)	= 0.56 trips/unit
Weekday PM Peak Hour (Generator)	= 0.67 trips/unit
Saturday Peak Hour (Generator)	= 0.70 trips/unit
Sunday Peak Hour (Generator)	= 0.67 trips/unit

Proposed Land-Use #221: Multi-family Housing (Mid-Rise)

Weekday AM Peak Hour (Street)	= 0.36 trips/unit
Weekday PM Peak Hour (Street)	= 0.44 trips/unit
Weekday AM Peak Hour (Generator)	= 0.32 trips/unit
Weekday PM Peak Hour (Generator)	= 0.41 trips/unit
Saturday Peak Hour (Generator)	= 0.44 trips/unit
Sunday Peak Hour (Generator)	= 0.39 trips/unit

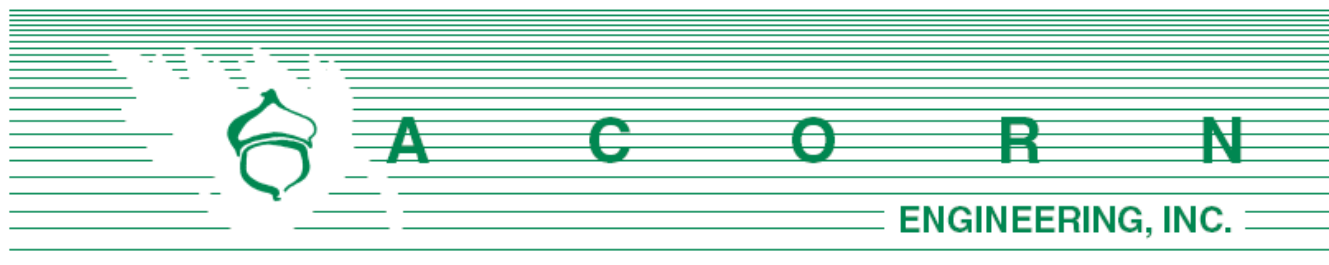
Table 1, below, provides a summary of the trip generation for the proposed development. This analysis also accounts for the estimated trip generation for the former school system that existed on site within the last 10 years. It was assumed that an average of 38 students attended the “West Program” school, based upon a Bangor Daily News article that stated the 2014 enrollment and capacity.

Table 1 – Peak Hour Trip Generation		
	Peak Hour PCE Trip Generation	Net Peak Hour PCE Trip Generation¹
AM Peak Hour (Street)	42 trips	12 trips
PM Peak Hour (Street)	52 trips	46 trips
AM Peak Hour (Generator)	40 trips	9 trips
PM Peak Hour (Generator)	50 trips	28 trips
Saturday Peak Hour (Generator)	54 trips	54 trips
Sunday Peak Hour (Generator)	48 trips	48 trips
¹ Accounts for trip credits from prior site use		

Crash Data

Crash data was obtained from MaineDOT for the most recent available three-year period (2018 to 2021). As seen in the appendix, there have been six crashes on Douglass Street and two crashes at the intersection of Douglass and Brighton Ave. Of the eight crashes recorded, only one of them resulted in an injury and this occurred at the intersection of Douglass and Brighton Ave. The seven other crashes were side swipes or rear ends and were property damage only. The intersection of Douglass and Brighton Ave allows left and right hand turns from both roads and is mediated by a stop sign at the end of Douglass. The intersection of Douglass and Congress does not have any reported crashes in the specified time window and has a curbed median in the middle of Congress Street to prohibit left-hand turns. Based on the relative minor nature of reported crashes and existing intersection conditions, the project's generated trips will not exacerbate an existing issue.





Maine Department of Environmental Protection
City of Portland, Maine

January 20, 2022

Subject: Delegated Review: Stormwater Management Permit
57 Douglass St. Redevelopment – Portland, Maine

To Whom It May Concern:

Acorn Engineering, Inc. has been retained by Douglass Commons, LLC. to provide civil engineering services for the proposed redevelopment of 57 Douglass Street located within the R-5A Zoning District in Portland, Maine. The 3.34-acre parcel was previously the site of a school building and is now vacant. The built-out site will consist of eight stand-alone buildings comprising 120 residential units, the majority of which will be deed-restricted for affordability. On behalf of our client, we are pleased to submit a Stormwater Management Permit application for this beneficial redevelopment subject to Delegated Review by the City of Portland. Concurrently, the project is anticipated to undergo a Major Site Plan/ review subject to approval from the Portland Planning Board.

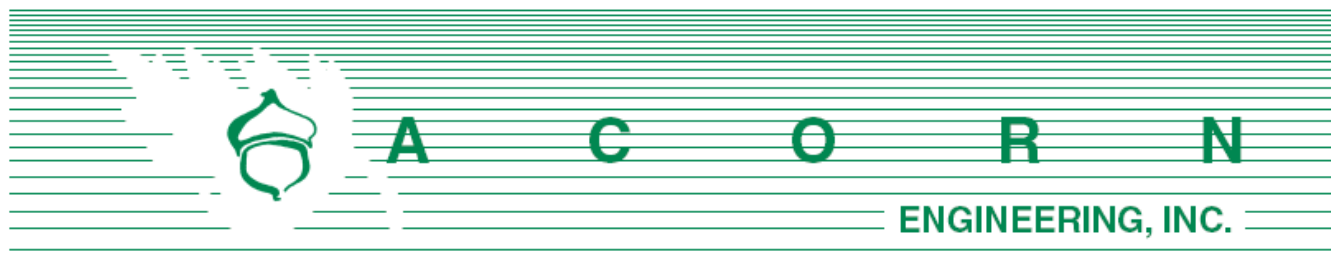
The existing property is covered by approximately 65% or 2.16 acres of impervious surfaces, whereupon a school and its associated infrastructure was formerly located. The proposed redevelopment includes reducing the overall impervious by approximately 0.36 acres to a total of 1.90 acres. In addition to net reduction in runoff and pollutant loading, there are stormwater treatment systems provided to improve the current state of the site, including an under drained soil filter, proprietary rain gardens, and the routing of all stormwater from the site to the separated storm drain within Douglass Street. Lastly, the weighted average of land use and pollutant ranking decreases from the existing to the proposed condition.

We look forward to your review of this project. If you have any questions regarding these materials or the completeness of the application materials, please do not hesitate to contact us.

Sincerely,

A handwritten signature in cursive script, reading "Sam Lebel".

Samuel J. Lebel, P.E.
Project Manager
Acorn Engineering, Inc.



The following documents are included as part of this application.

Documents:

1. Stormwater Management Law Permit Application
2. Fee Worksheet
3. Notice of Intent to File
4. Certificate of Good Standing
5. Title, Right, or Interest
6. Photos of the Project Site
7. Basic Standards Submissions (Erosion & Sedimentation Control Report)
8. General Standards Submissions (Stormwater Management Report)

**DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RESOURCES**

Stormwater Application Form

FOR DEP USE

L- _____

ATS# _____

FEES PAID _____

DATE RECEIVED _____

PLEASE TYPE OR PRINT IN INK

This application is for (Check the one that applies):		☒ New application		☐ Amendment	
1. Name of Applicant:	Douglass Commons, LLC		5. Name of Agent:	Sam Lebel	
2. Applicant's Mailing Address:	10 Free St, 2nd Floor Portland, ME 04101		6. Agent's Mailing Address:	65 Hanover St., Portland, ME 04101	
3. Applicant's Phone #:	207-805-3578		7. Agent's Phone #:	207-775-2655	
4. Email address (REQUIRED-license will be sent via email:	cszanton@szantoncompany.com		8. E-mail address (REQUIRED-license will be sent via email	slebel@acorn-engineering.com	
9. Location of Project: (Road, Street, Rt.#)	57 Douglass Ave.		10. Town:	Portland	
			11. County:	Cumberland	
12. Type of Direct Watershed: (Check all that apply)	☐ Lake not most at risk ☐ Lake most at risk ☐ Lake most at risk, severely blooming ☐ River, stream or brook ☐ Urban impaired stream ☐ Freshwater wetland ☐ Coastal wetland ☐ Wellhead of public water supply		13. Amount of Disturbed Area:	Total Amt.= <u>3.13</u> acres	
			14. Amount of Developed Area:	☒ 1 or more acres, but less than 5 acres ☐ 5 acres or more Total Amt.= <u>2.86</u> acres	
			15. Amount of Impervious Area:	☐ less than 20,000 sq. ft. ☐ 20,000 sq. ft. to 1 acre ☒ 1 to 3 acres ☐ 3 or more acres Total Amount of Impervious Acres =	
16. Applicable Standards: (Check all that apply)	☐ Stormwater PBR ☒ Basic standards ☒ General standards: BMP ☐ General standards: phosphorus ☐ Flooding standard ☐ Urban impaired stream standards ☐ Other: _____		17. Type of Stormwater Control:	☐ Vegetative (e.g. buffers) ☒ Structural (e.g. underdrained filters, ponds, infiltration structures)	
18. Exceptions &/or Waivers Requested:	BMP Standards ▼		Urban impaired stream standard ▼		Flooding Standard ▼
	☐ Pretreatment measures ☐ Discharge to ocean/major river segment ☐ Linear portion of project ☐ Utility corridor ☒ Redevelopment		☐ Developed area not landscaped or impervious ☐ Redevelopment		☐ Discharge to ocean/major river segment ☐ Insignificant increase in peak flow
19. Proposed Start Date and Brief Project Description:	The proposed project includes the redevelopment of the existing Portland Public Works garage into a 8-story mixed use building. With 171 proposed residential units and 7,600 SF of retail units (4 units).				
20. Size of Lot or Parcel:	☐ _____ sq. ft., or	☒ <u>3.34</u> acres	UTM Easting:	2920817.53	UTM Northing: 300346.97
21. Title, Right or Interest:	☐ own ☐ lease ☐ purchase option ☒ written agreement				
22. Deed Reference Numbers:	Book#: xxx	Page: xxx	24. Map and Lot Numbers:	Map #: 78	Lot #: C2 B7
23. DEP Staff Previously Contacted:		25. Project started prior to application?	☐ Yes ☒ No	Completed?	☐ Yes ☐ No

SIGNATURES / CERTIFICATIONS ON PAGE 2

26. Resubmission of Application?	☐ Yes → ☒ No	If yes, previous application #		Previous project manager:	
27. Written Notice of Violation?	☐ Yes → ☒ No	If yes, name of DEP enforcement staff involved:			
28. Detailed Directions to the Project Site:		From I-295N, take exit 5B, merge onto Congress St., first right on Douglass Street, and first right is access driveway.			
29. Stormwater Permit by Rule Submissions ▼		30. Stormwater Application Submissions ▼			
☐ This form (including signature page) ☐ Fee ☐ Topographic Map ☐ Plan or Drawing ☐ Photos of Area		☒ This form (including signature page) ☒ Fee ☒ Proof of title, right or interest ☒ Certificate of good standing (if applicable) ☒ Photos of Area ☐ Copy of Public Notice		☐ Professional & Notice Certification ☒ Basic standards submissions ☒ General standards submissions ☐ Flooding standard submissions ☐ Other standard submissions ☐ Compensation Fee (if required)	
31. FEES, Amount Enclosed:		DELEGATED REVIEW - FEE THROUGH CSS PORTAL			
Does the agent have an interest in the project? If yes, what is the interest?: ☐ Yes → ☒ No					

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 E-mailing the decision to the electronic address located on the front page of this application (see #4 for the applicant and #9 for the agent."	
Signed: <u></u>	Title <u>Project Manager</u> Date: <u>1.20.2022</u>
Notice of Intent to Comply with Maine Construction General Permit	With this Stormwater Law application form and my signature below, 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. Signed <u></u> Date: <u>1.20.2022</u>

NOTE: If a Notice of Intent is required, you must file a Notice of Termination (attached as Form G) within 20 days of completing permanent stabilization of the project site.

ADDITIONAL SIGNATURES/CERTIFICATIONS

The person responsible for preparing this application and/or attaching pertinent site and design information hereto, by signing below, certifies that the application for stormwater approval is complete and accurate to the best of his/her knowledge.

Signature: Sam Lebel

Name (print): Sam Lebel, PE

Date: 1.20.2022

Re/Cert/Lic No: _____

Engineer X

Geologist _____

Soil Scientist _____

Land Surveyor _____

Site Evaluator _____

Active Member of the Maine Bar _____

Professional Landscape Architect _____

Fee Worksheet

Use this form to help determine the permit fee. The fee is based upon the amount of disturbed area associated with the project. **THE EXAMPLE BELOW IS NOT BASED ON CURRENT FEES.** To determine current stormwater licensing fees, please visit the Department's website at: <http://www.maine.gov/dep/permits/>

NOTE: Ditches, swales, ditch turn-outs, level spreaders, and similar Best Management Practices (BMPs) used solely to convey or discharge water to a vegetated buffer are not considered, by themselves, to constitute structural BMPs, provided that the applicant assumes that all water quality treatment takes place in the buffer. If any treatment is assumed within the BMPs used to convey water to the buffer, they are treated as structural BMPs for the purposes of determining the applicable fee (and review period). "Disturbed area" and "impervious area" are defined in Chapter 500, Section 2(F) and (L).

Example (a): If solely vegetative control measures are used (e.g. buffers), using an example fee of \$250.00* for up to one acre of disturbed area, plus \$125.00† for each additional whole acre of disturbed area, the total fee is calculated as shown below.

Project will create 2.34 acres of disturbed area.

$$\text{Fee} = \$250.00 + [\$125.00 \times (1)] = \$375.00$$

Your fee:

Current fee from fee schedule plus [1/2 current fee times # additional whole acres] equals application fee
 \$ _____ + [\$ _____ X (____)] = \$ _____

Example (b): If any structural control measures are used (e.g. underdrained filters, ponds, infiltration systems), using an example fee of \$500.00 for up to one acre of disturbed area, plus \$250.00 for each additional whole acre of disturbed area, the total fee is calculated as shown below.

Project will create 2.34 acres of disturbed area.

$$\text{Fee} = \$500.00 + [\$250.00 \times (1)]. \text{ Fee} = \$750.00.$$

Your fee:

Current fee from fee schedule plus [1/2 current fee times # additional whole acres] equals application fee
 \$ 500 + [\$ 250 X (1)] = \$ 750

* The total fee for the first acre of disturbed area is obtained by combining the processing and licensing fees contained in the current fee schedule.

† The fee for each additional whole acre of disturbed area is one-half the combined processing and licensing fee.

Public Notice: Notice of Intent to File

Please take notice that

Douglass Commons, LLC 10 Free St. 2nd Floor, Portland ME, 04101

(Name, Address and Phone # of Applicant)

phone: (207) 805-3578

is intending to file a Stormwater Law permit application with the Maine Department of Environmental Protection pursuant to the provisions of 38 M.R.S.A. § 420-D on or about January 15, 2022

(anticipated filing date)

This application is for

The proposed redevelopment of a vacant lot to 8 buildings of 120 residential units.

(description of the project)

43/91 Douglass Ave., Portland, ME 04101 (Former West School)

(project location)

A request for a public hearing or a request that the Board of Environmental Protection assume jurisdiction over this application must be received by the Department in writing, no later than 20 days after the application is found by the Department to be complete and is accepted for processing. A public hearing may or may not be held at the discretion of the Commissioner or Board of Environmental Protection. Public comment on the application will be accepted throughout the processing of the application.

The application will be filed for public inspection at the Department of Environmental Protection's office in Portland, Augusta or Bangor) (circle one) during normal working hours. A copy of the application may also be seen at the municipal

offices in Portland, Maine.
(town)

Written public comments may be sent to the regional office in Portland, Augusta, or Bangor where the application is filed for public inspection.

MDEP, Central Maine Regional Office, 17 State House Station, Augusta, Maine 04333
MDEP, Southern Maine Regional Office, 312 Canco Road, Portland, Maine 04103
MDEP, Eastern Maine Regional Office, 106 Hogan Road, Bangor, Maine 04401

4. Certificate of Good Standing

Please see the attached Certificate of Good Standing from the Department of the Secretary of State for Douglass Commons, LLC.





MAINE

Department of the Secretary of State
Bureau of Corporations, Elections and Commissions

Corporate Name Search

Information Summary

[Subscriber activity report](#)

This record contains information from the CEC database and is accurate as of: Wed Jan 12 2022 11:34:21. Please print or save for your records.

Legal Name	Charter Number	Filing Type	Status
DOUGLASS COMMONS, LLC	20217618DC	LIMITED LIABILITY COMPANY (DOMESTIC)	GOOD STANDING

Filing Date	Expiration Date	Jurisdiction
03/03/2021	N/A	MAINE

Other Names (A=Assumed ; F=Former)

NONE

Clerk/Registered Agent

AMY CULLEN
C/O THE SZANTON COMPANY
482 CONGRESS ST STE 203
PORTLAND, ME 04101

[Back to previous screen](#)

[New Search](#)

Click on a link to obtain additional information.

List of Filings

[View list of filings](#)

Obtain additional information:

Certificate of Existence ([more info](#))

Short Form without amendments (\$30.00)	Long Form with amendments (\$30.00)
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You will need Adobe Acrobat version 3.0 or higher in order to view PDF files.
If you encounter problems, visit the [troubleshooting page](#).



If you encounter technical difficulties while using these services, please contact the [Webmaster](#). If you are unable to find the information you need through the resources provided on this web site, please contact the Bureau's Reporting and Information Section at 207-624-7752 or [e-mail](#) or visit

5. Title, Right or Interest

Please see attached for purchase agreements.



PURCHASE AND SALE AGREEMENT

THIS PURCHASE AND SALE AGREEMENT (this “Agreement”) is made this 21st day of May, 2021 (the “Effective Date”) by and between the CITY OF PORTLAND, a body politic and corporate located in Cumberland County, Maine, (hereinafter referred to as “Seller” or “City”), and Douglass Commons, LLC, a Maine limited liability company having a mailing address as provided below (hereinafter referred to as “Buyer”).

RECITALS

WHEREAS, the CITY is the owner of approximately 3.40 acres of land at or near 43 & 91 Douglass Street, Portland, Maine (the “Premises”) and did advertise RFP #20067 dated April 10, 2020, entitled Request for Proposals for Disposition and Development of City-Owned Property Located at 43 and 91 Douglass Street, a copy of which is attached hereto as Exhibit A and incorporated herein (the “Request for Proposals”) (the Premises is identified in the City’s tax records as CBL 078 C002 and a portion of 078 B007 together with the 60 ft. wide proposed street situated between the two parcels, as is generally depicted on the Boundary Survey dated March 1, 2021 prepared by Owen Haskell, Inc. for The Szanton Company, a copy of which is attached as Exhibit B); and

WHEREAS, Buyer submitted a proposal dated June 15, 2020 in response to the Request for Proposals, a copy of which is attached hereto as Exhibit C and incorporated herein (the “Proposal”); and

WHEREAS, Buyer desires to purchase and develop the Premises, and the City desires to convey the Premises to Buyer, subject to the terms and conditions set forth herein.

NOW THEREFORE, in consideration of the foregoing and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties, intending to be legally bound, hereby agree as follows:

1. **SALE.** City agrees to sell the Premises to Buyer, and Buyer agrees to purchase the Premises in accordance with the terms and conditions set forth in this Agreement. This Agreement is for the sale of land only.
2. **CONSIDERATION.** The purchase price for the Premises shall be Four Hundred Seventy-Five Thousand Dollars (\$475,000.00) (the “Purchase Price”), subject to the following cost adjustments and conditions:
 - a. Buyer shall deliver to the City the sum of Ten Thousand Dollars (\$10,000.00) (the “Deposit”) within 3 business days after the full execution of this Agreement, which the City shall hold in a non-interest bearing account. The Deposit shall be governed by the terms and conditions of this Agreement and shall be fully refundable until the end of the Due Diligence Period as that term is defined below.
 - b. The Buyer shall pay the remainder of the Purchase Price to the City by wire transfer (or as otherwise reasonably requested by the City) at closing.

3. TITLE AND DUE DILIGENCE.

- a. Due Diligence Period. Buyer will have from the Effective Date until 4:00 PM Eastern Time on the day that is eighteen (18) months after the Effective Date (the “Due Diligence Period”) to complete any surveys, environmental review, inspections, and title examinations, and to obtain any zone change, site plan approval, and any other permits and regulatory approvals required for the Project. Buyer may, in its sole discretion, notify the City in writing that the Buyer elects to terminate the Due Diligence Period sooner and proceed to closing. Within ten days of the Effective Date, the City shall provide copies of, or reasonable access to, all known, non-confidential City files regarding the Premises, including without limitation title files.
- b. Property Description. The legal description of the Premises contained in the deed will be a survey description based upon a survey plan that will more specifically describe the Premises. The parties acknowledge and agree that the survey attached as Exhibit B is a preliminary draft prepared by Buyer and is subject to change after review, amendment, and approval by both parties. The City will notify Buyer of any objections to the survey within 30 days after the Effective Date. Within 10 days after receipt of any such objection, the Buyer will either provide the City with a revised survey addressing City’s objections to City’s satisfaction, or notify the City that Buyer will not change the survey, in which case the City, will have the right to terminate this Agreement, return the Deposit to Buyer, and neither party shall have any further obligation to the other. Upon City’s acceptance of the survey, Buyer will provide the City with a draft legal description for the Premises, which shall be based on the survey and be subject to the City’s review and approval. The survey and description of the Premises will be prepared by the Buyer at its sole expense. The parties will work together in good faith to complete their review and approval of the survey and legal description on or before the day that is 90 days after the Effective Date.
- c. Rezoning Contingency. Buyer proposes to obtain the Portland City Council’s approval to rezone the Premises (the “Rezoning Approval”) to increase residential density for its development of the Premises as described in the Proposal (the “Project”). The Buyer will be responsible for obtaining, at its sole expense, the Rezoning Approval and any other regulatory approvals required for the Project prior to Closing. Buyer may terminate this Agreement and receive a full refund of the Deposit if the Rezoning Approval is not received.
- d. Financing Contingency. The Buyer’s obligation to close is contingent on obtaining construction and permanent financing for the Project that the Buyer, in its discretion, determines is sufficient to put the Project on a sound financial footing. That financing is anticipated to include, but not be limited to, the following: (i) for the residential rental portion of the project an allocation of Federal low-income housing tax credits (“LIHTCs”), other

financing provided by Maine State Housing Authority (“MaineHousing”) and affordable housing tax increment financing from the City including a Credit Enhancement Agreement and (ii) for the cooperative housing portion of the project permanent financing under the U.S. Department of Housing and Urban Development section 213 program and affordable housing tax increment financing from the City including a Credit Enhancement Agreement. Buyer may terminate this Agreement and receive a full refund of the Deposit if the financing contingency described above is not met during the Due Diligence Period.

- e. Title and Survey Objections. Buyer will have until the end of the Due Diligence Period to deliver to City any written objections to title, environmental, or survey matters (other than the permitted exceptions identified herein) that materially affect insurability or use. Objections not made prior to the end of the Due Diligence Period will be deemed waived; provided, however, that objections pertaining to matters of record environmental, or survey matters first appearing after the end of the Due Diligence Period may be made at any time prior to the closing.
- f. Option to Cure. In the event of a title or survey objection, City will have the option, but not the obligation, to cure the objection and will notify Buyer of its election within ten (10) business days after receipt of the objection. In the event that the City elects to cure the objection, it will have sixty (60) days from the date of the notice of election, or such other reasonable time as the parties may agree, to cure the objection. In the event that the City does not elect to cure the objection, or, having elected to cure the objection fails to timely do so to Buyer’s reasonable satisfaction, Buyer will have the option to (1) terminate this Agreement and obtain a refund of the Deposit (after which neither party will have any further obligation or liability to the other under this Agreement), (2) waive the objection and close, or (3) undertake the cure of such objection at its own expense (in which case it shall have 60 days to do so).
- g. Deed. City shall convey the Premises to Buyer at the closing in fee simple by a municipal quitclaim deed without covenant. Title shall be good and insurable title, free and clear of all encumbrances except (i) easements of record and easements described herein, including, without limitation, an easement to be reserved by, and in form and substance satisfactory to the City and Buyer, the City for access to, and maintenance, repair, and replacement of, the trail located between the Premises and the I-295 corridor; (ii) easements for utilities servicing the property, in form and substance satisfactory to the City and Buyer, including, without limitation, Utility and sewer (iii) zoning ordinances, and (iv) real estate taxes not yet due and payable. Further, Buyer acknowledges that the deed shall contain a restriction stating that in the event that the Premises or any portion thereof shall be exempt from real and personal property taxes, by transfer, conversion, or otherwise, then the then-owner of the exempt portion shall make annual payments to the City in lieu of taxes in the amount equal to

the amount of property taxes that would have been assessed on the exempt portion of the real and personal property situated on the Premises had such property remained taxable. Such restriction shall also confirm that Buyer and its successors and assigns shall possess and be vested with all rights and privileges as to abatement and appeal of valuations, rates, and the like as are accorded owners of real and personal property in Maine. The City shall provide a draft of the deed, and of any declaration of covenants and restrictions pursuant to section 11, to Buyer one month before the end of the Due Diligence Period, and the City and Buyer shall in good faith endeavor to agree on the form of the deed prior to the end of the Due Diligence Period.

- h. Existing Natural Gas Equipment and Easement. The City has informed Buyer that the City believes that all or a portion of the existing natural gas pipe and other equipment depicted on Exhibit B may be actually located outside of the easement provided by the City to Unitil. The City shall use best efforts to work with Unitil to resolve the actual location of the gas pipeline and equipment and amend the easement, if necessary, within three months of the Effective Date. If City is unable to amend the Unitil easement to Buyer's satisfaction, Buyer shall have the right to terminate this Agreement as set forth in subsection (i) below.
- i. Buyer's Right to Terminate. The Buyer may terminate this Agreement at any time during the Due Diligence Period if, in the exercise of its sole discretion, it decides to not proceed with the Project by giving written notice of termination to the City in which case the City shall return the Deposit to Buyer and neither party shall have any further obligations to the other.

4. INSPECTIONS.

- a. During the Due Diligence Period, Buyer and its employees, consultants, contractors and agents shall have the right, at Buyer's expense, to enter on the Premises at reasonable times in order to (i) inspect the same, (ii) conduct engineering studies, percolation tests, geotechnical exams, environmental assessments, and other such studies, tests, exams, and assessments, and (iii) do such other things as Buyer determines, it is sole discretion, to be required to determine the suitability of the Premises for Buyer's intended use (collectively, the "Inspections"). The City acknowledges that such Inspections may include the digging of test pits, which the City hereby approves.
- b. Buyer agrees to defend, indemnify and hold harmless the City against any mechanics liens that may arise from the activities of Buyer and its employees, consultants, contractors and agents on the Premises.
- c. Buyer shall exercise the access and inspection rights granted hereunder at its sole risk and expense, and Buyer hereby releases the City from, and

agrees to indemnify, defend, and hold the City harmless against, any and all losses, costs, claims, expenses and liabilities (including without limitation reasonable attorney fees and costs) (collectively, "Damages") suffered by the City on account of any injury to person or damage to property arising out of the exercise by Buyer of its rights hereunder, except to the extent that such Damages result from the act or omission of the City.

- d. Buyer shall cause any contractors, consultants or any other party conducting the Inspections to procure automobile insurance, if applicable, and commercial general liability insurance coverage in amounts of not less than Four Hundred Thousand Dollars (\$400,000.00) per occurrence for bodily injury, death and property damage, listing the City as an additional insured thereon, and also Workers' Compensation Insurance coverage to the extent required by law; the forms of all such insurance to be subject to City's Corporation Counsel's reasonable satisfaction.
- e. In the event that Buyer does not purchase the Premises, Buyer agrees to either return the Premises as nearly as possible to its original condition after conducting the Inspections; provided, however, the City hereby acknowledges and agrees Buyer shall have no obligation to clean-up, remove or take any other action with respect to any disturbance of any pre-existing environmental contamination on the Premises caused by such inspections, studies, tests, exams, and assessments, and that Buyer shall have no obligation to clean-up, remove or take any other action with respect to any pre-existing environmental contamination disturbed thereby.
- f. The parties hereto acknowledge and agree that it is a condition to Buyer's obligations under this Agreement that the results of the Inspections be acceptable to Buyer in its sole discretion. If the results of such due diligence are not acceptable to Buyer in its sole discretion, and if Buyer exercises its right to terminate this Agreement, and neither party shall have any further obligations or liabilities under this Agreement except as expressly set forth in this Agreement.

- 5. **REAL ESTATE TAXES, PRORATIONS AND TRANSFER TAX.** Buyer shall be liable for all real estate taxes beginning as of the start of fiscal year following the closing and continuing thereafter. Because the Property is currently owned by the City of Portland, which is exempt from real estate taxes, no taxes were assessed or will be due for any portion of the tax year during which the closing occurs, and no taxes will be prorated at the closing. Any utilities for the Property shall be prorated as of the closing. The Maine real estate transfer tax shall be paid for by Buyer in accordance with 36 M.R.S.A. § 4641-A. City is exempt from paying the transfer tax pursuant to 36 M.R.S.A. § 4641-C. The recording fee for the deed of conveyance and any expenses relating to Buyer's financing or closing shall be paid for by Buyer.
- 6. **DEFAULT AND REMEDIES.** Prior to Closing, in the event that Buyer defaults hereunder for a reason other than the default of the City, the City may terminate this Agreement and retain the Deposit, and neither party shall have any further obligation

- to the other. In the event that Buyer defaults on any matters addressed in this Agreement that survive Closing, Seller may pursue all available legal and equitable remedies. In the event City defaults under this Agreement, and if Buyer is not then in default hereunder, Buyer shall have the right to pursue specific performance or terminate this Agreement and elect in substitution therefor, as its sole remedy, the right to a return of the Deposit.
7. **RISK OF LOSS.** The risk of loss or damage to the Premises by fire, eminent domain, condemnation, or otherwise, until transfer of title hereunder, is assumed by the City. The Premises is to be delivered in substantially the same condition as of the Effective Date unless otherwise stated. In the event City is not able to deliver the Premises as stated, Buyer may terminate this Agreement, obtain a return of the Deposit, and neither party shall have any further obligations or liabilities under this Agreement except as expressly set forth in this Agreement.
8. **PROPERTY SOLD “AS IS, WHERE IS.”** Buyer acknowledges that Buyer has had an opportunity to inspect the Premises, and to hire professionals to do so, and that Premises will be sold “as is, where is” and “with all faults.” City, and its agents, make no representations or warranties with respect to the accuracy of any statement as to boundaries or acreage, or as to any other matters contained in any description of the Premises, or as to the fitness of the Premises for a particular purpose, or as to development rights, merchantability, habitability, or as to any other matter, including without limitation, land use, zoning and subdivision issues or the environmental, mechanical, or structural condition of the Premises. Acceptance by Buyer of the Deed at closing and payment of the purchase price shall be deemed to be full performance and discharge by the City of every agreement and obligation contained herein.
9. **ENVIRONMENTAL INDEMNIFICATION.** Buyer covenants and agrees to indemnify, defend, and hold the City harmless from and against any and all claims, damages, losses, liabilities, obligations, settlement payments, penalties, assessments, citations, directives, claims, litigation, demands, defenses, judgments, costs, or expenses of any kind, including, without limitation, reasonable attorneys’, consultants’, and experts’ fees incurred in investigating, defending, settling, or prosecuting any claim, litigation or proceeding, that may at any time be imposed upon, incurred by or asserted or awarded against Buyer or the City and relating directly or indirectly to the violation of or compliance with any federal, state, or local environmental laws, rules, or regulations governing the release, handling or storage of hazardous wastes or hazardous materials and affecting all or any portion of the Premises, except to the extent that such a claim results directly from the City’s release, handling or storage of hazardous wastes or hazardous materials on the Premises. This duty to indemnify, defend, and hold harmless shall be included in a covenant in the deed and shall run with the land conveyed and be binding upon Buyer’s successors, assigns, and transferees.
10. **CLOSING.** Time is of the essence in the performance of this agreement. The closing shall be held at the offices of Buyer’s counsel at a date and time specified by

two weeks' written notice from Buyer to the City on or before the day that is twenty (20) months after the Effective Date (the "Closing Date"). At the Closing:

- a. The City shall execute, acknowledge and deliver to Buyer a municipal quitclaim deed conveying to Buyer good and insurable title to the Premises, free and clear of all encumbrances except as otherwise set forth herein.
- b. Buyer shall deliver the Purchase Price to the City.
- c. Each party shall deliver to the other such other documents, certificates and the like as may be required herein or as may be necessary to carry out the obligations under this Agreement.
- d. Buyer shall deliver evidence, reasonably satisfactory to City's Corporation Counsel, that the entity receiving title to the Premises is in good standing under Maine law, and that the individuals acting at Closing and executing documents on behalf of Buyer are authorized to do so.

11. BUYER'S POST CLOSING OBLIGATIONS; RIGHTS OF CITY TO REPURCHASE PROPERTY.

As set forth in the Proposal, the Project includes a rental housing project and a limited equity cooperative housing project (hereinafter referred to as the "Rental Housing Project" and the "Cooperative Housing Project," respectively). Within thirty-two (32) months of the Effective Date, Buyer shall commence construction of both the Rental Housing Project and the Cooperative Housing Project.

a. Rental Housing Project.

- i. The Rental Housing Project will consist of an apartment building including no less than 56 units, with a mixture of one-, two- and three-bedroom units. In no event shall the Rental Housing Project include fewer than 17 two-bedroom units and 10 three-bedroom units.
- ii. For a period of 99 years after the Rental Housing Project has been completed, at least 40 units in the Rental Housing Project shall be affordable to households earning less than or equal to 60% of the area median income (AMI), adjusted for family size, based on figures published annually by HUD for the Portland Metropolitan Statistical Area. If at a time in the future, HUD no longer provides these annual figures, the City will identify another similar method of determining income guidelines for affordability. For purposes of this Agreement, "affordable" means that the percentage of income a household is charged in rent and other housing expenses including utilities, shall not exceed 30% of the household's gross monthly income, except as provided below if the Project is financed with the LIHTC program. Minimum household size allowed per unit and the formula for calculating maximum allowable monthly rent is detailed on Exhibit D, which is attached hereto and made a part hereof. However, if the Rental Housing Project is financed under the Federal Low Income Housing Tax Credit (LIHTC) Program, maximum allowable rent shall

be the maximum allowable rent under the Federal LIHTC Program during the applicable time period for that Program. Upon expiration of any affordability restrictions recorded in the Cumberland County Registry of Deeds under the Federal LIHTC Program, the provisions of Exhibit D shall apply to the Rental Housing Project for the remainder of the 99-year period.

b. Cooperative Housing Project.

- i. The Cooperative Housing Project will include at least 52 units, with a mixture of one-, two-, and three-bedroom units owned by a Limited Equity Cooperative Corporation (the “Co-op”) and leased individually to the resident shareholders of the Co-op (the holding of a Co-op share and lease agreement together constituting a resident’s “cooperative interest”). In no event shall the Cooperative Housing Project include fewer than 12 two-bedroom units and 22 three-bedroom units.
- ii. Upon the issuance of a certificate of occupancy for all or a portion of the Cooperative Housing Project, or at such earlier or later time as the Buyer, in its discretion, may determine, the Buyer shall convey the Cooperative Housing Project to the Co-op organized in accordance with the Maine Cooperative Affordable Housing Ownership Act, 13 M.R.S.A. §1741-1762, as may be amended or any successor provisions thereto (the “Act”). References below to particular provisions of the Act include any successor provisions to the provisions referenced.
- iii. Rent Restrictions. For a period of 99 years after the Cooperative Housing Project has been completed, all residential units in the Cooperative Housing Project shall be affordable to households earning less than or equal to 100% of the area median income (AMI), adjusted for family size, based on figures published annually by HUD for the Portland Metropolitan Statistical Area. If, at a time in the future, HUD no longer provides these annual figures, the City will identify another similar method of determining income guidelines for affordability. For purposes of this Agreement, “affordable” means that the percentage of income a household is charged in connection with (i) its cooperative interest and other housing expenses, including utilities, shall not exceed 30% of the household’s gross monthly income or (ii) its rent and other housing expenses, including utilities, shall not exceed 30% of the household’s gross income. Minimum household size allowed per unit and the formula for calculating maximum allowable purchase price and monthly rent is detailed on Exhibit D, which is attached hereto and made a part hereof.
- iv. Income Restrictions. Except as provided below regarding the initial sale of cooperative interests, a household may only purchase a cooperative interest in a unit or if its income is not more than 100% of the AMI, adjusted for family size, as published by the U.S. Department of Housing and Urban Development (“HUD”) at the time of purchase. This income test will be used only at the time of the household’s purchase. No income test shall apply for subsequent

transfers to family members (as reasonably defined by the Co-Op Entity) or to a cooperative membership interest which is inherited or transferred upon death to a beneficiary. At the time of the initial sale of cooperative membership interests in the Co-op, up to 20% of the cooperative membership interest may be sold to households earning up to 120% AMI. All subsequent sales must be to households earning no more than 100% of AMI.

- v. The articles of organization for the Co-op shall provide that in the event the Co-op shall be dissolved, its assets will be distributed in accordance with §1754 (6) of the Act. In such dissolution, the Co-Op's assets will be used first to pay all debts and other obligations of the Co-op, then to make any distributions to members required under the Co-Op's limited equity organizational documents, then any remaining balance shall be paid to the City or, at the Buyer's option with the consent of the City not to be unreasonably withheld, to another organization permitted under §1754 (6) of the Act.

c. **Option to Repurchase All or a Portion of the Premises.**

(i) If Buyer, its successors, assigns, or transferees commences no construction of any portion of the Project to be located on the Premises within 32 months of the Effective Date, the City shall have the right, but not the obligation, to repurchase the Premises and all improvements thereon (collectively, the "Property") at the Purchase Price (the "Property Repurchase Price") plus all commercially reasonable and documented, design, development, construction, and regulatory approval expenses ("Approved Expenses") incurred by Buyer, or successors, to the date on which the City notifies Buyer, its successors or assigns, of its intent to exercise its option to repurchase the Property. The parties acknowledge and agree that the Approved Expenses are intended to include only costs incurred directly in connection with the development of the Property for documents, agreements, designs, plats, plans, approvals, and construction, the rights to which may be assigned or transferred to the City. In no event shall the **Approved** Expenses include salaries, developer fees, or the like paid by Buyer, its successors or assigns to their members, shareholders, partners, employees, or agents.

(ii) If Buyer conveys a portion of the Property (the "Co-Op Site"), which conveyance may be by creating and conveying a land condominium unit, to a separate entity (the "Co-Op Entity") for purposes of that entity developing the Cooperative Housing Project, and the Co-Op Entity fails to commence construction of the Cooperative Housing Project within 32 months of the date of this agreement or fails to complete construction of the Cooperative Housing Project within fifty (50) months of the date of this agreement, the City shall have the right, but not the obligation, to purchase the Co-Op Site and all improvements thereon for a price equal to One Hundred Thousand Dollars (\$100,000) ("Co-Op Repurchase Price") plus Approved Expenses incurred by Buyer, or successors, for purposes of developing the Co-Op Site to the date on which the City notifies Buyer, its

successors or assigns, of its intent to exercise its option to repurchase. Any conveyance of the Co-Op Site to the City will (i) be subject to any and all rights of the Rental Housing Entity (defined below) or pursuant to any condominium documents that affect or burden the Co-Op Site and (ii) include any and all rights of the Co-Op Entity over the Rental Housing Site (as defined below) or pursuant to any condominium documents.

(iii) If Buyer conveys a portion of the Property (the “Rental Housing Site”), which conveyance may be by creating and conveying a land condominium unit, to a separate entity (the “the Rental Housing Entity”) for purposes of that entity developing the Rental Housing Project, and the Rental Housing Entity fails to commence construction of the Rental Housing Project within 32 months of the date of this agreement or fails to complete construction of the Rental Housing Project within fifty (50) months of the date of this agreement, the City shall have the right, but not the obligation, to purchase the Rental Housing Site and all improvements thereon for a price equal to \$375,000 (the “Rental Housing Repurchase Price”) plus Approved Expenses incurred by Buyer, or successors, for purposes of developing the Rental Housing Site to that the date on which the Property is conveyed to the City. Any conveyance of the Rental Housing Site to the City will (i) be subject to any and all rights of the Co-Op Housing Entity (defined below) or pursuant to any condominium documents that affect or burden the Rental Housing Site and (ii) include any and all rights of the Rental Housing Entity over the Co-Op Site (as defined below) or pursuant to any condominium documents.

(iv) Any conveyance to the City pursuant to the City’s option to purchase shall be subject to all mortgages of record placed by Buyer, its successors and assigns, but only if such mortgages secure financing of the development of the Premises (the “Permitted Mortgages”). In the event that there are any Permitted Mortgages on the Property, or portion thereof, at the time City exercises its right to repurchase, the parties agree that the City shall have the option to pay the applicable Repurchase Price and Approved Expenses to the first priority mortgagee. City and its successors and assigns agrees to enter into such agreements on reasonable commercial terms as may be requested by the lenders and/or investors of Buyer, its successors and assigns, to provide such lenders or investors notice and cure rights. In furtherance, but not in limitation of the foregoing, as long as MaineHousing holds a Permitted Mortgage on the Premises, no notice given by the City to the Buyer, its successors and assigns under the City’s deed shall be valid unless and until a copy of the notice is given to MaineHousing at Maine Housing at Maine State Housing Authority, 26 Edison Drive, Augusta, Maine 04330, Attn: Legal Department. MaineHousing shall have the right, but not the obligation, to cure any default or perform any obligation under the City’s deed for thirty (30) days beyond any period during which Buyer, its successors and assigns may cure any default or perform any obligation under the City’s deed. If the City exercises any of the above right to purchase, Buyer or its successor

shall convey the Property to the City, free and clear of all encumbrances other than the Permitted Mortgages and any utility easements granted by Buyers its successors and assigns, and assign to the City all contracts, plans, and other documents related to the design, construction, and regulatory approvals for the Project. The City agrees to make reasonable modifications to the provisions regarding the City's repurchase rights to facilitate mortgage and development financing for the Project. The rights to purchase shall be assignable by the City.

(v) Buyer anticipates that the Co-Op entity will grant a mortgage on the Co-Op Site to a lender or investor to finance the purchase of the Co-Op Site and preconstruction development costs including the Co-Op's \$100,000 portion of the acquisition price, Approved Expenses and related customary and commercially reasonable financing costs (such financing is referred to as the "Pre-Development Mortgage Loan"). Buyer, for itself, its successors, and assigns, including the Co-Op Entity, agrees that it will not encumber the Co-Op Site with mortgages other than the mortgage securing Pre-Development Mortgage Loan and that such mortgage shall not exceed in the aggregate the Co-Op Pre-Development Appraised Value (as defined below) at any time prior to the closing of the full construction financing for the Cooperative Housing Project (the "Co-Op Construction Loan Closing"). Prior to the Co-Op Construction Loan Closing, notwithstanding any other provision of this Agreement, the total amount that the City is required to pay to repurchase the Co-Op Site upon exercise of its option as provided above, including Approved Expenses, shall be limited to the then-outstanding balance of the mortgage securing the Pre-Development Mortgage Loan.

The term "Co-Op Pre-Development Appraised Value" means the appraised value of the Co-Op Site as determined by an appraisal, made in accordance with all applicable professional standards, obtained by the lender making the pre-development mortgage loan to the Co-Op entity. The Co-Op entity agrees to provide a copy of that appraisal to the City prior to entering into such mortgage loan.

The provisions of this Section 11(c)(v) shall cease to apply as of the Co-Op Construction Loan Closing.

- d. For all purposes of this Section 11, construction will be deemed completed for a portion of the Project upon the issuance of a Certificate of Occupancy by the City for that portion. Upon termination of the City's option with respect to a portion of the Project, the City will, at the request of the Buyer, its successors and assigns execute and record an affidavit indicating that the City's option has terminated with respect to all or a portion of the Project. Notwithstanding anything else to the contrary in this Section 11, in the event that the City fails to give the notice exercising the City's option on or before the date that is 31 months after the Closing Date, then the City's

option shall terminate automatically without the need for further writing or recording.

- e. Notwithstanding the above provisions, if after closing, Buyer, or its successors, assigns, or transferees determines that it is not feasible to develop the Property as a rental housing project using Maine State Housing Authority financing or as a cooperative leasing/ownership structure, Buyer may develop the Property using a different financing or leasing/ownership structure so long as the unit mix and affordability criteria provided in this Agreement are satisfied. If the Buyer or its successors does so within the time periods specified, the City shall not have the right to repurchase the Property.
- f. The provisions of this Section 11 will survive closing and will be included in greater detail in the City's deed to Buyer or in a declaration of covenants, conditions and restrictions executed before or at the time of Closing, which shall be recorded in the Cumberland County Registry of Deeds.

- 12. **ENTIRE AGREEMENT.** This Agreement represents the entire and complete Agreement and understanding between the parties and supersedes any prior agreement or understanding, written or oral, between the parties with respect to the acquisition or exchange of the Property hereunder. This Agreement cannot be amended except by written instrument executed by City and Buyer.
- 13. **NON-WAIVER.** No waiver of any breach of any one or more of the conditions of this Agreement by either party shall be deemed to imply or constitute a waiver of any succeeding or other breach hereunder.
- 14. **HEADINGS AND CAPTIONS.** The headings and captions appearing herein are for the convenience of reference only and shall not in any way affect the substantive provisions hereof.
- 15. **BINDING EFFECT.** This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective heirs, administrators, successors and assigns.
- 16. **TIME.** The City and Buyer each confirm and agree that each of the time periods set forth herein are essential provisions of the terms of this Agreement.
- 17. **GOVERNING LAW.** This Agreement shall be construed in all respects in accordance with, and governed by, the laws of the State of Maine. All parties hereto hereby consent to the exclusive jurisdiction of the Superior Court for the County of Cumberland in the State of Maine, for all actions, proceedings and litigation arising from or relating directly or indirectly to this Agreement or any of the obligations hereunder, and any dispute not otherwise resolved as provided herein shall be litigated solely in said Court. If any provision of this Agreement is determined to be invalid or unenforceable, it shall not affect the validity or enforcement of the remaining provisions hereof.

18. NOTICE. All notices, demands and other communications hereunder shall be in writing and shall be deemed to have been duly given on the date of service if served personally on the party to whom notice is to be given, or on the first business day after the notice is delivered to an overnight delivery service with delivery confirmation, addressed to the recipients at the addresses set forth below. Either party may change addresses for purposes of this paragraph by giving the other party notice of the new address in the manner described herein.

FOR THE CITY: City of Portland
ATTN: City Manager
389 Congress Street
Portland, ME 04101

With a copy to: The Office of the Corporation Counsel at the same address.

FOR BUYER: Douglass Commons LLC
c/o The Szanton Company
482 Congress, Suite 203
Portland, ME 04101

And to:

Maine Cooperative Development Partners, LLC
c/o Brian Eng
6 City Center, Fl. 3
Portland, ME 04101

With a copy to: John S. Kaminski
Drummond Woodsum
84 Marginal Way, Suite 600
Portland, ME 04101

19. SIGNATURES; MULTIPLE COUNTERPARTS. This Agreement may be executed in any number of counterparts and by different parties in separate counterparts. Each counterpart when so executed shall be deemed to be an original and all of which together shall constitute one and the same agreement.

20. BROKERS. The City and Buyer each represent and warrant that they have not dealt with a real estate broker in connection with this transaction. Buyer agrees to indemnify and hold harmless City from any claims made by any broker should Buyer's representation in this paragraph be false. Subject to the limitations of liability set forth in the Maine Tort Claims Act, City agrees to indemnify and hold harmless Buyer from any claims made by any broker should City's representation in this paragraph be false. The foregoing indemnities shall include all legal fees and costs incurred in defense against any such claim, and shall survive closing.

21. RECITALS INCORPORATED BY REFERENCE. The recitals set forth above are incorporated herein by reference and made a part of this Agreement.

IN WITNESS WHEREOF, the parties have caused this instrument to be executed on their behalf by their duly authorized offices or representatives, on the day and year first written above.


WITNESS

CITY OF PORTLAND


Jon P. Jennings
Its City Manager


WITNESS

DOUGLASS COMMONS, LLC

By: 
Printed Name: Nathan S. Szanton
Its Manager

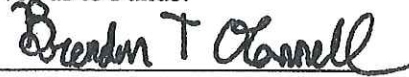
Approved as to Form:


City Corporation Counsel's Office

and

By: 
Printed Name: Brian Eng
Its Manager

Approved as to Funds:


City Finance Department

6. Photos of the Existing Site





Figure 1. Facing approx. north from access driveway.



Figure 2. Facing approx. northeast on site.





Figure 3. Facing approx. southeast on the site.



Figure 4. Facing south on the site.





Figure 5. *Until equipment at access driveway entrance, looking east.*



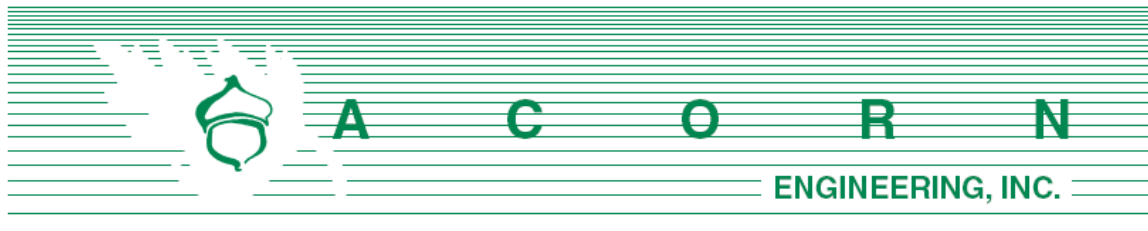
Figure 6. *Facing west towards access driveway in existing parking lot.*



7. Basic Standards Submissions

Please see the attached document, Erosion and Sedimentation Control Plan, developed in accordance with the Basic Standards submission requirements.





K. EROSION & SEDIMENTATION **CONTROL REPORT**

Prepared For:

**Douglass Commons, LLC.
43 & 91 Douglass Street
Portland, Maine 04101**

Prepared By:

**Acorn Engineering, Inc.
65 Hanover Street
Portland, Maine 04101**



January 2022

INTRODUCTION

Acorn Engineering, Inc. has been retained by Douglass Commons, LLC. to provide civil engineering services for the proposed redevelopment of 57 Douglass Street located within the R-5a Zoning District in Portland, Maine. The 3.34-acre parcel was previously the site of a school building and is now vacant. The built-out site will consist of eight stand-alone buildings of 120 residential dwelling 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 off an access road from Douglass Street adjacent to Douglass Park and Interstate 295. A Boundary & Topographic Survey has been prepared by Owen Haskell, Inc., dated March 1, 2021.

The property is in the R-5A Residential Zone. Abutting Uses include:

- North Douglass Park
- West Residential
- South/East Route 295

The site is currently vacant and was once occupied by the West School. The site in its existing condition is split a ridge middle of the property that drains water in roughly two directions, to the north and south. A small portion of the site drains to the playing fields to the east. The adjacent I-295 corridor basin contributes run-off to the site through an existing culvert. The grades on-site are mostly gentle in the 1 to 5% range with some steeper slopes of 10-15% on the edges of the property in the east and south .

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
Au Gres Loamy Sand	.15	.15
Deerfield Loamy Fine Sand	.20	.20

The soil “K” value for the soil, listed above, shows a low susceptibility to erosion, as derived from the Soil Conservation Service Medium Intensity Soil Survey for Cumberland County. Although the soil “K” value shows a low susceptibility to erosion, implementation of the proposed Erosion & Sedimentation Measures by the contractor will be important to limit erosion during large storm events.

1.2 Existing Erosion Problems

There are no signs of erosion.

1.3 Critical Areas

There are no critical areas that require special attention during construction.

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. The West School was demolished on-site within the last few 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, 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 road ways.

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 Douglass 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 Construction Management & Erosion Control Plan is included within the plan set.

4.0 DETAILS AND SPECIFICATIONS

4.1 Erosion & Sedimentation 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 silt fence or erosion control berm.
3. Install all other erosion control devices as necessary throughout the remainder of this schedule.
4. Commence installation of drainage infrastructure.
5. Prioritize the downhill side to contain runoff within the site while providing an engineered outlet to the municipal storm drain system within Douglass Street.
6. Commence earthwork operations, associated with the parking lot construction.
7. Commence installation of utilities.
8. Continue earthwork and grading to subgrade as necessary for construction.
9. Complete installation of drainage infrastructure, as well as other utility work.
10. Complete remaining earthwork operations.
11. Install sub-base and base gravels in paved areas.
12. Install paving, curbing and brickwork.
13. Loam, lime, fertilize, seed and mulch disturbed areas and complete all landscaping.
14. Once the site is stabilized and mulching of landscape areas is complete, remove all temporary erosion control measures.
15. Touch up areas without a vigorous catch of grass with loam and seed.
16. Complete site signage and striping.
17. 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



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.



8. General Standards Submissions

The following Stormwater Management Report and corresponding attachments have been developed in accordance with the General Standards submission requirements.



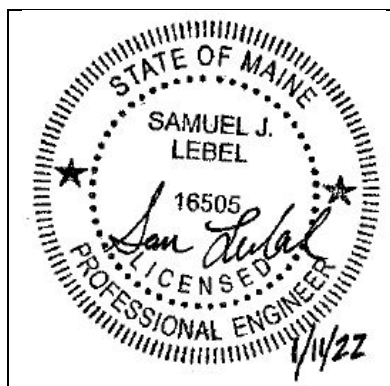
STORMWATER MANAGEMENT **REPORT**

Prepared For:

**Douglass Commons, LLC.
57 Douglass Street
Portland, Maine 04101**

Prepared By:

**Acorn Engineering, Inc.
PO Box 3372
Portland, Maine 04104**



January 2022



INTRODUCTION

Acorn Engineering, Inc. has been retained by Douglass Commons, LLC. to provide civil engineering services for the proposed redevelopment of 57 Douglass Street located within the R-5A Zoning District in Portland, Maine. The 3.34-acre parcel was previously the site of a school building and is now vacant. The built-out site will consist of eight stand-alone buildings comprising 120 residential units, the majority of which will be deed-restricted for affordability.

A stormwater analysis was 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 General (Redevelopment) Standards.

The property consists of approximately 3.34 acres of land in Portland's Libbytown neighborhood. The site is currently composed of approximately 2.16 acres impervious area. The proposed project will decrease the impervious area by approximately 0.36 acres to 1.90 acres. The project will result in redevelopment of non-roof impervious area greater than 5,000 SF and therefore will be required to provide treatment for a portion of the site.

EXISTING CONDITIONS

The proposed project site is located at 57 Douglass Street. A Boundary & Topographic Survey has been prepared by Owen Haskell, Inc., dated March 1, 2021.

The existing property is covered by approximately 65% impervious surfaces, whereupon a school and its associated infrastructure was formerly located. The existing site is vacant and has moderate slopes within the center of the site that form a plateau, grading down to perimeter. The site is split into three subcatchments, two larger and one smaller. Subcatchment 1 drains the gently sloping northerly portion of the site and a small section of the existing access driveway to the MS4 within Douglass Street. Subcatchment 2 drains the southerly portion of the site to a basin shared with the off-site drainage of residences and the western flanks of I-295, which were also modeled. Subcatchment 3 is a small section of the eastern part of the site that drains to the playing fields east and north of the site.

The project team is not aware of the presence of any existing significant natural features located on the site. Given the urban setting and existing impervious surfaces, a field inventory of significant natural features was not undertaken. The project is not located within a watershed classified as an Urban Impaired Stream.



PROPOSED DEVELOPMENT

The project features the development of a planned residential unit development (PRUD) and generally follows the principles of cluster subdivision planning where infrastructure is denser and more efficient and as a result, greater uninterrupted open space opportunities are available. The site will consist of eight separate residential buildings with a total of 120 dwelling units. Each building will be served with associated parking and utilities. Pedestrian access to the site will be provided along the access drive from Douglass Street and through paved foot paths from Dougherty Park. The development will be served by Portland Water District, Department of Public Works (sewer/storm), Unitil (natural gas), CMP (electric), Charter (cable), and Fairpoint (telephone).

The site has been graded to slope with the existing topography while providing for appropriate slopes in the parking lot. The slopes on the outside of the parking areas that are not part of a stormwater system will be appropriately stabilized per the specifications in the plans and are anticipated to be heavily landscaped for further slope protection and buffering. The majority of the site's runoff, including 100% of the new impervious area, will be collected via a storm drain system and directed to the Douglass Street Municipal Separated Storm Sewer System (MS4).

The proposed project will decrease the site's impervious area by approximately 0.36 acres, but will include redevelopment of non-roof impervious area greater than 5,000 square feet, triggering the City's water quality treatment requirement. Water quality treatment will be provided by collecting the runoff on over 75% of the parking lot area and allowing it to flow to a vegetated underdrained soil filter (VUSF) system and proprietary high-flow rain gardens for treatment prior to discharging into the MS4 within Douglass Street. The project has been designed to meet and exceed the Chapter 500 General Standards.

BASIC STANDARDS – EROSION & SEDIMENTATION CONTROL

The development shall provide erosion and sedimentation control, inspection and maintenance, and housekeeping standards as specified in the attached Exhibit K: Erosion and Sedimentation Control Report. Grading and construction activity will not impede or otherwise alter drainageways to have an unreasonable adverse impact on an adjacent downgradient parcels.

GENERAL STANDARDS - WATER QUALITY

When analyzing the Maine DEP Redevelopment Standards and the associated ranked impacts, the project results in a negative number and therefore treatment is not required per State law. However, the development will provide water quality treatment for no less than 50% of the non-roof redeveloped impervious area, consistent with the City of Portland's technical manual. Water quality treatment will be provided using an under-drained soil filter system and proprietary high-flow media rain gardens, which are approved systems per Appendix B of the Maine Stormwater BMP Manual. Filtration BMPs have been shown to be very effective at removing a wide range of pollutants from stormwater runoff. The rain gardens are based off a Focal Point system manufactured by ACF Environmental, but may be substituted at the time of construction for an approved



equal such as a Filterra manufactured by Contech. The footprint of the filter media is 20 square feet and has an infiltration rate of 100 inches per hour. Above the media, the garden will allow for 6 inches of ponding before overflowing into an overflow beehive grate which bypasses the filter media. Given the site is reducing the net peak flow leaving the site and is discharging to a 60" MS4 that freely flows to a major river segment, storage tanks are not being proposed below the rain gardens. From a stormwater perspective, the focus is on providing water quality treatment given the watershed's discharge and conveyance system are not overburdened.

The treatment of the impervious areas are as follows:

Table 1 – Impervious Area Treatment Table				
Existing Impervious Area (SF)	Total Proposed Impervious Area (SF)	Non-Roof Redeveloped Impervious Area (SF)	Proposed Non-Roof Impervious Area with Treatment (SF)	Treated Non-Roof Redeveloped Area
94,185	78,656	43,757	23,370	53%

As shown above, the project anticipates meeting the required treatment for new impervious and developed surfaces with the soil filter BMPs.

Filter Area Sizing

A calculation for filter area is necessary to meet the requirements below the surface of the VUSF. As defined in the Volume III: BMPs Technical Design Manual, Chapter 7, the surface area of the filter shall be no less than the sum of 5% of the tributary impervious area and 2% of the tributary vegetated area. The filter area is calculated by the following formula:

$$[(\text{Imp. SF} \times 0.05) + (\text{Veg. SF} \times 0.02)] = \text{Filter Area (SF)}$$

Table 2 – Total Filter Surface Area, displays the proposed USSF sizing requirements, actual size and the percentage of required area.

Table 2 – Total Filter Surface Area		
	Required Filter Area (SF)	Actual Filter Area (SF)
VUSF 1	465	465

As shown above, the project anticipates meeting and exceeding the required treatment for 50% of the redeveloped impervious surfaces.

Water Quality Volume

In accordance with the Volume III: BMPs Technical Design Manual, a water quality volume of 1.0 inches times the tributary impervious area plus 0.4 inches times the tributary vegetated area is required to be treated by the VUSF. The required water quality volume is calculated by the following formula:

$$\left(\frac{\text{Imp. SF} \times 1.0''}{12''/1'} \right) + \left(\frac{\text{Veg. SF} \times 0.4''}{12''/1'} \right) = \text{Treatment Volume (CF)}$$

Table 3 – Water Quality Volume				
	Tributary Impervious Area (SF)	Tributary Pervious Area (SF)	Water Quality Volume Required (CF)	System Storage Volume Provided (CF)
VUSF 1	8,274	2,578	775	1,052

As seen above, the provide water quality volume above the soil filter and below the overflow grate exceeds the requirement. Values from the HydroCAD calculations are attached to this report to demonstrate compliance with this standard.

As shown above, the project anticipates meeting and exceeding the required treatment for new impervious surfaces using the VUSF and proprietary high-flow media rain gardens.

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.

Time of Concentration (Tc)

The times of concentration for subcatchments in both the pre and post conditions were calculated by entering the flow path with the associated ground cover and slopes. HydroCAD then calculated the Tc's and incorporated the total Tc for each subcatchment into the model. When the calculated Tc was less than six minutes (0.1 hours), a direct entry of six minutes was used as advised by the TR-55 model. Consistent with previous submissions and best practices, the sheet flow length for any Tc path was capped at 100 feet.

Curve Number (CN)

Within the pre-development model, the vegetated areas were considered grass cover in fair or good condition, depending on the area. as demonstrated by aerial images and site visits. The post development landscaped areas were given a good rating all within the A hydrologic soil group. This is assumption is reinforced given the aggressive landscape plan which will feature more porous conditions that are appropriately mulched along with future extensive root systems and canopy cover that will exist once the landscaping has matured.



HydroCAD Adjustments

A simulation water quality outlet (vertical orifice) is modeled to mimic the minimum 24-hour release time through the soil filter media. This is completed by adjusting the rainfall amount in HydroCAD until the inflow volume is equal to or greater than the calculated water quality volume. The storm events are modeled as type III, 24-hour storm events in HydroCAD.

Pre-development Calculations

The site consists of gravel and grassed areas in the predevelopment condition. For the purposes of this analysis, the land has been divided into three sub-catchments. Subcatchment 1 drains the gently sloping northerly portion of the site and a small section of the existing access driveway, terminating in the storm drains and MS4 within Douglass Street (POI #1). Subcatchment 2 drains the southerly portion of the site to a basin shared with the off-site drainage of residences and the western flanks of I-295, which were also modeled. The slopes are in the 5-10% range. There is an existing culvert under the State's paved pathway that divides I-295 land with the proposed site, that facilitates flow from the grassed basin to the Site under the pathway. This low point was modeled as POI #2. Subcatchment 3 is a small section of the eastern part of the site with 2-5% slopes that drains to the playing fields east and north of the site which was modeled as POI #3.

Peak flow rates for the pre-development storm events are as follows:

Table 5 – Pre-Development Peak Stormwater Flows			
Drainage Area	2-Year Storm Event (cfs)	10-Year Storm Event (cfs)	25-Year Storm Event (cfs)
POI #1	3.2	5.4	7.3
POI #2	0.4	1.8	3.5
POI #3	0.7	1.5	2.1

Post-development Calculations

In the post development condition, over 95% of runoff from the site will be collected in stormwater infrastructure and piped to the MS4 within Douglass Street. The proposed project will decrease the site's impervious area by approximately 0.36 acres. Water quality treatment will be provided by collecting the runoff on over 75% of the parking lot area and allowing it to flow to an under-drained soil filter system and proprietary high-flow media rain gardens for treatment prior to discharging into the combined sewer within Douglass Street.

The post-development calculations include changes to the land use, and the compensation provided by the VUSF, rain gardens, and associated engineered orifices. The following table represents comparison of pre- development and post-development condition peak runoff rates for the proposed development and tributary areas.



Table 6 – Post-Development Peak Stormwater Flows			
Drainage Area	2-Year Storm Event (cfs)	10-Year Storm Event (cfs)	25-Year Storm Event (cfs)
POI #1	3.8	7.7	11.0
POI #2	0	0.1	0.3
POI #3	0	0	0

Table 7 – Comparison of Peak Flows						
Drainage Area	2-Year Storm Event (cfs)		10-Year Storm Event (cfs)		25-Year Storm Event (cfs)	
	<i>Pre</i>	<i>Post</i>	<i>Pre</i>	<i>Post</i>	<i>Pre</i>	<i>Post</i>
POI #1	3.2	3.8	5.4	7.7	7.3	11.0
POI #2	0.4	0	1.8	0.1	3.5	0.3
POI #3	0.7	0	1.5	0	2.1	0
POI #4 (Total Peak Discharge)	4.3	3.8	8.7	7.8	12.9	11.3

As shown in Tables 6 and 7, the net impact of the post development peak flows will remain 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 is sourced from the *Soil Conservation Service Medium Intensity Soil Survey for Cumberland County consistent with the USDA Soil Survey*.

The area within and surrounding the project includes soils types listed in the table below.

Table 8 – Hydrologic Soil Group	
Soils Type	HSG
Deerfield Loamy Fine Sand, 3-8% slopes	A

The HSG for the soils, listed above, show soils having a high infiltration rate (low runoff potential). These consist mainly of deep, well drained sands, with a high rate of water transmission.

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. The proposed project as designed is not anticipated to cause flooding or erosion problems within the subject site, abutters' sites, nor within the right-of-way.



Attachments

Attachment A: Pre-Development Watershed Map

Attachment B: Post-Development Watershed Map

Attachment C: Redevelopment Pollutant Ranking Exhibit

Attachment D: HydroCAD Calculations

Attachment E: Soil Survey



Attachment A

Pre-Development Watershed Map



Attachment B

Post-Development Watershed Map



Attachment C

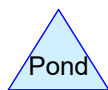
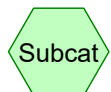
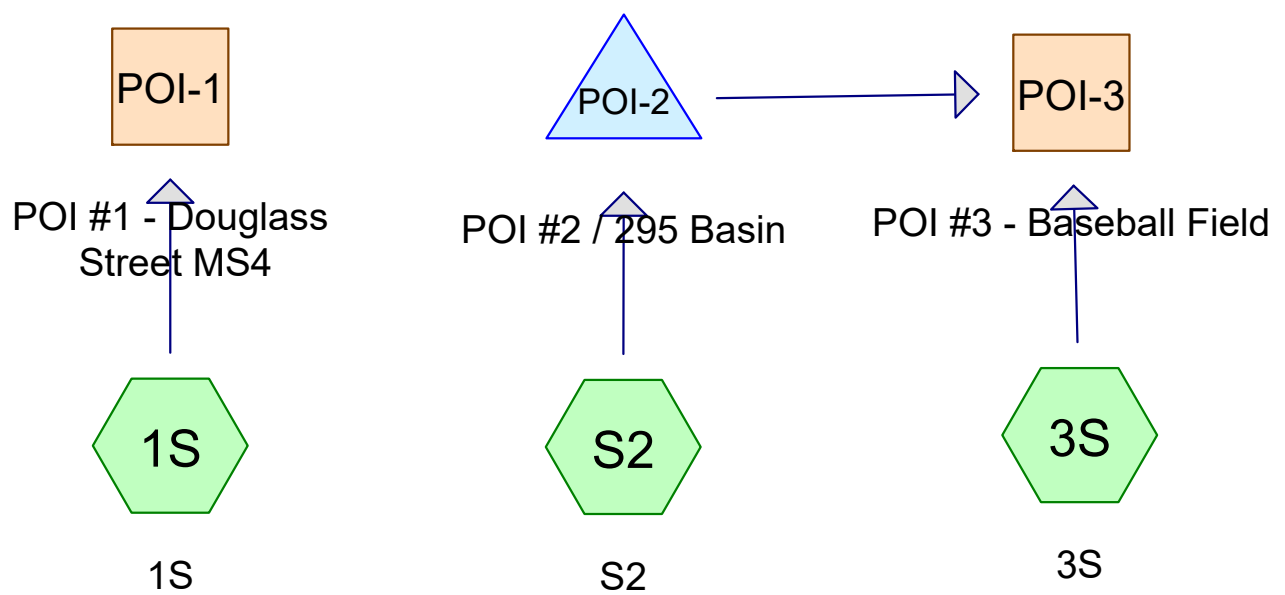
Redevelopment Pollutant Ranking Exhibit



Attachment D

HydroCAD Calculations





Routing Diagram for Pre Development 1.11
 Prepared by HP, Printed 1/20/2022
 HydroCAD® 10.00-24 s/n 00620 © 2018 HydroCAD Software Solutions LLC

Pre Development 1.11

Prepared by HP

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Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.204	77	1/8 acre lots, 65% imp, HSG A (1S)
1.085	49	50-75% Grass cover, Fair, HSG A (1S, 3S, S2)
0.571	96	Gravel (S2)
0.636	96	Gravel surface (1S)
0.353	96	Gravel surface, HSG A (3S)
0.072	98	Paved walking path (S2)
0.496	98	Pavement / Roof (1S)
0.321	98	Single family roofs and driveways (S2)
1.212	32	Woods/grass comb., Good, HSG A (S2)
4.951	70	TOTAL AREA

Pre Development 1.11

Prepared by HP

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
2.855	HSG A	1S, 3S, S2
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
2.096	Other	1S, S2
4.951		TOTAL AREA

Pre Development 1.11

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Page 4

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.204	0.000	0.000	0.000	0.000	0.204	1/8 acre lots, 65% imp	1 S
1.085	0.000	0.000	0.000	0.000	1.085	50-75% Grass cover, Fair	1 S, 3 S, S 2
0.000	0.000	0.000	0.000	0.571	0.571	Gravel	S 2
0.353	0.000	0.000	0.000	0.636	0.990	Gravel surface	1 S, 3 S
0.000	0.000	0.000	0.000	0.072	0.072	Paved walking path	S 2
0.000	0.000	0.000	0.000	0.496	0.496	Pavement / Roof	1 S
0.000	0.000	0.000	0.000	0.321	0.321	Single family roofs and driveways	S 2
1.212	0.000	0.000	0.000	0.000	1.212	Woods/grass comb., Good	S 2
2.855	0.000	0.000	0.000	2.096	4.951	TOTAL AREA	

Pre Development 1.11*Type III 24-hr 2-year Rainfall=3.10"*

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Time span=1.00-36.00 hrs, dt=0.10 hrs, 351 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: 1S

Runoff Area=68,602 sf 39.93% Impervious Runoff Depth=1.83"
Tc=6.0 min CN=87 Runoff=3.16 cfs 0.240 af

Subcatchment3S: 3S

Runoff Area=24,703 sf 0.00% Impervious Runoff Depth=1.20"
Tc=6.0 min CN=78 Runoff=0.73 cfs 0.057 af

SubcatchmentS2: S2

Runoff Area=122,360 sf 14.00% Impervious Runoff Depth=0.31"
Flow Length=233' Tc=16.0 min CN=58 Runoff=0.38 cfs 0.072 af

Reach POI-1: POI #1 - Douglass Street MS4

Inflow=3.16 cfs 0.240 af
Outflow=3.16 cfs 0.240 af

Reach POI-3: POI #3 - Baseball Field

Inflow=0.73 cfs 0.057 af
Outflow=0.73 cfs 0.057 af

Pond POI-2: POI #2 / 295 Basin

Peak Elev=27.00' Storage=1,609 cf Inflow=0.38 cfs 0.072 af
Discarded=0.05 cfs 0.061 af Primary=0.00 cfs 0.000 af Outflow=0.05 cfs 0.061 af

Total Runoff Area = 4.951 ac Runoff Volume = 0.368 af Average Runoff Depth = 0.89"
79.36% Pervious = 3.929 ac 20.64% Impervious = 1.022 ac

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

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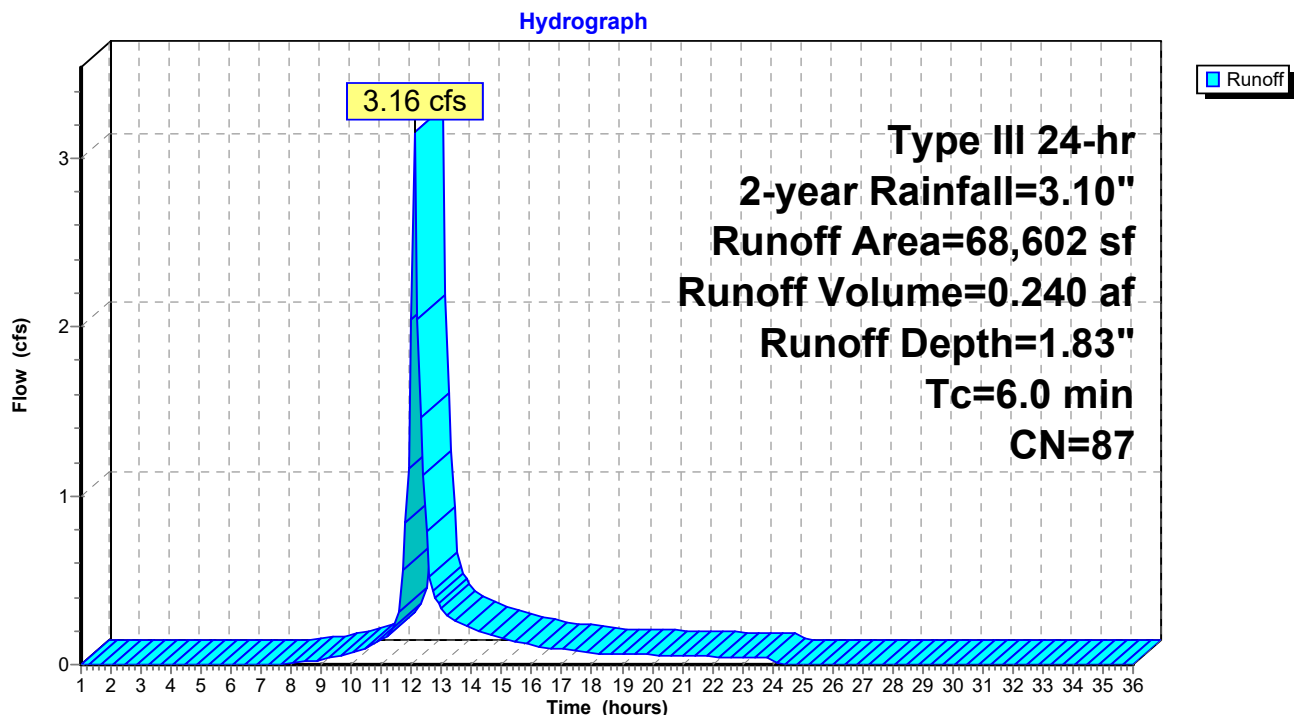
Summary for Subcatchment 1S: 1S

Runoff = 3.16 cfs @ 12.10 hrs, Volume= 0.240 af, Depth= 1.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	21,601	98	Pavement / Roof
*	27,720	96	Gravel surface
	10,373	49	50-75% Grass cover, Fair, HSG A
	8,908	77	1/8 acre lots, 65% imp, HSG A
	68,602	87	Weighted Average
	41,211		60.07% Pervious Area
	27,391		39.93% Impervious Area

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

Subcatchment 1S: 1S

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

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Summary for Subcatchment 3S: 3S

Runoff = 0.73 cfs @ 12.11 hrs, Volume= 0.057 af, Depth= 1.20"

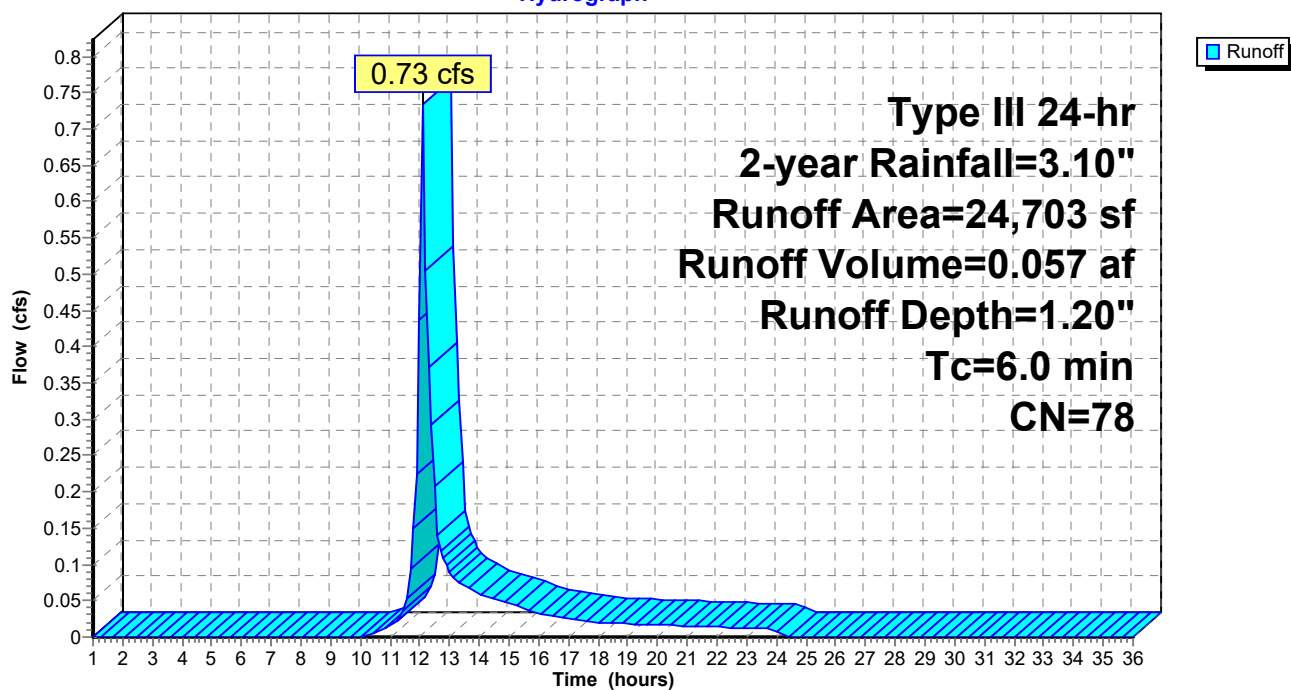
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs
Type III 24-hr 2-year Rainfall=3.10"

Area (sf)	CN	Description
15,393	96	Gravel surface, HSG A
9,310	49	50-75% Grass cover, Fair, HSG A
24,703	78	Weighted Average
24,703		100.00% Pervious Area

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

Subcatchment 3S: 3S

Hydrograph



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

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Summary for Subcatchment S2: S2

Runoff = 0.38 cfs @ 12.44 hrs, Volume= 0.072 af, Depth= 0.31"

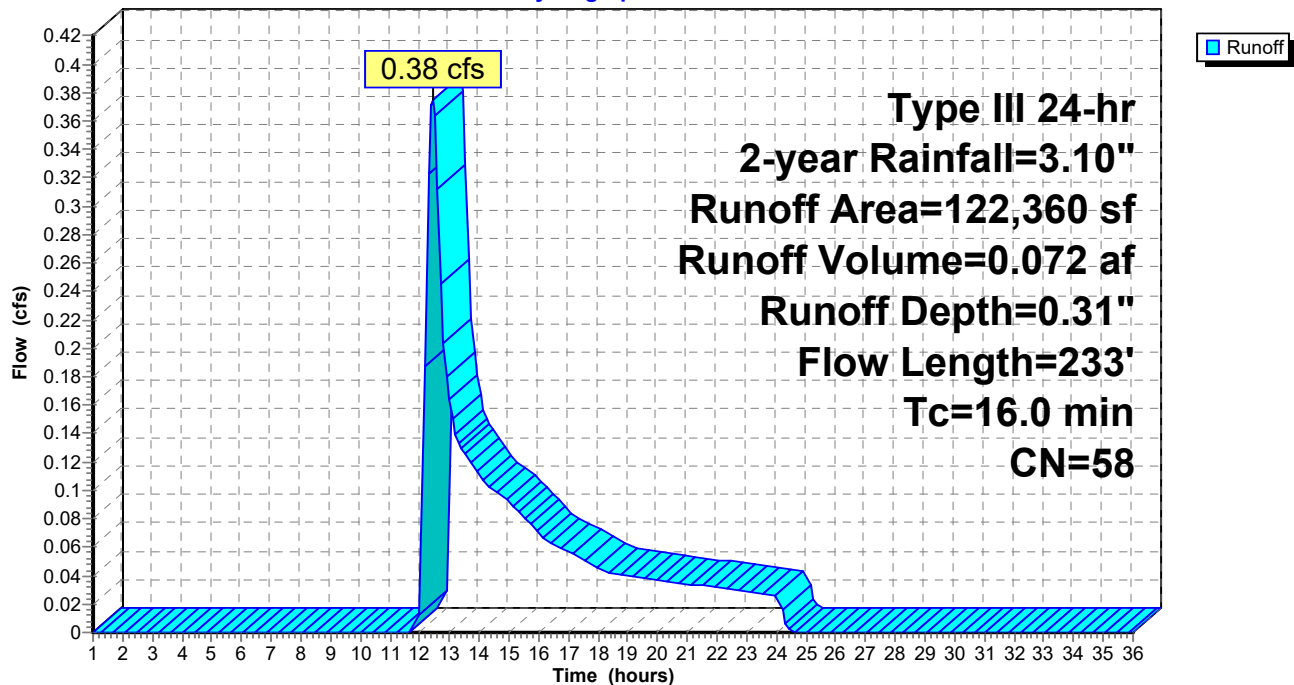
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	13,972	98	Single family roofs and driveways
*	3,155	98	Paved walking path
	52,792	32	Woods/grass comb., Good, HSG A
*	24,853	96	Gravel
	27,588	49	50-75% Grass cover, Fair, HSG A
	122,360	58	Weighted Average
	105,233		86.00% Pervious Area
	17,127		14.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	100	0.0500	0.11		Sheet Flow, A to B Woods: Light underbrush n= 0.400 P2= 3.27"
1.3	133	0.0600	1.71		Shallow Concentrated Flow, B to C (capped 100' sheet flow) Short Grass Pasture Kv= 7.0 fps
16.0	233	Total			

Subcatchment S2: S2

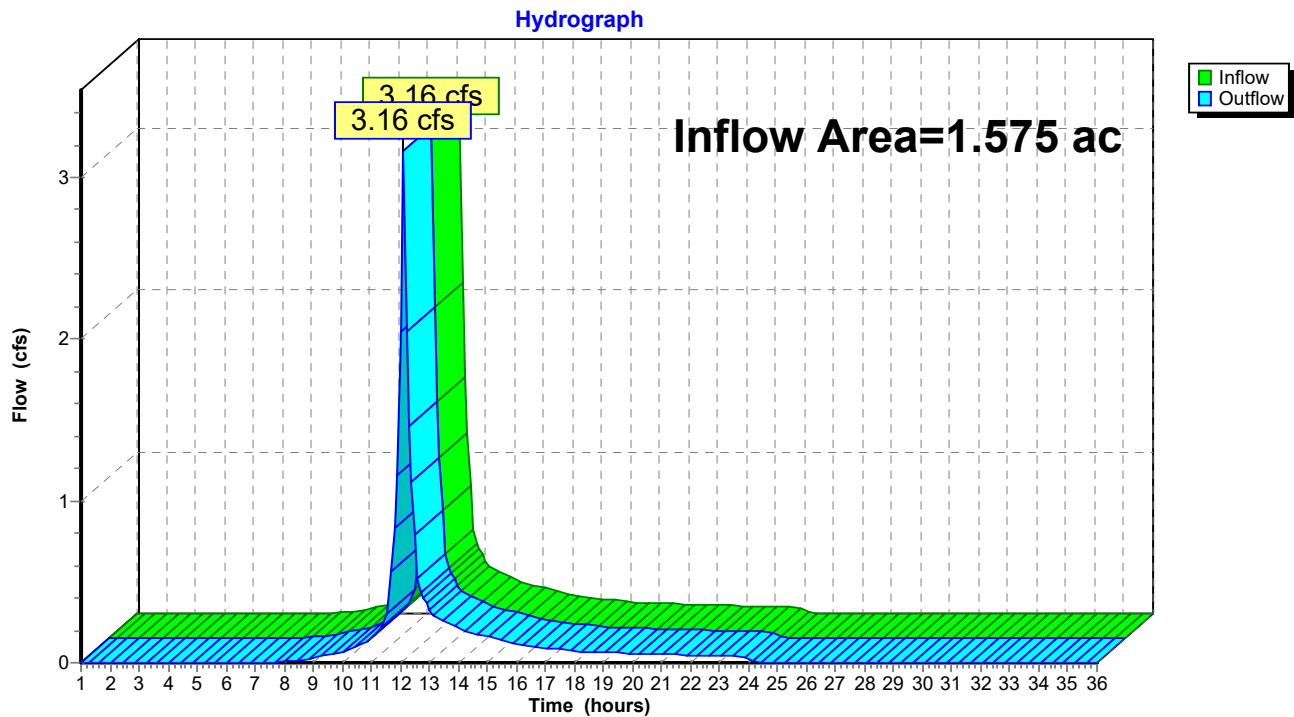
Hydrograph



Summary for Reach POI-1: POI #1 - Douglass Street MS4

Inflow Area = 1.575 ac, 39.93% Impervious, Inflow Depth = 1.83" for 2-year event
Inflow = 3.16 cfs @ 12.10 hrs, Volume= 0.240 af
Outflow = 3.16 cfs @ 12.10 hrs, Volume= 0.240 af, Atten= 0%, Lag= 0.0 min

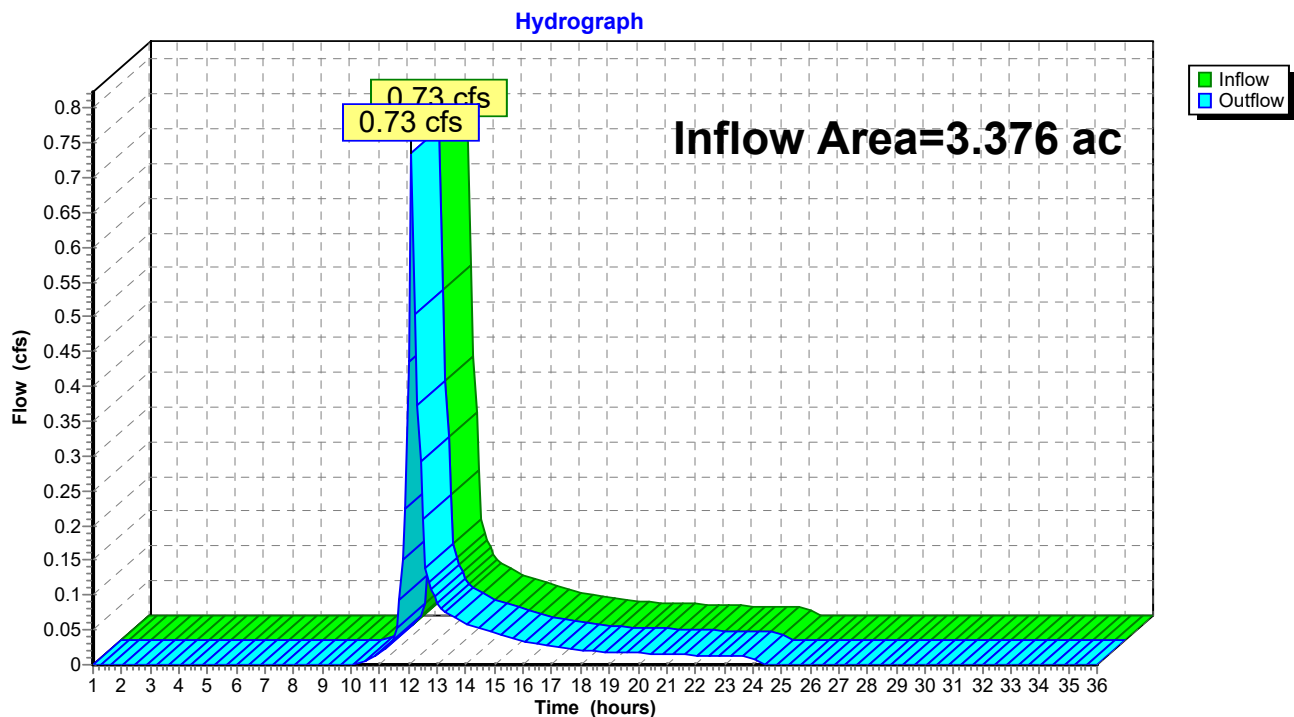
Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs

Reach POI-1: POI #1 - Douglass Street MS4

Summary for Reach POI-3: POI #3 - Baseball Field

Inflow Area = 3.376 ac, 11.65% Impervious, Inflow Depth = 0.20" for 2-year event
Inflow = 0.73 cfs @ 12.11 hrs, Volume= 0.057 af
Outflow = 0.73 cfs @ 12.11 hrs, Volume= 0.057 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs

Reach POI-3: POI #3 - Baseball Field

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

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Summary for Pond POI-2: POI #2 / 295 Basin

Inflow Area = 2.809 ac, 14.00% Impervious, Inflow Depth = 0.31" for 2-year event
 Inflow = 0.38 cfs @ 12.44 hrs, Volume= 0.072 af
 Outflow = 0.05 cfs @ 17.91 hrs, Volume= 0.061 af, Atten= 88%, Lag= 328.3 min
 Discarded = 0.05 cfs @ 17.91 hrs, Volume= 0.061 af
 Primary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs
 Peak Elev= 27.00' @ 17.91 hrs Surf.Area= 4,488 sf Storage= 1,609 cf

Plug-Flow detention time= 445.4 min calculated for 0.061 af (85% of inflow)
 Center-of-Mass det. time= 381.4 min (1,328.8 - 947.4)

Volume	Invert	Avail.Storage	Storage Description
#1	26.30'	274,731 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

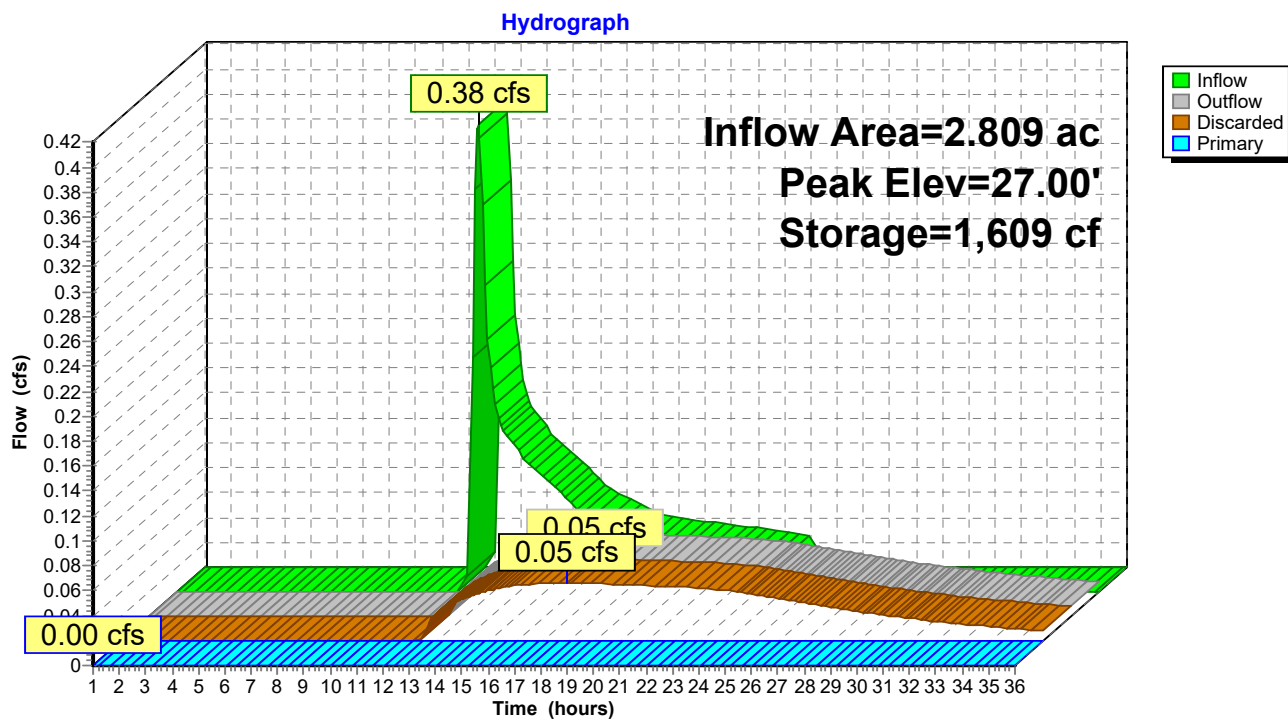
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.30	100	0	0
27.00	4,475	1,601	1,601
28.00	12,191	8,333	9,934
29.00	18,000	15,096	25,030
30.00	32,600	25,300	50,330
33.00	41,943	111,815	162,144
35.00	70,644	112,587	274,731

Device	Routing	Invert	Outlet Devices
#1	Primary	32.40'	20.0' long x 15.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	26.60'	0.800 in/hr Exfiltration over Surface area above 26.60' Excluded Surface area = 1,975 sf

Discarded OutFlow Max=0.05 cfs @ 17.91 hrs HW=27.00' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=0.00 cfs @ 1.00 hrs HW=26.30' TW=0.00' (Dynamic Tailwater)
 ↑**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond POI-2: POI #2 / 295 Basin



Pre Development 1.11*Type III 24-hr 10-year Rainfall=4.60"*

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Time span=1.00-36.00 hrs, dt=0.10 hrs, 351 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: 1S

Runoff Area=68,602 sf 39.93% Impervious Runoff Depth=3.19"
Tc=6.0 min CN=87 Runoff=5.43 cfs 0.419 af

Subcatchment3S: 3S

Runoff Area=24,703 sf 0.00% Impervious Runoff Depth=2.38"
Tc=6.0 min CN=78 Runoff=1.48 cfs 0.112 af

SubcatchmentS2: S2

Runoff Area=122,360 sf 14.00% Impervious Runoff Depth=0.96"
Flow Length=233' Tc=16.0 min CN=58 Runoff=1.84 cfs 0.224 af

Reach POI-1: POI #1 - Douglass Street MS4

Inflow=5.43 cfs 0.419 af
Outflow=5.43 cfs 0.419 af

Reach POI-3: POI #3 - Baseball Field

Inflow=1.48 cfs 0.112 af
Outflow=1.48 cfs 0.112 af

Pond POI-2: POI #2 / 295 Basin

Peak Elev=27.59' Storage=5,560 cf Inflow=1.84 cfs 0.224 af
Discarded=0.13 cfs 0.192 af Primary=0.00 cfs 0.000 af Outflow=0.13 cfs 0.192 af

Total Runoff Area = 4.951 ac Runoff Volume = 0.755 af Average Runoff Depth = 1.83"
79.36% Pervious = 3.929 ac 20.64% Impervious = 1.022 ac

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

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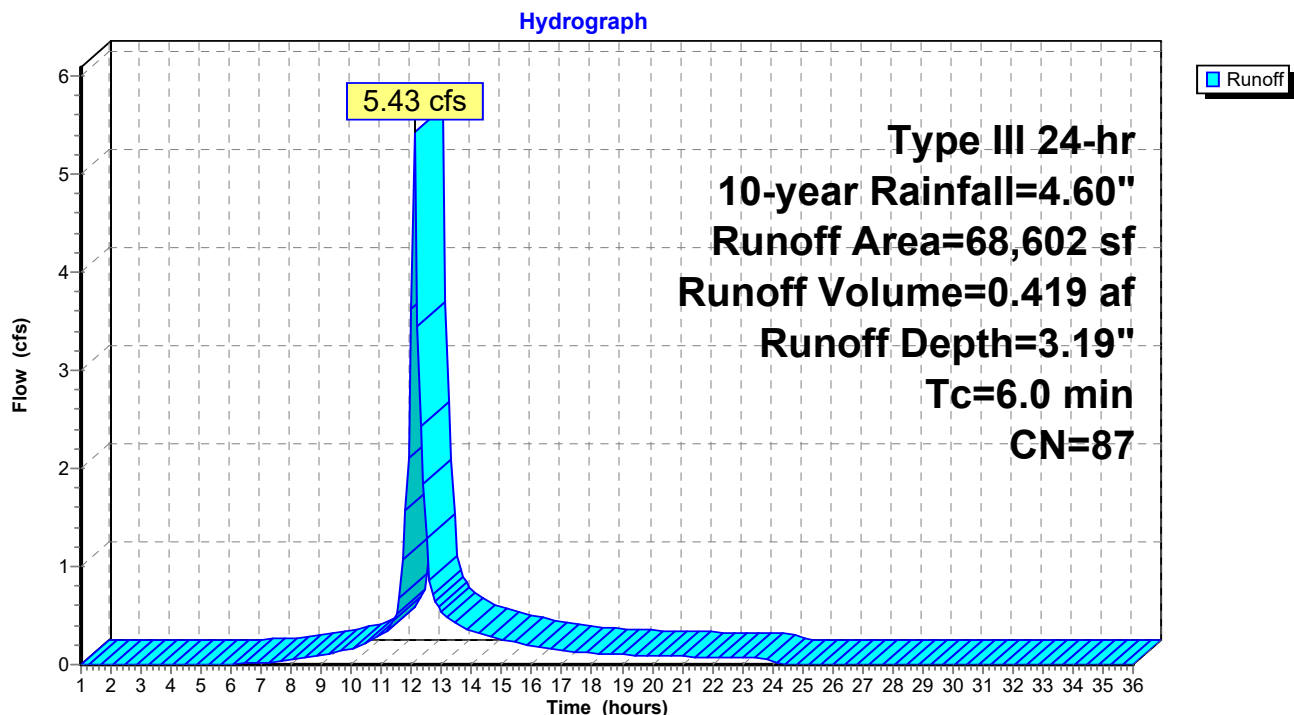
Summary for Subcatchment 1S: 1S

Runoff = 5.43 cfs @ 12.10 hrs, Volume= 0.419 af, Depth= 3.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs
Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
*	21,601	98	Pavement / Roof
*	27,720	96	Gravel surface
	10,373	49	50-75% Grass cover, Fair, HSG A
	8,908	77	1/8 acre lots, 65% imp, HSG A
	68,602	87	Weighted Average
	41,211		60.07% Pervious Area
	27,391		39.93% Impervious Area

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

Subcatchment 1S: 1S

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

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Summary for Subcatchment 3S: 3S

Runoff = 1.48 cfs @ 12.10 hrs, Volume= 0.112 af, Depth= 2.38"

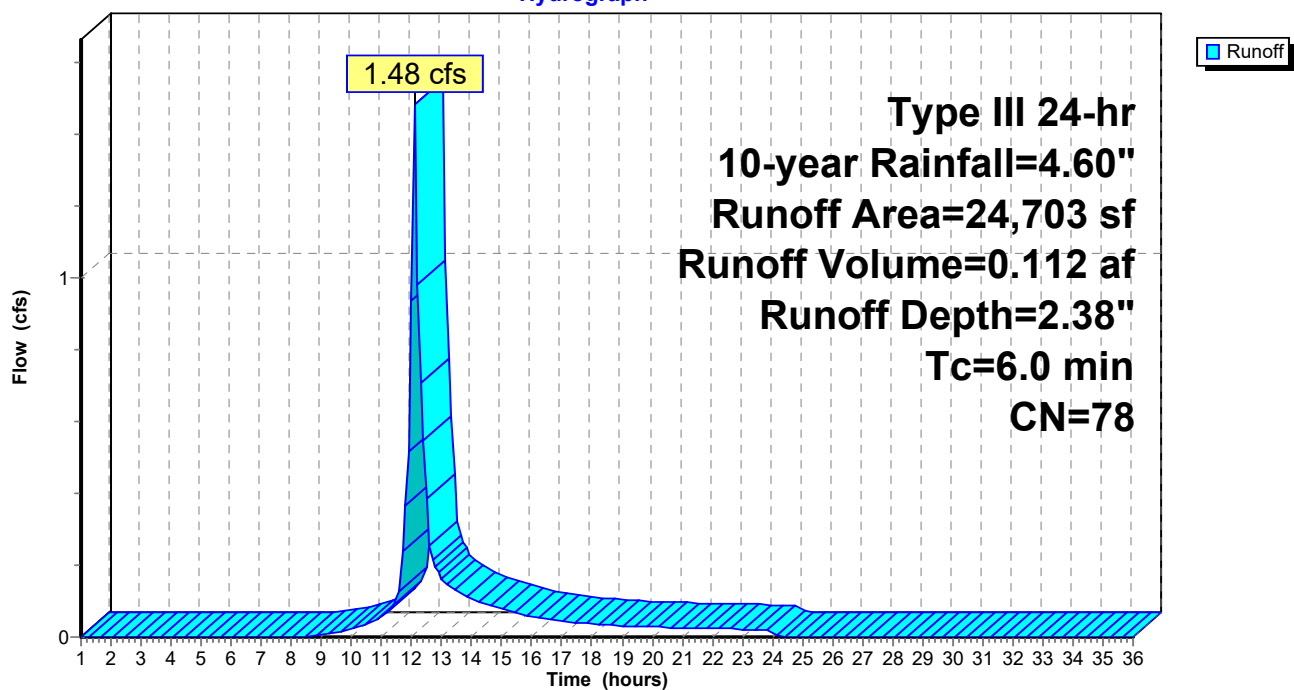
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
15,393	96	Gravel surface, HSG A
9,310	49	50-75% Grass cover, Fair, HSG A
24,703	78	Weighted Average
24,703		100.00% Pervious Area

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

Subcatchment 3S: 3S

Hydrograph



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

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Summary for Subcatchment S2: S2

Runoff = 1.84 cfs @ 12.29 hrs, Volume= 0.224 af, Depth= 0.96"

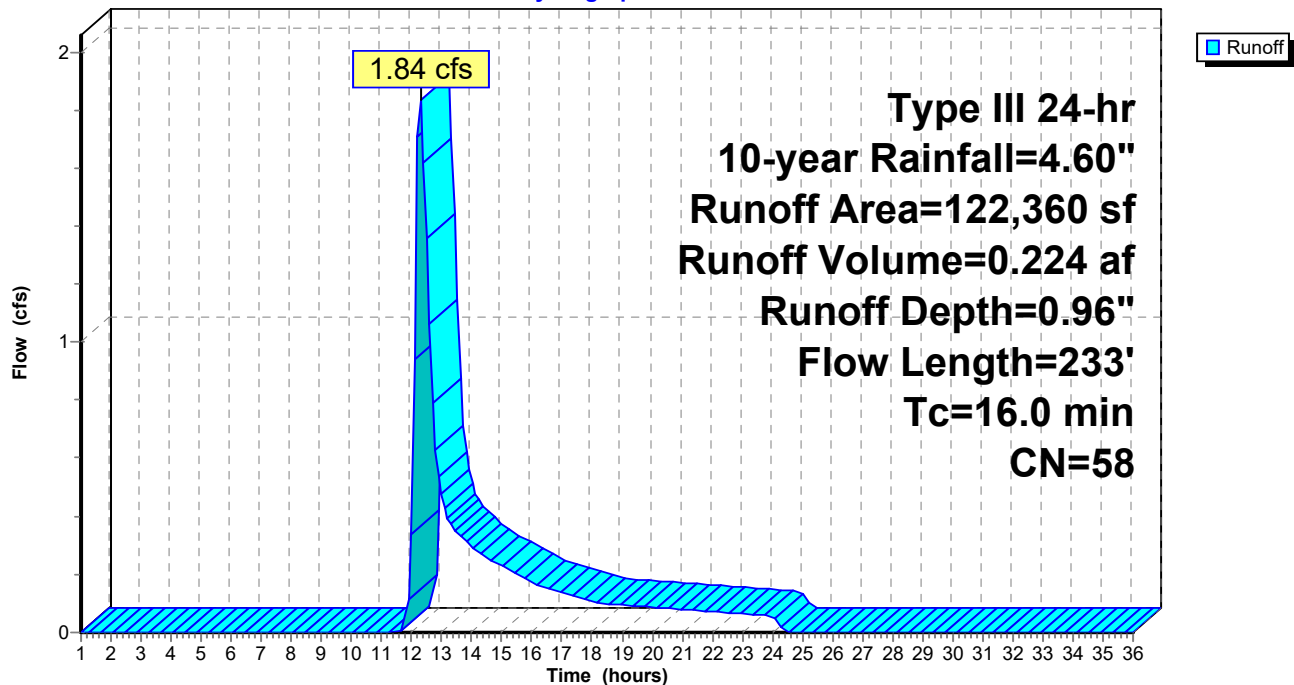
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs
Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
*	13,972	98	Single family roofs and driveways
*	3,155	98	Paved walking path
	52,792	32	Woods/grass comb., Good, HSG A
*	24,853	96	Gravel
	27,588	49	50-75% Grass cover, Fair, HSG A
	122,360	58	Weighted Average
	105,233		86.00% Pervious Area
	17,127		14.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	100	0.0500	0.11		Sheet Flow, A to B Woods: Light underbrush n= 0.400 P2= 3.27"
1.3	133	0.0600	1.71		Shallow Concentrated Flow, B to C (capped 100' sheet flow) Short Grass Pasture Kv= 7.0 fps
16.0	233	Total			

Subcatchment S2: S2

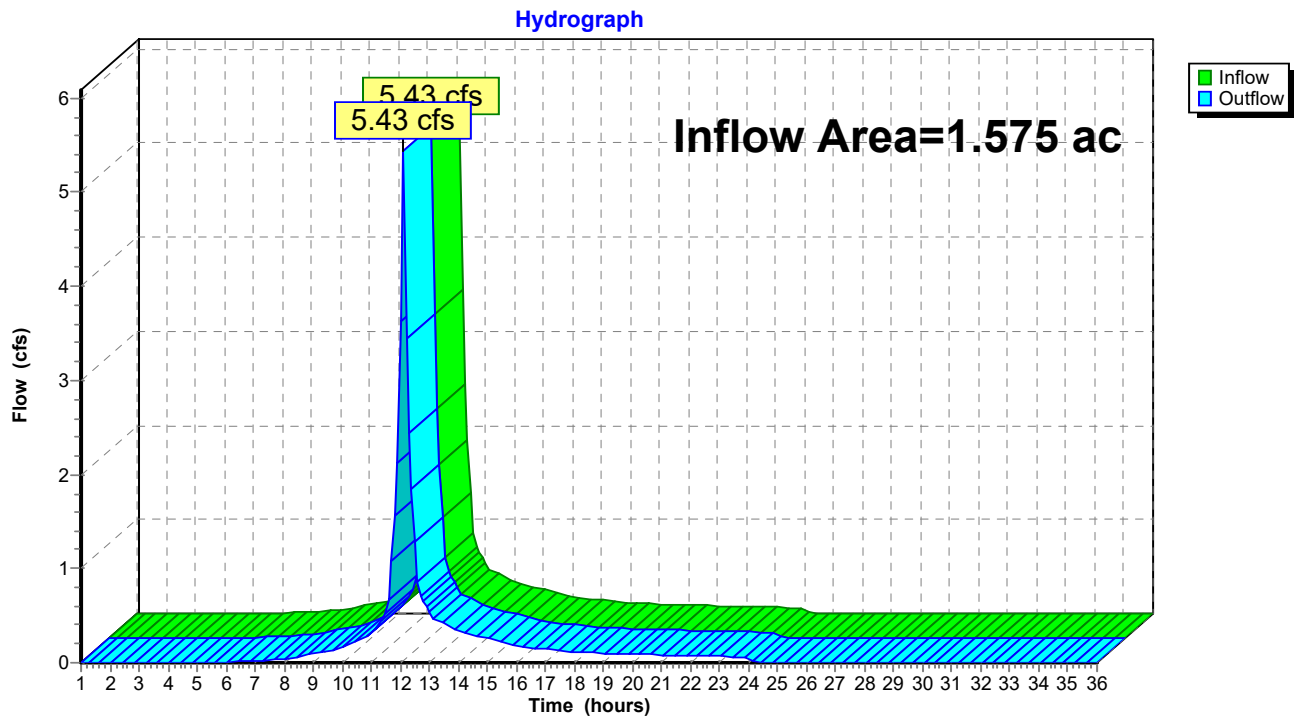
Hydrograph



Summary for Reach POI-1: POI #1 - Douglass Street MS4

Inflow Area = 1.575 ac, 39.93% Impervious, Inflow Depth = 3.19" for 10-year event
Inflow = 5.43 cfs @ 12.10 hrs, Volume= 0.419 af
Outflow = 5.43 cfs @ 12.10 hrs, Volume= 0.419 af, Atten= 0%, Lag= 0.0 min

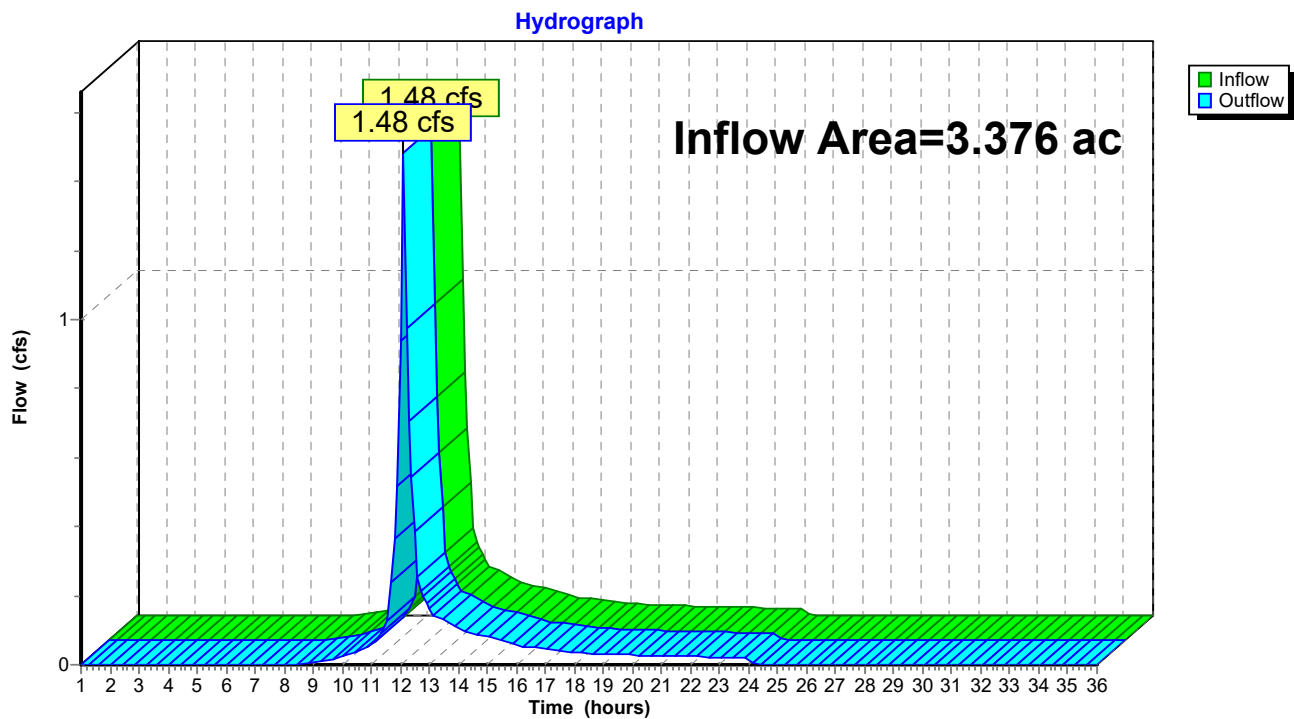
Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs

Reach POI-1: POI #1 - Douglass Street MS4

Summary for Reach POI-3: POI #3 - Baseball Field

Inflow Area = 3.376 ac, 11.65% Impervious, Inflow Depth = 0.40" for 10-year event
Inflow = 1.48 cfs @ 12.10 hrs, Volume= 0.112 af
Outflow = 1.48 cfs @ 12.10 hrs, Volume= 0.112 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs

Reach POI-3: POI #3 - Baseball Field

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

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Summary for Pond POI-2: POI #2 / 295 Basin

Inflow Area = 2.809 ac, 14.00% Impervious, Inflow Depth = 0.96" for 10-year event
 Inflow = 1.84 cfs @ 12.29 hrs, Volume= 0.224 af
 Outflow = 0.13 cfs @ 17.22 hrs, Volume= 0.192 af, Atten= 93%, Lag= 296.0 min
 Discarded = 0.13 cfs @ 17.22 hrs, Volume= 0.192 af
 Primary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs
 Peak Elev= 27.59' @ 17.22 hrs Surf.Area= 9,006 sf Storage= 5,560 cf

Plug-Flow detention time= 513.4 min calculated for 0.192 af (86% of inflow)
 Center-of-Mass det. time= 448.5 min (1,346.9 - 898.3)

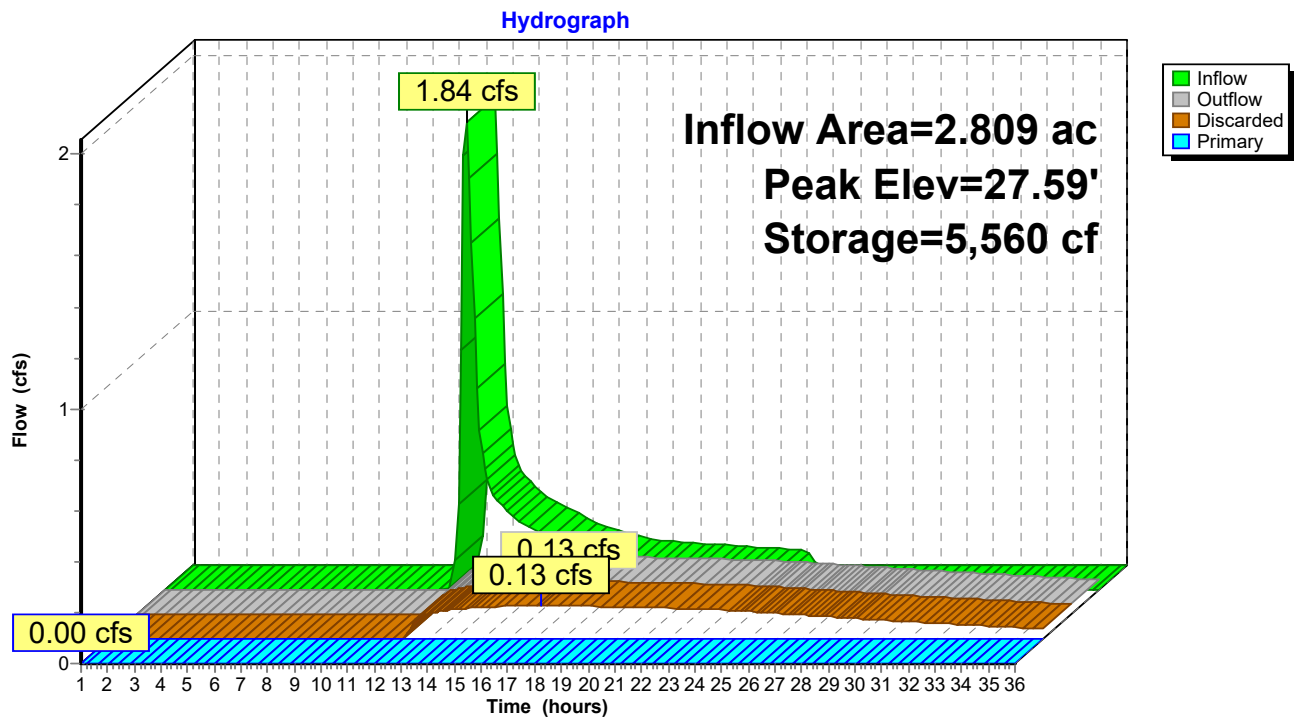
Volume	Invert	Avail.Storage	Storage Description
#1	26.30'	274,731 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.30	100	0	0
27.00	4,475	1,601	1,601
28.00	12,191	8,333	9,934
29.00	18,000	15,096	25,030
30.00	32,600	25,300	50,330
33.00	41,943	111,815	162,144
35.00	70,644	112,587	274,731

Device	Routing	Invert	Outlet Devices
#1	Primary	32.40'	20.0' long x 15.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	26.60'	0.800 in/hr Exfiltration over Surface area above 26.60' Excluded Surface area = 1,975 sf

Discarded OutFlow Max=0.13 cfs @ 17.22 hrs HW=27.59' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.13 cfs)

Primary OutFlow Max=0.00 cfs @ 1.00 hrs HW=26.30' TW=0.00' (Dynamic Tailwater)
 ↑**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond POI-2: POI #2 / 295 Basin



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

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Time span=1.00-36.00 hrs, dt=0.10 hrs, 351 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: 1S

Runoff Area=68,602 sf 39.93% Impervious Runoff Depth=4.33"
Tc=6.0 min CN=87 Runoff=7.26 cfs 0.568 af

Subcatchment3S: 3S

Runoff Area=24,703 sf 0.00% Impervious Runoff Depth=3.40"
Tc=6.0 min CN=78 Runoff=2.12 cfs 0.161 af

SubcatchmentS2: S2

Runoff Area=122,360 sf 14.00% Impervious Runoff Depth=1.63"
Flow Length=233' Tc=16.0 min CN=58 Runoff=3.47 cfs 0.382 af

Reach POI-1: POI #1 - Douglass Street MS4

Inflow=7.26 cfs 0.568 af
Outflow=7.26 cfs 0.568 af

Reach POI-3: POI #3 - Baseball Field

Inflow=2.12 cfs 0.161 af
Outflow=2.12 cfs 0.161 af

Pond POI-2: POI #2 / 295 Basin

Peak Elev=28.03' Storage=10,289 cf Inflow=3.47 cfs 0.382 af
Discarded=0.19 cfs 0.308 af Primary=0.00 cfs 0.000 af Outflow=0.19 cfs 0.308 af

Total Runoff Area = 4.951 ac Runoff Volume = 1.111 af Average Runoff Depth = 2.69"
79.36% Pervious = 3.929 ac 20.64% Impervious = 1.022 ac

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

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Summary for Subcatchment 1S: 1S

Runoff = 7.26 cfs @ 12.10 hrs, Volume= 0.568 af, Depth= 4.33"

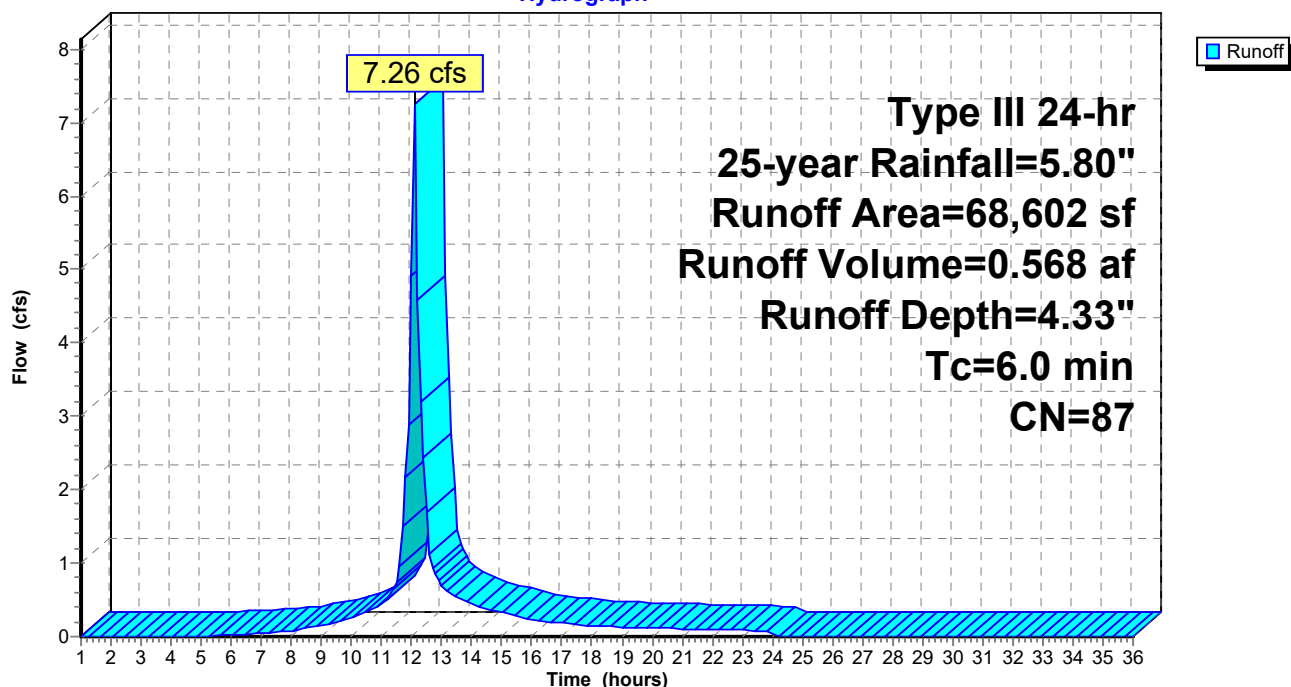
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs
Type III 24-hr 25-year Rainfall=5.80"

	Area (sf)	CN	Description
*	21,601	98	Pavement / Roof
*	27,720	96	Gravel surface
	10,373	49	50-75% Grass cover, Fair, HSG A
	8,908	77	1/8 acre lots, 65% imp, HSG A
	68,602	87	Weighted Average
	41,211		60.07% Pervious Area
	27,391		39.93% Impervious Area

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

Subcatchment 1S: 1S

Hydrograph



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

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Summary for Subcatchment 3S: 3S

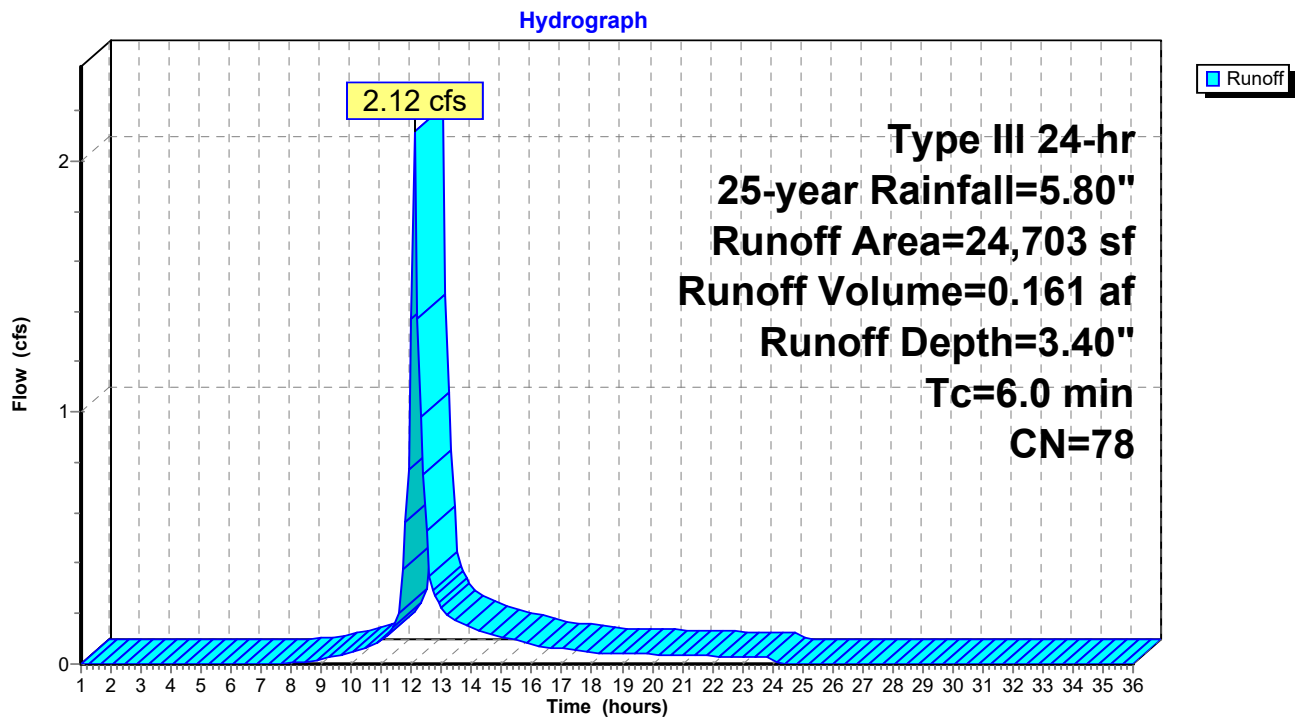
Runoff = 2.12 cfs @ 12.10 hrs, Volume= 0.161 af, Depth= 3.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs
Type III 24-hr 25-year Rainfall=5.80"

Area (sf)	CN	Description
15,393	96	Gravel surface, HSG A
9,310	49	50-75% Grass cover, Fair, HSG A
24,703	78	Weighted Average
24,703		100.00% Pervious Area

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

Subcatchment 3S: 3S



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

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Summary for Subcatchment S2: S2

Runoff = 3.47 cfs @ 12.25 hrs, Volume= 0.382 af, Depth= 1.63"

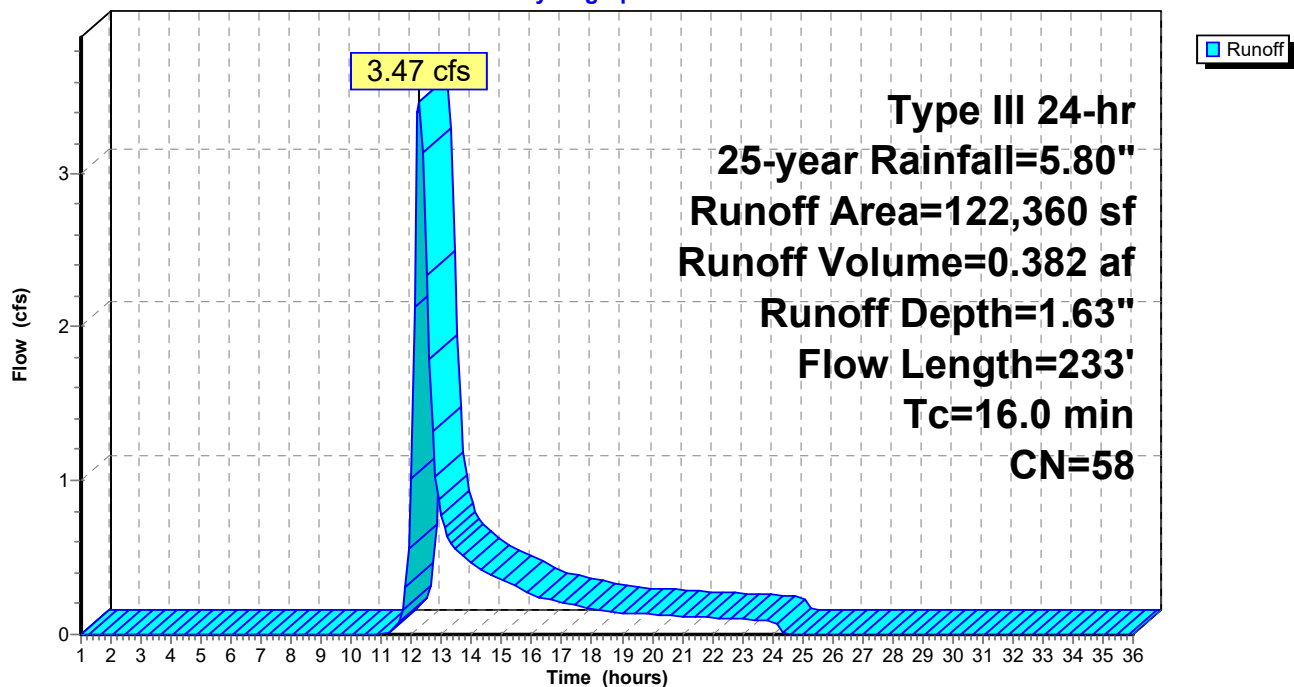
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs
Type III 24-hr 25-year Rainfall=5.80"

	Area (sf)	CN	Description
*	13,972	98	Single family roofs and driveways
*	3,155	98	Paved walking path
	52,792	32	Woods/grass comb., Good, HSG A
*	24,853	96	Gravel
	27,588	49	50-75% Grass cover, Fair, HSG A
	122,360	58	Weighted Average
	105,233		86.00% Pervious Area
	17,127		14.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	100	0.0500	0.11		Sheet Flow, A to B Woods: Light underbrush n= 0.400 P2= 3.27"
1.3	133	0.0600	1.71		Shallow Concentrated Flow, B to C (capped 100' sheet flow) Short Grass Pasture Kv= 7.0 fps
16.0	233	Total			

Subcatchment S2: S2

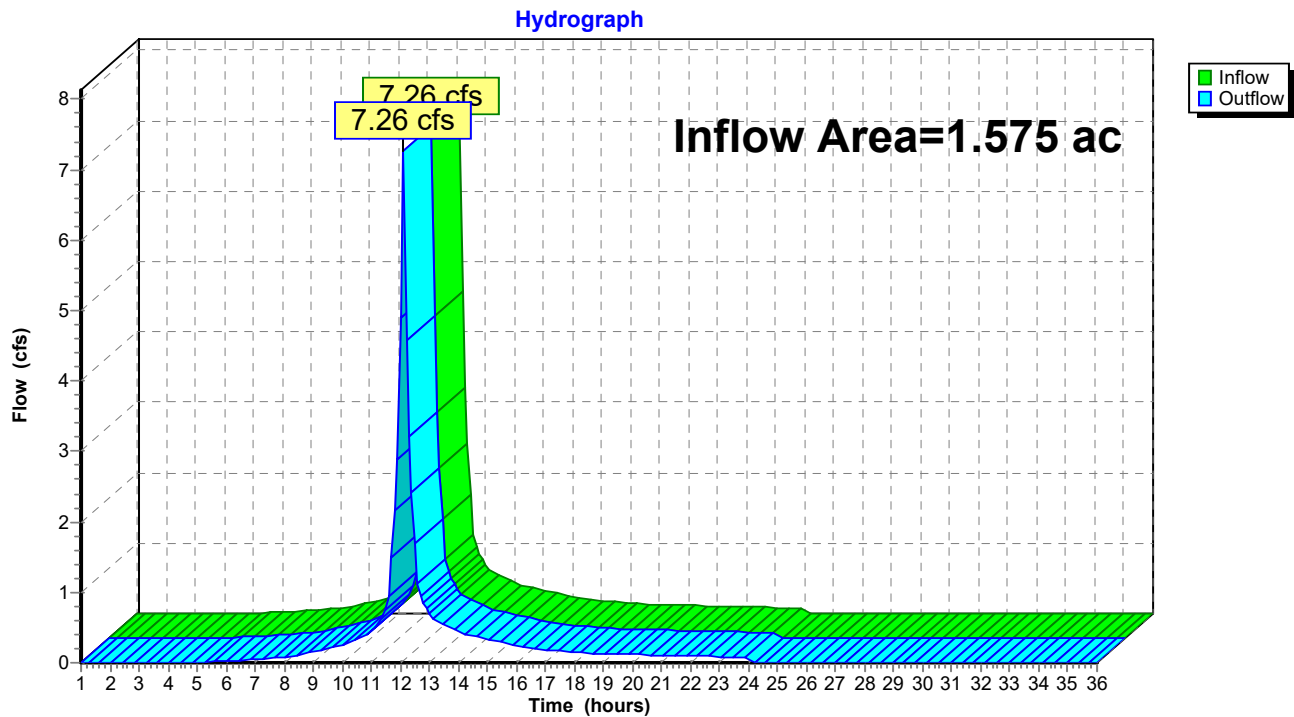
Hydrograph



Summary for Reach POI-1: POI #1 - Douglass Street MS4

Inflow Area = 1.575 ac, 39.93% Impervious, Inflow Depth = 4.33" for 25-year event
Inflow = 7.26 cfs @ 12.10 hrs, Volume= 0.568 af
Outflow = 7.26 cfs @ 12.10 hrs, Volume= 0.568 af, Atten= 0%, Lag= 0.0 min

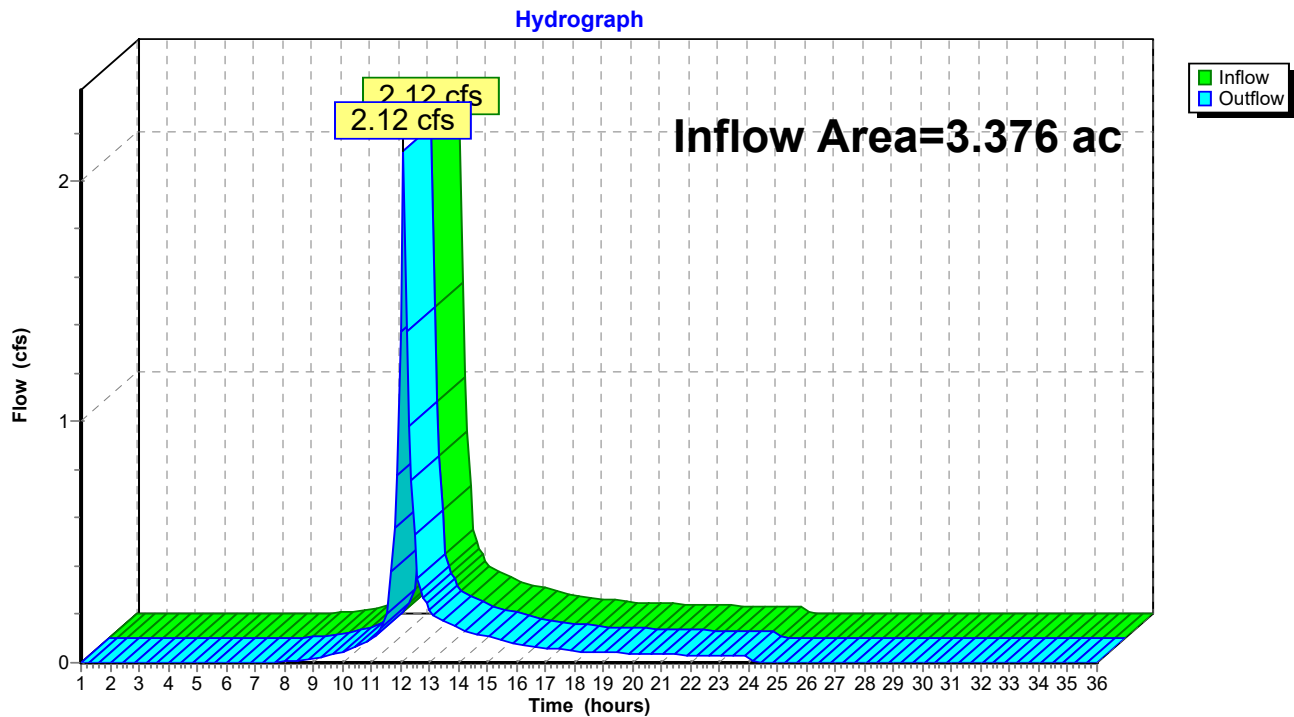
Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs

Reach POI-1: POI #1 - Douglass Street MS4

Summary for Reach POI-3: POI #3 - Baseball Field

Inflow Area = 3.376 ac, 11.65% Impervious, Inflow Depth = 0.57" for 25-year event
Inflow = 2.12 cfs @ 12.10 hrs, Volume= 0.161 af
Outflow = 2.12 cfs @ 12.10 hrs, Volume= 0.161 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs

Reach POI-3: POI #3 - Baseball Field

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

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Summary for Pond POI-2: POI #2 / 295 Basin

Inflow Area = 2.809 ac, 14.00% Impervious, Inflow Depth = 1.63" for 25-year event
 Inflow = 3.47 cfs @ 12.25 hrs, Volume= 0.382 af
 Outflow = 0.19 cfs @ 17.36 hrs, Volume= 0.308 af, Atten= 94%, Lag= 306.6 min
 Discarded = 0.19 cfs @ 17.36 hrs, Volume= 0.308 af
 Primary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs
 Peak Elev= 28.03' @ 17.36 hrs Surf.Area= 12,359 sf Storage= 10,289 cf

Plug-Flow detention time= 575.0 min calculated for 0.307 af (80% of inflow)
 Center-of-Mass det. time= 495.9 min (1,375.8 - 879.9)

Volume	Invert	Avail.Storage	Storage Description
#1	26.30'	274,731 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

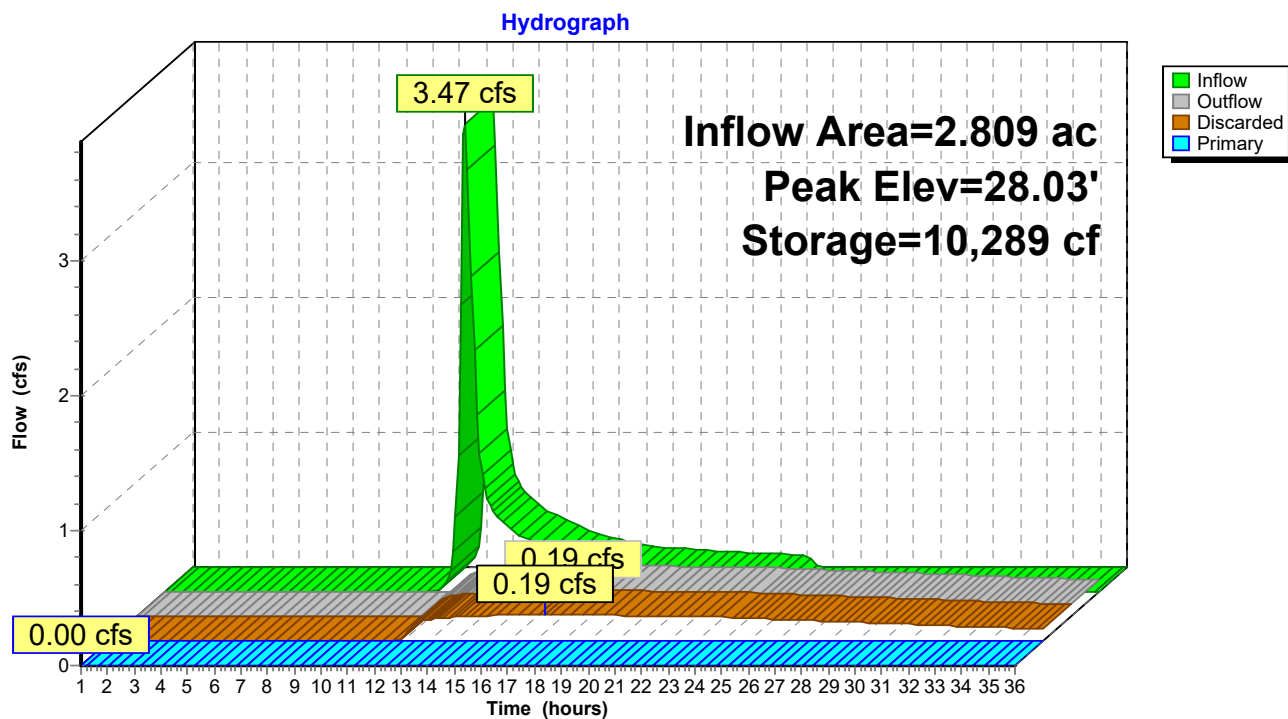
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.30	100	0	0
27.00	4,475	1,601	1,601
28.00	12,191	8,333	9,934
29.00	18,000	15,096	25,030
30.00	32,600	25,300	50,330
33.00	41,943	111,815	162,144
35.00	70,644	112,587	274,731

Device	Routing	Invert	Outlet Devices
#1	Primary	32.40'	20.0' long x 15.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	26.60'	0.800 in/hr Exfiltration over Surface area above 26.60' Excluded Surface area = 1,975 sf

Discarded OutFlow Max=0.19 cfs @ 17.36 hrs HW=28.03' (Free Discharge)
 ↑ **2=Exfiltration** (Exfiltration Controls 0.19 cfs)

Primary OutFlow Max=0.00 cfs @ 1.00 hrs HW=26.30' TW=0.00' (Dynamic Tailwater)
 ↑ **1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond POI-2: POI #2 / 295 Basin



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Type III 24-hr WQ Rainfall=1.00"

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Time span=1.00-36.00 hrs, dt=0.10 hrs, 351 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: 1S

Runoff Area=68,602 sf 39.93% Impervious Runoff Depth=0.22"
Tc=6.0 min CN=87 Runoff=0.33 cfs 0.029 af

Subcatchment3S: 3S

Runoff Area=24,703 sf 0.00% Impervious Runoff Depth=0.06"
Tc=6.0 min CN=78 Runoff=0.01 cfs 0.003 af

SubcatchmentS2: S2

Runoff Area=122,360 sf 14.00% Impervious Runoff Depth=0.00"
Flow Length=233' Tc=16.0 min CN=58 Runoff=0.00 cfs 0.000 af

Reach POI-1: POI #1 - Douglass Street MS4

Inflow=0.33 cfs 0.029 af
Outflow=0.33 cfs 0.029 af

Reach POI-3: POI #3 - Baseball Field

Inflow=0.01 cfs 0.003 af
Outflow=0.01 cfs 0.003 af

Pond POI-2: POI #2 / 295 Basin

Peak Elev=26.30' Storage=0 cf Inflow=0.00 cfs 0.000 af
Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Total Runoff Area = 4.951 ac Runoff Volume = 0.032 af Average Runoff Depth = 0.08"
79.36% Pervious = 3.929 ac 20.64% Impervious = 1.022 ac

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Type III 24-hr WQ Rainfall=1.00"

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Summary for Subcatchment 1S: 1S

Runoff = 0.33 cfs @ 12.12 hrs, Volume= 0.029 af, Depth= 0.22"

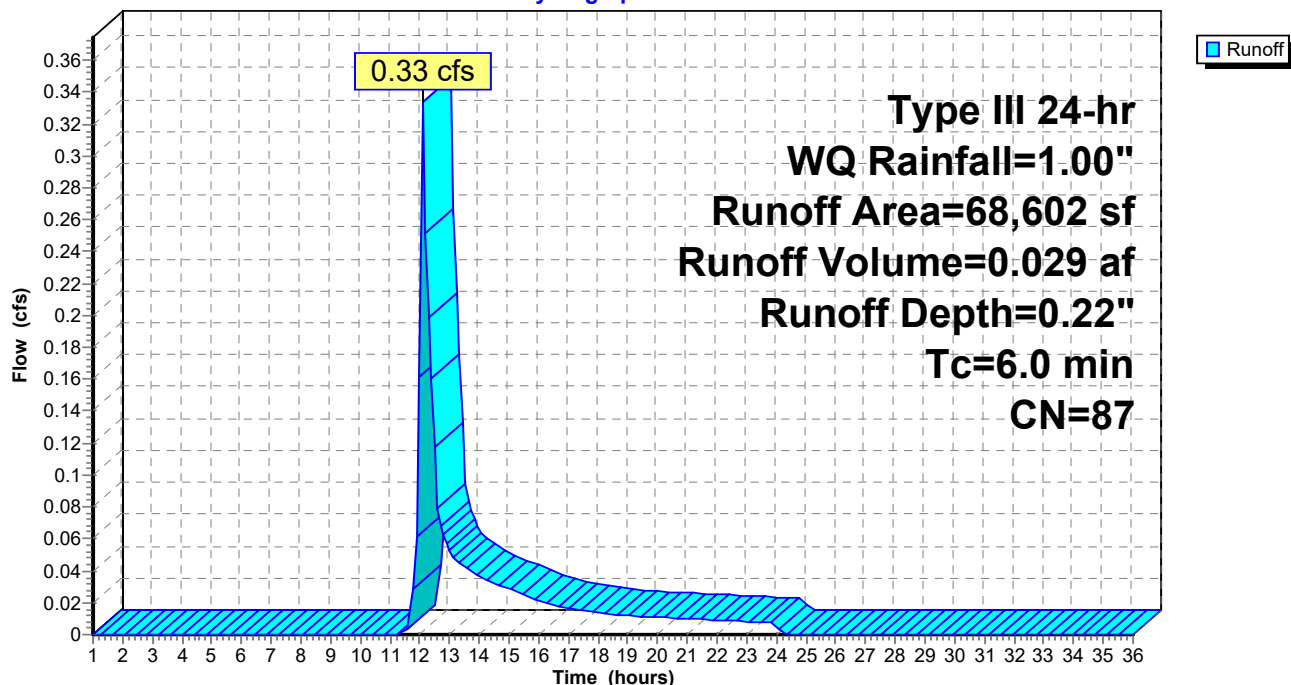
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs
Type III 24-hr WQ Rainfall=1.00"

	Area (sf)	CN	Description
*	21,601	98	Pavement / Roof
*	27,720	96	Gravel surface
	10,373	49	50-75% Grass cover, Fair, HSG A
	8,908	77	1/8 acre lots, 65% imp, HSG A
	68,602	87	Weighted Average
	41,211		60.07% Pervious Area
	27,391		39.93% Impervious Area

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

Subcatchment 1S: 1S

Hydrograph



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Type III 24-hr WQ Rainfall=1.00"

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Summary for Subcatchment 3S: 3S

Runoff = 0.01 cfs @ 12.40 hrs, Volume= 0.003 af, Depth= 0.06"

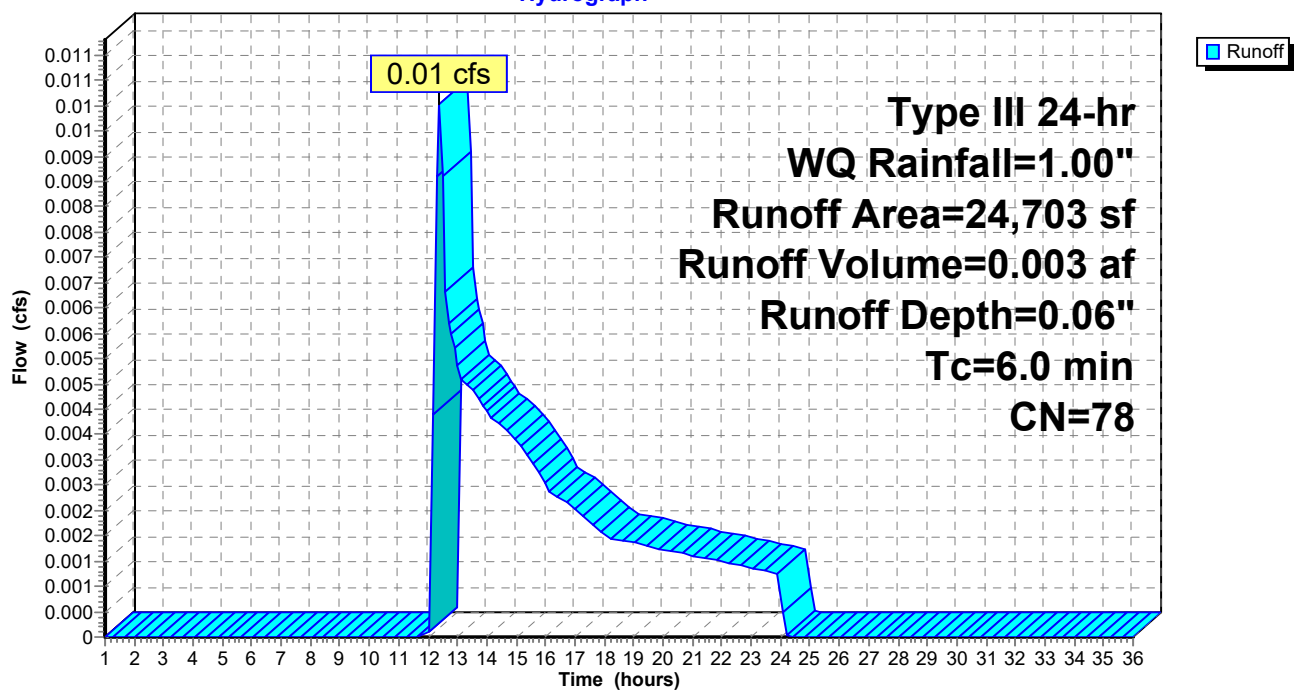
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs
Type III 24-hr WQ Rainfall=1.00"

Area (sf)	CN	Description
15,393	96	Gravel surface, HSG A
9,310	49	50-75% Grass cover, Fair, HSG A
24,703	78	Weighted Average
24,703		100.00% Pervious Area

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

Subcatchment 3S: 3S

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Type III 24-hr WQ Rainfall=1.00"

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Summary for Subcatchment S2: S2

Runoff = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Depth= 0.00"

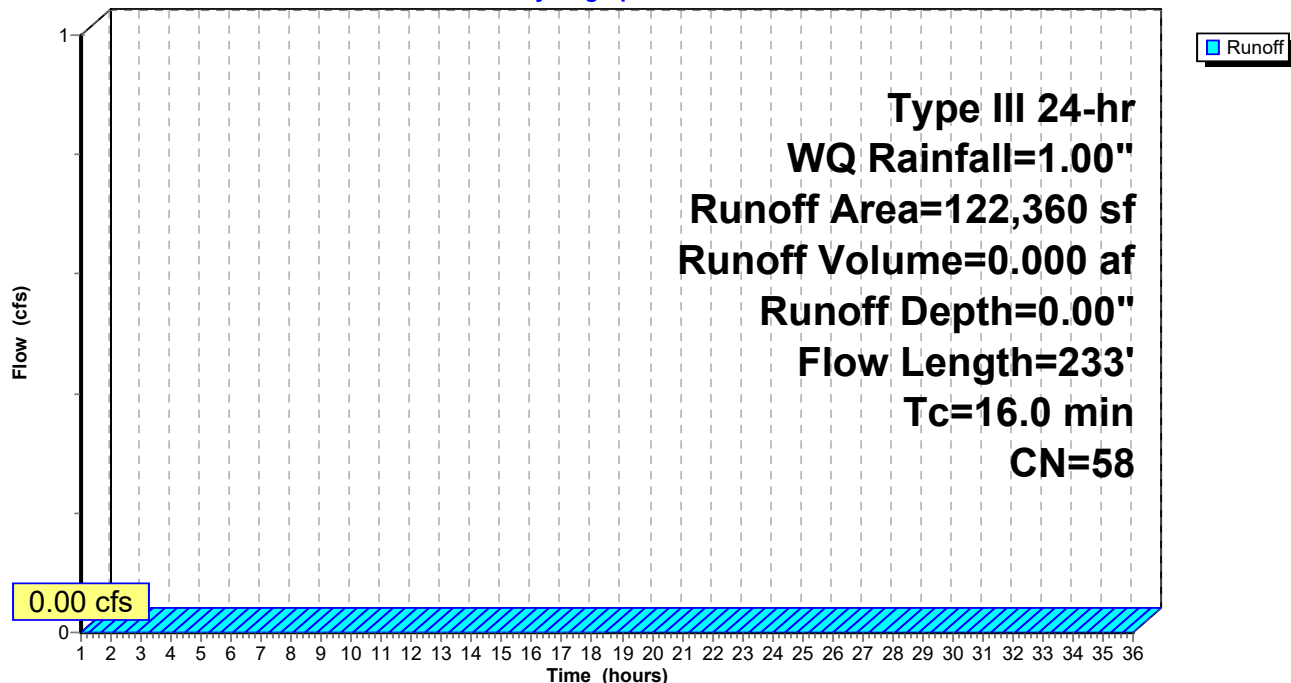
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs
Type III 24-hr WQ Rainfall=1.00"

	Area (sf)	CN	Description
*	13,972	98	Single family roofs and driveways
*	3,155	98	Paved walking path
	52,792	32	Woods/grass comb., Good, HSG A
*	24,853	96	Gravel
	27,588	49	50-75% Grass cover, Fair, HSG A
	122,360	58	Weighted Average
	105,233		86.00% Pervious Area
	17,127		14.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	100	0.0500	0.11		Sheet Flow, A to B Woods: Light underbrush n= 0.400 P2= 3.27"
1.3	133	0.0600	1.71		Shallow Concentrated Flow, B to C (capped 100' sheet flow) Short Grass Pasture Kv= 7.0 fps
16.0	233	Total			

Subcatchment S2: S2

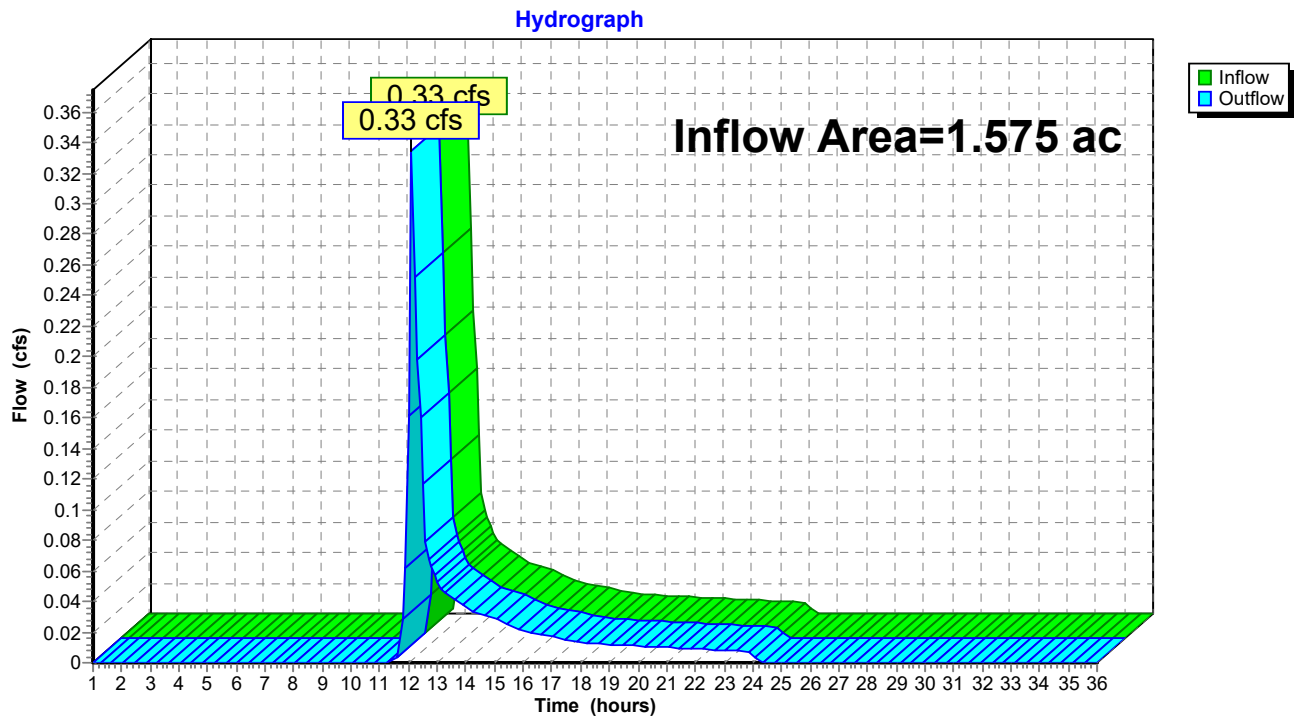
Hydrograph



Summary for Reach POI-1: POI #1 - Douglass Street MS4

Inflow Area = 1.575 ac, 39.93% Impervious, Inflow Depth = 0.22" for WQ event
Inflow = 0.33 cfs @ 12.12 hrs, Volume= 0.029 af
Outflow = 0.33 cfs @ 12.12 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.0 min

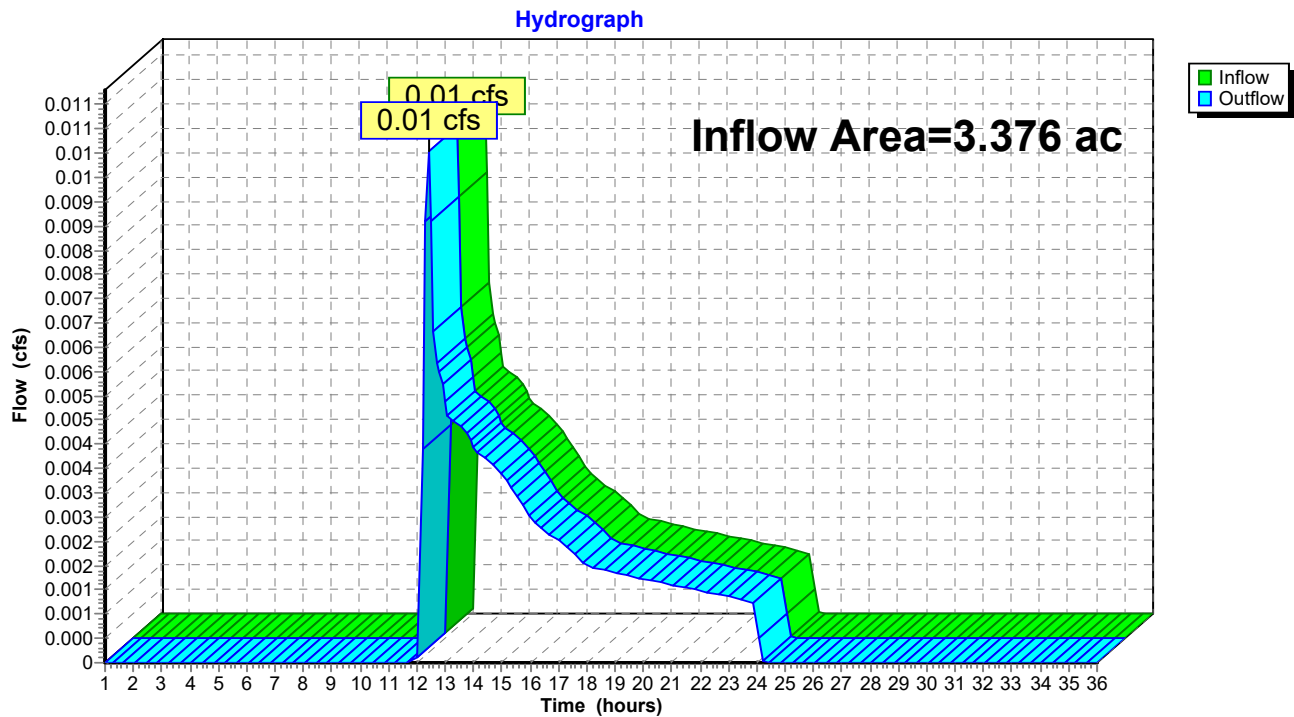
Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs

Reach POI-1: POI #1 - Douglass Street MS4

Summary for Reach POI-3: POI #3 - Baseball Field

Inflow Area = 3.376 ac, 11.65% Impervious, Inflow Depth = 0.01" for WQ event
Inflow = 0.01 cfs @ 12.40 hrs, Volume= 0.003 af
Outflow = 0.01 cfs @ 12.40 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs

Reach POI-3: POI #3 - Baseball Field

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Type III 24-hr WQ Rainfall=1.00"

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Summary for Pond POI-2: POI #2 / 295 Basin

Inflow Area = 2.809 ac, 14.00% 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
 Discarded = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af
 Primary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.10 hrs
 Peak Elev= 26.30' @ 1.00 hrs Surf.Area= 100 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	26.30'	274,731 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

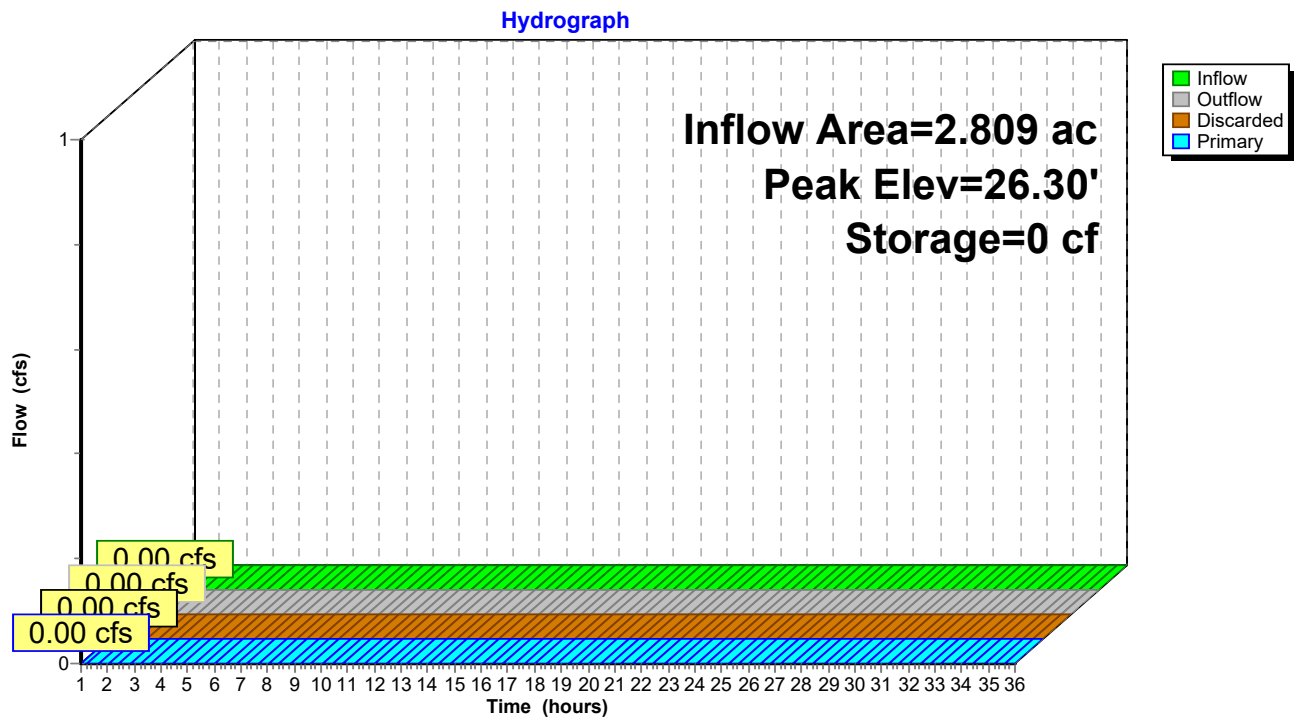
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.30	100	0	0
27.00	4,475	1,601	1,601
28.00	12,191	8,333	9,934
29.00	18,000	15,096	25,030
30.00	32,600	25,300	50,330
33.00	41,943	111,815	162,144
35.00	70,644	112,587	274,731

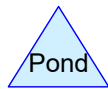
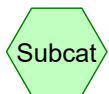
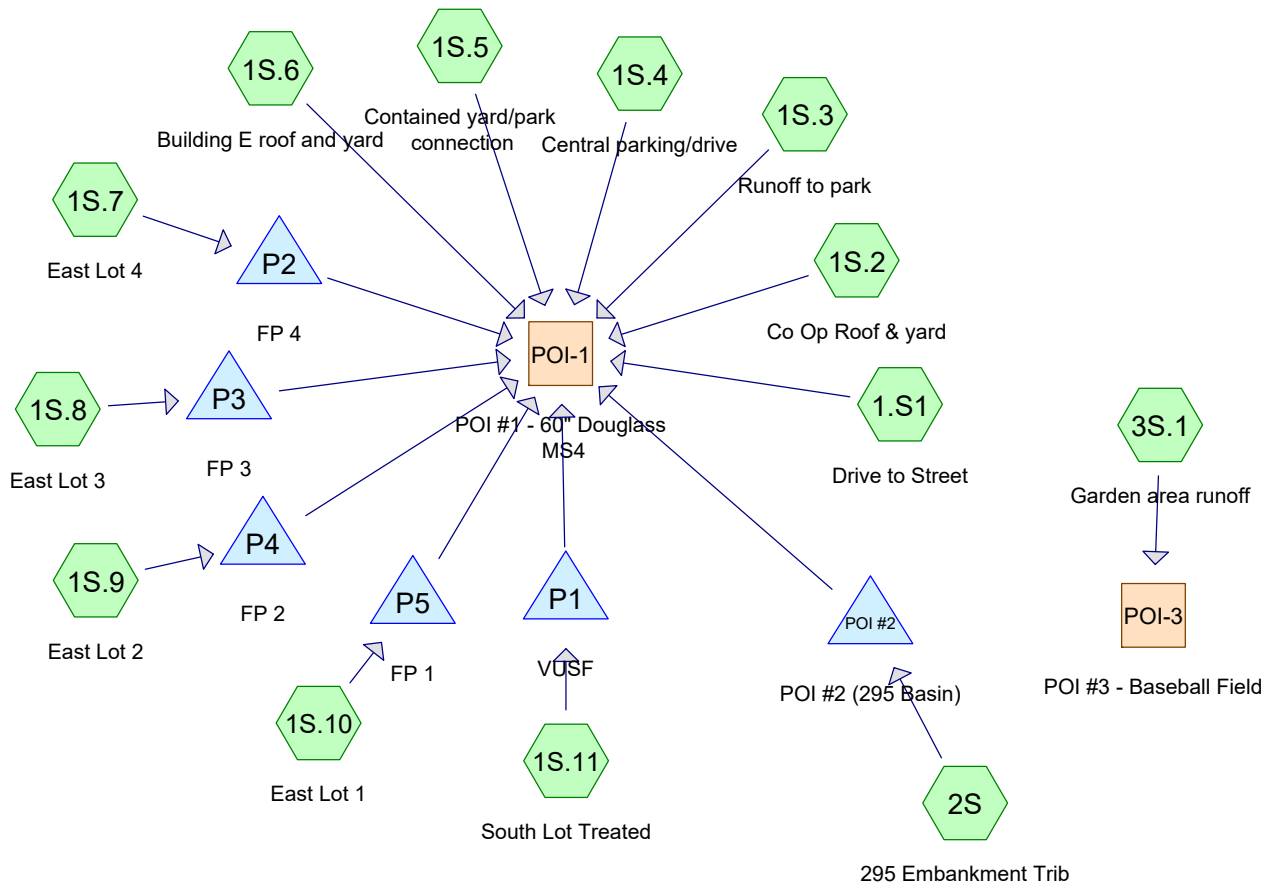
Device	Routing	Invert	Outlet Devices
#1	Primary	32.40'	20.0' long x 15.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	26.60'	0.800 in/hr Exfiltration over Surface area above 26.60' Excluded Surface area = 1,975 sf

Discarded OutFlow Max=0.00 cfs @ 1.00 hrs HW=26.30' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 1.00 hrs HW=26.30' TW=0.00' (Dynamic Tailwater)
 ↑**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond POI-2: POI #2 / 295 Basin





Routing Diagram for Post Development 1.13 FINAL
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.210	77	1/8 acre lots, 65% imp, HSG A (1S.2)
1.112	39	>75% Grass cover, Good, HSG A (1.S1, 1S.10, 1S.2, 1S.3, 1S.5, 1S.6, 1S.7, 1S.8, 1S.9, 2S)
0.309	30	Brush, Good, HSG A (1S.11, 1S.4, 3S.1)
0.126	98	Homes/driveways (2S)
0.072	98	Path (2S)
0.364	98	Paved parking (1S.11, 1S.7, 1S.8)
0.110	98	Paved parking, patio, sidewalk (1S.9)
0.428	98	Pavement (1.S1, 1S.10, 1S.4)
0.485	98	Roofs (1S.2)
0.005	98	Stairs (2S)
1.212	32	Woods/grass comb., Good, HSG A (2S)
0.014	98	patios (1S.2)
0.120	98	pavers (1S.2)
0.275	98	roof (1S.6)
0.108	98	sidewalks (1S.2, 1S.5)
4.952	63	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
2.842	HSG A	1.S1, 1S.10, 1S.11, 1S.2, 1S.3, 1S.4, 1S.5, 1S.6, 1S.7, 1S.8, 1S.9, 2S, 3S.1
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
2.110	Other	1.S1, 1S.10, 1S.11, 1S.2, 1S.4, 1S.5, 1S.6, 1S.7, 1S.8, 1S.9, 2S
4.952		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
0.210	0.000	0.000	0.000	0.000	0.210	1/8 acre lots, 65% imp	1S.2
1.112	0.000	0.000	0.000	0.000	1.112	>75% Grass cover, Good	1S.1, 1S.1 0, 1S.2, 1S.3, 1S.5, 1S.6, 1S.7, 1S.8, 1S.9, 2S
0.309	0.000	0.000	0.000	0.000	0.309	Brush, Good	1S.1 1, 1S.4, 3S.1
0.000	0.000	0.000	0.000	0.126	0.126	Homes/driveways	2S
0.000	0.000	0.000	0.000	0.072	0.072	Path	2S
0.000	0.000	0.000	0.000	0.364	0.364	Paved parking	1S.1 1, 1S.7, 1S.8
0.000	0.000	0.000	0.000	0.110	0.110	Paved parking, patio, sidewalk	1S.9
0.000	0.000	0.000	0.000	0.428	0.428	Pavement	1S.1, 1S.1 0, 1S.4
0.000	0.000	0.000	0.000	0.485	0.485	Roofs	1S.2
0.000	0.000	0.000	0.000	0.005	0.005	Stairs	2S
1.212	0.000	0.000	0.000	0.000	1.212	Woods/grass comb., Good	2S
0.000	0.000	0.000	0.000	0.014	0.014	patios	1S.2
0.000	0.000	0.000	0.000	0.120	0.120	pavers	1S.2
0.000	0.000	0.000	0.000	0.275	0.275	roof	1S.6
0.000	0.000	0.000	0.000	0.108	0.108	sidewalks	1S.2, 1S.5

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Ground Covers (all nodes) (continued)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
2.842	0.000	0.000	0.000	2.110	4.952	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	P1	27.00	26.75	60.0	0.0042	0.010	12.0	0.0	0.0
2	P2	32.35	32.00	70.0	0.0050	0.010	10.0	0.0	0.0
3	P3	31.90	31.50	70.0	0.0057	0.010	10.0	0.0	0.0
4	P4	31.40	31.00	70.0	0.0057	0.010	10.0	0.0	0.0
5	P5	30.90	30.53	75.0	0.0049	0.010	10.0	0.0	0.0
6	POI #2	26.60	26.51	16.0	0.0056	0.012	12.0	0.0	0.0

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

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Time span=1.00-36.00 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

Subcatchment 1S.1: Drive to Street	Runoff Area=1,131 sf 55.00% Impervious Runoff Depth=0.82" Tc=6.0 min CN=71 Runoff=0.02 cfs 0.002 af
Subcatchment 1S.10: East Lot 1	Runoff Area=3,754 sf 84.98% Impervious Runoff Depth=1.99" Tc=6.0 min CN=89 Runoff=0.20 cfs 0.014 af
Subcatchment 1S.11: South Lot Treated	Runoff Area=10,852 sf 76.24% Impervious Runoff Depth=1.46" Tc=6.0 min CN=82 Runoff=0.42 cfs 0.030 af
Subcatchment 1S.2: Co Op Roof & yard	Runoff Area=56,422 sf 65.80% Impervious Runoff Depth=1.20" Tc=6.0 min CN=78 Runoff=1.78 cfs 0.130 af
Subcatchment 1S.3: Runoff to park	Runoff Area=2,081 sf 0.00% Impervious Runoff Depth=0.00" Flow Length=264' Tc=9.0 min CN=39 Runoff=0.00 cfs 0.000 af
Subcatchment 1S.4: Central parking/drive	Runoff Area=19,043 sf 77.98% Impervious Runoff Depth=1.53" Tc=6.0 min CN=83 Runoff=0.78 cfs 0.056 af
Subcatchment 1S.5: Contained yard/park	Runoff Area=3,023 sf 16.84% Impervious Runoff Depth=0.09" Tc=6.0 min CN=49 Runoff=0.00 cfs 0.001 af
Subcatchment 1S.6: Building E roof and	Runoff Area=22,599 sf 53.10% Impervious Runoff Depth=0.77" Tc=6.0 min CN=70 Runoff=0.41 cfs 0.033 af
Subcatchment 1S.7: East Lot 4	Runoff Area=7,618 sf 53.01% Impervious Runoff Depth=0.77" Tc=6.0 min CN=70 Runoff=0.14 cfs 0.011 af
Subcatchment 1S.8: East Lot 3	Runoff Area=6,694 sf 52.99% Impervious Runoff Depth=0.77" Tc=6.0 min CN=70 Runoff=0.12 cfs 0.010 af
Subcatchment 1S.9: East Lot 2	Runoff Area=5,956 sf 80.74% Impervious Runoff Depth=1.83" Tc=6.0 min CN=87 Runoff=0.29 cfs 0.021 af
Subcatchment 2S: 295 Embankment Trib	Runoff Area=69,848 sf 12.70% Impervious Runoff Depth=0.00" Flow Length=233' Tc=16.0 min CN=41 Runoff=0.00 cfs 0.000 af
Subcatchment 3S.1: Garden area runoff	Runoff Area=6,670 sf 0.00% Impervious Runoff Depth=0.00" Flow Length=82' Tc=6.9 min CN=30 Runoff=0.00 cfs 0.000 af
Reach POI-1: POI #1 - 60" Douglass MS4	Inflow=3.76 cfs 0.286 af Outflow=3.76 cfs 0.286 af
Reach POI-3: POI #3 - Baseball Field	Inflow=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af
Pond P1: VUSF	Peak Elev=30.91' Storage=530 cf Inflow=0.42 cfs 0.030 af Discarded=0.04 cfs 0.022 af Primary=0.01 cfs 0.009 af Outflow=0.06 cfs 0.030 af

Post Development 1.13 FINAL*Type III 24-hr 2-year Rainfall=3.10"*

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Pond P2: FP 4

Peak Elev=35.95' Storage=0 cf Inflow=0.14 cfs 0.011 af
10.0" Round Culvert n=0.010 L=70.0' S=0.0050 '/' Outflow=0.14 cfs 0.011 af

Pond P3: FP 3

Peak Elev=36.10' Storage=0 cf Inflow=0.12 cfs 0.010 af
10.0" Round Culvert n=0.010 L=70.0' S=0.0057 '/' Outflow=0.12 cfs 0.010 af

Pond P4: FP 2

Peak Elev=35.90' Storage=0 cf Inflow=0.29 cfs 0.021 af
10.0" Round Culvert n=0.010 L=70.0' S=0.0057 '/' Outflow=0.29 cfs 0.021 af

Pond P5: FP 1

Peak Elev=35.70' Storage=0 cf Inflow=0.20 cfs 0.014 af
10.0" Round Culvert n=0.010 L=75.0' S=0.0049 '/' Outflow=0.20 cfs 0.014 af

Pond POI #2: POI #2 (295 Basin)

Peak Elev=26.36' Storage=20 cf Inflow=0.00 cfs 0.000 af
Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Total Runoff Area = 4.952 ac Runoff Volume = 0.308 af Average Runoff Depth = 0.75"
54.64% Pervious = 2.706 ac 45.36% Impervious = 2.246 ac

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

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Summary for Subcatchment 1.S1: Drive to Street

Runoff = 0.02 cfs @ 12.10 hrs, Volume= 0.002 af, Depth= 0.82"

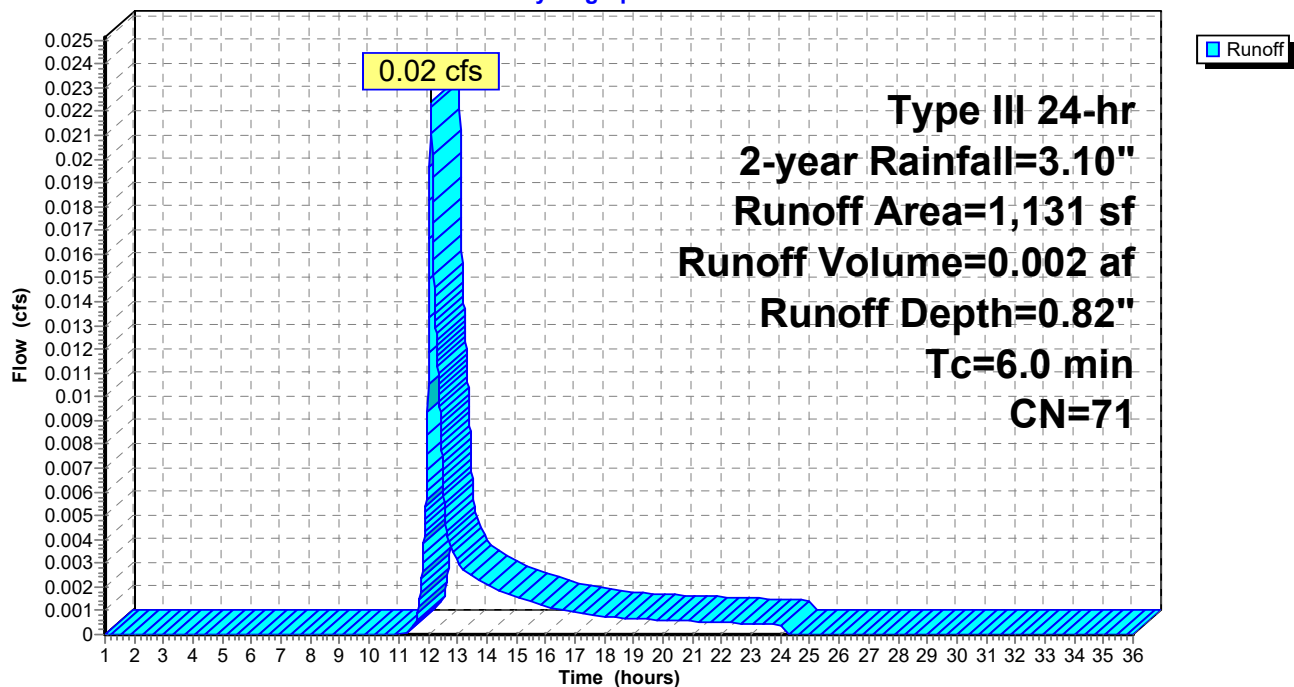
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	622	98	Pavement
	509	39	>75% Grass cover, Good, HSG A
	1,131	71	Weighted Average
	509		45.00% Pervious Area
	622		55.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1.S1: Drive to Street

Hydrograph



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

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Summary for Subcatchment 1S.10: East Lot 1

Runoff = 0.20 cfs @ 12.09 hrs, Volume= 0.014 af, Depth= 1.99"

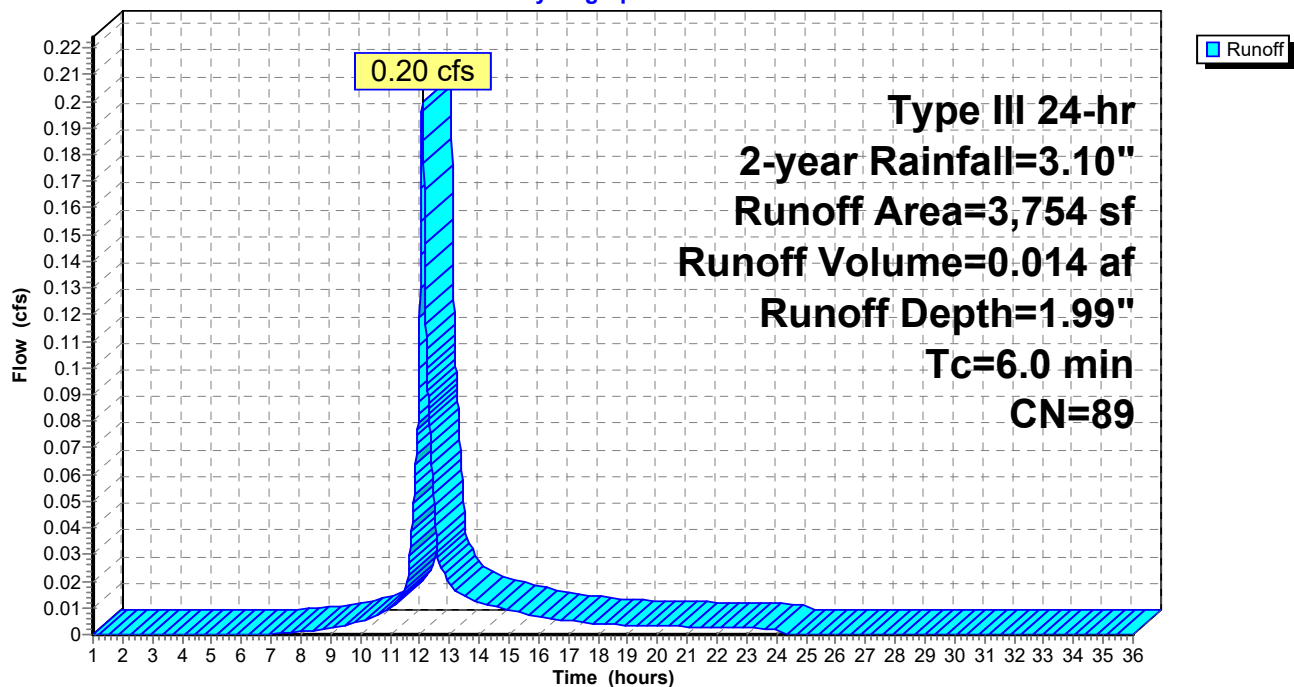
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	3,190	98	Pavement
	564	39	>75% Grass cover, Good, HSG A
	3,754	89	Weighted Average
	564		15.02% Pervious Area
	3,190		84.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1S.10: East Lot 1

Hydrograph



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

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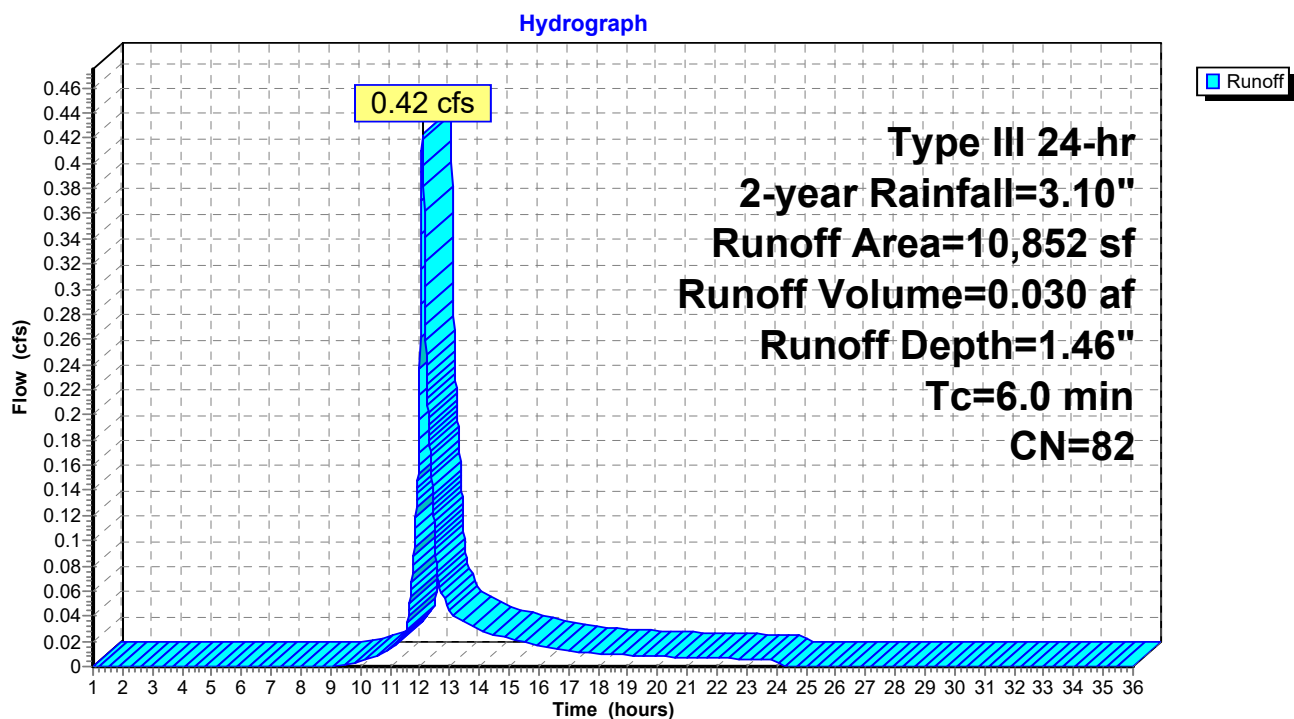
Summary for Subcatchment 1S.11: South Lot Treated

Runoff = 0.42 cfs @ 12.09 hrs, Volume= 0.030 af, Depth= 1.46"

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
*	8,274	98	Paved parking
	2,578	30	Brush, Good, HSG A
	10,852	82	Weighted Average
	2,578		23.76% Pervious Area
	8,274		76.24% Impervious Area

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

Subcatchment 1S.11: South Lot Treated

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

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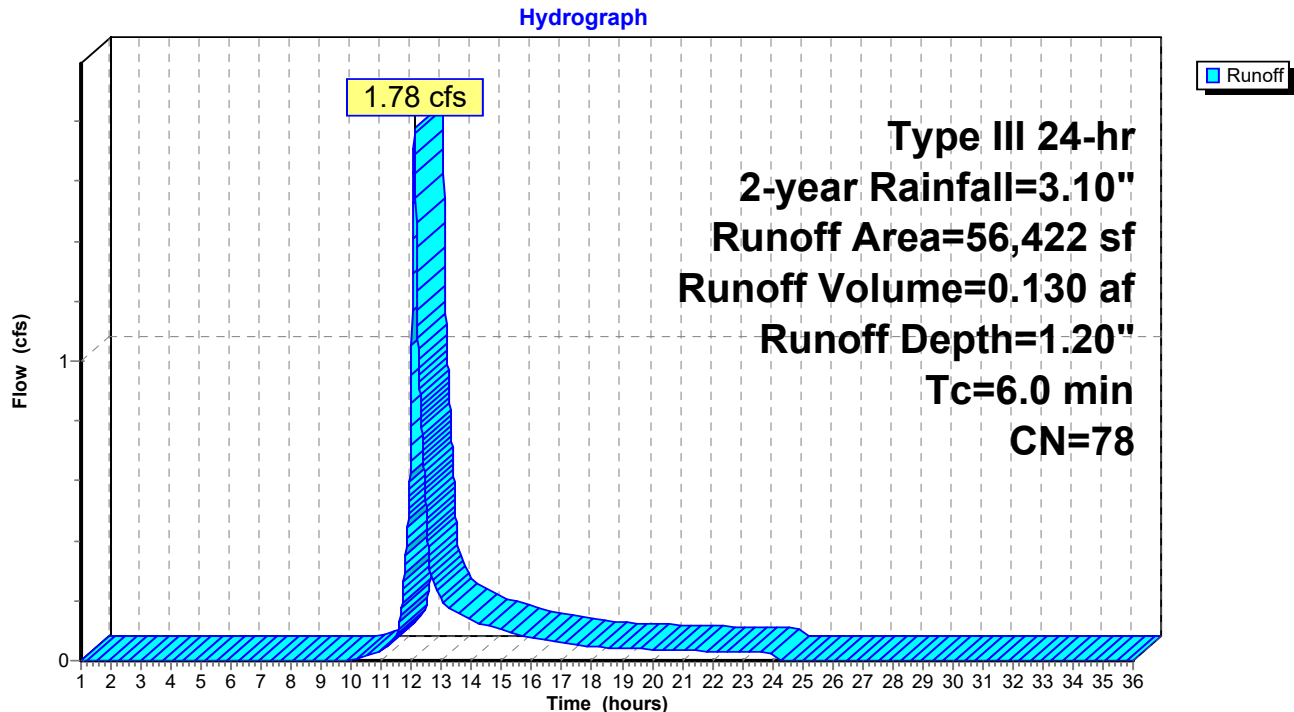
Summary for Subcatchment 1S.2: Co Op Roof & yard

Runoff = 1.78 cfs @ 12.09 hrs, Volume= 0.130 af, Depth= 1.20"

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
*	5,239	98	pavers
	16,100	39	>75% Grass cover, Good, HSG A
*	21,137	98	Roofs
*	4,191	98	sidewalks
*	618	98	patios
	9,137	77	1/8 acre lots, 65% imp, HSG A
	56,422	78	Weighted Average
	19,298		34.20% Pervious Area
	37,124		65.80% Impervious Area

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

Subcatchment 1S.2: Co Op Roof & yard

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

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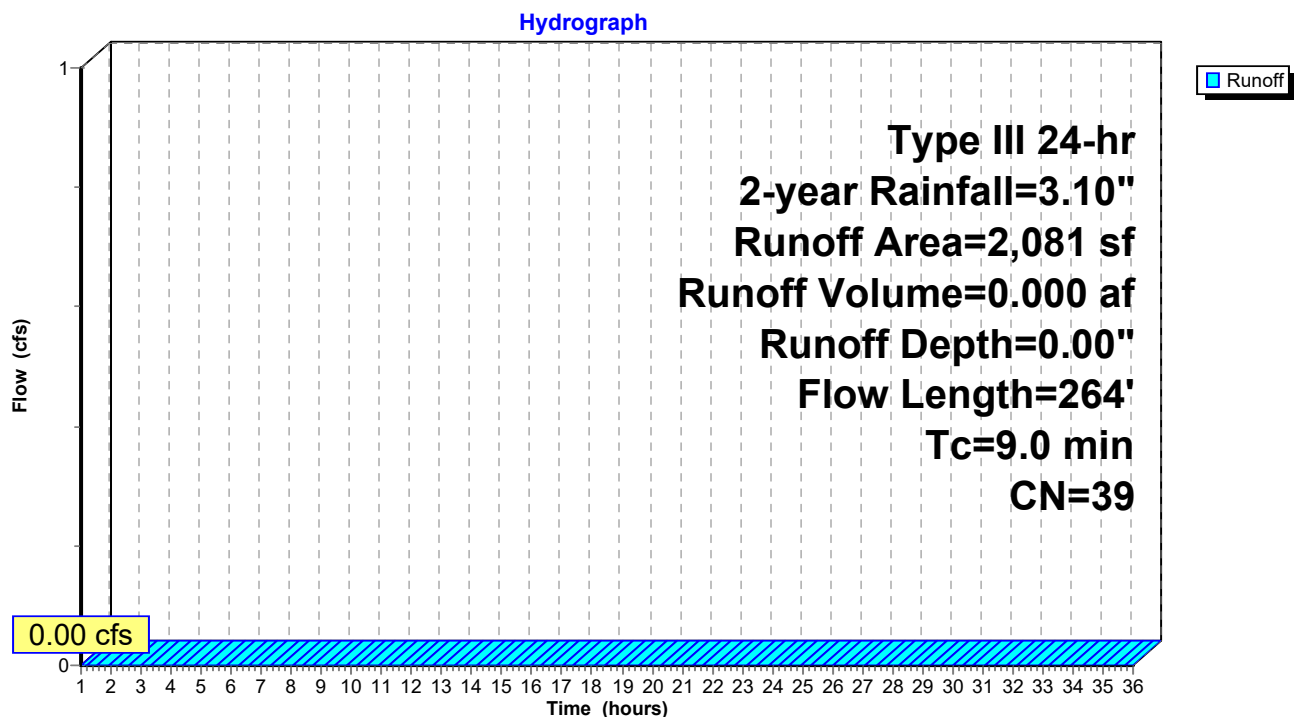
Summary for Subcatchment 1S.3: Runoff to park

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= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

Area (sf)	CN	Description
2,081	39	>75% Grass cover, Good, HSG A
2,081		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	100	0.0600	0.27		Sheet Flow, A to B Grass: Short n= 0.150 P2= 3.27"
2.8	164	0.0200	0.99		Shallow Concentrated Flow, B to C Short Grass Pasture Kv= 7.0 fps
9.0	264	Total			

Subcatchment 1S.3: Runoff to park

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

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Summary for Subcatchment 1S.4: Central parking/drive

Runoff = 0.78 cfs @ 12.09 hrs, Volume= 0.056 af, Depth= 1.53"

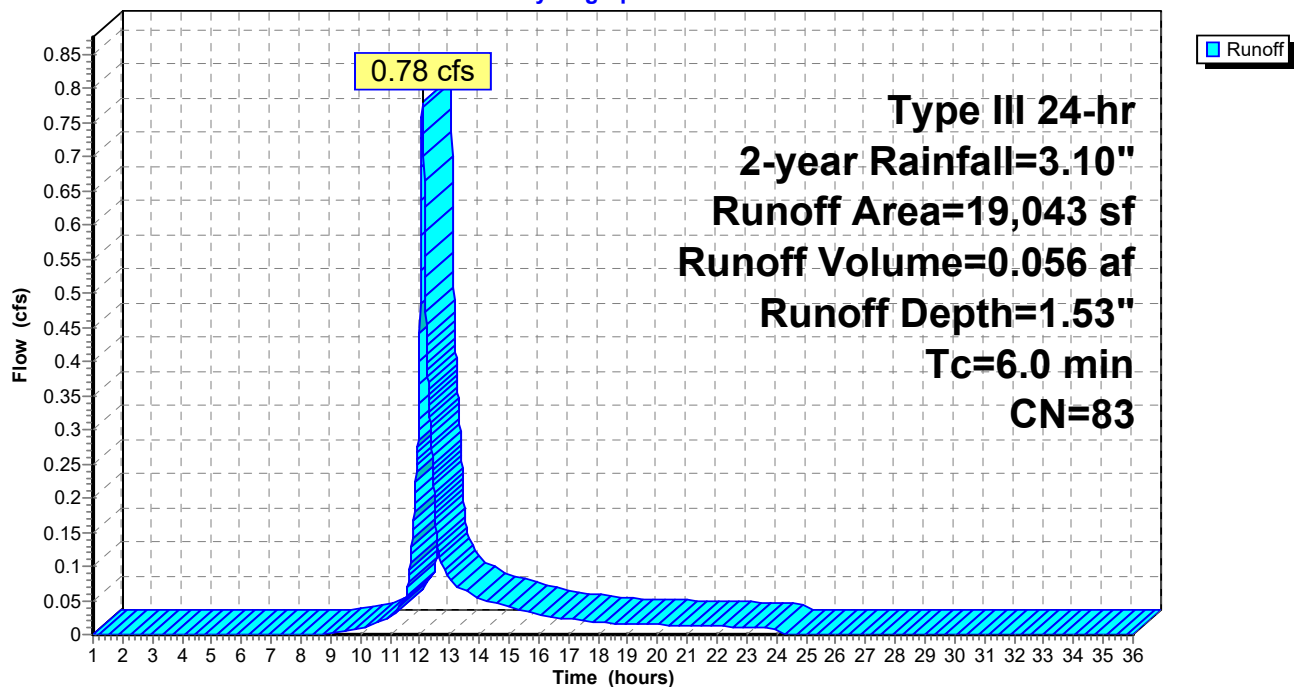
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	14,850	98	Pavement
	4,193	30	Brush, Good, HSG A
	19,043	83	Weighted Average
	4,193		22.02% Pervious Area
	14,850		77.98% Impervious Area

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

Subcatchment 1S.4: Central parking/drive

Hydrograph



Summary for Subcatchment 1S.5: Contained yard/park connection

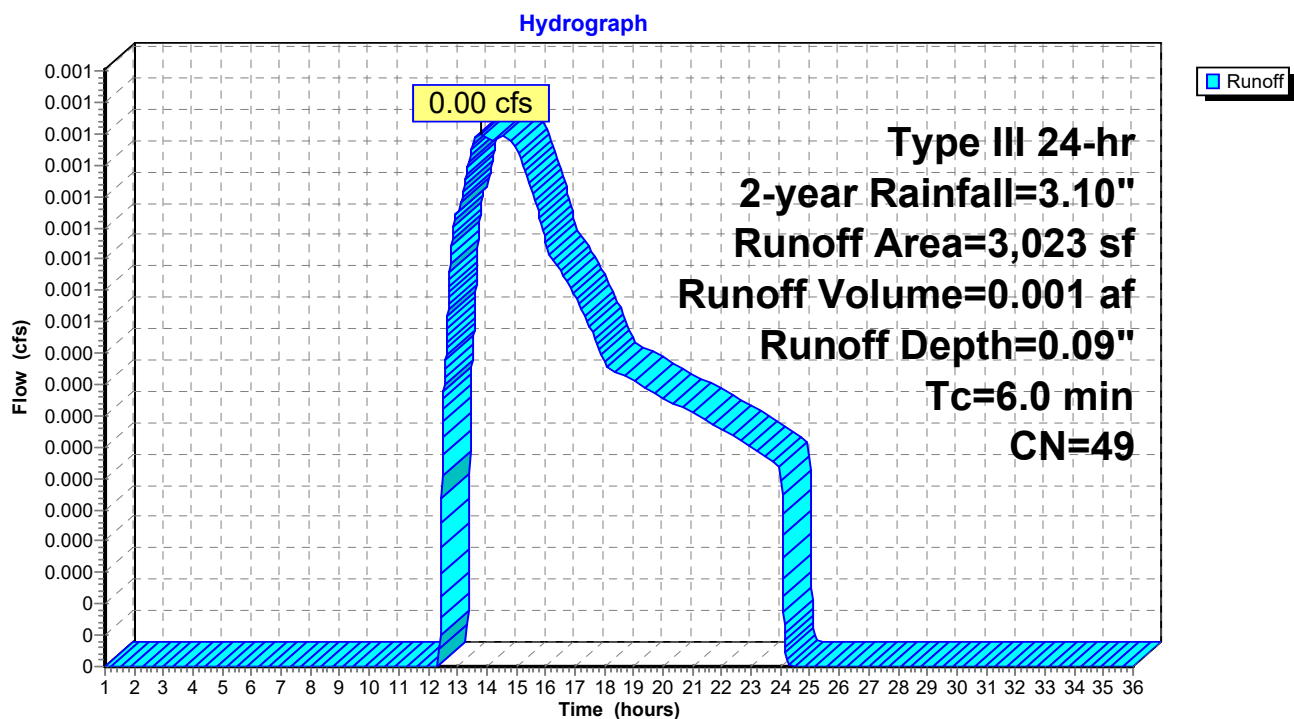
Runoff = 0.00 cfs @ 13.78 hrs, Volume= 0.001 af, Depth= 0.09"

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
2,514	39	>75% Grass cover, Good, HSG A
* 509	98	sidewalks
3,023	49	Weighted Average
2,514		83.16% Pervious Area
509		16.84% Impervious Area

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

Subcatchment 1S.5: Contained yard/park connection



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

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Summary for Subcatchment 1S.6: Building E roof and yard

Runoff = 0.41 cfs @ 12.10 hrs, Volume= 0.033 af, Depth= 0.77"

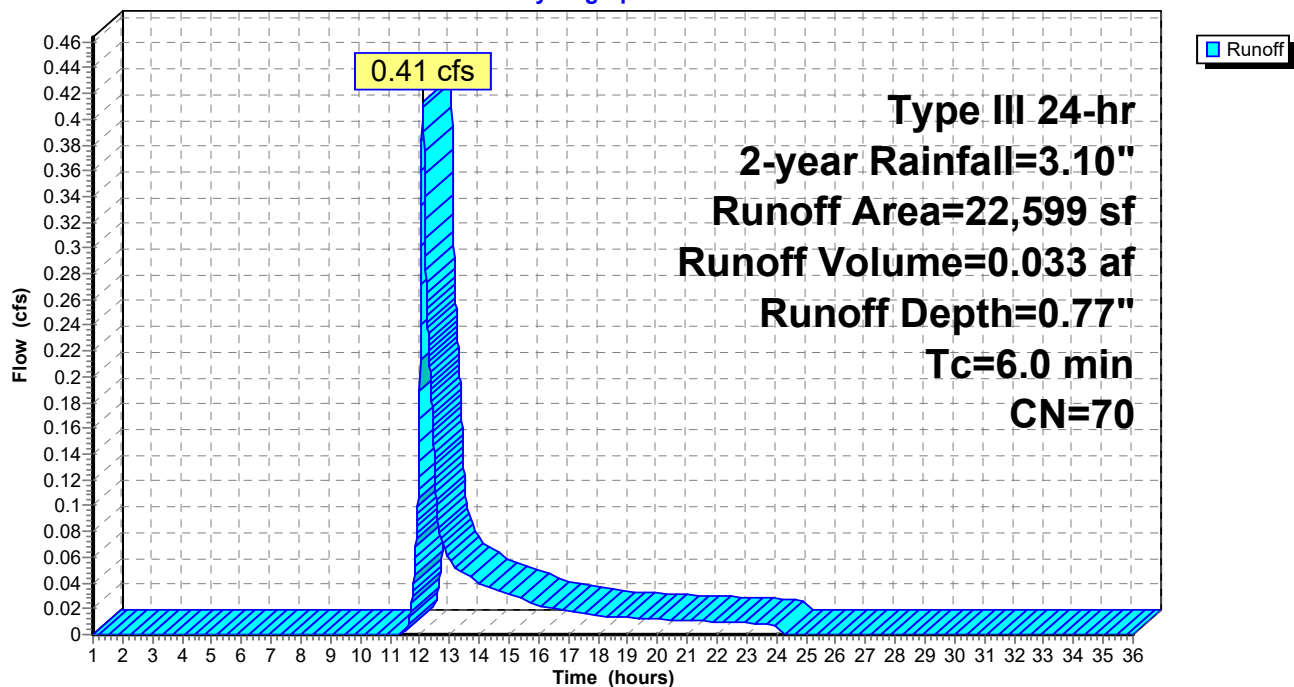
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
	10,599	39	>75% Grass cover, Good, HSG A
*	12,000	98	roof
	22,599	70	Weighted Average
	10,599		46.90% Pervious Area
	12,000		53.10% Impervious Area

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

Subcatchment 1S.6: Building E roof and yard

Hydrograph



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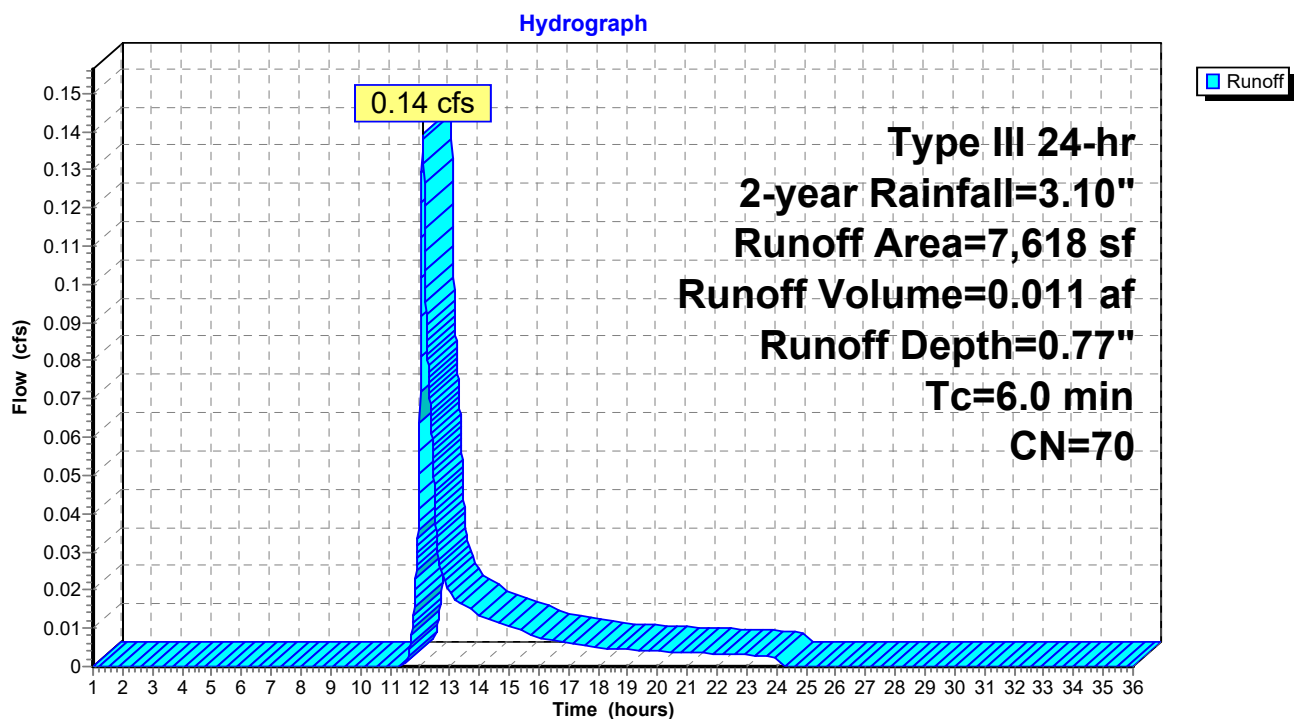
Summary for Subcatchment 1S.7: East Lot 4

Runoff = 0.14 cfs @ 12.10 hrs, Volume= 0.011 af, Depth= 0.77"

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
*	4,038	98	Paved parking
	3,580	39	>75% Grass cover, Good, HSG A
	7,618	70	Weighted Average
	3,580		46.99% Pervious Area
	4,038		53.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1S.7: East Lot 4

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

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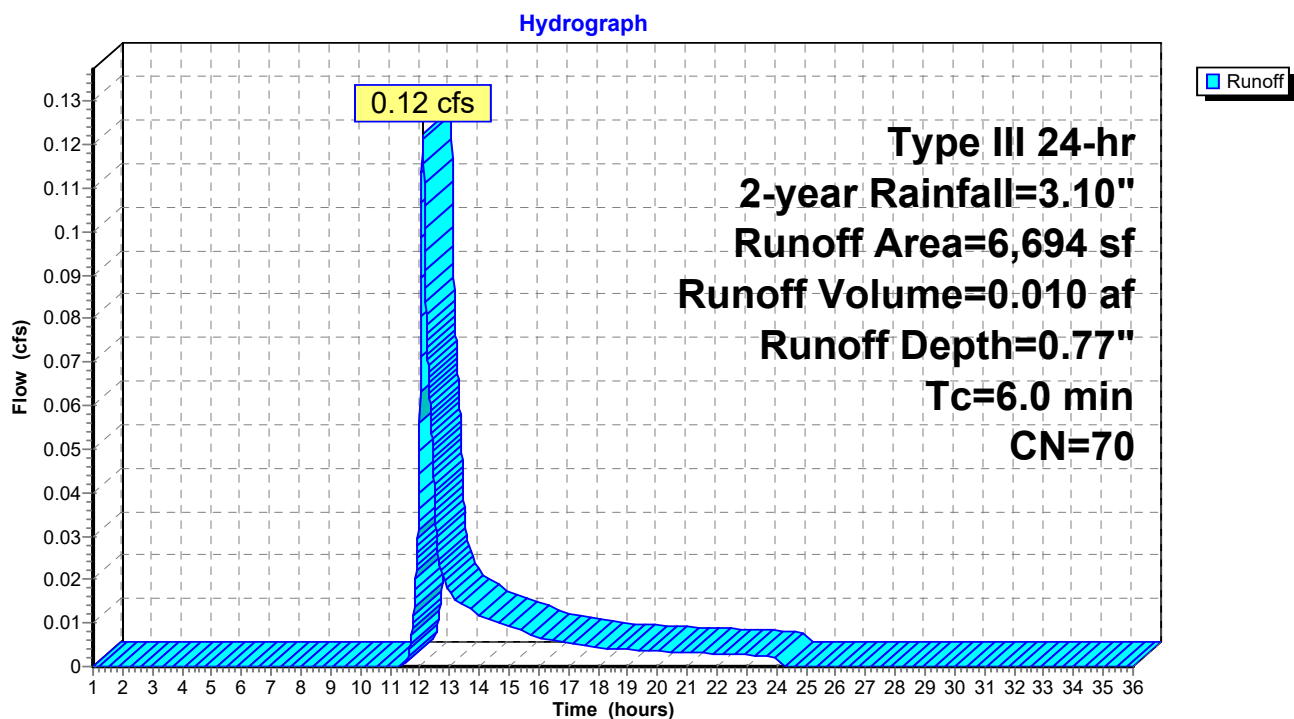
Summary for Subcatchment 1S.8: East Lot 3

Runoff = 0.12 cfs @ 12.10 hrs, Volume= 0.010 af, Depth= 0.77"

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
*	3,547	98	Paved parking
	3,147	39	>75% Grass cover, Good, HSG A
	6,694	70	Weighted Average
	3,147		47.01% Pervious Area
	3,547		52.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1S.8: East Lot 3

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

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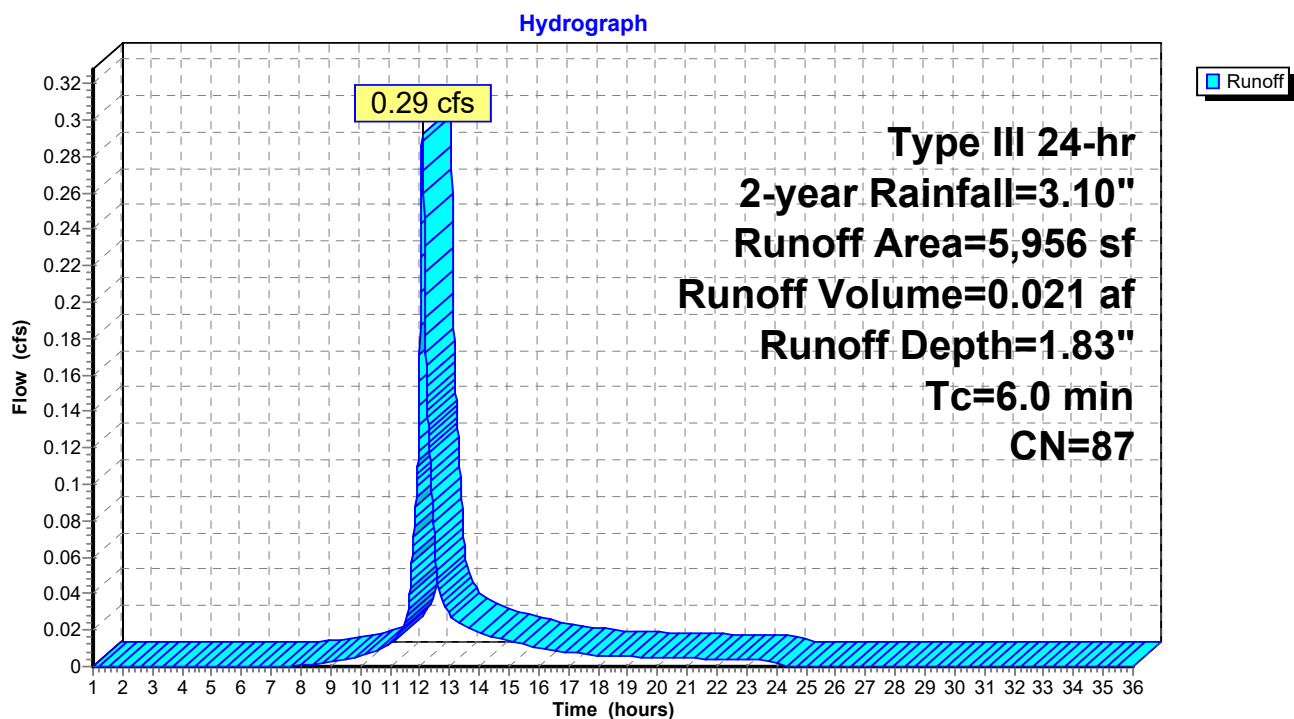
Summary for Subcatchment 1S.9: East Lot 2

Runoff = 0.29 cfs @ 12.09 hrs, Volume= 0.021 af, Depth= 1.83"

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
*	4,809	98	Paved parking, patio, sidewalk
	1,147	39	>75% Grass cover, Good, HSG A
	5,956	87	Weighted Average
	1,147		19.26% Pervious Area
	4,809		80.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1S.9: East Lot 2

Summary for Subcatchment 2S: 295 Embankment Trib

Runoff = 0.00 cfs @ 23.91 hrs, Volume= 0.000 af, Depth= 0.00"

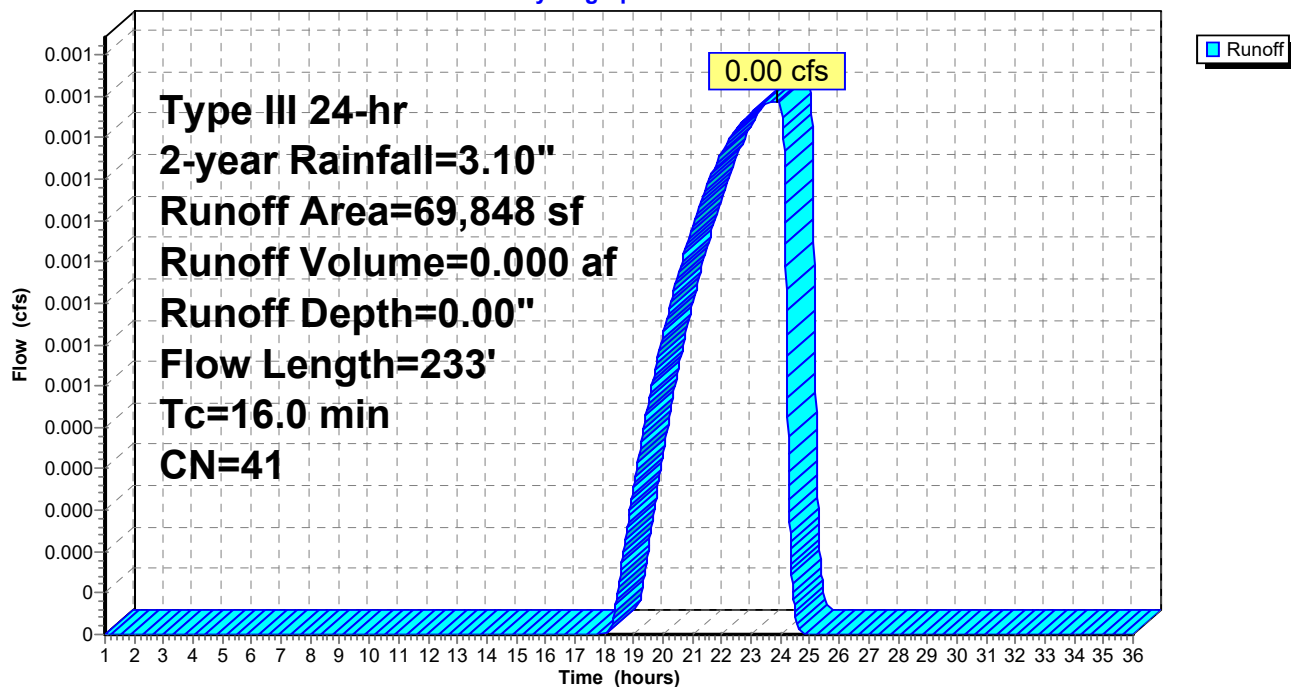
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
	8,183	39	>75% Grass cover, Good, HSG A
*	230	98	Stairs
*	3,155	98	Path
*	5,488	98	Homes/driveways
	52,792	32	Woods/grass comb., Good, HSG A
	69,848	41	Weighted Average
	60,975		87.30% Pervious Area
	8,873		12.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	100	0.0500	0.11		Sheet Flow, A to B Woods: Light underbrush n= 0.400 P2= 3.27"
1.3	133	0.0600	1.71		Shallow Concentrated Flow, B to C Short Grass Pasture Kv= 7.0 fps
16.0	233	Total			

Subcatchment 2S: 295 Embankment Trib

Hydrograph



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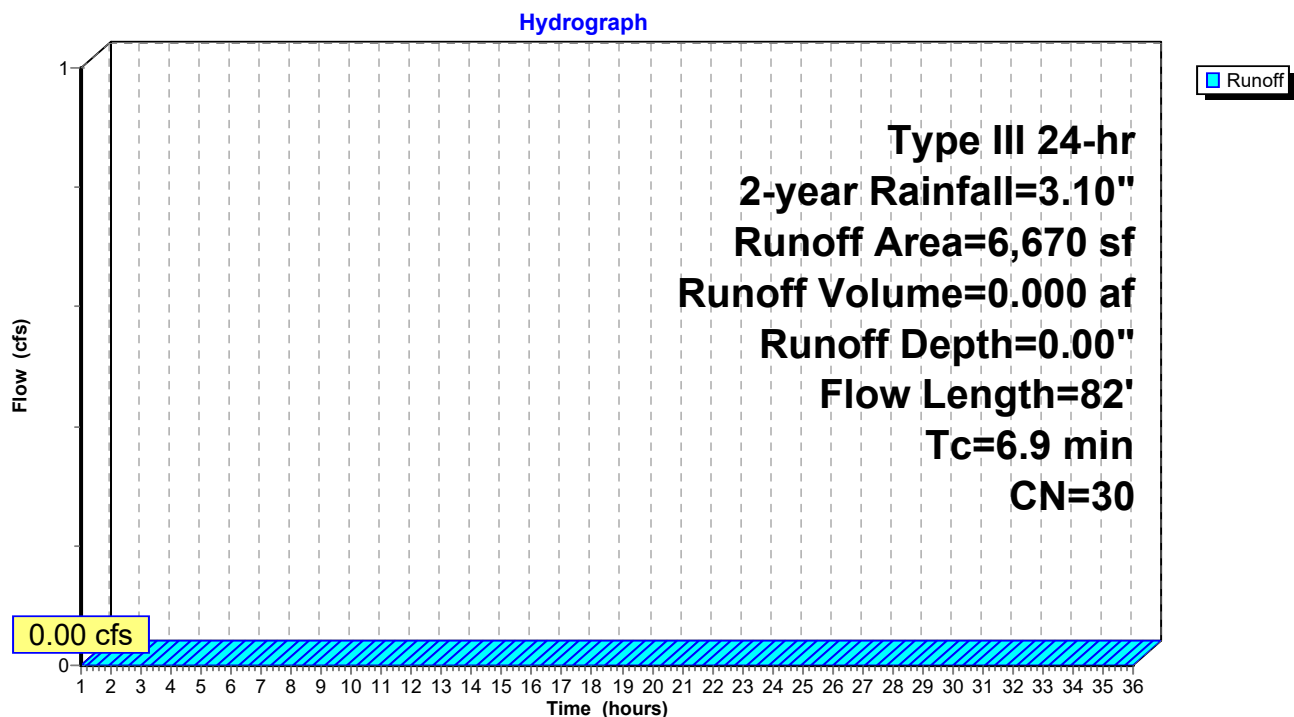
Summary for Subcatchment 3S.1: Garden area runoff

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= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

Area (sf)	CN	Description
6,670	30	Brush, Good, HSG A
6,670		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	28	0.3330	0.28		Sheet Flow, A to B
					Grass: Dense n= 0.240 P2= 3.27"
5.2	54	0.0700	0.17		Sheet Flow, B to C
					Grass: Dense n= 0.240 P2= 3.27"
6.9	82	Total			

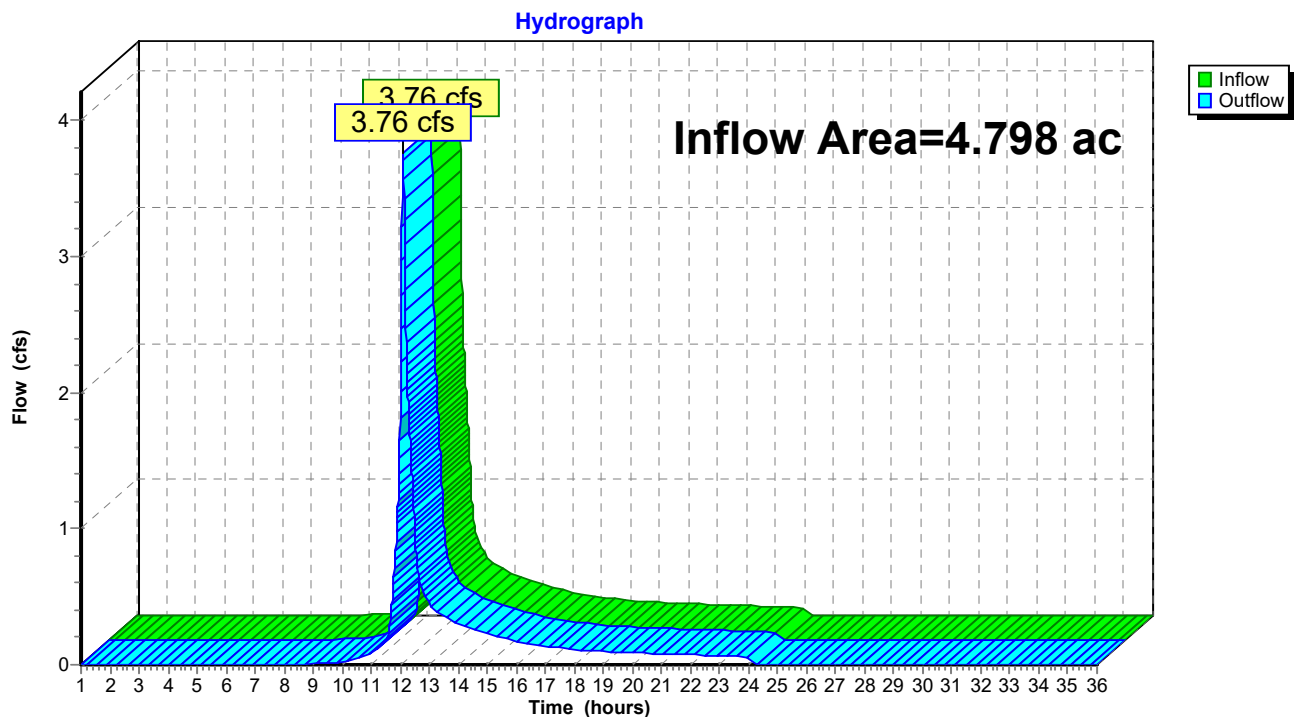
Subcatchment 3S.1: Garden area runoff

Summary for Reach POI-1: POI #1 - 60" Douglass MS4

Inflow Area = 4.798 ac, 46.81% Impervious, Inflow Depth = 0.71" for 2-year event
 Inflow = 3.76 cfs @ 12.09 hrs, Volume= 0.286 af
 Outflow = 3.76 cfs @ 12.09 hrs, Volume= 0.286 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 POI-1: POI #1 - 60" Douglass MS4

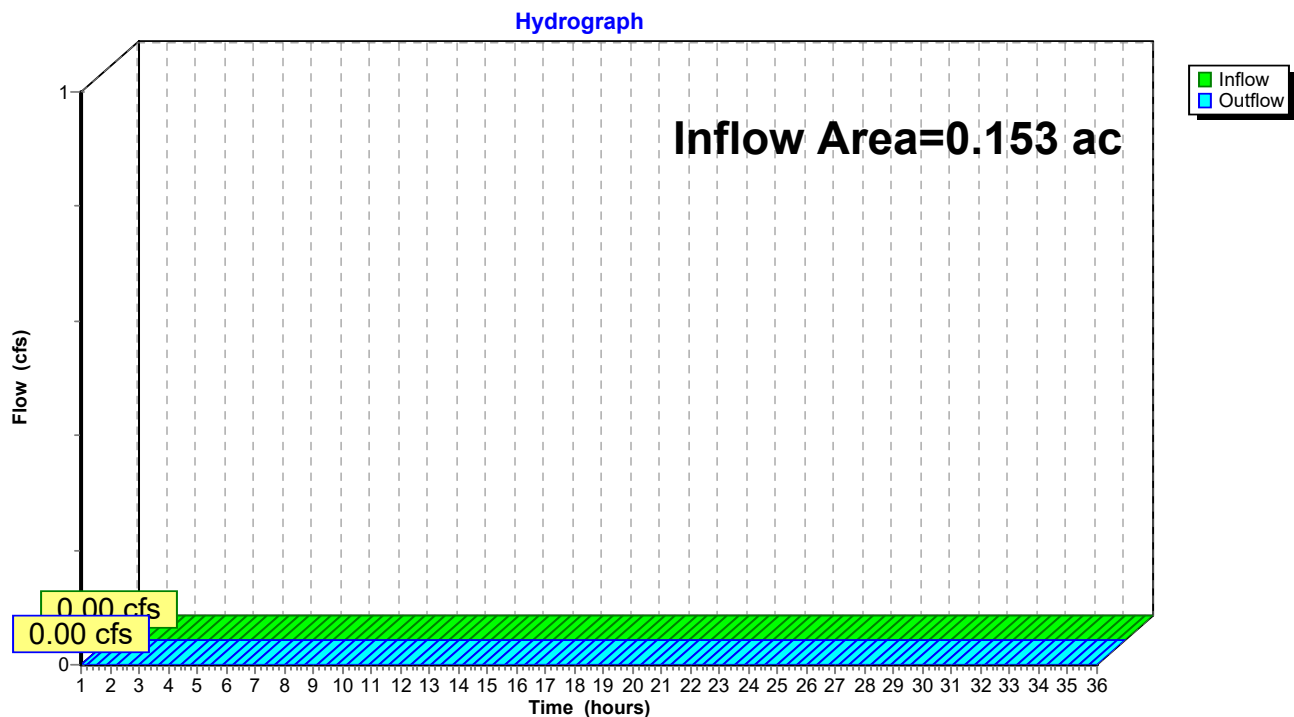


Summary for Reach POI-3: POI #3 - Baseball Field

Inflow Area = 0.153 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-year 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= 1.00-36.00 hrs, dt= 0.01 hrs

Reach POI-3: POI #3 - Baseball Field



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Summary for Pond P1: VUSF

Inflow Area = 0.249 ac, 76.24% Impervious, Inflow Depth = 1.46" for 2-year event
 Inflow = 0.42 cfs @ 12.09 hrs, Volume= 0.030 af
 Outflow = 0.06 cfs @ 12.76 hrs, Volume= 0.030 af, Atten= 87%, Lag= 39.9 min
 Discarded = 0.04 cfs @ 12.76 hrs, Volume= 0.022 af
 Primary = 0.01 cfs @ 12.76 hrs, Volume= 0.009 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Peak Elev= 30.91' @ 12.76 hrs Surf.Area= 1,889 sf Storage= 530 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= 171.8 min (1,009.6 - 837.8)

Volume	Invert	Avail.Storage	Storage Description
#1	30.75'	1,899 cf	Ponding (Prismatic) Listed below (Recalc)
#2	29.25'	69 cf	Filter Media/Loam (Prismatic) Listed below (Recalc) 687 cf Overall x 10.0% Voids
#3	28.92'	30 cf	Transition Gravel (Prismatic) Listed below (Recalc) 151 cf Overall x 20.0% Voids
#4	27.00'	349 cf	Crushed Stone (Prismatic) Listed below (Recalc) 879 cf Overall - 6 cf Embedded = 873 cf x 40.0% Voids
#5	27.10'	5 cf	4.0" Round Pipe Storage x 2 Inside #4 L= 30.0' S= 0.0005 '/' 6 cf Overall - 0.2" Wall Thickness = 5 cf
		2,353 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.75	465	0	0
32.25	945	1,058	1,058
33.00	1,300	842	1,899

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
29.25	458	0	0
30.75	458	687	687

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.92	458	0	0
29.25	458	151	151

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
27.00	458	0	0
28.92	458	879	879

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Device	Routing	Invert	Outlet Devices
#1	Primary	27.00'	12.0" Round Culvert L= 60.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 27.00' / 26.75' S= 0.0042 '/' Cc= 0.600 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf
#2	Device 1	27.10'	0.5" Vert. Soil Filter Media Drawdown Effect C= 0.600
#3	Device 1	32.35'	24.0" Horiz. Beehive Outlet C= 0.600 Limited to weir flow at low heads
#4	Discarded	27.00'	1.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.04 cfs @ 12.76 hrs HW=30.91' (Free Discharge)

↳ **4=Exfiltration** (Exfiltration Controls 0.04 cfs)

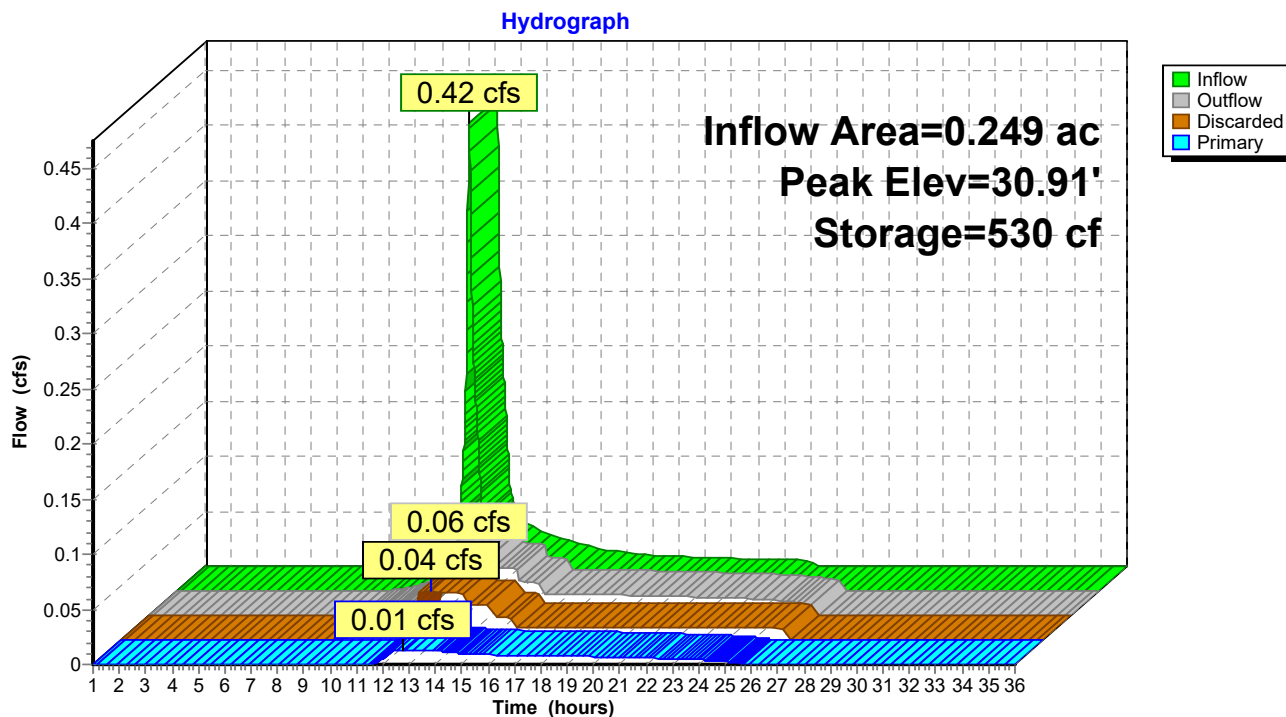
Primary OutFlow Max=0.01 cfs @ 12.76 hrs HW=30.91' TW=0.00' (Dynamic Tailwater)

↳ **1=Culvert** (Passes 0.01 cfs of 3.67 cfs potential flow)

↳ **2=Soil Filter Media Drawdown Effect** (Orifice Controls 0.01 cfs @ 9.37 fps)

↳ **3=Beehive Outlet** (Controls 0.00 cfs)

Pond P1: VUSF



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

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Summary for Pond P2: FP 4

Inflow Area = 0.175 ac, 53.01% Impervious, Inflow Depth = 0.77" for 2-year event
 Inflow = 0.14 cfs @ 12.10 hrs, Volume= 0.011 af
 Outflow = 0.14 cfs @ 12.10 hrs, Volume= 0.011 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.14 cfs @ 12.10 hrs, Volume= 0.011 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 35.95' @ 1.00 hrs Surf.Area= 40 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 0.0 min (878.2 - 878.2)

Volume	Invert	Avail.Storage	Storage Description
#1	35.95'	14 cf	4.00'W x 5.00'L x 3.60'H Media/Stone 72 cf Overall x 20.0% Voids
#2	35.95'	38 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		52 cf	Total Available Storage

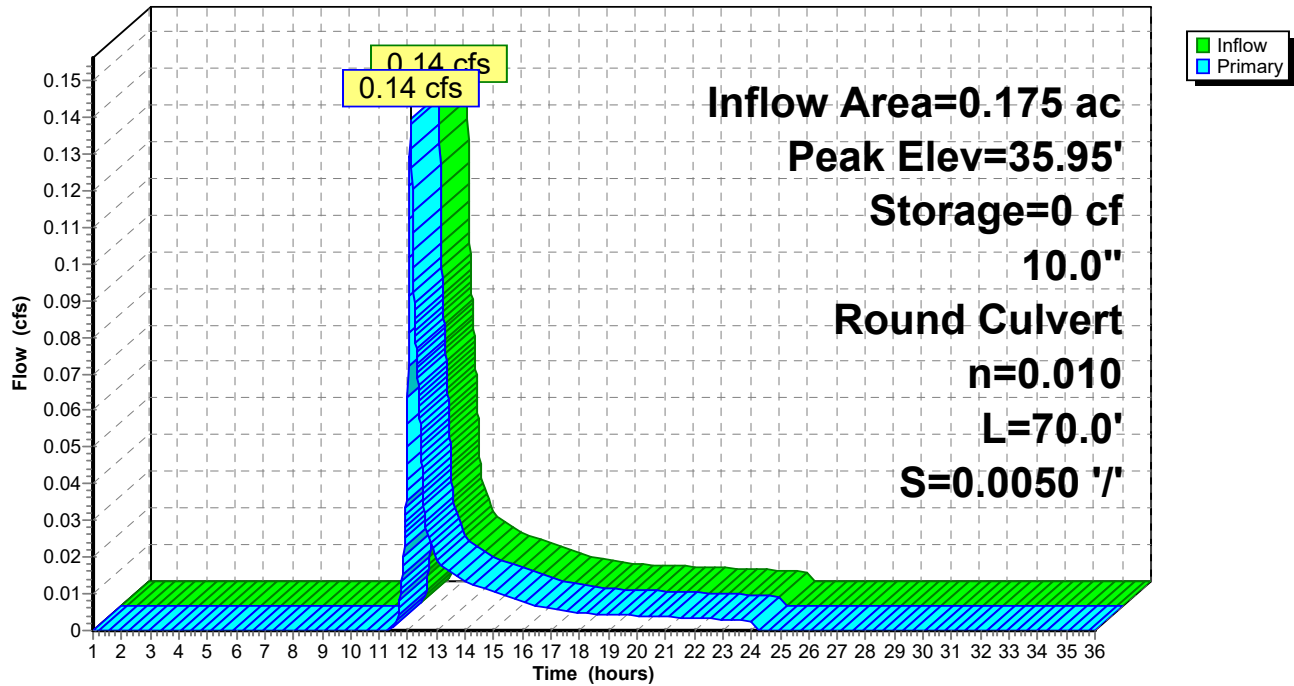
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
35.95	20	0	0
36.95	56	38	38

Device	Routing	Invert	Outlet Devices
#1	Primary	32.35'	10.0" Round Culvert L= 70.0' Ke= 1.000 Inlet / Outlet Invert= 32.35' / 32.00' S= 0.0050 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 12.10 hrs HW=35.95' TW=0.00' (Dynamic Tailwater)
 ↑**1=Culvert** (Passes 0.00 cfs of 3.51 cfs potential flow)

Pond P2: FP 4

Hydrograph



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

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Summary for Pond P3: FP 3

Inflow Area = 0.154 ac, 52.99% Impervious, Inflow Depth = 0.77" for 2-year event
 Inflow = 0.12 cfs @ 12.10 hrs, Volume= 0.010 af
 Outflow = 0.12 cfs @ 12.10 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.12 cfs @ 12.10 hrs, Volume= 0.010 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 36.10' @ 1.00 hrs Surf.Area= 50 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 0.0 min (878.2 - 878.2)

Volume	Invert	Avail.Storage	Storage Description
#1	36.10'	21 cf	5.00'W x 5.00'L x 4.20'H Media/Stone 105 cf Overall x 20.0% Voids
#2	36.10'	45 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		66 cf	Total Available Storage

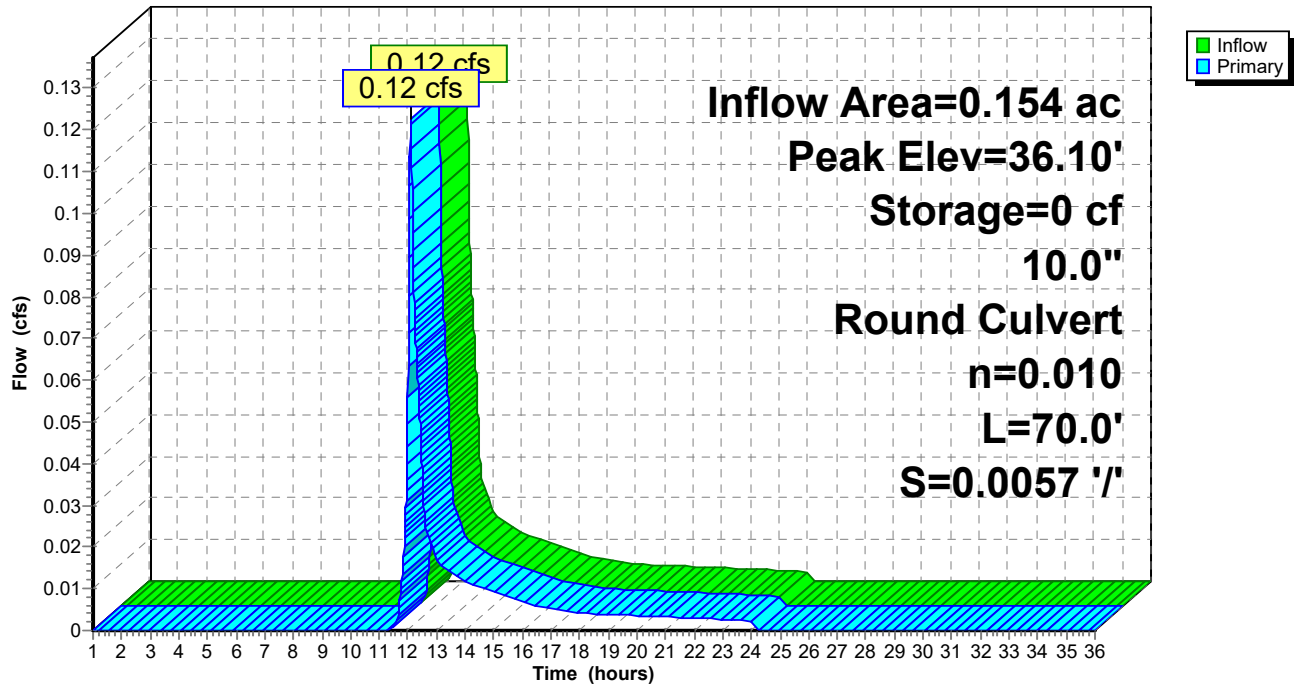
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.10	25	0	0
37.10	64	45	45

Device	Routing	Invert	Outlet Devices
#1	Primary	31.90'	10.0" Round Culvert L= 70.0' Ke= 1.000 Inlet / Outlet Invert= 31.90' / 31.50' S= 0.0057 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 12.10 hrs HW=36.10' TW=0.00' (Dynamic Tailwater)
 ↑1=Culvert (Passes 0.00 cfs of 3.83 cfs potential flow)

Pond P3: FP 3

Hydrograph



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

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Summary for Pond P4: FP 2

Inflow Area = 0.137 ac, 80.74% Impervious, Inflow Depth = 1.83" for 2-year event
 Inflow = 0.29 cfs @ 12.09 hrs, Volume= 0.021 af
 Outflow = 0.29 cfs @ 12.09 hrs, Volume= 0.021 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.29 cfs @ 12.09 hrs, Volume= 0.021 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 35.90' @ 1.00 hrs Surf.Area= 50 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	35.90'	23 cf	5.00'W x 5.00'L x 4.50'H Media/Stone 113 cf Overall x 20.0% Voids
#2	35.90'	45 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		67 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
35.90	25	0	0
36.90	64	45	45

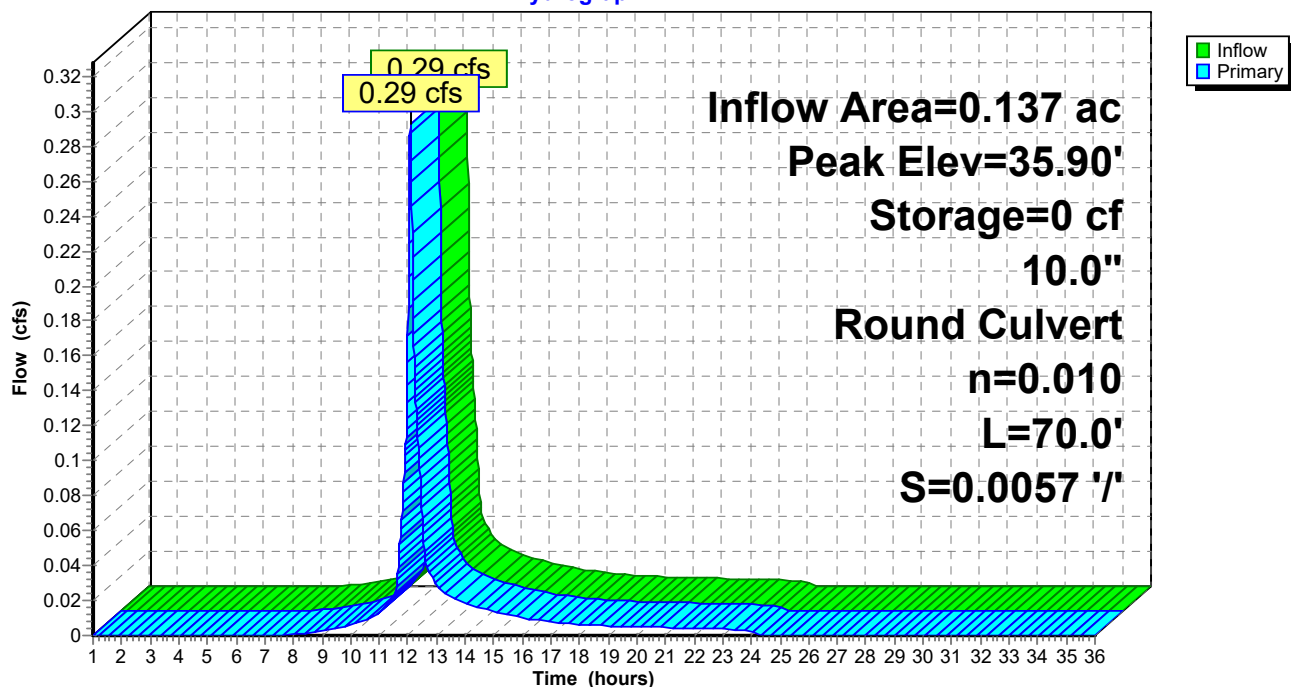
Device	Routing	Invert	Outlet Devices
#1	Primary	31.40'	10.0" Round Culvert L= 70.0' Ke= 1.000 Inlet / Outlet Invert= 31.40' / 31.00' S= 0.0057 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=35.90' TW=0.00' (Dynamic Tailwater)

↑**1=Culvert** (Passes 0.00 cfs of 3.98 cfs potential flow)

Pond P4: FP 2

Hydrograph



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

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Summary for Pond P5: FP 1

Inflow Area = 0.086 ac, 84.98% Impervious, Inflow Depth = 1.99" for 2-year event
 Inflow = 0.20 cfs @ 12.09 hrs, Volume= 0.014 af
 Outflow = 0.20 cfs @ 12.09 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.20 cfs @ 12.09 hrs, Volume= 0.014 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 35.70' @ 1.00 hrs Surf.Area= 40 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	35.70'	19 cf	4.00'W x 5.00'L x 4.80'H Media/Stone 96 cf Overall x 20.0% Voids
#2	35.70'	38 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		57 cf	Total Available Storage

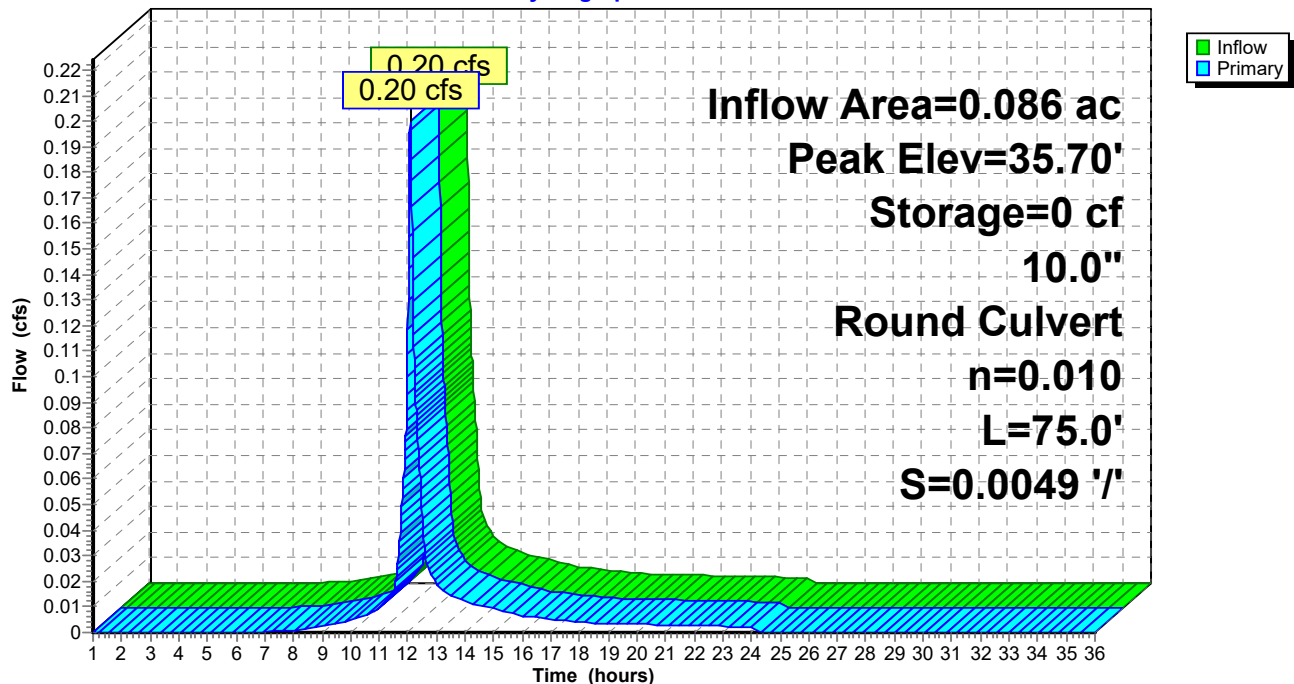
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
35.70	20	0	0
36.70	56	38	38

Device	Routing	Invert	Outlet Devices
#1	Primary	30.90'	10.0" Round Culvert L= 75.0' Ke= 1.000 Inlet / Outlet Invert= 30.90' / 30.53' S= 0.0049 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=35.70' TW=0.00' (Dynamic Tailwater)
 ↑**1=Culvert** (Passes 0.00 cfs of 4.12 cfs potential flow)

Pond P5: FP 1

Hydrograph



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Summary for Pond POI #2: POI #2 (295 Basin)

Inflow Area = 1.603 ac, 12.70% Impervious, Inflow Depth = 0.00" for 2-year event
 Inflow = 0.00 cfs @ 23.91 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af
 Primary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af
 Secondary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 26.36' @ 24.90 hrs Surf.Area= 505 sf Storage= 20 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	26.30'	105,037 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.30	100	0	0
27.00	4,475	1,601	1,601
28.00	10,120	7,298	8,899
29.00	14,131	12,126	21,024
30.00	17,326	15,729	36,753
32.00	24,023	41,349	78,102
33.00	29,847	26,935	105,037

Device	Routing	Invert	Outlet Devices
#1	Primary	26.60'	12.0" Round Culvert L= 16.0' Ke= 0.600 Inlet / Outlet Invert= 26.60' / 26.51' S= 0.0056 ' S= 0.0056 ' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	32.40'	20.0' long x 15.0' breadth Overflow Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Discarded	26.60'	1.000 in/hr Exfiltration over Surface area above 26.60' Excluded Surface area = 1,975 sf

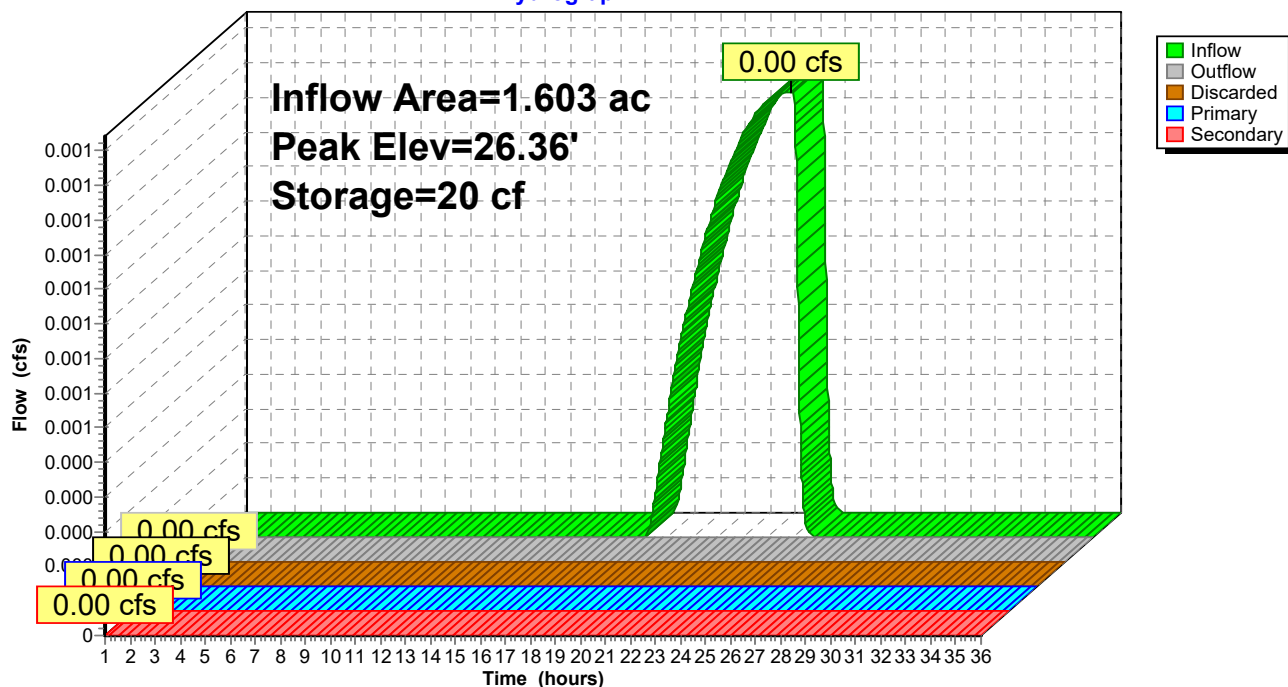
Discarded OutFlow Max=0.00 cfs @ 1.00 hrs HW=26.30' (Free Discharge)
 ↑**3=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 1.00 hrs HW=26.30' TW=0.00' (Dynamic Tailwater)
 ↑**1=Culvert** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 1.00 hrs HW=26.30' (Free Discharge)
 ↑**2=Overflow** (Controls 0.00 cfs)

Pond POI #2: POI #2 (295 Basin)

Hydrograph



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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

Subcatchment 1S.1: Drive to Street	Runoff Area=1,131 sf 55.00% Impervious Runoff Depth=1.82" Tc=6.0 min CN=71 Runoff=0.05 cfs 0.004 af
Subcatchment 1S.10: East Lot 1	Runoff Area=3,754 sf 84.98% Impervious Runoff Depth=3.39" Tc=6.0 min CN=89 Runoff=0.33 cfs 0.024 af
Subcatchment 1S.11: South Lot Treated	Runoff Area=10,852 sf 76.24% Impervious Runoff Depth=2.72" Tc=6.0 min CN=82 Runoff=0.80 cfs 0.057 af
Subcatchment 1S.2: Co Op Roof & yard	Runoff Area=56,422 sf 65.80% Impervious Runoff Depth=2.38" Tc=6.0 min CN=78 Runoff=3.61 cfs 0.256 af
Subcatchment 1S.3: Runoff to park	Runoff Area=2,081 sf 0.00% Impervious Runoff Depth=0.13" Flow Length=264' Tc=9.0 min CN=39 Runoff=0.00 cfs 0.001 af
Subcatchment 1S.4: Central parking/drive	Runoff Area=19,043 sf 77.98% Impervious Runoff Depth=2.81" Tc=6.0 min CN=83 Runoff=1.44 cfs 0.103 af
Subcatchment 1S.5: Contained yard/park	Runoff Area=3,023 sf 16.84% Impervious Runoff Depth=0.49" Tc=6.0 min CN=49 Runoff=0.02 cfs 0.003 af
Subcatchment 1S.6: Building E roof and	Runoff Area=22,599 sf 53.10% Impervious Runoff Depth=1.74" Tc=6.0 min CN=70 Runoff=1.03 cfs 0.075 af
Subcatchment 1S.7: East Lot 4	Runoff Area=7,618 sf 53.01% Impervious Runoff Depth=1.74" Tc=6.0 min CN=70 Runoff=0.35 cfs 0.025 af
Subcatchment 1S.8: East Lot 3	Runoff Area=6,694 sf 52.99% Impervious Runoff Depth=1.74" Tc=6.0 min CN=70 Runoff=0.31 cfs 0.022 af
Subcatchment 1S.9: East Lot 2	Runoff Area=5,956 sf 80.74% Impervious Runoff Depth=3.19" Tc=6.0 min CN=87 Runoff=0.50 cfs 0.036 af
Subcatchment 2S: 295 Embankment Trib	Runoff Area=69,848 sf 12.70% Impervious Runoff Depth=0.18" Flow Length=233' Tc=16.0 min CN=41 Runoff=0.05 cfs 0.025 af
Subcatchment 3S.1: Garden area runoff	Runoff Area=6,670 sf 0.00% Impervious Runoff Depth=0.00" Flow Length=82' Tc=6.9 min CN=30 Runoff=0.00 cfs 0.000 af
Reach POI-1: POI #1 - 60" Douglass MS4	Inflow=7.65 cfs 0.573 af Outflow=7.65 cfs 0.573 af
Reach POI-3: POI #3 - Baseball Field	Inflow=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af
Pond P1: VUSF	Peak Elev=31.87' Storage=1,177 cf Inflow=0.80 cfs 0.057 af Discarded=0.05 cfs 0.043 af Primary=0.01 cfs 0.014 af Outflow=0.07 cfs 0.057 af

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Pond P2: FP 4

Peak Elev=35.95' Storage=0 cf Inflow=0.35 cfs 0.025 af
10.0" Round Culvert n=0.010 L=70.0' S=0.0050 '/' Outflow=0.35 cfs 0.025 af

Pond P3: FP 3

Peak Elev=36.10' Storage=0 cf Inflow=0.31 cfs 0.022 af
10.0" Round Culvert n=0.010 L=70.0' S=0.0057 '/' Outflow=0.31 cfs 0.022 af

Pond P4: FP 2

Peak Elev=35.90' Storage=0 cf Inflow=0.50 cfs 0.036 af
10.0" Round Culvert n=0.010 L=70.0' S=0.0057 '/' Outflow=0.50 cfs 0.036 af

Pond P5: FP 1

Peak Elev=35.70' Storage=0 cf Inflow=0.33 cfs 0.024 af
10.0" Round Culvert n=0.010 L=75.0' S=0.0049 '/' Outflow=0.33 cfs 0.024 af

Pond POI #2: POI #2 (295 Basin)

Peak Elev=26.67' Storage=464 cf Inflow=0.05 cfs 0.025 af
Discarded=0.01 cfs 0.008 af Primary=0.01 cfs 0.009 af Secondary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.017 af

Total Runoff Area = 4.952 ac Runoff Volume = 0.631 af Average Runoff Depth = 1.53"
54.64% Pervious = 2.706 ac 45.36% Impervious = 2.246 ac

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

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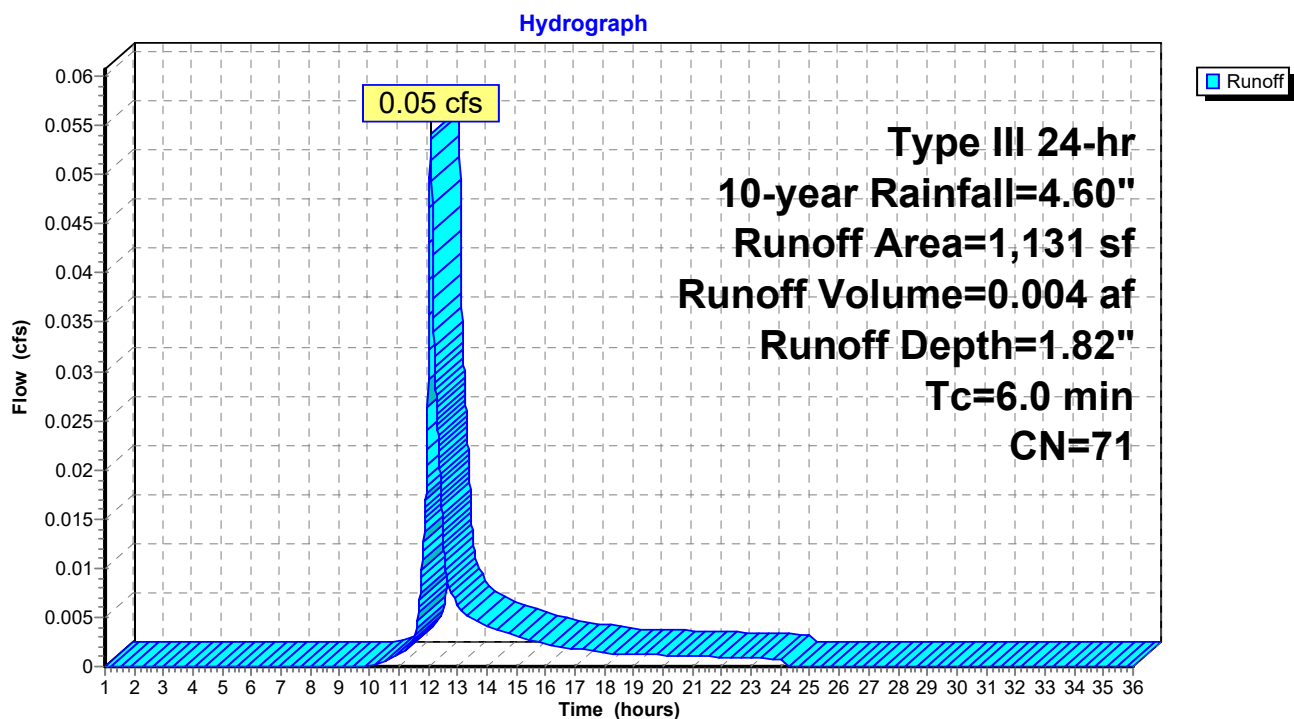
Summary for Subcatchment 1.S1: Drive to Street

Runoff = 0.05 cfs @ 12.09 hrs, Volume= 0.004 af, Depth= 1.82"

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
*	622	98	Pavement
	509	39	>75% Grass cover, Good, HSG A
	1,131	71	Weighted Average
	509		45.00% Pervious Area
	622		55.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1.S1: Drive to Street

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

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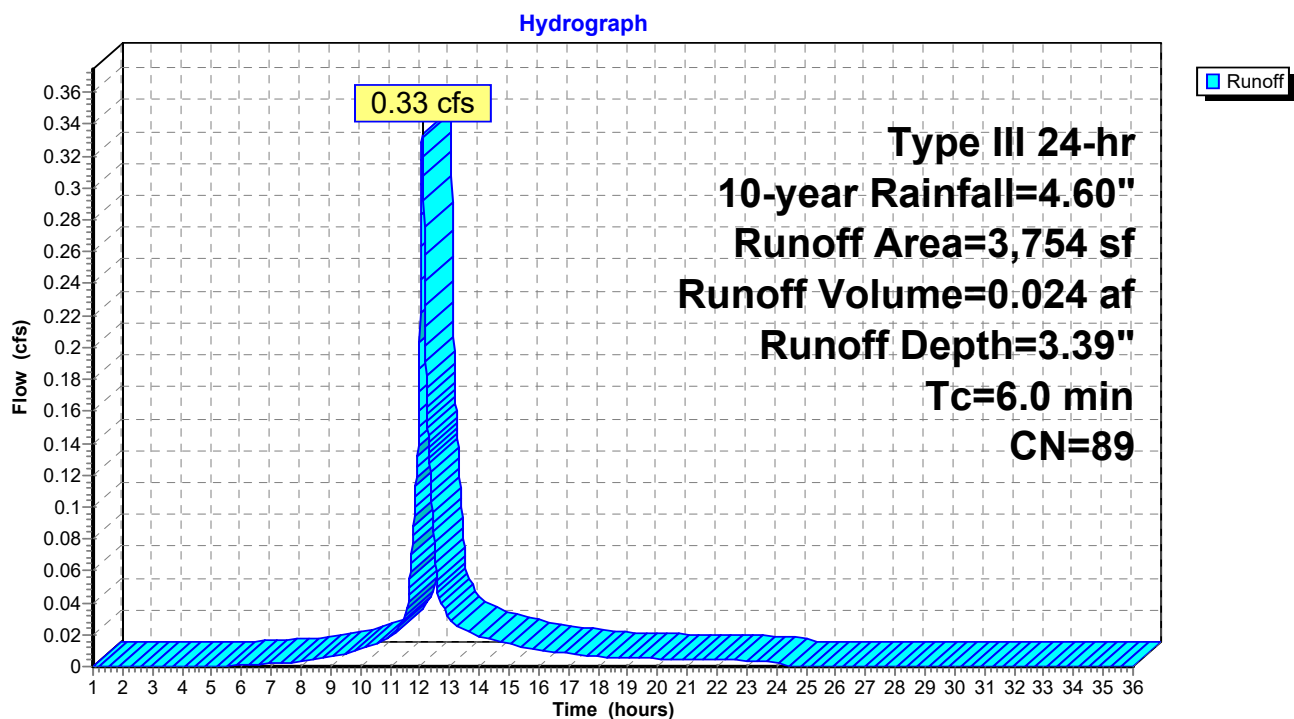
Summary for Subcatchment 1S.10: East Lot 1

Runoff = 0.33 cfs @ 12.09 hrs, Volume= 0.024 af, Depth= 3.39"

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
*	3,190	98	Pavement
	564	39	>75% Grass cover, Good, HSG A
	3,754	89	Weighted Average
	564		15.02% Pervious Area
	3,190		84.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1S.10: East Lot 1

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

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Summary for Subcatchment 1S.11: South Lot Treated

Runoff = 0.80 cfs @ 12.09 hrs, Volume= 0.057 af, Depth= 2.72"

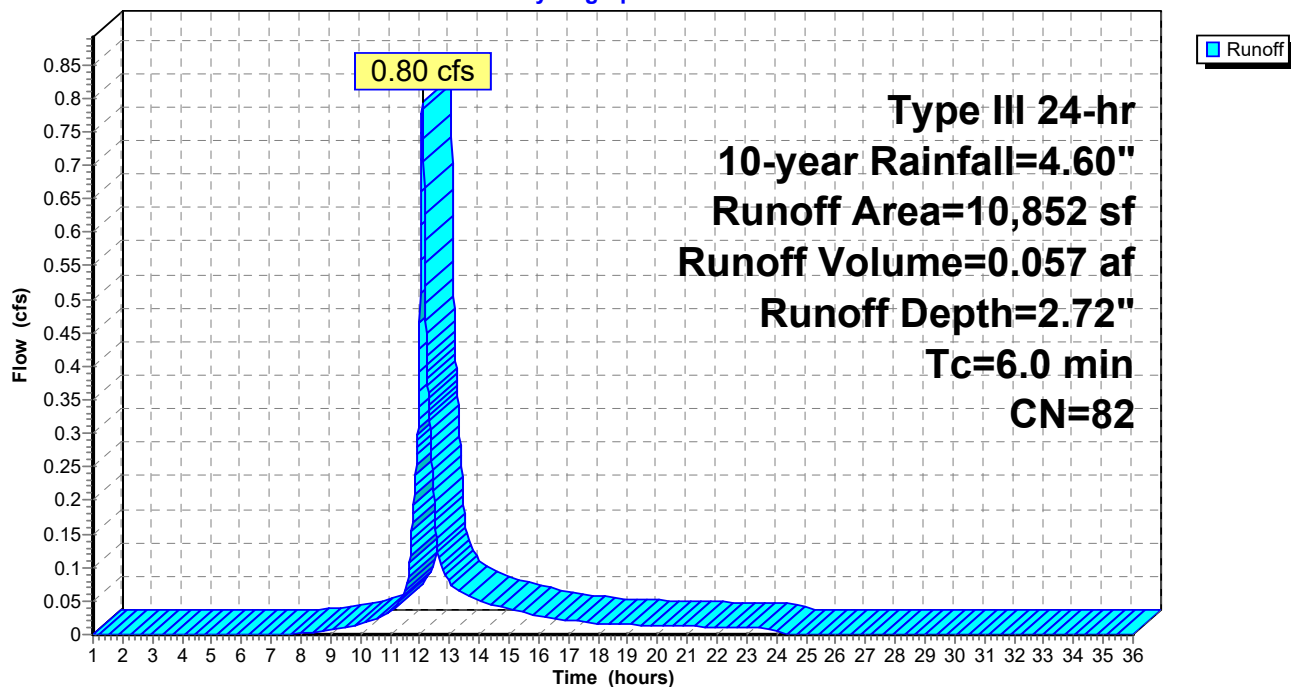
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

	Area (sf)	CN	Description
*	8,274	98	Paved parking
	2,578	30	Brush, Good, HSG A
	10,852	82	Weighted Average
	2,578		23.76% Pervious Area
	8,274		76.24% Impervious Area

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

Subcatchment 1S.11: South Lot Treated

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

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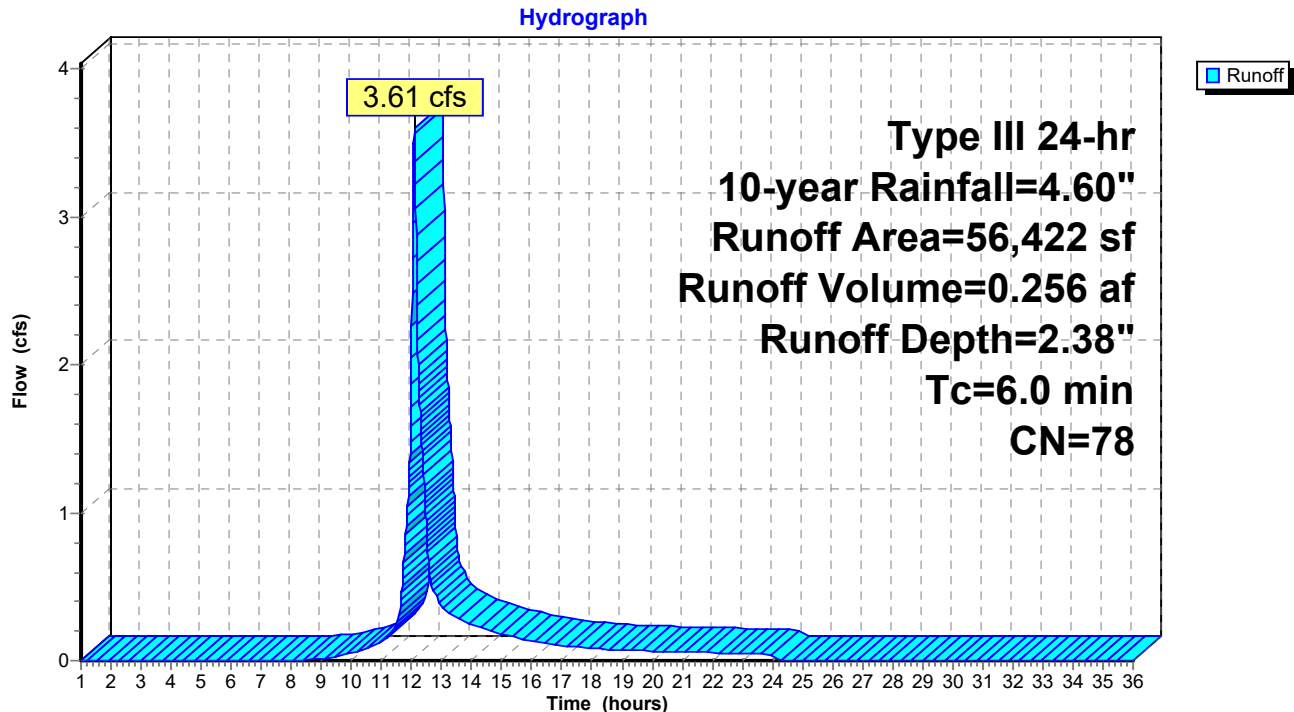
Summary for Subcatchment 1S.2: Co Op Roof & yard

Runoff = 3.61 cfs @ 12.09 hrs, Volume= 0.256 af, Depth= 2.38"

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
*	5,239	98	pavers
	16,100	39	>75% Grass cover, Good, HSG A
*	21,137	98	Roofs
*	4,191	98	sidewalks
*	618	98	patios
	9,137	77	1/8 acre lots, 65% imp, HSG A
	56,422	78	Weighted Average
	19,298		34.20% Pervious Area
	37,124		65.80% Impervious Area

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

Subcatchment 1S.2: Co Op Roof & yard

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

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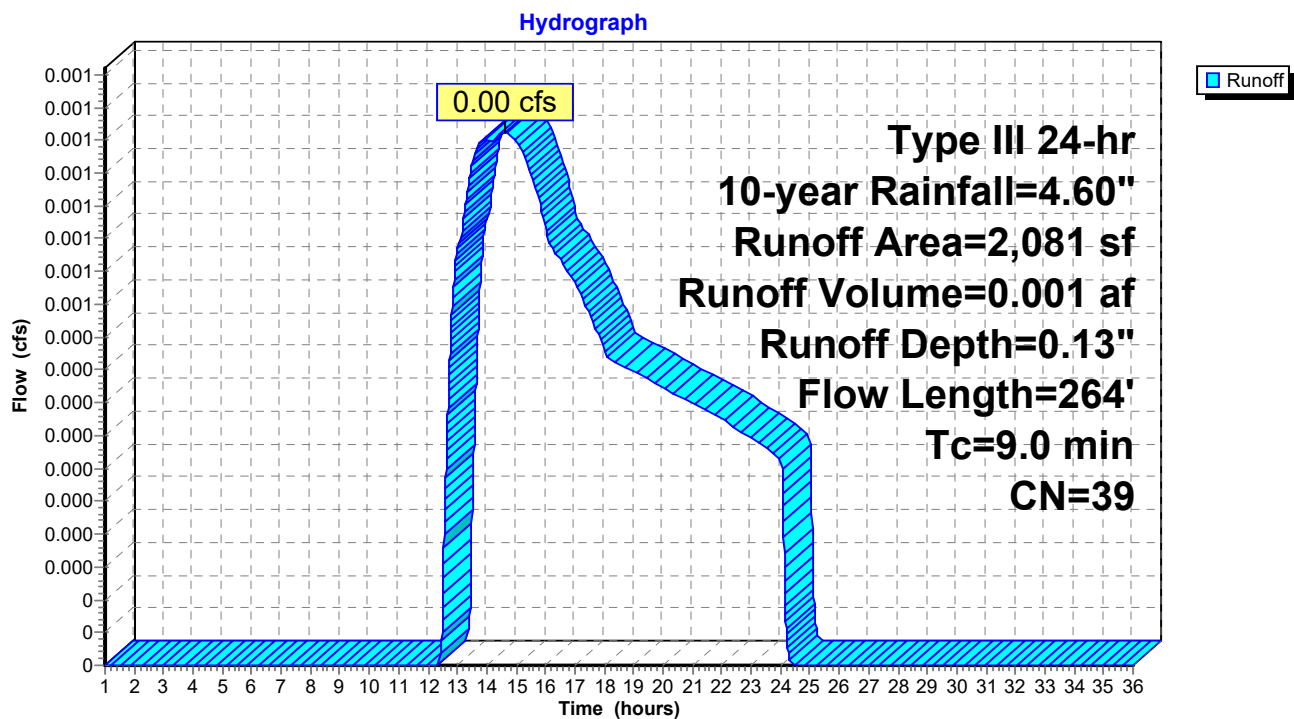
Summary for Subcatchment 1S.3: Runoff to park

Runoff = 0.00 cfs @ 14.63 hrs, Volume= 0.001 af, Depth= 0.13"

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
2,081	39	>75% Grass cover, Good, HSG A
2,081		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	100	0.0600	0.27		Sheet Flow, A to B Grass: Short n= 0.150 P2= 3.27"
2.8	164	0.0200	0.99		Shallow Concentrated Flow, B to C Short Grass Pasture Kv= 7.0 fps
9.0	264	Total			

Subcatchment 1S.3: Runoff to park

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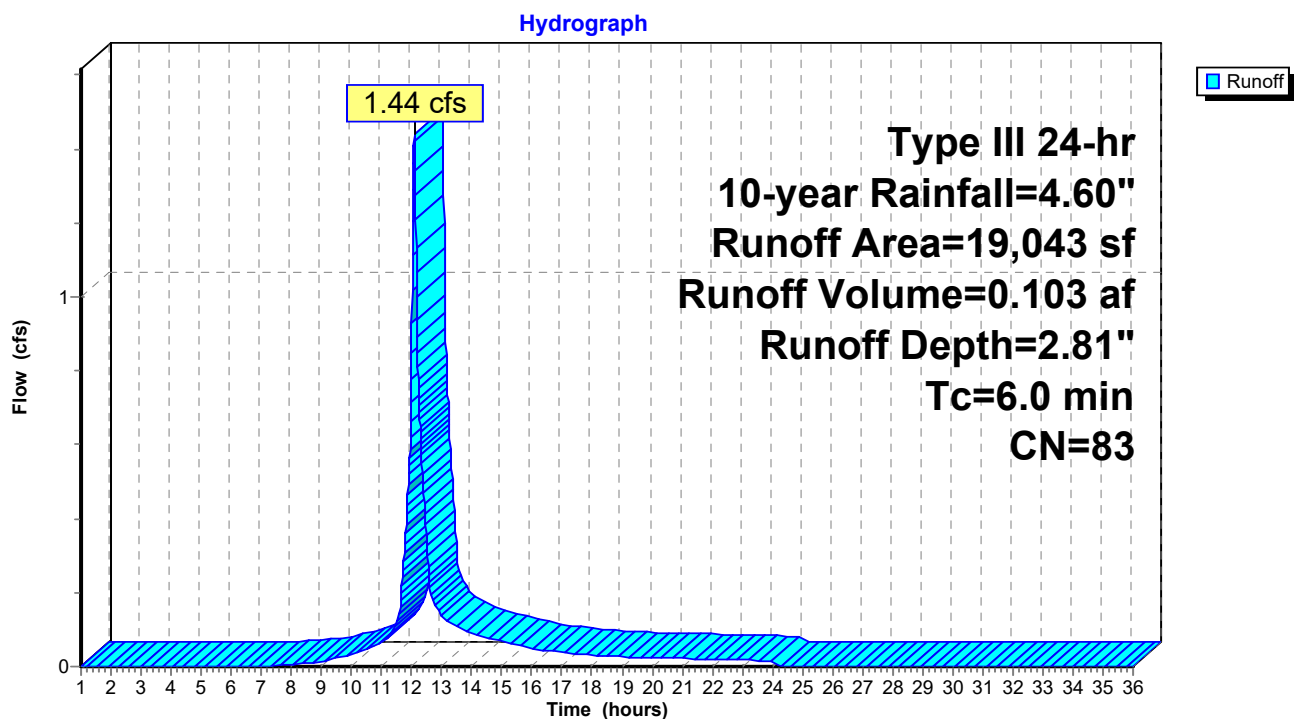
Summary for Subcatchment 1S.4: Central parking/drive

Runoff = 1.44 cfs @ 12.09 hrs, Volume= 0.103 af, Depth= 2.81"

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
*	14,850	98	Pavement
	4,193	30	Brush, Good, HSG A
	19,043	83	Weighted Average
	4,193		22.02% Pervious Area
	14,850		77.98% Impervious Area

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

Subcatchment 1S.4: Central parking/drive

Summary for Subcatchment 1S.5: Contained yard/park connection

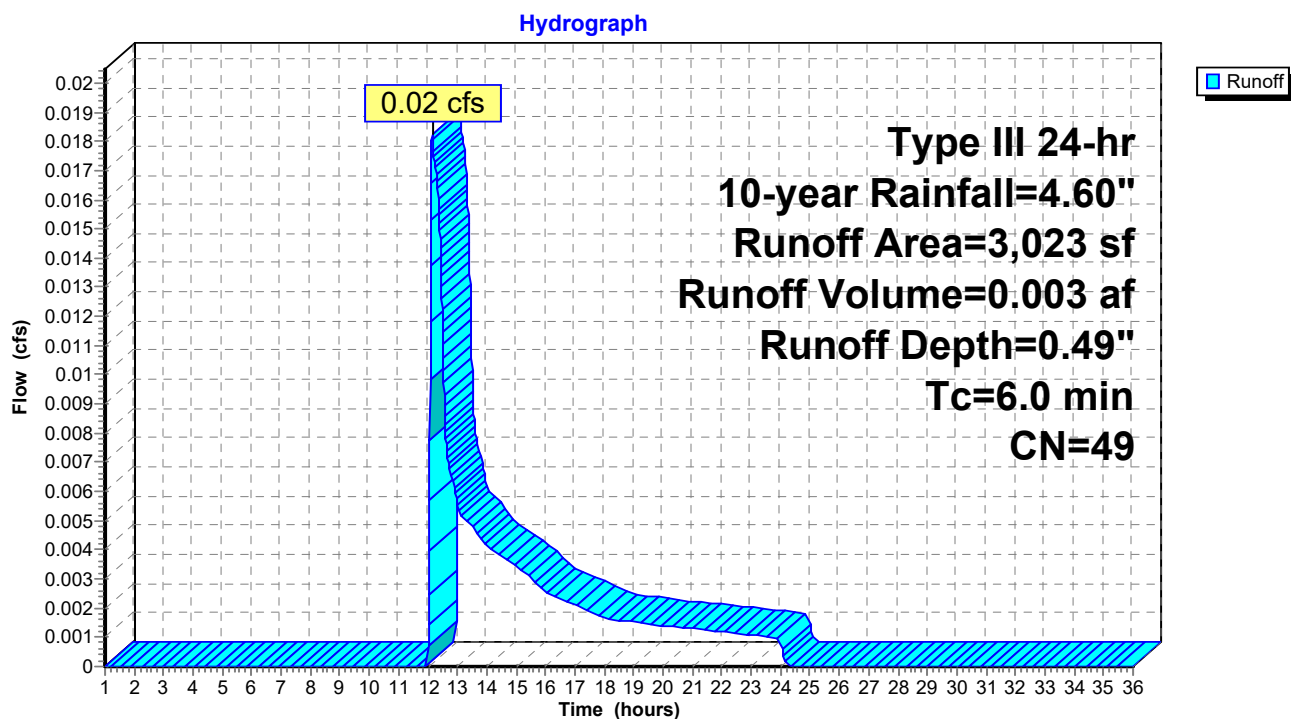
Runoff = 0.02 cfs @ 12.14 hrs, Volume= 0.003 af, Depth= 0.49"

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
2,514	39	>75% Grass cover, Good, HSG A
* 509	98	sidewalks
3,023	49	Weighted Average
2,514		83.16% Pervious Area
509		16.84% Impervious Area

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

Subcatchment 1S.5: Contained yard/park connection



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

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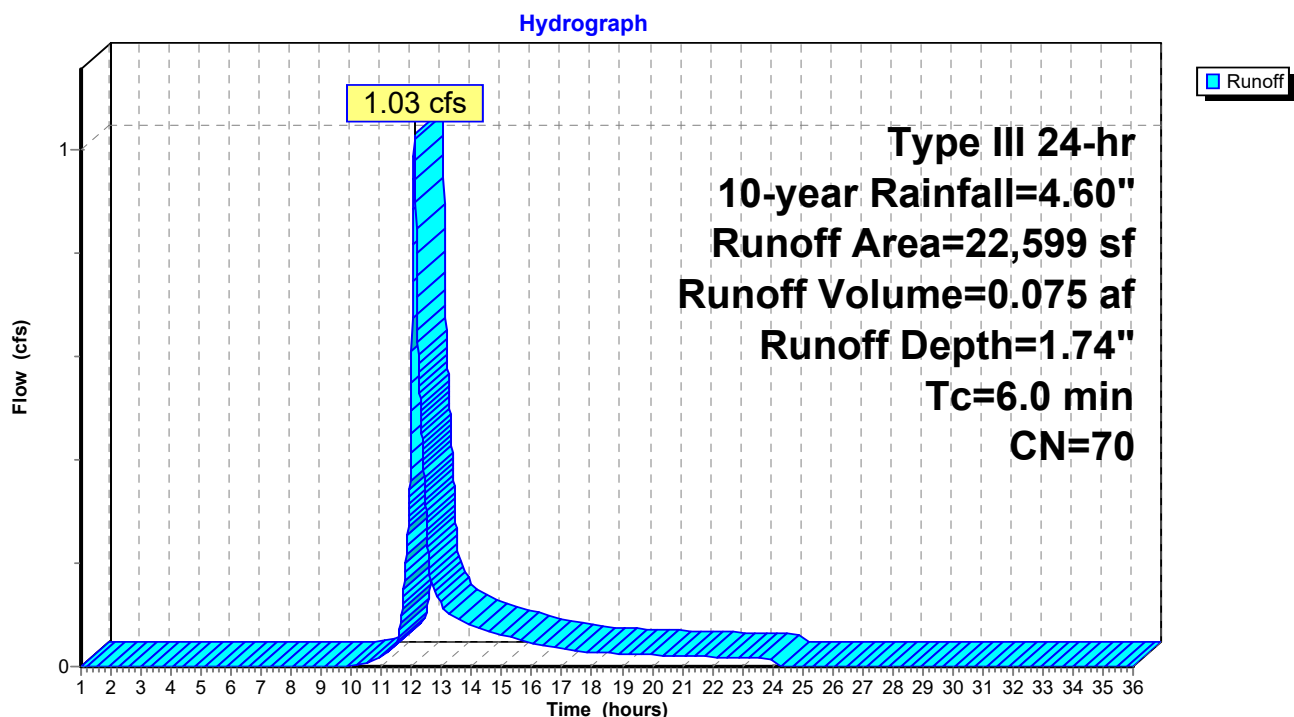
Summary for Subcatchment 1S.6: Building E roof and yard

Runoff = 1.03 cfs @ 12.09 hrs, Volume= 0.075 af, Depth= 1.74"

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
10,599	39	>75% Grass cover, Good, HSG A
* 12,000	98	roof
22,599	70	Weighted Average
10,599		46.90% Pervious Area
12,000		53.10% Impervious Area

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

Subcatchment 1S.6: Building E roof and yard

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

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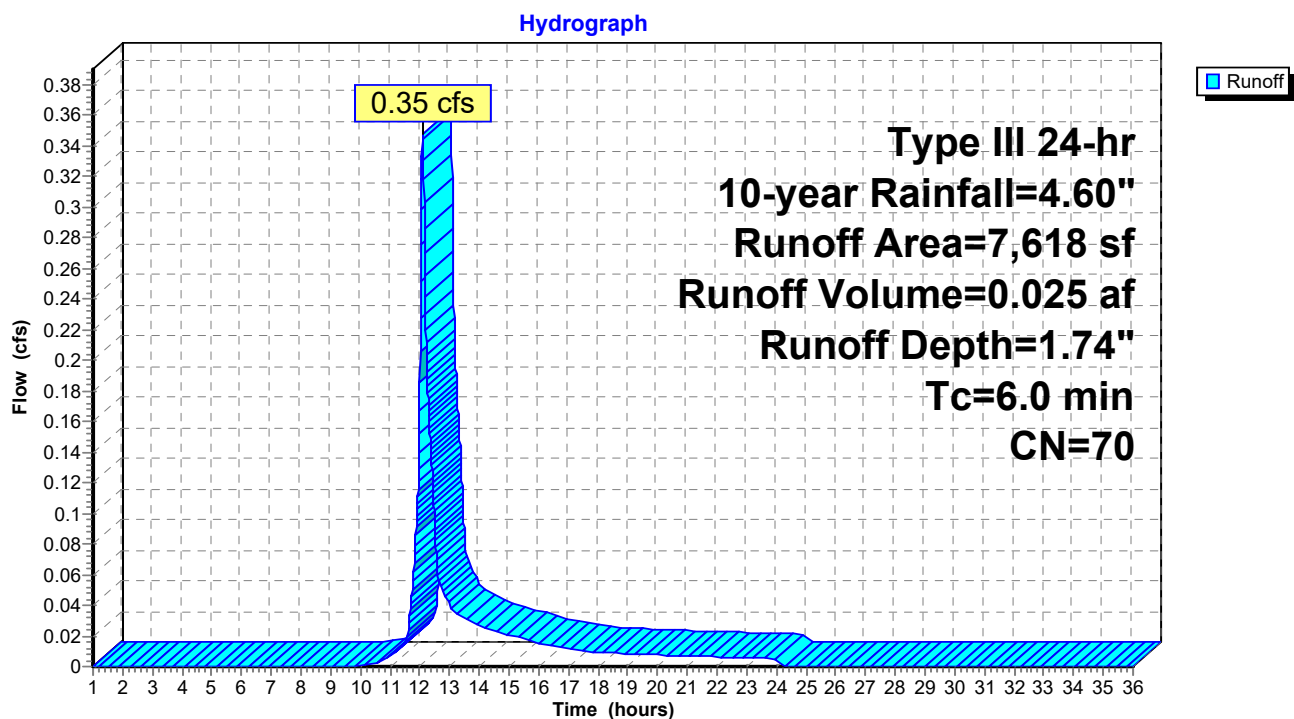
Summary for Subcatchment 1S.7: East Lot 4

Runoff = 0.35 cfs @ 12.09 hrs, Volume= 0.025 af, Depth= 1.74"

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
*	4,038	98	Paved parking
	3,580	39	>75% Grass cover, Good, HSG A
	7,618	70	Weighted Average
	3,580		46.99% Pervious Area
	4,038		53.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1S.7: East Lot 4

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

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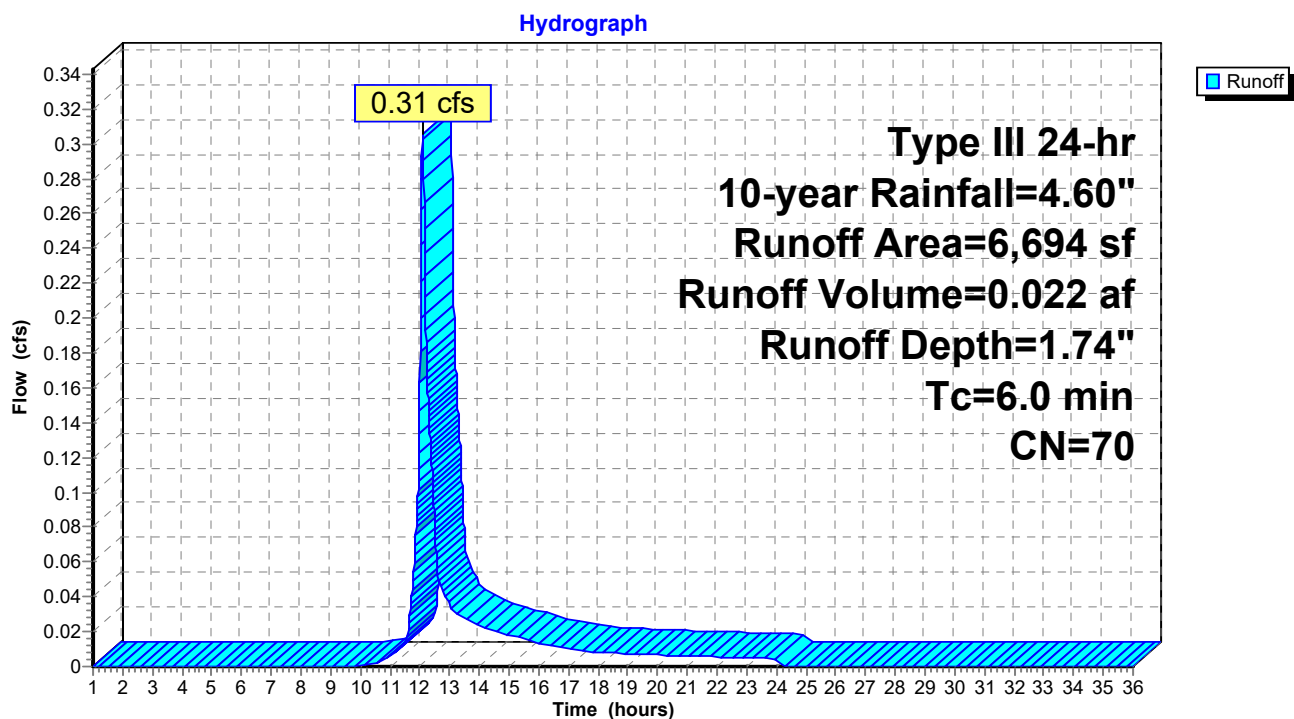
Summary for Subcatchment 1S.8: East Lot 3

Runoff = 0.31 cfs @ 12.09 hrs, Volume= 0.022 af, Depth= 1.74"

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
*	3,547	98	Paved parking
	3,147	39	>75% Grass cover, Good, HSG A
	6,694	70	Weighted Average
	3,147		47.01% Pervious Area
	3,547		52.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1S.8: East Lot 3

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

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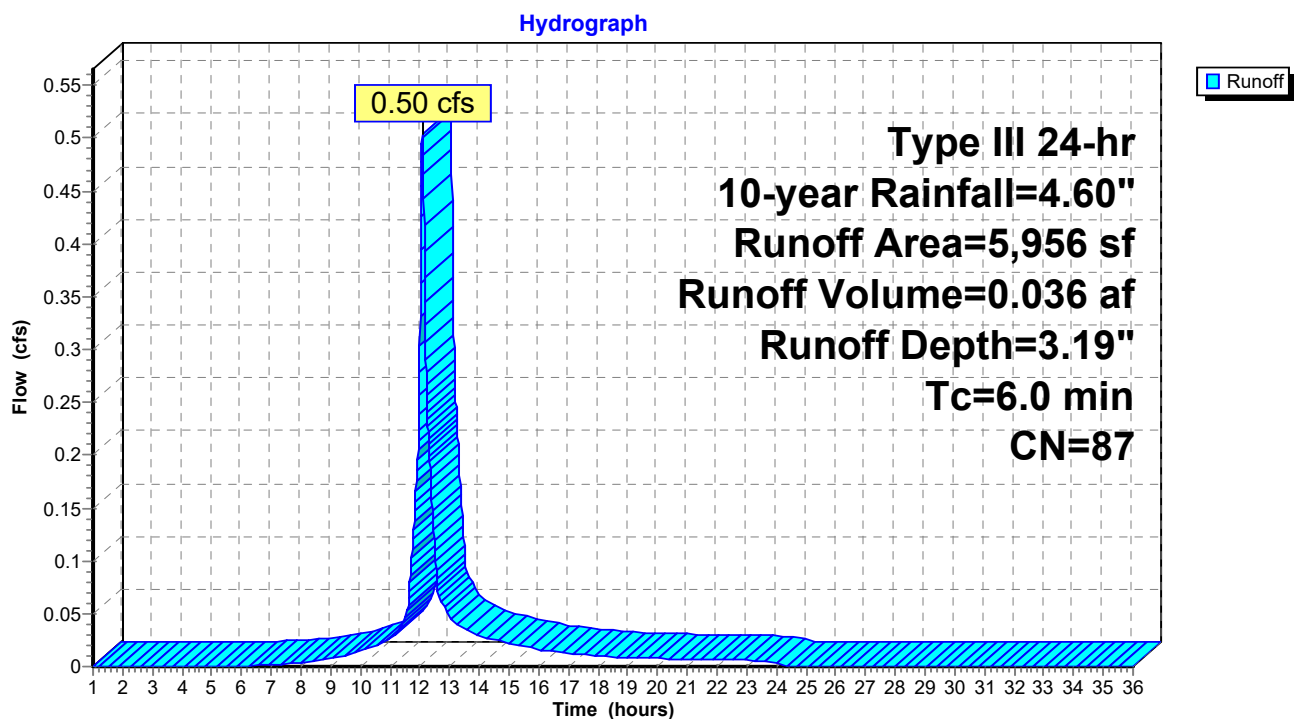
Summary for Subcatchment 1S.9: East Lot 2

Runoff = 0.50 cfs @ 12.09 hrs, Volume= 0.036 af, Depth= 3.19"

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
*	4,809	98	Paved parking, patio, sidewalk
	1,147	39	>75% Grass cover, Good, HSG A
	5,956	87	Weighted Average
	1,147		19.26% Pervious Area
	4,809		80.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1S.9: East Lot 2

Summary for Subcatchment 2S: 295 Embankment Trib

Runoff = 0.05 cfs @ 12.65 hrs, Volume= 0.025 af, Depth= 0.18"

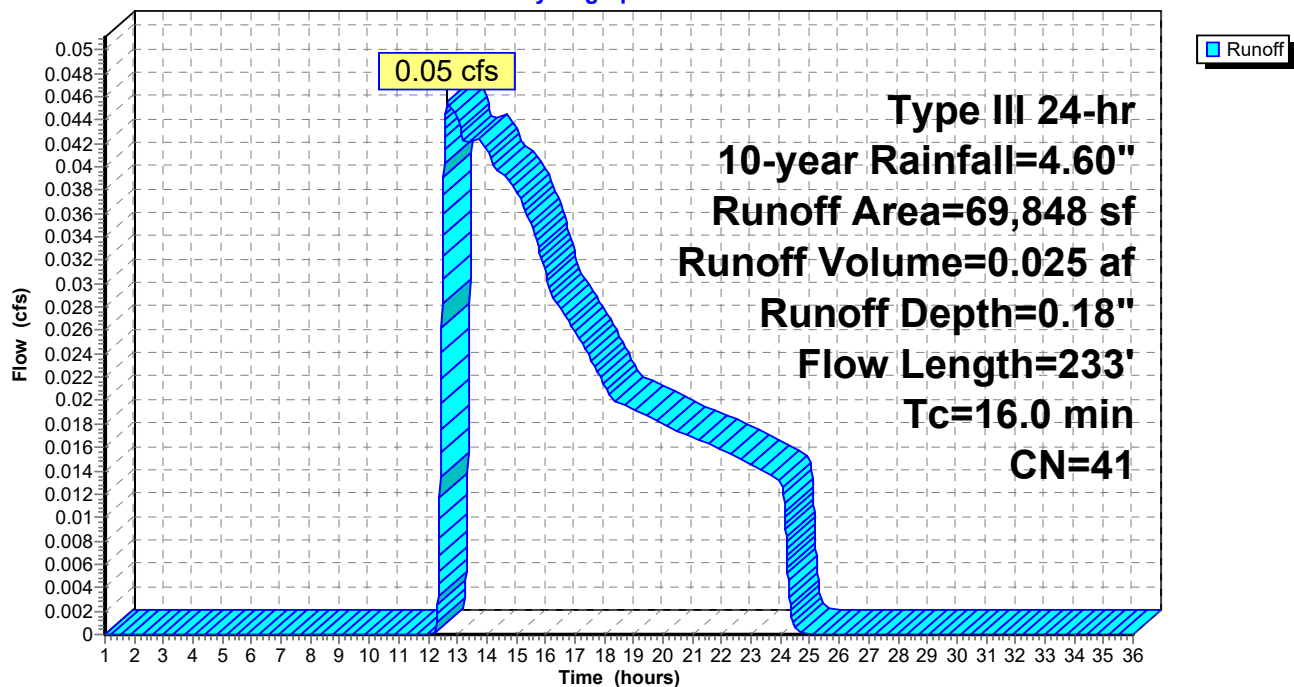
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
8,183	39	>75% Grass cover, Good, HSG A
* 230	98	Stairs
* 3,155	98	Path
* 5,488	98	Homes/driveways
52,792	32	Woods/grass comb., Good, HSG A
69,848	41	Weighted Average
60,975		87.30% Pervious Area
8,873		12.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	100	0.0500	0.11		Sheet Flow, A to B Woods: Light underbrush n= 0.400 P2= 3.27"
1.3	133	0.0600	1.71		Shallow Concentrated Flow, B to C Short Grass Pasture Kv= 7.0 fps
16.0	233	Total			

Subcatchment 2S: 295 Embankment Trib

Hydrograph



Summary for Subcatchment 3S.1: Garden area runoff

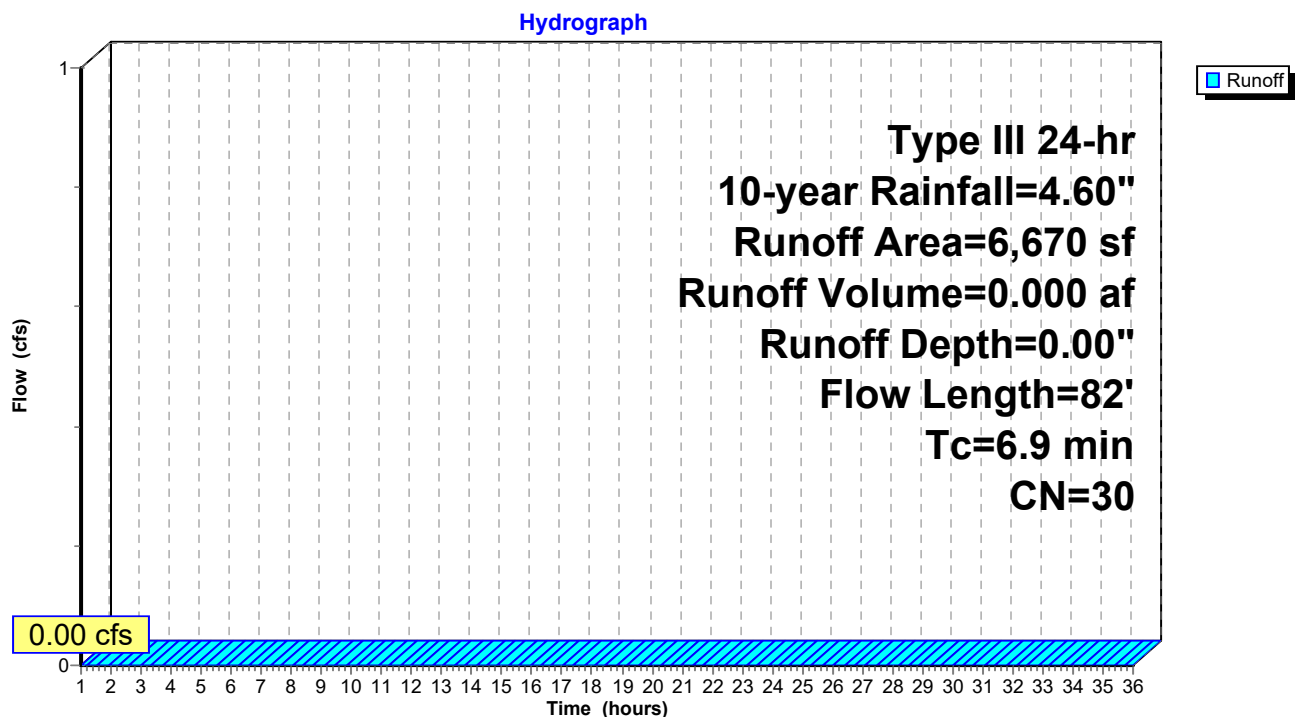
Runoff = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
6,670	30	Brush, Good, HSG A
6,670		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	28	0.3330	0.28		Sheet Flow, A to B
					Grass: Dense n= 0.240 P2= 3.27"
5.2	54	0.0700	0.17		Sheet Flow, B to C
					Grass: Dense n= 0.240 P2= 3.27"
6.9	82	Total			

Subcatchment 3S.1: Garden area runoff

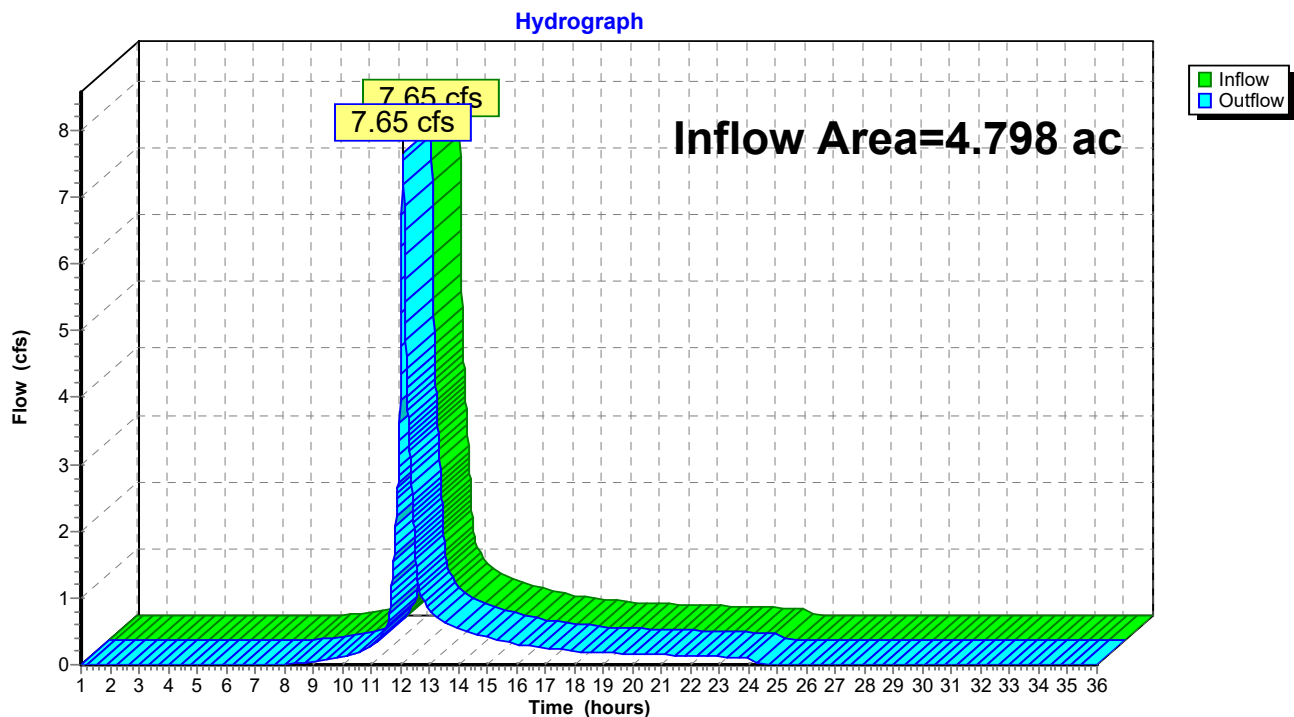


Summary for Reach POI-1: POI #1 - 60" Douglass MS4

Inflow Area = 4.798 ac, 46.81% Impervious, Inflow Depth = 1.43" for 10-year event
 Inflow = 7.65 cfs @ 12.09 hrs, Volume= 0.573 af
 Outflow = 7.65 cfs @ 12.09 hrs, Volume= 0.573 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 POI-1: POI #1 - 60" Douglass MS4

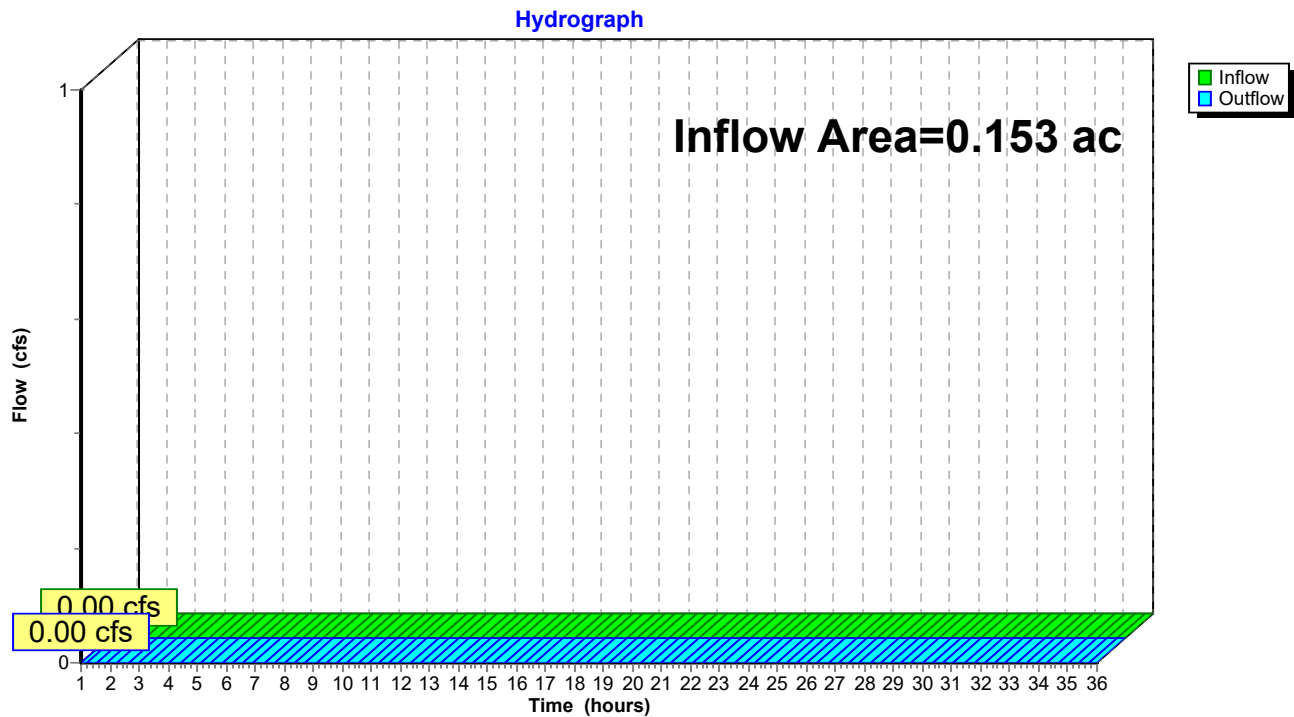


Summary for Reach POI-3: POI #3 - Baseball Field

Inflow Area = 0.153 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-year 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= 1.00-36.00 hrs, dt= 0.01 hrs

Reach POI-3: POI #3 - Baseball Field



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

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Summary for Pond P1: VUSF

Inflow Area = 0.249 ac, 76.24% Impervious, Inflow Depth = 2.72" for 10-year event
 Inflow = 0.80 cfs @ 12.09 hrs, Volume= 0.057 af
 Outflow = 0.07 cfs @ 13.29 hrs, Volume= 0.057 af, Atten= 92%, Lag= 72.1 min
 Discarded = 0.05 cfs @ 13.29 hrs, Volume= 0.043 af
 Primary = 0.01 cfs @ 13.29 hrs, Volume= 0.014 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Peak Elev= 31.87' @ 13.29 hrs Surf.Area= 2,198 sf Storage= 1,177 cf

Plug-Flow detention time= 220.8 min calculated for 0.057 af (100% of inflow)

Center-of-Mass det. time= 220.8 min (1,040.6 - 819.8)

Volume	Invert	Avail.Storage	Storage Description
#1	30.75'	1,899 cf	Ponding (Prismatic) Listed below (Recalc)
#2	29.25'	69 cf	Filter Media/Loam (Prismatic) Listed below (Recalc) 687 cf Overall x 10.0% Voids
#3	28.92'	30 cf	Transition Gravel (Prismatic) Listed below (Recalc) 151 cf Overall x 20.0% Voids
#4	27.00'	349 cf	Crushed Stone (Prismatic) Listed below (Recalc) 879 cf Overall - 6 cf Embedded = 873 cf x 40.0% Voids
#5	27.10'	5 cf	4.0" Round Pipe Storage x 2 Inside #4 L= 30.0' S= 0.0005 '/ 6 cf Overall - 0.2" Wall Thickness = 5 cf
		2,353 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.75	465	0	0
32.25	945	1,058	1,058
33.00	1,300	842	1,899

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
29.25	458	0	0
30.75	458	687	687

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.92	458	0	0
29.25	458	151	151

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
27.00	458	0	0
28.92	458	879	879

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

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Device	Routing	Invert	Outlet Devices
#1	Primary	27.00'	12.0" Round Culvert L= 60.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 27.00' / 26.75' S= 0.0042 '/' Cc= 0.600 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf
#2	Device 1	27.10'	0.5" Vert. Soil Filter Media Drawdown Effect C= 0.600
#3	Device 1	32.35'	24.0" Horiz. Beehive Outlet C= 0.600 Limited to weir flow at low heads
#4	Discarded	27.00'	1.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.05 cfs @ 13.29 hrs HW=31.87' (Free Discharge)

↳ **4=Exfiltration** (Exfiltration Controls 0.05 cfs)

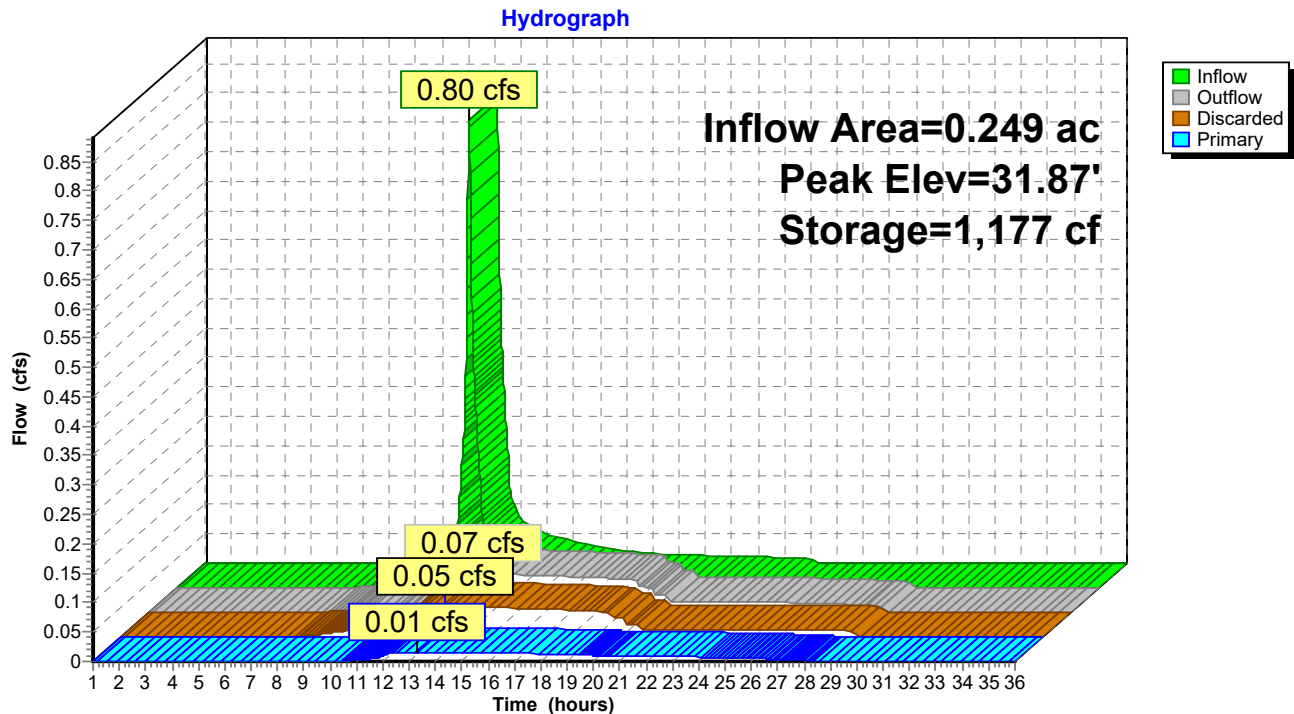
Primary OutFlow Max=0.01 cfs @ 13.29 hrs HW=31.87' TW=0.00' (Dynamic Tailwater)

↳ **1=Culvert** (Passes 0.01 cfs of 4.16 cfs potential flow)

↳ **2=Soil Filter Media Drawdown Effect** (Orifice Controls 0.01 cfs @ 10.50 fps)

↳ **3=Beehive Outlet** (Controls 0.00 cfs)

Pond P1: VUSF



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

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Summary for Pond P2: FP 4

Inflow Area = 0.175 ac, 53.01% Impervious, Inflow Depth = 1.74" for 10-year event
 Inflow = 0.35 cfs @ 12.09 hrs, Volume= 0.025 af
 Outflow = 0.35 cfs @ 12.09 hrs, Volume= 0.025 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.35 cfs @ 12.09 hrs, Volume= 0.025 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 35.95' @ 1.00 hrs Surf.Area= 40 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	35.95'	14 cf	4.00'W x 5.00'L x 3.60'H Media/Stone 72 cf Overall x 20.0% Voids
#2	35.95'	38 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		52 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
35.95	20	0	0
36.95	56	38	38

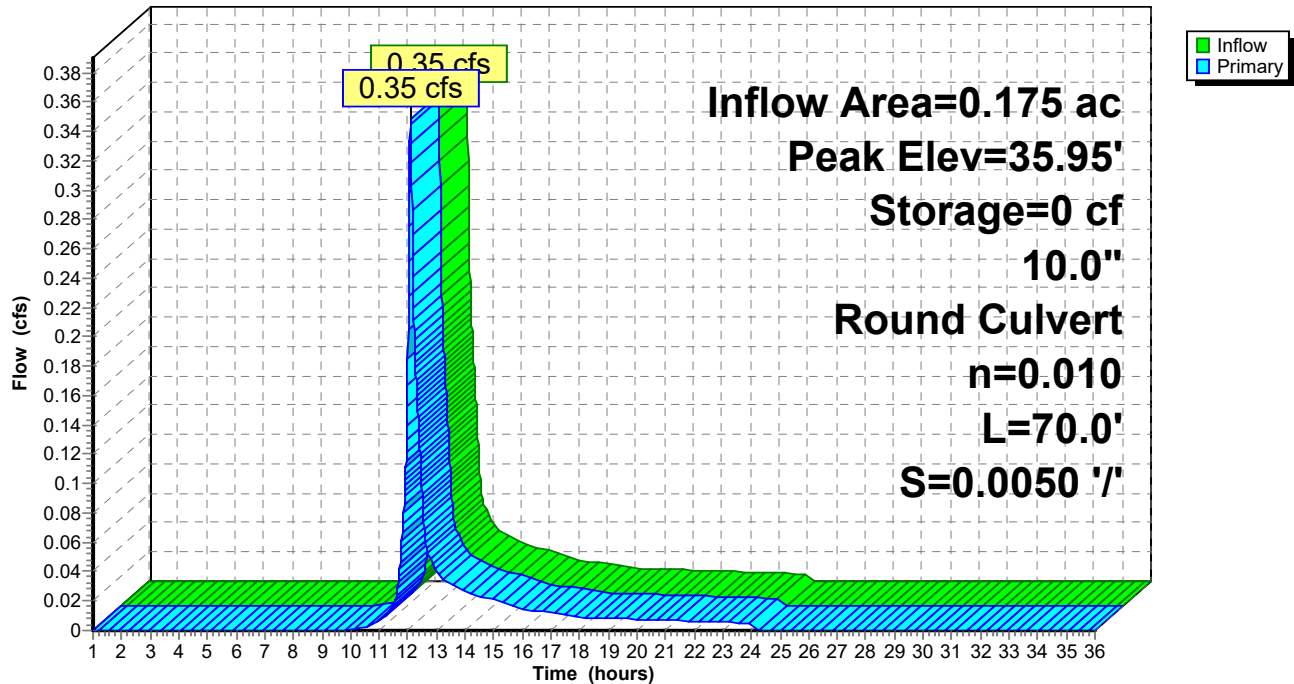
Device	Routing	Invert	Outlet Devices
#1	Primary	32.35'	10.0" Round Culvert L= 70.0' Ke= 1.000 Inlet / Outlet Invert= 32.35' / 32.00' S= 0.0050 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=35.95' TW=0.00' (Dynamic Tailwater)

↑**1=Culvert** (Passes 0.00 cfs of 3.51 cfs potential flow)

Pond P2: FP 4

Hydrograph



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

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Summary for Pond P3: FP 3

Inflow Area = 0.154 ac, 52.99% Impervious, Inflow Depth = 1.74" for 10-year event
 Inflow = 0.31 cfs @ 12.09 hrs, Volume= 0.022 af
 Outflow = 0.31 cfs @ 12.09 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.31 cfs @ 12.09 hrs, Volume= 0.022 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 36.10' @ 1.00 hrs Surf.Area= 50 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	36.10'	21 cf	5.00'W x 5.00'L x 4.20'H Media/Stone 105 cf Overall x 20.0% Voids
#2	36.10'	45 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		66 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.10	25	0	0
37.10	64	45	45

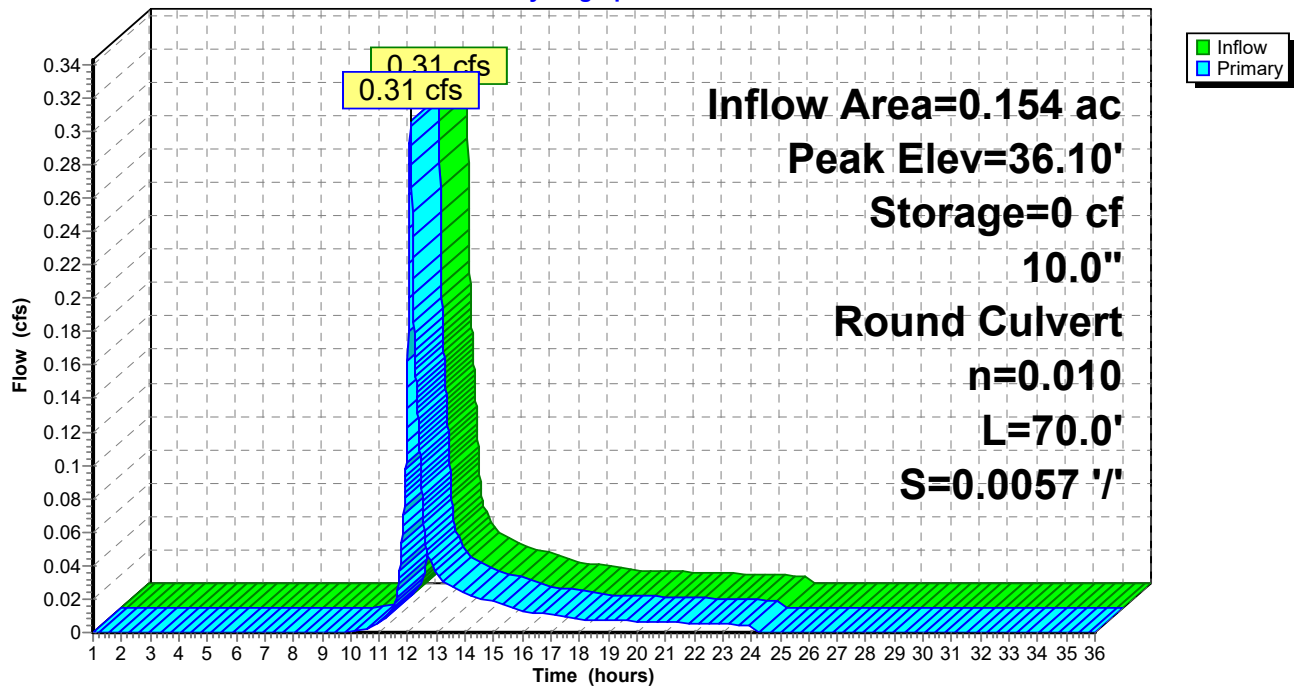
Device	Routing	Invert	Outlet Devices
#1	Primary	31.90'	10.0" Round Culvert L= 70.0' Ke= 1.000 Inlet / Outlet Invert= 31.90' / 31.50' S= 0.0057 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=36.10' TW=0.00' (Dynamic Tailwater)

↑**1=Culvert** (Passes 0.00 cfs of 3.83 cfs potential flow)

Pond P3: FP 3

Hydrograph



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

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Summary for Pond P4: FP 2

Inflow Area = 0.137 ac, 80.74% Impervious, Inflow Depth = 3.19" for 10-year event
 Inflow = 0.50 cfs @ 12.09 hrs, Volume= 0.036 af
 Outflow = 0.50 cfs @ 12.09 hrs, Volume= 0.036 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.50 cfs @ 12.09 hrs, Volume= 0.036 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 35.90' @ 1.00 hrs Surf.Area= 50 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	35.90'	23 cf	5.00'W x 5.00'L x 4.50'H Media/Stone 113 cf Overall x 20.0% Voids
#2	35.90'	45 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		67 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
35.90	25	0	0
36.90	64	45	45

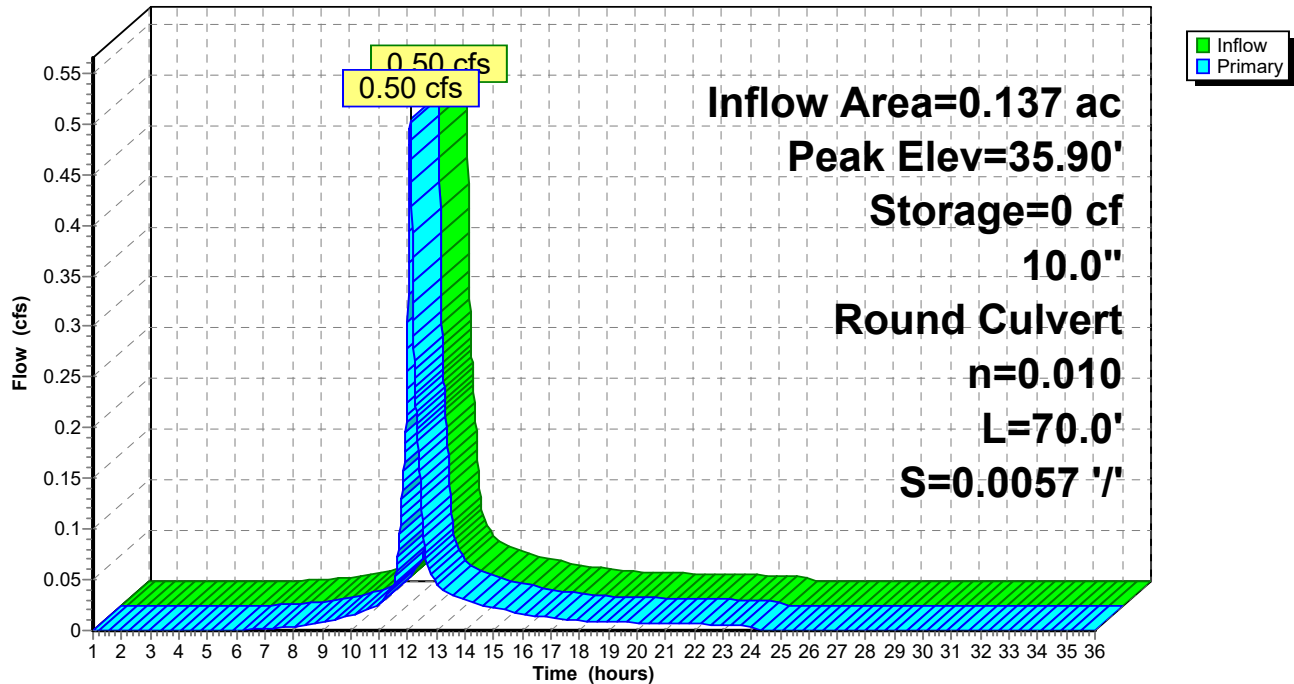
Device	Routing	Invert	Outlet Devices
#1	Primary	31.40'	10.0" Round Culvert L= 70.0' Ke= 1.000 Inlet / Outlet Invert= 31.40' / 31.00' S= 0.0057 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=35.90' TW=0.00' (Dynamic Tailwater)

↑**1=Culvert** (Passes 0.00 cfs of 3.98 cfs potential flow)

Pond P4: FP 2

Hydrograph



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

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Summary for Pond P5: FP 1

Inflow Area = 0.086 ac, 84.98% Impervious, Inflow Depth = 3.39" for 10-year event
 Inflow = 0.33 cfs @ 12.09 hrs, Volume= 0.024 af
 Outflow = 0.33 cfs @ 12.09 hrs, Volume= 0.024 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.33 cfs @ 12.09 hrs, Volume= 0.024 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 35.70' @ 1.00 hrs Surf.Area= 40 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 0.0 min (797.3 - 797.3)

Volume	Invert	Avail.Storage	Storage Description
#1	35.70'	19 cf	4.00'W x 5.00'L x 4.80'H Media/Stone 96 cf Overall x 20.0% Voids
#2	35.70'	38 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		57 cf	Total Available Storage

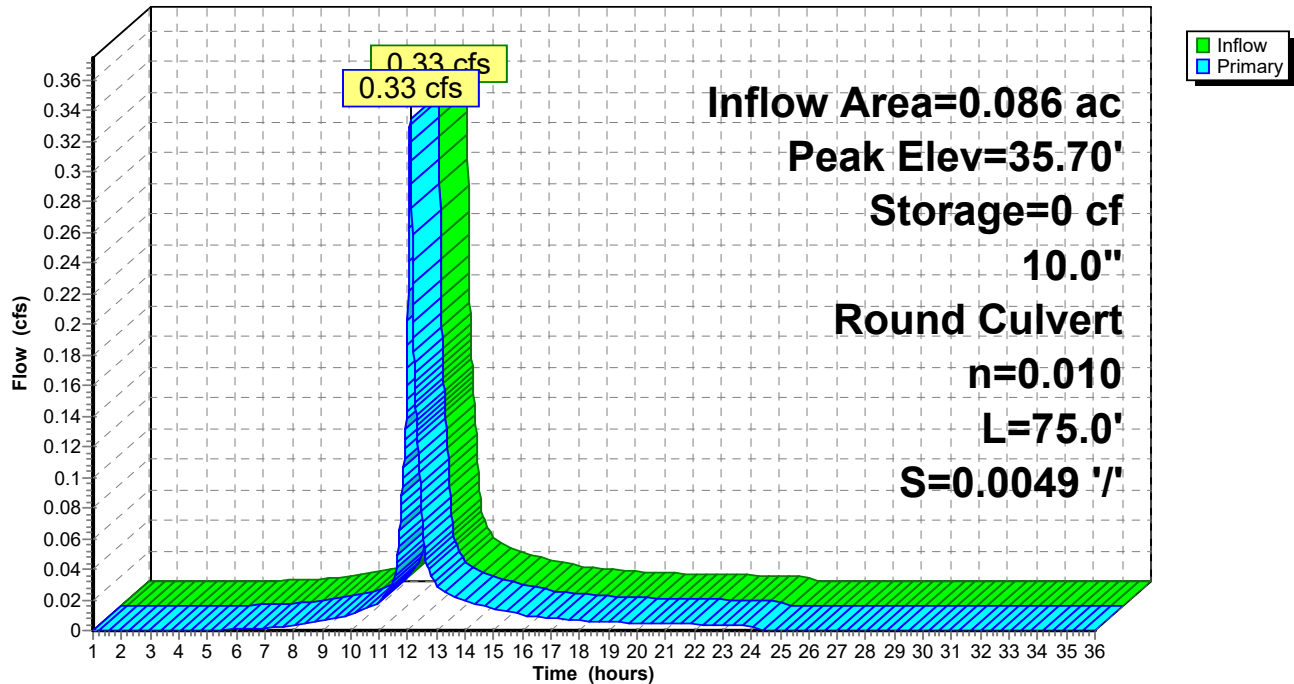
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
35.70	20	0	0
36.70	56	38	38

Device	Routing	Invert	Outlet Devices
#1	Primary	30.90'	10.0" Round Culvert L= 75.0' Ke= 1.000 Inlet / Outlet Invert= 30.90' / 30.53' S= 0.0049 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=35.70' TW=0.00' (Dynamic Tailwater)
 ↑**1=Culvert** (Passes 0.00 cfs of 4.12 cfs potential flow)

Pond P5: FP 1

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

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Summary for Pond POI #2: POI #2 (295 Basin)

Inflow Area = 1.603 ac, 12.70% Impervious, Inflow Depth = 0.18" for 10-year event
 Inflow = 0.05 cfs @ 12.65 hrs, Volume= 0.025 af
 Outflow = 0.02 cfs @ 17.23 hrs, Volume= 0.017 af, Atten= 45%, Lag= 274.8 min
 Discarded = 0.01 cfs @ 17.23 hrs, Volume= 0.008 af
 Primary = 0.01 cfs @ 17.23 hrs, Volume= 0.009 af
 Secondary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Peak Elev= 26.67' @ 17.23 hrs Surf.Area= 2,411 sf Storage= 464 cf

Plug-Flow detention time= 310.4 min calculated for 0.017 af (71% of inflow)

Center-of-Mass det. time= 201.5 min (1,221.1 - 1,019.6)

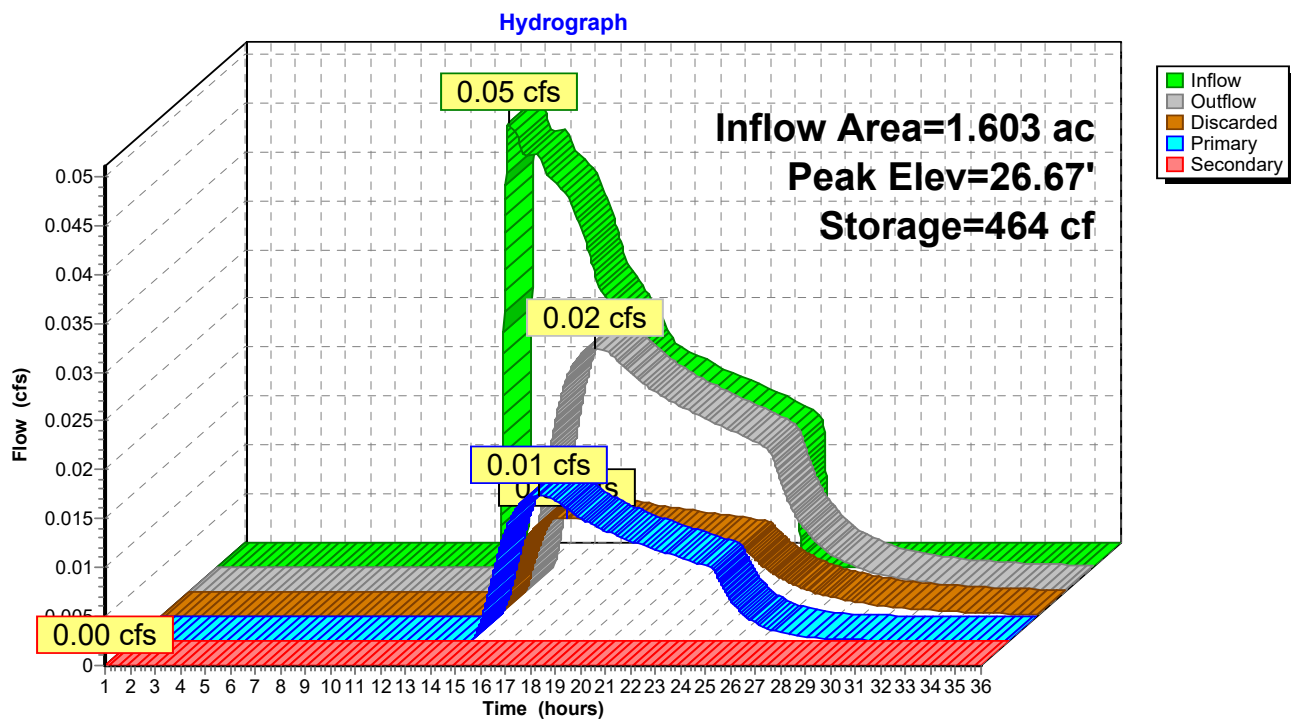
Volume	Invert	Avail.Storage	Storage Description
#1	26.30'	105,037 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.30	100	0	0
27.00	4,475	1,601	1,601
28.00	10,120	7,298	8,899
29.00	14,131	12,126	21,024
30.00	17,326	15,729	36,753
32.00	24,023	41,349	78,102
33.00	29,847	26,935	105,037

Device	Routing	Invert	Outlet Devices
#1	Primary	26.60'	12.0" Round Culvert L= 16.0' Ke= 0.600 Inlet / Outlet Invert= 26.60' / 26.51' S= 0.0056 ' S= 0.0056 ' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	32.40'	20.0' long x 15.0' breadth Overflow Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Discarded	26.60'	1.000 in/hr Exfiltration over Surface area above 26.60' Excluded Surface area = 1,975 sf

Discarded OutFlow Max=0.01 cfs @ 17.23 hrs HW=26.67' (Free Discharge)↑**3=Exfiltration** (Exfiltration Controls 0.01 cfs)**Primary OutFlow** Max=0.01 cfs @ 17.23 hrs HW=26.67' TW=0.00' (Dynamic Tailwater)↑**1=Culvert** (Barrel Controls 0.01 cfs @ 0.95 fps)**Secondary OutFlow** Max=0.00 cfs @ 1.00 hrs HW=26.30' (Free Discharge)↑**2=Overflow** (Controls 0.00 cfs)

Pond POI #2: POI #2 (295 Basin)



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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

Subcatchment 1S.1: Drive to Street	Runoff Area=1,131 sf 55.00% Impervious Runoff Depth=2.74" Tc=6.0 min CN=71 Runoff=0.08 cfs 0.006 af
Subcatchment 1S.10: East Lot 1	Runoff Area=3,754 sf 84.98% Impervious Runoff Depth=4.54" Tc=6.0 min CN=89 Runoff=0.44 cfs 0.033 af
Subcatchment 1S.11: South Lot Treated	Runoff Area=10,852 sf 76.24% Impervious Runoff Depth=3.80" Tc=6.0 min CN=82 Runoff=1.10 cfs 0.079 af
Subcatchment 1S.2: Co Op Roof & yard	Runoff Area=56,422 sf 65.80% Impervious Runoff Depth=3.40" Tc=6.0 min CN=78 Runoff=5.17 cfs 0.367 af
Subcatchment 1S.3: Runoff to park	Runoff Area=2,081 sf 0.00% Impervious Runoff Depth=0.39" Flow Length=264' Tc=9.0 min CN=39 Runoff=0.01 cfs 0.002 af
Subcatchment 1S.4: Central parking/drive	Runoff Area=19,043 sf 77.98% Impervious Runoff Depth=3.91" Tc=6.0 min CN=83 Runoff=1.98 cfs 0.142 af
Subcatchment 1S.5: Contained yard/park	Runoff Area=3,023 sf 16.84% Impervious Runoff Depth=0.98" Tc=6.0 min CN=49 Runoff=0.06 cfs 0.006 af
Subcatchment 1S.6: Building E roof and	Runoff Area=22,599 sf 53.10% Impervious Runoff Depth=2.65" Tc=6.0 min CN=70 Runoff=1.60 cfs 0.114 af
Subcatchment 1S.7: East Lot 4	Runoff Area=7,618 sf 53.01% Impervious Runoff Depth=2.65" Tc=6.0 min CN=70 Runoff=0.54 cfs 0.039 af
Subcatchment 1S.8: East Lot 3	Runoff Area=6,694 sf 52.99% Impervious Runoff Depth=2.65" Tc=6.0 min CN=70 Runoff=0.47 cfs 0.034 af
Subcatchment 1S.9: East Lot 2	Runoff Area=5,956 sf 80.74% Impervious Runoff Depth=4.33" Tc=6.0 min CN=87 Runoff=0.68 cfs 0.049 af
Subcatchment 2S: 295 Embankment Trib	Runoff Area=69,848 sf 12.70% Impervious Runoff Depth=0.49" Flow Length=233' Tc=16.0 min CN=41 Runoff=0.31 cfs 0.066 af
Subcatchment 3S.1: Garden area runoff	Runoff Area=6,670 sf 0.00% Impervious Runoff Depth=0.05" Flow Length=82' Tc=6.9 min CN=30 Runoff=0.00 cfs 0.001 af
Reach POI-1: POI #1 - 60" Douglass MS4	Inflow=11.03 cfs 0.854 af Outflow=11.03 cfs 0.854 af
Reach POI-3: POI #3 - Baseball Field	Inflow=0.00 cfs 0.001 af Outflow=0.00 cfs 0.001 af
Pond P1: VUSF	Peak Elev=32.38' Storage=1,639 cf Inflow=1.10 cfs 0.079 af Discarded=0.06 cfs 0.057 af Primary=0.13 cfs 0.022 af Outflow=0.18 cfs 0.079 af

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Pond P2: FP 4

Peak Elev=35.95' Storage=0 cf Inflow=0.54 cfs 0.039 af
10.0" Round Culvert n=0.010 L=70.0' S=0.0050 '/' Outflow=0.54 cfs 0.039 af

Pond P3: FP 3

Peak Elev=36.10' Storage=0 cf Inflow=0.47 cfs 0.034 af
10.0" Round Culvert n=0.010 L=70.0' S=0.0057 '/' Outflow=0.47 cfs 0.034 af

Pond P4: FP 2

Peak Elev=35.90' Storage=0 cf Inflow=0.68 cfs 0.049 af
10.0" Round Culvert n=0.010 L=70.0' S=0.0057 '/' Outflow=0.68 cfs 0.049 af

Pond P5: FP 1

Peak Elev=35.70' Storage=0 cf Inflow=0.44 cfs 0.033 af
10.0" Round Culvert n=0.010 L=75.0' S=0.0049 '/' Outflow=0.44 cfs 0.033 af

Pond POI #2: POI #2 (295 Basin)

Peak Elev=26.76' Storage=709 cf Inflow=0.31 cfs 0.066 af
Discarded=0.02 cfs 0.018 af Primary=0.08 cfs 0.041 af Secondary=0.00 cfs 0.000 af Outflow=0.10 cfs 0.059 af

Total Runoff Area = 4.952 ac Runoff Volume = 0.937 af Average Runoff Depth = 2.27"
54.64% Pervious = 2.706 ac 45.36% Impervious = 2.246 ac

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

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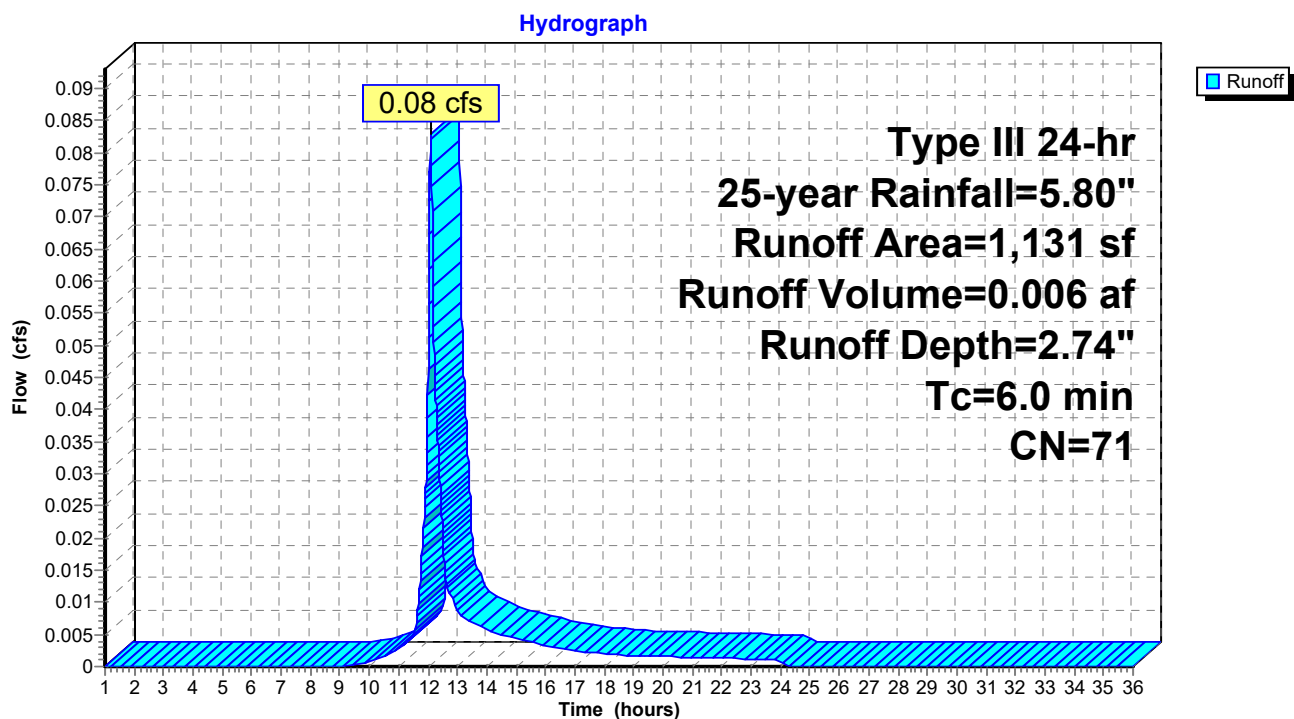
Summary for Subcatchment 1.S1: Drive to Street

Runoff = 0.08 cfs @ 12.09 hrs, Volume= 0.006 af, Depth= 2.74"

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
*	622	98	Pavement
	509	39	>75% Grass cover, Good, HSG A
	1,131	71	Weighted Average
	509		45.00% Pervious Area
	622		55.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1.S1: Drive to Street

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

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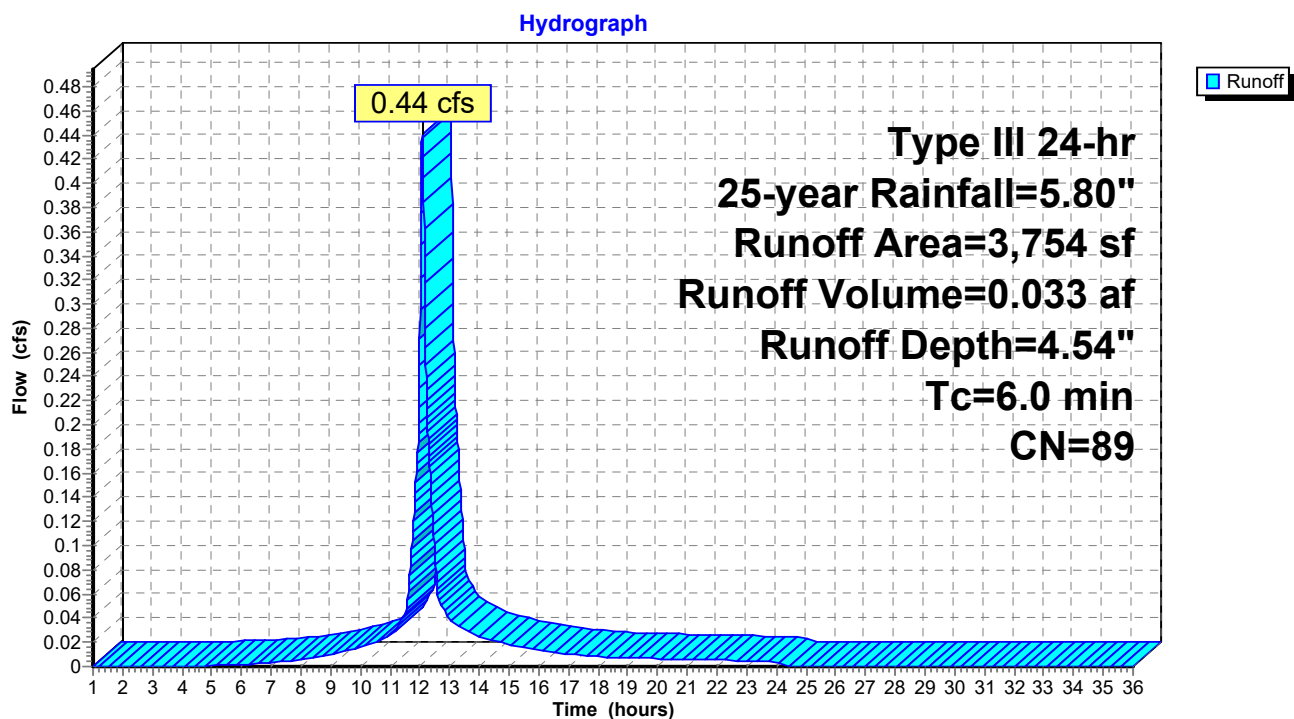
Summary for Subcatchment 1S.10: East Lot 1

Runoff = 0.44 cfs @ 12.08 hrs, Volume= 0.033 af, Depth= 4.54"

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
*	3,190	98	Pavement
	564	39	>75% Grass cover, Good, HSG A
	3,754	89	Weighted Average
	564		15.02% Pervious Area
	3,190		84.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1S.10: East Lot 1

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

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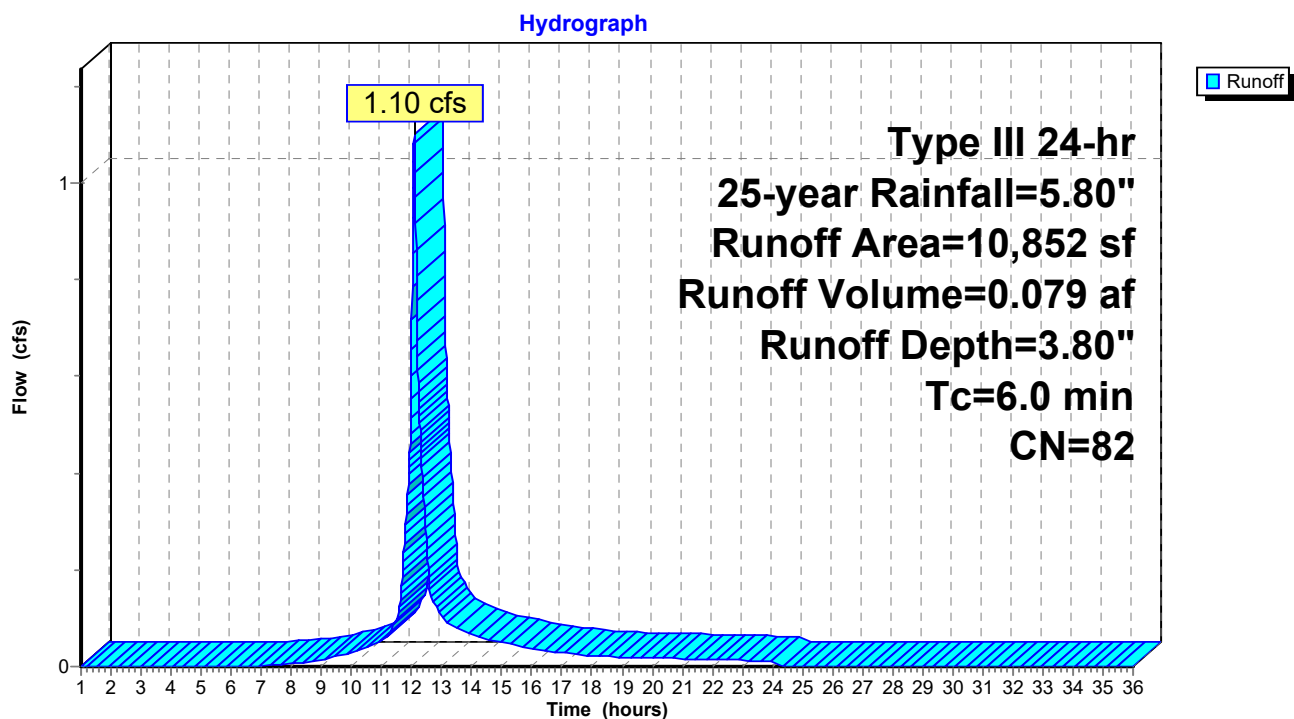
Summary for Subcatchment 1S.11: South Lot Treated

Runoff = 1.10 cfs @ 12.09 hrs, Volume= 0.079 af, Depth= 3.80"

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
*	8,274	98	Paved parking
	2,578	30	Brush, Good, HSG A
	10,852	82	Weighted Average
	2,578		23.76% Pervious Area
	8,274		76.24% Impervious Area

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

Subcatchment 1S.11: South Lot Treated

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

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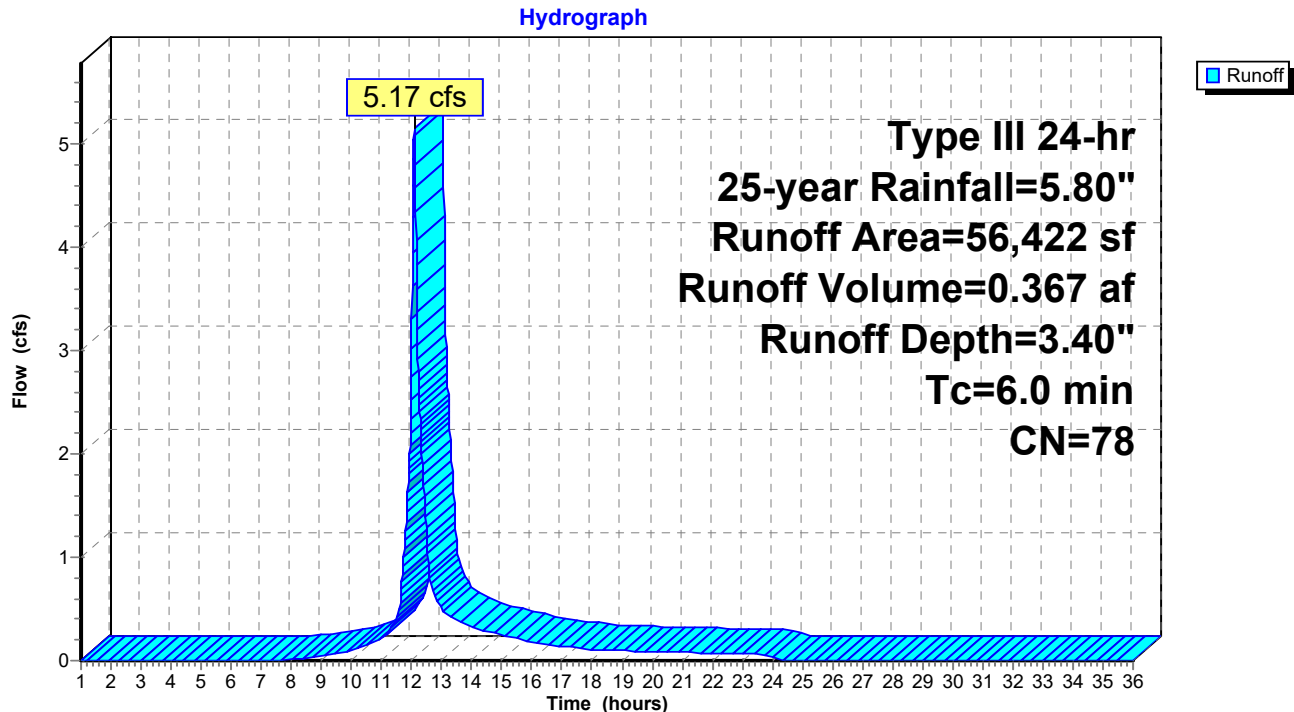
Summary for Subcatchment 1S.2: Co Op Roof & yard

Runoff = 5.17 cfs @ 12.09 hrs, Volume= 0.367 af, Depth= 3.40"

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
*	5,239	98	pavers
	16,100	39	>75% Grass cover, Good, HSG A
*	21,137	98	Roofs
*	4,191	98	sidewalks
*	618	98	patios
	9,137	77	1/8 acre lots, 65% imp, HSG A
	56,422	78	Weighted Average
	19,298		34.20% Pervious Area
	37,124		65.80% Impervious Area

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

Subcatchment 1S.2: Co Op Roof & yard

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Summary for Subcatchment 1S.3: Runoff to park

Runoff = 0.01 cfs @ 12.41 hrs, Volume= 0.002 af, Depth= 0.39"

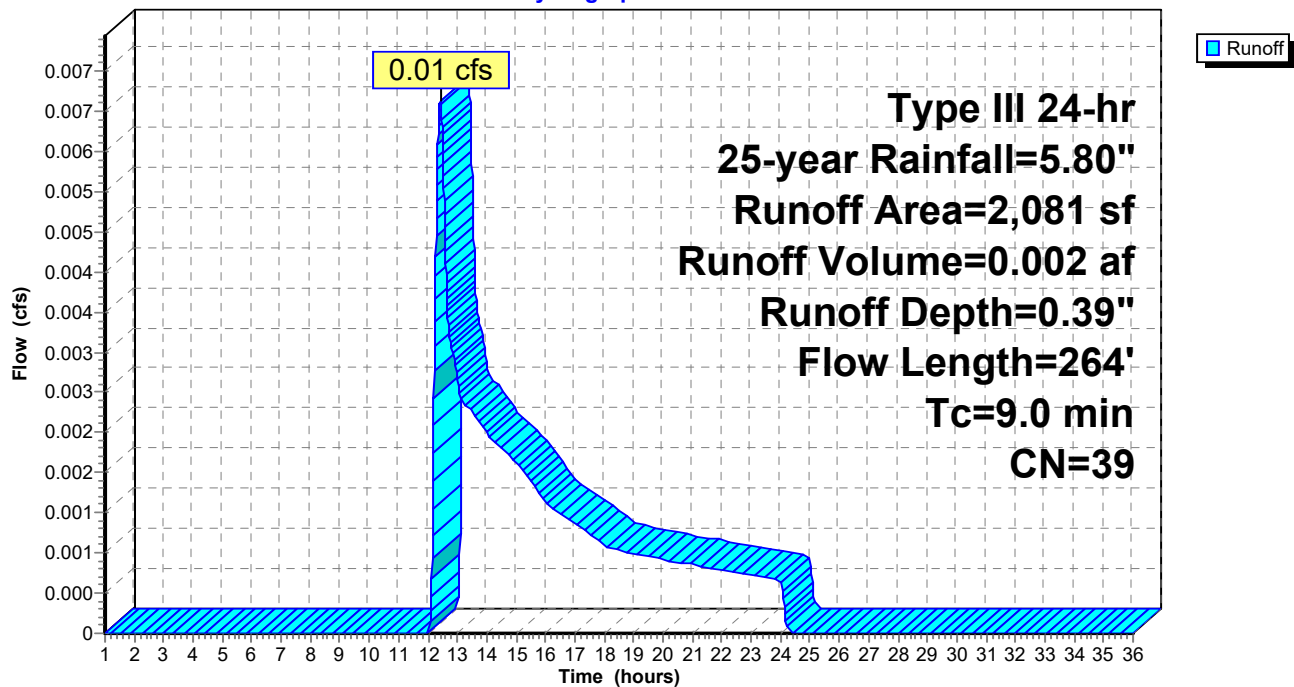
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

Area (sf)	CN	Description
2,081	39	>75% Grass cover, Good, HSG A
2,081		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	100	0.0600	0.27		Sheet Flow, A to B Grass: Short n= 0.150 P2= 3.27"
2.8	164	0.0200	0.99		Shallow Concentrated Flow, B to C Short Grass Pasture Kv= 7.0 fps
9.0	264	Total			

Subcatchment 1S.3: Runoff to park

Hydrograph



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

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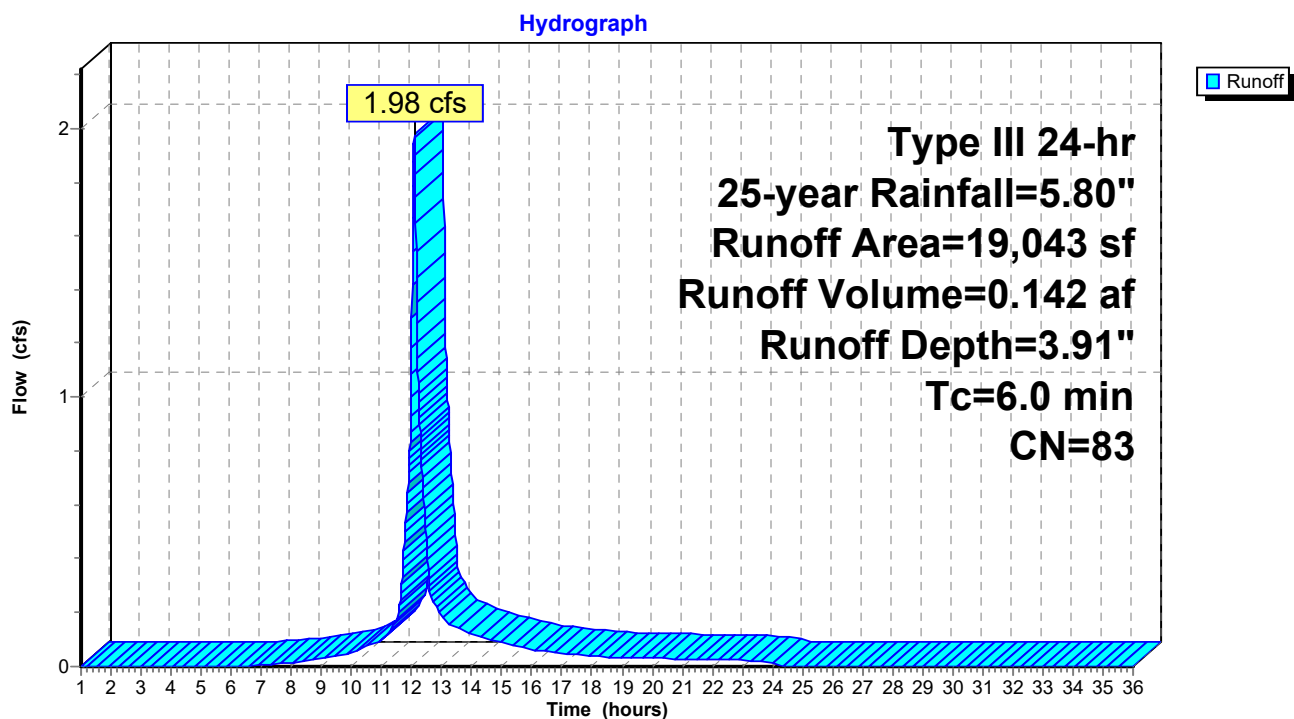
Summary for Subcatchment 1S.4: Central parking/drive

Runoff = 1.98 cfs @ 12.09 hrs, Volume= 0.142 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 25-year Rainfall=5.80"

	Area (sf)	CN	Description
*	14,850	98	Pavement
	4,193	30	Brush, Good, HSG A
	19,043	83	Weighted Average
	4,193		22.02% Pervious Area
	14,850		77.98% Impervious Area

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

Subcatchment 1S.4: Central parking/drive

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

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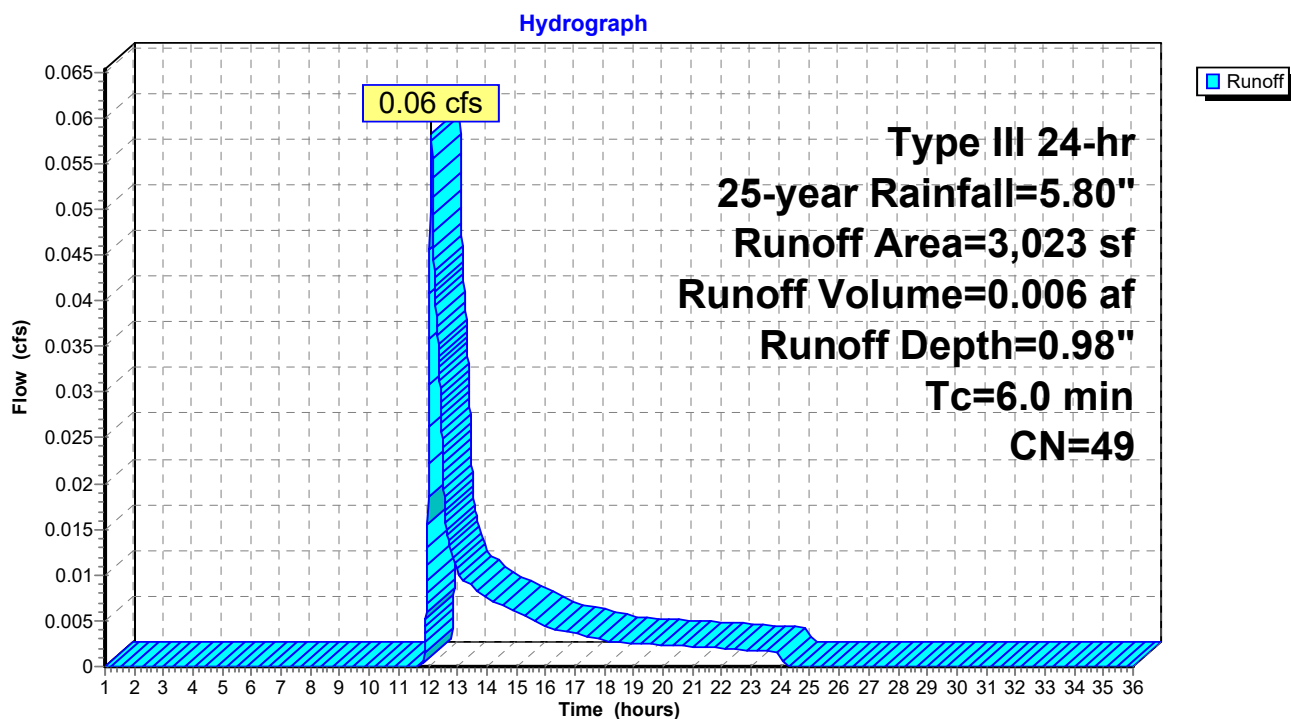
Summary for Subcatchment 1S.5: Contained yard/park connection

Runoff = 0.06 cfs @ 12.11 hrs, Volume= 0.006 af, Depth= 0.98"

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
2,514	39	>75% Grass cover, Good, HSG A
* 509	98	sidewalks
3,023	49	Weighted Average
2,514		83.16% Pervious Area
509		16.84% Impervious Area

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

Subcatchment 1S.5: Contained yard/park connection

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

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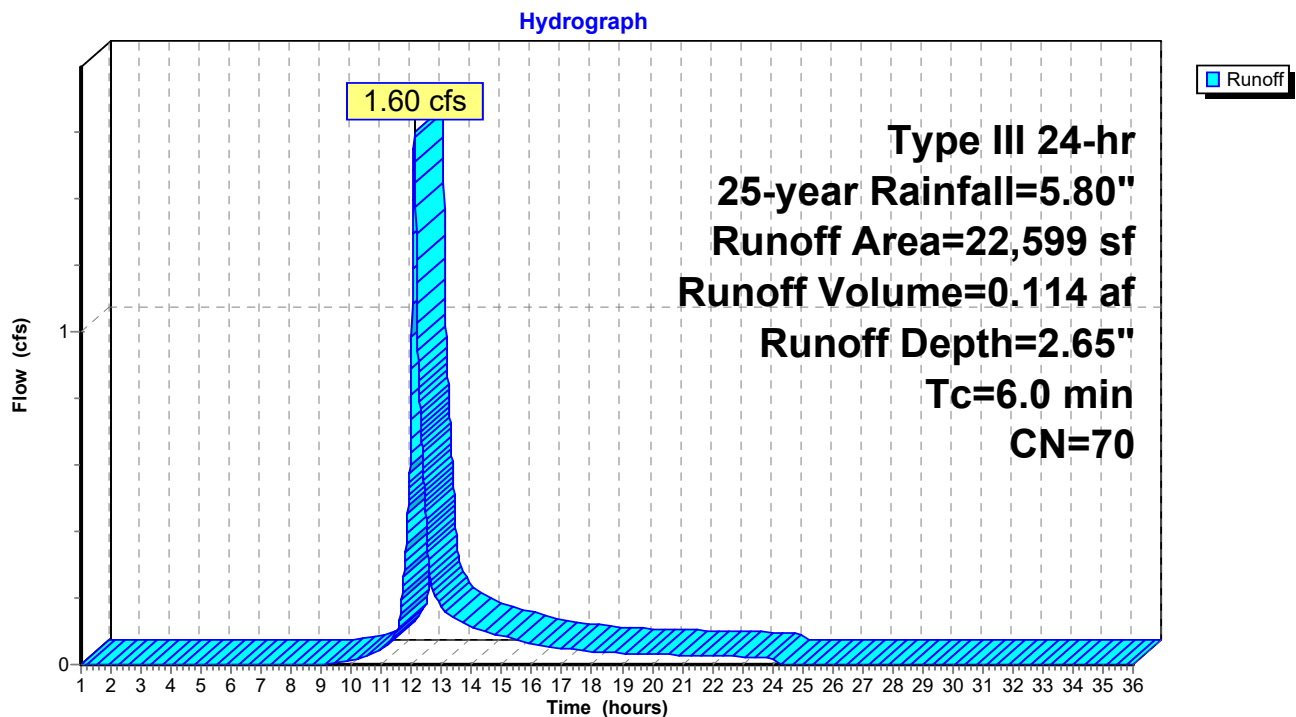
Summary for Subcatchment 1S.6: Building E roof and yard

Runoff = 1.60 cfs @ 12.09 hrs, Volume= 0.114 af, Depth= 2.65"

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
	10,599	39	>75% Grass cover, Good, HSG A
*	12,000	98	roof
	22,599	70	Weighted Average
	10,599		46.90% Pervious Area
	12,000		53.10% Impervious Area

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

Subcatchment 1S.6: Building E roof and yard

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

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Summary for Subcatchment 1S.7: East Lot 4

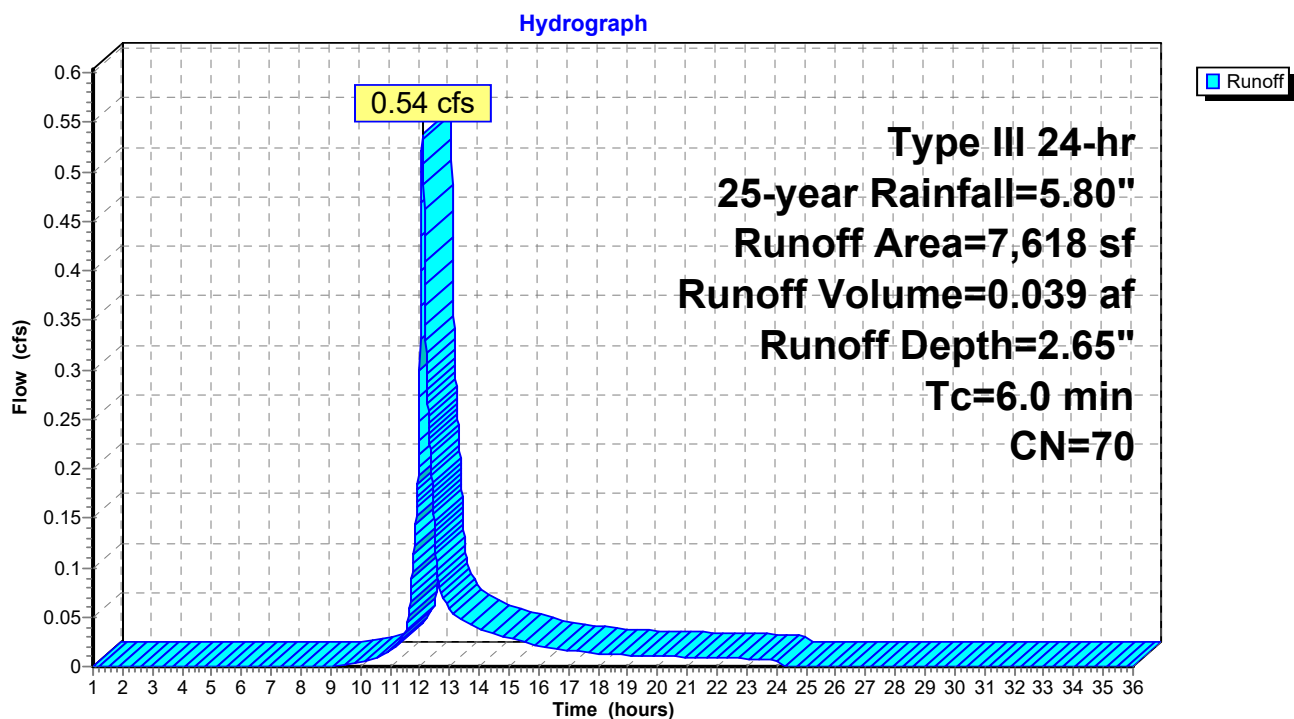
Runoff = 0.54 cfs @ 12.09 hrs, Volume= 0.039 af, Depth= 2.65"

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
*	4,038	98	Paved parking
	3,580	39	>75% Grass cover, Good, HSG A
	7,618	70	Weighted Average
	3,580		46.99% Pervious Area
	4,038		53.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1S.7: East Lot 4



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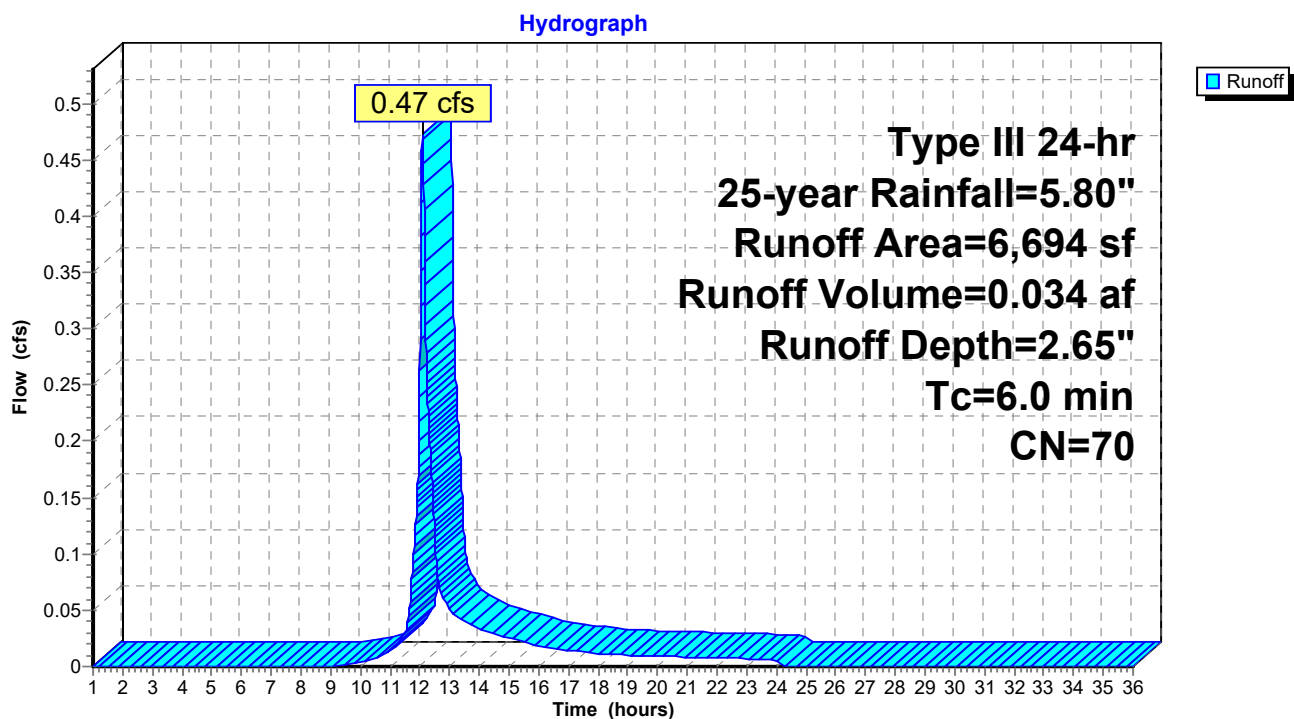
Summary for Subcatchment 1S.8: East Lot 3

Runoff = 0.47 cfs @ 12.09 hrs, Volume= 0.034 af, Depth= 2.65"

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
*	3,547	98	Paved parking
	3,147	39	>75% Grass cover, Good, HSG A
	6,694	70	Weighted Average
	3,147		47.01% Pervious Area
	3,547		52.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1S.8: East Lot 3

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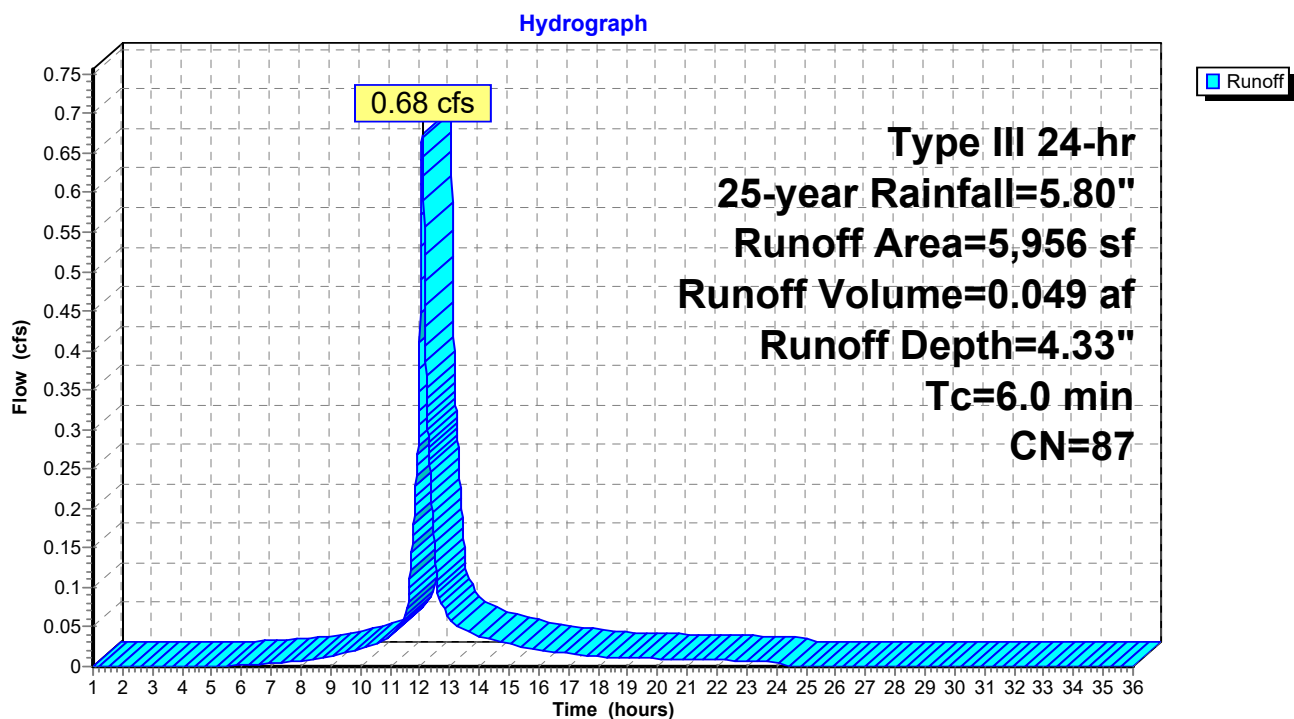
Summary for Subcatchment 1S.9: East Lot 2

Runoff = 0.68 cfs @ 12.09 hrs, Volume= 0.049 af, Depth= 4.33"

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
*	4,809	98	Paved parking, patio, sidewalk
	1,147	39	>75% Grass cover, Good, HSG A
	5,956	87	Weighted Average
	1,147		19.26% Pervious Area
	4,809		80.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1S.9: East Lot 2

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

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Summary for Subcatchment 2S: 295 Embankment Trib

Runoff = 0.31 cfs @ 12.47 hrs, Volume= 0.066 af, Depth= 0.49"

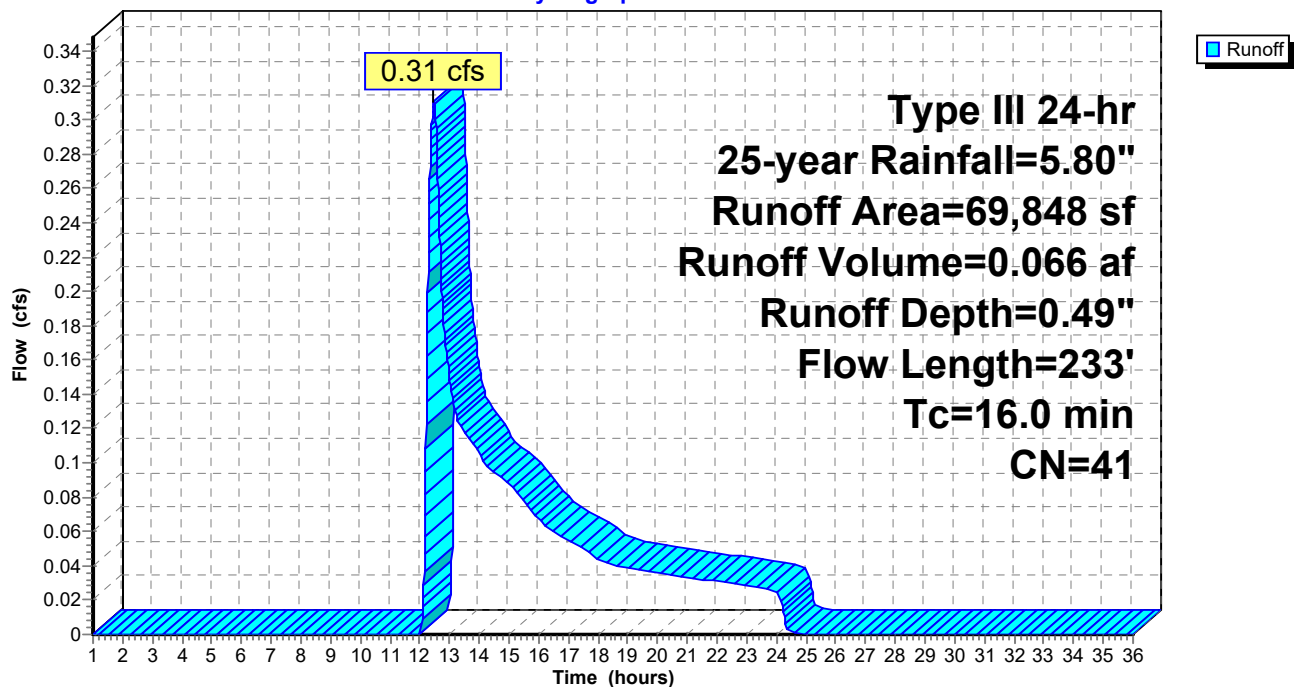
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.80"

Area (sf)	CN	Description
8,183	39	>75% Grass cover, Good, HSG A
* 230	98	Stairs
* 3,155	98	Path
* 5,488	98	Homes/driveways
52,792	32	Woods/grass comb., Good, HSG A
69,848	41	Weighted Average
60,975		87.30% Pervious Area
8,873		12.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	100	0.0500	0.11		Sheet Flow, A to B Woods: Light underbrush n= 0.400 P2= 3.27"
1.3	133	0.0600	1.71		Shallow Concentrated Flow, B to C Short Grass Pasture Kv= 7.0 fps
16.0	233	Total			

Subcatchment 2S: 295 Embankment Trib

Hydrograph



Summary for Subcatchment 3S.1: Garden area runoff

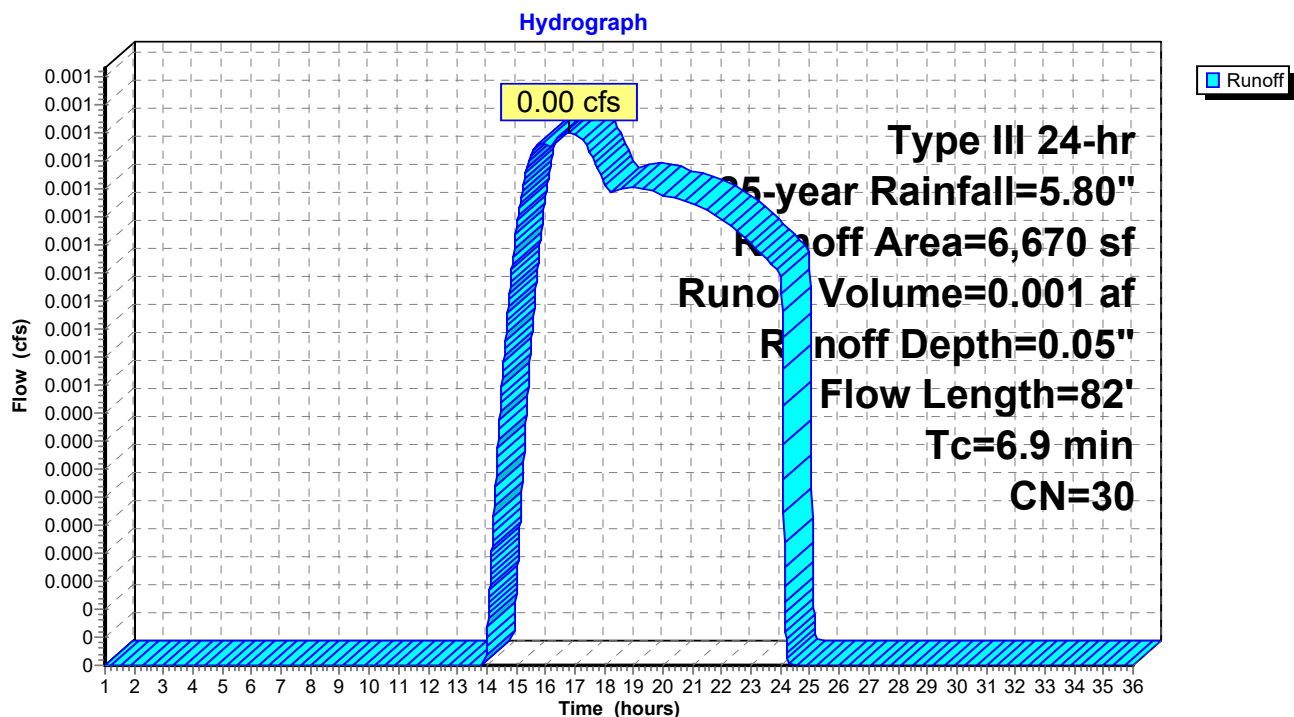
Runoff = 0.00 cfs @ 16.80 hrs, Volume= 0.001 af, Depth= 0.05"

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
6,670	30	Brush, Good, HSG A
6,670		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	28	0.3330	0.28		Sheet Flow, A to B Grass: Dense n= 0.240 P2= 3.27"
5.2	54	0.0700	0.17		Sheet Flow, B to C Grass: Dense n= 0.240 P2= 3.27"
6.9	82	Total			

Subcatchment 3S.1: Garden area runoff

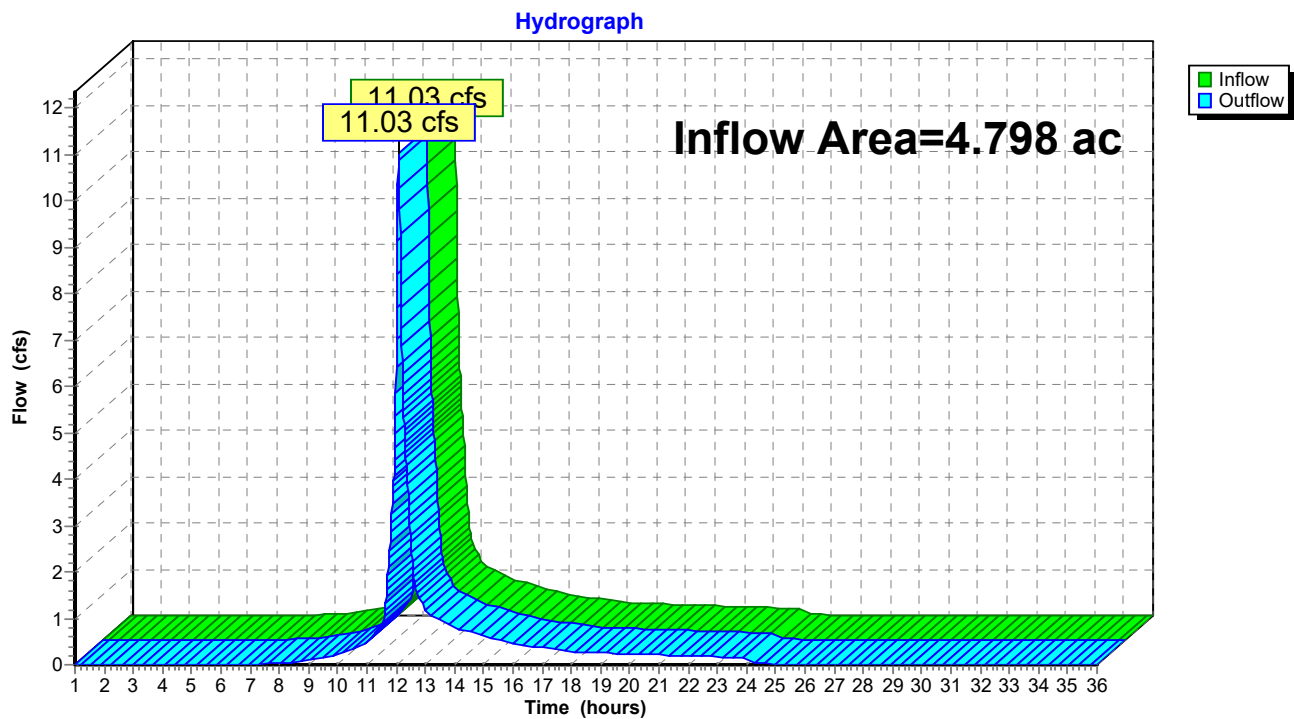


Summary for Reach POI-1: POI #1 - 60" Douglass MS4

Inflow Area = 4.798 ac, 46.81% Impervious, Inflow Depth = 2.14" for 25-year event
 Inflow = 11.03 cfs @ 12.09 hrs, Volume= 0.854 af
 Outflow = 11.03 cfs @ 12.09 hrs, Volume= 0.854 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 POI-1: POI #1 - 60" Douglass MS4

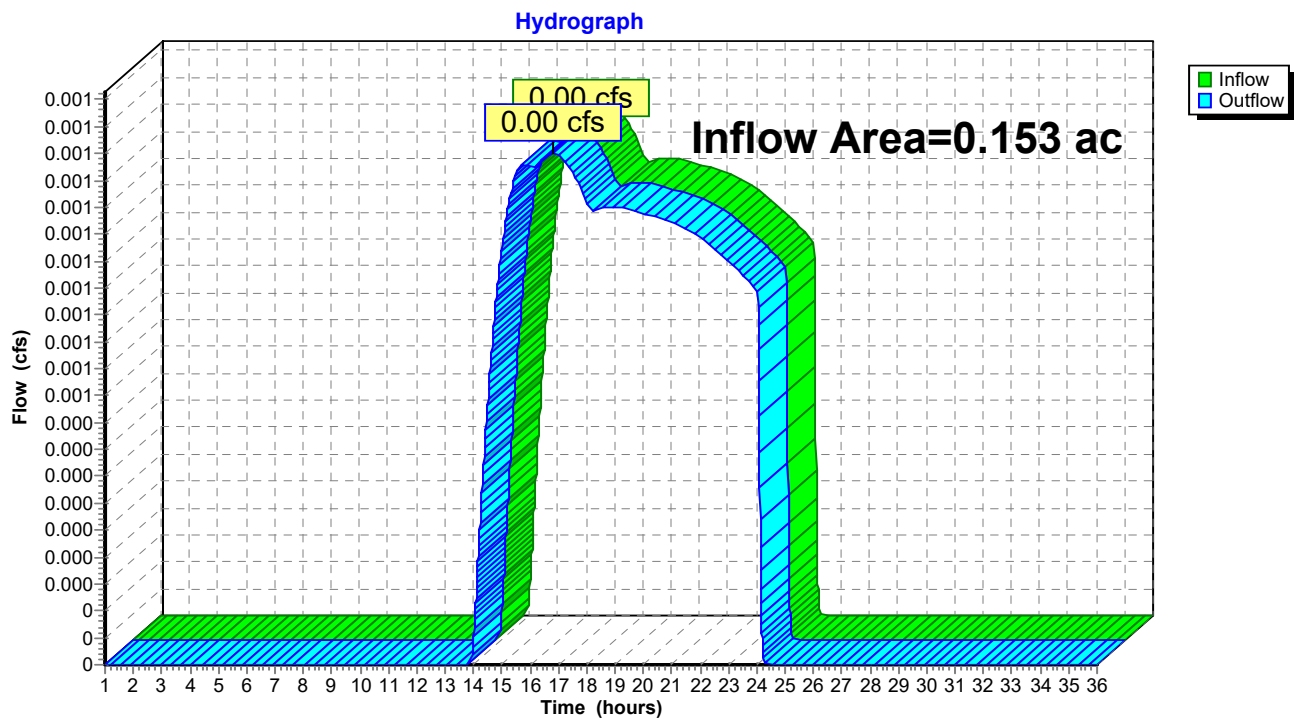


Summary for Reach POI-3: POI #3 - Baseball Field

Inflow Area = 0.153 ac, 0.00% Impervious, Inflow Depth = 0.05" for 25-year event
 Inflow = 0.00 cfs @ 16.80 hrs, Volume= 0.001 af
 Outflow = 0.00 cfs @ 16.80 hrs, Volume= 0.001 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 POI-3: POI #3 - Baseball Field



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

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Summary for Pond P1: VUSF

Inflow Area = 0.249 ac, 76.24% Impervious, Inflow Depth = 3.80" for 25-year event
 Inflow = 1.10 cfs @ 12.09 hrs, Volume= 0.079 af
 Outflow = 0.18 cfs @ 12.57 hrs, Volume= 0.079 af, Atten= 83%, Lag= 28.8 min
 Discarded = 0.06 cfs @ 12.57 hrs, Volume= 0.057 af
 Primary = 0.13 cfs @ 12.57 hrs, Volume= 0.022 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 32.38' @ 12.57 hrs Surf.Area= 2,381 sf Storage= 1,639 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= 254.7 min (1,064.9 - 810.3)

Volume	Invert	Avail.Storage	Storage Description
#1	30.75'	1,899 cf	Ponding (Prismatic) Listed below (Recalc)
#2	29.25'	69 cf	Filter Media/Loam (Prismatic) Listed below (Recalc) 687 cf Overall x 10.0% Voids
#3	28.92'	30 cf	Transition Gravel (Prismatic) Listed below (Recalc) 151 cf Overall x 20.0% Voids
#4	27.00'	349 cf	Crushed Stone (Prismatic) Listed below (Recalc) 879 cf Overall - 6 cf Embedded = 873 cf x 40.0% Voids
#5	27.10'	5 cf	4.0" Round Pipe Storage x 2 Inside #4 L= 30.0' S= 0.0005 '/ 6 cf Overall - 0.2" Wall Thickness = 5 cf
		2,353 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.75	465	0	0
32.25	945	1,058	1,058
33.00	1,300	842	1,899

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
29.25	458	0	0
30.75	458	687	687

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.92	458	0	0
29.25	458	151	151

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
27.00	458	0	0
28.92	458	879	879

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

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Device	Routing	Invert	Outlet Devices
#1	Primary	27.00'	12.0" Round Culvert L= 60.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 27.00' / 26.75' S= 0.0042 ' / ' Cc= 0.600 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf
#2	Device 1	27.10'	0.5" Vert. Soil Filter Media Drawdown Effect C= 0.600
#3	Device 1	32.35'	24.0" Horiz. Beehive Outlet C= 0.600 Limited to weir flow at low heads
#4	Discarded	27.00'	1.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.06 cfs @ 12.57 hrs HW=32.38' (Free Discharge)

↳ **4=Exfiltration** (Exfiltration Controls 0.06 cfs)

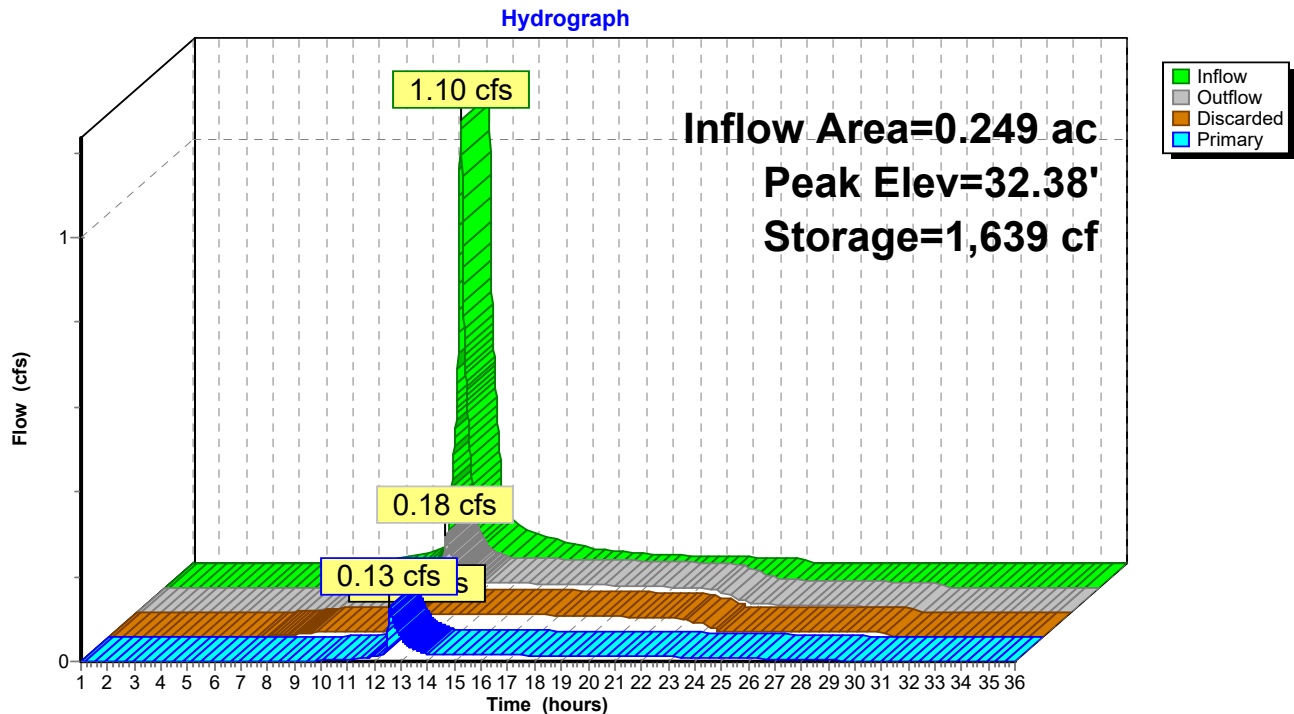
Primary OutFlow Max=0.13 cfs @ 12.57 hrs HW=32.38' TW=0.00' (Dynamic Tailwater)

↳ **1=Culvert** (Passes 0.13 cfs of 4.40 cfs potential flow)

↳ **2=Soil Filter Media Drawdown Effect** (Orifice Controls 0.02 cfs @ 11.04 fps)

↳ **3=Beehive Outlet** (Weir Controls 0.11 cfs @ 0.58 fps)

Pond P1: VUSF



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

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Summary for Pond P2: FP 4

Inflow Area = 0.175 ac, 53.01% Impervious, Inflow Depth = 2.65" for 25-year event
 Inflow = 0.54 cfs @ 12.09 hrs, Volume= 0.039 af
 Outflow = 0.54 cfs @ 12.09 hrs, Volume= 0.039 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.54 cfs @ 12.09 hrs, Volume= 0.039 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 35.95' @ 1.00 hrs Surf.Area= 40 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	35.95'	14 cf	4.00'W x 5.00'L x 3.60'H Media/Stone 72 cf Overall x 20.0% Voids
#2	35.95'	38 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		52 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
35.95	20	0	0
36.95	56	38	38

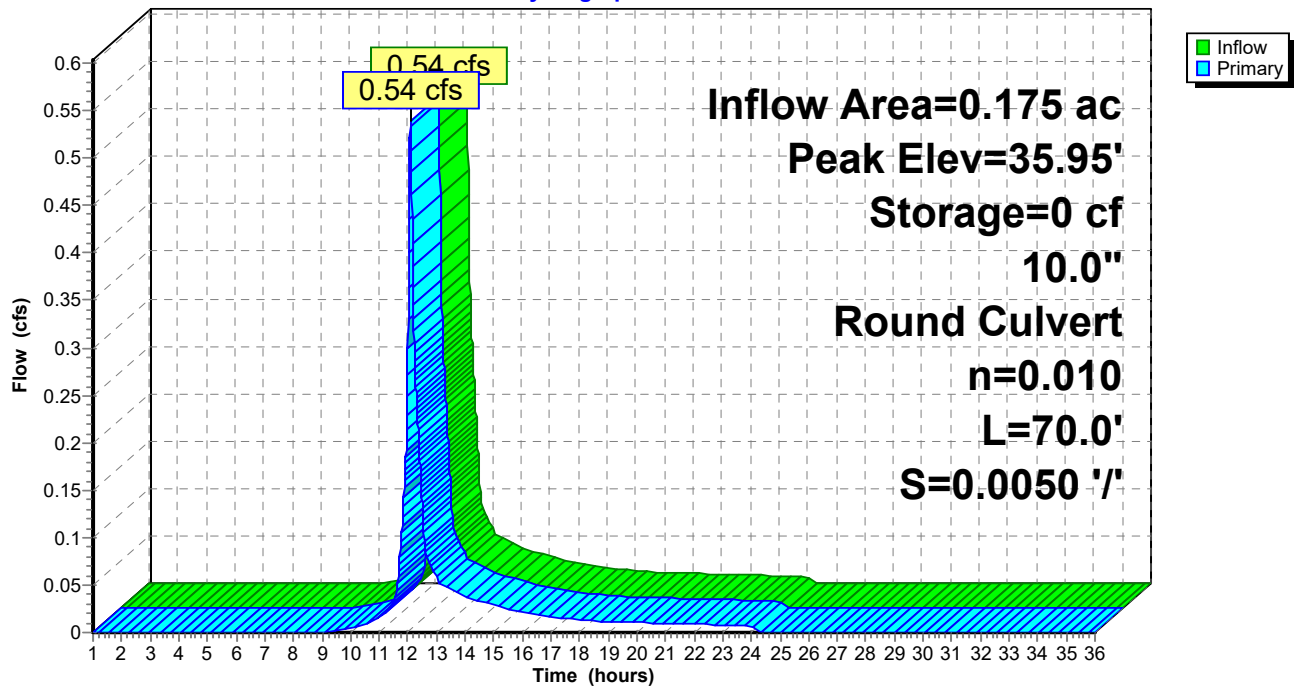
Device	Routing	Invert	Outlet Devices
#1	Primary	32.35'	10.0" Round Culvert L= 70.0' Ke= 1.000 Inlet / Outlet Invert= 32.35' / 32.00' S= 0.0050 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=35.95' TW=0.00' (Dynamic Tailwater)

↑**1=Culvert** (Passes 0.00 cfs of 3.51 cfs potential flow)

Pond P2: FP 4

Hydrograph



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

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Summary for Pond P3: FP 3

Inflow Area = 0.154 ac, 52.99% Impervious, Inflow Depth = 2.65" for 25-year event
 Inflow = 0.47 cfs @ 12.09 hrs, Volume= 0.034 af
 Outflow = 0.47 cfs @ 12.09 hrs, Volume= 0.034 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.47 cfs @ 12.09 hrs, Volume= 0.034 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 36.10' @ 1.00 hrs Surf.Area= 50 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 0.0 min (839.9 - 839.9)

Volume	Invert	Avail.Storage	Storage Description
#1	36.10'	21 cf	5.00'W x 5.00'L x 4.20'H Media/Stone 105 cf Overall x 20.0% Voids
#2	36.10'	45 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		66 cf	Total Available Storage

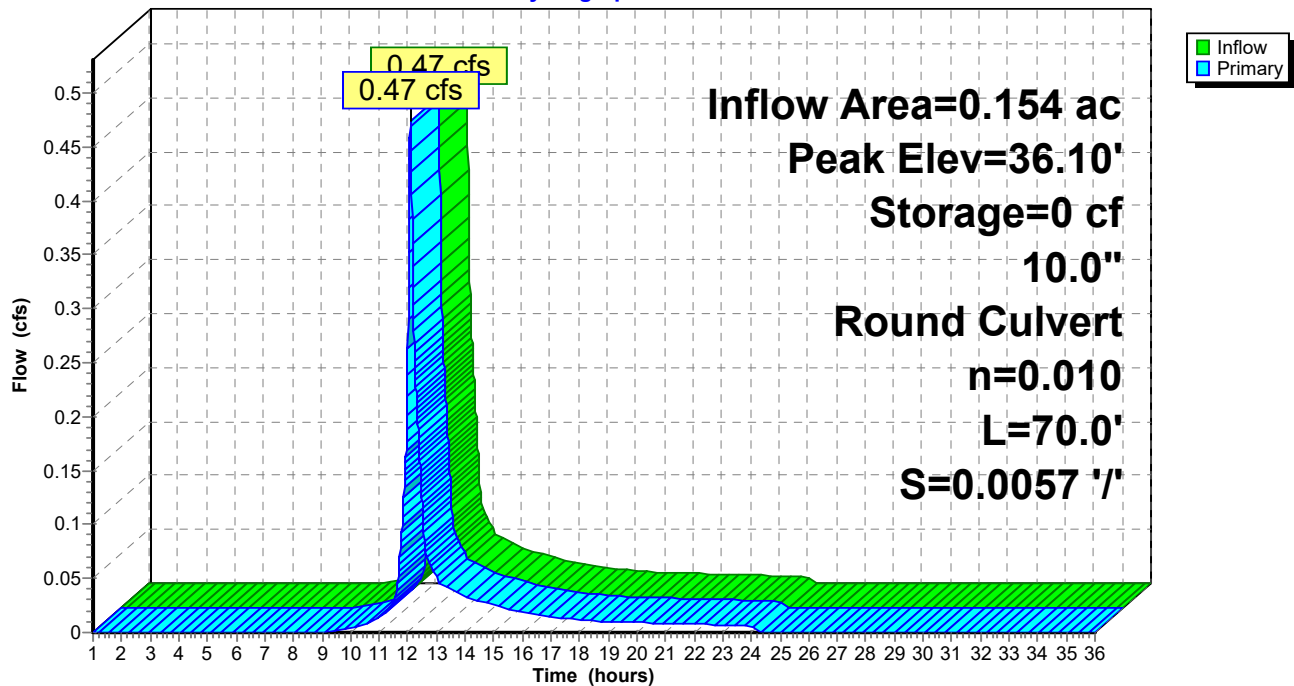
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.10	25	0	0
37.10	64	45	45

Device	Routing	Invert	Outlet Devices
#1	Primary	31.90'	10.0" Round Culvert L= 70.0' Ke= 1.000 Inlet / Outlet Invert= 31.90' / 31.50' S= 0.0057 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=36.10' TW=0.00' (Dynamic Tailwater)
 ↑**1=Culvert** (Passes 0.00 cfs of 3.83 cfs potential flow)

Pond P3: FP 3

Hydrograph



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

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Summary for Pond P4: FP 2

Inflow Area = 0.137 ac, 80.74% Impervious, Inflow Depth = 4.33" for 25-year event
 Inflow = 0.68 cfs @ 12.09 hrs, Volume= 0.049 af
 Outflow = 0.68 cfs @ 12.09 hrs, Volume= 0.049 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.68 cfs @ 12.09 hrs, Volume= 0.049 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 35.90' @ 1.00 hrs Surf.Area= 50 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 0.0 min (795.9 - 795.9)

Volume	Invert	Avail.Storage	Storage Description
#1	35.90'	23 cf	5.00'W x 5.00'L x 4.50'H Media/Stone 113 cf Overall x 20.0% Voids
#2	35.90'	45 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		67 cf	Total Available Storage

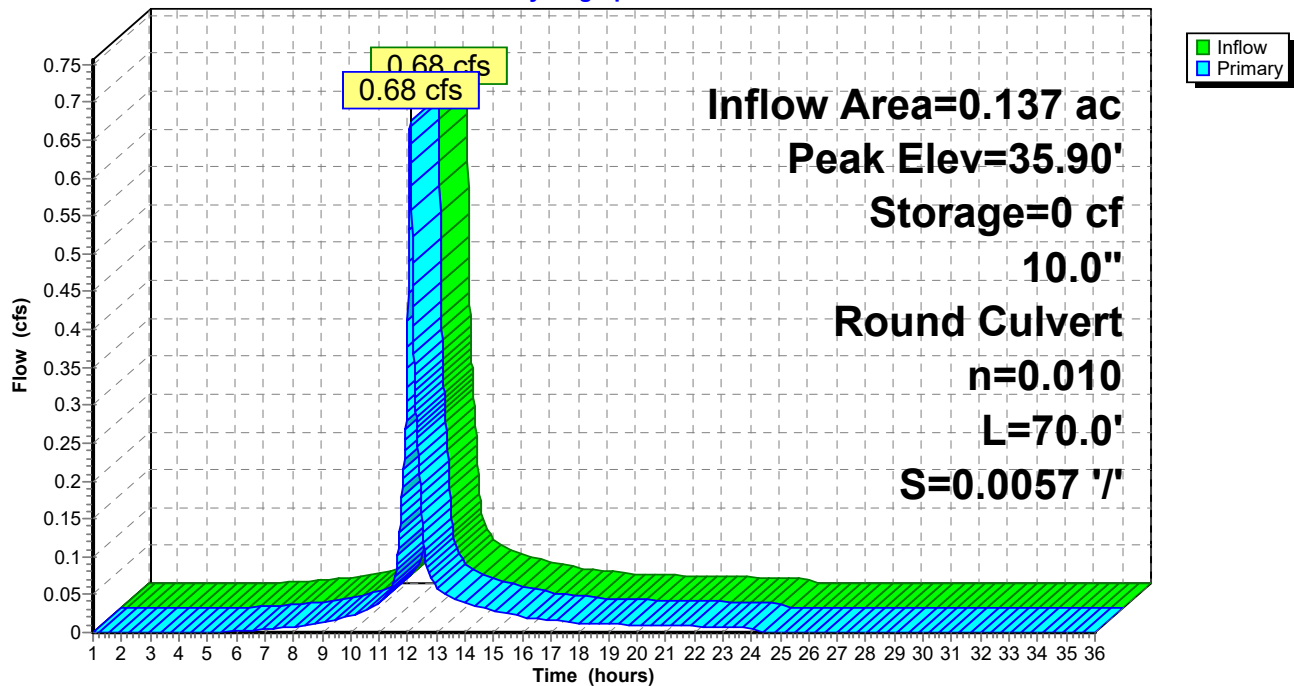
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
35.90	25	0	0
36.90	64	45	45

Device	Routing	Invert	Outlet Devices
#1	Primary	31.40'	10.0" Round Culvert L= 70.0' Ke= 1.000 Inlet / Outlet Invert= 31.40' / 31.00' S= 0.0057 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=35.90' TW=0.00' (Dynamic Tailwater)
 ↑**1=Culvert** (Passes 0.00 cfs of 3.98 cfs potential flow)

Pond P4: FP 2

Hydrograph



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

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Summary for Pond P5: FP 1

Inflow Area = 0.086 ac, 84.98% Impervious, Inflow Depth = 4.54" for 25-year event
 Inflow = 0.44 cfs @ 12.08 hrs, Volume= 0.033 af
 Outflow = 0.44 cfs @ 12.08 hrs, Volume= 0.033 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.44 cfs @ 12.08 hrs, Volume= 0.033 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 35.70' @ 1.00 hrs Surf.Area= 40 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 0.0 min (789.3 - 789.3)

Volume	Invert	Avail.Storage	Storage Description
#1	35.70'	19 cf	4.00'W x 5.00'L x 4.80'H Media/Stone 96 cf Overall x 20.0% Voids
#2	35.70'	38 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		57 cf	Total Available Storage

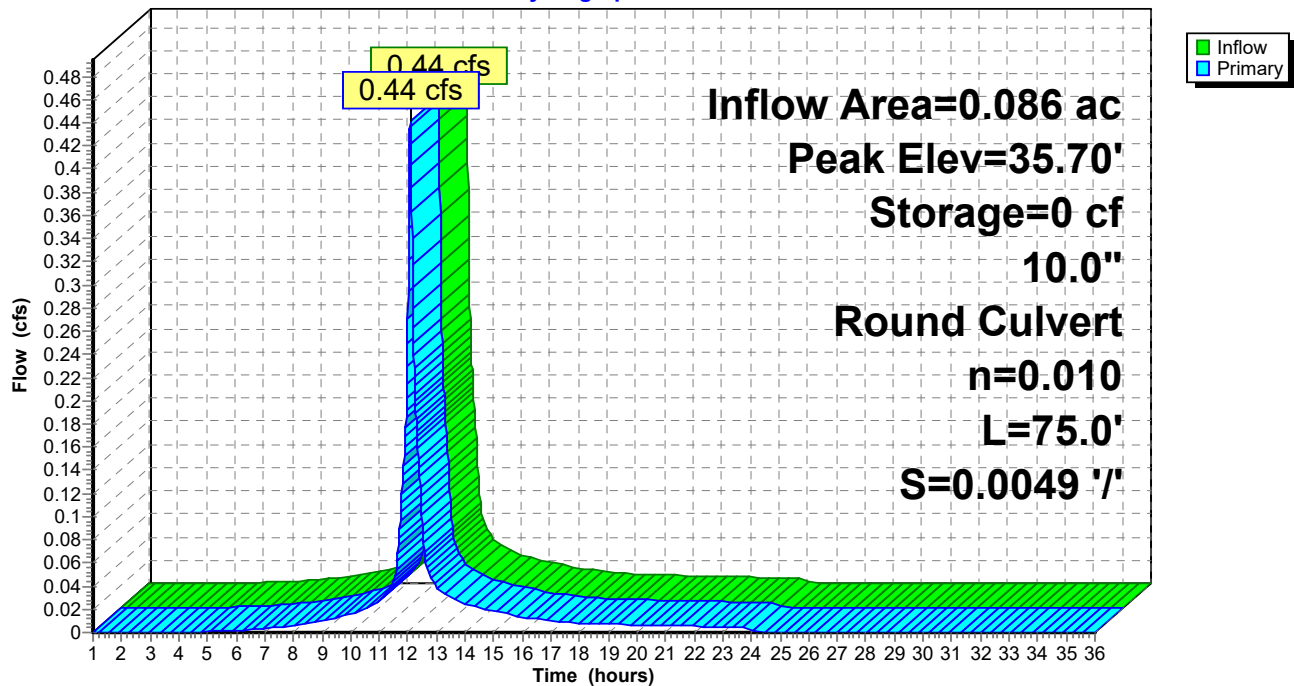
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
35.70	20	0	0
36.70	56	38	38

Device	Routing	Invert	Outlet Devices
#1	Primary	30.90'	10.0" Round Culvert L= 75.0' Ke= 1.000 Inlet / Outlet Invert= 30.90' / 30.53' S= 0.0049 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 12.08 hrs HW=35.70' TW=0.00' (Dynamic Tailwater)
 ↑**1=Culvert** (Passes 0.00 cfs of 4.12 cfs potential flow)

Pond P5: FP 1

Hydrograph



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

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Summary for Pond POI #2: POI #2 (295 Basin)

Inflow Area = 1.603 ac, 12.70% Impervious, Inflow Depth = 0.49" for 25-year event
 Inflow = 0.31 cfs @ 12.47 hrs, Volume= 0.066 af
 Outflow = 0.10 cfs @ 14.06 hrs, Volume= 0.059 af, Atten= 67%, Lag= 95.5 min
 Discarded = 0.02 cfs @ 14.06 hrs, Volume= 0.018 af
 Primary = 0.08 cfs @ 14.06 hrs, Volume= 0.041 af
 Secondary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Peak Elev= 26.76' @ 14.06 hrs Surf.Area= 2,978 sf Storage= 709 cf

Plug-Flow detention time= 154.2 min calculated for 0.059 af (89% of inflow)

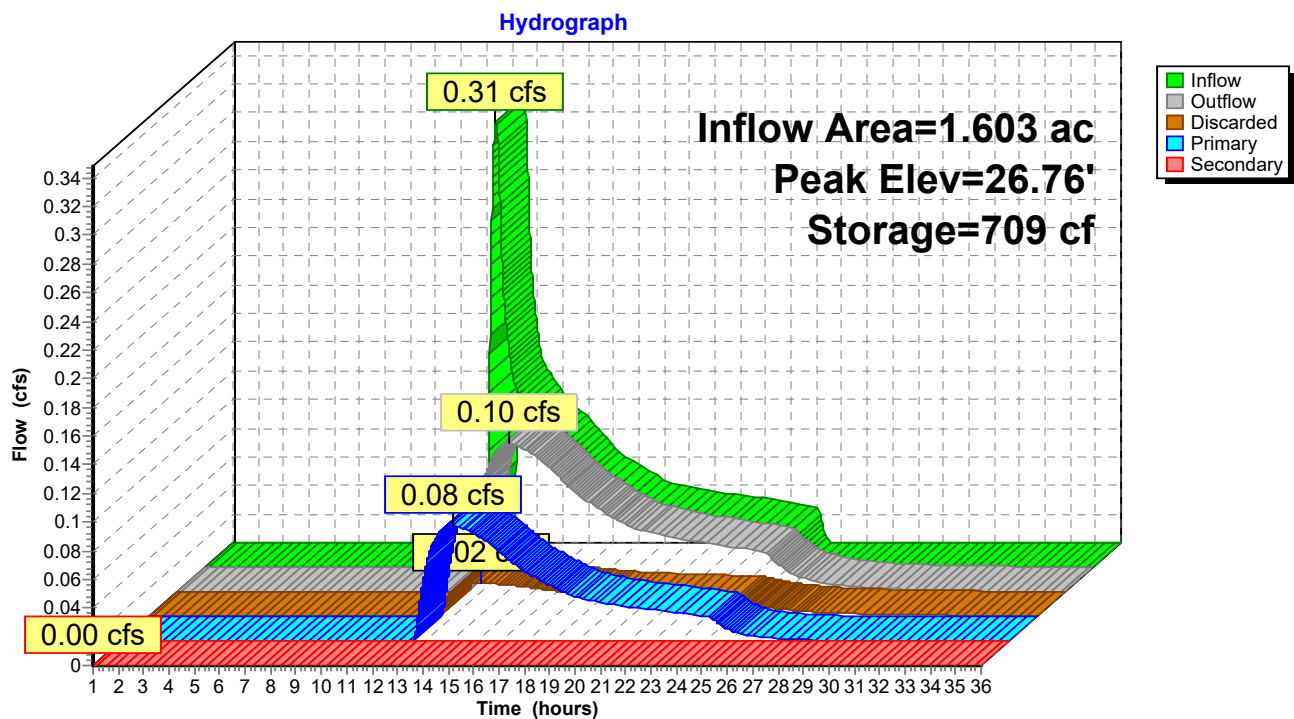
Center-of-Mass det. time= 105.0 min (1,063.5 - 958.5)

Volume	Invert	Avail.Storage	Storage Description
#1	26.30'	105,037 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.30	100	0	0
27.00	4,475	1,601	1,601
28.00	10,120	7,298	8,899
29.00	14,131	12,126	21,024
30.00	17,326	15,729	36,753
32.00	24,023	41,349	78,102
33.00	29,847	26,935	105,037

Device	Routing	Invert	Outlet Devices
#1	Primary	26.60'	12.0" Round Culvert L= 16.0' Ke= 0.600 Inlet / Outlet Invert= 26.60' / 26.51' S= 0.0056 ' S= 0.0056 ' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	32.40'	20.0' long x 15.0' breadth Overflow Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Discarded	26.60'	1.000 in/hr Exfiltration over Surface area above 26.60' Excluded Surface area = 1,975 sf

Discarded OutFlow Max=0.02 cfs @ 14.06 hrs HW=26.76' (Free Discharge)↑**3=Exfiltration** (Exfiltration Controls 0.02 cfs)**Primary OutFlow** Max=0.08 cfs @ 14.06 hrs HW=26.76' TW=0.00' (Dynamic Tailwater)↑**1=Culvert** (Barrel Controls 0.08 cfs @ 1.50 fps)**Secondary OutFlow** Max=0.00 cfs @ 1.00 hrs HW=26.30' (Free Discharge)↑**2=Overflow** (Controls 0.00 cfs)

Pond POI #2: POI #2 (295 Basin)



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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

Subcatchment 1S.1: Drive to Street	Runoff Area=1,131 sf 55.00% Impervious Runoff Depth=0.01" Tc=6.0 min CN=71 Runoff=0.00 cfs 0.000 af
Subcatchment 1S.10: East Lot 1	Runoff Area=3,754 sf 84.98% Impervious Runoff Depth=0.28" Tc=6.0 min CN=89 Runoff=0.03 cfs 0.002 af
Subcatchment 1S.11: South Lot Treated	Runoff Area=10,852 sf 76.24% Impervious Runoff Depth=0.11" Tc=6.0 min CN=82 Runoff=0.02 cfs 0.002 af
Subcatchment 1S.2: Co Op Roof & yard	Runoff Area=56,422 sf 65.80% Impervious Runoff Depth=0.06" Tc=6.0 min CN=78 Runoff=0.02 cfs 0.006 af
Subcatchment 1S.3: Runoff to park	Runoff Area=2,081 sf 0.00% Impervious Runoff Depth=0.00" Flow Length=264' Tc=9.0 min CN=39 Runoff=0.00 cfs 0.000 af
Subcatchment 1S.4: Central parking/drive	Runoff Area=19,043 sf 77.98% Impervious Runoff Depth=0.13" Tc=6.0 min CN=83 Runoff=0.04 cfs 0.005 af
Subcatchment 1S.5: Contained yard/park	Runoff Area=3,023 sf 16.84% Impervious Runoff Depth=0.00" Tc=6.0 min CN=49 Runoff=0.00 cfs 0.000 af
Subcatchment 1S.6: Building E roof and	Runoff Area=22,599 sf 53.10% Impervious Runoff Depth=0.00" Tc=6.0 min CN=70 Runoff=0.00 cfs 0.000 af
Subcatchment 1S.7: East Lot 4	Runoff Area=7,618 sf 53.01% Impervious Runoff Depth=0.00" Tc=6.0 min CN=70 Runoff=0.00 cfs 0.000 af
Subcatchment 1S.8: East Lot 3	Runoff Area=6,694 sf 52.99% Impervious Runoff Depth=0.00" Tc=6.0 min CN=70 Runoff=0.00 cfs 0.000 af
Subcatchment 1S.9: East Lot 2	Runoff Area=5,956 sf 80.74% Impervious Runoff Depth=0.22" Tc=6.0 min CN=87 Runoff=0.03 cfs 0.003 af
Subcatchment 2S: 295 Embankment Trib	Runoff Area=69,848 sf 12.70% Impervious Runoff Depth=0.00" Flow Length=233' Tc=16.0 min CN=41 Runoff=0.00 cfs 0.000 af
Subcatchment 3S.1: Garden area runoff	Runoff Area=6,670 sf 0.00% Impervious Runoff Depth=0.00" Flow Length=82' Tc=6.9 min CN=30 Runoff=0.00 cfs 0.000 af
Reach POI-1: POI #1 - 60" Douglass MS4	Inflow=0.10 cfs 0.016 af Outflow=0.10 cfs 0.016 af
Reach POI-3: POI #3 - Baseball Field	Inflow=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af
Pond P1: VUSF	Peak Elev=27.03' Storage=5 cf Inflow=0.02 cfs 0.002 af Discarded=0.01 cfs 0.002 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.002 af

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Pond P2: FP 4

Peak Elev=35.95' Storage=0 cf Inflow=0.00 cfs 0.000 af
10.0" Round Culvert n=0.010 L=70.0' S=0.0050 '/' Outflow=0.00 cfs 0.000 af

Pond P3: FP 3

Peak Elev=36.10' Storage=0 cf Inflow=0.00 cfs 0.000 af
10.0" Round Culvert n=0.010 L=70.0' S=0.0057 '/' Outflow=0.00 cfs 0.000 af

Pond P4: FP 2

Peak Elev=35.90' Storage=0 cf Inflow=0.03 cfs 0.003 af
10.0" Round Culvert n=0.010 L=70.0' S=0.0057 '/' Outflow=0.03 cfs 0.003 af

Pond P5: FP 1

Peak Elev=35.70' Storage=0 cf Inflow=0.03 cfs 0.002 af
10.0" Round Culvert n=0.010 L=75.0' S=0.0049 '/' Outflow=0.03 cfs 0.002 af

Pond POI #2: POI #2 (295 Basin)

Peak Elev=26.30' Storage=0 cf Inflow=0.00 cfs 0.000 af
Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Total Runoff Area = 4.952 ac Runoff Volume = 0.018 af Average Runoff Depth = 0.04"
54.64% Pervious = 2.706 ac 45.36% Impervious = 2.246 ac

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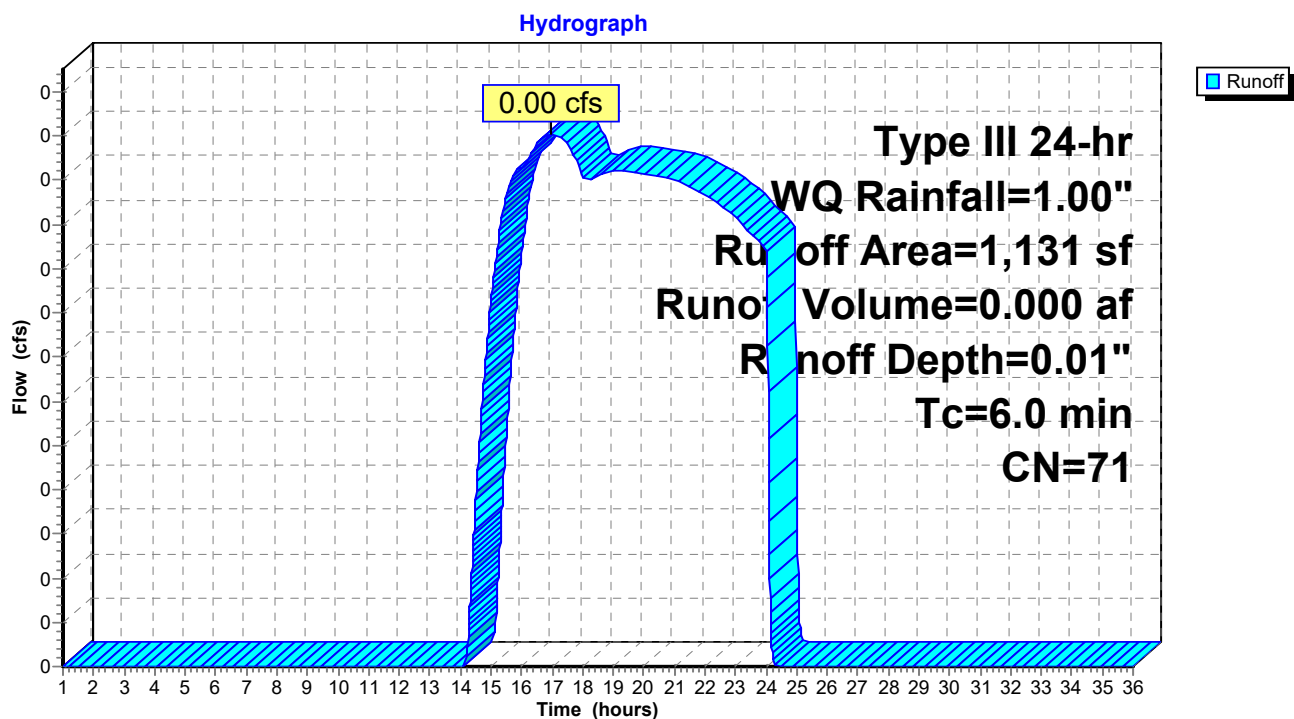
Summary for Subcatchment 1.S1: Drive to Street

Runoff = 0.00 cfs @ 16.98 hrs, Volume= 0.000 af, Depth= 0.01"

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 WQ Rainfall=1.00"

	Area (sf)	CN	Description
*	622	98	Pavement
	509	39	>75% Grass cover, Good, HSG A
	1,131	71	Weighted Average
	509		45.00% Pervious Area
	622		55.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1.S1: Drive to Street

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Type III 24-hr WQ Rainfall=1.00"

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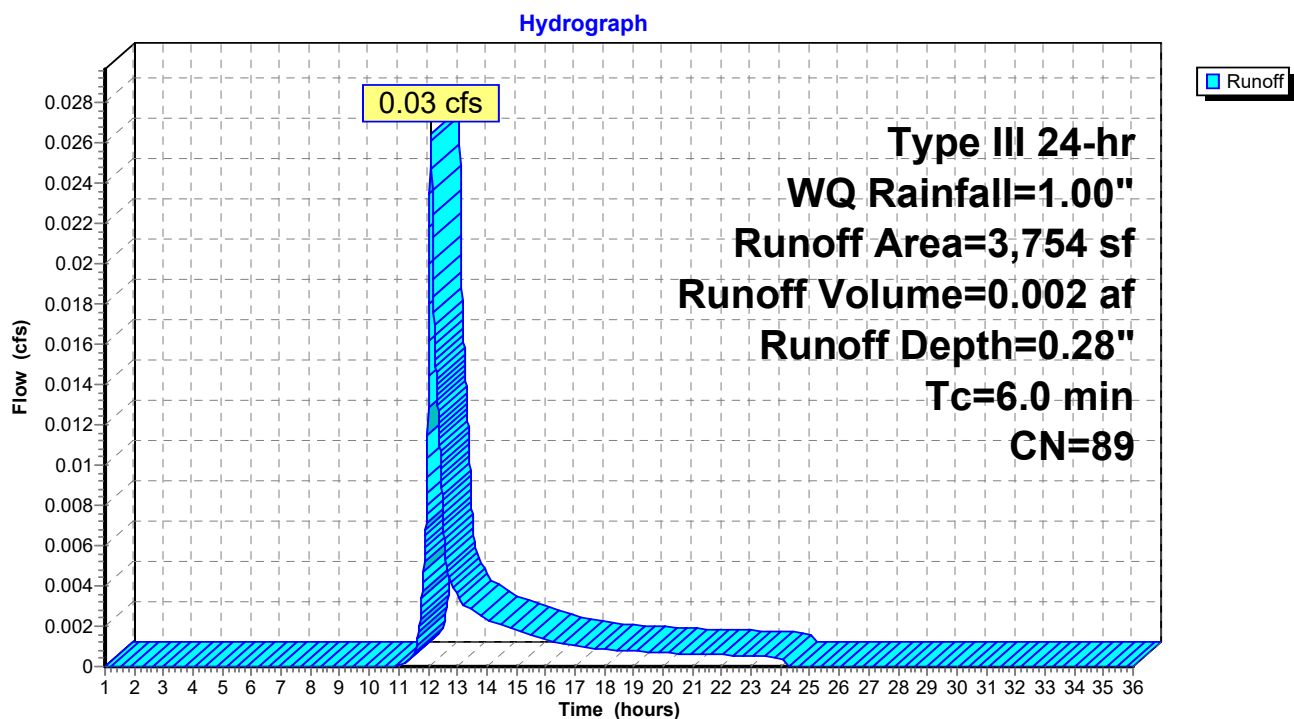
Summary for Subcatchment 1S.10: East Lot 1

Runoff = 0.03 cfs @ 12.10 hrs, Volume= 0.002 af, Depth= 0.28"

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 WQ Rainfall=1.00"

	Area (sf)	CN	Description
*	3,190	98	Pavement
	564	39	>75% Grass cover, Good, HSG A
	3,754	89	Weighted Average
	564		15.02% Pervious Area
	3,190		84.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1S.10: East Lot 1

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Type III 24-hr WQ Rainfall=1.00"

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Summary for Subcatchment 1S.11: South Lot Treated

Runoff = 0.02 cfs @ 12.14 hrs, Volume= 0.002 af, Depth= 0.11"

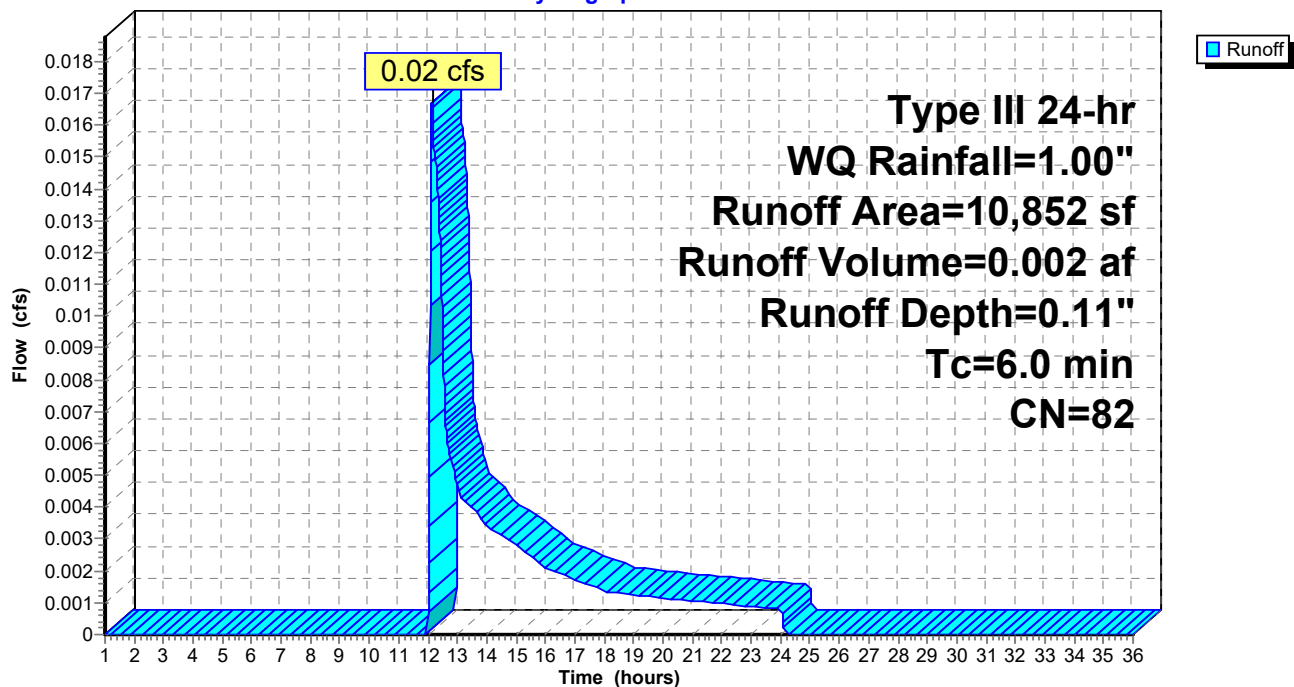
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr WQ Rainfall=1.00"

	Area (sf)	CN	Description
*	8,274	98	Paved parking
	2,578	30	Brush, Good, HSG A
	10,852	82	Weighted Average
	2,578		23.76% Pervious Area
	8,274		76.24% Impervious Area

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

Subcatchment 1S.11: South Lot Treated

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Type III 24-hr WQ Rainfall=1.00"

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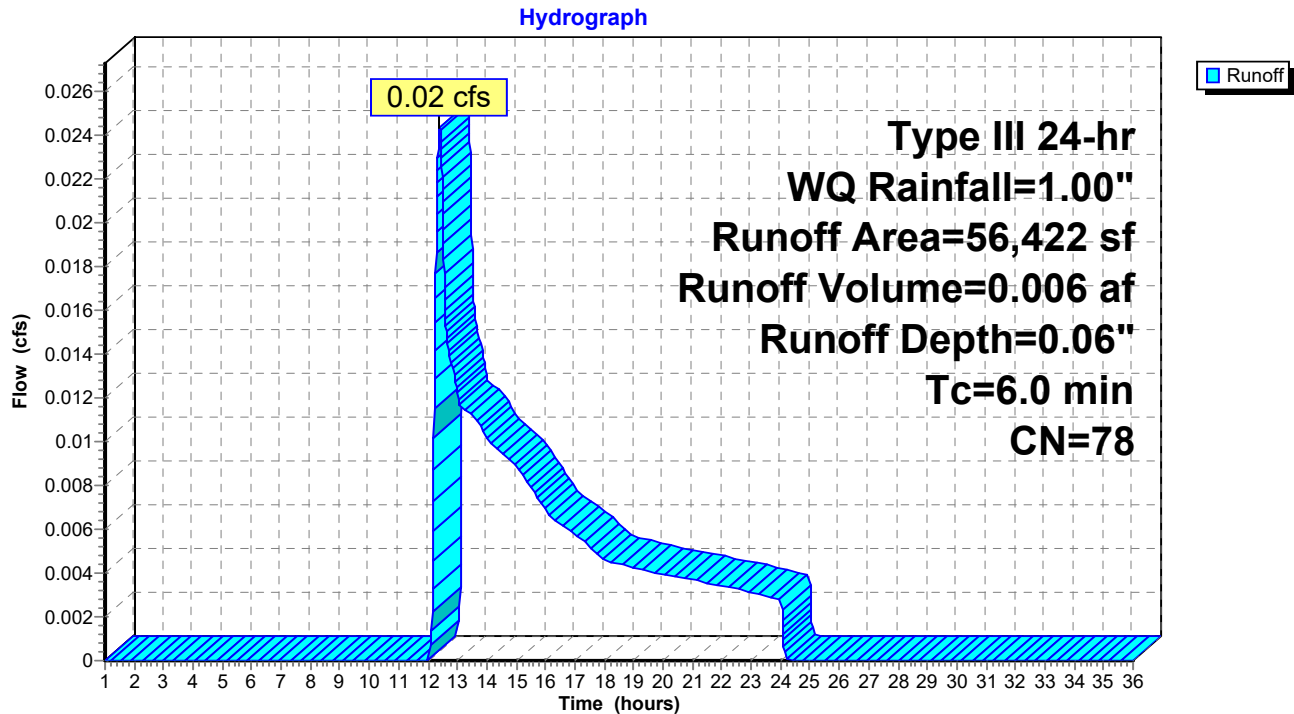
Summary for Subcatchment 1S.2: Co Op Roof & yard

Runoff = 0.02 cfs @ 12.39 hrs, Volume= 0.006 af, Depth= 0.06"

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 WQ Rainfall=1.00"

	Area (sf)	CN	Description
*	5,239	98	pavers
	16,100	39	>75% Grass cover, Good, HSG A
*	21,137	98	Roofs
*	4,191	98	sidewalks
*	618	98	patios
	9,137	77	1/8 acre lots, 65% imp, HSG A
	56,422	78	Weighted Average
	19,298		34.20% Pervious Area
	37,124		65.80% Impervious Area

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

Subcatchment 1S.2: Co Op Roof & yard

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Type III 24-hr WQ Rainfall=1.00"

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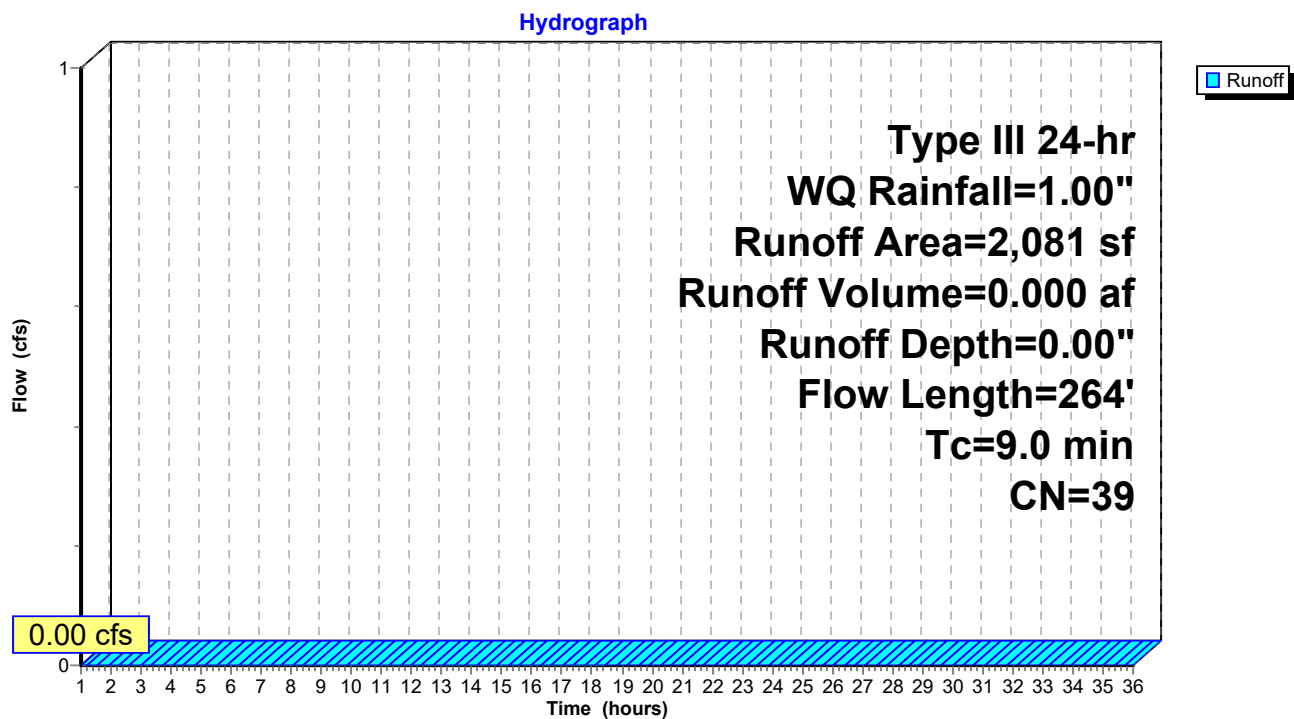
Summary for Subcatchment 1S.3: Runoff to park

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= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr WQ Rainfall=1.00"

Area (sf)	CN	Description
2,081	39	>75% Grass cover, Good, HSG A
2,081		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	100	0.0600	0.27		Sheet Flow, A to B Grass: Short n= 0.150 P2= 3.27"
2.8	164	0.0200	0.99		Shallow Concentrated Flow, B to C Short Grass Pasture Kv= 7.0 fps
9.0	264	Total			

Subcatchment 1S.3: Runoff to park

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Type III 24-hr WQ Rainfall=1.00"

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Summary for Subcatchment 1S.4: Central parking/drive

Runoff = 0.04 cfs @ 12.13 hrs, Volume= 0.005 af, Depth= 0.13"

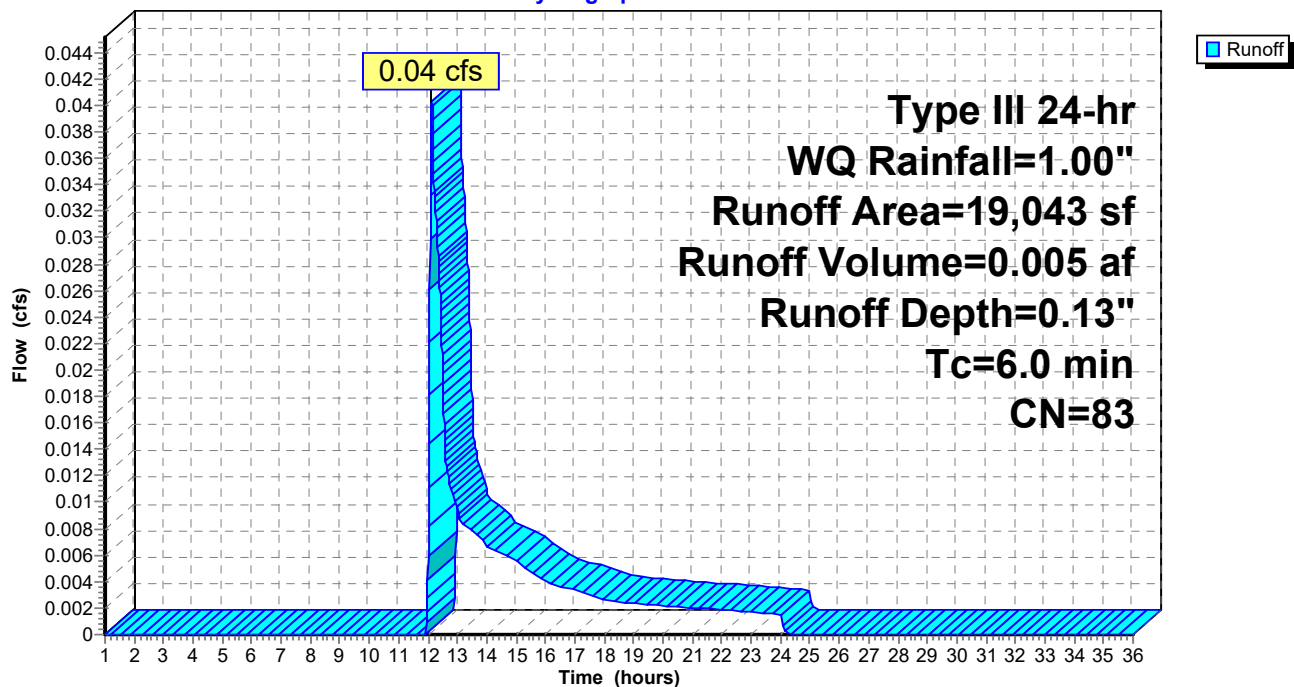
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr WQ Rainfall=1.00"

	Area (sf)	CN	Description
*	14,850	98	Pavement
	4,193	30	Brush, Good, HSG A
	19,043	83	Weighted Average
	4,193		22.02% Pervious Area
	14,850		77.98% Impervious Area

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

Subcatchment 1S.4: Central parking/drive

Hydrograph



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Type III 24-hr WQ Rainfall=1.00"

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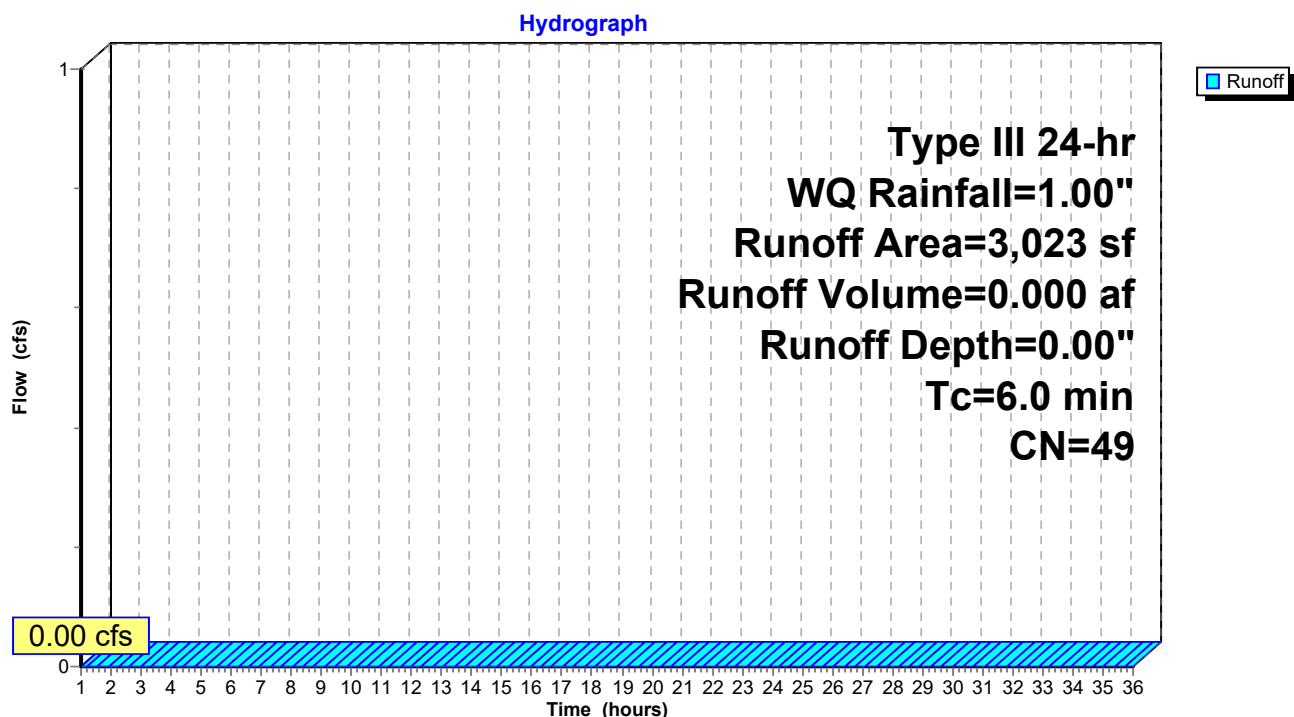
Summary for Subcatchment 1S.5: Contained yard/park connection

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= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr WQ Rainfall=1.00"

Area (sf)	CN	Description
2,514	39	>75% Grass cover, Good, HSG A
* 509	98	sidewalks
3,023	49	Weighted Average
2,514		83.16% Pervious Area
509		16.84% Impervious Area

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

Subcatchment 1S.5: Contained yard/park connection

Summary for Subcatchment 1S.7: East Lot 4

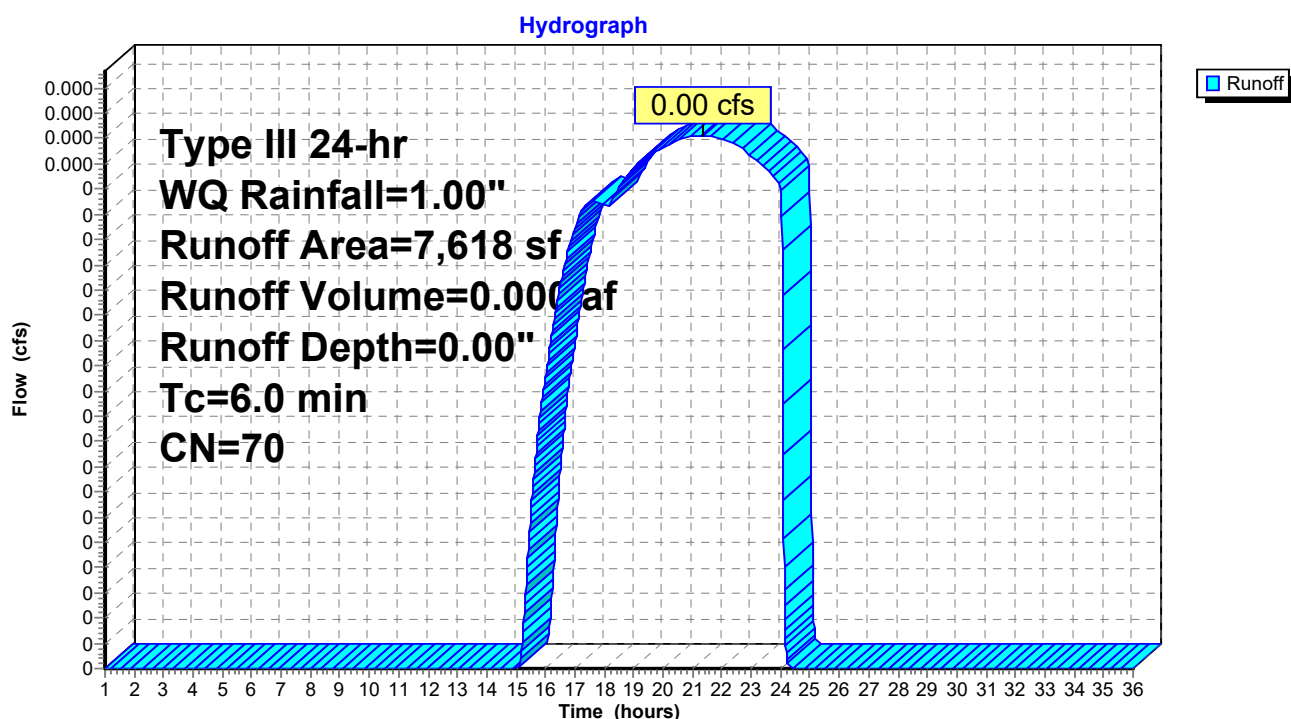
Runoff = 0.00 cfs @ 21.34 hrs, Volume= 0.000 af, Depth= 0.00"

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 WQ Rainfall=1.00"

	Area (sf)	CN	Description
*	4,038	98	Paved parking
	3,580	39	>75% Grass cover, Good, HSG A
	7,618	70	Weighted Average
	3,580		46.99% Pervious Area
	4,038		53.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1S.7: East Lot 4



Summary for Subcatchment 1S.8: East Lot 3

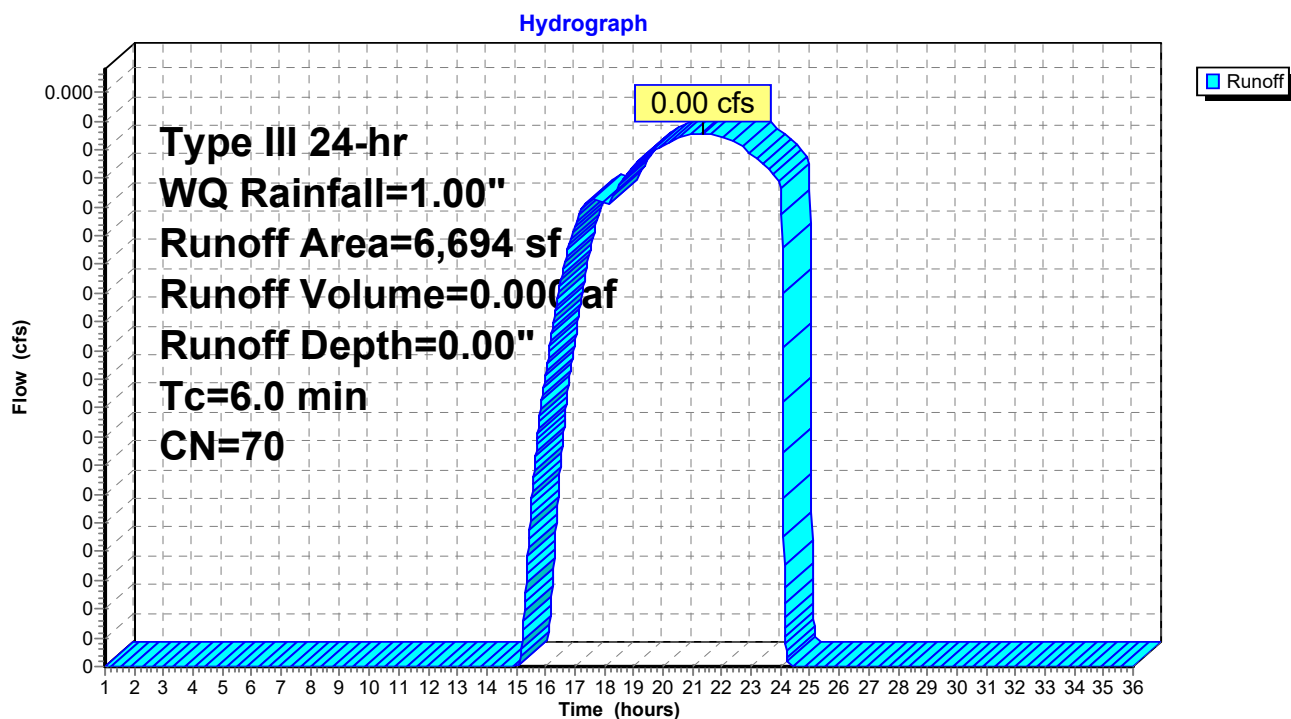
Runoff = 0.00 cfs @ 21.34 hrs, Volume= 0.000 af, Depth= 0.00"

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 WQ Rainfall=1.00"

	Area (sf)	CN	Description
*	3,547	98	Paved parking
	3,147	39	>75% Grass cover, Good, HSG A
	6,694	70	Weighted Average
	3,147		47.01% Pervious Area
	3,547		52.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1S.8: East Lot 3



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Type III 24-hr WQ Rainfall=1.00"

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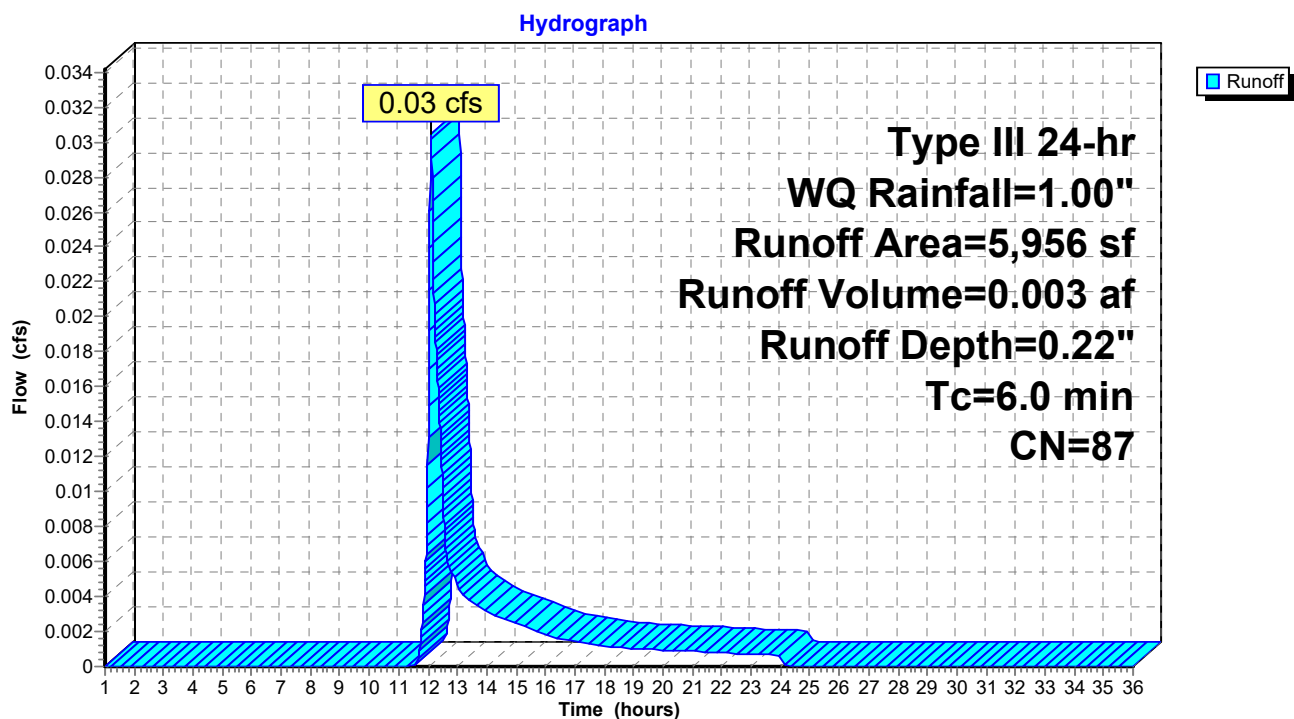
Summary for Subcatchment 1S.9: East Lot 2

Runoff = 0.03 cfs @ 12.10 hrs, Volume= 0.003 af, Depth= 0.22"

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 WQ Rainfall=1.00"

	Area (sf)	CN	Description
*	4,809	98	Paved parking, patio, sidewalk
	1,147	39	>75% Grass cover, Good, HSG A
	5,956	87	Weighted Average
	1,147		19.26% Pervious Area
	4,809		80.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, TR 55 .1 hour

Subcatchment 1S.9: East Lot 2

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Type III 24-hr WQ Rainfall=1.00"

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Summary for Subcatchment 2S: 295 Embankment Trib

Runoff = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Depth= 0.00"

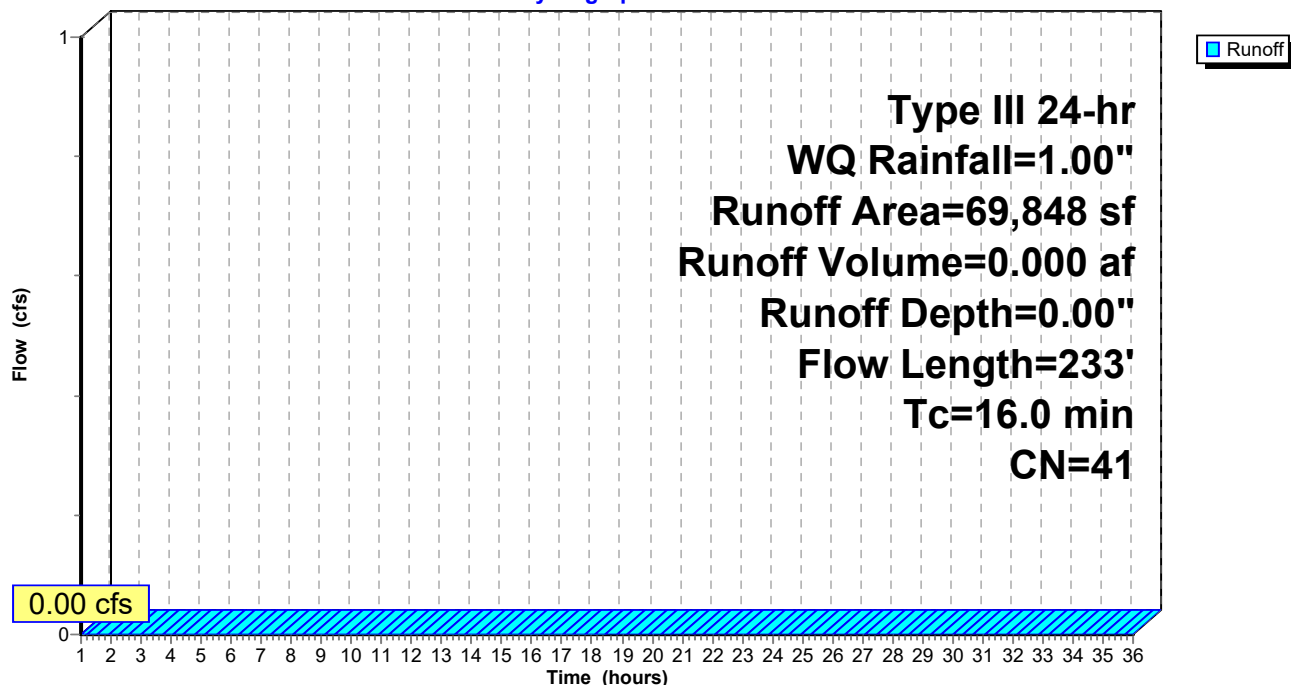
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr WQ Rainfall=1.00"

Area (sf)	CN	Description
8,183	39	>75% Grass cover, Good, HSG A
* 230	98	Stairs
* 3,155	98	Path
* 5,488	98	Homes/driveways
52,792	32	Woods/grass comb., Good, HSG A
69,848	41	Weighted Average
60,975		87.30% Pervious Area
8,873		12.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	100	0.0500	0.11		Sheet Flow, A to B Woods: Light underbrush n= 0.400 P2= 3.27"
1.3	133	0.0600	1.71		Shallow Concentrated Flow, B to C Short Grass Pasture Kv= 7.0 fps
16.0	233	Total			

Subcatchment 2S: 295 Embankment Trib

Hydrograph



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Type III 24-hr WQ Rainfall=1.00"

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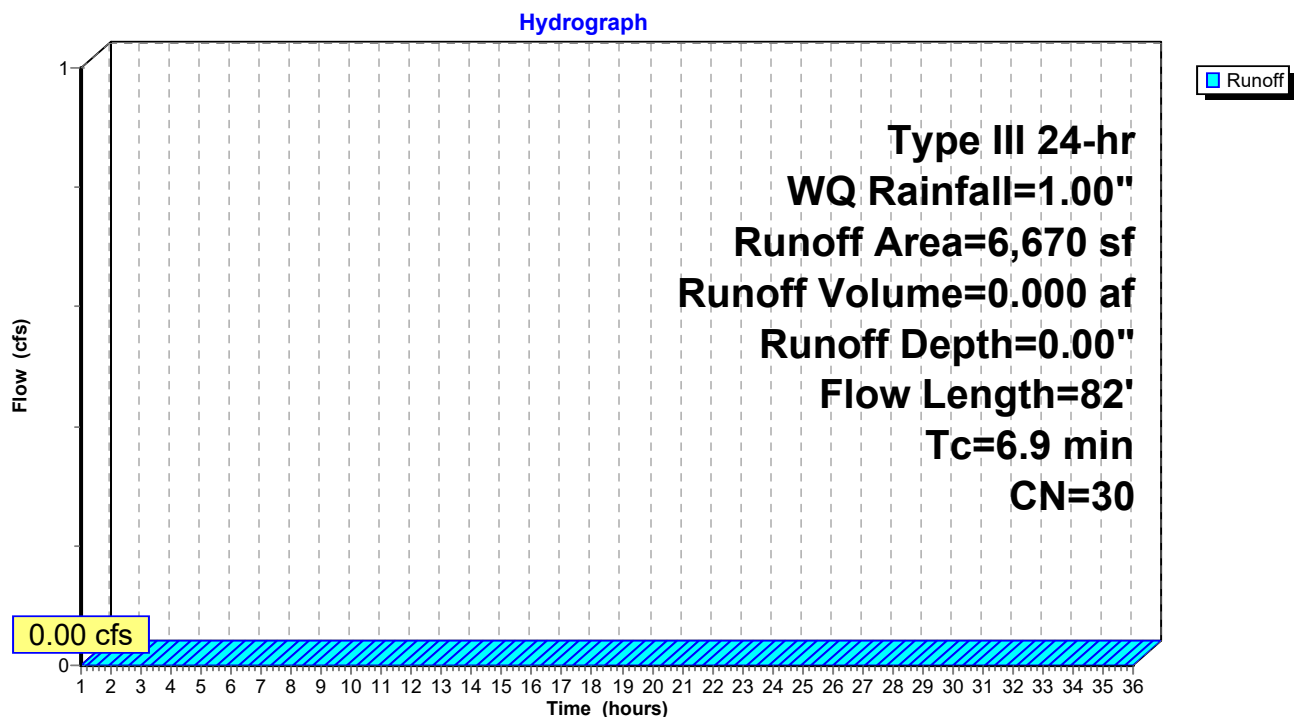
Summary for Subcatchment 3S.1: Garden area runoff

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= 1.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr WQ Rainfall=1.00"

Area (sf)	CN	Description
6,670	30	Brush, Good, HSG A
6,670		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	28	0.3330	0.28		Sheet Flow, A to B
					Grass: Dense n= 0.240 P2= 3.27"
5.2	54	0.0700	0.17		Sheet Flow, B to C
					Grass: Dense n= 0.240 P2= 3.27"
6.9	82	Total			

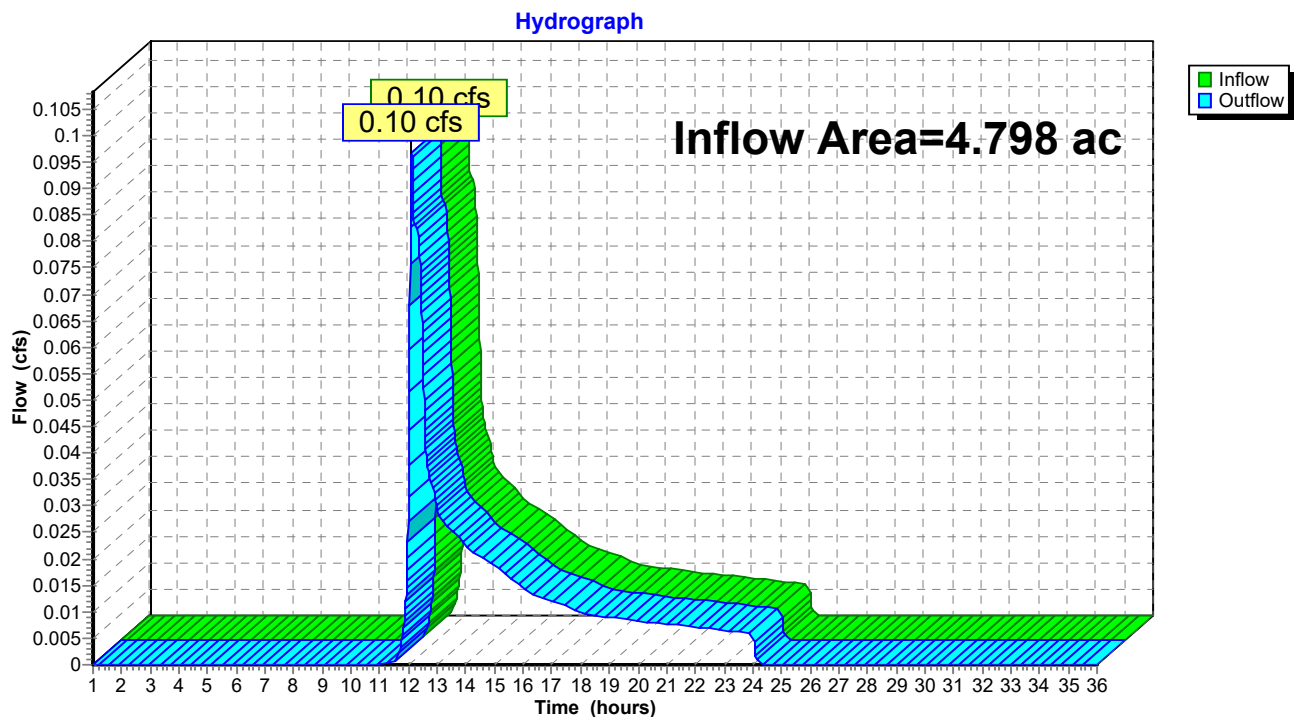
Subcatchment 3S.1: Garden area runoff

Summary for Reach POI-1: POI #1 - 60" Douglass MS4

Inflow Area = 4.798 ac, 46.81% Impervious, Inflow Depth = 0.04" for WQ event
 Inflow = 0.10 cfs @ 12.11 hrs, Volume= 0.016 af
 Outflow = 0.10 cfs @ 12.11 hrs, Volume= 0.016 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 POI-1: POI #1 - 60" Douglass MS4

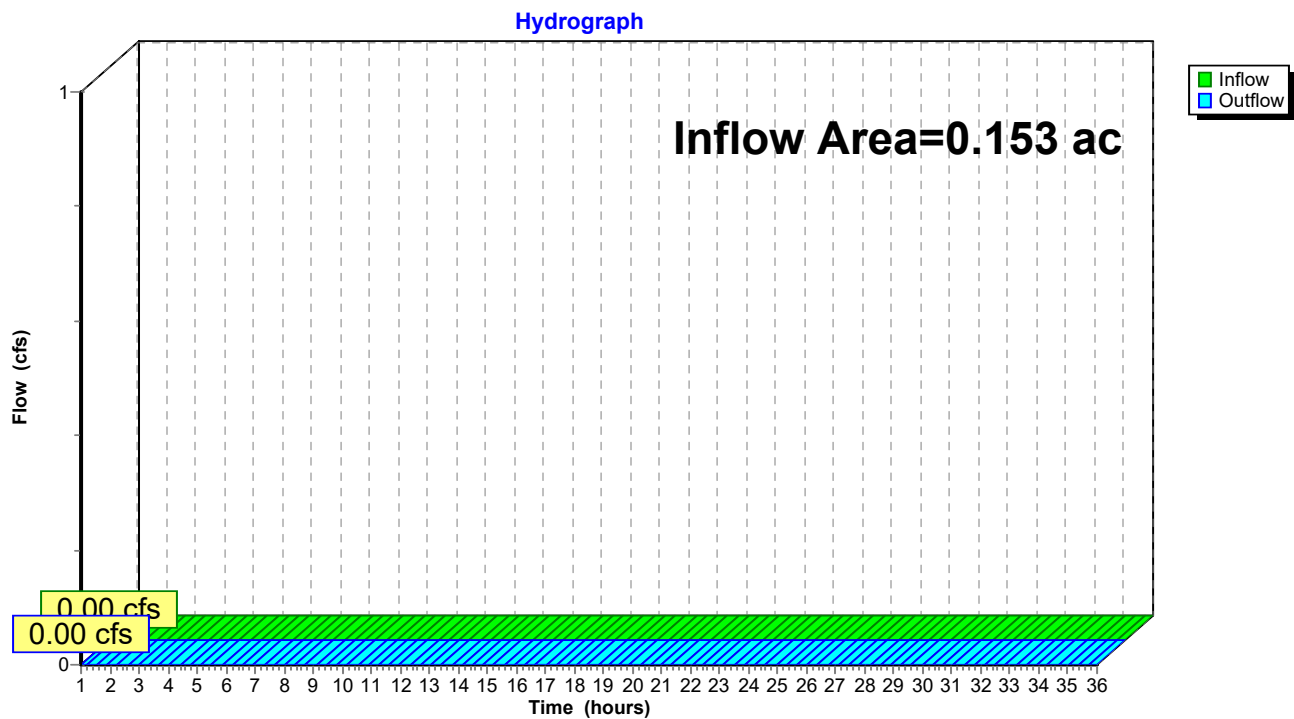


Summary for Reach POI-3: POI #3 - Baseball Field

Inflow Area = 0.153 ac, 0.00% 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= 1.00-36.00 hrs, dt= 0.01 hrs

Reach POI-3: POI #3 - Baseball Field



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Type III 24-hr WQ Rainfall=1.00"

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Summary for Pond P1: VUSF

Inflow Area = 0.249 ac, 76.24% Impervious, Inflow Depth = 0.11" for WQ event
 Inflow = 0.02 cfs @ 12.14 hrs, Volume= 0.002 af
 Outflow = 0.01 cfs @ 12.10 hrs, Volume= 0.002 af, Atten= 37%, Lag= 0.0 min
 Discarded = 0.01 cfs @ 12.10 hrs, Volume= 0.002 af
 Primary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Peak Elev= 27.03' @ 12.47 hrs Surf.Area= 458 sf Storage= 5 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= 1.5 min (929.5 - 928.0)

Volume	Invert	Avail.Storage	Storage Description
#1	30.75'	1,899 cf	Ponding (Prismatic) Listed below (Recalc)
#2	29.25'	69 cf	Filter Media/Loam (Prismatic) Listed below (Recalc)
			687 cf Overall x 10.0% Voids
#3	28.92'	30 cf	Transition Gravel (Prismatic) Listed below (Recalc)
			151 cf Overall x 20.0% Voids
#4	27.00'	349 cf	Crushed Stone (Prismatic) Listed below (Recalc)
			879 cf Overall - 6 cf Embedded = 873 cf x 40.0% Voids
#5	27.10'	5 cf	4.0" Round Pipe Storage x 2 Inside #4
			L= 30.0' S= 0.0005 '/'
			6 cf Overall - 0.2" Wall Thickness = 5 cf
		2,353 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.75	465	0	0
32.25	945	1,058	1,058
33.00	1,300	842	1,899

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
29.25	458	0	0
30.75	458	687	687

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.92	458	0	0
29.25	458	151	151

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
27.00	458	0	0
28.92	458	879	879

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Type III 24-hr WQ Rainfall=1.00"

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Device	Routing	Invert	Outlet Devices
#1	Primary	27.00'	12.0" Round Culvert L= 60.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 27.00' / 26.75' S= 0.0042 '/' Cc= 0.600 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf
#2	Device 1	27.10'	0.5" Vert. Soil Filter Media Drawdown Effect C= 0.600
#3	Device 1	32.35'	24.0" Horiz. Beehive Outlet C= 0.600 Limited to weir flow at low heads
#4	Discarded	27.00'	1.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.01 cfs @ 12.10 hrs HW=27.00' (Free Discharge)

↳ **4=Exfiltration** (Exfiltration Controls 0.01 cfs)

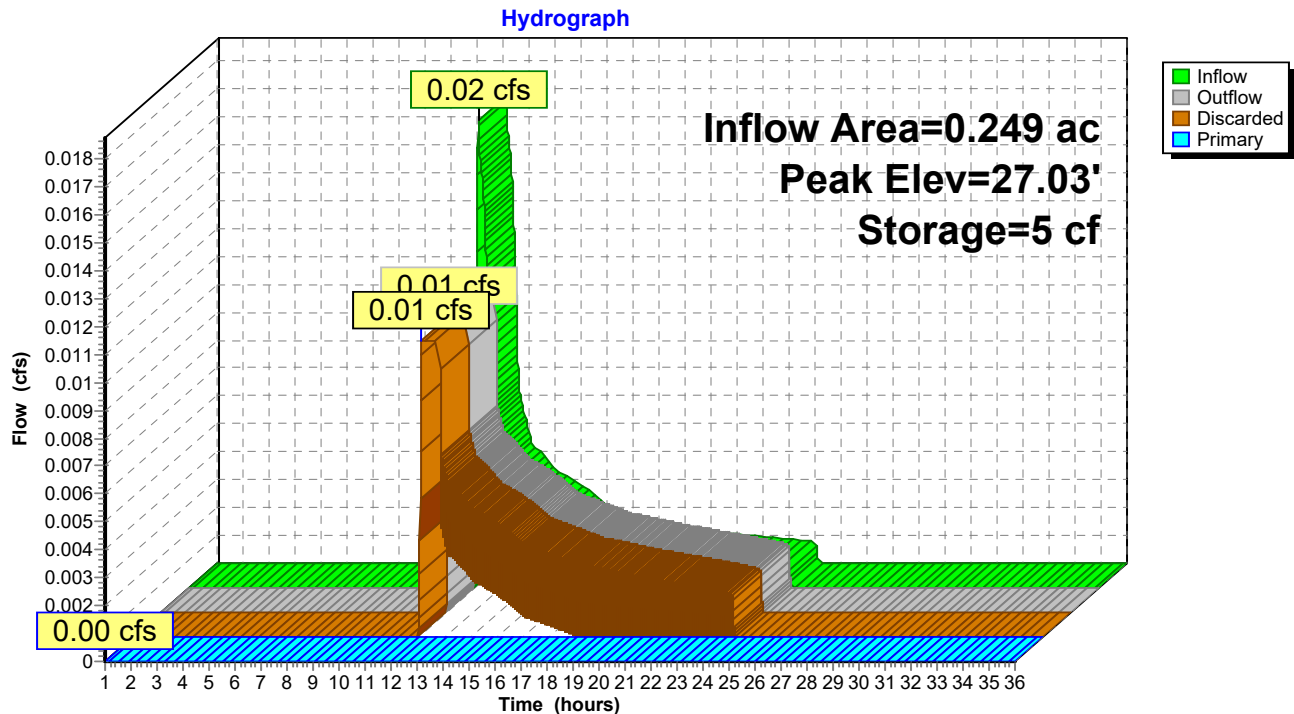
Primary OutFlow Max=0.00 cfs @ 1.00 hrs HW=27.00' TW=0.00' (Dynamic Tailwater)

↳ **1=Culvert** (Controls 0.00 cfs)

↳ **2=Soil Filter Media Drawdown Effect** (Controls 0.00 cfs)

↳ **3=Beehive Outlet** (Controls 0.00 cfs)

Pond P1: VUSF



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Type III 24-hr WQ Rainfall=1.00"

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Summary for Pond P2: FP 4

Inflow Area = 0.175 ac, 53.01% Impervious, Inflow Depth = 0.00" for WQ event
 Inflow = 0.00 cfs @ 21.34 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 21.34 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 21.34 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 35.95' @ 1.00 hrs Surf.Area= 40 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 0.0 min (1,203.6 - 1,203.6)

Volume	Invert	Avail.Storage	Storage Description
#1	35.95'	14 cf	4.00'W x 5.00'L x 3.60'H Media/Stone 72 cf Overall x 20.0% Voids
#2	35.95'	38 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		52 cf	Total Available Storage

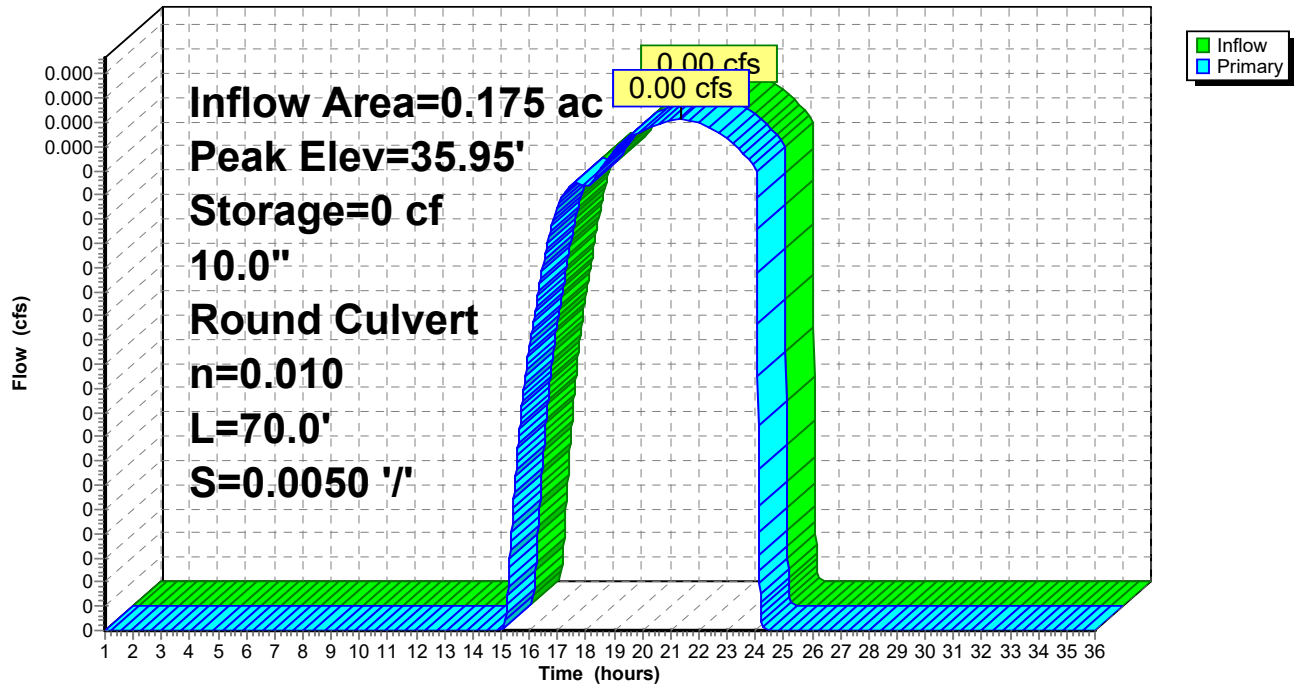
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
35.95	20	0	0
36.95	56	38	38

Device	Routing	Invert	Outlet Devices
#1	Primary	32.35'	10.0" Round Culvert L= 70.0' Ke= 1.000 Inlet / Outlet Invert= 32.35' / 32.00' S= 0.0050 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 21.34 hrs HW=35.95' TW=0.00' (Dynamic Tailwater)
 ↑**1=Culvert** (Passes 0.00 cfs of 3.51 cfs potential flow)

Pond P2: FP 4

Hydrograph



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Type III 24-hr WQ Rainfall=1.00"

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Summary for Pond P3: FP 3

Inflow Area = 0.154 ac, 52.99% Impervious, Inflow Depth = 0.00" for WQ event
 Inflow = 0.00 cfs @ 21.34 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 21.34 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 21.34 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 36.10' @ 1.00 hrs Surf.Area= 50 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 0.0 min (1,203.6 - 1,203.6)

Volume	Invert	Avail.Storage	Storage Description
#1	36.10'	21 cf	5.00'W x 5.00'L x 4.20'H Media/Stone 105 cf Overall x 20.0% Voids
#2	36.10'	45 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		66 cf	Total Available Storage

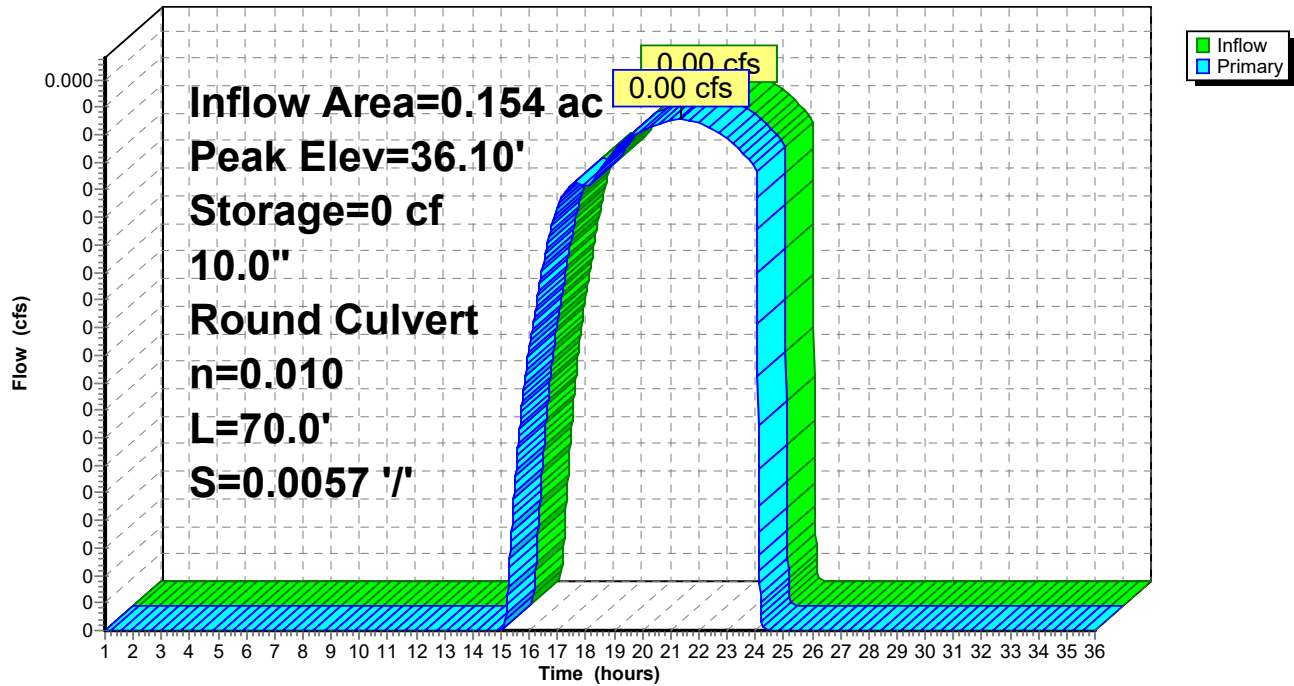
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.10	25	0	0
37.10	64	45	45

Device	Routing	Invert	Outlet Devices
#1	Primary	31.90'	10.0" Round Culvert L= 70.0' Ke= 1.000 Inlet / Outlet Invert= 31.90' / 31.50' S= 0.0057 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 21.34 hrs HW=36.10' TW=0.00' (Dynamic Tailwater)
 ↑**1=Culvert** (Passes 0.00 cfs of 3.83 cfs potential flow)

Pond P3: FP 3

Hydrograph



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Type III 24-hr WQ Rainfall=1.00"

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Summary for Pond P4: FP 2

Inflow Area = 0.137 ac, 80.74% Impervious, Inflow Depth = 0.22" for WQ event
 Inflow = 0.03 cfs @ 12.10 hrs, Volume= 0.003 af
 Outflow = 0.03 cfs @ 12.10 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.03 cfs @ 12.10 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 35.90' @ 1.00 hrs Surf.Area= 50 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	35.90'	23 cf	5.00'W x 5.00'L x 4.50'H Media/Stone 113 cf Overall x 20.0% Voids
#2	35.90'	45 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		67 cf	Total Available Storage

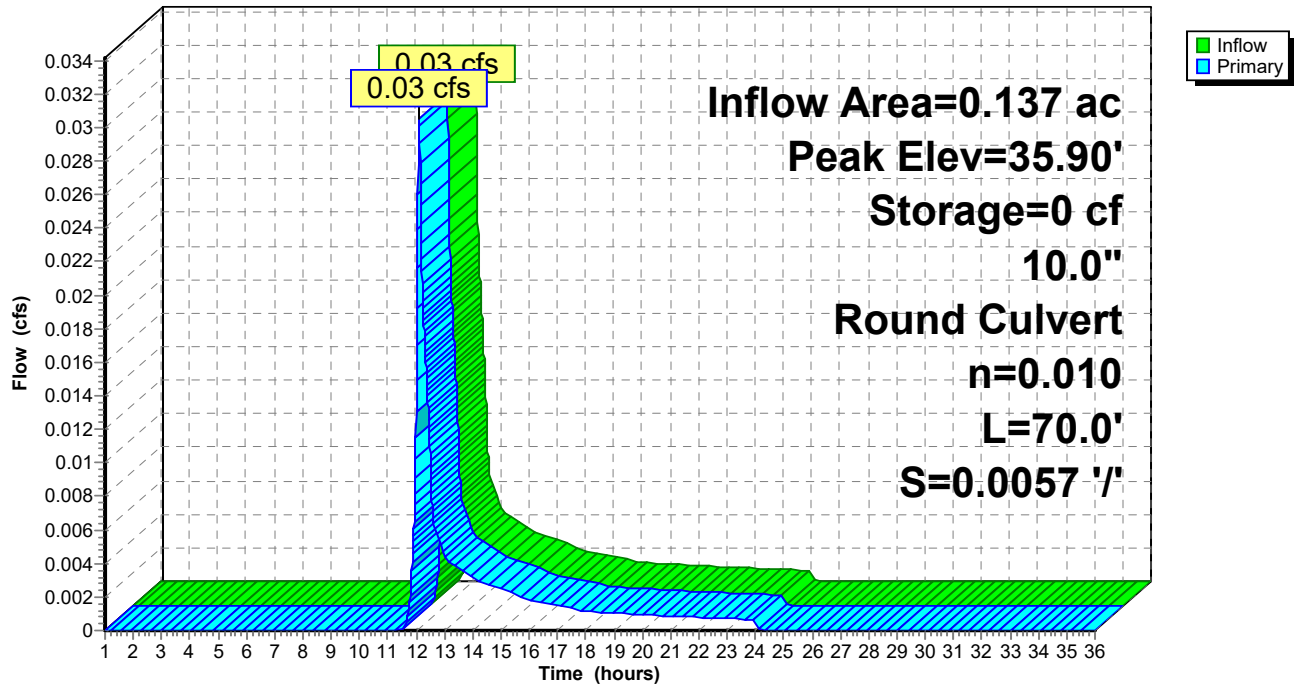
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
35.90	25	0	0
36.90	64	45	45

Device	Routing	Invert	Outlet Devices
#1	Primary	31.40'	10.0" Round Culvert L= 70.0' Ke= 1.000 Inlet / Outlet Invert= 31.40' / 31.00' S= 0.0057 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 12.10 hrs HW=35.90' TW=0.00' (Dynamic Tailwater)
 ↑**1=Culvert** (Passes 0.00 cfs of 3.98 cfs potential flow)

Pond P4: FP 2

Hydrograph



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Type III 24-hr WQ Rainfall=1.00"

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Summary for Pond P5: FP 1

Inflow Area = 0.086 ac, 84.98% Impervious, Inflow Depth = 0.28" for WQ event
 Inflow = 0.03 cfs @ 12.10 hrs, Volume= 0.002 af
 Outflow = 0.03 cfs @ 12.10 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.03 cfs @ 12.10 hrs, Volume= 0.002 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs
 Peak Elev= 35.70' @ 1.00 hrs Surf.Area= 40 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 0.0 min (869.9 - 869.9)

Volume	Invert	Avail.Storage	Storage Description
#1	35.70'	19 cf	4.00'W x 5.00'L x 4.80'H Media/Stone 96 cf Overall x 20.0% Voids
#2	35.70'	38 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		57 cf	Total Available Storage

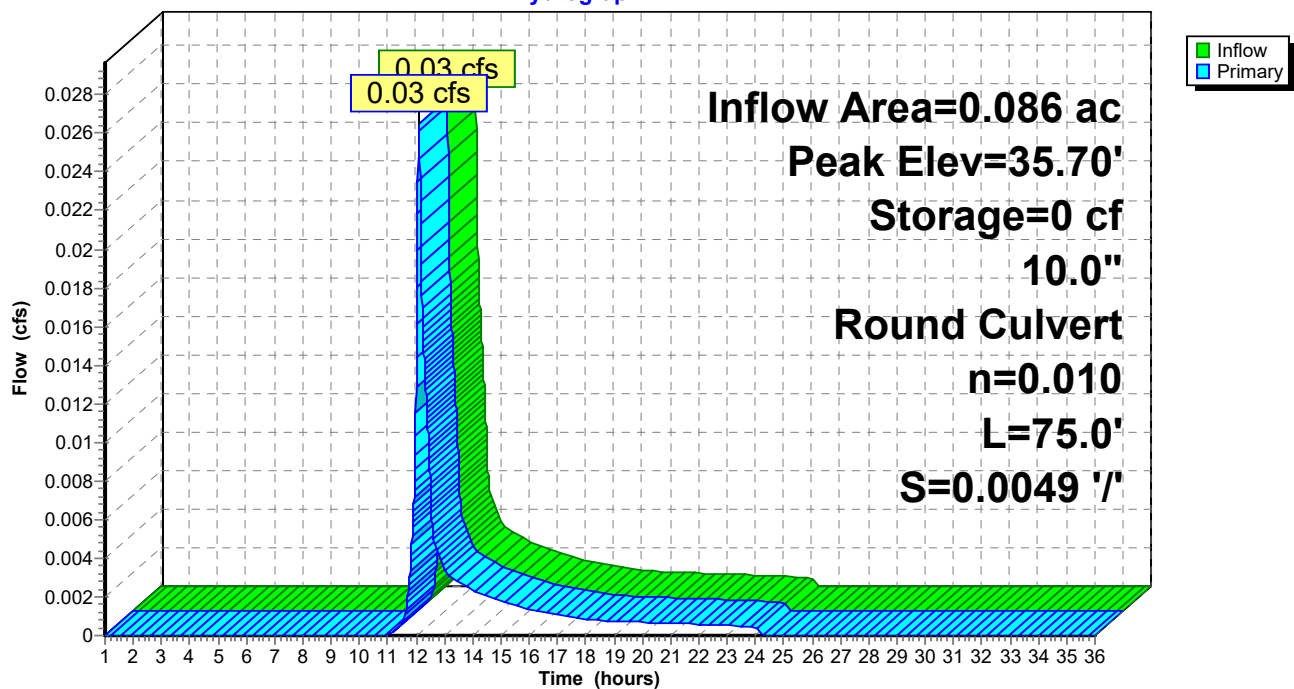
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
35.70	20	0	0
36.70	56	38	38

Device	Routing	Invert	Outlet Devices
#1	Primary	30.90'	10.0" Round Culvert L= 75.0' Ke= 1.000 Inlet / Outlet Invert= 30.90' / 30.53' S= 0.0049 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 12.10 hrs HW=35.70' TW=0.00' (Dynamic Tailwater)
 ↑**1=Culvert** (Passes 0.00 cfs of 4.12 cfs potential flow)

Pond P5: FP 1

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Type III 24-hr WQ Rainfall=1.00"

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Summary for Pond POI #2: POI #2 (295 Basin)

Inflow Area = 1.603 ac, 12.70% 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
 Discarded = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af
 Primary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af
 Secondary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-36.00 hrs, dt= 0.01 hrs

Peak Elev= 26.30' @ 1.00 hrs Surf.Area= 100 sf Storage= 0 cf

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

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

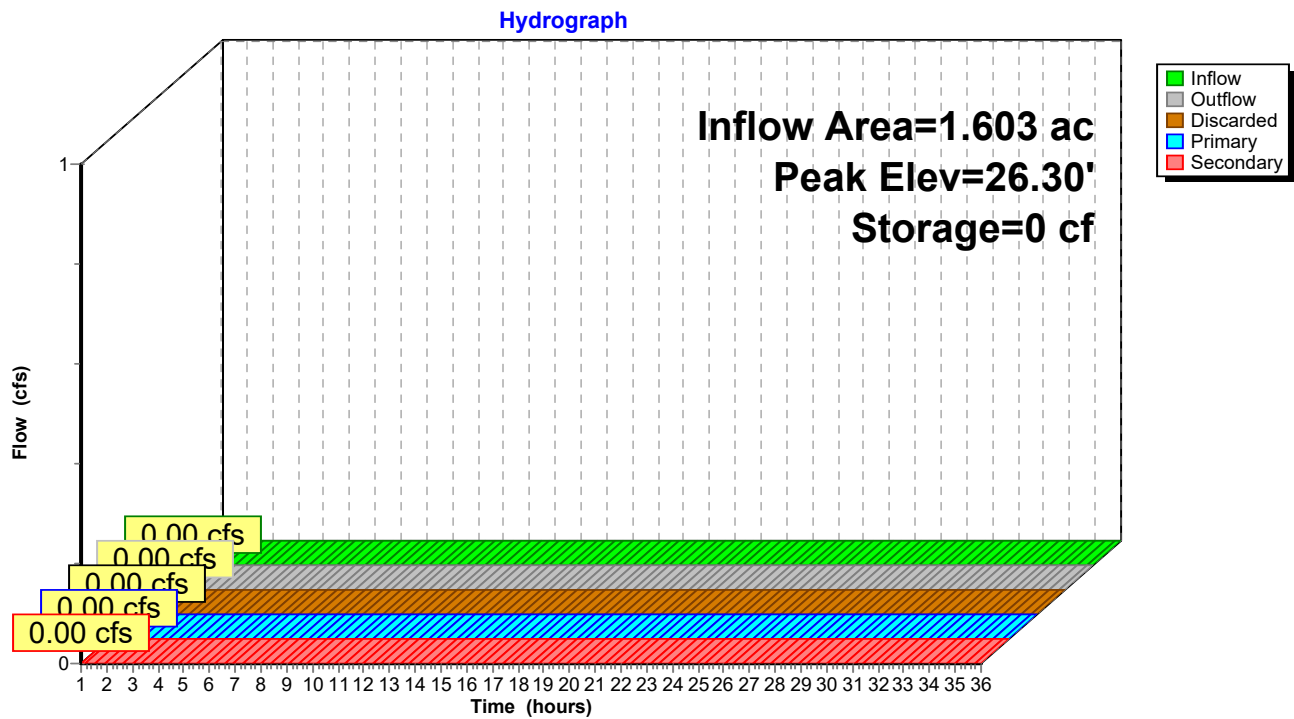
Volume	Invert	Avail.Storage	Storage Description
#1	26.30'	105,037 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.30	100	0	0
27.00	4,475	1,601	1,601
28.00	10,120	7,298	8,899
29.00	14,131	12,126	21,024
30.00	17,326	15,729	36,753
32.00	24,023	41,349	78,102
33.00	29,847	26,935	105,037

Device	Routing	Invert	Outlet Devices
#1	Primary	26.60'	12.0" Round Culvert L= 16.0' Ke= 0.600 Inlet / Outlet Invert= 26.60' / 26.51' S= 0.0056 ' S= 0.0056 ' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	32.40'	20.0' long x 15.0' breadth Overflow Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Discarded	26.60'	1.000 in/hr Exfiltration over Surface area above 26.60' Excluded Surface area = 1,975 sf

Discarded OutFlow Max=0.00 cfs @ 1.00 hrs HW=26.30' (Free Discharge)↑**3=Exfiltration** (Controls 0.00 cfs)**Primary OutFlow** Max=0.00 cfs @ 1.00 hrs HW=26.30' TW=0.00' (Dynamic Tailwater)↑**1=Culvert** (Controls 0.00 cfs)**Secondary OutFlow** Max=0.00 cfs @ 1.00 hrs HW=26.30' (Free Discharge)↑**2=Overflow** (Controls 0.00 cfs)

Pond POI #2: POI #2 (295 Basin)

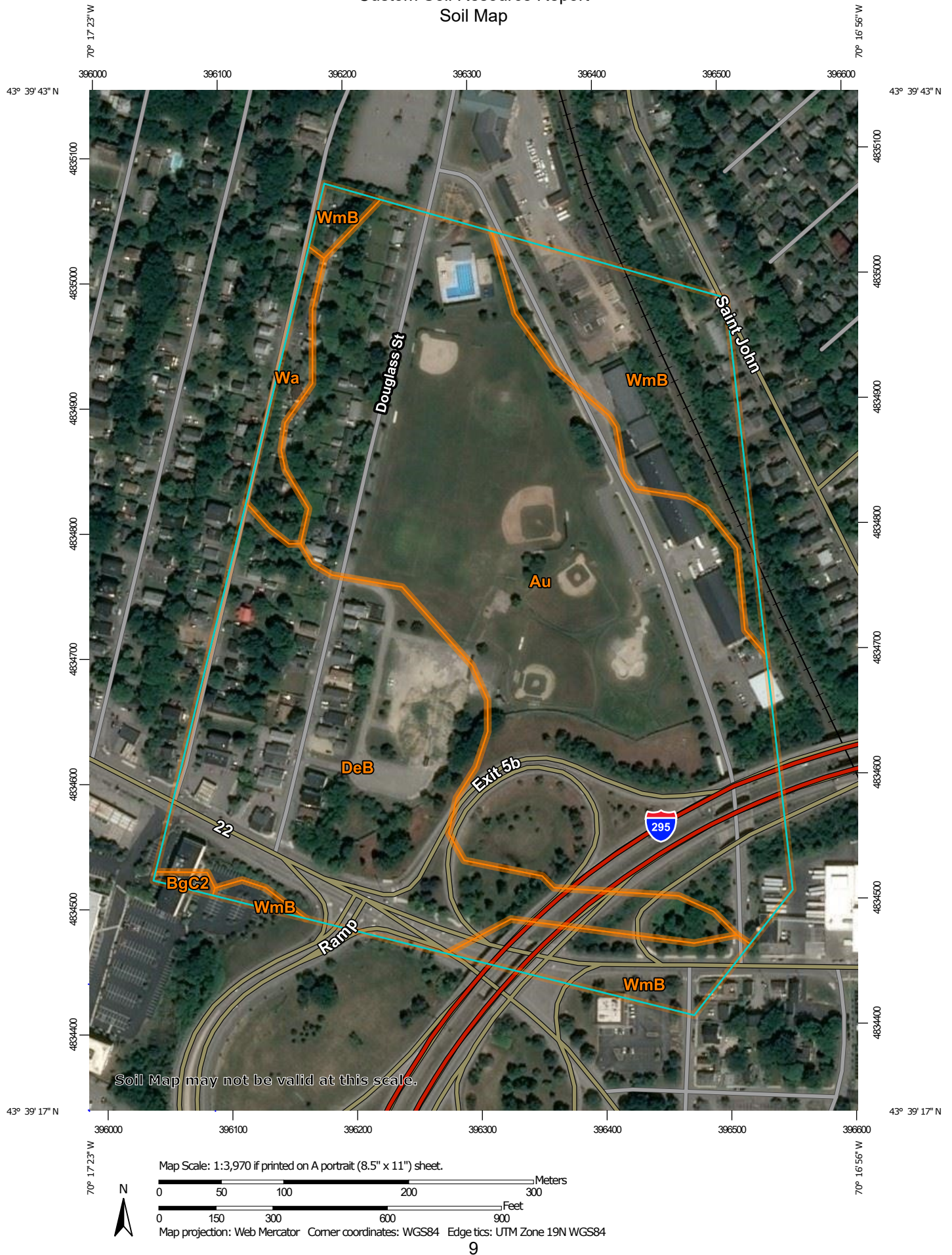


Attachment E

Soil Survey



Custom Soil Resource Report Soil Map



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 18, Aug 31, 2021

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
Au	Au Gres loamy sand	32.1	53.4%
BgC2	Nicholville very fine sandy loam, 8 to 15 percent slopes	0.1	0.2%
DeB	Deerfield loamy fine sand, 3 to 8 percent slopes	16.9	28.1%
Wa	Walpole fine sandy loam	1.3	2.2%
WmB	Windsor loamy sand, 0 to 8 percent slopes	9.7	16.1%
Totals for Area of Interest		60.2	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.

Attached please find a letter drafted by the Libbytown Neighborhood Association regarding proposed parking for the apartments to be built on Douglass St.

Thanks in advance for your consideration,

Maureen S. Morse

LNA Chair

The Libbytown Neighborhood is excited to see the development at Dougherty Field moving apace and appreciates the mix of incomes and demographics that it will bring to the neighborhood. However, we are concerned that the scheme seems to call for an overabundance of parking. As you certainly are aware, societal overdependence on motor vehicles has led to all manner of environmental, economic, and social problems. Furthermore, the LNA has been a strong supporter and advocate for this project. We support the mission but also seek greater vibrancy and more beauty for the neighborhood. Parking lots run counter to these goals. As the project is receiving significant public subsidy, it would seem necessary that the need is demonstrated.

As such we have the following questions:

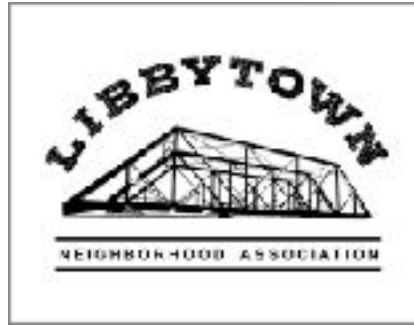
- Has there been a study of the amount of available on-street parking? There appears to already be an overabundance on St. James Street alone.
- Can the area designated for parking be put to better community use, such as a parklet. NB: The area where the Libbytown Community Garden now sits was at one time designated for parking Libbytown Neighborhood Association Portland Maine
- Has an assessment been as to the environmental impact of the parking?
 - Given the dire need for affordable housing, is there any indication that you would have any trouble filling the units if they did not come with parking? If no parking were provided and the lot was put to use as more housing, would those additional units rent? Would it strain the supply of on-street parking?
 - Why is de-bundling the parking (reducing rent for tenants who opt-out of parking) not part of the program?
 - Is there a fiduciary benefit to the development team for building parking?
- Have you made a workforce/demographic analysis to support the 1:1 parking ratio? For example, would all the tenants need ADA access?

- Given the cost of creating parking, how much of the project costs will parking consume?
- Is the project so well funded that the residents will not benefit from the long-term dividend from not having to maintain parking?
 - Given the high cost of maintaining parking (taxes, storm water fees, snow plowing, snow removal, re-paving, re-striping, etc.) can you provide figures of how much of the operating budget the parking will consume?
- Given the shortage of labor and specifically snow management personnel, what is the plan to conduct winter operations?
 - Given that parking lot plowing is most efficient in lots that contain no obstructions (e.g., trees) and contain ample space for snow storage, how do you intend to balance operational costs against a moderately scenic landscape that would provide shade.
- Has a TDM been prepared? Have you explored options in-lieu of parking such as car share, bike parking, etc? If not, doing so could save significant project costs if the ratio were lowered.
- Have you considered requesting the City designate an area for snow ban parking, for example on lightly used areas of St. James St, similar to on-street snow ban parking along the Eastern Promenade?
- If the parking for the co-operative housing is debundled then why is that not factored in?
- Parking on St. James Street will not only reduce the amount of impermeable surface but will also effectively narrow St. James Street which will reduce speeding along that stretch.

Given these concerns, we recommend a professional Traffic Demand Management study that gives strong consideration to utilizing on-street parking, reducing tenant parking to required ADA spaces; and to thus reduce the monthly rent accordingly.

With Regards,
Maureen S. Morse
LNA Chair

--
207-838-6120
917-696-5649
ZacharyBarowitz.com



January 26, 2022

Nathan Szanton
The Szanton Company
10 Free St.
Portland ME, 04101

Dear Mr. Szanton,

The Libbytown Neighborhood is excited to see the development at Dougherty Field moving apace and appreciates the mix of incomes and demographics that it will bring to the neighborhood. However, we are concerned that the scheme seems to call for an overabundance of parking. As you certainly are aware, societal overdependence on motor vehicles has led to all manner of environmental, economic, and social problems. Furthermore, the LNA has been a strong supporter and advocate for this project. We support the mission but also seek greater vibrancy and more beauty for the neighborhood. Parking lots run counter to these goals. As the project is receiving significant public subsidy, it would seem necessary that the need is demonstrated.

As such we have the following questions:

- Has there been a study of the amount of available on-street parking? There appears to already be an overabundance on St. James Street alone.
- Can the area designated for parking be put to better community use, such as a parklet. NB: The area where the Libbytown Community Garden now sits was at one time designated for parking

Libbytown Neighborhood Association Portland Maine

- Has an assessment been as to the environmental impact of the parking?
- Given the dire need for affordable housing, is there any indication that you would have any trouble filling the units if they did not come with parking? If no parking were provided and the lot was put to use as more housing, would those additional units rent? Would it strain the supply of on-street parking?
- Why is de-bundling the parking (reducing rent for tenants who opt-out of parking) not part of the program?
- Is there a fiduciary benefit to the development team for building parking?
- Have you made a workforce/demographic analysis to support the 1:1 parking ratio? For example, would all the tenants need ADA access?
- Given the cost of creating parking, how much of the project costs will parking consume?
- Is the project so well funded that the residents will not benefit from the long-term dividend from not having to maintain parking?
- Given the high cost of maintaining parking (taxes, storm water fees, snow plowing, snow removal, re-paving, re-striping, etc.) can you provide figures of how much of the operating budget the parking will consume?
- Given the shortage of labor and specifically snow management personnel, what is the plan to conduct winter operations?
- Given that parking lot plowing is most efficient in lots that contain no obstructions (e.g., trees) and contain ample space for snow storage, how do you intend to balance operational costs against a moderately scenic landscape that would provide shade.
- Has a TDM been prepared? Have you explored options in-lieu of parking such as car share, bike parking, etc? If not, doing so could save significant project costs if the ratio were lowered.
- Have you considered requesting the City designate an area for snow ban parking, for example on lightly used areas of St. James St, similar to

on-street snow ban parking along the Eastern Promenade?

- If the parking for the co-operative housing is debundled then why is that not factored in?
- Parking on St. James Street will not only reduce the amount of impermeable surface but will also effectively narrow St. James Street which will reduce speeding along that stretch.

Given these concerns, we recommend a professional Traffic Demand Management study that gives strong consideration to utilizing on-street parking, reducing tenant parking to required ADA spaces; and to thus reduce the monthly rent accordingly.

With Regards,
Maureen S. Morse
LNA Chair

RE: LNA Letter re parking at Douglass Street project

2 views

Subscribe ☐**Nathan Szanton**

Feb 17

to Maureen Morse, Emma Scudder, Damon Yakovleff, Fred's primary email, Zack Barowitz, planningboard@portlandmaine.gov, Azarro@portlandmaine.gov, rrodriguez@portlandmaine.gov, vpelletier@portlandmaine.gov, Carl Szanton, Amy Cullen, Liz Trice (liztrice@gmail.com), Matthew Peters, Brian Eng (bri.d.eng@gmail.com)

Dear Maureen,

As promised, attached is our response to your letter of January 26. We look forward to continuing conversation with LNA members and other neighbors at our Neighborhood Meeting on March 9.

As always, though, don't hesitate to get in touch with us at any time.

Thanks again for your letter.

Best,

Nathan Szanton



February 17, 2022

Ms. Maureen S. Morse, Chair
Libbytown Neighborhood Association
(by email)

Re: Dougherty Court Parking Plan

Dear Maureen,

Thank you very much for reaching out and sharing your thoughts about parking at our development at the site of former West School, which we've decided to name Dougherty Court. You raise important questions and highlight key reasons to avoid overbuilding parking. We agree with you that surface parking lots have many drawbacks, and we seek to create a walkable, pedestrian-oriented neighborhood that minimizes dependence on cars as much as possible. Our current site-wide plans are to construct only 69 parking spaces (56 for the apartments and 13 for the co-ops) for 120 units of housing (63 apartment and 57 co-op). That's an overall ratio of only 0.575 parking spaces per unit of housing. Please see our answers below to the questions you raised for additional explanation of our thought process.

Has there been a study of the amount of available on-street parking? There appears to already be an overabundance on St. James Street alone.

We have not formally studied the amount of available on-street parking, but like you, we have observed the availability of nearby on-street parking. It is only because of the on-street parking availability that exists nearby that we feel comfortable constructing only 69 parking spaces for 120 dwelling units.

Can the area designated for parking be put to better community use, such as a parklet. NB: The area where the Libbytown Community Garden now sits was at one time designated for parking Libbytown Neighborhood Association Portland Maine

While we would love to replace on-site parking with parklets, we feel that we have reduced on-site parking to the minimum amount that is commercially viable in this location. If we were downtown, we would have likely made a different decision.

Has an assessment been made as to the environmental impact of the parking?

Such an analysis will be included in the City's review of our site plan submission, as well as in MaineHousing's review of the site plan as we secure financing.

Given the dire need for affordable housing, is there any indication that you would have any trouble filling the units if they did not come with parking? If no parking were provided and the lot was put to use as more housing, would those additional units rent? Would it strain the supply of on-street parking?

We feel that constructing fewer on-site parking spaces and more apartments would run too much risk of harming our ability to lease the apartments. We feel that it would strain the supply of on-street parking, causing prospective residents to choose to live elsewhere. Importantly, though, if we experience that our surface parking is underutilized or unnecessary, we will consider adding additional housing to the site in a later development phase.

Why is de-bundling the parking (reducing rent for tenants who opt-out of parking) not part of the program?

Our rental housing building will offer 56 parking spaces for 63 units, which will mean that we cannot offer one parking space to each household. However, we are not planning on charging tenants an additional price for a parking space, due to concerns about the commercial viability of additional tenant charges.

Is there a fiduciary benefit to the development team for building parking?

Yes, we believe that creating more housing and less parking would tip the balance of parking scarcity too far to keep the building fully leased.

Have you made a workforce/demographic analysis to support the 1:1 parking ratio? For example, would all the tenants need ADA access?

Our plans have evolved and we no longer are planning to a 1:1 ratio, but the current 0.89:1 ratio is based on our experience leasing units at our four other Portland properties.

Given the cost of creating parking, how much of the project costs will parking consume?

The marginal cost of building parking, over and above the cost of landscaping that same area, is about \$8/sq. ft. Each parking space, including the requisite circulation space, consumes roughly 400 sq. ft.. Thus, the marginal cost of each parking space is about \$3,200. Multiplied by 56 parking spaces, that's about \$179,200. Out of an overall construction cost of our project of \$14.5 million, that's about 1.2%.

Is the project so well funded that the residents will not benefit from the long-term dividend from not having to maintain parking?

You're right that a long-term dividend in effect would be created by avoiding surface parking, but we feel that fewer on-site spaces impairs our ability to market the building. Again, if we find in the future that our parking is not being fully utilized, we may move to build additional housing in lieu of some of the surface parking.

Given the high cost of maintaining parking (taxes, storm water fees, snow plowing, snow removal, re-paving, re-striping, etc.) can you provide figures of how much of the operating budget the parking will consume?

We estimate the cost of maintaining parking spaces to be roughly equivalent to the cost of maintaining other hardscaped or landscaped areas.

Given the shortage of labor and specifically snow management personnel, what is the plan to conduct winter operations?

Current labor shortages certainly make it more difficult. At our other four Portland properties we are still able to hire snow management personnel and we expect a similar dynamic for Dougherty Court.

Given that parking lot plowing is most efficient in lots that contain no obstructions (e.g., trees) and contain ample space for snow storage, how do you intend to balance operational costs against a moderately scenic landscape that would provide shade.

It's important to us to build an attractive parking lot that does not simply read as a sea of parking. To that end, we are planning trees and other landscaping in the islands between parking bays.

Has a TDM been prepared? Have you explored options in-lieu of parking such as car share, bike parking, etc? If not, doing so could save significant project costs if the ratio were lowered.

No, but we will commission a TDM if requested by the Planning Board. As with all our properties, we encourage transportation by transit, bicycle, and car share and expect many residents to take advantage of these options. We will offer residents indoor, secure bicycle storage, as well as outdoor bike racks.

Have you considered requesting the City designate an area for snow ban parking, for example on lightly used areas of St. James St, similar to on-street snow ban parking along the Eastern Promenade?

We have not, largely because most of our residents will be parking on-site.

If the parking for the co-operative housing is debundled then why is that not factored in?

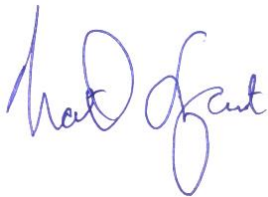
We're not quite sure what you mean by factored in, but it's true that our co-op development partners have made a different calculation regarding the need for on-site parking. We simply have a different philosophy about the importance of dedicated parking on site at this location.

Parking on St. James Street will not only reduce the amount of impermeable surface but will also effectively narrow St. James Street which will reduce speeding along that stretch.

That's no doubt true. We imagine that many of the co-op residents will park on St. James Street and deliver the narrowing effect that you mention.

Thank you again for reaching out. We value our relationship with LNA, and while we may not see completely eye-to-eye on this matter, we certainly hope to work together on this project wherever possible. If you'd like to discuss further, please feel free to reach out to me, or Carl Szanton (207-712-6191; cszanton@szantoncompany.com).

Sincerely,



Nathan S. Szanton
President, The Szanton Company

From: Nathan Szanton

Sent: Monday, January 31, 2022 10:02 AM

To: Maureen Morse <maureensheamorse@gmail.com>

Cc: Emma Scudder <scudder.emma@gmail.com>; Damon Yakovleff <damon.yakovleff@gmail.com>; Fred's primary email <fdillon@maine.rr.com>; Zack Barowitz <zbarowitz@gmail.com>; planningboard@portlandmaine.gov; 'Azarro@portlandmaine.gov'

<Azarro@portlandmaine.gov>; rrodriguez@portlandmaine.gov; vpelletier@portlandmaine.gov; Carl Szanton <cszanton@szantoncompany.com>; Amy Cullen <acullen@szantoncompany.com>; Liz Trice (liztrice@gmail.com) <liztrice@gmail.com>; Matthew Peters <matt@elysiancommunities.com>; Brian Eng (bri.d.eng@gmail.com) <bri.d.eng@gmail.com>

Subject: RE: LNA Request for Review of Parking at Douglass St. Project

Dear Maureen,

Thank you for your letter of January 26, on behalf of the Libbytown Neighborhood Association, about parking at our Douglass Street development. We agree with you that overbuilding of parking is poor planning on many levels.

Our team is reviewing your letter now, and will respond substantively within the next couple of weeks, via email. (We will copy everyone who is copied on this email.)

Thank you and the LNA for engaging with us. We appreciate that you took the time to gather your thoughts and share them with us.

All Best--

Nathan Szanton

DOUGLASS COMMONS

DOUGLASS COMMONS, LLC.
PORTLAND, MAINE 04101

PROJECT TEAM

DEVELOPER:

DOUGLASS COMMONS, LLC.
10 FREE STREET, 3RD FLOOR
PORTLAND, ME 04101
CONTACT: CARL SZANTON
(207) 805-3578

SURVEYOR:

OWEN HASKELL, INC.
FALMOUTH, MAINE
CONTACT: JOHN C. SCHWANDA, P.L.S.
(207) 774-0424



ARCHITECT:

KAPLAN THOMPSON ARCHITECTS
PORTLAND, MAINE
CONTACT: PHIL KAPLAN, R.A.
(207) 210-8253

GEOTECHNICAL ENGINEER:

SUMMIT GEOENGINEERING SERVICES
LEWISTON, MAINE
CONTACT: BILL PETERLEIN, P.E.
(207) 318-7761



ARCHITECT:

ARCHETYPE PA ARCHITECTURE
48 UNION WHARF
PORTLAND, MAINE 04101
CONTACT: DAVID LLOYD, R.A.
(207) 772-6022

LANDSCAPE ARCHITECT:

ACETO LANDSCAPE ARCHITECTURE + URBAN DESIGN
565 CONGRESS STREET, SUITE 310
PORTLAND, MAINE 04101
CONTACT: SETH KIMBALL, R.L.A.
(207) 221-3390



CIVIL ENGINEER:

ACORN ENGINEERING, INC.
65 HANOVER STREET
PORTLAND, MAINE 04101
CONTACT: SAM LEBEL, P.E.
(207) 775-2655

ELECTRICAL ENGINEER:

BENNETT ENGINEERING, INC.
7 BENNETT ROAD
FREEPORT, MAINE 04032
CONTACT: WILL BENNETT, P.E.
(207) 865-9475



UTILITY CONTACTS

SEWER:

DEPARTMENT OF PUBLIC WORKS (DPW)
250 CANCO ROAD
PORTLAND, MAINE 04101
CONTACT: BRAD ROLAND, P.E.
(207) 874-8834

ELECTRIC:

CENTRAL MAINE POWER COMPANY (CMP)
162 CANCO ROAD
PORTLAND, MAINE 04103
CONTACT: JAMIE COUGH
(207) 828-2882



TELEPHONE:

CONSOLIDATED COMMUNICATIONS
(FORMERLY FAIRPOINT)
45 FOREST AVENUE
PORTLAND, MAINE 04101
CONTACT: PAT MORRISON
(207) 745-9363



WATER:

PORTLAND WATER DISTRICT
225 DOUGLASS STREET
PO BOX 3553
PORTLAND, MAINE 04104
ATTN: MEANS DIVISION
(207) 774-5961



NATURAL GAS:

UNITIL SERVICE CORP
1075 FOREST AVENUE
PORTLAND, ME 04103
CONTACT: BRIDGET HARMON
(207) 541-2543



CABLE:

SPECTRUM CABLE
118 JOHNSON ROAD
PORTLAND, MAINE, 04102
CONTACT: MARK PELLETIER
(877) 546-0962



LEGEND

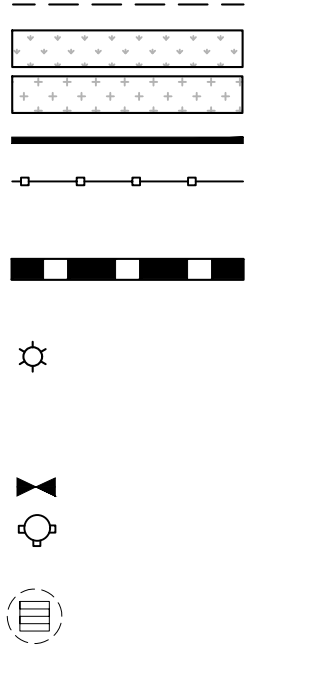
EXISTING

REFER TO THE
EXISTING
CONDITIONS PLAN
FOR ADDITIONAL
INFORMATION



UNDERDRAIN
GREEN SPACE
UTILITY PAVEMENT CUTS
STRIPING
SEDIMENTATION BARRIER
EDGE OF EX. PAVEMENT
CURB
SIGN
LAMP OR LIGHT POLE
UTILITY POLE
GUY WIRE
WATER VALVE
FIRE HYDRANT
SEWER MANHOLE
CATCH BASIN
DRAIN MANHOLE
UNDERGROUND ELECTRIC LINE
UNDERGROUND WATER LINE
MINOR CONTOURS (1 FT)
MAJOR CONTOURS (5 FT)
GAS LINE
STORM DRAIN LINE
SEWER LINE
EXISTING/PROPOSED BUILDING
OVERHEAD ELECTRICAL/TELEPHONE/CABLE
PROPERTY LINE
SETBACKS

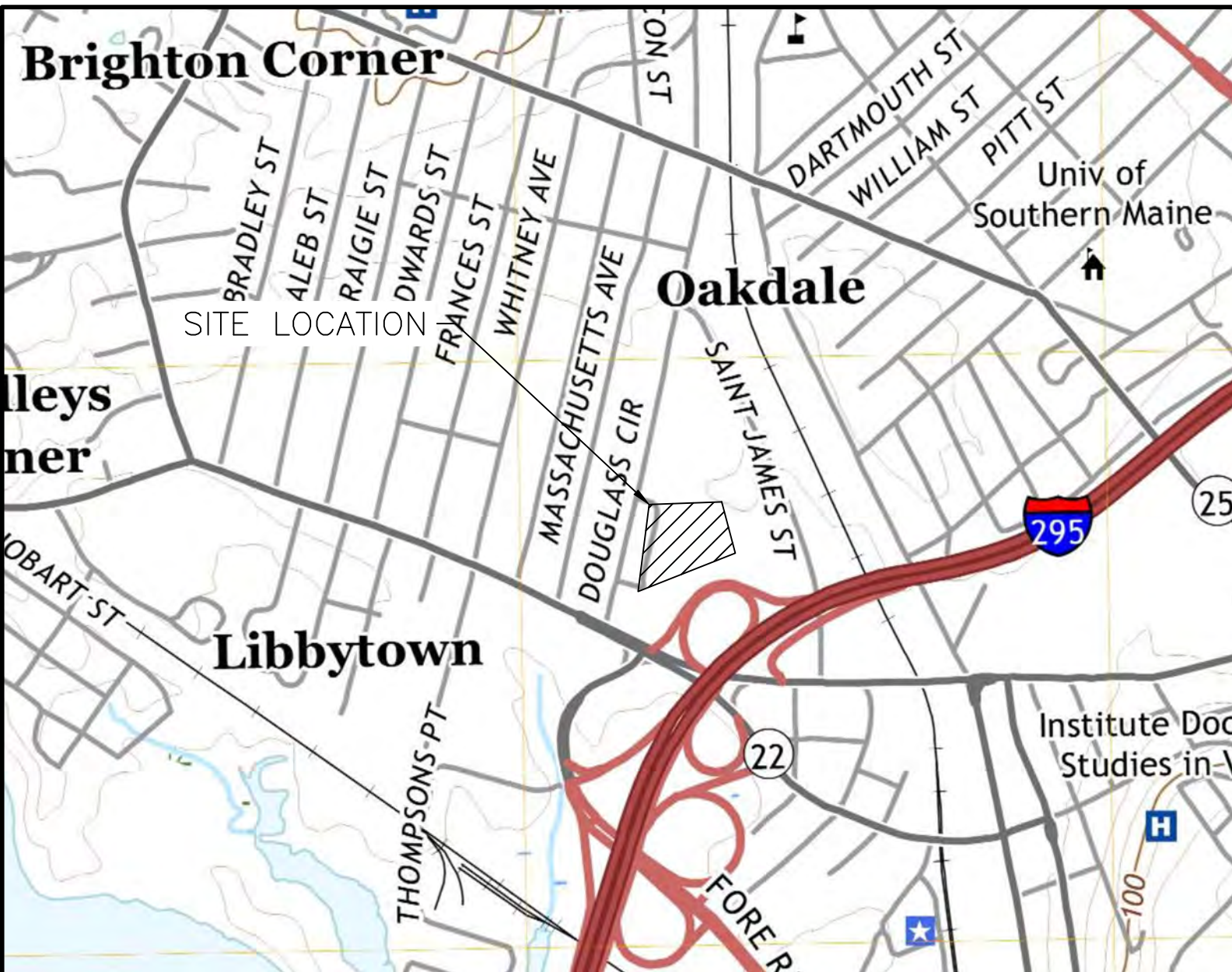
PROPOSED



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- C-10 SITE PLAN - MASTER
- C-11 SITE PLAN - PHASE I
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- C-21 UTILITY PLAN - PHASE I
- C-30 GRADING & DRAINAGE PLAN - MASTER
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CALL BEFORE YOU DIG
1-888-DIG-SAFE
1-888-344-7233



VICINITY MAP
NTS

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
CB	CATCH BASIN
CF	CUBIC FOOT
CIP	CAST IN PLACE
CL	CENTERLINE
CM	CONSTRUCTION MANAGER
CMP	CENTRAL MAINE POWER
CONC.	CONCRETE
CPP	CORRUGATED PLASTIC PIPE
CY	CUBIC YARD
DIP	DUCTILE IRON PIPE
DIA.	DIAMETER
DIM.	DIMENSION
EA.	EACH
ELEC.	ELECTRICAL
ELEV.	ELEVATION
EQUIV.	EQUIVALENT
EST.	ESTIMATE
EEMP.	ENVIRONMENTAL MEDIA MANAGEMENT PLAN
EX.	EXISTING
FFE	FINISH FLOOR ELEVATION
FT.	FEET
GAL.	GALVANIZED
ID	INNER DIAMETER
IN.	INCH
INV.	INVERT
L	LENGTH
MAX.	MAXIMUM
MDOT	MAINE DEPARTMENT OF TRANSPORTATION
M.E.P	MECHANICAL, ELECTRICAL, PLUMBING DESIGNER
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 DIMENSION RATIO
SF	SQUARE FEET
SMH	SEWER MANHOLE
SPEC.	SPECIFICATION
TC	TOP OF CURB
TW	TOP OF WALL
TYP.	TYPICAL
UD	UNDERDRAIN
UGE	UNDERGROUND ELECTRIC
VIF	VERIFY IN FIELD

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

ISSUED FOR
SITE PLAN APP

BY
DATE
1/11/22

COVER SHEET & LEGEND

DOUGLASS STREET COMMONS

DOUGLASS COMMONS, LLC
10 FREE STREET, SECOND FLOOR, PORTLAND ME 04101

DRAWING NAME:

PROJECT NAME/ ADDRESS:

CLIENT/OWNER OF RECORD:

ACORN ENGINEERING, INC.

ACORN ENGINEERING, INC.
PO BOX 3372, PORTLAND MAINE 04101
(207) 775-2655

STATE OF MAINE
WILLIAM H. SAVAGE
11419
1/11/22
LICENSED PROFESSIONAL ENGINEER

STATE OF MAINE
SAMUEL J. LEBEL
16505
1/11/22
LICENSED PROFESSIONAL ENGINEER

FILE: 1154_CIVIL

JN: 1154

SCALE: AS NOTED

DESIGNED BY: SJL

DRAWN BY: AWG

CHECKED BY: SJL/WH

DRAWING NO.

C-01

1. 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.

- CIVIL SITE NOTES:

- SPECIAL INSPECTION NOTES

- IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION.

- LAYOUT NOTES:

- ## PERMITTING NOTES

- GRADING AND DRAINAGE NOTES:

- EROSION CONTROL NOTES:

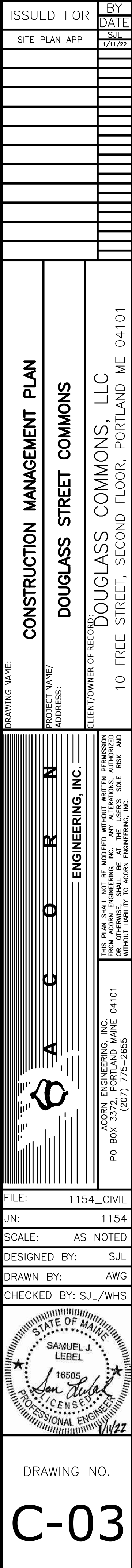
1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND ELEVATION OF THE EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED UPON RECORDS OF VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. 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 ACORN FOR FURTHER DIRECTIONS BEFORE ANY ADDITIONAL WORK PROCEEDS.

- DEMOLITION NOTES:

1. THE FOLLOWING ITEMS ARE TYPICAL OF MATERIAL WHICH MAY BE ON SITE:
 - ROCK AND CONCRETE FOUNDATIONS
 - CONCRETE SLABS
 - BITUMINOUS ASPHALT PAVEMENT
 - CONCRETE PADS AND BLOCKS
 - FENCE POST AND FENCING
 - UNDERGROUND UTILITY LINES
 - ABOVE AND OR BELOW FUEL OIL AND PROPANE GAS TANKS
 - STORM DRAIN PIPES AND APPURTENANCE STRUCTURES
 - OTHER TRASH & MISCELLANEOUS SOLID WASTES
2. THE CONTRACTOR IS ADVISED TO VISIT THE SITE TO CONFIRM DEMOLITION ITEMS SINCE THE LIST IS NOT INCLUSIVE OF THE SITE CONDITIONS WHICH MAY BE ENCOUNTERED
3. ALL DISPOSAL OF DEMOLITION DEBRIS OR WASTE SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE, & FEDERAL REGULATIONS. CONTRACTORS SHALL PROVIDE OWNER WITH APPROPRIATE "BILLS OF LADING" DEMONSTRATING PROPER DISPOSAL OF ALL MATERIALS.
4. CONTRACTOR TO REFER TO PHASE 1 ENVIRONMENTAL SITE ASSESSMENT BY CREDERE ASSOCIATES, INC. AND PHASE 2 ENVIRONMENTAL ASSESSMENT BY WOODARD AND CURRAN.
5. CONTRACTOR TO REFER TO AND ABIDE BY VRAP DOCUMENTS PREPARED BY CREDERE ASSOCIATES.

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

1. EXISTING ASPHALT TO BE REMOVED SHALL BE STRIPPED AND PROPERLY DISPOSED OF OFFSITE.
2. 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 MATERIAL.
3. SITE DEMOLITION SHALL NOT OCCUR UNTIL PROPER ABATEMENT PROCEDURES HAVE OCCURRED. ABATEMENT, IF NECESSARY, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. 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.
5. ALL CONSTRUCTION SIGNAGE IS TEMPORARY AND WILL BE REMOVED AT PROJECT COMPLETION. FINAL SIGNAGE WORDING AND PLACEMENT LOCATION TO BE ACCEPTED BY THE CITY.
6. ALL BARRIERS TO BE PLACED TO PROTECT ALL PROPERTY LINES, DOWN GRADAGE 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.
7. CONTRACTOR SHALL PLACE CATCH BASIN INLET PROTECTION ON CATCH BASINS AND FIELD INLETS DOWN-GRADIENT OF NON-STABILIZED AREAS.
8. 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.
9. CONTRACTOR TO BE RESPONSIBLE FOR PROVIDING OFF-SITE PARKING TO EMPLOYEES; ON-SITE PARKING WILL NOT BE PROVIDED OR GUARANTEED.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR SNOW REMOVAL ALONG CONSTRUCTION FENCE AND GATE.

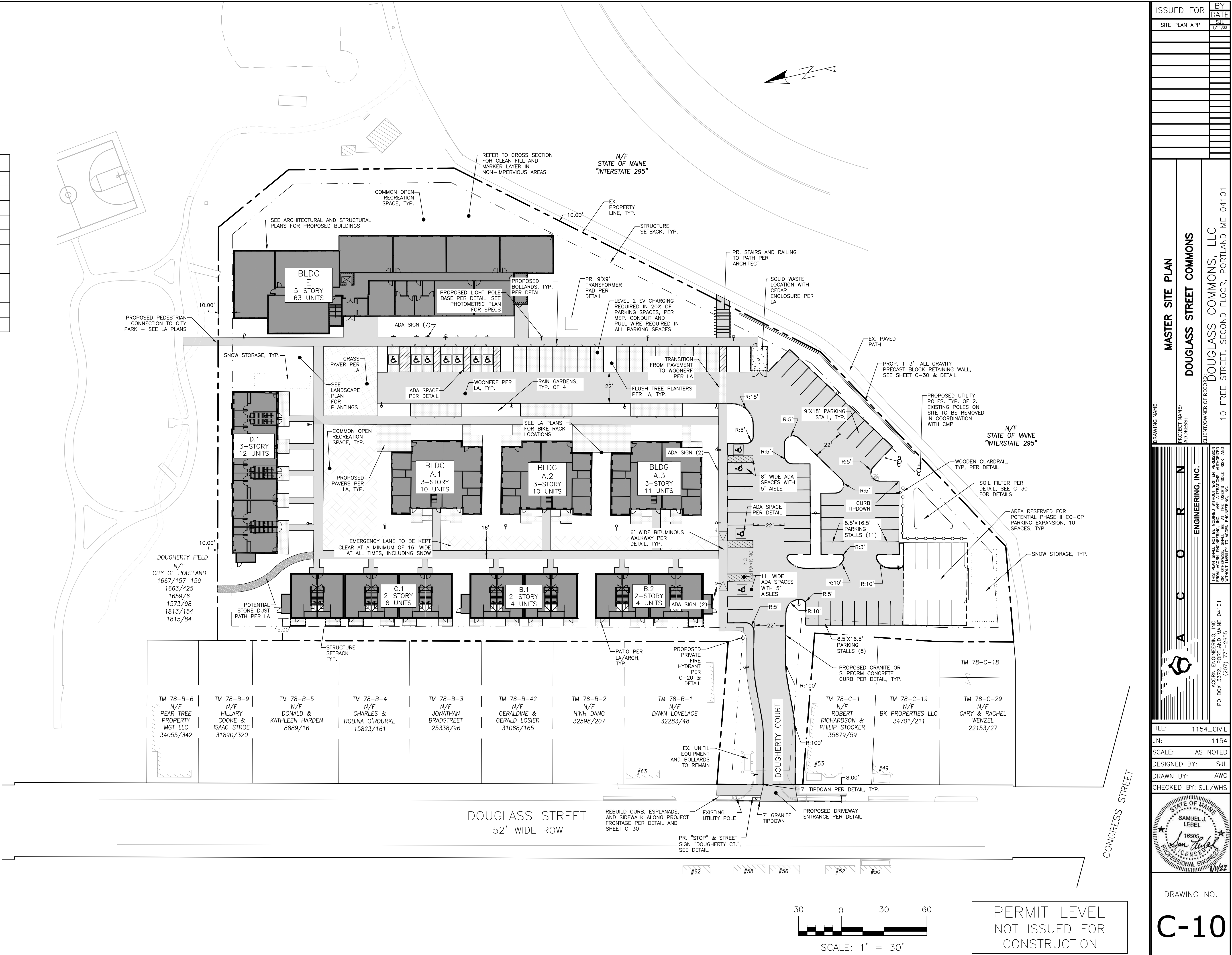


GENERAL NOTES:

1. ALL VERTICAL GRANITE CURB TO BE REPLACED SHALL BE REBUILT TO CITY OF PORTLAND STANDARD.
2. ALL PAVEMENT STRIPING AND MARKINGS SHALL COMPLY TO CITY OF PORTLAND STANDARDS.
3. ANY ASPHALT TO BE REMOVED SHALL BE STRIPPED AND PROPERLY DISPOSED OF OFFSITE.
4. CURB TO BE REMOVED, STOCKPILED AND RESET IN ACCORDANCE WITH DETAIL. BROKEN CURB SHALL BE PROPERLY DISPOSED OF AND SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
5. ALL RAMPS TO CONFORM TO ADA GUIDELINES. SLOPE SHALL NOT EXCEED 1 INCH PER FOOT.
6. ALL SITE SIGNAGE TO COMPLY WITH MUTCD STANDARDS. CONTRACTOR TO COORDINATE AND INSTALL.
7. FOLLOWING COMPLETION OF CONSTRUCTION, THE OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND MANAGEMENT OF DRIVEWAYS, SITE LIGHTING, TRASH REMOVAL AND SNOW REMOVAL.

SPACE AND BULK STANDARDS		
R-5A PRUD ZONE	REQUIRED	PROVIDED
MINIMUM LOT SIZE	2.00 AC	3.34 AC
MINIMUM STREET FRONTAGE	50'	50'
FRONT YARD SETBACK	10'	10'
SIDE YARD SETBACK	10'	10'
REAR YARD SETBACK	10'	10'
MAXIMUM BUILDING HEIGHT	55'	53'
MAX. # OF DWELLING UNITS ON PROPERTY	182	120
COMMON RECREATION OPEN SPACE	200 SF / D.U.	345 SF / D.U.
MAX. BUILDING COVERAGE	30%	23%
* R5A PRUD STANDARDS - SECTION 18.2 AFFORDABILITY BONUS		

PARKING TABLE			
AREA	PARKING SPACES	UNIT COUNT	SPACES:UNIT
5-STORY	56	63	0.89
2 & 3-STORIES	23	57	0.40
TOTAL	79 *	120	0.66
EV CHARGING	16		
* ALL SPACES 9'X18' UNLESS OTHERWISE NOTED			
** 10 ADDITIONAL PARKING SPACES ALLOCATED ON SITE IF NECESSARY			
*** OFF-STREET PARKING REQUIREMENTS WAIVED PER SEC. 14-332.2.b			



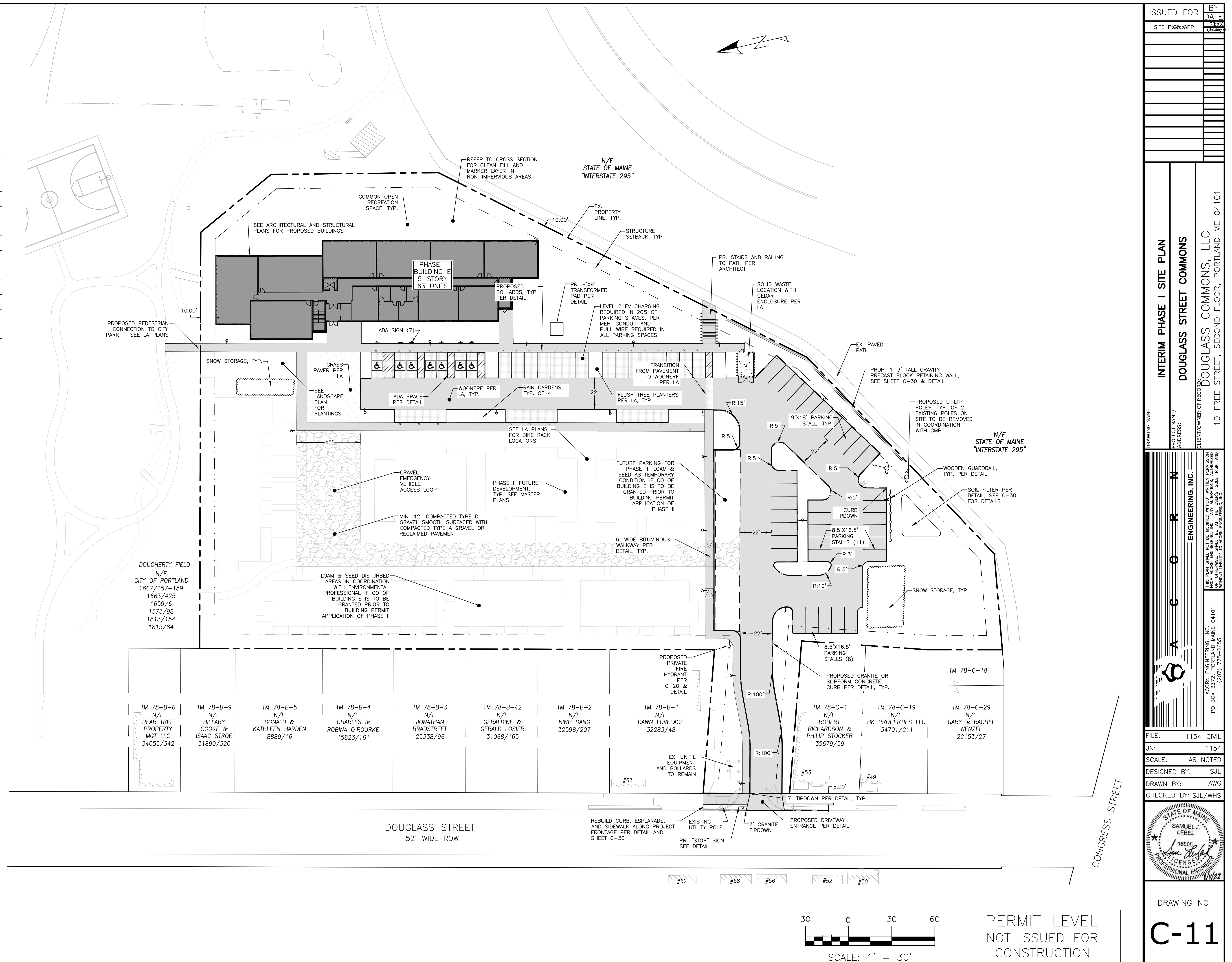
1. ALL BRICK SIDEWALK AND VERTICAL GRANITE CURB TO BE REPLACED SHALL BE REBUILT TO CITY OF PORTLAND STANDARD.
2. ALL PAVEMENT STRIPING AND MARKINGS SHALL COMPLY TO CITY OF PORTLAND STANDARDS.
3. ANY ASPHALT TO BE REMOVED SHALL BE STRIPPED AND PROPERLY DISPOSED OF OFFSITE.
4. CURE TO BE REMOVED, STOCKPILED AND RESET IN ACCORDANCE WITH DETAIL. BROKEN CURB SHALL BE PROPERLY DISPOSED OF AND SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
5. ALL RAMPS TO CONFORM TO ADA GUIDELINES. SLOPE SHALL NOT EXCEED 1 INCH PER FOOT
6. ALL SITE SIGNAGE TO COMPLY WITH MUTCD STANDARDS. CONTRACTOR TO COORDINATE AND INSTALL.
7. UPON COMPLETION OF CONSTRUCTION, THE OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND MANAGEMENT OF DRIVEWAYS, SITE LIGHTING, TRASH REMOVAL AND SNOW REMOVAL.

SPACE AND BULK STANDARDS		
R5A ZONE	REQUIRED	PROVIDED
MINIMUM LOT SIZE	2.00 AC	3.34 AC
MINIMUM STREET FRONTAGE	50'	50'
FRONT YARD SETBACK	10'	10'
SIDE YARD SETBACK	10'	10'
REAR YARD SETBACK	10'	10'
MAXIMUM BUILDING HEIGHT	55'	53'
MAX. # OF DWELLING UNITS ON PROPERTY	182	63
COMMON RECREATION OPEN SPACE	200 SF / D.U.	345 SF / D.U.
MAX. BUILDING COVERAGE	30%	8%
** R5A PRUD STANDARDS		

AREA	PARKING SPACES	UNIT COUNT	SPACES/UNIT
5-STORY	56	63	0.88
TOTAL	56	63	0.88
EV CHARGING	12		

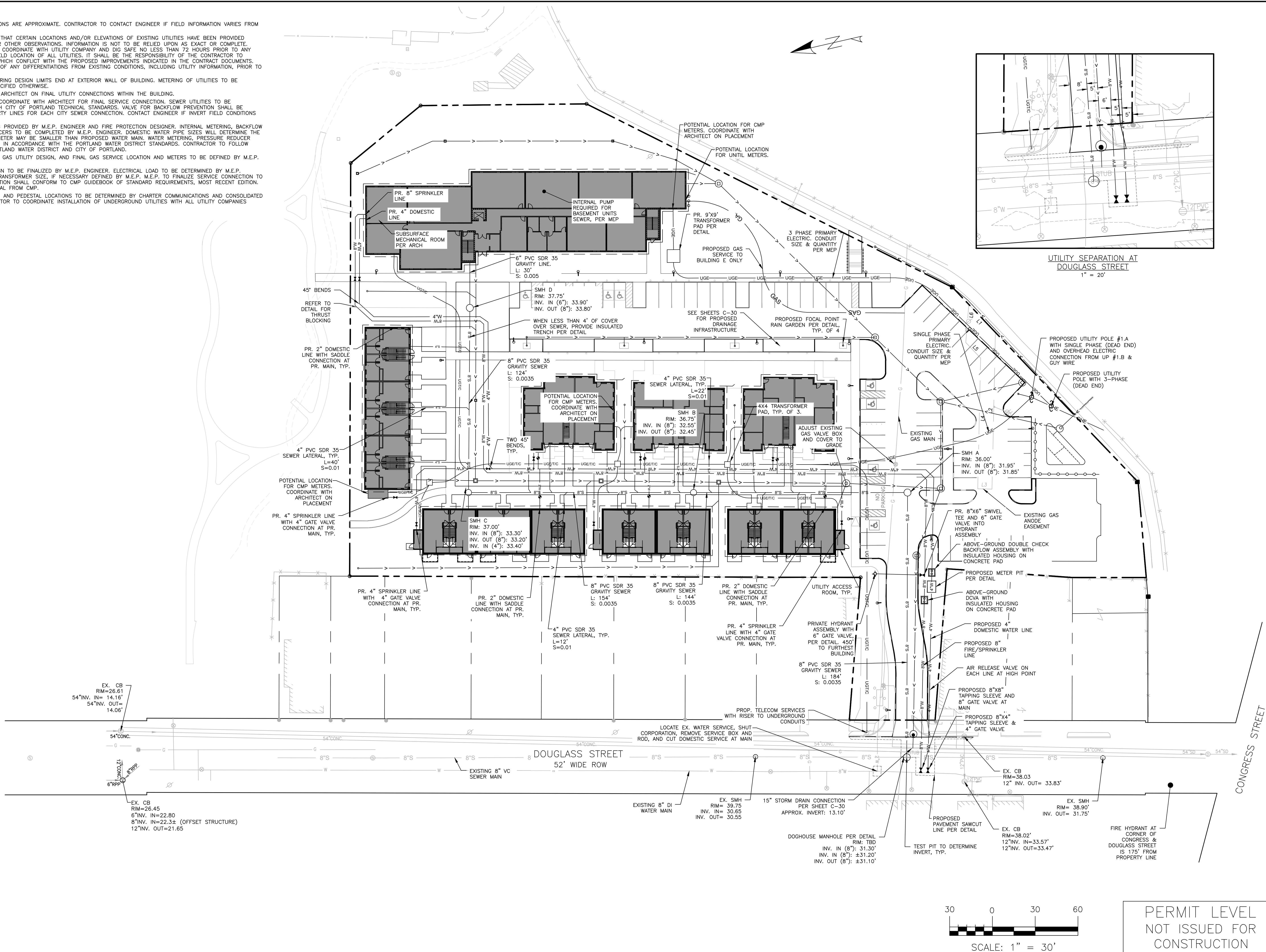
* ALL SPACES 9'X18' UNLESS OTHERWISE NOTED

** OFF-STREET PARKING REQUIREMENTS WAIVED PER SEC. 14--332.2.b



GENERAL NOTES:

1. LOCATION OF PROPOSED CONNECTIONS ARE APPROXIMATE. CONTRACTOR TO CONTACT ENGINEER IF FIELD INFORMATION VARIES FROM INFORMATION ON PLANS.
2. CONTRACTOR IS TO BE CAUTIONED THAT CERTAIN LOCATIONS AND/OR ELEVATIONS OF EXISTING UTILITIES HAVE BEEN PROVIDED THROUGH UTILITY COORDINATION OR OTHER OBSERVATIONS. INFORMATION IS NOT TO BE RELIED UPON AS EXACT OR COMPLETE. CONTRACTOR TO FIELD VERIFY AND COORDINATE WITH UTILITY COMPANY AND DIG SAFE NO LESS THAN 72 HOURS PRIOR TO ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF ALL UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS INDICATED IN THE CONTRACT DOCUMENTS. CONTRACTOR TO NOTIFY ENGINEER OF ANY DIFFERENTIATIONS FROM EXISTING CONDITIONS, INCLUDING UTILITY INFORMATION, PRIOR TO ANY CHANGES.
3. FOR ALL UTILITIES, ACORN ENGINEERING DESIGN LIMITS END AT EXTERIOR WALL OF BUILDING. METERING OF UTILITIES TO BE COMPLETED BY M.E.P. UNLESS SPECIFIED OTHERWISE.
4. CONTRACTOR TO COORDINATE WITH ARCHITECT ON FINAL UTILITY CONNECTIONS WITHIN THE BUILDING.
5. SEWER UTILITIES: CONTRACTOR TO COORDINATE WITH ARCHITECT FOR FINAL SERVICE CONNECTION. SEWER UTILITIES TO BE CONSTRUCTED IN ACCORDANCE WITH CITY OF PORTLAND TECHNICAL STANDARDS. VALVE FOR BACKFLOW PREVENTION SHALL BE INSTALLED WITHIN THE THE PROPERTY LINES FOR EACH CITY SEWER CONNECTION. CONTACT ENGINEER IF INVERT FIELD CONDITIONS VARY FROM DESIGN.
6. WATER UTILITIES: FINAL PIPE SIZING PROVIDED BY M.E.P. ENGINEER AND FIRE PROTECTION DESIGNER. INTERNAL METERING, BACKFLOW PREVENTION, AND PRESSURE REDUCERS TO BE COMPLETED BY M.E.P. ENGINEER. DOMESTIC WATER PIPE SIZES WILL DETERMINE THE FINAL WATER METERING OPTIONS. METER MAY BE SMALLER THAN PROPOSED WATER MAIN. WATER METERING, PRESSURE REDUCER AND BACKFLOW PREVENTION TO BE IN ACCORDANCE WITH THE PORTLAND WATER DISTRICT STANDARDS. CONTRACTOR TO FOLLOW METERING GUIDELINES OF THE PORTLAND WATER DISTRICT AND CITY OF PORTLAND.
7. GAS UTILITIES: PROJECT GAS LOAD, GAS UTILITY DESIGN, AND FINAL GAS SERVICE LOCATION AND METERS TO BE DEFINED BY M.E.P. AND IN ACCORDANCE WITH UNIL.
8. ELECTRIC UTILITIES: ELECTRIC DESIGN TO BE FINALIZED BY M.E.P. ENGINEER. ELECTRICAL LOAD TO BE DETERMINED BY M.E.P. ENGINEER. METER LOCATION AND TRANSFORMER SIZE, IF NECESSARY DEFINED BY M.E.P. M.E.P. TO FINALIZE SERVICE CONNECTION TO BUILDING. ALL ELECTRIC CONSTRUCTION SHALL CONFORM TO CMP GUIDEBOOK OF STANDARD REQUIREMENTS, MOST RECENT EDITION. DESIGN SUBJECT TO FINAL APPROVAL FROM CMP.
9. CABLE AND TELEPHONE PULLBOXES AND PEDESTAL LOCATIONS TO BE DETERMINED BY CHARTER COMMUNICATIONS AND CONSOLIDATED PRIOR TO CONSTRUCTION. CONTRACTOR TO COORDINATE INSTALLATION OF UNDERGROUND UTILITIES WITH ALL UTILITY COMPANIES INVOLVED.



ISSUED FOR	BY
SITE PLAN APP	SJL
	17/1/23

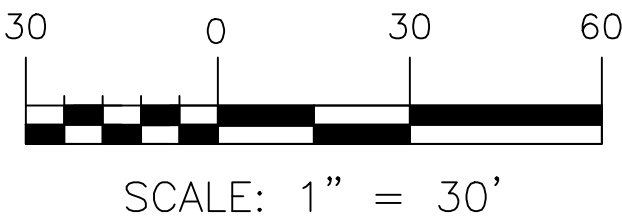
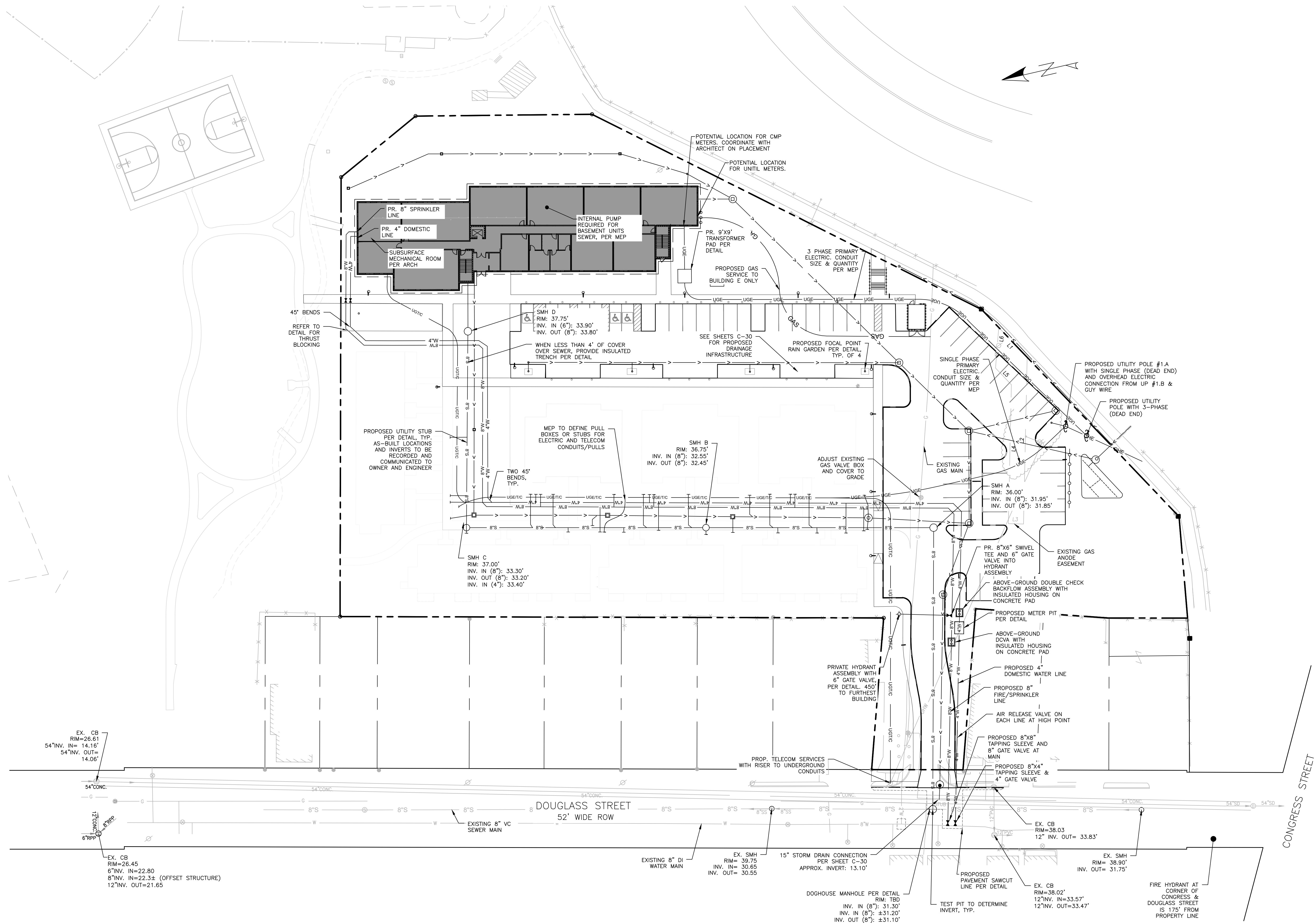
PROJECT NAME/ ADDRESS:	MASTER UTILITY PLAN DOUGLASS STREET COMMONS
CLIENT/OWNER OF RECORD:	DOUGLASS COMMONS, LLC
	10 FREE STREET, SECOND FLOOR, PORTLAND ME 04101

ENGINEERING, INC.	ACORN
PO BOX 3372, PORTLAND MAINE 04101	(207) 775-2855

FILE:	1154_CIVIL
JN:	1154
SCALE:	AS NOTED
DESIGNED BY:	SJL
DRAWN BY:	AWG
CHECKED BY:	SJL/WH

STATE OF MAINE	16505
SAMUEL J. LEBEL	PROFESSIONAL ENGINEER
1/1/22	

DRAWING NO.	C-20
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PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

ISSUED FOR		BY
SITE PLAN APP		DATE
		1/11/23
INTERIM PHASE I UTILITY PLAN		
DOUGLASS STREET COMMONS		
DOUGLASS COMMONS, LLC		
10 FREE STREET, SECOND FLOOR, PORTLAND ME 04101		
DRAWING NAME:		
PROJECT NAME/ ADDRESS:		
CLIENT/OWNER OF RECORD:		
ACORN ENGINEERING, INC.		
PO BOX 3372, PORTLAND MAINE 04101		
(207) 775-2555		
FILE: 1154_CIVIL		
JN: 1154		
SCALE: AS NOTED		
DESIGNED BY: SJL		
DRAWN BY: AWG		
CHECKED BY: SJL/WH		
DRAWING NO.		
C-21		

- GENERAL NOTES:
1. ALL WORK WITHIN THE CITY STREET RIGHT OF WAY SHALL MEET CITY OF PORTLAND TECHNICAL MANUAL STANDARDS.
 2. DESIGN OF TEMPORARY SOIL RESTRAINT MEASURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR IF NECESSARY FOR CONSTRUCTION.
 3. CONTRACTOR SHALL ENSURE THAT UNDERDRAINS ARE CONSTRUCTED WITH POSITIVE OUTLET TO PROPOSED CONNECTIONS.
 4. CATCH BASIN INLET PROTECTION TO BE INSTALLED WITHIN ANY STRUCTURES DOWNGRADIENT OF ACTIVE CONSTRUCTION.
 5. SEDIMENTATION BARRIERS ARE TO BE INSTALLED DOWNGRADIENT OF ALL ACTIVE CONSTRUCTION WORK PER DETAIL. BARRIERS TO NOT EXTEND PAST PROPERTY LINES; BARRIERS SHOWN OFFSET FROM PROPERTY LINES ON PLANS FOR VISUAL PURPOSES ONLY.

STRUCTURE TABLE				
NAME	RIM	INV. IN / PIPE (SIZE)	INV. OUT / PIPE (SIZE)	
CB-1	36.50'	25.55' (15")	25.45' (15")	
CB-2	35.15'	25.90' (12") 27.65' (12")	25.80' (15")	
CB-3	35.15'	26.70' (12") 26.30' (12") 29.70' (12")	26.20' (12")	
CB-4	33.69'		30.00' (12")	
CB-5	32.35'	27.40' (12") 27.20' (4")	27.10' (12")	
CB-6	36.00'	28.30' (12")	28.30' (12")	
DB-1	35.70'	31.00' (10")	30.90' (10")	
DB-2	35.90'	31.50' (10")	31.40' (10")	
DB-3	36.10'	32.00' (10")	31.90' (10")	
DB-4	36.04'		32.35' (10")	
DMH-1	38.70'	24.80' (15")	20.00' (15")	
DMH-2	31.85'	27.60' (8")	27.40' (10")	
DMH-3	36.75'	30.50' (10") 26.58' (10")	26.58' (12")	
FB-1	37.00'	29.35' (10") 29.40' (8")	29.25' (12")	
FB-2	37.00'	30.35' (10")	30.25' (10")	
FB-3	37.10'	31.35' (10") 31.35' (4")	31.25' (10")	

FB = 2'X2' CONCRETE "F" BASIN
DB = 12" DIAMETER INLINE PVC DRAIN BASIN

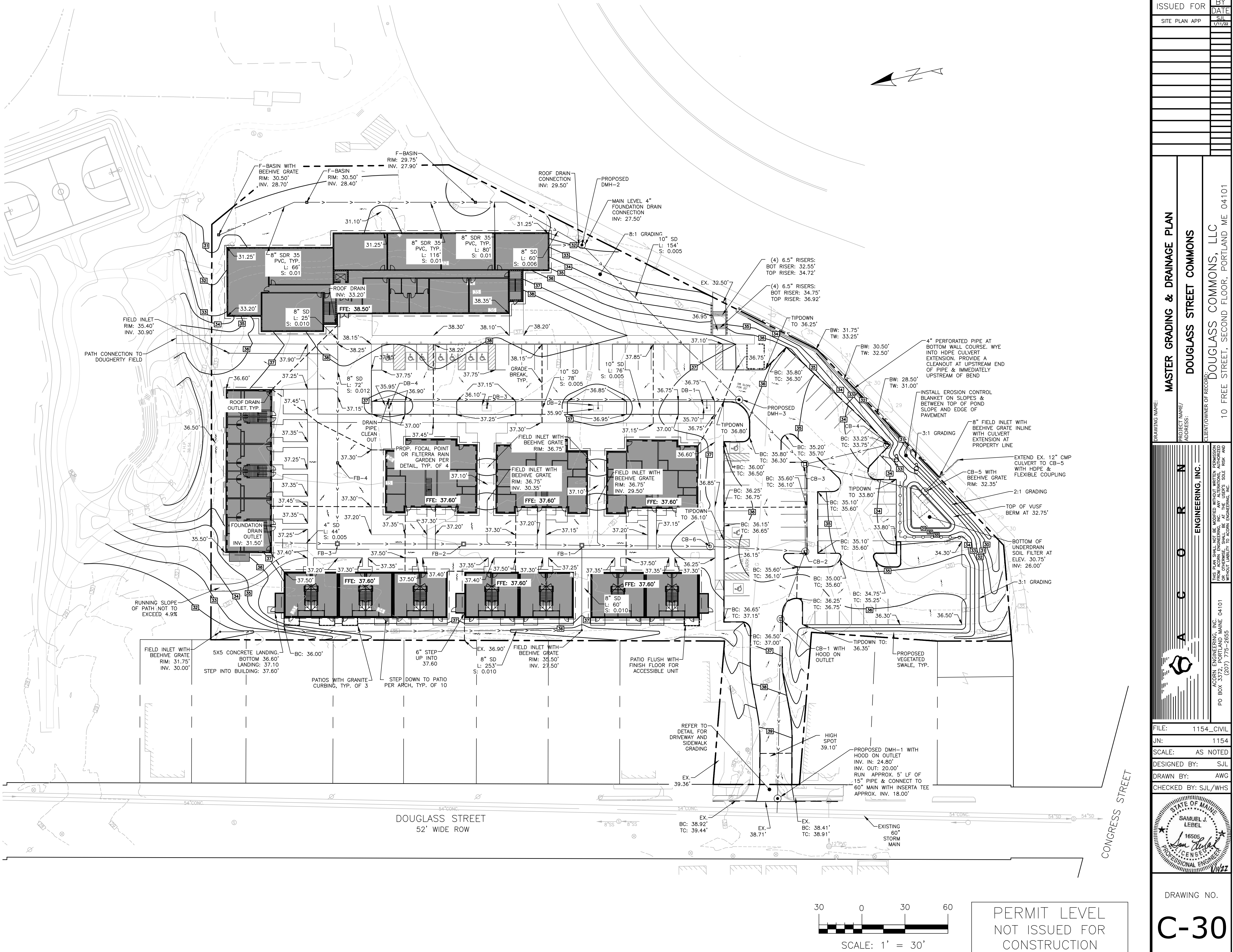
AVERAGE GRADES AND BUILDING HEIGHT - E 5-STORY	
NORTH CORNER ELEVATION	31.25'
EAST CORNER ELEVATION	31.25'
SOUTH CORNER ELEVATION	38.35'
WEST CORNER ELEVATION	33.20'
AVERAGE GRADE PLANE	33.50'
ELEVATION AT ROOF	86.50'
BUILDING HEIGHT	53.05'

AVERAGE GRADES AND BUILDING HEIGHT - A 1-3	
NORTH CORNER ELEVATION	37.60'
EAST CORNER ELEVATION	37.60'
SOUTH CORNER ELEVATION	37.60'
WEST CORNER ELEVATION	37.60'
AVERAGE GRADE PLANE	37.60'
ELEVATION AT ROOF	70.93'
BUILDING HEIGHT	33.33'

AVERAGE GRADES AND BUILDING HEIGHT - B 1-2	
NORTH CORNER ELEVATION	37.60'
EAST CORNER ELEVATION	37.60'
SOUTH CORNER ELEVATION	37.60'
WEST CORNER ELEVATION	37.60'
AVERAGE GRADE PLANE	37.60'
ELEVATION AT ROOF	62.60'
BUILDING HEIGHT	25.00'

AVERAGE GRADES AND BUILDING HEIGHT - C-1	
NORTH CORNER ELEVATION	36.10'
EAST CORNER ELEVATION	37.50'
SOUTH CORNER ELEVATION	37.60'
WEST CORNER ELEVATION	37.60'
AVERAGE GRADE PLANE	37.20'
ELEVATION AT ROOF	62.60'
BUILDING HEIGHT	25.40'

AVERAGE GRADES AND BUILDING HEIGHT - D-1	
NORTH CORNER ELEVATION	35.50'
EAST CORNER ELEVATION	36.60'
SOUTH CORNER ELEVATION	37.60'
WEST CORNER ELEVATION	37.50'
AVERAGE GRADE PLANE	36.80'
ELEVATION AT ROOF	70.93"
BUILDING HEIGHT	34.13'



ISSUED FOR

BY

DATE

SITE PLAN APP

17/1/23

MASTER GRADING & DRAINAGE PLAN

DOUGLASS STREET COMMONS

DOUGLASS COMMONS, LLC

10 FREE STREET, SECOND FLOOR, PORTLAND ME 04101

DRAWING NAME:

PROJECT NAME/ ADDRESS:

CLIENT/OWNER OF RECORD:

ENGINEERING, INC.

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION OF THE ENGINEER. ANY CHANGES SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

ACORN ENGINEERING, INC.

PO BOX 3372, PORTLAND MAINE 04101

(207) 775-2555

FILE:

1154_CIVIL

JN:

1154

SCALE:

AS NOTED

DESIGNED BY:

SJL

DRAWN BY:

AWG

CHECKED BY:

SJL/WH

STATE OF MAINE

SAMUEL J. LABEL

16505

PROFESSIONAL ENGINEER

1/1/22

DRAWING NO.

C-30

[illegible]

110 FREE STREET, SECOND FLOOR, PORTLAND ME 04101

10 FR

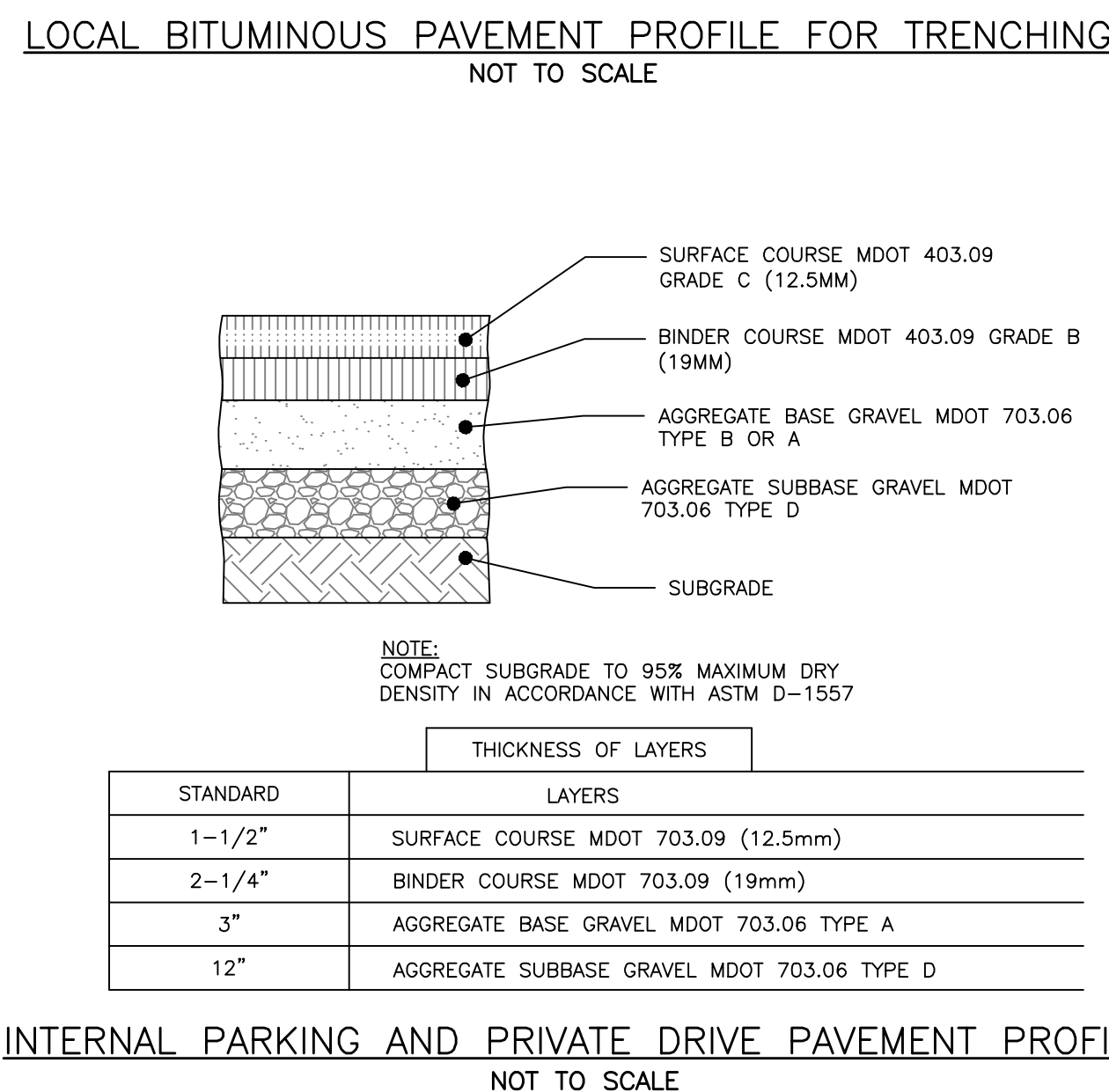
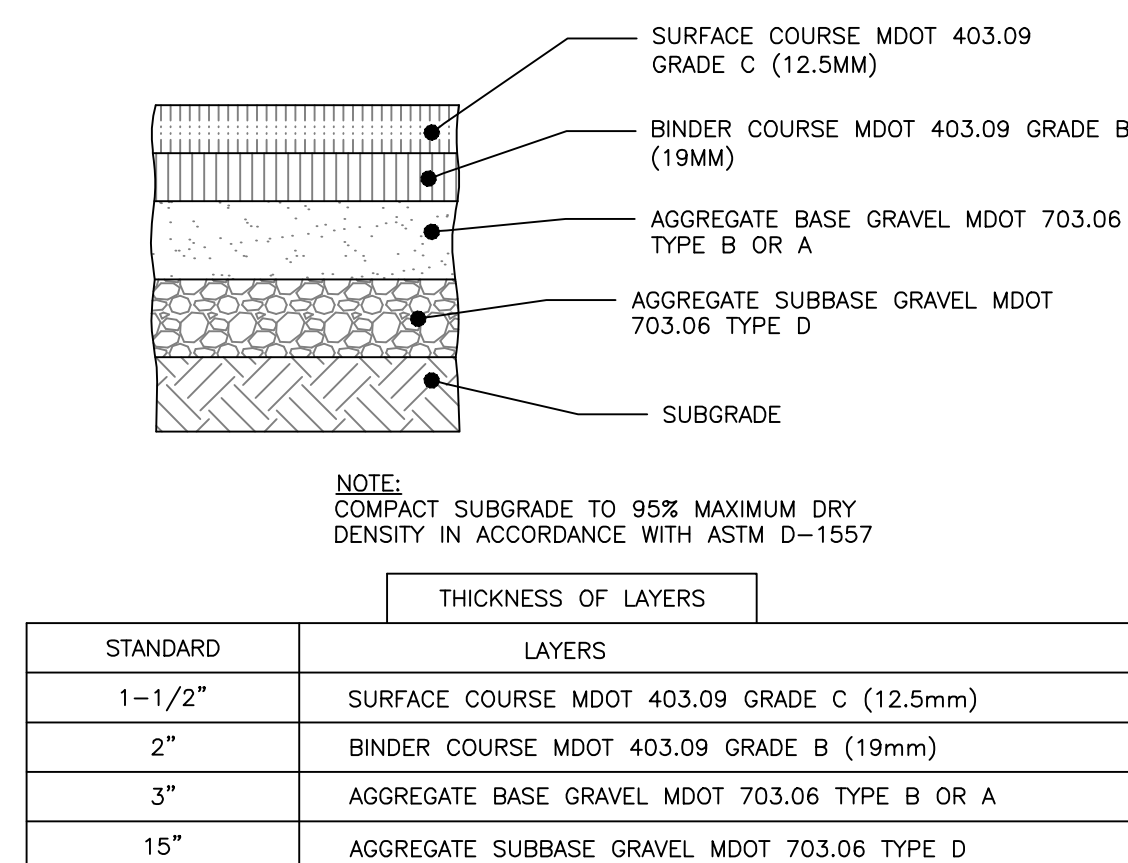
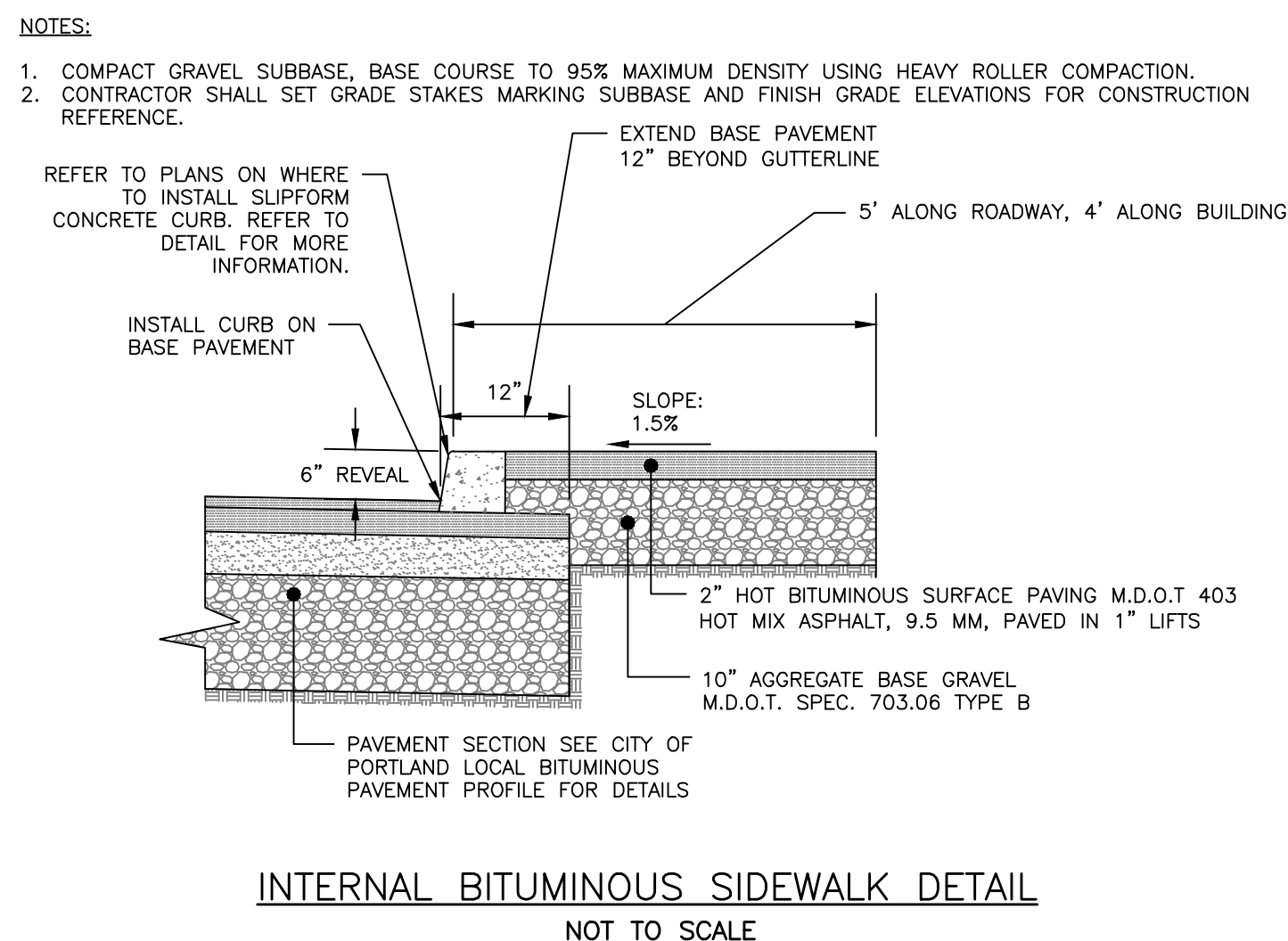
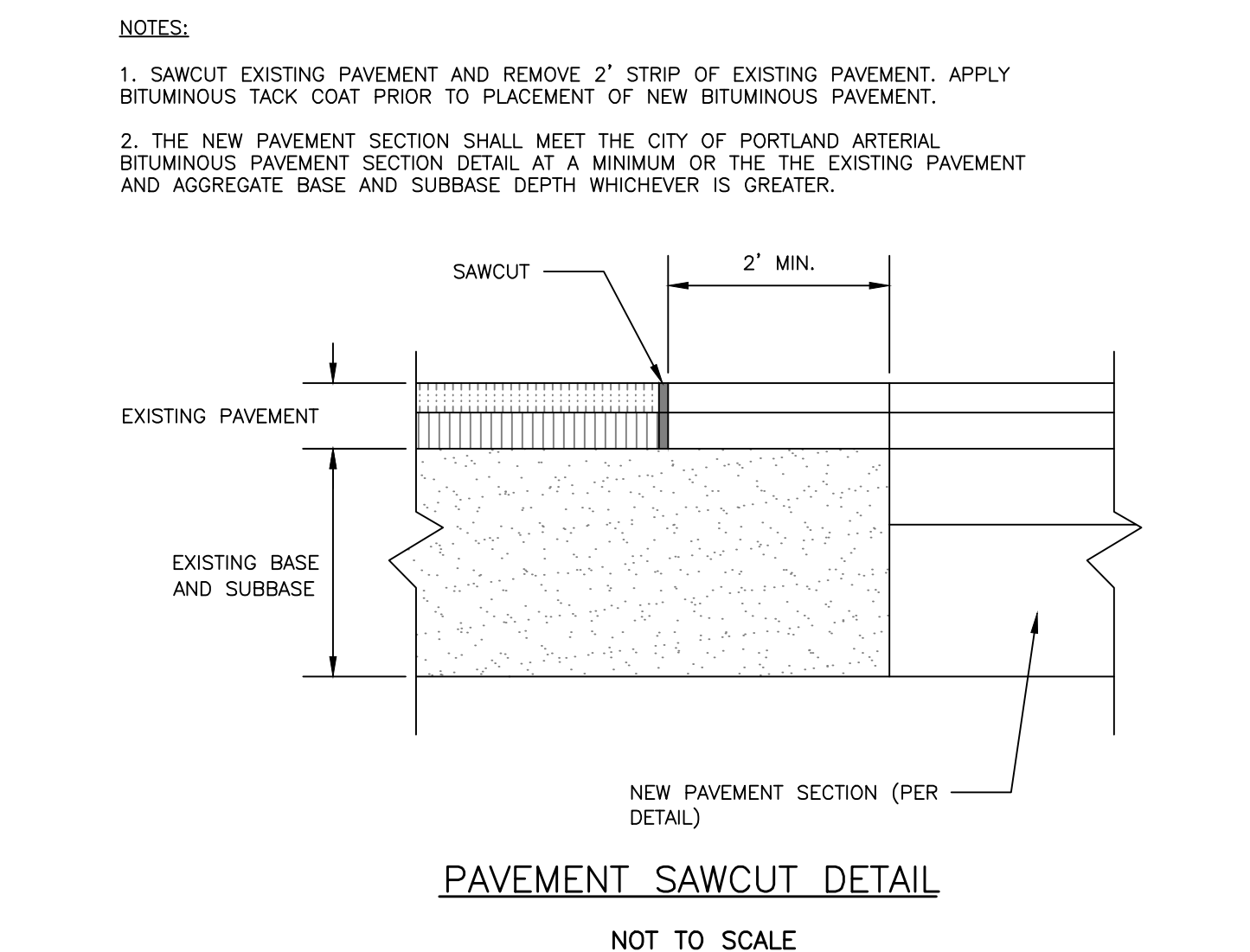
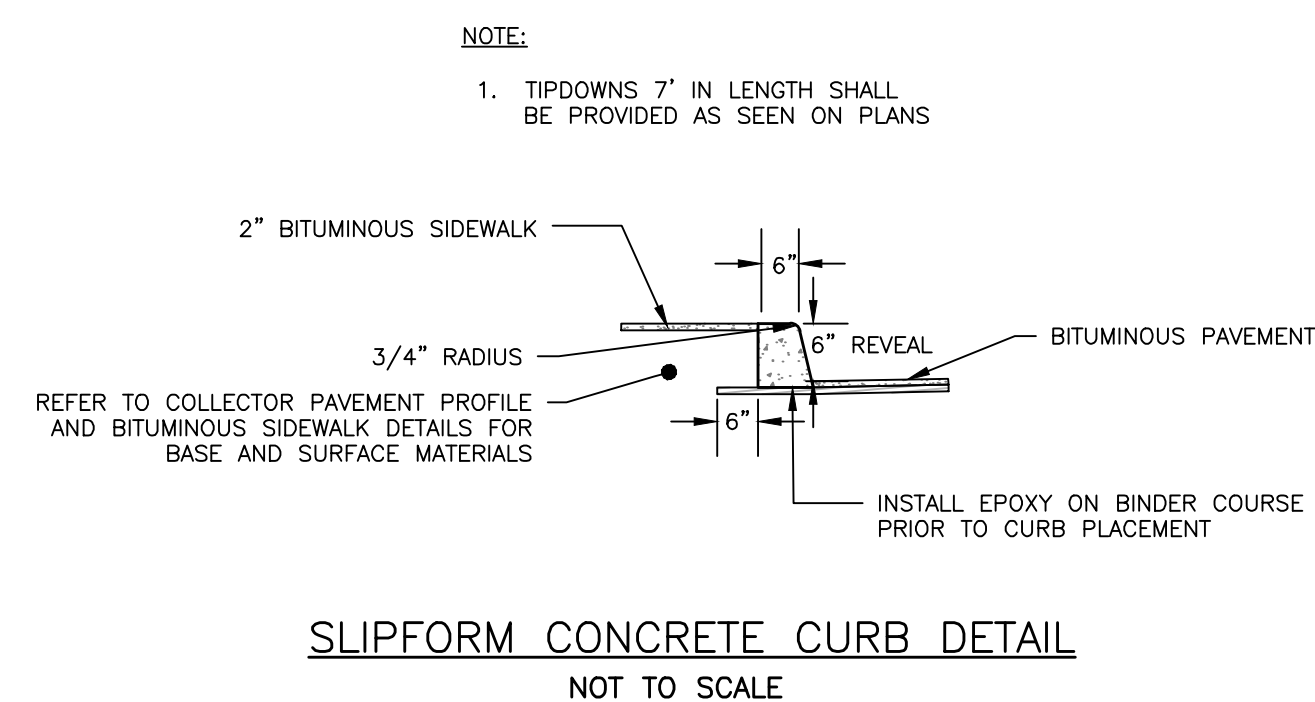
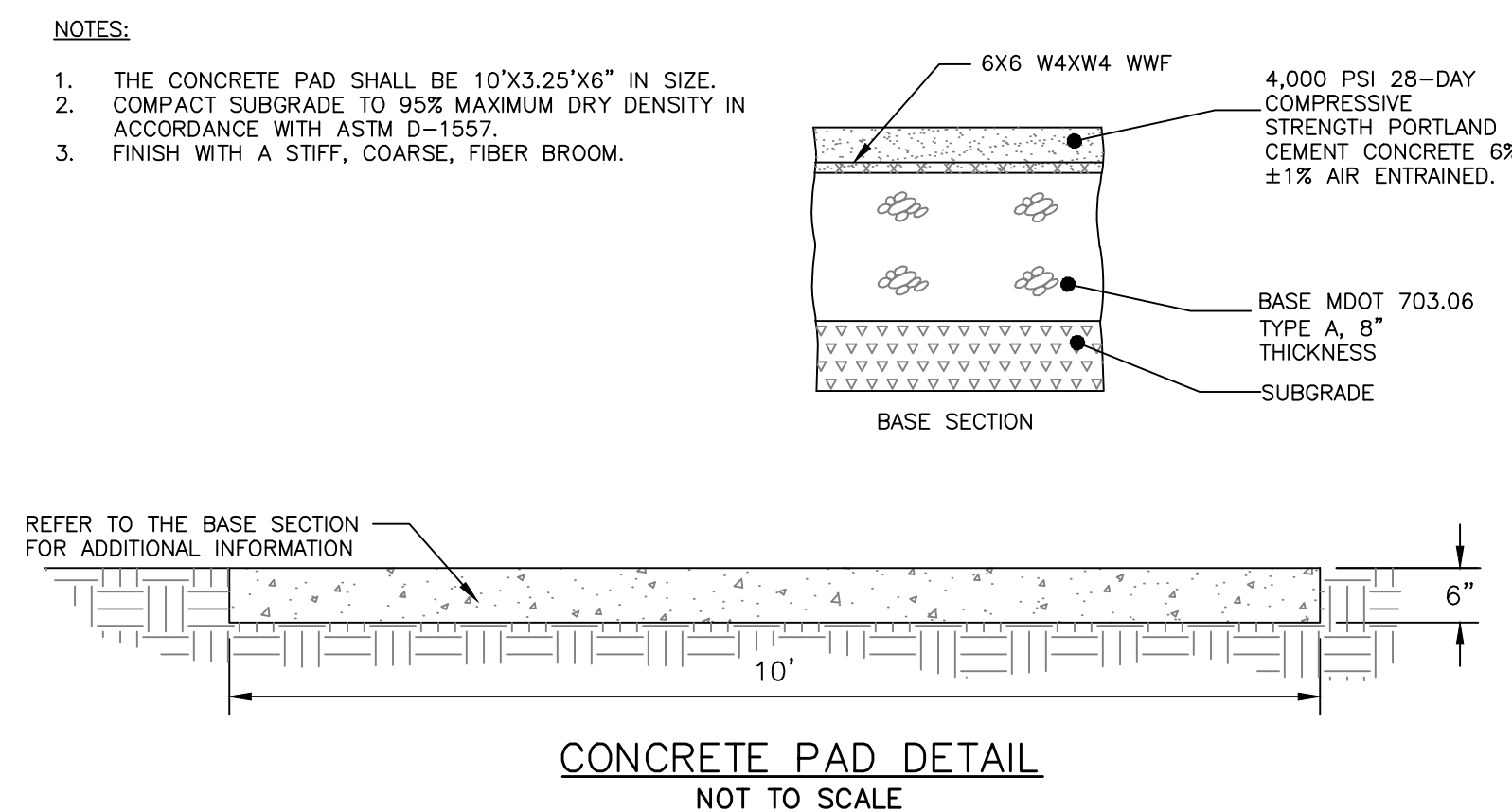
ENGINEERING, INC.

ACORN ENGINEERING, INC.

FILE:	1154_CIVIL
JN:	1154
SCALE:	AS NOTED
DESIGNED BY:	SJL
DRAWN BY:	AWG
CHECKED BY:	SJL/WS



C-31



INTERNAL PARKING AND PRIVATE DRIVE PAVEMENT PROFILE

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

DRAWING NAME:	SITE DETAILS - 1										ISSUED FOR	BY
	PROJECT NAME/ ADDRESS:										SITE PLAN APP	DATE
CLIENT/OWNER OF RECORD:	DOUGLASS STREET COMMONS											
	DOUGLASS COMMONS, LLC 10 FREE STREET, SECOND FLOOR, PORTLAND ME 04101											

FILE: 1154_CIVIL

JN: 1154

SCALE: AS NOTED

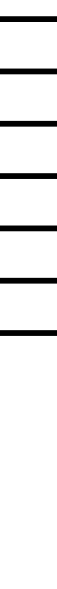
DESIGNED BY: SJL

DRAWN BY: AWG

CHECKED BY: SJL/WHHS

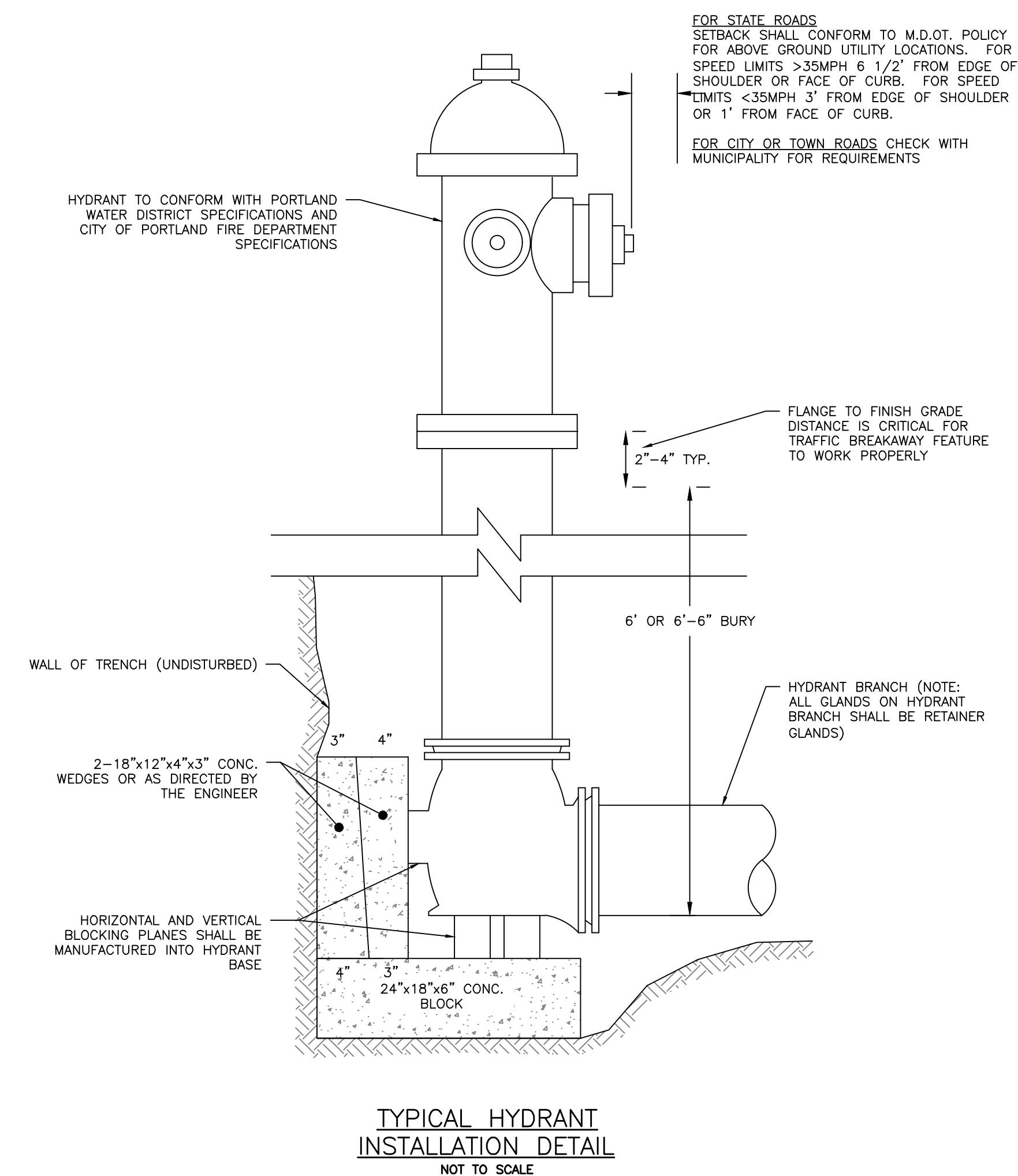
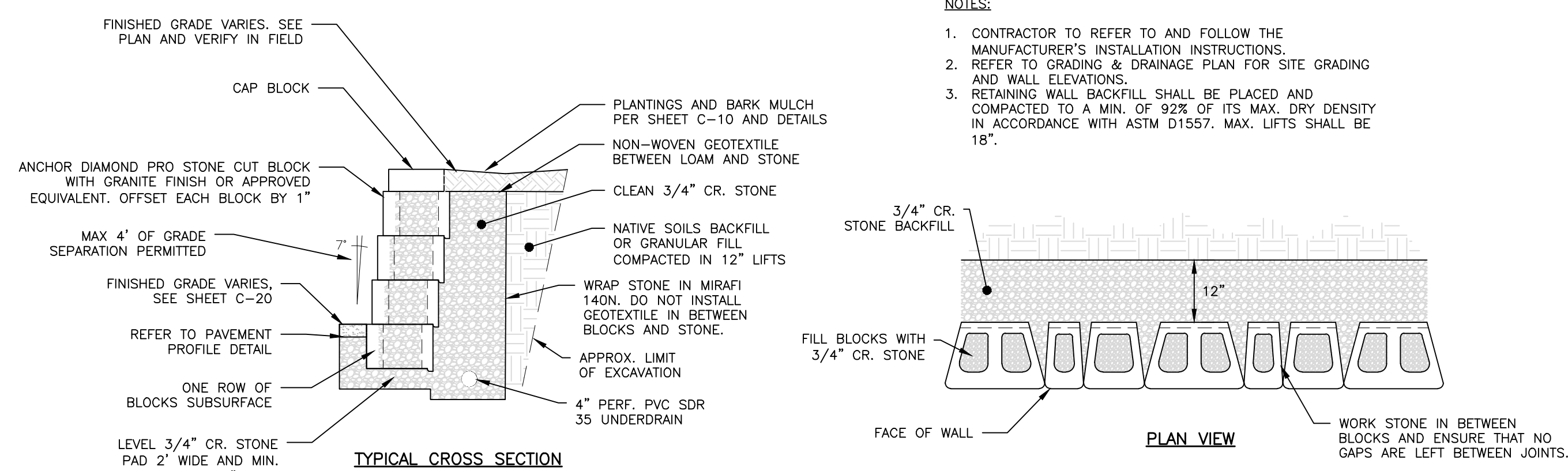
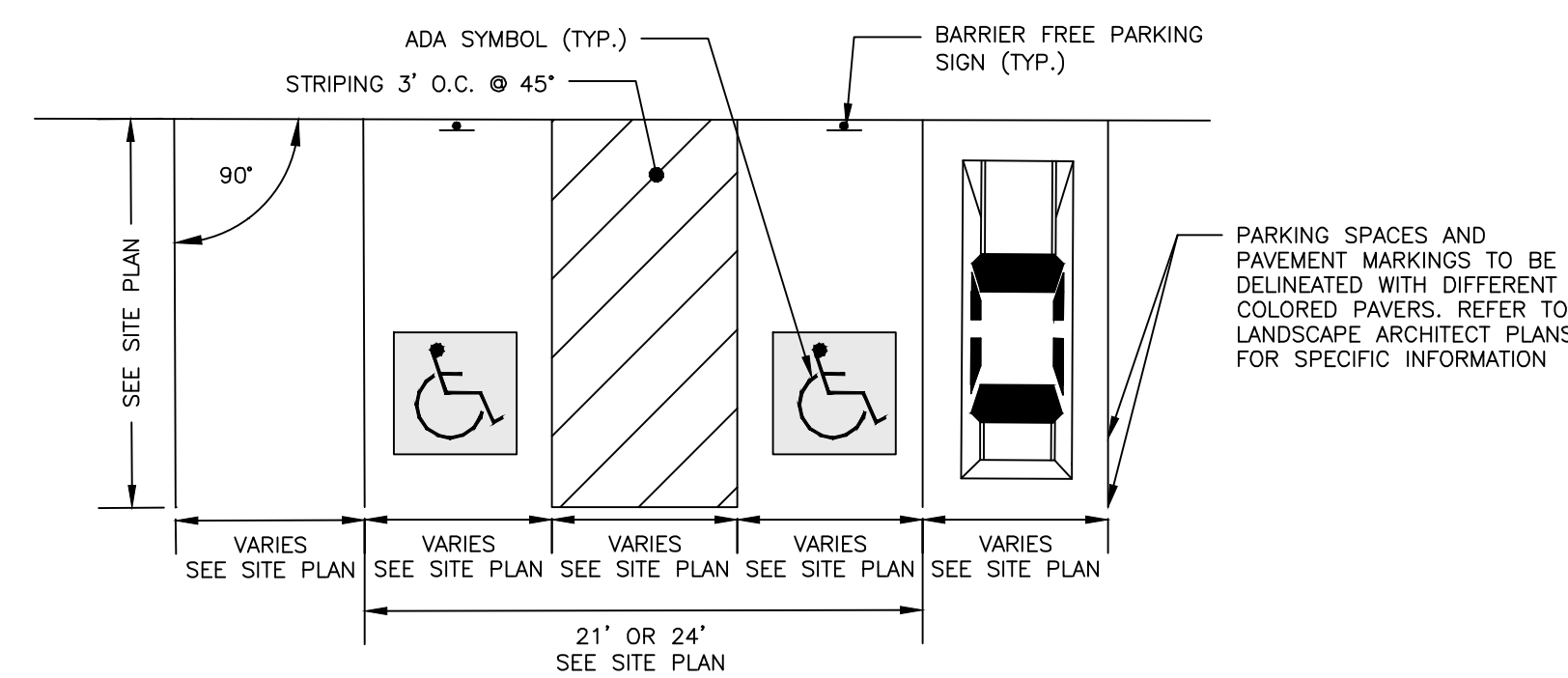
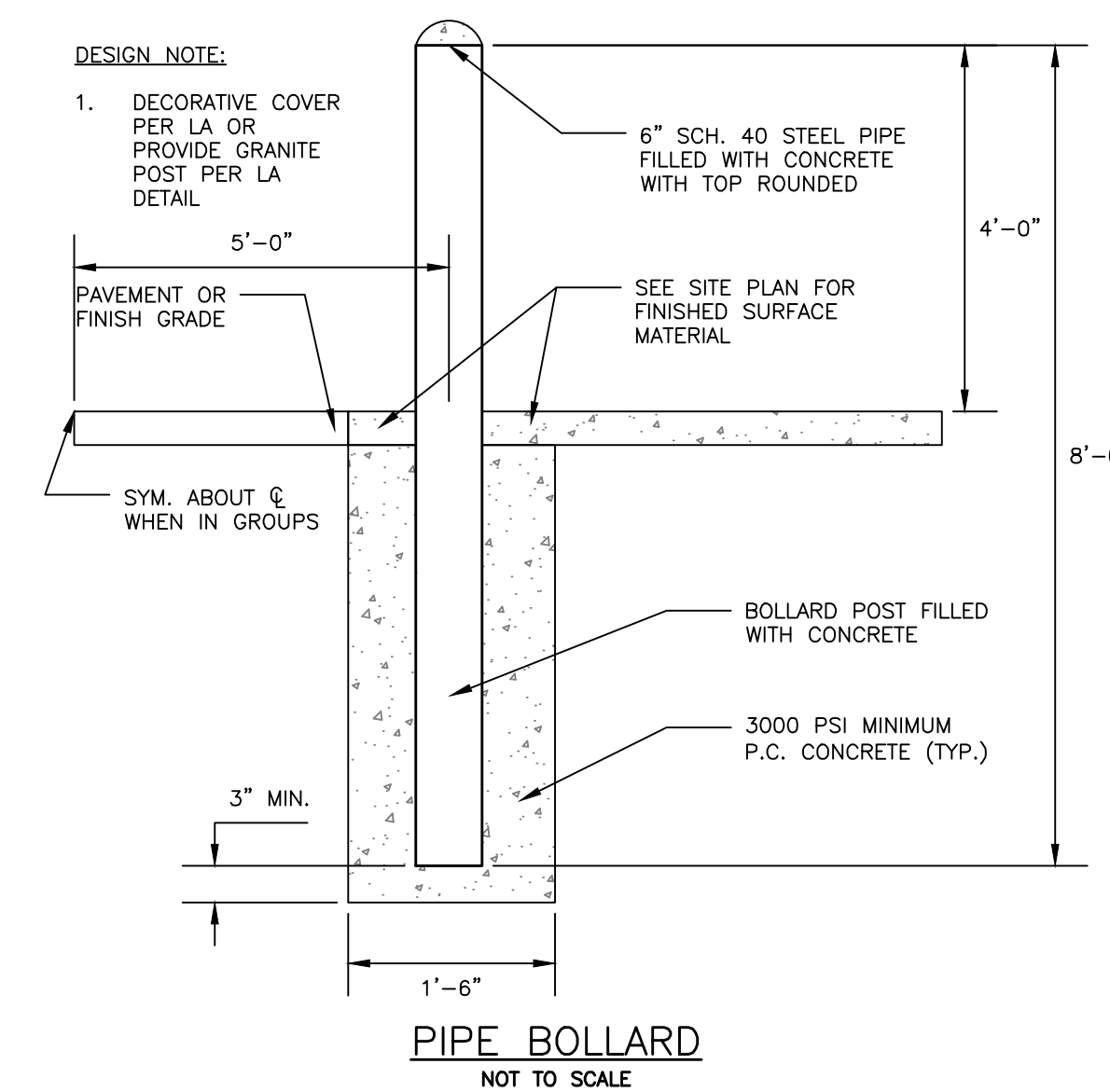
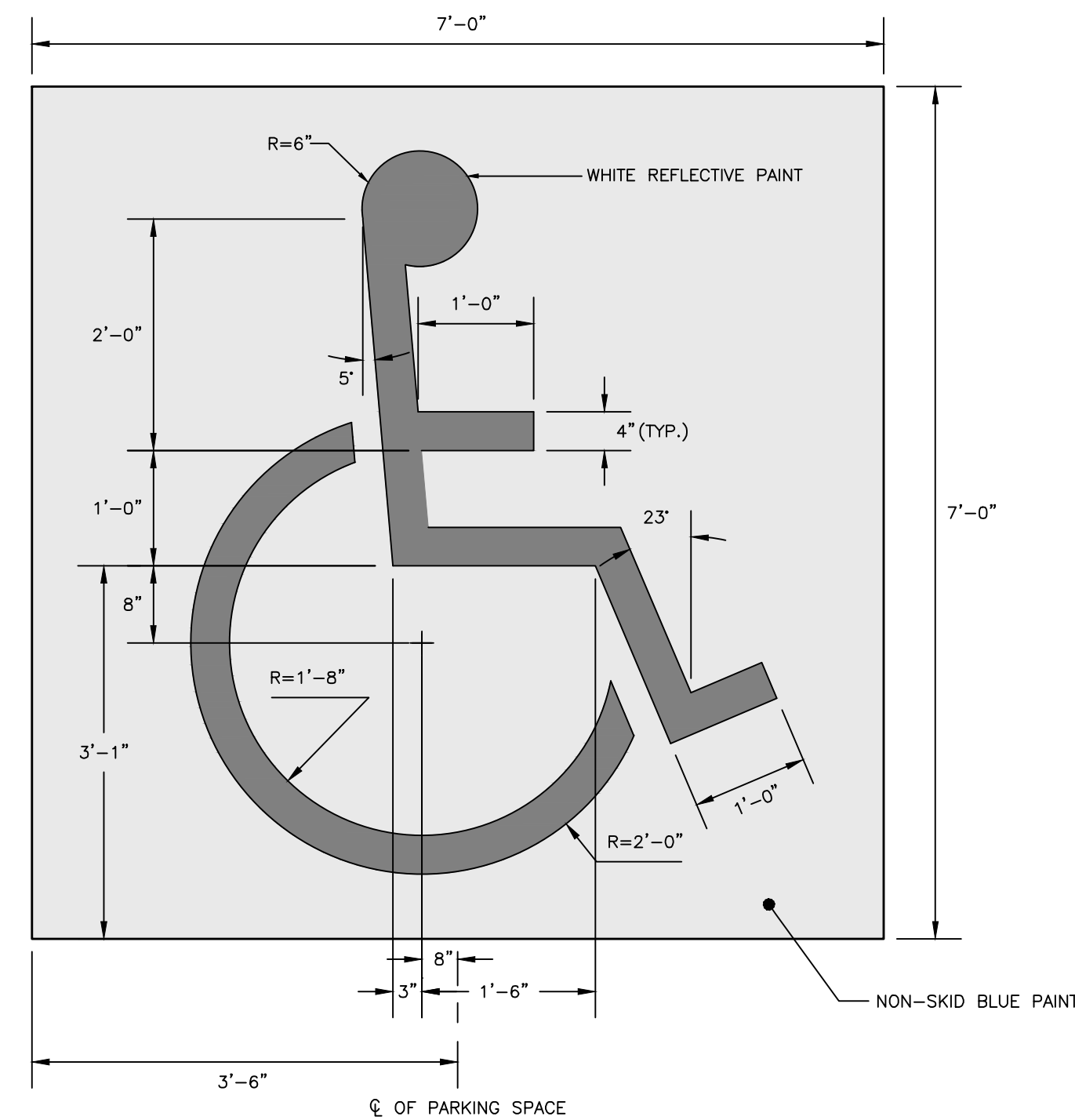
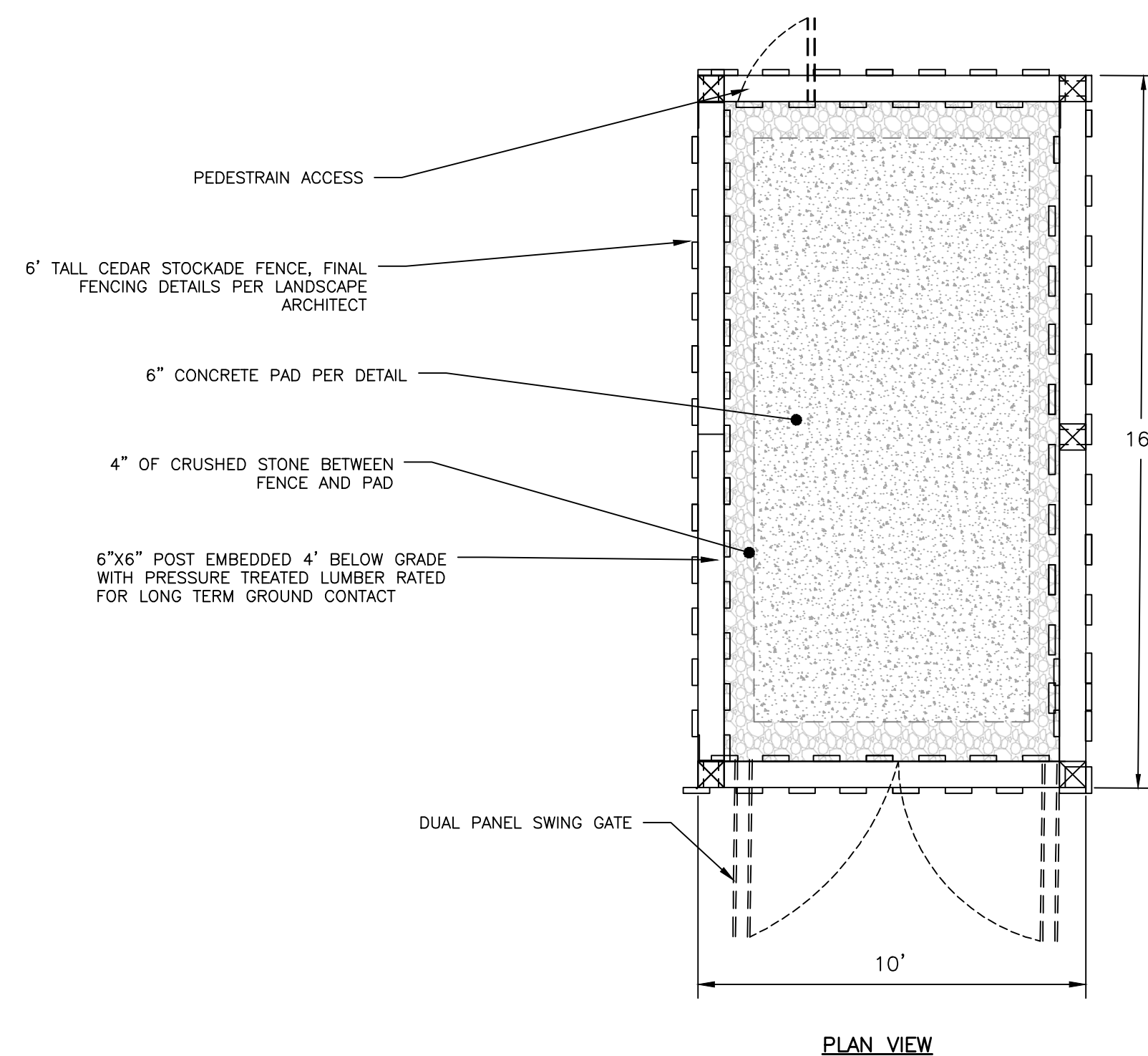
THE PLAN SHALL BE RECORDED WITHIN THIRTY (30) DAYS AFTER THE DATE OF THE DATE OF THE USER'S SOLE RISK AND LIABILITY. THE USER'S SOLE RISK AND LIABILITY SHALL BE AT THE USER'S SOLE RISK AND LIABILITY.

PO BOX 333333, PORTLAND, ME 04101
(207) 775-2855



A C O R N

ENGINEERING, INC.

[illegible]

SITE DETAILS - 2

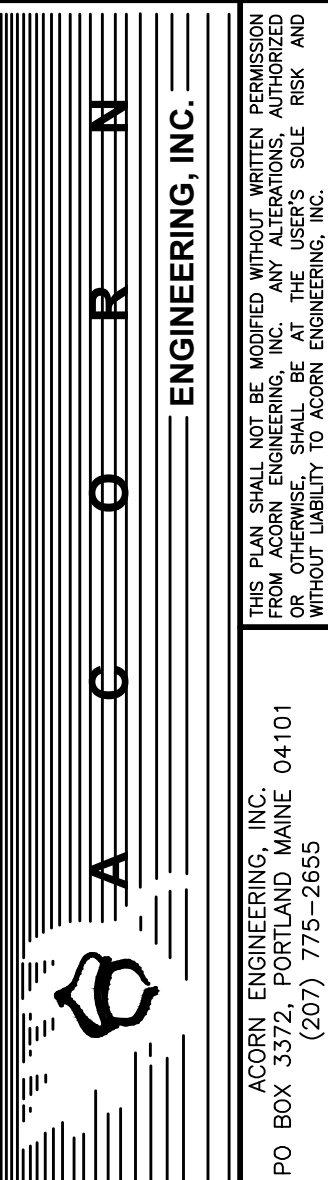
DOUGLASS STREET COMMONS

DOUGLASS COMMONS, LLC

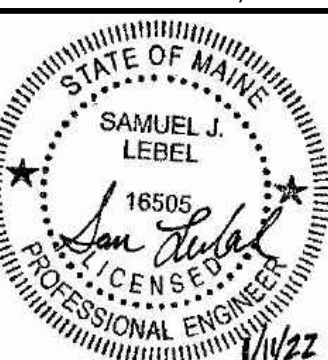
10 FREE STREET, SECOND FLOOR, PORTLAND ME 04101

PROJECT NAME/
ADDRESS:

CLIENT/OWNER OF:



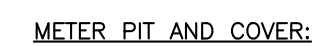
FILE:	1154_CIVIL
IN:	1154
SCALE:	AS NOTED
DESIGNED BY:	SJL
DRAWN BY:	AWG
CHECKED BY:	SJL/WH



DRAWING NO.

C-41

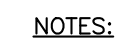
PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION



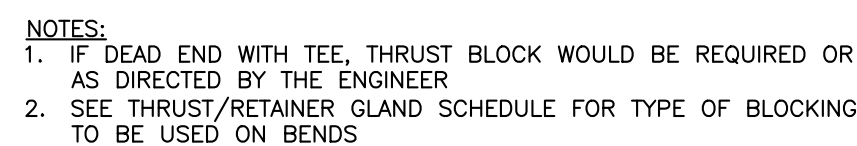
1. SPECIAL APPROVAL BY PWD IS REQUIRED FOR ALL PROPOSED METER VAULT INSTALLATIONS. PROPOSED CONFIGURATION SHALL BE SUBMITTED FOR PWD REVIEW PRIOR TO CONSTRUCTION.
2. METER VAULT SHALL BE CONSTRUCTED ON PRIVATE PROPERTY BETWEEN 10' AND 20' FROM THE PROPERTY LINE UNLESS OTHERWISE APPROVED BY PWD.
3. THE METER PIT SHALL BE MADE OF PRECAST CONCRETE OF SUFFICIENT SIZE TO PROVIDE 5.5' MINIMUM GROUND COVER FORM FINISHED GRADE TO THE TOP OF THE SERVICE PIPE.
4. ALL PIPE JOINTS BETWEEN THE SERVICE VALVE AND THE METER SHALL BE RESTRAINED.
5. TESTABLE BACKFLOW PREVENTION DEVICES MAY NOT BE INSTALLED WITHIN METER PITS.
6. ALL SEAMS BETWEEN CONCRETE SECTIONS SHALL BE SEALED WITH MASTIC JOINT. ALL OPENINGS IN THE CONCRETE FOR SERVICE PIPING SHALL BE SEALED WITH A MODULAR SEAL (E.G. DOW CORP. 8000) OF SIMILAR SIZE.
7. ENTRY COVER SHALL BE CAST IRON OR STEEL AND SHALL BE EITHER PERMANENTLY LABELED "WATER" OR HAVE NO LABEL. STEEL PLATE MATERIAL SHALL BE COATED WITH A RUST INHIBITOR PAINT.
8. IF NOT ON PAVED SURFACES, A 48" X 60" X 6" WOOD LATCH MAY BE USED.
9. WALL-MOUNTED LADDER RUNGS ARE NOT TO BE INSTALLED WITHIN METER PIT.
10. CUSTOMER SHALL ENSURE THE METER VAULT AND COVER ARE PROPERLY RATED FOR THE SERVICE PIPE.
11. RESTRAINED FLANGE COUPLING ADAPTER SHALL BE FORD (MODEL RFAD) OR ROMAC (MODEL RFCA) UNLESS OTHERWISE APPROVED BY PWD.

METER INSTALLATION:

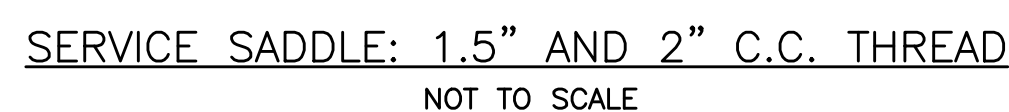
12. ONLY PWD PERSONNEL ARE AUTHORIZED TO INSTALL WATER METERS. PWD PERSONNEL ARE ADDITIONALLY AUTHORIZED TO OPERATE METER VALVES AS NEEDED FOR INSTALLATION AND MAINTENANCE.
13. PWD WILL SUPPLY THE WATER METER. ALL OTHER FITTINGS SHALL BE SUPPLIED AND INSTALLED BY CUSTOMER.
14. METER LAYING LENGTH SHOULD BE CONFIRMED WITH PWD PRIOR TO SETTING PIPE. PWD MAY REQUIRE THAT A FLANGED METER SPOOL PIECE BE INSTALLED PRIOR TO METER SET TO ENSURE PROPER SPACING. IF SO, THE METER SPOOL SHALL BE PROVIDED BY CUSTOMER. PWD WILL PROVIDE THE METER SPOOL SERVICE, 225 DOUGLASS STREET, PORTLAND DURING NORMAL BUSINESS HOURS.



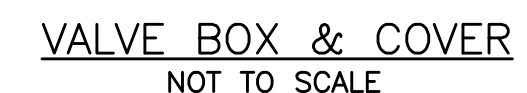
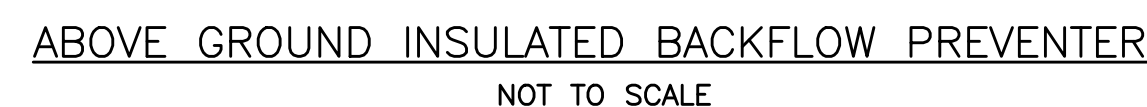
1. THE WATER TRENCH SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PORTLAND WATER DISTRICT STANDARD DETAILS & SPECIFICATIONS.
2. IF LESS THAN 5'-6" OF COVER IS POSSIBLE ADD TWO LAYERS OF 2-INCH "BLUE DOW" RIGID INSULATION.



THRUST BLOCKING: REGULAR BEND
NOT TO SCALE



TAPPING SLEEVE AND VALVE
NOT TO SCALE

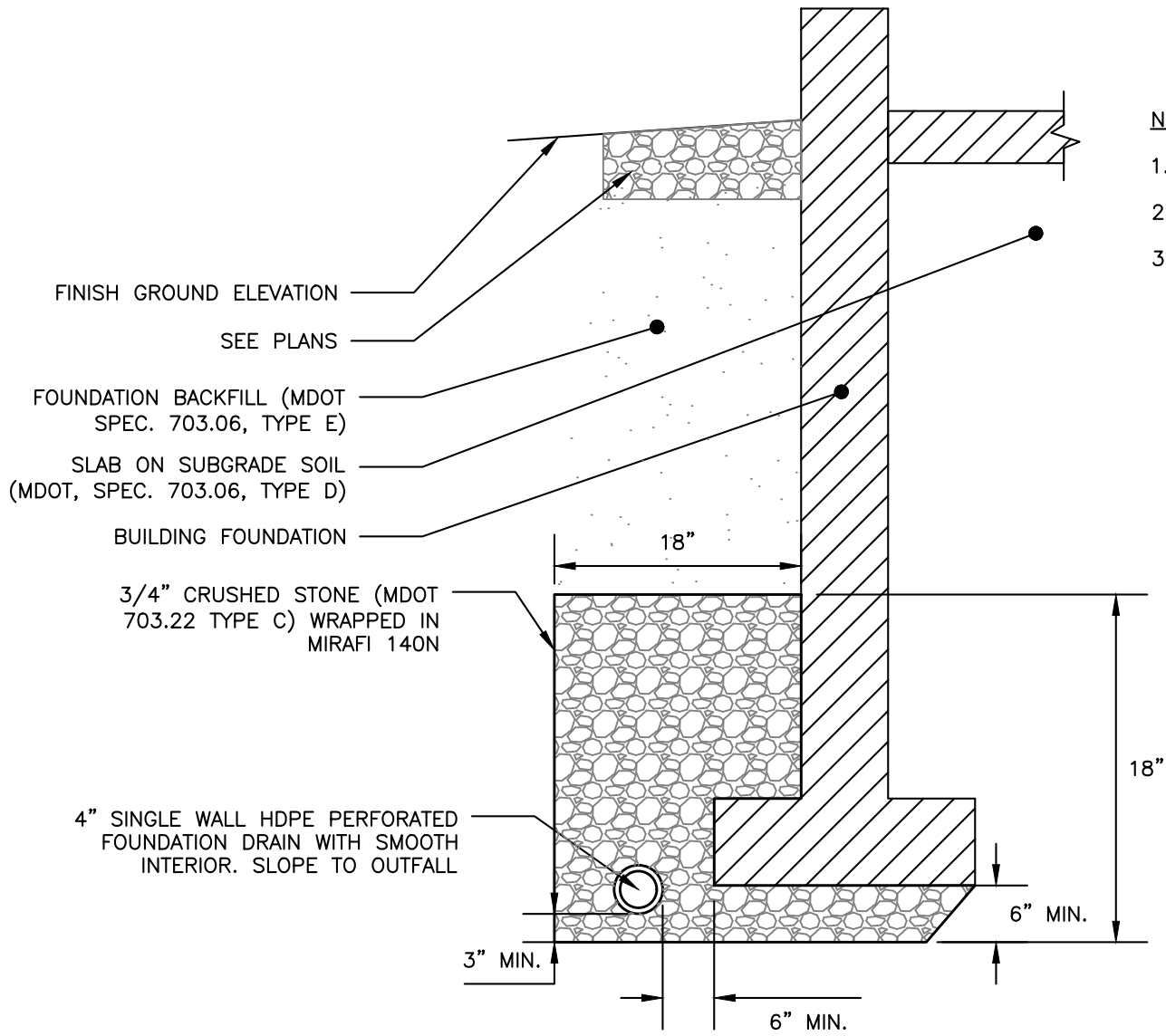


PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

		THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY ALTERATIONS, ADDITIONS, OR DELETIONS SHALL BE THE RESPONSIBILITY OF ACORN ENGINEERING, INC. WITHOUT LIABILITY TO ACORN ENGINEERING, INC.		PROJECT NAME/ ADDRESS: DOUGLASS STREET COMMONS DOUGLASS COMMONS, LLC 10. FREE STREET, SECOND FLOOR, PORTLAND ME 04101		ISSUED FOR DATE SITE PLAN APP 11/14/22	
E: 1154_CIVIL		SCALE: AS NOTED		PROJECT NAME/ ADDRESS: DOUGLASS STREET COMMONS DOUGLASS COMMONS, LLC 10. FREE STREET, SECOND FLOOR, PORTLAND ME 04101		ISSUED FOR DATE SITE PLAN APP 11/14/22	
DESIGNED BY: SJL		DRAWN BY: AWG		PROJECT NAME/ ADDRESS: DOUGLASS STREET COMMONS DOUGLASS COMMONS, LLC 10. FREE STREET, SECOND FLOOR, PORTLAND ME 04101		ISSUED FOR DATE SITE PLAN APP 11/14/22	
CHECKED BY: SJL/WH		STATE OF MAINE SAMUEL J. LEBEL 16500 San Rafael PROFESSIONAL ENGINEERING 01422		PROJECT NAME/ ADDRESS: DOUGLASS STREET COMMONS DOUGLASS COMMONS, LLC 10. FREE STREET, SECOND FLOOR, PORTLAND ME 04101		ISSUED FOR DATE SITE PLAN APP 11/14/22	
DRAWING NO.				PROJECT NAME/ ADDRESS: DOUGLASS STREET COMMONS DOUGLASS COMMONS, LLC 10. FREE STREET, SECOND FLOOR, PORTLAND ME 04101		ISSUED FOR DATE SITE PLAN APP 11/14/22	

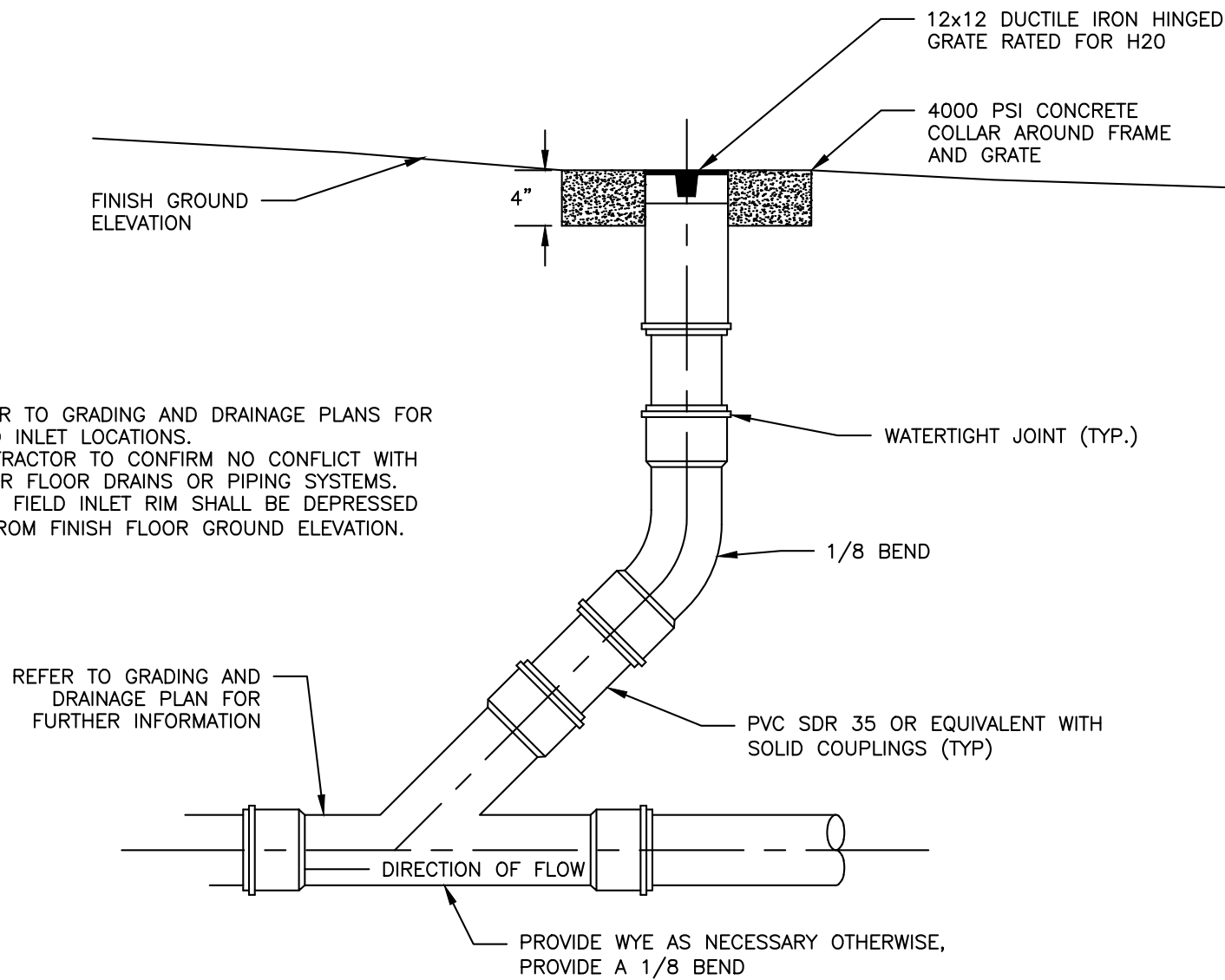
Page 810

- NOTES:
1. REFER TO THE BUILDING ARCHITECTS PLANS FOR THE BUILDING FOUNDATION, BACKFILL, ROOF DRAIN, SIDEWALK AND OTHER DETAILS.
 2. PERFORATIONS IN UNDERDRAIN PIPE SHALL BE ORIENTED DOWN.
 3. INSTALL STONE DRIP EDGE IN A LOCATIONS SUBJECT TO ROOF RUNOFF. WIDTH SHALL BE A MIN. 12" BEYOND THE PROJECTION OF THE ROOF EVE.
 4. FOUNDATION WALL FOOTINGS SHALL BE CONSTRUCTED TO A MIN. DEPTH OF 4 FT BELOW ADJACENT FINISH GRADE. REFER TO STRUCTURAL ENGINEERS PLANS FOR ADDITIONAL INFORMATION AND MIN. REQUIREMENTS.
 5. IF FOUNDATION DRAIN DAYLIGHTS, INSTALL DRAINAGE SOLUTIONS ANIMAL GUARD 4" EXTERNAL PVC OR CORRUGATED PLASTIC PIPE, OR INDUSTRY APPROVED EQUAL.



FOUNDATION DRAIN DETAIL
NOT TO SCALE

- NOTES:
1. REFER TO GRADING AND DRAINAGE PLANS FOR FIELD INLET LOCATIONS.
 2. CONTRACTOR TO CONFIRM NO CONFLICT WITH OTHER FLOOR DRAINS OR PIPING SYSTEMS.
 3. EACH FIELD INLET RIM SHALL BE DEPRESSED 1" FROM FINISH FLOOR GROUND ELEVATION.



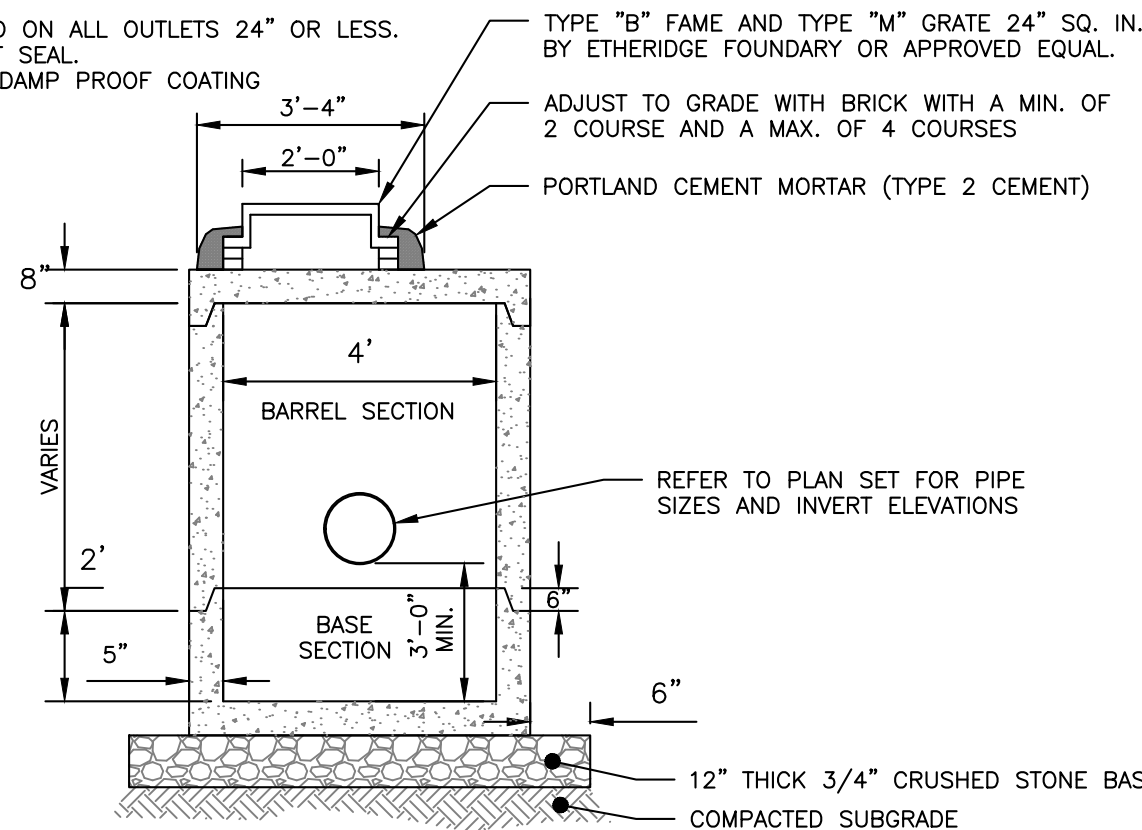
FIELD INLET IN THE TRAVEL WAY
NOT TO SCALE

1. ALL CONCRETE SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 4000 lbs. PER SQ. INCH AT THE END OF 28 DAYS, UNLESS OTHERWISE NOTED.
2. MANHOLES MAY BE CONSTRUCTED OF PRECAST REINFORCED CONCRETE, OR CAST IN PLACE.
3. PRECAST REINFORCED CONE BARREL MANUFACTURED PER ASTM SPEC. C-478.
4. ALL STORM AND SEWER MANHOLE COVERS SHALL BE SOLD AND SHALL HAVE ONE 7/8" DIAMETER DRILLED PICK HOLE LOCATED 8" FROM THE CENTER OF THE COVER.
5. ALL SANITARY MANHOLE COVERS SHALL HAVE "SEWER" CAST INTO THE COVER. ALL STORMWATER/DRAIN MANHOLE COVERS SHALL HAVE "DRAIN" CAST INTO THE COVER.
6. ALL MANHOLE RISERS SHALL BE ETHERIDGE 24" OR APPROVAL EQUAL.
7. SEWER BRICK SHALL CONFORM TO ASTM SPEC. DESIGNATE ON C-32-63, GRADE MA AND SA.
8. ALL SANITARY MANHOLES SHALL HAVE A WATERPROOFING COATING APPLIED TO THE EXTERIOR SURFACE.
9. CATCH BASIN FRAMES FOR TYPE A4 CATCH BASIN CURB INLETS SHALL BE ETHERIDGE DRSA OR APPROVED EQUAL.
10. CASTINGS SHALL CONFORM TO ASTM DESIGNATION A48-CLASS 35.
11. EXISTING MANHOLES, CATCH BASINS, FRAMES, AND COVERS SHALL BE SALVAGED BY THE CONTRACTOR, AND SHALL REMAIN THE PROPERTY OF THE CITY OF PORTLAND.
12. ALL CATCH BASIN OUTLETS SHALL BE INSTALLED WITH A CASCO TRAP PER DETAIL.

GENERAL NOTES FOR MANHOLES AND CATCH BASINS

NOTES:

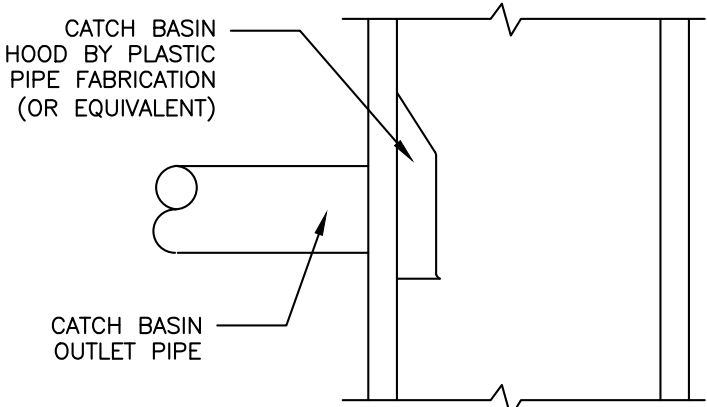
1. ALL CONCRETE TO HAVE A MIN. OF 4,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
2. DESIGN LOAD FOR H-20 WHEEL LOAD.
3. CATCH BASIN TO CONFORM TO ASTM-C478 SPECIFICATIONS.
4. REINFORCE TO 0.12 IN SQ./LF.
5. JOINTS SEALED WITH BUTYL RUBBER.
6. POLYPROPYLENE STEPS 12" O.C.
7. CASCO TRAPS SHALL BE PROVIDED ON ALL OUTLETS 24" OR LESS.
8. ALL PIPES TO HAVE A WATERTIGHT SEAL.
9. STRUCTURE TO BE APPLIED WITH DAMP PROOF COATING



4'-0" PRECAST CATCH BASIN WITH FLAT TOP
NOT TO SCALE

NOTES:

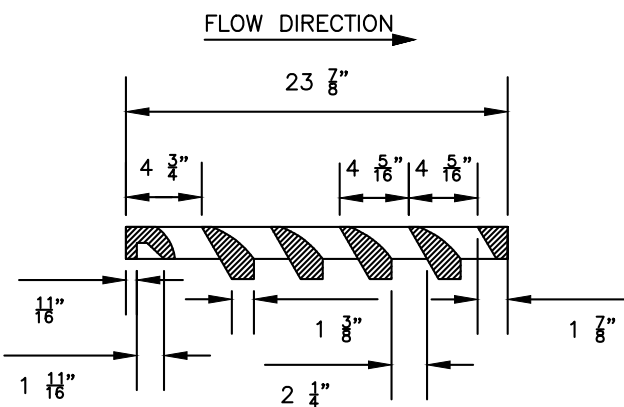
1. INSTALL CATCH BASIN HOODS IN ALL CATCH BASINS WITH A 12" OR 15" OUTLET PIPE.
2. PREFERRED STYLE DESIGNED TO ELIMINATE CEMENTING OF THE TRAP.
3. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION REQUIREMENTS



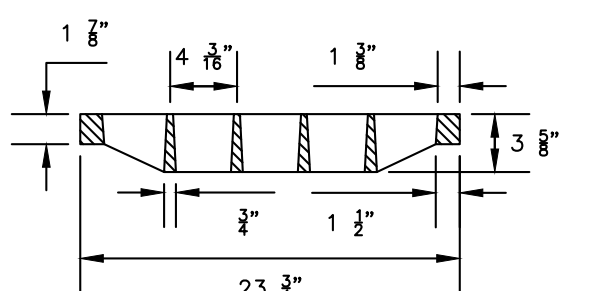
CATCH BASIN HOOD DETAIL
NOT TO SCALE

NOTES:

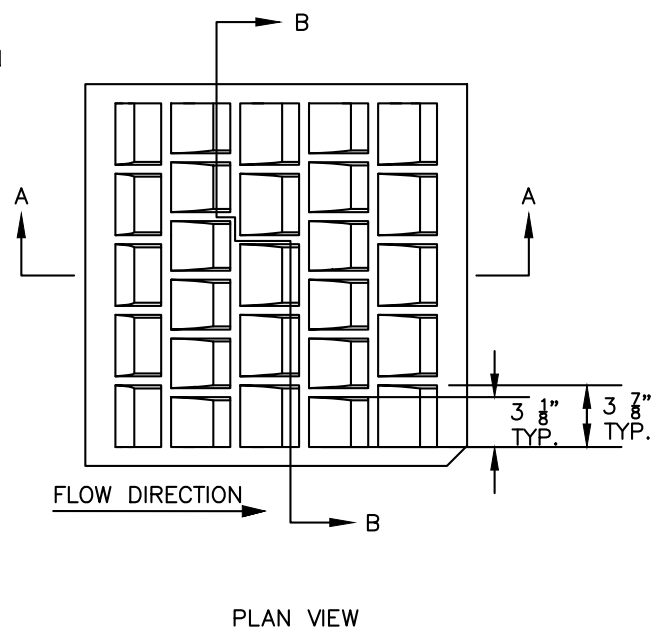
1. TYPE "A" FRAMES ARE TO HAVE 3 FLANGES.
2. TYPE "B" FRAMES ARE TO HAVE 4 FLANGES.
3. THE WORD "GUTTER" IS TO BE MOLDED INTO THE BACK FLANGE - TYPE "B" ONLY.
4. FRAMES AND GRATES ARE TO BE GRAY CAST IRON OR DUCTILE IRON CONFORMING TO AASHTO M306.
5. DIMENSIONS ARE NOMINAL.



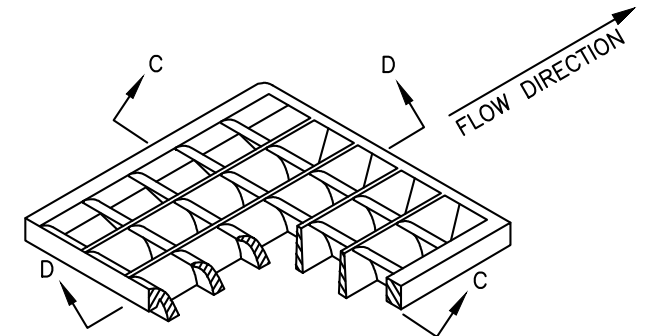
SECTION A-A



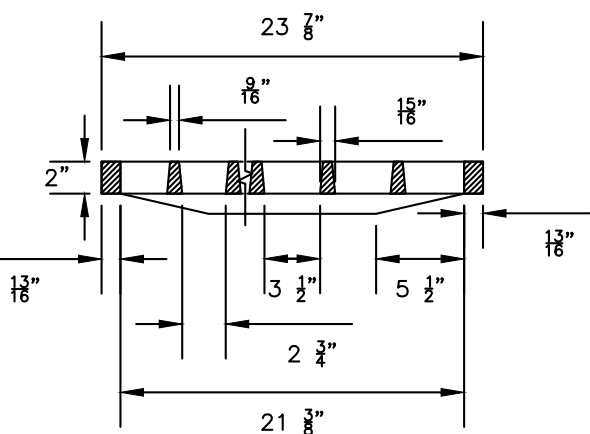
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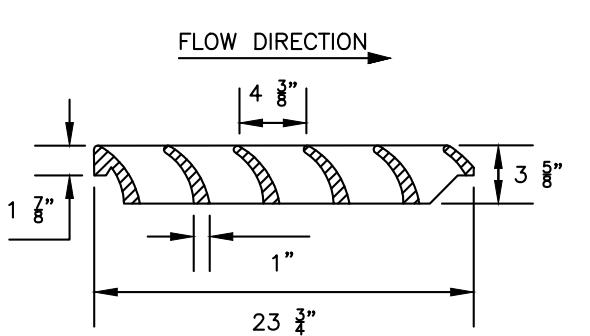
PLAN VIEW



ISOMETRIC VIEW

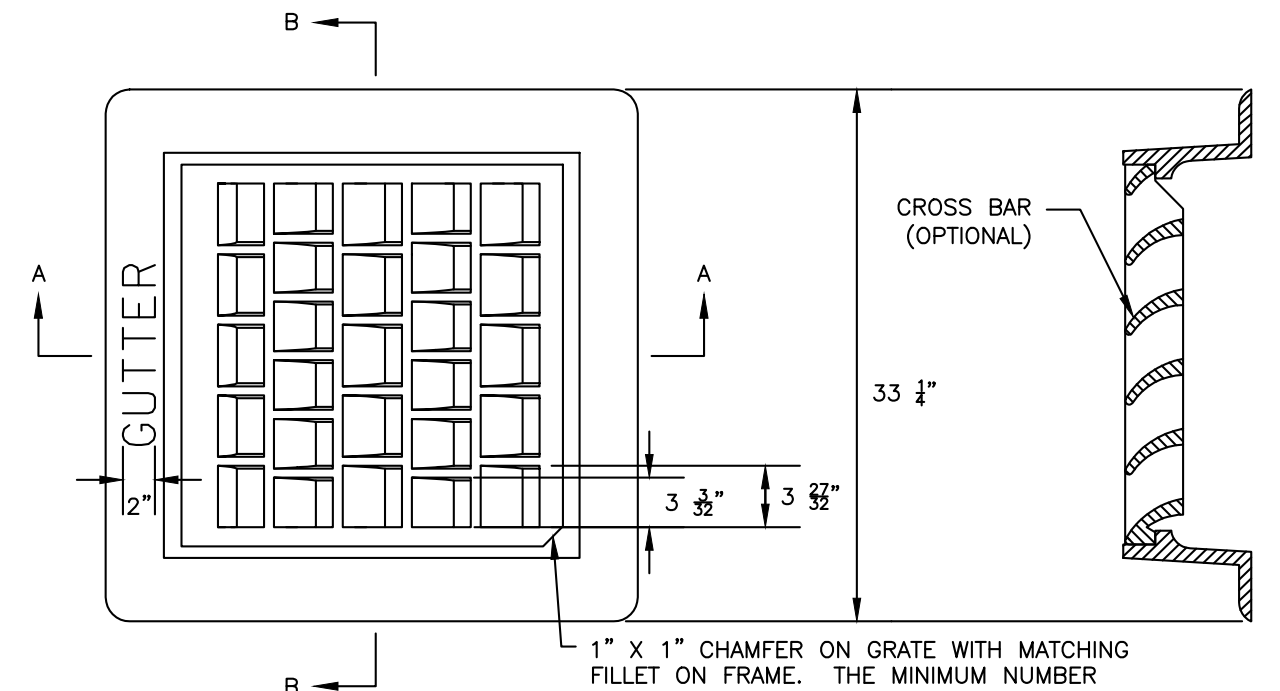


SECTION B-B

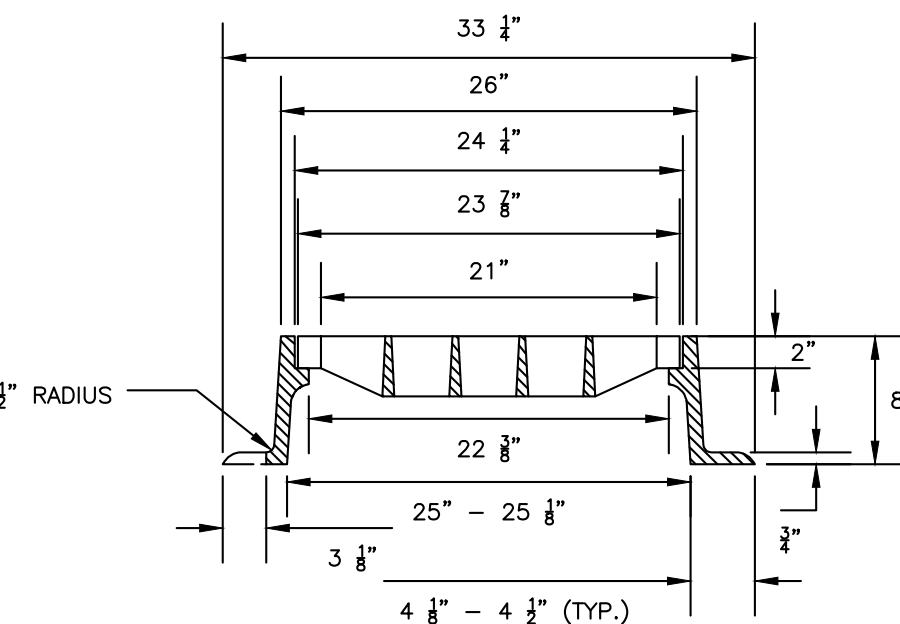


SECTION D-D

GRATE DETAIL



FRAME DETAIL

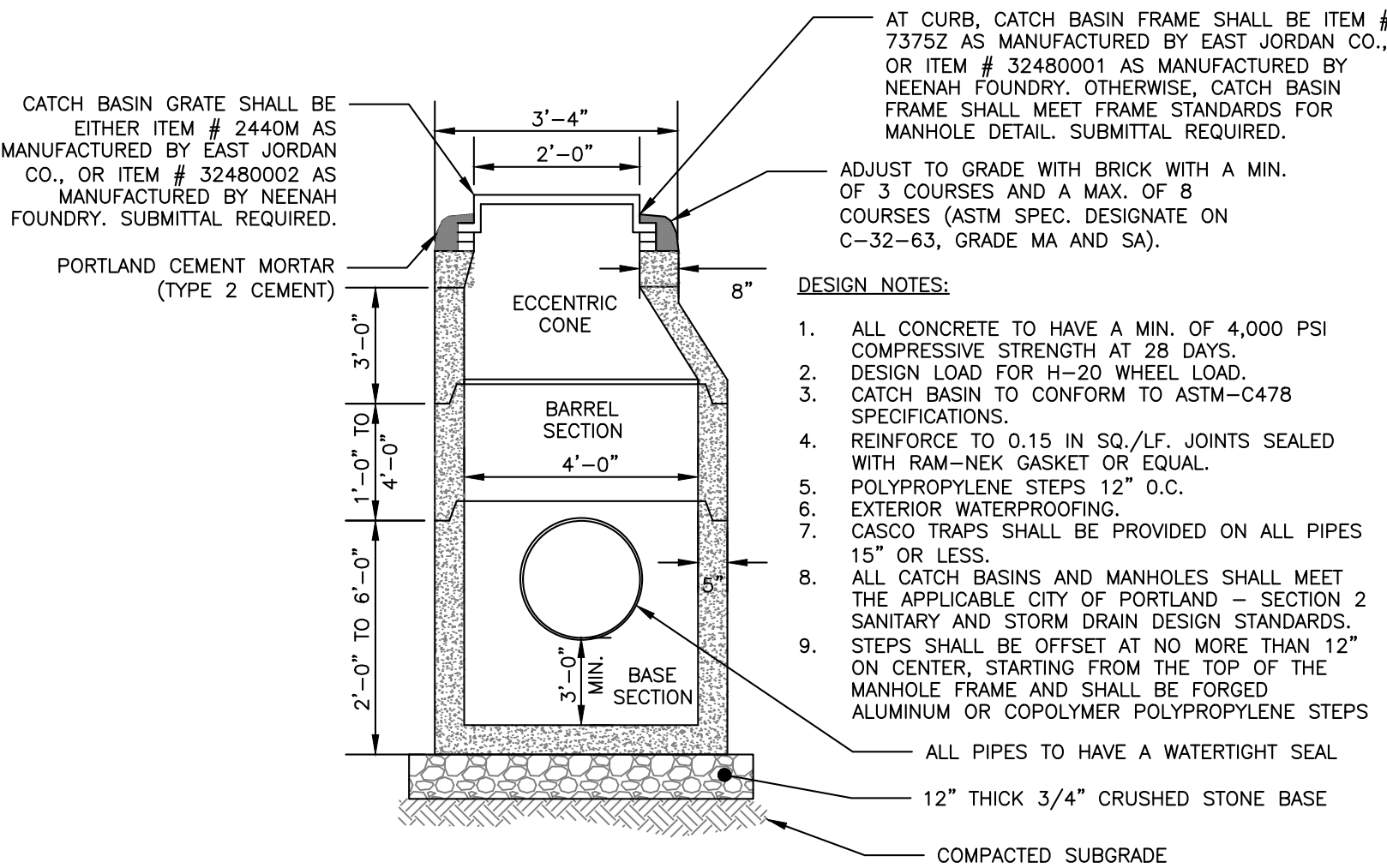


SECTION A-A

PLAN VIEW

SECTION B-B

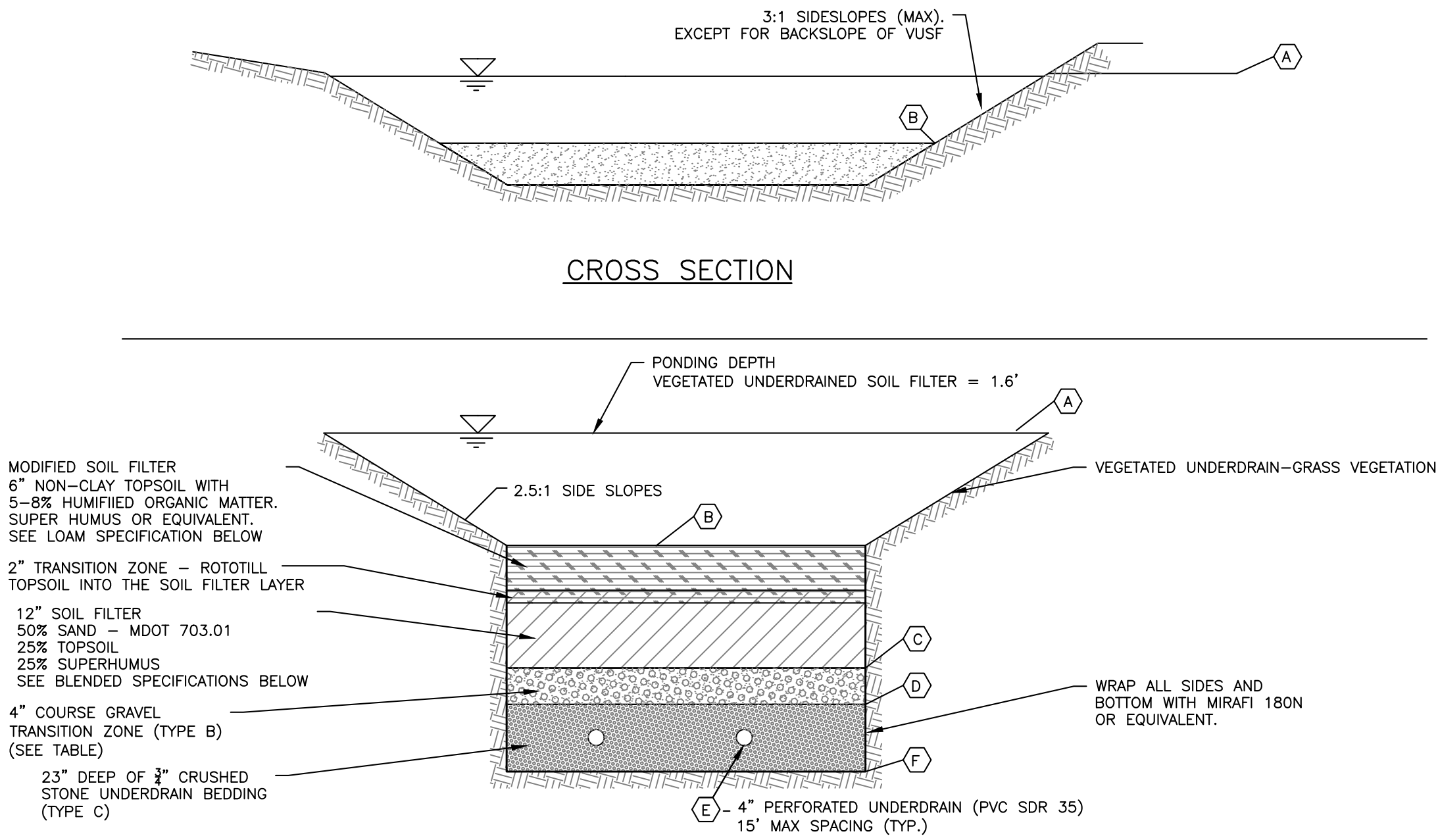
CATCH BASIN FRAME & GRATE - SQUARE
NOT TO SCALE



4'-0" DIAMETER PRECAST CATCH BASIN/MANHOLE
NOT TO SCALE

ISSUED FOR	BY
SITE PLAN APP	DATE
	1/7/22
DRAWING NAME:	
PROJECT NAME/ ADDRESS:	
CLIENT/OWNER OF RECORD:	
DOUGLASS STREET COMMONS, LLC	
10 FREE STREET, SECOND FLOOR, PORTLAND ME 04101	
ACORN ENGINEERING, INC.	
PO BOX 3372, PORTLAND MAINE 04101	
(207) 775-2655	
FILE: 1154_CIVIL	
JN: 1154	
SCALE: AS NOTED	
DESIGNED BY: SJL	
DRAWN BY: AWG	
CHECKED BY: SJL/WH	
STATE OF MAINE	
SAMUEL J. LEBEL	
16505	
LICENSED PROFESSIONAL ENGINEER	
1/1/22	
DRAWING NO.	
C-44	

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION



- NOTES:**
1. THE SIDESLOPES SHALL BE STABILIZED WITH A MIN. OF 4" LOAM, EROSION CONTROL BLANKETS SC150BN BY NORTH AMERICAN GREEN OR APPROVED EQUAL AND A CONSERVATION SEED MIX, THE BOTTOM OF THE VEGETATED UNDERDRAIN SHALL BE STABILIZED WITH EROSION CONTROL BLANKETS SC150BN BY NORTH AMERICAN GREEN OR APPROVED EQUAL AND A CONSERVATION SEED MIX
 2. LIGHT COMPACTION SOIL FILTER AND PIPE BEDDING MATERIAL. (90 TO 92% STANDARD PROCTOR), TESTING SHALL BE PERFORMED BY A QUALIFIED MATERIAL TESTING FIRM.
 3. THE SOIL FILTER MEDIA SHALL NOT BE CONSTRUCTED UNTIL THE AREA DRAINING TO THE BASIN HAS BEEN PERMANENTLY STABILIZED.
 4. THE SEDIMENT FOREBAY SHALL BE CONSTRUCTED PRIOR TO CONSTRUCTION OF THE SOIL FILTER AND INSPECTED AND MAINTAINED DURING CONSTRUCTION. MAINTENANCE SHALL INCLUDE REMOVAL OF ANY ACCUMULATED SEDIMENT.
 5. A LANDSCAPE DESIGNER OR ARCHITECT SHOULD BE INVOLVED TO TO SELECT THE APPROPRIATE PLANTS FOR THE BIORETENTION CELL AND FOR THE SITE CONDITIONS. PLANTING PLAN BY OTHERS.
 6. MINIMUM UNDERDRAIN SLOPE 0.0025 TOWARDS THE OUTLET.
 7. TESTING: SIEVE ANALYSIS INCLUDING HYDROMETER TESTING FOR CLAY CONTENT FOR EACH LAYER SHALL BE PERFORMED BY A QUALIFIED SOIL TESTING LABORATORY AND SUBMITTED TO THE PROJECT ENGINEER FOR APPROVAL 2 WEEKS PRIOR TO CONSTRUCTION. ALL TESTING AND SUBMITTALS SHALL BE IN ACCORDANCE WITH THE MAINE DEP - TECHNICAL DESIGN MANUAL SECTION 7.2.5 TESTING AND SUBMITTALS.

6" SOIL FILTER BED - LOAM TOPSOIL SPECIFICATION	
SIEVE SIZE	% PASSING BY WEIGHT
#4	75-95
#10	60-90
#40	35-85
#200	20-70
1. CLAY FRACTION <2% PASSING THE #200 SIEVE.	
2. LOAM SHALL BE LOOSE AND FRAGILE AND SHALL BE FREE FROM ADMIXTURE OF SUBSOIL, REFUSE, LARGE STONES, CLODS OR ROOTS OR RHIZOMES OR "WITCH GRASS" OR OTHER UNDESIRABLE GRASSES.	

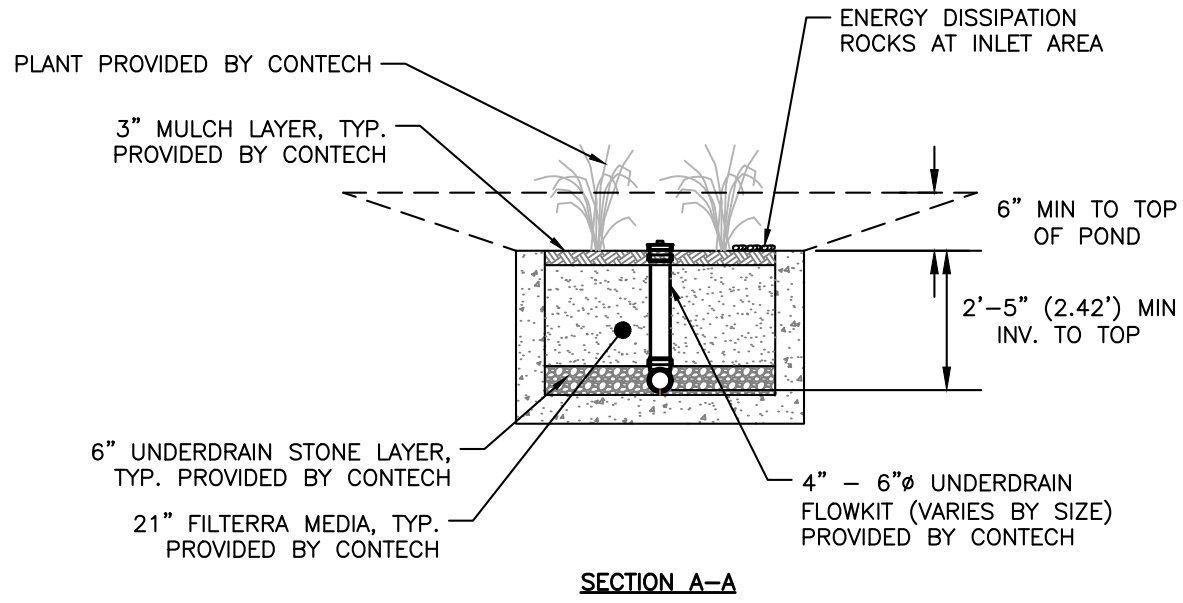
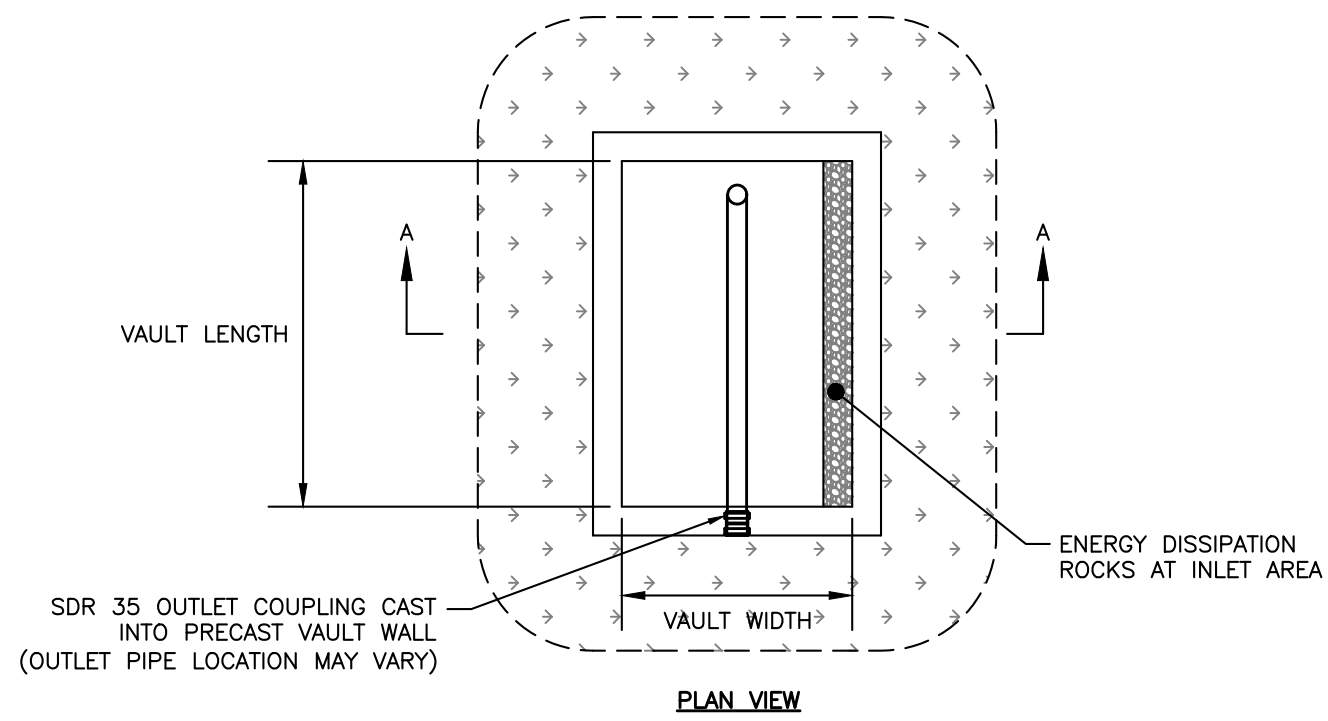
SOIL FILTER BED - SUPERHUMUS OR EQUIV. SPECIFICATION	
SIEVE SIZE	% PASSING BY WEIGHT
1"	100
#200	0-5
MINIMAL CLAY CONTENT, NO MORE THAN 3-5% PASSING #200 SIEVE.	

12" SOIL FILTER BED - BLENDED SAND, LOAM, SUPERHUMUS SIEVE ANALYSIS	
SIEVE SIZE	% PASSING BY WEIGHT
#10	85-100
#20	70-100
#60	15-40
#200	8-15
1. CLAY FRACTION <2% PASSING THE #200 SIEVE.	
2. SUPERHUMUS OR EQUIVALENT	

SCHEDULE	
ITEM	ELEV.
(A) OVERFLOW INVERT	32.35'
(B) TOP OF SOIL FILTER	30.75'
(C) TOP OF GRAVEL	29.25'
(D) TOP OF STONE	28.92'
(E) UNDERDRAIN INVERT	27.35'
(F) BOTTOM OF STONE	27.00'

SOIL FILTER BED - TRANSITION ZONE (TYPE B)	
SIEVE SIZE	% PASSING BY WEIGHT
1"	90-100
1/2"	75-100
#4	50-100
#20	15-80
#50	0-15
#200	0-5

SOIL FILTER BED - UNDERDRAIN BEDDING (TYPE C)	
SIEVE SIZE	% PASSING BY WEIGHT
1"	100
3/4"	90-100
3/8"	0-75
#4	0-25
#10	0-5



FILTERRA BIOSCAPE VAULT OFFLINE - BASIN
NOT TO SCALE

FILTERRA VAULT DATA TABLE				
UNIT #	SIZE	RIM ELEV.	BED ELEV.	INV. OUT
FT-1	4'X5'	36.70	35.70	30.90
FT-2	5'X5'	36.90	35.90	31.40
FT-3	5'X5'	37.10	36.10	31.90
FT-4	4'X5'	36.95	35.95	32.35

VEGETATED UNDERDRAINED SOIL FILTER DETAIL
NOT TO SCALE

PERMIT LEVEL
NOT ISSUED FOR
CONSTRUCTION

ISSUED FOR
SITE PLAN APP

BY
DATE
SUL
1/11/22

DRAINAGE DETAILS - 2

DOUGLASS STREET COMMONS

DOUGLASS COMMONS, LLC
10 FREE STREET, SECOND FLOOR, PORTLAND ME 04101

DRAWING NAME:
PROJECT NAME/
ADDRESS:
CLIENT/OWNER OF RECORD:

ACORN ENGINEERING, INC.
PO BOX 3372, PORTLAND, MAINE 04101
(207) 775-2655

THE PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. ANY ALTERATIONS, AUTHORIZED OR UNAUTHORIZED, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

FILE: 1154_CIVIL

JN: 1154

SCALE: AS NOTED

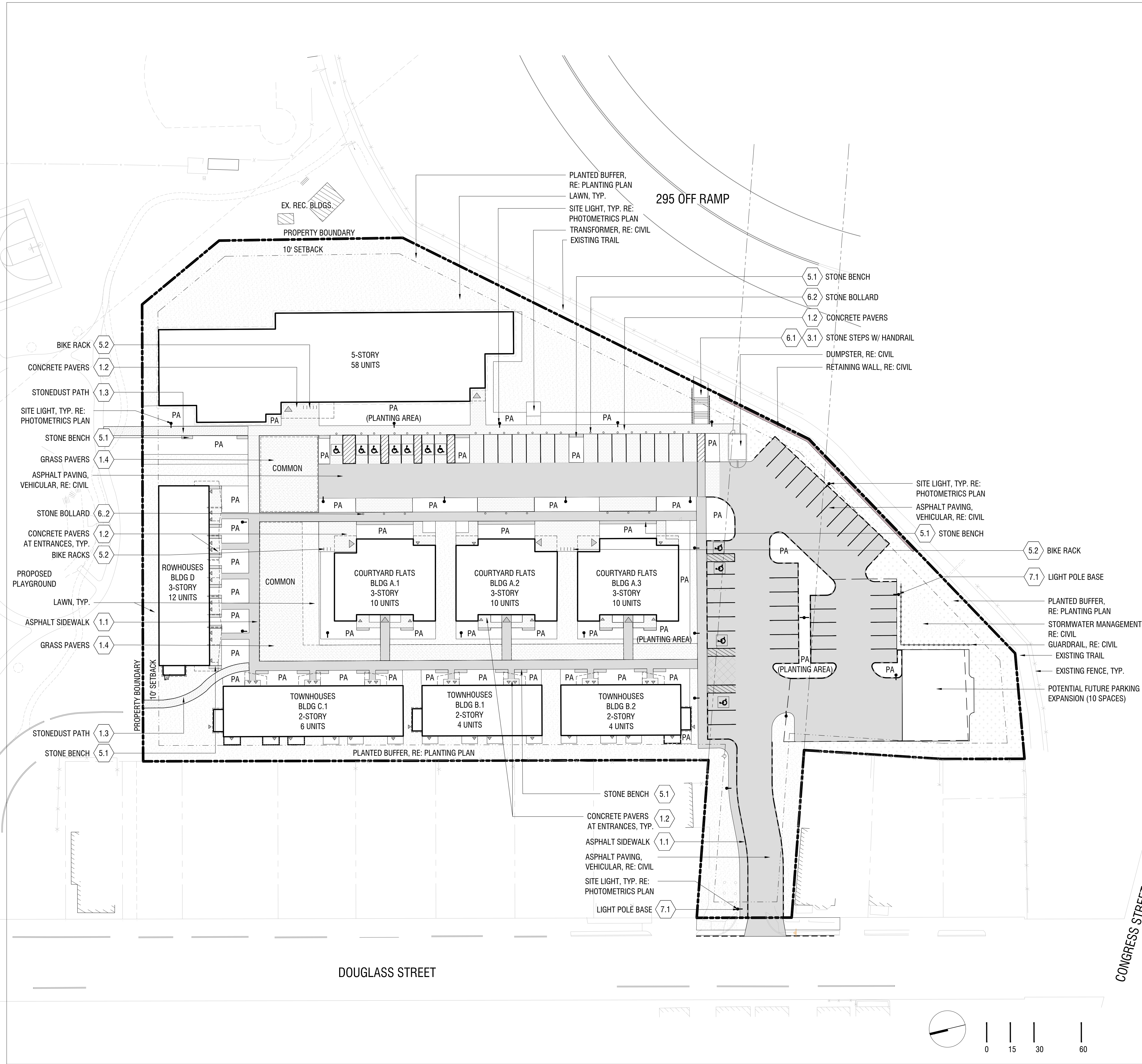
DESIGNED BY: SUL

DRAWN BY: AWG

CHECKED BY: SUL/WH5

STATE OF MAINE
SAMUEL J. LEBEL
16505
Professional Engineer
1/11/22

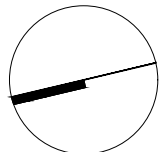
DRAWING NO.
C-45



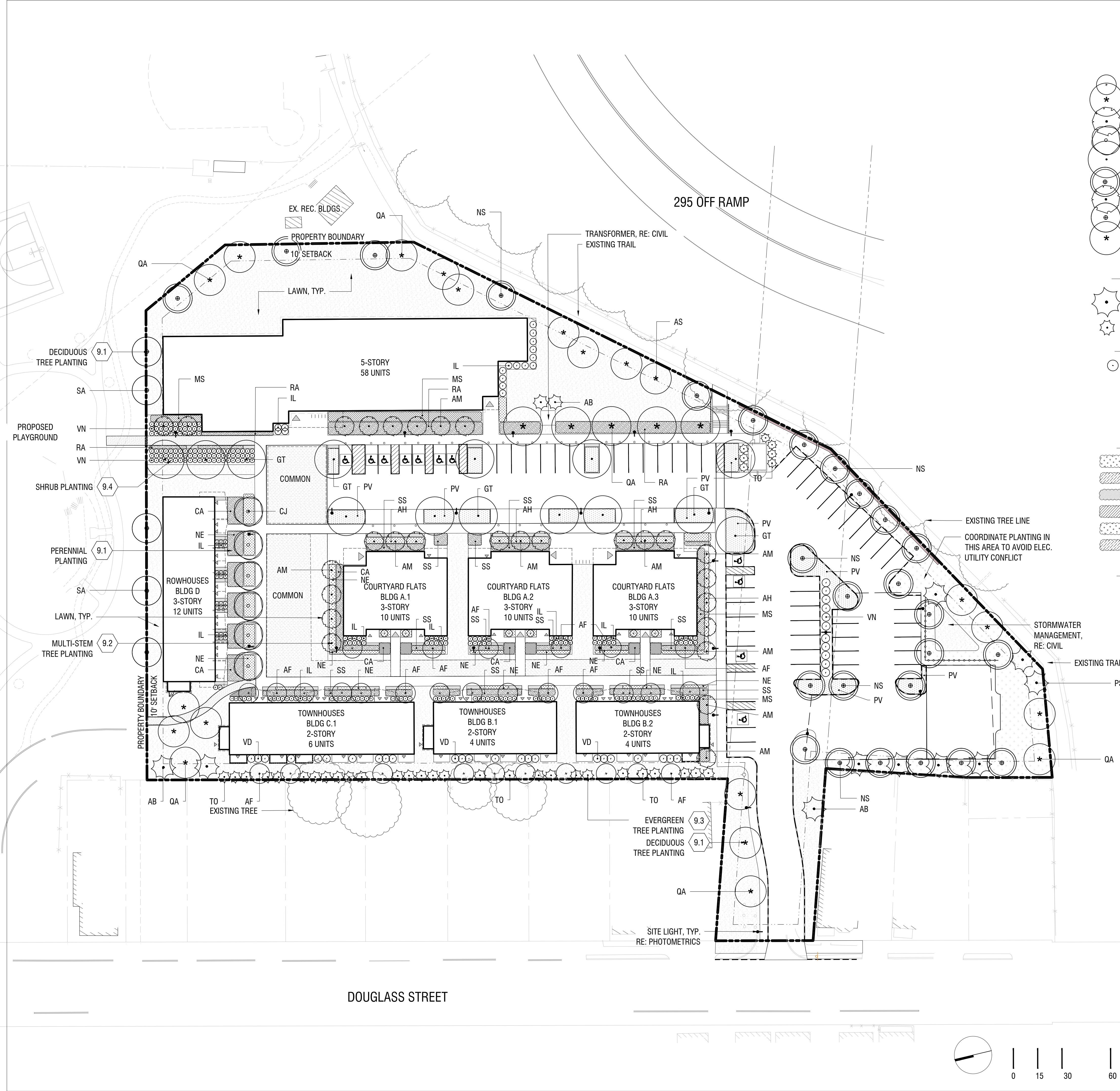
SITE KEYNOTES:

1.0	PAVEMENTS, RAMPS, CURBS	DETAIL / SHEET
1.1	ASPHALT PAVING - PEDESTRIAN	1/L3-00
1.2	CONCRETE PAVER	2/L3-00
1.3	STONEDUST PATH	3/L3-00
1.4	GRASS PAVERS	5/L3-01
2.0	JOINTING	
XX	NOT USED AT THIS TIME	X/XX-XX
3.0	STEPS	
3.1	STONE STEPS	6/L3-00
4.0	SITE WALLS/ EMBANKMENTS	
XX	NOT USED AT THIS TIME	X/XX-XX
5.0	SITE FURNITURE	
5.1	STONE BENCH	3/L3-01
5.2	BIKE RACK	1/L3-01
6.0	RAILINGS, BARRIERS, FENCING	
6.1	HANDRAIL	5/L3-00
6.2	STONE BOLLARD	4/L3-01

7.0	SITE LIGHTING	DETAIL / SHEET
7.1	LIGHT POLE BASE	2/L3-01
8.0	DRAINAGE	
XX	NOT USED AT THIS TIME	X/XX-XX
9.0	PLANTING AND LANDSCAPE	
9.1	DECIDUOUS TREE PLANTING	1/L3-02
9.2	MULTI-STEM TREE PLANTING	2/L3-02
9.3	EVERGREEN TREE PLANTING	3/L3-02
9.4	SHRUBS PLANTING	4/L3-02
9.5	PERENNIAL PLANTING	5/L3-02
9.6	TREE PROTECTION	6/L3-02
9.7	METAL EDGING	4/L3-00
10.0	MISCELLANEOUS ELEMENTS	



0 15 30 60



PLANT LIST

SYMB.	BOTANICAL NAME	COMMON NAME	QTY.	SIZE	SPACING
TREES					
AF	ACER X FREEMANII 'ARMSTRONG'	UPRIGHT ARMSTRONG MAPLE	TBD	2.5" CAL. MIN.	PER PLAN
AS	ACER SACCHARUM	SUGAR MAPLE	TBD	2.5" CAL. MIN.	PER PLAN
AM	AMELANCHIER CANADENSIS	SERVICEBERRY (MULTI-STEM)	TBD	2.5" CAL. MIN.	PER PLAN
CJ	CERCIDIPHYLLUM JAPONICUM	KATSURA	TBD	2.5" CAL. MIN.	PER PLAN
GT	GLEDTISIA TRIACANTHOS X INERMIS	HONEY LOCUST	TBD	2.5" CAL. MIN.	PER PLAN
NS	NYSSA SYLVATICA	BLACK TUPELO	TBD	2.5" CAL. MIN.	PER PLAN
PS	PRUNUS ARGENTEA 'PINK FLAIR'	FLOWERING CHERRY	TBD	2.5" CAL. MIN.	PER PLAN
SA	SORBUS ALNIFOLIA	MOUNTAIN ASH	TBD	2.5" CAL. MIN.	PER PLAN
QA	QUERCUS ALBA	WHITE OAK	TBD	2.5" CAL. MIN.	PER PLAN

TREES - EVERGREEN

AB	ABIES FRASERI	FRASER FIR	TBD	7-8"	PER PLAN
PS	PINUS STROBUS	WHITE PINE	TBD	7-8"	PER PLAN
PO	PICEA OMORICA	SERBIAN SPRUCE	TBD	7-8"	PER PLAN
TO	THUJA OCCIDENTALIS 'TECHNY'	ARBORVITAE	TBD	6-7"	PER PLAN

SHRUBS

HP	HYDRANGEA PANICULATA 'QUICK FIRE'	QUICK FIRE HYDRANGEA	TBD	#5	PER PLAN
IL	ILLEX GLABRA 'SHAMROCK'	INKBERRY	TBD	#5	PER PLAN
JH	JUNIPERUS HORIZONTALIS 'BAR HARBOR'	CREeping JUNIPER	TBD	#3	PER PLAN
RA	RHUS AROMATICA	LOW-GRO SUMAC	TBD	#1	PER PLAN
VD	VIBURNUM DENTATUM 'CHICAGO LUSTRE'	ARROWWOOD VIBURNUM	TBD	#5	PER PLAN
VN	VIBURNUM NUDUM 'WINTERTHUR'	SMOOTH VIBURNUM	TBD	#5	PER PLAN

PERENNIALS AND ORNAMENTAL GRASSES

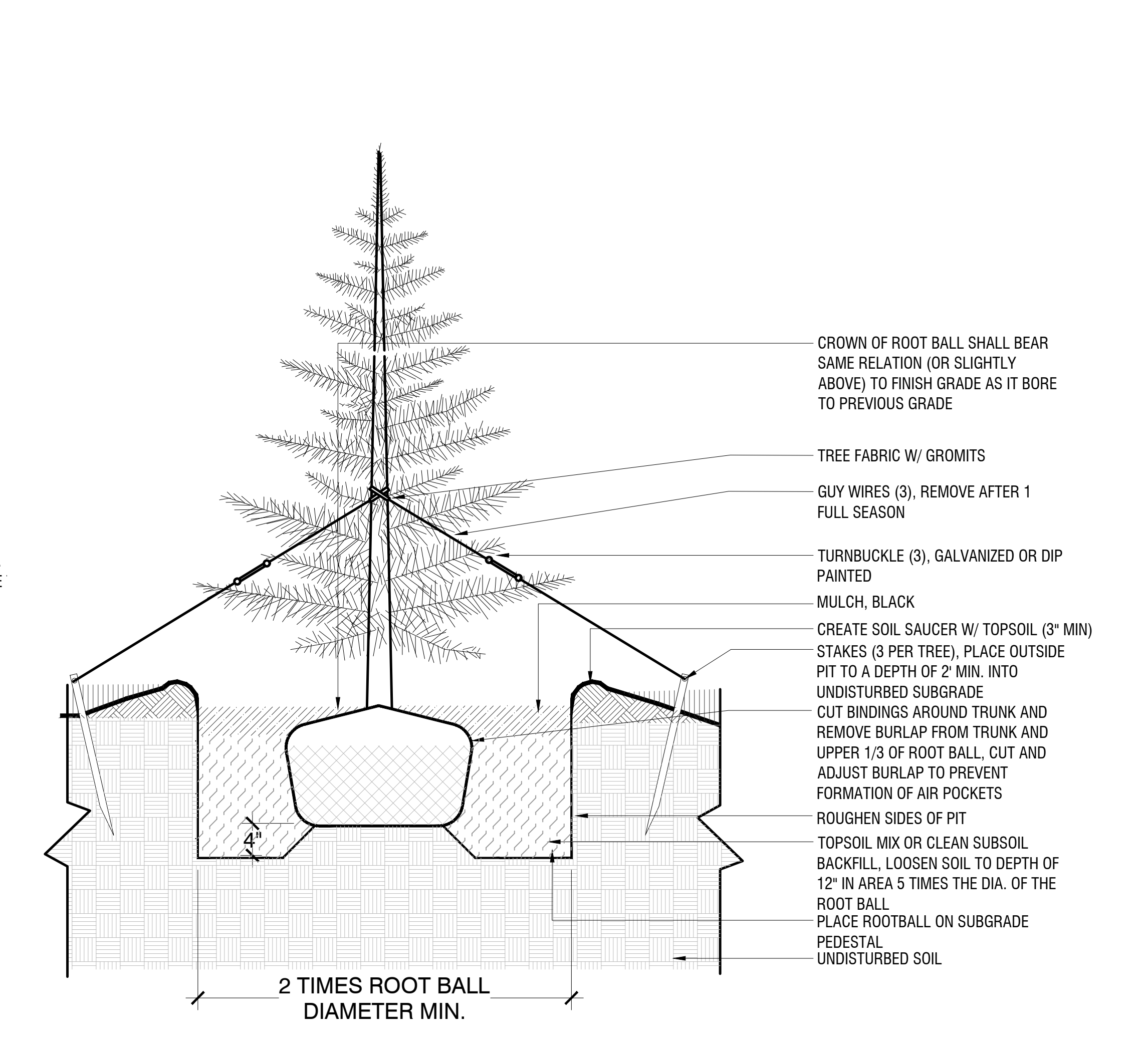
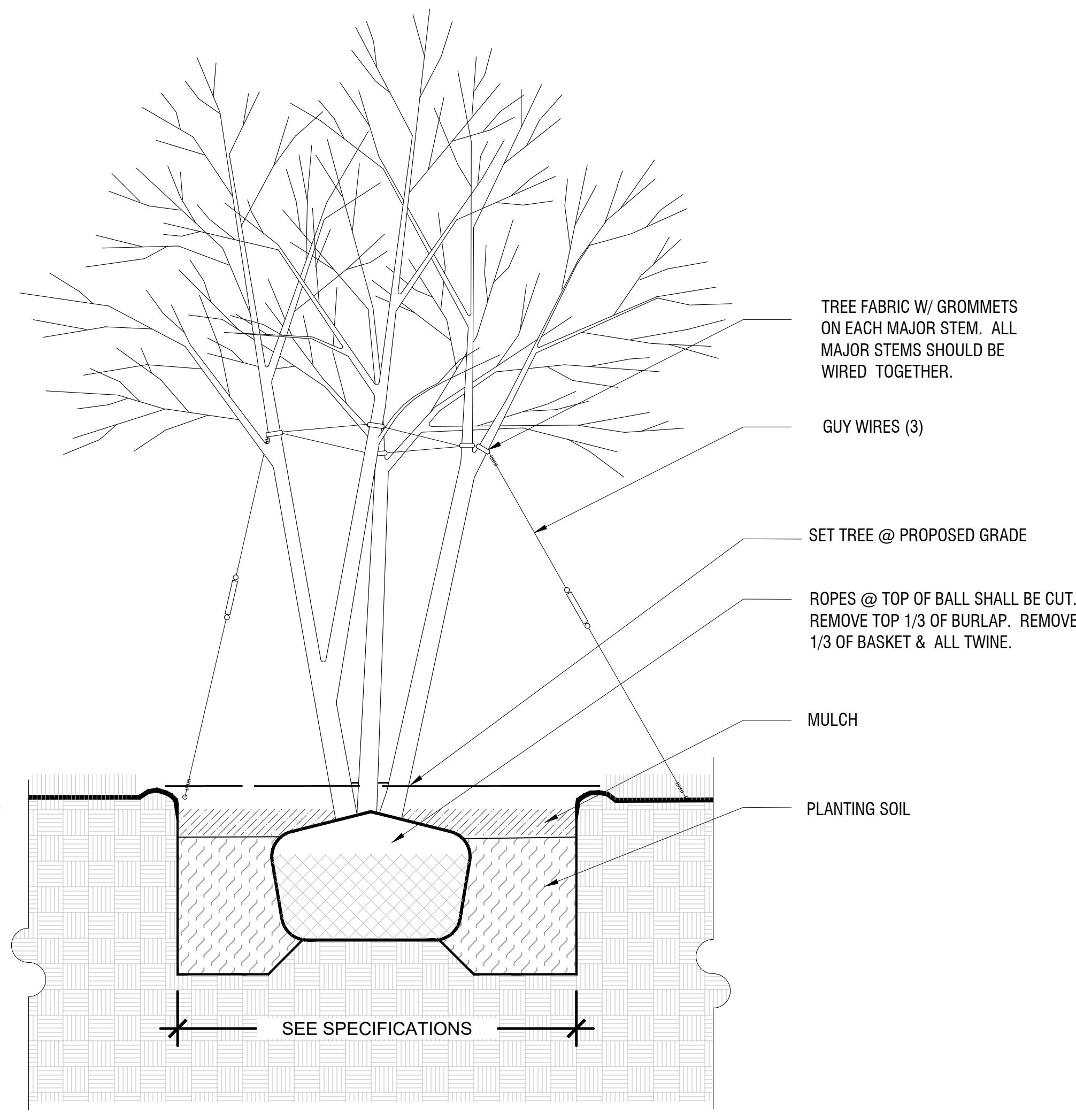
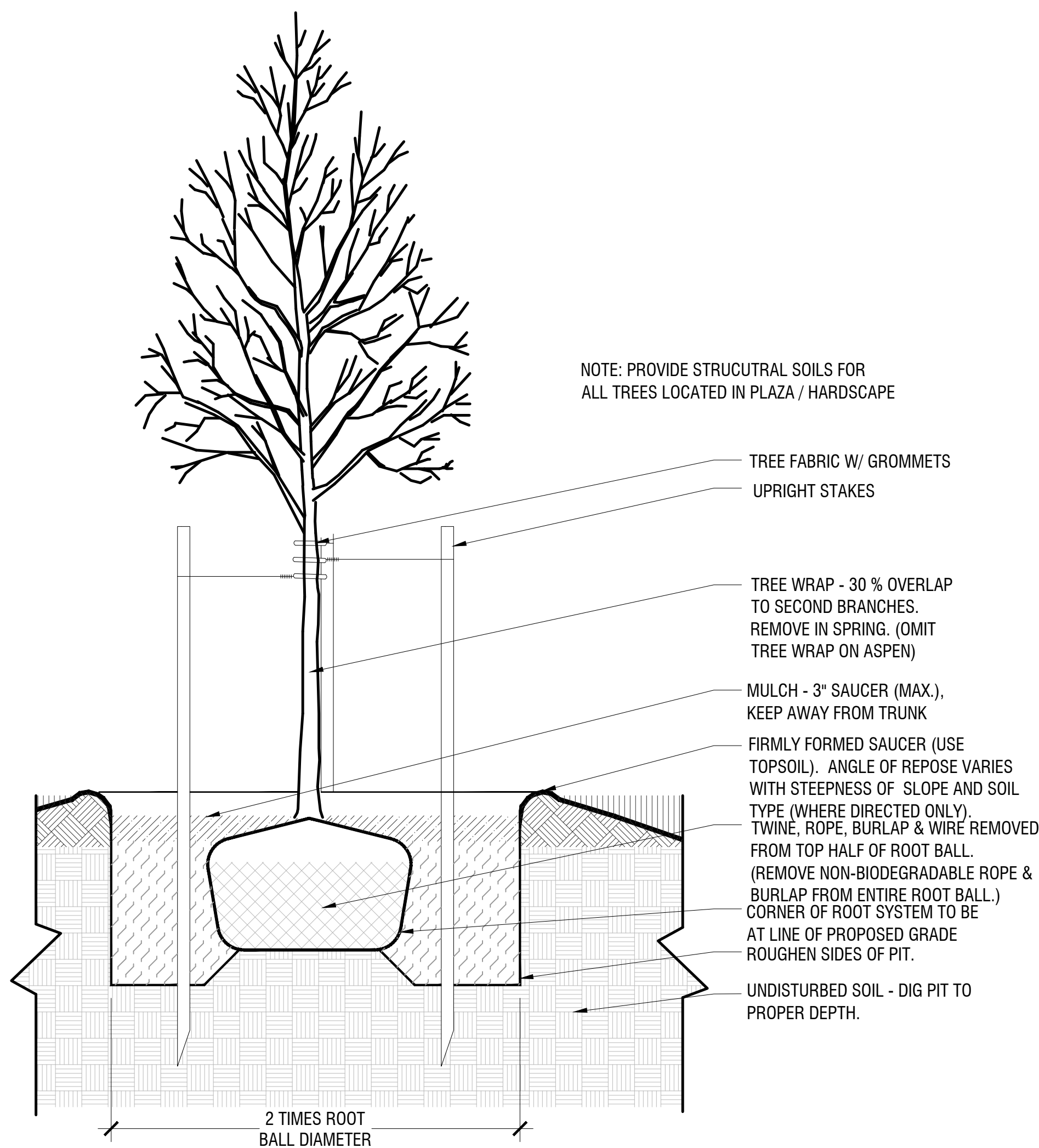
AH	AMSONIA HUBRICHTII	BLUE STAR	TBD	#1	PER PLAN
CA	CALAMAGROSTIS ACUTIFLORA 'KARL FOERSTER'	FEATHER REED GRASS	TBD	#1	PER PLAN
PV	PANICUM VIRGATUM 'ROTSTRAHLBUSCH'	SWITCH GRASS	TBD	#1	PER PLAN
MS	MISCANTHUS SINENSIS 'MY FAIR MAIDEN'	MAIDEN GRASS	TBD	#1	PER PLAN
NE	NEPETA 'WALKER'S LOW'	CATMINT	TBD	#1	PER PLAN
SS	SCHIZACHYRIUM SCOPARIUM 'PRAIRIE BLUES'	LITTLEBLUE STEM	TBD	#1	PER PLAN

SEEDING

RESTORATION MIX NEW ENGLAND CONSERVATION/WILDLIFE MIX MFR: NEW ENGLAND WETLAND PLANTS TOTAL AREA: TBD APPLICATION RATE 25LBS/ACRE 1750 SQ FT/LB (SEEDING RATE MAY VARY DEPENDING ON TIME OF YEAR, SEE SPEC. SHEET FOR INSTRUCTIONS)	LAWN WILDFLOWER FARM'S ECO-LAWN GRASS SEED TOTAL AREA: TBD ECO-LAWN IS A DROUGHT-RESISTANT GRASS THAT REQUIRES MOWING ONLY ONCE PER MONTH. EACH 5 POUND BAG OF SEED COVERS 1,000 SQUARE FEET. A THICK HEALTHY LAWN IS THE BEST DEFENCE AGAINST WEEDS, DISEASE, DROUGHT AND INSECT DAMAGE.
--	--

SITE KEYNOTES:

1.0	PAVEMENTS, RAMPS, CURBS	DETAIL / SHEET	7.0	SITE LIGHTING	DETAIL / SHEET
1.1	ASPHALT PAVING - PEDESTRIAN	1/L3-00	7.1	LIGHT POLE BASE	2/L3-01
1.2	CONCRETE PAVER	2/L3-00	8.0	DRAINAGE	X/XX-XX
1.3	STONEDUST PATH	3/L3-00			
1.4	GRASS PAVERS	5/L3-01			
2.0	JOINTING				
X.X	NOT USED AT THIS TIME	X/XX-XX	9.0	PLANTING AND LANDSCAPE	
3.0	STEPS		9.1	DECIDUOUS TREE PLANTING	1/L3-02
3.1	STONE STEPS	6/L3-00	9.2	MULTI-STEM TREE PLANTING	2/L3-02
4.0	SITE WALLS/ EMBANKMENTS		9.3	EVERGREEN TREE PLANTING	3/L3-02
X.X	NOT USED AT THIS TIME	X/XX-XX	9.4	SHRUBS PLANTING	4/L3-02
5.0	SITE FURNITURE		9.5	PERENNIAL PLANTING	5/L3-02
5.1	STONE BENCH	3/L3-01	9.6	TREE PROTECTION	6/L3-02
5.2	BIKE RACK	1/L3-01	9.7	METAL EDGING	4/L3-00
6.0	RAILINGS, BARRIERS, FENCING		10.0	MISCELLANEOUS ELEMENTS	
6.1	HANDRAIL	5/L3-00			
6.2	STONE BOLLARD	4/L3-01			



1 DECIDUOUS TREE PLANTING
N.T.S.

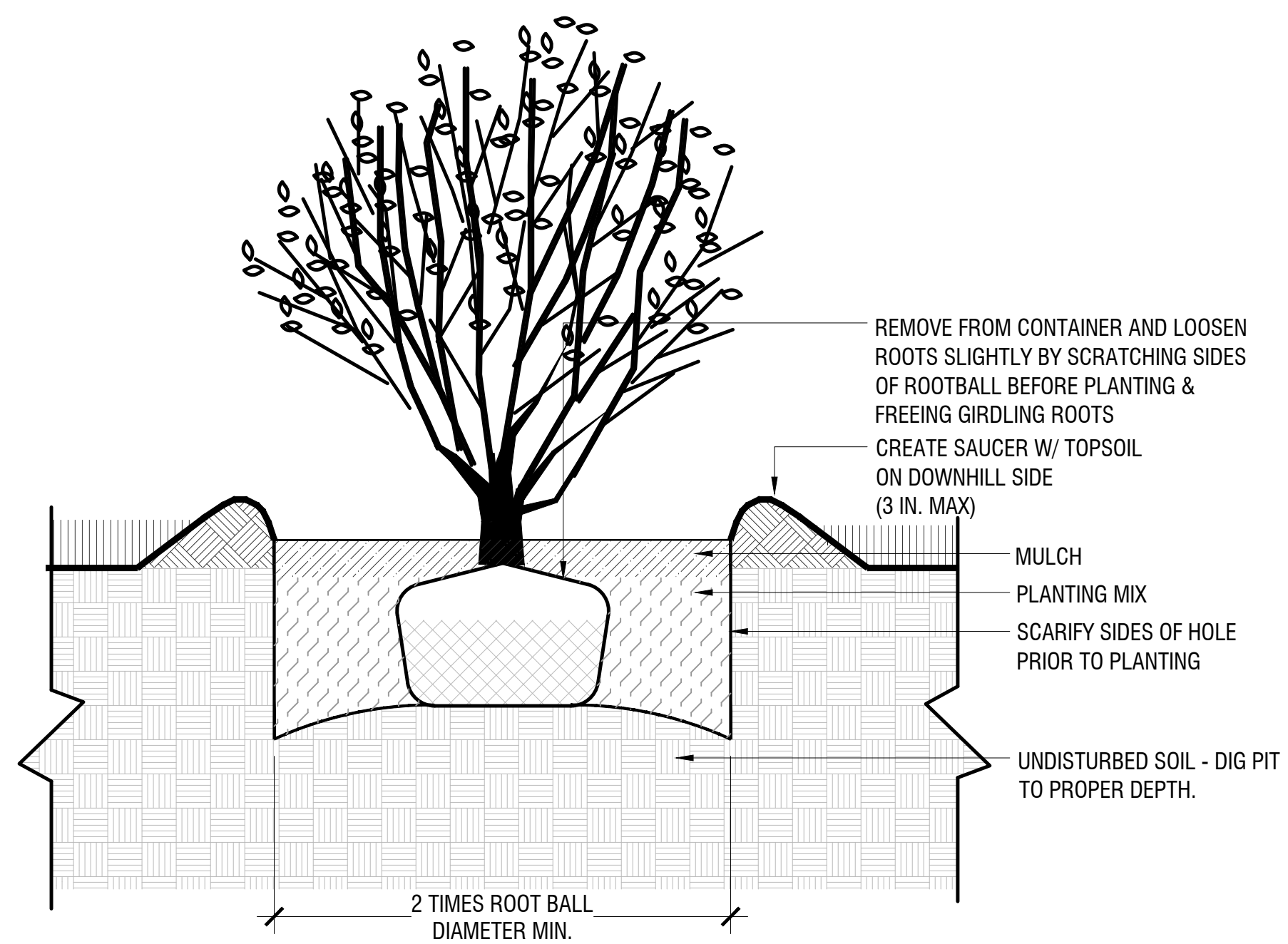
9.1

2 MULTI-STEM TREE PLANTING
N.T.S.

9.2

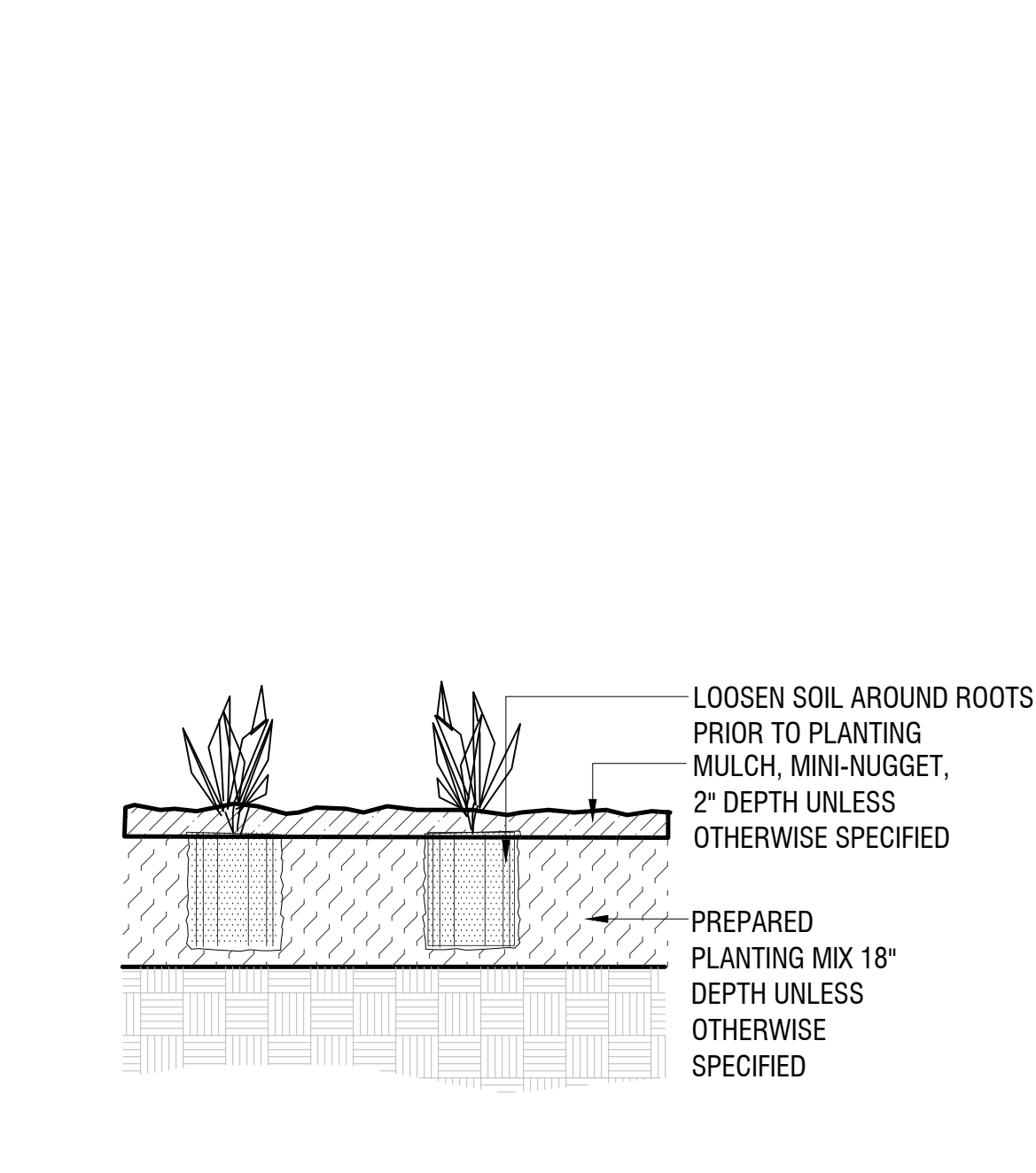
3 EVERGREEN TREE PLANTING
N.T.S.

9.3



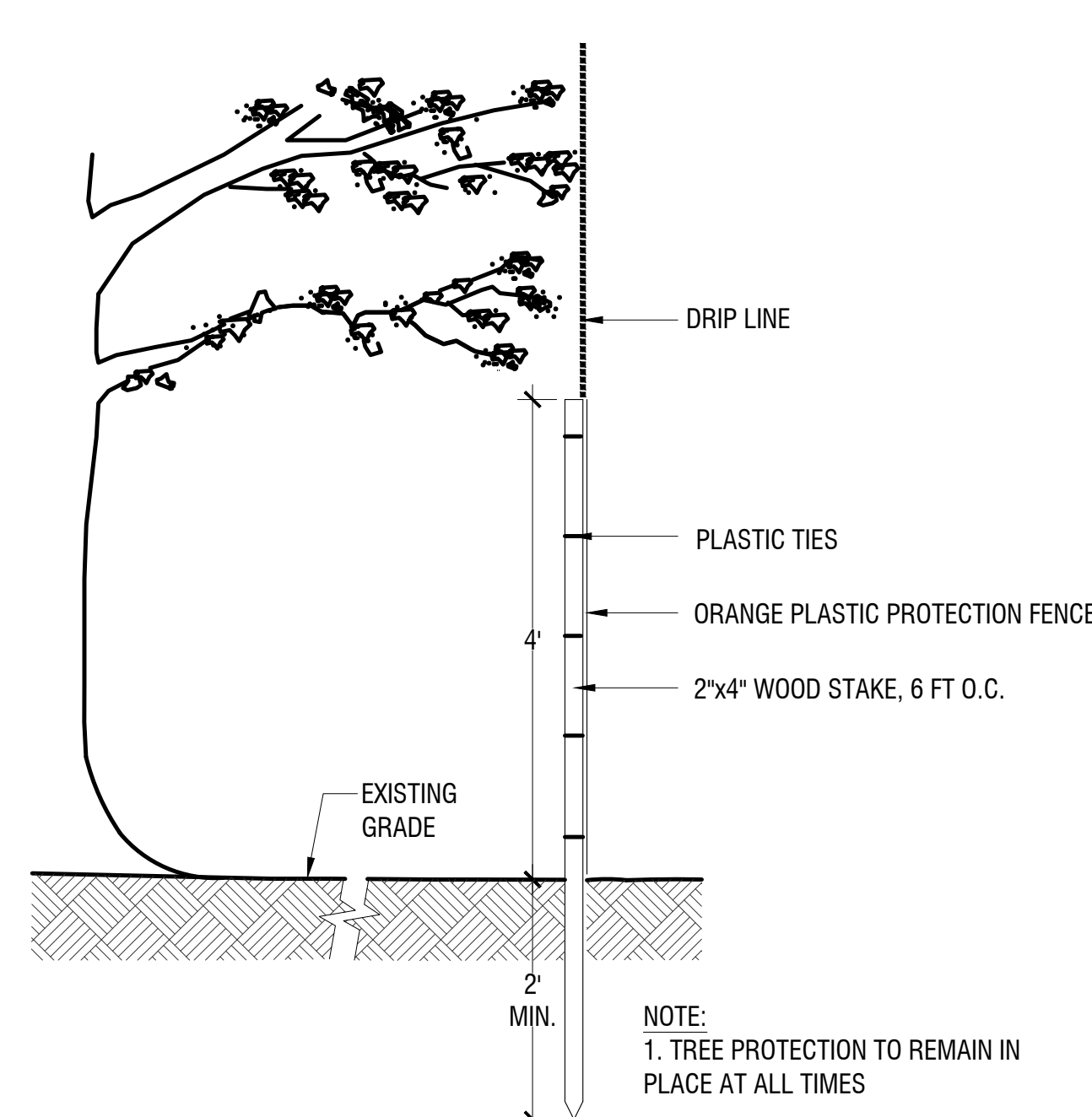
4 SHRUB PLANTING
1"=1'-0"

9.4



5 PERENNIAL PLANTING
1"=1'-0"

9.5



6 TREE PROTECTION
1"=1'-0"

9.6

SITE KEYNOTES:

1.0	PAVEMENTS, RAMPS, CURBS	DETAIL / SHEET
1.1	ASPHALT PAVING - PEDESTRIAN	1/L3-00
1.2	CONCRETE PAVEMENT	2/L3-00
1.3	STONEDUST PATH	3/L3-00
1.4	GRASS PAVERS	5/L3-01
2.0	JOINTING	
XX	NOT USED AT THIS TIME	X/XX-XX
3.0	STEPS	
3.1	STONE STEPS	6/L3-00
4.0	SITE WALLS/ EMBANKMENTS	
XX	NOT USED AT THIS TIME	X/XX-XX
5.0	SITE FURNITURE	
5.1	STONE BENCH	3/L3-01
5.2	BIKE RACK	1/L3-01
6.0	RAILINGS, BARRIERS, FENCING	
6.1	HANDRAIL	5/L3-00
6.2	STONE BOLLARD	4/L3-01

7.0	SITE LIGHTING	DETAIL / SHEET
7.1	LIGHT POLE BASE	2/L3-01
8.0	DRAINAGE	
XX	NOT USED AT THIS TIME	X/XX-XX
9.0	PLANTING AND LANDSCAPE	
9.1	DECIDUOUS TREE PLANTING	1/L3-02
9.2	MULTI-STEM TREE PLANTING	2/L3-02
9.3	EVERGREEN TREE PLANTING	3/L3-02
9.4	SHRUBS PLANTING	4/L3-02
9.5	PERENNIAL PLANTING	5/L3-02
9.6	TREE PROTECTION	6/L3-02
9.7	METAL EDGING	4/L3-00
10.0	MISCELLANEOUS ELEMENTS	

1.0	PAVEMENTS, RAMPS, CURBS	DETAIL / SHEET
1.1	ASPHALT PAVING - PEDESTRIAN	1/3-00
1.2	CONCRETE PAVR	2/3-00
1.3	STONE/STUD PATH	3/3-00
1.4	GRASS PAVERS	5/3-01
2.0	JOINTING	
XX	NOT USED AT THIS TIME	X/XX-XX
3.0	STEPS	
3.1	STONE STEPS	6/3-00
4.0	SITE WALLS / EMBANKMENTS	
XX	NOT USED AT THIS TIME	X/XX-XX
5.0	SITE FURNITURE	
5.1	STONE BENCH	3/3-01
5.2	BIKE RACK	1/3-01
6.0	RAILINGS, BARRIERS, FENCING	
6.1	HANDRAIL	5/3-00
6.2	STONE BOLLARD	4/3-01

8.0	DRAINAGE	
	X.X NOT USED AT THIS TIME	X/XX-XX

9.3	EVERGREEN TREE PLANTING	3/L3-02
9.4	SHRUBS PLANTING	4/L3-02
9.5	PERENNIAL PLANTING	5/L3-02
9.6	TREE PROTECTION	6/L3-02
9.7	METAL EDGING	4/L3-00



SUBJECT TITLE

DOUGLAS COMMONS
PORTLAND, ME

PREPARED FOR

ANTON COMPANY
D
NE COMMUNITY
VELOPMENT
RTNERS

[illegible]

E DATE

PLAN REVIEW
JANUARY 7, 2022

ET TITLE

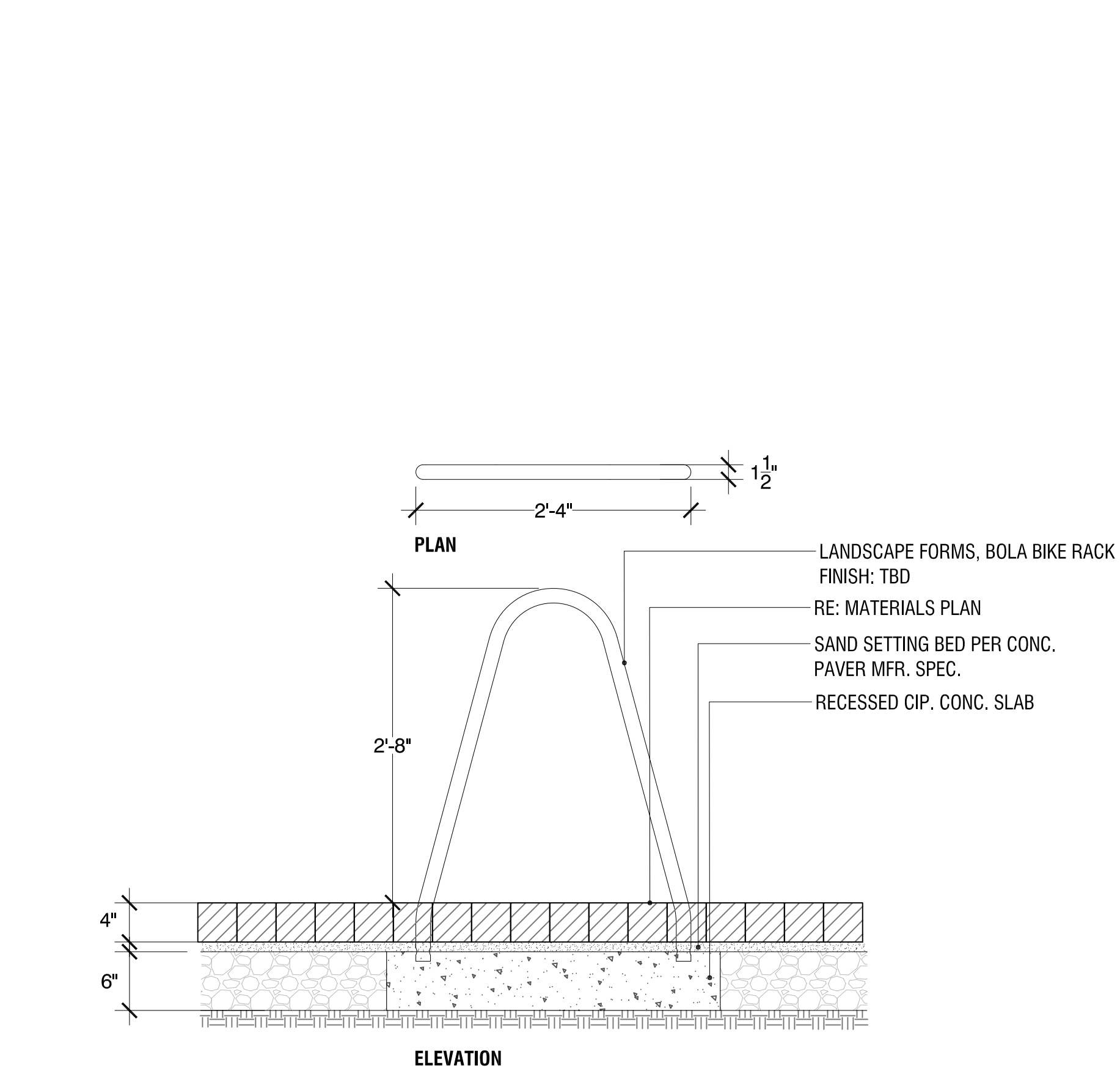
THE DETAILS

ET INFORMATION

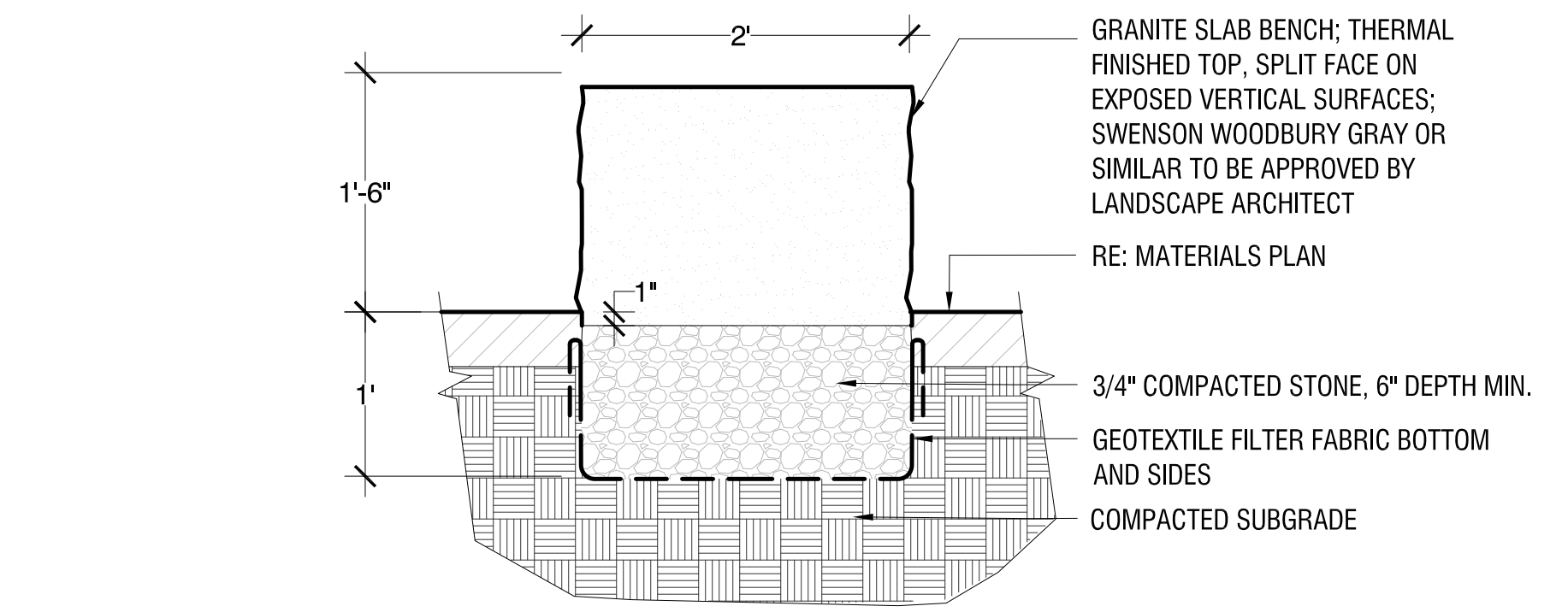
3-00

SITE KEYNOTES:

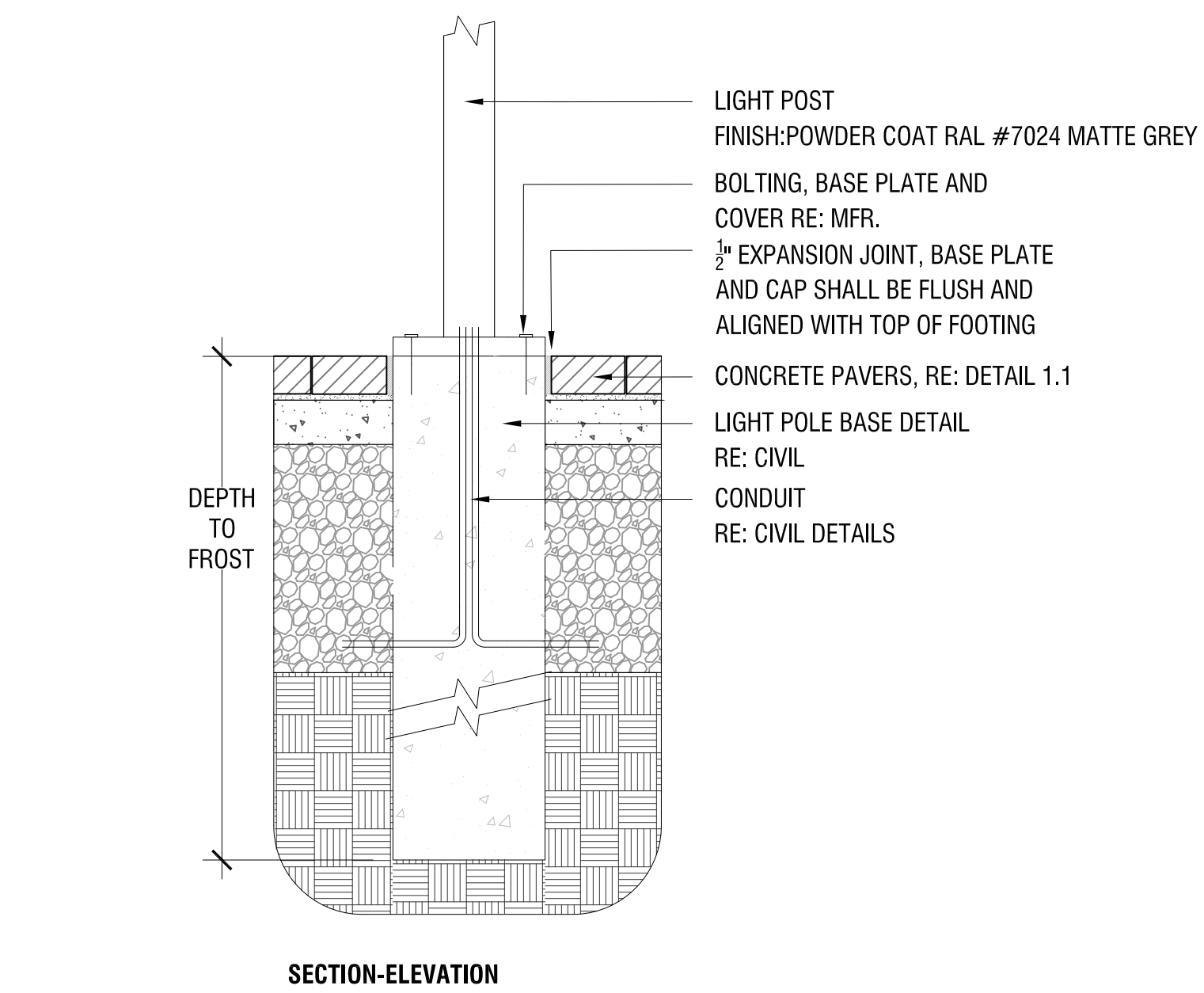
1.0	PAVEMENTS, RAMPS, CURBS	DETAIL / SHEET	7.0	SITE LIGHTING	DETAIL / SHEET
1.1	ASPHALT PAVING - PEDESTRIAN	1/L3-00	7.1	LIGHT POLE BASE	2/L3-01
1.2	CONCRETE PAVER	2/L3-00			
1.3	STONEDUST PATH	3/L3-00			
1.4	GRASS PAVERS	5/L3-01			
2.0	JOINTING		8.0	DRAINAGE	
X.X	NOT USED AT THIS TIME	X/XX-XX	X.X	NOT USED AT THIS TIME	X/XX-XX
3.0	STEPS		9.0	PLANTING AND LANDSCAPE	
3.1	STONE STEPS	6/L3-00	9.1	DECIDUOUS TREE PLANTING	1/L3-02
			9.2	MULTI-STEM TREE PLANTING	2/L3-02
			9.3	EVERGREEN TREE PLANTING	3/L3-02
			9.4	SHRUBS PLANTING	4/L3-02
			9.5	PERENNIAL PLANTING	5/L3-02
			9.6	TREE PROTECTION	6/L3-02
			9.7	METAL EDGING	4/L3-00
4.0	SITE WALLS/ EMBANKMENTS		10.0	MISCELLANEOUS ELEMENTS	
X.X	NOT USED AT THIS TIME	X/XX-XX			
5.0	SITE FURNITURE				
5.1	STONE BENCH	3/L3-01			
5.2	BIKE RACK	1/L3-01			
6.0	RAILINGS, BARRIERS, FENCING				
6.1	HANDRAIL	5/L3-00			
6.2	STONE BOLLARD	4/L3-01			



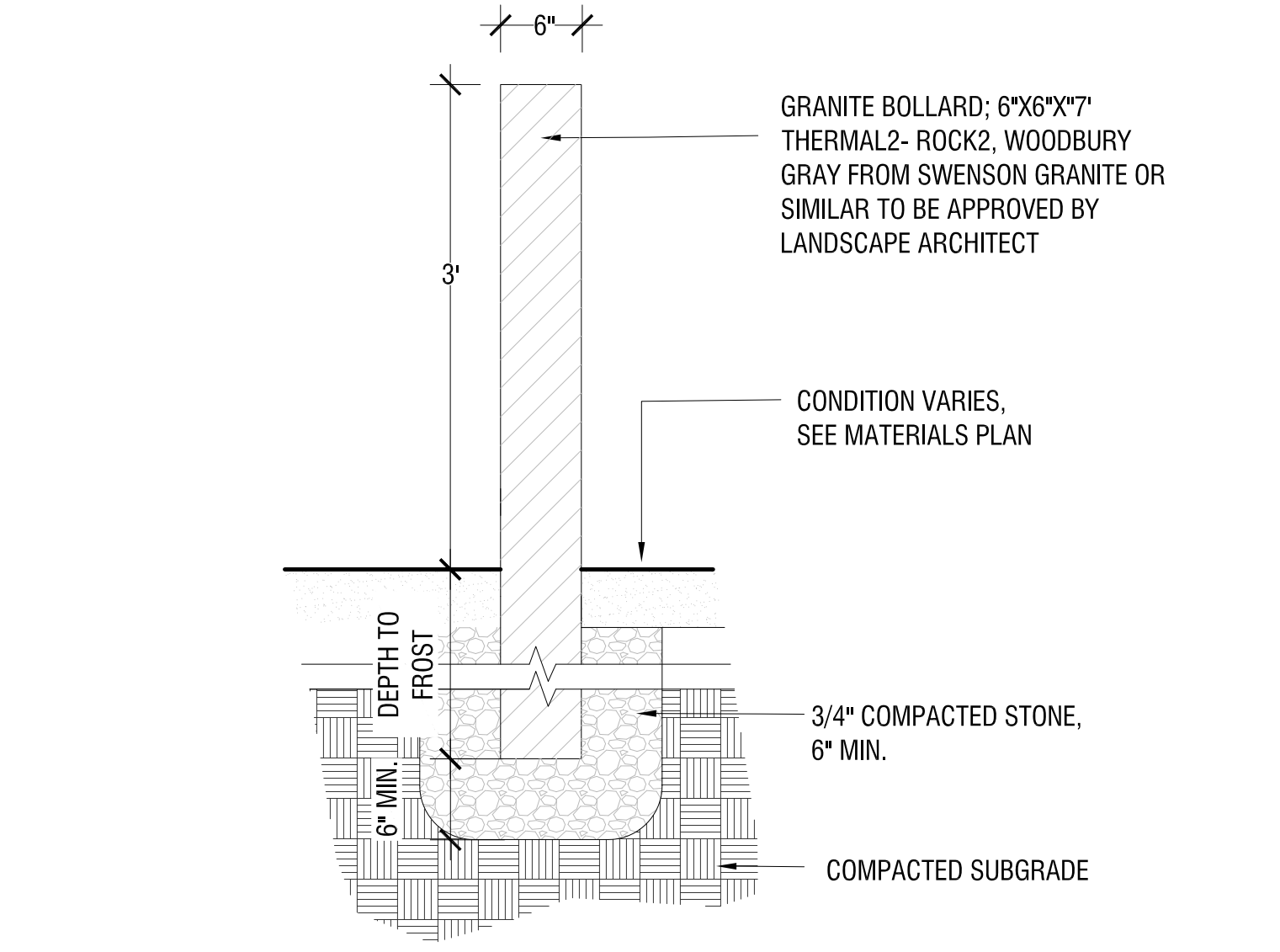
1 BIKE RACK
N.T.S.



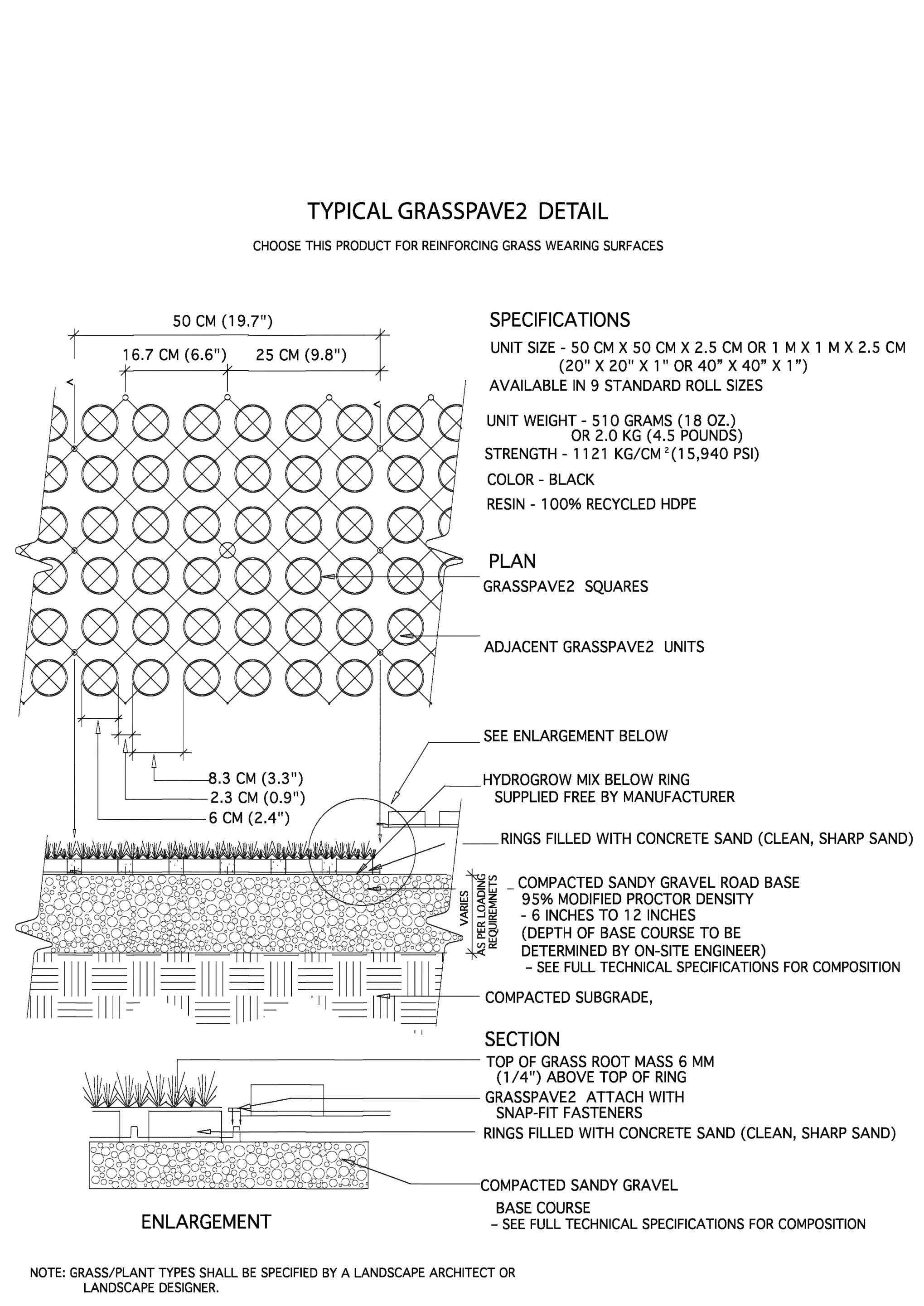
3 STONE BENCH
1":1'-0"



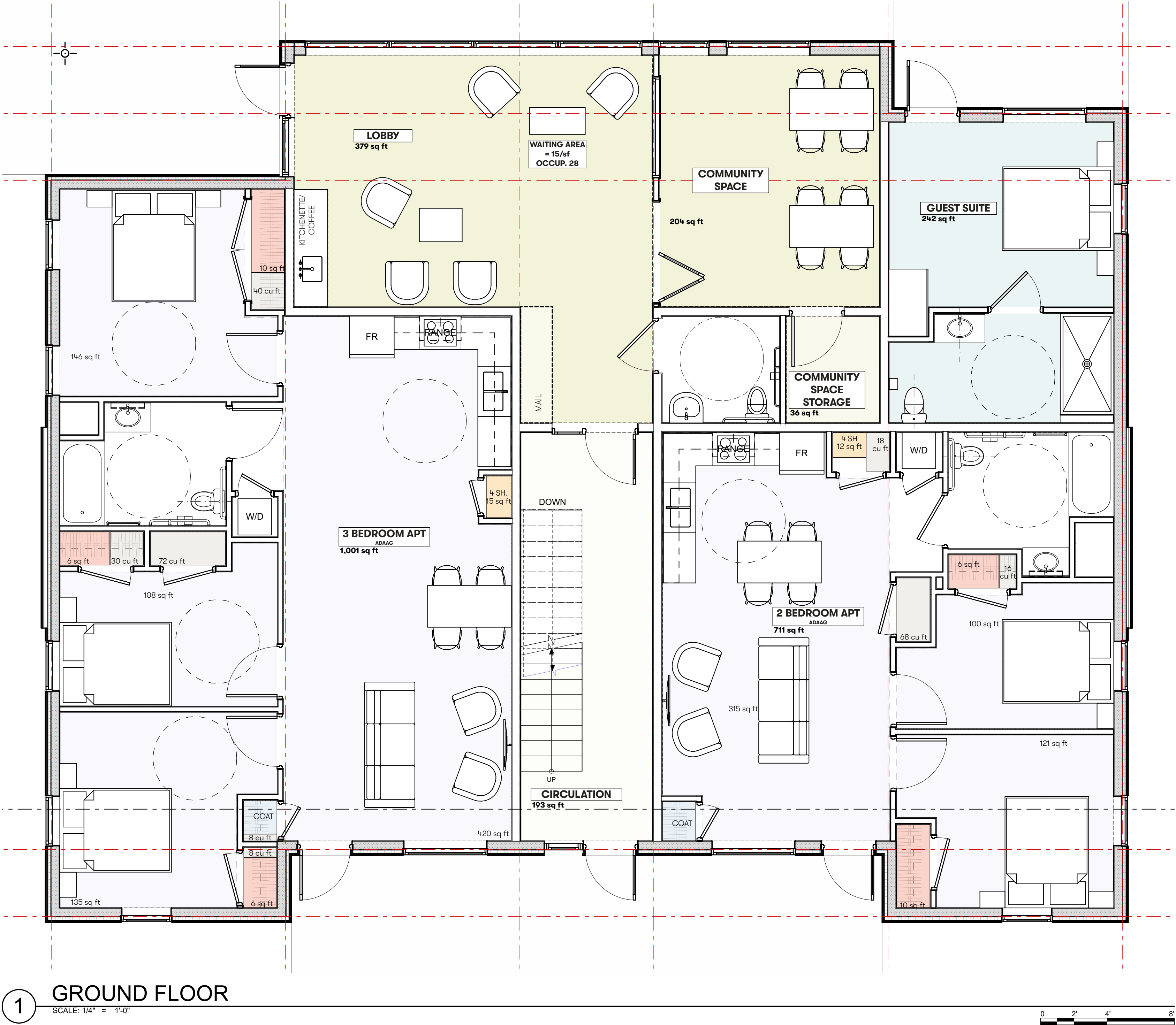
2 LIGHT POLE BASE
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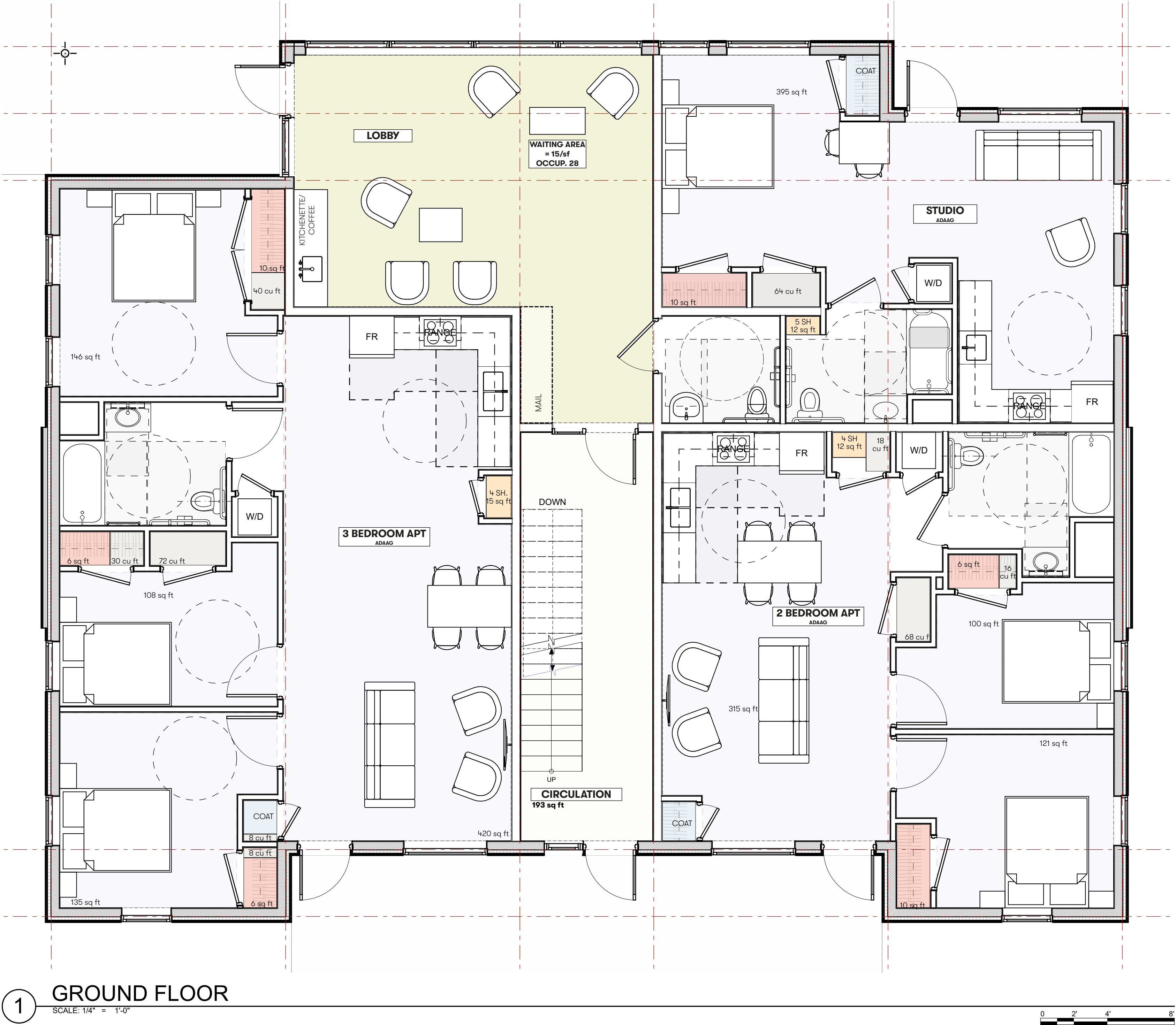
4 STONE BOLLARD
N.T.S.

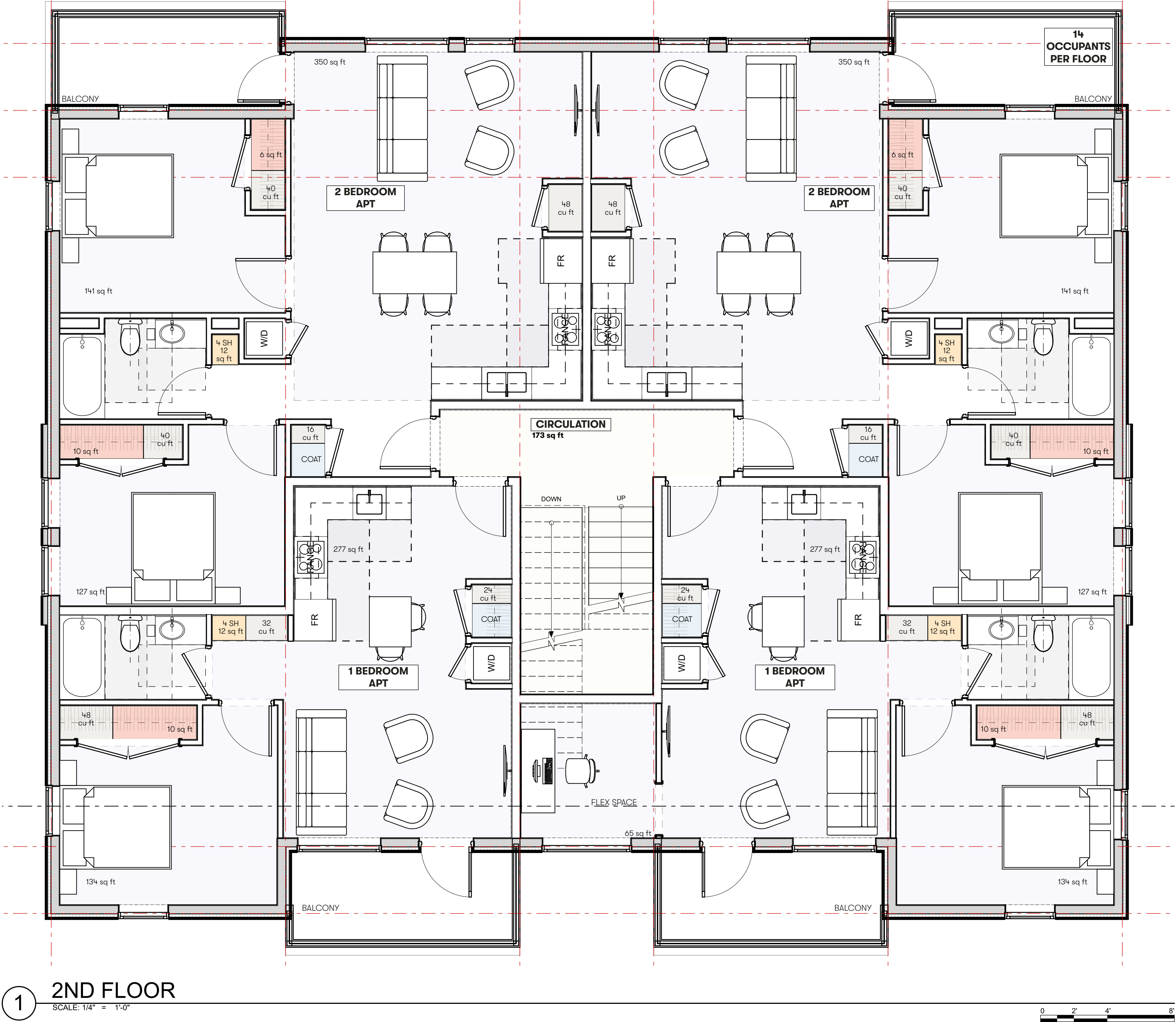


5 GRASS PAVE
1":1'-0"

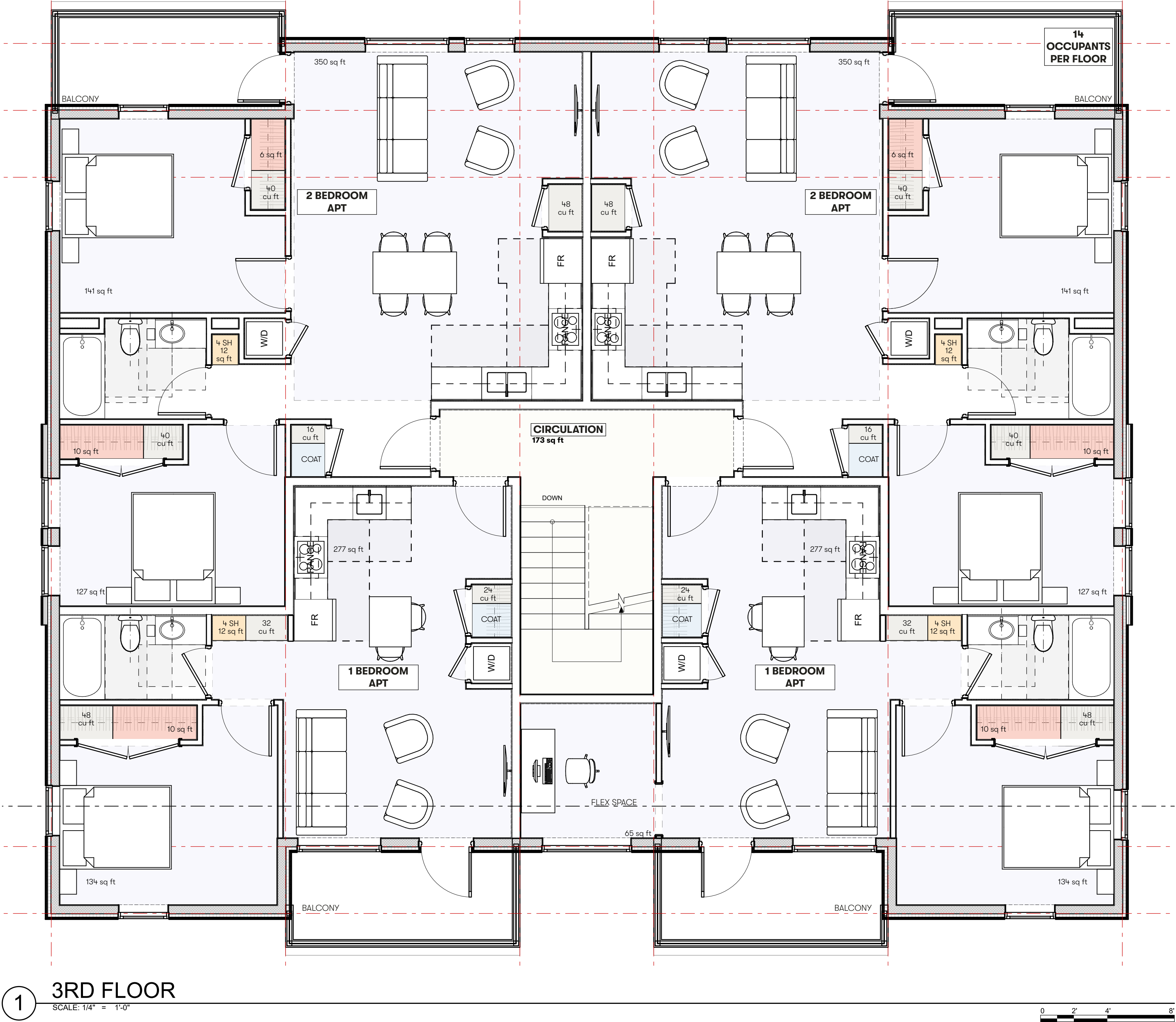


Community Flats Floor Plan: A-1 & A-2

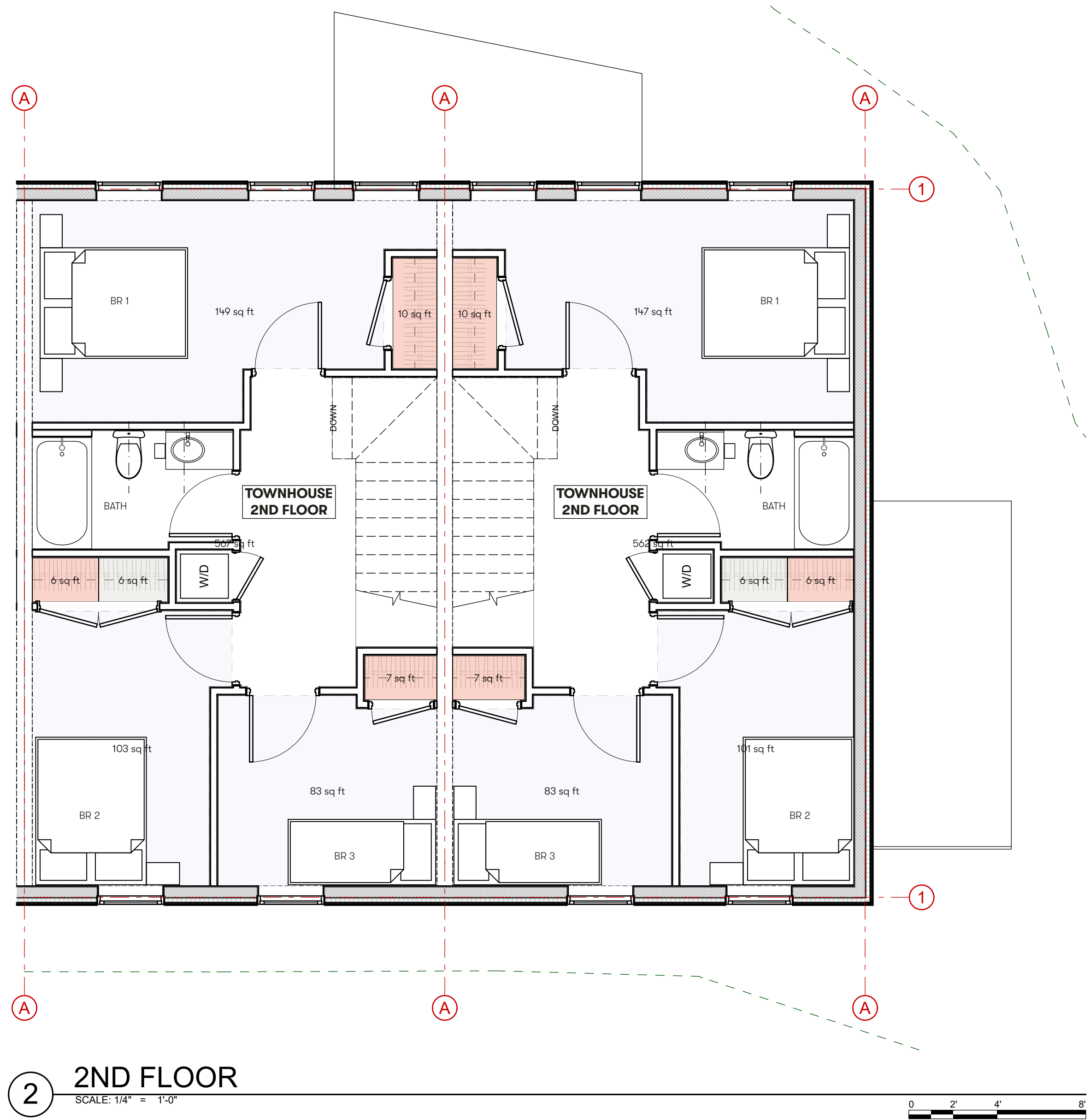
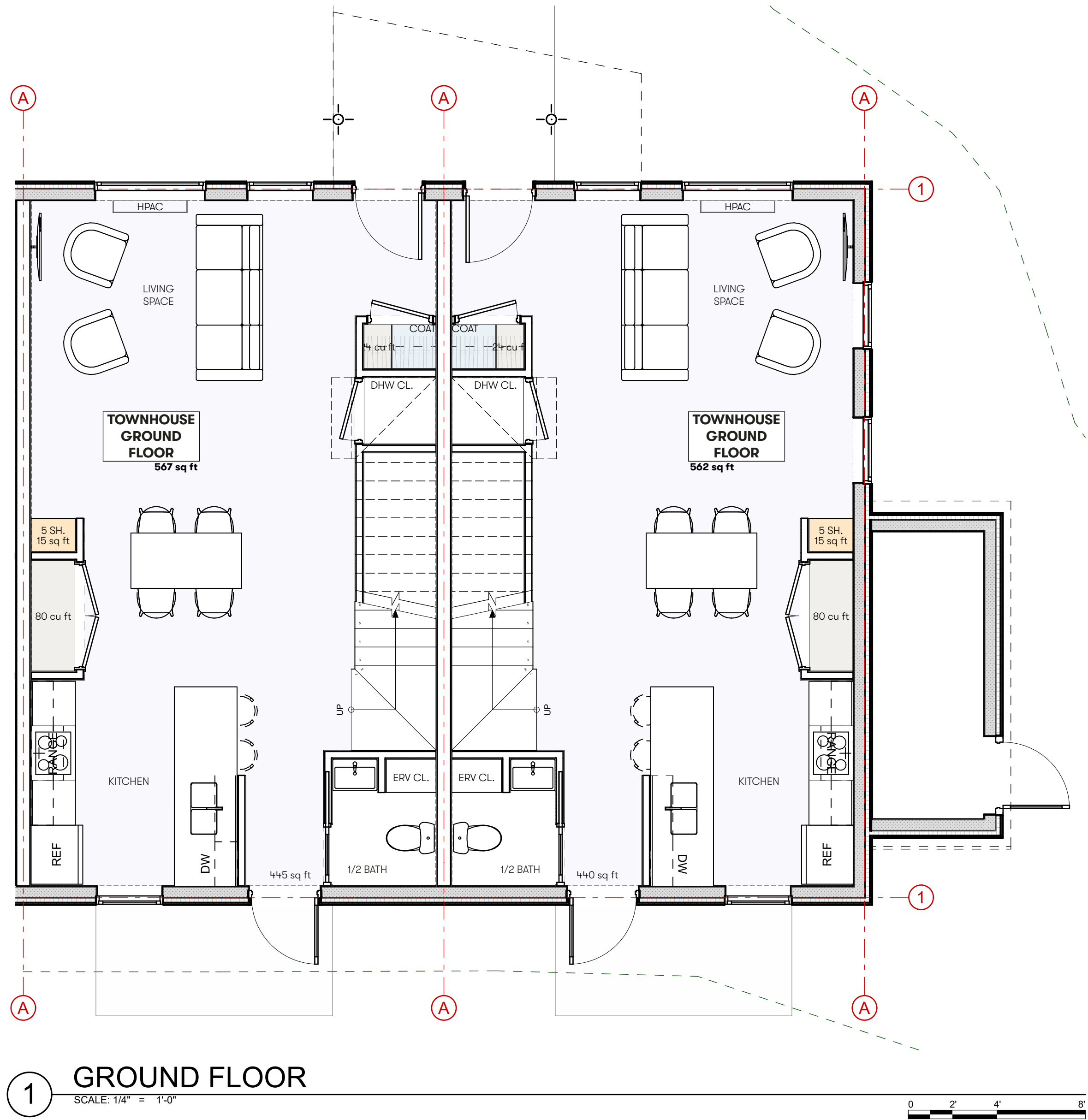


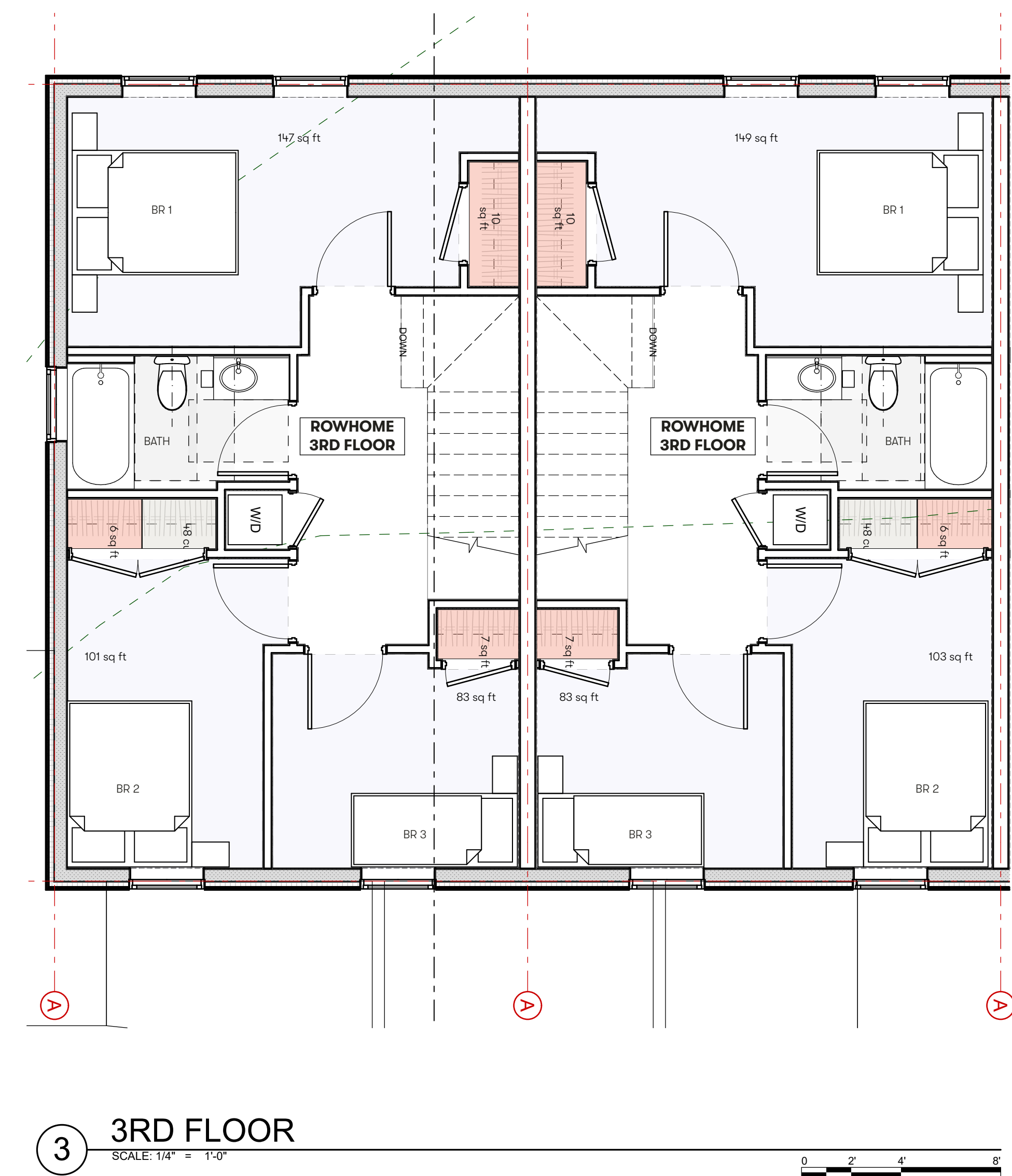
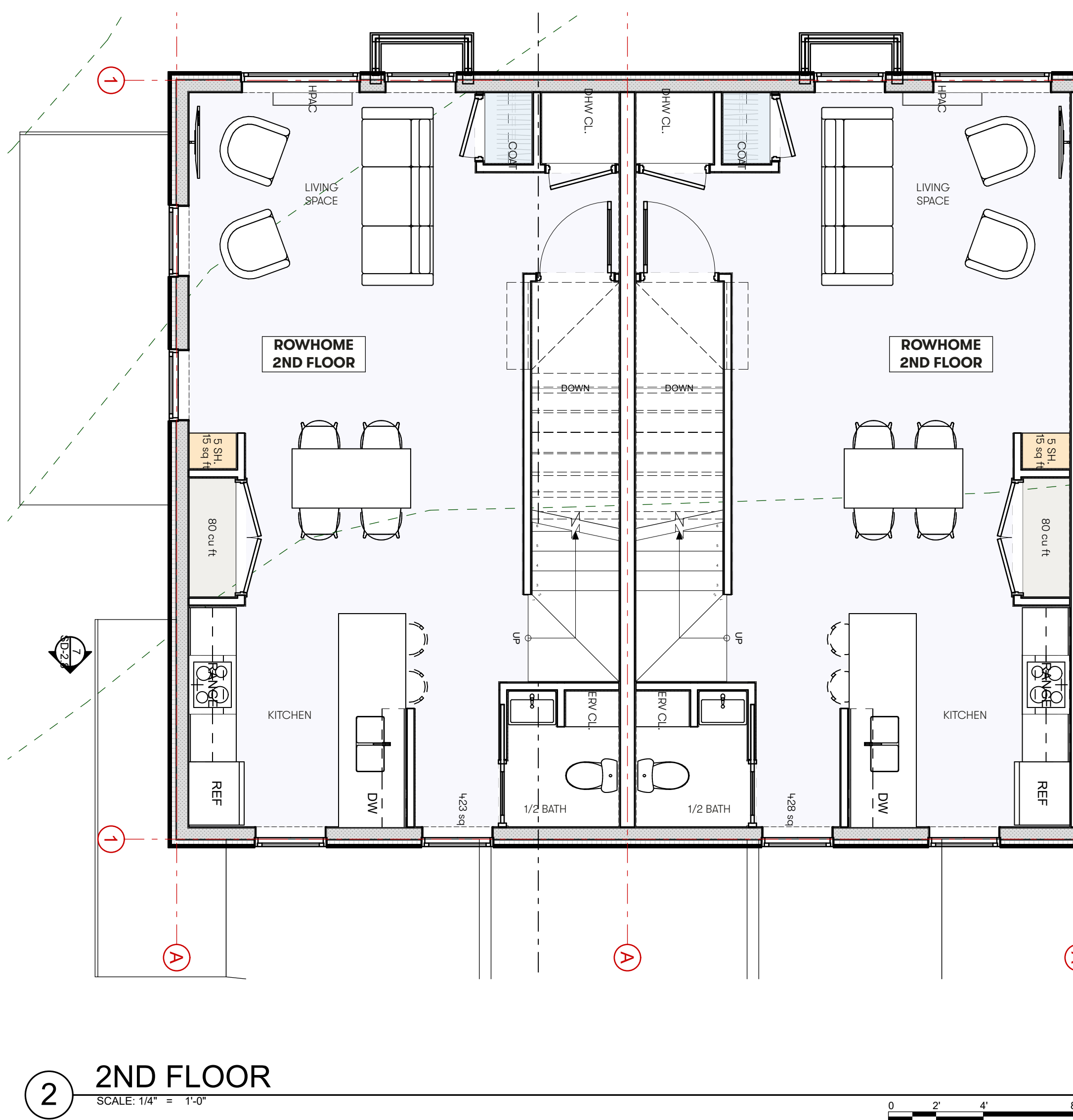
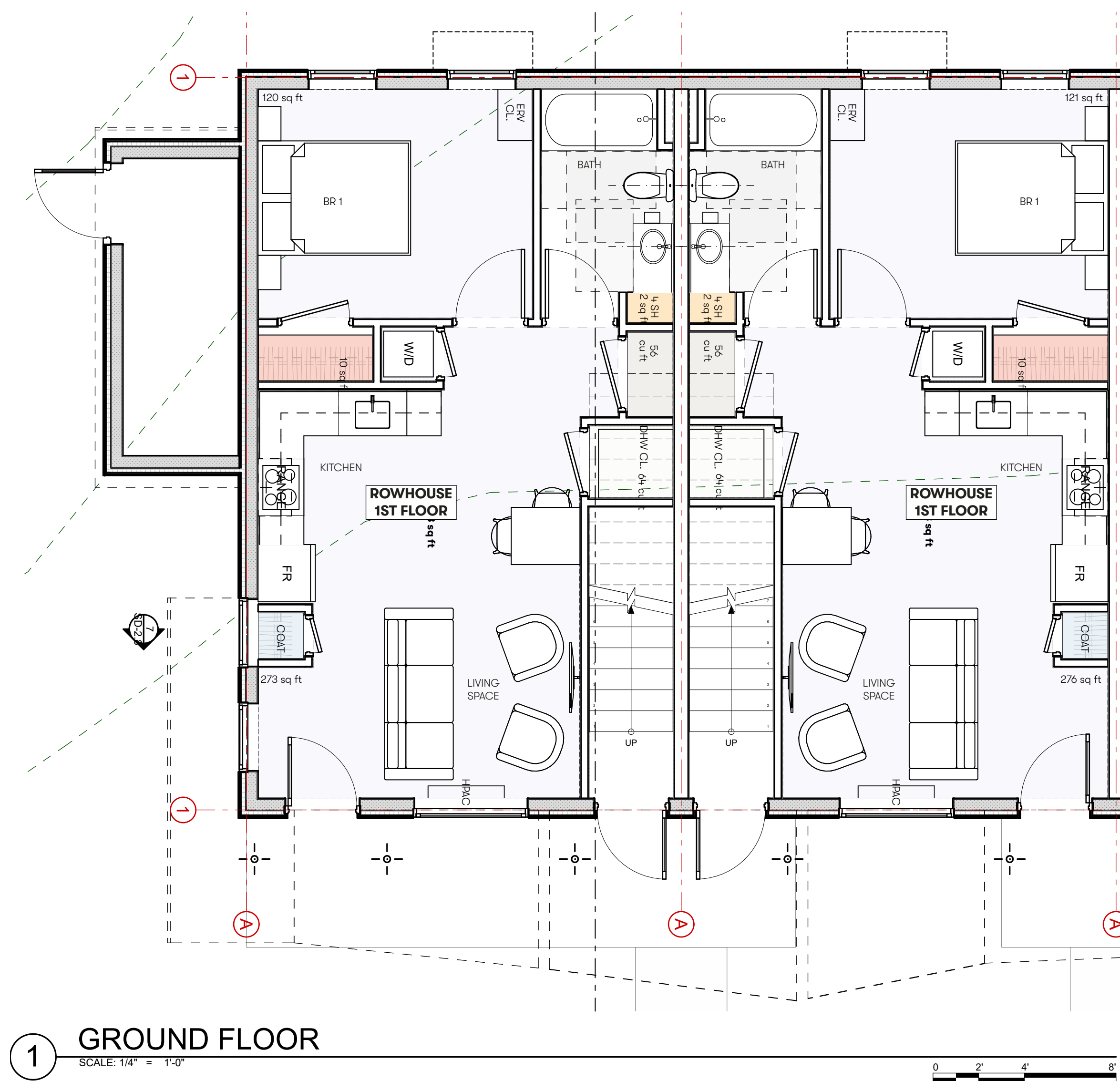


Community Flats Floor Plan: 2nd Floor



Community Flats Floor Plan: 3rd Floor







SIDING KEY

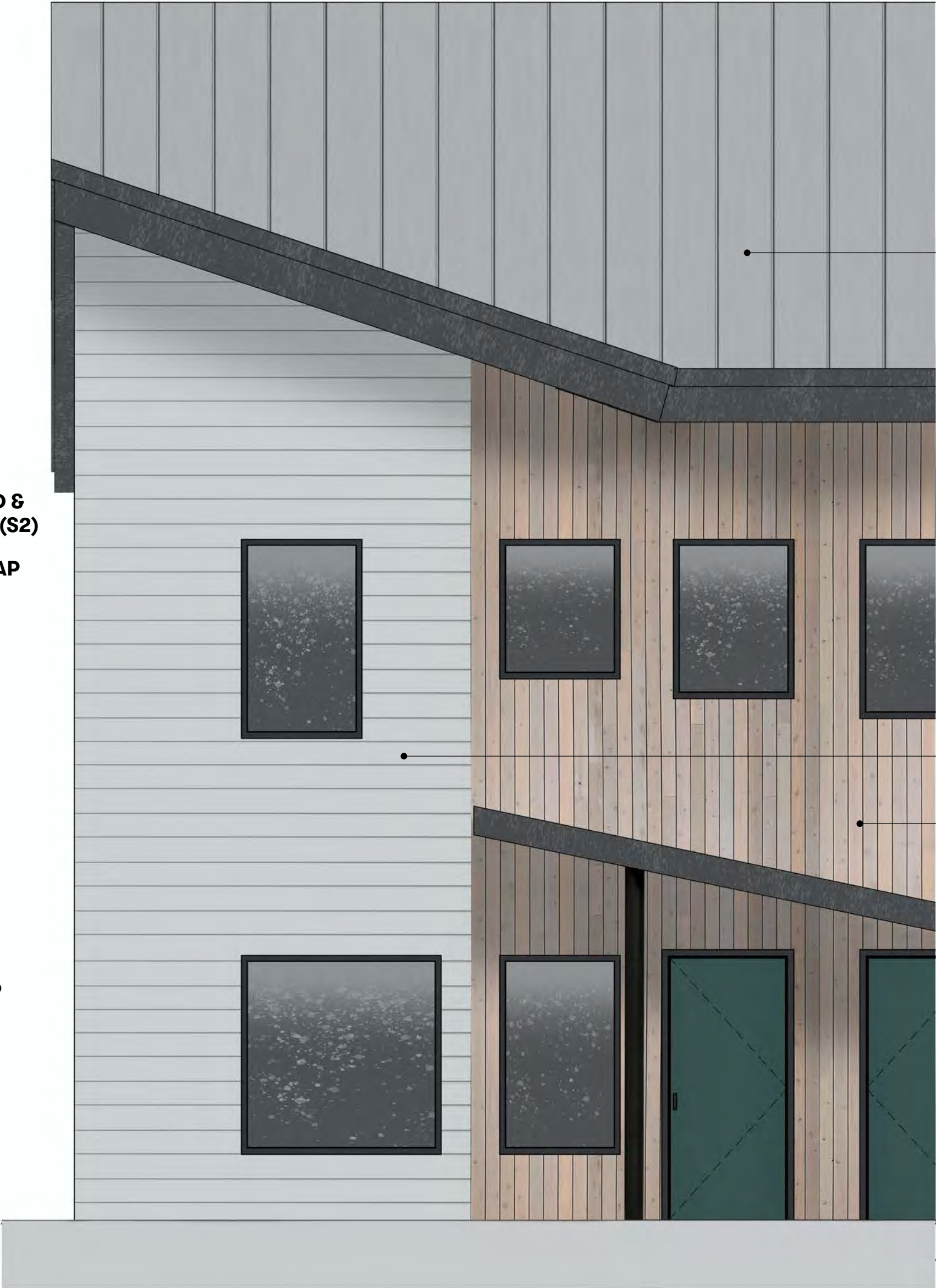
S1	CEDAR SHIPLAP SIDING
S2	REVERSE BOARD AND BATTEN SIDING
S3	TRADITIONAL LAP SIDING (GREY)
S4	TRADITIONAL LAP SIDING (WHITE)
S5A	TRADITIONAL LAP SIDING 8" REVEAL (DARK GREY)
S5B	TRADITIONAL LAP SIDING 6" REVEAL (DARK GREY)
S5C	TRADITIONAL LAP SIDING 4" REVEAL (DARK GREY)

SIDING KEY

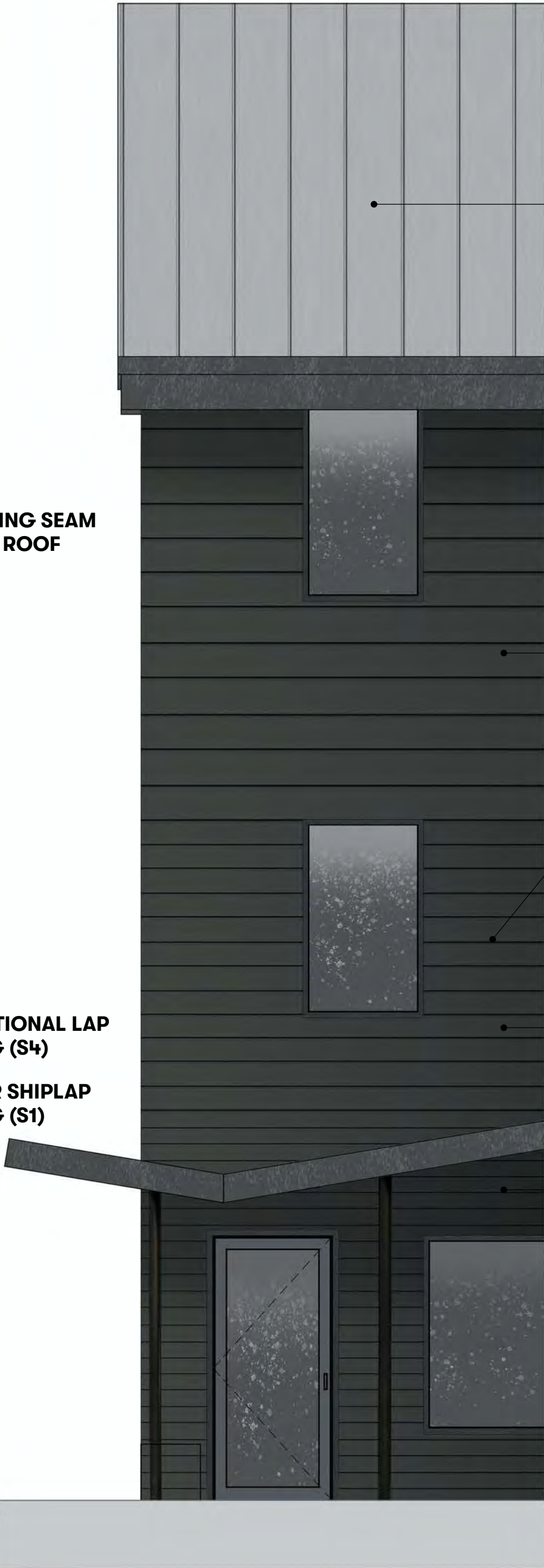
S1	CEDAR SHIPLAP SIDING
S2	REVERSE BOARD AND BATTEN SIDING
S3	TRADITIONAL LAP SIDING (GREY)
S4	TRADITIONAL LAP SIDING (WHITE)
S5A	TRADITIONAL LAP SIDING 8" REVEAL (DARK GREY)
S5B	TRADITIONAL LAP SIDING 6" REVEAL (DARK GREY)
S5C	TRADITIONAL LAP SIDING 4" REVEAL (DARK GREY)



COMMUNITY FLATS



TOWNHOMES



ROWHOMES



Vertical Wood Siding Precedent



Canopy Precedent

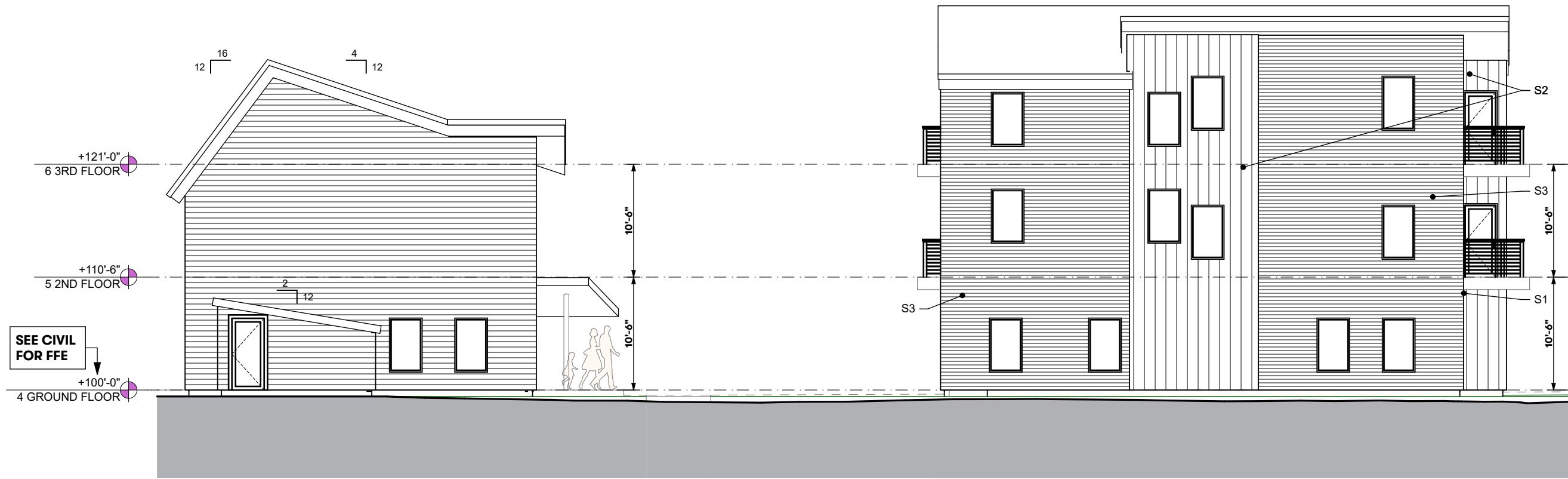


Lap Siding Precedent

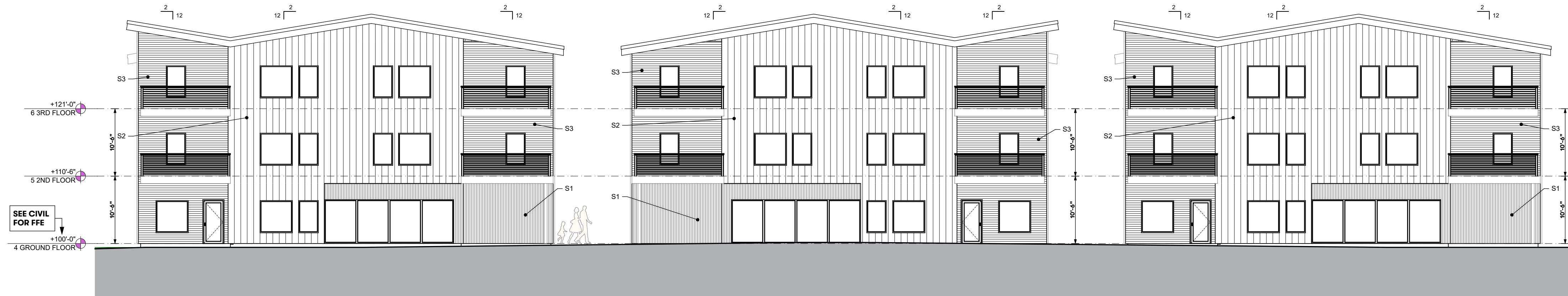


Material Options

Douglass St Co-Op



TOWNHOME & COMMUNITY FLATS, SIDE ELEVATION
BUILDINGS B.2 & A.3



COMMUNITY FLATS, LOBBY ELEVATION
BUILDINGS A.1, A.2 & A.3



TOWNHOMES, ENTRY ELEVATION
BUILDINGS B.1, B.2 & C.1

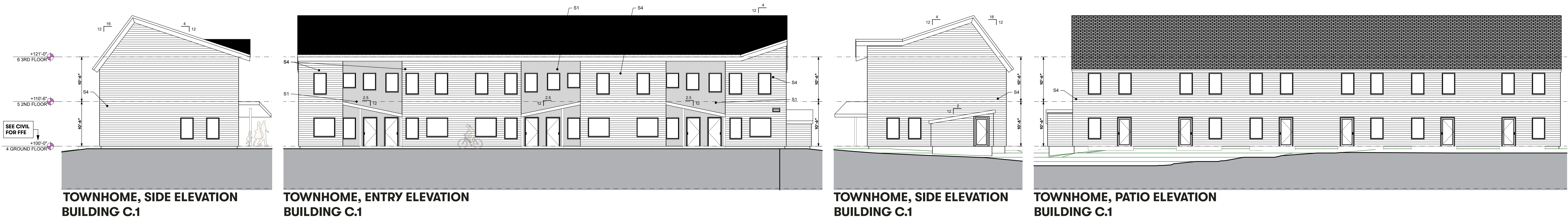
SIDING KEY

S1	CEDAR SHIPLAP SIDING
S2	REVERSE BOARD AND BATTEN SIDING
S3	TRADITIONAL LAP SIDING (GREY)
S4	TRADITIONAL LAP SIDING (WHITE)
S5A	TRADITIONAL LAP SIDING 8" REVEAL (DARK GREY)
S5B	TRADITIONAL LAP SIDING 6" REVEAL (DARK GREY)
S5C	TRADITIONAL LAP SIDING 4" REVEAL (DARK GREY)



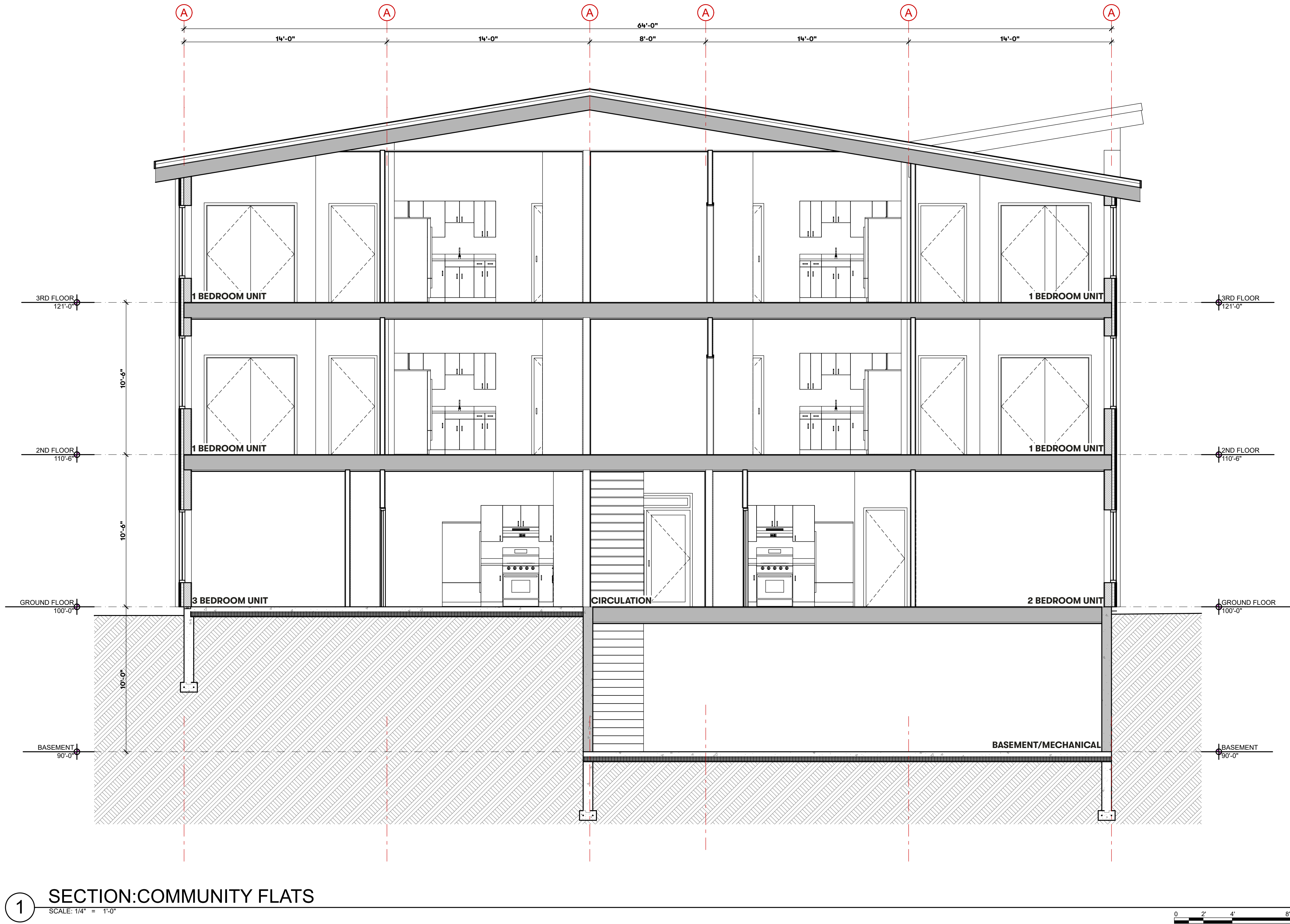
Elevations: Site Elevations

Douglass St Co-Op



SIDING KEY

S1	CEDAR SHIPLAP SIDING
S2	REVERSE BOARD AND BATTEN SIDING
S3	TRADITIONAL LAP SIDING (GREY)
S4	TRADITIONAL LAP SIDING (WHITE)
S5A	TRADITIONAL LAP SIDING 8" REVEAL (DARK GREY)
S5B	TRADITIONAL LAP SIDING 6" REVEAL (DARK GREY)
S5C	TRADITIONAL LAP SIDING 4" REVEAL (DARK GREY)



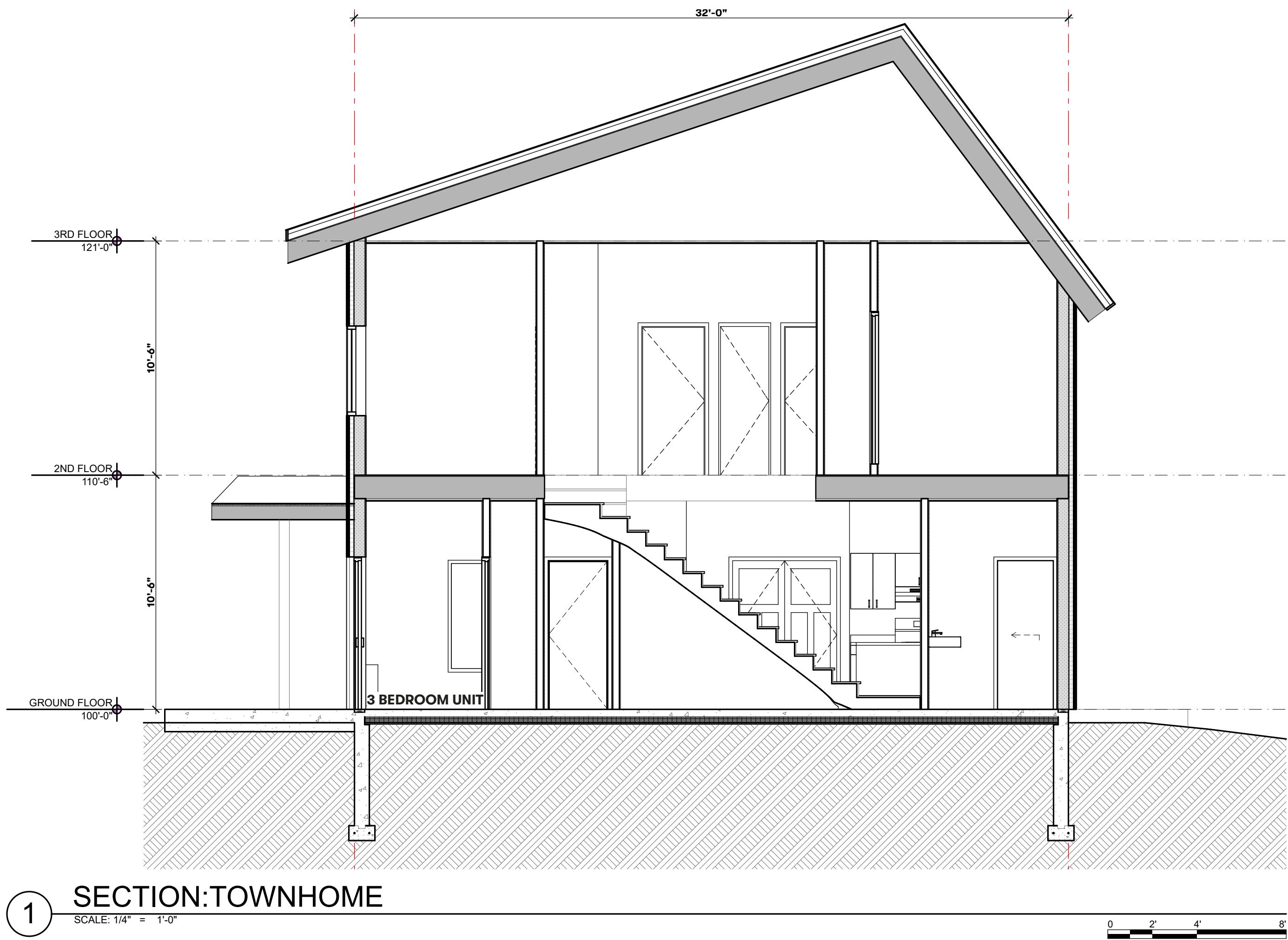
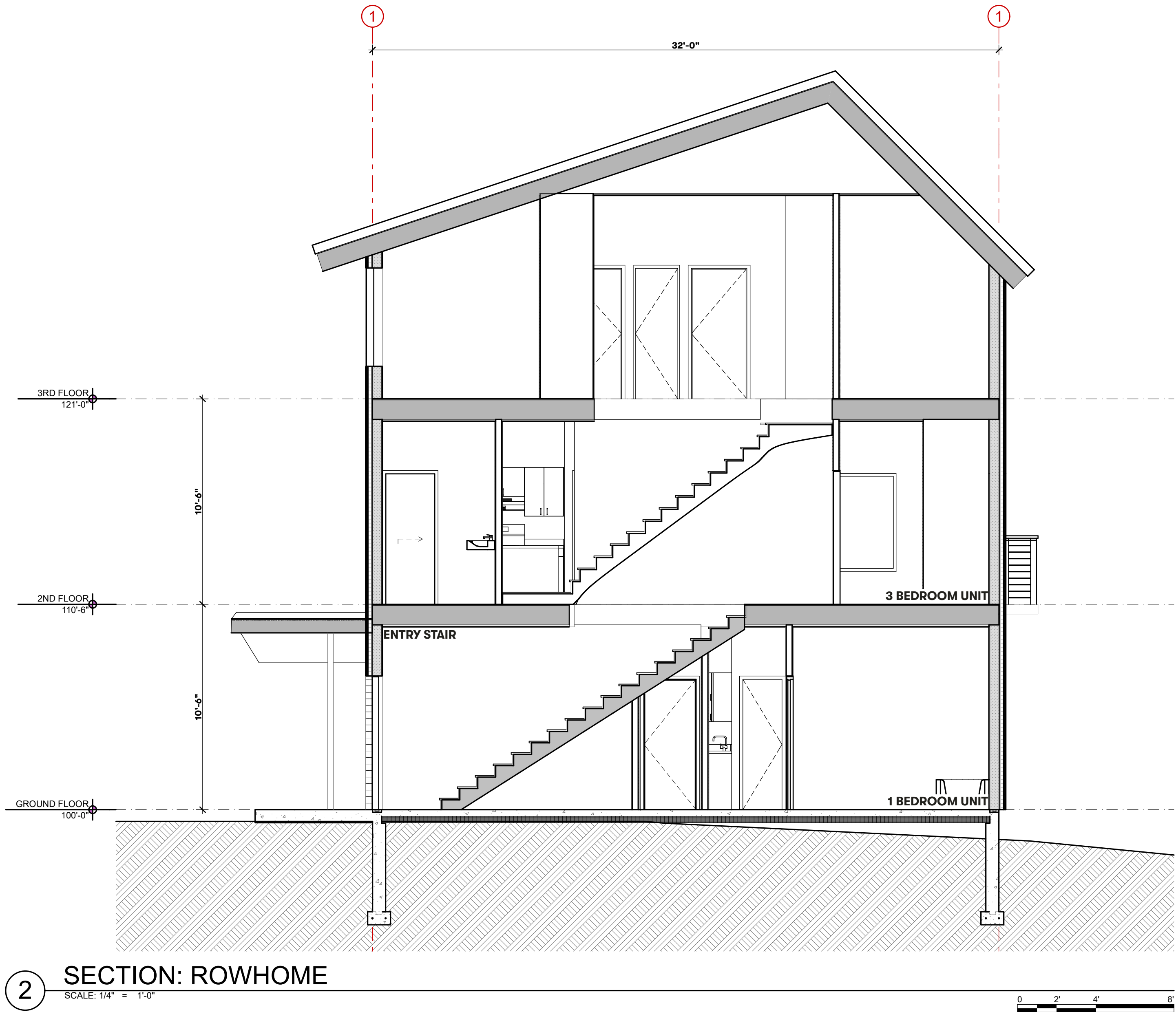
PROJECT

**Douglass St
Co-Op**

Lambert St
Portland, ME 04101

NOT FOR CONSTRUCTION

PROJECT	MCP2
DATE	05/27/2021
REVISED 1	
REVISED 2	
DRAWN BY	CB
PHASE	Schematic Design



Kaplan
Thompson
Architects

102 Exchange Street
Portland, ME 04101
(207) 842-2888
kaplanthompson.com

PROJECT

**Douglass St
Co-Op**

Lambert St
Portland, ME 04101

NOT FOR CONSTRUCTION

PROJECT	MCP2
DATE	05/27/2021
REVISED 1	
REVISED 2	
DRAWN BY	CB
PHASE	Schematic Design

BUILDING SECTIONS
A-3.2



DOUGLASS COMMONS

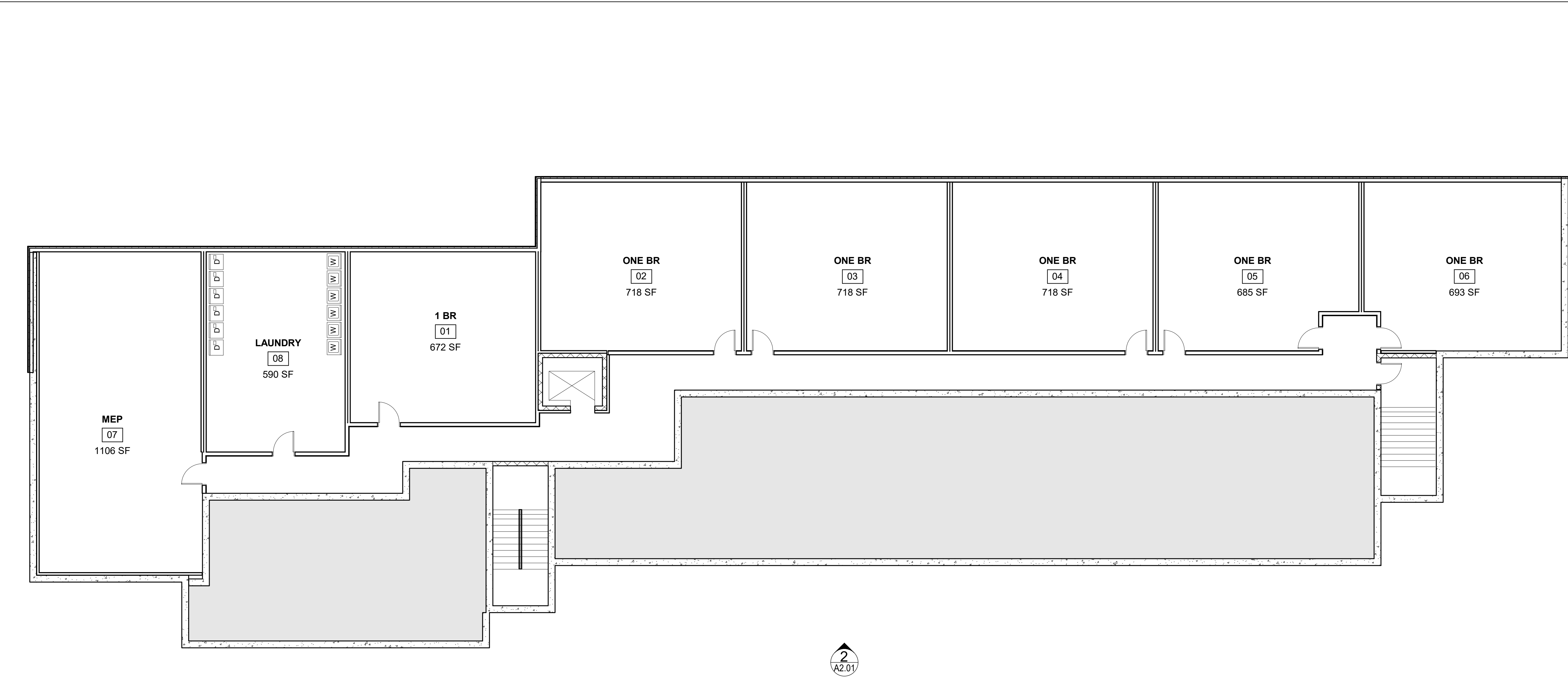
PROPOSED PATHS



DOUGLASS COMMONS
PROPOSED COMMON



DOUGLASS COMMONS
PROPOSED WOONERF



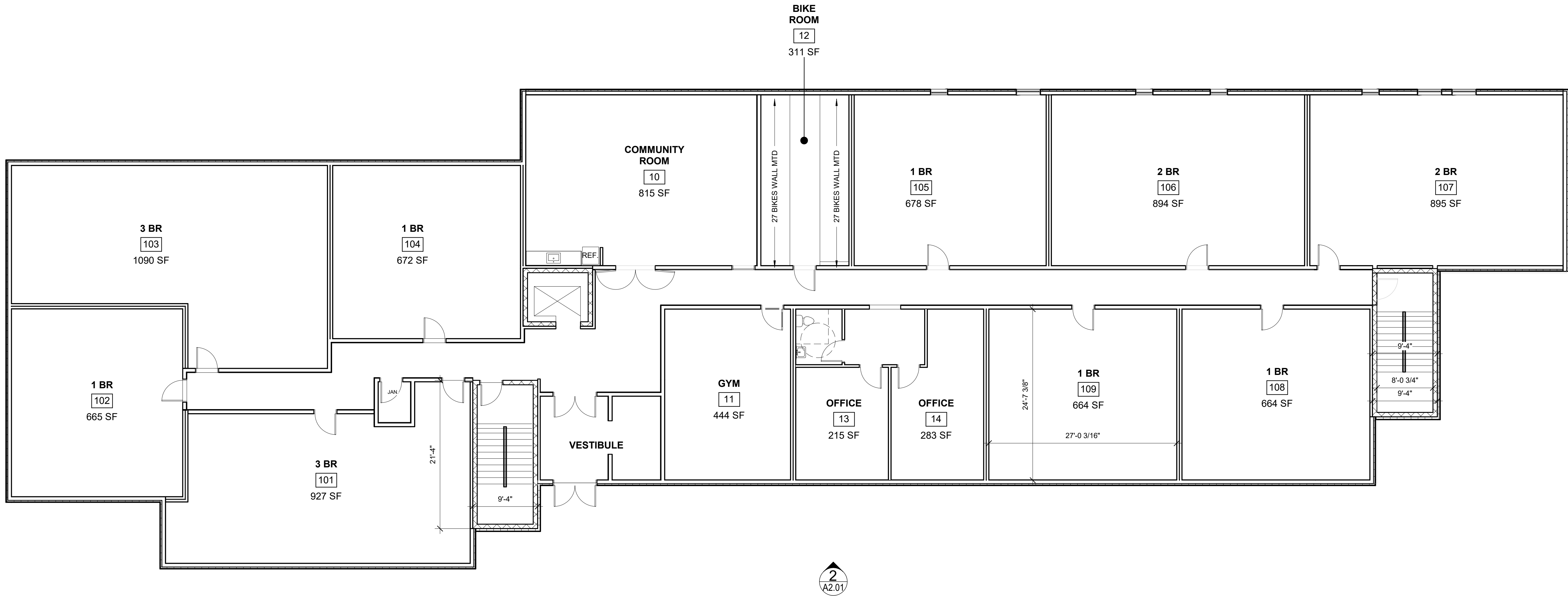
1 | BASEMENT
1/8" = 1'-0"

BASEMENT: 7,806 SF

1ST FLOOR
1 BR = 5
2 BR = 2
1 BR = 2

Date: JAN 21, 2022 Scale: 1/8" = 1'-0" Revisions:		Project: DOUGLASS STREET APARTMENTS		Architect: ARCHETYPE architects 48 Union Wharf Portland, Maine 04101 (207) 774-6022 ARCHETYPE@ARCHETYPEPA.COM		Consultant:		Prepared For: Owner Address City, State	
		Address City, State		Address City, State					

A1.00



1 | 1ST FLOOR PLAN
1/8" = 1'-0"

1ST FLOOR: 11,890 SF

1ST FLOOR
1 BR = 5
2 BR = 2
1 BR = 2

TOTAL BUILDING
1 BR = 35
2 BR = 18
1 BR = 10
TOTAL UNITS = 63

BASEMENT: 7,806 SF

1ST FLOOR: 11,890 SF

FLOORS 2, 3, 4: 11,890 SF X 3

5TH FLOOR: 11,890 SF

TOTAL: 67,256 GSF

Prepared For:

Owner

Consultant:

2.01

Architect:

ARCHETYPE
architects
48 Union Wharf Portland, Maine 04101
(207) 772-6022 ARCHETYPE@ARCHETYPEPA.COM

Project:

DOUGLASS STREET
APARTMENTS

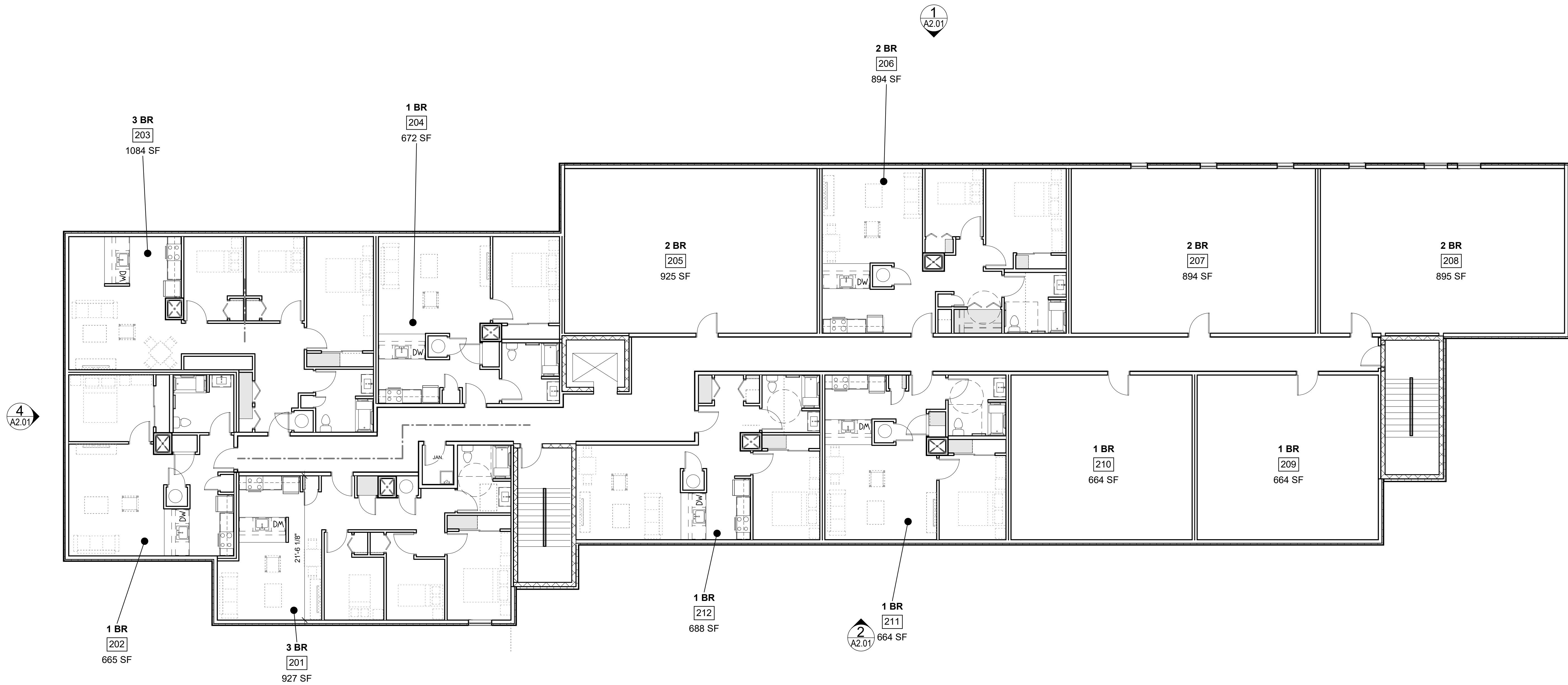
Revisions:

Date: JAN 21, 2022

Scale: 1/8" = 1'-0"

First Floor

A1.01

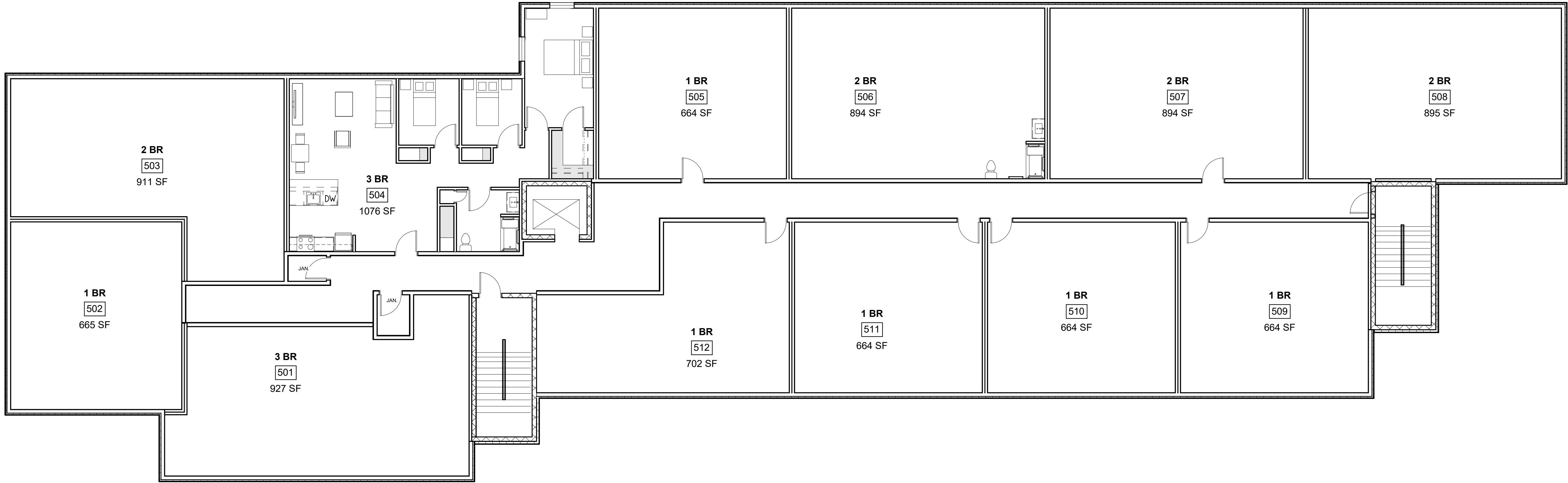


1 | FLOORS 2, 3, 4 TYPICAL FLOOR PLAN
1/8" = 1'-0"

TYPICAL FLOOR (2, 3, & 4): 11,890 SF

TYPICAL FLOOR	
1 BR = 6	
2 BR = 4	
1 BR = 2	

Date: JAN 21, 2022		Scale: 1/8" = 1'-0"	Typical Floor Plan	A1.02		
Revisions:						
Project: DOUGLASS STREET APARTMENTS		Architect: ARCHETYPE architects 48 Union Wharf Portland, Maine 04101 (207) 772-6022 ARCHETYPE@ARCHETYPEPA.COM				
Prepared For: Owner		Consultant: 3 A2.01				
		Address: City, State				



1 | 5TH FLOOR
1/8" = 1'-0"

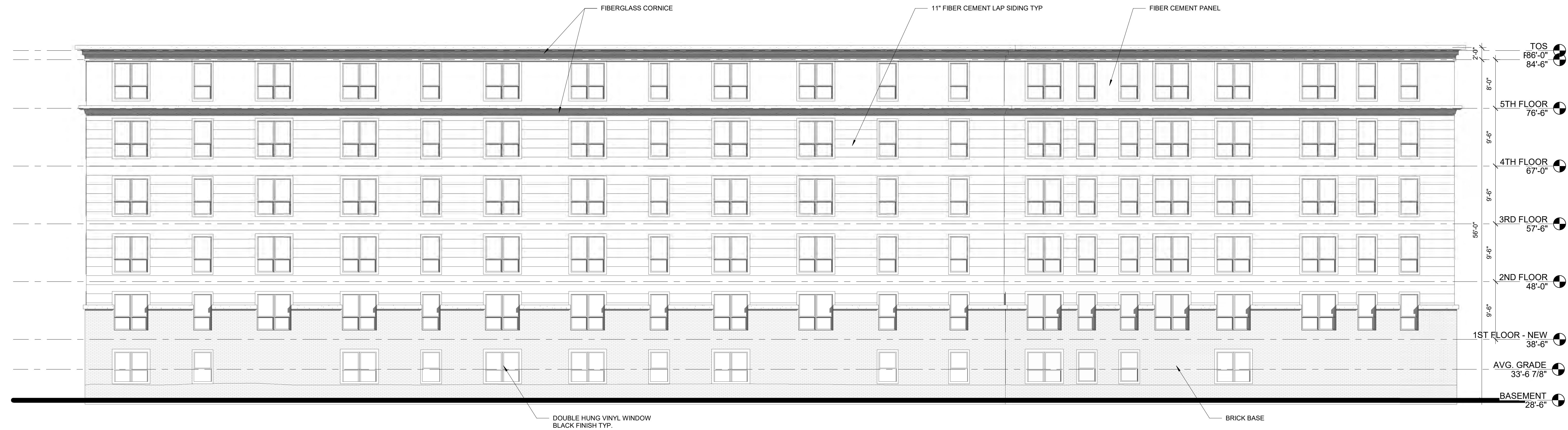
5TH FLOOR: 11,890 SF

5TH FLOOR
1 BR = 6
2 BR = 4
3 BR = 2

Date: JAN 21, 2022		Scale: 1/8" = 1'-0"	Revisions:	Project: DOUGLASS STREET APARTMENTS	Architect: ARCHETYPE architects 48 Union Wharf Portland, Maine 04101 (207) 772-6022 ARCHETYPE@ARCHETYPEPA.COM	Consultant:	Prepared For:	
							Owner	
Fifth Floor Plan		A1.05						
								Address City, State

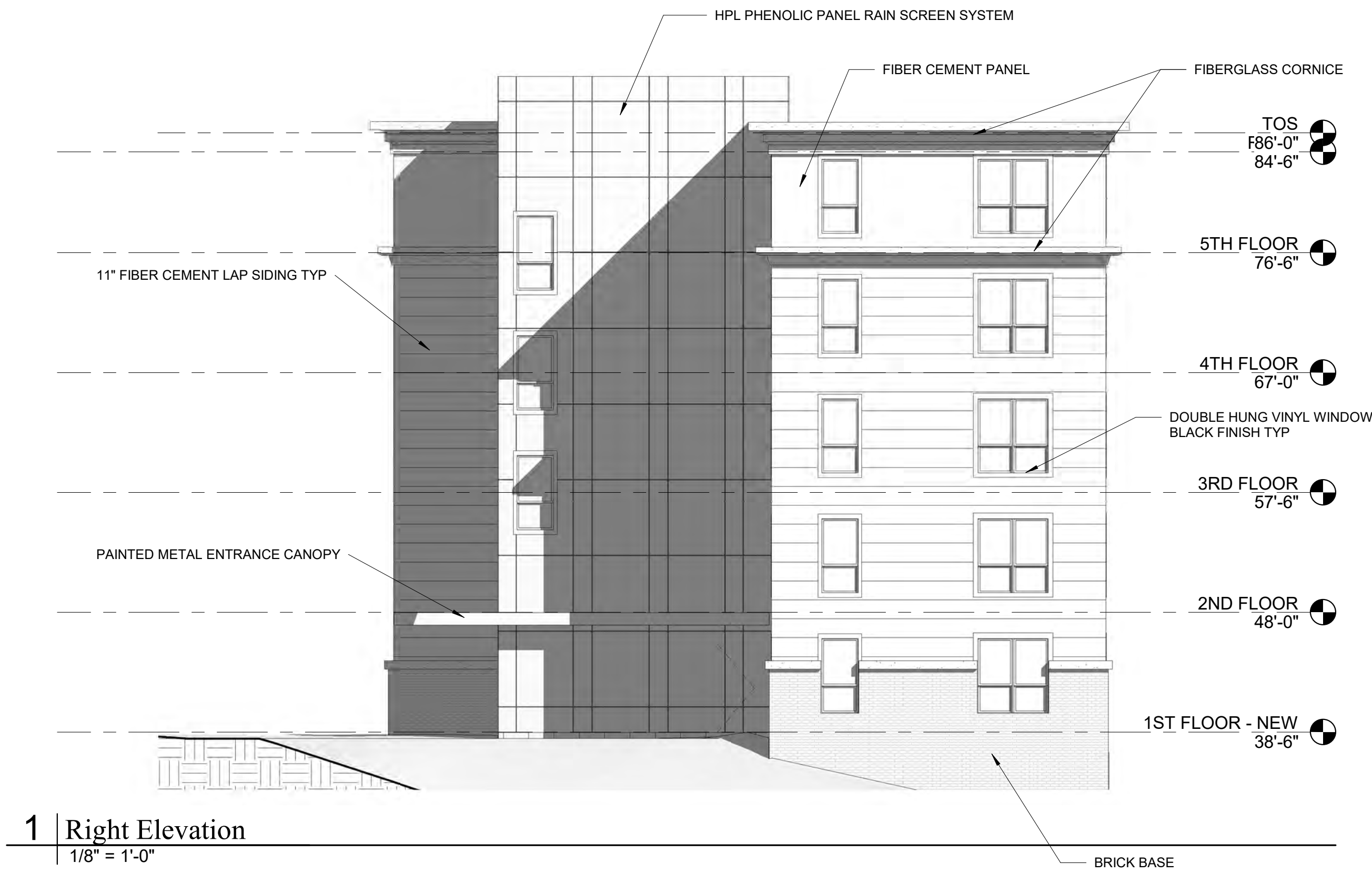


2 | Front Elevation
1/8" = 1'-0"

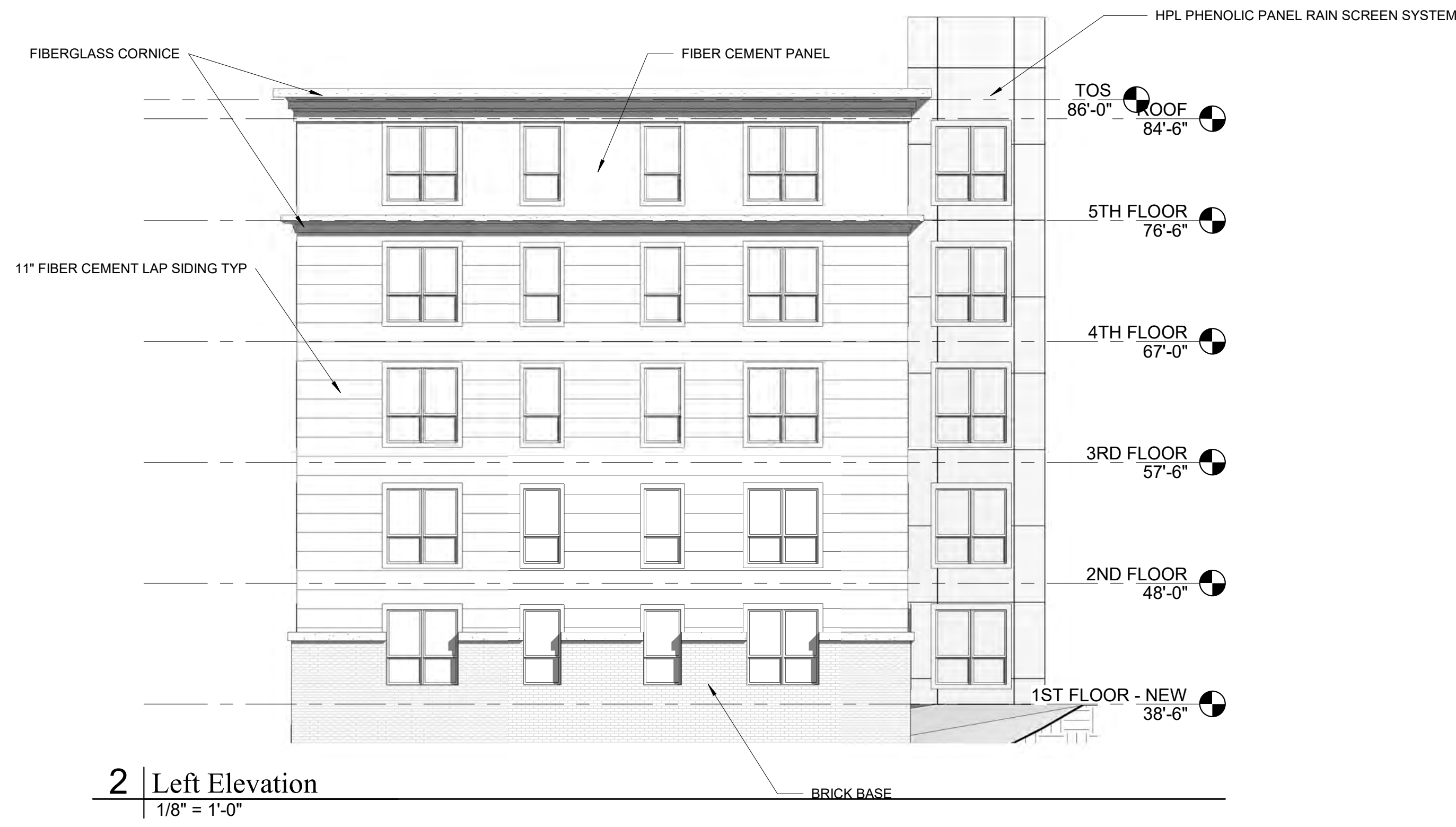


1 | Rear Elevation
1/8" = 1'-0"

Prepared For:		Owner	
Consultant:		Address City, State	
Architect:		ARCHETYPE ARCHITECTS 48 Union Wharf Portland, Maine 04101 (207) 772-6002 ARCHETYPE@ARCHETYPEPA.COM	
Project:		DOUGLASS STREET APARTMENTS	
Revisions:			
Date:	Scale:	Building Elevations	
DEC 2021	1/8" = 1'-0"		
A2.01			



1 | Right Elevation
1/8" = 1'-0"



2 | Left Elevation
1/8" = 1'-0"

A2.02		Date: DEC 2021	Scale: 1/8" = 1'-0"	Revisions:		Project: DOUGLASS STREET APARTMENTS	Architect: ARCHETYPE ARCHITECTS 48 Union Wharf Portland, Maine 04101 (207) 772-6022 ARCHETYPE@ARCHETYPEPA.COM	Consultant:	Prepared For:	
		Building Elevations							Owner	Address City, State







GENERAL NOTES:

- FOR INFORMATION REGARDING PROPOSED GROUND LEVEL LAYOUT, REFER TO SITE PLAN, SHEET C-10, MOST RECENT VERSION.
 - FOR INFORMATION REGARDING PROPOSED UTILITIES, REFER TO THE UTILITY PLAN, SHEET C-20, MOST RECENT VERSION.
 - FOR INFORMATION REGARDING PROPOSED GRADING AND STORMWATER, REFER TO THE GRADING & DRAINAGE PLAN, SHEET C-30, MOST RECENT VERSION.
 - UNIT TABULATION PROVIDED BY ARCHETYPE ARCHITECTS; REFER TO ARCHITECTURAL PLANS FOR FLOOR PLANS AND BUILDING HEIGHTS.
 - TOTAL SITE AREA INCLUDES 3.34 ACRES (145,490 S.F.). SITE BOUNDARIES PER BOUNDARY SURVEY & TOPOGRAPHICAL MAP WITH EXISTING CONDITIONS PROVIDED BY OWEN HASKELL, INC. ON A PLAN TITLED BOUNDARY SURVEY, DATED MARCH 2021.
 - AS OF 1/7/2021, THE SITE IS ENTIRELY BOUNDED BY THE R5 ZONE PER THE CITY OF PORTLAND'S GIS WEBSITE.
 - LOCUS PARCEL IS SHOWN ON THE CITY OF PORTLAND ASSESSOR'S MAP CHART, BOOK 78, LOTS: C-2, B-7. THE MENTIONED LOTS HAVE BEEN RECENTLY COMBINED INTO ONE PARCEL.
 - PROPOSED DEVELOPMENT REMAINS OUTSIDE THE 100-YR FEA FLOODPLAIN PER THE NATIONAL FLOOD INSURANCE PROGRAM, FLOOD INSURANCE RATE MAP COMMUNITY-PANEL NUMBER 230051 0013 B, INDEX DATED 7/17/1986.
 - THIS SHEET IS THE SUBDIVISION PLAT FOR THE CREATION OF UP TO ONE HUNDRED AND TWENTY (120) DWELLING UNITS IN THE PLANNED RESIDENTIAL UNIT DEVELOPMENT STANDARD.
 - ANY PROPERTY MARKER PROPOSED WITHIN A PEDESTRIAN OR VEHICULAR WAY SHALL BE FLUSH OR BELOW GRADE AT THE DISCRETION OF THE PROFESSIONAL LAND SURVEYOR AND/OR ENGINEER.
 - THE OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND MANAGEMENT OF THE ACCESS DRIVEWAY INCLUDING ALL DRIVEWAYS, SIDEWALKS, STORMWATER DEVICES, SITE LIGHTING, TRASH REMOVAL, RETAINING WALLS, AND SNOW REMOVAL.
 - THE OWNER SHALL BE RESPONSIBLE FOR COMPLYING WITH THE CONDITIONS OF CHAPTER 302 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 SUBMITTED STORMWATER MANAGEMENT PLAN AND THE APPROVED PLANS, AND MEET CITY STANDARDS AND STATE GUIDELINES.
 - THE OWNER MUST COMPLY TO THE FOLLOWING AS APPROVED BY THE CITY:
 - POST-CONSTRUCTION STORMWATER MANAGEMENT AGREEMENT:
- BOOK _____ PAGE _____
14. PROPERTY DEPICTED IS OWNED BY DOUGLASS COMMONS, LLC. WITH DEED RECORDED IN **BOOK XXX, PAGE XXX.**

WAIVERS & CONDITIONS OF APPROVAL:

TBD

APPROVED: PORTLAND PLANNING BOARD

CHAIRPERSON: _____ DATE: _____

RECORDING INFORMATION
STATE OF MAINE,
CUMBERLAND COUNTY
REGISTRY OF DEEDS

RECEIVED: _____

RECORDED IN _____

ATTEST: _____

REGISTRAR

UNIT TABULATION		BLDG D (TBD)		BLDG A (TBD)		BLDG B (TBD)	
UNIT NUMBER	SIZE (SF)	BLDG D (TBD)	SIZE (SF)	BLDG A (TBD)	SIZE (SF)	BLDG B (TBD)	SIZE (SF)
BLDG 1 (TBD)	12,000 SF	BLDG D (TBD)	464 SF	BLDG A (TBD)	697 SF	BLDG B (TBD)	1019 SF
BLDG D (TBD)	464 SF	BLDG D (TBD)	1019 SF	BLDG A (TBD)	697 SF	BLDG B (TBD)	1019 SF
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94 Portland Street
Major Site Plan
PL-001845-2021
94 Portland Street, LLC

Submitted to:	Portland Planning Board	Prepared By:	Charles Tetelman
Public Hearing Date:	March 22, 2022	Date:	March 18, 2022

I. INTRODUCTION

94 Portland Street, LLC has submitted a Major Site Plan application to convert the existing lodging house on the second and third floors of 94 Portland Street into four residential units. The first floor will continue to function as a marijuana retail store. As a change of use, this application is being referred to the Planning Board for compliance with the Land Use Code Section 14.6, Site Plan Standards.

As a change of use and interior renovation project for an existing building, the proposed development was scheduled for a Planning Board hearing without an initial workshop.



Figure 1: 94 Portland Street

The Planning and Urban Development Department mailed 103 notices advertising this meeting to property owners within 500 feet of the site. A legal advertisement ran in the March 11, 2022 and March 12, 2022 editions of the *Portland Press Herald*.

Applicant: 94 Portland Street, LLC
Applicant Representatives: Caleb Johnson Studio | Terradyn Consultants, LLC

II. REQUIRED REVIEWS

<i>Review</i>	<i>Applicable Standards</i>
Site Plan	Section 14.6

III. PROJECT DATA

Existing Zoning	B-2b Community Business
Property Size	4,675 sq. ft.
Existing Use	Retail Services
Proposed Use	Residential and Retail Services

	<i>Existing</i>	<i>Proposed</i>	<i>Net Change</i>
Building Footprint	1,163 sq. ft.	1,163 sq. ft.	0
Building Floor Area	2,326 sq. ft. Residential 935 sq. ft. Commercial	3,163 sq. ft. Residential 935 sq. ft. Commercial	+837 sq. ft. Residential 0 sq. ft. Commercial
Impervious Surface Area	4,675 sq. ft.	4,675 sq. ft.	0
Area Per Dwelling Unit	435 sq. ft.	1,168 sq. ft.	
Parking Spaces	0	0	0
Bicycle Parking Spaces	0	2	+2

IV. EXISTING CONDITIONS AND SURROUNDING AREA

The subject property is comprised of three parcels on the corner of Portland Street and Mechanic Street in the Bayside neighborhood. 89 Portland Street houses the Bayside American Café, a two-story restaurant (1,039 sq. ft.). 94 Portland Street contains a four-story commercial building (1,163 sq. ft.) currently housing a marijuana retail store on the first floor and a lodging house on the second and third floors. The third parcel is a paved parking area with an entrance on Mechanic Street. The parking area is directly behind the two buildings and provides four off-street parking spaces, a shed, and a dumpster for the two other buildings.

These parcels are within the B-2b Community Business zone that stretches along Portland Street from Forest Avenue to Alder Street. The B-2b zone is primarily for more compact urban development patterns that provide neighborhood and community mixed-use space with a pedestrian scale and character. The subject property is part of the Bayside neighborhood which includes a mix of old and new developments. 94 Portland Street is near the intersection of Portland Street, Park Avenue, and Forest Avenue directly across from Deering Oaks Park.



Figure 2: Surrounding Area

METRO Routes 2, 4, and 5 run directly on Portland Street and there is a transit stop on the opposite side of the street from the subject property. Additionally, the location of the site makes most METRO Routes accessible within a ten minute walk.

V. PROPOSED DEVELOPMENT

The applicant is proposing to convert the second and third floors of the 94 Portland Street building into two single-bedroom and two two-bedroom residential apartment units. The prior use of these floors were a lodging house with seven bedrooms. No work is proposed to the first floor; retail marijuana store will remain. Most of the work will be interior renovations related to converting the lodging rooms into apartment units. The applicant has proposed minimal exterior improvements to the building including removal of fire escape, brick repair, and replacement of windows.

No changes are proposed to the two adjacent parcels (89 Portland Street and the parking lot area).

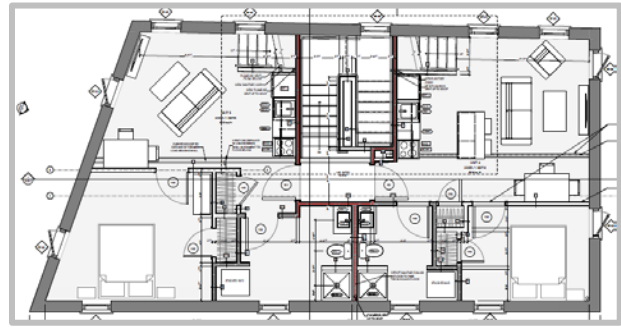
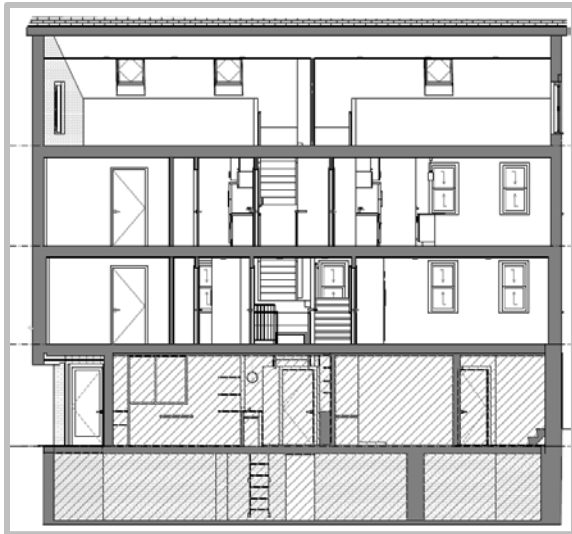


Figure 3 (Right): 3rd Floor Plan

Figure 4 (Left): Building Cross Section

VI. RIGHT, TITLE, & INTEREST

The applicant submitted a Deed of Sale dated March 27, 2020 (Attachment E) for 94 Portland Street between the Estate of Jean Carmine Simmons (Seller) and 94 Portland Street LLC (Purchaser) as evidence of right, title, and interest. The two adjacent lots are under the same ownership.

During review, City Staff noted that the buildings at 89 and 94 Portland Street encroach into the City's right-of-way. The applicant's surveyor demonstrated that the lines shown on the plan are the record boundaries as described in relevant deeds. Corporation Counsel determined that the applicant would require a License Agreement to encroach into the City's ROW as well as a Certificate of Insurance. The License Agreement and Certificate of Insurance have been included as a condition of approval.

VII. FINANCIAL & TECHNICAL CAPACITY

Bangor Savings Bank Vice-President Dale Winchenbach submitted a Financial Capacity Letter dated September 16, 2021 on behalf of Joseph and Diane Catoggio (the two stakeholders comprising 94 Portland Street LLC) stating that the team has the necessary financial capacity for this project (Attachments G and H).

The applicant's team includes Caleb Johnson Studio and provided a commercial portfolio outlining a variety of projects across Portland and the State of Maine. These projects and descriptions indicate that the applicants have demonstrated adequate technical capacity (Attachment F).

VIII. ZONING ANALYSIS

94 Portland Street is located in the B-2b Community Business zone. The proposed change of use from lodging house to residential aligns with the intended purpose of the B-2b zone. The B-2b zone allows a variety of uses including residential housing, commercial retail, and restaurants. This zone is intended for compact urban areas near arterials that provide for moderate to high-density housing. The applicant is proposing to increase residential units in the neighborhood while maintaining the commercial use on the first floor. Height for this project is determined by the Bayside Height Overlay Map.

Standard:	Required:	Proposed:
Lot Area	None	4,675 sq. ft.
Lot Area per Dwelling Unit	435 sq. ft.	791 sq. ft.
Street Frontage (min.)	20 ft.	54 ft.
Front Setback (from all street frontages) (max.)	10 ft.	0 ft.
Rear Setback (min.)	10 ft.	10 ft.
Structure Height (max.)	55 ft.	35 ft.
Impervious Surface Ratio (max.)	90%	No Change

IX. SITE PLAN STANDARDS (Section 14.6)

The proposed development has been reviewed by staff for conformance with the relevant review standards of the City of Portland's Site Plan Ordinance, Section 14.6. Staff comments are below (Attachment 1):

1. Transportation Standards (Section 14.6.1)

A. Impact on surrounding street systems

The applicant will not be changing the amount of parking sited on the subject parcel and thus will not have an impact on the circulation on surrounding streets. Staff found this standard has been met.

B. Access and circulation

There are no changes to existing access and circulation. 94 Portland Street provides direct pedestrian access on the frontages of the building. The applicant will be replacing the sidewalk for utility work and will also look for sidewalk improvements if needed. Staff found this standard has been met.

C. Public transit access

METRO Routes 2, 4, and 5 run directly on Portland Street and there is a transit stop on the opposite side of the street from the subject property. Additionally, the location of the site makes most METRO Routes accessible within a ten minute walk. Staff found this standard has been met.

D. Parking

The project is located within a quarter mile of a fixed route transit service at the corner of Forest Avenue and Portland Street and therefore no off-street parking is required (Table 19-B Categorical Exceptions to Off-street Parking Minimums). The applicant is proposing a bike hitch at the corner of Portland Street and Mechanic Street providing 2 bicycle parking spaces. Staff found this standard has been met.

E. Transportation demand management (TDM)

As a change of use in the B-2b zone, the proposed project is exempt from providing parking. A TDM plan is not required as part of this application.

2. Environmental Quality Standards (Section 14.6.2)

A. Preservation of significant natural features

N/A; the site is currently developed and there are no Significant Natural Features located on or near the site.

B. Landscape preservation

There are no proposed changes to the exterior of the site.

C. Site landscaping and buffers

There are no changes proposed to the site landscaping or buffers. As a multi-family residential development, the applicant is required to provide one street tree per unit. With two street trees on site and four residential units proposed, the applicant will need to contribute to the tree fund in the amount of \$400 per tree for the two remaining trees ($\$400 \times 2 = \800). Per Section 4.6.4 Street Tree Alternatives of the City's Technical Manual, the preferable location for new streets trees that cannot be located in the ROW along the frontage of the site is on public land or facilities elsewhere in the neighborhood. Locations in which to utilize the funds within the neighborhood will be identified by the City and is at the discretion of the City Arborist.

D. Water quality/storm water management/erosion control

With limited changes to the site, most of the stormwater management features will be maintained as currently exists on the site and building. This redevelopment will not result in 1,000 square feet of new impervious surfaces, thus it falls below Chapter 500 requirements. Staff found this standard has been met.

3. Public Infrastructure and Community Safety Standards (Section 14.6.3)

A. Consistency with City Master Plans

The City of Portland's Comprehensive Plan identifies a lack of sufficient and suitable housing supply in the city. As it is located in a mixed-use zone, this redevelopment project provides increased housing opportunities in the Bayside neighborhood. Furthermore, additional dwelling units in Bayside supports the City's vision of complete neighborhoods, where residents have access to basic necessities including housing, schools, food, open space, and other amenities and services within walking and biking distance. This type of diversity in housing is directly in-line with Portland's Plan 2030 and supports additional state and local goals including:

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 residents."

"Pursue policies to enable people who work in Portland to have the option to live in Portland."

"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."

B. Public safety and fire prevention

No changes to the existing building at ground level are proposed. Staff found this standard has been met. The applicant will need to coordinate with Life Safety on the proposed removal of the existing fire escape during the construction permitting phase to ensure that remaining egress is compliant with new construction codes.

C. Availability and capacity of public utilities

The applicant has submitted an Ability to Serve letter from the Portland Water district demonstrating approval of the water system as proposed (Attachments I and J).

The applicant will need to submit Ability to Serve letters from other utility providers. This has been included as a Condition of Approval.

4. Site Design Standards (Section 14.6.4)

A. Massing, ventilation, and wind impact

N/A; as a redevelopment of an existing building, this project will have no impact on massing, ventilation, or wind impact.

B. Shadows

N/A; as a redevelopment of an existing building, this project will not change the building's massing.

C. Snow and ice loading

The applicant will provide an updated site plan showing snow storage on site. This has been included as a condition of approval.

D. View corridors

N/A; 94 Portland Street is not located within any View Corridors shown in the *Design Manual*.

E. Historic resources

N/A; 94 Portland Street is not located within any designated Historic District.

F. Exterior lighting

No changes to the exterior lighting are proposed.

G. Noise and vibration

The applicant is intending to use typical residential scale heating and cooling equipment out of view from the public right-of-way.

H. Signage and wayfinding

N/A; signage and wayfinding standards are not applicable to this development.

I. Zoning-related design standards

The project was reviewed against the B-1 and B-1b Neighborhood Business and B-2 and B-2b Community Business Zone Design Standards (Attachment 2). Staff review noted the proposed windows did not meet the standards. The applicant provided revised drawings with updated window and door schedules that meet a VT of .7 or greater along the Mechanic Street frontage. The applicant adequately responded to design review comments and provided updated details and drawings.

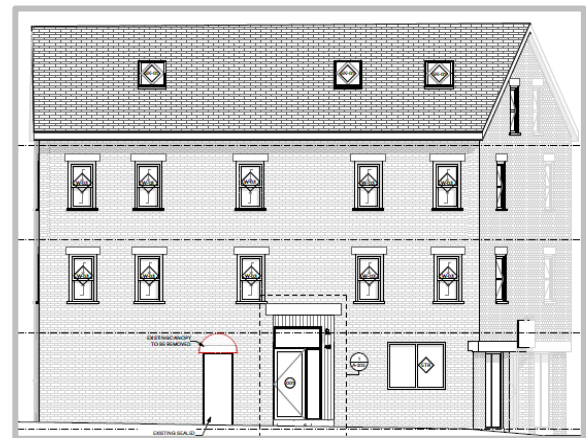


Figure 5: East Elevation (Mechanic St)

X. NEIGHBORHOOD MEETING & PUBLIC COMMENT

The applicant held a neighborhood meeting, as required as part of this application, on February 23, 2022 with four attendees (Attachments K, L, M, and N).

One public comment has been received by the Planning Department (Attachment PC 1). The public comment supported the proposed project noting that housing projects benefit the whole community.

XI. STAFF RECOMMENDATION

Subject to the proposed motions and conditions of approval listed below, Planning Department staff recommends to the Planning Board that application PL-001845-2021 to redevelop the second and third floors of 94 Portland Street into four residential units meets the applicable standards of Portland's Land Use Code.

XII. PROPOSED MOTIONS

A. SITE PLAN REVIEW

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 March 22, 2022 for application PL-001845-2021 relevant to the site plan 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 subject to the following conditions of approval:

PRIOR TO APPLYING FOR A BUILDING PERMIT

1. The applicant shall finalize all license agreements with the City with the approval of Corporation Counsel, the Planning Authority, and the Department of Public Works.
2. The applicant shall submit all remaining Ability to Serve letters for review and approval by the Planning Authority and Department of Public Works.
3. The applicant shall provide an updated Site Plan showing snow storage on site for review and approval by the Planning Authority.
4. The applicant shall provide an updated Utility Plan with recommendations regarding water line and utility work occurring in the City right-of-way for review and approval by the Planning Authority and Department of Public Works.

PRIOR TO ISSUANCE OF BUILDING PERMIT

5. The applicant shall submit a final Construction Management Plan for review and approval by the Planning Authority and Department of Public Works.

PRIOR TO THE ISSUANCE OF THE CERTIFICATE OF OCCUPANCY

6. The applicant shall contribute to the tree fund in the amount of \$400 per tree for two remaining street trees required in Sec. 14.6.2.C.4 of the Site Plan ordinance for a total of \$800 (2 x \$400 = \$800).

XIII. ATTACHMENTS

REPORT ATTACHMENTS

1. Staff Review Preliminary Comments
2. Design Review Memo

APPLICANT SUBMITTAL

- A. Cover Letter
- B. Major Site Plan Checklist

- C. Existing Conditions Survey
- D. Zoning Analysis Table
- E. Deed
- F. Technical Capability
- G. Financial Capacity
- H. 94 Portland St. LLC CBO
- I. Ability To Serve PWD
- J. Ability To Serve PWD
- K. Neighborhood Meeting Certification
- L. Neighborhood Meeting Minutes
- M. Neighborhood Meeting Sign In
- N. Neighborhood Meeting Notice Post Card
- O. Applicant Response to Preliminary Comments

DRAWINGS

- Plan 1. Cover Sheet
- Plan 2. Revised Plat
- Plan 3. Revised Site and Utility Plan
- Plan 4. Revised Site Details
- Plan 5. Code Analysis & Life Safety
- Plan 6. Existing Conditions Survey
- Plan 7. Revised Elevations
- Plan 8. Revised Door Detail
- Plan 9. Revised Schedules
- Plan 10. Basement Plan
- Plan 11. 1st Floor Plan
- Plan 12. 2nd Floor Plan
- Plan 13. 3rd Floor Plan
- Plan 14. 4th Floor Plan
- Plan 15. Sections
- Plan 16. Existing Demo Floor Plans

PUBLIC COMMENT

- PC 1. JC 2.23.22

GENERAL

- Confirm whether three lots associated with the sites are under the same ownership. Could potentially be an Right, Title, and Interest concern with the City.
- City reached out to applicant regarding building line and property line. The surveyor noted that the owners may have “gained title to the portion of the building which overlaps the record boundary by means of adverse possession.” City Staff is still reviewing this and will provide an update at a later date.
- As this project is intended for residential use, please provide bike racks somewhere on site.
- The existing canopies could encroach along the right of way. Please provide documentation that demonstrate these canopies are allowed as is.

TRANSPORTATION

- Please update the plans to show individual parking spots.

WATER QUALITY, STORMWATER, & INFRASTRUCTURE

- The sidewalk water line and utility work will occur within the street Right of Way. Applicant will need to work with the Department of Public Works to confirm these connections and updates.
- The applicant should at minimum improve the existing ramp to a better condition.
- The applicant should look at resurfacing sidewalks as they are not in great condition.
- The applicant needs to confirm how stormwater is being managed on site (may be as simple as working with architect to find a plan to confirm existing conditions).
- The existing water line is going through an existing tree bed. City Arborist has concerns about tree survivability. Please consult with the City Arborist on appropriate designs and layouts.

DESIGN REVIEW

- Design review is attached.
- **Windows:** In the B-1, B-1b, B-2, and **B-2b** zones windows shall be required along the street frontage of a building, Windows shall be transparent (with a visible transmittance (VT) of .7 or greater) and installed at a height to allow views into the building by passersby. **Applicant to confirm proposed windows for visible transmittance, applicant to provide window and door schedule for City staff review.**
- Windows – Not Met – Windows shall be located in all building facades visible from the public way, especially on building facades along the major public street. **Applicant to provide window and door schedule and include all existing fenestrations along Mechanic Street as it appears there is a service door and window for venting south of building entry.**
- Building Character, Detail, Scale, and Graphic Qualities – **Not Met**
Building design will include various architectural and graphic amenities to provide a strong presence along a street and relate a building to its community. **Applicant to provide materiality of renovated building entry, existing wood paneling appears to be in disrepair.**

Subject: 94 Portland Street
Zone: B2b
Date of Review: Wednesday, March 16, 2022
Reviewer(s): Sean King (Urban Designer), Charles Tetelman (Planner), Kevin Kraft (Deputy Director)
Project ID: PL-001845-2021

I. INTRODUCTION

The proposed change of use to four (4) residential units is located at 94 Portland Street.

II. DESIGN REVIEW COMMENTS:

STANDARDS. The project was reviewed against the **B-1 and B-1B NEIGHBORHOOD BUSINESS AND B-2 AND B-2B COMMERCIAL BUSINESS ZONE** Standards (Appendix 2 of the Design Manual).

- a. *Urban Street Wall:* Change of use maintains existing building to create urban street wall.
- b. *Mixed Uses:* Not applicable.
- c. *Building Entrances:* Building entry for residential units are oriented towards, adjacent and directly accessible from sidewalk in public right-of-way.
- d. *Windows:* In the B-1, B-1b, B-2, and **B-2b** zones windows shall be required along the street frontage of a building, Windows shall be transparent (with a visible transmittance (VT) of .7 or greater) and installed at a height to allow views into the building by passersby. **Applicant provided window and door schedule on revised drawing sheet A-601 that meet VT of .7 or greater along Mechanic Street street frontage.**
- e. *Façade Character:* Change of use maintains existing building façade with active orientation to public sidewalk.
- f. *Building Design:* Not applicable.
- g. *Building Materials:* Change of use maintains existing building materials that relate to mixed-use surroundings.
- h. Building Scale: Not applicable.
- i. *Landscaping and buffers:* Not applicable.

STANDARDS (Appendix 2 of the Design Manual)

1. Building Location and Form - Met

Buildings shall be located near the street so as to create an urban street wall. Change of use maintains existing building to create urban street wall.

Building Form, including height, bulk, and massing, contribute to the development of a street wall. Change of use maintains existing building to create urban street wall.

In the B-2b zone, buildings adjacent to streets should approach 1:2 height to street width, with a minimum of 1:3. Not applicable for change of use.

2. Building Function – Met

An urban street and business district requires a substantial intensity and variety of uses. Existing retail business at ground level to remain, not part of project scope.

3. Orientation of Buildings and their Entrances to the Street – Met

Major building entries shall be designed and located to provide the primary building access oriented to the public street and sidewalk. Building entry for residential units are oriented towards, adjacent and directly accessible from sidewalk in public right-of-way.

4. Windows – Met

Windows shall be located in all building facades visible from the public way, especially on building facades along the major public street. Applicant provided window and door schedule on revised drawing sheet A-601 that meet VT of .7 or greater along Mechanic Street street frontage.

5. Building Character, Detail, Scale, and Graphic Qualities – Met

Building design will include various architectural and graphic amenities to provide a strong presence along a street and relate a building to its community. Applicant provided entry elevation on new drawing sheet A-202 to include new materiality and window schedule that meet VT of .7 or greater along Mechanic Street street frontage.

6. Signage and building entrances – Met

Building entrances and building signage in the B-2b zone will be designed and constructed at the pedestrian scale. Not applicable

7. Development Relationship to Street – Met

Building facades and site amenities shall form a cohesive wall of enclosure along a street. Not applicable

8. Parking Lots – Met

Parking Lots shall be screened from view of the public way. Not applicable

Parking lots shall be screened from neighboring properties. Not applicable

Crosswalks shall be provided within parking lots and across entrance driveways, directing pedestrians to building entrances. Not applicable

Street trees shall be planted along property street frontage 25ft. on center. Not applicable

9. Transit Connections – Met

Development proposed along established transit corridors must design uninterrupted access from the proposed development to the transit stop. Not applicable

Major Site Plan Review - Cover Letter

Project Address: 94 Portland Street, Portland ME 04101

Submission Date: 11/5/2021

Owner:

94 Portland Street, LLC

7 Lucina Terrace, Gorham, ME 04038

(t) 207-837-1221 (e) 94portlandstllc@gmail.com

Architect:

Caleb Johnson Studio

110 Exchange Street, Portland ME 04101

(t) 207-283-8777 (e) patrick@calebjohnsonstudio.com

Civil Engineer:

Terradyn Consultants, LLC

565 Congress Street, Suite 201 Portland, Maine 04101

(t) 207-632-9010 (e) mtw@terradyconsultants.com

Existing Building Information:

The subject project is located at 94 Portland Street and resides within the B-2b Zone. The existing structure is a (3) story + an attic unsprinklered brick building of construction type III-B (IBC) / III-000 (NFPA). The 1st, 2nd, and 3rd level floor plates are roughly 1,050sf each, and the attic floor plate is approximately 800sf, totaling 3,950gsf existing. The 2nd and 3rd floor are accessed from a common stair that exits directly out to Mechanic Street.

The building is occupied on the first floor by a marijuana retail store (Caniba Co). The 2nd and 3rd floor are unoccupied but were previously used as a lodging house with 7 total bedrooms. The attic is unfinished and has been unoccupied.

Proposed Project Information:

The building Owner, 94 Portland Street LLC, is proposing to convert the previous lodging house on the 2nd and 3rd floor into (4) conventional, market rate residential apartment units. The 3rd floor residential units will be expanded into the attic for an additional bedroom that is accessible from within each unit. The common stair used to access the 2nd and 3rd level is to remain.

There are minimal exterior improvements proposed: Removal of existing fire escape, brick repair where necessary, and replacement of the existing windows. No work is proposed to the 1st floor retail store.

The current building has adequate electrical service for the proposed uses based on load calculations supplied by the electrical contractor. An ability to serve letter has been issued by the City of Portland Water District with an understanding that the existing domestic water service will need to be increased to 1 1/2" and a 4" sprinkler supply will need to be added to serve a proposed NFPA 13 full-building sprinkler system.

Major Site Plan Review - Narrative

50 Exchange Street, Portland ME 04101

General Application Documents:

- Project Description - Cover letter
 - Provided in this document
- Completed Checklist
 - Provided, see attachment
- Evidence of Right, Title, and Interest
 - Provided, see attachment
- Evidence of State or Federal Approval
 - NA, no additional approvals required
- Zoning Assessment
 - Provided, see attached drawings
- Site Plan Standards Assessment
 - Provided, see attached drawings
- Summary of Existing and/or Proposed Easements or Covenants, applicable.
 - Provided, See attached Boundary Survey
- Waiver Requests
 - NA, no waivers requested
- Financial Capability
 - Provided, see Attachment
- Technical Capability
 - Provided, see Attachment
- Housing Preservation and Replacement Ordinance
 - The previous building use included (7) boarding rooms and all of the area of the building will be converted to conventional apartments. As a result, the project is not subject to requirements of Portland zoning ordinance Chapter 18 per exemptions listed in section 18.1.3.

Transportation:

- Impact on Surrounding Street Systems
 - NA, the previous use on the 2nd and 3rd floor was boarding room style with 7 total bedrooms. The new use is (4) conventional apartments with 6 total bedrooms. No change in street loading.
- Access and Circulation
 - NA, there are no changes to the existing access and circulation proposed.
- Public Transit
 - NA, there are no enhancements to public transit proposed as the building is existing. The Portland Street and Forest Avenue bus stop serving lines 2,4 and 5 is across the street from the subject property.
- Off Street Parking
 - In review of Table 19-A, the previous use of a "Lodging House" required 1 space per 5 rooming

units. Previously with 7 bedrooms, this would require 2 parking spaces. The new building use will be 4 conventional apartments which is 1 space/dwelling unit, this would require 4 parking spaces. However, the off-street parking requirement is subsequently reduced to 0, per Table 19-B, as the project is within a ¼ mile of a fixed route transit service (Portland Street Forest Ave bus stop).

- Transportation Demand management
 - As the change of use is less than 10,000sf, a Transportation Demand Management Plan is not required.

Environmental:

- Preservation of Significant Natural Features
 - NA, no changes are proposed.
- Landscape Preservation
 - NA, as the building is tight to the lot line on all street sides and no changes are proposed. The Owner will provide payment for in-lieu-of fee for site trees as required for addition of dwelling units. (1 mature tree in ROW along Mechanic Street)
- Site Landscaping and Buffers
 - NA, as the building is tight to the lot line on all street sides.
- Water Quality, Stormwater Management, and Erosion Control
 - NA, as the building is tight to the lot line on all street sides and no additional impermeable surface is proposed. The existing gable pitched roof does not tie into any underground stormwater management. On the north side, stormwater is collected in a gutter and into a single downspout that empties onto the sidewalk along Mechanic street. On the south side, stormwater sheet flows into the alley space between 94 Portland and 98 Portland Street (Bayside American Cafe)

Public Infrastructure and Community Safety:

- Consistency with City master Plan
 - NA
- Public Safety and Fire Prevention
 - NA no changes to the existing building at ground level are proposed.
- Availability and Adequacy of Public Utilities
 - See attached ability to serve letter from the Portland Water District for domestic and sprinkler services.

Site Design:

- Massing, Ventilations and Wind Impact
 - NA, No changes to the existing building.
- Shadows
 - NA, No changes to the existing building.
- Snow and Ice Loading
 - NA, No changes to the existing building.

- View Corridors
 - NA, No changes to the existing building.
- Historic Resources
 - NA
- Exterior Lighting
 - NA, none proposed
- Noise and Vibration
 - NA, the project will use typical residential scale heating and cooling equipment.
- Signage and Wayfinding
 - NA, no new signage or wayfinding elements proposed.
- Zone Related Design Standards
 - Refer to attached drawings for information on zoning design standards.

Boundary Survey: Provided, see attached drawings

Site Plans: Provided, see attached drawings

Utility Plan: Provided, see attached drawings

Grading and Drainage Plan: NA

Landscape Plan: NA

Architectural Plans and Renderings: Provided, see attached drawings

Construction Management Plan: Provided, see attached drawings

Attachments:

1. Completed "Major Site Plan General Document and Drawing Checklist"
2. Evidence of Right, Title, and Interest
3. Architectural Drawing Set, Boundary Survey, Site Plan
4. Financial Capability Letter
5. Ability to Serve Letter - Portland Water District
6. Ability to Serve Plan - Portland Water District
7. Technical Capability - CJS/ Woodhull Commercial Portfolio

CITY OF PORTLAND
Planning & Urban Development Department

MAJOR SITE PLAN
GENERAL DOCUMENT AND DRAWINGS CHECKLIST

Please submit each document as a separate PDF file.
Please confirm by electronically checking the boxes in the left-hand column.

**** PLEASE FILL OUT AND UPLOAD THE ZONING ASSESSMENT TABLE
AND WAIVER TABLE SEPARATELY AS NOTED BELOW ****

At the time of application submission, please contact the Department of Public Works regarding E-911 addressing for your project.

GENERAL APPLICATION DOCUMENTS

☒	NA	Project Description Cover letter with detailed project description
☒	NA	Completed Checklist (this document)
☒	NA	Evidence of Right, Title, and Interest Deeds, leases, or purchase and sales agreements
☒	☒	Evidence of State or Federal Approvals Permits or letters of non-jurisdiction, if applicable
☒	NA	Zoning Assessment (see Zoning Assessment Table) Summary of compliance with use and dimensional standards of the land use code
☒	NA	Site Plan Standards Assessment (see Section 14.6 of the land use code) Summary of project compliance with site plan standards of the land use code
☒	NA	Summary of Existing and/or Proposed Easements or Covenants, applicable. Evidence of existing easements and any proposed easements, covenants, public or private rights-of-way
☒	☒	Waiver Requests (see Waiver Table) Written request for waiver describing request and compliance with applicable waiver standards
☒	NA	Financial Capability Letter or evidence from a financial institution or third party verifying financial capacity to undertake project
☒	NA	Technical Capability Evidence of technical capability of applicant and consultants – resumes and/or examples of past projects

MAJOR 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	Impact on Surrounding Street Systems (14-14.6.1(A)) Describe incremental volume of traffic impacts and mitigation measures. If needed
Yes	NA	Access and Circulation (14-14.6.1(B)) Identify and describe the following: - Site access and internal circulation, including ADA access - Drive-up features, if applicable - Loading and servicing needs, routes, and geometry, providing turning templates for delivery vehicles, if applicable - Sidewalks and condition along street frontages and internal walkways - Engineered details for ADA ramps and public sidewalks, meeting sidewalk material policy and construction requirements (Technical Manual, Section 1)
Yes	NA	Public Transit (14-14.6.1(C)), if applicable Identify and describe the following: Existing available transit service and proposed transit improvements, including design details, such as easement, pad base, and shelter
Yes	NA	Off-Street Parking (14-14.6.1(D)), if applicable Identify and describe the following: - Proposed vehicular and bicycle parking supply (including ADA-compliant parking) in relation to applicable parking requirements in Article 19 of the land use code - Curb cut separation and parking layout (Technical Manual, Section 1) - Construction details for bicycle racks - Management plan for snow storage and removal
Yes	NA	Transportation Demand Management (TDM) (14-14.6.1(E)), if applicable Provide TDM plan drafted in accordance with Technical Manual Section 1 requirements

ENVIRONMENTAL		
Yes	NA	Preservation of Significant Natural Features (14-14.6.2(A)), if applicable Identify and describe the following: • High and moderate value waterfowl and wading habitat • Aquifers (for Casco Bay Islands) • Waterbodies (including wetlands, watercourses, significant vernal pools and floodplains) • Proposed preservation areas and protection measures • Documentation from environmental compliance consultants and determinations from applicable state and federal agencies
Yes	NA	Landscape Preservation (14-14.6.2(B)) Identify and describe the following: • Measures to preserve trees, including within required zoning setbacks (Technical Manual, Section 4) • Measures to protect existing vegetation during construction
Yes	NA	Site Landscaping and Buffers (14-14.6.2(C)) Identify and describe the following: • Overall landscaping approach and consistency with standards • The use of screening and buffering of service areas and between non-residential and residential uses • Existing Heritage or Feature Trees on site and measures to preserve • Compliance with street tree requirements
Yes	NA	Water Quality, Stormwater Management, and Erosion Control (14-14.6.2(D)) Identify and describe the following: • Erosion and sedimentation control plan and measures • Evidence of compliance with Urban Impaired Stream Standards pursuant to DEP Chapter 500 stormwater law, as applicable • Subsurface sanitary sewage disposal and groundwater protection measures

PUBLIC INFRASTRUCTURE AND COMMUNITY SAFETY		
Yes	NA	Consistency with City Master Plans (14-14.6.3(A)) Describe proposed easements, rights and improvements to connect or continue off-premises public infrastructure, as applicable
Yes	NA	Public Safety and Fire Prevention (14-14.6.3(B)) Identify and describe the following: - Compliance with Crime Prevention through Environmental Design (CPTED) requirements (Technical Manual, Section 3) - Emergency vehicle access - Consistency with public safety standards (Technical Manual, Section 3)
Yes	NA	Availability and Adequacy of Public Utilities (14-14.6.3(C)) (Technical Manual, Sections 2 & 9) Identify and describe the following: - Electrical services, including providing underground services - Existing and proposed connections for public utilities and required public utility upgrades - Sewer line connections
SITE DESIGN		
Yes	NA	Massing, Ventilations and Wind Impact (14-14.6.4(A)) Identify and describe the following: - Wind and ventilation impacts on adjoining structures and/or adjacent public spaces, including wind study, if applicable - Bulk, location, or height impacts on adjoining structures
Yes	NA	Shadows (14-14.6.4(B)), if applicable Provide shadow analysis of impacts on publicly accessible open space (Technical Manual, Section 11)
Yes	NA	Snow and Ice Loading (14-14.6.4(C)) Describe building design measures to prevent snow and ice from loading or falling onto adjacent properties or public ways
Yes	NA	View Corridors (14-14.6.4(D)), if applicable Describe any protection of designated view corridors (Portland Design Manual, Appendix. 1)
Yes	NA	Historic Resources (14-14.6.4(E)), if applicable Identify and describe the following: - The site's status as a designated landmark, within a historic district or historic landscape district, or within 100 feet of any designated landmark, historic district, or historic landscape district - Compliance with standards for preservation and documentation of archaeological resources

Yes	NA	Exterior Lighting (14-14.6.4(F)) Describe how the proposed site lighting will adhere to photometrics requirements as it relates to light trespass and full cutoff fixture design, pursuant to Technical Manual Section 12
Yes	NA	Noise and Vibration (14-14.6.4(G)) Provide data on noise levels for HVAC and other mechanical equipment, such as design specifications, to demonstrate consistency with state and federal noise emissions requirements as well as City code
Yes	NA	Signage and Wayfinding (14-14.6.4(H)), if applicable - Provide signage plan showing the location, dimensions, height and setback of all existing and proposed signs - Provide drawings of all commercial and directional signage on site
Yes	NA	Zone-Related Design Standards (14-14.6.4(I)) Address any applicable design review standards by zone, including compliance with Design Manual

MAJOR SITE PLAN DRAWINGS CHECKLIST

Please upload the following DRAWINGS with the listed details into e-Plan as separate pdfs.

All drawings must be submitted in a 24 x 36 sheet size.

BOUNDARY SURVEY (stamped by a Maine Licensed Surveyor and drawn as per Technical Manual Sec. 13)

SITE PLAN(S) (stamped by a Maine Licensed Professional Engineer) including:

All sheets – Include a title block with project title and the following information:

- ✓ • Project street address
- ✓ • Name and address of property owner & applicant
- ✓ • Licensed design professional, incl firm that produced plans
- ✓ • North arrow
- ✓ • Date of preparation and revision history block
- ✓ • Tax parcel (chart, block, and lot) number

Existing Conditions Plan with the following:

- ✓ • Existing structures, with distance from primary building façade(s) to the property line
- ✓ • Approximate location of structures on abutting properties
- ✓ • All streets and intersections adjacent to the site
- ✓ • Existing driveways, pedestrian ways, and bicycle infrastructure, including dimensions and materials
- NA • Existing public transit infrastructure
- NA • Existing vehicle & bicycle parking areas
- ✓ • Existing utilities on site and within adjacent rights-of-way
- ✓ • Existing grades (two-foot contours preferred)
- NA • Location of water courses, wetlands, and vegetation, or other significant natural features
- NA • Existing soil conditions and location of test pits and borings
- ✓ • Zoning boundary lines, including overlays
- ✓ • Location of all existing easements and rights-of-way

Proposed Site Plan with the following:

- ✓ • Proposed structures, including distance from primary building façade(s) to property lines
- ✓ • Ground floor area, and finished floor elevations for all buildings
- NA • Any proposed geometric modifications to streets and intersections adjacent to site
- NA • Location, dimensions and materials of all proposed driveways, vehicle, bicycle, & pedestrian access ways with corresponding curb lines
- NA • Engineered specifications/ cross-sections for proposed driveways, sidewalks & paved areas
- NA • Location and dimensions of proposed loading areas, including turning templates
- NA • Proposed transit infrastructure with dimensions/ engineering specifications
- NA • Location of vehicle and bicycle parking with dimensions and engineering specifications
- NA • Location of all snow storage areas
- ✓ • Exterior lighting (please see Technical Manual Sec. 12 for photometrics requirements)
- NA • Location of fire hydrants

✓• Location of solid waste management receptacles ✓• Location of all proposed HVAC and mechanical equipment, including proposed screening, where applicable ✓• Location of proposed easements and rights-of-way, including dimensions ✓• Please utilize color-coding and/or hatches and shading to delineate changes between the pre and post development condition as needed
UTILITY PLAN including:
✓• Proposed electrical infrastructure - NA• Location, sizing and directional flows of all proposed sewer and stormwater infrastructure ✓• Location and dimensions of off-premises public or publicly accessible infrastructure adjacent to site - NA• Electric utility infrastructure
GRADING AND DRAINAGE PLAN including:
- NA• Proposed grades - NA• Proposed stormwater management measures meeting Technical Manual (Section 5) standards - NA• Any proposed alteration of a watercourse or wetlands - NA• Any groundwater protection measures - NA• Proposed buffers and preservation measures for wetlands or significant natural features
LANDSCAPE PLAN including:
- NA• Existing vegetation to be preserved and preservation measures - NA• Proposed landscaping, screening, and street trees, including caliper widths for trees - NA• Planting schedule, including street trees
ARCHITECTURAL PLANS AND RENDERINGS including:
✓• Exterior building elevations, color renderings, illustrations of all sides ✓• Axonometric and street-level views for structures greater than three stories in height - NA• Provide context drawings, if applicable (Design Manual, page 1) ✓• Floor plans
CONSTRUCTION MANAGEMENT PLAN including:
✓• Specifics on traffic control, sidewalk sheds, and pedestrian rerouting ✓• Include a drawing and written narrative
OTHER
✓• Details and cross-sections, as necessary



ZONING ANALYSIS Relevant Zone(s) B-2B

All Projects:

	Required	Proposed
Lot Size	NA	No Change
Area Per Dwelling Unit	435	1168
Minimum Street Frontage	20'	No Change
Front Yard Minimum	10'	No Change
Front Yard Maximum	NA	No Change
Rear Yard	10'	No Change
Yard Right	None	No Change
Yard Left	None	No Change
Side Street Setback	NA	No Change
Step Back	5'/15'	No Change
Maximum Lot Coverage	NA	--
Minimum Lot Coverage	NA	--
Maximum Height	50'	No Change
Open Space	NA	--
Maximum Impervious Area	90%	No Change
Pavement Setback	NA	No Change
Floor Area Ratio	NA	--
Off Street Parking Spaces	1 sp/unit	0
Loading Bays	0	0
Other 1		
Other 2		
Other 3		

Planned Residential Unit Developments (PRUD) Requirements

	Required	Proposed
Minimum Lot Size		
Minimum Lot Area per Dwelling		
Maximum # Units per Building		
Maximum Building Length		
Maximum Accessory Building Length		
Minimum Setbacks		
Minimum Building Separation		
Minimum Open Space		

Affordable Housing Density Bonuses (if applicable)

	Bonus Increase or Decrease	Maximum Allowable With Bonus	Proposed
Density			
Height			
Setback Reduction			
Recreation Space			
Maximum Accessory Building Length			
Minimum Setbacks			
Minimum Building Separation			
Minimum Open Space			
Explanatory Text 1 (optional):			
Explanatory Text 2 (optional):			
Explanatory Text 3 (optional):			

DEED OF SALE BY PERSONAL REPRESENTATIVE

(Testate)

Maine Statutory Short Form

KNOW ALL PERSONS BY THESE PRESENTS,

THAT, I, ROBERT A. SIMMONS, JR., of Windham, Maine, duly appointed and acting Personal Representative of the ESTATE OF JEAN CARMINE SIMMONS, deceased (testate), as shown by the Probate records of the County of Cumberland, State of Maine, Docket No. 2019-1377, with notice to each person succeeding to an interest in the real property described herein having been waived by each such person, by the power conferred by the Probate Code, and every other power, for consideration paid, grant to 94 PORTLAND STREET LLC, a Maine limited liability company, with a mailing address of 7 Lucina Terrace, Gorham, Maine 04038, certain lots or parcels of land, with any buildings thereon, situated in Portland, Cumberland County, State of Maine, being bounded and described as follows:

SEE EXHIBIT "A" ATTACHED HERETO, MADE A PART
HEREOF AND INCORPORATED BY REFERENCE HEREIN

Witness my hand and seal this 27th day of March, 2020.

ESTATE OF JEAN CARMINE SIMMONS

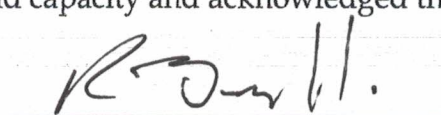


By: ROBERT A. SIMMONS, JR.

Its: Duly Appointed Personal Representative

State of Maine
Cumberland, ss.

Personally appeared before me on this 27th day of March, 2020, the above-named Robert A. Simmons, Jr., in his said capacity and acknowledged the foregoing instrument to be his free act and deed.


Notary Public/Attorney at Law

Printed Name: Ricky L. Brunette
COMMISSION EXPIRES:



EXHIBIT A

PARCEL A: 94 Portland Street

A CERTAIN LOT or parcel of land with the buildings thereon situated on the southwesterly corner of Mechanic Street and Portland Street in Portland, County of Cumberland and State of Maine, bounded and described as follows:

BEGINNING at the southwesterly corner of said Mechanic Street and Portland Street; thence running southerly along the westerly side line of said Mechanic Street forty-eight (48) feet to a point; thence westerly a distance of twenty-six (26) feet six (6) inches along the line parallel with an approximately two (2) feet from the back side of the frame rear projection of the house hereby conveyed, the house being numbered 94 on said Portland Street; thence northerly in a line equidistant between the building on the lot hereby conveyed and the building on the lot next westerly known as No. 98 Portland Street a distance of fifty-six (56) feet six (6) inches, more or less, to said Portland Street; thence easterly along said Portland Street twenty-eight (28) feet to the corner and point of beginning.

MEANING AND INTENDING to describe all those same premises conveyed (1) by Meredith J. Milliken to Ricky L. Brunette, Delores A. Brunette, Robert A. Simmons and Jean C. Simmons dated March 18, 1976 and recorded in the Cumberland County Registry of Deeds in Book 3817, Page 327 and (2) by Ricky L. Brunette and Delores A. Brunette to Robert A. Simmons and Jean C. Simmons as joint tenants dated March 28, 1979 and recorded in Book 4398, Page 305. Robert A. Simmons died on August 23, 2007, leaving Jean C. Simmons as surviving joint tenant. Jean Carmine Simmons, a/k/a Jean C. Simmons, died on September 1, 2019. See Cumberland County Probate Court Docket #2019-1377.

Received
Recorded Register of Deeds
Mar 30, 2020 09:53:19A
Cumberland County
Nancy A. Lane

PARCEL B: 42 Mechanic Street

BEGINNING at a point on the westerly side of Mechanic Street distant forty-eight (48) feet southerly from the southwesterly corner of said Mechanic Street and Portland Street; thence southwesterly a distance of fifty (50) feet, more or less, to land formerly of Ebenezer Daniels, said line running parallel to and approximately two (2) feet from the back side of the frame rear projection of the building conveyed by Maine Savings Bank to Kaleope H. Johns in May, 1940 [Book 1595, Page 444]; thence Southeasterly by said Daniels' land and parallel to Forest Avenue to land formerly of Robert Hall, later of Elias Thomas; thence northeasterly by said Hall land fifty (50) feet, more or less, to said Mechanic Street; thence northwesterly by said Mechanic Street, thirty-seven (37) feet, more or less, to the point of beginning.

MEANING AND INTENDING to describe all those premises conveyed by Robert Larkin to Robert A. Simmons, Sr. and Jean C.R. Simmons dated July 18, 1986 and recorded in the Cumberland County Registry of Deeds in Book 7283, Page 186. Robert A. Simmons, Sr. (a/k/a Robert A. Simmons) died on August 23, 2007, leaving Jean C.R. Simmons (a/k/a Jean C. Simmons) as surviving joint tenant. Jean Carmine Simmons, a/k/a Jean C. Simmons, died on September 1, 2019. See Cumberland County Probate Court Docket #2019-1377.







When a Maine cannabis retailer was ready for a brick and mortar shop, it was essential that the space echo the professional, high-quality product and service. Maneuvering state and federal laws around retail cannabis legality and schedule was an ongoing obstacle. But the client's clear vision and dedication to the design and architecture would anchor the project throughout production.

The building is separated from the surrounding commercial spaces, cutting a low profile just below the road and tucked into a corner adjacent to expansive natural wetlands. Upon arrival, the steel and cedar structure doesn't shout to be noticed; it reveals itself slowly and you experience it with a subtle impact. The design focused on a clean, upscale vibe, unlike your average cannabis shop. The 3,000-square-foot space is flooded with natural light and allows for open interaction without crowding. The ceiling has an inverted gable truss that creates a vaulted space and opens to the backside of the building. Woodhull of Maine completed custom millwork from Maine Ash that serves as a backdrop to showcase products and encourage customer engagement.







Two gallery owners were ready to add on to their popular space in Ogunquit, Maine but did not want to disrupt the existing character of the streetscape.

Regulatory restraints and a historical ordinance from the town board added additional requirements that called for strategic solutions. A traditional design with innovative structural decisions brought cohesion to the surrounding buildings and vibrancy to the busy Main Street intersection.





The ridge of the new structure was turned ninety degrees relative to the two buildings that were already part of the shop. This achieved some variety and allowed for a dramatic tall window that highlights an expanse of glass and beautiful recessed entries. In combination with a large central skylight, natural light from the window bathes the interior space moving from the street through large scale trusses that gradually scale down in size. The second floor and roof stacks on itself, revealing the bones that hold the building up. The finished gallery is light and clean with whitewashed Maine Pine and polished, uncolored concrete floors that allow displayed artwork and goods to add vibrancy throughout.





The building at 265 Main St. had been vacant for decades before the owners had the vision to return the space to its original purpose—a mixed-use building with commercial retail space, artist studios and office spaces, and apartments. Historic tax credits, which fund renovations of underutilized buildings, helped enable the remodel when many lenders were skeptical that Biddeford could support the new development.



The project integrated the history of the original building with a fully modern renovation. Without faking an antique or vintage feel, contemporary additions were left to be contemporary while hints of the past revealed themselves in preserved details—Grateful Dead graffiti, a 19th-century door panel. Old brick was left exposed with generations of multi-colored paint, now juxtaposed against clean white plaster. Original windows were kept and old beams were milled and re-purposed as custom cabinets in the apartments. A striking balance of past and present.

What was once a forgotten building became a vibrant, profitable location for the town in just two years, receiving statewide attention. 265 defied expectations and now houses businesses, artists, and high-end apartments.





A humble budget and thoughtful build out came together to create Elements, an essential cafe and social hub developed in downtown Biddeford at a time when many doubted its viability. A local business owner had the vision to combine what was originally two separate storefronts, opening the space to function as a coffee shop, bar, and bookstore. A dividing wall was removed, steel beam support was added, and much of the historic fabric of the 19th century mixed use building was maintained.



HIGGINS BEACH
INN

34


HIGGINS
BEACH INN
—

SHADE
the EATERY
AT HIGGINS BEACH INN

C
J S

Project: Higgins Beach Inn, Scarborough

calebjohnsonstudio.com



There is a long-standing connection between the Higgins Beach Inn, the residents of Higgins Beach, and the many people who have made Higgins Beach their vacation destination of choice. The renovation work sought to freshen up the beloved colonial inn with a clean and modern feel that maintains comfortable character and charm. The sleepy New England style gave way to a crisp, modern aesthetic guided by simplicity.

Rooms and communal spaces were updated throughout with fresh colors, textures, and millwork by Woodhull of Maine. The inn's connecting restaurant, Shade, introduced a breezy, uncomplicated experience with contemporary details including a sleek bar and cafe-style seating. Outside, the addition of a canopy extended outdoor seating and the space's range of use.











110 Exchange Street
2nd and 3rd Floors
Portland, ME 04101

207.283.8777
calebjohnsonstudio.com

C
J S



September 16, 2021

RE: Joseph and Diane Catoggio

To Whom It May Concern:

On behalf of Bangor Savings Bank, I am pleased to provide this letter of support for Joseph and Diane Catoggio and their interest in the development of 94 Portland Street in Portland, Maine. Mr. and Mrs. Catoggio have been customers of the Bank since 2007 and demonstrate noteworthy financial capacity. All accounts are in good standing and are handled in a professional and satisfactory manner.

This letter of support is not a commitment to lend, although we welcome the opportunity to be a resource for financing.

Please feel free to call me at (207) 593-6000 if I can be of assistance in any way.

Sincerely,

A handwritten signature in black ink, appearing to read "Dale Winchenbach", with a long, sweeping horizontal stroke extending to the right.

Dale Winchenbach
Vice President
Bangor Savings Bank
280 Fore Street, Suite 200
Portland, ME 04101
Dale.Winchenbach@Bangor.com

CERTIFICATION OF BENEFICIAL OWNER(S)

All persons opening an account on behalf of a legal entity must provide the following information:

Full Name and Title (person completing form) Diane Catoggio	Borrower Name 94 Portland Street LLC
Legal Entity Name 94 Portland Street LLC	Legal Entity Type (corporate structure) Limited liability company
Legal Entity Address 7 Lucina Terrace, Gorham, ME 04038	

INSTRUCTIONS: If there are no Legal Entities involved in this loan transaction, please complete **ONLY** Section III. Otherwise, complete all sections of this form. Please see General Instructions page for further information.

SECTION I – BENEFICIAL OWNERS

Please provide the following information for each individual(s), if any, who directly or indirectly, through any contract arrangement, understanding, relationship, or otherwise owns 25% or more of the equity interests of the legal entity listed above. Check here ☐ if no individual meets this definition and complete Sections II and III.

Full Name	Ownership %
Joseph Catoggio	50%
Diane Catoggio	50%

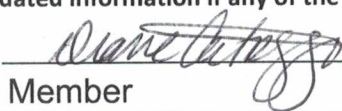
SECTION II - CONTROL

Please name an individual with significant responsibility for managing or directing the entity, including, an executive officer or senior manager (e.g. Chief Executive Officer, Chief Financial officer, Chief Operating Officer, Managing Member, General Partner, President, Vice President, Treasurer); or any other individual who regularly performs similar functions.

Full Name	Title
Diane Catoggio	Member

I, Diane Catoggio (name of person opening account), hereby certify, to the best of my knowledge, that the information provided above is complete and correct. I further certify that the Borrower will provide the Bank with updated information if any of the above reported information changes.

Signature:



Date:

3/20/20

Title:

Member

SECTION III – PAYMENT METHOD (NEW LOANS ONLY)

Please indicate the payment method anticipated for the new loan:

☐ AFT ☐ EFT ☐ CASH ☐ CHECK ☐ WIRE ☒ ONLINE PAYMENT



August 31, 2021

Michael Cleary
Woodhull Construction

Re: 94 Portland St, PO
Ability to Serve with PWD Water

Dear Mr. Cleary:

The Portland Water District has received your request for an Ability to Serve Determination for the noted site submitted on August 31, 2021. 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 and is valid for eighteen (18) months after the date of issue. Any changes affecting the approved water system will require further review and approval by PWD.**

Conditions of Service

The following conditions of service apply:

- A new 1.5-inch domestic service with a 1-inch meter may be installed from the water main in Mechanic Street. The service should enter through the property's frontage on Mechanic Street at least 10-feet from any side property lines. An approved non-testable dual check backflow prevention device must be installed on the service line directly after the meter prior to service activation.
- A new 4-inch fire service may be installed from the water main in Mechanic Street. The service should enter through the property's frontage on Mechanic Street at least 10-feet from any side property lines. An approved Testable double check valve assembly backflow prevention device must be installed on the service line directly before the sprinkler riser prior to service activation.
- The existing building is currently served with a 3/4-inch domestic water service and 5/8-inch meter; the size of this service is undersized for the proposed use. This service must be terminated by shutting the corporation valve and cutting the pipe from the water main. The building will be without water while the existing service is retired and the proposed service is installed. This process will take at least one day, and may take several days depending on the project.
- A service must be shut at stop with the meter pulled and have the account closed before the service can be retired. Please contact customer service at 207-761-8310 to complete this work prior to service retirement.
- The Portland Water District acknowledges all occupants of a multi-unit building as customers of the District. As such, all tenants of the building must be able to access the water meter. The method of access to the meter by the tenants is at the discretion of the owner of the building, provided that the tenants can freely access the meter in accordance with the Portland Water District Terms & Conditions.



Prior to construction, the owner or contractor will need to complete a Service Application and pay all necessary fees for each proposed service. When the project is ready for construction, an Application for each service can be requested by contacting the MEANS Group at MEANS@pwd.org or 207-774-5961 ext. 3199. Once a completed Application has been submitted with payment, please allow seven (7) days for processing.

Existing Site Service

According to District records, the project site does currently have existing water service. A 3/4-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 an 8-inch diameter ductile iron water main in Mechanic Street and a public fire hydrant located approximately 125 feet from the site. The most recent static pressure reading was 97 psi on August 19, 2021.

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. Based on the high water pressure in this area, we recommend that you consider the installation of pressure reducing devices that comply with state plumbing codes.

Private Fire Protection Water Needs

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

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

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

Sincerely,
Portland Water District



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

Neighborhood Meeting Certification

94 Portland Street Project

I, Jason Jirele with Caleb Johnson Studio, for the applicant “94 Portland Street, LLC” for the proposed project at 94 Portland Street in Portland, ME hereby certify that a virtual neighborhood meeting was held on February 23, 2022 at 5:00pm.

I also certify that on February 10, 2022, 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 or within 1000 feet of a proposed industrial subdivision or industrial zone change.
2. Residents on the “interested parties” list.

Signed,



Jason Jirele with Caleb Johnson Studio
on behalf of 94 Portland Street, LLC.

Attached to this certification are:

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

Neighborhood Meeting Minutes

Project: 94 Portland Street
 Date: February 23, 2022, 5:00pm
 Meeting: Neighborhood Meeting
 Location: Zoom (<https://us02web.zoom.us/j/81856285336>)
 Attendees:

CJS:	Jason Jirele	jjirele@calebjohnsonstudio.com
	Patrick Boothe	patrick@calebjohnsonstudio.com
Owners:	Diane Catoggio	diane.catoggio@gmail.com
	Joe Catoggio	joe.catoggio@gmail.com
Public Attendees:	George Rheault	george.rheault@gmail.com
	Jason Tropp	jasontrupp@gmail.com
	Heidi Souveraine	heidi.souveraine@gmail.com
	Carol Hutchins	(No email given)

MINUTES:

- Meeting commenced at 5:05 pm after waiting a few minutes for guests to arrive
- A project slideshow prepared by Caleb Johnson Studio was walked through with the Owners for record. A copy of this presentation can be made available if requested.
- Project slideshow includes information on:
 - Team introduction.
 - Intentions for meeting and procedure.
 - Existing building information.
 - Proposed changes as they relate to exterior improvements and the 4th Floor Addition.
 - Regulatory process to this point including historic certificate of appropriateness.
 - Next steps in the regulatory process.
 - Fielding questions from the attendees.
- Several questions were fielded from the attendees. Below is an abridged outline of questions and responses. A copy of the zoom video file is available on request should a full transcript be needed:

(George) Have the existing tenants left and if so when did they leave?

(Joe C.) The tenants have left over time since the building was purchased in Spring of 2020. Most were given a year's notice, and the last tenant moved out of the building in July 2021.

(George) Timing of the building review process

(Patrick) The project scope requires a Major Site Plan review from the city. This process will

take about 4 months and then a building permit will be applied for and be in review for about two months after receipt of the site plan approval.

(Jason T) Can you tell me about the two entries on Mechanic Street?

(Jason J) One entry is for the commercial tenant and has been infilled. The other is the current residential entry and will remain the residential entry with a new door and transom window.

(Jason T) Any plans for the adjacent parking lot?

(Joe C) No plans for development on the adjacent parking lot. It is used as a rear egress and loading access for Bayside American Cafe.

(Jason T) It would be great if there was a better street lamp at the parking lot to help with vagrancy

(Joe C) There is a light in the area already but will consider replacing it with a better one. Also a gate has been considered.

(Carol) <Asked a question but had an unstable connection>

(Jason T) Is there consideration for landscape at the concrete retaining wall along Carol's property at 40 Mechanic Street?

(Joe C) I will plan to meet with Carol to talk about it

(Jason T) Thank you sharing the project

(George) Will the fire escape be removed and how does the building address ADA?

(Patrick) The fire escape will be removed as the building will be sprinklered and it would not be required. The building meets requirements of accessibility code with respect to existing building provisions

(Jason T) Any work planned for the rear of Bayside American Cafe?

(Joe) We are considering a new walk-in cooler but no plans are final yet.

5. Meeting was adjourned at 5:30pm

Signed,



Jason Jirele with Caleb Johnson Studio
on behalf of 94 Portland Street, LLC.

Neighborhood Meeting Sign In

Project: 94 Portland Street
 Date: February 23, 2022
 Meeting: Neighborhood Meeting
 Location: Zoom (<https://us02web.zoom.us/j/81856285336>)

Members of the Public in Attendance

Name	Email
George Rheault	george.rheault@gmail.com
Jason Tropp	jasontropp@gmail.com
Heidi Souveraine	heidi.souveraine@gmail.com
Carol Hutchins	(No Email Given)

Developer and Consultant Team in Attendance

Name	Email
Jason Jirele	jjirele@calebjohnsonstudioc.com
Patrick Boothe	patrick@calebjohnsonstudio.com
Diane Catoggio	diane.catoggio@gmail.com
Joe Catoggio	joe.catoggio@gmail.com



RICKEY'S
DELIVERIES

NO
LOITERING
FIVE MIN
TALK ONLY

NO
PARKING
ANY TIME
DAY OR NIGHT

Budweiser
KING OF BEERS

CALEB JOHNSON
STUDIO

Dear Neighbor:

Please join us for a neighborhood meeting to discuss our plans for the renovation of 94 Portland Street.

Address:
94 Portland Street
Portland, ME 04101

Building Owner:
94 Portland Street LLC

Project Description:
Renovation of former lodging house into 4 residential apartment units.

Meeting Info:
Email jjirelle@calebjohnsonstudio.com for questions
<https://us02web.zoom.us/j/81856285336>
Meeting Date: February 23, 2022
Meeting Time: 05:00 PM

The Land Use Code requires that neighboring property owners and residents on an "interested party list" be invited to participate in this neighborhood meeting. Participant sign-in will be requested and a record of the meeting will be taken. Both the sign-in log and meeting record will be submitted to the Planning Board.

If you have any questions, Please call Caleb Johnson Studio at 207-283-8777

Sincerely,
94 Portland Street LLC

Major Site Plan Review Comment Responses

Project Address: 94 Portland Street, Portland ME 04101

General

- Confirm whether three lots associated with the sites are under the same ownership. Could potentially be an Right, Title, and Interest concern with the City.
All 3 lots are under the same ownership.
- City reached out to applicant regarding building line and property line. They surveyor noted that the owners may have “gained title to the portion of the building which overlaps the record boundary by means of adverse possession.” City Staff is still reviewing this and will provide an update at a later date.
- As this project is intended for residential use, please provide bike racks somewhere on site.
New bike rack has been added along Mechanic Street sidewalk near the corner of Mechanic and Portland Street. See updated Site Plan.
- The existing canopies could encroach along the right of way. Please provide documentation that demonstrates these canopies are allowed as is.
Existing canopy along Mechanic Street (Rickey's Delivery) will be removed. Canopy along Portland Street was removed as part of the commercial tenant fit-out on the ground floor filed with the city under a separate cover.

Transportation

- Please update the plans to show individual parking spots. There is an
See updated Site Plan for individual parking spots.

Water Quality, Stormwater, & Infrastructure

- The sidewalk water line and utility work will occur within the street Right of Way. Applicant will need to work with the Department of Public Works to confirm these connections and updates.
Okay, noted.
- The applicant should at minimum improve the existing ramp to a better condition.
New detectable warning plate added at corner of Portland and Mechanic Street. See updated Site Plan.
- The applicant should look at resurfacing sidewalks as they are not in great condition.
Any brick removed because of site work will be stored and reset or replaced in kind. The rest of the sidewalk will be reviewed for spot resurfacing where required. Please let us know if any additional work should be considered.

- The applicant needs to confirm how stormwater is being managed on site (may be as simple as working with architect to find a plan to confirm existing conditions.)
The existing roof is gabled and without gutters or downspouts, as a result the stormwater sheet flows to the ground on the building's east and west facades. The sewer is combined with stormwater in both Portland Street and Mechanic Street and there is an existing catch basin along Mechanic Street. No proposed change in stormwater management on site given the limited exterior work.
- The existing water line is going through an existing tree bed. City Arborist has concerns about tree survivability. Please consult with the City Arborist on appropriate designs and layouts.
We've contacted the City Arborist and will work with them for appropriate design and layout.

Design Review

- **Windows:** In the B-1, B-1b, B-2, and B-2b zones windows shall be required along the street frontage of a building. Windows shall be transparent (with a visible transmittance (VT) of .7 or greater) and installed at a height to allow views into the building by passersby. Applicant to confirm proposed windows for visible transmittance, applicant to provide window and door schedule for City staff review.
Please see updated sheet A-601 for additional information on Windows. The only new glazing for the proposed project at grade level is the new storefront at the residential building entry which is to have a minimum VT of .7. All other glazing along street level is part of the existing commercial tenant which is not within the scope of this project and has been permitted through the city under a separate cover.
- **Windows - Not Met.** Windows shall be located in all building facades visible from the public way, especially on building facades along the major public street. Applicant to provide window and door schedule and include all existing fenestrations along Mechanic Street as it appears there is a service door and window for venting south of building entry.
Please see updated sheet A-601 for additional information on Doors and Windows. Window for venting has been removed and infilled with new brick masonry as part of the commercial tenant fit-out.
- **Building Character, Detail, Scale, and Graphic Qualities - Not Met.** Building design will include various architectural and graphic amenities to provide a strong presence along a street and relate a building to its community. Applicant to provide materiality of renovated building entry, existing wood paneling appears to be in disrepair.
See sheet A-202 for additional information on tenant entry. New material at resident building entry to be thermally modified wood siding for long term durability.

94 Portland Street

0 views

Subscribe **Joshua Caron**

12:57 PM (22 minutes ago)

to planni...@portlandmaine.gov, ctet...@portlandmaine.gov

Hi,

I'm one of the owners of 66 Portland St. (Mike Capozza's old shop). We received the notice of the renovation for 94 Portland St. and are not able to attend the meeting but I just wanted to reach out to wish the owners well on the project and offer my support as a neighbor to the project. I would hope that the City requirements are minimal, pragmatic and have a quick approval process. Housing is way too expensive and any barriers to this project the City can minimize is ultimately going to benefit the community as whole.

Regards,
Josh

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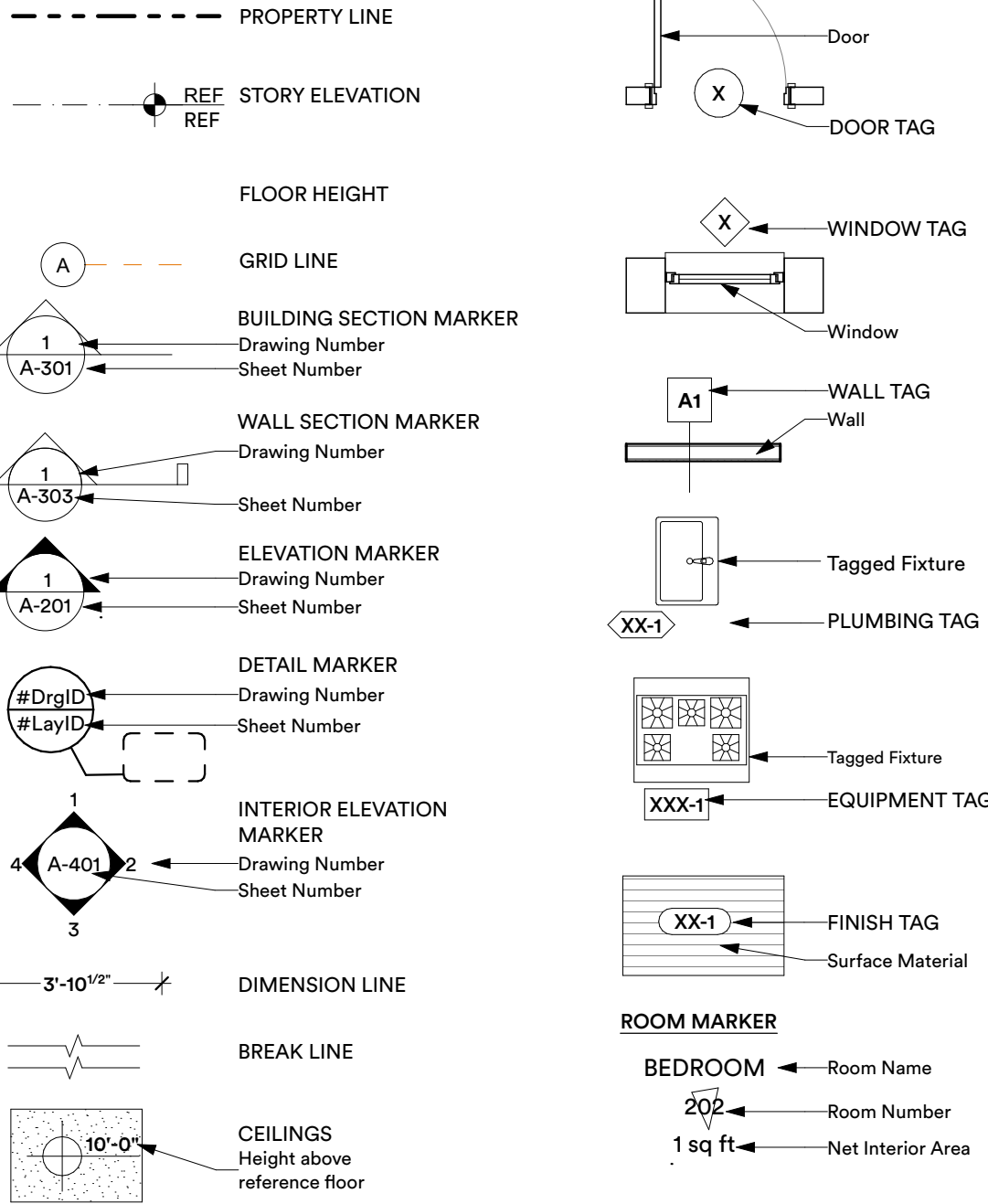
Joshua CaronM [207.408.3879](tel:207.408.3879)

BIMcloud: bimserver25 - BIMcloud Basic for ARCHICAD 25/Commercial Studio/94 Portland Street_20211102

GENERAL NOTES:

1. Contractor will review all drawings and specifications and confirm any unclear Information with the Architect before proceeding. Sheets are not to be separated when distributed to subcontractors in order to maintain contextual information.
2. Contractor is responsible for the construction of a complete weather tight building within the scope of the construction documents. If contractor feels conformance with the construction documents is in conflict with this goal he shall discuss conflicts with Architect.
3. Contractor is responsible for coordinating and supervising all sub-contractors. Workmanship standards shall be those generally accepted for high-end construction. Contractor warranties all work for a minimum of one year from final completion of job. Other explicit warranties may be in addition to above.

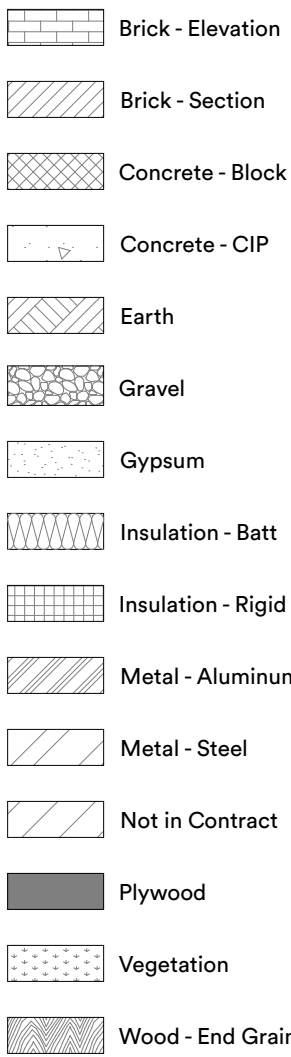
SYMBOL LEGEND



COMMON ABBREVIATIONS

ABV	Above	HT	Height
ACT	Acoustic Ceiling Tile	HM	Hollow Metal
AD	Area Drain	HORIZ	Horizontal
ADJ	Adjustable	HWH	Hot Water Heater
AFF	Above Finished Floor		
ALUM	Aluminum	IBC	International Building Code
ALT	Alternate	ID	Inside Diameter
APPROX	Approximate	IECC	International Energy Conservation Code
ANOD	Anodized	INSUL	Insulation
BLDG	Building	INT	Interior
BLKG	Blocking	IRC	International Residential Code
B.O.	Bottom of		
BLKHD	Bulkhead	MAX	Maximum
		MECH	Mechanical
CAB	Cabinet	MIN	Minimum
CIP	Cast in Place	MISC	Misc
CEO	Code Enforcement Officer	MO	Masonry Opening
CFCI	Contractor Furnished,	MTL	Metal
	Contractor Installed	MUBEC	Maine Uniform Building and Energy Code
CLG	Ceiling		
CLR	Clear	NIC	Not in Contract
CMU	Concrete Masonry Unit	OC	On Center
COL	Column	OFCL	Owner Furnished, Contractor Installed
CONC	Concrete		
CONT	Continuous	PCC	Pre-Cast Concrete
CPT	Carpet	PLUMB	Plumbing
CT	Ceramic Tile	PLY	Plywood
CTR	Center	PNT	Paint
		PT	Pressure-Treated
DBL	Double	PSF	Pounds per square foot
DIA	Diameter	PSI	Pounds per square inch
DIM(S)	Dimension(s)		
DN	Down	RBR	Rubber
DR	Door	RCP	Reflected Ceiling Plan
DW	Dishwasher	REQ	Required
DWG	Drawing	RM	Room
EA	Each	SIM	Similar
EL	Elevation	SPEC	Specified or Specification
ELEC	Electrical	SPK	Sprinkler
ELEV	Elevator	SS	Stainless Steel
EOS	Edge of Slab	STC	Sound Transmission Coefficient
EQ	Equal	STL	Steel
ETR	Existing to Remain	STRUCT	Structural
EQUIP	Equipment		
EXT	Exterior	TELE	Telephone
		TO	Top of
FA	Fire Alarm	TOS	Top of Slab/Structure
FAP	Fire Annunciator Panel	TOFF	Top of Finish Floor
FD	Floor Drain	TYP	Typical
FE	Fire Extinguisher	UNO	Unless Noted Otherwise
FEC	Fire Extinguisher Cabinet		
FH	Fire Hydrant	VIF	Verify in Field
FLR	Floor		
FT	Feet	W/	With
		WD	Wood
GA	Gauge		
GAL	Gallon		
GALV	Galvanized		
GL	Glass		
GYP	Gypsum Board		
GWB	Gypsum Wall Board		

MATERIAL LEGEND



94 PORTLAND STREET RESIDENCES

94 Portland Street Portland ME 04101

PROJECT ARCHITECT
Caleb Johnson Studio
110 Exchange Street, 2nd Floor
Portland, ME 04101
207-283-8777

Point of Contact:
Patrick Boothe, AIA
patrick@calebjohnsonstudio.com
207-956-0996

Jason Jirele
jjirele@calebjohnsonstudio.com
207-956-5169

BUILDING OWNER:
94 PORTLAND STREET LLC
7 Lucina Terrace
Gorham, ME

CONTRACTOR:
Woodhull of Maine
110 Exchange Street, 2nd Floor
Portland, ME 04101
207-283-8777

Point of Contact:
Michael Cleary
cleary@woodhullofmaine.com
207-283-8777

CIVIL ENGINEER:
Terradyn Consultants, LLC
565 Congress Street, Suite 201
Portland, ME 04102
207-926-5111

Point of Contact:
Michael Tadema-Wielandt, P.E.
mtw@terradyconsultants.com
207-632-9010



EXISTING BUILDING FROM PORTLAND STREET



EXISTING BUILDING FROM MECHANIC STREET



SITE PLAN REVIEW SET

10/05/2021

PROJECT NARRATIVE

Interior renovation and change of use of an existing 3-story building with an attic. Existing boarding rooms on the 2nd and 3rd floor to be demolished for 4 new apartment units. (2) 1 bed/1 bath units to be on the 2nd floor and (2) 2 bed/1 bath units to span between the 3rd floor and attic. The first floor is to be occupied by a new business (Caniba Co) that is part of a different permit set filed to the City of Portland and not within the scope of this drawing set.

QUICK PROJECT STATS

Construction Type:	III-B (IBC) / III-000 (NFPA)
Occupancy Type:	1st Floor (Not in Scope): "B" / New Business 2nd Floor: "R-2" / New Apartments 3rd Floor: "R-2" / New Apartments 4th Floor (Attic): "R-2" / New Apartments Basement: U Unoccupied / Mech Only
Building Height:	39'-0" +/- to top of roof
Sprinkler System:	Yes, NFPA 13
Mixed-Use:	Yes, Separated
Fire Alarm:	Yes, NFPA 72
Floor Area:	1st Floor: 1,163sf 2nd Floor: 1,163sf 3rd Floor: 1,163sf 4th Floor (Attic): 837sf
Existing Building:	Area of Work: Level 3 Alterations/Change of Use 2nd and 3rd Floor
Gross Building Area:	4,326sf total gross area
Total Calc Occupants:	1st Floor: 16 Occupants 2nd Floor: 6 Occupants 3rd Floor: 6 Occupants 4th Floor (Attic): 5 Occupants Basement: Not Occupied, building mech only 33 total occupants

SHEET LIST

GENERAL

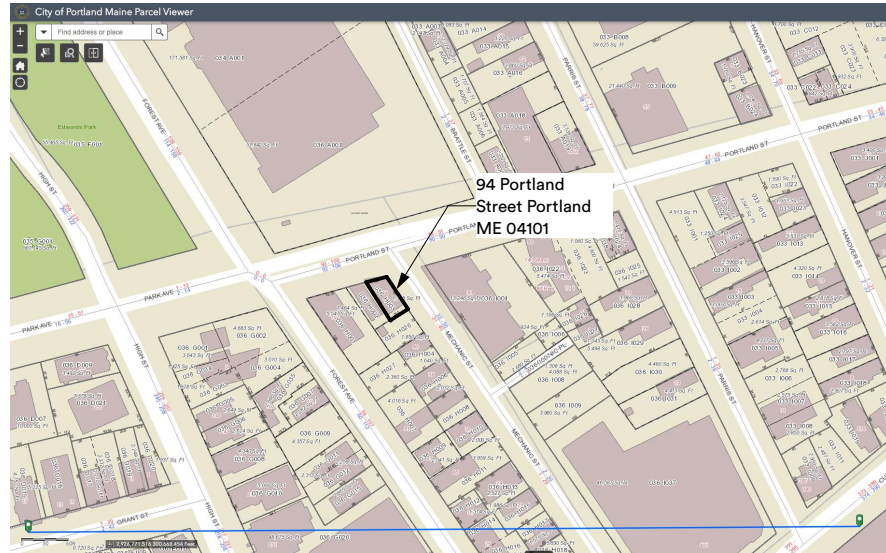
- G-000 COVER SHEET
- G-001 CODE ANALYSIS & LIFE SAFETY
- G-002 OUTLINE SPECIFICATION
- G-003 OUTLINE SPECIFICATION
- G-004 EXISTING CONIDITIONS SURVEY

CIVIL

- C-100 SITE & UTILITY PLAN
- C-200 SITE DETAILS

ARCHITECTURAL

- AD-101 EXISTING/DEMO FLOOR PLANS
- A-001 BASEMENT PLAN
- A-101 1ST FLOOR PLAN
- A-102 2ND FLOOR PLAN
- A-103 3RD FLOOR PLAN
- A-104 4TH FLOOR FLOOR PLAN
- A-111 1ST FLOOR REFLECTED CEILING PLAN AND POWER PLAN
- A-112 2ND FLOOR REFLECTED CEILING PLAN AND POWER PLAN
- A-113 3RD FLOOR REFLECTED CEILING PLAN AND POWER PLAN
- A-114 4TH FLOOR REFLECTED CEILING PLAN AND POWER PLAN
- A-201 ELEVATIONS
- A-301 SECTIONS
- A-401 UNIT KITCHEN AND STAIR PLANS
- A-402 STAIR SECTIONS
- A-403 STAIR SECTIONS
- A-404 CASEWORK ELEVATIONS
- A-501 DETAILS
- A-601 SCHEDULES



PORTLAND GIS WITH PARCEL



PORTLAND GIS WITH SATELLITE

CALEB JOHNSON
STUDIO

110 EXCHANGE ST 2ND FLOOR, PORTLAND, ME 04101
207 283 8777
calebjohnsonstudio.com

CHANGES THIS ISSUE:

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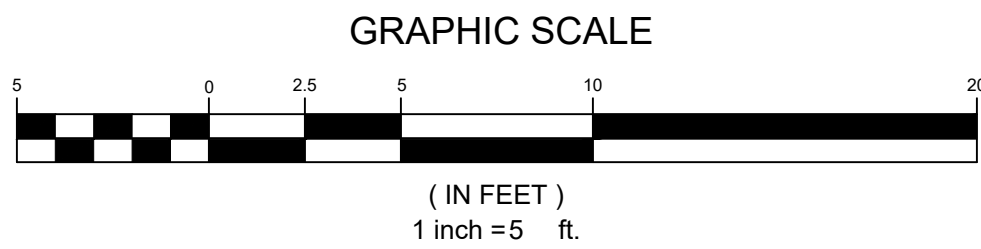
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-
- STATE OF MAINE
MICHAEL E. TADEUMA-WIELANDT
No. 11587
MECHANICAL ENGINEERING
LICENSED



41 CAMPUS DRIVE

SUITE 301

NEW GLOUCESTER, ME 04260

565 CONGRESS STREET

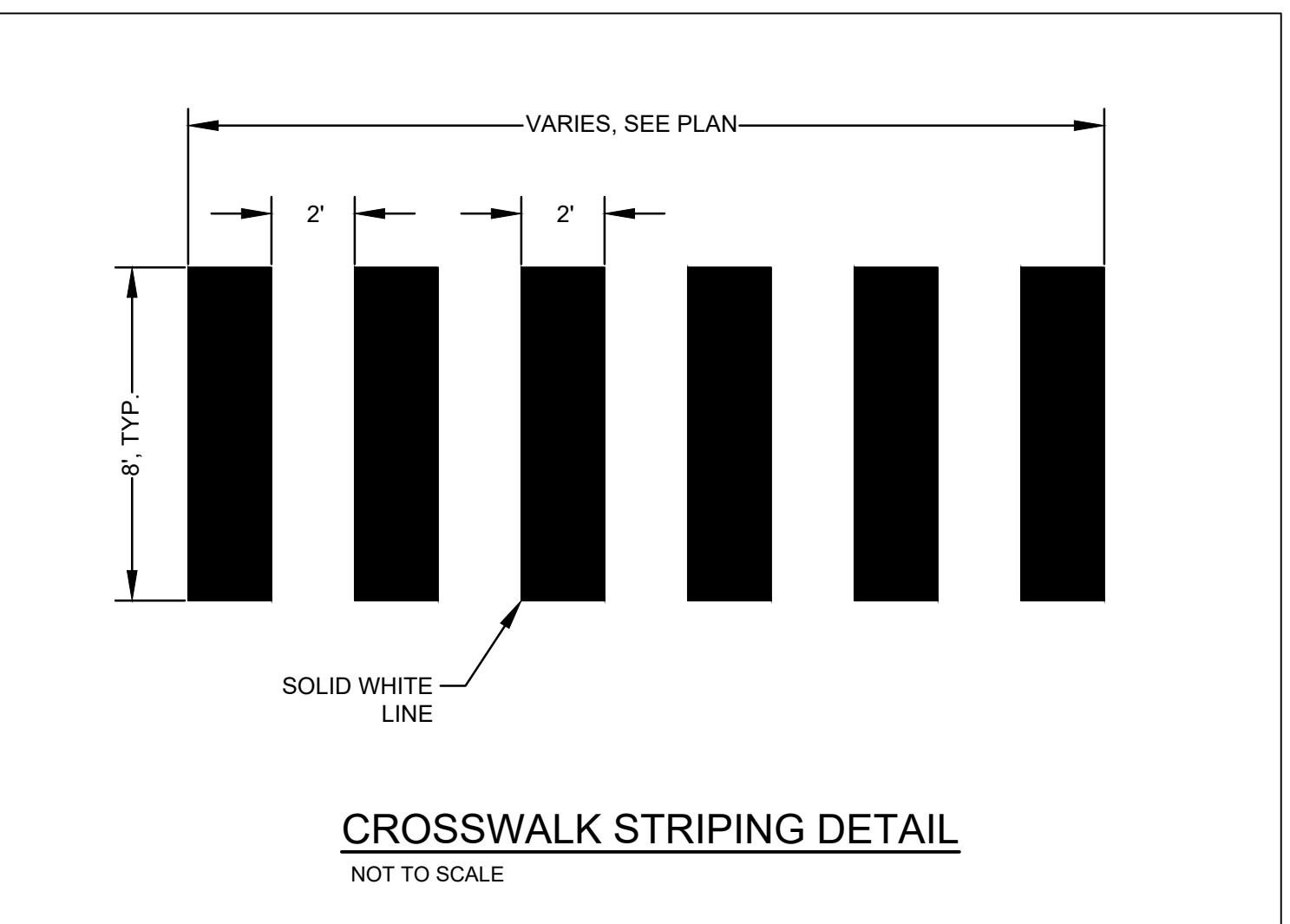
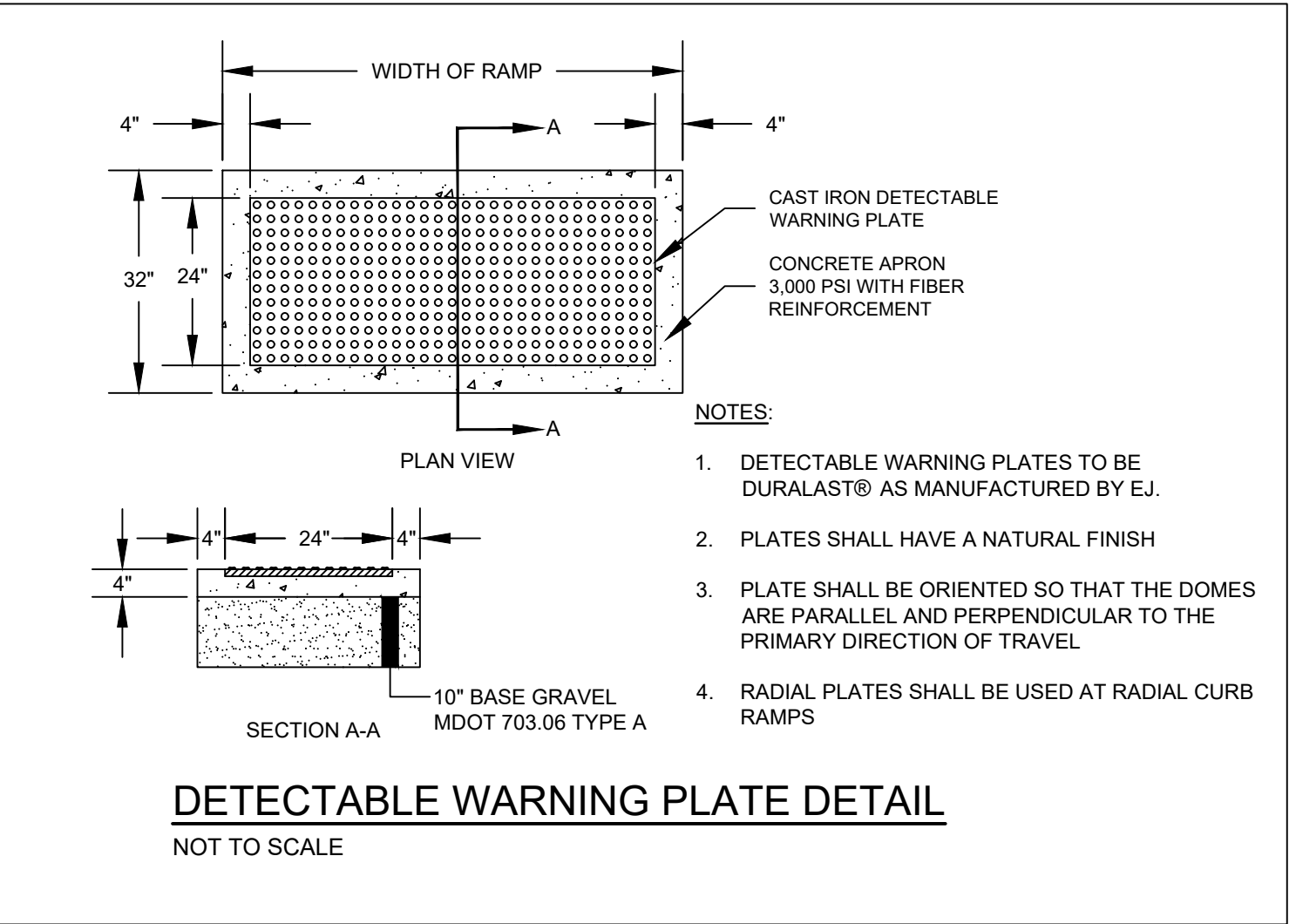
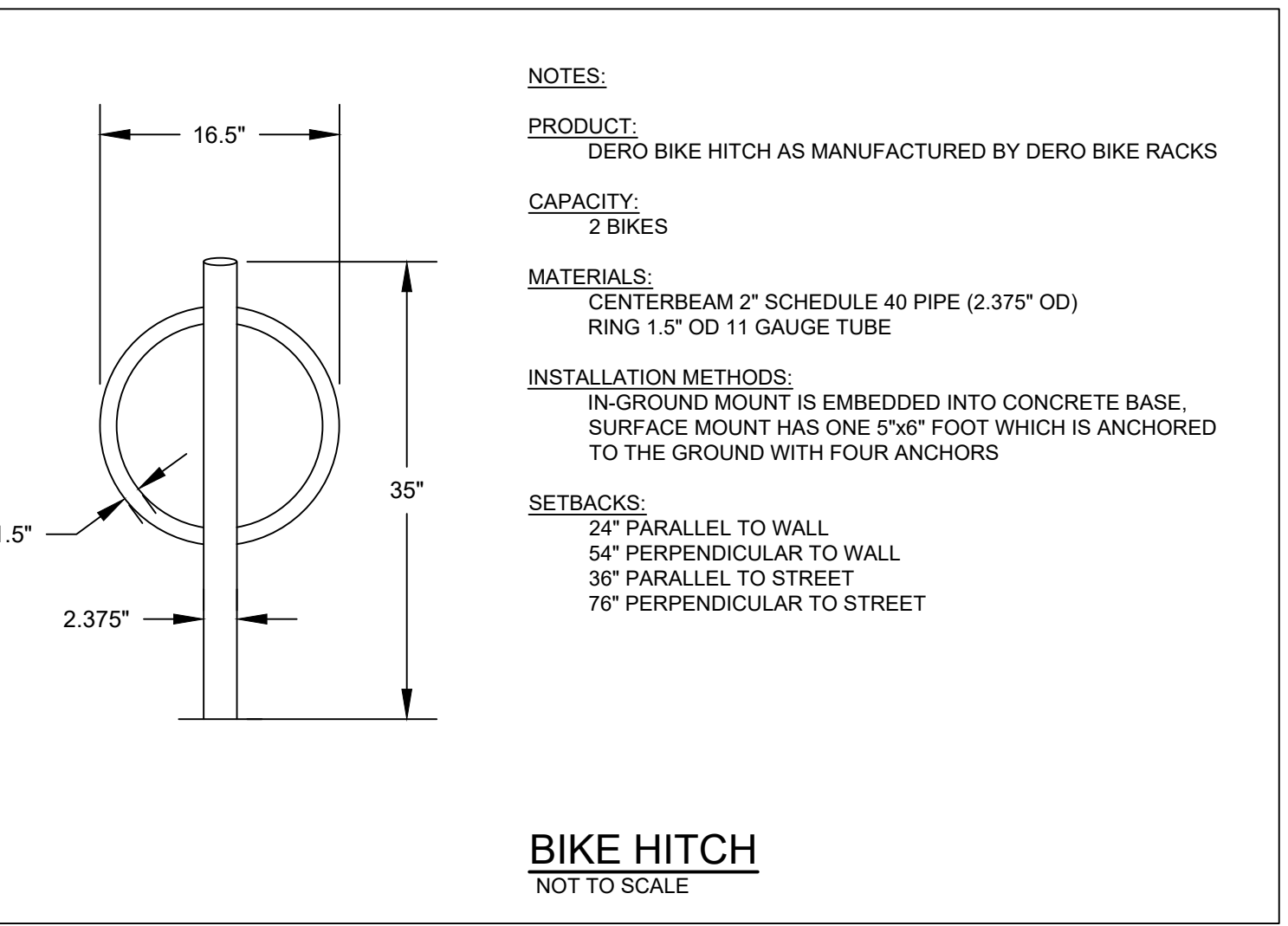
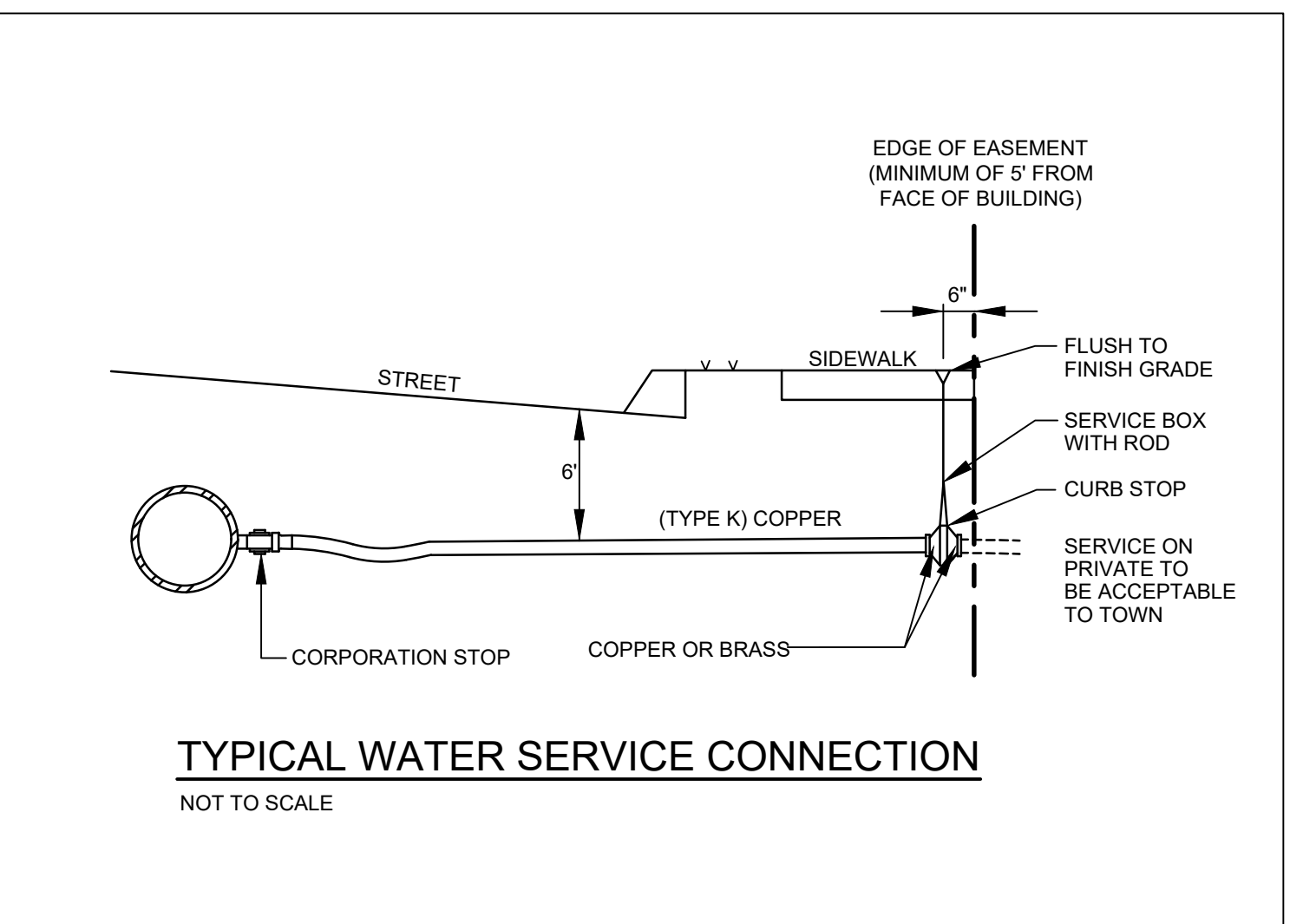
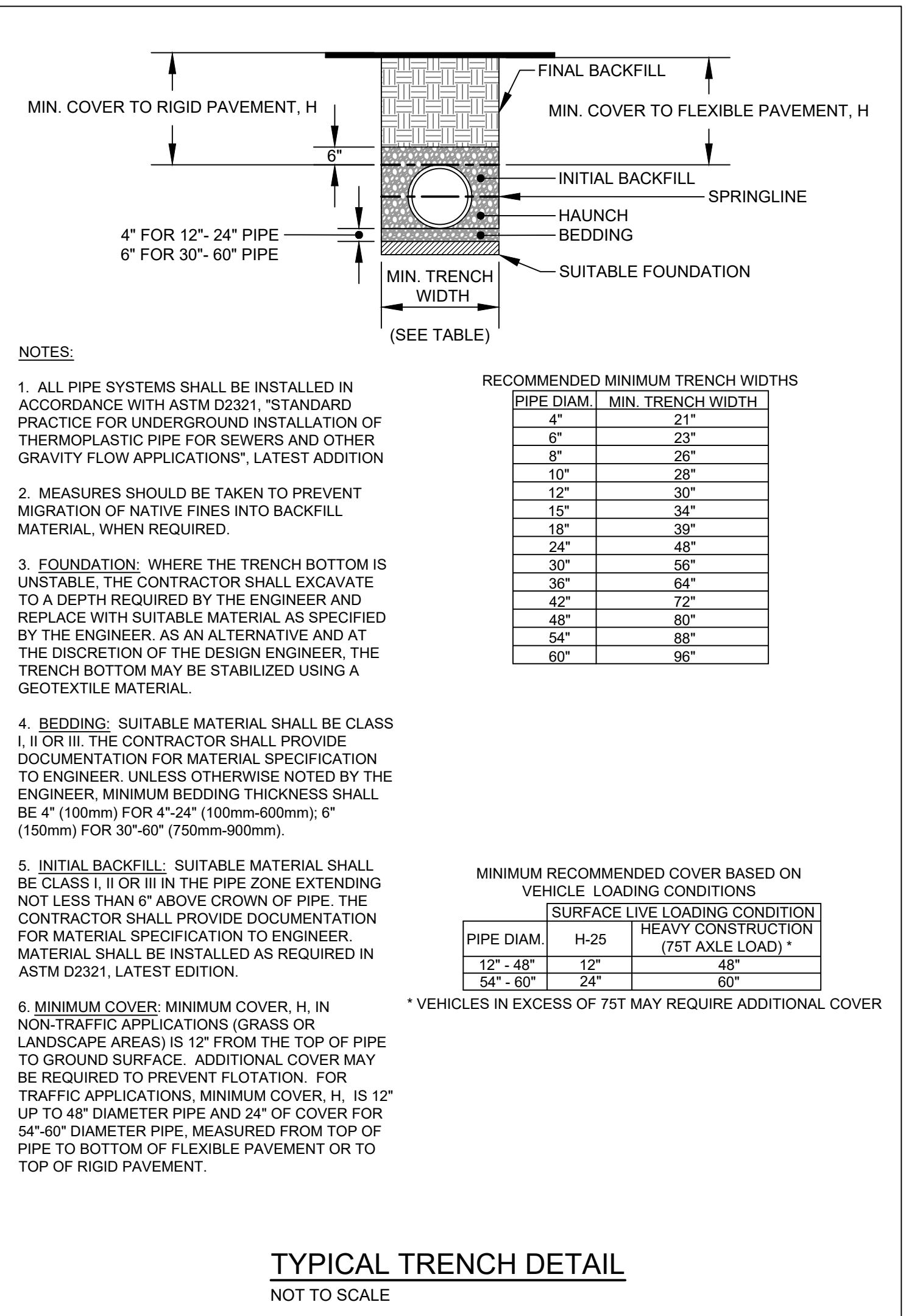
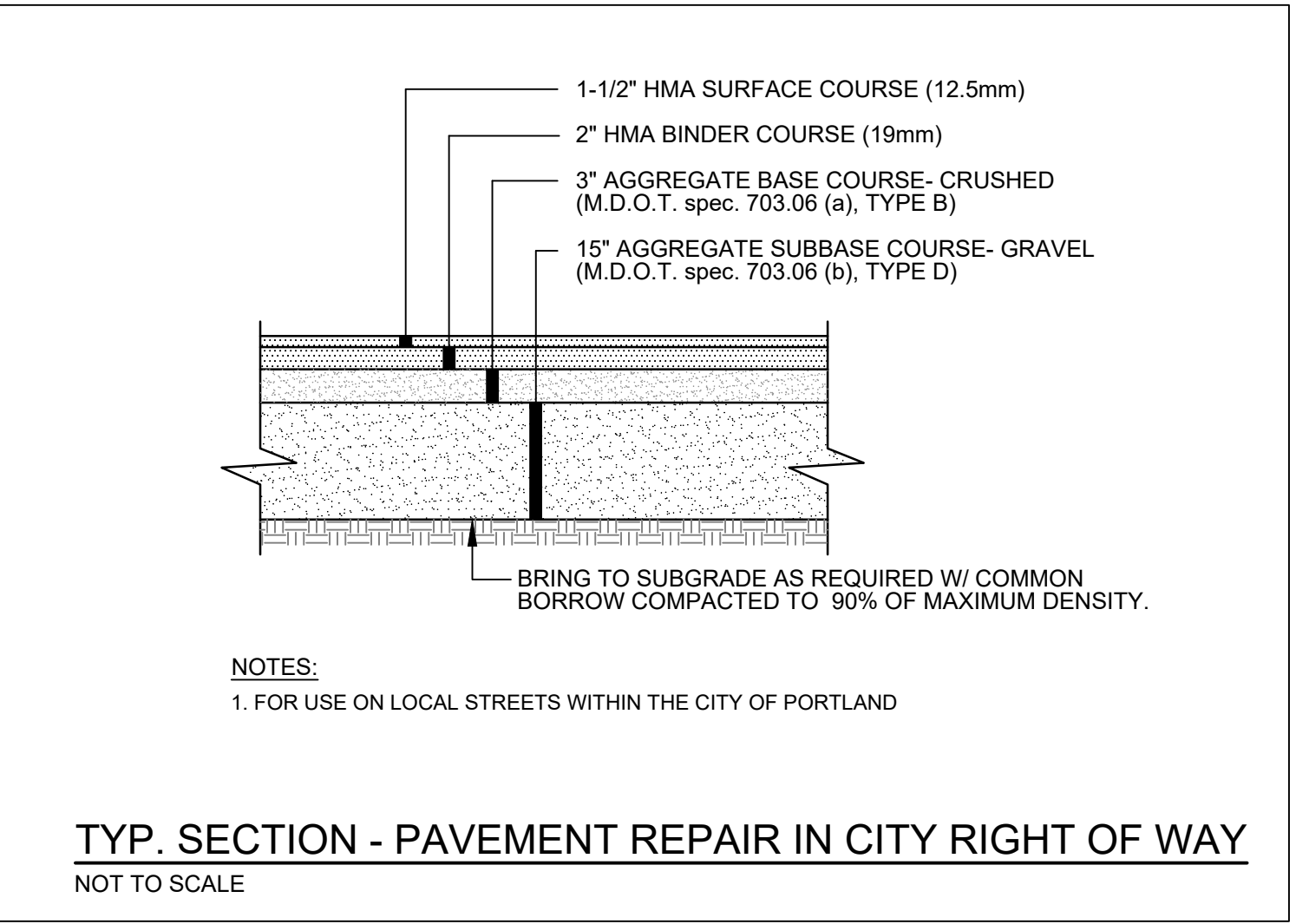
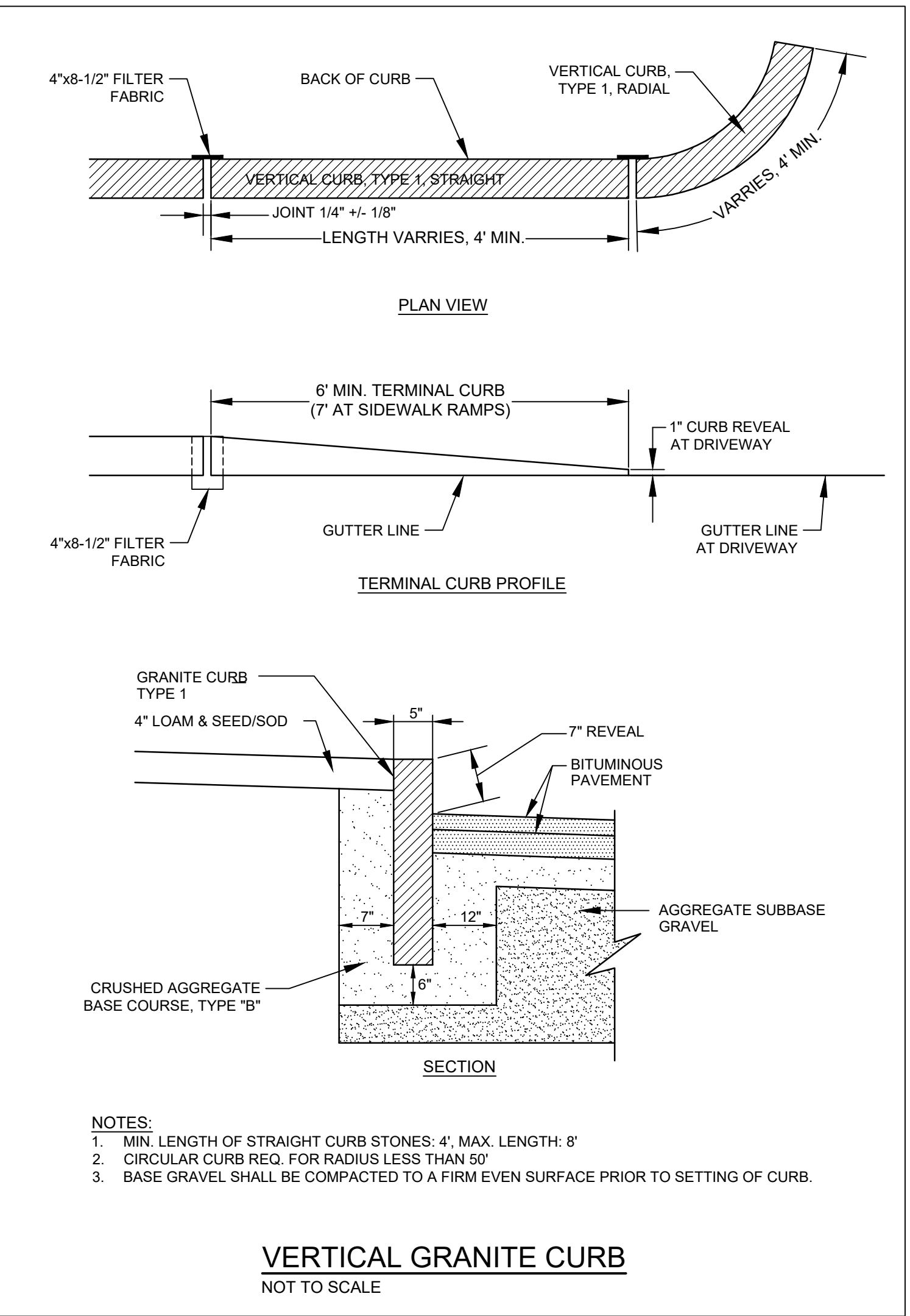
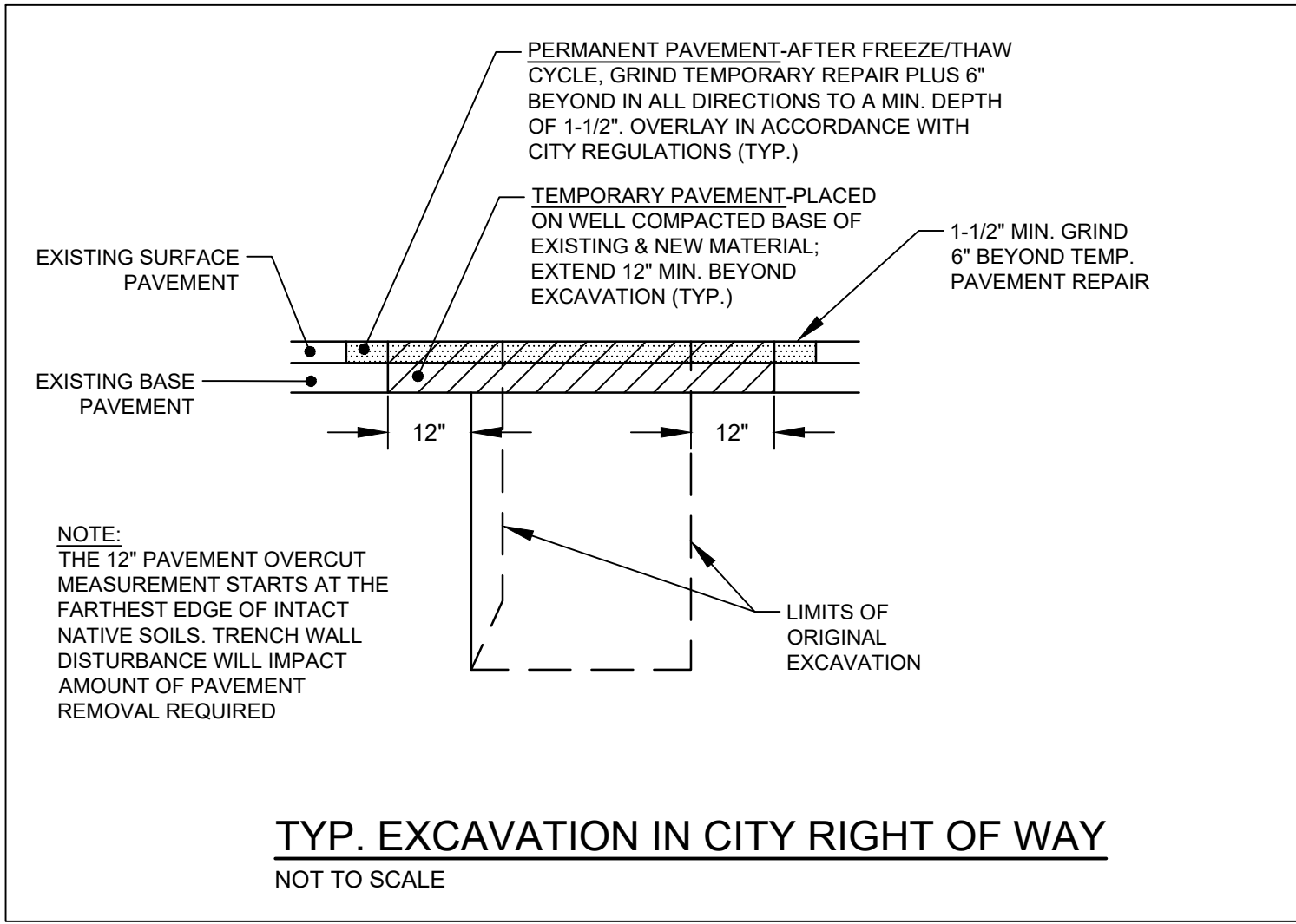
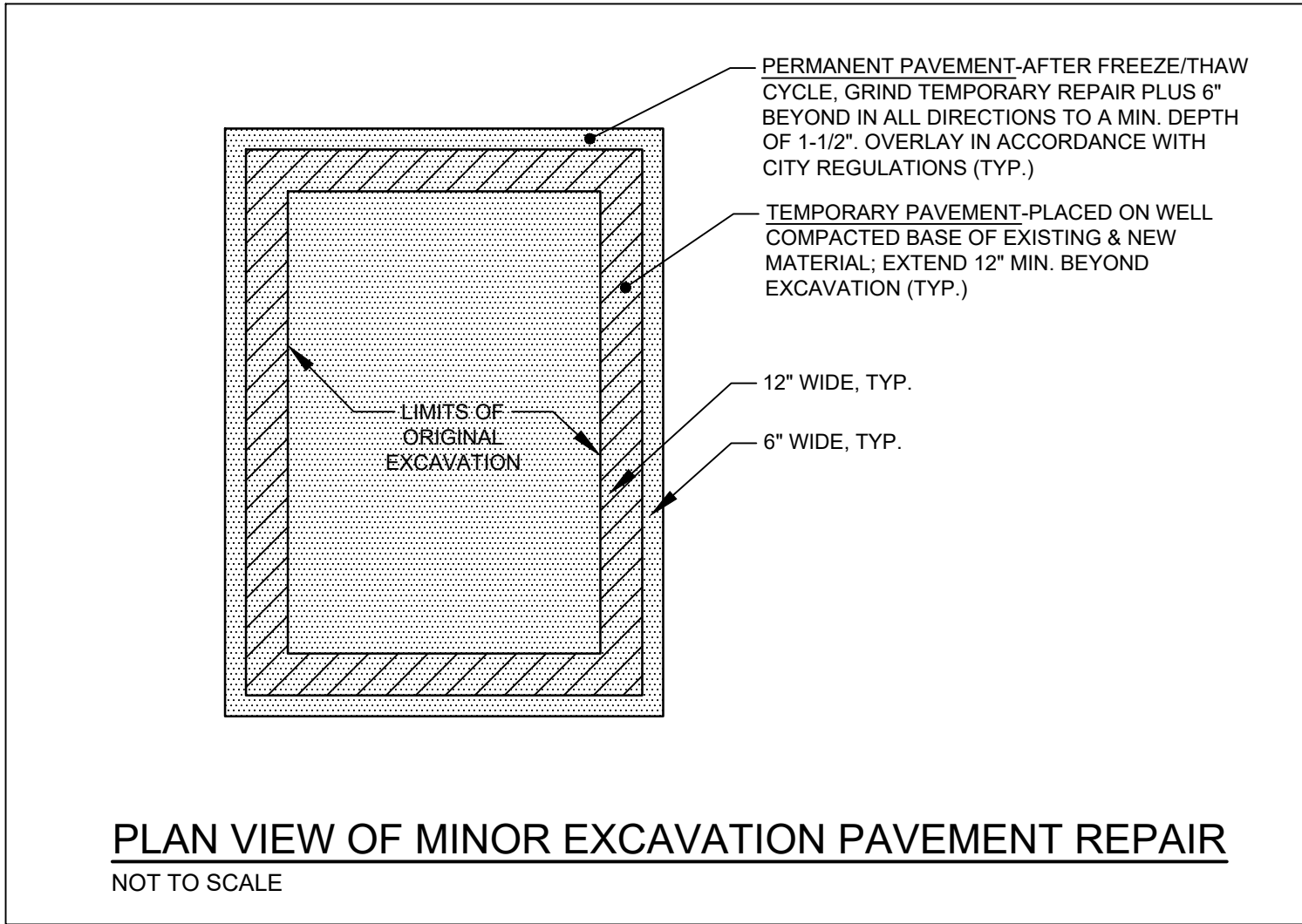
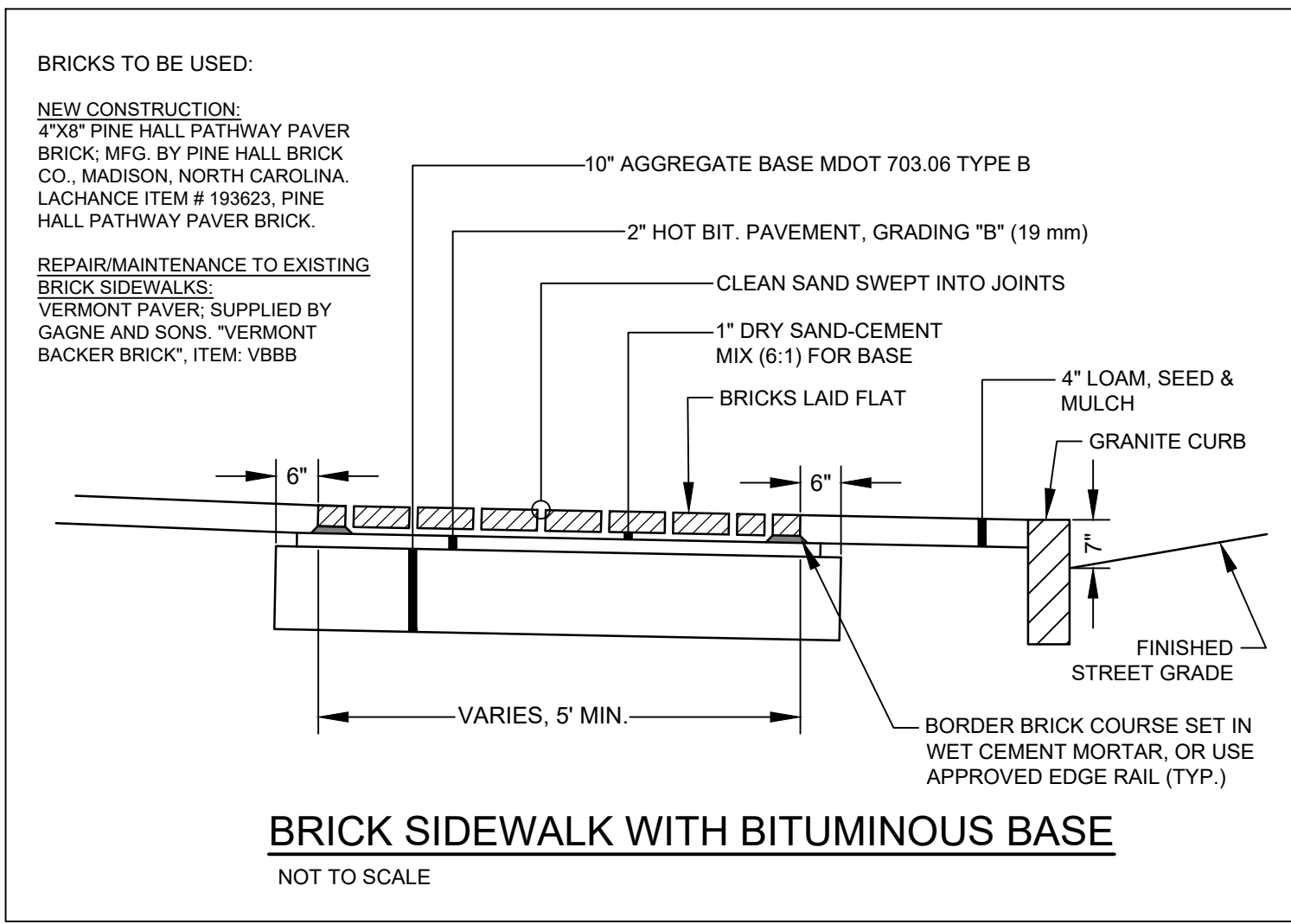
SUITE 201

PORTLAND, ME 04102

OFFICE: (207) 926-5111

www.terradyneconsultants.com

Civil Engineering | Land Planning | Stormwater Design | Environmental Permitting



PROJECT: 94 PORTLAND STREET RESIDENCES
94 PORTLAND STREET PORTLAND, MAINE 04101

SHEET TITLE: SITE DETAILS

CLIENT: CALEB JOHNSON STUDIO
110 EXCHANGE ST 2ND FLOOR
PORTLAND, MAINE 04101

DATE: 10/18/2021

SCALE: N.T.S.

DESIGNED: GJW

JOB NO: 21-67

FILE: 21-67-B

SHEET: C-200

PERMIT DRAWING
NOT FOR CONSTRUCTION

585 CONGRESS STREET
SUITE 201
PORTLAND, ME 04102

41 CAMPUS DRIVE
SUITE 301
NEW GLOUCESTER, ME 04260

OFFICE: (207) 926-5111
www.terradyconsultants.com

TERRADYN
CONSULTANTS, LLC

Civil Engineering | Land Planning | Stormwater Design | Environmental Permitting

DATE: 3/14/2022

P.E.: MICHAEL E. TADEMA-WIELANDT

MTW APP'D BY

REVISIONS

NO.	DATE	REVISIONS
2	3/14/2022	REVISED PER CITY STAFF COMMENTS
1	1/12/2022	REVISED PER CITY STAFF COMMENTS
NO.		

ZONING STANDARDS:

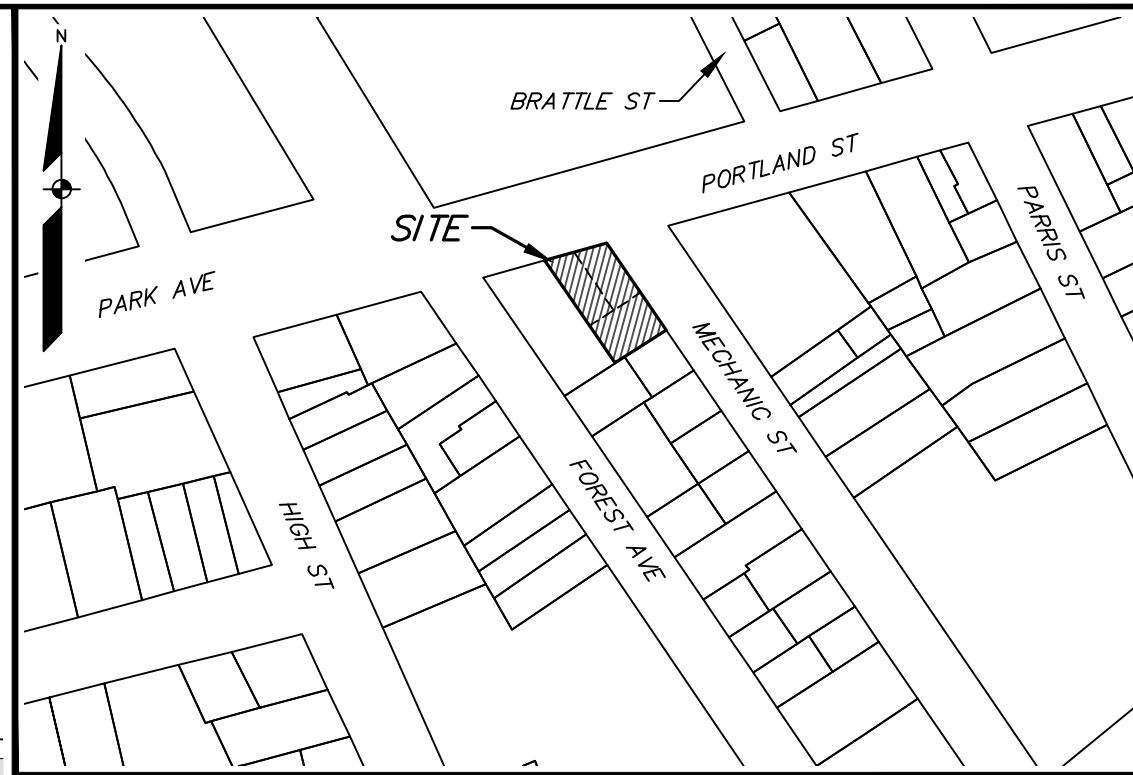
THE SURVEYED PROPERTY IS LOCATED IN THE BUSINESS COMMUNITY DISTRICT (B2B). LAND USE REGULATIONS ARE AS FOLLOWS:

MINIMUM LOT AREA:	NONE LISTED
MINIMUM LOT AREA PER DWELLING UNIT:	
• ACTIVE STREET FRONTAGE:	435 SQUARE FEET
• OTHER:	1,000 SQUARE FEET
MINIMUM STREET FRONTAGE:	20 FEET
MINIMUM FRONT SETBACK:	10 FEET
MINIMUM SIDE SETBACK:	
• PRINCIPAL STRUCTURE:	NONE
• ACCESSORY STRUCTURE:	5 FEET
MINIMUM REAR SETBACK:	
• PRINCIPAL STRUCTURE:	10 FEET
• ACCESSORY STRUCTURE:	5 FEET
MAXIMUM IMPERVIOUS SURFACE RATIO:	80%
MAXIMUM BUILDING HEIGHT:	50 FEET
• FIRST FLOOR IN COMMERCIAL USE:	45 FEET
• OTHER:	

FOR REGISTRY USE ONLY

GENERAL NOTES:

1. THE RECORD OWNER OF THE SURVEYED PROPERTY IS 94 PORTLAND STREET, LLC BY 2 DEEDS, BOTH DATED MARCH 27, 2020 AND RECORDED AT THE C.C.R.D. IN BOOK 26542, PAGE 194 AND BOOK 26542, PAGE 170 AND IS SHOWN AS PARCEL ID'S 036H002, 036H003 AND 036026 ON THE CITY OF PORTLAND'S GIS PARCEL VIEWER.
2. TOTAL AREA OF PARCEL IS APPROXIMATELY 4,675 SQUARE FEET (±0.107 ACRES).
3. BOUNDARY INFORMATION SHOWN HEREON IS BASED UPON AN ON-THE-GROUND SURVEY COMPLETED BY NORTHERN SURVEY ENGINEERING, LLC IN SEPTEMBER, 2021.
4. TOPOGRAPHIC INFORMATION SHOWN HEREON IS DERIVED FROM A TERRESTRIAL SCAN OF THE SITE COLLECTED USING A LEICA P-50 SCANSTATION COMPLETED BY NORTHERN SURVEY ENGINEERING, LLC IN SEPTEMBER, 2021.
5. BOOK AND PAGE REFERENCES SHOWN HEREON ARE IN REFERENCE TO THE CUMBERLAND COUNTY REGISTRY OF DEEDS (C.C.R.D.).
6. BEARINGS SHOWN HEREON ARE IN REFERENCE TO GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE 1802-NAD83. ELEVATIONS DEPICTED HEREON ARE IN REFERENCE TO THE CITY OF PORTLAND VERTICAL DATUM, WHICH APPROXIMATES THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29) BASED UPON THE TOP OF THE GRANITE MONUMENT AT THE NORTHWESTERLY INTERSECTION OF FOREST AVENUE AND CUMBERLAND AVENUE, HAVING A KNOWN ELEVATION OF 80.57 PER PLAN REF. 1C.
7. UTILITY INFORMATION DEPICTED HEREON IS COMPILED USING PHYSICAL SURFACE EVIDENCE LOCATED IN THE FIELD IN CONJUNCTION WITH ANY RECORD INFORMATION AVAILABLE AT THE TIME OF THIS SURVEY (SUE LEVEL C), AND MAY NOT NECESSARILY REPRESENT ALL EXISTING UTILITIES. CONTRACTORS AND/OR DESIGNERS NEED TO CONTACT DIG-SAFE SYSTEMS, INC. (1-888-DIG-SAFE) AND FIELD VERIFY EXISTING UTILITIES PRIOR TO CONSTRUCTION AND/OR EXCAVATION.
8. THE LOCUS PROPERTY AS DEPICTED HEREON DOES NOT FALL WITHIN A SPECIAL FLOOD HAZARD AREA AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR THE CITY OF PORTLAND, MAINE, CUMBERLAND COUNTY, COMMUNITY-PANEL NUMBER 2300510013B, HAVING AN EFFECTIVE DATE OF JULY 17, 1986. THE LOCUS FALLS WITHIN AN AREA IDENTIFIED AS ZONE C (NO SHADING), AREAS OF MINIMAL FLOODING.



LOCATION MAP REFERENCE DOCUMENTS:

1. PLAN REFERENCES:
 - 1.A. "PLAT SHOWING MONUMENTS AND LOT CORNERS - POST OFFICE - PORTLAND, MAINE" PREPARED BY S.L. LEFTOVITH DATED FEBRUARY 5, 1934, ON FILE AT THE CITY OF PORTLAND.
 - 1.B. BOUNDARY SURVEY - POST OFFICE - COURTHOUSE" PREPARED BY ALBERTI, LAROCHELLE & HOODSON ENGINEERING CORP., INC., PROJECT NO. 63-164 DATED AUGUST 21, 1963, REVISED DECEMBER 9, 1963, ON FILE AT THE CITY OF PORTLAND.
 - 1.C. "FOREST AVENUE RECONSTRUCTION PLAN AND PROFILE (PARK AVENUE TO CONGRESS STREET)" PREPARED BY THE CITY OF PORTLAND, MAINE PARKS AND PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION, ON FILE AT THE CITY OF PORTLAND.
 - 1.D. UNTITLED, UNDATED PLAN PREPARED BY E.C. JORDAN, SHOWING BLOCK OF LOTS ON FOREST AVENUE (GREEN STREET), MECHANIC STREET, AND PARRIS STREET. ON FILE AT THE OFFICE OF OMEN HASKELL, INC.
 - 1.E. "MECHANIC STREET RECONSTRUCTION" PREPARED BY THE CITY OF PORTLAND, MAINE PARKS AND PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION, PROJECT NO. 91330-30-60-13 DATED OCTOBER 19, 1990, AS-BUILT JANUARY-MAY, 1991, ON FILE AT THE CITY OF PORTLAND.
- 1.F. CITY OF PORTLAND BLUE SHEETS:
 - 1.F.1. MECHANIC STREET: DATED JANUARY, 1925 RECORDED IN VOLUME 2, PAGE 132 OF THE PORTLAND ARCHIVES.
 - 1.F.2. PORTLAND STREET: DATED JANUARY, 1926 RECORDED IN VOLUME 2, PAGE 163 OF THE PORTLAND ARCHIVES.
 - 1.F.3. FOREST AVENUE: DATED DECEMBER, 1925 RECORDED IN VOLUME 2, PAGE 129 OF THE PORTLAND ARCHIVES.
2. DEED REFERENCES:
 - 2.A. DEED BOOK 36542, PAGE 194 (3/27/2020) FROM ROBERT A. SIMMONS, JR. (ESTATE OF JEAN CARMINE SIMMONS) TO 94 PORTLAND STREET, LLC DATED MARCH 27, 2020.
 - 2.B. DEED BOOK 36542, PAGE 170 (3/27/2020) FROM TRAIL UNDER FOOT, INC. TO 98 PORTLAND STREET, LLC.
 - 2.C. DEED BOOK 146, PAGE 227 (2/1/1836) FROM MARY PREBLE & JAMES DEERING TO EBENEZER DANIELS.
 - 2.D. DEED BOOK 228, PAGE 8 (08/02/1850) FROM JOSEPH SYMONDS TO EBENEZER DANIELS.
 - 2.E. DEED BOOK 155, PAGE 522 (10/24/1837) FROM JAMES DEERING & MARY PREBLE TO ABRAHAM OSBORN.
 - 2.F. DEED BOOK 110, PAGE 20 (8/27/1827) FROM MARY PREBLE & JAMES DEERING TO WILLIAM HAMBLIN.
 - 2.G. DEED BOOK 110, PAGE 23 (8/27/1827) FROM JAMES DEERING & MARY PREBLE TO NATHANIEL HAMBLIN.
 - 2.H. DEED BOOK 110, PAGE 24 (8/27/1827) FROM JAMES DEERING & MARY PREBLE TO THOMAS COBB.
 - 2.I. DEED BOOK 113, PAGE 27 (2/29/1828) FROM JAMES DEERING & MARY PREBLE TO ALEXANDER GRAY AND ISRAEL HUNT.
 - 2.J. DEED BOOK 199, PAGE 238 (9/24/1846) FROM MARY PREBLE TO JOSEPH SYMONDS.

BOUNDARY NOTES:

1. ALL OF THE LOTS ON THE BLOCK BOUNDED BY MECHANIC STREET, PORTLAND STREET, FOREST AVENUE AND CUMBERLAND AVENUE WERE CONVEYED BY A COMMON GRANTOR (JAMES DEERING & MARY PREBLE) IN THE EARLY-MID 1800'S AND WERE DESCRIBED BY DISTANCES MEASURED NORTHWESTERLY ON FOREST AVENUE FROM ITS INTERSECTION WITH CUMBERLAND AVENUE. THE EARLIEST CONVEYANCES DESCRIBE THE LOTS AS BEING AT RIGHT ANGLES WITH FOREST AVENUE, LATER CONVEYANCES DO NOT DESCRIBE AN ANGLE BUT DESCRIBE THE LOTS AS MAINTAINING A WIDTH OF 40'. NO ORIGINAL MONUMENTS ESTABLISHING THESE LOTS HAVE BEEN RECOVERED.
- 1.1. THE LAND NOW OR FORMERLY OWNED BY CAROL E. HUTCHINS IS SENIOR IN TITLE (DEED REF. 2). THE RECORD DISTANCE FROM CUMBERLAND AVENUE DOES NOT FIT OCCUPATION AND HAS NOT BEEN HELD. INSTEAD, THE RECORD DISTANCE OF 85' (MEASURED ALONG MECHANIC STREET) PER DEED REF. 2J HAS BEEN HELD AS THE BEST EVIDENCE OF THIS BOUNDARY.
2. FOREST AVENUE AND MECHANIC STREET ARE PARALLEL AND 100' APART PER PLAN REF. 1F.1.
3. A PORTION OF THE BUILDINGS LOCATED ON LAND NOW OR FORMERLY OF CAROL E. HUTCHINS (PID 036H004) AND FORTY NINE, LLC (PID 036H001) APPEAR TO EXTEND OVER THE RECORD BOUNDARIES OF THE PROPERTY. OTHERS MAY HAVE OBTAINED OWNERSHIP AND/OR PRESCRIPTIVE RIGHTS TO THE OVERLAPPING PORTIONS BY MEANS OF ADVERSE POSSESSION OR OTHER LEGAL DOCTRINE.

LEGEND

—	PROPERTY LINE	N/F	NOW OR FORMERLY
- - -	ABUTTER LINE	A.G./B.G.	ABOVE/BELOW GRADE
- . - .	RIGHT-OF-WAY LINE	S.F.	SQUARE FEET
- - - -	RECORD DEED LINE	F.F.E.	FINISHED FLOOR ELEVATION
- - - -	SETBACK	SILL	DOOR SILL ELEVATION
	BUILDING	T.O.H.	TOP OF HOOD
	DECK/STEPS	□	MONUMENT FOUND
—	OVERHANG	○	DECIDUOUS TREE
—	EDGE PAVEMENT	+	BOLLARD/POST
—	EDGE CONCRETE	+	SIGN
—	EDGE BRICK	+	GAS GATE VALVE
—	PAVEMENT PAINT	+	GAS METER
—	CURB LINE	+	WATER GATE VALVE
—	CONTOURS	+	WATER SHUT OFF
—	SPOT GRADE	+	SANITARY MANHOLE
—	STOCKADE FENCE	+	DRAINAGE MANHOLE
—	RETAINING WALL	+	CATCH BASIN
—	GAS	+	UTILITY POLE
—	WATER	+	GUY WIRE
—	SANITARY SEWER	+	FLOOD LIGHT
—	STORM DRAIN	+	
—	OVERHEAD UTILITY	+	
—	UNDERGROUND UTILITY	+	

SURVEYORS CERTIFICATION:

THIS SURVEY WAS PERFORMED UNDER MY DIRECT SUPERVISION AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT WAS DONE IN ACCORDANCE WITH CHAPTER 90, PART 1 (PROFESSIONAL STANDARDS OF PRACTICE) AND PART 2 (TECHNICAL STANDARDS OF PRACTICE) OF THE MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS.

DEVON J. HURLEY, MAINE PLS 2584

11/15/21

DATE

BOUNDARY AND EXISTING CONDITIONS SURVEY

94 PORTLAND STREET, LLC PROPERTY

PORTLAND STREET & MECHANIC STREET

FOR: CALEB JOHNSON STUDIO

110 EXCHANGE STREET
PORTLAND, MAINE 04101

DRAWN

DJH

CHECKED

SPP

PROJECT NO.

21101

DATE

11/15/21

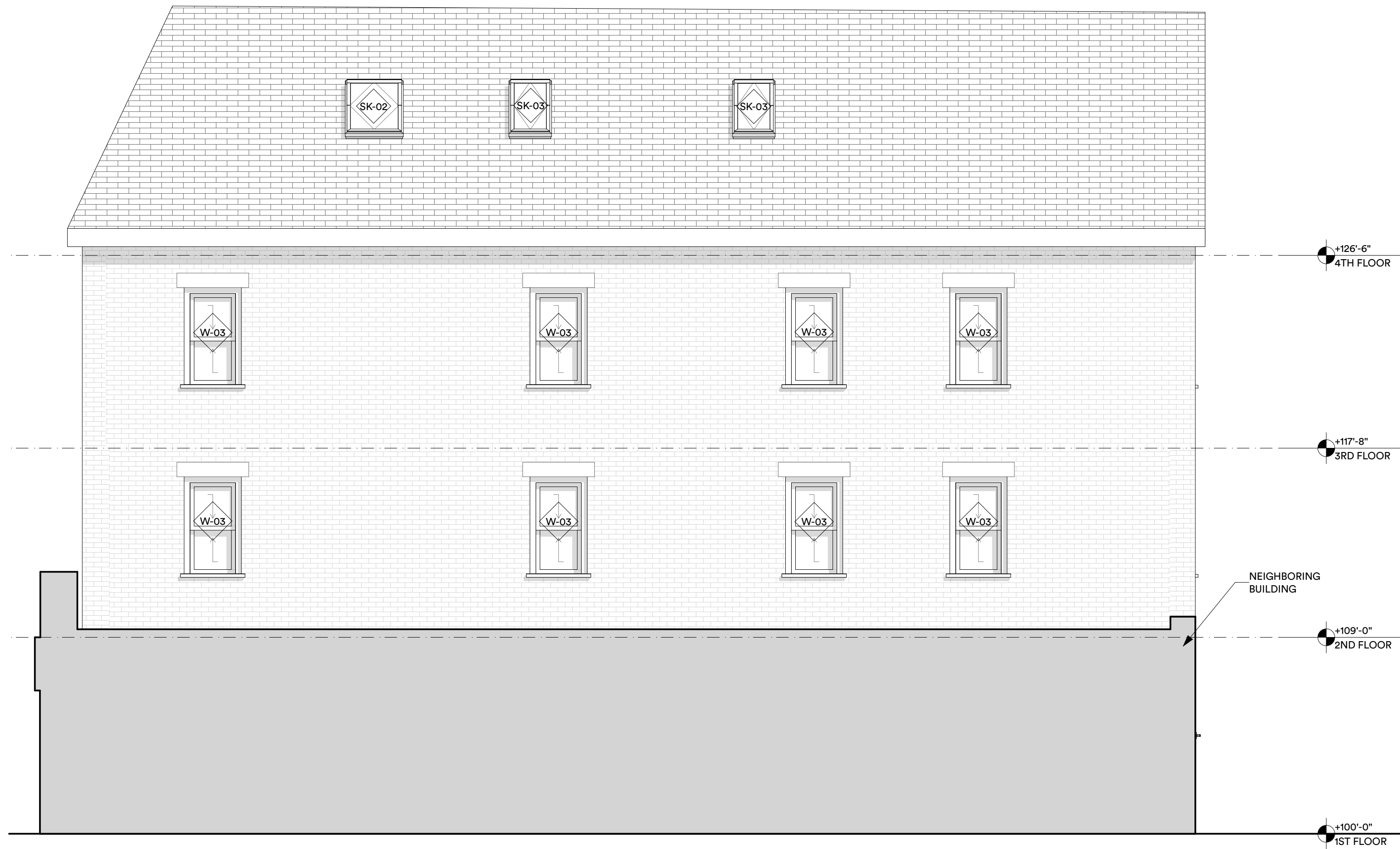
SHEET SIZE

24" x 36"

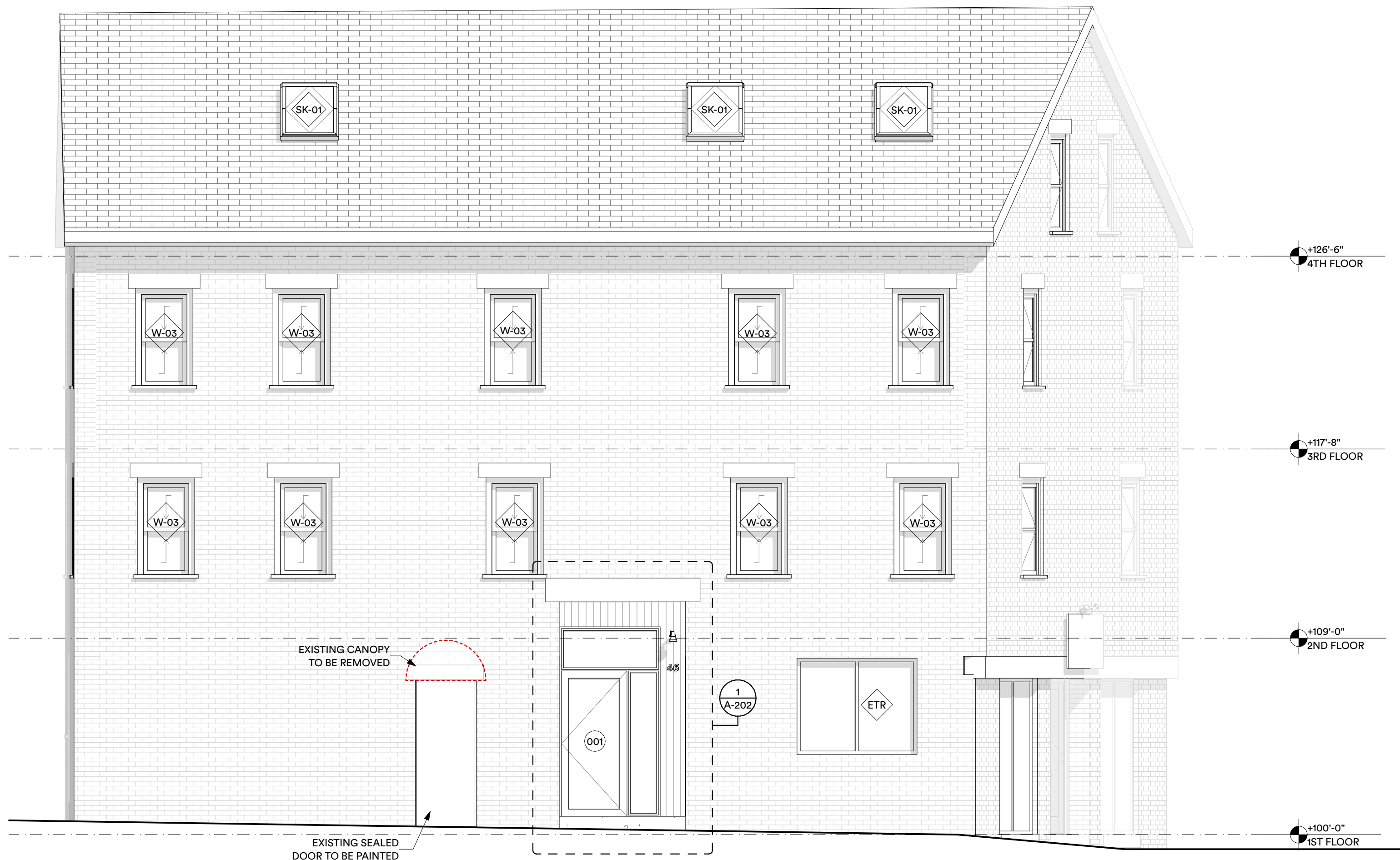
SCALE

1" = 5'

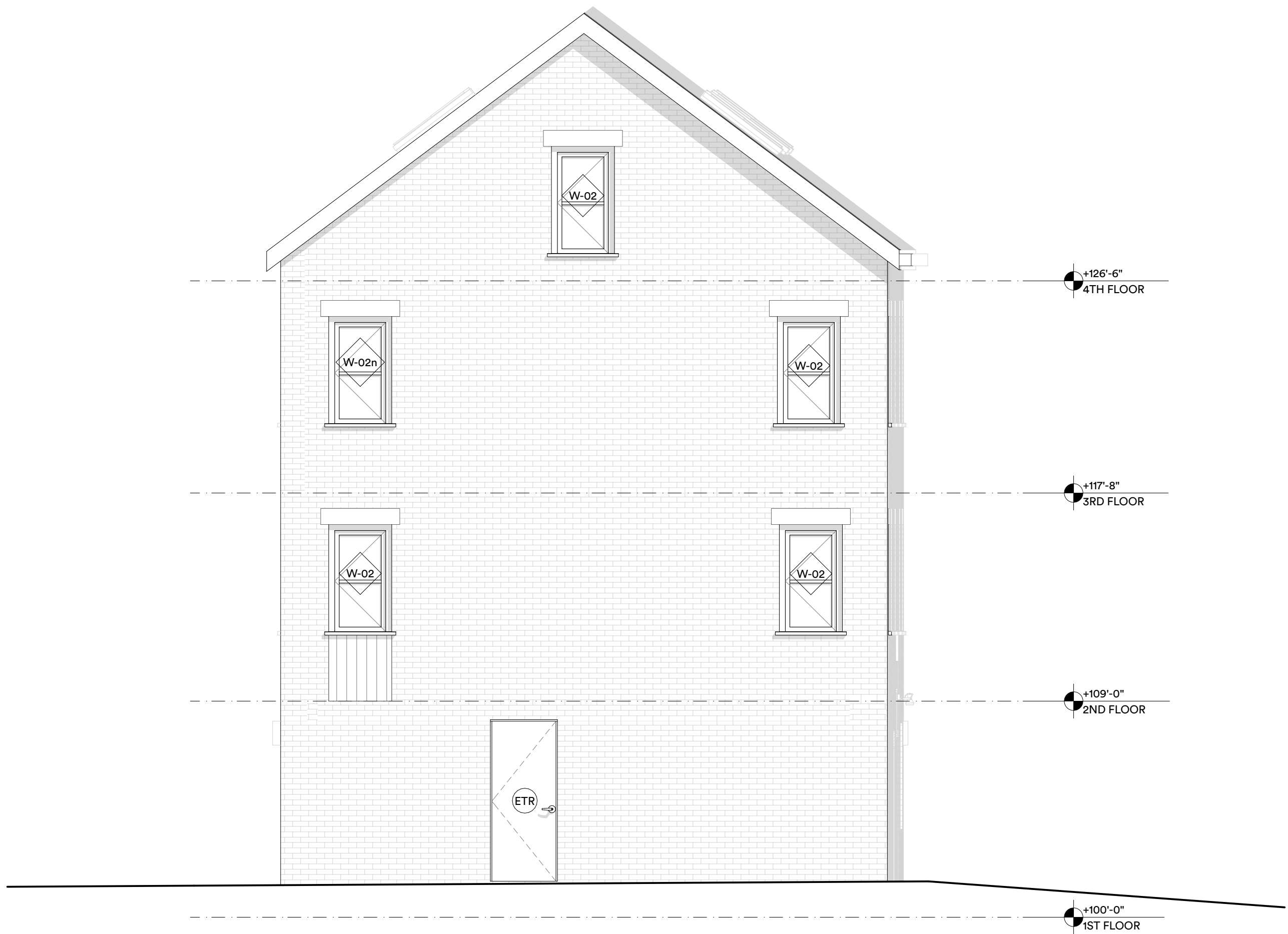
SHEET 1 OF 1



4 WEST ELEVATION
SCALE: 1/4" = 1'-0"



2 EAST ELEVATION (MECHANIC ST)
SCALE: 1/4" = 1'-0"



3 SOUTH ELEVATION
SCALE: 1/4" = 1'-0"



1 NORTH ELEVATION (PORTLAND ST)
SCALE: 1/4" = 1'-0"

CHANGES THIS ISSUE:	
ID	DESCRIPTION

SUBMISSIONS:	
ISSUE	DATE
01	10/01
02	03/02
SITE PLAN REVISION FROM ETR/CF COMMENTS	

CJS PROJECT LEAD:	
JJ	DATE OF ISSUE:
	3/15/22
PROJECT STATUS:	
	SITE PLAN REVIEW



DOOR SCHEDULE GENERAL NOTES:

1. Contractor to Verify in field all rough openings on exterior and any reused openings on the interior
2. All new interior doors are Solid Core Wood with Clear Finish with 1x4 painted casings, UNO.
3. Doors and Storefront Facing Alfred and Bacon Streets are to meet National Park Service Historic Guidelines
4. Additional Door Details are to be provided at a later date.
5. Provide Safety Glazing at hazardous locations as required by code.
6. Contractor to provide an allowance to the Owner for pricing. Lever hardware required within units.
7. Door finish schedule:
WD-1 (Entry Doors); Rift-Sawn White Oak Veneer
WD-2 (All other Wood Doors); Primed ready for paint

DOOR SCHEDULE											
ID	Location	Qty	Nominal W x H Size	Style	Fire Rating	Door Material	Glazing	Frame Material	Door/Frame Finish	Hardware	Notes
001	Entry Door off Mechanic Street	1	3'-0"x6'-8"	Storefront		HM	Y	HM	PTD		See sheet A-202 for additional information. Glazing within storefront and door to have a minimum VT rating of .7
101	Unit Entry Door	4	3'-0"x6'-8"	Flush	60m	WD		WD			
102	Bedroom/Bathroom	8	2'-10"x6'-8"	Flush		WD		WD	PTD		
103	Closet	4	2'-6"x6'-8"	Flush		WD		WD	PTD		
104	Closet	4	2'-0"x6'-8"	Flush		WD		WD	PTD		
105	Attic Closet	4	5'-0"x6'-2"	Flush		WD		WD	PTD		

WINDOW SCHEDULE GENERAL NOTES:

1. The majority of new windows utilize existing rough openings. Contractor to Verify in field all rough openings.
2. Contractor to provide estimate of work based on the below basis of design for review by the Owner/Architect.
Refer to Outline Specification on Sheets G-002 and G-003 for additional information.
3. Provide Safety Glazing at hazardous locations as required by code.
4. For information on new Storefront along Alfred and Bacon Streets, refer to Sheet A-405.

WINDOW SCHEDULE						
ID	Qty	Description	Width (Nominal)	Height (Nominal)	Manufacturer	Notes
W-01	2	Casement	2'-10"	4'-5 ^{1/2} "		
W-02	8	Casement	2'-4"	4'-5 ^{1/2} "		
W-02n	1	Casement	2'-4"	4'-5 ^{1/2} "		
W-03	18	Double Hung	2'-4"	4'-5 ^{1/2} "		

DOOR TYPES						
Element ID	001	101	102	103	104	105
Elevation View (Nominal Dims)						
Location	Tenant Entry (See sheet A-202 for additional information)	Unit Entry Door	Bedrooms/Bathrooms	Closet	Closet	Attic Closet

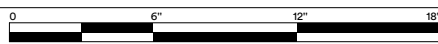
WINDOW TYPES				
Element ID	W-01	W-02	W-02n	W-03
Elevation (Nominal Dims)				
Window Type	Casement	Casement	Casement	Double Hung
Nominal W x H Size	2'-10"x4'-5 ^{1/2} "	2'-4"x4'-5 ^{1/2} "	2'-4"x4'-5 ^{1/2} "	2'-4"x4'-5 ^{1/2} "

INTERIOR WALL ASSEMBLIES					
	A1 TYPICAL INTERIOR WALL Wood Construction Non-Rated		A1a TYPICAL INTERIOR WALL W/ SOUND ATTENUATION Wood Construction Non-Rated STC-50		A2 TYPICAL INTERIOR WALL W/ SOUND ATTENUATION Wood Construction Non-Rated STC-50
	X1 1-HR INTERIOR WALL (2x4) Wood Construction 1-HR Rated (UL-U305)		X1a 1-HR INTERIOR INTERIOR WALL W/ SOUND ATTENUATION Wood Construction 1-HR Rated (UL-U305) STC-50		X2 1-HR INTERIOR WALL (2x6) Wood Construction 1-HR Rated (UL-U305)
	X2a 1-HR INTERIOR INTERIOR WALL W/ SOUND ATTENUATION Wood Construction 1-HR Rated (UL-U305) STC-50				

OTHER NOTES: 1. NO RECESSED LIGHT FIXTURES ALLOWED UNLESS FIRE RATED 2. PROVIDE FIRE-RATED JUNCTION BOXES IF IN CEILING 3. ALL PENETRATIONS THRU CEILING TO BE SEALED WITH FIRE-CAULKING		Z1 2ND FLOOR ASSEMBLY Wood Construction 2-HR Rated Use Horizontal Separation UL-L511 (SYSTEM NO. 3) STC 50 +/-; IIC 50 +/-	OTHER NOTES: 1. NO RECESSED LIGHT FIXTURES ALLOWED UNLESS FIRE RATED 2. PROVIDE FIRE-RATED JUNCTION BOXES IF IN CEILING 3. ALL PENETRATIONS THRU CEILING TO BE SEALED WITH FIRE-CAULKING		Z2 TYPICAL FLOOR ASSEMBLY Wood Construction 1-HR Rated Use Horizontal Separation UL-L501 (SYSTEM NO. 21) STC 50 +/-; IIC 50 +/-
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EQUIPMENT SCHEDULE				
ID	Qty	Description	Make, Model, Color	Notes
MCW-1	4	Microwave, Over the Range		
REF-1	4	24" Refrigerator		
RNG-1	4	20" Electric Range		

PLUMBING FIXTURE SCHEDULE				
ID	Qty	Description	Make, Model, Color	Notes
DSW-1	4	Dishwasher	18" compact	
FCT-1	4	Faucet in Kitchen		
FCT-2	4	Faucet in Bathroom		
KSK-1	4	Sink in Kitchen		
SHW-1	4	Shower		
TOL-1	4	Toilet		
VAN-1	4	Sink in Bathroom		



CHANGES THIS ISSUE:	
ID	DESCRIPTION

SUBMISSIONS:	
ISSUE	DATE
1	10/23
2	3/15/22

ISSUE NUMBER	
ISSUE	CHANGE NUMBER
1	001

DESCRIPTION	
1	SITE PLAN REVIEW
2	SITE PLAN REVISION FROM STAFF COMMENTS

CJS PROJECT LEAD: JJ	DATE OF ISSUE: 3/15/22
ISSUE	PROJECT STATUS: SITE PLAN REVIEW

FLOOR PLAN GENERAL NOTES

1. These Drawings constitute a design progress set. Additional information, dimensions and specifications will be provided by the Architect and/or Owner at a later date or as requested with estimate for clarification.

2. Dimensions: All dimensions are from face of core structure material for all new construction elements, UNO. All dimensions referencing existing elements are from finished face, UNO.

3. Project Specifications: Refer to sheets G-002 and G-003 for project specifications, where discrepancies exist between specifications and Drawings, consult with Architect for clarification

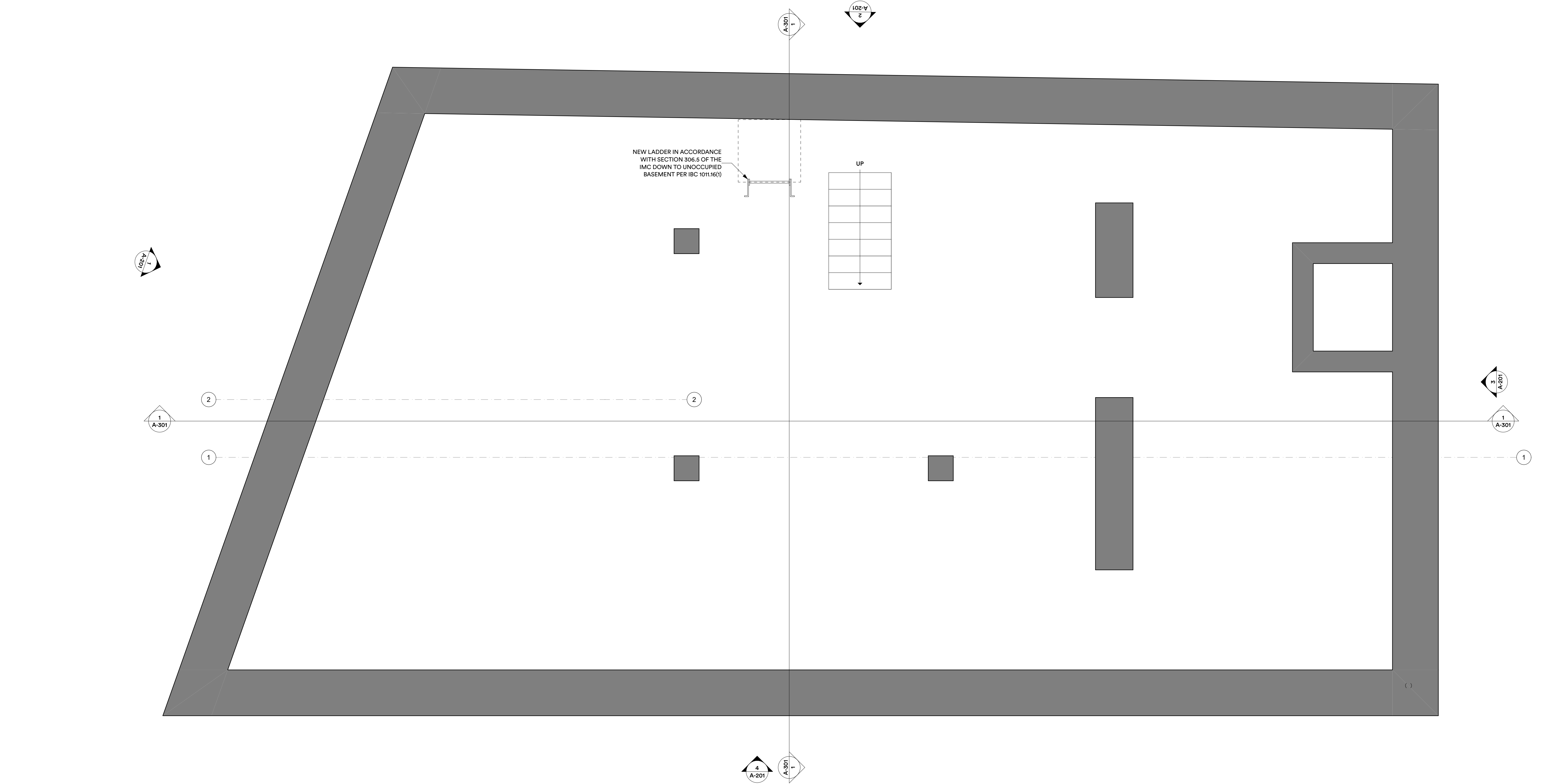
4. Walls/Floors: See wall and floor type assemblies on A-601.

5. MEP: Mechanical, Electrical and Plumbing work is to be design build by the Contractor. The Architect has provided design-build performance specifications and has made basic assumptions for size and space requirements and locations for incoming service. Contractor is to review and bring to the Architect's attention if additional information is required.

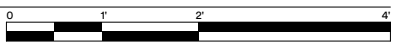
6. Automatic Sprinkler System: New NFPA 13 sprinkler system is design-build by the sprinkler subcontractor in accordance with local building code. See RCP and specifications for additional notes regarding design intent.
7. Life Safety Devices: Fire alarms systems, emergency lighting, smoke detection, etc are design-build by the fire alarm subcontractor, refer to Life Safety sheets, locations TBD, quantities by Contractor

8. Finishes: TBD, Forthcoming.

9. Appliances: All appliances are to be Owner-Furnished, Contractor installed.



1 BASEMENT PLAN
SCALE: 1/2" = 1'-0"



SUBMISSIONS:		DESCRIPTION	
ISSUE	DATE	DESCRIPTION	DATE
01	11/11/21	SITE PLAN REVIEW	

CHANGES THIS ISSUE:		ISSUE NUMBER	
ID	DESCRIPTION	DATE	NUMBER

FLOOR PLAN GENERAL NOTES

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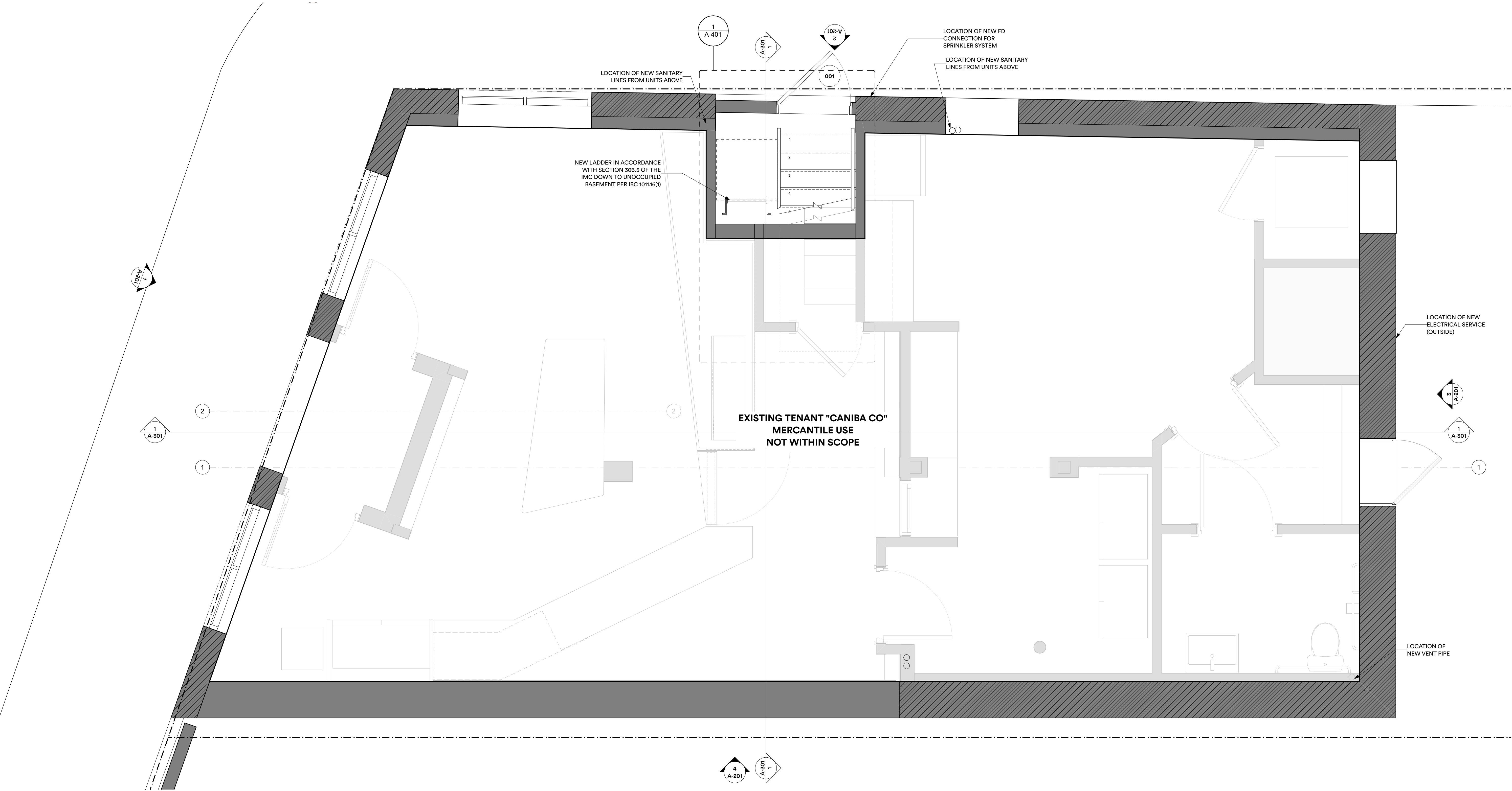
4. **Walls/Floors:** See wall and floor type assemblies on A-601.

5. **MEP:** Mechanical, Electrical and Plumbing work is to be design build by the Contractor. The Architect has provided design-build performance specifications and has made basic assumptions for size and space requirements and locations for incoming service. Contractor is to review and bring to the Architect's attention if additional information is required.

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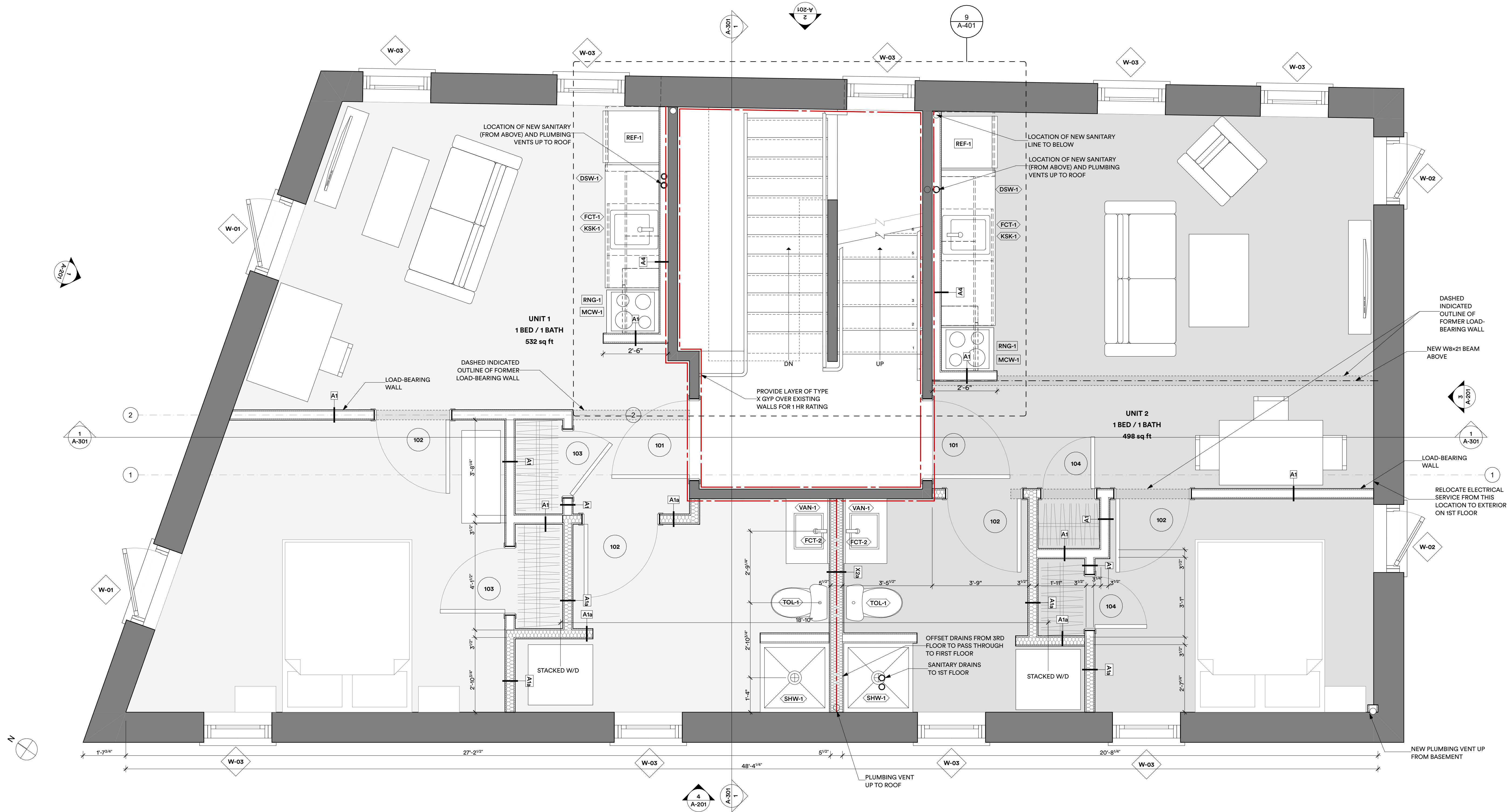
9. **Appliances:** All appliances are to be Owner-Furnished, Contractor installed.



BIMcloud: bimserver25 - BIMcloud Basic for ARCHICAD 25/Commercial Studio/94 Portland Street_20211102

FLOOR PLAN GENERAL NOTES

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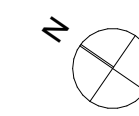
1 2ND FLOOR PLAN
SCALE: 1/2" = 1'-0"

C&S PROJECT LEAD:		SUBMISSIONS:		CHANGES THIS ISSUE:	
JJ	DATE OF ISSUE:	ISSUE	DESCRIPTION	ID	DESCRIPTION
	11/1/21	on	SITE PLAN REVIEW		
	</				

1. These Drawings constitute a design progress set. Additional information, dimensions and specifications will be provided by the Architect and/or Owner at a later date or as requested with estimate for clarification.
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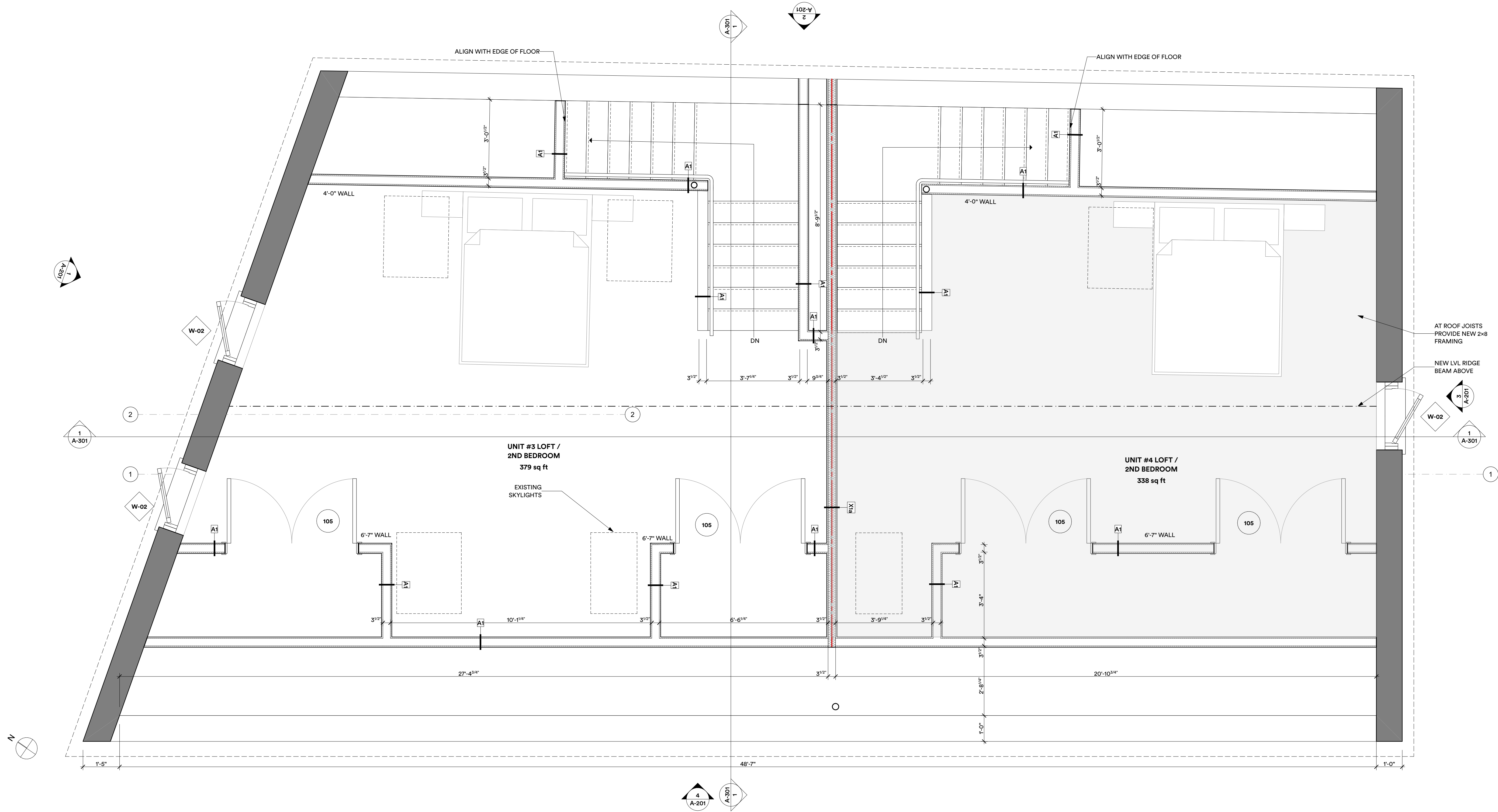
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SUBMISSIONS:		DESCRIPTION
ISSUE	DATE	
01	11/5/21	SITE PLAN REVIEW

CHANGES THIS ISSUE:	
ID	DESCRIPTION

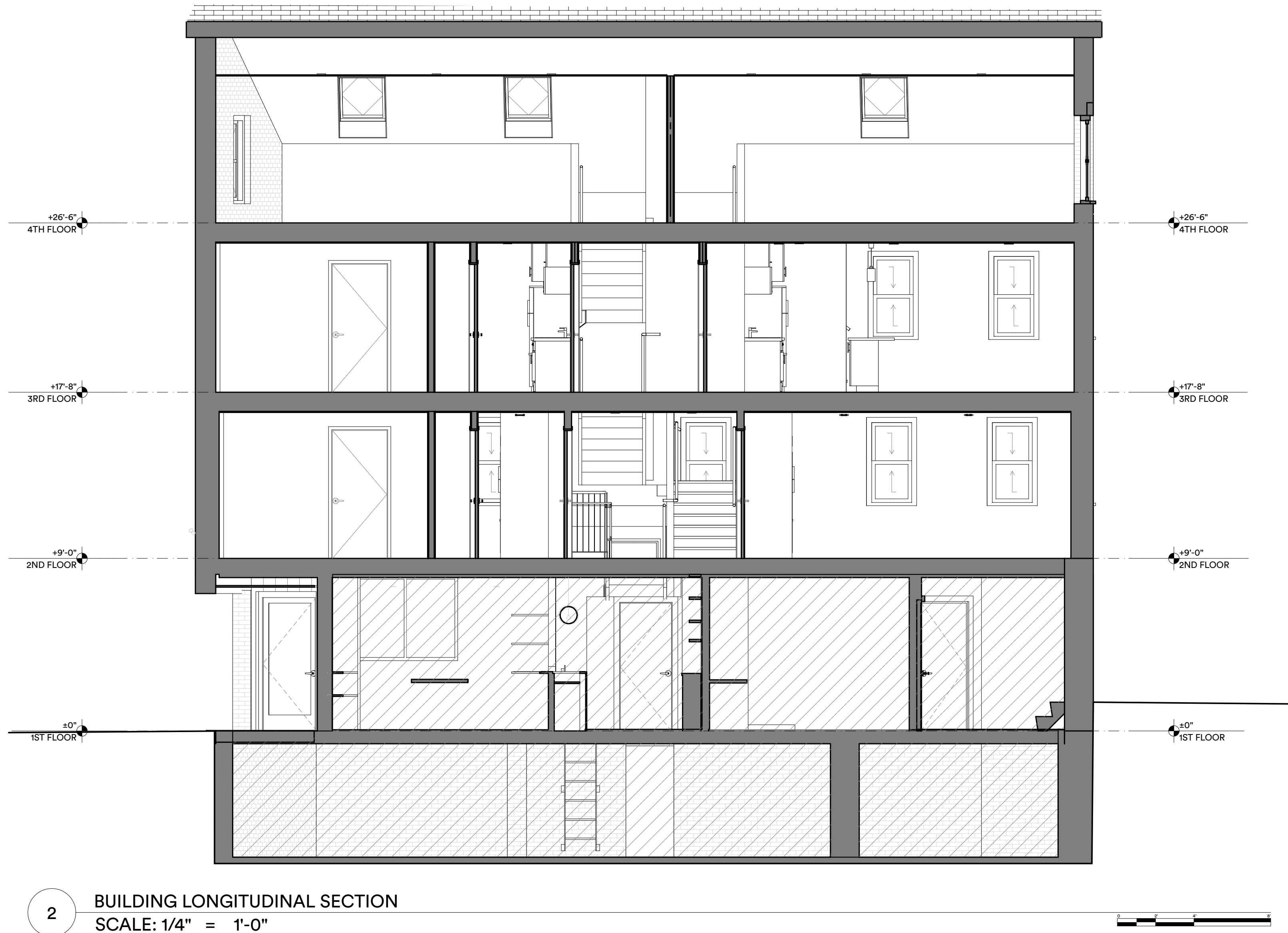
FLOOR PLAN GENERAL NOTES

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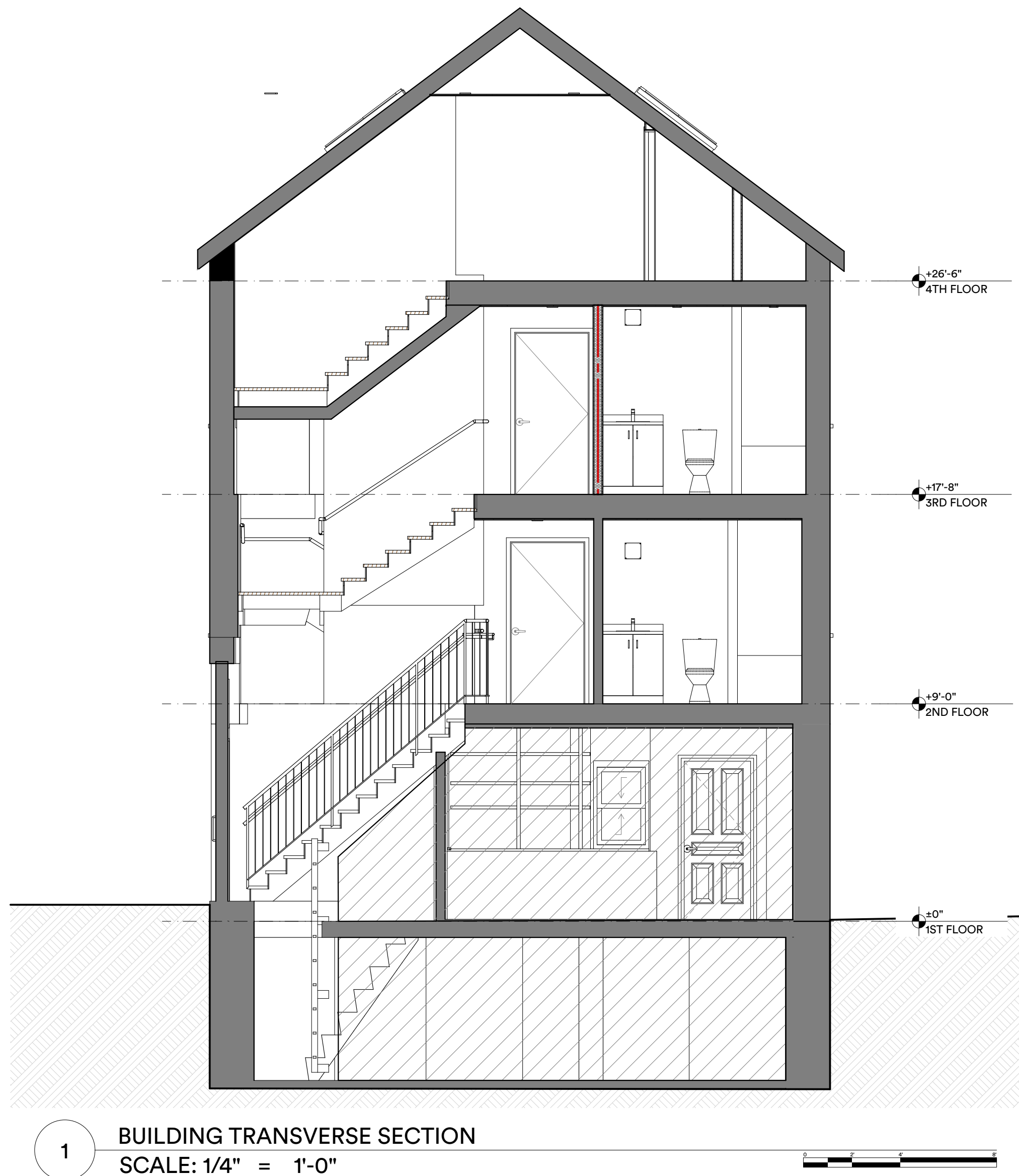
2 4TH FLOOR PLAN
SCALE: 1/2" = 1'-0"

SUBMISSIONS:		CHANGES THIS ISSUE:	
ISSUE	DATE	ID	DESCRIPTION
01	11/15/21		



2

BUILDING LONGITUDINAL SECTION
SCALE: 1/4" = 1'-0"



1

BUILDING TRANSVERSE SECTION
SCALE: 1/4" = 1'-0"

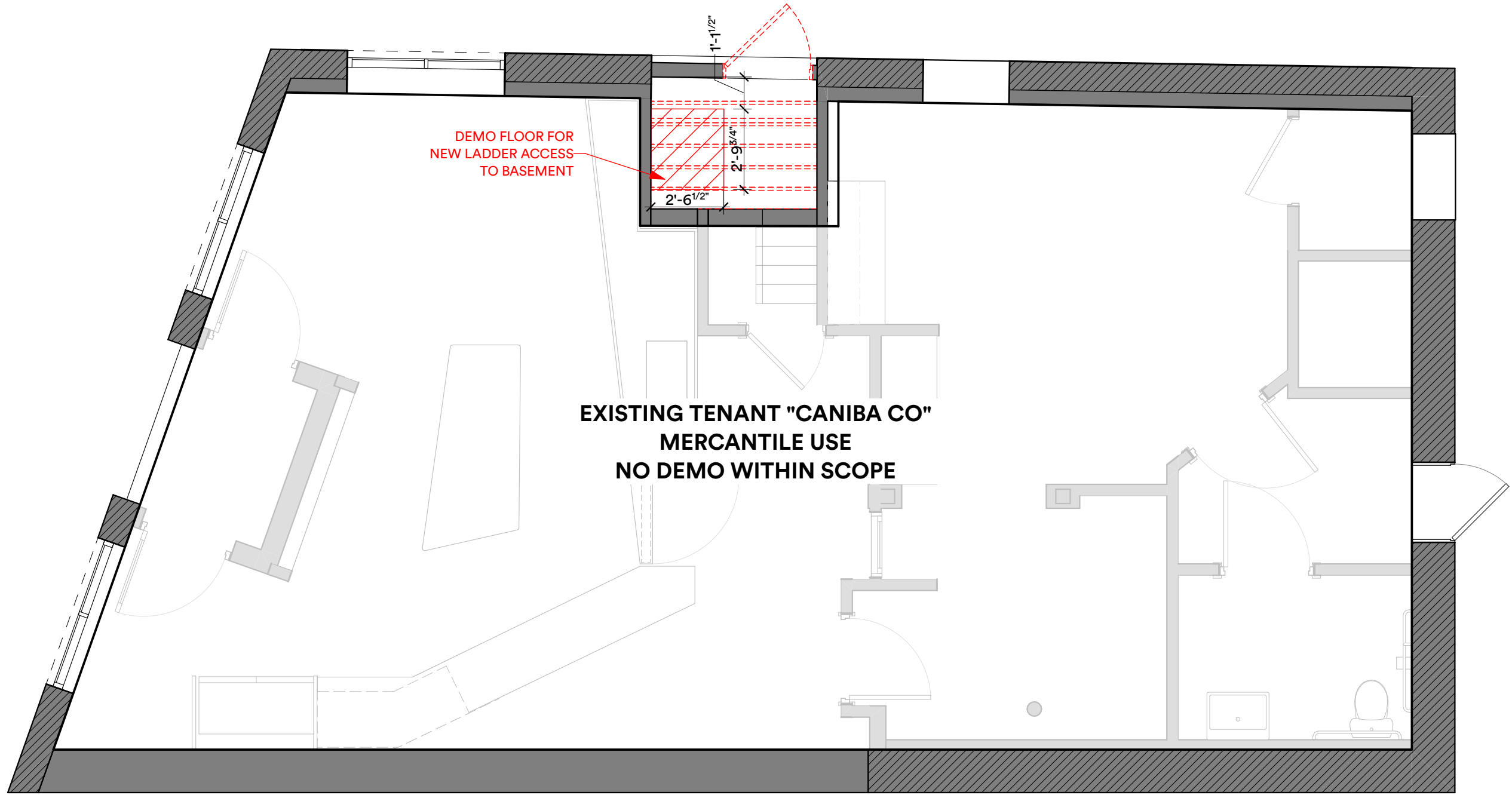
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DEMOLITION PLAN GENERAL NOTES

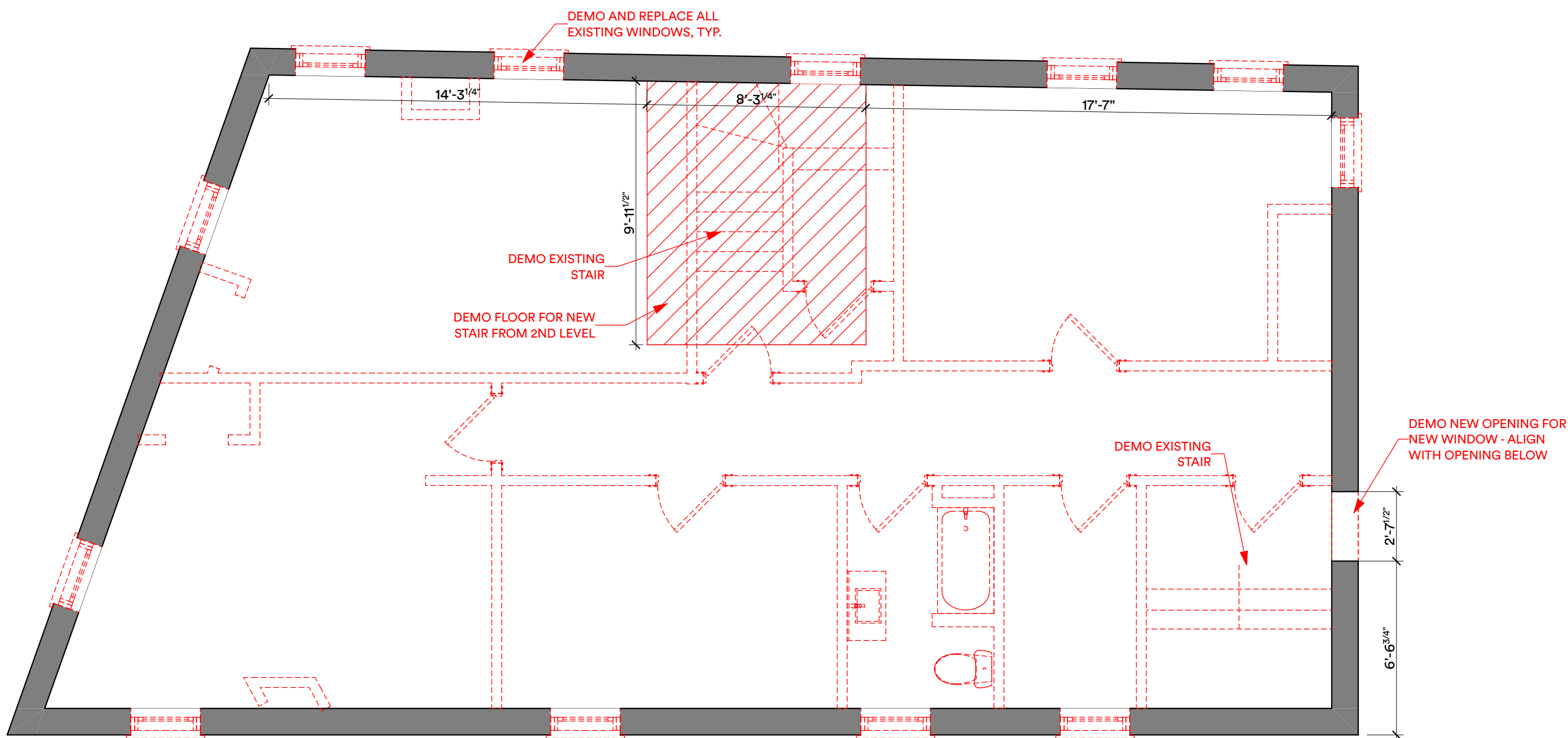
1. This drawing set constitutes a demolition permit application to the City of Portland for interior non-load bearing demolition.
2. Contractor is to visit the site and become familiar with all work included herein.
3. Contractor to remove all walls indicated on Drawings. If walls appear to be load-bearing or found to have columns within, provide temporary shoring and contact the architect for further instruction
4. Remove all existing wall, floor, and ceiling finishes to existing wood studs, U.N.O.
5. Remove all existing mechanical, electrical and plumbing work throughout.
6. Contractor to provide proper precautions for the removal and/or remediation of hazardous materials such as lead and asbestos.

DEMOLITION PLAN LEGEND

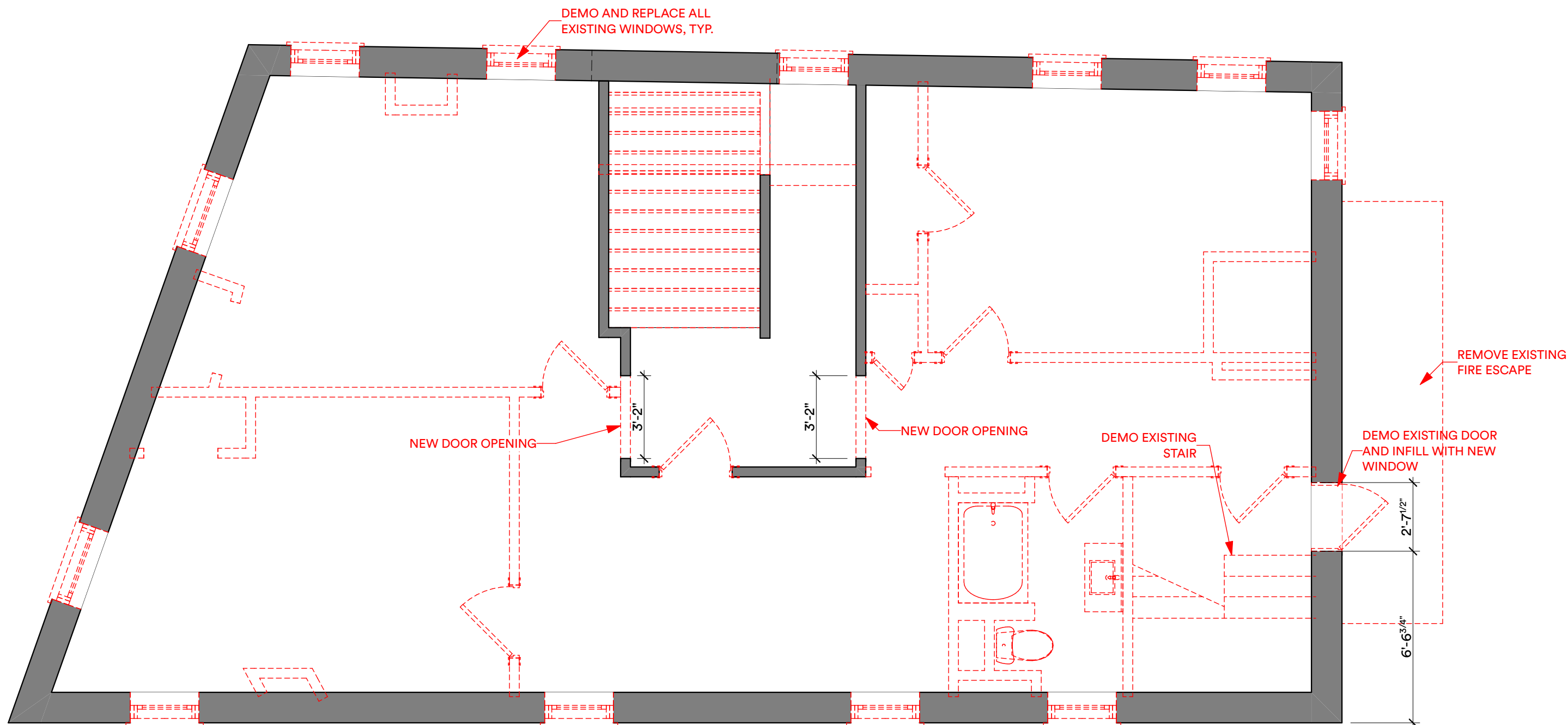
- Wall to be Demolished
- Existing Wall to Remain
- Room/ Area to be Gutted, See Additional Notes
- Door to be Demolished
- Fixture/ Object to be Demolished



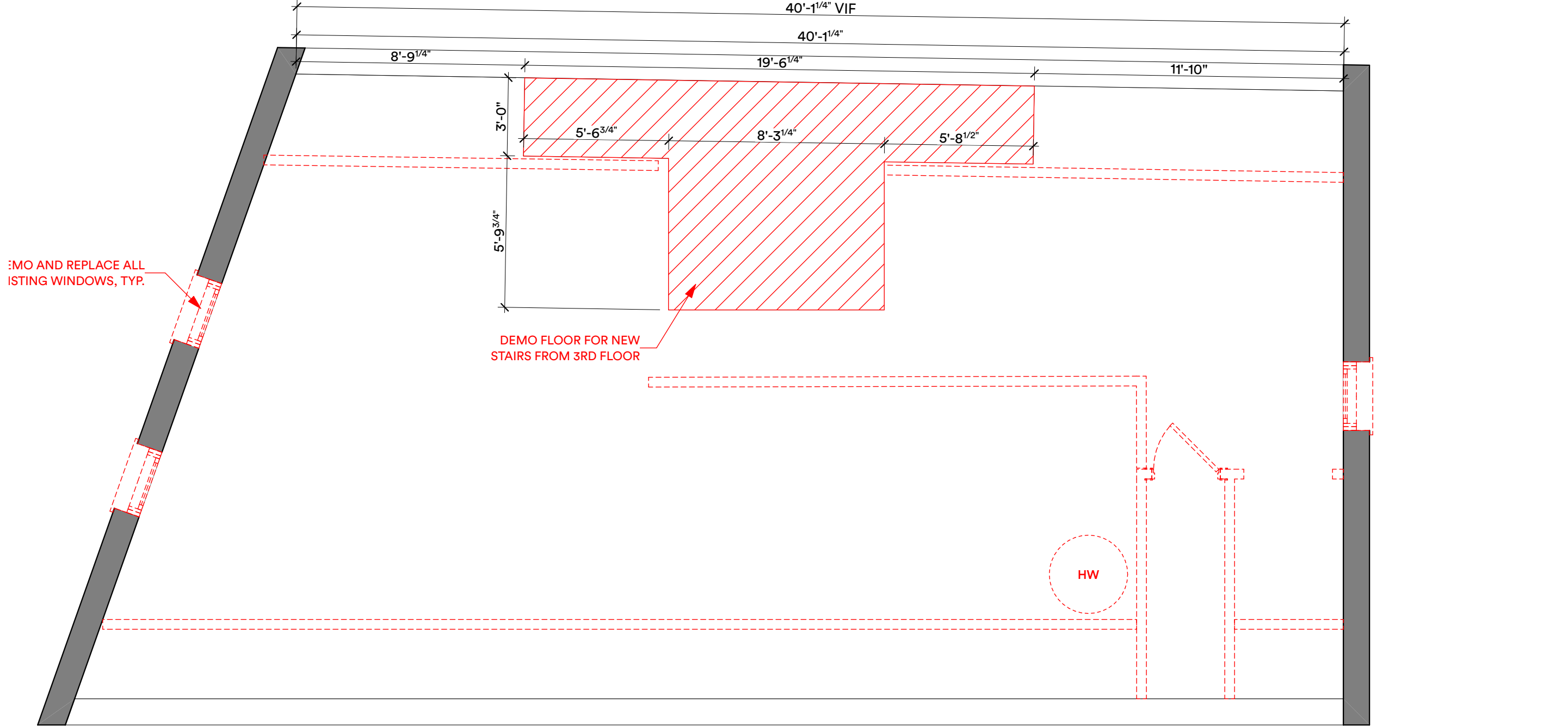
1 1ST FLOOR EXISTING/DEMOLITION PLAN
SCALE: 1/4" = 1'-0"



3 3RD FLOOR DEMO PLAN
SCALE: 1/4" = 1'-0"



2 2ND FLOOR DEMO PLAN
SCALE: 1/4" = 1'-0"



4 4TH FLOOR DEMO PLAN
SCALE: 1/4" = 1'-0"

SUBMISSIONS:	DATE	DESCRIPTION	ISSUE NUMBER	CHANGE NUMBER	DESCRIPTION
ISSUE	01	11/15/21	01	01	SITE PLAN REVIEW

CJS PROJECT LEAD:	JJ
DATE OF ISSUE:	11/11/21
PROJECT STATUS:	SITE PLAN REVIEW