CITY OF LEWISTON
PLANNING BOARD MEETING
Monday, September 14, 2020 – 5:30 P.M.
Lewiston City Government
27 Pine Street, Lewiston, ME

AGENDA

Remote Meeting Information:
In accordance with An Act To Implement Provisions Necessary to the Health, Welfare, and Safety of the Citizens of Maine in Response to the COVID-19 Public Health Emergency, as enacted to read: Sec. G-1 1 MRSA §403-A Public proceedings through remote access during the declaration of a state of emergency due to COVID-19, the meeting will be held through ZOOM video conferencing. To participate in the meeting, please go to https://www.lewistonmaine.gov/2020PB

Information regarding this application is available at http://www.lewistonmaine.gov/209/Planning-Board Questions, and comments on the application or meeting may be sent to dgreene@lewistonmaine.gov or by calling 207-513-3000, ext. 3223.

1. **ROLL CALL**

2. **ADJUSTMENTS TO THE AGENDA**

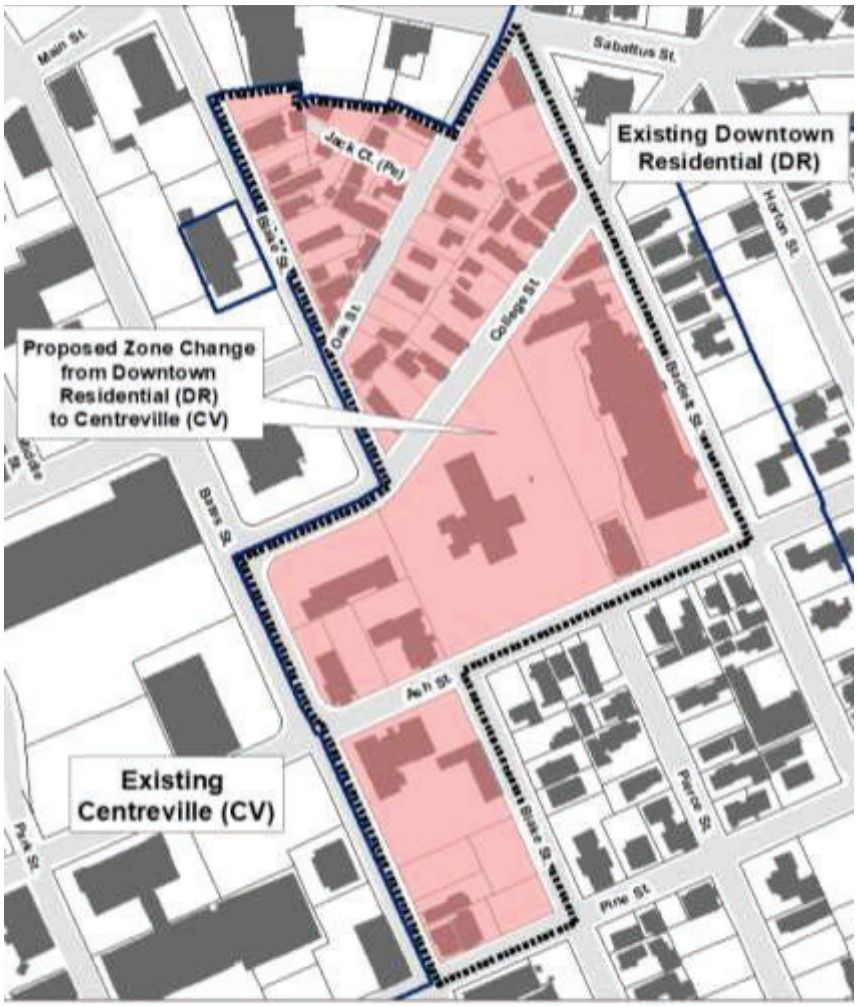
3. **CORRESPONDENCE**

4. **PUBLIC HEARINGS:**

   a. Sebago Technics, an agent for High and Main Street, LLC, on behalf of Central Maine Health Center (CMHC) has submitted a development review application to construct a 51,800 sf. medical building at the corners of High Street and Main Street and Main Street and Holland Street, and to resurface and re-stripe an existing parking lot at 88 Holland Street.

   b. Teradyne Consultants, LLC, an agent for 10 Gould Street, LLC, has submitted a development review application to construct a 16,000 sf. warehouse/light industrial building and associated parking at the property located at 10 Gould Street.

   c. Planning Board consideration and recommendation to the City Council to rezone 70 Blake St and the surrounding neighborhood from Downtown Residential District (DR) to Centreville District (CV) as shown on the map below.



Blake Street Area Rezoning From Downtown Residential (DR) to Centreville (CV)

September 2020

5. OTHER BUSINESS

a. A request to the Planning Board by Pierce Place Apartments to remove a condition of approval to reserve the property at 82 Pierce Street for future parking.

6. READING OF THE MINUTES: Motion to adopt the August 10, 2020 draft minutes.

7. ADJOURNMENT

The next scheduled Planning Board meeting is September 28, 2020

The City of Lewiston is an EOE. For more information, please visit our website @ www.lewistonmaine.gov and click on the Non-Discrimination Policy.

September 4, 2020

20149

Mr. Douglas Greene
City Planner
City Of Lewiston
27 Pine Street
Lewiston, ME 04240

Response to Staff Review Comments
Central Maine Health Care Cancer Center

Dear Doug:

We are writing on behalf of Main and High Street, LLC to address staff review comments related to our August 13, 2020 Site Plan Application for the Central Maine Health Care Cancer Center project. Included in this letter are responses to all of the staff review comments received to date which were attached to your email messages of August 27 and 31, 2020

The text of each review comment is provided below in italics for reference followed by our response. Revised plans and documents are attached as noted at the end of this letter.

Staff Comment Memorandum Dated August 25, 2020 (via email August 27, 2020)

Comments and Questions from Planning:

1. *The proposed Cancer Center Development is located on 8 different parcels. Will these lots be consolidated into one lot? I've attached a city map that shows how the site plan relates to the existing lotting. We're going to work with the Assessor's Office to generate a city-approved address. The application lists 1.64/1.68 ac as the lot size. Is that the project "lot" size as shown on the site plan? Please address in the project narrative in letter "p" Lot Layout.*

The proposed Cancer Center building will be located on a leased area of the Central Maine Health Care (CMHC) campus. The leased area encompasses 1.64 acres and is the project "lot" size listed in the application and on the plans. A copy of the building project site lease area exhibit is also included in the right-title and interest documentation within the application.

The 1.68 acre reference is the area of the Holland Street parking lot resurfacing. A revised narrative clarifying the project size in item "p" is attached.

As a leased parcel, the underlying ownership of the existing lots of record does not change. We understand that the assessor's office is working on assigning an appropriate address and we will add that information to the plans when it is received.

If the assessor's office requires that the underlying lots be reconfigured to reflect the leased area for tax map/assessing purposes, we will work with Central Maine Health care to prepare the required documents. We request that if this is required, that the City consider this as a Condition of Approval as it will require legal review by the land owner.

2. *Understanding the size and configuration of the future lot (development site) will help us better understanding the project data in the application. Please provide a breakdown of what constitutes the existing total impervious area of 635,976 sf. vs. (20,360 sf.). It's unclear where the 20,360 sf. is located?*

The total existing impervious area on the CMHC campus is 635,976 sf. of which 20,360 sf was constructed after 2007. This information is provided in the application because it relates to the City's MDEP delegated review authority thresholds. The question of the total impervious area on the campus first arose and was determined in 2007 as part of the City's review on the CMHC Emergency Department expansion project. This running total has been updated with each subsequent site plan review. The 20,360 sf of impervious area is located in several locations around the campus. This information was presented on the application form in this manner in an attempt to be consistent with other recent applications for site plans on the campus which have tracked additional impervious area added since 2007.

The proposed project will result in a net increase in impervious area of about 2,600 sf located on the Cancer Center building site where existing landscaped and paved areas are converted to rooftop.

3. *How did you calculate your required parking? Did you use the office requirement of 1 space / 300 sf.? Will there be beds used during a patients' stay? If so, how many beds will there be?*

The parking calculation is based the Article VII Section 17(d) requirements for a Medical Clinic which requires 2 spaces per "Treatment room or patient bed, whichever is greater". As an out-patient cancer treatment facility, there are no traditional patient beds as we would typically understand the term. The parking is based on the 61 rooms identified as a "Treatment Room", "Exam Room" or "Infusion Room" shown on the floor plans.

4. *Will the Holland Street parking lot continue to be used for snow storage as in the past? There have been numerous complaints from residents on Elm Street about the loud banging of dump trucks in the middle of the night.*

The Holland Street Parking lot is being resurfaced for parking and will not be used for snow storage or sand/salt pile operations.

5. *The chain-link fence at the rear of the Holland St. parking lot has been knocked down from snow storage and may be difficult to re-use.*

The existing fence will be reused where it can be salvaged and repaired or replaced where it cannot. There are areas of significant vegetation including several mature trees along the existing fence line that serves and an effective screen for the abutters that we are seeking to preserve the existing vegetation to the extent practicable.

6. *Please confirm the parking lot lighting will be cut-off type? How tall are the poles?*

The proposed lighting are cutoff fixtures. They are the same fixtures approved by the Planning Board and installed in the adjacent lot along Holland Street, that was reconstructed in 2015.

The fixtures will be installed on 16' poles, on concrete bases with a 3' reveal for traffic protection, resulting in a fixture mounting height not to exceed 20'.

7. *It looks like people who park in the Holland Street parking lot will have to walk through the entrance/exit to get to the Holland Street sidewalk. (i.e. no sidewalk there)*

The entrance lane at the driveway has been widened to provide a striped and paved shoulder for pedestrian access past the gate to the public sidewalk.

8. *There looks to be a conflict with the reconstructed sidewalk (next to the existing parking garage) and the parking area next to the sidewalk. Cars currently overhang into the sidewalk area.*

The existing sidewalk is to be replaced as part of this project and will be widened to 6' to accommodate parked cars.

9. *Will the existing obstructions in the sidewalk along Holland Street be addressed in the areas the sidewalk will be reconstructed? (shaded areas)*

The proposed sidewalk along Holland Street reflects widening to allow for ADA required width clear of the existing utility poles and fire hydrant in the sidewalk.

10. *Will there be an ADA tip-down at the corner of Main and Holland Streets?*

The plans have been revised to include new detectable warning plates at the existing tipdown area at the corner of High and Main Street adjacent to the building site.

11. What is the clearance of the canopy at the drop-off area?

Clearance at the canopy will be a minimum of 13' clear from the finished floor of the building.

12. Please add a certification block on the 2 site plans for the Planning Board Chair to sign.

The certification block has been added.

13. Please add site statistics to the site plans.

The project's space and bulk summary shown in the general notes (sheet 2) has been placed on Sheet 7 (Site Plan)

14. I'm also attaching notes that need to be added to the site plans.

The requested notes have been added to the Site Plan (Sheet 7).

The following are Public Works comments on the proposed development:

15. .The plans and application are acceptable to PW. My only comment is that reconstruction of the sidewalk along Holland Street provides ADA path around utility poles. It appears from the plans that this is done.

Noted. No response required.

Police: No Comments

Fire:

16. What will the physical address be? Will it be Holland St.? Seeing the main entrance being on that side, I would assume it would have a Holland St. address.

We understand the assessor is working on an address for the facility and will include this information when it is received.

17. With that being said, where will the proposed 4" Stortz FD connection be? The FD Fire Alarm control panel. Typically, we would like to see both of these FD features located at the front, main entrance to the building.

The Fire Alarm Control Panel will be located in the 2 hour rated life safety electrical room located near the center of the Holland Street frontage (north elevation) in the service driveway. There will be a remote fire alarm annunciator panel (with silence and reset capability) at the main public front entry, on the west side of the building (entrance facing the parking garage). The panel will be located on the wall at the left of the entry with fire department key box adjacent to it.

The Stortz connection is currently proposed on the Holland Street side of the building, in the service driveway, in close proximity to the existing hydrant located between the service drive curb cuts. There is another hydrant at the corner of High and Main Street. We will contact the Fire Department to confirm the desired location of the connection and request that the final determination be made during the building permit review process.

Other Plan Revisions

The revised plans reflect the following additional revisions made as part of the project development and budgeting.

1. Site and Landscape Plans

   The landscape plans have been revised at the northwest corner of the building in the area. The plans submitted in August presented a design for a healing garden and courtyard. This feature is now presented as an alternate in the project and will be constructed if the project budget allows, or in the future as a donor funded feature. The site and landscape plans (Sheets 7 and 14) reflect the base design for approval. The alternate design for this area is shown on Sheet 11.

   The landscape plan has been revised at the front of the building along main street. The plan has been revised to eliminate the need for a retaining wall at this location.

2. Updated color rendered building elevation drawings, rendered building model views and current floor plans are attached.

Thank you for your time and consideration of this project. Please contact me if you have any questions or require additional information regarding our responses.

Sincerely,

SEBAGO TECHNICS, INC.

Daniel L Riley, P.E.
Senior Project Manager

SEBAGO TECHNICS

CIVIL ENGINEERING • SURVEYING • LANDSCAPE ARCHITECTURE

Development Review Application

To:

City of Lewiston

CMHC Cancer Center

Main, High, and Holland Streets
Lewiston, Maine

Prepared for:
High & Main Street, LLC
470 Fore Street
Suite 400
Portland, ME 04101

Prepared by:
Sebago Technics, Inc.
75 John Roberts Road, Suite 4A
South Portland, Maine 04106

August 13, 2020

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August 13, 2020
20149

Douglas Greene, City Planner
City of Lewiston
27 Pine Street
Lewiston, ME 04240

Development Review Application – Major Development
CMHC Cancer Care Center, 300 Main Street – Lewiston, ME

Dear Mr. Greene:

On behalf of High & Main Street, LLC, we have prepared the following Development Review application for Staff and Planning Board Consideration. High & Main Street, LLC is proposing, on behalf of Central Maine Health Center (CMHC) to construct a new Cancer Care Center on an underutilized lot within the Health Center's campus. The applicant is also proposing to resurface and re-stripe an existing surface lot located at 88 Holland Street.

The building is proposed to be located on a site bounded by Main Street to the east, Holland Street to the north, High Street to the south and the hospital's visitors parking garage to the west. The project site is located in the Centerville and Neighborhood Conservation B Districts (CV/NCB) and involves the construction of a proposed 51,800 s.f. medical building (in the CV district). The project includes resurfacing and re-striping an existing surface parking lot located at 88 Holland Street (in NCB district) north and opposite the visitors parking garage.

The proposed medical building will create a free-standing cancer care center to consolidate several existing outpatient subspecialties services including radiation oncology, medical oncology/infusion, and surgical oncology, that are currently located in separated locations spread across the CMHC campus. Central Maine Health (CMH) is limited in its ability to provide comprehensive cancer care by equipment that will reach the end of its useful life in December of 2021, aging infrastructure, and the significant distance between the radiation oncology and medical oncology departments at their current locations. The new development is not proposed to introduce new health care services. The new space will serve to accommodate new equipment which cannot be replaced in the current locations and provide a better overall treatment and patient experience and upgrade clinical spaces to current practice standards.

Access to the building will be provided by the existing signalized High Street entrance at Main Street and the existing hospital parking lot curb cut on Holland Street, east of the visitor's garage. New curb cuts on the south side of Hollard Street are proposed for service access to the new building for items including trash removal, linens and deliveries and building utility entrances. The main entrance to the building will include a patient visitor drop off lane and ADA accessible parking accessed from the existing visitors parking area west of the building.

Permitting History:
The CMHC campus currently holds a Maine Department of Environmental Protection (MDEP) Site Location of Development Act approval order. The proposed project will require an amendment to the

existing permit and will be submitted to the City for its review under the City's delegated review authority. In 2009 and 2015, as part of the City's delegated review of Central Maine Medical Center's Emergency Department and expansion (2009) and Holland Street Parking improvements (2015) Sebago Technics undertook and investigation to estimate the total development area or "Structure" coverage on the CMHC campus and the portion of coverage created since the 1970's and subject to Site Law review. The City's delegated review authority is currently limited to 7 acres of structure.

In 1971 the campus included 10.2 acres of impervious cover. By 2007 this area had increased to 14.1 acres for a total of 3.9 acres of structure subject to the City's Delegated authority. Since 2007 there have been five projects, including the current proposal, which will add impervious cover as summarized below.

Project	**Date**	**Impervious Area Added**
Emergency Department Expansion	2009	4,155 SF
High, Main &Holland Street Lots	2013	11,004 SF
57 Lowell Street	2014	1,290 SF
100-112 Holland Street Parking	2015	3,911 SF
Cancer Center (Proposed)	2020	2,570 SF
	Total Structure Added	**22,930 SF or 0.53 Acres**

The proposed project will bring total impervious area on the campus to approximately 14.7 acres with a total of 4.4 acres of impervious area created since 1971. This is well below the 7-acre authority limit which could trigger MDEP's jurisdiction for review.

Stormwater: The proposed project will redevelop approximately 2.6 acres of the campus. Formerly developed with residential structures and currently developed as paved parking lots constructed in 2013. The project will increase impervious cover on the site by about 2,600 sf with a net reduction in pollutant impact rating as defined by the MDEP Chapter 500 redevelopment standards, due to the conversion of paved impervious area to rooftop area.

The redevelopment standards in this case requires that a minimum of 50% of the project's developed area receive stormwater quality treatment. The Chapter 500 General and Flooding standards will be met with the construction of a subsurface sand filter located in the redeveloped parking area west of the new building and tributary to an existing drain connection to the separated storm drainage system in Holland Street.

Traffic and Parking: The proposed project is not expected to result in a significant increase in the number of trips to and from the site or change traffic patterns, as the number of staff and patients will remain relatively the same. The traffic study included in the application does assess the potential future impacts that the reuse of vacated spaces on the campus may generate.

The main entrance for the proposed facility is to be located along the existing access drive between Holland Street and High Street. The area will be improved to include a pick up/drop off and valet area for the facility and will retain approximately 31 parking spaces adjacent to the patient entrance. Patients and visitors will use the provided parking spaces, or continue to use other existing visitor parking areas including the adjacent parking garage.

The project will include the resurfacing and re-striping CMHC's Lot S parking lot to offset parking displaced by the new building. Lot S on Holland Street is presently underutilized being striped for 121 parking spaces with areas to the north and west ends of the lot portioned off for use as snow storage and maintenance operation areas. After re-surfacing Lot S will be restriped to provide 208 parking spaces. The lot improvements will include new LED lighting fixtures and will add solid screen fencing along areas abutting residential uses to the north and west.

Solid Waste: The proposed project will not result in a need for additional waste disposal as the proposed building will house existing services from other areas on campus. Solid waste will be collected in existing exterior dumpsters that screened from view.

Utilities: The project will be served by existing public utilities available in Holland Street which include domestic water, sanitary sewer, electric, natural gas and telecommunications.

The City of Lewiston Water and Sewer Division has been contacted and is currently reviewing the water and sewer components of the project. A water and sewer capacity letter will be provided under separate cover.

Landscape Improvements: The project improvements will include a robust landscaping plan with planting palette consistent with the CMHC campus and to enhance the patient, employee and public experience of the building. The site features patient and staff courtyards including a healing garden area at the northwest corner of the building on Holland Street; plantings to replace and enhance street trees displaced on Main Street and Holland Street and architectural screening fencing with sound attenuation panels (if necessary) to screen the building mechanical equipment from view and to meet City noise standards.

Closure: On behalf of High & Main Street, LLC, we look forward to working with the City staff and Planning Board to permit this project. As you consider the application, please contact us if you have any questions.

Sincerely,

SEBAGO TECHNICS, INC.

Daniel L. Riley, P.E., CFM
Vice President, Engineering

Development Review Application

City of Auburn Planning and Permitting Department
City of Lewiston Department of Planning and Code Enforcement

PROJECT NAME: CMHC Cancer Care Center

PROPOSED DEVELOPMENT ADDRESS: 300 Main Street

PARCEL ID#: Map 194/Lots 9, 10, 12, 13, 14, 16, 17, 18

REVIEW TYPE: **Site Plan/Special Exception** ☒ **Site Plan Amendment** ☐
Subdivision ☐ **Subdivision Amendment** ☐

PROJECT DESCRIPTION: The proposed project involves the construction of a new two-story medical office building on a previously developed lot, as well as the redevelopment of an existing parking lot.

CONTACT INFORMATION:

Applicant

Name: High & Main Street, LLC
Address: 470 Fore Street, Suite 400, Portland
Zip Code 04101
Work #: 207-772-2992
Cell #:
Fax #:
Home #:
Email: nathan@batemanpartnersllc.com

Property Owner

Name: Central Maine Medical Center
Address: 300 Main Street, Lewiston
Zip Code 04240
Work #:
Cell #:
Fax #:
Home #:
Email:

Project Representative

Name:
Address:
Zip Code
Work #:
Cell #:
Fax #:
Home #:
Email:

Other professional representatives for the project (surveyors, engineers, etc.),

Name: Sebago Technics, Inc
Address: 75 John Roberts Road, Suite 4A, South Portland
Zip Code 04106
Work #: 207-200-2080
Cell #:
Fax #:
Home #:
Email: driley@sebagotechnics.com

PROJECT DATA

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

IMPERVIOUS SURFACE AREA/RATIO

Existing Total Impervious Area	635,976 (20,360)**	sq. ft.
Proposed Total Paved Area	48046	sq. ft.
Proposed Total Impervious Area	640,332 (22,880)**	sq. ft.
Proposed Impervious Net Change	2,600	sq. ft.
Impervious surface ratio existing	67.6	% of lot area
Impervious surface ratio proposed	68.1	% of lot area

**total facility (total since 1971)

BUILDING AREA/LOT COVERAGE

Existing Building Footprint	0	sq. ft.
Proposed Building Footprint	29,047	sq. ft.
Proposed Building Footprint Net change	29,047	sq. ft.
Existing Total Building Floor Area	0	sq. ft.
Proposed Total Building Floor Area	51,739	sq. ft.
Proposed Building Floor Area Net Change	51,739	sq. ft
New Building	yes	(yes or no)
Building Area/Lot coverage existing	NA	% of lot area
Building Area/Lot coverage proposed	41	% of lot area

ZONING

Existing	CV & NCB
Proposed, if applicable	no change

LAND USE

Existing	parking lot
Proposed	medical office & parking lot

RESIDENTIAL, IF APPLICABLE

Existing Number of Residential Units	na
Proposed Number of Residential Units	na
Subdivision, Proposed Number of Lots	na

PARKING SPACES

Existing Number of Parking Spaces	261 (140 building lot/121 parking lot)
Proposed Number of Parking Spaces	239 (31 on building lot/208 parking lot)
Required Number of Parking Spaces	122 (2 spaces per treatment room)
Number of Handicapped Parking Spaces	4 spaces

ESTIMATED COST OF PROJECT

$21,700,000.00

DELEGATED REVIEW AUTHORITY CHECKLIST

SITE LOCATION OF DEVELOPMENT AND STORMWATER MANAGEMENT

Existing Impervious Area	635,976(20,360)**	sq. ft.
Proposed Disturbed Area	133,800*	sq. ft.
Proposed Impervious Area	640,332(22,880)**	sq. ft.

**total facility (total after 1971)

*73,000 sf building site
60,800 sf Holland Lot

1. *If the proposed disturbance is greater than one acre, then the applicant shall apply for a Maine Construction General Permit (MCGP) with MDEP.*
2. *If the proposed impervious area is greater than one acre including any impervious area crated since 11/16/05, then the applicant shall apply for a MDEP Stormwater Management Permit, Chapter 500, with the City.*
3. *If total impervious area (including structures, pavement, etc) is greater than 3 acres since 1971 but less than 7 acres, then the applicant shall apply for a Site Location of Development Permit with the City. If more than 7 acres then the application shall be made to MDEP unless determined otherwise.*
4. *If the development is a subdivision of more than 20 acres but less than 100 acres then the applicant shall apply for a Site Location of Development Permit with the City. If more than 100 acres then the application shall be made to MDEP unless determined otherwise.*

TRAFFIC ESTIMATE

Total traffic estimated in the peak hour-existing (Since July 1, 1997) 0 passenger car equivalents (PCE)

Total traffic estimated in the peak hour-proposed (Since July 1, 1997) 18 passenger car equivalents (PCE)

If the proposed increase in traffic exceeds 100 one-way trips in the peak hour then a traffic movement permit will be required.

Zoning Summary

Proposed Building Lot: 1.64 ac
Proposed Resurfaced Lot: 1.68 ac

1. Property is located in the CV & NCB zoning district.
2. Parcel Area: 1.64/1.68 acres / 71,599/73,180 square feet(sf).

Regulations	Required/Allowed	Provided
Min Lot Area	none	1.64/1.68 ac
Street Frontage	25ft/50ft	181ft
Min Front Yard	none/10ft	21 ft(Main St)/NA
Min Rear Yard	none/5ft	115 ft/NA
Min Side Yard	none/5ft	9 ft (High St)/NA
Max. Building Height	150ft/65ft	35 ft/NA
Use Designation	other use	medical office/parking lot
Parking Requirement	2 space/ per Treatment Room	
Total Parking:	122	239 (31/208)
Overlay zoning districts (if any):	n/a	/ /

Urban impaired stream watershed? YES/NO If yes, watershed name_____

DEVELOPMENT REVIEW APPLICATION SUBMISSION

Submission shall include payment of fee and fifteen (15) complete packets containing the following materials:

1. Full size plans containing the information found in the attached sample plan checklist.
2. Application form that is completed and signed.
3. Cover letter stating the nature of the project.
4. All written submittals including evidence of right, title and interest.
5. Copy of the checklist completed for the proposal listing the material contained in the submitted application.

Refer to the application checklist for a detailed list of submittal requirements.

L/A's development review process and requirements have been made similar for convenience and to encourage development. Each Citys ordinances are available online at their prospective websites:
Auburn: www.auburnmaine.org under City Departments/ Planning and Permitting/Land Use Division/Zoning Ordinance
Lewiston: http://www.ci.lewiston.me.us/clerk/ordinances.htm Refer to Appendix A of the Code of Ordinances

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

This application is for development review only; a Performance Guarantee, Inspection Fee, Building Permit Application and other associated fees and permits will be required prior to construction.

Signature of Applicant:	Date:
	8/13/2020

Development Review Checklist

City of Auburn Planning and Permitting Department
City of Lewiston Department of Planning and Code Enforcement

THE FOLLOWING INFORMATION IS REQUIRED WHERE APPLICABLE TO BE SUBMITTED FOR AN APPLICATION TO BE COMPLETE

PROJECT NAME: CMHC Cancer Care Center

PROPOSED DEVELOPMENT ADDRESS and PARCEL #: 300 Main Street
Map 194/lots 9,10,12,13,14,16,17,18

Required Information		Check Submitted		Applicable Ordinance	
Site Plan		**Applicant**	**Staff**	**Lewiston**	**Auburn**
	Owner's Names/Address	X		X	
	Names of Development	X		X	
	Professionally Prepared Plan	X		X	
	Tax Map or Street/Parcel Number	X		X	
	Zoning of Property	X		X	
	Distance to Property Lines	X		X	
	Boundaries of Abutting land	X		X	
	Show Setbacks, Yards and Buffers	X		X	
	Airport Area of Influence (Auburn only)	NA			
	Parking Space Calcs	X		X	
	Drive Openings/Locations	X		X	
	Subdivision Restrictions	NA			
	Proposed Use	X		X	
	PB/BOA/Other Restrictions				
	Fire Department Review				
	Open Space/Lot Coverage	X		X	
	Lot Layout (Lewiston only)				
	Existing Building (s)	X		X	
	Existing Streets, etc.	X		X	
	Existing Driveways, etc.	X		X	
	Proposed Building(s)	X		X	
	Proposed Driveways	X		X	
Landscape Plan					
	Greenspace Requirements	X		X	
	Setbacks to Parking	X		X	
	Buffer Requirements	X		X	
	Street Tree Requirements	X		X	
	Screened Dumpsters	X		X	

	Additional Design Guidelines	X		X	
	Planting Schedule	X		X	
Stormwater & Erosion Control Plan					
	Compliance w/ chapter 500	X		X	
	Show Existing Surface Drainage	X		X	
	Direction of Flow	X		X	
	Location of Catch Basins, etc.	X		X	
	Drainage Calculations	X		X	
	Erosion Control Measures	X		X	
	Maine Construction General Permit				
	Bonding and Inspection Fees				
	Post-Construction Stormwater Plan	X		X	
	Inspection/monitoring requirements	X		X	
	Third Party Inspections (Lewiston only)	X		X	
Lighting Plan					
	Full cut-off fixtures	X		X	
	Meets Parking Lot Requirements	X		X	
Traffic Information					
	Access Management	X		X	
	Signage	X		X	
	PCE - Trips in Peak Hour	X		X	
	Vehicular Movements	X		X	
	Safety Concerns	X		X	
	Pedestrian Circulation	X		X	
	Police Traffic	X		X	
	Engineering Traffic	X		X	
Utility Plan					
	Water	X		X	
	Adequacy of Water Supply	X		X	
	Water main extension agreement	X		X	
	Sewer	X		X	
	Available city capacity				
	Electric	X		X	
	Natural Gas	X		X	
	Cable/Phone	X		X	
Natural Resources					
	Shoreland Zone	NA			
	Flood Plain	X		X	
	Wetlands or Streams	NA			
	Urban Impaired Stream	NA			
	Phosphorus Check	NA			
	Aquifer/Groundwater Protection	NA			
	Applicable State Permits				

	No Name Pond Watershed (Lewiston only)	NA			
	Lake Auburn Watershed (Auburn only)	NA			
	Taylor Pond Watershed (Auburn only)	NA			
Right Title or Interest					
	Verify	X		X	
	Document Existing Easements, Covenants, etc.	X		X	
Technical & Financial Capacity					
	Cost Est./Financial Capacity	X		X	
	Performance Guarantee				
State Subdivision Law		NA			
	Verify/Check				
	Covenants/Deed Restrictions				
	Offers of Conveyance to City				
	Association Documents				
	Location of Proposed Streets & Sidewalks				
	Proposed Lot Lines, etc.				
	Data to Determine Lots, etc.				
	Subdivision Lots/Blocks				
	Specified Dedication of Land				
Additional Subdivision Standards		NA			
	Single-Family Cluster (Lewiston only)				
	Multi-Unit Residential Development (Lewiston only)				
	Mobile Home Parks				
	Private Commercial or Industrial Subdivisions (Lewiston only)				
	PUD (Auburn only)				
A jpeg or pdf of the proposed site plan		X		X	
Final sets of the approved plans shall be submitted digitally to the City, on a CD or DVD, in AutoCAD format R 14 or greater, along with PDF images of the plans for archiving					

Section 1

Project Narrative/
Performance Standard Review

Section 1: Project Narrative/Performance Standard Review

Project Narrative

High & Main Street, LLC is proposing, on behalf of Central Maine Health Center (CMHC) to construct a new Cancer Care Center on an underutilized lot within the CMHC campus. The applicant is also proposing to resurface and re-stripe an existing surface lot located at 88 Holland Street.

The building is proposed to be located on a site bounded by Main Street to the east, Holland Street to the north, High Street to the south and the hospital's visitors parking garage to the west. The project site is located in the Centerville and Neighborhood Conservation B Districts (CV/NCB) and involves the construction of a proposed 51,800 s.f. medical building (in the CV district). The project includes resurfacing and re-striping an existing surface parking lot located at 88 Holland Street (in NCB district) north and opposite the visitors parking garage and abutting the Central Maine Christian Academy Property. The parking lot improvements are limited to resurfacing, restriping of the lot, replacement of lighting fixtures and the installation of a solid screen fence.

The proposed medical building will create a free-standing cancer care center to consolidate several existing outpatient subspecialties services including radiation oncology, medical oncology/infusion, and surgical oncology, that are currently located in separated locations spread across the CMHC campus. Central Maine Health (CMH) is limited in its ability to provide comprehensive cancer care by equipment that will reach the end of its useful life in December of 2021, aging infrastructure, and the significant distance between the radiation oncology and medical oncology departments at their current locations. The new development is not proposed to introduce new health care services. The new space will serve to accommodate new equipment which cannot be replaced in the current locations and to provide a better overall treatment and patient experience, as well as upgrade clinical spaces to current practice standards.

Access to the building will be provided by the existing signalized High Street entrance at Main Street and the existing hospital parking lot curb cut on Holland Street, east of the visitor's garage. New curb cuts on the south side of Hollard Street are proposed for service access to the new building for items including trash removal, linens and deliveries, and building utility entrances. The main entrance to the building will include a patient visitor drop off lane and ADA accessible parking accessed from the existing visitors parking area west of the building.

The proposed project is not expected to result in a significant increase in the number of trips to and from the site or change traffic patterns, as the number of staff and patients will remain relatively the same. The traffic study included in the application assesses the potential future impacts that the reuse of vacated spaces on the campus may generate. Please see Section 8 for additional traffic information.

The main entrance for the proposed facility is to be located along the existing access drive between Holland Street and High Street. The area will be improved to include a pick up/drop off and valet area for the facility and will retain approximately 31 parking spaces adjacent to the patient entrance. Patients and visitors will use the provided parking spaces, or continue to use other existing visitor parking areas including the adjacent parking garage.

The project will include the resurfacing and re-striping CMHC's Lot S parking lot to offset parking displaced by the new building. Lot S on Holland Street is presently underutilized being striped for 121 parking spaces with areas to the north and west ends of the lot portioned off for use as snow storage and maintenance

operation areas. After re-surfacing Lot S will be restriped to provide 208 parking spaces. The lot improvements will include new LED lighting fixtures and will add solid screen fencing along areas abutting residential uses to the north and west.

Stormwater will be managed on site meeting MDEP Chapter 500 standards for a redeveloped site with the construction of a new subsurface sand filter detention system and drain connections to the existing separated storm drains in Main Street and Holland Street.

There are existing utilities available in Holland Street: water will connect to an existing 8" water main; sewer will connect to an existing 12" sewer main; and gas will connect to an existing 4" gas main. New underground electrical and telecommunications services will be taken from poles on Holland street

The proposed subject site is previously developed and therefore the proposed project will involve minimal vegetation removal. Please see the plan set for more detailed information on the landscape plan.

Please see Section 8 for additional traffic information.

Article XII Performance Standards

Section 1. Applicability

The proposed project is in conformance with the applicable performance standards as outline in this Article.

Section 2. Shoreland area standards

Not applicable. The site is not located in a shoreland area.

Section 3. Timber harvesting standards.

Not applicable. The proposed project does not involve timber harvesting.

Section 4. Community garden standards.

Not applicable. No community gardens are proposed with this project.

Section 5. Earth material removal standards.

Not applicable, as outlined in the standard. All earth work performed on site will be consistent with what is required for the proposed redevelopment and associated improvements.

Section 6. Swimming pool standards.

Not applicable. No swimming pools are proposed as part of this project.

Section 7. Walls and fences.

There is one proposed retaining wall located along the eastern boundary of the subject site near Main Street. The proposed wall will be designed in accordance to the requirements of the City code.

Architectural screen fencing is proposed to screen the building's mechanical equipment from view. The fencing is compatible with add on sound attenuation panels if necessary, to reduce equipment noise levels. Please see the plan set for additional information.

Solid screen fencing is proposed along the resurfaced Lot S on Holland street along lot lines that abut residential uses to the north and west.

Section 8. Wind energy conversion systems.

Not applicable. The proposed project does not involve any wind energy conversion systems.

Section 9. Adult business establishment, tattoo establishment, and drinking place standard.

Not applicable. The proposed project involves improvements to an existing healthcare facility campus.

Section 10. Frontage right-o-way provisions.

Not applicable. The proposed project involves improvements to an existing healthcare facility campus.

Section 11. In-law apartment standards.

Not applicable. The proposed project involves improvements to an existing healthcare facility campus.

Section 12. Campground standards.

Not applicable. The proposed project involves improvements to an existing healthcare facility campus.

Section 13. Standards for the installation of mobile homes on individual lots.

Not applicable. The proposed project involves improvements to an existing healthcare facility campus.

Section 14. Standards for the installation of mobile homes in mobile home parks.

Not applicable. The proposed project involves improvements to an existing healthcare facility campus.

Section 15. Erosion and Sedimentation Control

The proposed project has been designed taking into consideration measures to prevent unreasonable erosion of sediment or soil beyond the project site and to be in compliance with M.R.S.A Title 38 480-B. Please see the site plans for more detailed information regarding erosion and sedimentation control.

Section 16. Signs.

Not applicable. There is no additional signage proposed with this project. Please see the plan set.

Section 17. Off-Street Parking and Loading

The proposed project involves improvements to an existing healthcare facility campus. The proposed building will house existing services. No additional services are proposed for this site. The proposed development includes the reconfiguration of a surface lot that connects the proposed building to the campus parking and abutting parking garage, and includes the resurfacing and restriping of and an existing underutilized surface lot. The available parking at site in the current configuration is underutilized. The proposed off-street parking on the building lot will be comprised of 31 spaces and the re-striped surface lot will provide 208 parking spaces. Please see the site plan and Section 8 for Traffic information.

Section 18. Improvement Standards

The proposed project involves improvements to an existing healthcare facility campus. Please see the plan set and Section 6 for the Stormwater Management Report for more detailed information on the proposed improvements associated with this project.

Section 19. Environmental Performance Standards.

Smoke. The proposed site redevelopment will not result in the generation of smoke at the site.

Noise. The proposed site redevelopment will not result in an additional noise impact to the site. The proposed chiller system will be installed with sound reduction panels and been positioned in such a way as to not exceed the ordinance requirement of 60 decibels at the property line.

The selected equipment includes a sound attenuation package and is rated for 66 dB at 5' distance from the unit**.** Sound in air typically reduces at 6dB with each doubling in distance indicating that the unit noise will reduce to the allowable limit at the property line without consideration of the attenuation provided by the proposed solid screen architectural chiller unit. If necessary, the enclosure fence can be fitted with sound attenuation panels or constructed of masonry material to further reduce sound levels. Please see the plan set for more detailed placement information and Section 7 for product information on the chiller equipment.

Vibration. The proposed site redevelopment will not result in any vibrations being generated at the site.

Odors. The proposed site redevelopment will not result in the generation of any odors at the site.

Air Pollution. The proposed site redevelopment will not result in an increase in air pollution at the site.

Electrical Disturbance or Interference. The proposed site redevelopment will not result in any electrical disturbances or interference at the project site.

Section 20. Child care facility standards.

Not applicable. The proposed project involves improvements to an existing healthcare facility campus.

Section 22. Residential design standards for the downtown residential and riverfront district.

Not applicable. The proposed project involves improvements to an existing healthcare facility campus.

Article XIII Development Review and Standards

Section 4. Approval Criteria.

a. **Utilization of the site.** The proposed site plan has been developed to reflect the natural capabilities of the site. The subject site is part of an existing healthcare facility campus and parking area. All of the proposed improvements are to occur on the subject site. The subject area is a previously developed, urban area. There are no natural drainage areas on the site.

b. **Traffic movement into and out of the development area.** The proposed site plan improvements will not result in a significant increase in the number of trips to and from the site or traffic patterns. The proposed building has been designed to consolidate existing services on the healthcare campus. Please see Section 8 for the Traffic report. Please see the plan set for how vehicles will circulate on and around the site.

c. **Access into the site.** The proposed site plan allows for safe and convenient access to the site. The proposed building parking area has been designed to allow access from either Holland or High Street following existing access patterns on the site. New curb cuts on Hollard street are limited to service entrances and for trash removal. Please see the plan set for more detailed information on the proposed site layout.

d. **Internal vehicular circulation.** The proposed site plan allows for safe movement of passenger, service, and emergency vehicles through the site. The building is sited to minimize any changes in traffic patterns. There is an offline drop-off/valet area to provided safe and accessible access to the building with ADA accessible parking at the building entrance. Please see the plan set for more detailed information on the proposed site layout.

e. **Pedestrian circulation.** The proposed project provides for a safe system of pedestrian circulation within the improvement area. Please see the plan set for more detailed information of pedestrian circulation.

f. **Stormwater Management.** Adequate provisions have been made for stormwater management at the site. Please see Section 6 and the plan set for the Stormwater Management Report.

g. **Erosion Control.** Adequate provisions have been made for erosion control at the site. Erosion control has been designed according to Maine Erosion and Sedimentation Control BMPs, latest revision. Please see the site plans for the proposed erosion control plan.

h. **Water supply.** The proposed building expansion will be provided with a system of water supply that provides an adequate supply of water meeting the standards of the State of Maine for drinking water. Please see the attached water and sewer capacity letter from the City of Lewiston Water and Sewer Division included in section 5.

i. **Sewage disposal.** The proposed sanitary sewer system will connect to the existing system. Please see the attached water and sewer capacity letter from the City of Lewiston Water and Sewer Division included in section 5.

j. **Utilities.** Electric and telecommunication utilities exist on site and will be extended into the new building in order to meet the anticipated use of the project.

k. **Natural features.** The proposed project area is a previously developed site. Landscaping will be added around the development to meet the requirements of the City. Please see the site and landscape plans for more detailed information.

l. **Groundwater protection.** The proposed project involves the redevelopment of a previously developed site. Redevelopment of the site will not result in an adverse impact to the quality or quantity of groundwater as public water and sewer will be utilized.

m. **Water and air pollution.** Redevelopment of the site will not result in undue water or air pollution.

n. **Exterior lighting.** The lighting for the proposed project has been designed to be in conformance with the City's requirements. Please see the plan set and Section 7 of the submittal for more detailed lighting information.

o. **Waste disposal.** The proposed project involves redevelopment of a previously developed site to house existing services on the healthcare campus. The proposed development will not result in

any significant increase in generation of waste at the facility. Screened areas for waste receptacles are provided and the hospital's current waste hauling contactor has capacity for the new facility.

p. **Lot layout.** The layout of the proposed building is in conformance with the space and bulk requirements of the City code.

q. **Landscaping.** The landscaping associated with the proposed improvements is in compliance with the City guidelines. Please see the landscape plan included in the plan set.

r. **Shoreland relationship.** The proposed improvements will not result in an impact to the water quality or shoreline of any water body.

s. **Open space.** The proposed project involves the redevelopment of a previously developed site and does not provide for additional recreation areas beyond what may already be on the site.

t. **Technical and financial capacity.** Central Maine Health Care has sufficient technical and financial capacity to complete the proposed project. Please see Section 4 for additional information on the design firms retained for this project and information on the funding for this project.

u. **Buffering.** The proposed project design is in conformance with the City's guidelines. Please see the plan set for more detailed information on the proposed site layout and landscaping.

v. **Compliance with district regulations.** The proposed improvements have been designed to be in compliance with the district regulations as outline in Article XI.

w. **Design consistent with performance standards.** The proposed improvements have been designed to be in accordance with the City's applicable performance standards as outlined in Article XII.

Section 2

Title, Right or Interest

Section 2: Title, Right, or Interest

The subject site is comprised of several parcels. Below please see a table which outlines the parcels by City Tax map/lot number as well as by Androscoggin County Registry Deed book/page and the record owner. Please see this Section for a copy of the deeds.

Project Area	City Map/Lot	Deed Book/Page	Record Owner
Office Building/Parking Garage	194/09	7564/180	Central Maine Medical Center
	194/10	7564/180	Central Maine Medical Center
	194/12	1720/260 & 2336/7	Central Maine Real Estate Management Corp
	194/13	7012/145	Central Maine Healthcare Corp
	194/14	4327/273	Central Maine Real Estate Management Corp
	194/16	5912/7	Central Maine Healthcare Corp
	194/17	5912/7	Central Maine Healthcare Corp
	194/18	7564/180	Central Maine Medical Center
88 Holland Street Parking Lot	194/23	4240/1040	Central Maine Medical Center

High & Main Street, LLC is working on behalf of Central Maine Health Center. Please see this Section for a copy of the Development Agreement between High & Main Street, LLC and Central Maine Health Center.

OPTION TO GROUND LEASE

This OPTION TO ENTER INTO GROUND LEASE is granted this _____day of _____ _____, 2020 ("Effective Date"), by **CENTRAL MAINE HEALTHCARE CORPORATION, CENTRAL MAINE REAL ESTATE MANAGEMENT CORPORATION,** and **CENTRAL MAINE MEDICAL CENTER**, which are affiliated entities having an address of 29 Lowell Street, #A, Lewiston, Maine 04240 (the "**Grantor**") to **HIGH & MAIN STREET LLC**, a Maine limited liability company, with an address of 470 Fore Street, Suite 400, Portland, Maine 04101 (the "**Grantee**").

1. **GRANT OF OPTION.** Grantor hereby grants Grantee the option and right to lease from the Grantor certain real property located in Lewiston, Maine located along Main, High, and Holland Streets consisting of parcels designated on the Lewiston Maine tax maps as parcels 194-12, 194-13, 194-14, 194-16, 194-17 and portions of the parcels designated as 194-18,194-10, 194-9, and 194-8, as depicted on the preliminary site plan attached hereto (hereinafter the "Leased Property").

2. **CONSIDERATION FOR OPTION AND TERM.** The consideration for this Option is more fully set for the in the Development Services Agreement dated October 31, 2019 between the Grantor and Bateman Investments, LLC, which is currently the sole member of the Grantee (the "Option Consideration").

The Option term shall be thirty-six (36) months, commencing on the Effective Date and expiring on the date immediately preceding the third anniversary of the Effective Date (the "Option Term") unless extended by the Grantee.

3. **NOTICE OF EXERCISE.** Written notice of the exercise of this Option by Grantee shall be given to Grantor by mailing (including express mail services) or delivering the same in person to Grantor to the mailing address listed above on or before the expiration date of this Option, or any extension thereof. If notice of the exercise of this Option is given by mail, this Option shall be deemed validly and effectively exercised when such notice is deposited in the mail. Grantor is hereby obligated to notify Grantee within 10 days of any mailing address changes.

5. **RIGHT TO GRANT OPTION**. Grantor represents that it has the right to grant the option described herein. The Grantor and Grantee acknowledge and agree that prior to the exercise of the Option, the Grantor may transfer the Leased Property to a wholly owned affiliate, subject to the rights granted in this agreement. In the event of such a transfer, the Grantee shall have the same rights to exercise the option granted herein with respect to such successor Grantor.

6. **RESTRICTIONS DURING OPTION TERM.** Grantor shall not, during the term hereof, transfer the Leased Property except to an affiliate wholly owned and controlled by the Grantor or its affiliates.

7. **GROUND LEASE TERMS.** Upon notice described in section 3 above, Grantor shall execute in favor of the Grantee a Ground Lease for the Leased Property with a term of not less than fifty (50) years.

8. **FAILURE TO EXERCISE OPTION.** If Grantee does not exercise this Option within the period provided for herein, then this Option shall be void and of no further force or effect, and the consideration for the Option and any extension shall be retained by Licensor as full payment and settlement for the Option and extension granted by this instrument.

9. **DEFAULT**. If Grantor fails to perform hereunder, the Grantee shall have the right to seek specific performance of the Grantor's obligations described herein.

10. **SUCCESSORS.** This Option Agreement shall inure to the benefit of and be binding upon the heirs, administrators, executors, successors, personal representatives and assigns of the respective parties hereto.

11. **ASSIGNMENT.** This Option shall be assignable by the Grantee to an affiliated business entity of Grantee after notice in writing to the Grantor. Any assignment shall be in writing.

12. **MISCELLANEOUS.**

A. This Option Agreement shall not be modified or amended except by an Instrument in writing executed by Grantor and Grantee.

B. This Option Agreement shall be construed and enforced in accordance with the laws of the State of Maine.

C. All section headings in this Option Agreement are for convenience only and are of no independent legal significance.

15. **SIGNING.** This Option Agreement is valid only when executed and attested by both Grantor and Grantee.

IN WITNESS WHEREOF, the undersigned have executed this instrument as of this ____ day of _____, 2020.

CENTRAL MAINE HEALTHCARE CORPORATION

By:_____
Name:
Its:

State of Maine
County of _____

On the ____ day of _____, 2020, personally appeared the above-named _____ in his/her said capacity and acknowledged the foregoing **OPTION TO GROUND LEASE** to be his/her free act and deed and the free act and deed of Central Maine Healthcare Corporation.

Before me,

_____
Notary Public

_____
Printed Name

My Commission expires: _____

CENTRAL MAINE REAL ESTATE MANAGEMENT CORPORATION

By:_____
Name:
Its:

State of Maine
County of _____

On the ____ day of _____, 2020, personally appeared the above-named _____ in his/her said capacity and acknowledged the foregoing **OPTION TO GROUND LEASE** to be his/her free act and deed and the free act and deed of Central Maine Real Estate Management Corporation.

Before me,

_____
Notary Public

_____
Printed Name

My Commission expires: _____

CENTRAL MAINE MEDCIAL CENTER

By:_____
Name:
Its:

State of Maine
County of _____

On the ____ day of _____, 2020, personally appeared the above-named _____ in his/her said capacity and acknowledged the foregoing **OPTION TO GROUND LEASE** to be his/her free act and deed and the free act and deed of Central Maine Medical Center.

Before me,

_____
Notary Public

_____
Printed Name

My Commission expires: _____

HIGH & MAIN STREET LLC

By:_____
Name:
Its:

State of Maine
County of _____

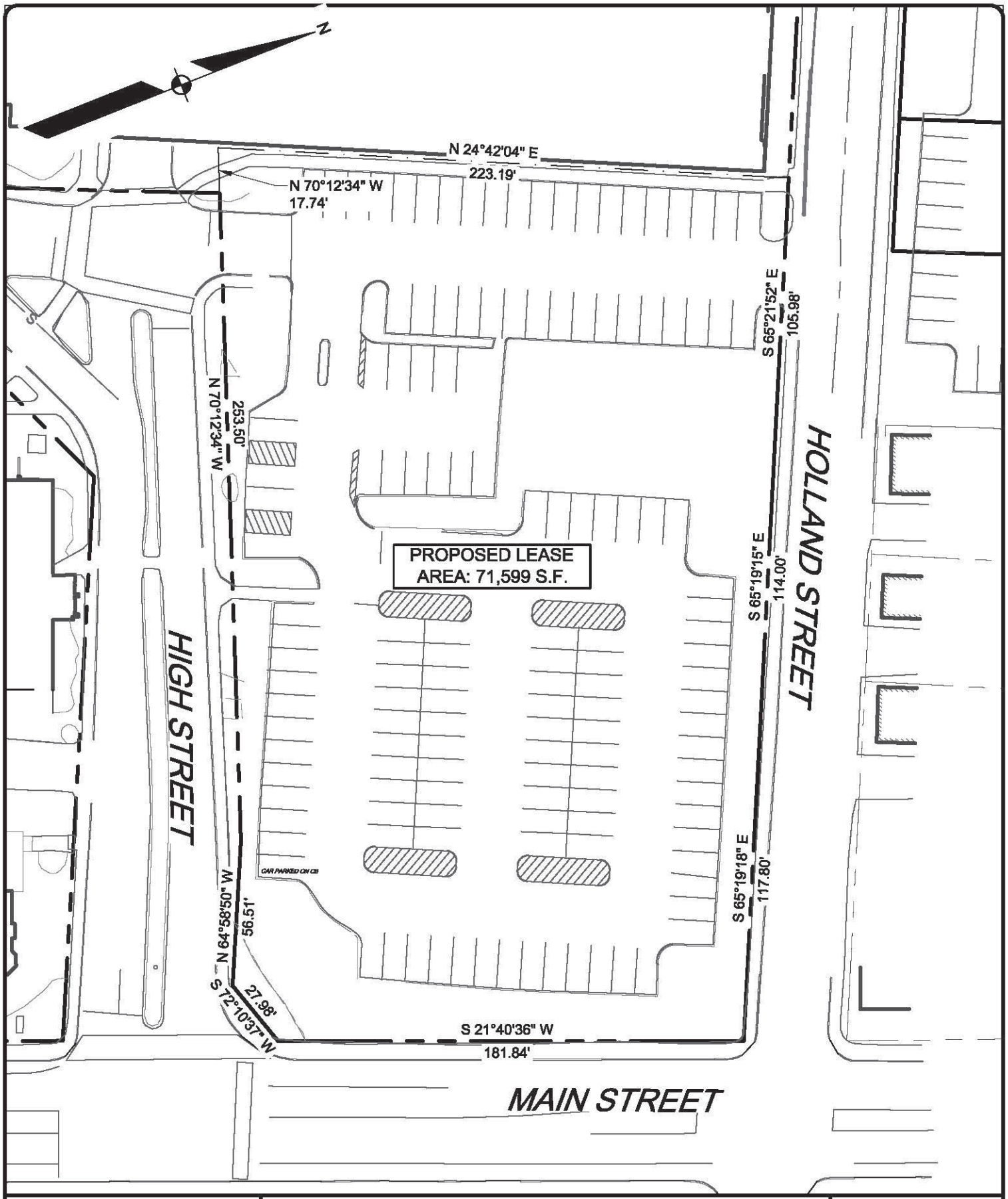
On the ____ day of _____, 2020, personally appeared the above-named _____ in his/her said capacity and acknowledged the foregoing **OPTION TO GROUND LEASE** to be his/her free act and deed and the free act and deed of High & Main Street LLC.

Before me,

_____
Notary Public

_____
Printed Name

My Commission expires: _____



SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

EXHIBIT B

OF CENTRAL MAINE MEDICAL CENTER CANCER CENTER

SCALE: 1" = 50'

DATE: 5/1/2020

LOCATION:
MAIN, HIGH, AND HOLLAND STREETS
LEWISTON, MAINE

FOR:
CENTRAL MAINE MEDICAL CENTER
LEWISTON, MAINE

SHEET: 1 OF 1

20149EXBT–B.dwg, TAB: Exhibit B

NOT AN OFFICIAL COPY

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MICHAEL F. L'HEUREUX and JOLINE A. L'HEUREUX both join as grantors and release all rights by descent and all other rights.

WITNESS our hands and seals this 10th day of May, 1984.

Witness

Michael F. L'Heureux

Michael F. L'Heureux for Joline A. L'Heureux

Joline A. L'Heureux

STATE OF MAINE
ANDROSCOGGIN, SS.

Personally appeared the above named MICHAEL F. L'HEUREUX, known to me, this 10th day of May, 1984, and acknowledged before me the foregoing instrument to be his free act and deed.

Notary Public/Attorney-at-Law

Wm. B. Skelton.

ANDROSCOGGIN SS.
RECEIVED MAY 15 1984
AT 11 H. 50 M. A. M.

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WARRANTY DEED

CENTRAL MAINE HEALTHCARE CORPORATION, a Maine corporation with its principal place of business in Lewiston, County of Androscoggin and State of Maine, hereby grants to CENTRAL MAINE REAL ESTATE MANAGEMENT CORPORATION, a Maine corporation with its principal place of business in Lewiston, County of Androscoggin and State of Maine, its successors and assigns forever, a certain lot or parcel of land situated in Lewiston, County of Androscoggin, State of Maine, bounded and described as follows:

NO MAINE R.E. TRANSFER TAX PAID

Beginning at a granite monument set in the ground at the intersection of the northwesterly line of Main Street with the northeasterly line of High Street and thence the line runs in a northwesterly direction along said line of High Street a distance of ninety (90) feet to an iron pin set in the ground; thence the line runs in a northeasterly direction a distance of fifty-nine (59) feet, more or less, to an iron pin set in the ground; thence the line runs in a southeasterly direction a distance of eighty-eight and five hundredths (88.05) feet, more or less, to a granite monument set in the ground in said line of Main Street; thence the line runs in a southeasterly direction along said line of Main Street fifty-nine (59) feet to the point of beginning.

Being all and the same premises conveyed to this grantor by warranty deed of Sweetser-Children's Home of even date to be recorded.

NOT AN OFFICIAL COPY

ALSO hereby conveying all rights, easements, privileges, and appurtenances belonging to the premises hereinabove described.

WITNESS my hand and seal this 4th day of Nov., 1988.

CENTRAL MAINE HEALTHCARE CORPORATION

By: Charles T. Orne, Treasurer

STATE OF MAINE
COUNTY OF Androscoggin, SS.

Then personally appeared the above-named Charles T. Orne as Treasurer of Central Maine Healthcare Corporation and acknowledged the foregoing instrument to be his free act and deed in said capacity and the free act and deed of said corporation.

Before me,

Notary Public - Attorney at law

Norman J. Rattey
Print or Type Name

jjbrea7.33

ANDROSCOGGIN, SS
RECEIVED NOV -7 1988
AT 9 H. 01 M. M.

ATTEST:

REGISTER

Skeltons, Trad. at N. Rattey

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WARRANTY DEED
(Maine Short Form)

NOT AN OFFICIAL COPY

J. NORMAN ALLEN and DIANE L. ALLEN, being husband and wife, of Lewiston, Androscoggin County, Maine, for consideration paid, hereby grant to **CENTRAL MAINE REAL ESTATE MANAGEMENT CORPORATION**, a Maine corporation with a place of business at 364 Main Street, Lewiston, Maine, with WARRANTY COVENANTS, two (2) certain lots or parcels of land with the buildings thereon situated in Lewiston, Androscoggin County, Maine, being more particularly described on the attached Exhibit A.

Also hereby conveying all rights, easements, privileges and appurtenances belonging to the premises described herein.

MAINE REAL ESTATE TRANSFER TAX PAID

WITNESS our hands and seals this 5 day of October, 1999.

Witness — J. Norman Allen

Witness — Diane L. Allen

STATE OF MAINE
ANDROSCOGGIN, ss.

Personally appeared before me, this 5 day of October, 1999, the above-named J. Norman Allen and Diane L. Allen, and acknowledged the foregoing instrument to be their free act and deed.

Notary Public/Attorney-a-Law

N. J. Rattey
Type or Print Name

H:\DOCS\RATTEY\CMHC\ALLEN-WD.WPD

over

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EXHIBIT A

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Parcel One:

A certain lot or parcel of land with the buildings thereon situated in Lewiston, Androscoggin County, Maine, bounded and described as follows:

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NOT AN OFFICIAL COPY

BEGINNING at the intersection of the southwesterly line of Holland Street, with the northwesterly line of Main Street; thence running northwesterly by the said southwesterly line of Holland Street, a distance of one hundred seventeen and eight tenths (117.8) feet to land now or formerly of Clarence Ward; thence southwesterly at an internal angle of 86 degrees and 11 minutes, a distance of one hundred and one (101) feet to land now or formerly of Henry Free; thence southeasterly at an internal angle of 94 degrees and 47 minutes, a distance of thirty-eight (38) feet to land now or formerly of Honora Curran; thence northeasterly at an internal angle of 85 degrees and 15 minutes, a distance of fifty (50) feet to the northwesterly corner of said Curran land; thence southeasterly at an internal angle of 271 degrees, a distance of seventy-nine and six tenths (79.6) feet to the said northwesterly line of Main Street; thence northeasterly by the said northwesterly line of Main Street and at an internal angle of 89 degrees and 12 minutes, a distance of forty-seven and five tenths (47.5) feet to the POINT OF BEGINNING.

Being the same premises described in the deed of Louis Collet and Rita L. Collet to J. Norman Allen and Diane L. Allen dated November 20, 1964 and recorded in the Androscoggin County Registry of Deeds in Book 931, Page 182.

Parcel Two:

A certain lot or parcel of land with the buildings thereon situated in Lewiston, Androscoggin County, Maine, bounded and described as follows:

BEGINNING on the northwesterly line of Main Street at the southerly corner of land now or formerly owned by Thomas J. and John W. Higgins; thence northwesterly by said Higgins land a distance of seventy-nine and six tenths (79.6) feet; thence southwesterly by said Higgins land a distance of fifty (50) feet to land now or formerly of Henry A. Free; thence southeasterly by said Free's land a distance of five and ninety-two hundredths (5.92) feet; thence southwesterly by said Free's land a distance of ten (10) feet to land formerly owned by one Stevens; thence southeasterly by said Stevens land, a distance of seventy-four and thirty-three hundredths (74.33) feet to the said northwesterly line of Main Street; thence northeasterly by the said northwesterly line of Main Street, a distance of sixty (60) feet to the POINT OF BEGINNING.

Being the same premises described in the deed from Mechanics Savings Bank to J. Norman Allen and Diane L. Allen dated November 12, 1980 and recorded in the Androscoggin County Registry of deeds in Book 1493, Page 59.

H:\DOCS\RATTEY\CMHC\ALLEN-EX.WPD

ANDROSCOGGIN COUNTY
REGISTER OF DEEDS

Bk 5912 Ps7 $11610
05-18-2004 @ 12:17p

MAINE SHORT FORM WARRANTY DEED

A N A N

We **RODOEPHEI G. LAVERDIERE** and **CARMEL IMA LAVERDIERE**, both of Lewiston, Androscoggin County, Maine, for consideration paid, hereby grant to **CENTRAL MAINE HEALTHCARE CORPORATION** of 300 Main Street, Lewiston, Androscoggin County, Maine 04240, with **WARRANTY COVENANTS**, a certain lot or parcel of land situated in **Lewiston**, Androscoggin County, Maine, being more particularly described on the attached Exhibit A.

O F F I C I A L O F F I C I A L
C O P Y C O P Y

ALSO HEREBY conveying all rights, easements and privileges pertaining thereto.

Being the same premises described in the deed of Margaret M. Theberge et al. to Rodolphe G. Laverdiere and Carmel M. Laverdiere dated August 17, 1964, and recorded in the Androscoggin County Registry of Deeds in Book 922, Page 260 (121 Holland Street), and the deed of Rodolphe G. Laverdiere to Rodolphe G. Laverdiere and Carmel M. Laverdiere dated March 2, 1981, and recorded in Book 1507, Page 131 (117 Holland Street).

IN WITNESS whereof, the said Carmel and Rodolphe G. Laverdiere have caused this instrument to be signed and sealed this 13 day of May, 2004.

MAINE REAL ESTATE TRANSFER TAX PAID

_____
Witness

Rodolphe G. Laverdiere
Rodolphe G. Laverdiere

CARMEL M. LAVERDIERE

_____
Witness

By: Rodolphe G. Laverdiere
Rodolphe G. Laverdiere,
as Attorney-in-Fact pursuant to Power of Attorney dated August 6, 2001

STATE OF MAINE
COUNTY OF ANDROSCOGGIN, SS.

Personally appeared before me this 13 day of May, 2004, the above-named Rodolphe G. Laverdiere, Individually and as Attorney-in-Fact for Carmel M. Laverdiere, acknowledged the foregoing instrument to be his free act and deed and free act and deed in said capacity.

N. J. Rattey
Notary Public/Attorney-at-Law

N. J. Rattey
Type or Print Name

My commission expires: _____

H:\DOCS\RATTEY\CMHC\117-123 Holland\MSFWDEED.wpd

NOT AN OFFICIAL COPY

Exhibit A
(117 Holland Street)

A certain lot or parcel of land, in Lewiston, Androscoggin County, Maine, together with the buildings thereon, on the southwesterly side of Holland Street,

Commencing at the most northerly corner of land now or formerly owned by L. W. Gilman;

THENCE north thirty-one and one-half (31-1/2) degrees east on line of land formerly owned by a widow Millett, one hundred and one (101) feet, more or less, to the southerly line of said Holland Street;

THENCE south fifty-two (52) degrees east on line of said Street, fifty (50) feet;

THENCE south thirty four and one-half (34-1/2) degrees west, one hundred (100) feet, more or less, to land formerly owned by Abiel M. Jones;

THENCE north fifty-two (52) degrees west, fifty (50) feet to the point of beginning.

Being the same premises described in the deed of Rodolphe G. Laverdiere to Rodolphe G. Laverdiere and Carmel M. Laverdiere dated March 2, 1981, and recorded in the Androscoggin County Registry of Deeds in Book 1507, Page 131.

ATC File No. 04-0575
H:\DOCS\RATTEY\CMHC\117-123 Holland\Exhibit A - 117 Holland.wpd

N O T N O T
A N A N
O F F I C I A L O F F I C I A L

Exhibit A
(121 Holland Street)

A certain lot or parcel of land, with the buildings thereon, situated in Lewiston, County of Androscoggin, State of Maine, bounded and described as follows:

N O T N O T
O F F I C I A L O F F I C I A L
C O P Y C O P Y

Commencing on the westerly side of Holland Street at the southeasterly corner of the lot of land now or formerly owned by J. B. Sawyer;

THENCE running westerly on said Sawyer lot one hundred (100) feet to land now or formerly of C. W. Curtis;

THENCE southerly at nearly a right angle by said Curtis land, by land now or formerly owned by the heirs of Daniel Garcelon, and by land now or formerly of J. L. H. Cobb about sixty-eight (68) feet to land now or formerly of the heirs of Hezekiah Chase;

THENCE at nearly a right angle easterly by said Chase lot one hundred (100) feet to Holland Street;

THENCE northerly by said Holland Street sixty-four (64) feet to the point begun at.

Being the same premises described in the deed of Margaret M. Theberge and Mary L. Goodridge to Rodolphe G. Laverdiere and Carmel Laverdiere, dated August 17, 1964, recorded in Book 922, Page 260 of the Androscoggin County Registry of Deeds.

ATC File No. 04-0575
H:\DOCS\RATTEY\CMHC\117-123 Holland\Exhibit A - 123 Holland.wpd

Norman, Hanson & Detroy
Skelton, Taintor & Abbott
P O Box 3200
Auburn Maine 04212-3200

ANDROSCOGGIN COUNTY
Tina M. Chaunard
REGISTER OF DEEDS

Bk 7012 Pg145 #30778
12-26-2006 @ 10:58a

MAINE SHORT FORM WARRANTY DEED

NOT AN OFFICIAL COPY

JOHN D. GRIFFIN and **NANCY GRIFFIN**, being husband and wife, both of Lewiston, Androscoggin County, Maine, for consideration paid, hereby grant to **CENTRAL MAINE HEALTHCARE CORPORATION,** a Maine non-profit corporation with a principal place of business in Lewiston, Androscoggin County, Maine, with **WARRANTY COVENANTS**, a certain lot or parcel of land situated in **Lewiston,** Androscoggin County, Maine, being more particularly described on the attached Exhibit A.

Also hereby conveying all rights, easements, privileges and appurtenances pertaining thereto.

Being the same premises described in the deed of Laurence Marie Fortier to John D. Griffin and Nancy Griffin dated October 16, 1972, and recorded in the Androscoggin County Registry of Deeds in Book 1063, Page 70.

WITNESS our hands and seals this 22 day of December, 2006.

MAINE REAL ESTATE TRANSFER TAX PAID

Witness

Witness

John D. Griffin

Nancy Griffin

STATE OF MAINE
COUNTY OF ANDROSCOGGIN, SS.

Personally appeared before me this 22 day of December, 2006, the above-named Nancy Griffin and acknowledged the foregoing instrument to be her free act and deed.

Notary Public/Attorney-at-Law

N. J. Rattey
Type or Print Name

My commission expires: _____

H:\DOCS\RATTEY\CMHC\Griffin 35010\MSFWDEED-Griffin doc

NOT AN OFFICIAL COPY

EXHIBIT A

NOT AN OFFICIAL COPY

A certain lot or parcel of land with the buildings thereon situated in Lewiston, in the County of Androscoggin, bounded and described as follows:

NOT AN OFFICIAL COPY

Commencing on the westerly side of Main Street at the southeasterly corner of land now or formerly owned by Julia A. Ambrose;

NOT AN OFFICIAL COPY

THENCE southerly on the westerly line of Main Street fifty (50) feet;

THENCE westerly on a line parallel with the northerly line of High Street to land of J. L. H. Cobb;

THENCE northerly on the line of said Cobb's land to now or formerly land of Julia A. Ambrose;

THENCE easterly on line of said Ambrose land to the point begun at.

Being the same premises described in the deed of Laurence Marie Fortier to John D. Griffin and Nancy Griffin dated October 16, 1972, and recorded in the Androscoggin County Registry of Deeds in Book 1063, Page 70.

H:\DOCS\RATTEY\CMHC\Griffin 35010\EXHIBIT A.doc

ANDROSCOGGIN COUNTY
Tina R. Chaunard
REGISTER OF DEEDS

Bk 7564 Pg180 #22792
11-05-2008 @ 10:21a

NOT AN OFFICIAL DOCUMENT

DEED

NOT AN OFFICIAL DOCUMENT

CENTRAL MAINE HEALTHCARE CORPORATION, a Maine non-profit corporation with an office in the City of Lewiston, Androscoggin County and State of Maine, for consideration paid, hereby grants to **CENTRAL MAINE MEDICAL CENTER**, a Maine non-profit corporation with a mailing address of 300 Main Street, Lewiston, Maine 04240, with QUITCLAIM COVENANTS, the following described property:

Beginning at the southerly corner of the High Street Parking Condominium as depicted on the Leasehold Condominium Plat and Plan prepared by A.R.C.C. Land Surveyors Inc. dated March 27, 2003, and recorded in the Androscoggin County Registry of Deeds on March 27, 2003, in Plan Book 42, Page 194 (said corner being located at the terminus of a "walkway" leading from High Street to said condominium);

THENCE South 38° 6' 43" West to a point in the northerly sideline of High Street to the TRUE POINT OF BEGINNING;

THENCE North 51° 54' 5" West along other land of this Grantor to land now or formerly of Maine Central Railroad;

THENCE running northeasterly along the land now or formerly of Maine Central Railroad to a capped iron rod set in the assumed southwesterly sideline of Holland Street;

THENCE South 51° 54' 5" East along the southwesterly sideline of Holland Street to a point;

THENCE running South 36° 29' 19" West along other land of this Grantor to a corner in the northwesterly sideline of High Street;

THENCE following said course along the northwesterly sideline of High Street 91 feet to a corner in the sideline of High Street;

THENCE South 80° 20' 22" West along the northerly sideline of High Street to the point of beginning.

NO MAINE R.E. TRANSFER TAX PAID

IN WITNESS WHEREOF, Central Maine Real Estate Management Corporation has caused this instrument to be signed in its name and behalf and by Charles T. Orne, its Treasurer, thereunto duly authorized, this 26 day of June, 2008.

Signed, Sealed and Delivered

CENTRAL MAINE HEALTHCARE CORPORATION

By: _____
Charles T. Orne, Treasurer

_____
Witness

STATE OF MAINE
ANDROSCOGGIN, ss.

NOT AN OFFICIAL COPY

Personally appeared before me this 26 day of June, 2008, the above-named Charles T. Orne, Treasurer of Central Maine Healthcare Corporation, 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.

NOT AN OFFICIAL COPY

SEAL

Sandra Magnusson
Notary Public/Attorney-at-Law
Print/type name: _____
My commission expires: _____

SANDRA MAGNUSSON
Notary Public, Maine
My Commission Expires December 21, ~~2007~~ 2014

H:\DOCS\RATTEY\CMHC\PARKING CONDO\cmhc to cmmc.doc

ANDROSCOGGIN COUNTY
Tina R. Chaurond
REGISTER OF DEEDS

Section 3

Parcel Information

Locus Map
Parcel Map
Property Card
Abutter List

Section 3: Parcel Information

The proposed project site is comprised of a portion of 9 parcels. The building project area totals approximately 1.64 acres. The parking lot that is to be resurfaced is approximately 1.68 acres. Please see this Section for a locus map, parcel map, tax map, City property card and abutters list. Please see Section 2 for a table that list the parcels included in the subject area.

SEBAGO TECHNICS

$EXWWHUV

-XQH

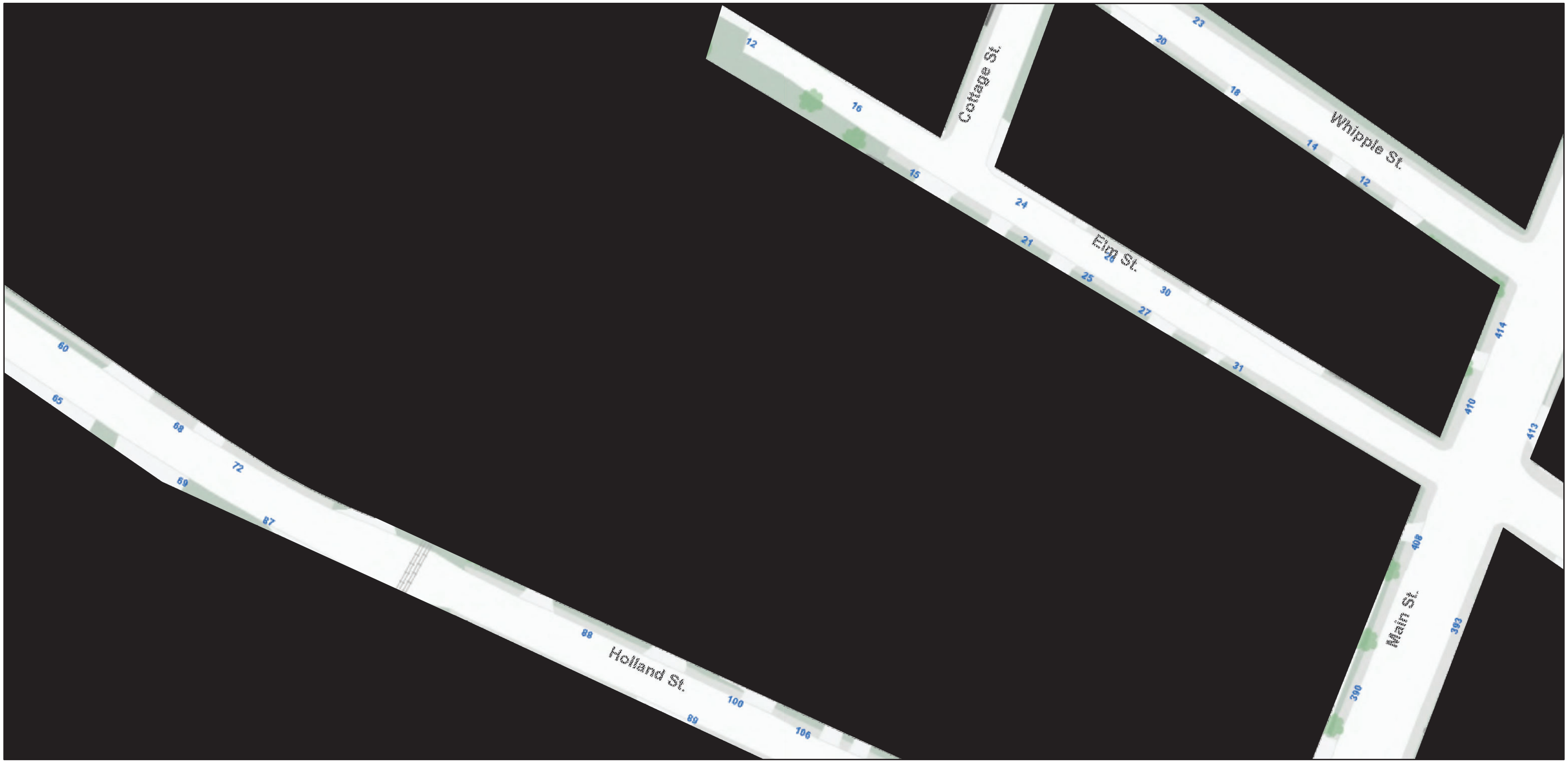
SDUFHOV

6XUH\ &WV&RUH&WV&RUJ&WV

Owner 1 Name	Owner 2 Name	Owner 1 Address	Owner 2 Address	City/State/Zip
RIOUX LAURIER C		14 WHIPPLE ST		LEWISTON ME 04240
COREEN LLC		P O BOX 797		AUBURN ME 04212
JANNARONE MATTHEW		224 ALBION RD		WINDHAM ME 04062
BLONDIN MAURICE R	BLONDIN JACQUELINE B	103 WINTER ST		LEWISTON ME 04240
COOK JOHN	LOMBARDO FRED B	1053 LISBON ST		LEWISTON ME 04240
CENTRAL MAINE HEALTHCARE CORP		29 LOWELL ST STE 3 # A		LEWISTON ME 04240
M E C A P LLC		84 MIDDLE ST		PORTLAND ME 04101
STANLEY MICHAEL		23 ELM ST		LEWISTON ME 04240
ROUSSEAU NORMAND		P O BOX 2675		LEWISTON ME 04241
CENTRAL MAINE HEALTHCARE CORPORATION		300 MAIN ST		LEWISTON ME 04240
CENTRAL ME CHRISTIAN ACADEMY		390 MAIN ST		LEWISTON ME 04240
CORNELIUS SUSAN	CORNELIUS RUBEN E	23 CROWLEY RD		SABATTUS ME 04280
CENTRAL MAINE HEALTHCARE CORPORATION		300 MAIN ST		LEWISTON ME 04240
ADVANCED HEATING SOLUTIONS LLC		504 POND RD		LEWISTON ME 04240
CENTRAL ME REAL ESTATE MGT CORP		29 LOWELL ST # A		LEWISTON ME 04240
CENTRAL ME REAL ESTATE MGT CORP		29 LOWELL ST # A		LEWISTON ME 04240
ROBERT NORMAND C/COREEN F TRSTS	ROBERT APARTMENTS TRUST II	P O BOX 797		AUBURN ME 04212 0686
CENTRAL MAINE HEALTHCARE		300 MAIN ST		LEWISTON ME 04240
CENTRAL MAINE HEALTHCARE CORP		29 LOWELL ST STE 3 # A		LEWISTON ME 04240
DESROCHERS ADRIENNE		141 HOLLAND ST		LEWISTON ME 04240
CENTRAL ME REAL ESTATE MGT CORP		29 LOWELL ST # A		LEWISTON ME 04240
COOK JOHN R	LOMBARDO FRED B	1053 LISBON ST		LEWISTON ME 04240
KEMP MICHAEL	COREAU LORIA ANN & NORMAN DESTINY	120 HOLLAND ST		LEWISTON ME 04240
CENTRAL MAINE MEDICAL CENTER		29 LOWELL ST STE 1 # A		LEWISTON ME 04240
369 MAIN STREET LLC		369 MAIN ST		LEWISTON ME 04240
ANUBIS PROPERTIES LLC		9 MORGAN DR		GRAY ME 04039
HALL JOAN		116 HOLLAND ST		LEWISTON ME 04240
WOODLAND PROPERTIES LLC		100 ALFRED ST #1328		BIDDEFORD ME 04005
ROBERT NORMAND C/COREEN F TRSTS	ROBERT APARTMENTS TRUST II	P O BOX 797		AUBURN ME 04212
CENTRAL MAINE HEALTHCARE CORP		29 LOWELL ST STE 3 # A		LEWISTON ME 04240
RAINBOW FEDERAL CREDIT UNION		391 MAIN ST		LEWISTON ME 04243
MAIN ST LLC		410 MAIN ST		LEWISTON ME 04240
TERRIO MARK R		P O BOX 2387		LEWISTON ME 04241
CENTRAL MAINE MEDICAL CENTER		29 LOWELL ST STE 1 # A		LEWISTON ME 04240
CENTRAL MAINE MEDICAL CENTER		29 LOWELL ST STE 1 # A		LEWISTON ME 04240
CENTRAL MAINE MEDICAL CENTER		29 LOWELL ST STE 1 # A		LEWISTON ME 04240
CENTRAL MAINE MEDICAL CENTER		29 LOWELL ST STE 1 # A		LEWISTON ME 04240
SIX SIGMA PROPERTY MANAGEMENT LLC		14 HIGGINS LN		SOUTH PORTLAND ME 04106
MAINE CENTRAL RAILROAD COMPANY		C/O GUILFORD TRANSPORT	IRON HORSE PARK	NORTH BILLERICA MA 01862
CENTRAL MAINE POWER COMPANY		C/O AVANGRID MGMT CO - LOCAL TAX	ONE CITY CTR - 5TH FLR	PORTLAND ME 04101

SIX SIGMA PROPERY MANAGEMENT LLC		14 HIGGINS LN		SOUTH PORTLAND ME 04106
CENTRAL MAINE MEDICAL CENTER		29 LOWELL ST STE 1 # A		LEWISTON ME 04240
CENTRAL MAINE MEDICAL CENTER		29 LOWELL ST STE 1 # A		LEWISTON ME 04240
CENTRAL MAINE MEDICAL CENTER		29 LOWELL ST STE 1 # A		LEWISTON ME 04240
69 HOLLAND STREET INVESTMENTS LLC		505 LAKESHORE DRIVE EAST		LAKE QUIVIRA KS 66217
MAINE CENTRAL RAILROAD COMPANY		C/O GUILFORD TRANSPORT	IRON HORSE PARK	NORTH BILLERICA MA 01862
CENTRAL MAINE MEDICAL CENTER		29 LOWELL ST STE 1 # A		LEWISTON ME 04240
CENTRAL MAINE MEDICAL CENTER		300 MAIN ST		LEWISTON ME 04240
CENTRAL MAINE HEALTHCARE CORP		29 LOWELL ST STE 3#A		LEWISTON ME 04240
CENTRAL ME REAL ESTATE MGT CORP		29 LOWELL ST # A		LEWISTON ME 04240
CENTRAL ME REAL ESTATE MGT CORP		29 LOWELL ST # A		LEWISTON ME 04240
CENTRAL ME REAL ESTATE MGT CORP		29 LOWELL ST # A		LEWISTON ME 04240
CENTRAL MAINE HEALTHCARE CORP		300 MAIN ST		LEWISTON ME 04240
CENTRAL ME REAL ESTATE MGT CORP		29 LOWELL ST # A		LEWISTON ME 04240
CENTRAL ME REAL ESTATE MGT CORP		29 LOWELL ST # A		LEWISTON ME 04240
CENTRAL MAINE MEDICAL CENTER		300 MAIN ST		LEWISTON ME 04240
CENTRAL MAINE HEALTHCARE CORP		29 LOWELL ST STE 3 # A		LEWISTON ME 04240
CENTRAL MAINE MEDICAL CENTER		29 LOWELL ST STE 1 # A		LEWISTON ME 04240
CENTRAL MAINE MEDICAL CENTER		29 LOWELL ST STE 1 # A		LEWISTON ME 04240
CENTRAL MAINE MEDICAL CENTER		29 LOWELL ST STE 1 # A		LEWISTON ME 04240
CENTRAL MAINE MEDICAL CENTER		29 LOWELL ST STE 1 # A		LEWISTON ME 04240
CENTRAL ME REAL ESTATE MGT CORP		29 LOWELL ST # A		LEWISTON ME 04240
TWELVE HIGH STREET LTD PRTNSHP		29 LOWELL ST BOX A		LEWISTON ME 04240
PICARD RAYMOND R	PICARD SALLY	182 OAK ST		LEWISTON ME 04240
PERENNIAL PROPERTIES LLC		179 COTTAGE RD		WINDHAM ME 04062
KONTOS GREGORY C	KONTOS CAROL A	355 MAIN ST		LEWISTON ME 04240
S K HOUSING LLC		84 MIDDLE ST		PORTLAND ME 04101
LANGELIER MAVERINE R	LANGELIER LAWRENCE W	11 BUFFIE LANE		GREENE ME 04236
CENTRAL MAINE HEALTHCARE CORP		29 LOWELL ST STE 3 # A		LEWISTON ME 04240
DUPUIS APARTMENTS LLC		P O BOX 2722		LEWISTON ME 04241
STROUT JOSEPH S	STROUT SONIA M	186 OAK ST		LEWISTON ME 04240
PELLETIER WILLIAM		13 SHERIDAN AVE		AUBURN ME 04210
COLLINS YOLANDE		16 ELM ST		LEWISTON ME 04240
CHAMBERLAND ALBERT R JR		C/O ALEX DERAPS	12 ELM ST	LEWISTON ME 04240
FOURNIER MATTHEW M		P O BOX 687		GREENE ME 04236
LEWISTON HOUSING AUTHORITY		1 COLLEGE ST		LEWISTON ME 04240

3DUFHO DS 3DUNLQJ/RW



-XO\

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Citation
Copyright

PARID: RE00009492 23 HIGH ST

Parcel

Parcel ID	RE00009492
Map/Lot	194/000/009
Property Location	23 HIGH ST
Property Class	Parking Lot
Land Area (acreage)	.26

Owners

Owner	CENTRAL MAINE MEDICAL CENTER
Address	29 LOWELL ST STE 1 # A
City	LEWISTON
State	ME
Zip	04240
Book	7564
Page	180

PARID: RE00001579 17 HIGH ST

Parcel

Parcel ID	RE00001579
Map/Lot	194/000/010
Property Location	17 HIGH ST
Property Class	Parking Lot
Land Area (acreage)	.76

Owners

Owner	CENTRAL MAINE MEDICAL CENTER
Address	29 LOWELL ST STE 1 # A
City	LEWISTON
State	ME
Zip	04240
Book	7564
Page	180

PARID: RE00013210 **1 HIGH ST**

Parcel

Parcel ID	RE00013210
Map/Lot	194/000/012
Property Location	1 HIGH ST
Property Class	Vacant Land - Comm
Land Area (acreage)	.34

Owners

Owner	CENTRAL ME REAL ESTATE MGT CORP
Address	29 LOWELL ST # A
City	LEWISTON
State	ME
Zip	04240
Book	2336
Page	5

OBY

Description	Area/Quantity
PA1-PAVING ASPHALT PARKING	7,500

PARID: RE00004461 **374 MAIN ST**

Parcel

Parcel ID	RE00004461
Map/Lot	194/000/013
Property Location	374 MAIN ST
Property Class	Vacant Land - Comm
Land Area (acreage)	.08

Owners

Owner	CENTRAL MAINE HEALTHCARE CORP
Address	29 LOWELL ST STE 3 # A
City	LEWISTON
State	ME
Zip	04240
Book	7012
Page	145

Sales History

Date	Amount	Book	Page
12/26/2006	$425,000	7012	145

Entrance

Inspection Date	Inspection Code	Info Source Code
08/23/2005	1 - ENTRY & SIGN	1 - OWNER

PARID: RE00013100 **376 MAIN ST**

Parcel

Parcel ID	RE00013100
Map/Lot	194/000/014
Property Location	376 MAIN ST
Property Class	Parking Lot
Land Area (acreage)	.29

Owners

Owner	CENTRAL ME REAL ESTATE MGT CORP
Address	29 LOWELL ST # A
City	LEWISTON
State	ME
Zip	04240
Book	4327
Page	273

Entrance

Inspection Date	Inspection Code	Info Source Code
07/07/2005	3 - REFUSAL	3 - OTHER

PARID: RE00005742 121 HOLLAND ST

Parcel

Parcel ID	RE00005742
Map/Lot	194/000/016
Property Location	121 HOLLAND ST
Property Class	Vacant Land - Comm
Land Area (acreage)	.15

Owners

Owner	CENTRAL MAINE HEALTHCARE CORP
Address	29 LOWELL ST STE 3 # A
City	LEWISTON
State	ME
Zip	04240
Book	5912
Page	7

PARID: RE00005743 117 HOLLAND ST

Parcel

Parcel ID	RE00005743
Map/Lot	194/000/017
Property Location	117 HOLLAND ST
Property Class	Parking Lot
Land Area (acreage)	.11

Owners

Owner	CENTRAL MAINE HEALTHCARE CORP
Address	29 LOWELL ST STE 3 # A
City	LEWISTON
State	ME
Zip	04240
Book	5912
Page	7

PARID: RE00012304 105 HOLLAND ST

Parcel

Parcel ID	RE00012304
Map/Lot	194/000/018
Property Location	105 HOLLAND ST
Property Class	Parking Lot
Land Area (acreage)	

Owners

Owner	CENTRAL MAINE MEDICAL CENTER
Address	29 LOWELL ST STE 1 # A
City	LEWISTON
State	ME
Zip	04240
Book	7564
Page	180

PARID: RE00001896 **88 HOLLAND ST**

Parcel

Parcel ID	RE00001896
Map/Lot	194/000/023
Property Location	88 HOLLAND ST
Property Class	Parking Lot
Land Area (acreage)	1.63

Owners

Owner	CENTRAL MAINE MEDICAL CENTER
Address	29 LOWELL ST STE 1 # A
City	LEWISTON
State	ME
Zip	04240
Book	1040
Page	49

OBY

Description	Area/Quantity
PA1-PAVING ASPHALT PARKING	71,003

Section 4

Financial & Technical Capacity

Section 4: Financial & Technical Capacity

Financial Capacity

Please see this Section for a copy of the financial capacity proof.

Technical Capacity

Please see this Section (listed below) for the technical capacity information for the project team:

MBH Architecture is a multi-disciplined firm specializing in architecture and interior design. They have been at the forefront in the creation of Healing & Sustainable environments in Healthcare Design for over 25 years. Their experience in Healthcare Design includes over 400 projects totaling over 600 million dollars in construction. The project types include: Hospitals, Medical Centers, Urgent Care Facilities, Ambulatory Care, Community Clinics, Master Facility Planning, and Medical Office Buildings.

Allied Engineering, Inc is a multi-disciplined Maine based firm specializing in structural, mechanical, and electrical engineering with over 60 years of experience. They have completed projects in education, government, healthcare, commercial, retail, and industrial sectors. They offer services in structural, mechanical, and electrical engineering as well as lighting design, fire protection, plumbing, and construction administration.

Sebago Technics, Inc. (STI) is a multi-disciplinary engineering firm with over 35 years of experience that offers a wide range of services specializing in land development, planning, permitting, and engineering design services. We maintain a staff of multi-disciplinary professionals to provide services in the areas of general civil engineering, road and utility infrastructure design, construction management, permitting, landscape architecture, soil science, wetlands science, land surveying, and environmental engineering. Resumes of key personnel will be provided upon request.

August 5, 2020

City of Lewiston, Maine
27 Pine Street
Lewiston, ME 04240

Re: High and Main Street, Lewiston, Maine

To Whom it May Concern:

NBT Bank, N.A. has a great relationship with High and Main Street, LLC and its members who are customers in good standing of the Bank. We enjoy a strong relationship with this group, having completed numerous successful projects together over the past several years. High and Main Street, LLC and its members have both the financial capacity as well as the industry experience necessary to complete the proposed project at High and Main Streets in Lewiston, Maine. Should there be any questions on this matter, please do not hesitate to contact me at (207) 229-7100 or via e-mail at jdeering@nbtbank.com.

Sincerely,

Jeremiah C. Deering
Senior Vice President
Senior Commercial Relationship Manager
NBT Bank

Section 5

Adequacy & Availability of Public Utilities

Section 5: Adequacy & Availability of Public Utilities

The proposed project involves the redevelopment of a previously developed parcel and will house existing services from other areas of the healthcare campus. We do not expect an increased demand or discharge as a result of the project. Water and sewer service are proposed to be extended into the building from Holland Street.

The City of Lewiston Water and Sewer Division has been contacted and is currently reviewing the project. Please see this section for correspondence with the City Water and Sewer Division. A water and sewer capacity letter will be provided under separate cover.

Rebecca Gabryszewski

From: Aaron Hunter
Sent: Thursday, May 21, 2020 10:50 AM
To: 'Marcel Lauze'; 'Kevin Gagne'
Cc: 'Richard Boucher'; Dan Riley
Subject: RE: CMHC Cancer Center - Water and Sewer Service
Attachments: 20149 Wastewater Flow Estimate.pdf; 19069EC-WORKSHEET-190311.pdf

Good Morning Kevin and Marcel,

Please see the attached wastewater flow estimate for the proposed medical office building.

I also wanted to follow up on my previous email in regards to obtaining any as-built plans or record information for the existing sewer and water along Holland Street. It would be helpful to confirm elevations and determine what is happening with the sewer. Per the attached survey there appears to be a line going east towards Main Street and another west down Holland. We also currently show an existing water main on the south side of Holland Street, can you confirm that this has been abandoned?

I appreciate your help with this. Please let me know if you have any questions.

Thanks,

Aaron Hunter, PE *Project Engineer*
Sebago Technics, Inc. | An Employee-Owned Company
75 John Roberts Rd., Suite 4A, South Portland, ME 04106
Office: 207.200.2100 | Direct: 207.200.2099 |
ahunter@sebagotechnics.com | www.sebagotechnics.com

From: Aaron Hunter
Sent: Monday, May 4, 2020 2:47 PM
To: Marcel Lauze <MLauze@lewistonmaine.gov>
Cc: Richard Boucher <BBoucher@lewistonmaine.gov>; Kevin Gagne <KGagne@lewistonmaine.gov>; Dan Riley <driley@sebagotechnics.com>
Subject: RE: CMHC Cancer Center - Water and Sewer Service

Hi Marcel,

Thank you for the information and taking the time to talk with me over the phone this last week. We are confirming with the MEP engineer and client before we setup a flow test. I will contact you to schedule when ready.

On another note, do you have any as-built plans or record information for the existing sewer and water along Holland Street. It would be helpful to verify some elevations in order to make our proposed connections. We also currently show an existing water main on the south side of Holland Street, can you confirm that this has been abandoned?

Please see the attached preliminary plan showing proposed connection locations. Let us know if you have any comments or questions. We appreciate your input.

Thanks,

Aaron Hunter, PE *Project Engineer*
Sebago Technics, Inc. | An Employee-Owned Company
75 John Roberts Rd., Suite 4A, South Portland, ME 04106
Office: 207.200.2100 | Direct: 207.200.2099 |
ahunter@sebagotechnics.com | www.sebagotechnics.com

From: Marcel Lauze <MLauze@lewistonmaine.gov>
Sent: Thursday, April 30, 2020 8:04 AM
To: Aaron Hunter <ahunter@sebagotechnics.com>
Subject: RE: CMHC Cancer Center - Water and Sewer Service

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Aaron, the hydrant on High St @ Main St was flow tested in 1994, it is a * " ductile water pipe 65lbs static 58 lbs residual circulating main, the hydrant on Holland St close to you construction are the same, 8" ductile water line 65lbs static and 58 lbs residual, circulating main. The water line on Main St is a 12" water line in front of Dunkins Doughnut with the same numbers

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From: Aaron Hunter <ahunter@sebagotechnics.com>
Sent: Monday, April 27, 2020 3:41 PM
To: Kevin Gagne <KGagne@lewistonmaine.gov>
Cc: Marcel Lauze <MLauze@lewistonmaine.gov>; Richard Boucher <BBoucher@lewistonmaine.gov>; Dan Riley <driley@sebagotechnics.com>
Subject: CMHC Cancer Center - Water and Sewer Service

Good Afternoon Kevin,

Sebago Technics, Inc. is working with Bateman Partners, LLC for a new multi-story medical office building and related site improvements at Central Maine Medical Center's Lewiston Campus. The existing site currently serves as a parking lot and is bounded by High Street to the south, Holland Street to the north, Main Street to the east and CMMC's existing parking garage to the west.

We are beginning the site engineering and would like to confirm the Districts ability to serve this project. We are proposing to provide water and sewer services to the north side of the proposed building. This will require connections to the existing water and sewer mains in Holland Street. I have attached a preliminary site layout plan that shows the proposed building and parking area overlayed on the existing site for your reference. The preliminary site layout plan indicates existing water and sewer mains on three sides of the property.

We would like to confirm the sizes of each main and obtain any recent water pressure information you may have for the mechanical engineers to size the fire and domestic services. An estimate of the average increased demand and anticipated daily flows will be provided in a separate email, as I am currently coordinating this with the MEP engineer. A more detailed plan will be provided as we move forward with the utility design.

Upon your review, please contact me with any questions.

Thanks,

Aaron Hunter, PE *Project Engineer*
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Section 6

Stormwater Narrative

Section 6: Stormwater Narrative

Please see this Section for the Stormwater Management Report.

SEBAGO TECHNICS

CIVIL ENGINEERING • SURVEYING • LANDSCAPE ARCHITECTURE

STORMWATER MANAGEMENT REPORT

For

CMHC CANCER CENTER
LEWISTON, MAINE

Prepared for

High & Main Street, LLC
470 Fore Street, Suite 400
Portland, Maine 04101

July 2020

STATE OF MAINE
DANIEL
L
RILEY
No. 9967
LICENSED
PROFESSIONAL ENGINEER

07/14/2020

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STORMWATER MANAGEMENT REPORT
CMHC CANCER CENTER
LEWISTON, MAINE

I. Introduction

This Stormwater Management Report has been prepared to present analyses performed to address the potential impacts associated with the project due to proposed modification in stormwater runoff characteristics and land cover changes. The stormwater management controls that are outlined in this report are based on accepted engineering practices and have been designed to suit the proposed development and to comply with applicable regulatory requirements.

II. Existing Conditions

The proposed project incorporates two areas of the Central Maine Medical Center (CMMC) Campus, both are developed as parking lots serving the campus. A proposed medical office building housing the Central Maine Health Care (CMHC) Cancer Center is to be located on the parcels bounded by High Street to the south, Holland Street to the north, Main Street to the east and CMMC's existing parking garage to the west.

The second project area is the existing parking lot on the north side of Holland Street, opposite the CMMC parking garage on Holland Street, referred to as Lot S or the "Holland Street Lot".

Both areas are developed with paved parking, landscaping and lighting. The redevelopment of the building site for the proposed medical office building will result in a small increase in impervious land cover. Work on the building site will also remove a small underdrained soil filter constructed in 2013 when the parking lot was developed.

Work in the Holland Street Lot is limited to maintenance, specifically repaving of the area without changing the line or grade of the site or increasing impervious cover. The project only proposes to repave the site due to the deterioration of the existing pavement, re-stripe the parking spaces, and install lighting. The Holland Street lot was last expanded in 2015 to include a new parking area for 41 spaces running along Holland Street up the hill toward Main Street. This lot construction included an underdrained soil filter for stormwater treatment of the new lot pavement. This stormwater treatment facility will remain and is unaltered by the project.

Slopes on the sites are moderate, with slopes ranging from 2% to 6% within the existing parking areas. Steeper slopes are prevalent along the edge of property side slopes and adjacent to the underdrained soil filters. The site is tributary to the Androscoggin River. The Androscoggin River flows south and discharges into the Atlantic Ocean.

The proposed development area of the site is located in Zone X, area of minimal flood hazard, per the FEMA Flood Insurance Rate Map for the City of Lewiston, Community Panel 230004 0327 E, effective July 8, 2013. A copy of the Firmette is included as a part of Appendix 4.

III. Soils

Soil characteristics were obtained from United States Department of Agriculture Natural Resource Conservation Service (NRCS) Web Soil Survey site. The Hydrologic Soil Groups (HSG) are classified by Technical Release TR-55 of the Soil Conservation Service as follows:

Soil Map Symbol	Soil Name	HSG
Md	Made Land	**C**

The soils consist entirely of Made Land from past development. For stormwater modeling purposes we have assumed a Hydrologic Soil Group (HSG) of "C" for both the Existing and Proposed Conditions models. A copy of the medium high intensity soil survey map is included as a part of Appendix 4.

IV. Proposed Site Improvements

The proposed project includes two separate areas of construction. The proposed Cancer Center building site includes the redevelopment of existing parking and landscaped areas, construction of a multi-story medical office building, paved parking areas, walkways and related site improvements. This site was historically developed with multi-family residential structures pre-dating Maine's Site Location of Development statutes. The site was redeveloped in 2013 with a Site plan and Site Law amendment reviewed by the City of Lewiston for use as surface parking. The proposed project will require an amendment to the hospitals Site Law Permits and is required to meet the Maine Chapter 500 standards for redevelopment.

The work affecting the Holland Street parking lot is limited to maintenance of the existing paved surface parking lot. The existing pavement is reaching the end of its useful life and will be removed and the replaced, maintaining the existing area drainage patterns. Existing catch basin inlets and subsurface storm drainage piping will remain. Other improvements are limited to installing new lighting and restriping the parking spaces. The Holland Street parking lot work is considered maintenance, as it will maintain operating condition, original line and grade, hydraulic capacity, and original purpose of the project area. The reconfiguration will decrease the impervious area coverage by approximately 50 square feet. This net decrease in impervious area is a result of various alterations of land cover including pervious landscape/lawn area converted to impervious pavement and impervious paved areas converted to pervious landscaped/lawn areas. Therefore, this area is not evaluated for redevelopment or stormwater purposes and the remainder of the report will discuss the medical office building project area.

The building site is currently developed; approximately 73,000 square feet of land will be disturbed and redeveloped. The development will increase the site impervious area coverage by approximately 2,570 square feet. This net increase in impervious area is a result of various alterations of land cover including pervious landscape/lawn area converted to impervious pavement and rooftop and impervious paved areas converted to rooftop impervious area and pervious landscaped/lawn areas.

V. Regulatory Requirements

City of Lewiston, Maine

The proposed development will require site plan approval from the City of Lewiston and must comply with Article XIII – Development and Review Standards. More specifically, Section 4, subsection 4(f) Stormwater Management which states

"Adequate provisions shall be made for the disposal of all stormwater collected on streets, parking areas, roofs or other impervious surfaces through a stormwater drainage system which will not have adverse impacts on abutting or downstream properties.

All projects disturbing less than one acre shall be designed to meet the requirements of this subsection 4(f).

All projects including one acre or more of disturbed land shall meet the requirements of this subsection 4(f) and the requirements of the Site Location of Development Law, 38 MRSA, 481 – 490, the Maine Stormwater Management Law, 38 M.R.S.A. Section 420- D, and regulations promulgated there under, specifically Rules 500, 501, and 502, as amended on August 12, 2015. At the discretion of the director of public works or his/her designee he/she may waive the above requirements, based on a finding that a particular site will have no significant runoff."

Relative to quantity, the site stormwater plan must limit peak discharges to the predevelopment levels for the 2-year, 10-year and 25-year frequency, 24-hour duration storms.

Relative to quality, the regulations state, "All projects including one acre or more of disturbed land shall meet the requirements of this subsection 4(f) and the requirements of the Site Location of Development Law, 38 MRSA, 481--490, the Maine Stormwater Management Law, 38 M.R.S.A. Section 420-D, and regulations promulgated there under, specifically Rules 500, 501, and 502, as amended on August 12, 2015. At the discretion of the director of public works or his/her designee he/she may waive the above requirements, based on a finding that a particular site will have no significant runoff."

Maine Department of Environmental Protection (MDEP)

The current Central Maine Medical Center campus has MDEP Site Location Permits issued for High Street / parking garage improvements in 1996 (MDEP Orders # L-18380-26-B-D, L-18380-26-C-D) and High Street Parking Lots in 1999 (MDEP # L-18380-19-D-D) with amendments for the construction of emergency department improvements in 2007 and redevelopment of the building site parking lot in 2013. All previous drainage design and Site Location applications have been reviewed by the City of Lewiston under its delegated review.

MDEP Rule Chapters 500 and 502 describe stormwater management requirements for new development projects and redevelopment sites. These rules describe performance standards divided into five major categories: Basic Standards, General Standards, Phosphorous Standards, Urban Impaired Stream Standards, and Flooding Standards. The following stormwater management section describes how this project will address the applicable stormwater management performance standards.

VI. Existing Conditions Model

The existing conditions of the site were modeled for the evaluation of runoff and stormwater treatment. The model described corresponds to the HydroCAD stormwater model output reports provided in Appendix 2A and the stormwater management plans provided in Appendix 5.

For this study's purposes the project area was modeled to evaluate three (3) study points and fourteen (14) subcatchments with an overall area of 2.26 acres.

Study Point SP-1, located at the northwest corner of the site, represents the location where stormwater runoff, collected in the existing on-site drainage system, connects to an existing manhole located in Holland Street. Prior to entering this manhole runoff is detained in existing 36" pipes located on the CMMC property and released via an 8" outlet pipe to the City's separated drainage system in Holland Street. A portion of the site runoff from the parking area constructed in 2013 is treated and detained for peak flow attenuation in an underdrained soil filter basin prior to discharge to the 36" pipes. Subcatchments 1.1S, 1.2S, 1.3S, 1.4S, 1.5S, 1.6S and 1.7S are tributary to this Study Point in the model.

Study Point SP-2, located at the northeast corner of the site at Holland and Main Street, represents the location where runoff from the northeastern portion of the site enters an existing catch basin in Holland Street. This basin directs runoff into the drainage infrastructure which conveys runoff northerly in Main Street. Subcatchments 2.1S, 2.2S and 2.3S are tributary to this Study Point in the model.

Study Point SP-3, located at the southeast corner of the site, represents the location where runoff from the southeastern portion of the site enters the existing drainage infrastructure in Main

Street which conveys runoff southerly down Main Street. Subcatchment 3.1S, 3.2S, 3.3S and 3.4S are tributary to this Study Point in the model.

VII. Proposed Conditions Model

The proposed conditions model corresponds to the HydroCAD stormwater model output reports provided in Appendix 2B and the stormwater management plans provided in Appendix 5.

The model evaluates the same three (3) study points as the existing conditions model and subdivides the site into twelve (12) subcatchments, totaling 2.26 acres. The subcatchments in the proposed condition have been delineated based on ground cover changes associated with the development, and based on stormwater Best Management Practices (BMPs). The proposed conditions HydroCAD model includes proposed landscaping and impervious areas associated with the proposed construction.

Study Point SP-1 represents the location where stormwater runoff collected in the proposed drainage system connects to the existing manhole located in Holland Street. The existing on-site 36" storage pipes and underdrained soil filter located on the CMMC property will be removed and replaced with a subsurface sand filter located in an existing parking area.

The western end of the site is treated and detained for peak flow attenuation in the subsurface sand filter prior to discharging through an outlet control structure to an on-site catch basin which is then released via an existing 8" outlet pipe to the separated storm drain system in Holland Street. Subcatchments 10S, 11S, 12S, 13S, 14S, 15S and 16S are tributary to this Study Point in the model.

Study Point SP-2 represents the location where runoff from the northeastern portion of the site enters an existing catch basin in Holland Street. This basin directs runoff into the existing drainage infrastructure in Main Street which conveys runoff northerly down Main Street. Subcatchments 20S and 21S are tributary to this Study Point in the model.

Study Point SP-3 represents the location where runoff from the southeastern portion of the site enters the existing drainage infrastructure located in Main Street. Runoff is directed southerly down Main Street. Subcatchments 30S, 31S and 32S are tributary to this Study Point in the model.

VIII. Stormwater Management

Basic Standard - Chapter 500, Section 4(B)

A project must meet basic standards if it disturbs an area greater than one (1) acre. As this development has an existing Site Location Permit, MDEP Basic Standards apply, requiring that grading or other construction activities on the site do not impede or otherwise alter drainage ways to have an unreasonable adverse impact.

The project avoids adverse impacts by providing an Erosion & Sedimentation Control Plan, and an Inspection, Maintenance and Housekeeping Plan (Appendix 3) to be implemented during construction and post-construction stabilization of the site. These construction requirements have been developed following Best Management Practice guidelines.

General Standard - Chapter 500, Section 4(C)

A project is subject to the general standards if it results in the creation of one (1) or more acres of impervious area or developed areas greater than five (5) acres. This project is subject to general standards as it is a modification of an existing Site Location Permit. Stormwater BMPS are designed to generally satisfy Maine DEP's General Standard. Maine DEP's Volume III, BMP Technical Design Manual was referenced as the basis for design and evaluation of BMP's.

The Redevelopment Standards of Chapter 500 Section 4, subsection C (d) apply to this project and allow for scaling of land uses to calculate the level of treatment required. Redevelopment standards apply since the proposed project will involve the redevelopment of the parking lot site.

The total redevelopment footprint evaluated is 2.26 acres as depicted on the drainage plans. A pre-development and post development runoff impact calculation, as described in §4.C(2)(d) of Chapter 500, was prepared and is attached in Appendix 1. The ranked impact change due to redevelopment is calculated to be -0.345 indicating a net reduction in potential pollutant ranking due primarily to the project's conversion of parking lot impervious areas to rooftop impervious. As a Site law project, the chapter 500 redevelopment standards require 50% of the proposed developed area to be treated.

To address the treatment standards and to mitigate the changes in hydrologic patterns due to the development of this project, a subsurface sand filter has been designed into the stormwater management infrastructure. The subsurface sand filter is designed in general conformance with Section 7.3 of the BMPs Technical Design Manual.

An inlet control structure will direct flow from a 1-year storm evenly into isolator rows sized so that the number of chambers exceeds standard sizing. Through the isolator row, flow will disperse to adjacent storage chambers so that a consistent water level is maintained throughout the entire system. The number of isolator rows was determined utilizing the 1-year storm event inflow rate to the chambers. An outlet control structure will be constructed with a weir set at or near the top of chamber so that the detained volume meets or exceeds the required water quality/channel protection volume.

Runoff less than or equal to the water quality volume detained in the chambers will discharge through a sand filter media layer below the chambers, filtering before discharging to downstream drainageways. An orifice will be installed at the outlet of the underdrain header pipe to control outflow of the treated runoff. This allows the full height of the chambers to be utilized for treatment.

Runoff from approximately 77.8% of developed surfaces will be treated through new BMPs to be constructed as part of this project. This exceeds the requirements for the Maine DEP General Standards applicable to this redevelopment project.

BMP sizing and treatment calculations are attached in Appendix 1.

Flooding Standard - Chapter 500, Section 4(F)

The MDEP requires that projects creating impervious areas greater than three (3) acres, or developed areas greater than twenty (20) acres, address various flooding standards. As this project is a modification of an existing Site Law Permit, the project is required to meet the flooding standard. The Flooding Standard requires a project's stormwater management system detain, retain, or result in the infiltration of stormwater from 24-hour storms of the 2, 10, and 25-year frequencies such that the peak flows of stormwater from the project site do not exceed the peak flows of stormwater prior to undertaking the project.

A runoff evaluation was performed using the methodology outlined in the USDA Soil Conservation Service's "Urban Hydrology for Small Watersheds - Technical Release #55 (TR-55)". HydroCAD computer software was utilized to perform the calculations.

Runoff curve numbers were determined for each of the watersheds by measuring the area of each hydrologic soil group within each type of land cover. The type of land cover was determined based on survey data, field reconnaissance and aerial photography. Times of concentration were determined from site topographic maps in accordance with SCS procedures.

The 24-hour rainfall values utilized in the hydrologic model were obtained from Appendix H of MDEP's Chapter 500: Stormwater Management. Rainfall values for Androscoggin County are listed in the table below.

Storm Frequency Precipitation (in./24 hr) Androscoggin County	
2-year	3.0
10-year	4.3
25-year	5.4

The following table presents the results of the stormwater runoff calculations at the study points for the existing and proposed conditions.

Stormwater Runoff Summary Table			
Study Point	**Storm Event**	**Existing Conditions (cfs)**	**Proposed Conditions (cfs)**
SP-1	2-year	2.6	1.2
	10-year	4.1	1.9
	25-year	5.2	4.9
SP-2	2-year	1.0	0.7
	10-year	1.6	1.1
	25-year	2.1	1.5
SP-3	2-year	1.3	1.3
	10-year	2.0	1.9
	25-year	2.5	2.5

The HydroCAD Data output results from the analysis are attached to this report in Appendix 2 along with the Stormwater Management Plans in Appendix 5. The model predicts that the peak runoff rates in the proposed condition are at or below existing runoff rates for the 2, 10, and 25-year storm events with implementation of the proposed stormwater management practices.

IX. Summary

Erosion and sedimentation controls, inspection and maintenance procedures and general housekeeping requirements have been outlined to prevent unreasonable impacts on the site and to the surrounding environment. An inspection, maintenance and housekeeping plan is included as a part of Appendix 3.

Based on the modeling data, the proposed peak rates of runoff are less than or equal to their corresponding existing rates of runoff at the study points during the 2-year, 10-year and 25-year storm events.

With the incorporation of the above referenced erosion control and stormwater quantity control measures, the project has been designed in conformance with the applicable City of Lewiston and MDEP rules and regulations. Accordingly, it is anticipated that stormwater runoff from the proposed development will not cause a significant adverse effect to off-site receiving channels or downstream properties.

Prepared by:

SEBAGO TECHNICS, INC.

Daniel R. Riley, P.E., CFM
Vice President, Engineering

Aaron C. Hunter, P.E.
Project Engineer

STATE OF MAINE
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07/14/2020

Appendix 1

Stormwater Quality Calculations

Table 1: MDEP GENERAL STANDARD CALCULATIONS

Job # 20149

AREA ID	WATERSHED SIZE (S.F.)	EXISTING ONSITE IMPERVIOUS AREA TO REMAIN (S.F.)	NEW ONSITE IMPERVIOUS AREA (S.F.)	EXISTING ONSITE LANDSCAPED AREA TO REMAIN (S.F.)	NEW ONSITE LANDSCAPED AREA (S.F.)	NET NEW DEVELOPED AREA (S.F.)	NET EXISTING DEVELOPED AREAS (S.F.)	NET UNDEVELOPED AREAS (S.F.)	TREATMENT PROVIDED?	EXISTING IMPERVIOUS AREA TREATED (S.F.)	IMPERVIOUS AREA TREATED (S.F.)	EXISTING LANDSCAPED AREA TREATED* (S.F.)	LANDSCAPED AREA TREATED (S.F.)	TOTAL DEVELOPED AREA TREATED (S.F.)	TREATMENT BMP
10S	4,145	4,106	0	0	39	39	4,106	0	NO	0	0	0	0	0	NONE
11S	16,120	8,334	2,478	510	4,798	7,276	8,844	510	NO	0	0	0	0	0	NONE
12S	3,400	1,721	1,306	0	373	1,679	1,721	0	YES	1,721	1,306	0	373	3,400	SSF-1
13S	19,144	0	19,144	0	0	19,144	0	0	YES	0	19,144	0	0	19,144	SSF-1
14S	14,286	6,971	1,579	191	5,545	7,124	7,162	191	YES	6,971	1,579	191	5,545	14,286	SSF-1
15S	2,401	2,231	0	170	0	0	2,401	170	YES	2,231	0	170	0	2,401	SSF-1
16S	3,825	3,230	0	595	0	0	3,825	595	YES	3,230	0	595	0	3,825	SSF-1
20S	4,169	2,220	148	0	1,801	1,949	2,220	0	NO	0	0	0	0	0	NONE
21S	9,933	5,565	0	0	4,368	4,368	5,565	0	NO	0	0	0	0	0	NONE
30S	3,044	2,591	0	0	453	453	2,591	0	NO	0	0	0	0	0	NONE
31S	10,000	0	10,000	0	0	10,000	0	0	NO	0	0	0	0	0	NONE
32S	8,129	4,315	1,251	478	2,085	3,336	4,793	478	NO	0	0	0	0	0	NONE
TOTAL (S.F.)	**98,596**	**41,284**	**35,906**	**1,944**	**19,462**	**55,368**	**43,228**	**1,944**		**14,153**	**22,029**	**956**	**5,918**	**43,056**	

TOTAL NEW DEVELOPED AREA (S.F.)	**55,368**
EXISTING DEVELOPED AREA RECEIVING TREATMENT (S.F.)	**15,109**
NEW DEVELOPED AREA RECEIVING TREATMENT (S.F.)	**27,947**
TOTAL DEVELOPED AREA REQUIRING TREATMENT (S.F.) (50% of New Developed Area)	**27,684**
TOTAL DEVELOPED AREA RECEIVING TREATMENT (S.F.)	**43,056**
% OF DEVELOPED AREA RECEIVING TREATMENT	**77.8%**

Redevelopment Calculations
(Calculations based on Chapter 500, Section 4.C.d)

Redevelopment Footprint	**98,596**	**SF**	**=**	**2.26**	**AC**

Per Table 2: Pollutant Impact Rankings of Various Redevelopment Land Uses

Existing Use	Existing Area (SF)	Existing Area (AC)	Pollutant Ranking	Weighted Ave. Impact
Medium Use Parking Lots	68,786	1.58	4	6.32
Walkways/Foot Traffic-Only Pavement	5,662	0.13	2	0.26
Grassed Areas	24,148	0.55	2	1.11
	98,596		**Sum**	7.69

Proposed Use	Proposed Area (SF)	Proposed Area (AC)	Pollutant Ranking	Weighted Ave. Impact
Roof - Flat Asphalt	29,144	0.67	3	2.01
Medium Use Parking Lots	37,186	0.85	4	3.41
Walkways/Foot Traffic-Only Pavement	10,860	0.25	2	0.50
Grassed Areas	21,406	0.49	2	0.98
	98,596		**Sum**	6.90

a.	Existing Impact Rating =	**7.69**
b.	Proposed Impact Rating =	**6.90**
c.	Existing Impact Rating per Acre of Development =	**3.395**
d	Proposed Impact Rating per Acre of Development =	**3.050**
e	Redevelopment Rating Difference	**-0.345**

Therefore 50% of Developed Area must be treated
(per Table 3 - Treatment Levels for Redevelopment Projects)

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JOB	20149		
SHEET NO.	1	OF	1
CALCULATED BY	ACH	DATE	5/22/2020
FILE NAME	20149 WQC.xlsx	PRNT DATE	6/24/2020

UNDERDRAINED SUBSURFACE SAND FILTER

Task: Calculate water quality volume per MDEP chapter 500 regulations

References
1. Maine DEP Chapter 500, Section 4.C.(3)(b)
   "must detain a runoff volume equal to 1.0 inch times the subcatchment's impervious area plus 0.4 inch times the subcatchment's landscaped area"
2. Maine DEP Best Management Practices Stormwater Manual, Section 7.3.2
   a. "detain runoff volume equal to 1.0 inch times the subcatchment's impervious area plus 0.4 inch times the subcatchment's landscaped area"
   b. "surface area of the sand filter bed and chamber system must be at least equal to 5% of the impervious area draining to it and 2% of the landscaped area."
   c. "treatment flow rate for the Stormtech Isolator Row is the projected one year peak flow rate for the drainage area feeding the Isolator Row"

Flow rates:		
SC-310	0.10	cfs/chamber
SC-740	0.20	cfs/chamber
DC-780	0.20	cfs/chamber
MC-3500	0.30	cfs/chamber

   d. Inspection ports to the underdrain gravel layer should be provided with at least one port per 500 square-feet of subsurface filter area.

Tributary to Subsurface Sand Filter: SSF-1

Landscaped Area	6,874.00	SF
Impervious Area	36,182.00	SF

Minimum Surface Area for sand filter and chamber system

Required (2% X Landscaped + 5%" X Impervious)

Total Landscaped Area	6,874.00	SF	Area	137.5	SF
Total Impervious Area	36,182.00	SF	Area	1,809.1	SF
Required Minimum Surface Area				1,946.6	SF
Provided Surface Area				2,105.0	SF

Required No. of Inspection Ports: 5

Treatment Volume

Required (0.4" X Landscaped + 1.0" X Impervious)

Landscaped Area	6,874.00	SF	Volume	229.1	
Impervious Area	36,182.00	SF	Volume	3,015.2	
Treatment Volume Required				3,244.3	CF
Provided Treatment Volume				3,306.0	CF

0.074 AF

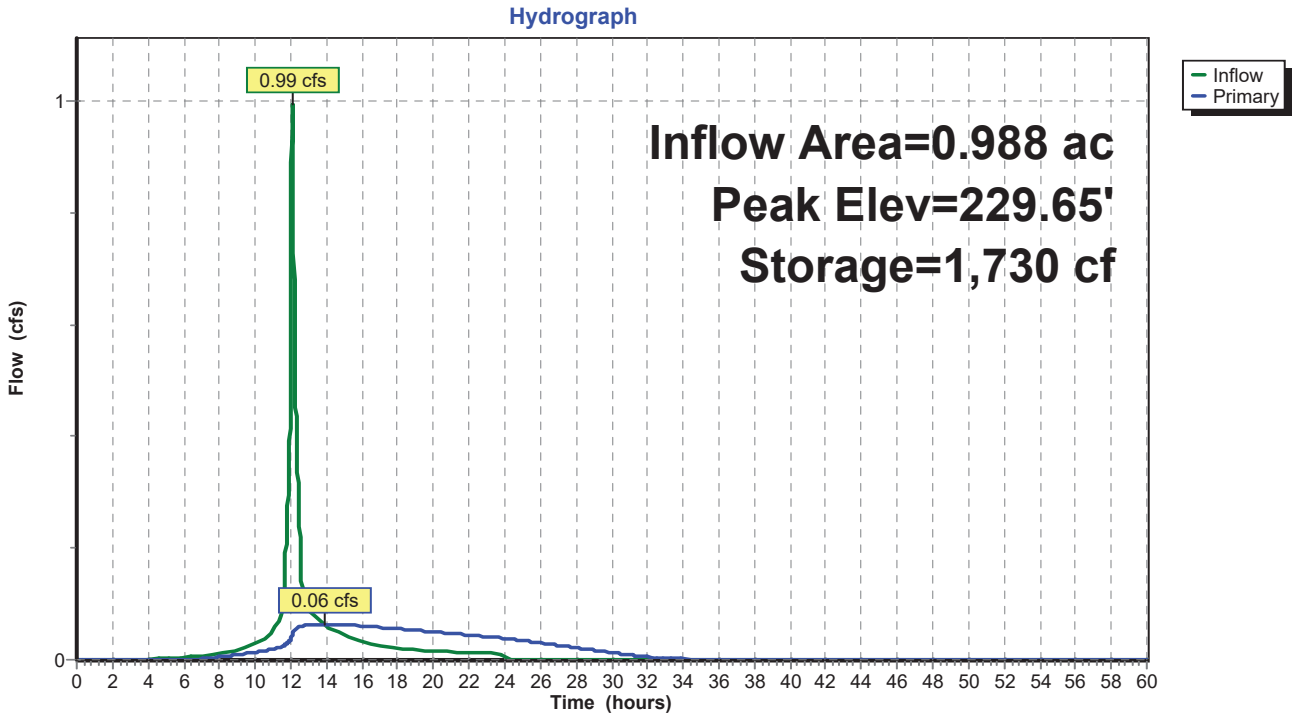
(Elev. 230.30-232.70)

Sediment Pre-Treatment

Per Reference 2.c above

One year flow rate out put from Hydrocad:	2.08	cfs
ISO Row sizing for:	**SC-740**	**0.2** cfs
Total number of Isolator Row Chambers required:	11	

Pond 11P: SSF-1

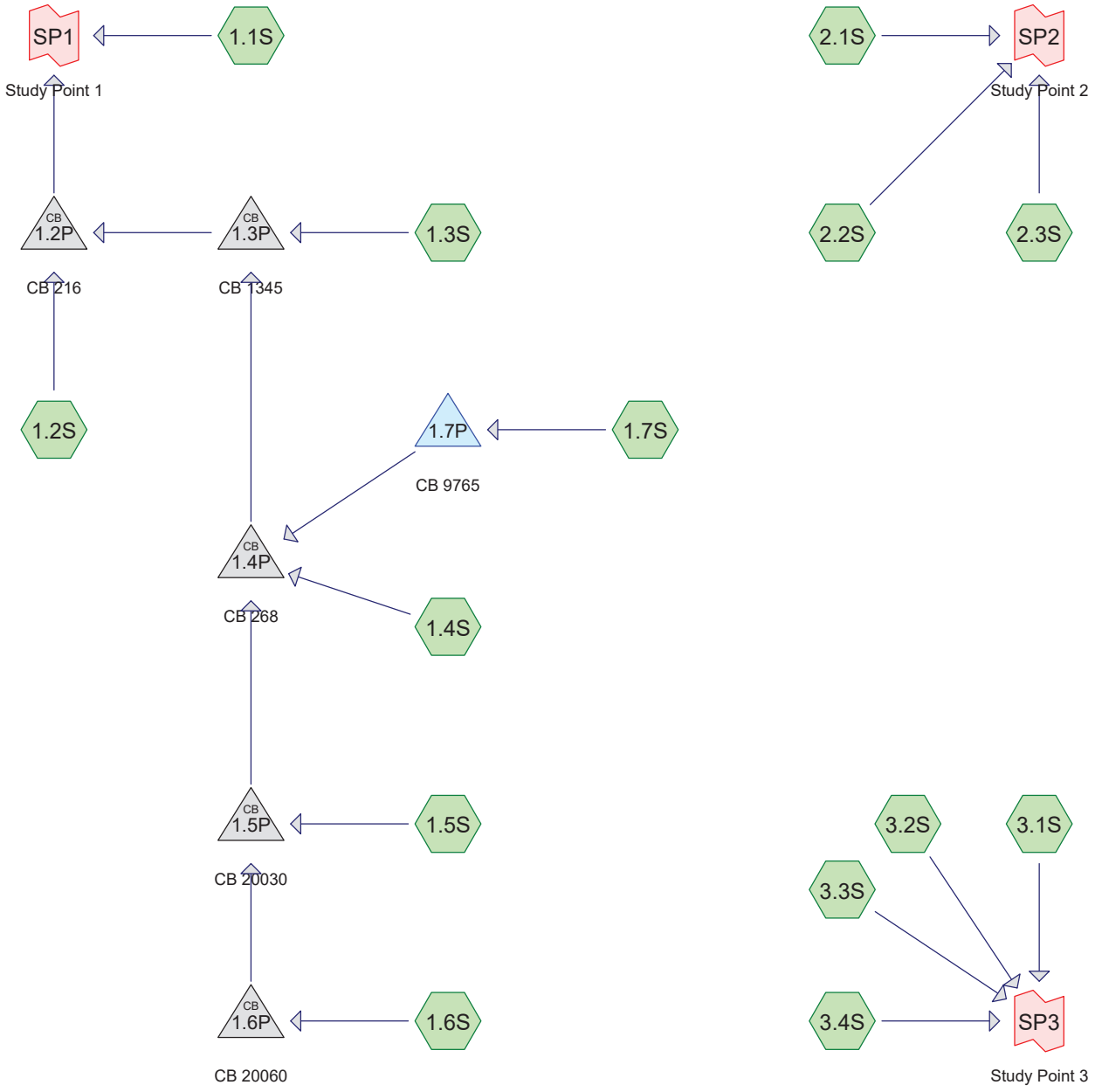


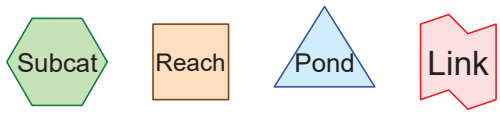
Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Pond 11P: SSF-1 Peak Elev=231.82' Storage=4,114 cf Inflow=2.08 cfs 0.157 af
Outflow=0.09 cfs 0.157 af

Appendix 2A

Hydrologic Modeling
Existing Conditions
HydroCAD Summary





Routing Diagram for 20149 PRE
Prepared by Sebago Technics, Inc., Printed 6/24/2020
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.554	74	>75% Grass cover, Good, HSG C (1.1S, 1.2S, 1.3S, 1.4S, 1.5S, 1.6S, 1.7S, 2.1S, 2.3S, 3.1S, 3.4S)
1.709	98	Paved parking, HSG C (1.1S, 1.2S, 1.3S, 1.4S, 1.5S, 1.6S, 1.7S, 2.1S, 2.2S, 2.3S, 3.1S, 3.2S, 3.3S, 3.4S)
2.263	**92**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
2.263	HSG C	1.1S, 1.2S, 1.3S, 1.4S, 1.5S, 1.6S, 1.7S, 2.1S, 2.2S, 2.3S, 3.1S, 3.2S, 3.3S, 3.4S
0.000	HSG D	
0.000	Other	
2.263		**TOTAL AREA**

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1.1S: Runoff Area=4,986 sf 72.20% Impervious Runoff Depth=2.07"
Tc=6.0 min CN=91 Runoff=0.27 cfs 0.020 af

Subcatchment1.2S: Runoff Area=20,310 sf 70.65% Impervious Runoff Depth=2.07"
Tc=6.0 min CN=91 Runoff=1.12 cfs 0.080 af

Subcatchment1.3S: Runoff Area=2,332 sf 14.15% Impervious Runoff Depth=1.07"
Tc=6.0 min CN=77 Runoff=0.06 cfs 0.005 af

Subcatchment1.4S: Runoff Area=11,881 sf 87.75% Impervious Runoff Depth=2.45"
Tc=6.0 min CN=95 Runoff=0.74 cfs 0.056 af

Subcatchment1.5S: Runoff Area=2,413 sf 93.04% Impervious Runoff Depth=2.55"
Tc=6.0 min CN=96 Runoff=0.15 cfs 0.012 af

Subcatchment1.6S: Runoff Area=3,825 sf 84.44% Impervious Runoff Depth=2.35"
Tc=6.0 min CN=94 Runoff=0.23 cfs 0.017 af

Subcatchment1.7S: Runoff Area=12,323 sf 75.44% Impervious Runoff Depth=2.16"
Tc=6.0 min CN=92 Runoff=0.70 cfs 0.051 af

Subcatchment2.1S: Runoff Area=3,798 sf 54.32% Impervious Runoff Depth=1.74"
Tc=6.0 min CN=87 Runoff=0.18 cfs 0.013 af

Subcatchment2.2S: Runoff Area=5,500 sf 100.00% Impervious Runoff Depth=2.77"
Tc=6.0 min CN=98 Runoff=0.37 cfs 0.029 af

Subcatchment2.3S: Runoff Area=9,131 sf 60.95% Impervious Runoff Depth=1.90"
Tc=6.0 min CN=89 Runoff=0.46 cfs 0.033 af

Subcatchment3.1S: Runoff Area=3,228 sf 80.27% Impervious Runoff Depth=2.25"
Tc=6.0 min CN=93 Runoff=0.19 cfs 0.014 af

Subcatchment3.2S: Runoff Area=5,853 sf 100.00% Impervious Runoff Depth=2.77"
Tc=6.0 min CN=98 Runoff=0.39 cfs 0.031 af

Subcatchment3.3S: Runoff Area=5,287 sf 100.00% Impervious Runoff Depth=2.77"
Tc=6.0 min CN=98 Runoff=0.35 cfs 0.028 af

Subcatchment3.4S: Runoff Area=7,716 sf 53.43% Impervious Runoff Depth=1.74"
Tc=6.0 min CN=87 Runoff=0.36 cfs 0.026 af

Pond 1.2P: CB 216 Peak Elev=229.34' Inflow=2.36 cfs 0.221 af
8.0" Round Culvert n=0.012 L=20.0' S=0.0600 '/' Outflow=2.36 cfs 0.221 af

Pond 1.3P: CB 1345 Peak Elev=229.34' Inflow=1.25 cfs 0.140 af
36.0" Round Culvert n=0.012 L=40.0' S=0.0093 '/' Outflow=1.25 cfs 0.140 af

Pond 1.4P: CB 268 Peak Elev=229.35' Inflow=1.18 cfs 0.136 af
36.0" Round Culvert n=0.012 L=96.0' S=0.0026 '/' Outflow=1.18 cfs 0.136 af

Pond 1.5P: CB 20030 Peak Elev=234.63' Inflow=0.39 cfs 0.029 af
12.0" Round Culvert n=0.012 L=118.0' S=0.0256 '/' Outflow=0.39 cfs 0.029 af

Pond 1.6P: CB 20060 Peak Elev=234.67' Inflow=0.23 cfs 0.017 af
12.0" Round Culvert n=0.012 L=40.0' S=0.0122 '/' Outflow=0.23 cfs 0.017 af

Pond 1.7P: CB 9765 Peak Elev=242.03' Storage=910 cf Inflow=0.70 cfs 0.051 af
Outflow=0.06 cfs 0.051 af

Link SP1: Study Point 1 Inflow=2.64 cfs 0.241 af
Primary=2.64 cfs 0.241 af

Link SP2: Study Point 2 Inflow=1.01 cfs 0.075 af
Primary=1.01 cfs 0.075 af

Link SP3: Study Point 3 Inflow=1.29 cfs 0.099 af
Primary=1.29 cfs 0.099 af

Total Runoff Area = 2.263 ac Runoff Volume = 0.414 af Average Runoff Depth = 2.20"
24.47% Pervious = 0.554 ac 75.53% Impervious = 1.709 ac

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1.1S: Runoff Area=4,986 sf 72.20% Impervious Runoff Depth=3.31"
Tc=6.0 min CN=91 Runoff=0.43 cfs 0.032 af

Subcatchment1.2S: Runoff Area=20,310 sf 70.65% Impervious Runoff Depth=3.31"
Tc=6.0 min CN=91 Runoff=1.75 cfs 0.128 af

Subcatchment1.3S: Runoff Area=2,332 sf 14.15% Impervious Runoff Depth=2.05"
Tc=6.0 min CN=77 Runoff=0.13 cfs 0.009 af

Subcatchment1.4S: Runoff Area=11,881 sf 87.75% Impervious Runoff Depth=3.73"
Tc=6.0 min CN=95 Runoff=1.10 cfs 0.085 af

Subcatchment1.5S: Runoff Area=2,413 sf 93.04% Impervious Runoff Depth=3.84"
Tc=6.0 min CN=96 Runoff=0.23 cfs 0.018 af

Subcatchment1.6S: Runoff Area=3,825 sf 84.44% Impervious Runoff Depth=3.62"
Tc=6.0 min CN=94 Runoff=0.35 cfs 0.026 af

Subcatchment1.7S: Runoff Area=12,323 sf 75.44% Impervious Runoff Depth=3.41"
Tc=6.0 min CN=92 Runoff=1.08 cfs 0.080 af

Subcatchment2.1S: Runoff Area=3,798 sf 54.32% Impervious Runoff Depth=2.91"
Tc=6.0 min CN=87 Runoff=0.29 cfs 0.021 af

Subcatchment2.2S: Runoff Area=5,500 sf 100.00% Impervious Runoff Depth=4.06"
Tc=6.0 min CN=98 Runoff=0.53 cfs 0.043 af

Subcatchment2.3S: Runoff Area=9,131 sf 60.95% Impervious Runoff Depth=3.11"
Tc=6.0 min CN=89 Runoff=0.75 cfs 0.054 af

Subcatchment3.1S: Runoff Area=3,228 sf 80.27% Impervious Runoff Depth=3.51"
Tc=6.0 min CN=93 Runoff=0.29 cfs 0.022 af

Subcatchment3.2S: Runoff Area=5,853 sf 100.00% Impervious Runoff Depth=4.06"
Tc=6.0 min CN=98 Runoff=0.56 cfs 0.046 af

Subcatchment3.3S: Runoff Area=5,287 sf 100.00% Impervious Runoff Depth=4.06"
Tc=6.0 min CN=98 Runoff=0.51 cfs 0.041 af

Subcatchment3.4S: Runoff Area=7,716 sf 53.43% Impervious Runoff Depth=2.91"
Tc=6.0 min CN=87 Runoff=0.60 cfs 0.043 af

Pond 1.2P: CB 216 Peak Elev=232.00' Inflow=3.62 cfs 0.347 af
8.0" Round Culvert n=0.012 L=20.0' S=0.0600 '/' Outflow=3.62 cfs 0.347 af

Pond 1.3P: CB 1345 Peak Elev=232.00' Inflow=1.87 cfs 0.218 af
36.0" Round Culvert n=0.012 L=40.0' S=0.0093 '/' Outflow=1.87 cfs 0.218 af

Pond 1.4P: CB 268 Peak Elev=232.00' Inflow=1.74 cfs 0.209 af
36.0" Round Culvert n=0.012 L=96.0' S=0.0026 '/' Outflow=1.74 cfs 0.209 af

Pond 1.5P: CB 20030 Peak Elev=234.70' Inflow=0.58 cfs 0.044 af
12.0" Round Culvert n=0.012 L=118.0' S=0.0256 '/' Outflow=0.58 cfs 0.044 af

Pond 1.6P: CB 20060 Peak Elev=234.76' Inflow=0.35 cfs 0.026 af
12.0" Round Culvert n=0.012 L=40.0' S=0.0122 '/' Outflow=0.35 cfs 0.026 af

Pond 1.7P: CB 9765 Peak Elev=242.46' Storage=1,437 cf Inflow=1.08 cfs 0.080 af
Outflow=0.24 cfs 0.080 af

Link SP1: Study Point 1 Inflow=4.05 cfs 0.378 af
Primary=4.05 cfs 0.378 af

Link SP2: Study Point 2 Inflow=1.57 cfs 0.118 af
Primary=1.57 cfs 0.118 af

Link SP3: Study Point 3 Inflow=1.96 cfs 0.151 af
Primary=1.96 cfs 0.151 af

Total Runoff Area = 2.263 ac Runoff Volume = 0.648 af Average Runoff Depth = 3.44"
24.47% Pervious = 0.554 ac 75.53% Impervious = 1.709 ac

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1.1S: Runoff Area=4,986 sf 72.20% Impervious Runoff Depth=4.37"
Tc=6.0 min CN=91 Runoff=0.56 cfs 0.042 af

Subcatchment1.2S: Runoff Area=20,310 sf 70.65% Impervious Runoff Depth=4.37"
Tc=6.0 min CN=91 Runoff=2.28 cfs 0.170 af

Subcatchment1.3S: Runoff Area=2,332 sf 14.15% Impervious Runoff Depth=2.96"
Tc=6.0 min CN=77 Runoff=0.19 cfs 0.013 af

Subcatchment1.4S: Runoff Area=11,881 sf 87.75% Impervious Runoff Depth=4.82"
Tc=6.0 min CN=95 Runoff=1.41 cfs 0.109 af

Subcatchment1.5S: Runoff Area=2,413 sf 93.04% Impervious Runoff Depth=4.93"
Tc=6.0 min CN=96 Runoff=0.29 cfs 0.023 af

Subcatchment1.6S: Runoff Area=3,825 sf 84.44% Impervious Runoff Depth=4.70"
Tc=6.0 min CN=94 Runoff=0.45 cfs 0.034 af

Subcatchment1.7S: Runoff Area=12,323 sf 75.44% Impervious Runoff Depth=4.48"
Tc=6.0 min CN=92 Runoff=1.40 cfs 0.106 af

Subcatchment2.1S: Runoff Area=3,798 sf 54.32% Impervious Runoff Depth=3.95"
Tc=6.0 min CN=87 Runoff=0.39 cfs 0.029 af

Subcatchment2.2S: Runoff Area=5,500 sf 100.00% Impervious Runoff Depth=5.16"
Tc=6.0 min CN=98 Runoff=0.67 cfs 0.054 af

Subcatchment2.3S: Runoff Area=9,131 sf 60.95% Impervious Runoff Depth=4.16"
Tc=6.0 min CN=89 Runoff=0.99 cfs 0.073 af

Subcatchment3.1S: Runoff Area=3,228 sf 80.27% Impervious Runoff Depth=4.59"
Tc=6.0 min CN=93 Runoff=0.37 cfs 0.028 af

Subcatchment3.2S: Runoff Area=5,853 sf 100.00% Impervious Runoff Depth=5.16"
Tc=6.0 min CN=98 Runoff=0.71 cfs 0.058 af

Subcatchment3.3S: Runoff Area=5,287 sf 100.00% Impervious Runoff Depth=5.16"
Tc=6.0 min CN=98 Runoff=0.64 cfs 0.052 af

Subcatchment3.4S: Runoff Area=7,716 sf 53.43% Impervious Runoff Depth=3.95"
Tc=6.0 min CN=87 Runoff=0.80 cfs 0.058 af

Pond 1.2P: CB 216 Peak Elev=235.10' Inflow=4.67 cfs 0.455 af
8.0" Round Culvert n=0.012 L=20.0' S=0.0600 '/' Outflow=4.67 cfs 0.455 af

Pond 1.3P: CB 1345 Peak Elev=235.10' Inflow=2.40 cfs 0.285 af
36.0" Round Culvert n=0.012 L=40.0' S=0.0093 '/' Outflow=2.40 cfs 0.285 af

Pond 1.4P: CB 268 Peak Elev=235.11' Inflow=2.21 cfs 0.272 af
36.0" Round Culvert n=0.012 L=96.0' S=0.0026 '/' Outflow=2.21 cfs 0.272 af

Pond 1.5P: CB 20030 Peak Elev=235.20' Inflow=0.74 cfs 0.057 af
12.0" Round Culvert n=0.012 L=118.0' S=0.0256 '/' Outflow=0.74 cfs 0.057 af

Pond 1.6P: CB 20060 Peak Elev=235.22' Inflow=0.45 cfs 0.034 af
12.0" Round Culvert n=0.012 L=40.0' S=0.0122 '/' Outflow=0.45 cfs 0.034 af

Pond 1.7P: CB 9765 Peak Elev=242.55' Storage=1,551 cf Inflow=1.40 cfs 0.106 af
Outflow=0.66 cfs 0.106 af

Link SP1: Study Point 1 Inflow=5.23 cfs 0.497 af
Primary=5.23 cfs 0.497 af

Link SP2: Study Point 2 Inflow=2.05 cfs 0.156 af
Primary=2.05 cfs 0.156 af

Link SP3: Study Point 3 Inflow=2.53 cfs 0.197 af
Primary=2.53 cfs 0.197 af

Total Runoff Area = 2.263 ac Runoff Volume = 0.849 af Average Runoff Depth = 4.50"
24.47% Pervious = 0.554 ac 75.53% Impervious = 1.709 ac

Summary for Subcatchment 1.1S:

Runoff = 0.56 cfs @ 12.08 hrs, Volume= 0.042 af, Depth= 4.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (sf)	CN	Description
3,600	98	Paved parking, HSG C
1,386	74	>75% Grass cover, Good, HSG C
4,986	91	Weighted Average
1,386		27.80% Pervious Area
3,600		72.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Min Tc Time**

Summary for Subcatchment 1.2S:

Runoff = 2.28 cfs @ 12.08 hrs, Volume= 0.170 af, Depth= 4.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (sf)	CN	Description
14,349	98	Paved parking, HSG C
5,961	74	>75% Grass cover, Good, HSG C
20,310	91	Weighted Average
5,961		29.35% Pervious Area
14,349		70.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Min Tc Time**

Summary for Subcatchment 1.3S:

Runoff = 0.19 cfs @ 12.09 hrs, Volume= 0.013 af, Depth= 2.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (sf)	CN	Description
330	98	Paved parking, HSG C
2,002	74	>75% Grass cover, Good, HSG C
2,332	77	Weighted Average
2,002		85.85% Pervious Area
330		14.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Min Tc Time**

Summary for Subcatchment 1.4S:

Runoff = 1.41 cfs @ 12.08 hrs, Volume= 0.109 af, Depth= 4.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (sf)	CN	Description
10,426	98	Paved parking, HSG C
1,455	74	>75% Grass cover, Good, HSG C
11,881	95	Weighted Average
1,455		12.25% Pervious Area
10,426		87.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Min Tc Time**

Summary for Subcatchment 1.5S:

Runoff = 0.29 cfs @ 12.08 hrs, Volume= 0.023 af, Depth= 4.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (sf)	CN	Description
2,245	98	Paved parking, HSG C
168	74	>75% Grass cover, Good, HSG C
2,413	96	Weighted Average
168		6.96% Pervious Area
2,245		93.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Min Tc Time**

Summary for Subcatchment 1.6S:

Runoff = 0.45 cfs @ 12.08 hrs, Volume= 0.034 af, Depth= 4.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (sf)	CN	Description
3,230	98	Paved parking, HSG C
595	74	>75% Grass cover, Good, HSG C
3,825	94	Weighted Average
595		15.56% Pervious Area
3,230		84.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Min Tc Time**

Summary for Subcatchment 1.7S:

Runoff = 1.40 cfs @ 12.08 hrs, Volume= 0.106 af, Depth= 4.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (sf)	CN	Description
3,026	74	>75% Grass cover, Good, HSG C
9,297	98	Paved parking, HSG C
12,323	92	Weighted Average
3,026		24.56% Pervious Area
9,297		75.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Min Tc Time**

Summary for Subcatchment 2.1S:

Runoff = 0.39 cfs @ 12.09 hrs, Volume= 0.029 af, Depth= 3.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (sf)	CN	Description
1,735	74	>75% Grass cover, Good, HSG C
2,063	98	Paved parking, HSG C
3,798	87	Weighted Average
1,735		45.68% Pervious Area
2,063		54.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Min Tc Time**

Summary for Subcatchment 2.2S:

Runoff = 0.67 cfs @ 12.08 hrs, Volume= 0.054 af, Depth= 5.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (sf)	CN	Description
5,500	98	Paved parking, HSG C
5,500		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Min Tc Time**

Summary for Subcatchment 2.3S:

Runoff = 0.99 cfs @ 12.09 hrs, Volume= 0.073 af, Depth= 4.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (sf)	CN	Description
3,566	74	>75% Grass cover, Good, HSG C
5,565	98	Paved parking, HSG C
9,131	89	Weighted Average
3,566		39.05% Pervious Area
5,565		60.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Min Tc Time**

Summary for Subcatchment 3.1S:

Runoff = 0.37 cfs @ 12.08 hrs, Volume= 0.028 af, Depth= 4.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (sf)	CN	Description
2,591	98	Paved parking, HSG C
637	74	>75% Grass cover, Good, HSG C
3,228	93	Weighted Average
637		19.73% Pervious Area
2,591		80.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Min Tc Time**

Summary for Subcatchment 3.2S:

Runoff = 0.71 cfs @ 12.08 hrs, Volume= 0.058 af, Depth= 5.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (sf)	CN	Description
5,853	98	Paved parking, HSG C
5,853		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Min Tc Time**

Summary for Subcatchment 3.3S:

Runoff = 0.64 cfs @ 12.08 hrs, Volume= 0.052 af, Depth= 5.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (sf)	CN	Description
5,287	98	Paved parking, HSG C
5,287		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Min Tc Time**

Summary for Subcatchment 3.4S:

Runoff = 0.80 cfs @ 12.09 hrs, Volume= 0.058 af, Depth= 3.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (sf)	CN	Description
3,593	74	>75% Grass cover, Good, HSG C
4,123	98	Paved parking, HSG C
7,716	87	Weighted Average
3,593		46.57% Pervious Area
4,123		53.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Min Tc Time**

Summary for Pond 1.2P: CB 216

Inflow Area = 1.219 ac, 75.12% Impervious, Inflow Depth = 4.48" for 25-YR event
Inflow = 4.67 cfs @ 12.08 hrs, Volume= 0.455 af
Outflow = 4.67 cfs @ 12.08 hrs, Volume= 0.455 af, Atten= 0%, Lag= 0.0 min
Primary = 4.67 cfs @ 12.08 hrs, Volume= 0.455 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 235.10' @ 12.08 hrs
Flood Elev= 232.39'

Device	Routing	Invert	Outlet Devices
#1	Primary	227.03'	**8.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 227.03' / 225.83' S= 0.0600 '/' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf

Primary OutFlow Max=4.67 cfs @ 12.08 hrs HW=235.07' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 4.67 cfs @ 13.37 fps)

Summary for Pond 1.3P: CB 1345

Inflow Area = 0.752 ac, 77.89% Impervious, Inflow Depth = 4.55" for 25-YR event
Inflow = 2.40 cfs @ 12.08 hrs, Volume= 0.285 af
Outflow = 2.40 cfs @ 12.08 hrs, Volume= 0.285 af, Atten= 0%, Lag= 0.0 min
Primary = 2.40 cfs @ 12.08 hrs, Volume= 0.285 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 235.10' @ 12.09 hrs
Flood Elev= 233.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	227.10'	**36.0" Round Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 227.10' / 226.73' S= 0.0093 '/' Cc= 0.900 n= 0.012, Flow Area= 7.07 sf

Primary OutFlow Max=0.00 cfs @ 12.08 hrs HW=234.96' TW=235.07' (Dynamic Tailwater)
└─**1=Culvert** (Controls 0.00 cfs)

Summary for Pond 1.4P: CB 268

Inflow Area = 0.699 ac, 82.77% Impervious, Inflow Depth = 4.68" for 25-YR event
Inflow = 2.21 cfs @ 12.08 hrs, Volume= 0.272 af
Outflow = 2.21 cfs @ 12.08 hrs, Volume= 0.272 af, Atten= 0%, Lag= 0.0 min
Primary = 2.21 cfs @ 12.08 hrs, Volume= 0.272 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 235.11' @ 12.10 hrs
Flood Elev= 236.55'

Device	Routing	Invert	Outlet Devices
#1	Primary	227.43'	**36.0" Round Culvert** L= 96.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 227.43' / 227.18' S= 0.0026 '/' Cc= 0.900 n= 0.012, Flow Area= 7.07 sf

Primary OutFlow Max=0.00 cfs @ 12.08 hrs HW=234.60' TW=234.95' (Dynamic Tailwater)
└─**1=Culvert** (Controls 0.00 cfs)

Summary for Pond 1.5P: CB 20030

Inflow Area = 0.143 ac, 87.77% Impervious, Inflow Depth = 4.79" for 25-YR event
Inflow = 0.74 cfs @ 12.08 hrs, Volume= 0.057 af
Outflow = 0.74 cfs @ 12.08 hrs, Volume= 0.057 af, Atten= 0%, Lag= 0.0 min
Primary = 0.74 cfs @ 12.08 hrs, Volume= 0.057 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 235.20' @ 12.11 hrs
Flood Elev= 239.49'

Device	Routing	Invert	Outlet Devices
#1	Primary	234.32'	**12.0" Round Culvert** L= 118.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 234.32' / 231.30' S= 0.0256 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.41 cfs @ 12.08 hrs HW=234.81' TW=234.58' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 0.41 cfs @ 1.58 fps)

Summary for Pond 1.6P: CB 20060

Inflow Area = 0.088 ac, 84.44% Impervious, Inflow Depth = 4.70" for 25-YR event
Inflow = 0.45 cfs @ 12.08 hrs, Volume= 0.034 af
Outflow = 0.45 cfs @ 12.08 hrs, Volume= 0.034 af, Atten= 0%, Lag= 0.0 min
Primary = 0.45 cfs @ 12.08 hrs, Volume= 0.034 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 235.22' @ 12.12 hrs
Flood Elev= 239.34'

Device	Routing	Invert	Outlet Devices
#1	Primary	234.20'	**12.0" Round Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 234.20' / 233.71' S= 0.0122 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.21 cfs @ 12.08 hrs HW=234.82' TW=234.81' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 0.21 cfs @ 0.58 fps)

Summary for Pond 1.7P: CB 9765

Inflow Area = 0.283 ac, 75.44% Impervious, Inflow Depth = 4.48" for 25-YR event
Inflow = 1.40 cfs @ 12.08 hrs, Volume= 0.106 af
Outflow = 0.66 cfs @ 12.24 hrs, Volume= 0.106 af, Atten= 53%, Lag= 9.6 min
Primary = 0.66 cfs @ 12.24 hrs, Volume= 0.106 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 242.55' @ 12.24 hrs Surf.Area= 1,369 sf Storage= 1,551 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 155.3 min (935.6 - 780.3)

Volume	Invert	Avail.Storage	Storage Description
#1	241.00'	2,220 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
241.00	646	0	0
242.00	1,102	874	874
243.00	1,590	1,346	2,220

Device	Routing	Invert	Outlet Devices
#1	Primary	233.00'	**8.0" Round Culvert** L= 53.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 233.00' / 231.25' S= 0.0330 '/' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf
#2	Device 1	241.00'	**2.410 in/hr Exfiltration over Surface area**
#3	Device 1	242.40'	**12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.66 cfs @ 12.24 hrs HW=242.55' TW=230.52' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.66 cfs of 4.03 cfs potential flow)
  ├─**2=Exfiltration** (Exfiltration Controls 0.08 cfs)
  └─**3=Orifice/Grate** (Weir Controls 0.58 cfs @ 1.26 fps)

Summary for Link SP1: Study Point 1

Inflow Area = 1.333 ac, 74.87% Impervious, Inflow Depth = 4.47" for 25-YR event
Inflow = 5.23 cfs @ 12.08 hrs, Volume= 0.497 af
Primary = 5.23 cfs @ 12.08 hrs, Volume= 0.497 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Link SP2: Study Point 2

Inflow Area = 0.423 ac, 71.24% Impervious, Inflow Depth = 4.41" for 25-YR event
Inflow = 2.05 cfs @ 12.08 hrs, Volume= 0.156 af
Primary = 2.05 cfs @ 12.08 hrs, Volume= 0.156 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

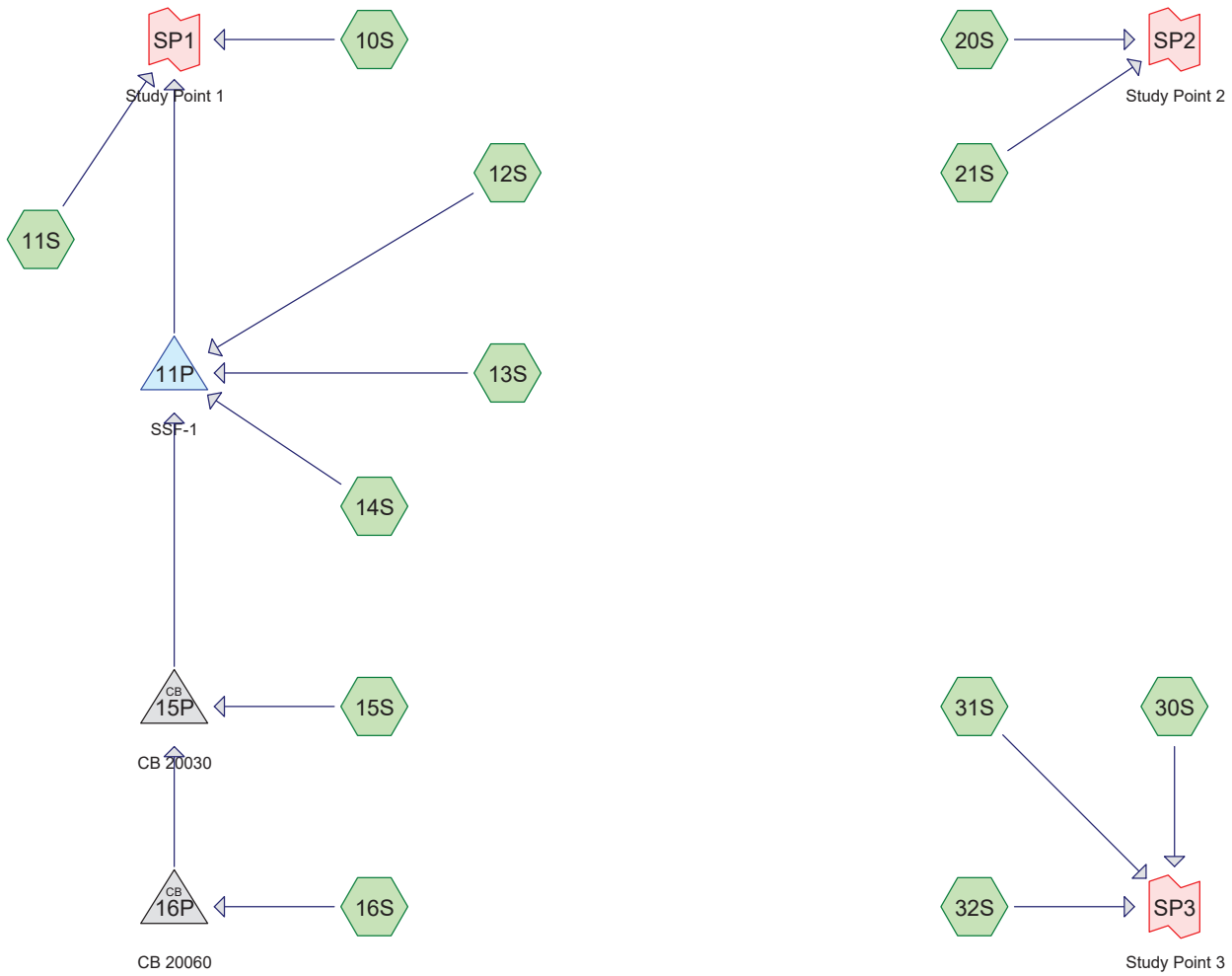
Summary for Link SP3: Study Point 3

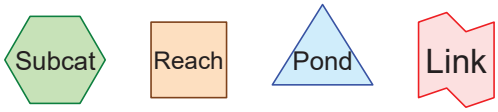
Inflow Area = 0.507 ac, 80.85% Impervious, Inflow Depth = 4.65" for 25-YR event
Inflow = 2.53 cfs @ 12.08 hrs, Volume= 0.197 af
Primary = 2.53 cfs @ 12.08 hrs, Volume= 0.197 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Appendix 2B

Hydrologic Modeling
Proposed Conditions
HydroCAD Summary





Routing Diagram for 20149 POST
Prepared by Sebago Technics, Inc., Printed 6/24/2020
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.491	74	>75% Grass cover, Good, HSG C (10S, 11S, 12S, 14S, 15S, 16S, 20S, 21S, 30S, 32S)
1.103	98	Paved parking, HSG C (10S, 11S, 12S, 14S, 15S, 16S, 20S, 21S, 30S, 32S)
0.669	98	Roofs, HSG C (13S, 31S)
2.263	**93**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
2.263	HSG C	10S, 11S, 12S, 13S, 14S, 15S, 16S, 20S, 21S, 30S, 31S, 32S
0.000	HSG D	
0.000	Other	
2.263		**TOTAL AREA**

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 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

Subcatchment10S: Runoff Area=4,145 sf 99.06% Impervious Runoff Depth=2.77"
Tc=6.0 min CN=98 Runoff=0.28 cfs 0.022 af

Subcatchment11S: Runoff Area=16,120 sf 67.07% Impervious Runoff Depth=1.98"
Tc=6.0 min CN=90 Runoff=0.85 cfs 0.061 af

Subcatchment12S: Runoff Area=3,400 sf 89.03% Impervious Runoff Depth=2.45"
Tc=6.0 min CN=95 Runoff=0.21 cfs 0.016 af

Subcatchment13S: Runoff Area=19,144 sf 100.00% Impervious Runoff Depth=2.77"
Tc=6.0 min CN=98 Runoff=1.28 cfs 0.101 af

Subcatchment14S: Runoff Area=14,286 sf 59.85% Impervious Runoff Depth=1.82"
Tc=6.0 min CN=88 Runoff=0.70 cfs 0.050 af

Subcatchment15S: Runoff Area=2,401 sf 92.92% Impervious Runoff Depth=2.55"
Tc=6.0 min CN=96 Runoff=0.15 cfs 0.012 af

Subcatchment16S: Runoff Area=3,825 sf 84.44% Impervious Runoff Depth=2.35"
Tc=6.0 min CN=94 Runoff=0.23 cfs 0.017 af

Subcatchment20S: Runoff Area=4,169 sf 56.80% Impervious Runoff Depth=1.82"
Tc=6.0 min CN=88 Runoff=0.20 cfs 0.015 af

Subcatchment21S: Runoff Area=9,933 sf 56.03% Impervious Runoff Depth=1.74"
Tc=6.0 min CN=87 Runoff=0.46 cfs 0.033 af

Subcatchment30S: Runoff Area=3,044 sf 85.12% Impervious Runoff Depth=2.35"
Tc=6.0 min CN=94 Runoff=0.19 cfs 0.014 af

Subcatchment31S: Runoff Area=10,000 sf 100.00% Impervious Runoff Depth=2.77"
Tc=6.0 min CN=98 Runoff=0.67 cfs 0.053 af

Subcatchment32S: Runoff Area=8,129 sf 68.47% Impervious Runoff Depth=1.98"
Tc=6.0 min CN=90 Runoff=0.43 cfs 0.031 af

Pond 11P: SSF-1 Peak Elev=232.55' Storage=5,345 cf Inflow=2.58 cfs 0.196 af
Outflow=0.10 cfs 0.196 af

Pond 15P: CB 20030 Peak Elev=234.63' Inflow=0.39 cfs 0.029 af
12.0" Round Culvert n=0.012 L=80.0' S=0.0152 '/' Outflow=0.39 cfs 0.029 af

Pond 16P: CB 20060 Peak Elev=234.67' Inflow=0.23 cfs 0.017 af
12.0" Round Culvert n=0.012 L=40.0' S=0.0122 '/' Outflow=0.23 cfs 0.017 af

Link SP1: Study Point 1 Inflow=1.21 cfs 0.279 af
Primary=1.21 cfs 0.279 af

Link SP2: Study Point 2 Inflow=0.67 cfs 0.048 af
Primary=0.67 cfs 0.048 af

Link SP3: Study Point 3 Inflow=1.28 cfs 0.098 af
Primary=1.28 cfs 0.098 af

Total Runoff Area = 2.263 ac Runoff Volume = 0.424 af Average Runoff Depth = 2.25"
21.71% Pervious = 0.491 ac 78.29% Impervious = 1.772 ac

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 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

Subcatchment10S: Runoff Area=4,145 sf 99.06% Impervious Runoff Depth=4.06"
Tc=6.0 min CN=98 Runoff=0.40 cfs 0.032 af

Subcatchment11S: Runoff Area=16,120 sf 67.07% Impervious Runoff Depth=3.20"
Tc=6.0 min CN=90 Runoff=1.35 cfs 0.099 af

Subcatchment12S: Runoff Area=3,400 sf 89.03% Impervious Runoff Depth=3.73"
Tc=6.0 min CN=95 Runoff=0.32 cfs 0.024 af

Subcatchment13S: Runoff Area=19,144 sf 100.00% Impervious Runoff Depth=4.06"
Tc=6.0 min CN=98 Runoff=1.85 cfs 0.149 af

Subcatchment14S: Runoff Area=14,286 sf 59.85% Impervious Runoff Depth=3.01"
Tc=6.0 min CN=88 Runoff=1.14 cfs 0.082 af

Subcatchment15S: Runoff Area=2,401 sf 92.92% Impervious Runoff Depth=3.84"
Tc=6.0 min CN=96 Runoff=0.23 cfs 0.018 af

Subcatchment16S: Runoff Area=3,825 sf 84.44% Impervious Runoff Depth=3.62"
Tc=6.0 min CN=94 Runoff=0.35 cfs 0.026 af

Subcatchment20S: Runoff Area=4,169 sf 56.80% Impervious Runoff Depth=3.01"
Tc=6.0 min CN=88 Runoff=0.33 cfs 0.024 af

Subcatchment21S: Runoff Area=9,933 sf 56.03% Impervious Runoff Depth=2.91"
Tc=6.0 min CN=87 Runoff=0.77 cfs 0.055 af

Subcatchment30S: Runoff Area=3,044 sf 85.12% Impervious Runoff Depth=3.62"
Tc=6.0 min CN=94 Runoff=0.28 cfs 0.021 af

Subcatchment31S: Runoff Area=10,000 sf 100.00% Impervious Runoff Depth=4.06"
Tc=6.0 min CN=98 Runoff=0.96 cfs 0.078 af

Subcatchment32S: Runoff Area=8,129 sf 68.47% Impervious Runoff Depth=3.20"
Tc=6.0 min CN=90 Runoff=0.68 cfs 0.050 af

Pond 11P: SSF-1 Peak Elev=233.65' Storage=6,856 cf Inflow=3.88 cfs 0.299 af
Outflow=0.95 cfs 0.299 af

Pond 15P: CB 20030 Peak Elev=234.70' Inflow=0.58 cfs 0.044 af
12.0" Round Culvert n=0.012 L=80.0' S=0.0152 '/' Outflow=0.58 cfs 0.044 af

Pond 16P: CB 20060 Peak Elev=234.75' Inflow=0.35 cfs 0.026 af
12.0" Round Culvert n=0.012 L=40.0' S=0.0122 '/' Outflow=0.35 cfs 0.026 af

Link SP1: Study Point 1 Inflow=1.85 cfs 0.430 af
Primary=1.85 cfs 0.430 af

Link SP2: Study Point 2 Inflow=1.10 cfs 0.079 af
Primary=1.10 cfs 0.079 af

Link SP3: Study Point 3 Inflow=1.92 cfs 0.149 af
Primary=1.92 cfs 0.149 af

Total Runoff Area = 2.263 ac Runoff Volume = 0.659 af Average Runoff Depth = 3.49"
21.71% Pervious = 0.491 ac 78.29% Impervious = 1.772 ac

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 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

Subcatchment10S: Runoff Area=4,145 sf 99.06% Impervious Runoff Depth=5.16"
Tc=6.0 min CN=98 Runoff=0.50 cfs 0.041 af

Subcatchment11S: Runoff Area=16,120 sf 67.07% Impervious Runoff Depth=4.26"
Tc=6.0 min CN=90 Runoff=1.78 cfs 0.131 af

Subcatchment12S: Runoff Area=3,400 sf 89.03% Impervious Runoff Depth=4.82"
Tc=6.0 min CN=95 Runoff=0.40 cfs 0.031 af

Subcatchment13S: Runoff Area=19,144 sf 100.00% Impervious Runoff Depth=5.16"
Tc=6.0 min CN=98 Runoff=2.32 cfs 0.189 af

Subcatchment14S: Runoff Area=14,286 sf 59.85% Impervious Runoff Depth=4.05"
Tc=6.0 min CN=88 Runoff=1.51 cfs 0.111 af

Subcatchment15S: Runoff Area=2,401 sf 92.92% Impervious Runoff Depth=4.93"
Tc=6.0 min CN=96 Runoff=0.29 cfs 0.023 af

Subcatchment16S: Runoff Area=3,825 sf 84.44% Impervious Runoff Depth=4.70"
Tc=6.0 min CN=94 Runoff=0.45 cfs 0.034 af

Subcatchment20S: Runoff Area=4,169 sf 56.80% Impervious Runoff Depth=4.05"
Tc=6.0 min CN=88 Runoff=0.44 cfs 0.032 af

Subcatchment21S: Runoff Area=9,933 sf 56.03% Impervious Runoff Depth=3.95"
Tc=6.0 min CN=87 Runoff=1.03 cfs 0.075 af

Subcatchment30S: Runoff Area=3,044 sf 85.12% Impervious Runoff Depth=4.70"
Tc=6.0 min CN=94 Runoff=0.36 cfs 0.027 af

Subcatchment31S: Runoff Area=10,000 sf 100.00% Impervious Runoff Depth=5.16"
Tc=6.0 min CN=98 Runoff=1.21 cfs 0.099 af

Subcatchment32S: Runoff Area=8,129 sf 68.47% Impervious Runoff Depth=4.26"
Tc=6.0 min CN=90 Runoff=0.90 cfs 0.066 af

Pond 11P: SSF-1 Peak Elev=233.84' Storage=7,041 cf Inflow=4.97 cfs 0.388 af
Outflow=3.36 cfs 0.388 af

Pond 15P: CB 20030 Peak Elev=234.75' Inflow=0.74 cfs 0.057 af
12.0" Round Culvert n=0.012 L=80.0' S=0.0152 '/' Outflow=0.74 cfs 0.057 af

Pond 16P: CB 20060 Peak Elev=234.82' Inflow=0.45 cfs 0.034 af
12.0" Round Culvert n=0.012 L=40.0' S=0.0122 '/' Outflow=0.45 cfs 0.034 af

Link SP1: Study Point 1 Inflow=4.94 cfs 0.560 af
Primary=4.94 cfs 0.560 af

Link SP2: Study Point 2 Inflow=1.47 cfs 0.107 af
Primary=1.47 cfs 0.107 af

Link SP3: Study Point 3 Inflow=2.47 cfs 0.192 af
Primary=2.47 cfs 0.192 af

Total Runoff Area = 2.263 ac Runoff Volume = 0.860 af Average Runoff Depth = 4.56"
21.71% Pervious = 0.491 ac 78.29% Impervious = 1.772 ac

Summary for Subcatchment 10S:

Runoff = 0.50 cfs @ 12.08 hrs, Volume= 0.041 af, Depth= 5.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (sf)	CN	Description
4,106	98	Paved parking, HSG C
39	74	>75% Grass cover, Good, HSG C
4,145	98	Weighted Average
39		0.94% Pervious Area
4,106		99.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Min Tc Time**

Summary for Subcatchment 11S:

Runoff = 1.78 cfs @ 12.08 hrs, Volume= 0.131 af, Depth= 4.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (sf)	CN	Description
10,812	98	Paved parking, HSG C
5,308	74	>75% Grass cover, Good, HSG C
16,120	90	Weighted Average
5,308		32.93% Pervious Area
10,812		67.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Min Tc Time**

Summary for Subcatchment 12S:

Runoff = 0.40 cfs @ 12.08 hrs, Volume= 0.031 af, Depth= 4.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (sf)	CN	Description
3,027	98	Paved parking, HSG C
373	74	>75% Grass cover, Good, HSG C
3,400	95	Weighted Average
373		10.97% Pervious Area
3,027		89.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Min Tc Time**

Summary for Subcatchment 13S:

Runoff = 2.32 cfs @ 12.08 hrs, Volume= 0.189 af, Depth= 5.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (sf)	CN	Description
19,144	98	Roofs, HSG C
19,144		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Min Tc Time**

Summary for Subcatchment 14S:

Runoff = 1.51 cfs @ 12.09 hrs, Volume= 0.111 af, Depth= 4.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (sf)	CN	Description
8,550	98	Paved parking, HSG C
5,736	74	>75% Grass cover, Good, HSG C
14,286	88	Weighted Average
5,736		40.15% Pervious Area
8,550		59.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Min Tc Time**

Summary for Subcatchment 15S:

Runoff = 0.29 cfs @ 12.08 hrs, Volume= 0.023 af, Depth= 4.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (sf)	CN	Description
2,231	98	Paved parking, HSG C
170	74	>75% Grass cover, Good, HSG C
2,401	96	Weighted Average
170		7.08% Pervious Area
2,231		92.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Min Tc Time**

Summary for Subcatchment 16S:

Runoff = 0.45 cfs @ 12.08 hrs, Volume= 0.034 af, Depth= 4.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (sf)	CN	Description
3,230	98	Paved parking, HSG C
595	74	>75% Grass cover, Good, HSG C
3,825	94	Weighted Average
595		15.56% Pervious Area
3,230		84.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Min Tc Time**

Summary for Subcatchment 20S:

Runoff = 0.44 cfs @ 12.09 hrs, Volume= 0.032 af, Depth= 4.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (sf)	CN	Description
1,801	74	>75% Grass cover, Good, HSG C
2,368	98	Paved parking, HSG C
4,169	88	Weighted Average
1,801		43.20% Pervious Area
2,368		56.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Min Tc Time**

Summary for Subcatchment 21S:

Runoff = 1.03 cfs @ 12.09 hrs, Volume= 0.075 af, Depth= 3.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (sf)	CN	Description
4,368	74	>75% Grass cover, Good, HSG C
5,565	98	Paved parking, HSG C
9,933	87	Weighted Average
4,368		43.97% Pervious Area
5,565		56.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Min Tc Time**

Summary for Subcatchment 30S:

Runoff = 0.36 cfs @ 12.08 hrs, Volume= 0.027 af, Depth= 4.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (sf)	CN	Description
2,591	98	Paved parking, HSG C
453	74	>75% Grass cover, Good, HSG C
3,044	94	Weighted Average
453		14.88% Pervious Area
2,591		85.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Min Tc Time**

Summary for Subcatchment 31S:

Runoff = 1.21 cfs @ 12.08 hrs, Volume= 0.099 af, Depth= 5.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (sf)	CN	Description
10,000	98	Roofs, HSG C
10,000		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Min Tc Time**

Summary for Subcatchment 32S:

Runoff = 0.90 cfs @ 12.08 hrs, Volume= 0.066 af, Depth= 4.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (sf)	CN	Description
2,563	74	>75% Grass cover, Good, HSG C
5,566	98	Paved parking, HSG C
8,129	90	Weighted Average
2,563		31.53% Pervious Area
5,566		68.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Min Tc Time**

Summary for Pond 11P: SSF-1

Inflow Area = 0.988 ac, 84.03% Impervious, Inflow Depth = 4.71" for 25-YR event
Inflow = 4.97 cfs @ 12.08 hrs, Volume= 0.388 af
Outflow = 3.36 cfs @ 12.17 hrs, Volume= 0.388 af, Atten= 33%, Lag= 5.1 min
Primary = 3.36 cfs @ 12.17 hrs, Volume= 0.388 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 233.84' @ 12.17 hrs Surf.Area= 4,560 sf Storage= 7,041 cf
Flood Elev= 236.75' Surf.Area= 4,599 sf Storage= 7,415 cf

Plug-Flow detention time= 435.7 min calculated for 0.388 af (100% of inflow)
Center-of-Mass det. time= 435.4 min (1,200.5 - 765.1)

Volume	Invert	Avail.Storage	Storage Description
#1B	230.30'	2,569 cf	**34.75'W x 60.58'L x 3.92'H Field B Z=0.5** 8,996 cf Overall - 2,573 cf Embedded = 6,423 cf x 40.0% Voids
#2B	231.22'	2,573 cf	**ADS_StormTech SC-740 +Cap** x 56 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 56 Chambers in 7 Rows
#3	227.60'	2,273 cf	**Sand Filter/ UD layer (Prismatic)** Listed below (Recalc)
		7,415 cf	Total Available Storage

Storage Group B created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
227.60	2,105	0.0	0	0
227.61	2,105	40.0	8	8
230.29	2,105	40.0	2,257	2,265
230.30	2,105	40.0	8	2,273

Device	Routing	Invert	Outlet Devices
#1	Primary	227.50'	**12.0" Round Culvert** L= 64.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 227.50' / 227.15' S= 0.0055 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	227.60'	**1.3" Vert. UD Bleeder** C= 0.600
#3	Device 1	233.55'	**6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#4	Device 1	232.70'	**3.0" Vert. Weir Orifice** C= 0.600
#5	Device 2	227.60'	**6.0" Round UD Header Pipe** L= 3.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 227.60' / 227.60' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#6	Device 5	227.60'	**2.410 in/hr Filtration over Surface area**

Primary OutFlow Max=3.36 cfs @ 12.17 hrs HW=233.84' TW=0.00' (Dynamic Tailwater)
- **1=Culvert** (Passes 3.36 cfs of 8.02 cfs potential flow)
  - **2=UD Bleeder** (Orifice Controls 0.11 cfs @ 11.97 fps)
    - **5=UD Header Pipe** (Passes 0.11 cfs of 2.31 cfs potential flow)
      - **6=Filtration** (Passes 0.11 cfs of 0.25 cfs potential flow)
  - **3=Sharp-Crested Rectangular Weir** (Weir Controls 3.01 cfs @ 1.76 fps)
  - **4=Weir Orifice** (Orifice Controls 0.24 cfs @ 4.85 fps)

Summary for Pond 15P: CB 20030

Inflow Area = 0.143 ac, 87.71% Impervious, Inflow Depth = 4.79" for 25-YR event
Inflow = 0.74 cfs @ 12.09 hrs, Volume= 0.057 af
Outflow = 0.74 cfs @ 12.09 hrs, Volume= 0.057 af, Atten= 0%, Lag= 0.0 min
Primary = 0.74 cfs @ 12.09 hrs, Volume= 0.057 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 234.75' @ 12.09 hrs
Flood Elev= 239.49'

Device	Routing	Invert	Outlet Devices
#1	Primary	234.32'	**12.0" Round Culvert** L= 80.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 234.32' / 233.10' S= 0.0152 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.73 cfs @ 12.09 hrs HW=234.75' TW=233.12' (Dynamic Tailwater)
- **1=Culvert** (Inlet Controls 0.73 cfs @ 2.24 fps)

Summary for Pond 16P: CB 20060

Inflow Area = 0.088 ac, 84.44% Impervious, Inflow Depth = 4.70" for 25-YR event
Inflow = 0.45 cfs @ 12.08 hrs, Volume= 0.034 af
Outflow = 0.45 cfs @ 12.09 hrs, Volume= 0.034 af, Atten= 0%, Lag= 0.2 min
Primary = 0.45 cfs @ 12.09 hrs, Volume= 0.034 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 234.82' @ 12.09 hrs
Flood Elev= 239.34'

Device	Routing	Invert	Outlet Devices
#1	Primary	234.20'	**12.0" Round Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 234.20' / 233.71' S= 0.0122 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.44 cfs @ 12.09 hrs HW=234.82' TW=234.75' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 0.44 cfs @ 1.25 fps)

Summary for Link SP1: Study Point 1

Inflow Area = 1.454 ac, 80.70% Impervious, Inflow Depth = 4.62" for 25-YR event
Inflow = 4.94 cfs @ 12.16 hrs, Volume= 0.560 af
Primary = 4.94 cfs @ 12.16 hrs, Volume= 0.560 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link SP2: Study Point 2

Inflow Area = 0.324 ac, 56.25% Impervious, Inflow Depth = 3.98" for 25-YR event
Inflow = 1.47 cfs @ 12.09 hrs, Volume= 0.107 af
Primary = 1.47 cfs @ 12.09 hrs, Volume= 0.107 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Summary for Link SP3: Study Point 3

Inflow Area = 0.486 ac, 85.76% Impervious, Inflow Depth = 4.75" for 25-YR event
Inflow = 2.47 cfs @ 12.08 hrs, Volume= 0.192 af
Primary = 2.47 cfs @ 12.08 hrs, Volume= 0.192 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Appendix 3

Inspection, Maintenance and Housekeeping Plan

INSPECTION, MAINTENANCE, AND HOUSEKEEPING PLAN
CMHC Cancer Center
Lewiston, Maine

Introduction

The following plan outlines the anticipated inspection, maintenance, and housekeeping procedures for the erosion and sedimentation controls as well as stormwater management devices for the project site. Also, this plan outlines several housekeeping requirements that shall be followed during and after construction. These procedures should be followed in order to ensure the intended function of the designed measures and to prevent unreasonable adverse impacts to the surrounding environment.

The procedures outlined in this Inspection, Maintenance, and Housekeeping Plan are provided as an overview of the anticipated practices to be used on this site during and after construction. In some instances, additional measures may be required due to unexpected conditions. For additional details on any of the erosion and sedimentation control measures or stormwater management devices to be utilized on this project, refer to the most recently revised edition of the "Maine Erosion and Sedimentation Control BMP" manual and/or the "Stormwater Management for Maine: Best Management Practices" manual as published by the Maine Department of Environmental Protection (MDEP).

During Construction

1. **Inspection:** During the construction process, it is the contractor's responsibility to comply with the inspection and maintenance procedures outlined in this section. These responsibilities include inspecting disturbed and impervious areas, erosion control measures, materials storage areas that are exposed to precipitation, and locations where vehicles enter or exit the site. These areas shall be inspected at least once a week as well as before and after a storm event, and prior to completing permanent stabilization measures. A person with knowledge of erosion and stormwater control, including the standards and conditions in any applicable permits, shall conduct the inspections.

2. **Maintenance:** All measures shall be maintained in an effective operating condition until areas are permanently stabilized. If Best Management Practices (BMPs) need to be maintained or modified, additional BMPs are necessary, or other corrective action is needed, implementation must be completed within seven (7) calendar days and prior to any storm event (rainfall).

3. **Documentation:** A log summarizing the inspections and any corrective action taken must be maintained on-site. Corrective action shall be performed in general conformance with the Maine Construction General Permit and Maine DEP Chapter 500 Stormwater standards. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of erosion and sedimentation controls, material storage areas, and vehicle access points to the site. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and locations where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken. The log must be made accessible to the appropriate regulatory agency upon request. The permittee shall retain a copy of the log for a period of at least three years from the completion of permanent stabilization.

4. **Specific Inspection and Maintenance Tasks:** The following is a list of erosion control and stormwater management measures and the specific inspection and maintenance tasks to be performed during construction.

A. Filter Berms:

- Hay bale barriers, silt fences, and filter berms shall be inspected immediately after each rainfall and at least daily during prolonged rainfall.
- If the fabric on a silt fence or filter barrier should decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, it shall be replaced.
- Sediment deposits should be removed after each storm event. They must be removed before deposits reach approximately one-half the height of the barrier.
- Filter berms shall 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.

B. Stone Check Dams:

- Inspect the center of the dam to make sure it is lower than the edges. Erosion caused by high flows around the edges of the dam must be corrected.
- Sediment accumulation shall be removed prior to reaching half of the original design height.
- Areas beneath stone check dams must be seeded and mulched upon removal.

C. Riprap Materials:

- Once a riprap installation has been completed, it should require very little maintenance. It shall, however, be inspected periodically to determine if high flows have caused scour beneath the riprap or dislodged any of the stone.

D. Erosion Control Blankets:

- Inspect these reinforced areas semi-annually and after significant rainfall events for slumping, sliding, seepage, and scour. Pay close attention to unreinforced areas adjacent to the erosion control blankets which may experience accelerated erosion.
- Review all applicable inspection and maintenance procedures recommended by the specific blanket manufacturer. These tasks shall be included in addition to the requirements of this plan.

E. Stabilized Construction Entrances/Exits:

- The exit shall be maintained in a condition that will prevent tracking of sediment onto public right-of-ways.
- When the control pad becomes ineffective, the stone shall be removed along with the collected soil material. The entrance should then be reconstructed.

- Areas that have received mud-tracking or sediment deposits shall be swept or washed. Washing shall be done on an area stabilized with aggregate, which drains into an approved sediment-trapping device (not into storm drains, ditches, or waterways).

F. Temporary Seed and Mulch:

- Mulched areas should be inspected after rain events to check for rill erosion.
- If less than 90% of the soil surface is covered by mulch, additional mulch shall be applied in bare areas.
- In applications where seeding and mulch have been applied in conjunction with erosion control blankets, the blankets must be inspected after rain events for dislocation or undercutting.
- Mulch shall continue to be reapplied until 95% of the soil surface has established temporary vegetative cover.

G. Stabilized Temporary Drainage Swales:

- Sediment accumulation in the swale shall be removed once the cross section of the swale is reduced by 25%.
- The swales shall be inspected after rainfall events. Any evidence of sloughing of the side slopes or channel erosion shall be repaired and corrective action should be taken to prevent reoccurrence of the problem.
- In addition to the stabilized lining of the channel (i.e. erosion control blankets), stone check dams may be needed to further reduce channel velocity.

5. **Housekeeping:** The following general performance standards apply to the proposed project.

A. Spill Prevention: Controls must be used to prevent pollutants from being discharged from materials on-site, including storage practices to minimize exposure of the materials to stormwater, and appropriate spill prevention, containment, and response planning and implementation.

B. Groundwater Protection: During construction, liquid petroleum products and other hazardous materials with the potential to contaminate groundwater may not be stored or handled in areas of the site draining to an infiltration area. An "infiltration area" is any area of the site that by design or as a result of soils, topography and other relevant factors, accumulates runoff that infiltrates into the soil. Dikes, berms, sumps, and other forms of secondary containment that prevent discharge to groundwater may be used to isolate portions of the site for the purposes of storage and handling of these materials.

C. Fugitive Sediment and Dust: Actions must be taken to ensure that activities do not result in noticeable erosion of soils or fugitive dust emissions during or after construction. Oil may not be used for dust control.

D. Debris and Other Materials: Litter, construction debris, and chemicals exposed to stormwater must be prevented from becoming a pollutant source.

E. Trench or Foundation Dewatering: Trench dewatering is the removal of water from trenches, foundations, cofferdams, ponds, and other areas within the construction area that retain water after excavation. In most cases, the collected water is heavily silted and hinders correct and safe construction practices. The collected water must be removed from the ponded area, either through gravity or pumping, and must be spread through natural wooded buffers or removed to areas that are specifically designed to collect the maximum amount of sediment possible, like a cofferdam sedimentation basin. Avoid allowing the water to flow over disturbed areas of the site. Equivalent measures may be taken if approved.

Post-Construction

1. **Inspection:** After construction, it is the responsibility of the owner to comply with the inspection and maintenance procedures outlined in this section. All measures must be maintained in effective operating condition. A person with knowledge of erosion and stormwater control, including the standards and conditions in all applicable permits, shall conduct the inspections.

2. **Specific Inspection and Maintenance Tasks:** The following is a list of permanent erosion control and stormwater management measures and the inspection and maintenance tasks to be performed after construction.

A. Vegetated Areas:

- Inspect vegetated areas, particularly slopes and embankments, early in the growing season or after heavy rains to identify active or potential erosion problems.
- Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows.

B. Ditches, Swales and Other Open Channels:

- Inspect ditches, swales, level spreaders and other open stormwater channels in the spring, in the late fall, and after heavy rains to remove any obstructions to flow. Remove accumulated sediments and debris, remove woody vegetative growth that could obstruct flow, and repair any erosion of the ditch lining.
- Vegetated ditches must be mowed at least annually or otherwise maintained to control the growth of woody vegetation and maintain flow capacity.
- Any woody vegetation growing through riprap linings must also be removed. Repair any slumping side slopes as soon as practicable.
- If the ditch has a riprap lining, replace riprap in areas where any underlying filter fabric or underdrain gravel is showing through the stone or where stones have dislodged.

C. Winter Sanding:

- Clear accumulations of winter sand along access road at least once a year, preferably in the spring.

- Accumulations of sand along road shoulders may be removed by grading excess sand to the pavement edge and removing it manually or by a front-end loader or other acceptable method.

D. Culverts:

- Inspect culverts in the spring, in the late fall, and after heavy rains to remove any obstructions to flow.
- Remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit.
- Inspect and repair any erosion damage at the culvert's inlet and outlet.

E. Subsurface Sand Filter:

- Follow Operation & Maintenance procedures per manufacturer.
- Inspect the site monthly for the first few months after construction. Then inspections can occur on an annual basis, preferably after rain events when clogging will be obvious.
- Make any repairs necessary to ensure the measure is operating properly.
- Regular maintenance is necessary to remove surface sediment, trash, debris, and leaf litter.
- Outlets and chambers need to be cleaned/repaired when drawdown times in the filter exceeds 36 hours.

3. Documentation:

A. A log summarizing the inspections and any corrective action taken must be maintained. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of controls. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and locations where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken. The log must be made accessible to the appropriate regulatory agency upon request. A sample "Stormwater Inspection and Maintenance Form" has been included as Attachment 1 of this Inspection, Maintenance, and Housekeeping Plan.

4. Maine DEP Recertification: A certification of the following shall be submitted to the MDEP within three months of the expiration of each five-year interval from the date of issuance of MDEP permits.

A. Identification and repair of erosion problems. All areas of the project site have been inspected for areas of erosion, and appropriate steps have been taken to permanently stabilize these areas.

B. Inspection and repair of stormwater control system. All aspects of the stormwater control system have been inspected for damage, wear, and malfunction, and appropriate steps have been taken to repair or replace the system, or portions of the system.

C. The Inspection, Maintenance, and Housekeeping Plan for the site is being implemented as written, or modifications to the plan have been submitted to and approved by the MDEP, and the maintenance log is being maintained.

5. **Duration of Maintenance:** Perform maintenance as described and required for any associated permits unless and until the system is formally accepted by a municipality or quasi-municipal district, or is placed under the jurisdiction of a legally created association that will be responsible for the maintenance of the system. If a municipality or quasi-municipal district chooses to accept a stormwater management system, or a component of a stormwater system, it must provide a letter to the MDEP stating that it assumes responsibility for the system. The letter must specify the components of the system for which the municipality or district will assume responsibility, and that the municipality or district agrees to maintain those components of the system in compliance with MDEP standards. Upon such assumption of responsibility, and approval by the MDEP, the municipality, quasi-municipal district, or association becomes a co-permittee for this purpose only and must comply with all terms and conditions of the permit.

Attachment: Attachment 1 – Sample Stormwater Inspection and Maintenance Form

Sample Stormwater Inspection and Maintenance Form
CMHC Cancer Center
Attachment 1

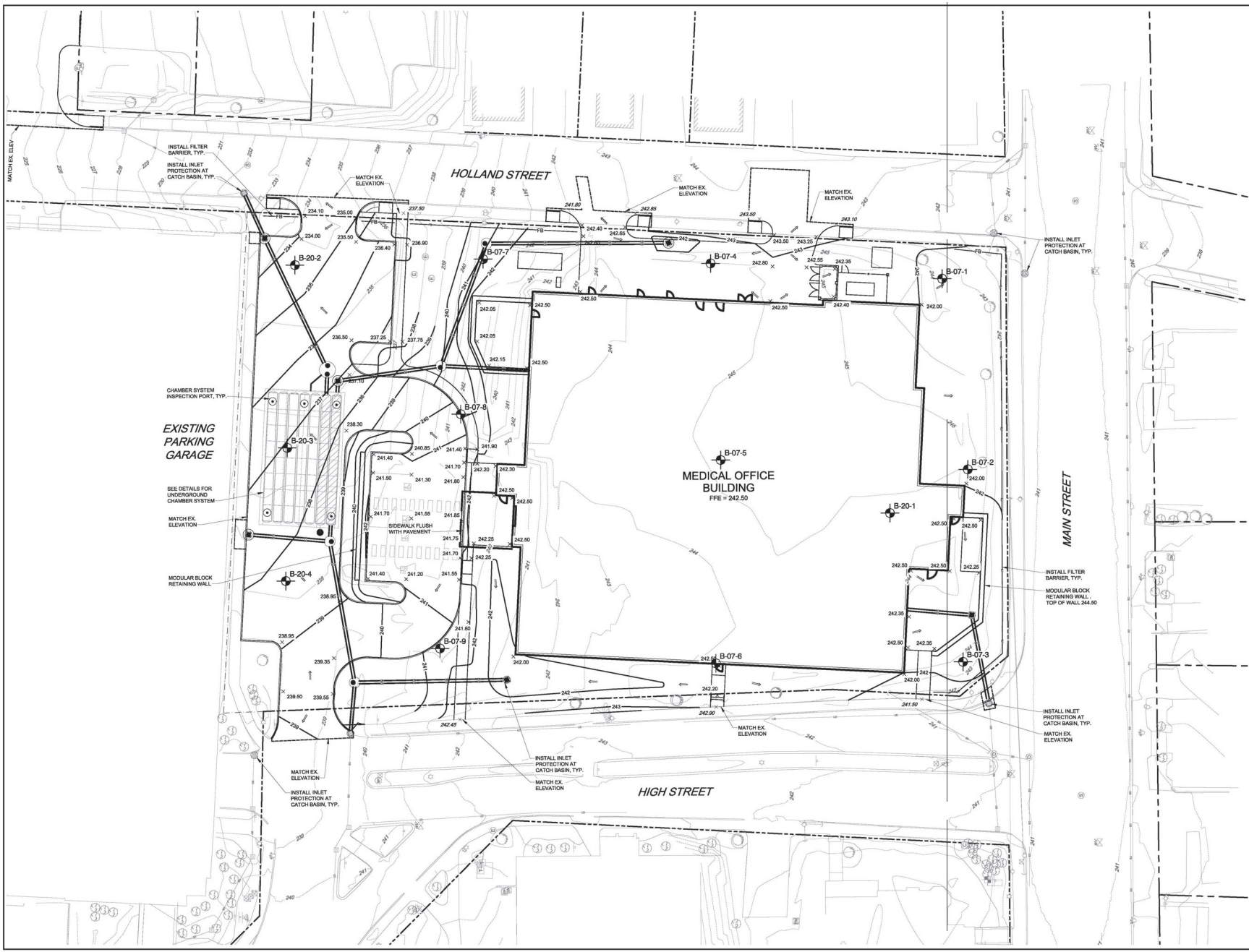
This log is intended to accompany the stormwater Inspection, Maintenance and Housekeeping Plan for the CMHC Cancer Center project in Lewiston, Maine. The following items shall be checked, cleaned and maintained on a regular basis as specified in the Maintenance Plan and as described in the table below. This log shall be kept on file for a minimum of five (5) years and shall be available for review. Qualified personnel familiar with drainage systems and soils shall perform all inspections. Attached is a copy of the construction and post-construction maintenance logs.

	INSPECTOR NAME	DATE PERFORMED	SUGGESTED INTERVAL
Vegetated Areas			
Inspect all slopes and embankments			Annually
Replant bare areas or areas with sparse growth			Annually
Paved Surfaces			
Clear accumulated winter sand			Annually
Remove sediment along edges and in pockets			Annually
Ditches & Swales			
Remove any obstructions and accumulated sediments and debris			Monthly
Repair any erosion of ditch lining			Annually
Mow vegetated ditches			Annually
Remove woody vegetation growing through riprap			Annually
Repair any slumping side slopes			Annually
Replace riprap where stones have dislodged			Annually
Catch Basins			
Remove accumulated sediments and debris in the sump and at grate			Annually
Culverts			
Remove accumulated sediments and debris at the inlet, outlet, within conduit			Annually
Repair any erosion at inlet and outlet			Annually
Sump Depth			Annually

	INSPECTOR NAME	DATE PERFORMED	SUGGESTED INTERVAL
Subsurface Sand Filter			
Inspection of subsurface structure following major storm events			Semi-Annually (during first year)
Inspection after major storm to ensure proper function			Monthly for first 3 months after construction, then Bi-Annually
Remove sediment and debris			Annually
Clean/repair outlets and chambers			When drawdown times in filter exceed 36 hrs

Appendix 4

Subsurface Investigations, NRCS Soils Map and FEMA Map



LEGEND:

APPROXIMATE BORING LOCATION

NOTES:

1. EXPLORATION LOCATION PLAN WAS PREPARED FROM A 1"=20' SCALE GRADING PLAN OF THE SITE, PREPARED BY SEBAGO TECHNICS, INC., RECEIVED VIA E-MAIL 06/10/2020.
2. BORINGS B-20-1 THROUGH B-20-10 WERE LOCATED IN THE FIELD BY MEASUREMENTS FROM EXISTING SITE FEATURES.
3. BORINGS B-07-1 THROUGH B-07-9 WERE PERFORMED UNDER THE DIRECTION OF S. W. COLE ENGINEERING, INC. IN FEBRUARY 2007.
4. THIS PLAN SHOULD BE USED IN CONJUNCTION WITH THE ASSOCIATED S. W. COLE ENGINEERING, INC. GEOTECHNICAL REPORT.
5. THE PURPOSE OF THIS PLAN IS ONLY TO DEPICT THE LOCATION OF THE EXPLORATIONS IN RELATION TO THE EXISTING CONDITIONS AND PROPOSED CONSTRUCTION AND IS NOT TO BE USED FOR CONSTRUCTION.

0 20 40 Feet

S.W. COLE ENGINEERING, INC.

BATEMAN PARTNERS LLC.

EXPLORATION LOCATION PLAN

PROPOSED MEDICAL OFFICE BUILDING & PARKING LOT
HOLLAND STREET
LEWISTON, MAINE

Job No.:	20-0154	Scale:	1" = 20
Date :	06/11/2020	Sheet:	2

E:\2020\20154\CAD\Drawings\20-0154-EP.dwg, 6/17/2020 7:42:34 AM, 1:1, CDM, S. W. Cole Engineering, Inc.

BORING LOG

S.W.COLE ENGINEERING, INC.

CLIENT: Bateman Partners LLC
PROJECT: Proposed Medical Office Building & Parking Lot
LOCATION: Holland Street, Lewiston, ME

BORING NO.: B-20- 2
SHEET: 1 of 1
PROJECT NO. 20-0154
DATE START: 5/29/2020
DATE FINISH: 5/29/2020

Drilling Information

LOCATION: See Exploration Location Plan
ELEVATION (FT): 234' +/-
TOTAL DEPTH (FT): 12.0
LOGGED BY: Evan Walker
DRILLING CO.: S. W. Cole Explorations, LLC
DRILLER: Kevin Hanscom
DRILLING METHOD: Solid Stem Auger
RIG TYPE: Track Mounted Diedrich D-50
AUGER ID/OD: N/A / 4 1/2 in
SAMPLER: Standard Split-Spoon
HAMMER TYPE: Automatic
HAMMER WEIGHT (lbs): 140
CASING ID/OD: N/A /N/A
CORE BARREL:
HAMMER EFFICIENCY FACTOR: 0.98
HAMMER DROP (inch): 30
WATER LEVEL DEPTHS (ft): All Soils Damp to Moist, No Free Water Observed
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:

Water Level
- ▽ At time of Drilling
- ▼ At Completion of Drilling
- ▼ After Drilling

D = Split Spoon Sample
U = Thin Walled Tube Sample
R = Rock Core Sample
V = Field Vane Shear

Pen. = Penetration Length
Rec. = Recovery Length
bpf = Blows per Foot
mpf = Minute per Foot

WOR = Weight of Rods
WOH = Weight of Hammer
RQD = Rock Quality Designation
PID = Photoionization Detector

S_v = Field Vane Shear Strength, kips/sq.ft.
q_u = Unconfined Compressive Strength, kips/sq.ft.
Ø = Friction Angle (Estimated)
N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
										0.3 Asphalt Pavement		
			1D		0.5-2.5	24/14	5-4-5-5			Loose to medium dense, brown, gravelly SAND, some silt, with clayey silt seams (FILL)		
			2D		2.5-4.5	24/18	6-5-5-5			2.5 Medium dense, brown, silty gravelly SAND (FILL)		
230	5		3D		5-7	24/18	3-4-6-19			6.5 Medium dense to dense, brown, gravelly silty SAND (Till)		
225	10		4D		10-12	24/18	11-16-17-15					

Bottom of Exploration at 12.0 feet

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING / WELL 20-0154.GPJ SWCE TEMPLATE.GDT 6/16/20

BORING LOG

S.W.COLE ENGINEERING, INC.

CLIENT: Bateman Partners LLC
PROJECT: Proposed Medical Office Building & Parking Lot
LOCATION: Holland Street, Lewiston, ME

BORING NO.: B-20- 3
SHEET: 1 of 1
PROJECT NO. 20-0154
DATE START: 5/29/2020
DATE FINISH: 5/29/2020

Drilling Information

LOCATION: See Exploration Location Plan **ELEVATION (FT):** 237' +/- **TOTAL DEPTH (FT):** 12.0 **LOGGED BY:** Evan Walker
DRILLING CO.: S. W. Cole Explorations, LLC **DRILLER:** Kevin Hanscom **DRILLING METHOD:** Solid Stem Auger
RIG TYPE: Track Mounted Diedrich D-50 **AUGER ID/OD:** N/A / 4 1/2 in **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic **HAMMER WEIGHT (lbs):** 140 **CASING ID/OD:** N/A /N/A **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: 0.98 **HAMMER DROP (inch):** 30
WATER LEVEL DEPTHS (ft): All Soils Damp to Moist, No Free Water Observed
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_U = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_2O Depth	Remarks
										0.3 3" Asphalt Pavement		
235			1D		0.4-2.4	24/12	8-9-11-7			Medium dense, brown, gravelly SAND, some silt (FILL)		
			2D		2.4-4.4	24/3	6-6-4-6					
	5		3D		5-7	24/20	7-8-11-12	q_P=9 ksf		4.0 Hard to stiff, brown, silty CLAY, with frequent sand seams		
230												
	10		4D		10-12	24/24	2-3-2-3	q_P=3 ksf				
225												

Bottom of Exploration at 12.0 feet

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING / WELL 20-0154.GPJ SWCE TEMPLATE.GDT 6/16/20

BORING LOG

S.W.COLE ENGINEERING, INC.

CLIENT: Bateman Partners LLC
PROJECT: Proposed Medical Office Building & Parking Lot
LOCATION: Holland Street, Lewiston, ME

BORING NO.: B-20- 4
SHEET: 1 of 1
PROJECT NO. 20-0154
DATE START: 5/29/2020
DATE FINISH: 5/29/2020

Drilling Information

LOCATION: See Exploration Location Plan **ELEVATION (FT):** 238' +/- **TOTAL DEPTH (FT):** 12.0 **LOGGED BY:** Evan Walker
DRILLING CO.: S. W. Cole Explorations, LLC **DRILLER:** Kevin Hanscom **DRILLING METHOD:** Solid Stem Auger
RIG TYPE: Track Mounted Diedrich D-50 **AUGER ID/OD:** N/A / 4 1/2 in **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic **HAMMER WEIGHT (lbs):** 140 **CASING ID/OD:** N/A /N/A **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: 0.98 **HAMMER DROP (inch):** 30
WATER LEVEL DEPTHS (ft): ▽ 11 ft Soils Moist Below 1', Saturated Below 11' +/-
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_U = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_2O Depth	Remarks
										0.3 3.5" Asphalt Pavement		
			1D		0.5-2.5	24/18	9-6-7-8			Medium dense, brown, SAND, some gravel, trace silt (FILL)		
235			2D		2.5-4.5	24/10	6-8-10-11			2.8 Medium dense, gray-brown, clayey SILT, with black organics (FILL)		
	5		3D		5-7	24/22	6-8-9-11	q_P=8-9 ksf		5.0 Very stiff to stiff, brown, silty CLAY, with frequent sand seams		
230												
	10		4D		10-12	24/24	4-4-6-8	q_P=5 ksf			▽	

Bottom of Exploration at 12.0 feet

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING / WELL 20-0154.GPJ SWCE TEMPLATE.GDT 6/16/20

Map Scale: 1:1,400 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 20 40 80 120

Feet: 0 50 100 200 300

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

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 1:15,800.

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: Androscoggin and Sagadahoc Counties, Maine
Survey Area Data: Version 20, Sep 16, 2019

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

Date(s) aerial images were photographed: Apr 18, 2012—Nov 1, 2016

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

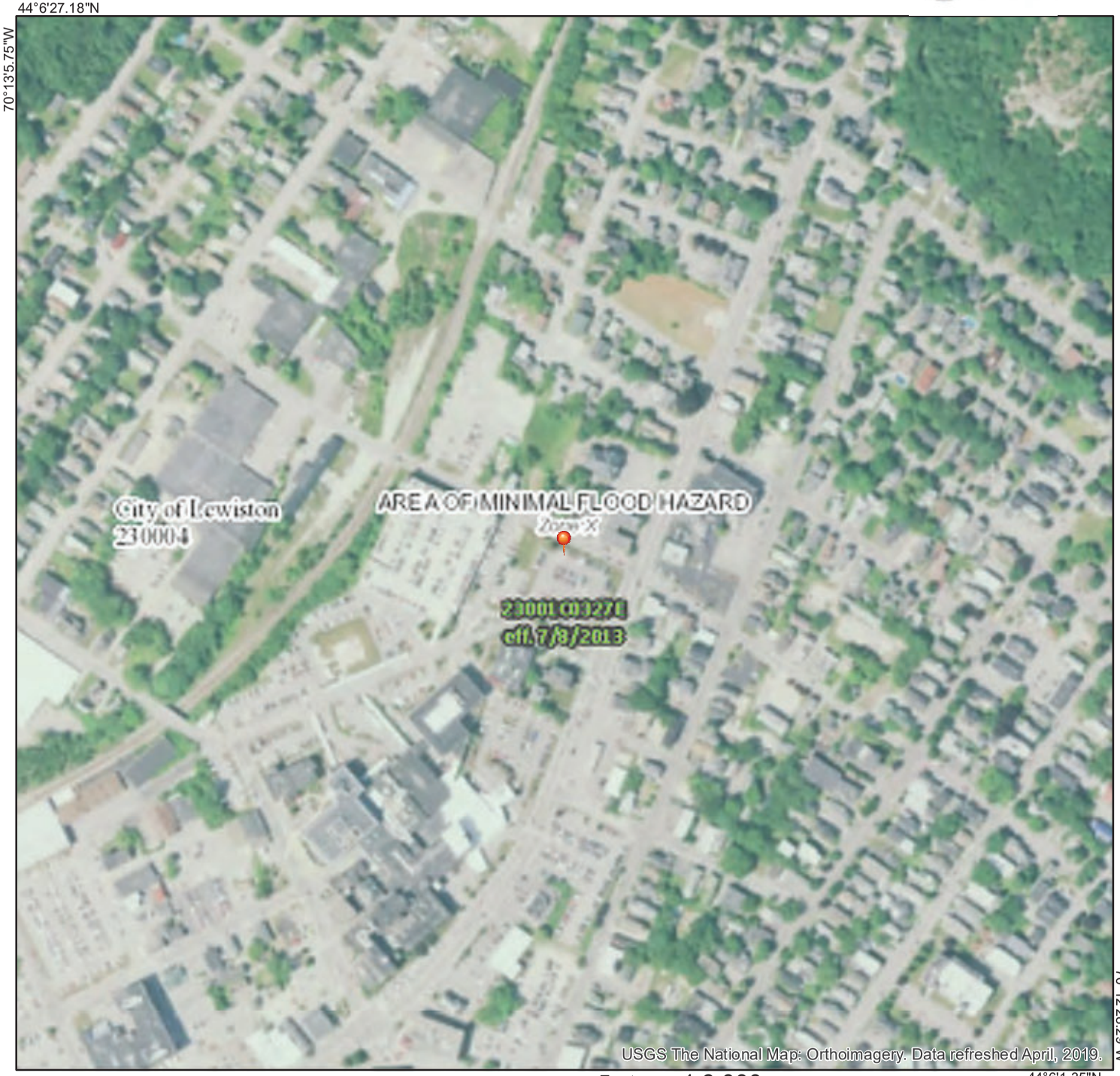
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Md	Made land, loamy materials	4.2	100.0%
Totals for Area of Interest		**4.2**	**100.0%**

National Flood Hazard Layer FIRMette

FEMA

44°6'27.18"N

70°13'5.75"W



70°12'28.29"W

44°6'1.35"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

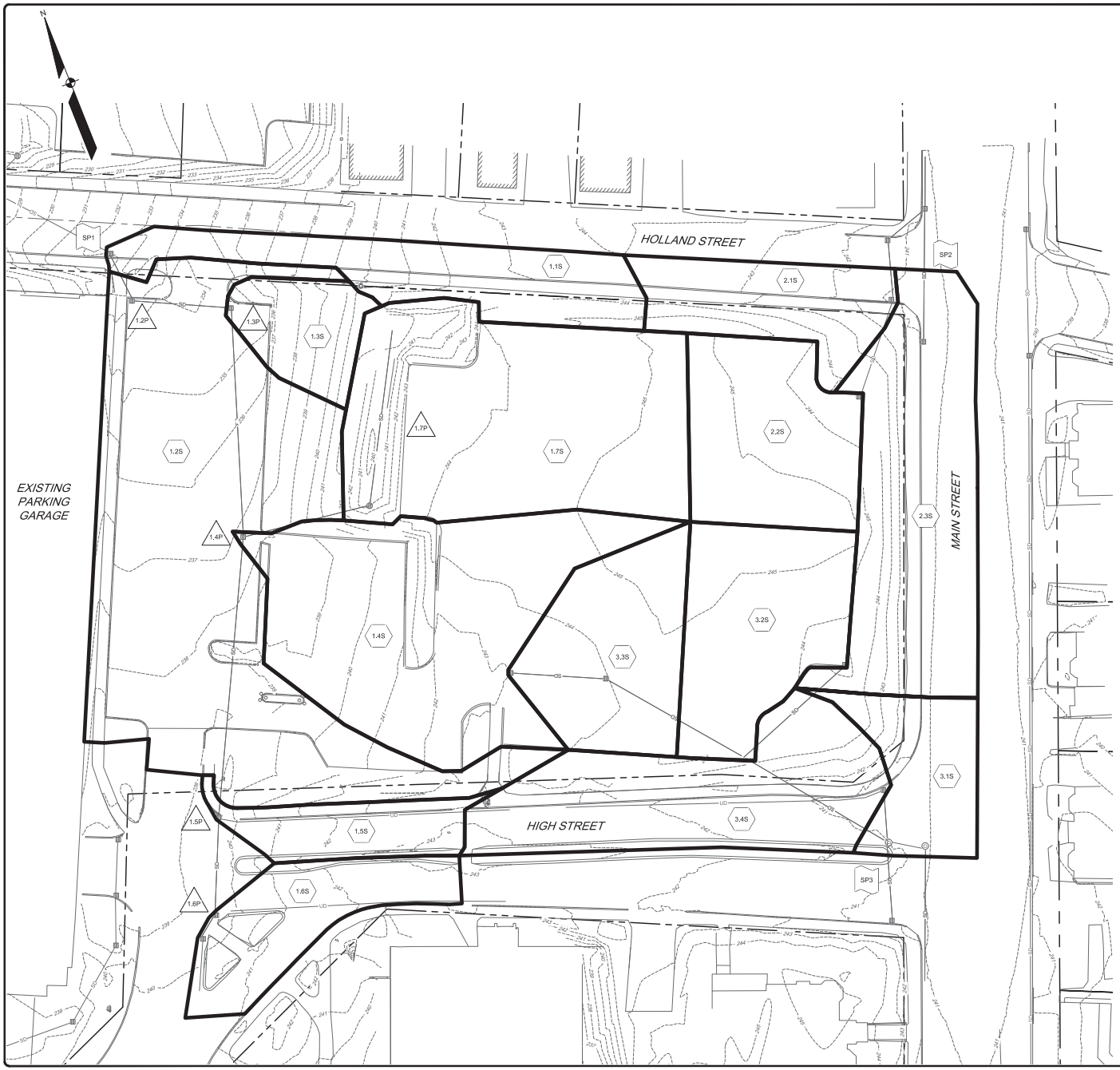
This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 4/26/2020 at 9:28:39 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Appendix 5

Stormwater Management Plans



SOIL TYPES

SYMBOL	SOIL TYPES	PHASE	SLOPE	HSG	DRAINAGE CLASS
Md	MADE LAND	LOAMY	0-35%	C	MODERATELY WELL DRAINED

NOTES:

1. ON-SITE SOIL INFORMATION IS BASED ON THE NATURAL RESOURCES CONSERVATION SERVICE (NRCS) CUSTOM SOIL RESOURCE REPORT FOR ANDROSCOGGIN AND SAGADAHOC COUNTIES, MAINE, DATED JUNE 8, 2020.

LEGEND

- WATERSHED BOUNDARY
- TIME OF CONCENTRATION (A – B)
- REACH
- 1S — WATERSHED LABEL
- 1R — REACH
- SP1 — STUDY POINT
- 1P — DETENTION POND
- HSG A / HSG B — SOILS BOUNDARY

GRAPHIC SCALE
(IN FEET)
1 INCH = 20 FT.

REV.	BY	DATE	STATUS
C	DLR	7/14/20	ISSUED FOR SITE PLAN REVIEW
B	DLR	6/29/20	ISSUED FOR: DESIGN DEVELOPMENT
A	DLR	5/29/20	ISSUED FOR: SCHEMATIC DESIGN

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite A
South Portland, ME 04106
Tel. 207-200-2100

DANIEL L. RILEY, PE # 9867
STATE OF MAINE
DANIEL L. RILEY
No. 9867
PROFESSIONAL ENGINEER
07/14/2020

DANIEL M. DAWKERS, RLA # 461

EXISTING CONDITIONS SWM PLAN

OF:

CMHC CANCER CENTER

MAIN, HIGH AND HOLLAND STREETS
LEWISTON, MAINE

FOR:

BATEMAN PARTNERS, LLC
470 FORE STREET, SUITE 400
PORTLAND, MAINE 04101

DESIGNED	ACH
DRAWN	ACH
CHECKED	DLR
DATE	04/30/2020
SCALE	1" = 20'
PROJECT	20149

SHEET 1 OF 2

2019SWMP Reg. TS&PPC

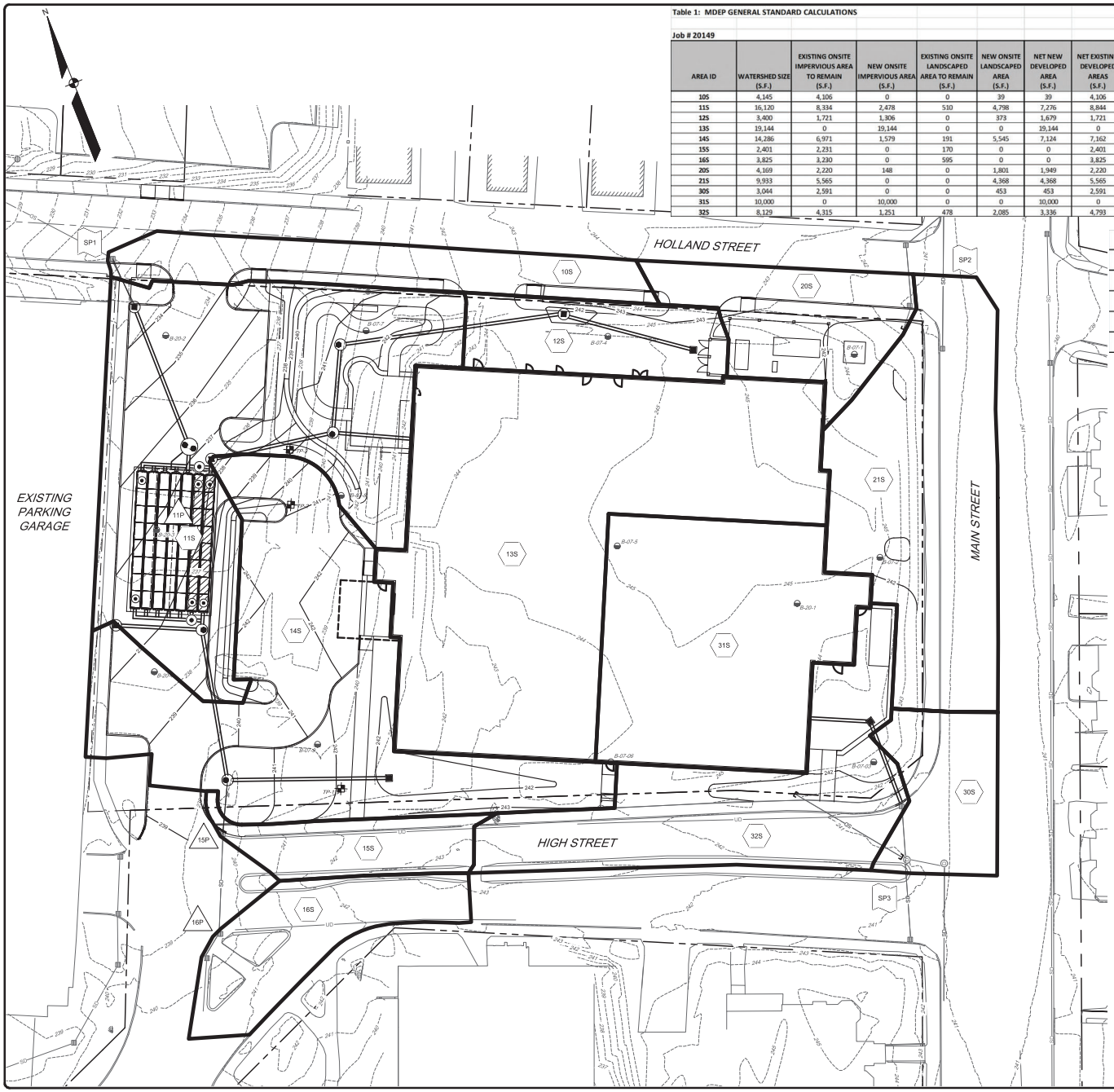


Table 1: MDEP GENERAL STANDARD CALCULATIONS

Job # 20149

AREA ID	WATERSHED SIZE (S.F.)	EXISTING ONSITE IMPERVIOUS AREA TO REMAIN (S.F.)	NEW ONSITE IMPERVIOUS AREA (S.F.)	EXISTING ONSITE LANDSCAPED AREA TO REMAIN (S.F.)	NEW ONSITE LANDSCAPED AREA (S.F.)	NET NEW DEVELOPED AREA (S.F.)	NET EXISTING DEVELOPED AREAS (S.F.)	NET UNDEVELOPED AREAS (S.F.)	TREATMENT PROVIDED?	EXISTING IMPERVIOUS AREA TREATED (S.F.)	IMPERVIOUS AREA TREATED (S.F.)	EXISTING LANDSCAPED AREA TREATED* (S.F.)	LANDSCAPED AREA TREATED (S.F.)	TOTAL DEVELOPED AREA TREATED (S.F.)	TREATMENT BMP
10S	4,145	4,106	0	0	39	39	4,106	0	NO	0	0	0	0	0	NONE
11S	16,120	8,334	2,478	510	4,798	7,276	8,844	510	NO	0	0	0	0	0	NONE
12S	3,400	1,721	1,306	0	373	1,679	1,721	0	YES	1,721	1,306	0	373	3,400	SSF-1
13S	19,144	0	19,144	0	0	19,144	0	0	YES	0	19,144	0	0	19,144	SSF-1
14S	14,286	6,971	1,579	191	5,545	7,124	7,162	191	YES	6,971	1,579	191	5,545	14,286	SSF-1
15S	2,401	2,231	0	170	0	0	2,401	170	YES	2,231	0	170	0	2,401	SSF-1
16S	3,825	3,230	0	595	0	0	3,825	595	YES	3,230	0	595	0	3,825	SSF-1
20S	4,169	2,220	148	0	1,801	1,949	2,220	0	NO	0	0	0	0	0	NONE
21S	9,933	5,565	0	0	4,368	4,368	5,565	0	NO	0	0	0	0	0	NONE
30S	3,044	2,591	0	0	453	453	2,591	0	NO	0	0	0	0	0	NONE
31S	10,000	0	10,000	0	0	10,000	0	0	NO	0	0	0	0	0	NONE
32S	8,129	4,315	1,251	478	2,085	3,336	4,793	478	NO	0	0	0	0	0	NONE

TOTAL NEW DEVELOPED AREA (S.F.)	55,368
EXISTING DEVELOPED AREA RECEIVING TREATMENT (S.F.)	15,109
NEW DEVELOPED AREA RECEIVING TREATMENT (S.F.)	27,947
TOTAL DEVELOPED AREA REQUIRING TREATMENT (S.F.) (50% of New Developed Area)	27,684
TOTAL DEVELOPED AREA RECEIVING TREATMENT (S.F.)	43,056
% OF DEVELOPED AREA RECEIVING TREATMENT	77.8%

SOIL TYPES

SYMBOL	SOIL TYPES	PHASE	SLOPE	HSG	DRAINAGE CLASS
Md	MADE LAND	LOAMY	0-35%	C	MODERATELY WELL DRAINED

NOTES:

1. ON-SITE SOIL INFORMATION IS BASED ON THE NATURAL RESOURCES CONSERVATION SERVICE (NRCS) CUSTOM SOIL RESOURCE REPORT FOR ANDROSCOGGIN AND SAGADAHOC COUNTIES, MAINE, DATED JUNE 8, 2020.

LEGEND

- WATERSHED BOUNDARY
- TIME OF CONCENTRATION (A – B)
- REACH
- 1S — WATERSHED LABEL
- 1R — REACH
- SP1 — STUDY POINT
- 1P — DETENTION POND
- HSG A / HSG B — SOILS BOUNDARY

GRAPHIC SCALE
(IN FEET)
1 INCH = 20 FT.

DANIEL D. DAWERS RLA # 415

STATE OF MAINE
DANIEL D. RILEY
No. 9997
PROFESSIONAL ENGINEER
10/14/2020

REV.	BY	DATE	ISSUED
B	DLR	6/26/20	ISSUED FOR DESIGN DEVELOPMENT
A	DLR	5/28/20	ISSUED FOR SCHEMATIC DESIGN

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite A
South Portland, ME 04106
Tel. 207-200-2100

PROPOSED CONDITIONS SWM PLAN

OF:

CMHC CANCER CENTER

MAIN, HIGH AND HOLLAND STREETS
LEWISTON, MAINE

FOR:

BATEMAN PARTNERS, LLC
470 FORE STREET, SUITE 400
PORTLAND, MAINE 04101

DESIGNED	ACH
DRAWN	ACH
CHECKED	DLR
DATE	04/30/2020
SCALE	1" = 20'
PROJECT	20149

SHEET 2 OF 2

20149SWP Reg 740 POST

Section 7

Lighting and Product Information

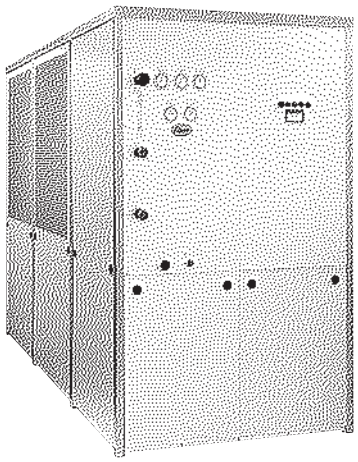
Section 7: Lighting and Product Information

Please see this Section and the plan set for lighting product information and plan.

Please see this Section for information on the proposed chiller.

CHILLER For [2] High Energy Varian Clinacs [7.5cl] 2100C/D, 2300C/D, 21EX, 23EX, iX, Trilogy & Novalis Tx, TrueBeam

Filtrine SINCE 1901



TYPICAL CHILLER

MODEL.....PCP-1500G-180-DUC
[2] SCROLL COMPRESSORS

FEATURES

- **Uses HFC "Ozone Safe" Refrigerant**
- **Optional Anodized Aluminum & Stainless Steel Exterior**

DESCRIPTION

A closed loop, packaged chiller designed specifically to cool **[2] High Energy Varian Clinacs [7.5cl] 2100C/D, 2300C/D, 21EX, 23EX, iX, Trilogy & Novalis Tx and True Beam** to recirculate a clean coolant at a constant temperature, pressure and flow. Ideal for all installations where a dependable source of clean cooling water is not available.

Filtrine PCP chillers use a storage-type cooling tank, with immersion coil evaporator, to provide close temperature control of recirculating coolants. The tank is sealed to prevent coolant evaporation or fouling, and supplied with a liquid level gauge, fill port and clean out. The pump recirculates the coolant at a constant temperature, pressure and flow.

The chiller is available in four standard configurations. The self-contained air cooled model should be installed in a well ventilated room. The water cooled model may be installed in a nonventilated room but requires a source of condenser cooling water. The remote air cooled model may be installed in a non-ventilated area with the condensers mounted outdoors. The weather-resistant model would be installed completely outdoors.

ENERGY SAVINGS OPTIONS
ENGINEERED TO REDUCE CHILLER OPERATING COSTS
Contact Filtrine For Details

START-UP and FIRST YEAR SERVICE
FILTRINE Mfg. Co. provides start-up and first year service on all parts and labor. Regular maintenance on a yearly contract basis is a wise investment and will prevent costly downtime.

WARRANTY
All parts are covered FOB jobsite for (12) months from the start date or (15) months from date of shipment or whichever comes first.

SERVICE MAKES THE DIFFERENCE
Recognizing that downtime on critical medical equipment is unacceptable, Filtrine has established a national network of qualified service technicians, selected because of their extensive experience working on medical equipment chillers and their location within the "Emergency Response Zone" (approximately 40 miles). This expert and quick service is available on an 8/5 or 24/7 basis for all Filtrine medical chillers and heat exchangers.

SPECIFICATIONS:

Cooling Capacity:
- Btu/hr 180,000
- Watts 52,755
- Rating Conditions:
- Coolant Discharge Temperature ..... 68ºF [20ºC]
- Ambient Air Temperature ..... 90ºF [32ºC]

Condensing Unit: Compressor HP ..... [2] 7-1/2
- Description: Dual scroll compressors with condenser as specified [see options below], supplied with high/low pressure stat, freeze control, pump-down solenoid valve, head and suction gauges, thermostatic expansion valve, refrigerant sight glass and dehydrator.

Condenser Options [see back for further details]:
- **-A** Self-contained air cooled condenser.
- **-W** Water cooled condenser.
- **-AR** Remote air cooled condenser.
- **-A-WP** Weather-resistant for outdoor installation.

Cooling Tank & Evaporator: Capacity ..... 170 Gals. [646 L]
- Construction: Welded stainless steel shell with stainless steel immersion coil evaporator. Tank tested at 250# for 125# working pressure, supplied with drain connection and insulated with closed cell thermo-elastomer with an R factor of 3.7.

Pump: Motor HP 2
- Capacity ..... 16 GPM @ 30 PSI [61 LPM @ 2 bar]
- Description: Stainless steel centrifugal pump mounted on a rubber pad over a stainless steel condensation tray and supplied with unions and service valves and a manual bypass valve. All piping and fittings brass, copper or bronze, and insulated with closed cell thermo-elastomer with an R factor of 3.7.

Adustable Differential Thermostat: ..... 40º to 90ºF [4º to 32ºC]
- Temperature Stability ..... ±1.5ºF [0.8ºC]

Cabinet: Enameled aluminum panels with stainless steel corner legs and top on a welded angle iron frame. Panels removable for access to all components.

Supply Power: ..... 208-230/60/3 or 460/60/3
- Full Load Amps ..... 60 or 30
- **NOTE**: FLA may vary depending on options. See MCA and MOP ratings on as-built unit.

Plumbing Connections In & Out ..... 1-1/2" MPT

Decibel Rating [nominal at 5 ft.] 74dBA

Shipping Weight ..... Chart on reverse

"Fail Safe" Options: [Designated by suffix]

- **-DPA** **DUAL PUMPS:** Automatic switchover to backup pump on loss of coolant.
- **-LL** **LOW LEVEL INTERLOCK:** Float switch in tank lights a warning light if coolant level drops below safe low limit.
- **-LF** **LOW FLOW INTERLOCK:** Flow switch lights a warning light if flow rate drops below safe low limit.
- **-HT** **HIGH TEMPERATURE INTERLOCK:** Thermostat lights a warning if coolant temperature rises above safe high limit.
- **-AS** **AUTOMATIC SWITCHOVER TO CITY WATER:** In case of pump or compressor failure, city water switchover solenoids are activated to allow for temporary cooling using city water.

FILTRINE Mfg Co • 15 Kit St. Keene, NH 03431 USA
800-930-3367 • 603-352-5500 • FAX 603-352-0330
WEB www.filtrine.com • EMAIL cool@filtrine.com

LABOR & PARTS

FILTRINE IS ISO 9001-2008 REGISTERED
PRODUCT LINE ETL APPROVED CE MARK AVAILABLE

CHILLER DIMENSIONS & WEIGHTS BASED ON STANDARD AMBIENT CONDITIONS [INDOOR UP TO 90ºF & OUTDOOR UP TO 100ºF]

CHILLER DIMENSIONS and WEIGHTS

FILTRINE MODEL NUMBER	W		D		H		SHIPPING WT	
	in	cm	in	cm	in	cm	lb	kg
PCP-1500G-A-DUC	136	346	54	137	80	203	3500	1575
PCP-1500G-W-DUC	104	264	52	132	70	178		
PCP-1500G-AR-DUC	104	264	52	132	70	178		
PCP-1500G-A-WP-DUC	136	346	54	137	80	203		
PCP-1500G-A-WP-LP-DUC*	140	356	87	221	44	112		

* LOW PROFILE , WEATHER-RESISTANT UNIT FOR ROOFTOP INSTALLATION
NOTE: Chiller dimensions and shipping weights may vary depending on options installed

STANDARD CONDENSER OPTIONS:

-A **SELF-CONTAINED AIR COOLED CONDENSER:**
With a lifetime lubricated welded hermetic compressor.

-W **WATER COOLED CONDENSER:**
Same specifications as self-contained air cooled models with water cooled condenser for hookup to city or tower water.

-A-WP **WEATHER-RESISTANT OUTDOOR INSTALLATION:**
Same specifications as self-contained air cooled models, but packaged for outdoor installation. [Not available in space saving design models.]

-A-WP-LP **WEATHER-RESISTANT OUTDOOR INSTALLATION-LOW PROFILE:**
Same specifications as weather-resistant model above but in low profile design for mounting on roof.

-AR **REMOTE AIR COOLED CONDENSER:**
Same specifications as self-contained air cooled models but with weather-resistant air cooled remote condenser furnished separately for mounting outdoors in ambients up to 100ºF. For higher ambients, see HA options. Consult factory for condenser specifications.

STANDARD OPERATING CONDITIONS:

INDOOR AMBIENT:
50º to 100ºF [10º to 38ºC]

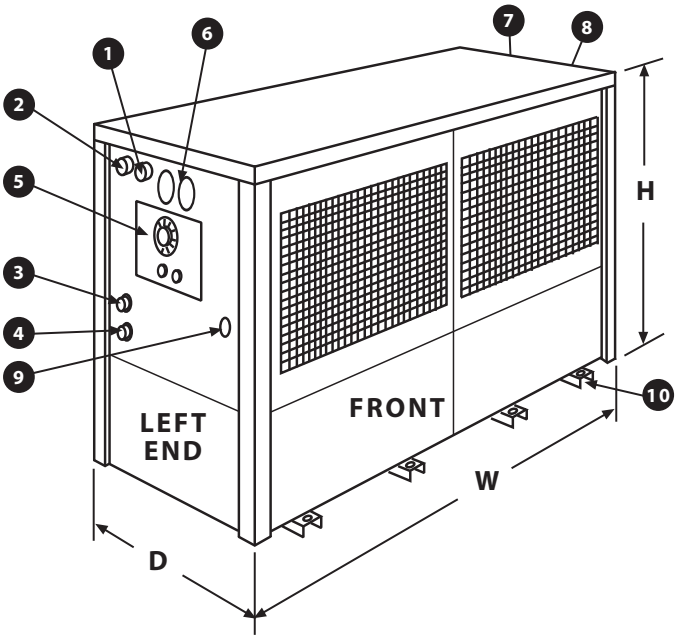
OUTDOOR AMBIENT:
-20º to 100ºF [-29º to 38ºC]

OPTIONAL OPERATING CONDITIONS:
OUTDOOR AMBIENT:
Up to 110ºF [43ºC]
Up to 120ºF [49ºC]

NOTE: Higher ambient options may affect unit dimensions.

All information given on this bulletin is for general use only. Please confirm specifications with factory for your specific requirement.

STANDARD MODELS— Suffix A, W, AR & A-WP



NOTE: Manufacturer recommends 36" for service access at front panel and 12" minimum clear space opposite all ventilation panels.

LEGEND

1. AirVent
2. Fill Port
3. Coolant Return
4. Coolant Discharge
5. Control Panel
6. Gauges
7. To Remote Condenser [AR models] Condenser Water Out [W models]
8. From Remote Condenser [AR models] Condenser Water In [W models]
9. Electrical Connection
10. Channel Skids

VENTILATION PANELS:
Standard models — air intake at rear, air discharge at right end on A & WP models.

REMOVABLE SERVICE PANELS:
Front & rear on all models

CHANNEL SKIDS:
Channel skids project 2" [5 cm] front and rear. Center of mounting holes located 6" [15 cm] from chiller end and 1" [2.5 cm] from chiller edge front and rear.

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DATE:	LOCATION:
TYPE:	PROJECT:
CATALOG #:	

VIPER S

SMALL VIPER LUMINAIRE

OPTICS STRIKE

FEATURES

- Small size companion to Viper Large
- Wide choice of different LED wattage configurations
- Nine optical distributions
- Designed to replace HID lighting up to 400W MH or HPS
- Suitable for wet locations

*3000K and warmer CCTs only

RELATED PRODUCTS

Viper Large

CONTROL TECHNOLOGY

NX DISTRIBUTED INTELLIGENCE™ wiSCAPE™ energeni SiteSync LIGHTING CONTROL

SPECIFICATIONS

CONSTRUCTION

- Manufactured with die cast aluminum
- Coated with a polyester finish that meets ASTM B117 corrosion test requirements and ASTM D522 cracking and loss of adhesion test requirements
- IFS polyester powder-coat electrostatically applied and thermocured. IFS finish consists of a five stage pretreatment regimen with a polymer primer sealer and top coated with a thermoset super TGIC polyester powder coat finish
- The finish meets the AAMA 2604 performance specification which includes passing a 3,000-hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D522 and resists surface impacts of up to 160 inch-pounds
- External hardware is corrosion resistant

OPTICS

- Cartridge is held together with internal brass standoffs soldered to the board so that it can be field replaced as a one-piece optical system
- One-piece silicone gasket ensures a weatherproof seal around each individual optic
- One-piece optical cartridge system consisting of an LED engine, optics, gasket and stainless steel bezel

INSTALLATION

- Mounting options for horizontal arm, vertical tenon or traditional arm mounting available. Mounting hardware included

ELECTRICAL

- Luminaire accepts 100V through 277V, 347V or 480V input 50 Hz to 60 Hz (UNV)
- Power factor is ≥ .90 at full load
- Dimming drivers are standard, but CD must be selected in options to obtain external wiring leads for dimming controls
- Component-to-component wiring within the luminaire may carry no more than 80% of rated load and is certified by UL for use at 600VAC at 90°C or higher
- Plug disconnects are certified by UL for use at 600 VAC, 13A or higher. 13A rating applies to primary (AC) side only
- Fixture electrical compartment contains all LED driver components
- Optional 7-pin ANSI C136.41-2013 Twist-Lock® photo control receptacle available. Compatible with ANSI C136.41 external wireless control devices
- Ambient operating temperature -40°C to 25°C
- Surge protection: 20kA
- Lifeshield™ Circuit (see Electrical Data)

CONTROLS

- Available with an optional passive infrared (PIR) motion sensor capable of detecting motion 360° around the luminaire. When no motion is detected for the specified time, the motion response system reduces the wattage to factory preset level, reducing the light level accordingly. When motion is detected by the PIR sensor, the luminaire returns to full wattage and full light output. Please contact Beacon Products if project requirements vary from standard configuration

CONTROLS (CONTINUED)

- Available with Energeni for optional set dimming, timed dimming with simple delay, or timed dimming based on time of night
- In addition, Viper can be specified with SiteSync™ wireless control system for reduction in energy and maintenance costs while optimizing light quality 24/7

CERTIFICATIONS

- DLC® (DesignLights Consortium) Qualified. Please refer to the DLC website for specific product qualifications at www.designlights.org
- Certified to UL 1598 and UL 8750
- 3G rated for ANSI C136.31 high vibration applications with MAF mounting
- IDA approved
- This product is approved by the Florida Fish and Wildlife Conservation Commission. Separate spec available online

WARRANTY

- 5 year warranty
- See HLI Commercial and Industrial Outdoor Lighting Warranty for additional information

KEY DATA	
Lumen Range	5400–16,216
Wattage Range	55–136
Efficacy Range (LPW)	100–124
Reported Life (Hours)	L70>60,000
Input Current Range (Amps)	0.1–1.1

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TYPE: | PROJECT:

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VIPER S

SMALL VIPER LUMINAIRE

ORDERING GUIDE

Example: VPS–24L–55–4K7–4W–UNV–A–DB–TL–GENI–04–BC

CATALOG #

Series		LED Engine		CCT/CRI [7]		Distribution		Rotation		Voltage	
VPS	Viper Small	**24L-55**	55W, LED array	**3K7**	3000K, 70 CRI	**FR**	Type 1/Front Row	**Blank**	No rotation	**UNV**	120–277V
		36L-65	65W, LED array	**4K7**	4000K, 70 CRI	**2**	Type 2	**L**	Optic rotation left [5]	**347**	347V
		36L-80	80W, LED array	**5K7**	5000K, 70 CRI	**3**	Type 3	**R**	Optic rotation right [5]	**480**	480V
		48L-110	110W, LED array			**4F (formerly 4)**	Type 4				
		60L-136	136W, LED array			**4W**	Type 4 Wide				
						5QM	Type 5QM				
						5R	Type 5R (rectangular)				
						5W	Type 5W (round wide)				
						TC	Tennis Court				

Mounting		Color		Control Options		Options	
A	Rectangular Arm (formerly RA) for square or round pole	**BLT**	Black Matte Textured	**7PR**	7-Pin Receptacle only (shorting cap, photo control, or wireless control provided by others)	**BC**	Backshield (available for FR, 2, 3, 4, 4W Optics)
MAF	Mast Arm Fitter (formerly SF2) for 2⅜" OD horizontal arm	**BLS**	Black Gloss Smooth	**7PR-SC**	7-Pin Receptacle w/Shorting Cap	**CD**	Continuous Dimming
K	Knuckle (formerly PK2) limit to 30° tilt or 2⅜" OD horizontal arm or vertical tenon	**DBT**	Dark Bronze Matte Textured	**7PR-TL**	7-Pin Receptacle w/Twist-Lock® photo control	**F**	Fusing
WB	Wall Bracket	**DBS**	Dark Bronze Gloss Smooth	**SCP/_F**	Programmable Occupancy Sensor w/ daylight control [1,2,6]	**TB**	Terminal Block
AD	Universal Arm for square pole	**GTT**	Graphite Matte Textured	**GENI-XX**	ENERGENI [3]		
AD3	Adapter for 2.4"–4.1" round pole	**LGS**	Light Grey Gloss Smooth	**SWP**	SiteSync Pre-Commission [1,4]		
AD4	Adapter for 4.2"–5.3" round pole	**PSS**	Platinum Silver Smooth	**SWPM_F**	SiteSync Pre-Commission w/ Sensor [1,2,4]		
AD5	Adapter for 5.5"–5.9" round pole	**WHT**	White Matte Textured				
AD6	Adapter for 6.0"–6.5" round pole	**WHS**	White Gloss Smooth				
		VGT	Verde Green Textured				
		Color Option					
		CC	Custom Color				

House Side Shield Accessories

- ☐ **HSS/VP-S/90-FB/XXX** 90° shield front or back
- ☐ **HSS/VP-S/90-LR/XXX** 90° shield left or right
- ☐ **HSS/VP-S/270-FB/XXX** 270° shield front or back
- ☐ **HSS/VP-S/270-LR/XXX** 270° shield left or right
- ☐ **HSS/VP-S/360/XXX** Full shield

Replace XXX with notation for desired finish color. Refer to page 8 for shield images.

Mounting Accessories

- ☐ **VPL-AD-RPA3** 2.4"–4.1" Round Pole Adapter for AD arm
- ☐ **VPL-AD-RPA4** 4.2"–5.3" Round Pole Adapter for AD arm
- ☐ **VPL-AD-RPA5** 5.5"–5.9" Round Pole Adapter for AD arm
- ☐ **VPL-AD-RPA6** 6.0"–6.5" Round Pole Adapter for AD arm

Notes:

1. Not available with other wireless control or sensor options
2. Specify mounting height; 8 = 8' or less, 40 = 9' to 40'
3. Specify routine setting code (example GENI-04). See ENERGENI brochure and instructions for setting table and options. Not available with sensor or SiteSync options
4. Specify group and zone at time of order. See www.hubbelllighting.com/sitesync for further details. Order at least one SiteSync interface accessory SWUSB or SWTAB. Each option contains SiteSync License, GUI, and Bridge Node
5. Only available with FR, 2, 3, 4, 4W and 5R distributions
6. Order at least one SCP-REMOTE per project location to program and control the occupancy sensor

Accessories and Services (Ordered Separately)

- ☐ **SCP-REMOTE** Remote Control for SCP/_F option. Order at least one per project to program and control the occupancy sensor
- ☐ **SWUSB*** SiteSync interface software loaded on USB flash drive for use with owner supplied PC (Windows based only). Includes SiteSync license, software and USB radio bridge node
- ☐ **SWTAB*** Windows tablet and SiteSync interface software. Includes tablet with preloaded software, SiteSync license and USB radio bridge node
- ☐ **SWBRG** SiteSync USB radio bridge node only. Order if a replacement is required or if an extra bridge node is requested
- ☐ **SW7PR+** SiteSync 7-Pin on fixture module On/Off/Dim, Daylight Sensor 120–480VAC
- ☐ **BIRD-SPIKE-3** Bird Spikes

* When ordering SiteSync at least one of these two interface options must be ordered per project.
\+ Available as a SiteSync retrofit solution for fixtures with an existing 7-pin receptacle.

Hubbell Control Solutions — Accessories (Sold Separately)

NX Distributed Intelligence™

- ☐ **NXOFM-1R1D-UNV** On-fixture Module (7-pin), On / Off / Dim, Daylight Sensor with HubbNET Radio and Bluetooth® Radio, 120–480VAC

wiSCAPE® Lighting Control

- ☐ **WIR-RME-L** On-fixture Module (7-pin or 5-pin), On / Off / Dim, Daylight Sensor with wiSCAPE Radio, 110–480VAC

For additional information related to these accessories please visit www.hubbellcontrolsolutions.com. Options provided for use with integrated sensor, please view specification sheet ordering information table for details.

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HUBBELL Lighting

VIPER S

SMALL VIPER LUMINAIRE

CONTROLS

SiteSync — Precommissioned Ordering Information:

When ordering a fixture with the SiteSync lighting control option, additional information will be required to complete the order. The SiteSync Commissioning Form or alternate schedule information must be completed. This form includes Project location, Group information, and Operating schedules. For more detailed information please visit the SiteSync family page on our website or contact Hubbell Lighting tech support at 864-678-1000.

SiteSync fixtures with Motion control (SWPM) require the mounting height of the fixture for selection of the lens.

Examples: VP-L/80L-235/4K7/3/UNV/A/DB/SWP/ SiteSync only
VP-L/80L-235/4K7/3/UNV/A/DB/SWPM-40F/ SiteSync with Motion Control

SiteSync 7-Pin Module:

- SiteSync features in a new form
- Available as an accessory for new construction or retrofit applications (with existing 7-Pin receptacle)
- Does not interface with occupancy sensors

SW7PR

NX Distributed Intelligence™ Lighting Controls:

Supports both indoor and outdoor applications in a variety of deployment options: wired, wireless and hybrid.
Integrates with and enables a wide array of luminaires including those with SpectraSync Color Tuning Technology.

NX Integrated Controls Reference								
NX Option	Sensor	Networkable	Scheduling	Occupancy	Daylight Harvesting	0–10V Dimming	On/off Control	Bluetooth® App Programming
NX Networked – Wireless								
NXOFM-1R1D-UNV	SCLNX	Yes	Yes	Yes	Yes	Yes	Yes	Yes, Bluetooth App

wiSCAPE™:

Supports remote management, monitoring and metering of outdoor wireless lighting applications such as smart campuses, smart cities, parking lots, parking lots and roadways.

wiSCAPE Reference								
wiSCAPE Option	Sensor	Networkable	Scheduling	Occupancy	Daylight Harvesting	0–10V Dimming	On/off Control	Bluetooth® App Programming
Networked – Wireless								
WIR-RME-L	WIR-RME-L	Yes	Yes	No	Yes	Yes	Yes	wiSCAPE Gateway

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TYPE: PROJECT:

CATALOG #:

VIPER S

SMALL VIPER LUMINAIRE

DELIVERED LUMENS

				5K (5000K nominal, 70 CRI)					4K (4000K nominal, 70 CRI)					3K (3000K nominal, 70 CRI)				
# of LEDs	DRIVE CURRENT (mA)	SYSTEM WATTS	DISTRIBUTION TYPE	LUMENS	LPW	B	U	G	LUMENS	LPW	B	U	G	LUMENS	LPW	B	U	G
24	700 mA	55W	FR	6357	118	1	0	1	6486	120	1	0	1	5804	107	1	0	1
			2	6132	114	1	0	1	6257	116	1	0	2	5599	104	1	0	1
			3	6015	111	1	0	2	6137	114	1	0	2	5492	102	1	0	2
			4	5921	110	1	0	2	6034	112	1	0	2	5400	100	1	0	2
			4W	5793	108	1	0	2	5909	110	1	0	2	5272	98	1	0	2
			5QM	6022	112	2	0	1	6145	114	2	0	1	5499	102	2	0	1
			5R	6063	112	3	0	3	6187	115	3	0	3	5536	103	3	0	3
			5W	5908	109	3	0	1	6028	112	3	0	1	5908	102	3	0	1
			TC	6183	113	1	0	1	6309	118	1	0	1	5645	105	1	0	1
36	560 mA	65W	FR	7864	121	1	0	1	8041	124	1	0	1	7189	111	1	0	1
			2	7586	117	1	0	2	7757	119	1	0	2	6934	107	1	0	2
			3	7441	114	1	0	2	7609	117	1	0	2	6802	105	1	0	2
			4	7317	110	1	0	2	7482	112	1	0	2	6688	100	1	0	2
			4W	8690	108	1	0	2	8864	110	1	0	2	7908	98	1	0	2
			5QM	7450	115	3	0	1	7618	117	3	0	1	6810	105	3	0	1
			5R	7501	115	3	0	3	7670	118	3	0	3	6857	105	3	0	3
			5W	7309	112	3	0	2	7473	115	3	0	2	6681	103	3	0	1
36	700 mA	80W	FR	9535	118	1	0	1	9730	120	1	0	1	8706	107	1	0	1
			2	9197	114	1	0	2	9385	116	1	0	2	8398	104	1	0	2
			3	9022	111	1	0	2	9206	114	1	0	2	8238	102	1	0	2
			4	8871	110	1	0	2	9052	112	1	0	2	8100	100	1	0	2
			4W	11587	108	1	0	3	11819	110	1	0	3	10544	98	1	0	3
			5QM	9033	112	3	0	1	9217	114	3	0	1	8248	102	3	0	1
			5R	9095	112	3	0	3	9280	115	3	0	3	8304	103	3	0	3
			5W	8861	109	3	0	2	9043	112	3	0	2	8092	100	3	0	2
			TC	9275	115	1	0	1	9464	118	1	0	1	8468	105	1	0	1
48	700 mA	110W	FR	12713	118	1	0	1	12973	120	2	0	1	11608	107	1	0	1
			2	12263	114	2	0	2	12513	116	2	0	2	11197	104	2	0	2
			3	12029	111	2	0	2	11275	114	2	0	2	10984	102	1	0	2
			4	11828	110	1	0	3	12069	112	1	0	3	10800	100	1	0	2
			4W	14484	108	2	0	4	14774	111	2	0	4	13180	98	2	0	3
			5QM	12044	112	3	0	2	12290	114	3	0	2	10997	102	3	0	1
			5R	12126	112	3	0	3	12374	115	3	0	3	11072	103	3	0	3
			5W	12126	109	4	0	2	12057	112	4	0	2	10789	100	4	0	2
			TC	12366	115	1	0	2	12619	118	1	0	2	11290	105	1	0	2
60	700 mA	136W	FR	15891	117	2	0	2	16216	120	2	0	2	14511	107	2	0	1
			2	15329	113	2	0	2	15642	116	2	0	2	13997	103	2	0	2
			3	15037	111	2	0	3	15344	113	2	0	3	13730	101	2	0	3
			4	14784	109	1	0	3	15086	111	1	0	3	13500	100	1	0	3
			4W	14802	109	2	0	3	15104	112	2	0	3	13515	100	2	0	3
			5QM	15055	111	3	0	2	15362	114	3	0	2	13747	102	3	0	2
			5R	15158	112	4	0	4	15469	114	4	0	4	13841	102	4	0	4
			5W	14781	109	4	0	2	15083	111	4	0	2	13495	100	4	0	2
			TC	15458	115	1	0	2	15834	118	1	0	2	14113	105	1	0	2

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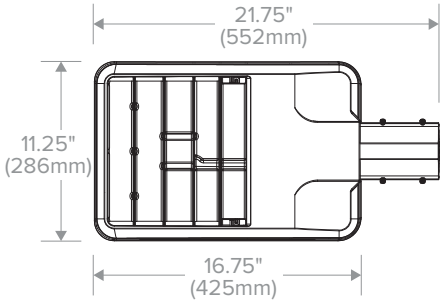
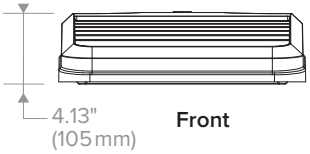
VIPER S

SMALL VIPER LUMINAIRE

DIMENSIONS

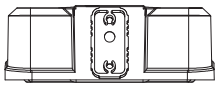




Weight	15.0 lbs (6.8 kg)
EPA	.67 ft^2

A Arm (formerly RA)

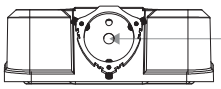
Side View



Back View

MAF (formerly SF2)

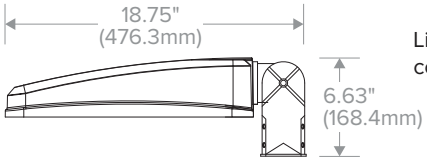
Side View



Back View

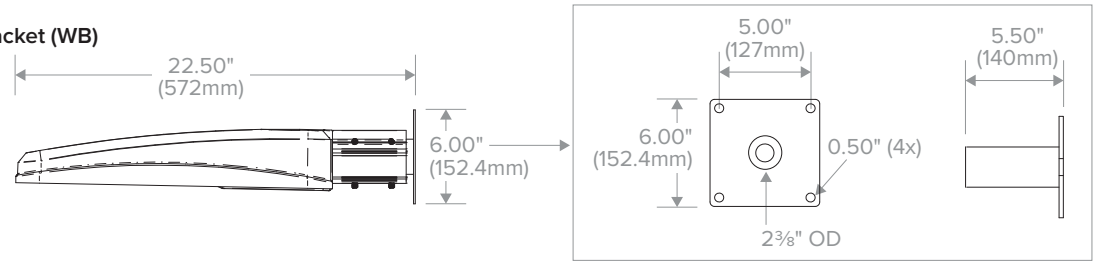
Accepts 2⅜" OD tenon, min 5" long.

2⅜" Adjustable Knuckle (K) (formerly PK2)

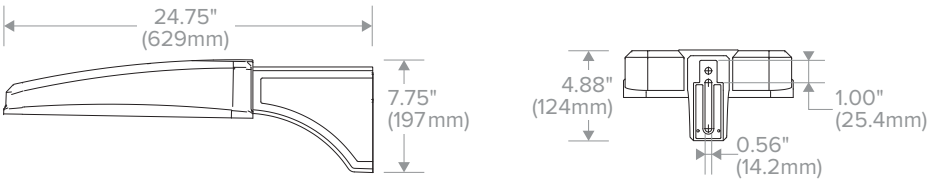


Limit to 30° tilt. Sensor, photocell and wireless controls should not be tilted above horizontal.

Wall Bracket (WB)



AD Decorative Arm



See page 9 for mounting details.

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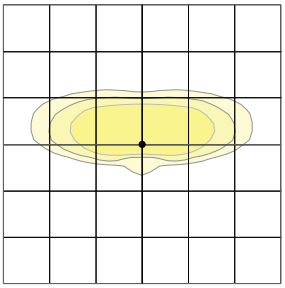
VIPER S

SMALL VIPER LUMINAIRE

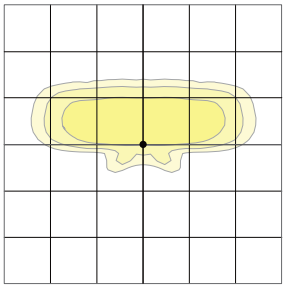
PHOTOMETRY

The following diagrams represent the general distribution options offered for this product. For detailed information on specific product configurations, see website photometric test reports.

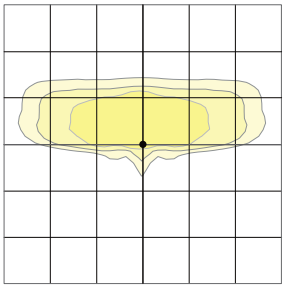
Type FR – Front Row/Auto Optic



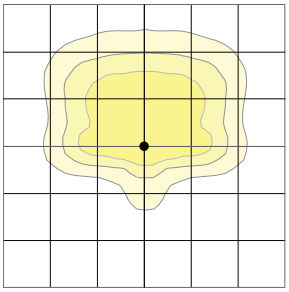
Type 2



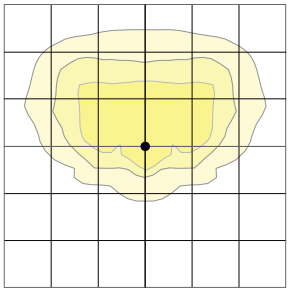
Type 3



Type 4



Type 4 Wide



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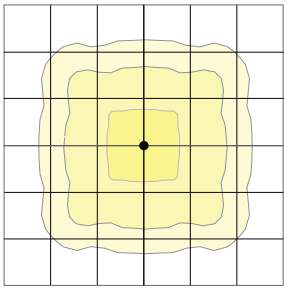
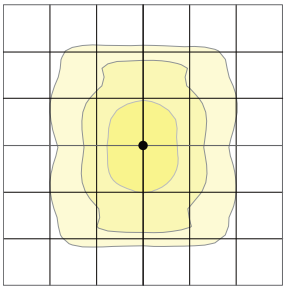
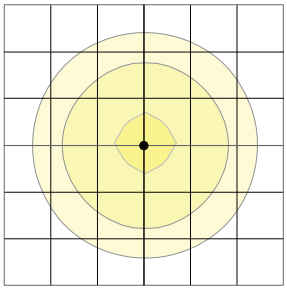


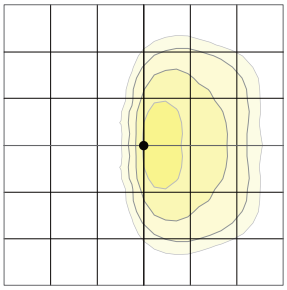
Type 5R (rectangular)



Type 5W (round wide)



Type TC



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HUBBELL Lighting

BEACON
design . performance . technology

DATE:	LOCATION:
TYPE:	PROJECT:
CATALOG #:	

VIPER S

SMALL VIPER LUMINAIRE

ELECTRICAL DATA

# OF LEDS	NUMBER OF DRIVERS	DRIVE CURRENT (mA)	INPUT VOLTAGE (V)	SYSTEM POWER (w)	CURRENT (Amps)
24	1	700 mA	120	55	0.5
			277		0.2
			347		0.2
			480		0.1
36	1	525 mA	120	65	0.65
			277		0.28
			347		0.22
			480		0.16
		700 mA	120	80	0.7
			277		0.3
			347		0.2
			480		0.2
48	1	700 mA	120	110	0.9
			277		0.4
			347		0.3
			480		0.2
60	1	700 mA	120	136	1.1
			277		0.5
			347		0.4
			480		0.3

PROJECTED LUMEN MAINTENANCE						
Ambient Temp.	0	25,000	50,000	TM-21-11 60,000[1]	100,000	Calculated L70 (HOURS)
25°C / 77°C	1	0.97	0.95	0.95	0.92	>377,000

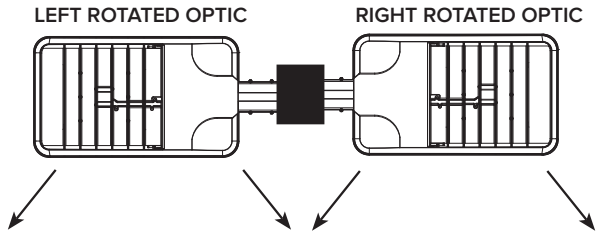
1 Projected per IESNA TM-21-11.
Data references the extrapolated performance projections for the 60 LED base model in a 25°C ambient, based on 10,000 hours of LED testing per IESNA LM-80-08.

LIFESHIELD™ CIRCUIT

Protects luminaire from excessive temperature. The device activates at a specific, factory-preset temperature and progressively reduces power over a finite temperature range. Operation is smooth and undetectable to the eye. Thermal circuit is designed to “fail on”, allowing the luminaire to revert to full power in the event of an interruption of its power supply or faulty wiring connection to the drivers. The device can co-exist with other 0–10V control devices (occupancy sensors, external dimmers, etc.)

ADDITIONAL INFORMATION

ROTATION OPTIONS



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HUBBELL Lighting

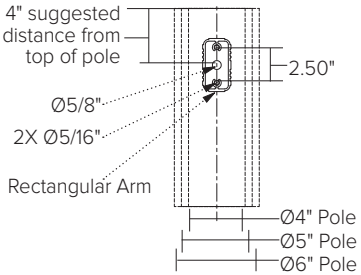
VIPER S

SMALL VIPER LUMINAIRE

ADDITIONAL INFORMATION (CONTINUED)

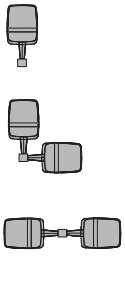
DRILL PATTERN

RECTANGULAR ARM (A)
Compatible with Pole drill pattern B3

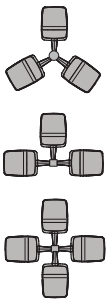


EPA

Config.	EPA
1	.67
2 @ 90˚	1.06
2 @ 180˚	1.34



Config.	EPA
3 @ 120˚	1.68
3 @ 90˚	1.73
4 @ 90˚	2.12

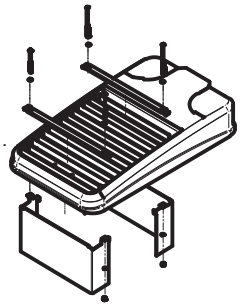


TENON TOP POLE BRACKET ACCESSORIES (ORDER SEPARATELY)

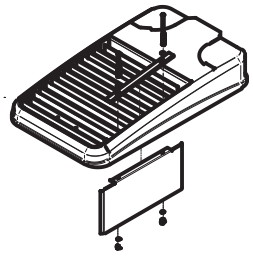
(2 3/8" OD tenon)

TENON TOP POLE BRACKET ACCESSORIES (Order Separately)	
☐ **SETAVP-XX**	Square tenon adapter (4 at 90°) for A - Rectangular Arm mounting option only
☐ **RETAVP-XX**	Round tenon adapter (4 at 90°) for A - Rectangular Arm mounting option only
☐ **SETA2XX**	Square tenon adapter (4 at 90°) for AD - Universal Arm mounting option only
☐ **RETA2XX**	Round tenon adapter (4 at 90°) for AD3 - Universal Arm mounting option only

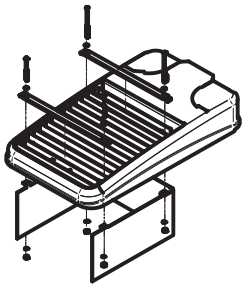
HOUSE SIDE SHIELD FIELD INSTALL ACCESSORIES



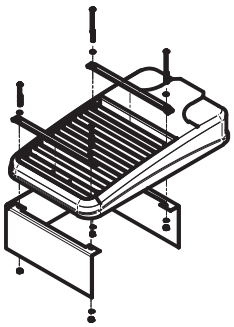
HSS/VP-S/90-FB/XXX
90° shield front or back
(2 shields shown)



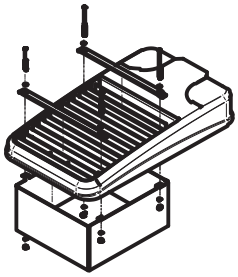
HSS/VP-S/90-LR/XXX
90° shield left or right
(1 shield shown in left orientation)



HSS/VP-S/270-FB/XXX
270° shield front or back
(1 shield shown in back orientation)



HSS/VP-S/270-LR/XXX
270° shield left or right
(1 shield shown in right orientation)



HSS/VP-S/360/XXX
Full shield
(1 shield shown)

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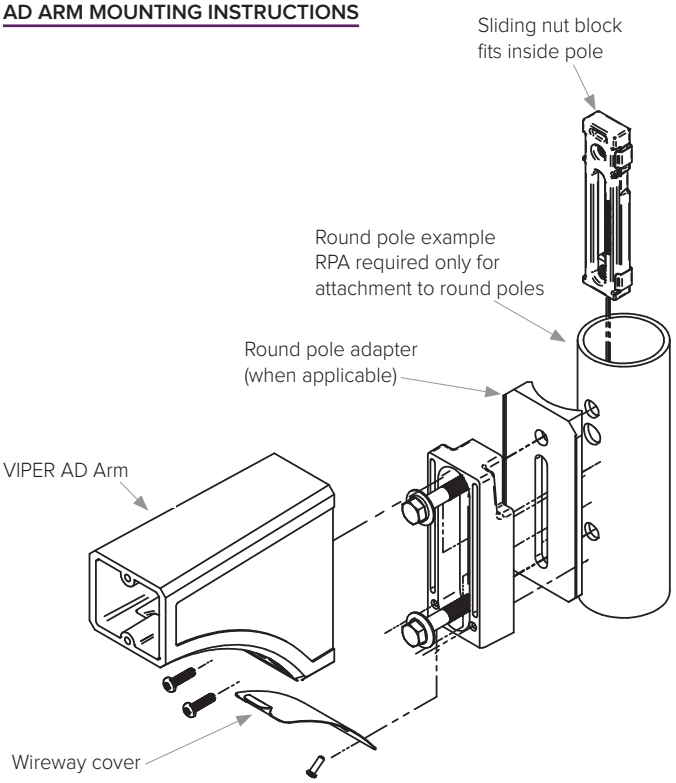
HUBBELL Lighting

VIPER S

SMALL VIPER LUMINAIRE

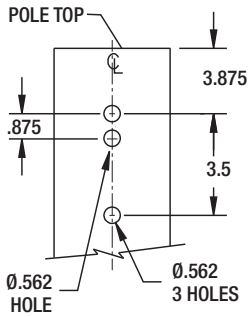
ADDITIONAL INFORMATION (CONTINUED)

AD ARM MOUNTING INSTRUCTIONS



DECORATIVE ARM (AD)

Compatible with pole drill pattern S2



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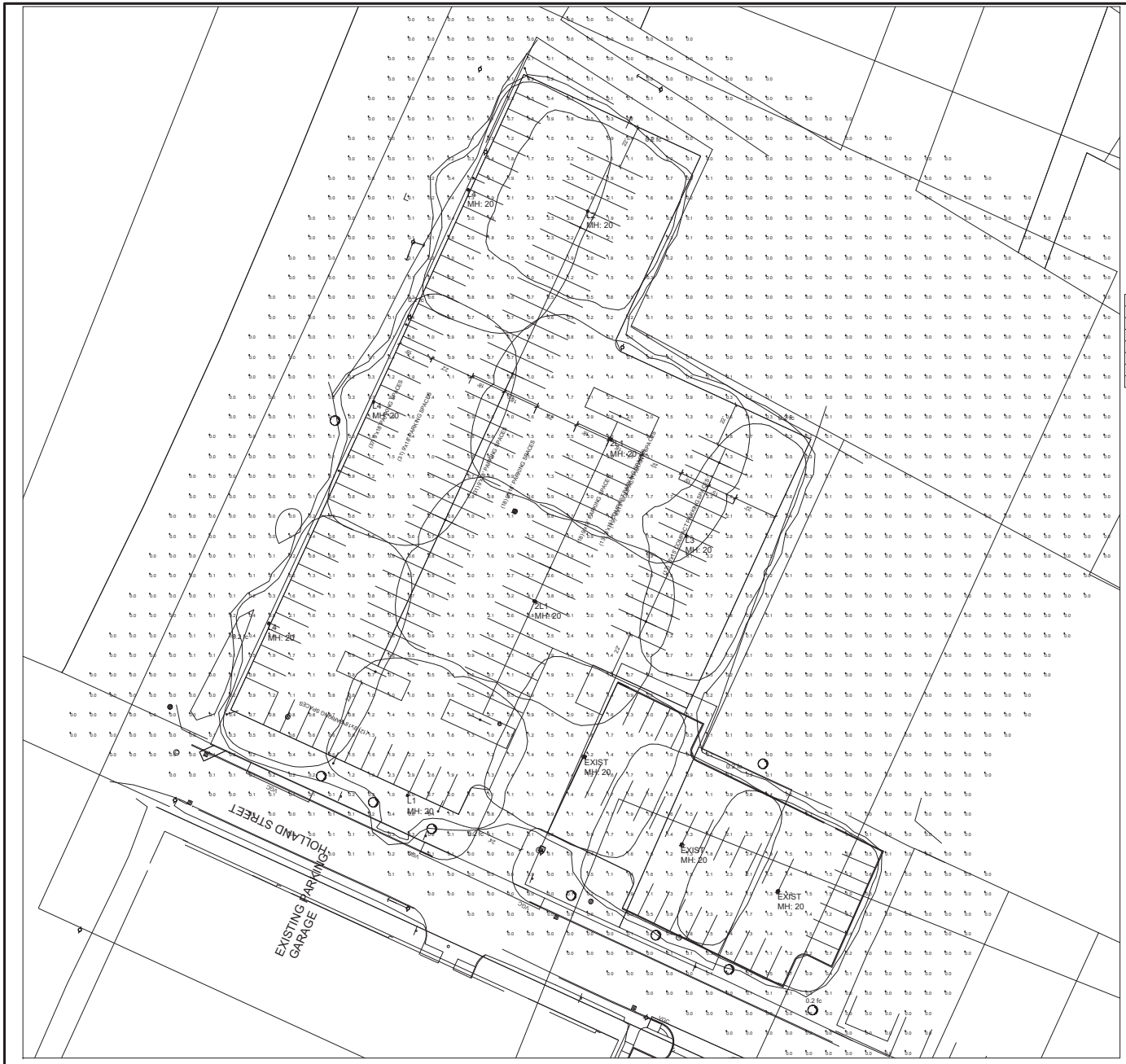

PLAN VIEW

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	0.50	4.3	0.0	N.A.	N.A.
existing park	1.37	2.4	0.3	4.57	8.00
new parking	1.33	4.3	0.1	13.30	43.00

Luminaire Schedule (note fixture cataloge numbers are not complete)

Type	Qty	Lum. Lumens	LLF	Lum. Watts	Description
EXIST	3	8074	0.900	90	30NB-90-T5QM
L1	1	8871	0.900	81	VP-S-36L-80-5K7-4
L2	1	9033	0.900	81	VP-S-36L-80-5K7-5QM
L3	1	9022	0.900	81	VP-S-36L-80-5K7-3
L4	3	8690	0.900	80.52	VP-S-36L-80-5K7-4W
2L1	2	8871	0.900	81	twin VP-S-36L-80-5K7-4

site 6-17-20.AGI

GENERATED FOR: SEBAGO TECH

SCALE NOT TO SCALE

TITLE: CMHC - HOLLAND ST PARKING
LEWISTON, ME
SITE LIGHTING LAYOUT

Page 1 of 1

Date:6/17/2020

GENERATED BY SWANEY LIGHTING, SCARBOROUGH ME - 207-883-7100 - swaneylighting.com

SWANEY LIGHTING ASSOCIATES, INC.

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Section 8

Traffic

Section 8: Traffic

The proposed project will not result in a significant increase in the number of patients or staff and will not result in a significant increase in traffic to the area. Please see the attached Traffic Report.

SEBAGO TECHNICS

CIVIL ENGINEERING • SURVEYING • LANDSCAPE ARCHITECTURE

Memorandum

20149

To: **David Hediger**
Director of Planning & Code Enforcement
City of Lewiston

From: **Derek Caldwell, P.E., PTOE**
Traffic Engineer
Sebago Technics, Inc

Date: **July 7, 2020**

Subject: **Traffic Impact Statement**
Central Maine Healthcare – Cancer Care Center
Lewiston, Maine

Introduction

This memorandum provides a summary of the expected traffic impacts as a result of the proposed Central Maine Healthcare (CMHC) Cancer Care Center. The proposed center is to be constructed adjacent to the existing Central Maine Medical Center (CMMC) campus on a parcel of land bordered by Holland Street to the north, Main Street to the east, High Street to the south, and an existing access drive to the west. The existing use of the site is a surface parking lot constructed in 2012 utilized by staff on the CMMC campus. Prior use of this site included multi-family residential properties. The project proposes to construct a two-story, approximately 51,739 square foot facility which will serve as a new location for existing CMHC oncology programs.

Trip Generation

The proposed facility is intended to serve existing oncology programs hosted by CMHC on the CMMC campus, as outlined in the correspondence included from CMHC. The new development is not proposed to result in an increase in staff levels or introduce new health care services. The new space would serve to accommodate new equipment which cannot be replaced in the current locations, consolidate radiation oncology and medical oncology departments which currently operate in separate locations on the campus, and provide a better overall treatment and patient experience. Therefore, it can be expected that the new facility would not directly result in a significant increase in traffic to the campus and surrounding area.

However, it is recognized that there is potential to back-fill the spaces currently utilized by the oncology department with other hospital uses when the new facility is operational and potential for general growth in oncology services as a result of providing a modern treatment facility. It is our understanding that there

are no specific plans for what services may occupy the vacated space, but it is expected that it would, similarly to the proposed facility, be used by existing programs within the campus which typically require more space to meet current standards of patient care, as opposed to creating new services.

Currently, the Oncology Department utilizes a total of 18,042 square feet of space, split between 9,994 square feet on the first floor of the Main Building and 8,098 square feet in Suites 205 & 210 of 12 High Street. Because the space is spread out in three different locations, it is not likely to be reused as efficiently as a single continuous space might be, providing further indication that there would not be significant opportunities to create new programs and in turn result in a large increase in traffic.

To determine the potential increase in traffic, the *10th Edition of the Institute of Transportation Engineers Trip Generation Manual* Land Use Code (LUC) 610-Hospital, is used to calculate the expected number of trips based upon the 18,042 square feet of space that will be available.

Table 1 – Trip Generation
Land Use Code 610 - Hospital
(18,042 Square Feet)

Time Period	Rate per 1,000 SF	Total Trips	Entering %	Exiting %	Entering	Exiting
Weekday	10.72	193	50%	50%	97	96
AM Peak Hour	0.89	16	68%	32%	11	5
PM Peak Hour	0.97	18	32%	68%	6	12

As shown above, the calculated trip generation resultant from the vacated space being back-filled by other hospital uses is shown to be 193 total trips during a typical weekday, 16 trips during the AM Peak Hour, and 18 trips during the PM Peak Hour. This small level of increase in traffic, if realized, would not be expected to have an adverse impact on the adjacent roadways or intersections.

Site Access and Parking

The main entrance for the proposed facility is to be located along the existing access drive between Holland Street and High Street. The area will be improved to include a pick up/drop off and valet area for the facility and will retain approximately 31 parking spaces adjacent to the patient entrance. Patients and visitors would be able to use the provided parking spaces, or use other existing visitor parking areas including the adjacent parking garage. Staff will primarily park in the garage or the lot located at 88 Holland Street (Lot S), which is to be improved as part of this project.

As previously noted, the proposed facility is to be built at the location of an existing staff surface parking lot (Lot A). Staff who currently utilize this lot would instead use either the adjacent parking garage or the Holland Street Lot S. These parking facilities currently have surplus supply and would be able to accommodate the addition of displaced vehicles. The existing Lot S on Holland parking lot is currently

75 John Roberts Road – Suite 4A, South Portland, ME 04106-6963 • 207.200.2100 • Fax: 207.856.2206

underutilized with areas at the north and east end used as a snow dump and maintenance area. There are currently 121 striped parking spaces in the two connected areas comprising Lot S. The project anticipates repaving and re-striping the lot to accommodate a total of approximately 208 spaces.

Presently, vehicles use both High Street and Holland Street to access the existing parking area which is to be removed. The proposed modifications would not be anticipated to result in a change of traffic patterns for vehicles entering and exiting the site and associated parking areas. Staff and visitors are expected to use either Holland Street or High Street to access their destination in a similar manner as occurs presently.

Therefore, in conjunction with the above stated projected increase in traffic, the development would be not expected to result in a change to current traffic operations at intersections adjacent to the development.

Conclusion

The proposed CMHC Cancer Care Center and any development of subsequent vacated space within CMMC, is expected to result in a nominal increase of 16 vehicular trips during the AM Peak Hour and 18 trips during the PM Peak Hour. The proposed facility and related parking area improvements would not be expected to alter the existing vehicular movement patterns, specifically at the intersections of Main Street at High Street and Main Street at Holland Street. Based on these factors, the proposed development would not be expected to have an adverse impact on the area roadways.

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July 1, 2020

Daniel L. Riley, PE, CFM
Vice President, Engineering
Sebago Technics, Inc.
75 John Roberts Rd., Suite 4A
South Portland, ME 04106

Dear Dan,

Central Maine Healthcare (CMH) is building a freestanding Cancer Care Center to bring together several existing outpatient subspecialties including radiation oncology, medical oncology/infusion, and surgical oncology, that are currently located at opposite ends of the CMMC campus to provide more cohesive, efficient, accessible and patient-centered care. This project is scheduled to commence in the Fall of 2020 and open in the late 2021 timeframe.

Currently, CMH is limited in its ability to provide comprehensive cancer care by equipment that will reach the end of its useful life in December of 2021, aging infrastructure, and the significant distance between the radiation oncology and medical oncology departments. CMH's historical and current growth support the need to strengthen and enhance this service line.

CMH will partner with a developer to construct the proposed Cancer Institute. The new facility is necessary in order for CMH to replace the two existing linear accelerators that will reach the end of their useful lives in 2021 and cannot be replaced with new equipment in the current location. The replacement linear accelerators and relocation to the Cancer Institute will provide enhanced treatment capabilities, operational efficiencies, improved access, and a better patient experience.

This project is designed to meet CMH's existing need for replacement equipment to better serve CMH's patients in the region rather than create demand for new health care services. This project will not increase health care utilization and will not create inappropriate or unnecessary demand. The growth rates projected for the cancer program will not impact existing local competitor institutions and aims to maintain local access for medical and radiation oncology services.

CMH anticipates modest market growth in radiation and medical oncology principally as a result of offering the community infrastructure and enhanced services for cancer care.

Once the services outlined above (rad-onc, med-onc/infusion, surg-onc) are relocated to the new CMH Cancer Care Center, we will be vacating approximately 18,042 SQ FT on the current campus (see details below). There are no firm plans to backfill space in the main building or Suites 205 and 210 in the 12 High St building.

However, it is likely Suites 205 and 210 in the 12 High Street building will eventually be backfilled with other existing clinics, as opposed to new services. We do not anticipate significant growth of overall services or volumes on the Lewiston campus beyond modest market growth outlined above.

Total SQ FT to be vacated = 18,042

Main building = 9,944 SQ FT

12 High Suite 205 = 6,126 SQ FT
12 High Suite 210 = 1,972 SQ FT
12 High 205 + 210 = 8,098 SQ FT

Please let me know if you have any additional questions or concerns.

Sincerely,

John W. Hamilton MHA

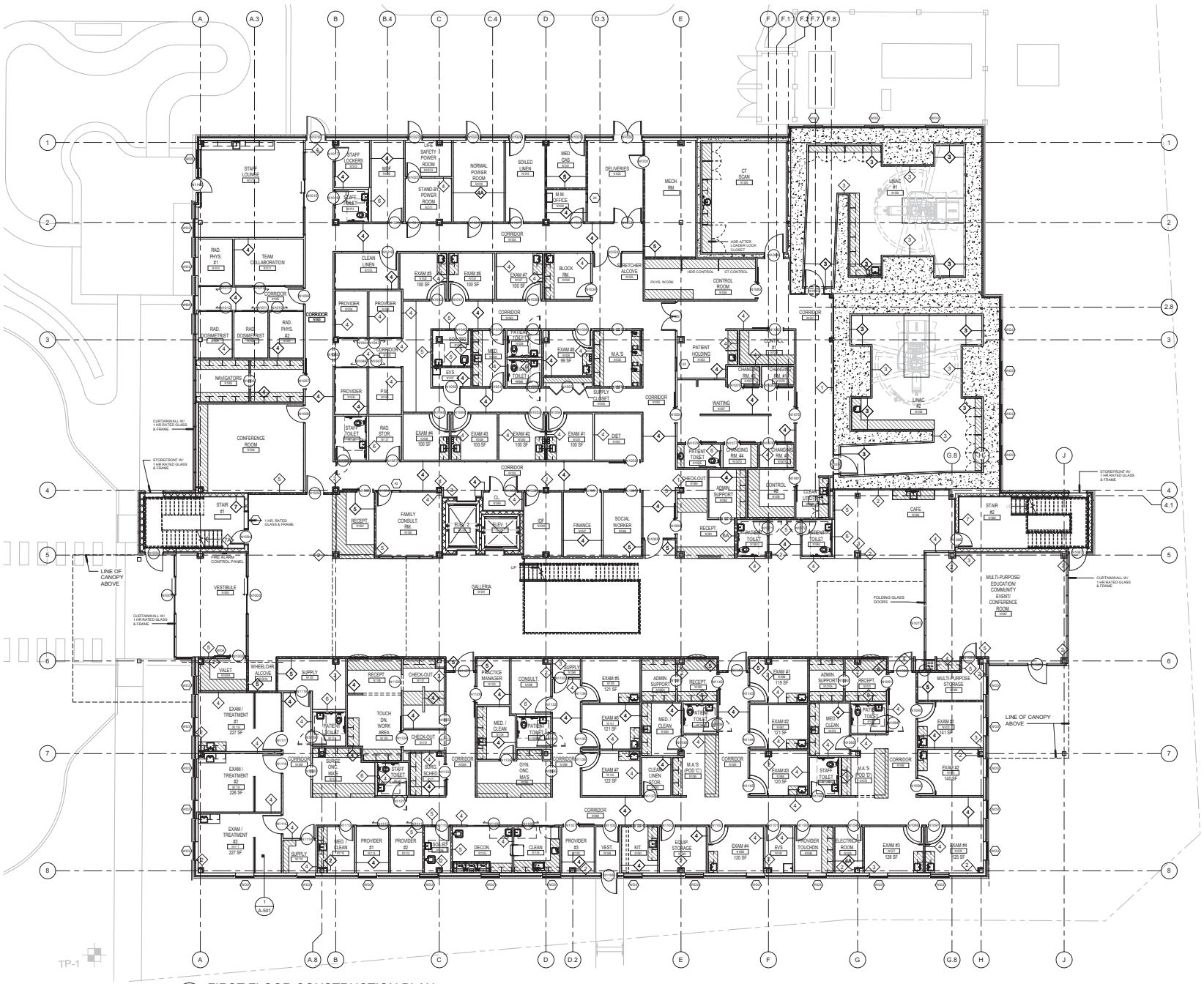
300 Main Street, Lewiston, ME 04240 • Phone: 207.795.0111 • www.cmmc.org

Section 9

Building Elevations & Floor Plans

Section 9: Building Elevations & Floor Plan

Please see this Section for a copy of the building elevations and floor plan.



1 FIRST FLOOR CONSTRUCTION PLAN (29, 149.58 SF)
SCALE: 1/8" = 1'-0"

PROGRESS
06/26/2020

NORTH

REVISIONS

NO.	DESCRIPTION	DATE

CMH CANCER CARE CENTER

300 MAIN STREET
LEWISTON, ME 04240

Central Maine Medical Center
Free Standing Medical Office Building

FIRST FLOOR CONSTRUCTION PLAN

MBH ARCHITECTURE
Architecture · Green Design
Interior Design · Holistic Design
MBH ARCHITECTURE, LLC.
Corporate Center West • 433 South Main Street
Suite 301 • West Hartford, Connecticut 06110
Tel: 860-521-1400 • Fax: 860-521-9400
www.mbharchitecture.com

ISSUED FOR:	DESIGN DEVELOPMENT
DATE ISSUED:	06/26/20
SCALE:	1/8" = 1'-0"
PROJECT NUMBER:	19221
DRAWN BY:	R.E.M.

A-110

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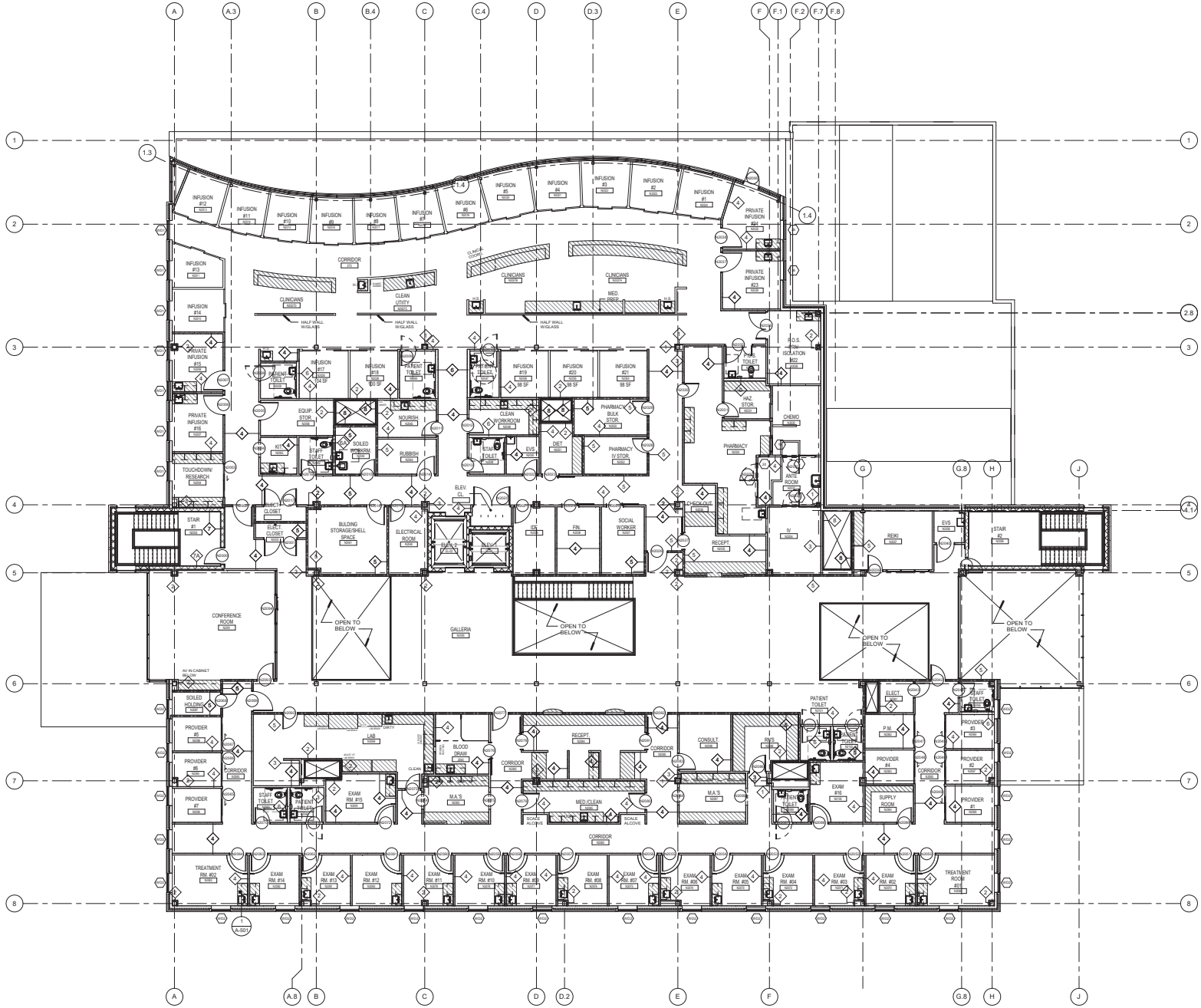

1 SECOND FLOOR CONSTRUCTION PLAN (22,801.00 SF)
SCALE: 1/8" = 1'-0"

PROGRESS
06/26/2020

NORTH

REVISIONS

NO.	DESCRIPTION	DATE

CMH CANCER CARE CENTER

300 MAIN STREET
LEWISTON, ME 04240

Central Maine Medical Center
Free Standing Ambulatory Care Center

SECOND FLOOR CONSTRUCTION PLAN

MBH ARCHITECTURE
Architecture • Green Design
Interior Design • Holistic Design

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Suite 301 • West Hartford, Connecticut 06110
Tel: 860-521-1400 • Fax: 860-521-9400
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PROJECT NUMBER:	19221
DRAWN BY:	R.E.M.

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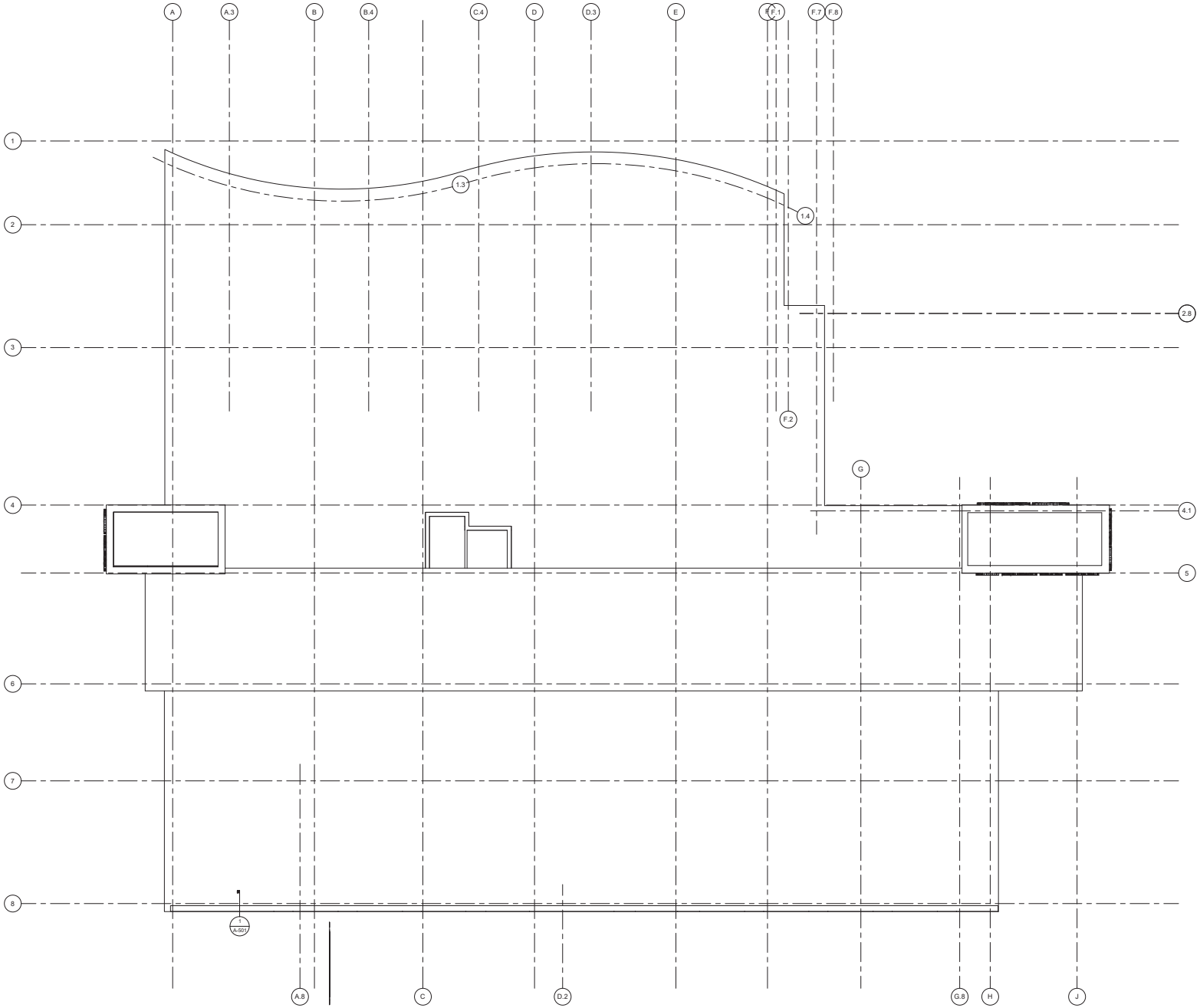


1 ROOF PLAN
SCALE: 1/8" = 1'-0"

PROGRESS
06/26/2020

REVISIONS

NO.	DESCRIPTION	DATE

CMH CANCER CARE CENTER

300 MAIN STREET
LEWISTON, ME 04240

Central Maine Medical Center
Erik Contreras-Mulanax AIA,LEAD AP,Form 5

ROOF PLAN

MBH ARCHITECTURE
Architecture • Green Design
Interior Design • Holistic Design

MBH ARCHITECTURE, LLC.
Corporate Center West • 433 South Main Street
Suite 301 • West Hartford, Connecticut 06110
Tel: 860-521-1400 • Fax: 860-521-9400
www.mbharchitecture.com

ISSUED FOR:	DESIGN DEVELOPMENT
DATE ISSUED:	06/26/20
SCALE:	1/8" = 1'-0"
PROJECT NUMBER:	19221
DRAWN BY:	Author

A-300

6/26/2020 9:31:05 PM C:\MBH - Autodesk Revit\Local Files\19221 (R2020) CENTRAL_myraj@mbharchitecture.com.rvt

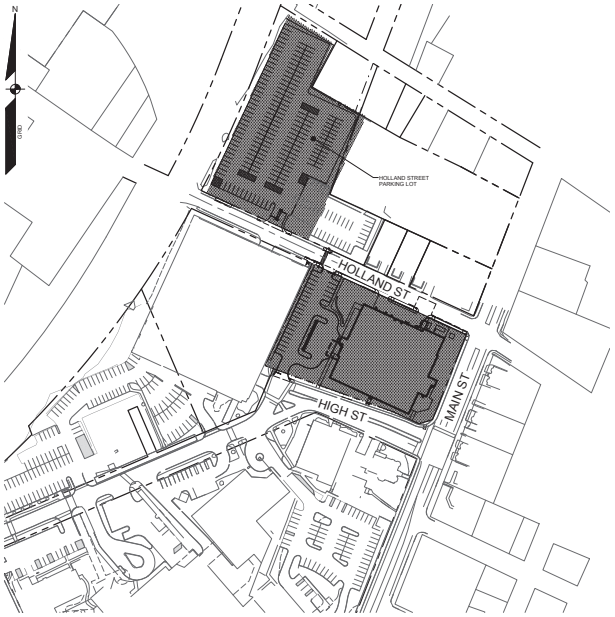
CMHC CANCER CENTER

MAIN, HIGH AND HOLLAND STREETS
LEWISTON, MAINE

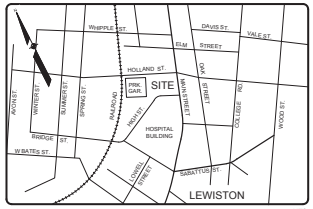
APPLICANT:
HIGH & MAIN
STREET, LLC
470 FORE STREET, SUITE 400
PORTLAND, MAINE 04101

ENGINEER/SURVEYOR/
LANDSCAPE ARCHITECT:

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A.
South Portland, ME 04106
Tel. 207-200-2100



SCALE: 1" = 100'



LOCATION MAP NTS

SHEET INDEX

SHEET NO.	SHEET TITLE
C-001	COVER SHEET
C-002	GENERAL NOTES AND LEGEND
C-101	EXISTING CONDITIONS PLAN
C-102	EXISTING CONDITIONS PLAN
C-103	DEMOLITION PLAN
C-104	DEMOLITION PLAN HOLLAND STREET LOT
C-105	SITE PLAN
C-106	SITE PLAN HOLLAND STREET LOT
C-107	ALTERNATE - HEALING GARDEN PLANS
C-108	GRADING PLAN
C-109	GRADING PLAN HOLLAND STREET LOT
C-110	UTILITY PLAN
C-111	UTILITY PLAN HOLLAND STREET LOT
C-112	LANDSCAPE PLAN
C-501	EROSION CONTROL NOTES
C-502	DETAILS
C-503	DETAILS
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C-505	DETAILS
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ISSUED FOR: SITE PLAN REVIEW SEPTEMBER 4, 2020

REVISIONS

NO.	DESCRIPTION	DATE

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
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South Portland, ME 04106
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STATE OF MAINE
DANIEL L. RILEY
No. 9697
PROFESSIONAL ENGINEER
09/04/2020

CMH CANCER CARE CENTER
300 MAIN STREET
LEWISTON, ME 04240

Central Maine Medical Center
The Central Maine Medical Family

COVER SHEET

MBH ARCHITECTURE
Architecture • Green Design
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ISSUED FOR:	BID SET
DATE ISSUED:	09/04/2020
SCALE:	AS NOTED
PROJECT NUMBER:	20148
DRAWN BY:	STI

C-001

LEGEND

EXISTING		PROPOSED
	PROPERTY LINE/R.O.W.	
	ABUTTER LINE/R.O.W.	
	DEED LINE/R.O.W.	
	TIE LINE	
	SETBACK	
	EASEMENT	
	BUFFER	
	FLOODPLAIN	
	FLOODWAY	
	CENTERLINE	
	MONUMENT	
	IRON PIPE/ROD	
	DRILL HOLE	
C15,1	DEED CALL	
C15,1	CURVE/LINE NO.	C15,1
	SOILS	
	ZONE LINE	
	ZONE LINE ON PL	
BENCHMARK DESCRIPTION WITH ELEVATION	BENCHMARK	
	SURVEY CONTROL	
TP-1	TEST PIT	
MW-1	MONITORING WELL	
B-1	BORING	
	BUILDING	
	DECK/STEPS/ OVERHANG	
	EDGE WETLAND	
	WETLANDS	
"U"	UPLANDS	
	STREAM	
	LEDGE	
	EDGE PAVEMENT	
	PAVEMENT SAWCUT	
	EDGE CONCRETE	
	PAVEMENT PAINT	
	EDGE GRAVEL	
	CURB LINE	
	EDGE OF WATER	
	TREELINE	
120	CONTOURS	120
120.00	SPOT GRADE	120.00
	CHAIN LINK FENCE	
	BARB WIRE FENCE	
	STOCKADE FENCE	
	GUARD RAIL	
	STONE WALL	
	RETAINING WALL	
	DECIDUOUS TREE	
	CONIFEROUS TREE	
	MULCH LINE	
	BOLLARD	
	SIGN	
	RAILROAD	
G	GAS	G
	GAS GATE VALVE	
	GAS METER	
	GAS MANHOLE	
W	WATER	W
	WATER GATE VALVE	
	WATER SHUT OFF	
	HYDRANT	
	WATER MANHOLE	
	WELL	
S	SANITARY SEWER	S
FM	FORCE MAIN	FM
	SANITARY MANHOLE	
SD	STORM DRAIN	SD
UD	UNDER DRAIN	UD
	DRAINAGE MANHOLE	
	CATCH BASIN	
OHU	OVERHEAD UTILITY	OHU
UGU	UNDERGROUND UTILITY	UGU
	TRANSFORMER PAD	
	ELECTRICAL MANHOLE	
	ELECTRIC METER	
	HVAC UNIT	
	TELEPHONE MANHOLE	
	LIGHT POLE	
	UTILITY POLE	
	GUY WIRE	
	DRAINAGE DITCH	
	EROSION CONTROL BLANKET	
	FILTER BARRIER	FB
	RIPRAP	
	CHECK DAM	
	INLET PROTECTION	
	BOULDER	

GENERAL NOTES

1. THE RECORD OWNERS OF THE PARCELS ARE:
   LOT 12: CENTRAL MAINE REAL ESTATE MANAGEMENT CORP BY DEED DATED MAY 10, 1984 AND RECORDED IN BOOK 1720, PAGE 280 AND DEED DATED NOVEMBER 4, 1988 AND RECORDED IN BOOK 2336, PAGE 7.
   LOT 14: CENTRAL MAINE REAL ESTATE MANAGEMENT CORP BY DEED DATED OCTOBER 5, 1999 AND RECORDED IN BOOK 4327, PAGE 273.
   LOT 16 & 17: CENTRAL MAINE HEALTHCARE CORP BY DEED DATED MAY 13, 2004 AND RECORDED IN BOOK 5812, PAGE 7.
   LOT 13: CENTRAL MAINE HEALTHCARE CORP BY DEED DATED DECEMBER 22, 2006 AND RECORDED IN BOOK 7012, PAGE 145.
   LOT 9, 10 & 18: CENTRAL MAINE MEDICAL CENTER BY DEED DATED JUNE 26, 2008 AND RECORDED IN DEED BOOK 7564, PAGE 180.

   BOOK AND PAGE NUMBERS SHOWN HEREON ARE IN REFERENCE TO THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS (ACRD). LOT NUMBERS REFERENCE CITY OF LEWISTON TAX MAP 194.
2. THE PROPERTY IS SHOWN AS LOTS 9, 10, 12, 13, 14, 16, 17 & 18 ON THE CITY OF LEWISTON TAX MAP 194 AND IS LOCATED IN THE CENTREVILLE (CV) DISTRICT.
3. SPACE AND BULK CRITERIA FOR THE CV DISTRICT ARE AS FOLLOWS:

	REQUIRED:	PROVIDED:
MINIMUM LOT SIZE	NONE	1.64 ACRE (LEASE AREA)
MINIMUM STREET FRONTAGE:	25 FT	181 FT
MINIMUM FRONT YARD:	NONE	21 FT (MAIN ST)
MINIMUM SIDE YARD:	NONE	9 FT (HIGH ST)
MINIMUM REAR YARD:	NONE	115 FT (LEASE AREA LINE)
MAXIMUM BUILDING HEIGHT:	20FT MIN- 150FT MAX	35 FT
MAXIMUM BUILDING COVERAGE:	100%	41% (LEASE AREA)
MAXIMUM IMPERVIOUS COVERAGE:	100%	77% (LEASE AREA)

* SEE ORDINANCE FOR MORE PARTICULAR INFORMATION.

4. TOPOGRAPHIC INFORMATION OF THE PARKING AREA SHOWN HEREON IS BASED UPON A FIELD SURVEY PERFORMED BY SEBAGO TECHNICS INC IN MARCH OF 2019 WITH THICK SNOW COVER. BOUNDARY AND TOPOGRAPHIC INFORMATION OF PORTIONS OF HOLLAND STREET SHOWN HEREON IS BASED UPON A FIELD SURVEY PERFORMED BY SEBAGO TECHNICS IN AUGUST OF 2015. TOPOGRAPHIC INFORMATION OF PORTIONS OF HOLLAND STREET, MAIN STREET AND HIGH STREET SHOWN HEREON IS BASED UPON A FIELD SURVEY PERFORMED IN 2007, SEE PLAN REFERENCE G.
5. PLAN REFERENCES:
   A. "LEASEHOLD CONDOMINIUM PLAT & PLAN - HIGH STREET PARKING CONDOMINIUM" BY A.R.C.C LAND SURVEYORS, INC. DATED MARCH 27, 2003 AND RECORDED IN ACRD PLAN BOOK 42, PAGE 194.
   B. STATE OF MAINE DEPARTMENT OF TRANSPORTATION RIGHT OF WAY MAP "STATE HIGHWAY "15" - FEDERAL AID PROJECT NO. STP-6687" DATED JANUARY 1998, D.O.T. FILE NO 1-236, SHEET 3 OF 7.
   C. "HIGH STREET REALIGNMENT - RIGHT OF WAY", DATED JULY 22, 2002, PREPARED BY TAYLOR ENGINEERING ASSOCIATES.
   D. "STANDARD BOUNDARY SURVEY, CENTRAL MAINE MEDICAL CENTER", DATED OCTOBER 23, 1992, PREPARED BY A.R.C.C. LAND SURVEYORS.
   E. "TOPOGRAPHICAL PLAN OF EXISTING CONDITIONS AND PROPERTY PLAN", DATED DECEMBER 11, 2000, PREPARED BY A.R.C.C. LAND SURVEYORS, INC.
   F. BOUNDARY & TOPOGRAPHIC SURVEY OF 100-112 HOLLAND STREET BY SEBAGO TECHNICS INC. (PROJECT #15305) LAST DATED MARCH 18, 2018, NOT RECORDED.
   G. GRADING AND UTILITY PLAN OF CMMC PARKING LOT EXPANSION BY SEBAGO TECHNICS INC (PROJECT #6045S5) LAST DATED SEPTEMBER 4, 2012, NOT RECORDED.
   H. EXISTING CONDITIONS PLAN OF PARKING LOT EXPANSION BY SEBAGO TECHNICS INC (PROJECT #6045S5) LAST DATED SEPTEMBER 4, 2012, NOT RECORDED.
6. PLAN ORIENTATION IS GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE 1602-NAD83, ELEVATIONS DEPICTED HEREON ARE NAVD88, BASED ON DUAL FREQUENCY GPS OBSERVATIONS.
7. UTILITY INFORMATION DEPICTED HEREON, UNLESS OTHERWISE NOTED, IS OF QUALITY LEVEL D PER AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE) STANDARD CI/ASCE 38-02. UTILITIES DEPICTED HEREON 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 WITHIN THE PROJECT AREA PRIOR TO CONSTRUCTION AND/OR EXCAVATION.
8. THE DEFINITION OF HIGH STREET PER THE CITY OF LEWISTON BOOK OF STREETS AND ROADS BOOK 8 PAGES 87 & 106, BOOK 1 PAGES 15 & 18, AND BOOK 5 PAGES 25 & 26.
9. THE APPROXIMATE AREA OF THE PROJECT SITE BETWEEN HOLLAND, MAIN, HIGH STREET AT THE PARKING GARAGE IS 1.65 ACRES.
10. ALL WORK SHALL CONFORM TO THE APPLICABLE CODES AND ORDINANCES.
11. CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIM OR HERSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIM OR HERSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
12. CONTRACTOR SHALL NOTIFY ENGINEER OF ALL PRODUCTS OR ITEMS NOTED AS "EXISTING" WHICH ARE NOT FOUND IN THE FIELD.
13. PROVIDE ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND OWNER'S REQUIREMENTS UNLESS SPECIFICALLY OTHERWISE INDICATED OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
14. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE ENGINEER.
15. CONTRACTOR SHALL CLEAN AND REMOVE DEBRIS AND SEDIMENT DEPOSITED ON PUBLIC STREETS, SIDEWALKS, ADJACENT AREAS, OR OTHER PUBLIC WAYS DUE TO CONSTRUCTION.
16. CONTRACTOR SHALL INCORPORATE PROVISIONS AS NECESSARY IN CONSTRUCTION TO PROTECT EXISTING STRUCTURES, PHYSICAL FEATURES, AND MAINTAIN SITE STABILITY DURING CONSTRUCTION. CONTRACTOR SHALL RESTORE ALL AREAS TO ORIGINAL CONDITION AND AS DIRECTED BY DESIGN DRAWINGS.
17. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS PRIOR TO CONSTRUCTION.
18. THE CONTRACTOR IS HEREBY CAUTIONED THAT ALL SITE FEATURES SHOWN HEREON ARE BASED ON FIELD OBSERVATIONS BY THE SURVEYOR AND BY INFORMATION PROVIDED BY UTILITY COMPANIES. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT DIG SAFE (811) AT LEAST THREE (3) BUT NOT MORE THAN THIRTY (30) DAYS PRIOR TO COMMENCEMENT OF EXCAVATION OR DEMOLITION TO VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES.
19. CONTRACTORS SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THE REQUIREMENTS OF 23 MRSA 3360-A. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE APPROPRIATE UTILITIES TO OBTAIN AUTHORIZATION PRIOR TO RELOCATION OF ANY EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS. IF A UTILITY CONFLICT ARISES, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER, THE MUNICIPALITY AND APPROPRIATE UTILITY COMPANY PRIOR TO PROCEEDING WITH ANY RELOCATION.
20. ALL PAVEMENT MARKINGS AND DIRECTIONAL SIGNAGE SHOWN ON THE PLAN SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) STANDARDS.
21. ALL PAVEMENT JOINTS SHALL BE SAWCUT PRIOR TO PAVING TO PROVIDE A DURABLE AND UNIFORM JOINT.
22. NO HOLES, TRENCHES OR STRUCTURES SHALL BE LEFT OPEN OVERNIGHT IN ANY EXCAVATION ACCESSIBLE TO THE PUBLIC OR IN PUBLIC RIGHTS-OF-WAY.
23. IMMEDIATELY UPON COMPLETION OF CUTS/FILLS, THE CONTRACTOR SHALL STABILIZE DISTURBED AREAS IN ACCORDANCE WITH EROSION CONTROL NOTES AND AS SPECIFIED ON PLANS.
24. THE CONTRACTOR SHALL BE FULLY AND SOLELY RESPONSIBLE FOR THE REMOVAL, REPLACEMENT AND RECTIFICATION OF ALL DAMAGED AND DEFECTIVE MATERIAL AND WORKMANSHIP IN CONNECTION WITH THE CONTRACT WORK. THE CONTRACTOR SHALL REPLACE OR REPAIR AS DIRECTED BY THE OWNER ALL SUCH DAMAGED OR DEFECTIVE MATERIALS WHICH APPEAR WITHIN A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION.
25. WHERE THE TERMS "APPROVED EQUAL", "OTHER APPROVED", "EQUAL TO", "ACCEPTABLE" OR OTHER GENERAL QUALIFYING TERMS ARE USED IN THESE NOTES, IT SHALL BE UNDERSTOOD THAT REFERENCE IS MADE TO THE RULING AND JUDGEMENT OF SEBAGO TECHNICS, INC.
26. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY PROTECTION FOR THE WORK UNTIL TURNED OVER TO THE OWNER.

GENERAL NOTES CONTINUED

27. THE CONTRACTOR SHALL MAINTAIN A CURRENT AND COMPLETE SET OF CONSTRUCTION DRAWINGS ON SITE DURING ALL PHASES OF CONSTRUCTION FOR USE OF ALL TRADES.
28. THE CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ANY CHANGES AND DEVIATION OF APPROVED PLANS NOT AUTHORIZED BY THE ARCHITECT/ENGINEER AND/OR CLIENT/OWNER.
29. DETAILS ARE INTENDED TO SHOW END RESULT OF DESIGN. ANY MODIFICATION TO SUIT FIELD DIMENSION AND CONDITION SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ANY WORK.
30. BEFORE THE FINAL ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL REMOVE ALL EQUIPMENT AND MATERIALS, REPAIR OR REPLACE PRIVATE OR PUBLIC PROPERTY WHICH MAY HAVE BEEN DAMAGED OR DESTROYED DURING CONSTRUCTION, CLEAN THE AREAS WITHIN AND ADJACENT TO THE PROJECT WHICH HAVE BEEN OBSTRUCTED BY HIS/HER OPERATIONS, AND LEAVE THE PROJECT AREA NEAT AND PRESENTABLE.

UTILITY DEMOLITION NOTES

1. PROTECT EXISTING BOUNDARY LINE MONUMENTATION. IF DISTURBED, EXISTING MONUMENTATION TO BE RESET BY A PROFESSIONAL LAND SURVEYOR.
2. DEMOLITION OF UTILITIES REQUIRING TREE REMOVAL SHALL BE COORDINATED WITH THE OWNER AND IN ACCORDANCE WITH PROJECT PLANS.
3. UTILITY DEMOLITION SHALL BE COMPLETED IN COORDINATION WITH NEW INFRASTRUCTURE. CONTRACTOR SHALL ENSURE EXISTING SURFACE DRAINAGE IS MAINTAINED DURING CONSTRUCTION.
4. EXISTING SEWER AND STORM DRAINAGE INFRASTRUCTURE TO REMAIN ACTIVE DURING CONSTRUCTION AND UPON COMPLETION OF PROJECT. DEMOLITION/CONSTRUCTION ACTIVITIES SHALL NOT INTERFERE OR IMPEDE EXISTING FLOWS. CONTRACTOR SHALL PROVIDE BYPASS PUMPING AS REQUIRED DURING SEWER AND STORM DEMOLITION AND NEW CONSTRUCTION. DAMAGE TO EXISTING SEWER INFRASTRUCTURE SHALL BE REPAIRED BY CONTRACTOR AT THEIR EXPENSE.
5. DEMOLITION SHOWN IS FOR MAJOR SITE ELEMENTS TO BE DEMOLISHED. OTHER MINOR DEMOLITION MAY BE REQUIRED AS PART OF CONSTRUCTION AND SHALL BE CONSIDERED INCIDENTAL TO THE COST OF CONSTRUCTION. COORDINATE ALL DEMOLITION WORK WITH SITE AND BUILDING DRAWINGS.
6. PRIOR TO ANY DEMOLITION, THE CONTRACTOR SHALL SUBMIT A SEQUENCE OF DEMOLITION PLANS TO THE OWNER. THIS PLAN SHALL DEPICT LOCATIONS OF PROPOSED TERMINATIONS AND ANY TEMPORARY SERVICES THAT WILL BE NEEDED.
7. CONTRACTOR REQUIRED TO CONFIRM/MAINTAIN BENCHMARKS. IF IMPACTED CONTRACTOR IS RESPONSIBLE FOR NOTIFICATION/RELOCATION AND COORDINATION WITH PROJECT TEAM.

GRADING & EROSION NOTES

1. SIDESLOPES SHALL NOT BE STEEPER THAN 3:1 (H:V) EXCEPT AS OTHERWISE IDENTIFIED ON THIS PLAN. ALL SIDESLOPES STEEPER THAN 3:1 (H: V) SHALL BE LINED WITH EROSION CONTROL BLANKET, OR ADDITIONAL MEASURES AS INDICATED.
2. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH "MAINE EROSION AND SEDIMENT CONTROL BMPS" MANUAL PUBLISHED BY BUREAU OF LAND AND WATER QUALITY MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, OR LATEST EDITION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO POSSESS A COPY OF THE EROSION CONTROL PLAN AT ALL TIMES.
3. ALL AREAS DISTURBED DURING CONSTRUCTION AND NOT RESTORED WITH IMPERVIOUS SURFACES (BUILDINGS, PAVEMENTS, WALKS, ETC.) SHALL RECEIVE LOAM AND SEED PER DETAIL.
4. SEE UTILITY PLAN FOR PIPE AND STRUCTURE DATA TABLES.

CONSTRUCTION PLAN

1. PROVIDE EROSION CONTROL MEASURES PRIOR TO SITE DISTURBANCE.
2. GRADING AND CLEARING LIMITS SHALL NOT ENCROACH ON ADJACENT PROPERTIES UNLESS NOTED OTHERWISE ON THE PLANS.
3. OPEN AREAS SHALL BE LIMITED TO AREAS BEING WORKED IN. THE AREA STRIPPED OF EXISTING VEGETATION AT ANY GIVEN TIME SHALL BE MINIMIZED AND BE PHASED WHERE PRACTICAL SO THAT AREAS ARE REVEGETATED AND PERMANENTLY STABILIZED BEFORE ADDITIONAL AREAS ARE STRIPPED OF EXISTING VEGETATION. CONSTRUCTION BY USE OF RIPRAP, SEED, MULCH, OR OTHER GROUND COVER WITHIN ONE WEEK FROM THE TIME IT WAS ACTIVELY WORKED.

UTILITY NOTES

1. UTILITY INFORMATION DEPICTED HEREON IS COMPILED USING PHYSICAL EVIDENCE LOCATED IN THE FIELD. UTILITIES DEPICTED HEREON 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. PROTECT EXISTING ONSITE UTILITIES AND ADJACENT STRUCTURE RIMS TO GRADE WHERE APPLICABLE.
2. ALL GRAVITY CONDUIT PIPES SHALL BE INSTALLED USING A PIPE LASER AND TARGET SYSTEM THROUGH THE PIPE. ON PIPE RUNS 50 FEET OR LESS, THE CONTRACTOR SHALL REQUEST ENGINEERS APPROVAL TO USE OR NOT USE A GROUND LASER.
3. MAINTAIN MINIMUM 5'-6" OF COVER ABOVE TOP OF WATER SERVICE PIPE.
4. MAINTAIN MINIMUM 10 FEET HORIZONTAL SEPARATION BETWEEN WATER SERVICES AND OTHER UTILITIES UNLESS OTHERWISE INDICATED ON THE PLANS. MAINTAIN MINIMUM 18 INCHES VERTICAL SEPARATION BETWEEN WATER SERVICES AND OTHER UTILITIES.
5. LOWER OR RAISE WATER SERVICES AS REQUIRED TO MAINTAIN MINIMUM 12 INCH VERTICAL SEPARATION FROM OTHER UTILITIES. WATER SERVICES CROSSING SEWERS SHALL BE PROVIDE 18 INCH MINIMUM SEPARATION BETWEEN THE BOTTOM OF WATER LINE AND TOP OF SEWER UNLESS NOTED OTHERWISE ON THE PLANS.
6. PIPE:
   - SEWER PIPE SHALL BE SDR 35 PVC OR APPROVED EQUAL.
   - STORMDRAIN SHALL BE ADS N-12 DUAL WALL HDPE PIPE WITH SMOOTH-WALLED INTERIOR OR APPROVED EQUAL. UNLESS NOTED OTHERWISE ON THE UTILITY PLANS.
   - WATER PIPE AND FITTINGS SHALL CONFORM TO CITY OF LEWISTON WATER AND SEWER DIVISION WATER PIPING SPECIFICATIONS. MAIN WATER SERVICE PIPE SHALL BE DUCTILE IRON, CLASS 52 PUSH-ON PIPE MEETING THE REQUIREMENTS OF AWWA/ANSI C-111/A21.11 (LATEST REVISION). PIPE SHALL BE CEMENT-LINED AWWA/ANSI C104/A21.4 WITH LINING TWICE THE THICKNESS SPECIFIED, AND COATED TWICE WITH A BITUMINOUS SEAL COATING. PROVIDE THRUST BLOCKS AT ALL WATER SERVICE BENDS.
7. WATER SERVICE ENTRANCE DESIGNS TO INCLUDE METERS AND BACKFLOW PREVENTERS TO MEET ALL STANDARDS AND REQUIREMENTS OF THE CITY OF LEWISTON WATER AND SEWER DIVISION.
8. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY GRADE CHANGES THAT WILL IMPACT STORM DRAINAGE INFRASTRUCTURE OR OTHER UTILITIES.
9. UTILITIES WITHIN 5 FEET FROM FACE OF BUILDING ARE COORDINATED ON RELEVANT M.E.P. DRAWINGS. CONTRACTOR SHALL COORDINATE INVERTS, CONNECTIONS AND MATERIALS WITH ALL DRAWINGS.
10. CONTRACTOR SHALL FURNISH AND INSTALL TRENCHING, MATERIALS AND BACKFILL FOR ALL UTILITIES. ELECTRICAL AND TELECOM/DATA PROVIDERS WILL PULL PRIMARY SERVICE TO TRANSFORMER AND PANEL. CONTRACTOR RESPONSIBLE FOR TIMING AND COORDINATION WITH UTILITIES AND DRAWINGS. COORDINATE WITH ELECTRICAL DRAWINGS FOR CONDUIT SCHEDULE, TYPE AND SIZES.
11. UTILITY CONTACTS:

    ELECTRIC:
    CENTRAL MAINE POWER (CMP)
    DAN BEGIN, ENERGY SERVICES SPECIALIST
    (207) 629-4517

    WATER AND SEWER:
    CITY OF LEWISTON WATER AND SEWER DIVISION
    KEVIN GAGNE, DEPUTY DIRECTOR
    (207) 513-3003

LANDSCAPE NOTES

1. PLANT QUANTITIES SHOWN ON PLANT LISTS ARE FOR CONVENIENCE TO THE CONTRACTOR ONLY. THE CONTRACTOR IS RESPONSIBLE FOR ALL PLANT MATERIAL INSTALLATION AS SHOWN ON PLANS.
2. SIZE AND GRADING STANDARDS OF PLANT MATERIALS SHALL CONFORM TO THE LATEST EDITION OF "U.S.A. STANDARD FOR NURSERY STOCK," BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC.
3. ALL PLANT MATERIAL SHALL BE FREE FROM INSECTS AND DISEASE.
4. ALL PLANTING SHALL BE DONE IN ACCORDANCE WITH ACCEPTABLE HORTICULTURAL PRACTICES. THIS IS TO INCLUDE PROPER PLANTING MIX, PLANT BED AND TREE PIT PREPARATION, PRUNING, STAKING OR GUYING, WRAPPING, SPRAYING, FERTILIZATION, PLANTING AND ADEQUATE MAINTENANCE UNTIL ACCEPTANCE BY THE OWNER.
5. PLANT MATERIAL SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR BY THE CONTRACTOR AND A PERIOD OF TWO YEARS THEREAFTER BY THE OWNER FROM DATE OF INSTALLATION. DURING THE ONE YEAR GUARANTEE PERIOD, DEAD PLANT MATERIAL SHALL BE REPLACED AT NO COST TO THE OWNER. AT THE END OF THE ONE YEAR PERIOD, THE CONTRACTOR SHALL OBTAIN FINAL ACCEPTANCE FROM THE OWNER.
6. ALL GRASS, OTHER VEGETATION AND DEBRIS SHALL BE REMOVED FROM ALL PLANTING AREAS PRIOR TO PLANTING.
7. EXISTING TREES TO BE PRESERVED WILL BE PROTECTED DURING CONSTRUCTION AND SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
8. THE LANDSCAPE CONTRACTOR IS ADVISED OF THE PRESENCE OF THE UNDERGROUND UTILITIES AND SHALL VERIFY THE EXISTENCE AND LOCATION OF SAME BEFORE COMMENCING AND DIGGING OPERATIONS. THE LANDSCAPE CONTRACTOR SHALL REPLACE OR REPAIR UTILITIES, PAVING, WALKS, CURBING, ETC. DAMAGED IN PERFORMANCE OF THIS JOB AT NO ADDITIONAL COST TO THE OWNER.
9. ALL SHRUB BEDS SHALL BE MULCHED WITH 3" CLEAN SHREDDED DARK BROWN BARK MULCH.
10. THE CONTRACTOR SHALL PROVIDE 4" LOAM FOR ALL AREAS TO BE SODDED OR SEEDED. PLANTING AREAS SHALL RECEIVE 12" ROLLED THICKNESS OF LOAM. THE LANDSCAPE CONTRACTOR SHALL COORDINATE SUBGRADE PREPARATION WITH THE GENERAL CONTRACTOR PRIOR TO PLACING LOAM.
11. ANY DEVIATION FROM THE LANDSCAPE PLAN, INCLUDING PLANT LOCATION, SELECTION, SIZE, QUANTITY OR CONDITION SHALL BE REVIEWED AND APPROVED BY THE OWNER AND LANDSCAPE ARCHITECT (AND MUNICIPAL AUTHORITY, IF APPLICABLE) PRIOR TO INSTALLATION ON SITE.
12. WHERE INDICATED ON PLAN, PLANTING SOIL MIXTURE FOR PERENNIAL AND ANNUAL FLOWER BED AREAS SHALL CONSIST OF FOUR PARTS TOPSOIL, TWO PARTS SPHAGNUM PEAT MOSS, AND ONE PART HORTICULTURAL PERLITE BY VOLUME. PEAT MOSS MAY BE SUBSTITUTED WITH WELL-ROTTED OR DEHYDRATED MANURE OR COMPOST. ROTOTILL BEDS TO A DEPTH OF 8 INCHES.

TYPICAL ABBREVIATIONS

AC	ACRE
AFG	ABOVE FINISH GRADE
APPROX.	APPROXIMATELY
BC	BOTTOM OF CURB
BCC	BITUMINOUS CONCRETE CURB
BIT	BITUMINOUS
BLDG	BUILDING
BW	BOTTOM OF WALL
CB	CATCH BASIN
CONC	CONCRETE
CONT	CONTINUOUS
DI	DUCTILE IRON
DIA	DIAMETER
DMH	DRAIN MANHOLE
E.W.	EACH WAY
ELEV	ELEVATION
FFE	FINISH FLOOR ELEVATION
FIN. GR.	FINISH GRADE
FTG	FOOTING
HDPE	HIGH DENSITY POLYETHYLENE
HGT	HEIGHT
HMA	HOT MIX ASPHALT
INV	INVERT
LF	LINEAR FEET
OC	ON CENTER
PVC	POLYVINYL CHLORIDE
PWD	PORTLAND WATER DISTRICT
R	RADIUS
R.O.W.	RIGHT OF WAY
S.F.	SQUARE FEET
SCH	SCHEDULE
SCSC	SUPPORM CONCRETE SLOPED CURB
SCVC	SUPPORM CONCRETE VERTICAL CURB
SD	STORM DRAIN
SGC	SLOPED GRANITE CURB
SMH	SEWER MANHOLE
SPECS	SPECIFICATIONS
SS	SANITARY SEWER
SSGC	SALAVAGED SLOPED GRANITE CURB
SVGC	SALAVAGED VERTICAL GRANITE CURB
TC	TOP OF CURB
TW	TOP OF WALL
TYP	TYPICAL
VGC	VERTICAL GRANITE CURB
VIF	VERIFY IN FIELD

REVISIONS

NO.	DESCRIPTION	DATE

SEBAGO TECHNICS
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STATE OF MAINE
DANIEL L. RILEY
No. 9697
PROFESSIONAL ENGINEER
09/04/2020

CMH CANCER CARE CENTER

300 MAIN STREET
LEWISTON, ME 04240

Central Maine Medical Center
The Central Maine Medical Family

GENERAL NOTES AND LEGEND

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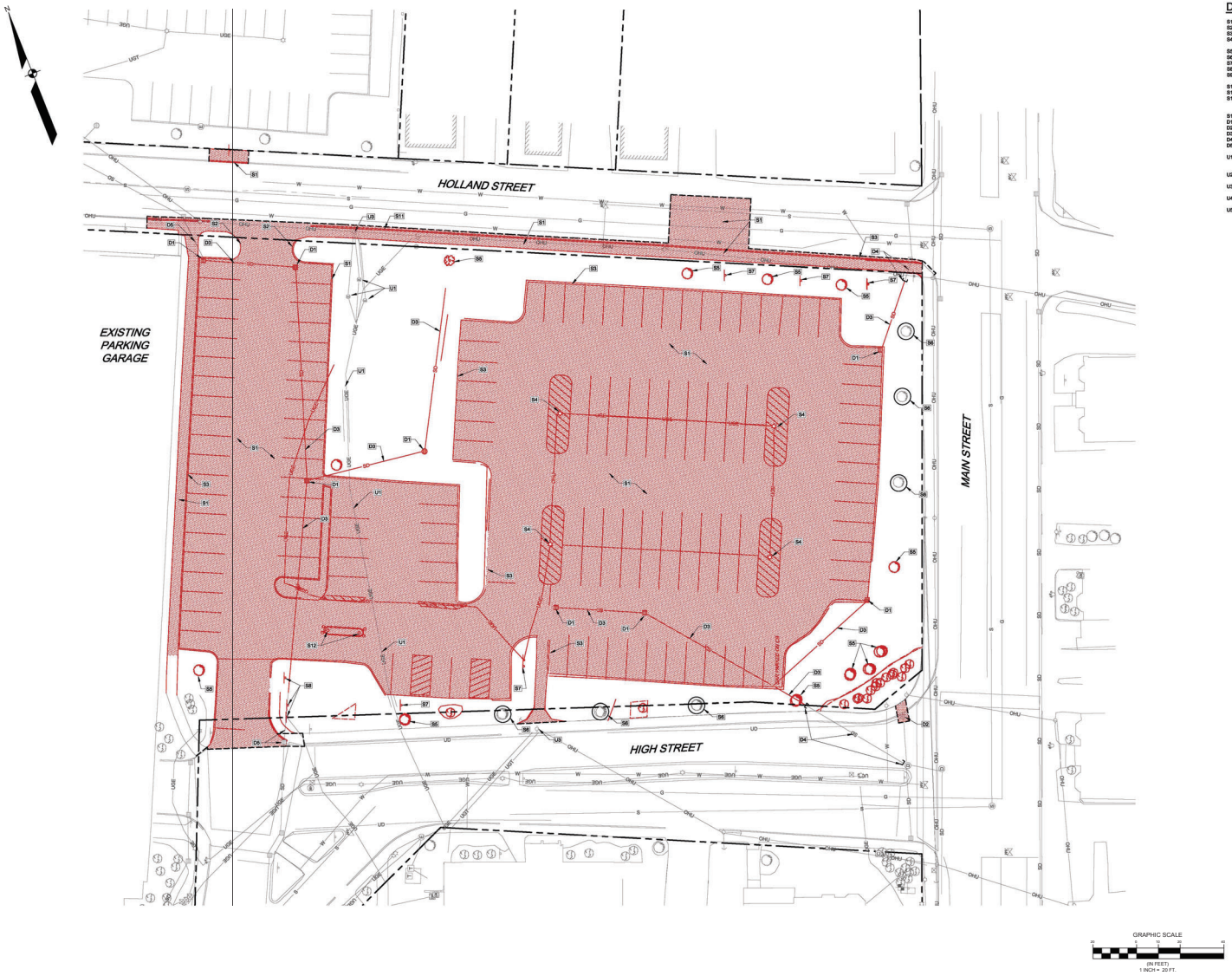

DEMO KEY NOTES

- S1 REMOVE BITUMINOUS PAVING
- S2 REMOVE GRANITE CURB
- S3 REMOVE BITUMINOUS CURB
- S4 REMOVE LIGHT POLE, FIXTURE AND BASE SALVAGE POLE AND FIXTURE
- S5 REMOVE TREE
- S6 PROTECT TREE TO REMAIN
- S7 REMOVE AND SALVAGE HOSPITAL SIGN
- S8 PROTECT SIGN TO REMAIN
- S9 REMOVE PARKING LOT LIGHTING BASE, POLE AND LUMINAIRES
- S10 REMOVE CHAIN LINK FENCE
- S11 REMOVE AND RESET GRANITE CURB
- S12 REMOVE AND SALVAGE VEHICULAR GATE AND CONTROLLER FOR REINSTALLATION AT HOLLAND STREET PARKING LOT
- S13 PROTECT CHAIN LINK FENCE TO REMAIN
- D1 REMOVE DRAINAGE STRUCTURE
- D2 MODIFY DRAINAGE STRUCTURE
- D3 REMOVE STORM DRAIN PIPE
- D4 FILL AND ABANDON DRAINAGE PIPE IN PLACE
- D5 PROTECT DRAINAGE PIPE OR STRUCTURE TO REMAIN
- U1 PROTECT UNDERGROUND ELECTRICAL AND TELECOMMUNICATIONS STRUCTURES AND DUCT BANKS TO REMAIN
- U2 REMOVE LIGHTING CONDUCTORS REMOVE OR ABANDON CONDUIT IN PLACE
- U3 PROTECT AND SUPPORT UTILITY POLE TO REMAIN. RESET GUY.
- U4 REMOVE EXISTING ELECTRIC METER AND DISCONNECT OVERHEAD ELECTRIC SERVICE
- U5 REMOVE OVERHEAD ELECTRIC SERVICE

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DEMOLITION PLAN

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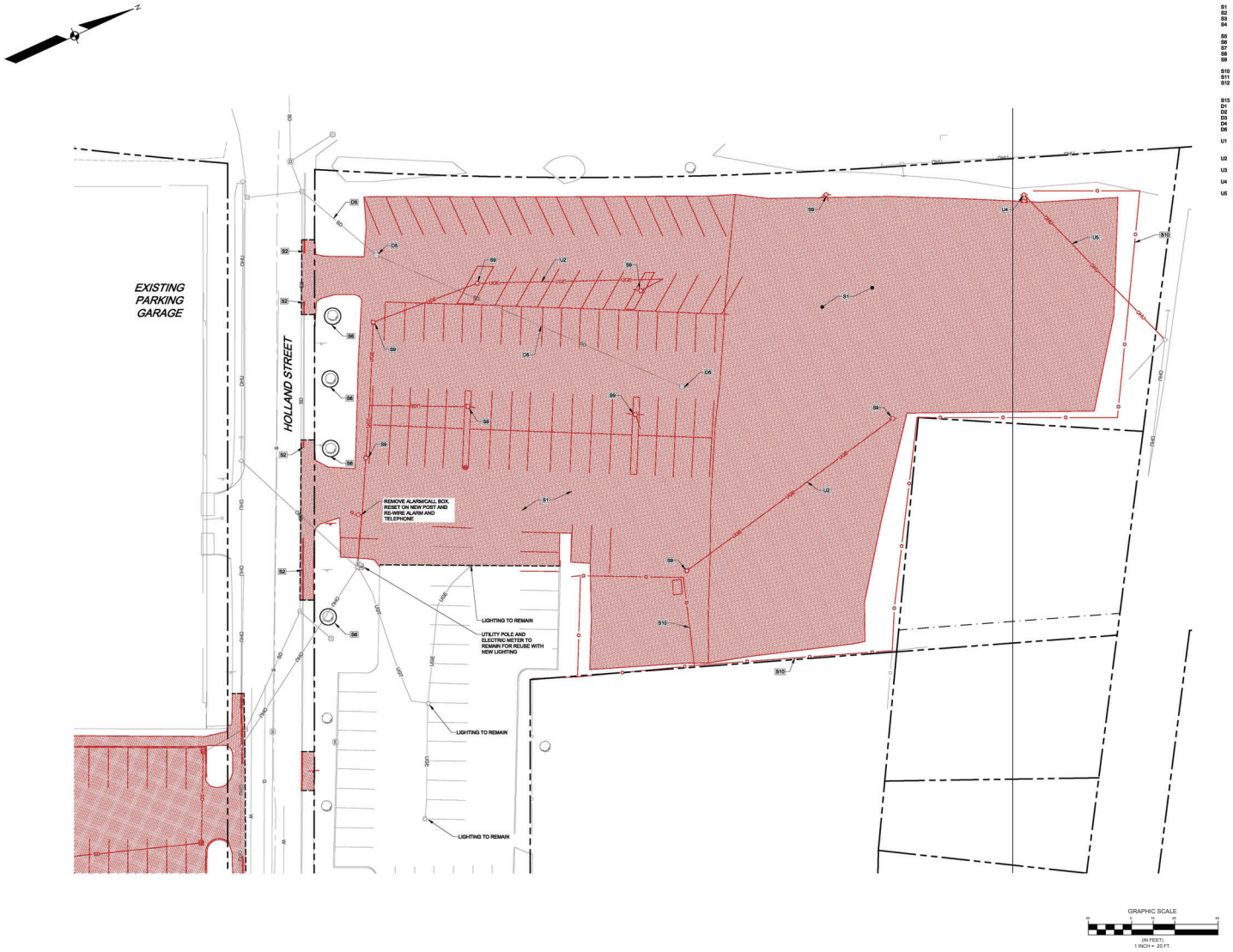

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C-104

GENERAL NOTES

1. THE RECORD OWNERS OF THE PARCELS ARE:
   LOT 12: CENTRAL MAINE REAL ESTATE MANAGEMENT CORP BY DEED DATED MAY 10, 1984 AND RECORDED IN BOOK 1720, PAGE 260 AND DEED DATED NOVEMBER 4, 1988 AND RECORDED IN BOOK 2336, PAGE 7.
   LOT 14: CENTRAL MAINE REAL ESTATE MANAGEMENT CORP BY DEED DATED OCTOBER 5, 1999 AND RECORDED IN BOOK 4327, PAGE 273.
   LOT 16 & 17: CENTRAL MAINE HEALTHCARE CORP BY DEED DATED MAY 13, 2004 AND RECORDED IN BOOK 5912, PAGE 7.
   LOT 13: CENTRAL MAINE HEALTHCARE CORP BY DEED DATED DECEMBER 22, 2006 AND RECORDED IN BOOK 7012, PAGE 145.
   LOT 9, 10 & 18: CENTRAL MAINE MEDICAL CENTER BY DEED DATED JUNE 26, 2008 AND RECORDED IN DEED BOOK 7564, PAGE 180.

   BOOK AND PAGE NUMBERS SHOWN HEREON ARE IN REFERENCE TO THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS (ACRD). LOT NUMBERS REFERENCE CITY OF LEWISTON TAX MAP 194.

2. THE PROPERTY IS SHOWN AS LOTS 9, 10, 12, 13, 14, 16, 17 & 18 ON THE CITY OF LEWISTON TAX MAP 194 AND IS LOCATED IN THE CENTREVILLE (CV) DISTRICT.

3. SPACE AND BULK CRITERIA FOR THE CV DISTRICT ARE AS FOLLOWS:

	REQUIRED:	PROVIDED:
MINIMUM LOT SIZE	NONE	1.64 ACRE (LEASE AREA)
MINIMUM STREET FRONTAGE:	25 FT	181 FT
MINIMUM FRONT YARD:	NONE	21 FT (MAIN ST)
MINIMUM SIDE YARD:	NONE	9 FT (HIGH ST)
MINIMUM REAR YARD:	NONE	115 FT (LEASE AREA LINE)
MAXIMUM BUILDING HEIGHT:	20FT MIN- 150FT MAX	35 FT
MAXIMUM BUILDING COVERAGE:	100%	41% (LEASE AREA)
MAXIMUM IMPERVIOUS COVERAGE:	100%	77% (LEASE AREA)

   * SEE ORDINANCE FOR MORE PARTICULAR INFORMATION.

4. TOPOGRAPHIC INFORMATION OF THE PARKING AREA SHOWN HEREON IS BASED UPON A FIELD SURVEY PERFORMED BY SEBAGO TECHNICS INC IN MARCH OF 2019 WITH THICK SNOW COVER. BOUNDARY AND TOPOGRAPHIC INFORMATION OF PORTIONS OF HOLLAND STREET SHOWN HEREON IS BASED UPON A FIELD SURVEY PERFORMED BY SEBAGO TECHNICS IN AUGUST OF 2015. TOPOGRAPHIC INFORMATION OF PORTIONS OF HOLLAND STREET, MAIN STREET AND HIGH STREET SHOWN HEREON IS BASED UPON A FIELD SURVEY PERFORMED IN 2007, SEE PLAN REFERENCE G.

5. PLAN REFERENCES:
   A. "LEASEHOLD CONDOMINIUM PLAT & PLAN - HIGH STREET PARKING CONDOMINIUM" BY A.R.C.C LAND SURVEYORS, INC. DATED MARCH 27, 2003 AND RECORDED IN ACRD PLAN BOOK 42, PAGE 194.
   B. STATE OF MAINE DEPARTMENT OF TRANSPORTATION RIGHT OF WAY MAP "STATE HIGHWAY '15' - FEDERAL AID PROJECT NO. STP-6697" DATED JANUARY 1998, D.O.T. FILE NO 1-236, SHEET 3 OF 7.
   C. "HIGH STREET REALIGNMENT - RIGHT OF WAY", DATED JULY 22, 2002, PREPARED BY TAYLOR ENGINEERING ASSOCIATES.
   D. "STANDARD BOUNDARY SURVEY, CENTRAL MAINE MEDICAL CENTER", DATED OCTOBER 23, 1992, PREPARED BY A.R.C.C. LAND SURVEYORS.
   E. "TOPOGRAPHICAL PLAN OF EXISTING CONDITIONS AND PROPERTY PLAN", DATED DECEMBER 11, 2000, PREPARED BY A.R.C.C. LAND SURVEYORS, INC.
   F. BOUNDARY & TOPOGRAPHIC SURVEY OF 100-112 HOLLAND STREET BY SEBAGO TECHNICS INC, (PROJECT #15305) LAST DATED MARCH 18, 2018, NOT RECORDED.
   G. GRADING AND UTILITY PLAN OF CMMC PARKING LOT EXPANSION BY SEBAGO TECHNICS INC (PROJECT #06456) LAST DATED SEPTEMBER 4, 2012, NOT RECORDED.
   H. EXISTING CONDITIONS PLAN OF PARKING LOT EXPANSION BY SEBAGO TECHNICS INC (PROJECT #06456) LAST DATED SEPTEMBER 4, 2012, NOT RECORDED.

6. PLAN ORIENTATION IS GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE 1802-NAD83, ELEVATIONS DEPICTED HEREON ARE NAVD88, BASED ON DUAL FREQUENCY GPS OBSERVATIONS.

7. UTILITY INFORMATION DEPICTED HEREON, UNLESS OTHERWISE NOTED, IS OF QUALITY LEVEL D PER AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE) STANDARD CI/ASCE 38-02. UTILITIES DEPICTED HEREON 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 WITHIN THE PROJECT AREA PRIOR TO CONSTRUCTION AND/OR EXCAVATION.

8. THE DEFINITION OF HIGH STREET PER THE CITY OF LEWISTON BOOK OF STREETS AND ROADS BOOK 8 PAGES 67 & 106, BOOK 1 PAGES 15 & 18, AND BOOK 5 PAGES 25 & 26.

9. THE APPROXIMATE AREA OF THE PROJECT SITE BETWEEN HOLLAND, MAIN, HIGH STREET AT THE PARKING GARAGE IS 1.65 ACRES.

10. ALL WORK SHALL CONFORM TO THE APPLICABLE CODES AND ORDINANCES.

11. CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIM OR HERSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIM OR HERSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.

12. CONTRACTOR SHALL NOTIFY ENGINEER OF ALL PRODUCTS OR ITEMS NOTED AS "EXISTING" WHICH ARE NOT FOUND IN THE FIELD.

13. PROVIDE ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND OWNER'S REQUIREMENTS UNLESS SPECIFICALLY OTHERWISE INDICATED OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.

14. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE ENGINEER.

15. CONTRACTOR SHALL CLEAN AND REMOVE DEBRIS AND SEDIMENT DEPOSITED ON PUBLIC. STREETS, SIDEWALKS, ADJACENT AREAS, OR OTHER PUBLIC WAYS DUE TO CONSTRUCTION.

16. CONTRACTOR SHALL INCORPORATE PROVISIONS AS NECESSARY IN CONSTRUCTION TO PROTECT EXISTING STRUCTURES, PHYSICAL FEATURES, AND MAINTAIN SITE STABILITY DURING CONSTRUCTION. CONTRACTOR SHALL RESTORE ALL AREAS TO ORIGINAL CONDITION AND AS DIRECTED BY DESIGN DRAWINGS.

17. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS PRIOR TO CONSTRUCTION.

18. THE CONTRACTOR IS HEREBY CAUTIONED THAT ALL SITE FEATURES SHOWN HEREON ARE BASED ON FIELD OBSERVATIONS BY THE SURVEYOR AND BY INFORMATION PROVIDED BY UTILITY COMPANIES. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT DIG SAFE (811) AT LEAST THREE (3) BUT NOT MORE THAN THIRTY (30) DAYS PRIOR TO COMMENCEMENT OF EXCAVATION OR DEMOLITION TO VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES.

19. CONTRACTORS SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THE REQUIREMENTS OF 23 MRSA 3360-A. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE APPROPRIATE UTILITIES TO OBTAIN AUTHORIZATION PRIOR TO RELOCATION OF ANY EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS. IF A UTILITY CONFLICT ARISES, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER, THE MUNICIPALITY AND APPROPRIATE UTILITY COMPANY PRIOR TO PROCEEDING WITH ANY RELOCATION.

20. ALL PAVEMENT MARKINGS AND DIRECTIONAL SIGNAGE SHOWN ON THE PLAN SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) STANDARDS.

21. ALL PAVEMENT JOINTS SHALL BE SAWCUT PRIOR TO PAVING TO PROVIDE A DURABLE AND UNIFORM JOINT.

22. NO HOLES, TRENCHES OR STRUCTURES SHALL BE LEFT OPEN OVERNIGHT IN ANY EXCAVATION ACCESSIBLE TO THE PUBLIC OR IN PUBLIC RIGHTS-OF-WAY.

23. IMMEDIATELY UPON COMPLETION OF CUTS/FILLS, THE CONTRACTOR SHALL STABILIZE DISTURBED AREAS IN ACCORDANCE WITH EROSION CONTROL NOTES AND AS SPECIFIED ON PLANS.

24. THE CONTRACTOR SHALL BE FULLY AND SOLELY RESPONSIBLE FOR THE REMOVAL, REPLACEMENT AND RECTIFICATION OF ALL DAMAGED AND DEFECTIVE MATERIAL AND WORKMANSHIP IN CONNECTION WITH THE CONTRACT WORK. THE CONTRACTOR SHALL REPLACE OR REPAIR AS DIRECTED BY THE OWNER ALL SUCH DAMAGED OR DEFECTIVE MATERIALS WHICH APPEAR WITHIN A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION.

25. WHERE THE TERMS "APPROVED EQUAL", "OTHER APPROVED", "EQUAL TO", "ACCEPTABLE" OR OTHER GENERAL QUALIFYING TERMS ARE USED IN THESE NOTES, IT SHALL BE UNDERSTOOD THAT REFERENCE IS MADE TO THE RULING AND JUDGEMENT OF SEBAGO TECHNICS, INC.

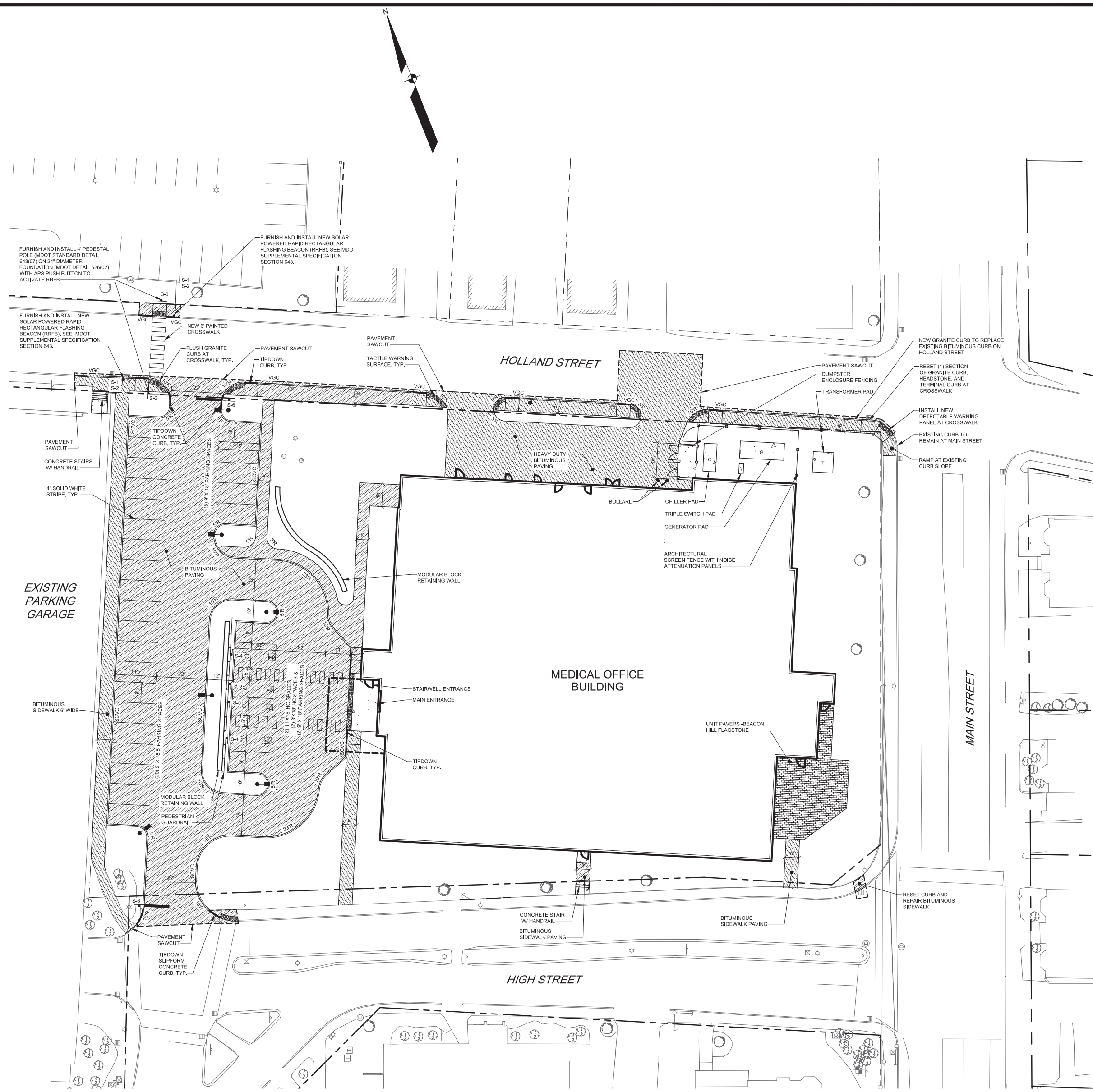
26. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY PROTECTION FOR THE WORK UNTIL TURNED OVER TO THE OWNER.

27. THE CONTRACTOR SHALL MAINTAIN A CURRENT AND COMPLETE SET OF CONSTRUCTION DRAWINGS ON SITE DURING ALL PHASES OF CONSTRUCTION FOR USE OF ALL TRADES.

28. THE CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ANY CHANGES AND DEVIATION OF APPROVED PLANS NOT AUTHORIZED BY THE ARCHITECT/ENGINEER AND/OR CLIENT/OWNER.

29. DETAILS ARE INTENDED TO SHOW END RESULT OF DESIGN. ANY MODIFICATION TO SUIT FIELD DIMENSION AND CONDITION SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ANY WORK.

30. BEFORE THE FINAL ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL REMOVE ALL EQUIPMENT AND MATERIALS, REPAIR OR REPLACE PRIVATE OR PUBLIC PROPERTY WHICH MAY HAVE BEEN DAMAGED OR DESTROYED DURING CONSTRUCTION, CLEAN THE AREAS WITHIN AND ADJACENT TO THE PROJECT WHICH HAVE BEEN OBSTRUCTED BY HIS/HER OPERATIONS, AND LEAVE THE PROJECT AREA NEAT AND PRESENTABLE.



SIGN LEGEND

S-1	PEDESTRIAN CROSSING SIGN, W11-2, 30" X 30"	
S-2	DOWNWARD DIAGONAL ARROW (PLAQUE) , W16-7P, 24" X 12"	
S-3	PEDESTRIAN PUSHBUTTON SIGN, R10-25, 9" X 12"	
S-4	RESERVED PARKING AND VAN ACCESSIBLE SIGNS, R7-8 AND R7-8P	
S-5	RESERVED PARKING SIGN, R7-8	
S-6	STOP SIGN, R1-1	

STANDARDS NOTES FOR MAJOR DEVELOPMENT REVIEW PLANS.

1. "PRIOR TO ANY CERTIFICATE OF OCCUPANCY BEING ISSUED, THE APPLICANT SHALL MEET THE PROVISIONS OF ARTICLE XIII, SECTION 15(E), POST-CONSTRUCTION STORMWATER MANAGEMENT SYSTEM PLAN APPROVAL AND (F), POST-CONSTRUCTION STORMWATER MANAGEMENT SYSTEM PLAN COMPLIANCE."
2. "PRIOR TO ANY CERTIFICATE OF OCCUPANCY BEING ISSUED, THE APPLICANT'S DESIGNING ENGINEER SHALL SUBMIT A FINAL INSPECTION REPORT TO THE CITY INDICATING THAT THE STORMWATER SYSTEM AND ALL SITE IMPROVEMENTS HAVE BEEN COMPLETED IN ACCORDANCE WITH THE APPROVED PLAN".
3. "A BUILDING/USE PERMIT SHALL BE REQUIRED FOR ALL ACTIVITIES REGULATED BY THE ZONING AND LAND USE CODE INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:
   (a) THE CONSTRUCTION, ALTERATION, RELOCATION, DEMOLITION, PLACEMENT, OR REMOVAL OF OR THE ADDITION TO ANY STRUCTURE OR BUILDING OR PART THEREOF;
   (b) THE CONSTRUCTION/ INSTALLATION OF A WALL OR FENCE 3.5 FEET OR GREATER IN HEIGHT IN ACCORDANCE WITH ARTICLE XII, SEC. 7;
   (c) THE ERECTION/ INSTALLATION OF A SIGN OR THE REPLACEMENT OF A SIGN FACE REGULATED IN ACCORDANCE WITH ARTICLE XII, SECTION 16 OF THIS CODE;
   (d) THE CONSTRUCTION OF A DRIVEWAY OR PARKING LOT;
   (e) THE CHANGE OF USE OR OCCUPANCY OF A BUILDING, STRUCTURE, OR LOT OF LAND"
4. "NO PERMIT SHALL BE ISSUED FOR THE CONSTRUCTION, ADDITION, ALTERATION, REMOVAL, DEMOLITION OR CHANGE OF USE OF ANY BUILDING, STRUCTURE OR PART THEREOF, OR FOR THE USE OF ANY PREMISES UNLESS THE PLANS AND INTENDED USE INDICATE THAT THE BUILDING, STRUCTURE OR PREMISES IS TO CONFORM IN ALL RESPECTS TO ZONING AND LAND USE CODE OF THE CITY OF LEWISTON AND THE LAND USE LAWS OF THE STATE OF MAINE."
5. "THE GRANTING OF THIS APPROVAL IS DEPENDENT UPON AND LIMITED TO THE PROPOSALS AND PLANS CONTAINED IN THE APPLICATION AND SUPPORTING DOCUMENTS SUBMITTED AND AFFIRMED TO BY THE APPLICANT. ANY VARIATION FROM THESE PLANS, PROPOSALS, AND SUPPORTING DOCUMENTS IS SUBJECT TO REVIEW AND APPROVAL PRIOR TO IMPLEMENTATION. FURTHER SUBDIVISION OF PROPOSED LOTS BY THE APPLICANT OR FUTURE OWNERS IS SPECIFICALLY PROHIBITED WITHOUT PRIOR APPROVAL OF THE BOARD."
6. "THE APPLICANT SHALL SECURE AND COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL LICENSES, PERMITS, AUTHORIZATIONS, CONDITIONS, AGREEMENTS, AND ORDERS PRIOR TO OR DURING CONSTRUCTION AND OPERATION, AS APPROPRIATE."

APPROVAL- CITY OF LEWISTON PLANNING BOARD

DATE

CHAIRPERSON

GRAPHIC SCALE

20 0 10 20 40

(IN FEET)
1 INCH = 20 FT.

REVISIONS		
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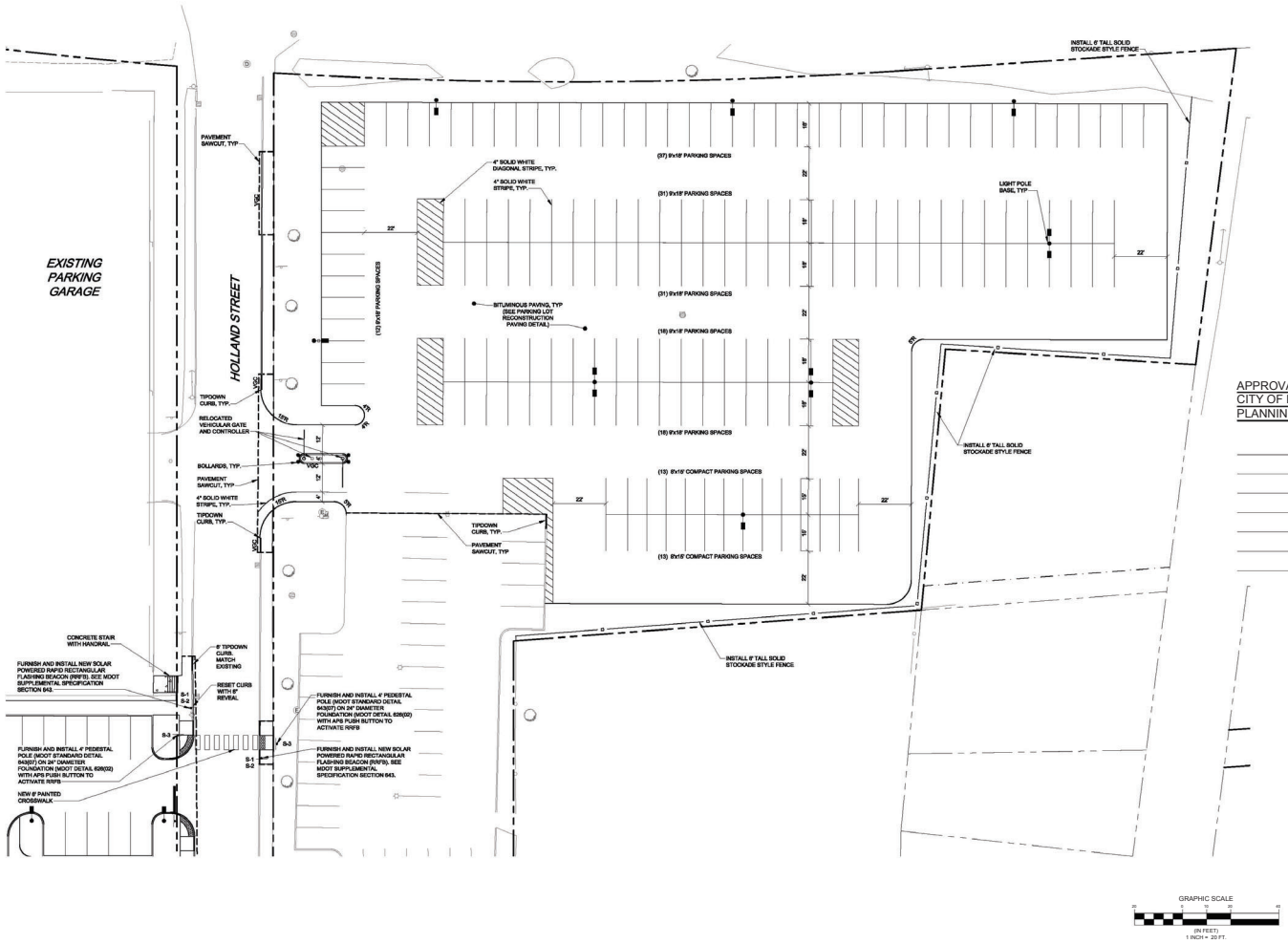

APPROVAL-
CITY OF LEWISTON
PLANNING BOARD

DATE

CHAIRPERSON

REVISIONS

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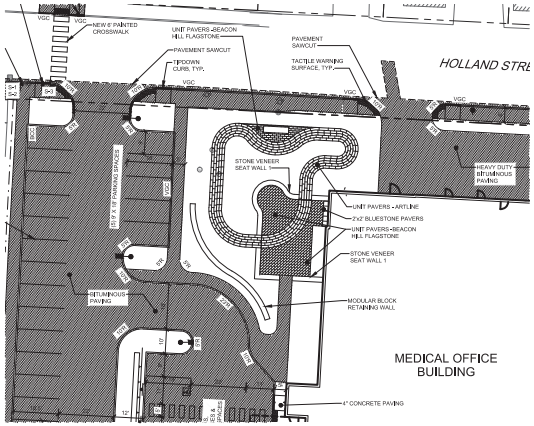
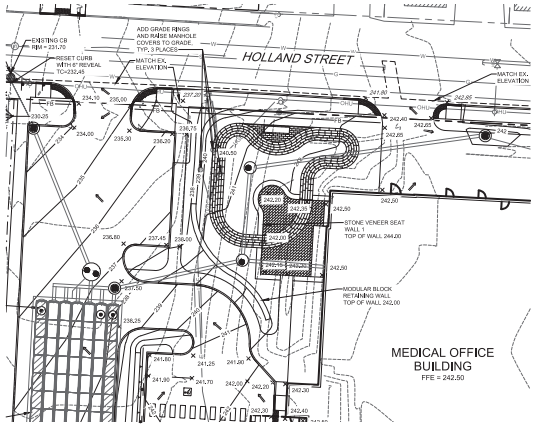
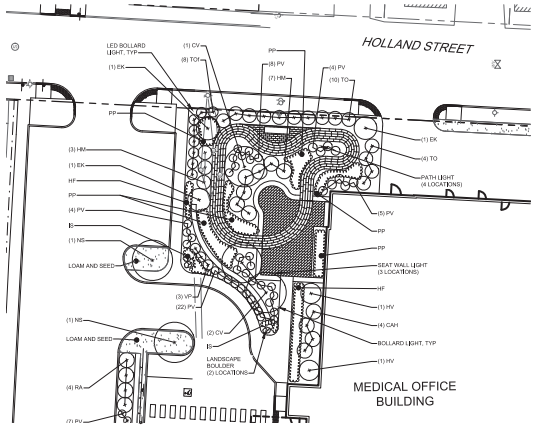


ALTERNATE SITE PLAN
SCALE: HORIZ. 1" = 20'



ALTERNATE GRADING PLAN
SCALE: HORIZ. 1" = 20'



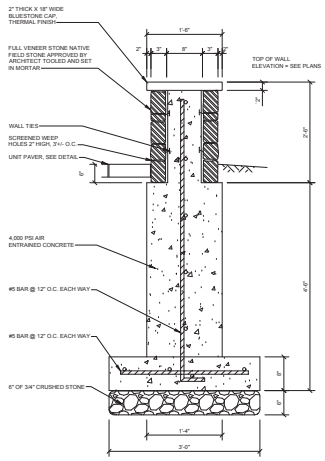
ALTERNATE LANDSCAPE PLAN
SCALE: HORIZ. 1" = 20'

CAST-IN-PLACE CONCRETE

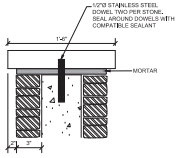
1. ALL CONCRETE WORK AND REINFORCING BAR DETAILS SHALL CONFORM TO THE LATEST ACI STANDARDS, ACI 301 AND 318.
2. WHERE WALLS ARE SHOWN ON PLAN AS CURVED WALLS, BUILD FORMWORK TO ACHIEVE TRUE RADIUS OF CURVATURE OF WALLS. PROVIDE WEDGE SPACERS IN FORM PANELS AS REQUIRED TO CREATE PANELS NOT EXCEEDING TWO FEET WIDTH ALONG CURVE.
3. FOUNDATION CONCRETE SHALL BE AIR-ENTRAINED, (5 TO 7%), AND HAVE A 28-DAY COMPRESSIVE STRENGTH OF 4,000 psi. SUBMIT MIX DESIGNS FOR APPROVAL.
4. PLACE NO CONCRETE WITHOUT REVIEW AND APPROVAL OF THE REINFORCING AND EMBEDDED ITEMS BY ENGINEER. SUBMIT REINFORCING SHOP DRAWINGS FOR APPROVAL.
5. ALL CONCRETE MATERIALS, REINFORCEMENT, AND FORMS SHALL BE FREE OF FROST OR DEBRIS.
6. CONSOLIDATE ALL CONCRETE WITH A VIBRATOR OR OTHER MEANS RECOMMENDED BY ACI 301.
7. PROVIDE DIAGONAL REINFORCING BARS AROUND INSIDE CORNERS OF ALL OPENINGS IN CONCRETE.
8. MINIMUM CONCRETE COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS:
   CONCRETE CAST AGAINST EARTH: 3 INCHES
   FORMED CONCRETE EXPOSED TO EARTH OR WEATHER: 2 INCHES
9. CALCIUM CHLORIDE IS PROHIBITED FROM ALL CONCRETE MIXES.
10. PLACE WALL CONTROL JOINTS AS SHOWN ON DRAWINGS OR AT A MAXIMUM OF 15 FEET O.C.
11. BACKFILL BOTH SIDES OF FOUNDATION WALLS SIMULTANEOUSLY TO PREVENT UNEVEN LATERAL LOADING.
12. PROVIDE VOLCLAY BW WATERSTOPS AT JOINTS INDICATED ON THE DRAWINGS. SUBMIT MANUFACTURER'S CUT SHEET FOR APPROVAL.
13. MASONRY SUBCONTRACTORS SHALL BE REQUIRED TO ATTEND A PRECONSTRUCTION MEETING WITH THE ARCHITECT.

MASONRY

1. PERFORM MASONRY WORK ONLY WHEN AIR AND SUBSTRATE TEMPERATURES ARE 40 DEGREES AND ABOVE AND WILL REMAIN SO UNTIL MASONRY HAS DRIED, BUT FOR NOT LESS THAN 3 DAYS AFTER COMPLETION OF WORK.
2. PROVIDE A 1:1/8 TYPE N MORTAR, PER ASTM C270, FOR MORTARING GRANITE STONES TO MASONRY BLOCK.
   A. PORTLAND CEMENT: ASTM C150, TYPE II WHITE PORTLAND CEMENT
   B. HYDRATED LIME: ASTM C207, TYPE S.
   C. AGGREGATE FOR MORTAR: TO BE SUBMITTED TO AND REVIEWED BY THE RESIDENT.
   D. WATER: POTABLE
3. USE SOLOMON MORTAR TINT AS APPROVED BY ARCHITECT TO ACHIEVE DESIRED MORTAR COLOR.
4. MEASUREMENT AND MIXING: MEASURE CEMENTITIOUS AND AGGREGATE MATERIAL IN A DRY CONDITION BY VOLUME OR EQUIVALENT WEIGHT. DO NOT MEASURE BY SHOVEL. USE KNOWN MEASURE. MIX MATERIALS IN A CLEAN MECHANICAL MIXER.
5. THOROUGHLY MIX CEMENTITIOUS AND AGGREGATE MATERIAL TOGETHER BEFORE ADDING ANY WATER. THEN MIX AGAIN ADDING ONLY ENOUGH WATER TO PRODUCE A DAMP, UNWORKABLE MIX WHICH WILL RETAIN ITS FORM WHEN PRESSED INTO A BALL. MAINTAIN MORTAR IN THIS DAMPENED CONDITION FOR 1 TO 2 HOURS. ADD REMAINING WATER IN SMALL PORTIONS UNTIL MORTAR OF DESIRED CONSISTENCY IS REACHED. USE MORTAR WITHIN 30 MINUTES OF FINAL MIXING. DO NOT RE-TEMBER OR USE PARTIALLY HARDENED MIX.
6. ALL ANCHOR WIRE, TIES, ETC. SHALL BE STAINLESS STEEL.
7. PROVIDE "MORTAR NET" WEEP VENTS AT LOCATIONS INDICATED ON DRAWINGS.
8. MASONRY SUBCONTRACTORS SHALL BE REQUIRED TO ATTEND A PRECONSTRUCTION MEETING WITH THE ARCHITECT.



SECTION STONE VENEER WALL 1
NOT TO SCALE



CAP & FLASHING DETAIL
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GRAPHIC SCALE
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1 INCH = 20 FT.

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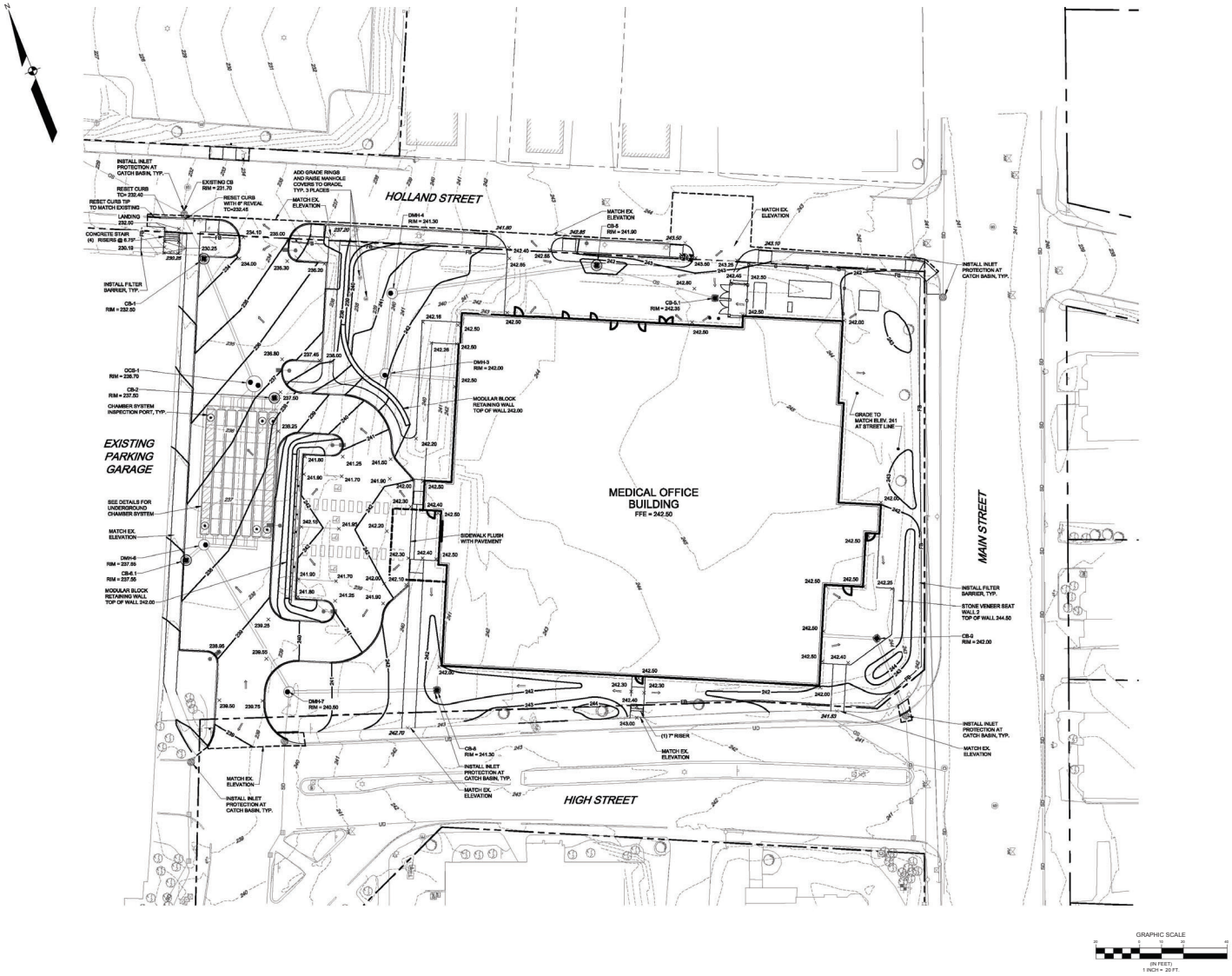

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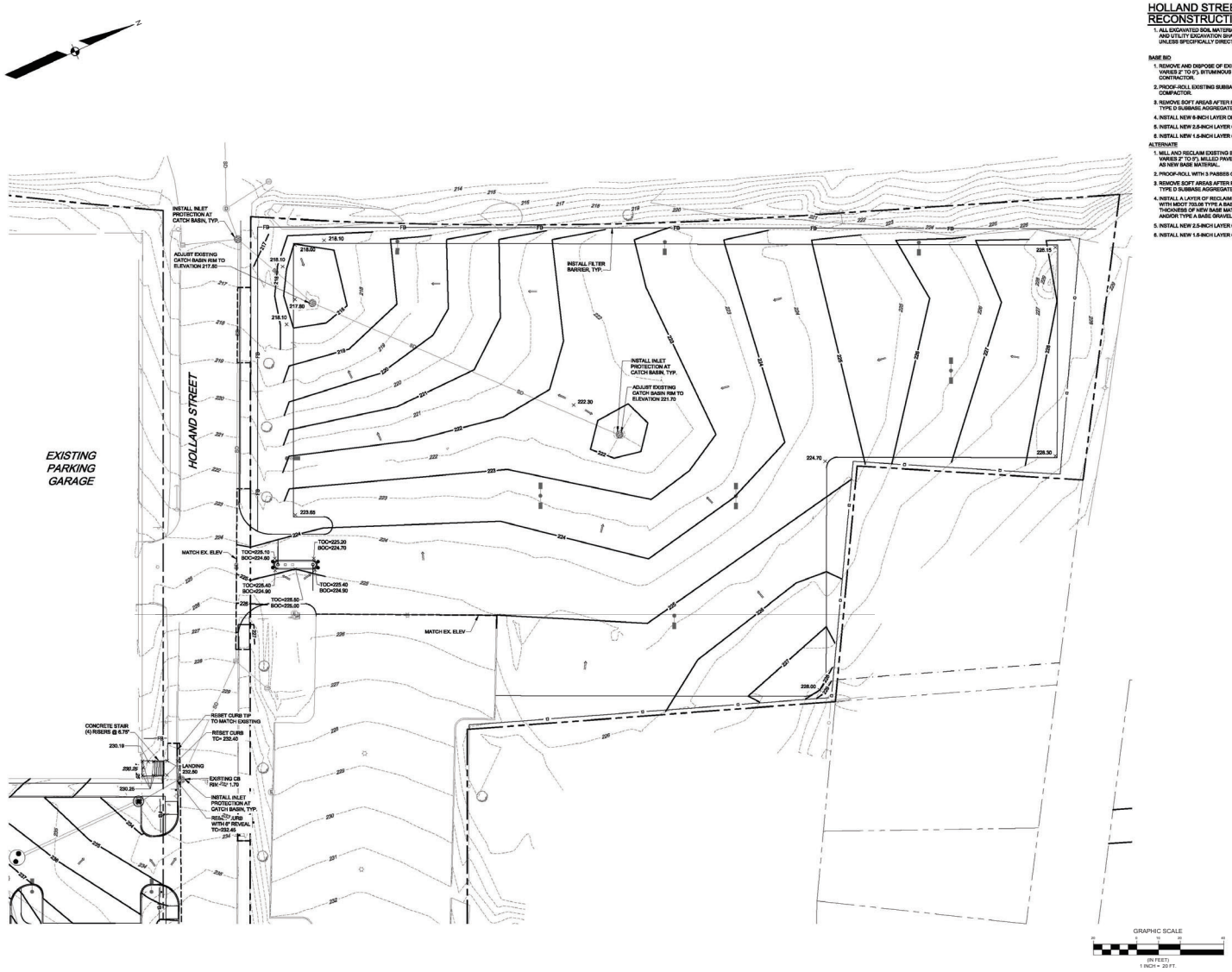

HOLLAND STREET PARKING RECONSTRUCTION NOTES

1. ALL EXCAVATED SOIL MATERIALS FROM PARKING CONSTRUCTION, LIGHTING AND UTILITY EXCAVATION SHALL REMAIN ON SITE AND REUSED AS BACKFILL UNLESS SPECIFICALLY DIRECTED OTHERWISE BY THE OWNER.

BASE BID

1. REMOVE AND DISPOSE OF EXISTING BITUMINOUS PAVEMENT (THICKNESS VARIES 2" TO 6"). BITUMINOUS PAVEMENT BECOMES THE PROPERTY OF THE CONTRACTOR.
2. PROOF-ROLL EXISTING SUBBASE WITH 3 PASSES OF 10 TON VIBRATORY ROLLER COMPACTOR.
3. REMOVE SOFT AREAS AFTER PROOF-ROLLING AND REPLACE WITH MDOT 703.06 TYPE D SUBBASE AGGREGATE
4. INSTALL NEW 8-INCH LAYER OF MDOT 703.06 TYPE A BASE AGGREGATE
5. INSTALL NEW 2.5-INCH LAYER OF MDOT 19.0 MM HMA BINDER
6. INSTALL NEW 1.5-INCH LAYER OF MDOT 12.5MM HMA SURFACE

ALTERNATE

1. MILL AND RECLAIM EXISTING BITUMINOUS PAVEMENT (THICKNESS VARIES 2" TO 6"). MILLED PAVEMENT TO BE GRADED AND COMPACTED ON SITE AS NEW BASE MATERIAL.
2. PROOF-ROLL WITH 3 PASSES OF 10 TON VIBRATORY ROLLER COMPACTOR.
3. REMOVE SOFT AREAS AFTER PROOF-ROLLING AND REPLACE WITH MDOT 703.06 TYPE D SUBBASE AGGREGATE.
4. INSTALL A LAYER OF RECLAIMED ASPHALT. SHIMMED AS NEEDED TO GRADE WITH MDOT 703.06 TYPE A BASE AGGREGATE. SHIM TO PROVIDE 6" TOTAL THICKNESS OF NEW BASE MATERIAL COMPRISED OF RECLAIMED ASPHALT AND/OR TYPE A BASE GRAVEL
5. INSTALL NEW 2.5-INCH LAYER OF MDOT 19.0 MM HMA BINDER
6. INSTALL NEW 1.5-INCH LAYER OF MDOT 9.5MM HMA SURFACE

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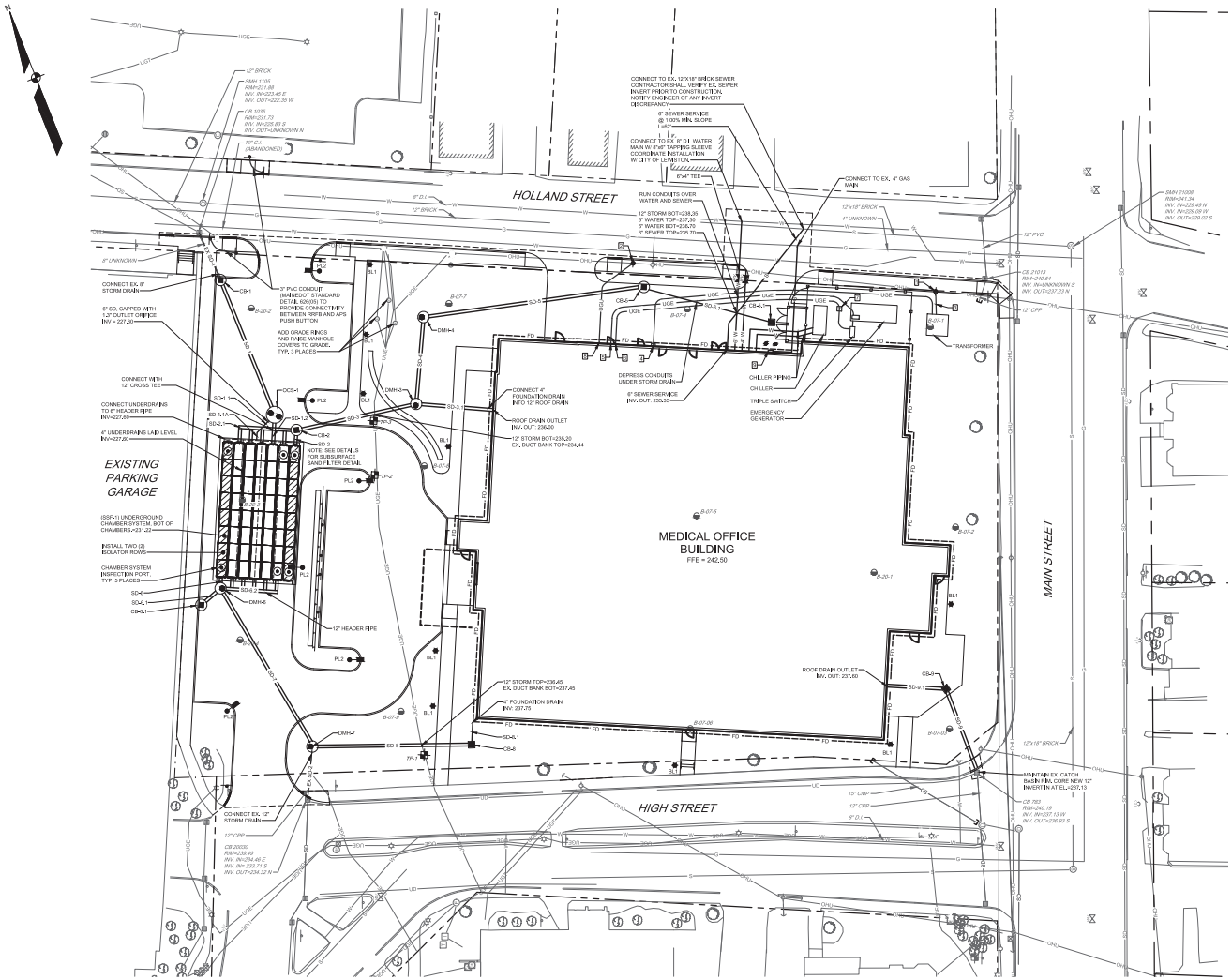

STORM DRAIN STRUCTURE DATA

STRUCTURE	RIM	INV. IN	INV. OUT:	DIAM.
CB-1	232.50	227.15 (SD-1)	227.03 (EX SD-1)	48"
CB-2	237.50	234.00 (SD-2) 232.26 (SD-4.1)	231.20 (SD-3)	48"
CB-6	241.80	238.20 (SD-5.1)	238.10 (SD-5)	48"
CB-5.1	242.35		236.50 (SD-5.1)	24"
CB-4.1	237.55		232.36 (SD-4.1)	48"
CB-8	241.30	237.45 (SD-5.1)	235.20 (SD-5)	24"
CB-9	242.00	237.45 (SD-5.1)	237.25 (SD-9)	24"
DMH-3	243.00	235.80 (SD-4) 235.80 (SD-5.1)	235.70 (SD-3)	48"
DMH-4	241.30	237.20 (SD-6)	237.10 (SD-6)	48"
DMH-6	237.65	232.26 (SD-4.1) 232.26 (SD-7) 232.26 (SD-4.2)	231.22 (SD-6)	48"
DMH-7	240.00	235.80 (SD-8) 233.80 (EX SD-2)	233.70 (SD-7)	48"
OCS-1	236.70	232.26 (SD-1.2) 227.60 (SD-1.1)	227.00 (SD-1)	72"

STORM DRAIN PIPE DATA

NAME	SIZE	LENGTH	SLOPE
SD-1	12"	57'	0.62%
SD-1.1	6"	8'	0.00%
SD-1.1A	6"	3'	0.00%
SD-1.2	12"	9'	0.00%
SD-2	12"	4'	0.00%
SD-2.1	12"	22'	0.00%
SD-3	12"	48'	3.54%
SD-3.1	12"	31'	0.65%
SD-4	12"	33'	3.85%
SD-5	12"	90'	1.20%
SD-5.1	10"	53'	0.98%
SD-6	12"	2'	0.00%
SD-6.1	12"	7'	1.47%
SD-6.2	12"	22'	0.00%
SD-7	12"	74'	1.06%
SD-8	12"	64'	3.28%
SD-8.1	4"	9'	1.18%
SD-9	12"	35'	5.63%
SD-9.1	12"	24'	5.63%

UTILITY KEY NOTES

1. NEW SERVICE POLE AND RISERS FOR ELECTRIC SERVICE.
2. NEW SERVICE POLE AND RISERS FOR TELECOMMUNICATIONS SERVICE.
3. PRIMARY POWER TO TRANSFORMER, INSTALL (3) 5" SCH 40 PVC CONDUIT.
4. NORMAL FEEDER FROM TRANSFORMER TO NORMAL POWER ROOM, INSTALL (4) 4" AND (1) 1.5" SCH 40 PVC CONDUIT. COORDINATE ELECTRIC METER WITH CENTRAL MAINE POWER.
5. STAND-BY AND CRITICAL POWER FEEDERS FROM EMERGENCY GENERATOR TO STAND-BY POWER ROOM, INSTALL (1) 4", (1) 3" AND (2) 1" SCH 40 PVC CONDUIT.
6. LIFE SAFETY FEEDER FROM EMERGENCY GENERATOR VIA TRIPLE SWITCH TO LIFE SAFETY POWER ROOM, INSTALL (3) 2" SCH 40 PVC CONDUIT.
7. 24"W X 24"L X 30"H ELECTRIC HANDHOLE.
8. COMMUNICATION FEEDER TO MDF ROOM, INSTALL (4) 4" SCH 40 PVC CONDUIT.
9. NATURAL GAS SERVICE LINE TO BE INSTALLED BY GAS COMPANY. CONTRACTOR TO COORDINATE MATERIALS AND INSTALLATION WITH GAS COMPANY.

NOTES

1. UTILITIES WITHIN 5 FEET FROM FACE OF BUILDING ARE COORDINATED ON RELEVANT M,E,P, DRAWINGS. CONTRACTOR SHALL COORDINATE INVERTS, CONNECTIONS AND MATERIALS WITH ALL DRAWINGS.

TEST PIT INFORMATION

TEST PIT #	TOP OF DUCT ELEVATION	BOTTOM OF DUCT ELEVATION
TP-1	238.32' (W) 238.65' (E)	237.45'
TP-2	235.44' (W) 235.51 (E)	234.09'
TP-3	234.20' (W) 234.44' (E)	232.88'

LIGHTING SCHEDULE

TAG	DESCRIPTION
PL1	PATH LIGHT - TEKA MINI BEACON
BL1	BOLLARD LIGHT - KIM LIGHTING PAVILION BOLLARD
WL1	WALL LIGHT - BK LIGHTING LOUVERED STEP LIGHT
PL2	POLE LIGHT - ARCHITECTURAL AREA LIGHTING - PROMENADE FIXTURE 16' POLE

NOTE: POLES TO BE MAXIMUM 20' ABOVE GRADE.

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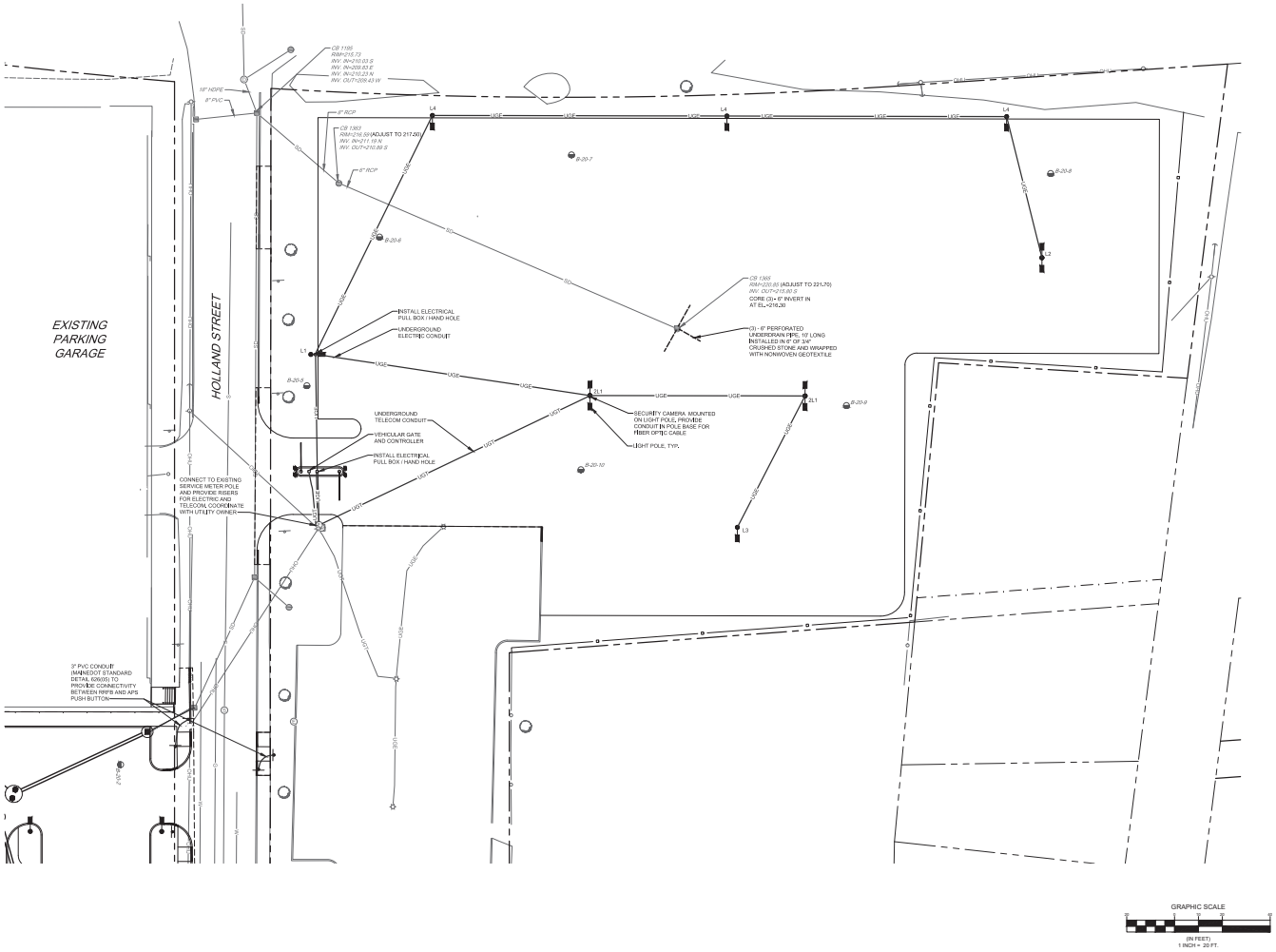
LUMINAIRE SCHEDULE

TAG	DESCRIPTION
L1	VPS-50E-4S-SK7-4
L2	VPS-50E-4S-SK7-4S2M
L3	VPS-50E-4S-SK7-3
L4	VPS-50E-4S-SK7-5N
SL1	TVBN VPS-50E-4S-SK7-4

NOTE: FURNISH 16' POLES MOUNTED ON 20" CONCRETE BASE WITH 3' REVEAL. LUMINAIRE HEIGHT NOT TO EXCEED 20 FEET ABOVE GRADE.

NOTES

1. CONDUIT LAYOUT IS PRELIMINARY FOR PRICING. ASSUME 2" CONDUIT FOR PRICING. CONFIRM CONDUIT SIZE AND LAYOUT WITH SITE ELECTRICAL PLANS BY OTHERS PRIOR TO CONSTRUCTION.



GRAPHIC SCALE

(IN FEET)
1 INCH = 20 FT.

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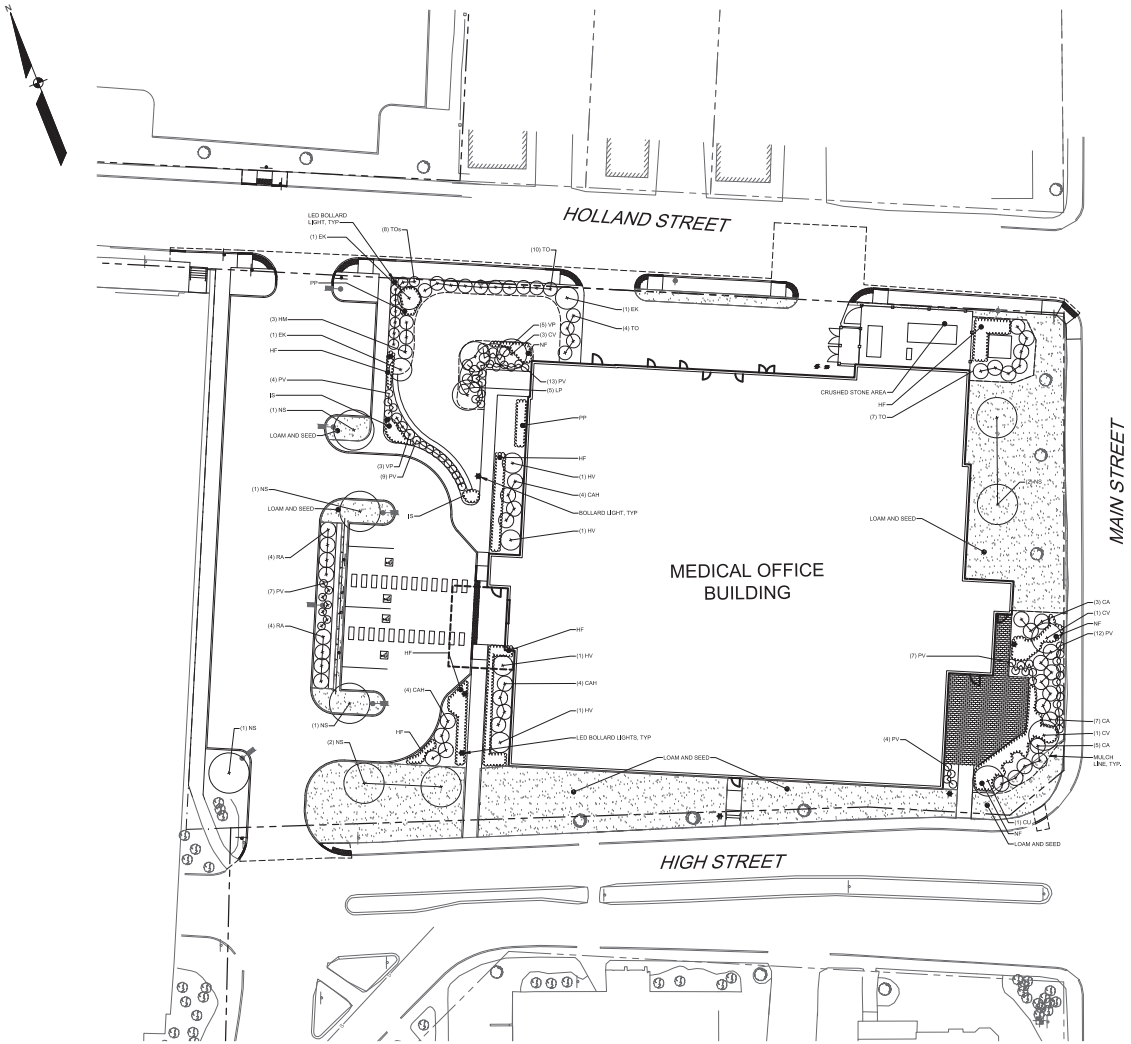
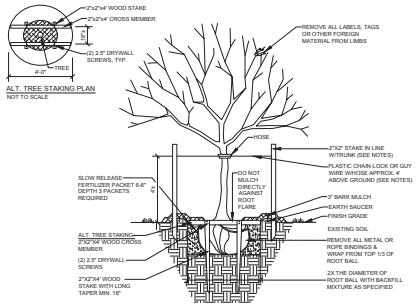


GRAPHIC SCALE

(IN FEET)
1 INCH = 20 FT.

PLANT SCHEDULE

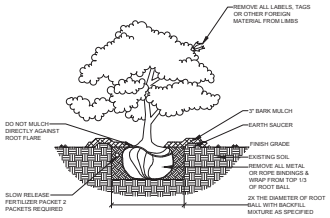
KEY	BOTANIC NAME	COMMON NAME	SIZE/NOTES
NS	NYSSA SYLVATICA	BLACK TUPELO	3" CAL.
CV	CHIONANTHUS VIRGINICUS	FRINGE TREE	8'-10' HGT.
TO	THUJA OCCIDENTALIS 'DOUGLASII'	DOUGLAS ARBORVITAE	7'-8' HGT.
TOs	THUJA OCCIDENTALIS ' SMARAGD '	SMARAGD ARBORVITAE	7'-8' HGT.
EK	ENKIANTHUS CAMPANULATUS	RED VEIN ENKIANTHUS	5'-6' HGT.
HV	HAMMAMELIS VERNALIS 'PURPUREA'	PURPLE WITCHHAZEL	5'-6' HGT.
VP	VIBURNUM P. VAR. TOMENTOSUM SUMMER SNOWFLAKE'	FLOWERING VIBURNUM	3'-5' HGT.
HM	HYDRANGEA MACROPHYLLA SUMMER LACE'	LACECAP HYDRANGEA	#5 CONTAINER.
RA	RHUS AROMATICA 'GRO LOW'	GRO LOW SUMAC	#5 CONTAINER.
CA	CEANOTHUS AMERICANUS	NEW JERSY TEA SHRUB	# 5 CONTAINER
CAH	CLETHRA ALNIFOLIA 'HUMMINGBIRD'	SWEET PEPPERBUSH	#5 CONTAINER.
NF	NEPETA FAASSENII 'EARLY BIRD'	CATMINT	#3 CONTAINER
PV	PANICUM VIRGATUM 'CAPE BREEZE'	CAPE BREEZE SWITCH GRASS	#2 CONTAINER
HF	HEMEROCALLIS FULVA STELLA D'ORO	STELL D'ORO DAYLILY	#1 CONTAINTER 24" OC



ALT. TREE STAKING PLAN
NOT TO SCALE

NOTES:
INSTALL STAKES AND GUYS TO TREES IF THE FOLLOWING APPLY:
1. THE TREE IS OF SUBSTANTIAL SIZE.
2. THE PLANTING LOCATION IS EXTREMELY WINDY, AS ON OPEN UNDEVELOPED SITES.
3. THE PLANTING LOCATION IS COMPRISED OF SAND OR OTHER LOOSE TEXTURED SOILS.
4. IF STAKES AND GUYS ARE REQUIRED, REMOVE AFTER ONE YEAR TIME.

DECIDUOUS TREES
NOT TO SCALE



DECIDUOUS & EVERGREEN SHRUB
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EROSION CONTROL MEASURES

PRE-CONSTRUCTION PHASE

PRIOR TO THE BEGINNING OF ANY CONSTRUCTION, SEDIMENT BARRIERS (SILT FENCE) WILL BE STAKED/INSTALLED ACROSS THE SLOPE(S), ON THE CONTOUR AT OR JUST BELOW THE LIMITS OF CLEARING OR GRUBBING, AND/OR JUST ABOVE ANY ADJACENT PROPERTY LINE OR WATERCOURSE TO PROTECT AGAINST CONSTRUCTION RELATED EROSION. THE PLACEMENT OF SEDIMENT BARRIERS SHALL BE COMPLETED IN ACCORDANCE WITH GUIDELINES ESTABLISHED IN BEST MANAGEMENT PRACTICES AND IN ACCORDANCE WITH THIS EROSION CONTROL PLAN AND DETAILS IN THIS PLAN SET. THIS NETWORK IS TO BE MAINTAINED BY THE CONTRACTOR UNTIL ALL EXPOSED SLOPES HAVE AT LEAST 90% VIGOROUS PERENNIAL VEGETATIVE COVER TO PREVENT EROSION. TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER PERMANENT STABILIZATION IS ATTAINED.

PRIOR TO ANY CLEARING OR GRUBBING, A CONSTRUCTION ENTRANCE/EXIT SHALL BE CONSTRUCTED AT THE INTERSECTION OF THE PROPOSED ENTRANCES AND EXISTING ROADWAY TO AVOID TRACKING OF MUD, DUST AND DEBRIS FROM THE SITE.

PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL PREPARE A DETAILED SCHEDULE AND MARKED UP PLAN INDICATING AREAS AND COMPONENTS OF THE WORK AND KEY DATES SHOWING DATE OF DISTURBANCE AND COMPLETION OF THE WORK. THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE MUNICIPAL STAFF. THREE COPIES OF THE SCHEDULE AND MARKED UP PLAN SHALL BE PROVIDED TO THE MUNICIPALITY THREE DAYS PRIOR TO THE SCHEDULED PRE-CONSTRUCTION MEETING. SPECIAL ATTENTION SHALL BE GIVEN TO THE 14 DAY LIMIT OF DISTURBANCE IN THE SCHEDULE ADDRESSING TEMPORARY AND PERMANENT VEGETATION MEASURES.

CONSTRUCTION AND POST-CONSTRUCTION PHASE

AREAS UNDERGOING ACTUAL CONSTRUCTION SHALL ONLY EXPOSE THAT AMOUNT OF MINERAL SOIL NECESSARY FOR PROGRESSIVE AND EFFICIENT CONSTRUCTION. AN AREA CONSIDERED OPEN IS ANY AREA NOT STABILIZED WITH PAVEMENT, VEGETATION, MULCHING, EROSION CONTROL MATS, RIPRAP OR GRAVEL BASE ON A ROAD. OPEN AREAS SHALL BE ANCHORED WITH TEMPORARY EROSION CONTROL AS SHOWN ON THE DESIGN PLANS AND AS DESCRIBED WITHIN THIS EROSION CONTROL PLAN WITHIN 7 DAYS OF DISTURBANCE. AREAS LOCATED WITHIN 100' OF STREAMS SHALL BE ANCHORED WITH TEMPORARY EROSION CONTROL WITHIN SEVEN (7) DAYS. REFER TO WINTER EROSION CONTROL NOTES FOR THE TREATMENT OF OPEN AREAS AFTER OCTOBER 1ST OF THE CONSTRUCTION YEAR. NO MORE THAN ONE (1) ACRE SHOULD BE ACTIVELY WORKED ON AT ONE TIME, AND NO LARGER AREA SHOULD BE DISTURBED THAN CAN BE MULCHED IN ONE (1) DAY.

THE CONTRACTOR MUST INSTALL ANY ADDED MEASURES WHICH MAY BE NECESSARY TO CONTROL EROSION/SEDIMENTATION FROM THE SITE DEPENDENT UPON THE ACTUAL SITE AND WEATHER CONDITIONS. CONTINUATION OF EARTHWORK OPERATIONS ON ADDITIONAL AREAS SHALL NOT BEGIN UNTIL THE EXPOSED SOIL SURFACE ON THE AREA BEING WORKED HAS BEEN STABILIZED, IN ORDER TO MINIMIZE AREAS WITHOUT EROSION CONTROL PROTECTION.

EROSION CONTROL APPLICATIONS & MEASURES
THE PLACEMENT OF EROSION CONTROL MEASURES SHALL BE COMPLETED IN ACCORDANCE WITH GUIDELINES ESTABLISHED IN BEST MANAGEMENT PRACTICES AND IN ACCORDANCE WITH THE EROSION CONTROL PLAN AND DETAILS IN THE PLAN SET.

1. TEMPORARY MULCHING:

ALL DISTURBED AREAS SHALL BE MULCHED WITH MATERIALS SPECIFIED BELOW PRIOR TO ANY STORM EVENT. ALL DISTURBED AREAS NOT FINAL GRADED WITHIN 14 DAYS SHALL BE MULCHED. DISTURBED AREAS ADJACENT TO NATURAL RESOURCES THAT ARE NOT GRADED WITHIN SEVEN (7) DAYS SHALL BE MULCHED. ALSO, AREAS, WHICH HAVE BEEN TEMPORARILY OR PERMANENTLY SEEDED, SHALL BE MULCHED IMMEDIATELY FOLLOWING SEEDING. EROSION CONTROL BLANKETS ARE RECOMMENDED TO BE USED AT THE BASE OF GRASSED WATERWAYS AND ON SLOPES GREATER THAN 33%. MULCH ANCHORING SHOULD BE USED ON SLOPES GREATER THAN 5% AFTER SEPTEMBER 15TH OF THE CONSTRUCTION YEAR (SEE WINTER EROSION CONTROL NOTES).
TYPES OF MULCH:

HAY OR STRAW: SHALL BE APPLIED AT A RATE OF 75 LBS/1,000 S.F. (1.5 TONS PER ACRE).

EROSION CONTROL MIX: SHALL BE PLACED EVENLY AND MUST PROVIDE 100% SOIL COVERAGE. EROSION CONTROL MIX SHALL BE APPLIED SUCH THAT THE THICKNESS ON SLOPES 3:1 OR LESS IS 2 INCHES PLUS 1/2 INCH PER 20 FEET OF SLOPE UP TO 100 FEET. THE THICKNESS ON SLOPES BETWEEN 3:1 AND 2:1 SHALL BE 4 INCHES PLUS 1/2 INCH PER 20 FEET OF SLOPE UP TO 100 FEET. THIS SHALL NOT BE USED ON SLOPES GREATER THAN 2:1.

EROSION CONTROL BLANKET: SHALL BE INSTALLED SUCH THAT CONTINUOUS CONTACT BETWEEN THE MAT AND THE SOIL IS OBTAINED. INSTALL BLANKETS AND STAPLE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

2. SOIL STOCKPILES:

STOCKPILES OF SOIL OR SUBSOIL SHALL BE MULCHED WITH HAY OR STRAW AT A RATE OF 75 LBS/1,000 S.F. (1.5 TONS PER ACRE) OR WITH A FOUR-INCH LAYER OF WOOD WASTE EROSION CONTROL MIX. THIS WILL BE DONE WITHIN 24 HOURS OF STOCKING AND RE-ESTABLISHED PRIOR TO ANY RAINFALL. ANY SOIL STOCKPILE WILL NOT BE PLACED (EVEN COVERED WITH HAY OR STRAW) WITHIN 100 FEET FROM ANY NATURAL RESOURCES. SEDIMENT BARRIERS SHALL BE INSTALLED DOWNGRADIENT OF STOCKPILES, AND STORMWATER SHALL BE PREVENTED FROM RUNNING ONTO THE STOCKPILE.

3. NATURAL RESOURCES PROTECTION:

ANY AREAS WITHIN 100 FEET FROM ANY NATURAL RESOURCES, IF NOT STABILIZED WITH A MINIMUM OF 90% MATURE VEGETATION CATCH, SHALL BE MULCHED USING TEMPORARY MULCHING (AS DESCRIBED IN PART 1. OF THIS SECTION) WITHIN 7 DAYS OF EXPOSURE OR PRIOR TO ANY STORM EVENT. SEDIMENT BARRIERS (AS DESCRIBED IN PART 4. OF THIS SECTION) SHALL BE PLACED BETWEEN ANY NATURAL RESOURCE AND THE DISTURBED AREA. PROJECTS CROSSING THE NATURAL RESOURCE SHALL BE PROTECTED A MINIMUM DISTANCE OF 100 FEET ON EITHER SIDE FROM THE RESOURCE.

4. SEDIMENT BARRIERS:

PRIOR TO THE BEGINNING OF ANY CONSTRUCTION, SEDIMENT BARRIERS SHALL BE STAKED ACROSS THE SLOPE(S), ON THE CONTOUR AT OR JUST BELOW THE LIMITS OF CLEARING OR GRUBBING, AND/OR JUST ABOVE ANY ADJACENT PROPERTY LINE OR WATERCOURSE TO PROTECT AGAINST CONSTRUCTION RELATED EROSION. SEDIMENT BARRIERS SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL ALL EXPOSED SLOPES HAVE AT LEAST 90% VIGOROUS PERENNIAL VEGETATIVE COVER TO PREVENT EROSION.

SILT FENCE: SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. THE EFFECTIVE HEIGHT OF THE FENCE SHALL NOT EXCEED 36 INCHES. IT IS RECOMMENDED THAT SILT FENCE BE REMOVED BY CUTTING THE FENCE MATERIALS AT GROUND LEVEL SO AS TO AVOID ADDITIONAL SOIL DISTURBANCE.

HAY BALES: SHALL NOT BE INSTALLED ADJACENT TO WETLAND. INSTALL PER THE DETAIL ON THE PLANS. BALES SHALL BE WIRE-BOUND OR STRING-TIED AND THESE BINDINGS MUST REMAIN PARALLEL WITH THE GROUND SURFACE DURING INSTALLATION TO PREVENT DETERIORATION OF THE BINDINGS. BALES SHALL BE INSTALLED WITHIN A MINIMUM 4 INCH DEEP TRENCH LINE WITH ENDS OF ADJACENT BALES TIGHTLY ABUTTING ONE ANOTHER.

EROSION CONTROL MIX: SHALL NOT BE USED ADJACENT TO WETLANDS. INSTALL PER THE DETAIL ON THE PLANS. THE MIX SHALL CONSIST PRIMARILY OF ORGANIC MATERIAL AND CONTAIN A WELL-GRADED MIXTURE OF PARTICLE SIZES AND MAY CONTAIN ROCKS LESS THAN 4 INCHES IN DIAMETER. THE MIX COMPOSITION SHALL MEET THE STANDARDS DESCRIBED WITHIN THE MDEP BEST MANAGEMENT PRACTICES. NO TRENCHING IS REQUIRED FOR INSTALLATION OF THIS BARRIER. EROSION CONTROL MIX BERMS SHALL NOT BE USED AT THE TOP OF STEEP SLOPES (>8%) OR SLOPES WITH FLOWING WATER.

CONTINUOUS CONTAINED BERM: SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. THIS SEDIMENT BARRIER IS EROSION CONTROL MIX PLACED WITHIN A SYNTHETIC TUBULAR NETTING AND PERFORMS AS A STURDY SEDIMENT BARRIER THAT WORKS WELL ON HARD GROUND SUCH AS FROZEN CONDITIONS, TRAVELED AREAS OR PAVEMENT. NO TRENCHING IS REQUIRED FOR INSTALLATION OF THIS BARRIER.

5. TEMPORARY CHECK DAMS:

SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. CHECK DAMS ARE TO BE PLACED WITHIN DITCHES/ SWALES AS SPECIFIED ON THE DESIGN PLANS IMMEDIATELY AFTER FINAL GRADING. CHECK DAMS SHALL BE 2 FEET HIGH. TEMPORARY CHECK DAMS MAY BE REMOVED ONLY AFTER THE ROADWAYS ARE PAVED AND THE VEGETATED SWALE ARE ESTABLISHED WITH AT LEAST 90% OF VIGOROUS PERENNIAL GROWTH. THE AREA BENEATH THE CHECK DAM MUST BE SEEDED AND MULCHED IMMEDIATELY AFTER REMOVAL OF THE CHECK DAM.

STONE CHECK DAMS: STONE DAMS SHOULD BE CONSTRUCTED OF 2 TO 3 INCH STONE AND PLACED SUCH THAT COMPLETE COVERAGE OF THE SWALE IS OBTAINED AND THAT THE CENTER OF THE DAM IS 6 INCHES LOWER THAT THE OUTER EDGES.

HAY BALE CHECK DAMS: BALES SHALL BE WIRE-BOUND OR STRING-TIED. BALES SHALL BE INSTALLED WITHIN A MINIMUM 4 INCH DEEP TRENCH LINE WITH ENDS OF ADJACENT BALES TIGHTLY ABUTTING ONE ANOTHER. HAY BALES SHALL BE PLACED SUCH THAT COMPLETE COVERAGE OF THE SWALE IS OBTAINED AND THAT THE CENTER OF THE DAM IS 6 INCHES LOWER THAT THE OUTER EDGES.

MANUFACTURED CHECK DAMS: MANUFACTURED CHECK DAMS, AS SPECIFIED IN THE DETAIL ON THE PLANS, MAY BE USED IF AUTHORIZED BY THE PROPER LOCAL, STATE OR FEDERAL REGULATING AGENCIES. THESE UNITS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURE'S RECOMMENDATIONS.

6. STORMDRAIN INLET PROTECTION:

INLET PROTECTION SHALL BE PLACED AROUND A STORMDRAIN DROP INLET OR CURB INLET PRIOR TO PERMANENT STABILIZATION OF THE IMMEDIATE AND UPSTREAM DISTURBED AREAS. THEY SHALL BE CONSTRUCTED IN A MANNER THAT WILL FACILITATE CLEAN-OUT AND DISPOSAL OF TRAPPED SEDIMENTS AND MINIMIZE INTERFERENCE WITH CONSTRUCTION ACTIVITIES. ANY RESULTANT PONDING OF WATER FROM THE PROTECTION METHOD MUST NOT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT AREAS OR STRUCTURES.

HAY BALE DROP INLET PROTECTION: WE DO NOT RECOMMEND THE USE OF HAY BALES AS INLET PROTECTION.

CONCRETE BLOCK AND STONE INLET SEDIMENT FILTER (DROP OR CURB INLET): SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. THE HEIGHT OF THE CONCRETE BLOCK BARRIER CAN VARY BUT MUST BE BETWEEN 12 AND 24 INCHES TALL. A MINIMUM OF 1 INCH CRUSHED STONE SHALL BE USED.

MANUFACTURED SEDIMENT BARRIERS AND FILTER (DROP OR CURB INLET): MANUFACTURED FILTERS, AS SPECIFIED IN THE DETAIL ON THE PLANS, MAY BE USED IF INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

7. STABILIZED CONSTRUCTION ENTRANCE/EXIT:

PRIOR TO CLEARING AND/OR GRUBBING THE SITE A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE CONSTRUCTED WHEREVER TRAFFIC WILL EXIT THE CONSTRUCTION SITE ONTO A PAVED ROADWAY IN ORDER TO MINIMIZE THE TRACKING OF SEDIMENT AND DEBRIS FROM THE CONSTRUCTION SITE ONTO PUBLIC ROADWAYS. THE ENTRANCES AND ADJACENT ROADWAY AREAS SHALL BE PERIODICALLY SWEPT OR WASHED TO FURTHER MINIMIZE THE TRACKING OF MUD, DUST OR DEBRIS FROM THE CONSTRUCTION AREA. STABILIZED CONSTRUCTION EXITS SHALL BE CONSTRUCTED IN AREAS SPECIFIED ON THE PLANS AND AS DETAILED ON THE PLANS. THE CONTRACTOR SHALL MAINTAIN THE STABILIZED CONSTRUCTION ENTRANCE UNTIL ALL DISTURBED AREAS ARE STABILIZED.

8. DUST CONTROL:

DUST CONTROL DURING CONSTRUCTION SHALL BE ACHIEVED BY THE USE OF A WATERING TRUCK TO PERIODICALLY SPRINKLE THE EXPOSED ROADWAY AREAS AS NECESSARY TO REDUCE DUST DURING THE DRY MONTHS. APPLYING OTHER DUST CONTROL PRODUCTS SUCH AS CALCIUM CHLORIDE OR OTHER MANUFACTURED PRODUCTS ARE ALLOWED IF AUTHORIZED BY THE PROPER LOCAL, STATE AND/OR FEDERAL REGULATING AGENCIES. HOWEVER, IT IS THE CONTRACTOR'S ULTIMATE RESPONSIBILITY TO MITIGATE DUST AND SOIL LOSS FROM THE SITE. IF OFFSITE TRACKING OCCURS, PUBLIC ROADS SHOULD BE SWEPT IMMEDIATELY AND NOT LESS THAN ONCE A WEEK AND PRIOR TO SIGNIFICANT STORM EVENTS.

9. TEMPORARY VEGETATION:

TEMPORARY VEGETATION SHALL BE APPLIED TO DISTURBED AREAS THAT WILL NOT RECEIVE FINAL GRADING FOR PERIODS UP TO 12 MONTHS. THIS PROCEDURE SHOULD BE USED EXTENSIVELY IN AREAS ADJACENT TO NATURAL RESOURCES. SEEDBED PREPARATION AND APPLICATION OF SEED SHALL BE CONDUCTED AS INDICATED IN THE PERMANENT VEGETATION SECTION OF THIS NARRATIVE. SPECIFIC SEEDS (FAST GROWING AND SHORT LIVING) SHALL BE SELECTED FROM THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL DATED 3/2003 OR LATER. ALTERNATIVE EROSION CONTROL MEASURES SHOULD BE USED IF SEEDING CAN NOT BE DONE BEFORE SEPTEMBER 15TH OF THE CONSTRUCTION YEAR.

10. PERMANENT VEGETATION:

REVEGETATION MEASURES SHALL COMMENCE IMMEDIATELY UPON COMPLETION OF FINAL GRADING OF AREAS TO BE LOAMED AND SEEDED. THE APPLICATION OF SEED SHALL BE CONDUCTED BETWEEN APRIL 1ST AND OCTOBER 1ST OF THE CONSTRUCTION YEAR, PLEASE REFER TO THE WINTER EROSION CONTROL NOTES FOR MORE DETAIL. REVEGETATION MEASURES SHALL CONSIST OF THE FOLLOWING:

SEEDBED PREPARATION:

A. FOUR (4) INCHES OF LOAM SHALL BE SPREAD OVER DISTURBED AREAS AND SMOOTHED TO A UNIFORM SURFACE. LOAM SHALL BE FREE OF SUBSOIL, CLAY LUMPS, STONES AND OTHER OBJECTS OVER 2 INCHES OR LARGER IN ANY DIMENSION, AND WITHOUT WEEDS, ROOTS OR OTHER OBJECTIONABLE MATERIAL.

B. SOILS TESTS SHALL BE TAKEN AT THE TIME OF SOIL STRIPPING TO DETERMINE FERTILIZATION REQUIREMENTS. SOILS TESTS SHALL BE TAKEN PROMPTLY AS TO NOT INTERFERE WITH THE 14-DAY LIMIT ON SOIL EXPOSURE. BASED UPON TEST RESULTS, SOIL AMENDMENTS SHALL BE INCORPORATED INTO THE SOIL PRIOR TO FINAL SEEDING. IN LIEU OF SOIL TESTS, SOIL AMENDMENTS MAY BE APPLIED AS FOLLOWS:

ITEM	APPLICATION RATE
10-20-20 FERTILIZER (N-P205-K20 OR EQUAL)	18.4 LBS./1,000 S.F.
GROUND LIMESTONE (50% CALCIUM & MAGNESIUM OXIDE)	138 LBS./1,000 S.F.

C. WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH PROPER EQUIPMENT. ROLL THE AREA TO FIRM THE SEEDBED EXCEPT ON CLAY OR SILTY SOILS OR COARSE SAND.

APPLICATION OF SEED:

A. SEEDING: SHALL BE CONDUCTED BETWEEN APRIL 1ST AND OCTOBER 1ST OF THE CONSTRUCTION YEAR. GENERALLY A SEED MIXTURE MAY BE APPLIED AS FOLLOWS: (MDEP SEED MIX 2 IS DISPLAYED)

SEED TYPE	APPLICATION RATE
CREEPING RED FESCUE	0.46 LBS/1,000 S.F. (20 LBS/ACRE)
REDTOP	0.05 LBS/1,000 S.F. (2 LBS/ACRE)
TALL FESCUE	0.46 LBS/1,000 S.F. (20 LBS/ACRE)
TOTAL:	0.97 LBS/1,000 S.F. (42 LBS/ACRE)

NOTE: A SPECIFIC SEED MIXTURE SHOULD BE CHOSEN TO MATCH THE SOILS CONDITION OF THE SITE. VARIOUS AGENCIES CAN RECOMMEND SEED MIXTURES. MDEP RECOMMENDED SEED MIXTURES ARE IN THE EROSION AND SEDIMENT CONTROL BMP MANUAL DATED 3/2003 OR LATER.

B. HYDROSEEDING: SHALL BE CONDUCTED ON PREPARED AREAS WITH SLOPES LESS THAN 2:1. LIME AND FERTILIZER MAY BE APPLIED SIMULTANEOUSLY WITH THE SEED. RECOMMENDED SEEDING RATES MUST BE INCREASED BY 10% WHEN HYDROSEEDING.

C. MULCHING: SHALL COMMENCE IMMEDIATELY AFTER SEED IS APPLIED. REFER TO THE TEMPORARY MULCHING SECTION OF THIS NARRATIVE FOR DETAILS.

SODDING:
FOLLOWING SEEDBED PREPARATION, SOD CAN BE APPLIED IN LIEU OF SEEDING IN AREAS WHERE IMMEDIATE VEGETATION IS MOST BENEFICIAL SUCH AS DITCHES, AROUND STORMWATER DROP INLETS AND AREAS OF AESTHETIC VALUE. SOD SHOULD BE LAID AT RIGHT ANGLES TO THE DIRECTION OF FLOW, STARTING AT THE LOWEST ELEVATION. SOD SHOULD BE ROLLED OR TAMPED DOWN TO EVEN OUT THE JOINTS ONCE LAID DOWN. WHERE FLOW IS PREVALENT THE SOD MUST BE PROPERLY ANCHORED DOWN. IRRIGATE THE SOD IMMEDIATELY AFTER INSTALLATION. IN MOST CASES, SOD CAN BE ESTABLISHED BETWEEN APRIL 1ST AND NOVEMBER 15TH OF THE CONSTRUCTION YEAR, HOWEVER, REFER TO THE WINTER EROSION CONTROL NOTES FOR ANY ACTIVITIES AFTER OCTOBER 1ST.

STANDARDS FOR TIMELY STABILIZATION:

STANDARD FOR THE TIMELY STABILIZATION OF DISTURBED SLOPES -- THE CONTRACTOR WILL CONSTRUCT AND STABILIZE STONE-COVERED SLOPES BY NOVEMBER 15. THE CONTRACTOR WILL SEED AND MULCH ALL SLOPES TO BE VEGETATED BY SEPTEMBER 15. THE MDEP WILL CONSIDER ANY AREA HAVING A GRADE GREATER THAN 15% (10H:1V) TO BE A SLOPE. IF THE CONTRACTOR FAILS TO STABILIZE ANY SLOPE TO BE VEGETATED BY SEPTEMBER 15, THEN THE CONTRACTOR WILL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE SLOPE FOR LATE FALL AND WINTER.
A. STABILIZE THE SOIL WITH TEMPORARY VEGETATION AND EROSION CONTROL MATS -- BY OCTOBER 1 THE CONTRACTOR WILL SEED THE DISTURBED SLOPE WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1,000 SQUARE FEET AND APPLY EROSION CONTROL MATS OVER THE MULCHED SLOPE. THE CONTRACTOR WILL MONITOR GROWTH OF THE RYE OVER THE NEXT 30 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR COVER AT LEAST 75% OF THE DISTURBED SLOPE BY NOVEMBER 1, THEN THE APPLICANT WILL COVER THE SLOPE WITH A LAYER OF WOOD WASTE COMPOST AS DESCRIBED IN ITEM 2(C.) OF THIS STANDARD OR WITH STONE RIPRAP AS DESCRIBED IN ITEM 2(D.) OF THIS STANDARD.
B. STABILIZE THE SLOPE WITH SOD -- THE CONTRACTOR WILL STABILIZE THE DISTURBED SLOPE WITH PROPERLY INSTALLED SOD BY OCTOBER 1. PROPER INSTALLATION INCLUDES THE APPLICANT 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 APPLICANT WILL NOT USE LATE-SEASON SOD INSTALLATION TO STABILIZE SLOPES HAVING A GRADE GREATER THAN 33% (3H:1V).
C. STABILIZE THE SLOPE WITH WOOD WASTE COMPOST -- THE CONTRACTOR WILL PLACE A SIX-INCH LAYER OF WOOD WASTE COMPOST ON THE SLOPE BY NOVEMBER 15. PRIOR TO PLACING THE WOOD WASTE COMPOST, THE APPLICANT WILL REMOVE ANY SNOW ACCUMULATION ON THE DISTURBED SLOPE. THE APPLICANT WILL NOT USE WOOD WASTE COMPOST TO STABILIZE SLOPES HAVING GRADES GREATER THAN 50% (2H:1V) OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.
D. STABILIZE THE SLOPE WITH STONE RIPRAP -- THE CONTRACTOR WILL PLACE A LAYER OF STONE RIPRAP ON THE SLOPE BY NOVEMBER 15. THE APPLICANT WILL HIRE A REGISTERED PROFESSIONAL ENGINEER TO DETERMINE THE STONE SIZE NEEDED FOR STABILITY AND TO DESIGN A FILTER LAYER FOR UNDERNEATH THE RIPRAP.

STANDARD FOR THE TIMELY STABILIZATION OF DISTURBED SOILS -- BY SEPTEMBER 15 THE CONTRACTOR WILL SEED AND MULCH ALL DISTURBED SOILS ON AREAS HAVING A SLOPE LESS THAN 15%. IF THE CONTRACTOR FAILS TO STABILIZE THESE SOILS BY THIS DATE, THEN THE CONTRACTOR WILL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE SOIL FOR LATE FALL AND WINTER.
A. STABILIZE THE SOIL WITH TEMPORARY VEGETATION -- BY OCTOBER 1 THE CONTRACTOR WILL SEED THE DISTURBED SOIL WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1000 SQUARE FEET, LIGHTLY MULCH THE SEEDED SOIL WITH HAY OR STRAW AT 75 POUNDS PER 1000 SQUARE FEET, AND ANCHOR THE MULCH WITH PLASTIC NETTING. THE APPLICANT WILL MONITOR GROWTH OF THE RYE OVER THE NEXT 30 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR COVER AT LEAST 75% OF THE DISTURBED SOIL BEFORE NOVEMBER 15, THEN THE APPLICANT WILL MULCH THE AREA FOR OVER-WINTER PROTECTION AS DESCRIBED IN ITEM 3(C.) OF THIS STANDARD.
B. STABILIZE THE SOIL WITH SOD -- THE APPLICANT WILL STABILIZE THE DISTURBED SOIL WITH PROPERLY INSTALLED SOD BY OCTOBER 1. PROPER INSTALLATION INCLUDES THE APPLICANT 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.
C. STABILIZE THE SOIL WITH MULCH -- BY NOVEMBER 15 THE APPLICANT WILL MULCH THE DISTURBED SOIL BY SPREADING HAY OR STRAW AT A RATE OF AT LEAST 150 POUNDS PER 1000 SQUARE FEET ON THE AREA SO THAT NO SOIL IS VISIBLE THROUGH THE MULCH. PRIOR TO APPLYING THE MULCH, THE APPLICANT WILL REMOVE ANY SNOW ACCUMULATION ON THE DISTURBED AREA. IMMEDIATELY AFTER APPLYING THE MULCH, THE APPLICANT WILL ANCHOR THE MULCH WITH PLASTIC NETTING TO PREVENT WIND FROM MOVING THE MULCH OFF THE DISTURBED SOIL.

1. MAINTENANCE MEASURES SHALL BE APPLIED AS NEEDED DURING THE ENTIRE CONSTRUCTION CYCLE. AFTER EACH RAINFALL, SNOW STORM OR PERIOD OF THAWING AND RUNOFF, AND AT LEAST EVERY SEVEN (7) DAYS, THE CONTRACTOR SHALL PERFORM A VISUAL INSPECTION OF ALL INSTALLED EROSION CONTROL MEASURES. THE CONTRACTOR SHALL PERFORM REPAIRS NO LATER THAN THE END OF THE NEXT WORKDAY, TO ALLOW CONTINUED PROPER FUNCTIONING OF THE EROSION CONTROL MEASURE. THE CONTRACTOR SHALL PROVIDE THE NECESSARY REGULATING AGENCIES WITH WRITTEN DOCUMENTATION DESCRIBING DATES OF INSPECTIONS AND NECESSARY FOLLOW-UP WORK TO MAINTAIN EROSION CONTROL MEASURES MEETING THE REQUIREMENTS OF THIS PLAN WITHIN SEVEN (7) DAYS.

2. FOLLOWING THE TEMPORARY AND/OR FINAL SEEDINGS, THE CONTRACTOR SHALL INSPECT THE WORK AREA SEMIMONTHLY UNTIL THE SEEDINGS HAVE BEEN ESTABLISHED. ESTABLISHED MEANS A MINIMUM OF 90% OF AREAS VEGETATED WITH VIGOROUS GROWTH. RESEEDING SHALL BE CARRIED OUT BY THE CONTRACTOR WITH FOLLOW-UP INSPECTIONS IN THE EVENT OF ANY FAILURES UNTIL VEGETATION IS ADEQUATELY ESTABLISHED.

HOUSEKEEPING:

1. SPILL PREVENTION. CONTROLS MUST BE USED TO PREVENT POLLUTANTS FROM CONSTRUCTION AND WASTE MATERIALS STORED ON SITE TO ENTER STORMWATER, WHICH INCLUDES STORAGE PRACTICES TO MINIMIZE EXPOSURE OF THE MATERIALS TO STORMWATER. THE SITE CONTRACTOR OR OPERATOR MUST DEVELOP, AND IMPLEMENT AS NECESSARY, APPROPRIATE SPILL PREVENTION, CONTAINMENT, AND RESPONSE PLANNING MEASURES.

2. GROUNDWATER PROTECTION. DURING CONSTRUCTION, LIQUID PETROLEUM PRODUCTS AND OTHER HAZARDOUS MATERIALS WITH THE POTENTIAL TO CONTAMINATE GROUNDWATER MAY NOT BE STORED OR HANDLED IN AREAS OF THE SITE DRAINING TO AN INFILTRATION AREA. AN "INFILTRATION AREA" IS ANY AREA OF THE SITE THAT BY DESIGN OR AS A RESULT OF SOILS, TOPOGRAPHY AND OTHER RELEVANT FACTORS ACCUMULATES RUNOFF THAT INFILTRATES INTO THE SOIL. DIKES, BERMS, SUMPS, AND OTHER FORMS OF SECONDARY CONTAINMENT THAT PREVENT DISCHARGE TO GROUNDWATER MAY BE USED TO ISOLATE PORTIONS OF THE SITE FOR THE PURPOSES OF STORAGE AND HANDLING OF THESE MATERIALS. ANY PROJECT PROPOSING INFILTRATION OF STORMWATER MUST PROVIDE ADEQUATE PRE-TREATMENT OF STORMWATER PRIOR TO DISCHARGE OF STORMWATER TO THE INFILTRATION AREA, OR PROVIDE FOR TREATMENT WITHIN THE INFILTRATION AREA, IN ORDER TO PREVENT THE ACCUMULATION OF FINES, REDUCTION IN INFILTRATION RATE, AND CONSEQUENT FLOODING AND DESTABILIZATION.

3. FUGITIVE SEDIMENT AND DUST. ACTIONS MUST BE TAKEN TO ENSURE THAT ACTIVITIES DO NOT RESULT IN NOTICEABLE EROSION OF SOILS OR FUGITIVE DUST EMISSIONS DURING OR AFTER CONSTRUCTION. OIL MAY NOT BE USED FOR DUST CONTROL, BUT OTHER WATER ADDITIVES MAY BE CONSIDERED AS NEEDED. A STABILIZED CONSTRUCTION ENTRANCE (SCE) SHOULD BE INCLUDED TO MINIMIZE TRACKING OF MUD AND SEDIMENT. IF OFF-SITE TRACKING OCCURS, PUBLIC ROADS SHOULD BE SWEPT IMMEDIATELY AND NO LESS THAN ONCE A WEEK AND PRIOR TO SIGNIFICANT STORM EVENTS. OPERATIONS DURING DRY MONTHS, THAT EXPERIENCE FUGITIVE DUST PROBLEMS, SHOULD WET DOWN UNPAVED ACCESS ROADS ONCE A WEEK OR MORE FREQUENTLY AS NEEDED WITH A WATER ADDITIVE TO SUPPRESS FUGITIVE SEDIMENT AND DUST.

4. DEBRIS AND OTHER MATERIALS. MINIMIZE THE EXPOSURE OF CONSTRUCTION DEBRIS, BUILDING AND LANDSCAPING MATERIALS, TRASH, FERTILIZERS, PESTICIDES, HERBICIDES, DETERGENTS, SANITARY WASTE AND OTHER MATERIALS TO PRECIPITATION AND STORMWATER RUNOFF. THESE MATERIALS MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE.

5. EXCAVATION DE-WATERING. EXCAVATION DE-WATERING IS THE REMOVAL OF WATER FROM TRENCHES, FOUNDATIONS, COFFER DAMS, PONDS, AND OTHER AREAS WITHIN THE CONSTRUCTION AREA THAT RETAIN WATER AFTER EXCAVATION. IN MOST CASES THE COLLECTED WATER IS HEAVILY SILTED AND HINDERS CORRECT AND SAFE CONSTRUCTION PRACTICES. THE COLLECTED WATER REMOVED FROM THE PONDED AREA, EITHER THROUGH GRAVITY OR PUMPING, MUST BE SPREAD THROUGH NATURAL WOODED BUFFERS OR REMOVED TO AREAS THAT ARE SPECIFICALLY DESIGNED TO COLLECT THE MAXIMUM AMOUNT OF SEDIMENT POSSIBLE, LIKE A COFFERDAM SEDIMENTATION BASIN. AVOID ALLOWING THE WATER TO FLOW OVER DISTURBED AREAS OF THE SITE. EQUIVALENT MEASURES MAY BE TAKEN IF APPROVED BY THE DEPARTMENT.

6. AUTHORIZED NON-STORMWATER DISCHARGES. IDENTIFY AND PREVENT CONTAMINATION BY NON-STORMWATER DISCHARGES. WHERE ALLOWED NON-STORMWATER DISCHARGES EXIST, THEY MUST BE IDENTIFIED AND STEPS SHOULD BE TAKEN TO ENSURE THE IMPLEMENTATION OF APPROPRIATE POLLUTION PREVENTION MEASURES FOR THE NON-STORMWATER COMPONENT(S) OF THE DISCHARGE. AUTHORIZED NON-STORMWATER DISCHARGES ARE:
A. DISCHARGES FROM FIREFIGHTING ACTIVITY;
B. FIRE HYDRANT FLUSHINGS;
C. VEHICLE WASHWATER IF DETERGENTS ARE NOT USED AND WASHING IS LIMITED TO THE EXTERIOR OF VEHICLES (ENGINE, UNDERCARRIAGE AND TRANSMISSION WASHING IS PROHIBITED);
D. DUST CONTROL RUNOFF IN ACCORDANCE WITH PERMIT CONDITIONS AND ITEM 3 OF THIS SECTION;
E. ROUTINE EXTERNAL BUILDING WASHDOWN, NOT INCLUDING SURFACE PAINT REMOVAL, THAT DOES NOT INVOLVE DETERGENTS;
F. PAVEMENT WASHWATER (WHERE SPILLS/LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE NOT OCCURRED, UNLESS ALL SPILLED MATERIAL HAD BEEN REMOVED) IF DETERGENTS ARE NOT USED;
G. UNCONTAMINATED AIR CONDITIONING OR COMPRESSOR CONDENSATE;
H. UNCONTAMINATED GROUNDWATER OR SPRING WATER;
I. FOUNDATION OR FOOTER DRAIN-WATER WHERE FLOWS ARE NOT CONTAMINATED;
J. UNCONTAMINATED EXCAVATION DEWATERING (SEE REQUIREMENTS IN ITEM 5 OF THIS SECTION);
K. POTABLE WATER SOURCES INCLUDING WATERLINE FLUSHINGS; AND
L. LANDSCAPE IRRIGATION.

7. UNAUTHORIZED NON-STORMWATER DISCHARGES. THE DEPARTMENT'S APPROVAL DOES NOT AUTHORIZE A DISCHARGE THAT IS MIXED WITH A SOURCE OF NON-STORMWATER, OTHER THAN THOSE DISCHARGES IN COMPLIANCE WITH ITEM 6 OF THIS SECTION. SPECIFICALLY, THE DEPARTMENT'S APPROVAL DOES NOT AUTHORIZE DISCHARGES OF THE FOLLOWING:
A. WASTEWATER FROM THE WASHOUT OR CLEANOUT OF CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS OR OTHER CONSTRUCTION MATERIALS;
B. FUELS, OILS OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE;
C. SOAPS, SOLVENTS, OR DETERGENTS USED IN VEHICLE AND EQUIPMENT WASHING; AND
D. TOXIC OR HAZARDOUS SUBSTANCES FROM A SPILL OR OTHER RELEASE.

WINTER EROSION CONTROL MEASURES

THE WINTER CONSTRUCTION PERIOD IS FROM OCTOBER 1 THROUGH APRIL 15. IF THE CONSTRUCTION SITE IS NOT STABILIZED WITH PAVEMENT, A ROAD GRAVEL BASE, 75% MATURE VEGETATION COVER OR RIPRAP BY NOVEMBER 15 THEN THE SITE NEEDS TO BE PROTECTED WITH OVER-WINTER STABILIZATION. AN AREA CONSIDERED OPEN IS ANY AREA NOT STABILIZED WITH PAVEMENT, VEGETATION, MULCHING, EROSION CONTROL MATS, RIPRAP OR GRAVEL BASE ON A ROAD. LIMIT THE EXPOSED AREA TO THOSE AREAS IN WHICH WORK IS EXPECTED TO BE UNDER TAKEN DURING THE PROCEEDING 15 DAYS AND THAT CAN BE MULCHED IN ONE DAY PRIOR TO ANY SNOW EVENT. ALL AREAS SHALL BE CONSIDERED TO BE DENUDED UNTIL THE SUBBASE GRAVEL IS INSTALLED IN ROADWAY AREAS OR THE AREAS OF FUTURE LOAM AND SEED HAVE BEEN LOAMED, SEEDED AND MULCHED. HAY AND STRAW MULCH RATE SHALL BE A MINIMUM OF 150 LBS./1,000 S.F. (3 TONS/ACRE) AND SHALL BE PROPERLY ANCHORED. THE CONTRACTOR MUST INSTALL ANY ADDED MEASURES WHICH MAY BE NECESSARY TO CONTROL EROSION/SEDIMENTATION FROM THE SITE DEPENDENT UPON THE ACTUAL SITE AND WEATHER CONDITIONS. CONTINUATION OF EARTHWORK OPERATIONS ON ADDITIONAL AREAS SHALL NOT BEGIN UNTIL THE EXPOSED SOIL SURFACE ON THE AREA BEING WORKED HAS BEEN STABILIZED, IN ORDER TO MINIMIZE AREAS WITHOUT EROSION CONTROL PROTECTION.

1. SOIL STOCKPILES

STOCKPILES OF SOIL OR SUBSOIL WILL BE MULCHED FOR OVER WINTER PROTECTION WITH HAY OR STRAW AT TWICE THE NORMAL RATE OR AT 150 LBS/1,000 S.F. (3 TONS PER ACRE) OR WITH A FOUR-INCH LAYER OF WOOD WASTE EROSION CONTROL MIX. THIS WILL BE DONE WITHIN 24 HOURS OF STOCKING AND RE-ESTABLISHED PRIOR TO ANY RAINFALL OR SNOWFALL. ANY SOIL STOCKPILE WILL NOT BE PLACED (EVEN COVERED WITH HAY OR STRAW) WITHIN 100 FEET FROM ANY NATURAL RESOURCES.

2. NATURAL RESOURCES PROTECTION

ANY AREAS WITHIN 100 FEET FROM ANY NATURAL RESOURCES, IF NOT STABILIZED WITH A MINIMUM OF 75% MATURE VEGETATION CATCH, SHALL BE MULCHED BY DECEMBER 1 AND ANCHORED WITH PLASTIC NETTING OR PROTECTED WITH EROSION CONTROL MATS. DURING WINTER CONSTRUCTION, A DOUBLE LINE OF SEDIMENT BARRIERS (I.E. SILT FENCE BACKED WITH HAY BALES OR EROSION CONTROL MIX) WILL BE PLACED BETWEEN ANY NATURAL RESOURCE AND THE DISTURBED AREA.

PROJECTS CROSSING THE NATURAL RESOURCE SHALL BE PROTECTED A MINIMUM DISTANCE OF 100 FEET ON EITHER SIDE FROM THE RESOURCE. EXISTING PROJECTS NOT STABILIZED BY DECEMBER 1 SHALL BE PROTECTED WITH THE SECOND LINE OF SEDIMENT BARRIER TO ENSURE FUNCTIONALITY DURING THE SPRING THAW AND RAINS.

3. SEDIMENT BARRIERS

DURING FROZEN CONDITIONS, SEDIMENT BARRIERS SHALL CONSIST OF WOOD WASTE FILTER BERMS AS FROZEN SOIL PREVENTS THE PROPER INSTALLATION OF HAY BALES AND SEDIMENT SILT FENCES.

4. MULCHING

ALL AREA SHALL BE CONSIDERED TO BE DENUDED UNTIL AREAS OF FUTURE LOAM AND SEED HAVE BEEN LOAMED, 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. MULCH SHALL NOT BE SPREAD ON TOP OF SNOW. THE SNOW WILL BE REMOVED DOWN TO A ONE-INCH DEPTH OR LESS PRIOR TO APPLICATION. AFTER EACH DAY OF FINAL GRADING, THE AREA WILL 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 WITH STRAW OR HAY AT A RATE OF 150 LB. PER 1.000 SQUARE FEET (3TONS/ACRE) AND ADEQUATELY ANCHORED THAT GROUND SURFACE IS NOT VISIBLE THOUGH THE MULCH.

BETWEEN THE DATES OF SEPTEMBER 1 AND APRIL 15, ALL MULCH SHALL BE ANCHORED BY EITHER PEG LINE, MULCH NETTING, ASPHALT EMULSION CHEMICAL, TRACK OR WOOD CELLULOSE FIBER. WHEN GROUND SURFACE IS NOT VISIBLE THOUGH THE MULCH THEN COVER IS SUFFICIENT.
AFTER NOVEMBER 1ST, MULCH AND ANCHORING OF ALL BARE SOIL SHALL OCCUR AT THE END OF EACH FINAL GRADING WORK DAY.

5. MULCHING ON SLOPES AND DITCHES

SLOPES SHALL NOT BE LEFT EXPOSED FOR ANY EXTENDED TIME OF WORK SUSPENSION UNLESS FULLY MULCHED AND ANCHORED WITH PEG AND NETTING OR WITH EROSION CONTROL BLANKETS. MULCHING SHALL BE APPLIED AT A RATE OF 230 LBS/1,000 S.F. ON ALL SLOPES GREATER THAN 8%. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH A SLOPE GREATER THAN 3% FOR SLOPES EXPOSED TO DIRECT WINDS AND FOR ALL OTHER SLOPES GREATER THAN 5%. EROSION CONTROL BLANKETS SHALL BE USED IN LIEU OF MULCH IN ALL DRAINAGE WAYS WITH SLOPES 8%. EROSION CONTROL MIX CAN BE USED TO SUBSTITUTE EROSION CONTROL BLANKETS ON ALL SLOPES EXCEPT DITCHES.

6. SEEDING

BETWEEN THE DATES OF OCTOBER 15 AND APRIL 1ST, LOAM OR SEED WILL 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 SUCH TIME AS THE FINAL TREATMENT CAN BE APPLIED. IF THE DATE IS AFTER NOVEMBER 1ST AND IF THE EXPOSED AREA HAS BEEN LOOMED, FINAL GRADED 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 SELECTED TO BE PLACED PRIOR TO THE PLACEMENT OF MULCH AND FABRIC NETTING ANCHORED WITH STAPLES. IF DORMANT SEEDING IS USED FOR THE SITE, ALL DISTURBED AREAS SHALL RECEIVE 4' OF LOAM AND SEED AT AN APPLICATION RATE OF 5LBS/1000 S.F. ALL AREAS SEEDED DURING THE WINTER WILL BE INSPECTED IN THE SPRING FOR ADEQUATE CATCH. ALL AREAS SUFFICIENTLY 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. SEED TYPE SHALL BE WINTER RYE.

7. INSPECTION AND MONITORING

MAINTENANCE MEASURES SHALL BE APPLIED AS NEEDED DURING THE ENTIRE CONSTRUCTION SEASON. AT A MINIMUM, AFTER EACH RAINFALL, SNOW STORM OR PERIOD OF THAWING AND RUNOFF, THE SITE CONTRACTOR SHALL PERFORM A VISUAL INSPECTION OF ALL INSTALLED EROSION CONTROL MEASURES AND PERFORM REPAIRS AS NEEDED TO INSURE THEIR CONTINUOUS FUNCTION.
FOLLOWING THE TEMPORARY AND OR FINAL SEEDING AND MULCHING, THE CONTRACTOR SHALL IN THE SPRING INSPECT AND REPAIR ANY DAMAGES AND/ OR UNESTABLISHED SPOTS. ESTABLISHED VEGETATIVE COVER MEANS A MINIMUM OF 90% OF AREAS VEGETATED WITH VIGOROUS GROWTH.

STANDARDS FOR TIMELY STABILIZATION OF CONSTRUCTION SITES DURING WINTER

1. STANDARD FOR THE TIMELY STABILIZATION OF DITCHES AND CHANNELS -- THE APPLICANT WILL CONSTRUCT AND STABILIZE ALL STONE-LINED DITCHES AND CHANNELS ON THE SITE BY NOVEMBER 15. THE APPLICANT WILL CONSTRUCT AND STABILIZE ALL GRASS-LINED DITCHES AND CHANNELS ON THE SITE BY SEPTEMBER 15. IF THE APPLICANT FAILS TO STABILIZE A DITCH OR CHANNEL TO BE GRASS-LINED BY SEPTEMBER 15, THEN THE APPLICANT WILL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE DITCH FOR LATE FALL AND WINTER.

INSTALL A SOD LINING IN THE DITCH -- THE APPLICANT WILL LINE THE DITCH WITH PROPERLY INSTALLED SOD BY OCTOBER 1. PROPER INSTALLATION INCLUDES THE APPLICANT PINNING THE SOD ONTO THE SOIL WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL, AND ANCHORING THE SOD WITH JUTE OR PLASTIC MESH TO PREVENT THE SOD STRIPS FROM SLOUGHING DURING FLOW CONDITIONS.
INSTALL A STONE LINING IN THE DITCH --THE APPLICANT WILL LINE THE DITCH WITH STONE RIPRAP BY NOVEMBER 15. THE APPLICANT WILL HIRE A REGISTERED PROFESSIONAL ENGINEER TO DETERMINE THE STONE SIZE AND LINING THICKNESS NEEDED TO WITHSTAND THE ANTICIPATED FLOW VELOCITIES AND FLOW DEPTHS WITHIN THE DITCH. IF NECESSARY, THE APPLICANT WILL REGRADE THE DITCH PRIOR TO PLACING THE STONE LINING SO TO PREVENT THE STONE LINING FROM REDUCING THE DITCH'S CROSS-SECTIONAL AREA.

2. STANDARD FOR THE TIMELY STABILIZATION OF DISTURBED SLOPES -- THE APPLICANT WILL CONSTRUCT AND STABILIZE STONE-COVERED SLOPES BY NOVEMBER 15. THE APPLICANT WILL SEED AND MULCH ALL SLOPES TO BE VEGETATED BY SEPTEMBER 15. THE DEPARTMENT WILL CONSIDER ANY AREA HAVING A GRADE GREATER THAN 15% (10H:1V) TO BE A SLOPE. IF THE APPLICANT FAILS TO STABILIZE ANY SLOPE TO BE VEGETATED BY SEPTEMBER 15, THEN THE APPLICANT WILL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE SLOPE FOR LATE FALL AND WINTER.

STABILIZE THE SOIL WITH TEMPORARY VEGETATION AND EROSION CONTROL MATS -- BY OCTOBER 1 THE APPLICANT WILL SEED THE DISTURBED SLOPE WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1000 SQUARE FEET AND APPLY EROSION CONTROL MATS OVER THE MULCHED SLOPE. THE APPLICANT WILL MONITOR GROWTH OF THE RYE OVER THE NEXT 30 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR COVER AT LEAST 75% OF THE DISTURBED SLOPE BY NOVEMBER 1, THEN THE APPLICANT WILL COVER THE SLOPE WITH A LAYER OF WOOD WASTE COMPOST AS DESCRIBED IN ITEM III OF THIS CONDITION OR WITH STONE RIPRAP AS DESCRIBED IN ITEM IV OF THIS CONDITION.

STABILIZE THE SLOPE WITH SOD -- THE APPLICANT WILL STABILIZE THE DISTURBED SLOPE WITH PROPERLY INSTALLED SOD BY OCTOBER 1. PROPER INSTALLATION INCLUDES THE APPLICANT 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 APPLICANT WILL NOT USE LATE-SEASON SOD INSTALLATION TO STABILIZE SLOPES HAVING A GRADE GREATER THAN 33% (3H:1V).

STABILIZE THE SLOPE WITH WOOD WASTE COMPOST -- THE APPLICANT WILL PLACE A SIX-INCH LAYER OF WOOD WASTE COMPOST ON THE SLOPE BY NOVEMBER 15. PRIOR TO PLACING THE WOOD WASTE COMPOST, THE APPLICANT WILL REMOVE ANY SNOW ACCUMULATION ON THE DISTURBED SLOPE. THE APPLICANT WILL NOT USE WOOD WASTE COMPOST TO STABILIZE SLOPES HAVING GRADES GREATER THAN 50% (2H:1V) OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.

STABILIZE THE SLOPE WITH STONE RIPRAP -- THE APPLICANT WILL PLACE A LAYER OF STONE RIPRAP ON THE SLOPE BY NOVEMBER 15. THE APPLICANT WILL HIRE A REGISTERED PROFESSIONAL ENGINEER TO DETERMINE THE STONE SIZE NEEDED FOR STABILITY AND TO DESIGN A FILTER LAYER FOR UNDERNEATH THE RIPRAP.

3. STANDARD FOR THE TIMELY STABILIZATION OF DISTURBED SOILS -- BY SEPTEMBER 15 THE APPLICANT WILL SEED AND MULCH ALL DISTURBED SOILS ON AREAS HAVING A SLOPE LESS THAN 15%. IF THE APPLICANT FAILS TO STABILIZE THESE SOILS BY THIS DATE, THEN THE APPLICANT WILL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE SOIL FOR LATE FALL AND WINTER.
STABILIZE THE SOIL WITH TEMPORARY VEGETATION -- BY OCTOBER 1 THE APPLICANT WILL SEED THE DISTURBED SOIL WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1000 SQUARE FEET, LIGHTLY MULCH THE SEEDED SOIL WITH HAY OR STRAW AT 75 POUNDS PER 1000 SQUARE FEET, AND ANCHOR THE MULCH WITH PLASTIC NETTING. THE APPLICANT WILL MONITOR GROWTH OF THE RYE OVER THE NEXT 30 DAYS. IF THE RYE FAILS GROW AT LEAST THREE INCHES OR COVER AT LEAST 75% OF THE DISTURBED SOIL BEFORE NOVEMBER 15, THEN THE APPLICANT WILL MULCH THE AREA FOR OVER-WINTER PROTECTION AS DESCRIBED IN ITEM III OF THIS STANDARD.
STABILIZE THE SOIL WITH SOD -- THE APPLICANT WILL STABILIZE THE DISTURBED SOIL WITH PROPERLY INSTALLED SOD BY OCTOBER 1. PROPER INSTALLATION INCLUDES THE APPLICANT 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 15 THE APPLICANT WILL MULCH THE DISTURBED SOIL BY SPREADING HAY OR STRAW AT A RATE OF AT LEAST 150 POUNDS PER 1000 SQUARE FEET ON THE AREA SO THAT NO SOIL IS VISIBLE THROUGH THE MULCH. PRIOR TO APPLYING THE MULCH, THE APPLICANT WILL REMOVE ANY SNOW ACCUMULATION ON THE DISTURBED AREA. IMMEDIATELY AFTER APPLYING THE MULCH, THE APPLICANT WILL ANCHOR THE MULCH WITH PLASTIC NETTING TO PREVENT WIND FROM MOVING THE MULCH OFF THE DISTURBED SOIL.

REVISIONS

NO.	DESCRIPTION	DATE

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

STATE OF MAINE
DANIEL L RILEY
No. 996[illegible]
LICENSED PROFESSIONAL ENGINEER
09/04/2020

CMH CANCER CARE CENTER
300 MAIN STREET
LEWISTON, ME 04240

Central Maine Medical Center
The Central Maine Medical Family

EROSION CONTROL NOTES

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Interior Design • Holistic Design
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Suite 301 • West Hartford, Connecticut 06110
Tel: 860-521-1400 • Fax: 860-521-9400
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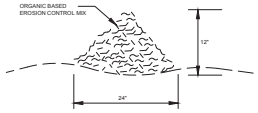
ISSUED FOR:	BID SET
DATE ISSUED:	09/04/2020
SCALE:	AS NOTED
PROJECT NUMBER:	20149
DRAWN BY:	STI

C-501



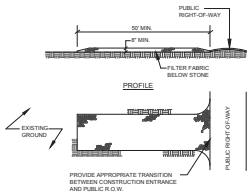
COMPOSITION

EROSION CONTROL MIX SHALL BE MANUFACTURED ON OR OFF THE PROJECT SITE SUCH THAT ITS COMPOSITION IS IN ACCORDANCE WITH THE MDEP MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL, LAST REVISED 10/20/16 OR LATER. IT MUST CONSIST PREMARILY OF ORGANIC MATERIAL, SEPARATED AT THE POINT OF GENERATION, AND MAY INCLUDE: SHREDDED BARK, STUMP GRINDINGS, COMPOSTED BARK, OR ACCEPTABLE MANUFACTURED PRODUCTS. WOOD AND BARK CHIPS, GROUND CONSTRUCTION DEBRIS OR REPROCESSED WOOD PRODUCTS WILL NOT BE ACCEPTABLE AS THE ORGANIC COMPONENT OF THE MIX.

INSTALLATION:

1. THE BARRIER MUST BE PLACED ACROSS THE SLOPE, ALONG THE CONTOUR.
2. EXISTING GROUND SHALL BE PREPARED SUCH THAT THE BARRIER MAY LIE NEARLY FLAT ALONG THE GROUND TO AVOID THE CREATION OF VOIDS AND BRIDGES IN ORDER TO MINIMIZE THE POTENTIAL OF WASH OUTS UNDER THE BARRIER.
3. THE BARRIER SHALL BE A MINIMUM OF 1 FOOT HIGH (AS MEASURED ON THE UPHILL SIDE) AND 2 FEET WIDE FOR SLOPES LESS THAN 5% IN GRADE AND SHALL BE WIDER TO ACCOMMODATE THE ADDITIONAL RUNOFF.
4. EROSION CONTROL MIX CAN BE INSTALLED WHERE SILT FENCE IS ILLUSTRATED ON THE DESIGN PLANS IN AREAS EXCEPT IN, BUT NOT LIMITED TO, THE FOLLOWING AREAS: WETLAND AREAS, AT POINTS OF CONCENTRATED FLOW, BELOW CULVERT OUTLET APRONS, AROUND CATCH BASINS AND CLOSED STORM SYSTEMS AND AT THE BOTTOM OF STEEP SLOPES THAT ARE MORE THAN 50 FEET FROM TOP TO BOTTOM.

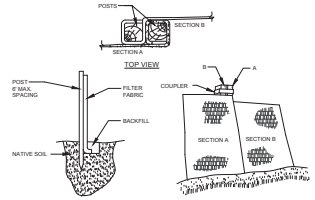
EROSION CONTROL MIX BERM
NOT TO SCALE



NOTES:

1. STONE SIZE- AASHTO DESIGNATION M43, SIZE NO. 2 (2 1/2" TO 1 1/2"), USE CRUSHED STONE.
2. LENGTH- AS SHOWN ON PLANS, MIN. 50 FEET.
3. THICKNESS- NOT LESS THAN EIGHT (8) INCHES.
4. WIDTH- NOT LESS THAN FULL WIDTH OF ALL POINT OF INGRESS OR EGRESS.
5. MAINTENANCE- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED IMMEDIATELY.

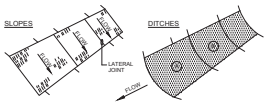
STABILIZED CONSTRUCTION EXIT
NOT TO SCALE



INSTALLATION NOTES:

1. EXCAVATE A 4"x 6" TRENCH ALONG THE LINE OF PLACEMENT FOR THE FILTER BARRIER.
2. UNROLL A SECTION AT A TIME AND POSITION THE POSTS AGAINST THE BACK (DOWNSTREAM) WALL OF THE TRENCH.
3. DRIVE POSTS INTO THE GROUND UNTIL APPROXIMATELY 2" OF FABRIC IS LYING ON THE TRENCH BOTTOM.
4. LAY THE TOE-IN FLAP OF FABRIC ONTO THE UNDISTURBED BOTTOM OF THE TRENCH. BACKFILL THE TRENCH AND TAMP THE SOIL. TOE-IN CAN ALSO BE ACCOMPLISHED BY LAYING THE FABRIC FLAP ON UNDISTURBED GROUND AND PILING AND TAMPING FILL AT THE BASE, BUT MUST BE ACCOMPANIED BY AN INTERCEPTION DITCH.
5. JOIN SECTION AS SHOWN ABOVE.
6. BARRIER SHALL BE MIRAFI SILT FENCE OR EQUAL.

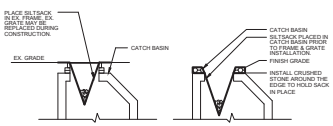
FILTER BARRIER
NOT TO SCALE

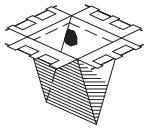


NOTES:

1. BURY THE TOP END OF THE MESH MATERIAL IN A 6" TRENCH AND BACKFILL AND TAMP TRENCHING SECURE END WITH STAPLES AT 6" SPACING. 4" DOWN FROM EXPOSED END.
2. FLOW DIRECTION JOINTS TO HAVE UPPER END OF LOWER STRIP BURIED WITH UPPER LAYERS OVERLAPPED 4" AND STAPLED. OVERLAP B OVER A.
3. LATERAL JOINTS TO HAVE 4" OVERLAP OF STRIPS. STAPLE 18" ON CENTER.
4. STAPLE OUTSIDE LATERAL EDGE 2' ON CENTER.
5. WIRE STAPLES TO BE MIN. OF # 11 WIRE 6" LONG AND 1-1/2" WIDE.
6. USE NORTH AMERICAN GREEN DS 150 OR APPROVED EQUAL.

EROSION CONTROL BLANKET
NOT TO SCALE



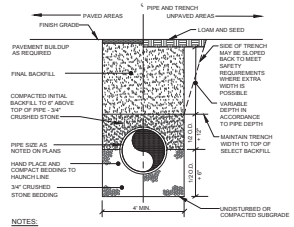


SILT SACK PROTECTION

NOTES:

PRIOR TO FINAL GRADING AND PAVING OPERATIONS BEGIN A CATCH BASIN INSERT (SUCH AS A SILT SACK OR A DANDY BAG ®) MUST BE INSTALLED IN EACH BASIN PER MANUFACTURES INSTRUCTIONS. HAY BALES SHOULD BE REMOVED ONCE INSERTS ARE INSTALLED.

CATCH BASIN PROTECTION DETAIL (FOR PAVED AREAS)
NOT TO SCALE



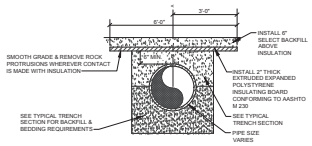
NOTES:

1. FOR ALL TRENCHES WITH A GRADE GREATER THAN 4% AND/OR WHERE GROUNDWATER IS APPARENT, INSTALL CHECK DAMS AROUND PIPE AT 100' INTERVALS. SUBMIT CHECK DAM PRODUCT TO EOR FOR APPROVAL.
2. AT LOCATIONS WHERE PVC PIPE IS INDICATED IN-LIEU OF HDPE, INSTALL SAND FOR BEDDING AND INITIAL BACKFILL. SAND PER ASTM C33 AND COMPACTED TO 95% MAXIMUM DRY DENSITY.

TRENCH BACKFILL SCHEDULE		
PIPE TYPE	PIPE BEDDING MATERIAL	INITIAL BACKFILL
SOLID WALL AND PERFORATED PVC	MDOT 703.22 TYPE C 3/4" CRUSHED STONE	MDOT 703.22 TYPE C 3/4" CRUSHED STONE
HDPE	MDOT 703.22 TYPE C 3/4" CRUSHED STONE	MDOT 703.22 TYPE C 3/4" CRUSHED STONE

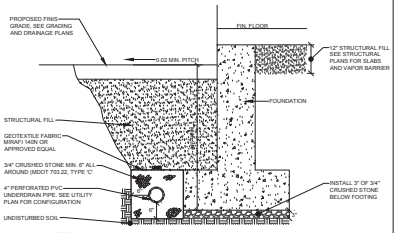
NOTE:
ALL BRACING AND SHEETING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL MEET ALL STATE AND O.S.H.A. SAFETY STANDARDS.

TYPICAL DRAIN PIPE TRENCH SECTION
NOT TO SCALE



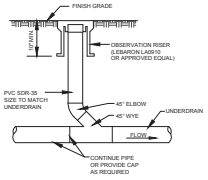
NOTE:
PROVIDE INSULATION WHERE LESS THAN 4'-0" OF COVER ABOVE SANITARY SEWER PIPE IS PROVIDED.

PIPE INSULATION DETAIL
NOT TO SCALE



NOTES:
1. THIS DETAIL FOR PURPOSES OF THE FOUNDATION DRAIN AND BUILDING BACKFILL IS PROVIDED FOR ILLUSTRATIVE PURPOSES ONLY. CONSTRUCTION OF THE FOOTING, SLAB ON GRADE AND ASSOCIATED MATERIALS SHALL BE COORDINATED WITH THE BUILDING DRAWINGS.

FOUNDATION DRAIN SECTION
NOT TO SCALE



CLEANOUT IN GRASSED AREAS
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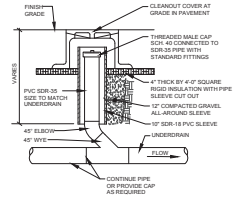

CLEANOUT IN PAVEMENT AREAS
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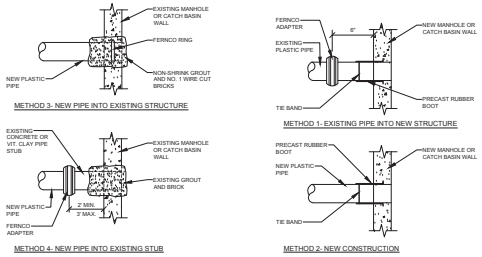

PLASTIC PIPE CONNECTIONS
NOT TO SCALE

REVISIONS

NO.	DESCRIPTION	DATE

SEBAGO TECHNICS
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75 John Roberts Rd.
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South Portland, ME 04106
Tel. 207-200-2100

STATE OF MAINE
DANIEL L. RILEY
No. 9697
PROFESSIONAL ENGINEER
09/04/2020

CMH CANCER CARE CENTER
300 MAIN STREET
LEWISTON, ME 04240

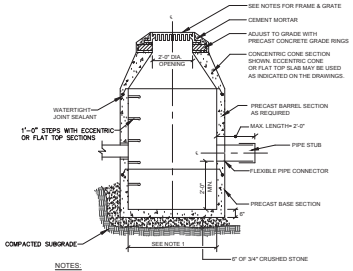
Central Maine Medical Center
The Central Maine Medical Family

DETAILS

MBH ARCHITECTURE
Architecture • Green Design
Interior Design • Holistic Design
MBH ARCHITECTURE, LLC
Corporate Center West • 433 South Main Street
Suite 301 • West Hartford, Connecticut 06110
Tel: 860-521-1680 Fax: 860-521-8400
www.mbharchitecture.com

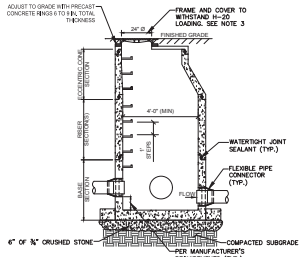
ISSUED FOR:	BID SET
DATE ISSUED:	09/04/2020
SCALE:	AS NOTED
PROJECT NUMBER:	20149
DRAWN BY:	STI

C-502



NOTES:
1. 4'-0" I.D. TYPICAL. SOME STRUCTURES MAY REQUIRE LARGER I.D.
2. STRUCTURE & APPURTENANCES SHALL CONFORM TO ASTM C-478 & BE DESIGNED TO WITHSTAND H-20 LOADING PER AASHTO. FC=4,000 (MIN).
3. CONTRACTOR TO SUBMIT SHOP DRAWING PREPARED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MAINE TO EOR FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. DESIGN STRUCTURES TO RESIST BUOYANCY WITH A 1.5 (MIN) FACTOR OF SAFETY.
4. PIPE SIZES AND INVERTS AS NOTED ON PLANS.
5. CATCH BASIN FRAME AND GRATE TO BE EAST JORDAN "E.J.", 5250 FRAME & GRATE, TYPE M OR APPROVED EQUAL.

TYPICAL CATCH BASIN
NOT TO SCALE



NOTES:
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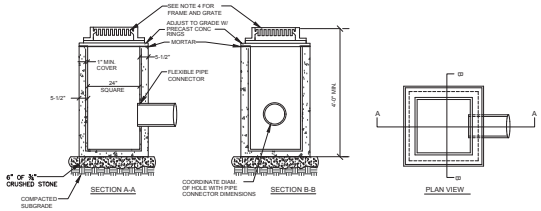
3. DRAINAGE MANHOLE FRAME AND GRATE TO BE EAST JORDAN "ELJ" 1122 FRAME & COVER OR APPROVED EQUAL. COVER SHOULD BE MARKED 'DRAIN'.
4. PIPE SIZES AND INVERTS AS NOTED ON THE PLANS.

TYPICAL DRAIN MANHOLE
NOT TO SCALE



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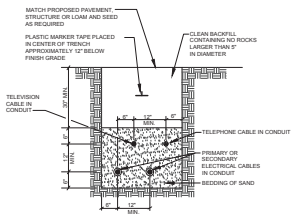
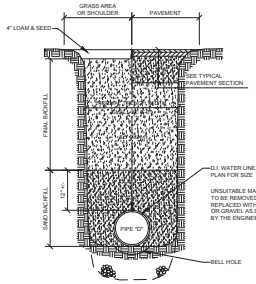
3. PIPE SIZES AND INVERTS AS NOTED ON PLANS.
4. CATCH BASIN FRAME AND COVER TO BE EAST JORDAN "E.J.", 5250 FRAME & COVER, TYPE M OR APPROVED EQUAL.

"TYPE F" CATCH BASIN
NOT TO SCALE

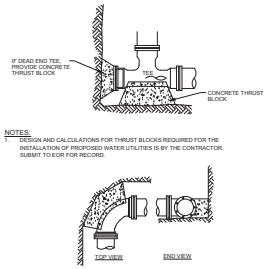


NOTES:
1. CABLES TO BE ENCASED IN SCHEDULE 40 PVC CONDUIT WHEN RUN BENEATH PAVED AREAS.

TYPICAL UNDERGROUND CABLE INSTALLATION
NOT TO SCALE

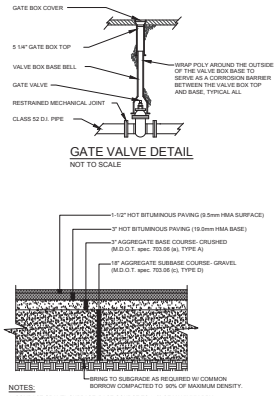


WATER LINE TRENCH SECTION THRU EARTH
NOT TO SCALE



NOTES:
1. DESIGN AND CALCULATIONS FOR THRUST BLOCKS REQUIRED FOR THE INSTALLATION OF PROPOSED WATER UTILITIES IS BY THE CONTRACTOR. SUBMIT TO EOR FOR RECORD.

TEE & BEND DETAIL
NOT TO SCALE

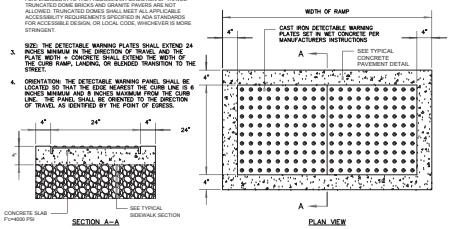


GATE VALVE DETAIL
NOT TO SCALE

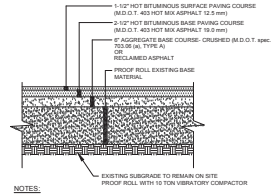
NOTES:
1. COMPACT GRAVEL SUBBASE, BASE COURSE TO 95% OF MAXIMUM DRY DENSITY USING HEAVY ROLLER COMPACTION.
2. CONTRACTOR SHALL SET GRADE STAKES MARKING SUBBASE AND FINISH GRADE ELEVATIONS FOR CONSTRUCTION REFERENCE.
3. ALL MATERIALS AND PAVEMENT OPERATIONS SHALL MEET THE MINIMUM REQUIREMENTS OF M.D.O.T. STANDARD SPECIFICATIONS.

HEAVY DUTY BITUMINOUS PAVEMENT
NOT TO SCALE

NOTES:
1. ALL DETECTABLE WARNING PLATES SHALL BE UNCOATED CAST IRON. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION.
2. TRUNCATED DOMES SHALL BE ALIGNED IN ROWS, PARALLEL AND PERPENDICULAR TO THE PREDOMINANT DIRECTION OF TRAVEL. TRUNCATED DOME BRICKS AND GRANITE PAVERS ARE NOT ALLOWED. TRUNCATED DOMES SHALL MEET ALL APPLICABLE ACCESSIBILITY REQUIREMENTS SPECIFIED IN ADA STANDARDS FOR ACCESSIBLE DESIGN, OR LOCAL CODE, WHICHEVER IS MORE STRINGENT.
3. SIZE: THE DETECTABLE WARNING PLATES SHALL EXTEND 24 INCHES MINIMUM IN THE DIRECTION OF TRAVEL AND THE PLATE WIDTH + CONCRETE SHALL EXTEND THE WIDTH OF THE CURB RAMP, LANDING, OR BLENDED TRANSITION TO THE STREET.
4. ORIENTATION: THE DETECTABLE WARNING PANEL SHALL BE PLACED SO THAT THE EDGE NEAREST THE CURB LINE IS 6 INCHES MINIMUM AND 8 INCHES MAXIMUM FROM THE CURB LINE. THE PANEL SHALL BE ORIENTED TO THE DIRECTION OF TRAVEL AS IDENTIFIED BY THE POINT OF EGRESS.

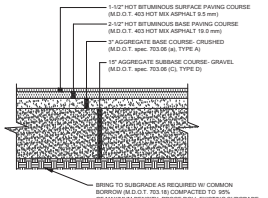


SIDEWALK RAMP DETECTABLE WARNING PANEL
NOT TO SCALE



NOTES:
1. PROOF ROLL EXISTING BASE/SUBGRADE MATERIAL WITH 3 PASSES OF 10 TON VIBRATORY ROLLER COMPACTOR. REMOVE SOFT AREAS AFTER PROOF-ROLLING AND REPLACE WITH MDOT 703.06 TYPE D SUBBASE AGGREGATE.
2. COMPACT GRAVEL BASE/RECLAIMED ASPHALT COURSE TO 95% OF MAXIMUM DRY DENSITY USING HEAVY ROLLER COMPACTION.
3. CONTRACTOR SHALL SET GRADE STAKES MARKING SUBBASE AND FINISH GRADE ELEVATIONS FOR CONSTRUCTION REFERENCE.
4. ALL MATERIALS AND PAVEMENT OPERATIONS SHALL MEET THE MINIMUM REQUIREMENTS OF M.D.O.T. STANDARD SPECIFICATIONS.

HOLLAND STREET LOT RECONSTRUCTION PAVING
NOT TO SCALE



NOTES:
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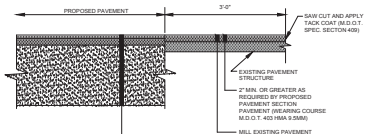
BITUMINOUS PAVING
NOT TO SCALE



TYPICAL PAVEMENT JOINT DETAIL/MILLING SECTION
NOT TO SCALE

REVISIONS

NO.	DESCRIPTION	DATE

SEBAGO TECHNICS
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South Portland, ME 04106
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STATE OF MAINE — DANIEL L. RILEY — No. 9697 — PROFESSIONAL ENGINEER
09/04/2020

CMH CANCER CARE CENTER
300 MAIN STREET
LEWISTON, ME 04240

Central Maine Medical Center — The Central Maine Medical Family

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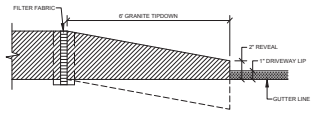
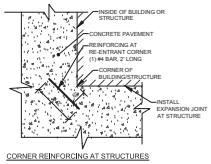
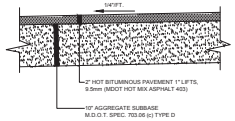


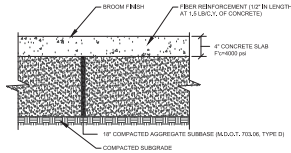
TIPDOWN CURB INSTALLATION
NOT TO SCALE



CORNER REINFORCING AT STRUCTURES

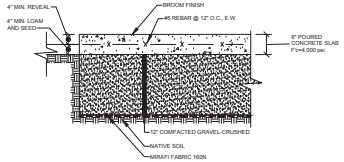


BITUMINOUS SIDEWALK
NOT TO SCALE



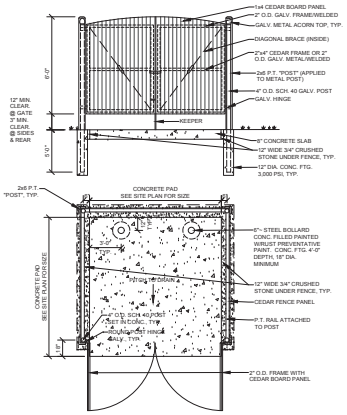
NOTE:
1. SAWCUT CONTROL JOINT TO 1/4 OF SLAB THICKNESS AT 5'-0" O.C.+-
2. PLACE PRE-FORMED 1/2" EXPANSION JOINT AT 30' (MAX.) O.C. EXPANSION JOINTS SHALL BE INSTALLED AT ALL INTERSECTIONS OF BUILDINGS, WALKS, UTILITY PENETRATIONS AND ANY OTHER FIXED STRUCTURE.

TYPICAL CONCRETE SIDEWALK
NOT TO SCALE

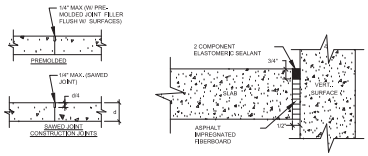


NOTE:
1. PROVIDE CONTRACTION CONTROL JOINTS EVERY 6' IN EACH DIRECTION

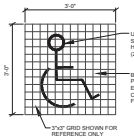
CONCRETE EQUIPMENT PAD SECTION
NOT TO SCALE



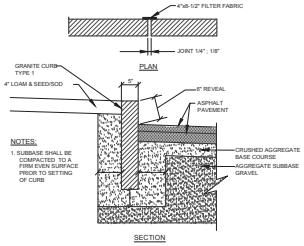
DUMPSTER ENCLOSURE
NOT TO SCALE



CONCRETE JOINT DETAILS
NOT TO SCALE

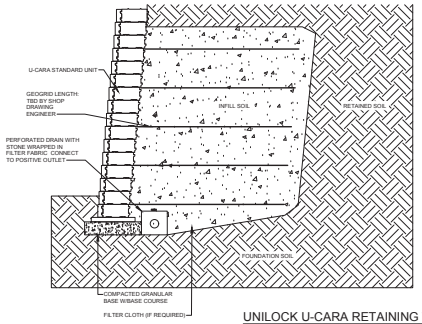


ADA ACCESSIBLE HANDICAP MARKINGS
NOT TO SCALE



NOTES:
1. SUBBASE SHALL BE COMPACTED TO A FIRM EVEN SURFACE PRIOR TO SETTING OF CURB

VERTICAL GRANITE CURB
NOT TO SCALE



UNILOCK U-CARA RETAINING WALL SECTION
NOT TO SCALE

NOTES:
1. THIS PRELIMINARY DESIGN WAS ANALYZED IN ACCORDANCE WITH THE NATIONAL CONCRETE MASONRY ASSOCIATION DESIGN MANUAL FOR SEGMENTAL RETAINING WALLS, SECOND EDITION. ALL MINIMUM REQUIRED FACTORS OF SAFETY HAVE BEEN MET OR EXCEEDED GIVEN THE DESIGN PARAMETERS NOTED ON THIS DRAWING. THIS IS A TYPICAL, NON-SITE SPECIFIC DESIGN AND IS TO BE USED FOR ESTIMATION AND FEASIBILITY PURPOSES ONLY.
2. NO ANALYSIS FOR GLOBAL STABILITY, TOTAL OR DIFFERENTIAL SETTLEMENT, OR SEISMIC EFFECTS HAS BEEN PERFORMED.
3. THIS PRELIMINARY DESIGN IS ONLY PROVIDED TO ILLUSTRATE THE GENERAL ARRANGEMENT OF THE SRW STRUCTURE FOR PRELIMINARY COSTING AND FEASIBILITY PURPOSES. THIS DRAWING IS NOT FOR CONSTRUCTION. A QUALIFIED ENGINEER, LICENSED IN THE APPLICABLE PROVINCE/STATE, MUST BE RETAINED TO PROVIDE A FINAL DESIGN PRIOR TO CONSTRUCTION.
4. STRUCTURES SUCH AS HANDRAILS, GUARDRAILS, FENCES, TERRACES, AND SITE CONDITIONS SUCH AS HIGH WATER LEVEL, DRAINAGE, AND SOIL CONDITIONS, ADDITIONAL LIVE AND DEAD LOADS, ETC. HAVE SIGNIFICANT EFFECTS ON THE WALL DESIGN AND HAVE NOT BEEN TAKEN INTO ACCOUNT IN THIS TYPICAL SECTION. WHEN ACCOUNTED FOR IN THE FINAL DESIGN, OTHER CONDITIONS AND ELEMENTS MAY RESULT IN ADDITIONAL DESIGN MEASURES (GEOGRID, DRAINAGE, ETC) AND COST.
5. FOR GEOGRID REINFORCED STRUCTURES, A MINIMUM LONG TERM DESIGN STRENGTH OF 1800 LBS/LIN.FT WAS ASSUMED. CONTACT YOUR MANUFACTURER FOR A LIST OF APPROVED GEOGRID REINFORCEMENTS.

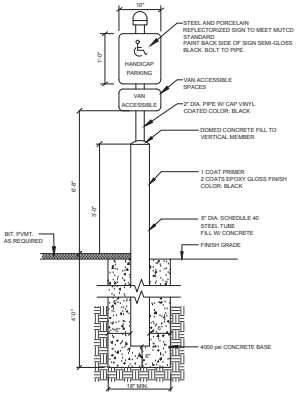
DESIGN SPECIFIC GEOMETRIC INFORMATION

RETAINING WALL SYSTEM	U-CARA W/ GEOGRID
MAXIMUM HEIGHT mm (in)	2470 (97)
MAXIMUM SLOPE ABOVE WALL	HORIZONTAL
MAX. SURCHARGE ABOVE WALL kPa (LB/SQ. FT.)	12 kPa (250 LB/SQ.FT.) (TRAFFIC) OFFSET 2.0FT
BATTER OF WALL	5.5°
GEOGRID TYPE AND MANUFACTURER	SEE NOTE
MIN. SLOPE BELOW WALL	NONE
DEPTH OF EMBEDMENT mm (in)	247 (10)
COMPACTED BASE DIMENSION mm (in)	656 X 150 (26 X 6)

DESIGN SPECIFIC SOIL INFORMATION

	INFILL	RETAINED	FOUNDATION	BASE	DRAINAGE
DESCRIPTION (BY USCS)	GW - WELL GRADED, FREE DRAINING GRANULAR	CL - INORGANIC CLAYS LOW PLASTICITY	CL - INORGANIC CLAYS LOW PLASTICITY	GW - WELL GRADED, FREE DRAINING GRANULAR	SEE INFILL
EFFECTIVE INTERNAL FRICTION ANGLE	35°	28°	28°	39°	NR
MOIST UNIT WEIGHT kN/CU.M (IB/CU. FT.)	22 (140)	20 (127)	20 (127)	22 (140)	NR
EFFECTIVE COHESION kPa (LB/SQ. FT.)	NR	NR	NR	NR	NR
SOIL NOTES	PLACED IN 150MM (6") LIFTS AND COMPACTED TO 95% SPD	UNDISTURBED DENSE SOIL OR WELL COMPACTED ENG. FILL.	ALLOWABLE BEARING CAP. MUST EXCEED 100k Pa (2100 PSF)	CRUSHED GRAVEL (FREE DRAINING) COMPACTED TO 95% SPD.	GRAVEL INFILL MUST BE WELL GRADED, ANGULAR, FREE DRAIN W/MAX. 8% FINES

NR = NOT REQUIRED



ADA ACCESSIBLE SIGNS IN METAL BOLLARD
NOT TO SCALE

REVISIONS

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SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
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STATE OF MAINE DANIEL L. RILEY No. 9691 PROFESSIONAL ENGINEER
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CMH CANCER CARE CENTER

300 MAIN STREET
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Central Maine Medical Center
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DETAILS

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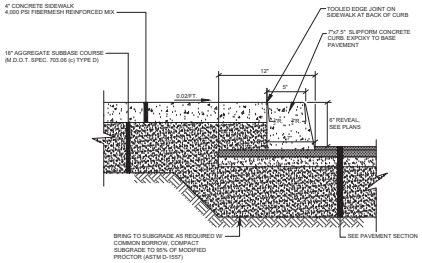
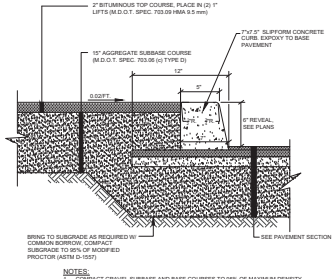


NOTES:
1. COMPACT GRAVEL SUBBASE AND BASE COURSES TO 95% OF MAXIMUM DENSITY USING HEAVY ROLLER COMPACTION.
2. HOT MIX ASPHALT SURFACE COARSE SHALL BE COMPACTED TO 95% OF ITS THEORETICAL MAXIMUM DENSITY (ASTM D-2041). BASE COARSE SHALL BE COMPACTED TO 95% ±2.5% OF ITS THEORETICAL MAXIMUM DENSITY (ASTM D-2041).
3. APPLY TACK COAT BETWEEN SUCCESSIVE LIFTS OF BITUMINOUS PAVEMENT.
4. CONTRACTOR SHALL SET GRADE STAKES MARKING SUBBASE AND FINISH GRADE ELEVATIONS FOR CONSTRUCTION REFERENCE.

CONCRETE SIDEWALK WALK WITH SLIPFORM CURB

NOT TO SCALE



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BITUMINOUS SIDEWALK WALK WITH SLIPFORM CURB

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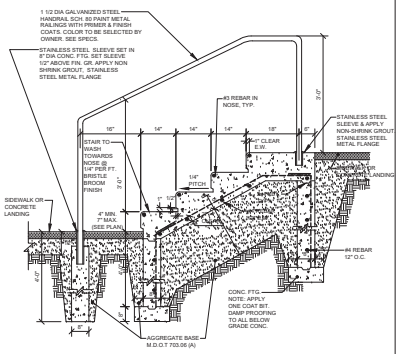
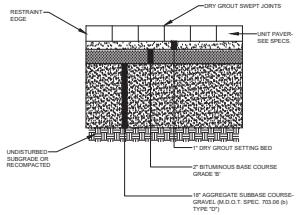


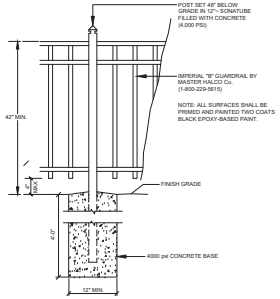
CONCRETE STAIR

NOT TO SCALE



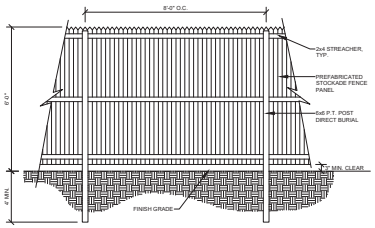
UNIT PAVER

NOT TO SCALE



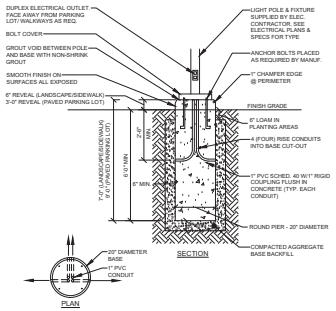
PEDESTRIAN GUARDRAIL (ALUMINUM TUBING)

NOT TO SCALE



STOCKADE FENCE

NOT TO SCALE



NOTES:
1. CONCRETE f'c=5000 psi @ 28 DAYS WITH STEEL REINFORCEMENT
2. CONDUIT AND ANCHOR BOLTS PLACED AS REQUIRED PROVIDED BY ELECTRICAL CONSTRACTOR
3. PROVIDE 2 COATS BITUMINOUS DAMPROOFING FOR ALL CONCRETE BELOW GRADE.
4. LIGHT POLE BASE AS MANUFACTURED BY SUPERIOR CONCRETE OR APPROVED EQUAL.

20" ROUND LIGHT POLE BASE

NOT TO SCALE

REVISIONS

NO.	DESCRIPTION	DATE

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

STATE OF MAINE
DANIEL L. RILEY
No. 9697
PROFESSIONAL ENGINEER
09/04/2020

CMH CANCER CARE CENTER

300 MAIN STREET
LEWISTON, ME 04240

Central Maine Medical Center
The Central Maine Medical Family

DETAILS

MBH ARCHITECTURE
Architecture • Green Design
Interior Design • Historic Design
MBH ARCHITECTURE, LLC
Corporate Center West • 433 South Main Street
Suite 301 • West Hartford, Connecticut 06110
Tel: 860-521-1400 Fax: 860-521-9400
www.mbharchitecture.com

ISSUED FOR:	BID SET
DATE ISSUED:	09/04/2020
SCALE:	AS NOTED
PROJECT NUMBER:	20149
DRAWN BY:	STI

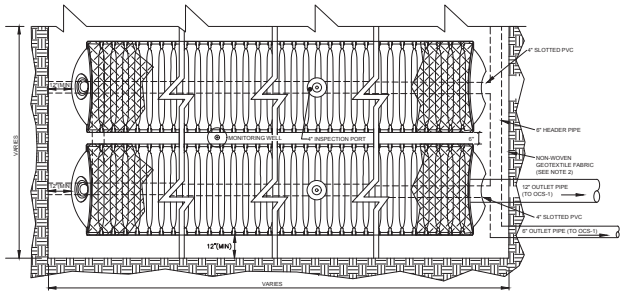
C-505

SUBSURFACE SAND FILTER NOTES:

1. THE STORMWATER CHAMBER SHALL BE A STORMTECH SC-740 OR EQUIVALENT SUBSURFACE STORAGE CHAMBER APPROVED BY THE ENGINEER.
2. THE ENTIRE SUBSURFACE SYSTEM, INCLUDING THE CRUSHED STONE STORAGE VOLUME, THE FILTER MEDIA, AND UNDERDRAIN MATERIALS, SHALL BE WRAPPED IN A NON-WOVEN GEOTEXTILE FABRIC (MIRAFI 160N OR EQUIVALENT).
3. TWO STRIPS OF WOVEN GEOTEXTILE SHALL BE INSTALLED BETWEEN THE BOTTOM OF THE ISOLATOR ROW CHAMBER AND ITS STONE FOUNDATION. THIS FABRIC TRAPS SEDIMENTS AND PROTECTS THE UNDERLYING CRUSHED STONE. A SECOND STRIP OF NON-WOVEN AASHTO M288 CLASS 2 GEOTEXTILE (MIRAFI FW 404 OR EQUIVALENT) SHALL BE DRAPED OVER THE ENTIRE LENGTH OF THE CHAMBERS. THIS FABRIC WILL ALSO TRAP SEDIMENTS AND PROVIDE SEPARATION BETWEEN THE CHAMBERS AND SURROUNDING STONE.
4. THE EMBEDMENT STONE SURROUNDING THE CHAMBERS SHALL BE A WASHED, ANGULAR STONE WITH THE MAJORITY OF PARTICLES BETWEEN 3/4 INCH AND 2 INCH. THE BOTTOM 6 INCH LAYER OF STONE THAT ACTS AS THE FOUNDATION BELOW THE CHAMBERS SHALL BE COMPACTED TO ACHIEVE A 95% STANDARD PROCTOR DENSITY.
5. THE SAND FILTER MATERIAL SHALL BE A UNIFORM MIX, FREE OF STONES LARGER THAN 2 INCHES, STUMPS, ROOTS, OR OTHER SIMILAR OBJECTS. THE MATERIAL SHALL MEET THE SPECIFICATIONS FOR MDOT AGGREGATE SAND (MDOT #703.01). HOWEVER, THIS AGGREGATE SAND SHALL BE MIXED WITH LOAM TO ACHIEVE A MATERIAL WITH BETWEEN 8% AND 10% PASSING THE #200 SIEVE. THE LOAM USED IN THIS MIXTURE SHALL HAVE LESS THAN 2% CLAY CONTENT. THIS 18 INCH LAYER OF SAND FILTRATION MEDIA SHALL BE PLACED TO ACHIEVE A LEVEL OF COMPACTION BETWEEN 92% AND 95% STANDARD PROCTOR DENSITY.
6. SEE PLANS FOR INSPECTION PORT LOCATIONS.

CONSTRUCTION OVERSIGHT NOTES FOR SUBSURFACE SAND FILTER:

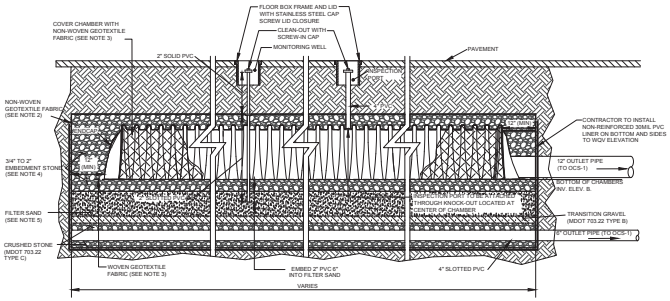
1. INSPECTIONS BY A PROFESSIONAL ENGINEER SHALL CONSIST OF WEEKLY VISITS TO THE SITE TO INSPECT THE CONSTRUCTION AND STABILIZATION OF THE PROPOSED SUBSURFACE CHAMBERS AND ITS FILTER COURSE MATERIAL TO BE BUILT ON THIS SITE. INSPECTIONS SHALL CONSIST OF AN APPROPRIATE NUMBER OF VISITS TO THE SITE TO INSPECT THE INSTALLATION OF THE SUBGRADE, FILTER BED MATERIAL PLACEMENT, INSTALLATION OF EMBEDMENT STONE, ISOLATOR ROW AND CHAMBER, SURROUNDING STONE, FABRIC PLACEMENT AND STORMWATER OVERFLOW BYPASS CONSTRUCTION FROM INITIAL GROUND DISTURBANCE TO BACKFILL OVER CHAMBERS.



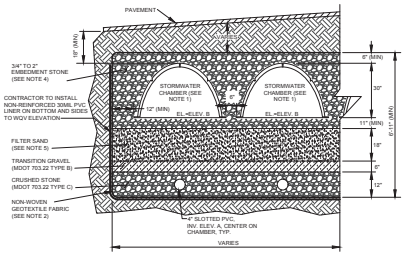
SUBSURFACE SAND FILTER PLAN VIEW

SUBSURFACE SAND FILTER CHAMBER DATA

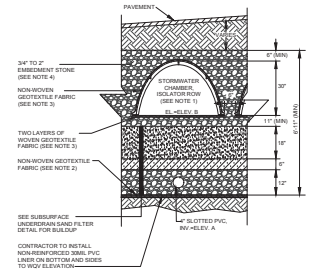
SUBSURFACE SAND FILTER CHAMBER DATA				
	ELEV. A	ELEV. B	TREATMENT SURFACE AREA	TREATMENT SIZE (TOTAL CHAMBERS)
SSF-1	227.60	231.22	2,105 SF	56 CHAMBERS



SUBSURFACE SAND FILTER ELEVATION VIEW



SUBSURFACE SAND FILTER SECTION

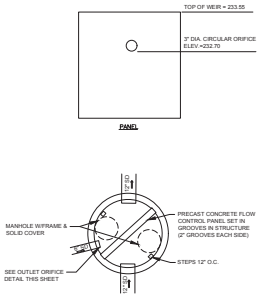


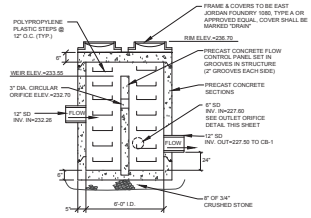
SUBSURFACE SAND FILTER (SSF-1)

NOT TO SCALE

SUBSURFACE UNDERDRAINED SAND FILTER ISOLATOR ROW

NOT TO SCALE

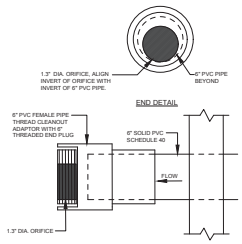




NOTES:
1. SUBMIT SHOP DRAWINGS FOR OWNER/ENGINEER APPROVAL.
2. STRUCTURE SHALL BE DESIGNED FOR H-20 LOADING.

OUTLET CONTROL STRUCTURE (OCS-1)

NOT TO SCALE



OUTLET ORIFICE DETAIL

NOT TO SCALE

REVISIONS

NO.	DESCRIPTION	DATE

SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite 4A,
South Portland, ME 04106
Tel. 207-200-2100

STATE OF MAINE DANIEL L. RILEY No. 9697 PROFESSIONAL ENGINEER

09/04/2020

CMH CANCER CARE CENTER

300 MAIN STREET
LEWISTON, ME 04240

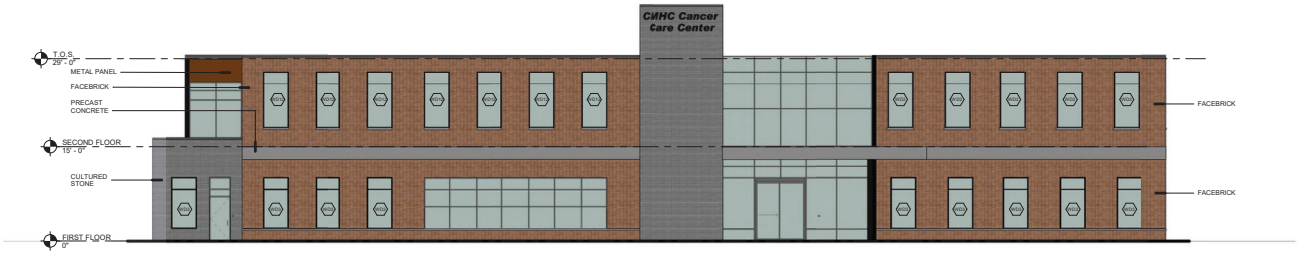
Central Maine Medical Center
The Central Maine Medical Family

DETAILS

MBH ARCHITECTURE
Architecture • Green Design
Interior Design • Historic Design
MBH ARCHITECTURE, LLC
Corporate Center West • 433 South Main Street
Suite 301 • West Hartford, Connecticut 06110
Tel: 860-521-1680 Fax: 860-521-8400
www.mbharchitecture.com

ISSUED FOR:	BID SET
DATE ISSUED:	09/04/2020
SCALE:	AS NOTED
PROJECT NUMBER:	20149
DRAWN BY:	STT

C-506



1 HIGH STREET ELEVATION A
SCALE: 1/8" = 1'-0"

2 MAIN STREET ELEVATION
SCALE: 1/8" = 1'-0"

3 MAIN STREET ELEVATION
SCALE: 1/8" = 1'-0"

4 HOLLAND STREET ELEVATION
SCALE: 1/8" = 1'-0"

REVISIONS

NO.	DESCRIPTION	DATE

CMHC CANCER CARE CENTER

300 MAIN STREET
LEWISTON, ME 04240

Central Maine Medical Center
The Central Maine Medical Family

EXTERIOR ELEVATIONS

MBH ARCHITECTURE
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Corporate Center West • 433 South Main Street
Suite 301 • West Hartford, Connecticut 06110
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ISSUED FOR:	SITE PLAN APPROVAL
DATE ISSUED:	09/04/2020
SCALE:	1/8" = 1'-0"
PROJECT NUMBER:	19221
DRAWN BY:	SW

A-400

9/2/2020 5:04:19 PM C:\MBH - Autodesk Revit\Local Files\19220-19221 (#20230) CENTRAL_detached_SW 2020-08-28_sawarnavit\19-A3(Revisions).rvt

CMHC CANCER CARE CENTER

300 MAIN STREET
LEWISTON, ME 04240
09/04/2020

MBH ARCHITECTURE

CMHC CANCER CARE CENTER

300 MAIN STREET
LEWISTON, ME 04240
09/04/2020

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09/04/2020

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CMHC CANCER CARE CENTER

300 MAIN STREET
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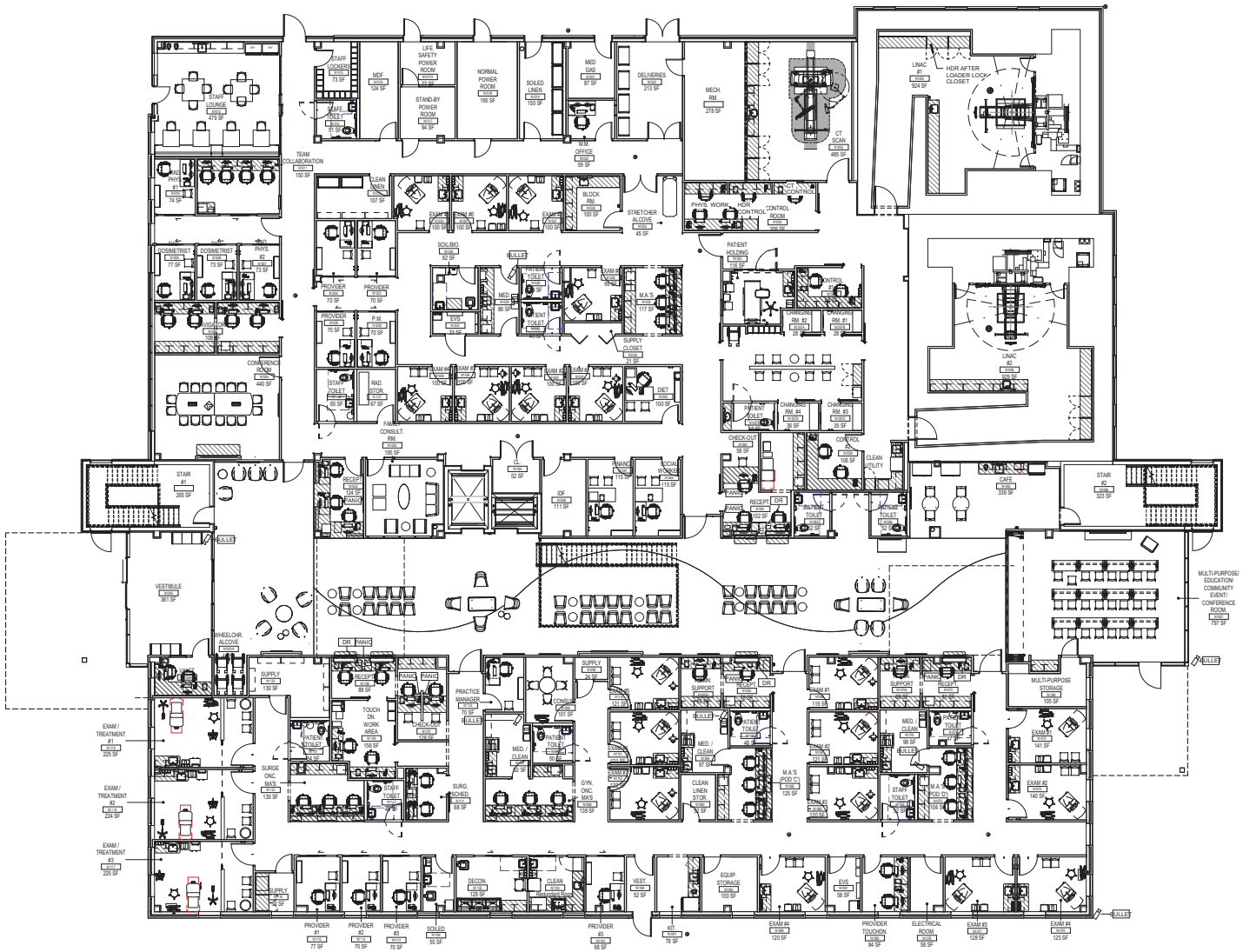
09/04/2020

MBH ARCHITECTURE
ARCHITECTURE · INTERIOR DESIGN
GREEN DESIGN · HOLISTIC DESIGN



1 FIRST FLOOR FURNITURE & EQUIPMENT PLAN

SCALE: 1/8" = 1'-0"

NORTH

REVISIONS

NO.	DESCRIPTION	DATE

CMH CANCER CARE CENTER

300 MAIN STREET
LEWISTON, ME 04240

Central Maine Medical Center
Free Carrier Alliance Affiliate of Franklin

OVERALL FIRST FLOOR FURNITURE & EQUIPMENT PLAN

MBH ARCHITECTURE
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Tel: 860-521-1400 • Fax: 860-521-9400
www.mbharchitecture.com

ISSUED FOR:	BID SET
DATE ISSUED:	09/04/2020
SCALE:	1/8" = 1'-0"
PROJECT NUMBER:	19221
DRAWN BY:	JRG

FE-110

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1 SECOND FLOOR FURNITURE & EQUIPMENT PLAN
SCALE: 1/8" = 1'-0"

NORTH

REVISIONS

NO.	DESCRIPTION	DATE

CMH CANCER CARE CENTER

300 MAIN STREET
LEWISTON, ME 04240

Central Maine Medical Center
The Central Maine Adventist Family

OVERALL SECOND FLOOR FURNITURE & EQUIPMENT PLAN

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Suite 301 • West Hartford, Connecticut 06110
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ISSUED FOR:	BID SET
DATE ISSUED:	09/04/2020
SCALE:	1/8" = 1'-0"
PROJECT NUMBER:	19221
DRAWN BY:	JRG

FE-120

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CITY OF LEWISTON

Department of Planning & Code Enforcement

TO: Lewiston Planning Board

FROM: Douglas Greene, AICP, RLA, City Planner

DATE: September 14, 2020

RE: Agenda Item 4 b, New Light Industrial/Warehouse Building at 10 Gould St.

Teradyne Consultants, LLC, an agent for 10 Gould Street, LLC, has submitted a development review application to construct a 16,000 sf. warehouse/light industrial building and associated parking at the property located at 10 Gould Street.

PROJECT DESCRIPTION
The proposed 16,000 sf. building at a property located at 10 Gould St. and is zoned Highway Business (HB). Interstate 95 is located to the north, Gould Street is to the east, and an abandoned rail line is located to the south of the subject property. The development site has been graded in the past, and a gravel driveway that crosses a small stream was permitted by DEP back in 2017. The 6.69-acre site has multiple, small wetland areas to the north.

The current zoning of Highway Business (HB) allows the proposed light industrial and warehousing uses. The Site Plan shows a 16,000 sf. building with two separate driveways accessing Gould Street. One driveway will lead to an eight space parking lot for staff and customers with a sidewalk to the main entrance. A second driveway will lead to a 13 space parking area and a vehicular entrance to the building. That area will also act as a turn-around for large vehicles.

LIST TYPES OF APPROVALS
The Planning Board should review the project using Article XIII, Development Review and Standards, Section 4, Approval Criteria. A permit by rule from DEP for the stream crossing was included in the application.

STAFF REVIEW and COMMENTS
The staff brought these comments to the attention of the applicant:

1. Providing more information on the type of users and potential traffic generated.
2. What is the purpose of the 30’ x 120’ area south of the building?
3. Confirm the dumpster location is accessible by solid waste vehicles.
4. Addition of standard notes, certification block, detail of landscape materials and signage.
5. Public Works asked for additional stormwater management information.

The applicant addressed these, and other comments from city staff in a memo included with the application and with revisions to the plans.

STAFF RECOMMENDATION
Staff recommends APPROVAL of the proposed project.

ACTION NECESSARY
Make a motion that the application submitted by Teradyne Associates, LLC, on behalf of 10 Gould Street, LLC, to construct a 16,000 sf building located at 10 Gould Street meets all of the necessary criteria contained in the Zoning and Land Use Code, including, but not limited to Article XIII, Section 4 of the Zoning and Land Use Code, and that approval be granted (including, if any, specific conditions raised by the Planning Board or staff).

Pineland
Cumberland Hall
41 Campus Drive, Suite 101
New Gloucester, ME 04260

Portland
565 Congress Street, Suite 310
Portland, ME 04101

September 8, 2020 Project #2021

City of Lewiston, Maine Planning Department
c/o Mr. Douglas Greene, AICP, RLA
Deputy Director of Planning & Code Enforcement
27 Pine Street
3rd Floor
Lewiston, ME 04240

Development Review Application 10 Gould Street, Lewiston, Maine

Dear Doug,

On behalf of Survey Works Inc, we are pleased to submit response to staff comments and revised drawings for the 10 Gould Street project. The information enclosed was prepared in response to comments provided on September 2, 2020 for the September 14, 2020 Planning Board.

Comment Responses

The following response to comments are from the information provided on September 14, 2020. The original comments are in *Italics*:

Comments from Planning Department:

1. *Can you provide more information on the type of user and the amount of potential traffic for the new building?*

   Comment Response: The Applicant is intending to construct the building and lease the space to potential light industrial tenant. There is no tenant at this time however the Applcant is working with possible tenats. Additiational tenant information can be provided during the building permit process. The site has been designed to accommodate a light industrial use which would require the largest loading.

2. *Please provide project cost on page 2 of the application.*

   Comment Response: Project cost has been added to page 2 of the application.

3. *Project Narrative Correction.*
   a. *Letter "d" – Last line is not clear*
   b. *Letter "l"- "Sanity"*
   c. *Letter "p"- "propped"*

Comment Response: The Corrections have been made to the narrative. Please see the attached revised Standars Compliance Narrative.

4. *Will there be a barrier or gate at the end of the paved driveway?*

   Comment Response: Concrete barriers have been added at the end of the paved access drive. Please see the attached revised site plan.

5. *What is the purpose/use of the 30' x 120' foot area to the south of the proposed building is it paved?*

   Comment Response: The space is intended to be grassed lawn area.

6. *The access to the two dumpsters looks awkward. Have you "tested the movement of a waste collection vehicle?*

   Comment Response: The entrance to the parking lot has been widened to allow for easier access of collection vehicles, traffic movements have been tested. Please see the attached revised plans.

7. *Please add certification block for Planning Board Chair to sign.*

   Comment Response: An approval block has been added to the cover sheet of the plan set, please see the attached revised plan.

8. *Add standard notes (attached with staff comments)*

   Comment Response: The standard notes have been added to the Site Plan, plese see that attached revised plan.

9. *Will a sign be included in the project? if so, please show on the plan.*

   Comment Response: No Sign is proposed, the applicant intents to only install numbering on the building.

10. *Please specify species/type of plantings (street trees and flowering bushes)*

    Comment Response: **S**pecies/ type of trees has been added to the site plan drawings. The flowering bushes are intended to be Virginia rose (Rosa Virginiana) or Rohodora (Rhododendron canadense) or similar style flowering bushes.

Comments from Public works:

1. *The design engineer should review the outlets for Pond 3 in the stormwater calculations.*

   Comment Response: Pond 3 of the HydroCAD model has been updated. Please see the attached revised HydroCAD models within the Stormwater Management Report.

2. *In the stormwater calculations, does WS-3 contain Gould Road? If so, the subarea should include the impervious area of Gould Road.*

   Comment Response: Gould Road was not included within the Stormwater Calculations for WS-3, the Pre-Development Watershed Map has been updated to show Gould Road for reference.

3. *Stormwater calculations and watershed plans should have a PE stamp and signature*

   Comment Response: A P.E. stamp has been added to the watershed plans and Stormwater report. Please see the attached revised Stormwater Managemetn Report.

4. *Application form in the Zoning section should show the actual setback distances of Front, Side and Rear yards.*

   Comment Response: Setbacks have been added to the application from.

5. *The Applicant should demonstrate that adequate potable water is available from the proposed private well.*

   Comment Response: The Applicant is working with a well driller and will provide documentation demonstrating adequate potable water upon receipt.

6. *Site Plan should show parking calculations.*

   Comment Response: Off Street Parking calculations have been added to the site plan, please see the attached revised plan.

7. *Site plan should have signature block for approval.*

   Comment Response: A signature block has been added to the cover sheet of the plan set.

CLOSURE

We trust that the above responses and attached materials address the comments. Please contact me directly with any additional questions or concerns.

Sincerely,
TERRADYN CONSULTANTS, LLC

Craig Sweet, P.E.

Attachments:
Att. 1 – Development Review Application
Att. 2 - Standards Compliance Narrative
Att. 3 – Stormwater Managemetn Report
Att. 4 – Revised Plan Sheets

ATTACHMENT 1

Development Review Applcaiton

Development Review Application

City of Auburn Planning and Permitting Department
City of Lewiston Department of Planning and Code Enforcement

PROJECT NAME: 10 Gould Street

PROPOSED DEVELOPMENT ADDRESS: 10 Gould Street, Lewiston

PARCEL ID#: RE00008694 Map 69 Lot 13

REVIEW TYPE: **Site Plan/Special Exception** ☒ **Site Plan Amendment** ☐
Subdivision ☐ **Subdivision Amendment** ☐

PROJECT DESCRIPTION: Construction of new building , associated parking , and utilitiesto be leased for light industrial use

CONTACT INFORMATION:

Applicant

Name: Tim Millett, 10 Gould Street LLC
Address: 155 Center St, Bldg G, Box 6, Auburn
Zip Code 04210
Work #:
Cell #: 207-754-6332
Fax #:
Home #:
Email: tamillett@gmail.com

Property Owner

Name: Same as Applicant
Address:
Zip Code
Work #:
Cell #:
Fax #:
Home #:
Email:

Project Representative

Name: Jimmy Courbron, SurveyWorks, Inc
Address: 79 Main Street, Suite 300 Auburn
Zip Code 04210
Work #: 207-200-1678
Cell #: 207-212-4478
Fax #:
Home #:
Email: jim@surveyworksinc.com

Other professional representatives for the project (surveyors, engineers, etc.),

Name: Craig Sweet, P.E.
Address: 41 Campus Drive, Suite 101 New Gloucester
Zip Code 04260
Work #: 207-926-5111
Cell #: 207-370-2776
Fax #:
Home #:
Email: craig@terradynconsultants.com

PROJECT DATA

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

IMPERVIOUS SURFACE AREA/RATIO

Existing Total Impervious Area	**0**	sq. ft.
Proposed Total Paved Area	**25,950**	sq. ft.
Proposed Total Impervious Area	**41,950**	sq. ft.
Proposed Impervious Net Change	**41,950**	sq. ft.
Impervious surface ratio existing	**0**	% of lot area
Impervious surface ratio proposed	**14.40**	% of lot area

BUILDING AREA/LOT COVERAGE

Existing Building Footprint	0	sq. ft.
Proposed Building Footprint	16,000	sq. ft.
Proposed Building Footprint Net change	16,000	sq. ft.
Existing Total Building Floor Area	n/a	sq. ft.
Proposed Total Building Floor Area	16,000	sq. ft.
Proposed Building Floor Area Net Change	16,000	sq. ft
New Building	yes	(yes or no)
Building Area/Lot coverage existing	n/a	% of lot area
Building Area/Lot coverage proposed	5.5	% of lot area

ZONING

Existing	Highway Business (HB)
Proposed, if applicable	

LAND USE

Existing	Vacant
Proposed	Warehouse/Light Industiral

RESIDENTIAL, IF APPLICABLE

Existing Number of Residential Units	N/A
Proposed Number of Residential Units	N/A
Subdivision, Proposed Number of Lots	N/A

PARKING SPACES

Existing Number of Parking Spaces	0
Proposed Number of Parking Spaces	21
Required Number of Parking Spaces	19
Number of Handicapped Parking Spaces	1

ESTIMATED COST OF PROJECT

$1,000,000

DELEGATED REVIEW AUTHORITY CHECKLIST

SITE LOCATION OF DEVELOPMENT AND STORMWATER MANAGEMENT

Existing Impervious Area	0	sq. ft.
Proposed Disturbed Area	65,850	sq. ft.
Proposed Impervious Area	41,950	sq. ft.

1. If the proposed disturbance is greater than one acre, then the applicant shall apply for a Maine Construction General Permit (MCGP) with MDEP.
2. If the proposed impervious area is greater than one acre including any impervious area crated since 11/16/05, then the applicant shall apply for a MDEP Stormwater Management Permit, Chapter 500, with the City.
3. If total impervious area (including structures, pavement, etc) is greater than 3 acres since 1971 but less than 7 acres, then the applicant shall apply for a Site Location of Development Permit with the City. If more than 7 acres then the application shall be made to MDEP unless determined otherwise.
4. If the development is a subdivision of more than 20 acres but less than 100 acres then the applicant shall apply for a Site Location of Development Permit with the City. If more than 100 acres then the application shall be made to MDEP unless determined otherwise.

TRAFFIC ESTIMATE

Total traffic estimated in the peak hour-**existing** 0 passenger car equivalents (PCE)
(Since July 1, 1997)

Total traffic estimated in the peak hour-proposed 11 passenger car equivalents (PCE)
(Since July 1, 1997).

If the proposed increase in traffic exceeds 100 one-way trips in the peak hour a traffic movement permit will be required

Zoning Summary

1. Property is located in the HB zoning district.
2. Parcel Area: 6.69 acres / _____ square feet(sf).

Regulations	Required/Allowed	Provided
Min Lot Area	N/A	
Street Frontage	150	250
Min Front Yard	20	50.5
Min Rear Yard	20	1,120
Min Side Yard	20	24.5
Max. Building Height	65	30
Use Designation		
Parking Requirement	1 space per 500 first 3000sf, one space per 1,000 sf excess 3,000sf	
Total Parking:	19	21
Overlay zoning districts (if any):		

Urban impaired stream watershed? YES/NO If yes, watershed name_____

DEVELOPMENT REVIEW APPLICATION SUBMISSION

Submission shall include payment of fee and fifteen (15) complete packets containing the following materials:

1. Full size plans containing the information found in the attached sample plan checklist.
2. Application form that is completed and signed.
3. Cover letter stating the nature of the project.
4. All written submittals including evidence of right, title and interest.
5. Copy of the checklist completed for the proposal listing the material contained in the submitted application.

Refer to the application checklist for a detailed list of submittal requirements.

Lewiston's development review process and requirements have been made similar to Auburn's for convenience and to encourage development. Each Citys ordinances are available online at their prospective websites:
Auburn: www.auburnmaine.org under City Departments/ Planning and Permitting/Land Use Division/Zoning Ordinance
Lewiston: http://www.ci.lewiston.me.us/clerk/ordinances.htm Refer to Appendix A of the Code of Ordinances

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

This application is for development review only; a Performance Guarantee, Inspection Fee, Building Permit Application and other associated fees and permits will be required prior to construction.

Signature of Applicant:	Date:

ATTACHMENT 2

Standards Compliance Narrative

Pineland
Cumberland Hall
41 Campus Drive, Suite 101
New Gloucester, ME 04260

Portland
565 Congress Street, Suite 201
Portland, ME 04101

August 2020 Project# 2021

COMPLIANCE WITH CITY OF LEWISTON ZONING AND LAND USE CODE

10 Gould Street, Lewiston, Maine

The following information describes how the proposed project, located at 10 Gould Street in Lewiston, Maine, complies with Article XIII Section 4 of the City of Lewiston's Zoning and Land Use Code.

a) Utilization of the Site

The proposed building and parking areas have been situated outside of environmentally sensitive areas. The access drive on the site will be upgraded as part of the proposed project and obtained a NRPA Permit by Rule in 2017 for the crossing of the unnamed stream on the property.

b) Traffic Movement Into and Out of the Development Area

The proposed development is not expected to have any discernable traffic impacts on the immediate neighborhood. The estimated vehicular traffic can be obtained from the Trip Generation Manual published by the Institute of Transportation Engineers. Section 140 Manufacturing was selected as the closest comparable use and used as a basis for the calculations and is summarized as follows:

- Average Daily Trip Generation= 3.93 Trips/ 1,000sf floor area= **63 Trips/Day**
- Average Weekday AM Peak Hour= 0.62 Trips/1,000 sf floor area= **10 Trips/Hour**
- Average Weekday PM Peak Hour= 0.67 Trips/Employee= **11 Trips/Hour**

c) Access into the Site

A curb cut currently exists at the site for the constructed gravel access drive; a second curb cut is proposed approximately 100-feet north of the access drive for a proposed parking lot to serve the building.

Vehicular access into the site is in accordance with the City of Lewiston's Policy for the Design and Construction of Streets and Sidewalks.

d) Internal Vehicular Circulation

The parking areas have been sized to accommodate a light industrial use, which requires one space per 500 sf of gross floor area up to 3,000 sf plus one space for every 1,000 sf in excess of 3,000 sf. 19 parking spaces are required for the proposed 16,000 sf building. 21 parking spaces are proposed in two separate parking areas to serve the proposed building.

The proposed parking lots have been designed in accordance with the City of Lewiston's Performance Standards.

The proposed access drive is proposed slightly modified to allow for a 24-foot paved width with 3-foot shoulders. The 24-foot access drive is intended to provide vehicular access to the loading bay area as well as the to the 13-space parking lot.

e) <u>Pedestrian Circulation</u>

Safe pedestrian circulation is provided within the proposed development. No sidewalks currently exist in the vicinity of the project.

f) <u>Stormwater Management</u>

Please see the attached stormwater report for additional information regarding stormwater management.

g) <u>Erosion Control</u>

All necessary erosion control will be provided in accordance with the Maine Department of Environmental Projection guidelines and have been detailed on the attached plans.

h) <u>Water Supply</u>

The proposed building will be supplied by a private well on site; there is currently no tenant selected for the site. The well is anticipated to be able to supply adequate water to the proposed development.

i) <u>Sewage Disposal</u>

The new building is proposed to be served by the existing sanitary sewer system within Gould Street. A new 6-inch sewer extension is proposed within the proposed access drive that will tie into the existing public sewer within Gould Street.

j) <u>Utilities</u>

A new 3-phase transformer will be installed on the site. Underground electrical and telecommunication services will be installed to feed the proposed building.

k) <u>Natural Features</u>

The existing site currently consists of vacant unmaintained lawn/meadow area; no trees are proposed to be removed as part of the construction. Grading and filling have been minimized where possible.

l) Groundwater Protection

The proposed project will not adversely impact the quality or quantity of groundwater available to abutting properties or public water supply systems.

m) Water and Air Pollution

The proposed development will not result in undue water or air pollution.

n) Exterior Lighting

The building will utilize building-mounted fixtures. All fixtures will be LED and feature a full cut-off design. See attached site plan for the locations of the fixtures, and example, lighting cut sheets are attached to this letter.

o) Waste Disposal

Solid waste dumpsters will be provided onsite and screened from abutting properties and public streets. The owner will contract with a local waste vendor to remove and dispose of all waste at a licensed facility.

p) Lot Layout

The proposped lot layout is in conformance with the City of Lewiston standards.

q) Landscaping

Street trees are proposed along the property frontage to help define street edges and flowering bushes are proposed along the parking area to soften the appearance of the development.

r) Shoreland Relationship

The development will not adversely impact the water quality or shoreline of any adjacent water body.

s) Open Space

This section is not applicable to the proposed development.

t) Technical and Financial Capacity

First National Bank has provided documentation supporting the proposed project; a copy is attached to this letter.

u) Buffering

The proposed project is located in a commercial area; no buffering is proposed at this time.

v) <u>Compliance with District Regulations</u>

The site is located within the Highway Business (HB) district. The proposed use of the building complies with the allowed use within this zone.

w) <u>Design consistent with performance standards:</u>

In addition to the approval criteria above, the proposed project is also subject to the performance standards of article XII as applicable. The following performance standards apply to the proposed change of use:

- Erosion and Sedimentation Control
- Off-street parking and loading
- Improvement Standards

ATTACHMENT 3

Stormwater Management Report

Pineland
Cumberland Hall
41 Campus Drive, Suite 101
New Gloucester, ME 04260

Portland
565 Congress Street, Suite 201
Portland, ME 04101

10 GOULD STREET, LLC
10 GOULD STREET, LEWISTON, MAINE

STORMWATER MANAGEMENT REPORT

PREPARED FOR:

10 GOULD STREET, LLC
155 CENTER ST, BLDG G, BOX 6
AUBURN, MAINE 04210

PREPARED BY:

TERRADYN CONSULTANTS LLC
41 CAMPUS DRIVE, SUITE 101
NEW GLOUCESTER, MAINE 04260

STATE OF MAINE
CRAIG SWEET
No. 15060
LICENSED
PROFESSIONAL ENGINEER

August 2020
Revised September 8, 2020

Introduction

The following Stormwater Management Report has been prepared for the 10 Gould Street project to evaluate stormwater runoff and erosion control for the propose development.

Site Calculations

Total Property Area	6.69 Ac (+/-)
Total New Impervious Area	0.95 Ac
Landscaped Area	0.56 Ac
Total Developed Area	1.51 Ac

Existing Project Site

The project site is approximately 6.69 acres in size, is depicted on the City of Lewiston's Tax Map 69 as lot 13, and is situated in the City's Highway Business (HB) Zoning District.

The project site is currently comprised of vacant meadowed land with an unnamed stream that runs along the eastern boundary of the project site. A gravel access drive is located along the southern property line and crosses the stream; the gravel drive was permitted with the Maine Department of Environmental Protection (MEDP) in the fall of 2017 for the stream crossing. A copy of the Permit by Rule is located in Appendix 1.

The project site generally slopes to the south towards the constructed gravel access drive; stormwater then channelizes into a swale constructed along the northern portion of the drive before entering a drainage basin north of the gravel drive. Stormwater runoff generated from the gravel drive runs overland into a second drainage basin to the south of the access drive. Both drainage basins are connected via a 24-inch HDPE pipe installed at the time of the driveway construction and discharge into a 24-inch granite box culvert under the Maine Central Railroad property.

The development area is not located within an area of flood hazard, according to the Federal Insurance Rate Maps 23001C0333E and 23001C0334E.

The following existing conditions figures are provided in Appendix 2:

Figure 1	USGS Topographic Map
Figure 2	Federal Insurance Rate Maps

Proposed Project

10 Gould Street, LLC is proposing to construct a single story 16,000 sf building with vehicular access and 21 parking spaces, pedestrian sidewalks, and utility infrastructure. The proposed building will be leased to potential tenants after construction.

The gravel access drive at the site will be paved and utilized as access to the proposed loading bays and an accessory parking lot; a second parking lot will be accessed from Gould Street. An on-site dumpster will be located on the site for solid waste, and roof dripline filters are proposed for stormwater treatment. The project is proposed to be served by the public sewer system, and a private well will be installed to supply water for the proposed building.

Basic Standards

A site-specific Erosion & Sedimentation Control Plan has been developed for the project. Means and methods to control erosion and sedimentation during and after construction are detailed in the erosion control plan narrative and construction details, which are included directly on the project drawings for ease of reference during construction.

Requirements for inspection and maintenance of the stormwater management system are provided in the stormwater management system inspection and maintenance plan located in Appendix 3

Housekeeping requirements are included in the Erosion & Sediment Control Narrative located on the project drawings.

Stormwater BMPs

A Roof Dripline Filter with underdrain will be installed along the majority of the building perimeter. The underdrain will be omitted under the loading dock. Approximately 14,000 square feet of roof area will drain to the dripline filter. Runoff will be stored in the stone reservoir and filtered through a sand media before being collected in an underdrain and discharged to the ground surface.

- Treatment area: 14,240 square feet of roof area
- The system will be constructed in fill and is not expected to impact groundwater.
- System overflow will be over grassed law areas adjacent to each dripedge.
- The system is designed to store and treat runoff from at least 1-inch rainfall event.

Stormwater Quantity Control

Hydrologic analysis of pre-development and post-development conditions was conducted based upon the methodology contained in the USDA Soil Conservation

Service's Technical Releases No. 22 and 55 (SCS TR-20 and TR-55). For Androscoggin County Maine, a 24-hour SCS Type III Storm distribution was used for the analysis using the following storm frequencies and rainfall amounts, per Maine DEP Chapter 500:

Storm Event	24-Hour Rainfall
2–Year Storm	3.0 inches
10–Year Storm	4.3 inches
25–Year Storm	5.4 inches

Runoff curve numbers, time of concentration, and travel time data were established based on methods outlined in the USDA TR-55 manual.

A minimum time of concentration of 5 minutes was used in the models. A maximum sheet flow distance of 150 linear feet was used in the models.

The existing 24-inch box culvert, which passes under the Maine Central Railroad, was chosen as the primary study point for the analysis. The majority of the project site drains directly into this study point. The total area tributary to the study point is approximately 76 acres.

Land use, cover, delineation of watershed subcatchments, hydraulic flow paths, and hydrologic soil group (HSG) types were obtained using the following data:

1. Lewiston, Maine USGS 7.5 minute quadrangle map.
2. NRCS Medium Intensity Soils Survey.
3. Lidar topography with 2-foot contour intervals, made available by the State of Maine Office of GIS.
4. Topographic Site Plan of existing conditions prepared by Jimmy C. Courbron, PLS Survey Works Inc, of Turner, ME.
5. Wetland delineation completed by Survey Works Inc, of Turner, ME
6. Field reconnaissance by Terradyn Consultants.

Pre-Development Conditions

The pre-development HydroCAD model includes six (6) subcatchments. Off-site subcatchments draining into existing culverts were delineated based upon Lidar topography and site reconnaissance performed by Terradyn Consultants. The pre-development conditions have been modeled to represent the project site prior to the construction of the gravel access drive; this has been done to demonstrate that all proposed improvements to the site will not have any impacts downstream of the site.

A Pre-Development Watershed Map, showing sub-watershed boundaries, time of concentration flow paths, and Study Points is provided in Appendix 5. The Pre-development HydroCAD model is attached in Appendix 6.

Existing condition peak rates of runoff at the Study Points is as follows:

Pre-Development Peak Rates of Runoff (cfs)			
	2-Year	**10-Year**	**25-Year**
SP1	17.33	32.82	42.20

The pre-development peak rates of runoff are a baseline used for comparison to the post-development condition.

Post-Development Conditions

The post-development HydroCAD model includes nine (9) subcatchments to include the proposed development of the project site. The off-site subcatchments remain unchanged from the pre-development model.

A Post-development Watershed Map showing sub-watershed boundaries, time of concentration flow paths, and Study Points is provided in Appendix 5. The Post-development HydroCAD model is attached in Appendix 7.

Proposed condition peak rates of runoff at the Study Point is as follows:

Post-Development Peak Rates of Runoff (cfs)			
	2-Year	**10-Year**	**25-Year**
SP1	16.33	32.27	40.58

Stormwater Analysis

The results of the pre-development and post-development models were analyzed at the defined Study Points described above. The direct comparison of the pre-development and post-development conditions at the Study Points are as follows:

Peak Runoff Flow Rates Comparison		
Storm Event	**Pre-Development (cfs)**	**Post-Development (cfs)**
	Study Point SP1	
2-Year	17.33	16.33
10-Year	32.82	32.27
25-Year	42.20	40.58

The peak rates of runoff from study points are expected to decrease for the three design storm events.

Summary

Based on the results of this evaluation, the proposed stormwater design is not expected to cause flooding, erosion, or other significant adverse effects downstream of the site.

Appendices

1 – NRPA PBR Stream Crossing
2- Existing Conditions Figures
3 – Stormwater Infrastructure Inspection & Maintenance Manual
4- Erosion and Sediment Control Inspection & Maintenance Plan
5 – Watershed Maps
6 – Pre-Development HydroCAD Model
7 – Post-Development HydroCAD Model

APPENDIX 1

NRPA PERMIT BY RULE

The Mailing Center
250 Center St
Auburn,Me 04210
207-783-7740

Shipment----------
USPS First Class Mail Parcel
Ship To:
AUGUSTA DEP
17 STATE HOUSE STA
AUGUSTA, ME 04333-0017
Package ID: 192499 4.52
Tracking #: 9400110200793556178103
USPS Tracking [$0.00]

SUBTOTAL	4.52
TAX	0.00
TOTAL	4.52
TEND Cash	5.00
CHANGE	0.48

Total shipments: 1
TIM MILLETT

10/24/2017
#138301 01:10 PM
Workstation: 0 -

I have verified address is correct.

If package is damage in transit be sure to
save all packing material.

For tracking purpose visit:
www.mailingctr.com

11/14/2013

DEPARTMENT OF ENVIRONMENTAL PROTECTION
NRPA PERMIT BY RULE NOTIFICATION FORM

(For use with DEP Regulation, Natural Resources Protection Act–Permit by Rule Standards, Chapter 305)

PLEASE TYPE OR PRINT IN *BLACK INK ONLY*

Name of Applicant: (owner)	1822 Lisbon St LLC	**Name of Agent:**	Tim Mullett
Applicant Mailing Address:	153 Center St Box 6	**Agent Phone # (include area code):**	207-754-6332
Town/City:	Auburn, Me	**PROJECT Information Name of Town/City:**	Lewiston, Me
State and Zip code:	Maine 04210	**Name of Wetland or Waterbody:**	Unnamed
Daytime Phone # (include area code):	207-783-0130	**Map #:** 69	**Lot #:** 13
Detailed Directions to Site:	Lewiston Exit, I-95 off off N Junction Lisbon Approx 2 miles Lowest on left		
		UTM Northing: (if known) —	**UTM Easting: (if known)** —
Description of Project:	Crossing Small Stream		
Part of a larger project? (check one)→	☐ Yes ☒ No	**After the Fact? (check one)→** ☐ Yes ☒ No	**Check one→** This project ☐ does (or) ☒ does not involve work below mean low water (average low water).

NRPA PERMIT BY RULE (PBR) SECTIONS: (Check at least one)

I am filing notice of my intent to carry out work which meets the requirements for Permit By Rule (PBR) under DEP Rules, Chapter 305. I and my agents, if any, **have read** and will comply with all of the standards in the Sections checked below.

- ☐ **Sec. (2) Act. Adj. to Protected Natural Res.**
- ☐ **Sec. (3) Intake Pipes**
- ☐ **Sec. (4) Replacement of Structures**
- ☐ **Sec. (5) REPEALED**
- ☐ **Sec. (6) Movement of Rocks or Vegetation**
- ☐ **Sec. (7) Outfall Pipes**
- ☐ **Sec. (8) Shoreline stabilization**
- ☐ **Sec. (9) Utility Crossing**
- ☒ **Sec. (10) Stream Crossing**
- ☐ **Sec. (11) State Transportation Facil.**
- ☐ **Sec. (12) Restoration of Natural Areas**
- ☐ **Sec. (13) F&W Creation/Enhance/Water Quality Improvement**
- ☐ **Sec. (14) REPEALED**
- ☐ **Sec. (15) Public Boat Ramps**
- ☐ **Sec. (16) Coastal Sand Dune Projects**
- ☐ **Sec. (17) Transfers/Permit Extension**
- ☐ **Sec. (18) Maintenance Dredging**
- ☐ **Sec. (19) Activities in/on/over significant vernal pool habitat**
- ☐ **Sec. (20) Activities located in/on/over high or moderate value inland water-fowl & wading bird habitat or shore-bird feeding & roosting areas**

NOTIFICATION FORMS CANNOT BE ACCEPTED WITHOUT THE NECESSARY ATTACHMENTS:

- ☐ ***Attach*** **a check for the correct fee, payable to: "Treasurer, State of Maine". The current fee for NRPA PBR Notifications can be found at the Department's website: http://www.maine.gov/dep/feesched.pdf**
- ☐ ***Attach*** **a U.S.G.S. topo map or Maine Atlas & Gazetteer map with the project site clearly marked.**
- ☐ ***Attach*** **Proof of Legal Name if applicant is a corporation, LLC, or other legal entity.** Provide a copy of Secretary of State's *registration information* (available at http://icrs.informe.org/nei-sos-icrs/ICRS?MainPage=x). Individuals and municipalities are **not** required to provide any proof of identity,
- ☐ ***Attach*** **photos of the proposed site where activity will take place as required in PBR Sections checked above.**
- ☐ ***Attach*** **all other required submissions as outlined in the PBR Sections checked above.**

I authorize staff of the Departments of Environmental Protection, Inland Fisheries & Wildlife, and Marine Resources to access the project site for the purpose of determining compliance with the rules. I also understand that ***this permit is not valid until approved by the Department or 14 days after receipt by the Department, whichever is less.***

By signing this Notification Form, I represent that the project meets all applicability requirements and standards in the rule and that the applicant has sufficient title, right, or interest in the property where the activity takes place.

Signature of Agent or Applicant:	[signature]	**Date:**	10-24-13

Keep a copy as a record of permit. Send the form with attachments via certified mail or hand deliver to the Maine Dept. of Environmental Protection **at the appropriate regional office listed below**. The DEP will send a copy to the Town Office as evidence of the DEP's receipt of notification. No further authorization by DEP will be issued after receipt of notice. Permits are valid for two years. **Work carried out in violation of any standard is subject to enforcement action.**

AUGUSTA DEP	PORTLAND DEP	BANGOR DEP	PRESQUE ISLE DEP
17 STATE HOUSE STATION	312 CANCO ROAD	106 HOGAN ROAD	1235 CENTRAL DRIVE
AUGUSTA, ME 04333-0017	PORTLAND, ME 04103	BANGOR, ME 04401	PRESQUE ISLE, ME 04769
(207)287-3901	(207)822-6300	(207)941-4570	(207)764-0477

OFFICE USE ONLY	Ck.#		Staff	Staff	
PBR #	FP	Date	Acc. Date	Def. Date	After Photos

DEPLW0311-O2013

Land Resources – Dams and Hydropower

Code	Description	Processing Fee	Licensing Fee
32	FERC water quality certification for storage	$1,623	-
33	FERC water quality certification, no increase in capacity	$487[1]	$80[1]
34	MWDCA maintenance/repair only	$227	$80
35	MWDCA new construction/expanded generating capacity	$730[1]	$80[1]
36	water level petitions	$1,027	$1,027
37	dams, abandonment	$1,027	-
3D	dams, release of impoundment	$1,027	-
3E	non-hydropower dams	$227	$80
3A	FERC hydropower licensing, first consultation	$1,588	-
3B	FERC hydropower licensing, second consultation	$1,588	-

[1]Fee per megawatt

The fee for a **minor revision, condition compliance or transfer** is $153. The fee for an **amendment** is one half the processing fee, plus one half the licensing fee. The **minor amendment** fee is $1,401. The fee for a **renewal** is one half the processing fee, plus the full licensing fee.

Land Resources – Mining and Excavations

Code	Description	Processing Fee	Licensing Fee
80	notice of intent to comply w/ borrow pit or quarry standards	-	$250
	notice of borrow pit or quarry expansion	-	$250
	variance from excavation standards: general	-	$250
	variance from excavation standards: excavation below the water table or externally drained	-	$500
	variance from excavation standards: topsoil salvage	-	$125
	variance from quarry standards: general	-	$250
	variance from quarry standards: excavation below the water table or externally drained	-	$500
	variance from quarry standards: topsoil salvage or air blasts & ground vibration	-	$125
	fee if <2,500 cubic yards extracted	-	$100[2]
	fee if >2,500 cubic yards extracted	-	$400[2]

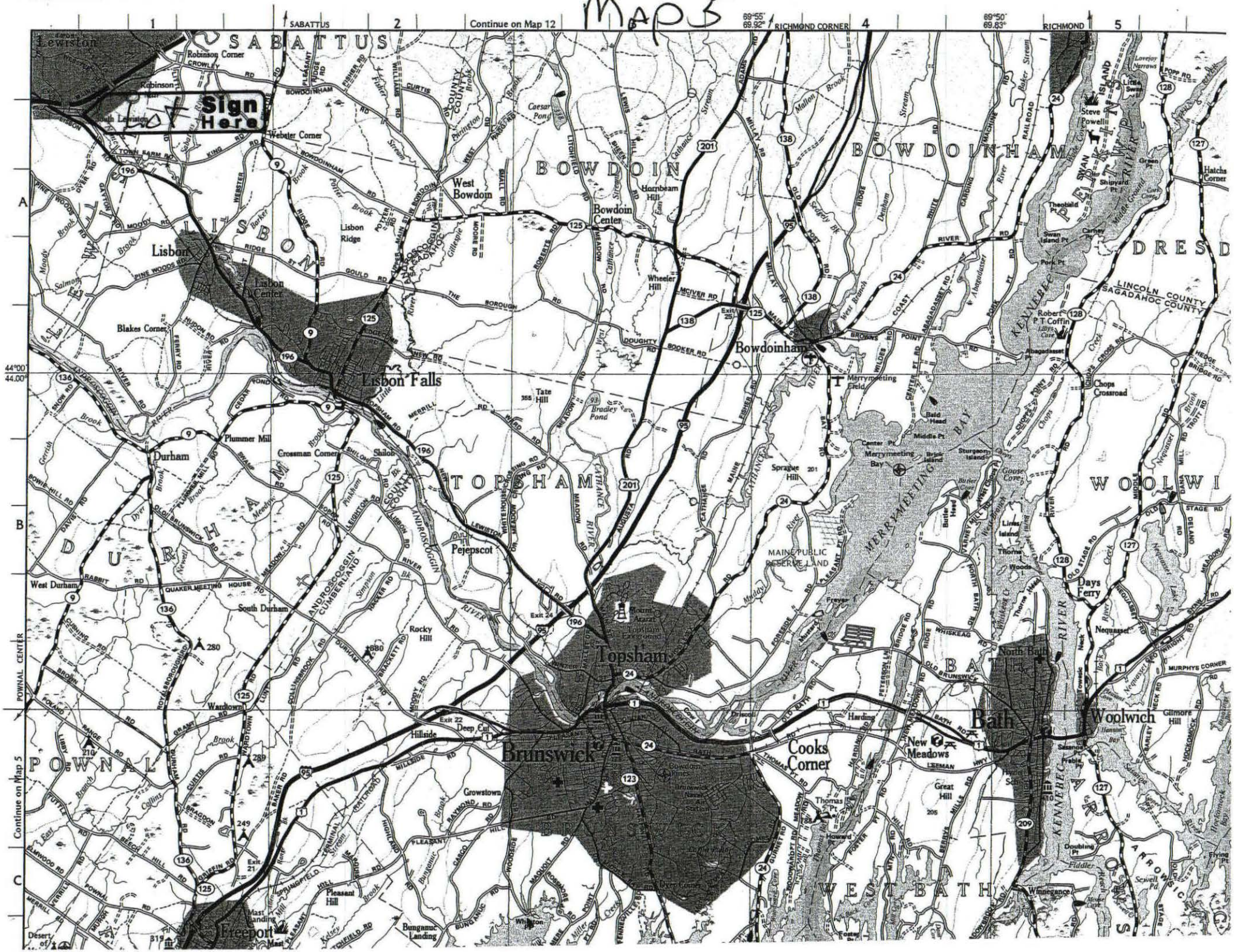
[2]Licensing Fee assessed annually.

Land Resources – Natural Resources Protection Act

The fees in the following table apply to all projects subject to the Natural Resources Protection Act(NRPA). Fees for projects which alter 15,000 square feet or more of freshwater wetland are wholly based on the pro-rata table at the end of this section.

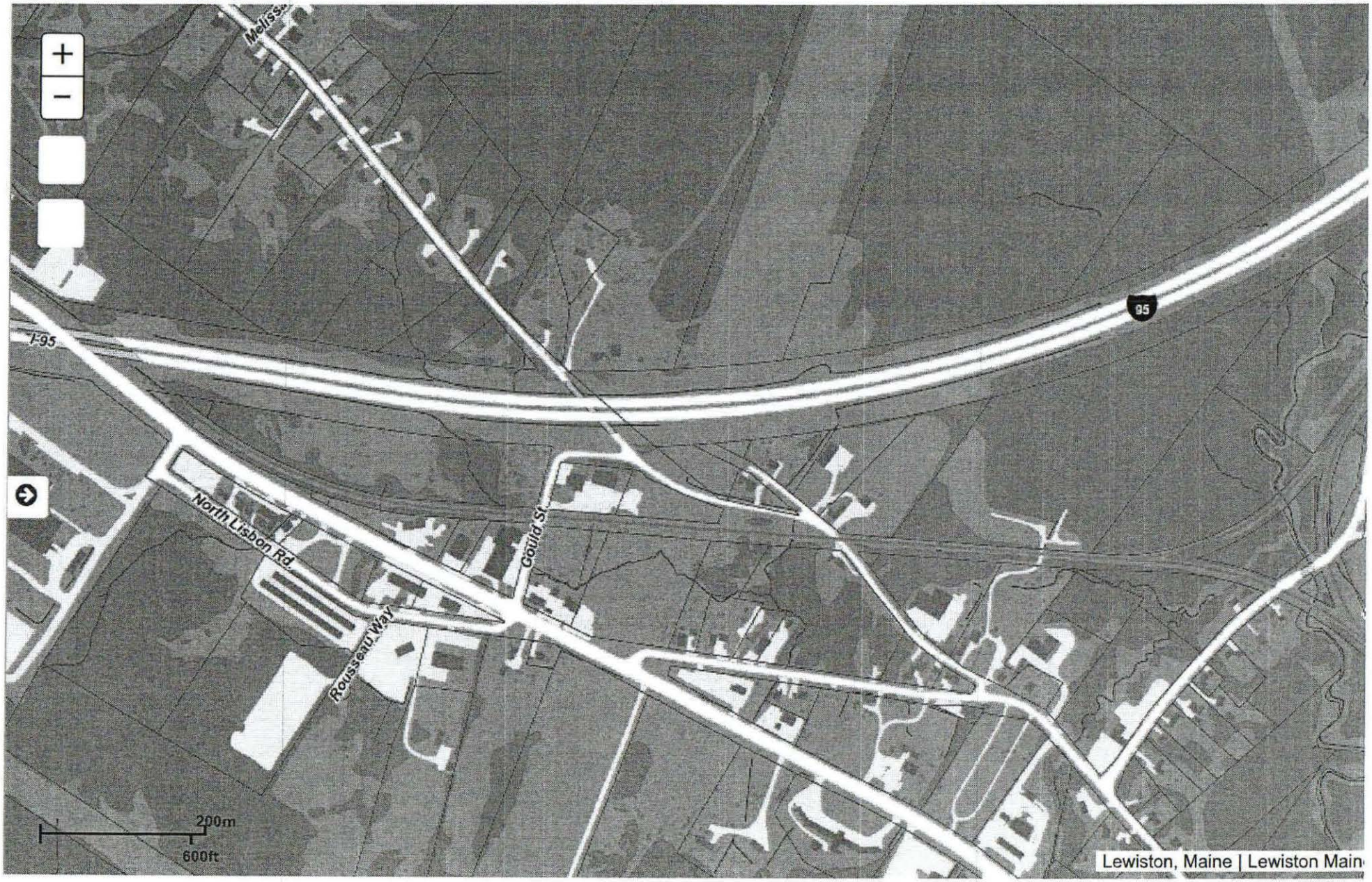
Code	Description	Processing Fee	Licensing Fee
-	NRPA permit by rule notification	$75	-
08	water quality certification other than hydropower	$227[3]	-
2A	shoreline stabilization on a great pond	$227	$80
2B	other activity on a great pond	$227	$80
2C	fragile mountains areas	$227	$80
2D	irrigation ponds	$227	$80
AP	agricultural irrigation pond	$227	$80
2E	cranberry bogs	$227	$80
CW	cranberry cultivation	$227	$80

Map 5


Sign Here
Continue on Map 12
Continue on Map 5
SABATTUS
BOWDOIN
BOWDOINHAM
LISBON
DURHAM
TOPSHAM
POWNAL
WEST BATH
WOOLWICH
DRESDEN
Lewiston
Lisbon
Lisbon Falls
Durham
Bowdoin Center
West Bowdoin
Bowdoinham
Topsham
Brunswick
Bath
Woolwich
Cooks Corner
Freeport
Pejepscot
Merrymeeting Bay
Merrymeeting Field
Days Ferry
North Bath
New Meadows
MAINE PUBLIC RESERVE LAND
Exit 24
Exit 22
Exit 21
Exit 25
69°55'
69.92°
69°50'
69.83°
44°00'
44.00°

City of Lewiston

Parcel Viewer



Filing Fee $175.00

File No. 20170699DC Pages 2
Fee Paid $ 175
DCN 2162302300010 DLLC
----FILED----------
08/16/2016

Deputy Secretary of State

A True Copy When Attested By Signature

Deputy Secretary of State

MAINE
LIMITED LIABILITY COMPANY

STATE OF MAINE

CERTIFICATE OF FORMATION

Pursuant to 31 MRSA §1531, the undersigned executes and delivers the following Certificate of Formation:

FIRST: The name of the limited liability company is:

1822 Lisbon Street, LLC

(A limited liability company name must contain the words "limited liability company" or "limited company" or the abbreviation "L.L.C.," "LLC," "L.C." or "LC" or, in the case of a low-profit limited liability company, "L3C" or "l3c" – see 31 MRSA 1508.)

SECOND: Filing Date: (select one)

- [x] Date of this filing; or
- [ ] Later effective date (specified here): _____

THIRD: Designation as a low profit LLC (Check only if applicable):

- [ ] This is a low-profit limited liability company pursuant to 31 MRSA §1611 meeting all qualifications set forth here:

  A. The company intends to qualify as a low-profit limited liability company;

  B. The company must at all times significantly further the accomplishment of one or more of the charitable or educational purposes within the meaning of Section 170(c)(2)(B) of the Internal Revenue Code of 1986, as it may be amended, revised or succeeded, and must list the specific charitable or educational purposes the company will further;

  C. No significant purpose of the company is the production of income or the appreciation of property. The fact that a person produces significant income or capital appreciation is not, in the absence of other factors, conclusive evidence of a significant purpose involving the production of income or the appreciation of property; and

  D. No purpose of the company is to accomplish one or more political or legislative purpose within the meaning of Section 170(c)(2)(D) of the Internal Revenue Code of 1986, or its successor.

FOURTH: Designation as a professional LLC (Check only if applicable):

- [ ] This is a professional limited liability company* formed pursuant to 13 MRSA Chapter 22-A to provide the following professional services:

_____
(Type of professional services)

FIFTH: The Registered Agent is a: (select **either** a Commercial or Noncommercial Registered Agent)

☑ Commercial Registered Agent CRA Public Number: P10199

James E. Belleau

(Name of commercial registered agent)

☐ Noncommercial Registered Agent

(Name of noncommercial registered agent)

(physical location, not P.O. Box – street, city, state and zip code)

(mailing address if different from above)

SIXTH: Pursuant to 5 MRSA §105.2, the registered agent listed above has consented to serve as the registered agent for this limited liability company.

SEVENTH: Other matters the members determine to include are set forth in the attached Exhibit _____, and made a part hereof.

****Authorized person(s)** **Dated** 8-15-16

(Signature of authorized person) Timothy A. Millett (Type or print name of authorized person)

(Signature of authorized person) (Type or print name of authorized person)

***Examples** of professional service limited liability companies are accountants, attorneys, chiropractors, dentists, registered nurses and veterinarians. (This is not an inclusive list – see 13 MRSA §723.7)

****Pursuant to 31 MRSA §1676.1.A, Certificate of Formation **MUST** be signed by at least one authorized person.

The execution of this certificate constitutes an oath or affirmation under the penalties of false swearing under 17-A MRSA §453.

Please remit your payment made payable to the Maine Secretary of State..

Submit completed form to:

Secretary of State
Division of Corporations, UCC and Commissions
101 State House Station
Augusta, ME 04333-0101
Telephone Inquiries: **(207) 624-7752** Email Inquiries: CEC.Corporations@Maine.gov

X

IRS DEPARTMENT OF THE TREASURY
INTERNAL REVENUE SERVICE
PHILADELPHIA PA 19255-0023

Date of this notice: 08-19-2016

Employer Identification Number:
81-3562212

Form: SS-4

Number of this notice: CP 575 G

000265.689276.460814.3710 1 MB 0.419 530

1822 LISBON STREET LLC
TIMOTHY A MILLETT SOLE MBR
155 CENTER ST
AUBURN ME 04210

000265

For assistance you may call us at:
1-800-829-4933

IF YOU WRITE, ATTACH THE
STUB OF THIS NOTICE.

WE ASSIGNED YOU AN EMPLOYER IDENTIFICATION NUMBER

Thank you for applying for an Employer Identification Number (EIN). We assigned you EIN 81-3562212. This EIN will identify you, your business accounts, tax returns, and documents, even if you have no employees. Please keep this notice in your permanent records.

When filing tax documents, payments, and related correspondence, it is very important that you use your EIN and complete name and address exactly as shown above. Any variation may cause a delay in processing, result in incorrect information in your account, or even cause you to be assigned more than one EIN. If the information is not correct as shown above, please make the correction using the attached tear-off stub and return it to us.

A limited liability company (LLC) may file Form 8832, Entity Classification Election, and elect to be classified as an association taxable as a corporation. If the LLC is eligible to be treated as a corporation that meets certain tests and it will be electing S corporation status, it must timely file Form 2553, Election by a Small Business Corporation. The LLC will be treated as a corporation as of the effective date of the S corporation election and does not need to file Form 8832.

IMPORTANT REMINDERS:

* Keep a copy of this notice in your permanent records. This notice is issued only one time and IRS will not be able to generate a duplicate copy for you. You may give a copy of this document to anyone asking for proof of your EIN.
* Use this EIN and your name exactly as they appear at the top of this notice on all your federal tax forms.
* Refer to this EIN on your tax-related correspondence and documents.
* Provide future officers of your organization with a copy of this notice.

Your name control associated with this EIN is 1822. You will need to provide this information, along with your EIN, if you file your returns electronically.

If you have questions about your EIN, you can contact us at the phone number or address listed at the top of this notice. If you write, please tear off the stub at the bottom of this notice and include it with your letter. Thank you for your cooperation.

(IRS USE ONLY) 575G 08-19-2016 1822 0 0509906656 SS-4

000265

Keep this part for your records. CP 575 G (Rev. 1-2013)

Return this part with any correspondence so we may identify your account. Please correct any errors in your name or address.

CP 575 G

0509906656

Your Telephone Number
( ) -

Best Time to Call

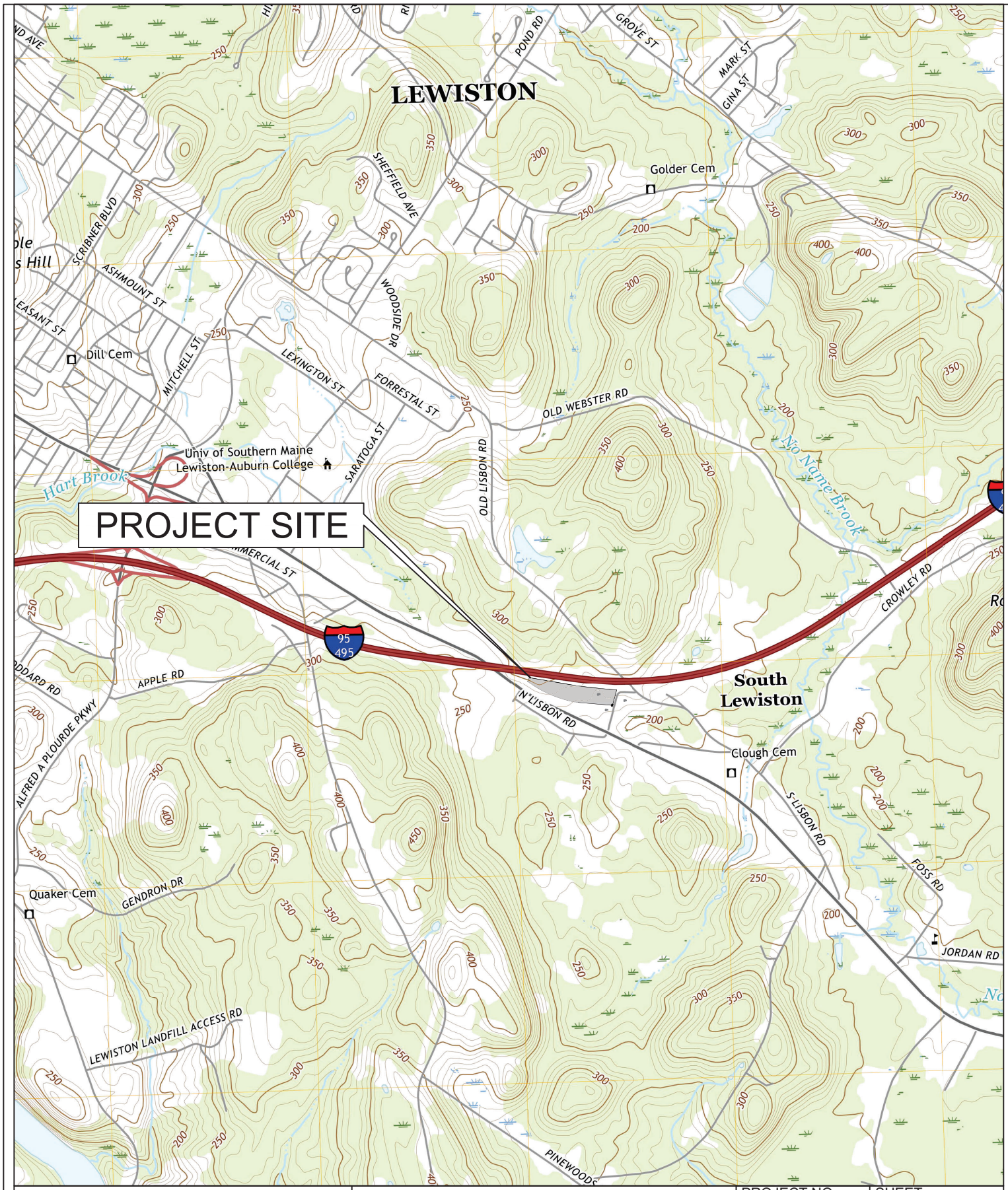
DATE OF THIS NOTICE: 08-19-2016
EMPLOYER IDENTIFICATION NUMBER: 81-3562212
FORM: SS-4 NOBOD

1822 LISBON STREET LLC
TIMOTHY A MILLETT SOLE MBR
155 CENTER ST
AUBURN ME 04210

INTERNAL REVENUE SERVICE
PHILADELPHIA PA 19255-0023

APPENDIX 2

EXISTING CONDITIONS FIGURES



USGS

PROJECT:
10 GOULD ST
LEWISTON, MAINE

PREPARED FOR:
SURVEY WORKS INC.
7 COBBLESTONE DRIVE, SUITE 4
TURNER, MAINE 04282

TERRADYN CONSULTANTS, LLC

PINELAND
41 CAMPUS DRIVE, SUITE 101
NEW GLOUCESTER, ME 04260

PORTLAND
565 CONGRESS STREET, SUITE 201
PORTLAND, ME 04101

207.926.5111 • info@terradynconsultants.com • www.terradynconsultants.com

PROJECT NO.	SHEET
2021	1
DATE	OF
7/22/2020	1
SCALE	
1"=2,000'	

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) Report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS Report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study Report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study Report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study Report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 19. The **horizontal datum** was NAD 83, GRS 1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713- 3242**, or visit its website at http://www.ngs.noaa.gov.

Base map information shown on this FIRM was derived from the Maine Office of Geographic Information Systems (MEGIS) at a scale of 1:4,800 or better from photography dated 2001 or later.

The **profile baselines** depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the **profile baseline**, in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.

Based on updated topographic information, this map reflects more detailed and up-to-date **stream channel configurations and floodplain delineations** than those shown on the previous FIRM for this jurisdiction. As a result, the Flood Profiles and Floodway Data tables for multiple streams in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on the map. Also, the road to floodplain relationships for unrevised streams may differ from what is shown on previous maps.

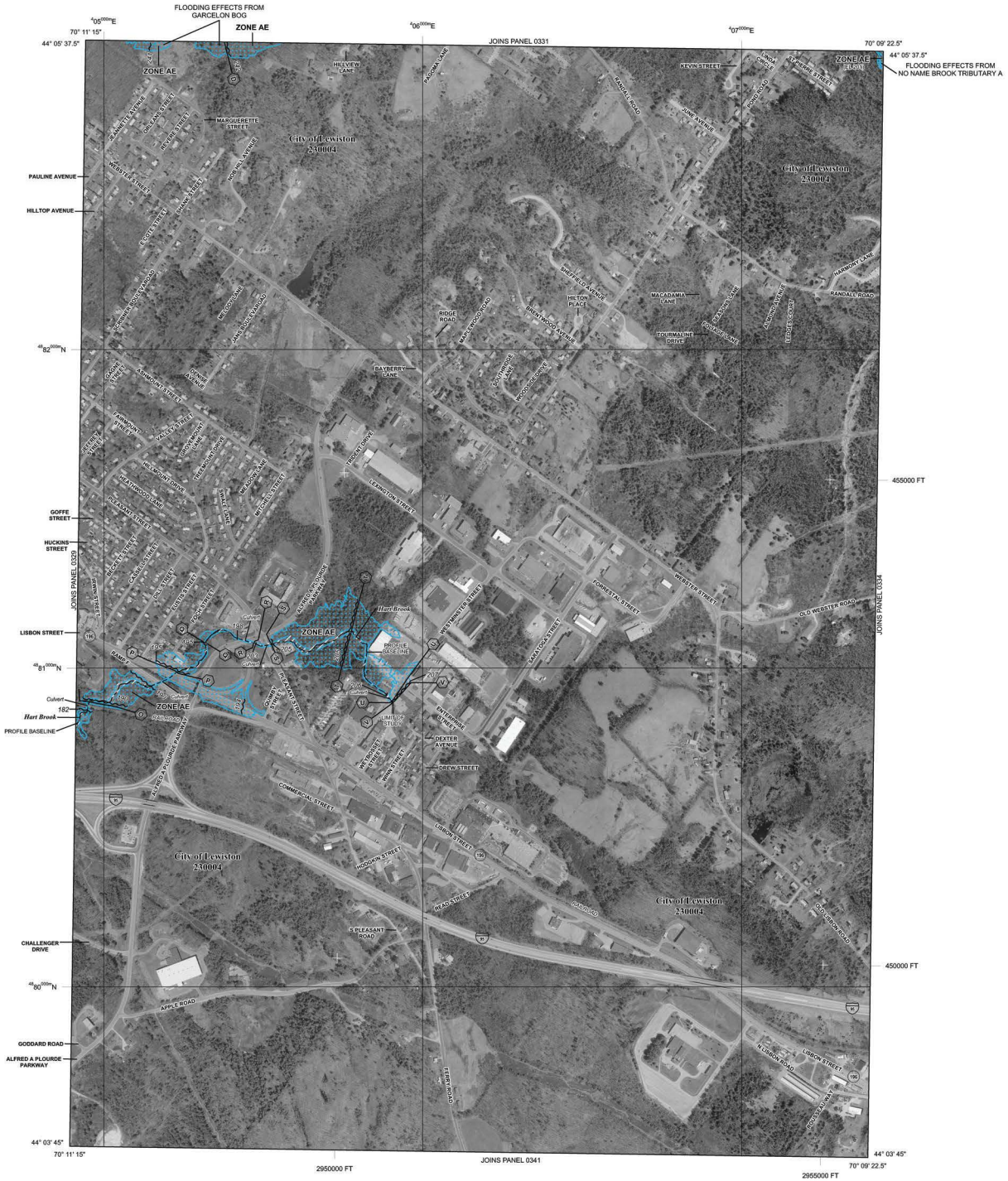
Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

For information on available products associated with this FIRM visit the **Map Service Center (MSC)** website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.

If you have **questions about this map,** how to order products, or the National Flood Insurance Program in general, please call the **FEMA Map Information eXchange (FMIX)** at **1-877-FEMA-MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/business/nfip.

State of Maine Floodway Note: Under the Maine Revised Statutes Annotated (M.R.S.A.) Title 38 § 439-A, 7C where the floodway is not designated on the Flood Insurance Rate Map, the floodway is considered to be the channel of a river or other water course and the adjacent land areas to a distance of one-half the width of the floodplain, as measured from the normal high water mark to the upland limit of the floodplain, unless a technical evaluation certified by a registered professional engineer is provided demonstrating the actual floodway based upon approved FEMA modeling methods.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% Annual Chance Floodplain Boundary

0.2% Annual Chance Floodplain Boundary

Floodway boundary

Zone D boundary

CBRS and OPA boundary

Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.

513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

A — A	Cross section line
23 - - - 23	Transect line
45° 02' 08", 93° 02' 12"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere
3100000 FT	5000-foot ticks: Maine State Plane West Zone (FIPS Zone 1802), Transverse Mercator projection
4989000 N	1000-meter Universal Transverse Mercator grid values, zone 19
DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
• FT1,000	River Station

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
July 8, 2013

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET

150 0 150 300 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0333E

FIRM

FLOOD INSURANCE RATE MAP

ANDROSCOGGIN COUNTY, MAINE (ALL JURISDICTIONS)

PANEL 333 OF 470

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
LEWISTON, CITY OF	230004	0333	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
23001C0333E

EFFECTIVE DATE
JULY 8, 2013

Federal Emergency Management Agency

NOTES TO USERS

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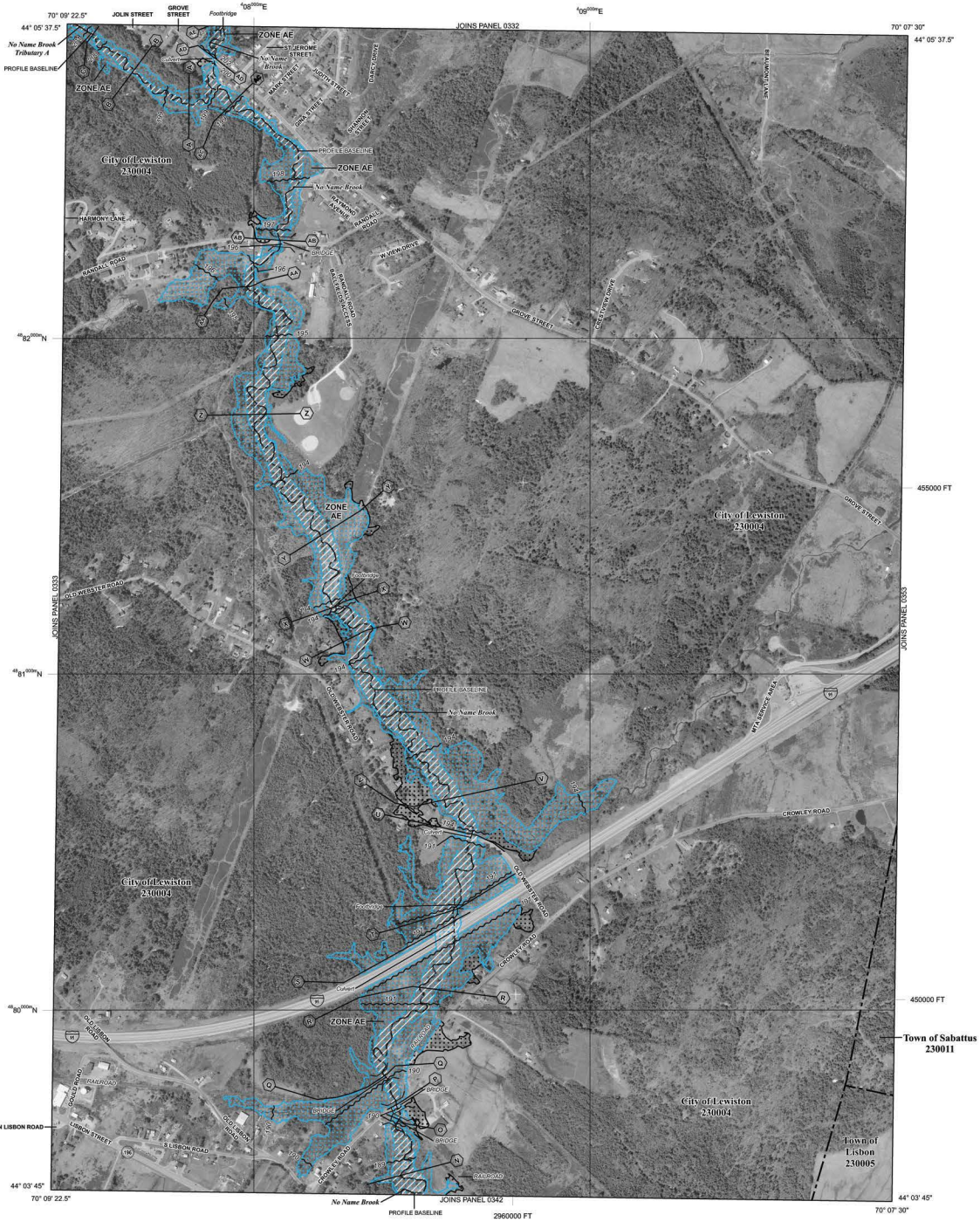

LEGEND

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OTHER AREAS

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OTHERWISE PROTECTED AREAS (OPAs)

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0.2% Annual Chance Floodplain Boundary

Floodway boundary

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Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.

513*	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

(A)———(A)	Cross section line
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45° 02' 08", 93° 02' 12"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere
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$^{4}89^{000m}$ N	1000-meter Universal Transverse Mercator grid values, zone 19
DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
•FT1,000	River Station

MAP REPOSITORIES
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EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
July 8, 2013

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

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MAP SCALE 1" = 500'

250 0 500 1000 FEET

150 0 150 300 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0334E

FIRM

FLOOD INSURANCE RATE MAP

ANDROSCOGGIN COUNTY, MAINE (ALL JURISDICTIONS)

PANEL 334 OF 470

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
LEWISTON, CITY OF	230004	0334	E
LISBON, TOWN OF	230005	0334	E
SABATTUS, TOWN OF	230011	0334	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
23001C0334E

EFFECTIVE DATE
JULY 8, 2013

Federal Emergency Management Agency

APPENDIX 3

STORMWATER INFRASTRUCTURE INSPECTION & MAINTENANCE MANUAL

Pineland
Cumberland Hall
41 Campus Drive, Suite 101
New Gloucester, ME 04260

Portland
565 Congress Street, Suite 201
Portland, ME 04101

10 Gould Street
LEWISTON, MAINE
STORMWATER MANAGEMENT SYSTEM
INSEPCTION & MAINTENANCE PLAN

Project Owner/Developer: 10 Gould Street, LLC
155 Center Street, Building G, Box 6
Auburn, Maine 04210
(207) 754-6332

Responsible Party: Owner or General Contractor
TBD

Prepared By: Craig Sweet, P.E.
Terradyn Consultants, LLC
41 Campus Drive, Suite 101
New Gloucester, Maine 04260
(207) 926-5111

INTRODUCTION:

Regular inspection and maintenance of the entire stormwater management system is crucial to the long-term effectiveness of the system. The responsible party must provide regular inspection and maintenance of all permanent erosion control measures and stormwater management structures, establish any contract services required to implement the program, and keep records and a maintenance log book of inspection and maintenance activities. At a minimum, the inspection and maintenance activities outlined herein should be performed at the recommended intervals.

All measures must be maintained in effective operating condition. A person with knowledge of erosion and sedimentation practices, stormwater management, and the standards and conditions of all local, state and federal permits for the project shall conduct the inspections. The following areas, facilities, and measures must be inspected and identified deficiencies must be corrected.

INSPECTION TASKS

1. Inspect **vegetated areas**, particularly slopes and embankments, early in the growing season or after heavy rains to identify active or potential erosion problems. Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows.

2. Inspect **ditches, swales and other open stormwater channels** in the spring, in late fall, and after heavy rains to remove any obstructions to flow, remove accumulated sediments and debris, to control vegetated growth that could obstruct flow, and to repair any erosion of the ditch lining. Vegetated ditches must be mowed at least annually or otherwise maintained to control the growth of woody vegetation and maintain flow capacity. Any woody vegetation growing through riprap linings must also be removed. Repair any slumping side slopes as soon as practicable. If the ditch has a riprap lining, replace riprap on areas where any underlying filter fabric or underdrain gravel is showing through the stone or where stones have dislodged. The channel must receive adequate routine maintenance to maintain capacity and prevent or correct any erosion of the channel's bottom or sideslopes.

3. Inspect **culverts** in the spring, in late fall, and after heavy rains to remove any obstructions to flow; remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit; and to repair any erosion damage at the culvert's inlet and outlet.

4. Inspect **Roof Drain Filter Strip** semi-annually and following major storm events. Debris and sediment buildup shall be removed as needed. Area should be weeded as necessary.

DOCUMENTATION

Keep a log (report) summarizing inspections, maintenance, and any corrective actions taken. The log must include the date on which each inspection or maintenance task was performed, a description of the inspection findings or maintenance completed, and the name of the inspector or maintenance personnel performing the task. If a maintenance task requires the clean-out of any sediments or debris, indicate where the sediment and debris was disposed after removal. The log must be made accessible to Department of Environmental Protection staff and a copy provided to the Department upon request. The permittee shall retain a copy of the log for a period of at least five years from the completion of permanent stabilization.

The log attached at the end of this plan is from the *Maine Erosion and Sediment Control Best Management Practices (BMPs) Manual for Designers and Engineers (May 2016)*. The log may be used or adapted for this project.

ATTACHMENTS:
Stormwater Management Facilities Inspection & Maintenance Log

Stormwater Management Facilities
Inspection & Maintenance Log
10 Gould Street

General Information:

Inspected by:	Date:	Weather:

Reason for Inspection: (Regular Inspection) (Major Rain Event)

BMP	Conditions Observed	Repairs Needed?
1. Vegetated Areas		
2. Ditches, Swales, Open Channels		
3. Culverts		
4. Roof Drain Filter Strip		

Detailed Repair Notes:

BMP Type	Date	Description of Repairs & Sediment Disposal

Notes:
If a maintenance task requires the clean-out of any sediments or debris, indicate where the sediment and debris was disposed after removal. A copy of this log shall be retained for a period of at least five years from the completion of permanent stabilization. The log must be made accessible to Department of Environmental Protection staff and a copy provided to the Department upon request.

APPENDIX 4

EROSION & SEDIMENT CONTROL INSPECTION MANUAL

Pineland
Cumberland Hall
41 Campus Drive, Suite 101
New Gloucester, ME 04260

Portland
565 Congress Street, Suite 201
Portland, ME 04101

10 Gould Street
LEWISTON, MAINE
EROSION & SEDIMENTATION CONTROL
INSEPCTION & MAINTENANCE PLAN
CONSTRUCTION PHASE

Project Owner/Developer: 10 Gould Street, LLC
155 Center Street, Building G, Box 6
Auburn, Maine 04210
(207) 754-6332

Responsible Party: Owner or General Contractor
TBD

Prepared By: Craig Sweet, P.E.
Terradyn Consultants, LLC
41 Campus Drive, Suite 101
New Gloucester, Maine 04260
(207) 926-5111

INTRODUCTION:

Anyone who conducts or directs an activity that involves exposing, filling or displacing soil or other earthen materials must take appropriate measures to prevent erosion and the loss of sediment beyond the project site or into a sensitive resource.

Erosion and sediment control measures should be in place before the activity begins and should remain functional until the site is permanently stabilized. All measures should remain effective until all areas are permanently stabilized. Any disturbed area should be regularly inspected until the site is fully stabilized with either 90% grass cover or a permanent impervious surface such as pavement.

The following information describes the Inspection, Maintenance and Documentation necessary during construction to comply with the State of Maine Stormwater Management Law.

INSPECTION

Inspect disturbed and impervious areas, erosion control measures, materials storage areas that are exposed to precipitation, and locations where vehicles enter or exit the site. Inspect these areas at least once a week as well as before and within 24 hours after a storm event (rainfall), and prior to completing permanent stabilization measures. For the purposes of this plan, a storm event is rainfall greater than 0.5 inches in a 24 hour period.

The person conducting inspections shall have knowledge of erosion and sedimentation practices, stormwater management, and the standards and conditions of all local, state and federal permits for the project.

MAINTENANCE AND CORRECTIVE ACTION

If best management practices (BMPs) need to be repaired, the repair work should be initiated upon discovery of the problem but no later than the end of the next workday. If additional BMPs or significant repair of BMPs are necessary, implementation must be completed within 7 calendar days and prior to any storm event (rainfall). All measures must be maintained in effective operating condition until areas are permanently stabilized.

DOCUMENTATION

Keep a log (report) summarizing the inspections and any corrective actions taken. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of erosion and sedimentation controls, materials storage areas, and vehicles access points to the parcel. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and location(s) where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken.

The log attached at the end of this plan is from the *Maine Erosion and Sediment Control Best Management Practices (BMPs) Manual for Designers and Engineers (May 2016)*. The log may be used or adapted for this project.

Documentation must be retained for a minimum of three years after permanent stabilization has been achieved on the site and must be made accessible to the Maine Department of Environmental Protection upon request.

REFERENCES

Approved Drawings:
C-2.0 Grading, Drainage & Erosion Control Plan
C-3.0 Erosion Control Notes & Details

Maine Erosion and Sediment Control Best Management Practices (BMPs) Manual for Designers and Engineers (May 2016), Maine Department of Environmental Protection

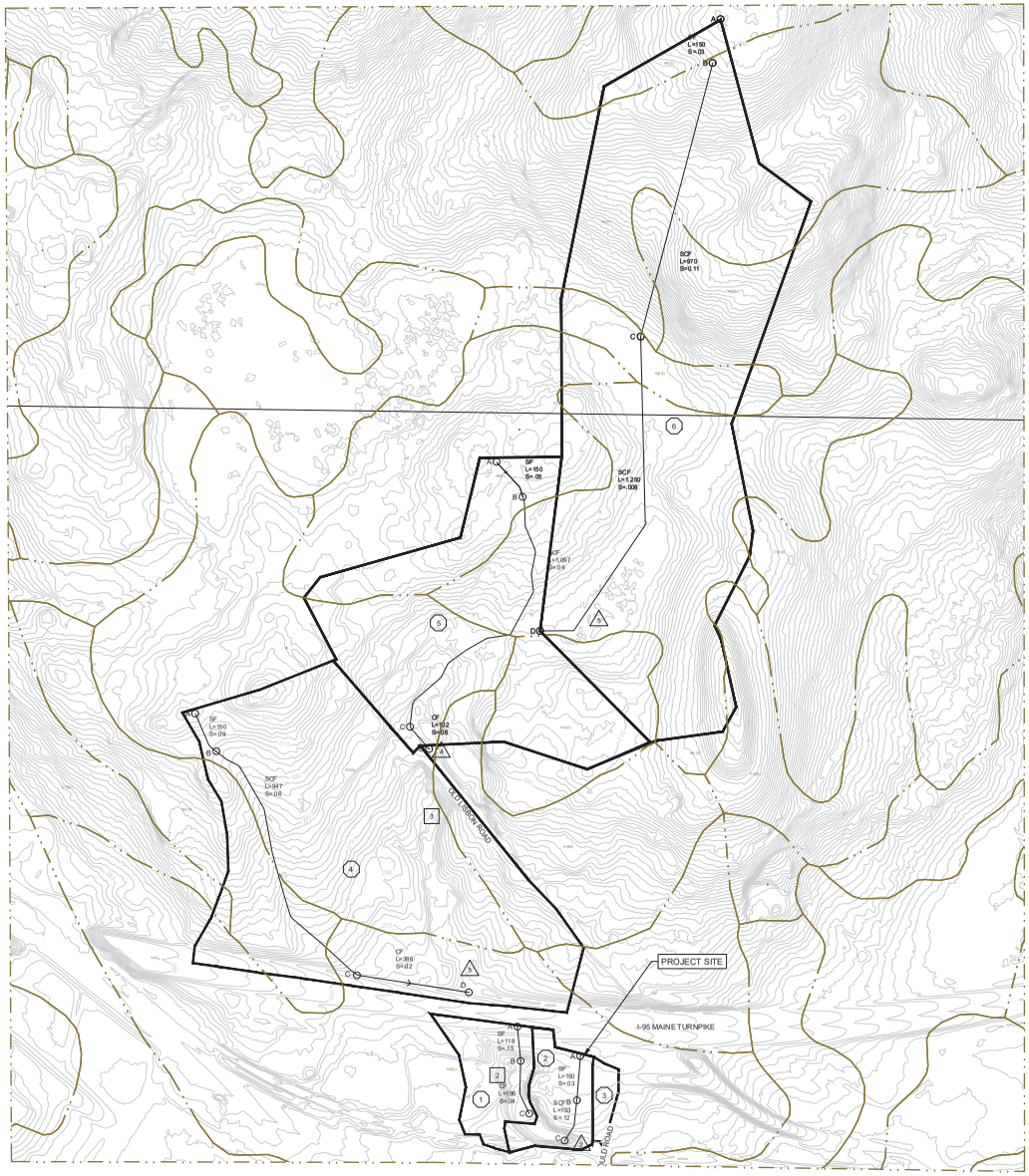
Maine Erosion and Sediment Control Practices Field Guide for Contractors, Maine Department of Environmental Protection

CONSTRUCTION INSPECTION FORM FOR EROSION AND SEDIMENT CONTROL					
General Information:					
Site Name:	Date:		Inspected by:		
Owner:					
Retained 3PI:	Last Rain Date:			Amount:	
Reason for Inspection:	Weekly	Winter	Final	Rain Event	Complaint
Description of disturbed area:					
Photos:					

	YES/NO/NA	COMMENTS
1. Is an Erosion and Sediment Control Plan available?		
ESC plan on-site and followed		
Other:		
2. Are all erosion control practices installed properly, maintained and functioning?		
Disturbed areas stable		
Concentrated flow inlet/outlet protection		
All areas at final grade		
Disturbed dormant areas stabilized		
Access roads and parking		
Hillsides and stockpiles		
Other:		
3. Are all sedimentation control practices installed properly, maintained and functioning?		
Construction entrance		
Sedimentation basins/traps/diversions		
Perimeter controls		
Check dams		
Other:		
4. Is maintenance of ESC measures, construction activities and housekeeping kept-up?		
Sedimentation/erosion in ditches		
Tracked Sediment or dust at exits		
Hazardous material storage and spill control practices		
Waste management (concrete, hazardous material, etc.)		
Other:		
5. Violation, Corrective Actions, Recommendations		
Sediment discharged from site?		
Corrective action required?		
Site compliant with all permits?		
Notice of violation or stop work order issued?		
Comments/Corrective Actions (complete corrective actions before the next rain event and within 7 day)		

APPENDIX 5

WATERSHED MAPS



GRAPHIC SCALE

(IN FEET)
1 inch = 150 ft.

GRID NORTH

WATERSHED LEGEND

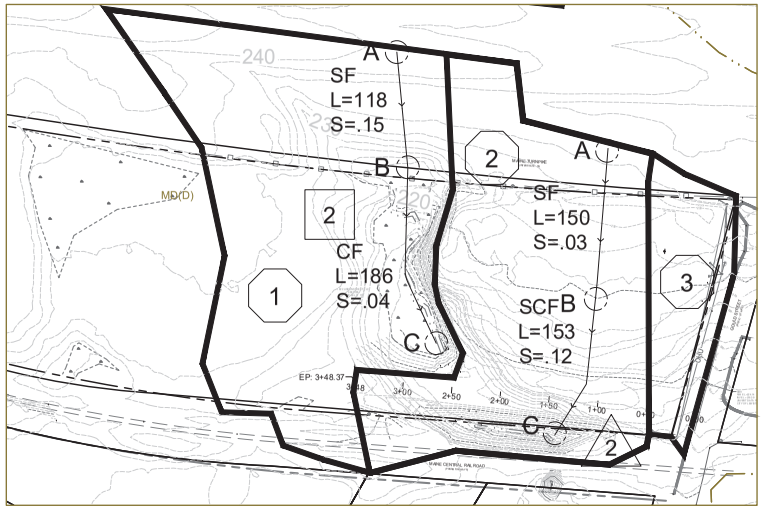
PREDEVELOPMENT

- WATERSHED BOUNDARY
- SOILS BOUNDARY
- Tc FLOWPATH
- 5 SUBCATCHMENT
- 3 POND
- 1 REACH

SF: SHEET FLOW
SCF: SHALLOW CONCENTRATED FLOW
CF: CHANNEL FLOW

NOTES:

- SOILS WITHIN THE WATERSHED AREAS MAPPED BY THE NRCS WEB SOIL SURVEY IN JUNE 2020:
- LYMAN-TUNBRIDGE COMPLEX (HSG D)
- LYMAN-ABRAM COMPLEX (HSG D)
- SCANTIC SILT LOAM (HSG D)
- CHARLTON VERY STONY FINE SANDY LOAM (HSG A)
- MADE LAND, LOAMY MATERIALS (HSG D)



PROJECT SITE DETAIL
1"=60'

STATE OF MAINE
CRAIG SWEET
No. 15060
LICENSED
PROFESSIONAL ENGINEER

DATE: 09/08/2020
P.E.: CRAIG SWEET, P.E.

NO.	DATE	REVISIONS	CMS APP'D BY
1	09/08/2020	REVISED PER CITY COMMENTS	

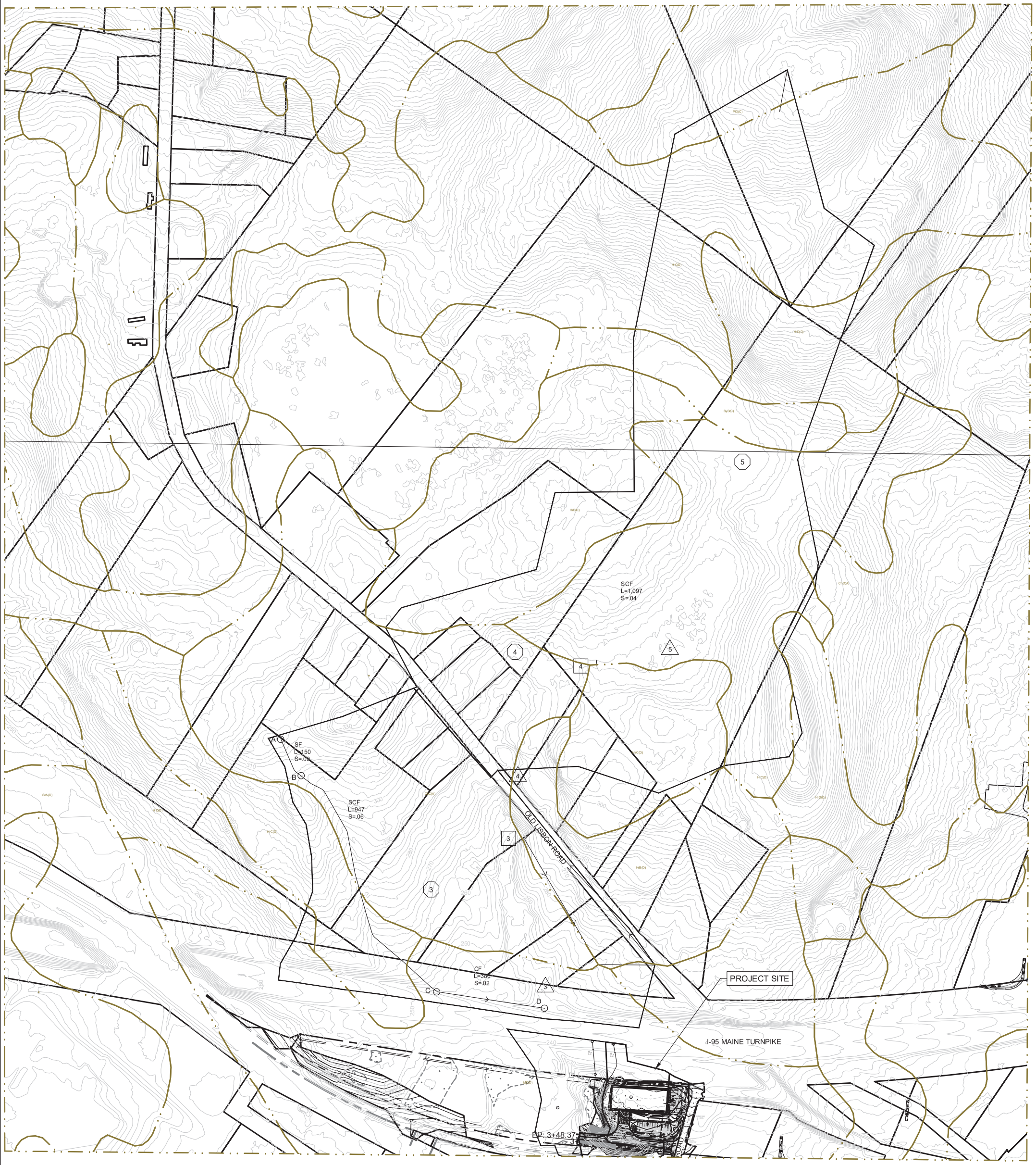
TERRADYN CONSULTANTS, LLC
41 CAMPUS DRIVE SUITE 200 NEW GLOUCESTER, ME 04260
565 CONGRESS STREET SUITE 200 PORTLAND, ME 04102
OFFICE: (207) 926-5111 FAX: (207) 221-1317
www.terradynconsultants.com

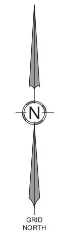
Civil Engineering | Land Planning | Stormwater Design | Environmental Permitting

PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT: 10 GOULD STREET, LLC.
LEWISTON, MAINE
SHEET TITLE: PRE-DEVELOPMENT WATERSHED MAP
CLIENT: SURVEY WORKS INC.
7 COBBLESTONE DRIVE, SUITE 4,
TURNER, MAINE 04282

DATE:	8/3/2020
SCALE:	1"=20'
DESIGNED:	
JOB NO:	2021
FILE:	
SHEET	WS-1.0



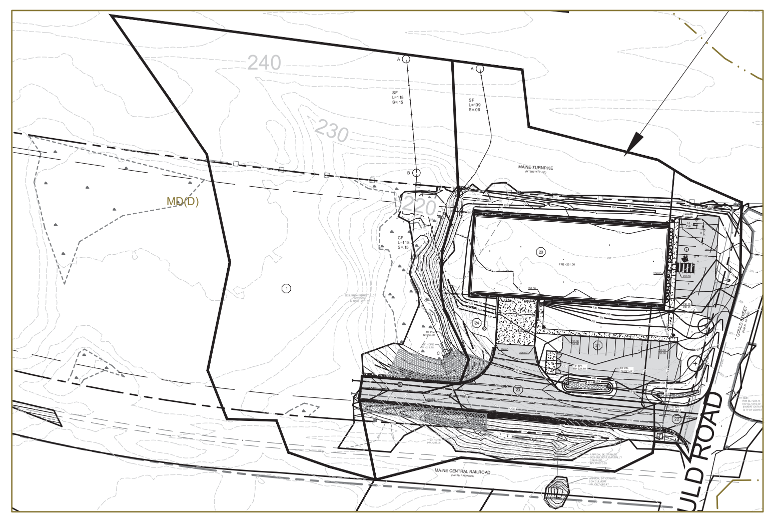


WATERSHED LEGEND

POSTDEVELOPMENT

- WATERSHED BOUNDARY
- SOILS BOUNDARY
- Tc FLOWPATH
- 5 SUBCATCHMENT
- 3 POND
- 1 REACH

SF: SHEET FLOW
SCF: SHALLOW CONCENTRATED FLOW
CF: CHANNEL FLOW



PROJECT SITE DETAIL

1"=60'

GRAPHIC SCALE

(IN FEET)
1 inch = 150 ft.

STATE OF MAINE — CRAIG SWEET — No. 15060 — LICENSED — PROFESSIONAL ENGINEER

DATE: 09/08/2020
P.E.: CRAIG SWEET, P.E.

NO.	DATE	REVISIONS	APP'D BY
1	09/08/2020	REVISED PER CITY COMMENTS	CMS

41 CAMPUS DRIVE
SUITE 101
NEW GLOUCESTER, ME 04260

565 CONGRESS STREET
SUITE 201
PORTLAND, ME 04102

OFFICE: (207) 926-5111 FAX: (207) 221-1317
www.terradynconsultants.com

TERRADYN CONSULTANTS, LLC

Civil Engineering | Land Planning | Stormwater Design | Environmental Permitting

PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
10 GOULD STREET, LLC.
LEWISTON, MAINE

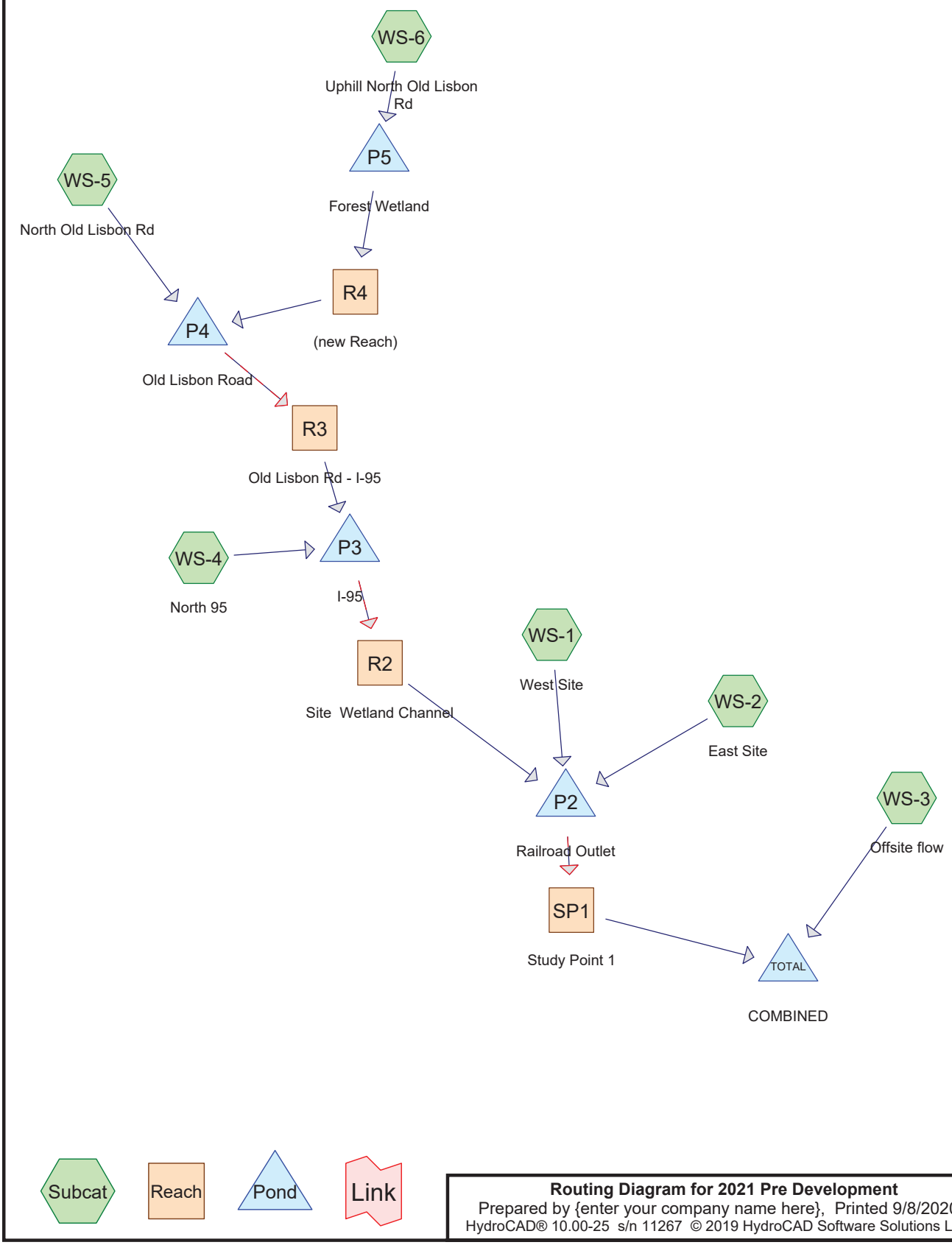
SHEET TITLE:
POST-DEVELOPMENT WATERSHED MAP

CLIENT:
SURVEY WORKS INC.
7 COBBLESTONE DRIVE, SUITE 4,
TURNER, MAINE 04282

DATE:	8/3/2020
SCALE:	1"=20'
DESIGNED:	
JOB NO:	2021
FILE:	
SHEET	WS-2.0

APPENDIX 6

PRE-DEVELOPMENT HYDROCAD MODEL



Routing Diagram for 2021 Pre Development
Prepared by {enter your company name here}, Printed 9/8/2020
HydroCAD® 10.00-25 s/n 11267 © 2019 HydroCAD Software Solutions LLC

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	P2	210.33	209.47	40.0	0.0215	0.025	24.0	24.0	0.0
2	P3	225.50	224.50	250.0	0.0040	0.013	30.0	0.0	0.0
3	P4	266.00	265.00	100.0	0.0100	0.013	24.0	0.0	0.0

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

Subcatchment WS-1: West Site Runoff Area=99,472 sf 0.00% Impervious Runoff Depth>1.13"
Flow Length=304' Tc=8.1 min CN=78 Runoff=2.73 cfs 0.214 af

Subcatchment WS-2: East Site Runoff Area=81,652 sf 0.00% Impervious Runoff Depth>1.12"
Flow Length=303' Tc=19.2 min CN=78 Runoff=1.64 cfs 0.175 af

Subcatchment WS-3: Offsite flow Runoff Area=17,531 sf 0.00% Impervious Runoff Depth>1.13"
Tc=5.0 min CN=78 Runoff=0.54 cfs 0.038 af

Subcatchment WS-4: North 95 Runoff Area=22.655 ac 5.19% Impervious Runoff Depth>0.85"
Flow Length=1,483' Tc=43.6 min CN=73 Runoff=9.85 cfs 1.598 af

Subcatchment WS-5: North Old Lisbon Rd Runoff Area=13.983 ac 6.44% Impervious Runoff Depth>1.05"
Flow Length=1,349' Tc=56.4 min CN=77 Runoff=6.85 cfs 1.229 af

Subcatchment WS-6: Uphill North Old Runoff Area=34.550 ac 0.00% Impervious Runoff Depth>0.69"
Flow Length=2,370' Tc=104.0 min CN=70 Runoff=6.84 cfs 1.983 af

Reach R2: Site Wetland Channel Avg. Flow Depth=0.55' Max Vel=6.34 fps Inflow=16.37 cfs 4.732 af
n=0.030 L=330.0' S=0.0561 '/' Capacity=231.75 cfs Outflow=16.36 cfs 4.729 af

Reach R3: Old Lisbon Rd - I-95 Avg. Flow Depth=0.46' Max Vel=4.18 fps Inflow=8.36 cfs 3.142 af
n=0.030 L=730.0' S=0.0301 '/' Capacity=169.92 cfs Outflow=8.35 cfs 3.135 af

Reach R4: (new Reach) Avg. Flow Depth=0.18' Max Vel=7.33 fps Inflow=5.98 cfs 1.920 af
n=0.012 L=540.0' S=0.0407 '/' Capacity=564.90 cfs Outflow=5.98 cfs 1.917 af

Reach SP1: Study Point 1 Inflow=17.33 cfs 5.115 af
Outflow=17.33 cfs 5.115 af

Pond P2: Railroad Outlet Peak Elev=212.42' Storage=707 cf Inflow=17.40 cfs 5.119 af
Primary=17.33 cfs 5.115 af Secondary=0.00 cfs 0.000 af Outflow=17.33 cfs 5.115 af

Pond P3: I-95 Peak Elev=236.00' Storage=0 cf Inflow=16.37 cfs 4.732 af
Primary=0.03 cfs 0.010 af Secondary=16.34 cfs 4.723 af Outflow=16.37 cfs 4.732 af

Pond P4: Old Lisbon Road Peak Elev=267.50' Storage=894 cf Inflow=8.36 cfs 3.146 af
Primary=8.36 cfs 3.142 af Secondary=0.00 cfs 0.000 af Outflow=8.36 cfs 3.142 af

Pond P5: Forest Wetland Peak Elev=296.20' Storage=0.264 af Inflow=6.84 cfs 1.983 af
Outflow=5.98 cfs 1.920 af

Pond TOTAL: COMBINED Inflow=17.41 cfs 5.153 af
Primary=17.41 cfs 5.153 af

Total Runoff Area = 75.748 ac Runoff Volume = 5.238 af Average Runoff Depth = 0.83"
97.26% Pervious = 73.673 ac 2.74% Impervious = 2.075 ac

Summary for Subcatchment WS-1: West Site

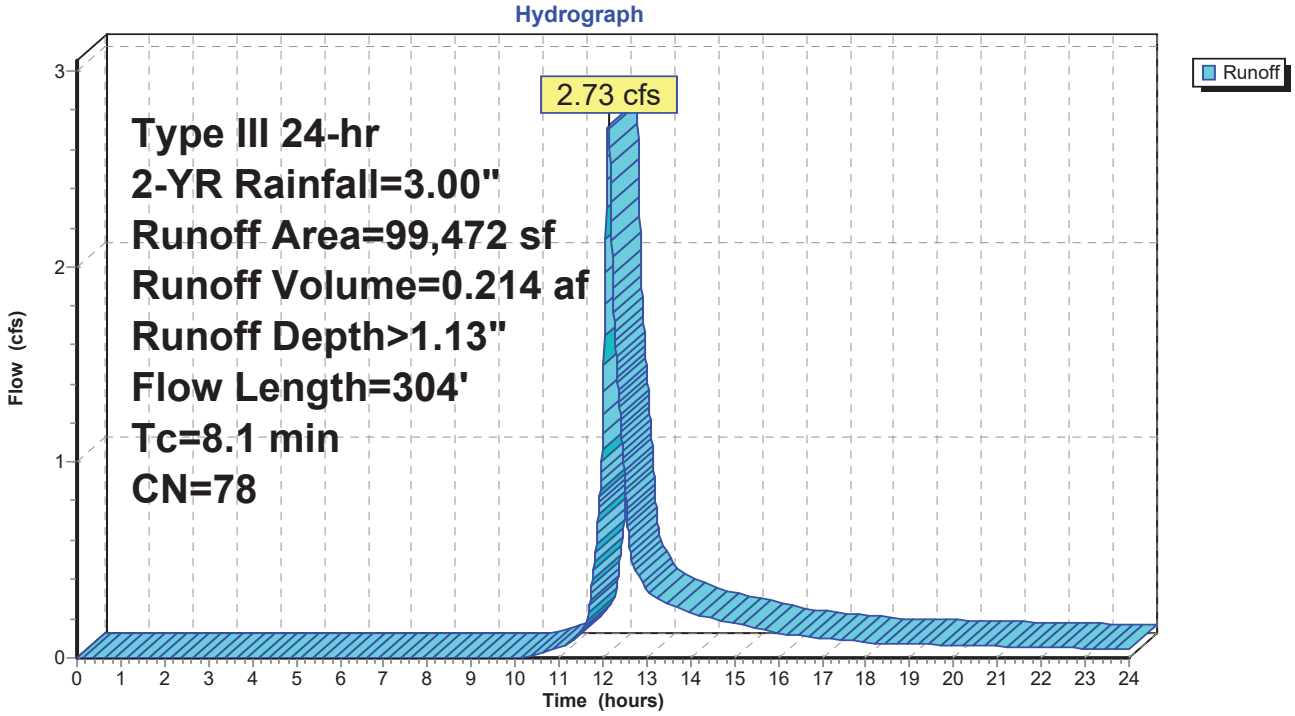
Runoff = 2.73 cfs @ 12.12 hrs, Volume= 0.214 af, Depth> 1.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.00"

Area (sf)	CN	Description
99,472	78	Meadow, non-grazed, HSG D
99,472		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	118	0.1530	0.26		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.00"
0.6	186	0.0400	5.06	11.39	**Trap/Vee/Rect Channel Flow, B-C** Bot.W=3.00' D=0.50' Z= 3.0 '/' Top.W=6.00' n= 0.030 Earth, grassed & winding
8.1	304	Total			

Subcatchment WS-1: West Site



Summary for Subcatchment WS-2: East Site

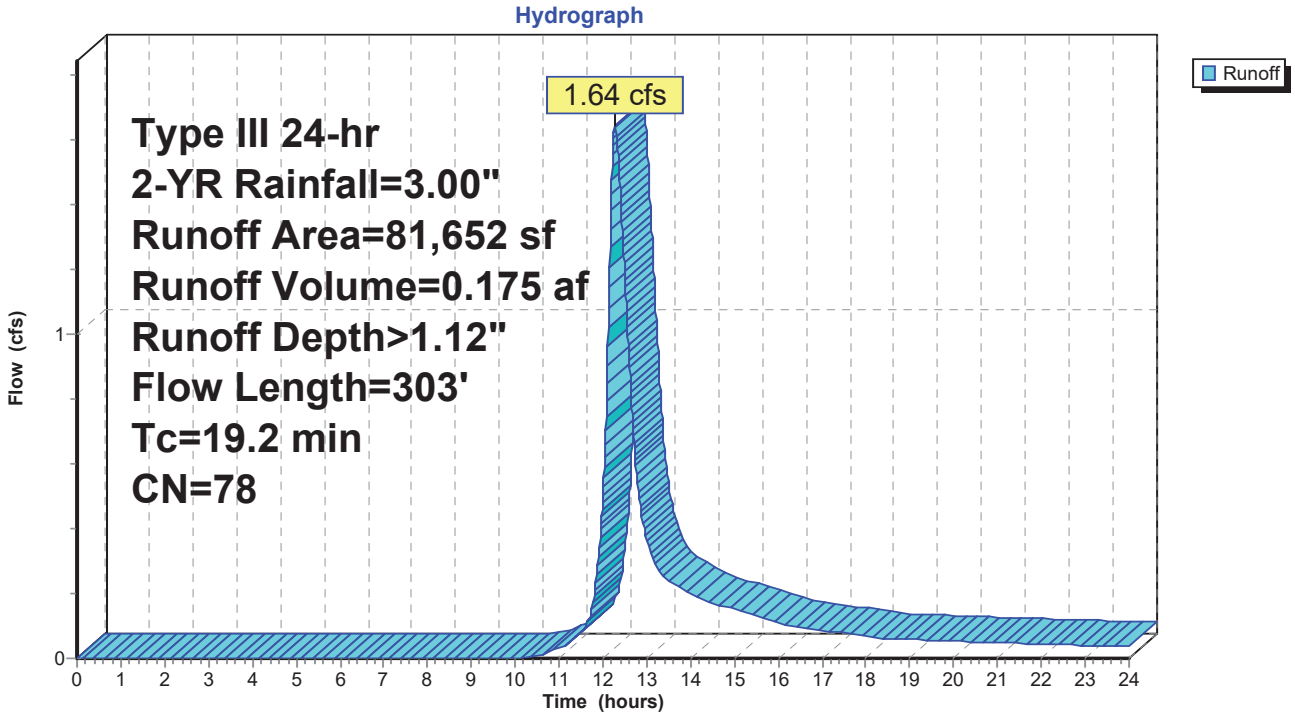
Runoff = 1.64 cfs @ 12.27 hrs, Volume= 0.175 af, Depth> 1.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.00"

Area (sf)	CN	Description
81,652	78	Meadow, non-grazed, HSG D
81,652		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.1	150	0.0270	0.14		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.00"
1.1	153	0.1200	2.42		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
19.2	303	Total			

Subcatchment WS-2: East Site



Summary for Subcatchment WS-3: Offsite flow

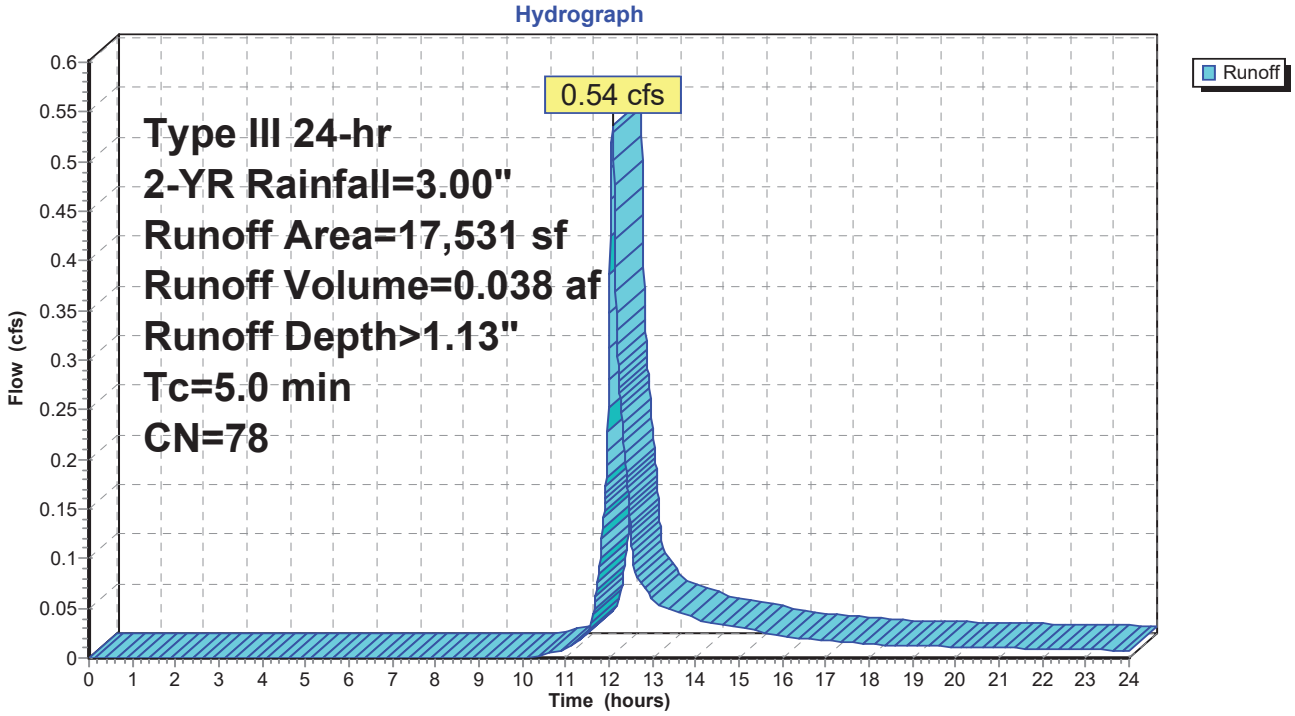
Runoff = 0.54 cfs @ 12.08 hrs, Volume= 0.038 af, Depth> 1.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.00"

Area (sf)	CN	Description
17,531	78	Meadow, non-grazed, HSG D
17,531		100.00% Pervious Area

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

Subcatchment WS-3: Offsite flow



Summary for Subcatchment WS-4: North 95

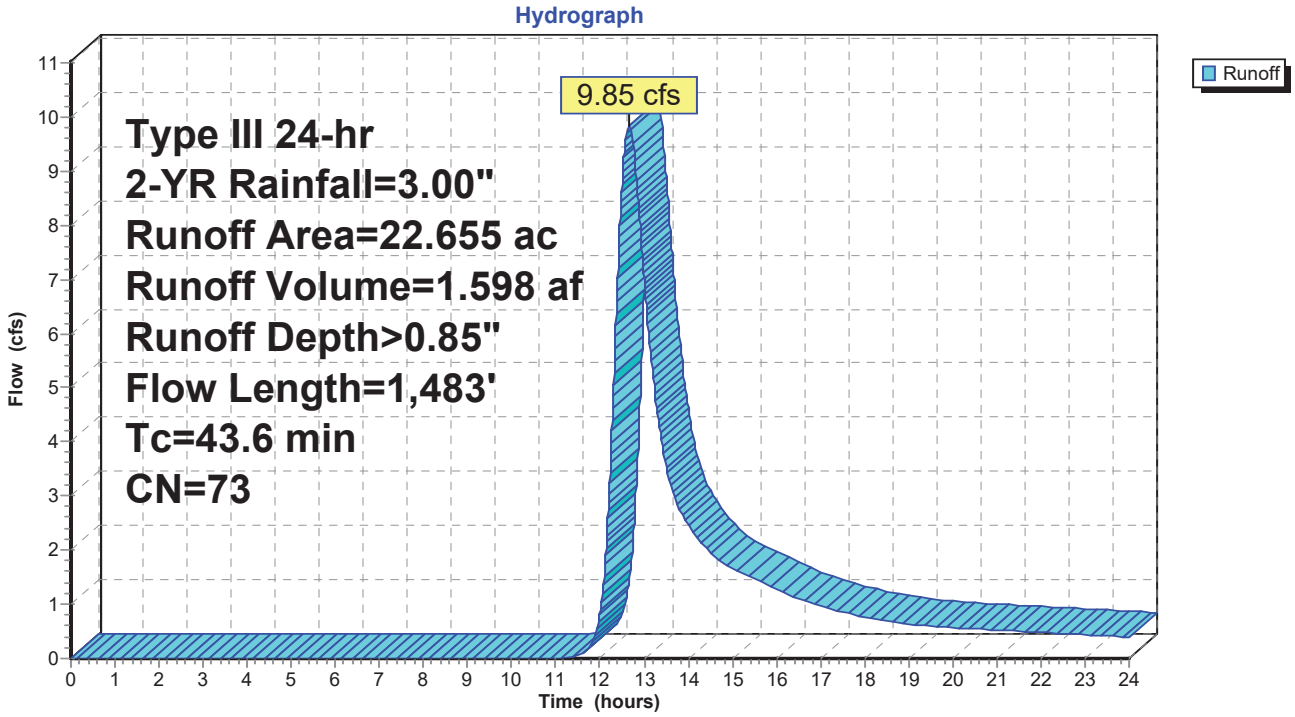
Runoff = 9.85 cfs @ 12.65 hrs, Volume= 1.598 af, Depth> 0.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.00"

Area (ac)	CN	Description
2.000	80	1/2 acre lots, 25% imp, HSG C
0.500	85	1/2 acre lots, 25% imp, HSG D
0.550	98	Paved roads w/curbs & sewers, HSG C
15.380	70	Woods, Good, HSG C
4.225	77	Woods, Good, HSG D
22.655	73	Weighted Average
21.480		94.81% Pervious Area
1.175		5.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.7	150	0.0870	0.08		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 3.00"
12.6	947	0.0630	1.25		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
1.3	386	0.0210	5.00	11.25	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=3.00' D=0.50' Z= 3.0 '/' Top.W=6.00' n= 0.022 Earth, clean & straight
43.6	1,483	Total			

Subcatchment WS-4: North 95



Summary for Subcatchment WS-5: North Old Lisbon Rd

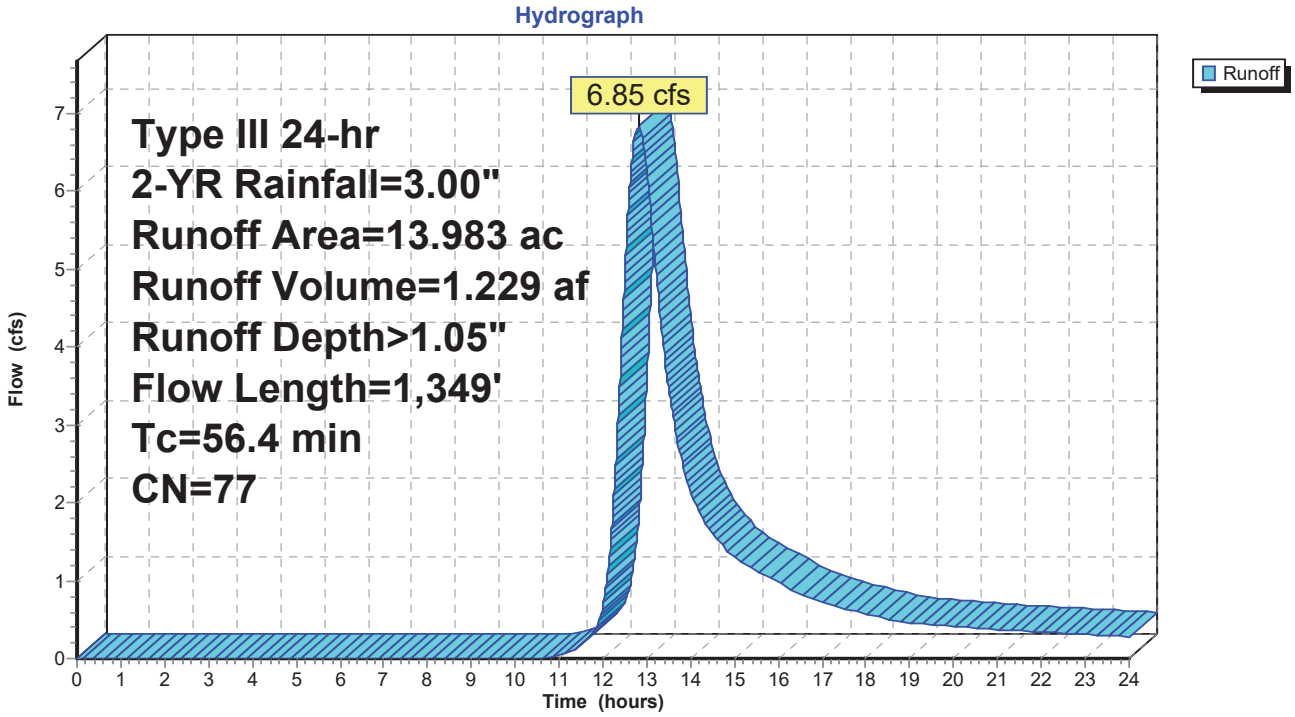
Runoff = 6.85 cfs @ 12.84 hrs, Volume= 1.229 af, Depth> 1.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.00"

Area (ac)	CN	Description
0.500	85	1/2 acre lots, 25% imp, HSG D
2.000	80	1/2 acre lots, 25% imp, HSG C
0.275	98	Paved roads w/curbs & sewers, HSG D
8.450	77	Woods, Good, HSG D
2.758	70	Woods, Good, HSG C
13.983	77	Weighted Average
13.083		93.56% Pervious Area
0.900		6.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.9	150	0.0470	0.07		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 3.00"
18.3	1,097	0.0400	1.00		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.2	102	0.0590	7.98	13.96	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=2.00' D=0.50' Z= 3.0 '/' Top.W=5.00' n= 0.022 Earth, clean & straight
56.4	1,349	Total			

Subcatchment WS-5: North Old Lisbon Rd



Summary for Subcatchment WS-6: Uphill North Old Lisbon Rd

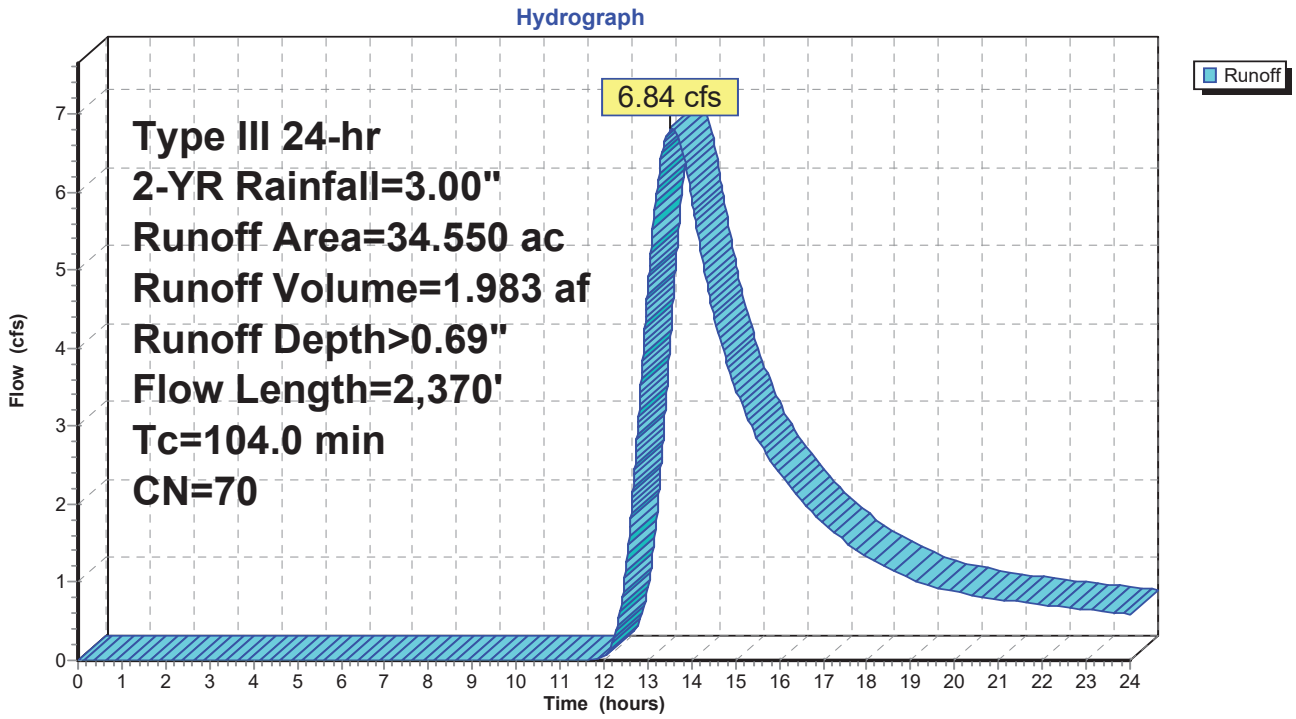
Runoff = 6.84 cfs @ 13.52 hrs, Volume= 1.983 af, Depth> 0.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.00"

Area (ac)	CN	Description
34.550	70	Woods, Good, HSG C
34.550		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
47.7	150	0.0266	0.05		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 3.00"
9.7	970	0.1100	1.66		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
46.6	1,250	0.0080	0.45		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
104.0	2,370	Total			

Subcatchment WS-6: Uphill North Old Lisbon Rd



Summary for Reach R2: Site Wetland Channel

Inflow Area = 71.188 ac, 2.91% Impervious, Inflow Depth > 0.80" for 2-YR event
Inflow = 16.37 cfs @ 12.75 hrs, Volume= 4.732 af
Outflow = 16.36 cfs @ 12.76 hrs, Volume= 4.729 af, Atten= 0%, Lag= 0.8 min

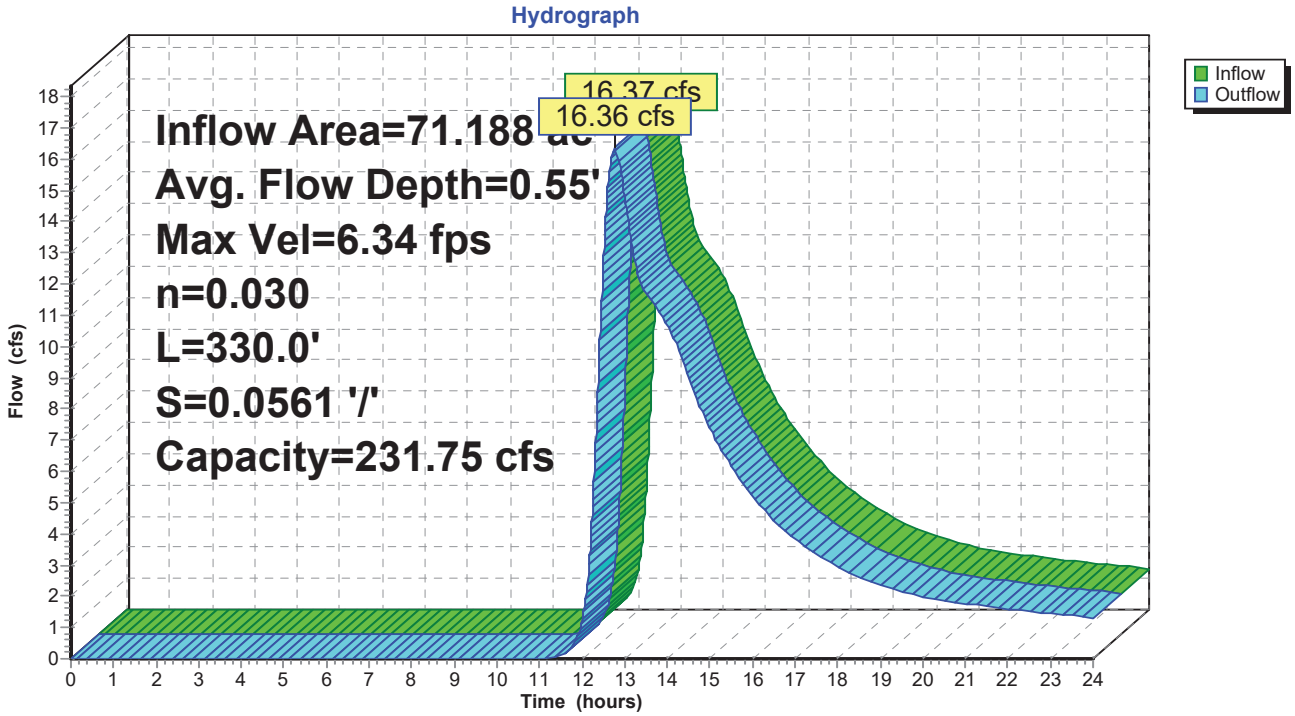
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 6.34 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 3.80 fps, Avg. Travel Time= 1.4 min

Peak Storage= 852 cf @ 12.76 hrs
Average Depth at Peak Storage= 0.55'
Bank-Full Depth= 2.00' Flow Area= 18.0 sf, Capacity= 231.75 cfs

3.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 15.00'
Length= 330.0' Slope= 0.0561 '/'
Inlet Invert= 234.50', Outlet Invert= 216.00'

‡

Reach R2: Site Wetland Channel



Summary for Reach R3: Old Lisbon Rd - I-95

Inflow Area = 48.533 ac, 1.85% Impervious, Inflow Depth > 0.78" for 2-YR event
Inflow = 8.36 cfs @ 13.77 hrs, Volume= 3.142 af
Outflow = 8.35 cfs @ 13.80 hrs, Volume= 3.135 af, Atten= 0%, Lag= 2.1 min

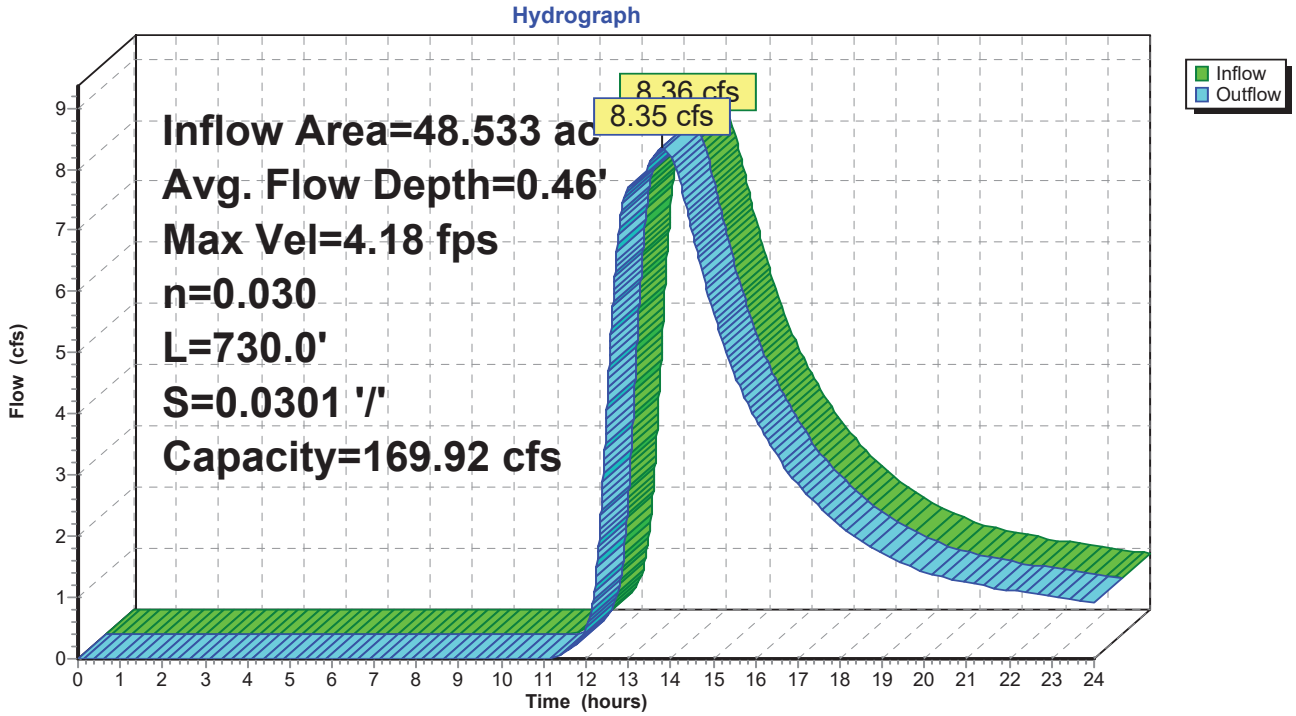
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.18 fps, Min. Travel Time= 2.9 min
Avg. Velocity = 2.71 fps, Avg. Travel Time= 4.5 min

Peak Storage= 1,458 cf @ 13.80 hrs
Average Depth at Peak Storage= 0.46'
Bank-Full Depth= 2.00' Flow Area= 18.0 sf, Capacity= 169.92 cfs

3.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 15.00'
Length= 730.0' Slope= 0.0301 '/'
Inlet Invert= 258.00', Outlet Invert= 236.00'

‡

Reach R3: Old Lisbon Rd - I-95



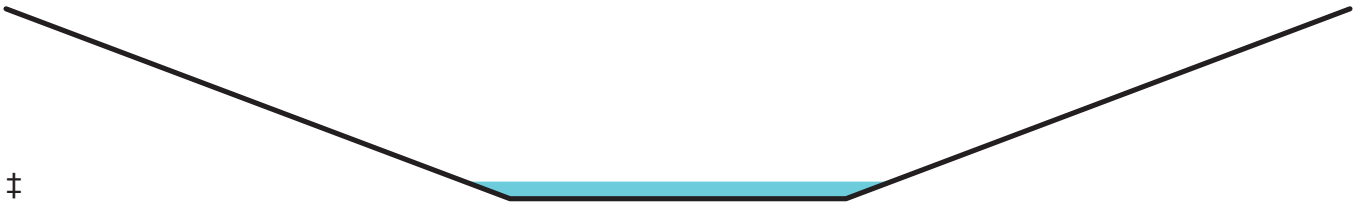
Summary for Reach R4: (new Reach)

Inflow Area = 34.550 ac, 0.00% Impervious, Inflow Depth > 0.67" for 2-YR event
Inflow = 5.98 cfs @ 13.97 hrs, Volume= 1.920 af
Outflow = 5.98 cfs @ 13.99 hrs, Volume= 1.917 af, Atten= 0%, Lag= 0.8 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 7.33 fps, Min. Travel Time= 1.2 min
Avg. Velocity = 4.52 fps, Avg. Travel Time= 2.0 min

Peak Storage= 440 cf @ 13.99 hrs
Average Depth at Peak Storage= 0.18'
Bank-Full Depth= 2.00' Flow Area= 20.0 sf, Capacity= 564.90 cfs

4.00' x 2.00' deep channel, n= 0.012 Wood, Planed
Side Slope Z-value= 3.0 '/' Top Width= 16.00'
Length= 540.0' Slope= 0.0407 '/'
Inlet Invert= 296.00', Outlet Invert= 274.00'



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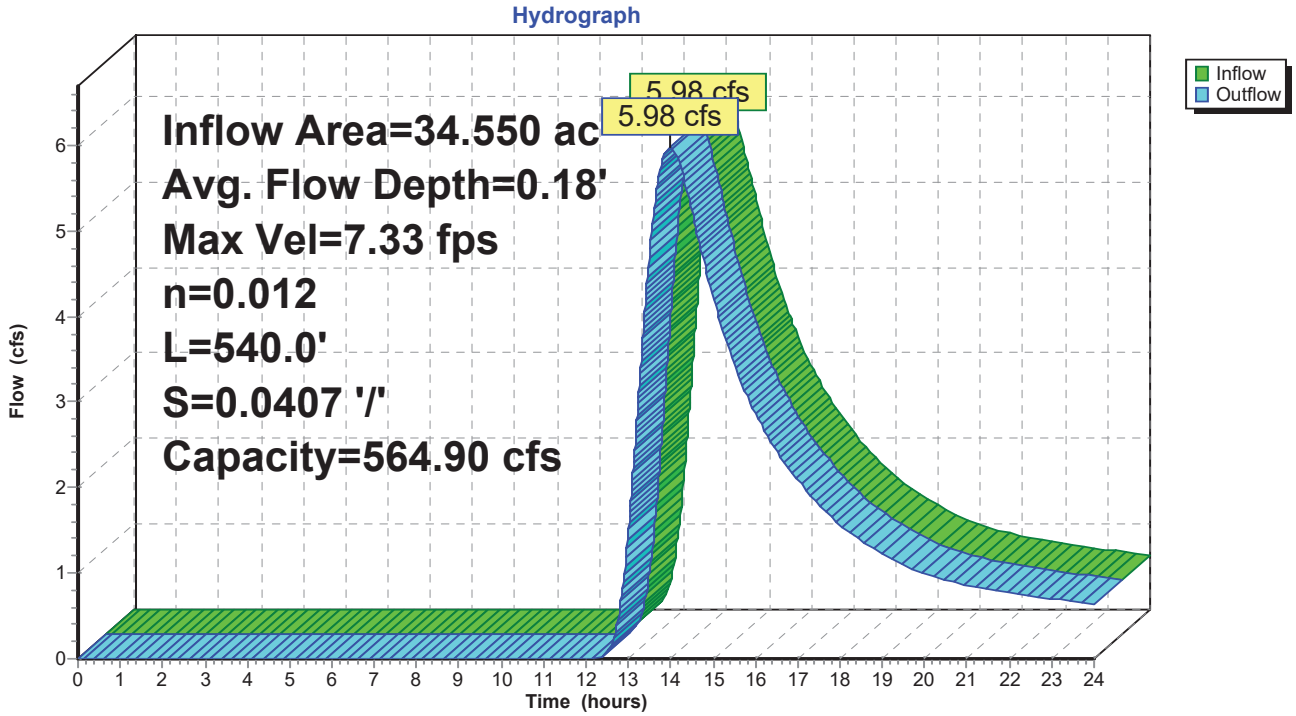
Reach R4: (new Reach)



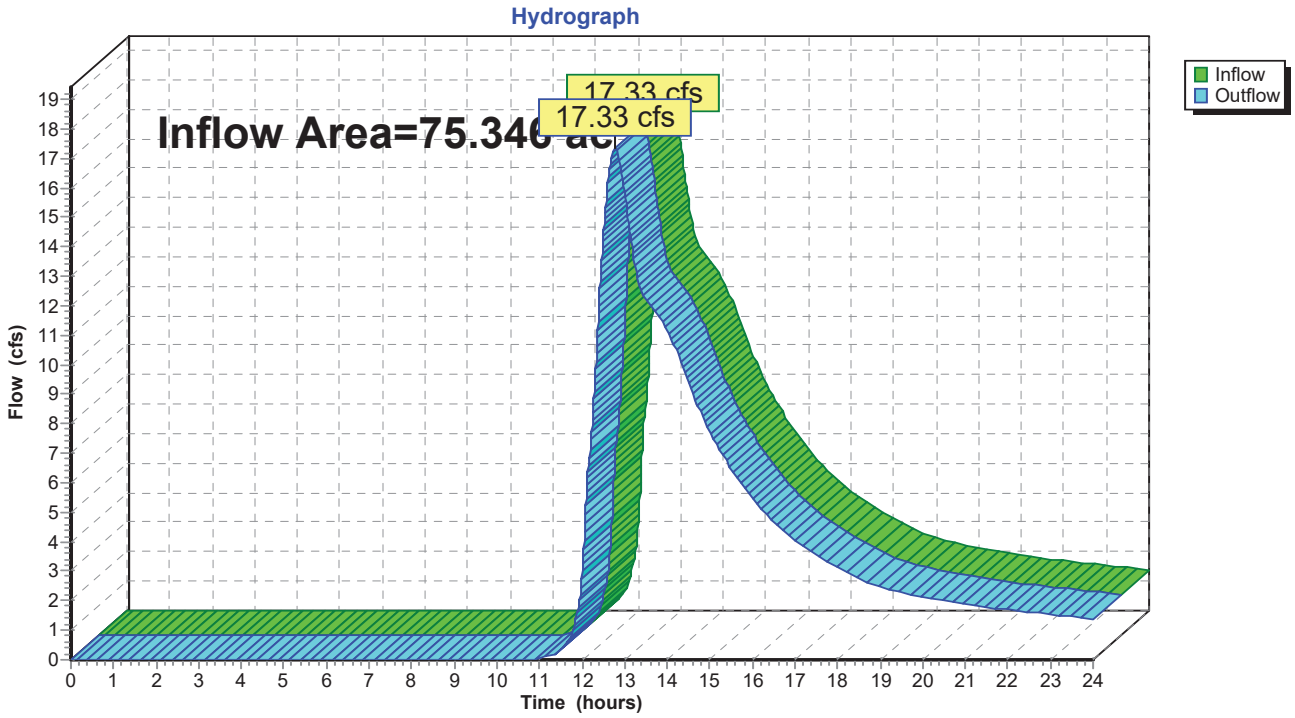
Summary for Reach SP1: Study Point 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 75.346 ac, 2.75% Impervious, Inflow Depth > 0.81" for 2-YR event
Inflow = 17.33 cfs @ 12.78 hrs, Volume= 5.115 af
Outflow = 17.33 cfs @ 12.78 hrs, Volume= 5.115 af, Atten= 0%, Lag= 0.0 min

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

Reach SP1: Study Point 1



Summary for Pond P2: Railroad Outlet

Inflow Area = 75.346 ac, 2.75% Impervious, Inflow Depth > 0.82" for 2-YR event
Inflow = 17.40 cfs @ 12.75 hrs, Volume= 5.119 af
Outflow = 17.33 cfs @ 12.78 hrs, Volume= 5.115 af, Atten= 0%, Lag= 1.7 min
Primary = 17.33 cfs @ 12.78 hrs, Volume= 5.115 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 212.42' @ 12.78 hrs Surf.Area= 1,380 sf Storage= 707 cf

Plug-Flow detention time= 0.8 min calculated for 5.115 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (928.6 - 928.2)

Volume	Invert	Avail.Storage	Storage Description
#1	209.00'	151,705 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

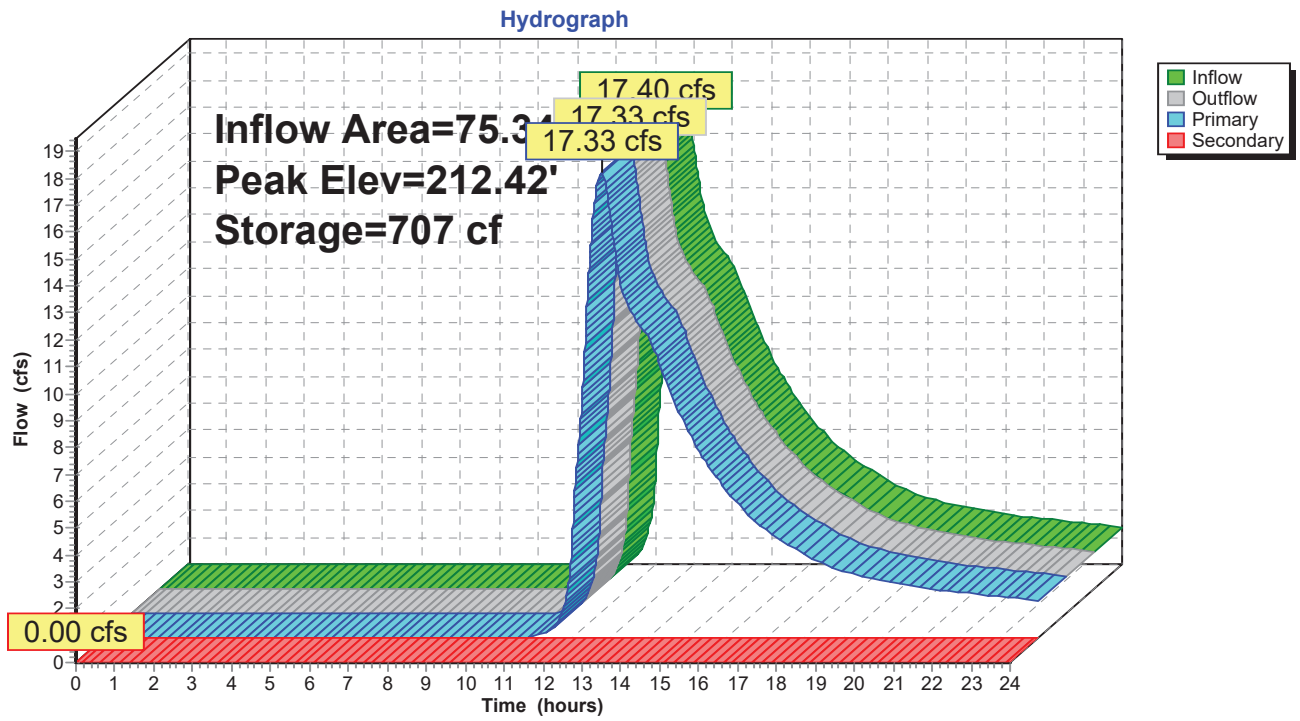
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
209.00	50	0	0
210.00	100	75	75
212.00	200	300	375
214.00	5,818	6,018	6,393
216.00	13,161	18,979	25,372
218.00	17,586	30,747	56,119
220.00	24,000	41,586	97,705
222.00	30,000	54,000	151,705

Device	Routing	Invert	Outlet Devices
#1	Primary	210.33'	**24.0" W x 24.0" H Box Culvert** L= 40.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 210.33' / 209.47' S= 0.0215 '/' Cc= 0.900 n= 0.025 Rubble masonry, cemented, Flow Area= 4.00 sf
#2	Secondary	221.50'	**50.0' long x 50.0' 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

Primary OutFlow Max=17.33 cfs @ 12.78 hrs HW=212.42' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 17.33 cfs @ 5.53 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=209.00' TW=0.00' (Dynamic Tailwater)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P2: Railroad Outlet



Summary for Pond P3: I-95

[44] Hint: Outlet device #1 is below defined storage
[44] Hint: Outlet device #2 is below defined storage

Inflow Area =	71.188 ac,	2.91% Impervious,	Inflow Depth >	0.80"	for 2-YR event
Inflow =	16.37 cfs @	12.75 hrs,	Volume=	4.732 af	
Outflow =	16.37 cfs @	12.75 hrs,	Volume=	4.732 af,	Atten= 0%, Lag= 0.0 min
Primary =	0.03 cfs @	12.74 hrs,	Volume=	0.010 af	
Secondary =	16.34 cfs @	12.75 hrs,	Volume=	4.723 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 236.00' @ 0.00 hrs Surf.Area= 13,500 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (933.2 - 933.2)

Volume	Invert	Avail.Storage	Storage Description
#1	236.00'	33,973 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

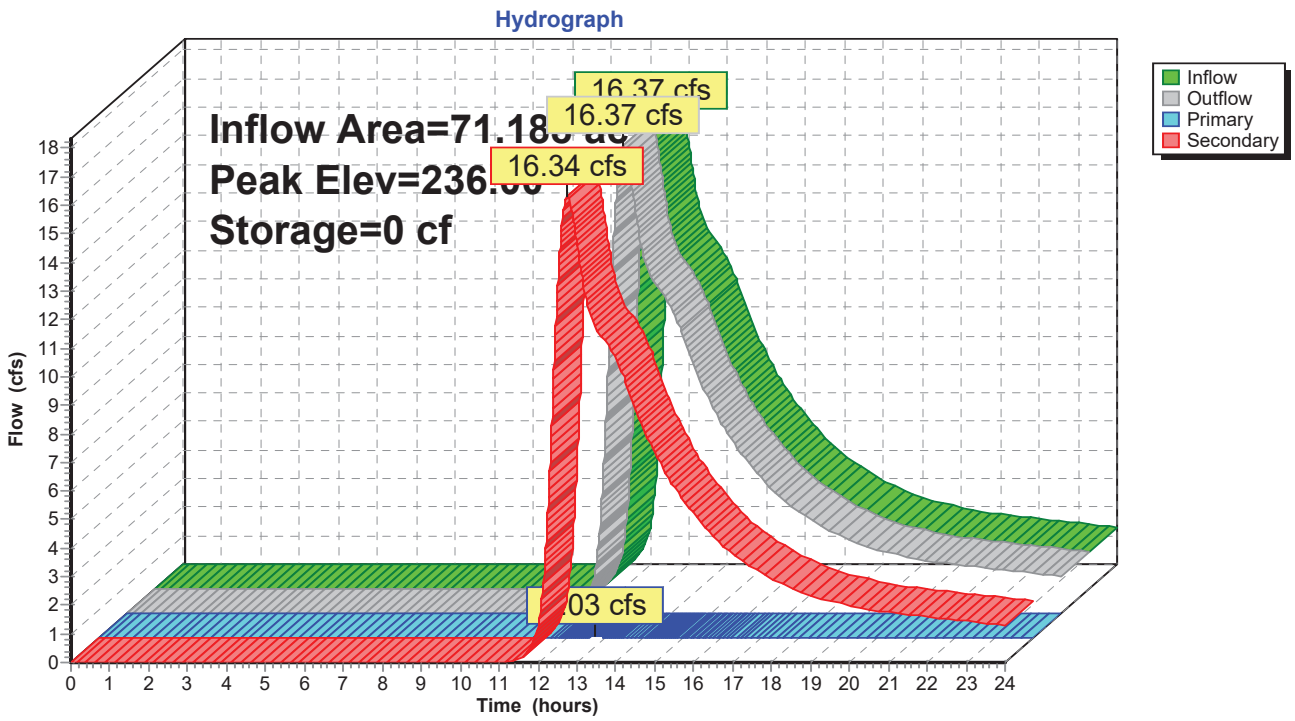
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
236.00	13,500	0	0
238.00	20,473	33,973	33,973

Device	Routing	Invert	Outlet Devices
#1	Primary	225.50'	**30.0" Round Culvert** L= 250.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 225.50' / 224.50' S= 0.0040 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf
#2	Secondary	228.00'	**300.0' long x 90.0' 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

Primary OutFlow Max=0.00 cfs @ 12.74 hrs HW=236.00' TW=235.05' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.00 cfs of 18.15 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 12.75 hrs HW=236.00' TW=235.05' (Dynamic Tailwater)
└─**2=Broad-Crested Rectangular Weir** (Passes 0.00 cfs of 9,067.59 cfs potential flow)

Pond P3: I-95


Hydrograph
Inflow Area=71.18
Peak Elev=236.
Storage=0 cf
16.37 cfs
16.37 cfs
16.34 cfs
03 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)

Summary for Pond P4: Old Lisbon Road

Inflow Area =	48.533 ac,	1.85% Impervious,	Inflow Depth >	0.78"	for 2-YR event
Inflow =	8.36 cfs @	13.75 hrs,	Volume=	3.146 af	
Outflow =	8.36 cfs @	13.77 hrs,	Volume=	3.142 af,	Atten= 0%, Lag= 1.4 min
Primary =	8.36 cfs @	13.77 hrs,	Volume=	3.142 af	
Secondary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 267.50' @ 13.77 hrs Surf.Area= 839 sf Storage= 894 cf

Plug-Flow detention time= 2.2 min calculated for 3.141 af (100% of inflow)
Center-of-Mass det. time= 1.5 min (948.9 - 947.4)

Volume	Invert	Avail.Storage	Storage Description
#1	266.00'	51,550 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

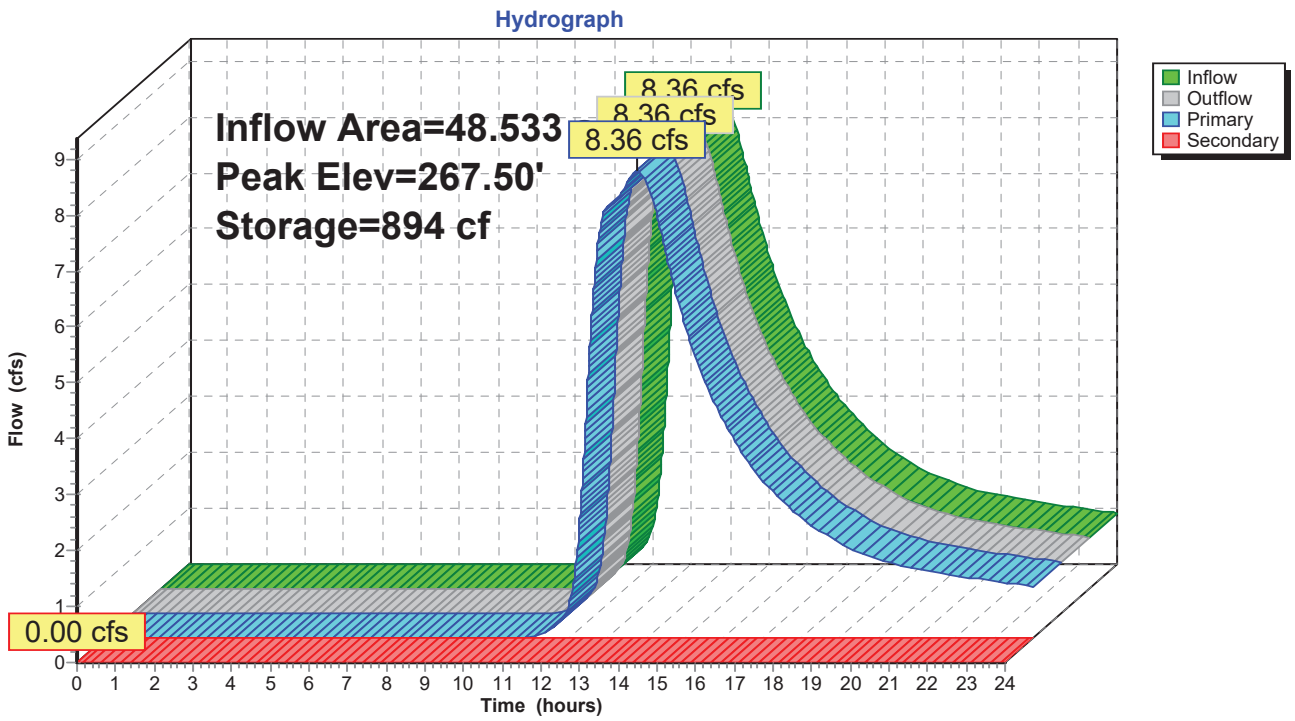
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
266.00	350	0	0
268.00	1,000	1,350	1,350
270.00	2,100	3,100	4,450
272.00	6,000	8,100	12,550
274.00	9,500	15,500	28,050
276.00	14,000	23,500	51,550

Device	Routing	Invert	Outlet Devices
#1	Primary	266.00'	**24.0" Round Culvert** L= 100.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 266.00' / 265.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Secondary	274.00'	**50.0' long x 24.0' 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

Primary OutFlow Max=8.36 cfs @ 13.77 hrs HW=267.50' TW=258.46' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 8.36 cfs @ 3.30 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=266.00' TW=258.00' (Dynamic Tailwater)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P4: Old Lisbon Road



Summary for Pond P5: Forest Wetland

Inflow Area = 34.550 ac, 0.00% Impervious, Inflow Depth > 0.69" for 2-YR event
Inflow = 6.84 cfs @ 13.52 hrs, Volume= 1.983 af
Outflow = 5.98 cfs @ 13.97 hrs, Volume= 1.920 af, Atten= 13%, Lag= 26.9 min
Primary = 5.98 cfs @ 13.97 hrs, Volume= 1.920 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 296.20' @ 13.99 hrs Surf.Area= 1.371 ac Storage= 0.264 af

Plug-Flow detention time= 43.3 min calculated for 1.919 af (97% of inflow)
Center-of-Mass det. time= 28.4 min (980.5 - 952.1)

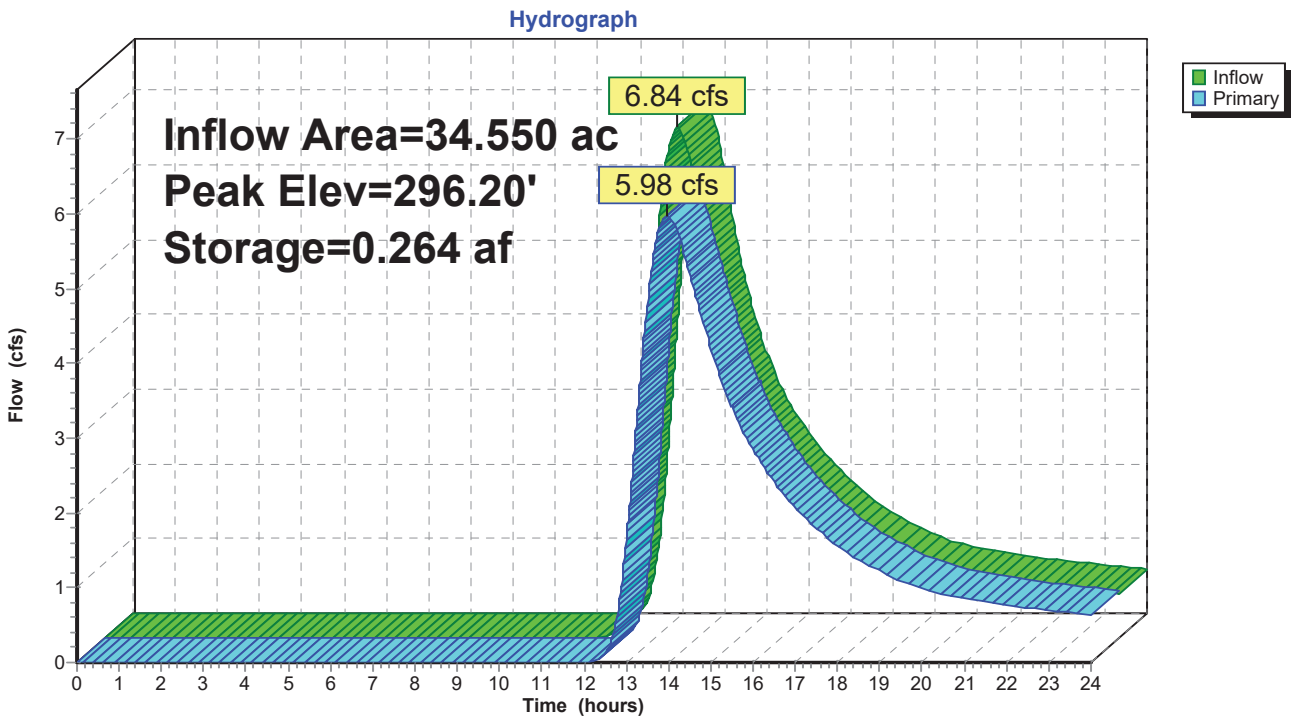
Volume	Invert	Avail.Storage	Storage Description
#1	296.00'	3.920 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
296.00	1.220	0.000	0.000
298.00	2.700	3.920	3.920

Device	Routing	Invert	Outlet Devices
#1	Primary	296.00'	**50.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=5.97 cfs @ 13.97 hrs HW=296.20' TW=296.18' (Dynamic Tailwater)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 5.97 cfs @ 0.59 fps)

Pond P5: Forest Wetland



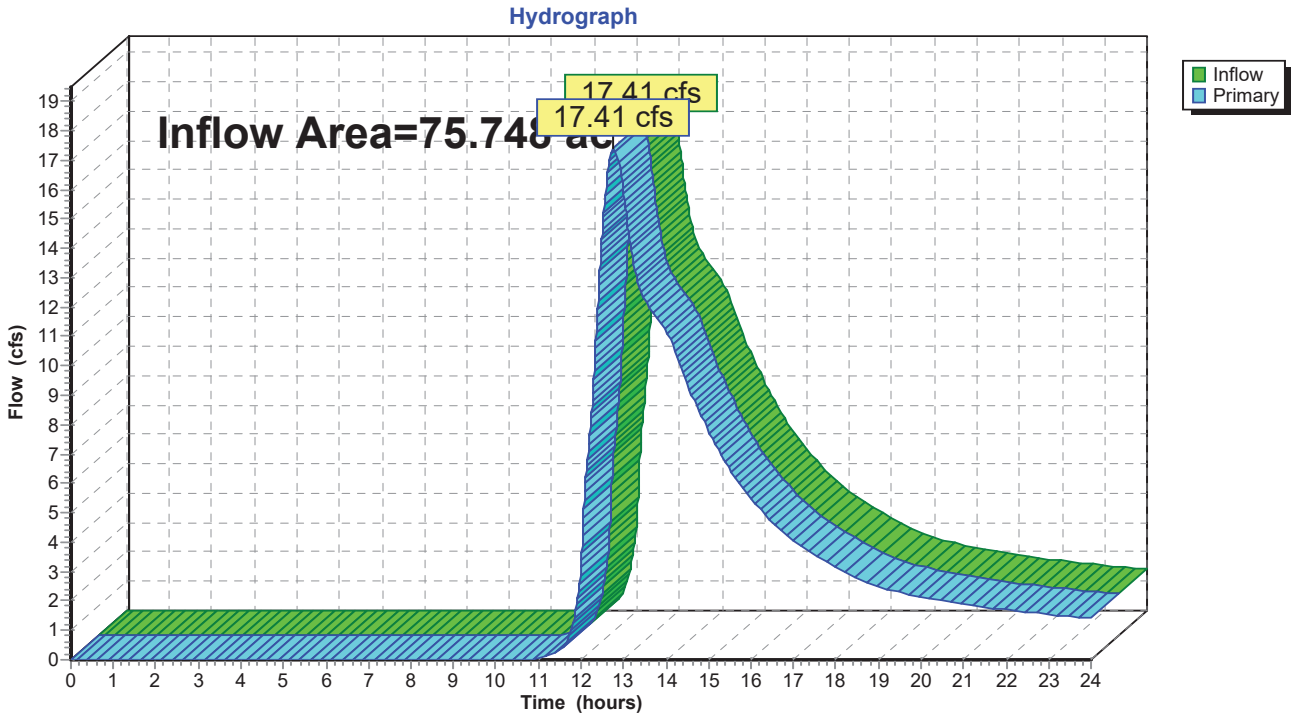
Summary for Pond TOTAL: COMBINED

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 75.748 ac, 2.74% Impervious, Inflow Depth > 0.82" for 2-YR event
Inflow = 17.41 cfs @ 12.78 hrs, Volume= 5.153 af
Primary = 17.41 cfs @ 12.78 hrs, Volume= 5.153 af, Atten= 0%, Lag= 0.0 min

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

Pond TOTAL: COMBINED



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

Subcatchment WS-1: West Site Runoff Area=99,472 sf 0.00% Impervious Runoff Depth>2.13"
Flow Length=304' Tc=8.1 min CN=78 Runoff=5.29 cfs 0.404 af

Subcatchment WS-2: East Site Runoff Area=81,652 sf 0.00% Impervious Runoff Depth>2.12"
Flow Length=303' Tc=19.2 min CN=78 Runoff=3.20 cfs 0.331 af

Subcatchment WS-3: Offsite flow Runoff Area=17,531 sf 0.00% Impervious Runoff Depth>2.13"
Tc=5.0 min CN=78 Runoff=1.04 cfs 0.071 af

Subcatchment WS-4: North 95 Runoff Area=22.655 ac 5.19% Impervious Runoff Depth>1.73"
Flow Length=1,483' Tc=43.6 min CN=73 Runoff=21.38 cfs 3.261 af

Subcatchment WS-5: North Old Lisbon Rd Runoff Area=13.983 ac 6.44% Impervious Runoff Depth>2.02"
Flow Length=1,349' Tc=56.4 min CN=77 Runoff=13.58 cfs 2.356 af

Subcatchment WS-6: Uphill North Old Runoff Area=34.550 ac 0.00% Impervious Runoff Depth>1.49"
Flow Length=2,370' Tc=104.0 min CN=70 Runoff=16.21 cfs 4.284 af

Reach R2: Site Wetland Channel Avg. Flow Depth=0.82' Max Vel=7.85 fps Inflow=35.17 cfs 9.790 af
n=0.030 L=330.0' S=0.0561 '/' Capacity=231.75 cfs Outflow=35.15 cfs 9.785 af

Reach R3: Old Lisbon Rd - I-95 Avg. Flow Depth=0.73' Max Vel=5.38 fps Inflow=20.21 cfs 6.540 af
n=0.030 L=730.0' S=0.0301 '/' Capacity=169.92 cfs Outflow=20.21 cfs 6.529 af

Reach R4: (new Reach) Avg. Flow Depth=0.31' Max Vel=10.01 fps Inflow=15.04 cfs 4.193 af
n=0.012 L=540.0' S=0.0407 '/' Capacity=564.90 cfs Outflow=15.03 cfs 4.190 af

Reach SP1: Study Point 1 Inflow=32.82 cfs 10.516 af
Outflow=32.82 cfs 10.516 af

Pond P2: Railroad Outlet Peak Elev=214.97' Storage=13,729 cf Inflow=37.02 cfs 10.521 af
Primary=32.82 cfs 10.516 af Secondary=0.00 cfs 0.000 af Outflow=32.82 cfs 10.516 af

Pond P3: I-95 Peak Elev=236.00' Storage=0 cf Inflow=35.17 cfs 9.790 af
Primary=0.07 cfs 0.020 af Secondary=35.10 cfs 9.770 af Outflow=35.17 cfs 9.790 af

Pond P4: Old Lisbon Road Peak Elev=269.86' Storage=4,171 cf Inflow=20.37 cfs 6.546 af
Primary=20.21 cfs 6.540 af Secondary=0.00 cfs 0.000 af Outflow=20.21 cfs 6.540 af

Pond P5: Forest Wetland Peak Elev=296.36' Storage=0.482 af Inflow=16.21 cfs 4.284 af
Outflow=15.04 cfs 4.193 af

Pond TOTAL: COMBINED Inflow=32.92 cfs 10.588 af
Primary=32.92 cfs 10.588 af

Total Runoff Area = 75.748 ac Runoff Volume = 10.708 af Average Runoff Depth = 1.70"
97.26% Pervious = 73.673 ac 2.74% Impervious = 2.075 ac

Summary for Subcatchment WS-1: West Site

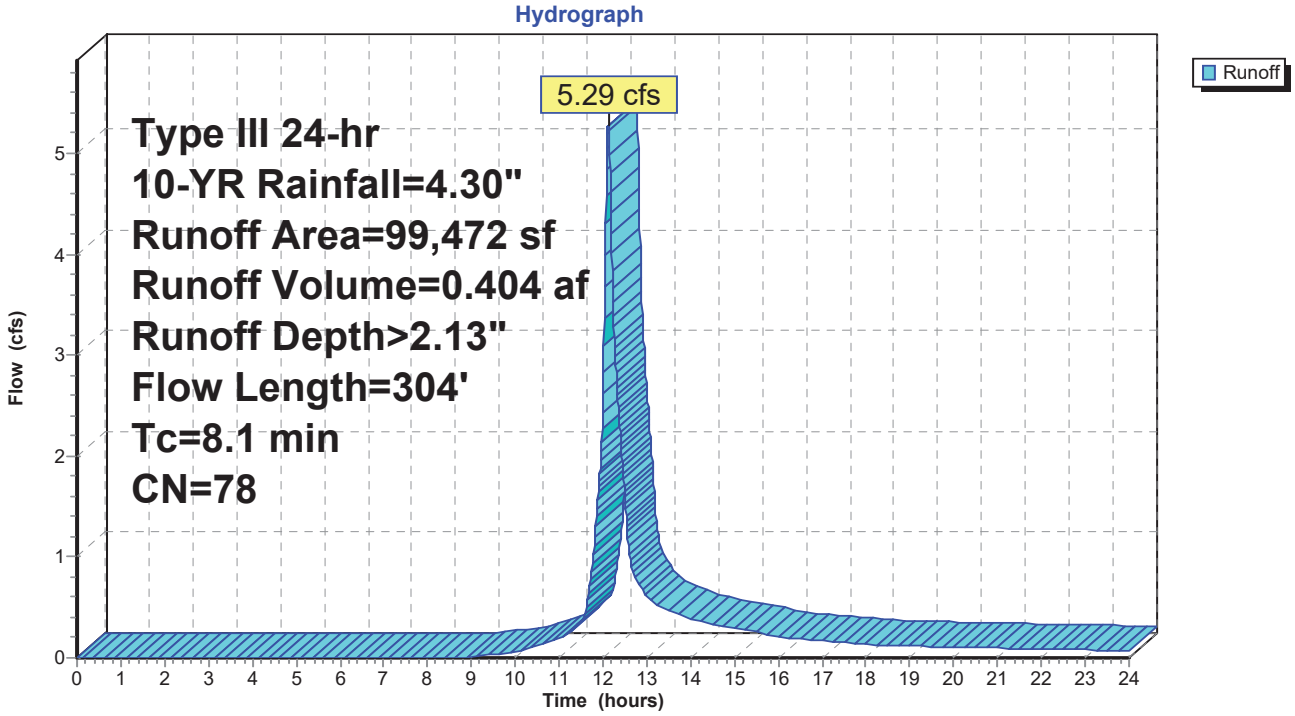
Runoff = 5.29 cfs @ 12.12 hrs, Volume= 0.404 af, Depth> 2.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.30"

Area (sf)	CN	Description
99,472	78	Meadow, non-grazed, HSG D
99,472		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	118	0.1530	0.26		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.00"
0.6	186	0.0400	5.06	11.39	**Trap/Vee/Rect Channel Flow, B-C** Bot.W=3.00' D=0.50' Z= 3.0 '/' Top.W=6.00' n= 0.030 Earth, grassed & winding
8.1	304	Total			

Subcatchment WS-1: West Site



Summary for Subcatchment WS-2: East Site

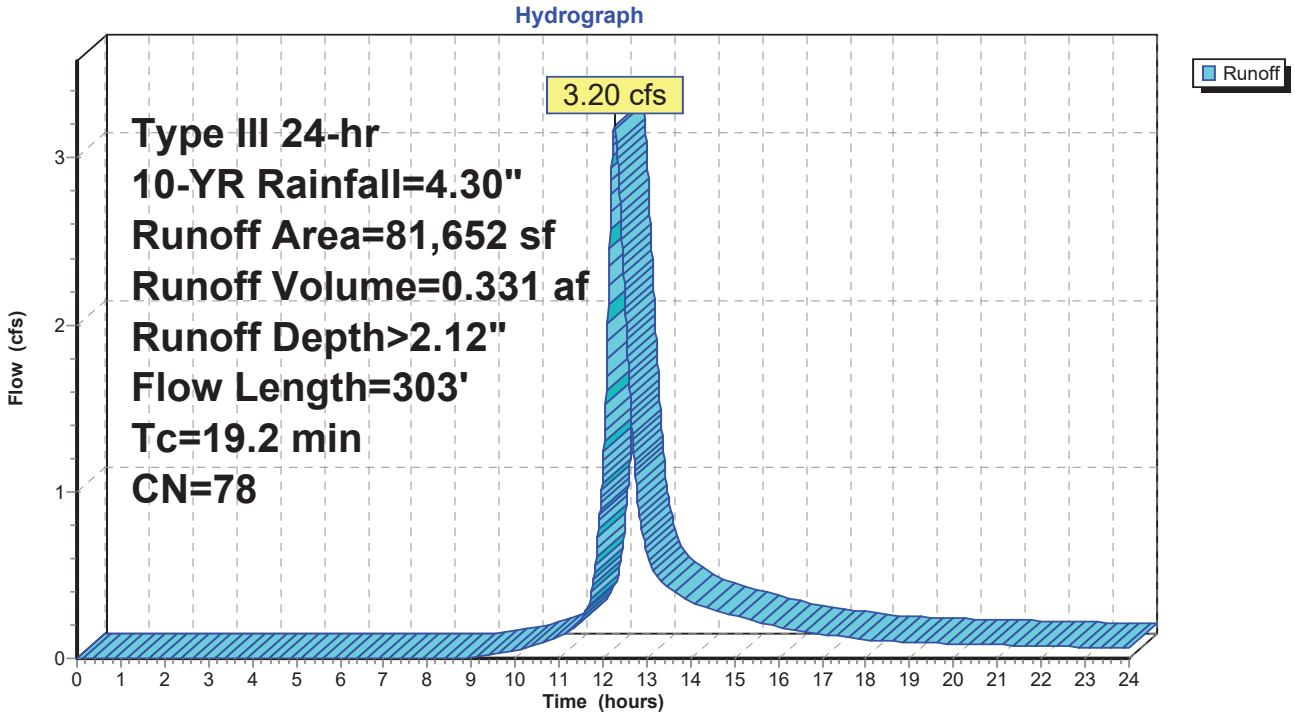
Runoff = 3.20 cfs @ 12.27 hrs, Volume= 0.331 af, Depth> 2.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.30"

Area (sf)	CN	Description
81,652	78	Meadow, non-grazed, HSG D
81,652		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.1	150	0.0270	0.14		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.00"
1.1	153	0.1200	2.42		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
19.2	303	Total			

Subcatchment WS-2: East Site



Summary for Subcatchment WS-3: Offsite flow

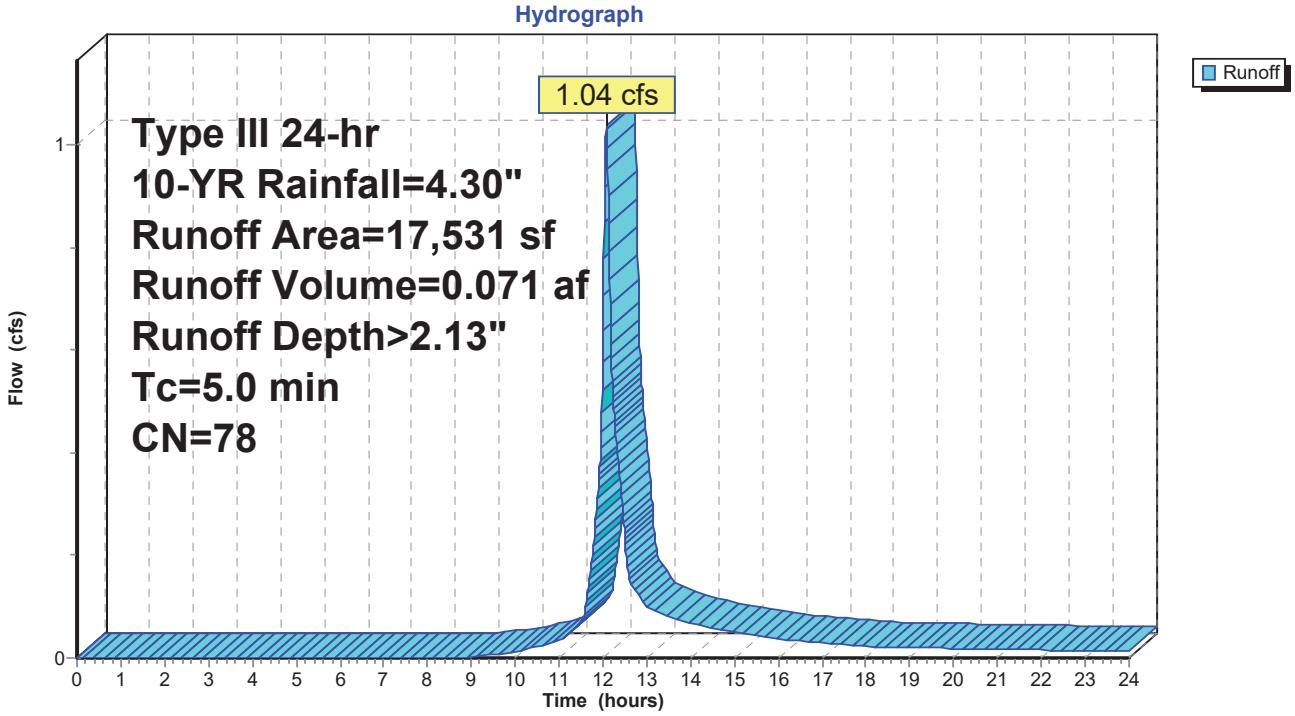
Runoff = 1.04 cfs @ 12.08 hrs, Volume= 0.071 af, Depth> 2.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.30"

Area (sf)	CN	Description
17,531	78	Meadow, non-grazed, HSG D
17,531		100.00% Pervious Area

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

Subcatchment WS-3: Offsite flow



Summary for Subcatchment WS-4: North 95

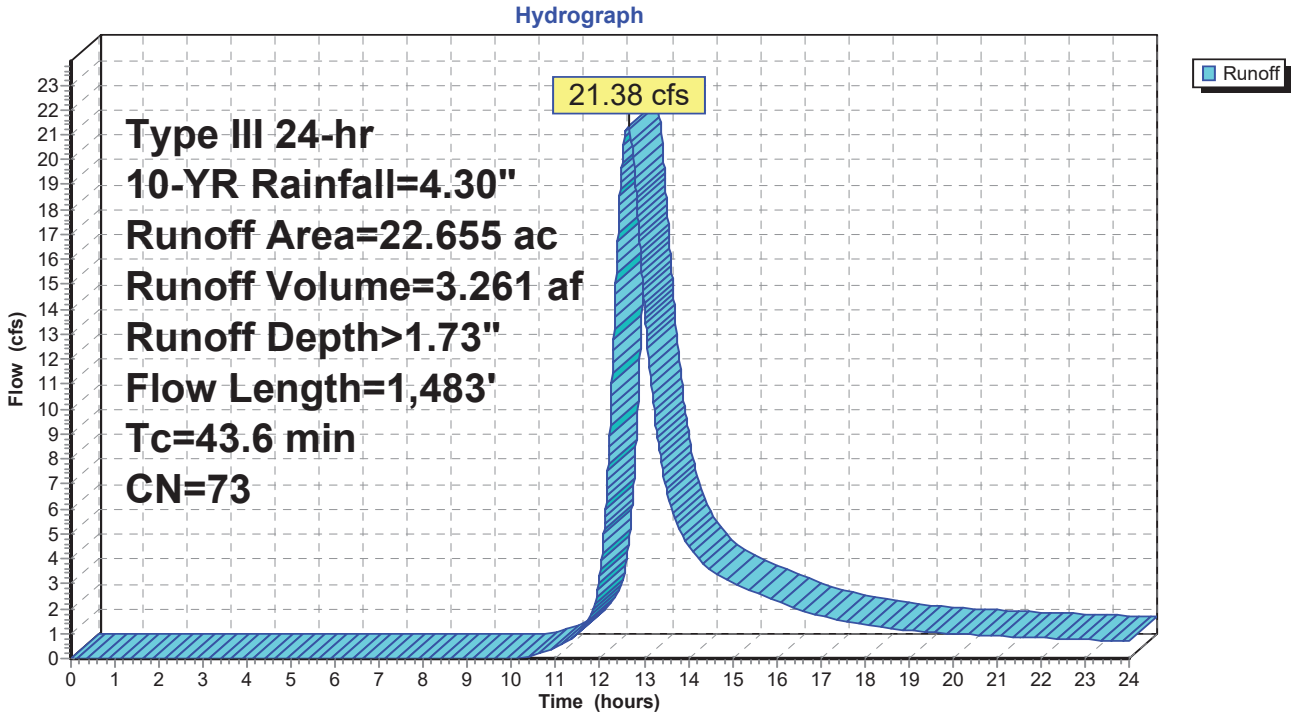
Runoff = 21.38 cfs @ 12.64 hrs, Volume= 3.261 af, Depth> 1.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.30"

Area (ac)	CN	Description
2.000	80	1/2 acre lots, 25% imp, HSG C
0.500	85	1/2 acre lots, 25% imp, HSG D
0.550	98	Paved roads w/curbs & sewers, HSG C
15.380	70	Woods, Good, HSG C
4.225	77	Woods, Good, HSG D
22.655	73	Weighted Average
21.480		94.81% Pervious Area
1.175		5.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.7	150	0.0870	0.08		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 3.00"
12.6	947	0.0630	1.25		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
1.3	386	0.0210	5.00	11.25	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=3.00' D=0.50' Z= 3.0 '/' Top.W=6.00' n= 0.022 Earth, clean & straight
43.6	1,483	Total			

Subcatchment WS-4: North 95



Summary for Subcatchment WS-5: North Old Lisbon Rd

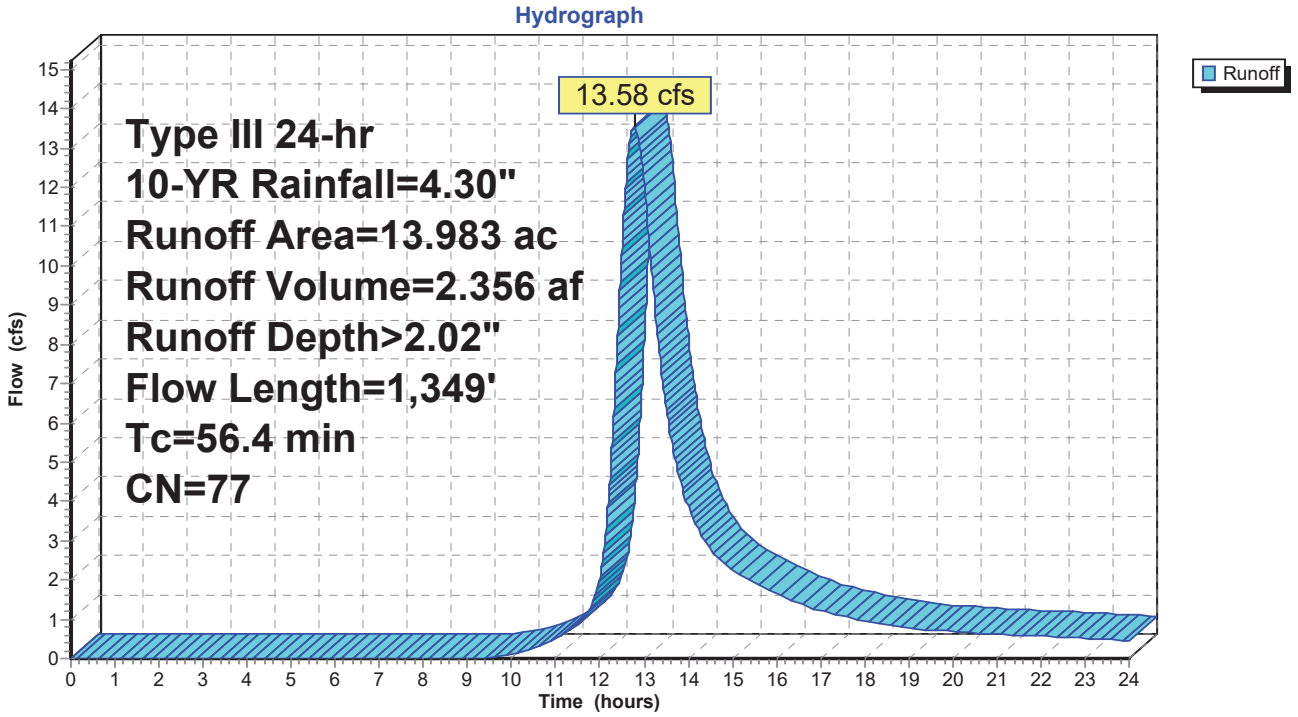
Runoff = 13.58 cfs @ 12.78 hrs, Volume= 2.356 af, Depth> 2.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.30"

Area (ac)	CN	Description
0.500	85	1/2 acre lots, 25% imp, HSG D
2.000	80	1/2 acre lots, 25% imp, HSG C
0.275	98	Paved roads w/curbs & sewers, HSG D
8.450	77	Woods, Good, HSG D
2.758	70	Woods, Good, HSG C
13.983	77	Weighted Average
13.083		93.56% Pervious Area
0.900		6.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.9	150	0.0470	0.07		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 3.00"
18.3	1,097	0.0400	1.00		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.2	102	0.0590	7.98	13.96	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=2.00' D=0.50' Z= 3.0 '/' Top.W=5.00' n= 0.022 Earth, clean & straight
56.4	1,349	Total			

Subcatchment WS-5: North Old Lisbon Rd



Summary for Subcatchment WS-6: Uphill North Old Lisbon Rd

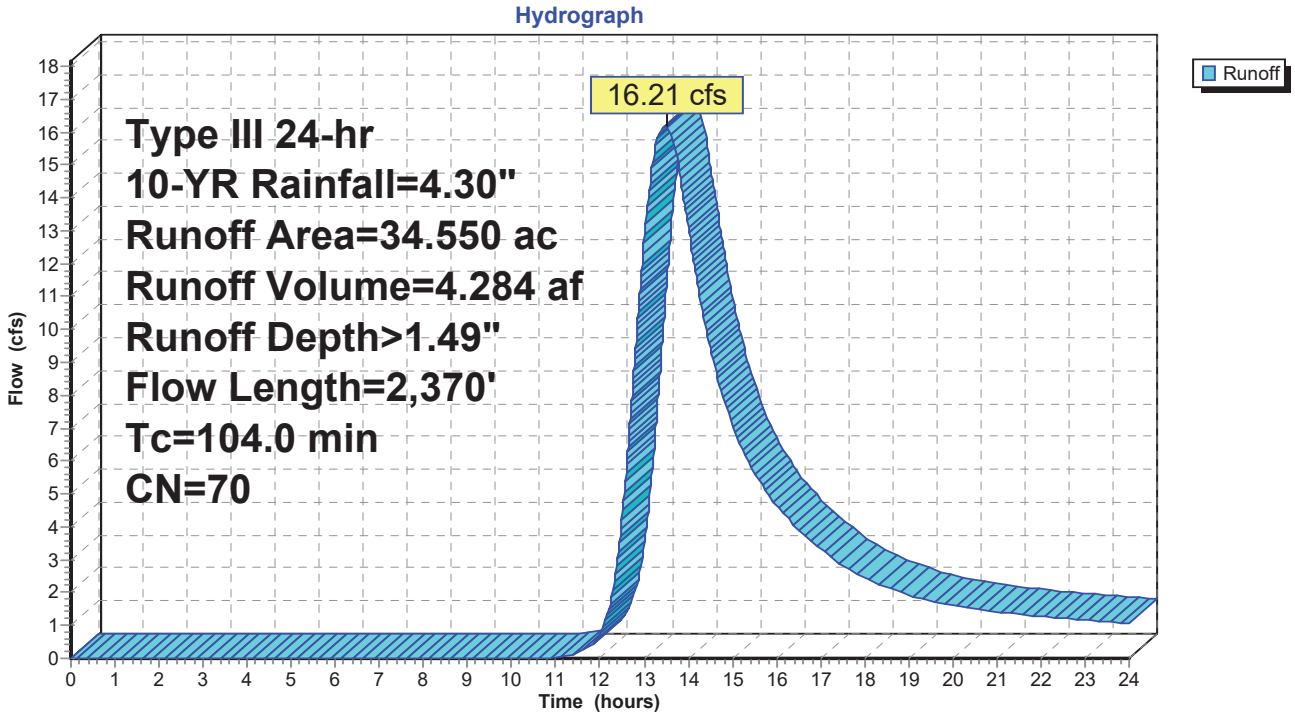
Runoff = 16.21 cfs @ 13.52 hrs, Volume= 4.284 af, Depth> 1.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.30"

Area (ac)	CN	Description
34.550	70	Woods, Good, HSG C
34.550		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
47.7	150	0.0266	0.05		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 3.00"
9.7	970	0.1100	1.66		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
46.6	1,250	0.0080	0.45		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
104.0	2,370	Total			

Subcatchment WS-6: Uphill North Old Lisbon Rd



Summary for Reach R2: Site Wetland Channel

Inflow Area = 71.188 ac, 2.91% Impervious, Inflow Depth > 1.65" for 10-YR event
Inflow = 35.17 cfs @ 12.74 hrs, Volume= 9.790 af
Outflow = 35.15 cfs @ 12.75 hrs, Volume= 9.785 af, Atten= 0%, Lag= 0.5 min

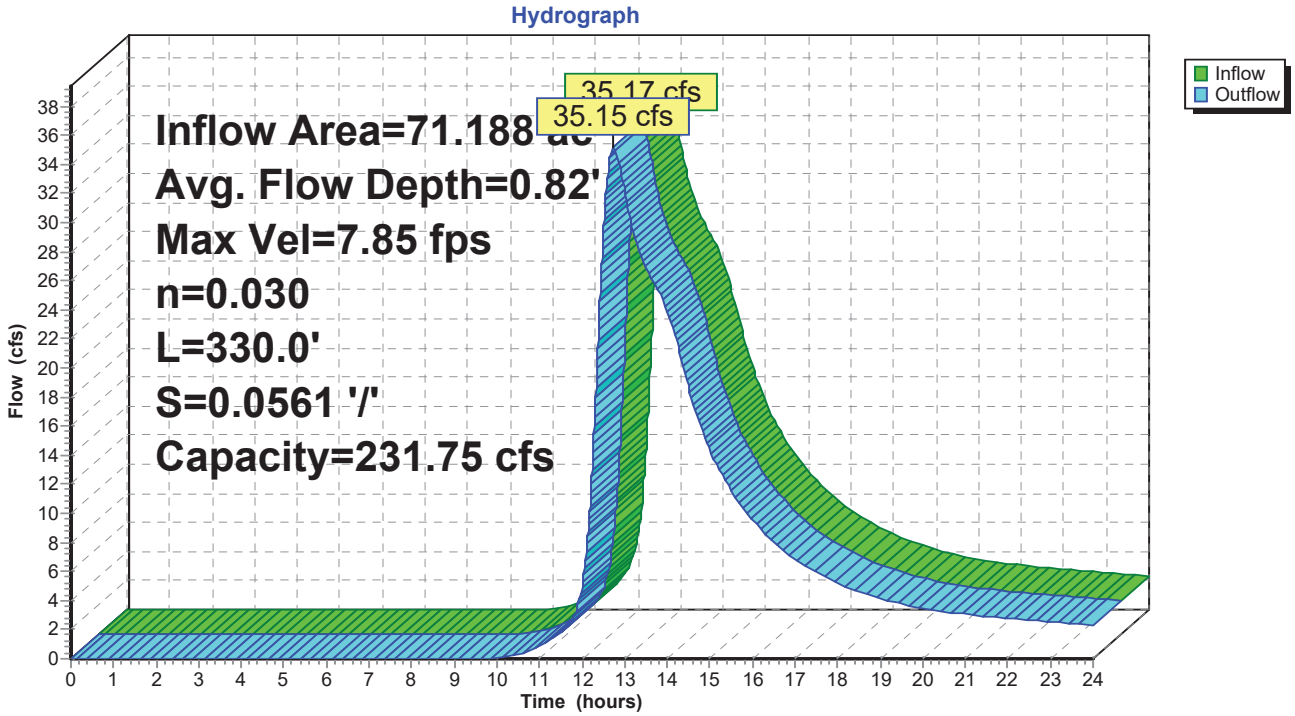
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 7.85 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 4.46 fps, Avg. Travel Time= 1.2 min

Peak Storage= 1,478 cf @ 12.75 hrs
Average Depth at Peak Storage= 0.82'
Bank-Full Depth= 2.00' Flow Area= 18.0 sf, Capacity= 231.75 cfs

3.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 15.00'
Length= 330.0' Slope= 0.0561 '/'
Inlet Invert= 234.50', Outlet Invert= 216.00'

‡

Reach R2: Site Wetland Channel



Summary for Reach R3: Old Lisbon Rd - I-95

Inflow Area = 48.533 ac, 1.85% Impervious, Inflow Depth > 1.62" for 10-YR event
Inflow = 20.21 cfs @ 13.64 hrs, Volume= 6.540 af
Outflow = 20.21 cfs @ 13.67 hrs, Volume= 6.529 af, Atten= 0%, Lag= 1.6 min

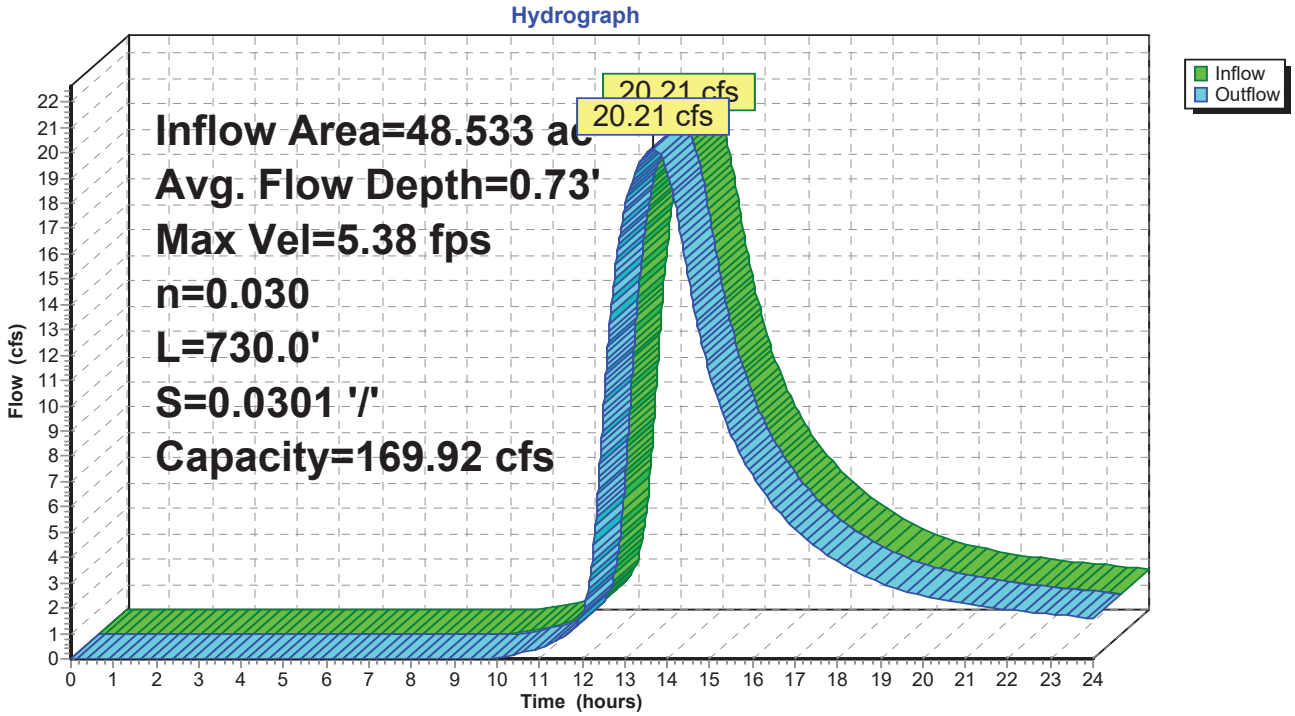
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.38 fps, Min. Travel Time= 2.3 min
Avg. Velocity = 3.17 fps, Avg. Travel Time= 3.8 min

Peak Storage= 2,742 cf @ 13.67 hrs
Average Depth at Peak Storage= 0.73'
Bank-Full Depth= 2.00' Flow Area= 18.0 sf, Capacity= 169.92 cfs

3.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 15.00'
Length= 730.0' Slope= 0.0301 '/'
Inlet Invert= 258.00', Outlet Invert= 236.00'

‡

Reach R3: Old Lisbon Rd - I-95



Summary for Reach R4: (new Reach)

Inflow Area = 34.550 ac, 0.00% Impervious, Inflow Depth > 1.46" for 10-YR event
Inflow = 15.04 cfs @ 13.76 hrs, Volume= 4.193 af
Outflow = 15.03 cfs @ 13.77 hrs, Volume= 4.190 af, Atten= 0%, Lag= 0.6 min

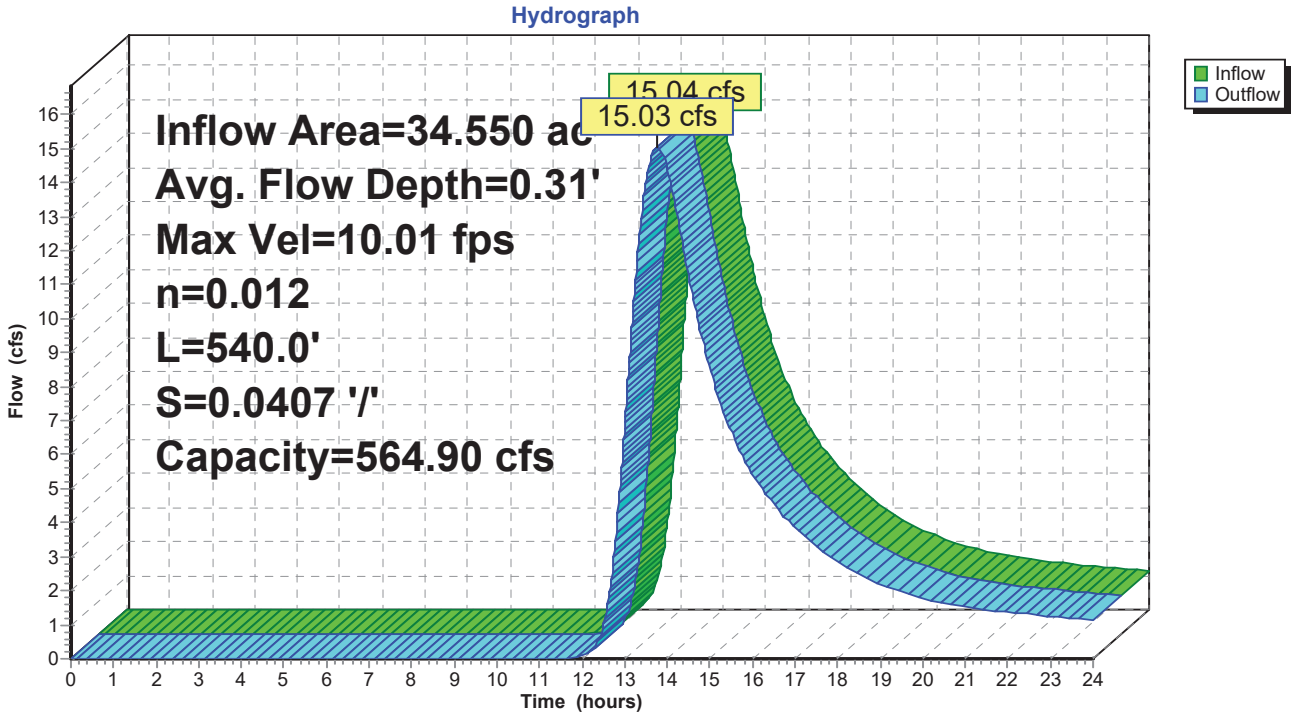
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 10.01 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 5.56 fps, Avg. Travel Time= 1.6 min

Peak Storage= 811 cf @ 13.77 hrs
Average Depth at Peak Storage= 0.31'
Bank-Full Depth= 2.00' Flow Area= 20.0 sf, Capacity= 564.90 cfs

4.00' x 2.00' deep channel, n= 0.012 Wood, Planed
Side Slope Z-value= 3.0 '/' Top Width= 16.00'
Length= 540.0' Slope= 0.0407 '/'
Inlet Invert= 296.00', Outlet Invert= 274.00'

‡

Reach R4: (new Reach)



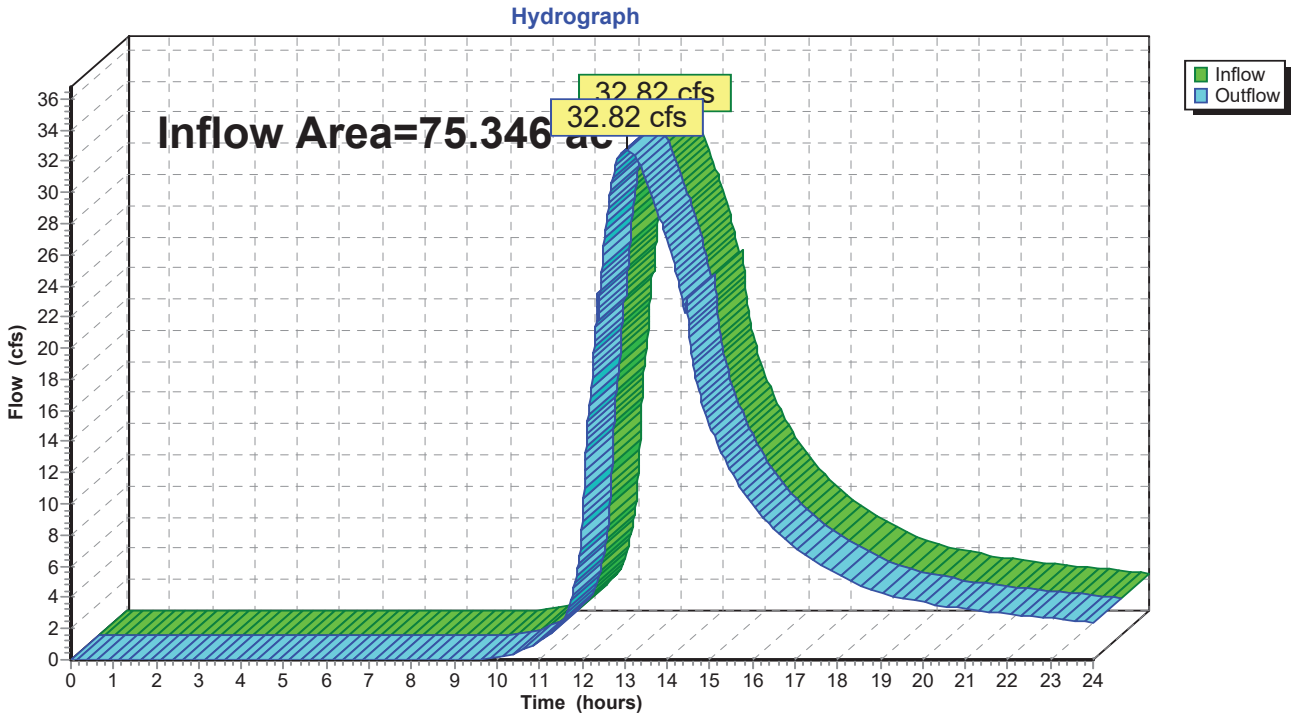
Summary for Reach SP1: Study Point 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 75.346 ac, 2.75% Impervious, Inflow Depth > 1.67" for 10-YR event
Inflow = 32.82 cfs @ 13.04 hrs, Volume= 10.516 af
Outflow = 32.82 cfs @ 13.04 hrs, Volume= 10.516 af, Atten= 0%, Lag= 0.0 min

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

Reach SP1: Study Point 1



Summary for Pond P2: Railroad Outlet

Inflow Area = 75.346 ac, 2.75% Impervious, Inflow Depth > 1.68" for 10-YR event
Inflow = 37.02 cfs @ 12.73 hrs, Volume= 10.521 af
Outflow = 32.82 cfs @ 13.04 hrs, Volume= 10.516 af, Atten= 11%, Lag= 18.6 min
Primary = 32.82 cfs @ 13.04 hrs, Volume= 10.516 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 214.97' @ 13.04 hrs Surf.Area= 9,366 sf Storage= 13,729 cf

Plug-Flow detention time= 2.7 min calculated for 10.516 af (100% of inflow)
Center-of-Mass det. time= 2.5 min (909.8 - 907.3)

Volume	Invert	Avail.Storage	Storage Description
#1	209.00'	151,705 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

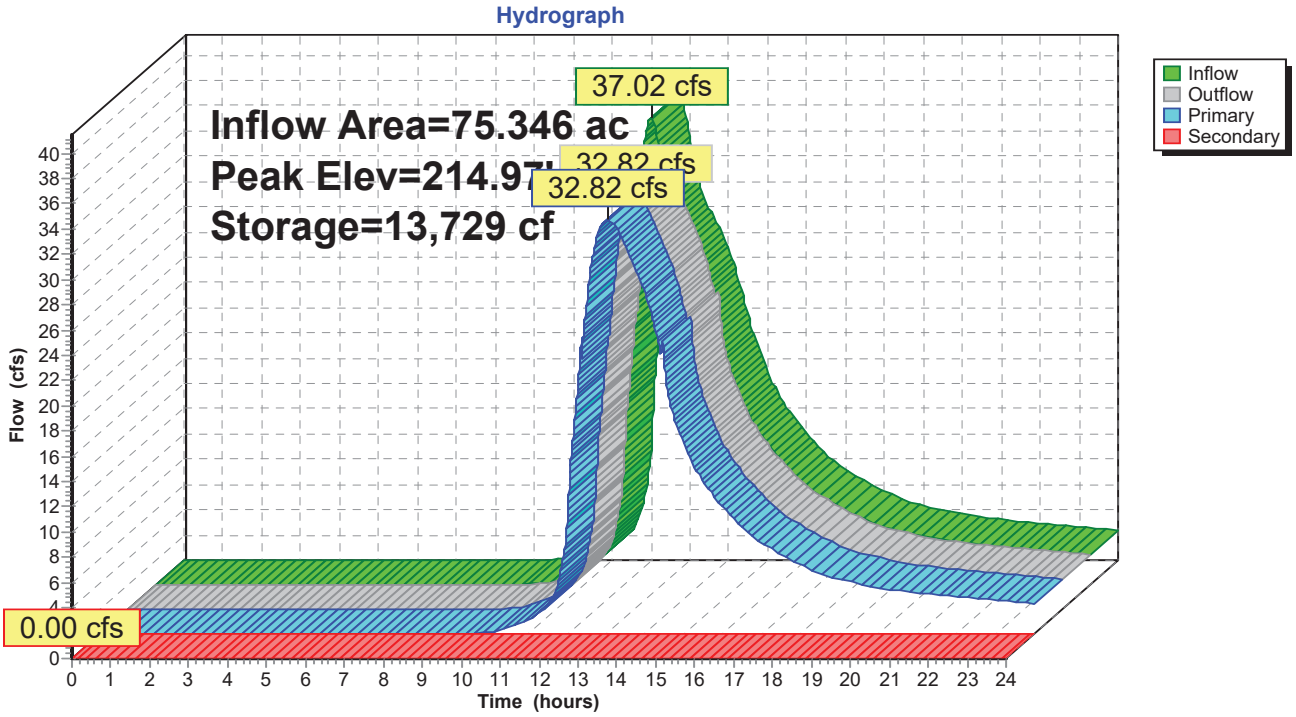
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
209.00	50	0	0
210.00	100	75	75
212.00	200	300	375
214.00	5,818	6,018	6,393
216.00	13,161	18,979	25,372
218.00	17,586	30,747	56,119
220.00	24,000	41,586	97,705
222.00	30,000	54,000	151,705

Device	Routing	Invert	Outlet Devices
#1	Primary	210.33'	**24.0" W x 24.0" H Box Culvert** L= 40.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 210.33' / 209.47' S= 0.0215 '/' Cc= 0.900 n= 0.025 Rubble masonry, cemented, Flow Area= 4.00 sf
#2	Secondary	221.50'	**50.0' long x 50.0' 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

Primary OutFlow Max=32.82 cfs @ 13.04 hrs HW=214.97' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 32.82 cfs @ 8.21 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=209.00' TW=0.00' (Dynamic Tailwater)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P2: Railroad Outlet



Summary for Pond P3: I-95

[44] Hint: Outlet device #1 is below defined storage
[44] Hint: Outlet device #2 is below defined storage

Inflow Area =	71.188 ac,	2.91% Impervious,	Inflow Depth >	1.65"	for 10-YR event
Inflow =	35.17 cfs @	12.74 hrs,	Volume=	9.790 af	
Outflow =	35.17 cfs @	12.74 hrs,	Volume=	9.790 af,	Atten= 0%, Lag= 0.0 min
Primary =	0.07 cfs @	12.74 hrs,	Volume=	0.020 af	
Secondary =	35.10 cfs @	12.74 hrs,	Volume=	9.770 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 236.00' @ 0.00 hrs Surf.Area= 13,500 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	236.00'	33,973 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

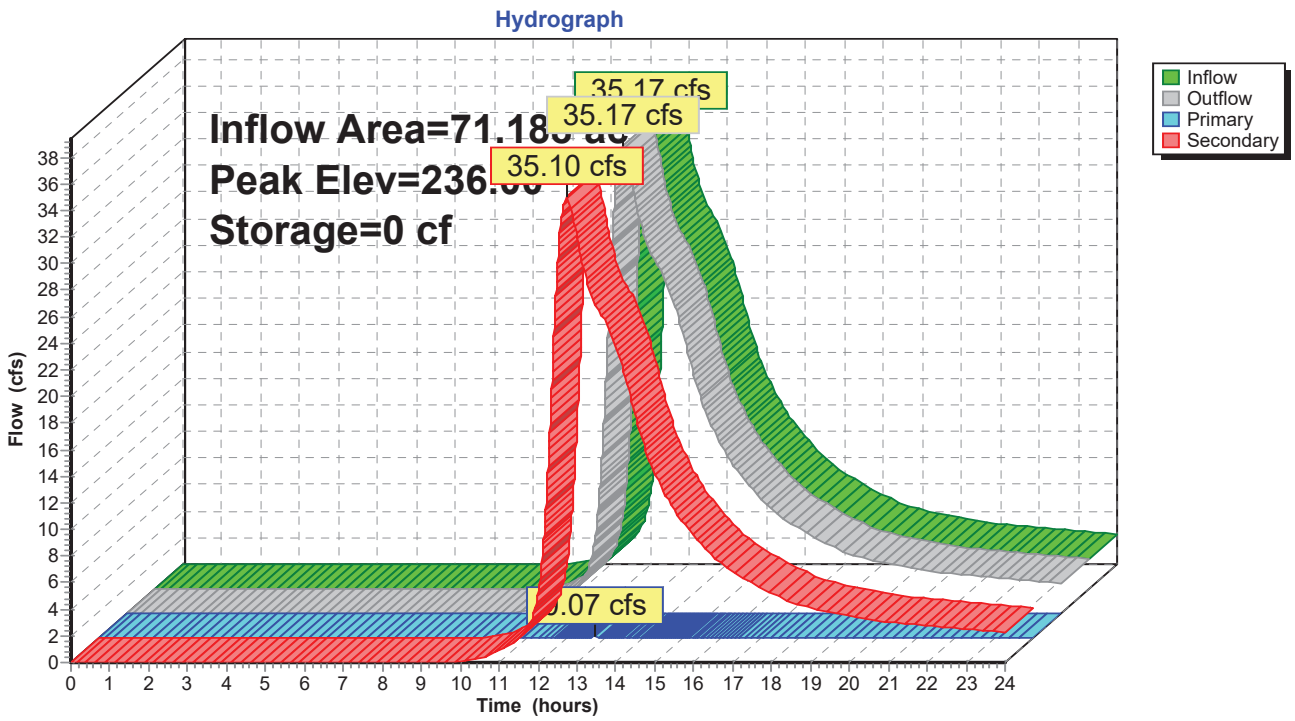
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
236.00	13,500	0	0
238.00	20,473	33,973	33,973

Device	Routing	Invert	Outlet Devices
#1	Primary	225.50'	**30.0" Round Culvert** L= 250.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 225.50' / 224.50' S= 0.0040 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf
#2	Secondary	228.00'	**300.0' long x 90.0' 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

Primary OutFlow Max=0.00 cfs @ 12.74 hrs HW=236.00' TW=235.32' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.00 cfs of 15.38 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 12.74 hrs HW=236.00' TW=235.32' (Dynamic Tailwater)
└─**2=Broad-Crested Rectangular Weir** (Passes 0.00 cfs of 8,009.94 cfs potential flow)

Pond P3: I-95


Hydrograph
Inflow
Outflow
Primary
Secondary
35.17 cfs
35.17 cfs
35.10 cfs
Storage=0 cf
Flow (cfs)
Time (hours)

Summary for Pond P4: Old Lisbon Road

Inflow Area = 48.533 ac, 1.85% Impervious, Inflow Depth > 1.62" for 10-YR event
Inflow = 20.37 cfs @ 13.51 hrs, Volume= 6.546 af
Outflow = 20.21 cfs @ 13.64 hrs, Volume= 6.540 af, Atten= 1%, Lag= 8.1 min
Primary = 20.21 cfs @ 13.64 hrs, Volume= 6.540 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 269.86' @ 13.64 hrs Surf.Area= 2,026 sf Storage= 4,171 cf

Plug-Flow detention time= 2.5 min calculated for 6.537 af (100% of inflow)
Center-of-Mass det. time= 2.0 min (927.3 - 925.3)

Volume	Invert	Avail.Storage	Storage Description
#1	266.00'	51,550 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

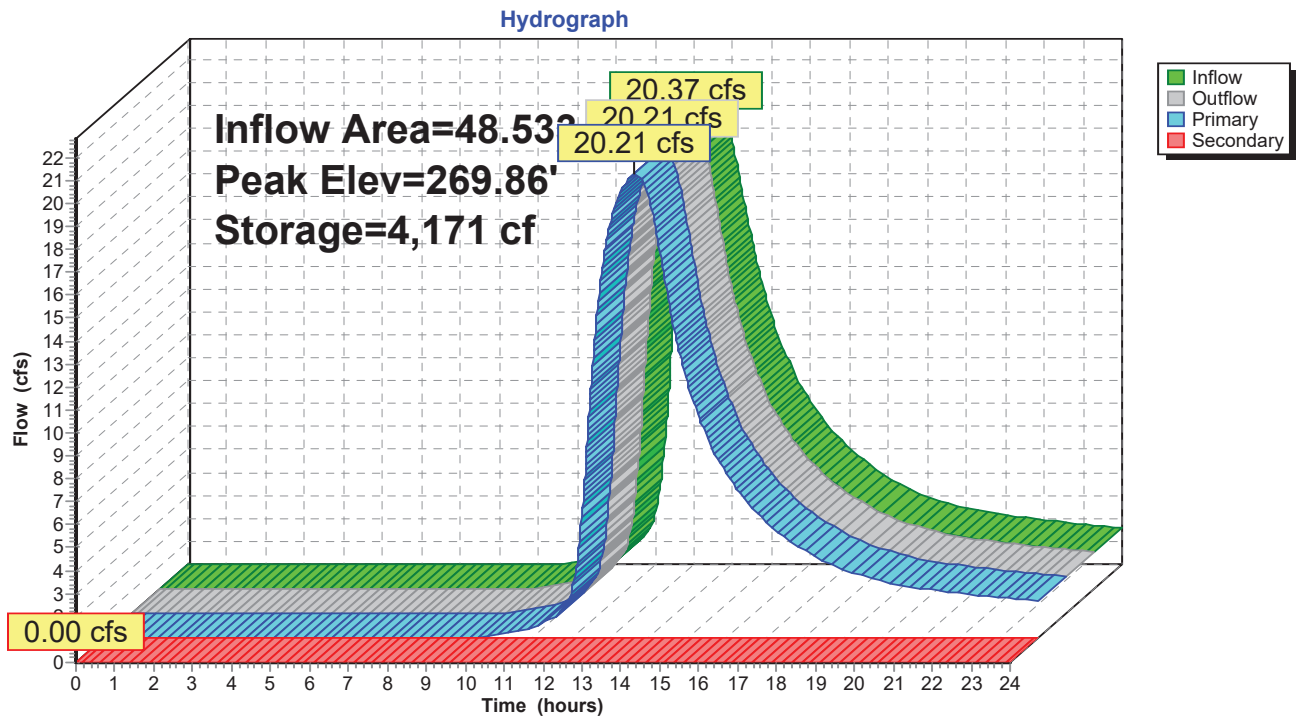
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
266.00	350	0	0
268.00	1,000	1,350	1,350
270.00	2,100	3,100	4,450
272.00	6,000	8,100	12,550
274.00	9,500	15,500	28,050
276.00	14,000	23,500	51,550

Device	Routing	Invert	Outlet Devices
#1	Primary	266.00'	**24.0" Round Culvert** L= 100.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 266.00' / 265.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Secondary	274.00'	**50.0' long x 24.0' 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

Primary OutFlow Max=20.21 cfs @ 13.64 hrs HW=269.86' TW=258.73' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 20.21 cfs @ 6.43 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=266.00' TW=258.00' (Dynamic Tailwater)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P4: Old Lisbon Road



Summary for Pond P5: Forest Wetland

Inflow Area = 34.550 ac, 0.00% Impervious, Inflow Depth > 1.49" for 10-YR event
Inflow = 16.21 cfs @ 13.52 hrs, Volume= 4.284 af
Outflow = 15.04 cfs @ 13.76 hrs, Volume= 4.193 af, Atten= 7%, Lag= 14.8 min
Primary = 15.04 cfs @ 13.76 hrs, Volume= 4.193 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 296.36' @ 13.77 hrs Surf.Area= 1.484 ac Storage= 0.482 af

Plug-Flow detention time= 32.7 min calculated for 4.193 af (98% of inflow)
Center-of-Mass det. time= 22.2 min (952.3 - 930.1)

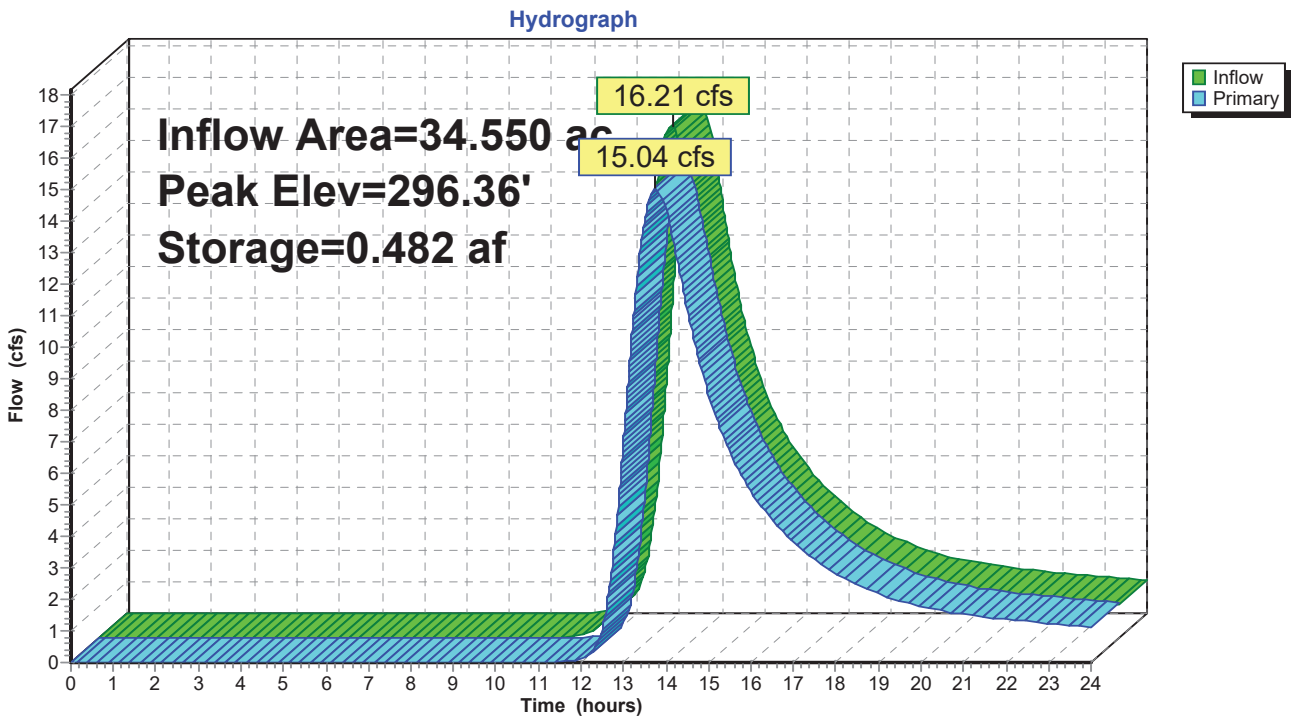
Volume	Invert	Avail.Storage	Storage Description
#1	296.00'	3.920 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
296.00	1.220	0.000	0.000
298.00	2.700	3.920	3.920

Device	Routing	Invert	Outlet Devices
#1	Primary	296.00'	**50.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=15.03 cfs @ 13.76 hrs HW=296.36' TW=296.31' (Dynamic Tailwater)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 15.03 cfs @ 0.84 fps)

Pond P5: Forest Wetland



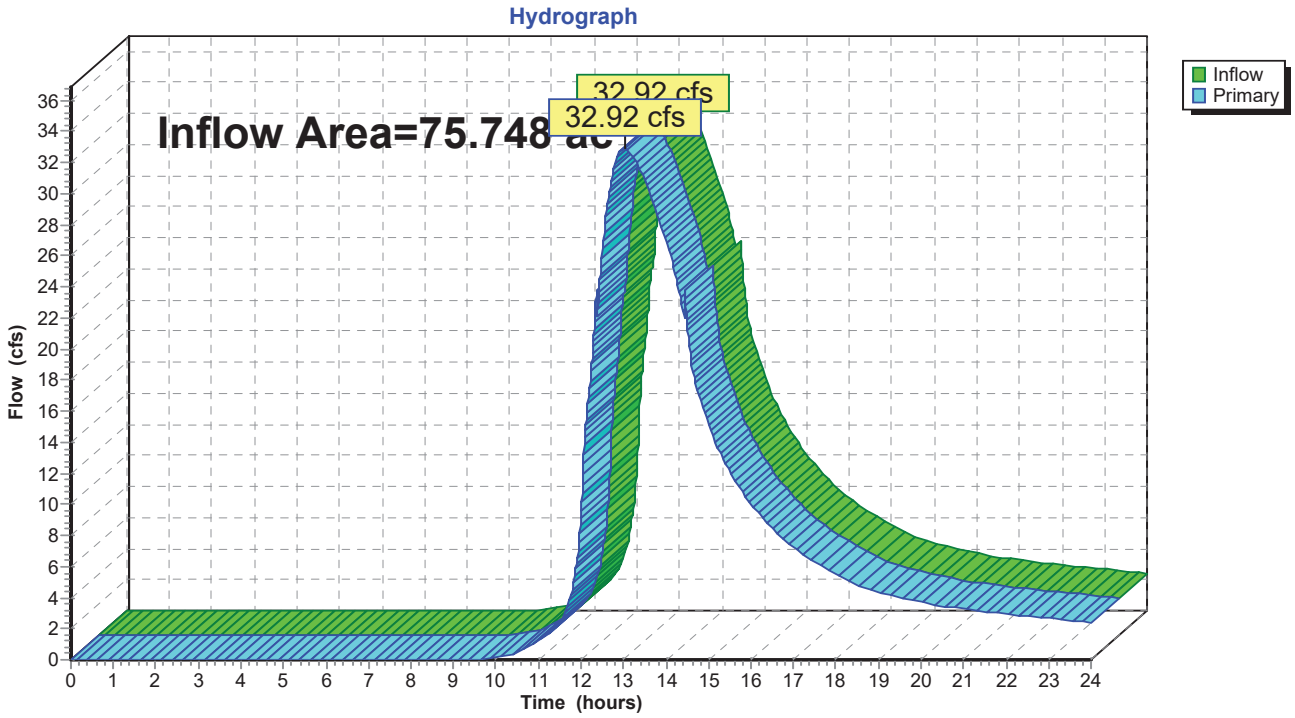
Summary for Pond TOTAL: COMBINED

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 75.748 ac, 2.74% Impervious, Inflow Depth > 1.68" for 10-YR event
Inflow = 32.92 cfs @ 13.04 hrs, Volume= 10.588 af
Primary = 32.92 cfs @ 13.04 hrs, Volume= 10.588 af, Atten= 0%, Lag= 0.0 min

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

Pond TOTAL: COMBINED



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

Subcatchment WS-1: West Site Runoff Area=99,472 sf 0.00% Impervious Runoff Depth>3.05"
Flow Length=304' Tc=8.1 min CN=78 Runoff=7.61 cfs 0.580 af

Subcatchment WS-2: East Site Runoff Area=81,652 sf 0.00% Impervious Runoff Depth>3.04"
Flow Length=303' Tc=19.2 min CN=78 Runoff=4.61 cfs 0.475 af

Subcatchment WS-3: Offsite flow Runoff Area=17,531 sf 0.00% Impervious Runoff Depth>3.05"
Tc=5.0 min CN=78 Runoff=1.49 cfs 0.102 af

Subcatchment WS-4: North 95 Runoff Area=22.655 ac 5.19% Impervious Runoff Depth>2.57"
Flow Length=1,483' Tc=43.6 min CN=73 Runoff=32.26 cfs 4.856 af

Subcatchment WS-5: North Old Lisbon Rd Runoff Area=13.983 ac 6.44% Impervious Runoff Depth>2.92"
Flow Length=1,349' Tc=56.4 min CN=77 Runoff=19.77 cfs 3.408 af

Subcatchment WS-6: Uphill North Old Runoff Area=34.550 ac 0.00% Impervious Runoff Depth>2.27"
Flow Length=2,370' Tc=104.0 min CN=70 Runoff=25.43 cfs 6.548 af

Reach R2: Site Wetland Channel Avg. Flow Depth=1.00' Max Vel=8.73 fps Inflow=52.11 cfs 14.675 af
n=0.030 L=330.0' S=0.0561 '/' Capacity=231.75 cfs Outflow=52.11 cfs 14.669 af

Reach R3: Old Lisbon Rd - I-95 Avg. Flow Depth=0.88' Max Vel=5.97 fps Inflow=29.60 cfs 9.832 af
n=0.030 L=730.0' S=0.0301 '/' Capacity=169.92 cfs Outflow=29.60 cfs 9.819 af

Reach R4: (new Reach) Avg. Flow Depth=0.40' Max Vel=11.63 fps Inflow=24.05 cfs 6.436 af
n=0.012 L=540.0' S=0.0407 '/' Capacity=564.90 cfs Outflow=24.05 cfs 6.432 af

Reach SP1: Study Point 1 Inflow=42.20 cfs 15.720 af
Outflow=42.20 cfs 15.720 af

Pond P2: Railroad Outlet Peak Elev=217.25' Storage=43,527 cf Inflow=54.92 cfs 15.725 af
Primary=42.20 cfs 15.720 af Secondary=0.00 cfs 0.000 af Outflow=42.20 cfs 15.720 af

Pond P3: I-95 Peak Elev=236.00' Storage=0 cf Inflow=52.11 cfs 14.675 af
Primary=0.10 cfs 0.029 af Secondary=52.02 cfs 14.646 af Outflow=52.11 cfs 14.675 af

Pond P4: Old Lisbon Road Peak Elev=273.15' Storage=20,568 cf Inflow=32.37 cfs 9.840 af
Primary=29.60 cfs 9.832 af Secondary=0.00 cfs 0.000 af Outflow=29.60 cfs 9.832 af

Pond P5: Forest Wetland Peak Elev=296.47' Storage=0.660 af Inflow=25.43 cfs 6.548 af
Outflow=24.05 cfs 6.436 af

Pond TOTAL: COMBINED Inflow=42.32 cfs 15.822 af
Primary=42.32 cfs 15.822 af

Total Runoff Area = 75.748 ac Runoff Volume = 15.970 af Average Runoff Depth = 2.53"
97.26% Pervious = 73.673 ac 2.74% Impervious = 2.075 ac

Summary for Subcatchment WS-1: West Site

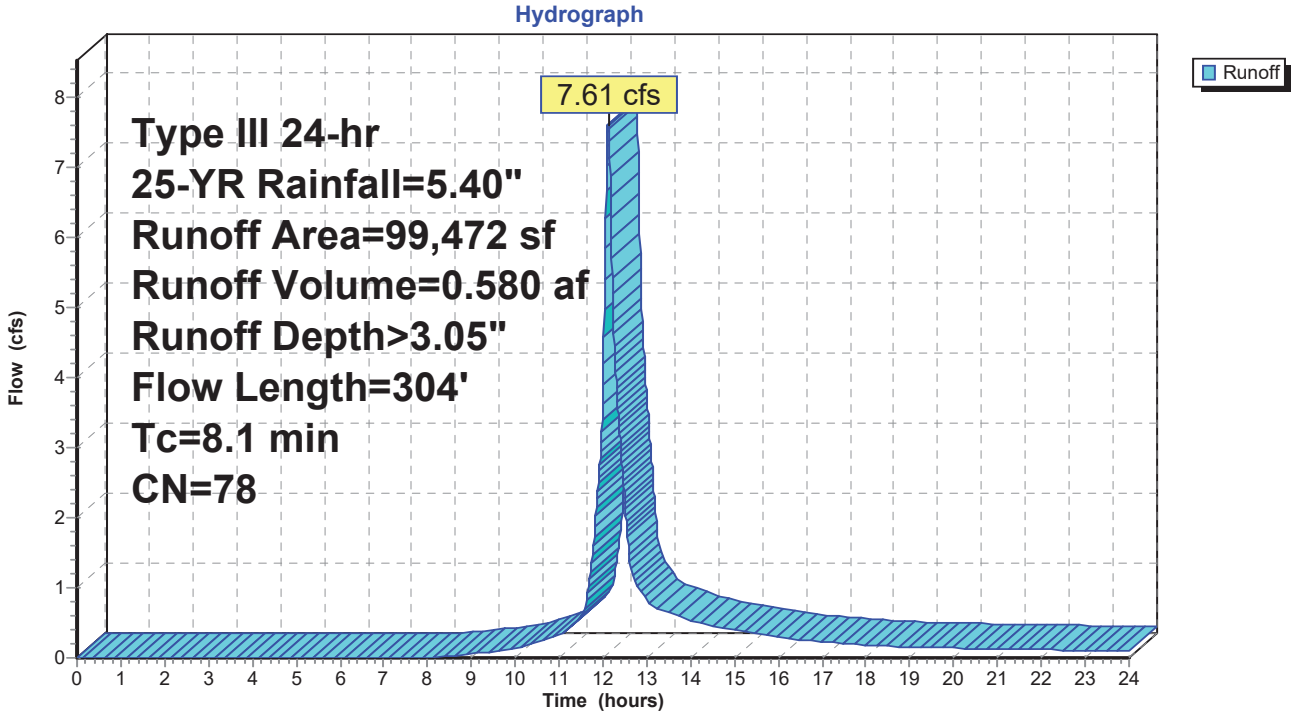
Runoff = 7.61 cfs @ 12.12 hrs, Volume= 0.580 af, Depth> 3.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (sf)	CN	Description
99,472	78	Meadow, non-grazed, HSG D
99,472		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	118	0.1530	0.26		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.00"
0.6	186	0.0400	5.06	11.39	**Trap/Vee/Rect Channel Flow, B-C** Bot.W=3.00' D=0.50' Z= 3.0 '/' Top.W=6.00' n= 0.030 Earth, grassed & winding
8.1	304	Total			

Subcatchment WS-1: West Site



Summary for Subcatchment WS-2: East Site

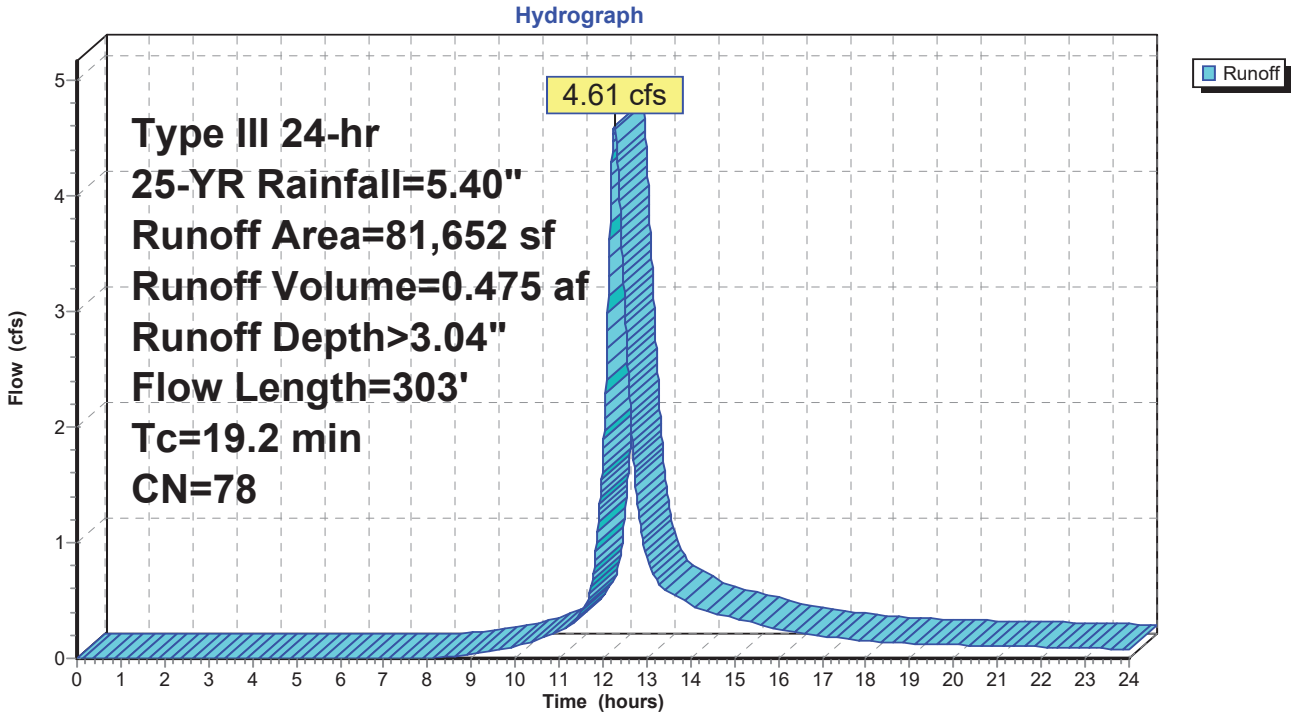
Runoff = 4.61 cfs @ 12.27 hrs, Volume= 0.475 af, Depth> 3.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (sf)	CN	Description
81,652	78	Meadow, non-grazed, HSG D
81,652		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.1	150	0.0270	0.14		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.00"
1.1	153	0.1200	2.42		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
19.2	303	Total			

Subcatchment WS-2: East Site



Summary for Subcatchment WS-3: Offsite flow

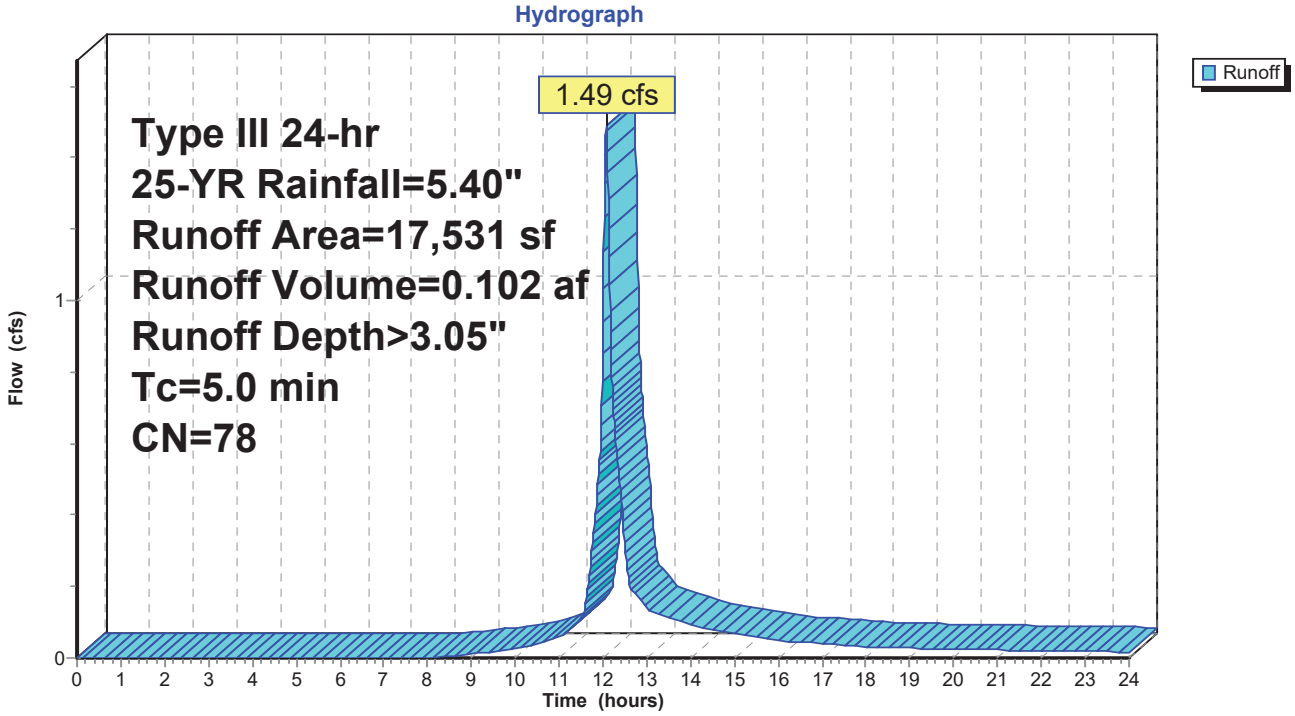
Runoff = 1.49 cfs @ 12.07 hrs, Volume= 0.102 af, Depth> 3.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (sf)	CN	Description
17,531	78	Meadow, non-grazed, HSG D
17,531		100.00% Pervious Area

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

Subcatchment WS-3: Offsite flow



Summary for Subcatchment WS-4: North 95

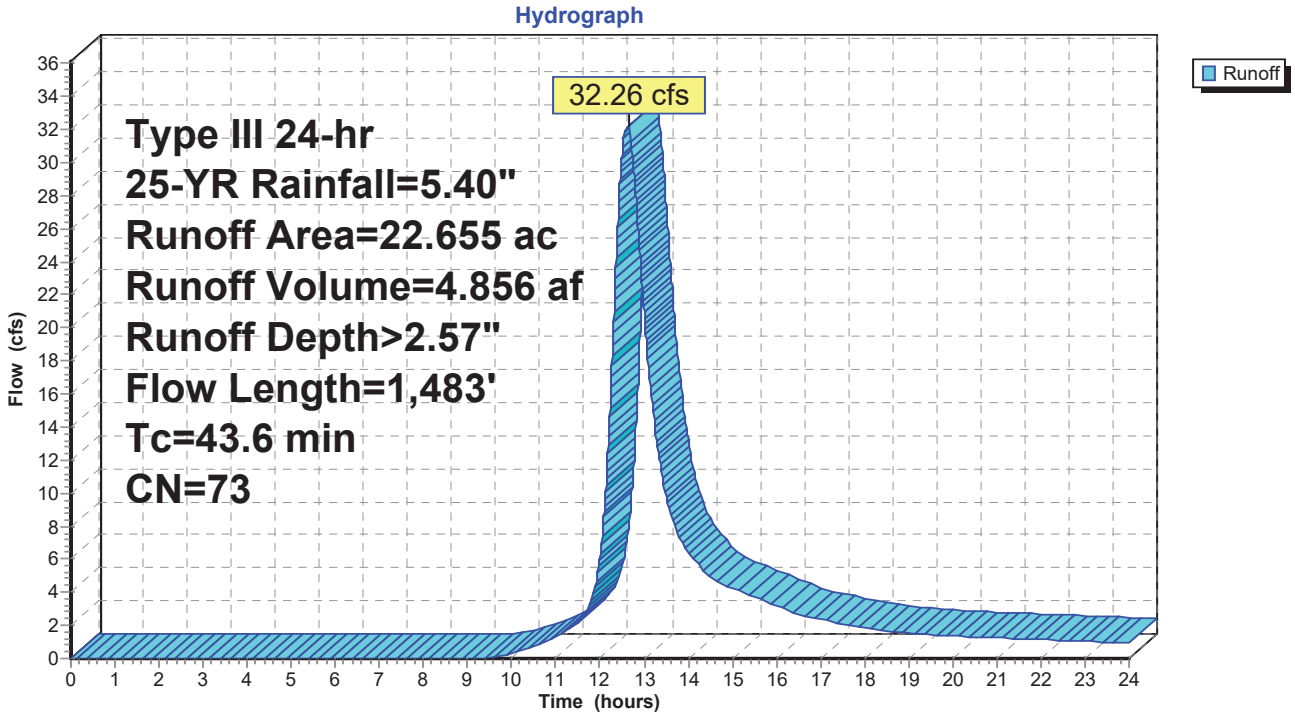
Runoff = 32.26 cfs @ 12.64 hrs, Volume= 4.856 af, Depth> 2.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (ac)	CN	Description
2.000	80	1/2 acre lots, 25% imp, HSG C
0.500	85	1/2 acre lots, 25% imp, HSG D
0.550	98	Paved roads w/curbs & sewers, HSG C
15.380	70	Woods, Good, HSG C
4.225	77	Woods, Good, HSG D
22.655	73	Weighted Average
21.480		94.81% Pervious Area
1.175		5.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.7	150	0.0870	0.08		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 3.00"
12.6	947	0.0630	1.25		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
1.3	386	0.0210	5.00	11.25	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=3.00' D=0.50' Z= 3.0 '/' Top.W=6.00' n= 0.022 Earth, clean & straight
43.6	1,483	Total			

Subcatchment WS-4: North 95



Summary for Subcatchment WS-5: North Old Lisbon Rd

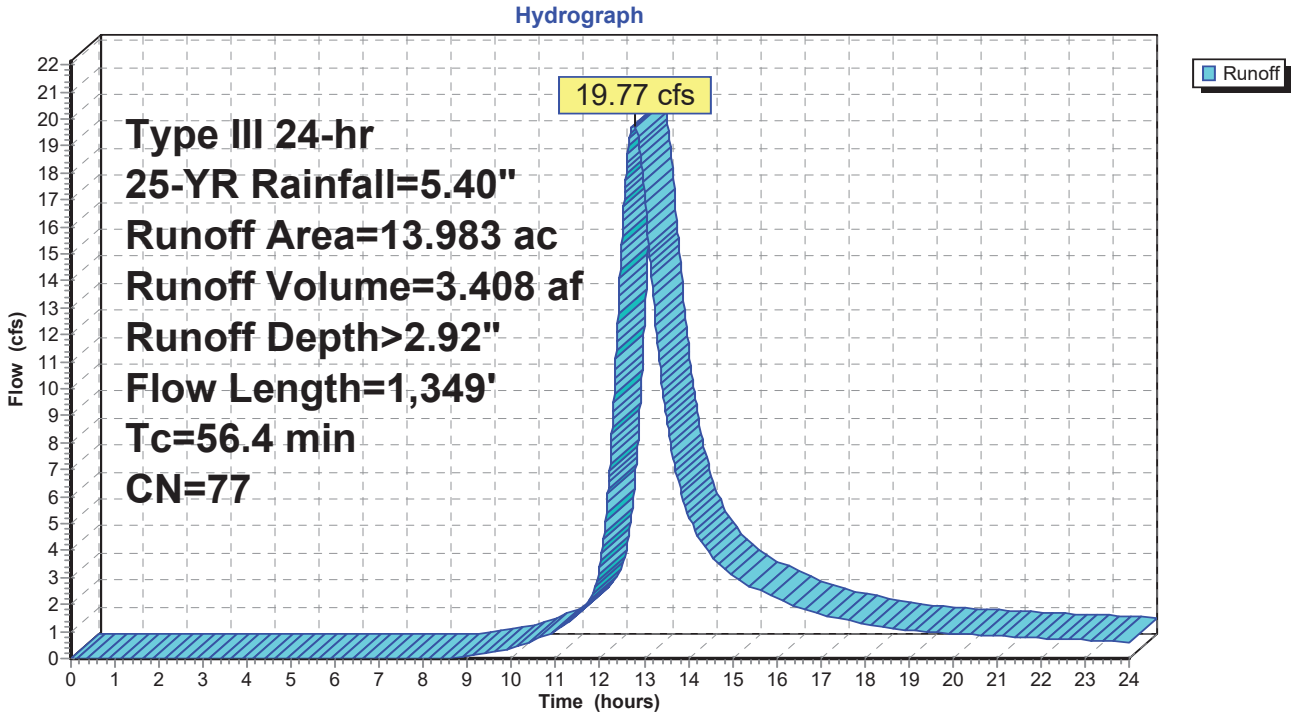
Runoff = 19.77 cfs @ 12.78 hrs, Volume= 3.408 af, Depth> 2.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (ac)	CN	Description
0.500	85	1/2 acre lots, 25% imp, HSG D
2.000	80	1/2 acre lots, 25% imp, HSG C
0.275	98	Paved roads w/curbs & sewers, HSG D
8.450	77	Woods, Good, HSG D
2.758	70	Woods, Good, HSG C
13.983	77	Weighted Average
13.083		93.56% Pervious Area
0.900		6.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.9	150	0.0470	0.07		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 3.00"
18.3	1,097	0.0400	1.00		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.2	102	0.0590	7.98	13.96	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=2.00' D=0.50' Z= 3.0 '/' Top.W=5.00' n= 0.022 Earth, clean & straight
56.4	1,349	Total			

Subcatchment WS-5: North Old Lisbon Rd



Summary for Subcatchment WS-6: Uphill North Old Lisbon Rd

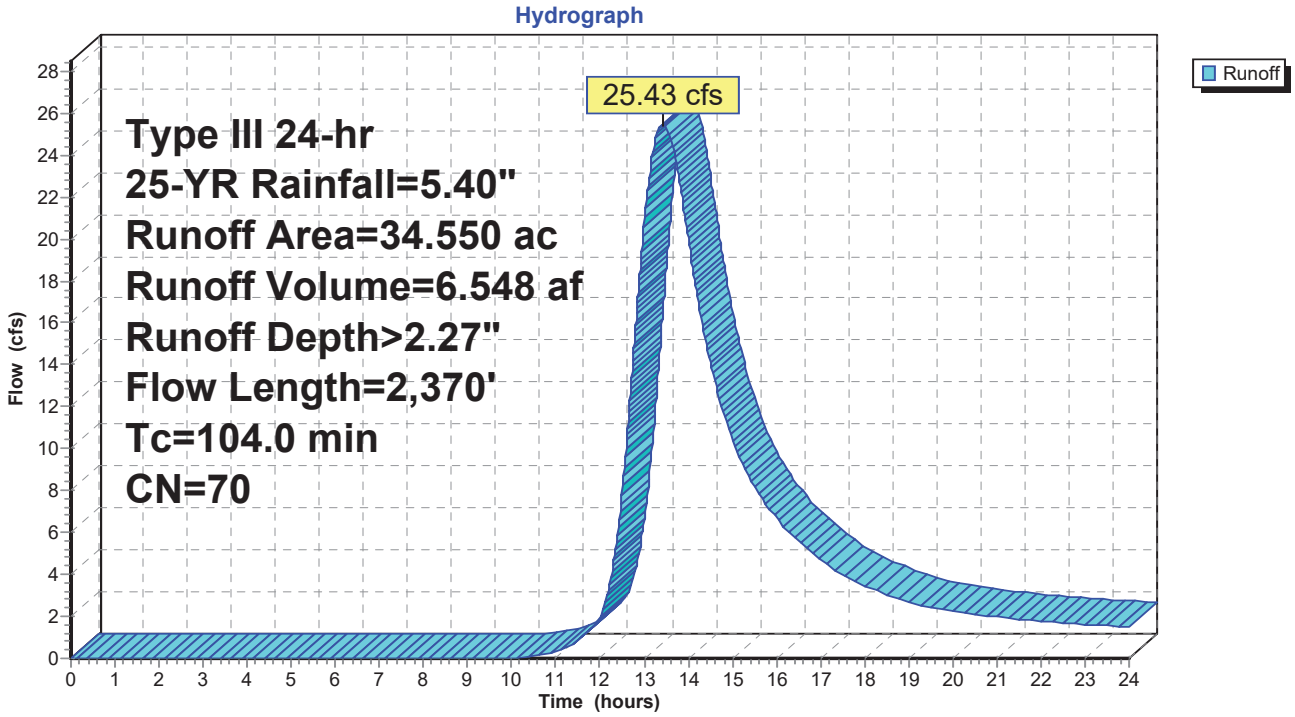
Runoff = 25.43 cfs @ 13.41 hrs, Volume= 6.548 af, Depth> 2.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (ac)	CN	Description
34.550	70	Woods, Good, HSG C
34.550		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
47.7	150	0.0266	0.05		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 3.00"
9.7	970	0.1100	1.66		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
46.6	1,250	0.0080	0.45		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
104.0	2,370	Total			

Subcatchment WS-6: Uphill North Old Lisbon Rd



Summary for Reach R2: Site Wetland Channel

Inflow Area = 71.188 ac, 2.91% Impervious, Inflow Depth > 2.47" for 25-YR event
Inflow = 52.11 cfs @ 12.71 hrs, Volume= 14.675 af
Outflow = 52.11 cfs @ 12.72 hrs, Volume= 14.669 af, Atten= 0%, Lag= 0.6 min

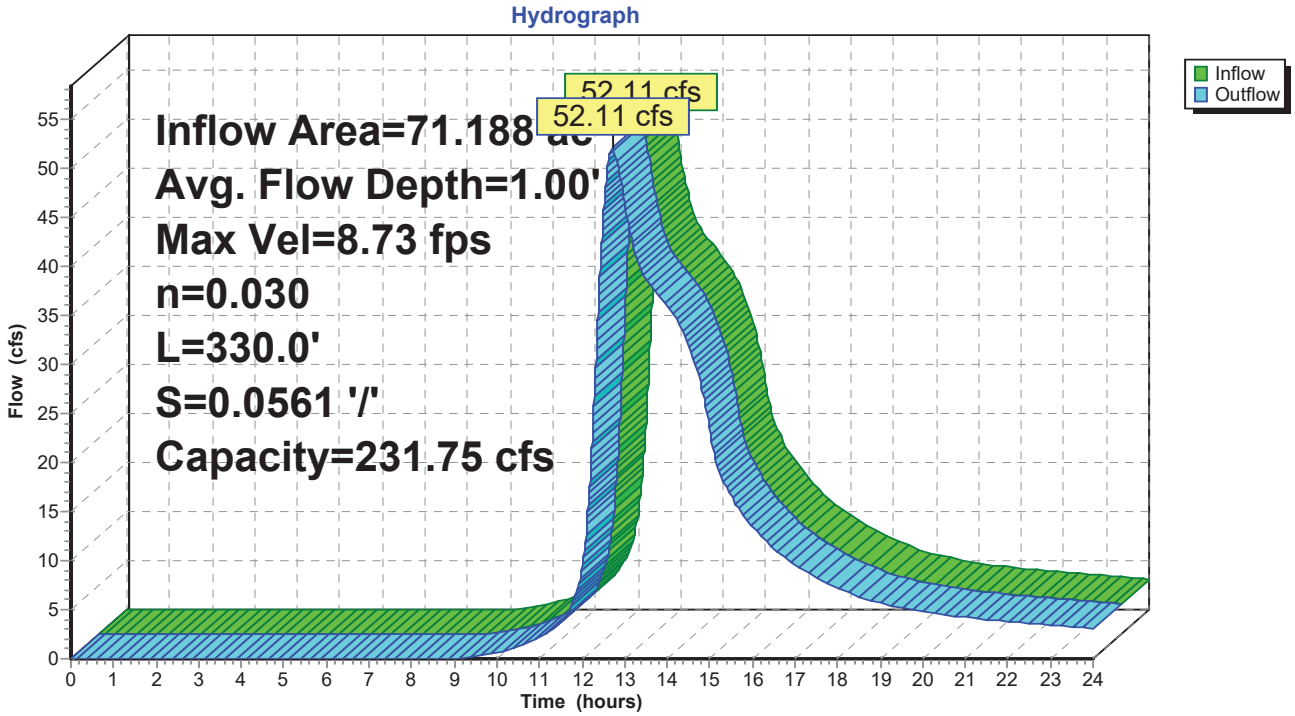
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 8.73 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 4.87 fps, Avg. Travel Time= 1.1 min

Peak Storage= 1,971 cf @ 12.72 hrs
Average Depth at Peak Storage= 1.00'
Bank-Full Depth= 2.00' Flow Area= 18.0 sf, Capacity= 231.75 cfs

3.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 15.00'
Length= 330.0' Slope= 0.0561 '/'
Inlet Invert= 234.50', Outlet Invert= 216.00'

‡

Reach R2: Site Wetland Channel



Summary for Reach R3: Old Lisbon Rd - I-95

Inflow Area = 48.533 ac, 1.85% Impervious, Inflow Depth > 2.43" for 25-YR event
Inflow = 29.60 cfs @ 13.86 hrs, Volume= 9.832 af
Outflow = 29.60 cfs @ 13.88 hrs, Volume= 9.819 af, Atten= 0%, Lag= 1.5 min

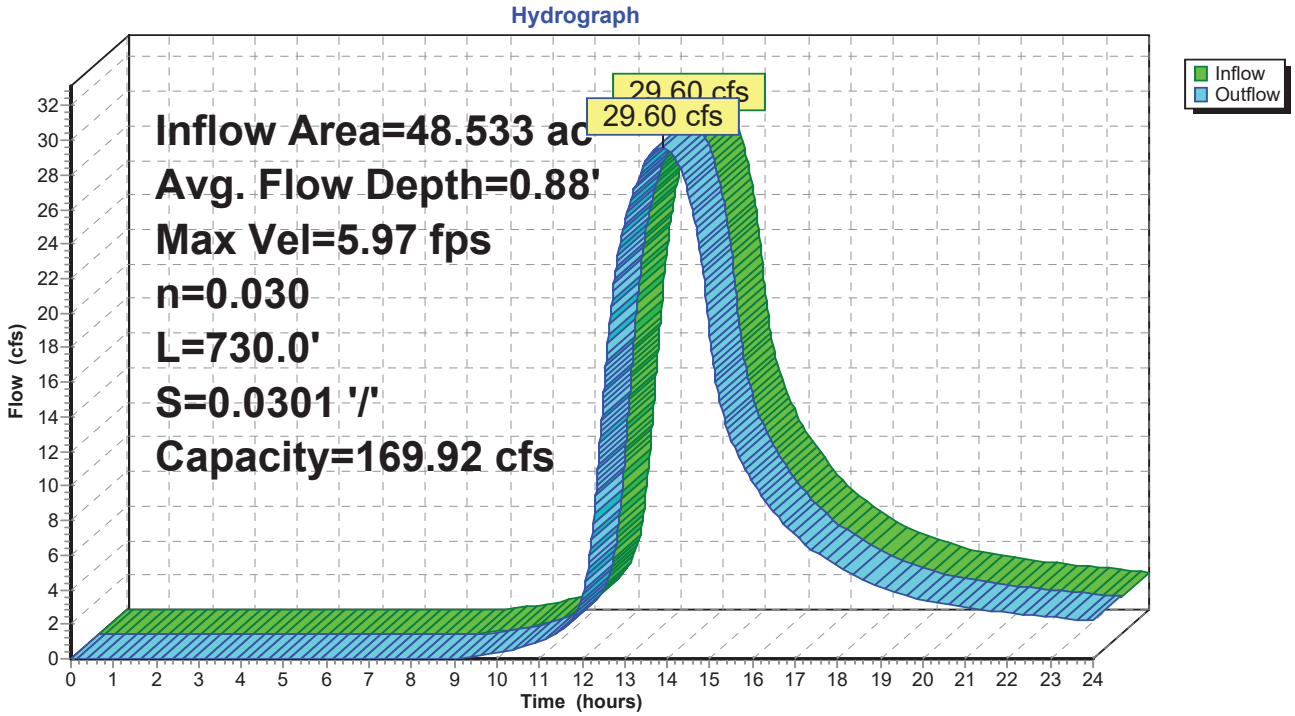
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.97 fps, Min. Travel Time= 2.0 min
Avg. Velocity = 3.45 fps, Avg. Travel Time= 3.5 min

Peak Storage= 3,617 cf @ 13.88 hrs
Average Depth at Peak Storage= 0.88'
Bank-Full Depth= 2.00' Flow Area= 18.0 sf, Capacity= 169.92 cfs

3.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 15.00'
Length= 730.0' Slope= 0.0301 '/'
Inlet Invert= 258.00', Outlet Invert= 236.00'

‡

Reach R3: Old Lisbon Rd - I-95



Summary for Reach R4: (new Reach)

Inflow Area = 34.550 ac, 0.00% Impervious, Inflow Depth > 2.24" for 25-YR event
Inflow = 24.05 cfs @ 13.68 hrs, Volume= 6.436 af
Outflow = 24.05 cfs @ 13.69 hrs, Volume= 6.432 af, Atten= 0%, Lag= 0.5 min

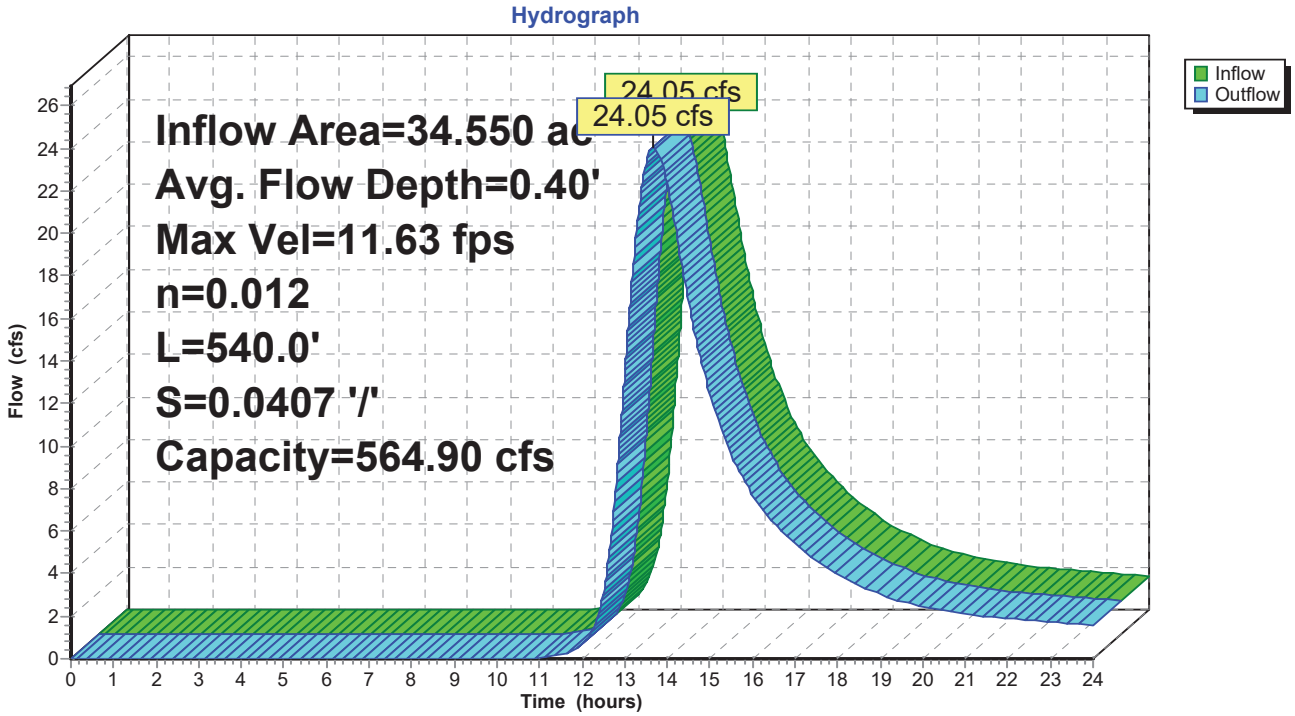
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 11.63 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 6.16 fps, Avg. Travel Time= 1.5 min

Peak Storage= 1,117 cf @ 13.69 hrs
Average Depth at Peak Storage= 0.40'
Bank-Full Depth= 2.00' Flow Area= 20.0 sf, Capacity= 564.90 cfs

4.00' x 2.00' deep channel, n= 0.012 Wood, Planed
Side Slope Z-value= 3.0 '/' Top Width= 16.00'
Length= 540.0' Slope= 0.0407 '/'
Inlet Invert= 296.00', Outlet Invert= 274.00'

‡

Reach R4: (new Reach)



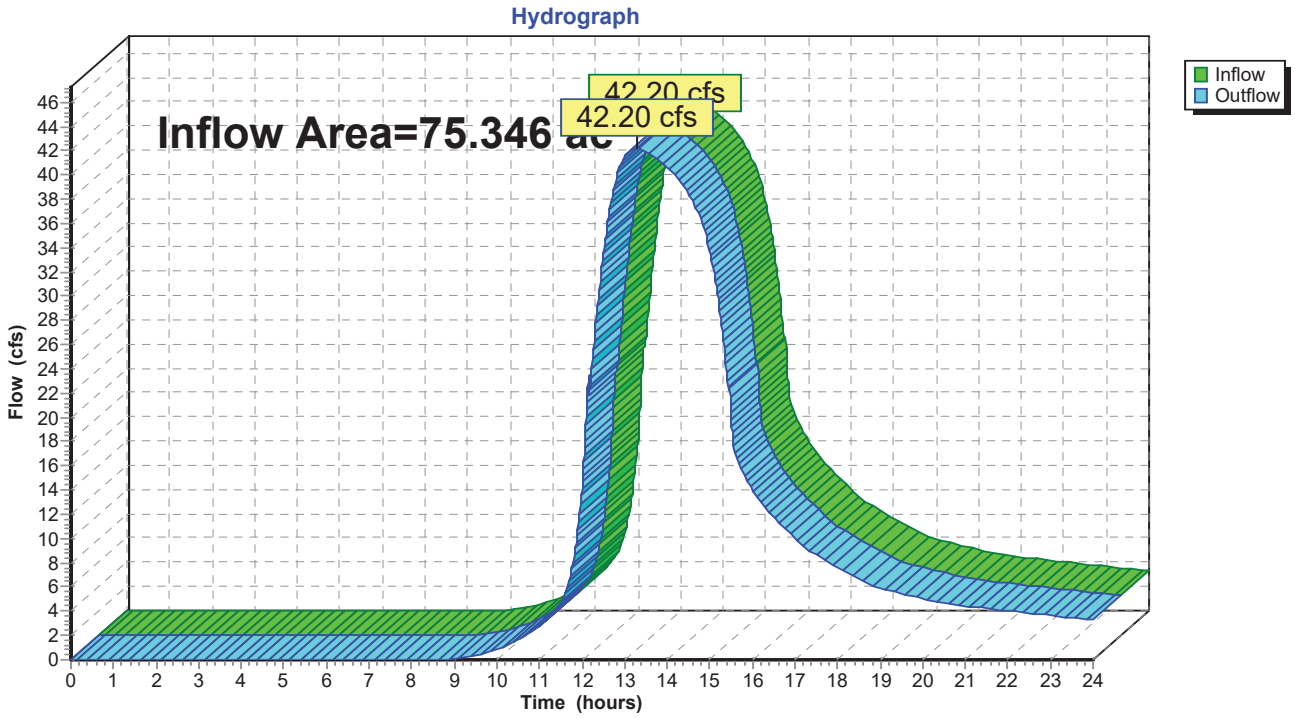
Summary for Reach SP1: Study Point 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 75.346 ac, 2.75% Impervious, Inflow Depth > 2.50" for 25-YR event
Inflow = 42.20 cfs @ 13.29 hrs, Volume= 15.720 af
Outflow = 42.20 cfs @ 13.29 hrs, Volume= 15.720 af, Atten= 0%, Lag= 0.0 min

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

Reach SP1: Study Point 1



Summary for Pond P2: Railroad Outlet

[62] Hint: Exceeded Reach R2 OUTLET depth by 0.37' @ 13.33 hrs

Inflow Area =	75.346 ac,	2.75% Impervious,	Inflow Depth >	2.50"	for 25-YR event
Inflow =	54.92 cfs @	12.70 hrs,	Volume=	15.725 af	
Outflow =	42.20 cfs @	13.29 hrs,	Volume=	15.720 af,	Atten= 23%, Lag= 35.4 min
Primary =	42.20 cfs @	13.29 hrs,	Volume=	15.720 af	
Secondary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 217.25' @ 13.29 hrs Surf.Area= 15,923 sf Storage= 43,527 cf

Plug-Flow detention time= 8.2 min calculated for 15.713 af (100% of inflow)
Center-of-Mass det. time= 8.0 min (905.9 - 897.9)

Volume	Invert	Avail.Storage	Storage Description
#1	209.00'	151,705 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

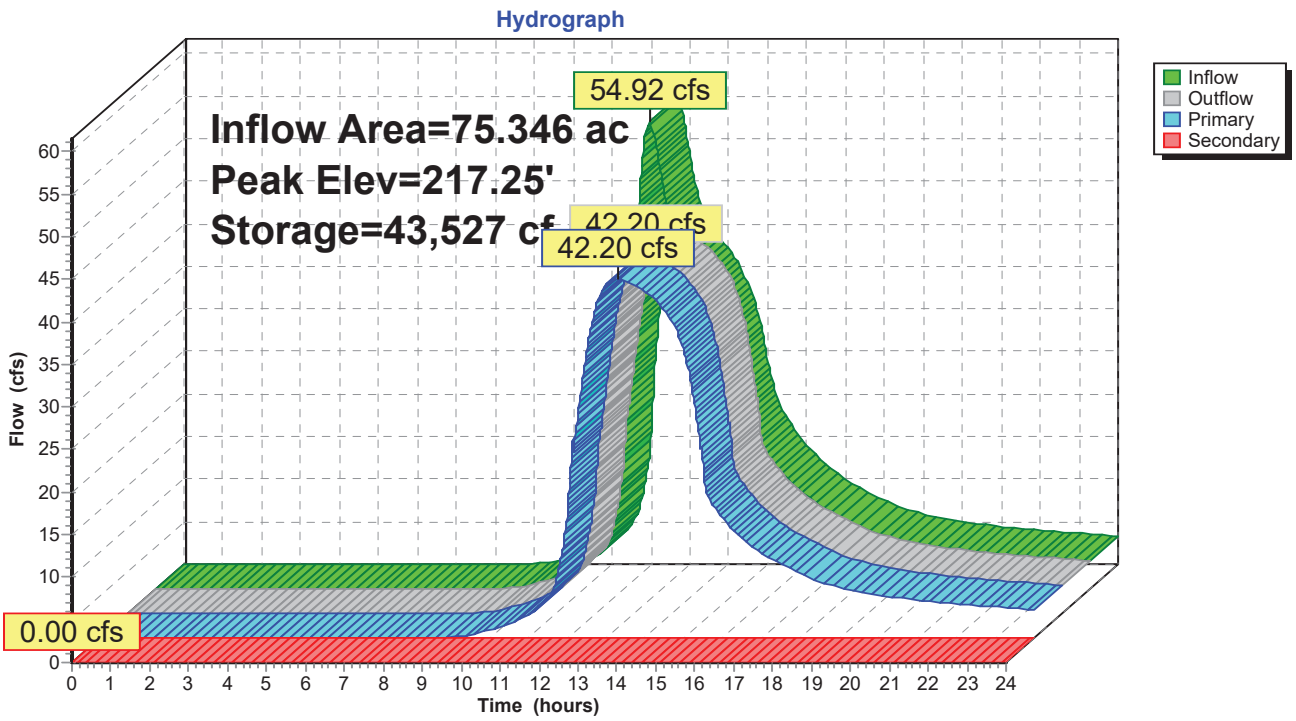
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
209.00	50	0	0
210.00	100	75	75
212.00	200	300	375
214.00	5,818	6,018	6,393
216.00	13,161	18,979	25,372
218.00	17,586	30,747	56,119
220.00	24,000	41,586	97,705
222.00	30,000	54,000	151,705

Device	Routing	Invert	Outlet Devices
#1	Primary	210.33'	**24.0" W x 24.0" H Box Culvert** L= 40.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 210.33' / 209.47' S= 0.0215 '/' Cc= 0.900 n= 0.025 Rubble masonry, cemented, Flow Area= 4.00 sf
#2	Secondary	221.50'	**50.0' long x 50.0' 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

Primary OutFlow Max=42.20 cfs @ 13.29 hrs HW=217.25' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 42.20 cfs @ 10.55 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=209.00' TW=0.00' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P2: Railroad Outlet



Summary for Pond P3: I-95

[44] Hint: Outlet device #1 is below defined storage
[44] Hint: Outlet device #2 is below defined storage

Inflow Area =	71.188 ac,	2.91% Impervious,	Inflow Depth >	2.47"	for 25-YR event
Inflow =	52.11 cfs @	12.71 hrs,	Volume=	14.675 af	
Outflow =	52.11 cfs @	12.71 hrs,	Volume=	14.675 af,	Atten= 0%, Lag= 0.0 min
Primary =	0.10 cfs @	12.70 hrs,	Volume=	0.029 af	
Secondary =	52.02 cfs @	12.71 hrs,	Volume=	14.646 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 236.00' @ 0.00 hrs Surf.Area= 13,500 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (902.3 - 902.3)

Volume	Invert	Avail.Storage	Storage Description
#1	236.00'	33,973 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

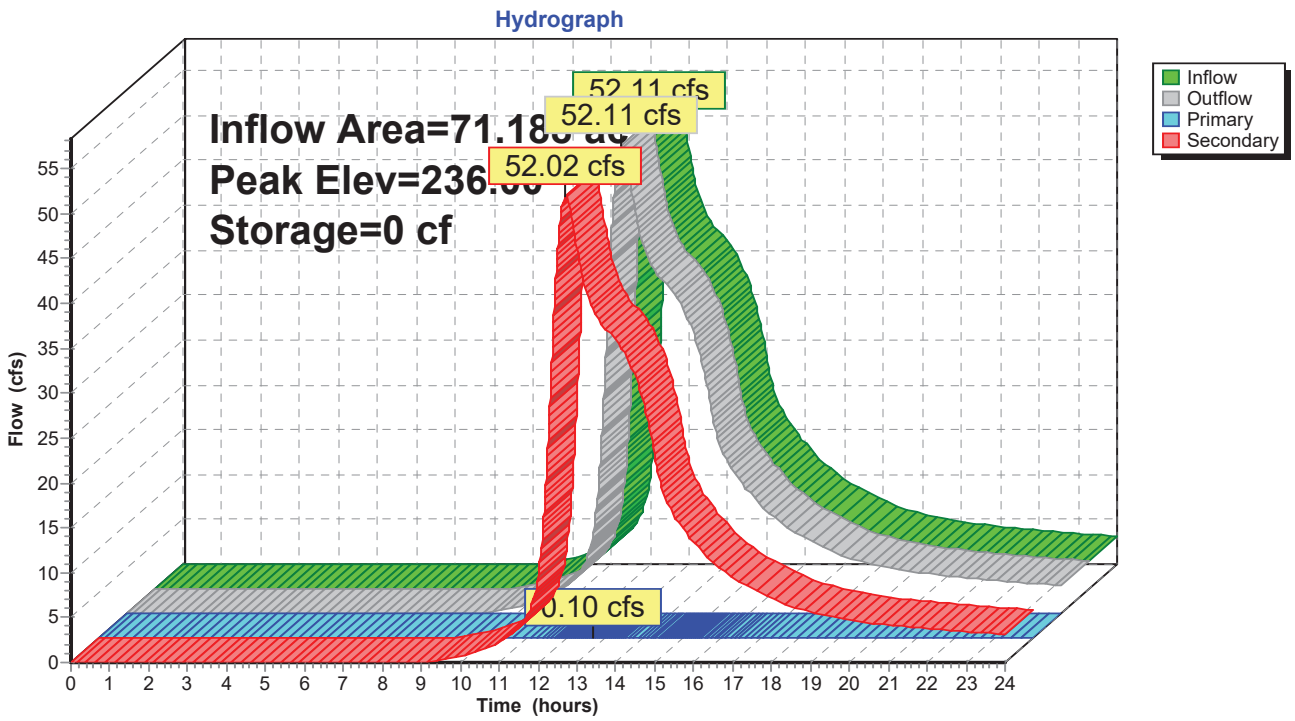
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
236.00	13,500	0	0
238.00	20,473	33,973	33,973

Device	Routing	Invert	Outlet Devices
#1	Primary	225.50'	**30.0" Round Culvert** L= 250.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 225.50' / 224.50' S= 0.0040 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf
#2	Secondary	228.00'	**300.0' long x 90.0' 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

Primary OutFlow Max=0.00 cfs @ 12.70 hrs HW=236.00' TW=235.50' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.00 cfs of 13.24 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 12.71 hrs HW=236.00' TW=235.50' (Dynamic Tailwater)
└─**2=Broad-Crested Rectangular Weir** (Passes 0.00 cfs of 7,150.36 cfs potential flow)

Pond P3: I-95


Hydrograph
Inflow Area=71.18
Peak Elev=236.
Storage=0 cf
52.11 cfs
52.11 cfs
52.02 cfs
0.10 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)

Summary for Pond P4: Old Lisbon Road

Inflow Area =	48.533 ac,	1.85% Impervious,	Inflow Depth >	2.43"	for 25-YR event
Inflow =	32.37 cfs @	13.38 hrs,	Volume=	9.840 af	
Outflow =	29.60 cfs @	13.86 hrs,	Volume=	9.832 af,	Atten= 9%, Lag= 28.4 min
Primary =	29.60 cfs @	13.86 hrs,	Volume=	9.832 af	
Secondary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 273.15' @ 13.86 hrs Surf.Area= 8,004 sf Storage= 20,568 cf

Plug-Flow detention time= 5.5 min calculated for 9.828 af (100% of inflow)
Center-of-Mass det. time= 5.1 min (918.7 - 913.6)

Volume	Invert	Avail.Storage	Storage Description
#1	266.00'	51,550 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

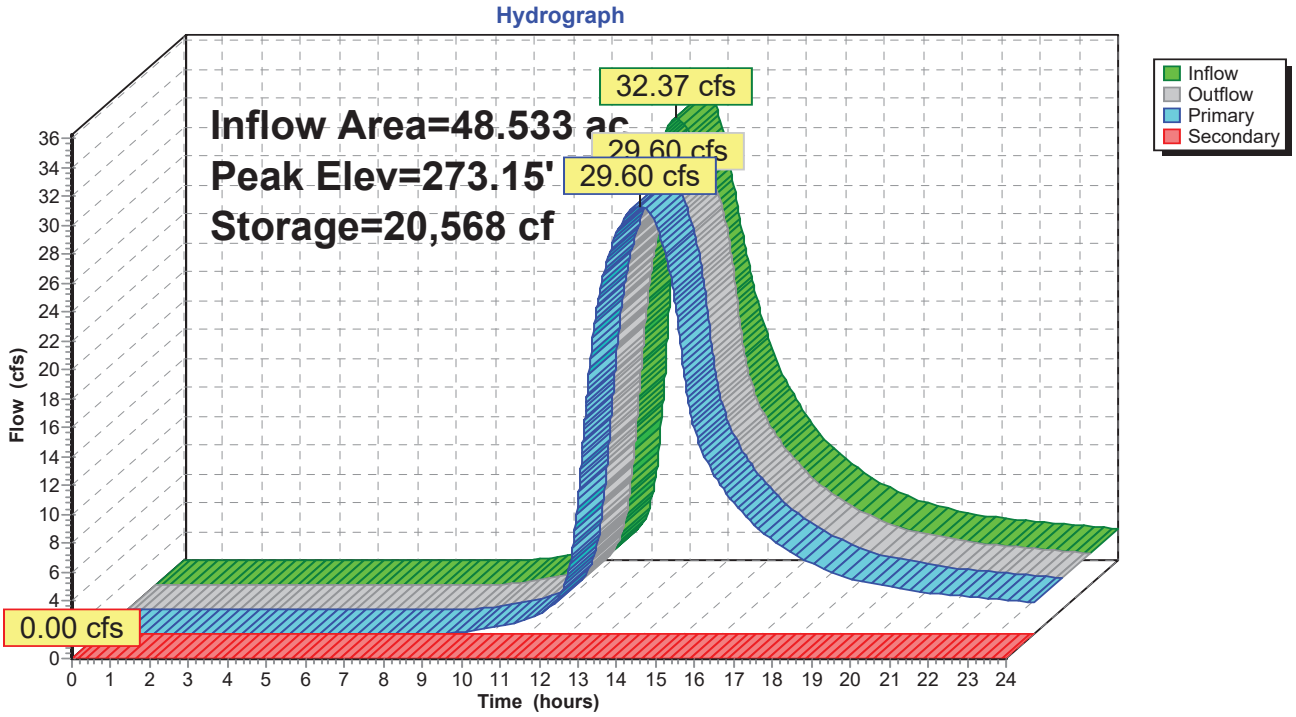
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
266.00	350	0	0
268.00	1,000	1,350	1,350
270.00	2,100	3,100	4,450
272.00	6,000	8,100	12,550
274.00	9,500	15,500	28,050
276.00	14,000	23,500	51,550

Device	Routing	Invert	Outlet Devices
#1	Primary	266.00'	**24.0" Round Culvert** L= 100.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 266.00' / 265.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Secondary	274.00'	**50.0' long x 24.0' 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

Primary OutFlow Max=29.60 cfs @ 13.86 hrs HW=273.15' TW=258.88' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 29.60 cfs @ 9.42 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=266.00' TW=258.00' (Dynamic Tailwater)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P4: Old Lisbon Road



Summary for Pond P5: Forest Wetland

Inflow Area = 34.550 ac, 0.00% Impervious, Inflow Depth > 2.27" for 25-YR event
Inflow = 25.43 cfs @ 13.41 hrs, Volume= 6.548 af
Outflow = 24.05 cfs @ 13.68 hrs, Volume= 6.436 af, Atten= 5%, Lag= 16.2 min
Primary = 24.05 cfs @ 13.68 hrs, Volume= 6.436 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 296.47' @ 13.69 hrs Surf.Area= 1.570 ac Storage= 0.660 af

Plug-Flow detention time= 28.3 min calculated for 6.436 af (98% of inflow)
Center-of-Mass det. time= 19.7 min (938.4 - 918.7)

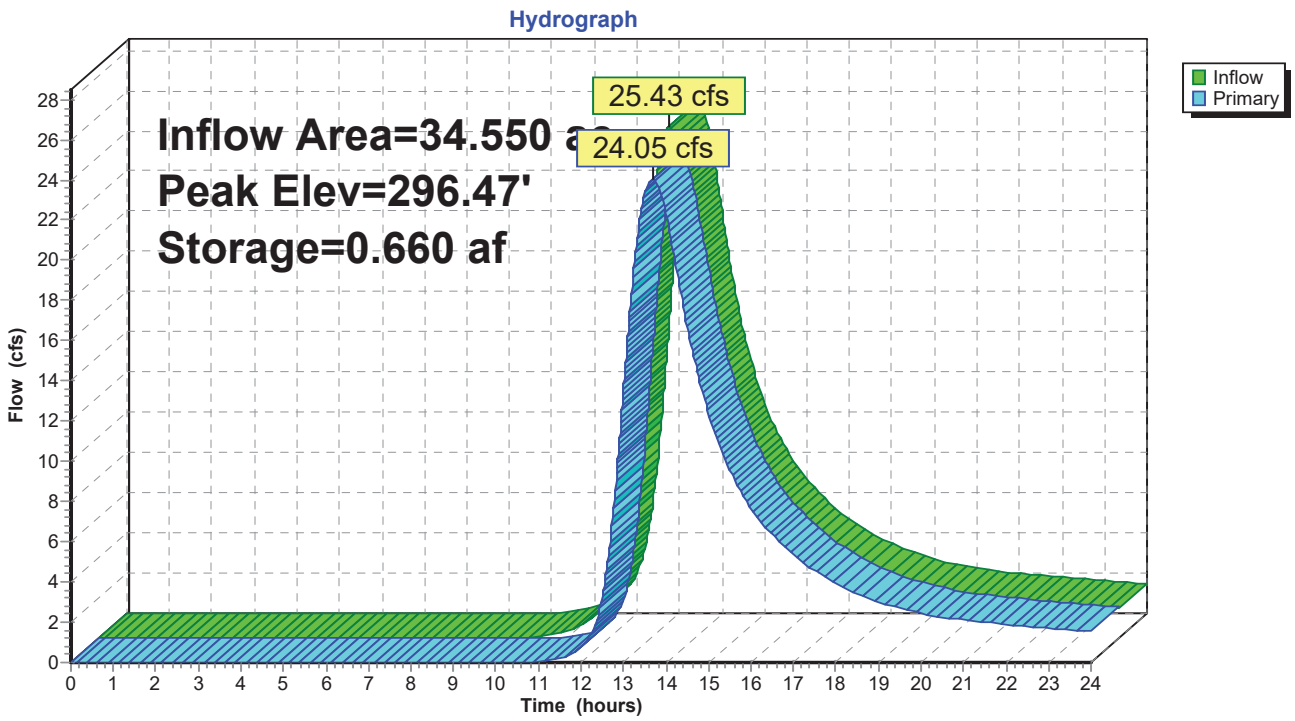
Volume	Invert	Avail.Storage	Storage Description
#1	296.00'	3.920 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
296.00	1.220	0.000	0.000
298.00	2.700	3.920	3.920

Device	Routing	Invert	Outlet Devices
#1	Primary	296.00'	**50.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=24.04 cfs @ 13.68 hrs HW=296.47' TW=296.40' (Dynamic Tailwater)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 24.04 cfs @ 1.02 fps)

Pond P5: Forest Wetland



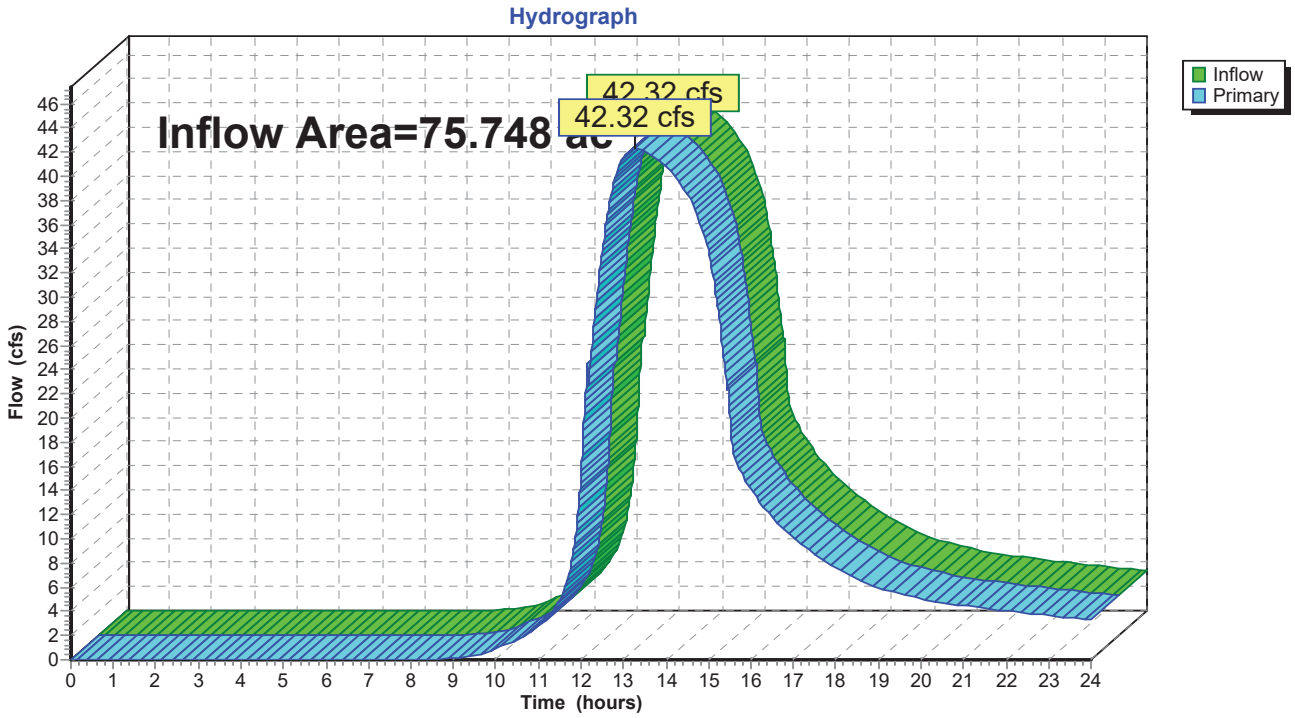
Summary for Pond TOTAL: COMBINED

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 75.748 ac, 2.74% Impervious, Inflow Depth > 2.51" for 25-YR event
Inflow = 42.32 cfs @ 13.28 hrs, Volume= 15.822 af
Primary = 42.32 cfs @ 13.28 hrs, Volume= 15.822 af, Atten= 0%, Lag= 0.0 min

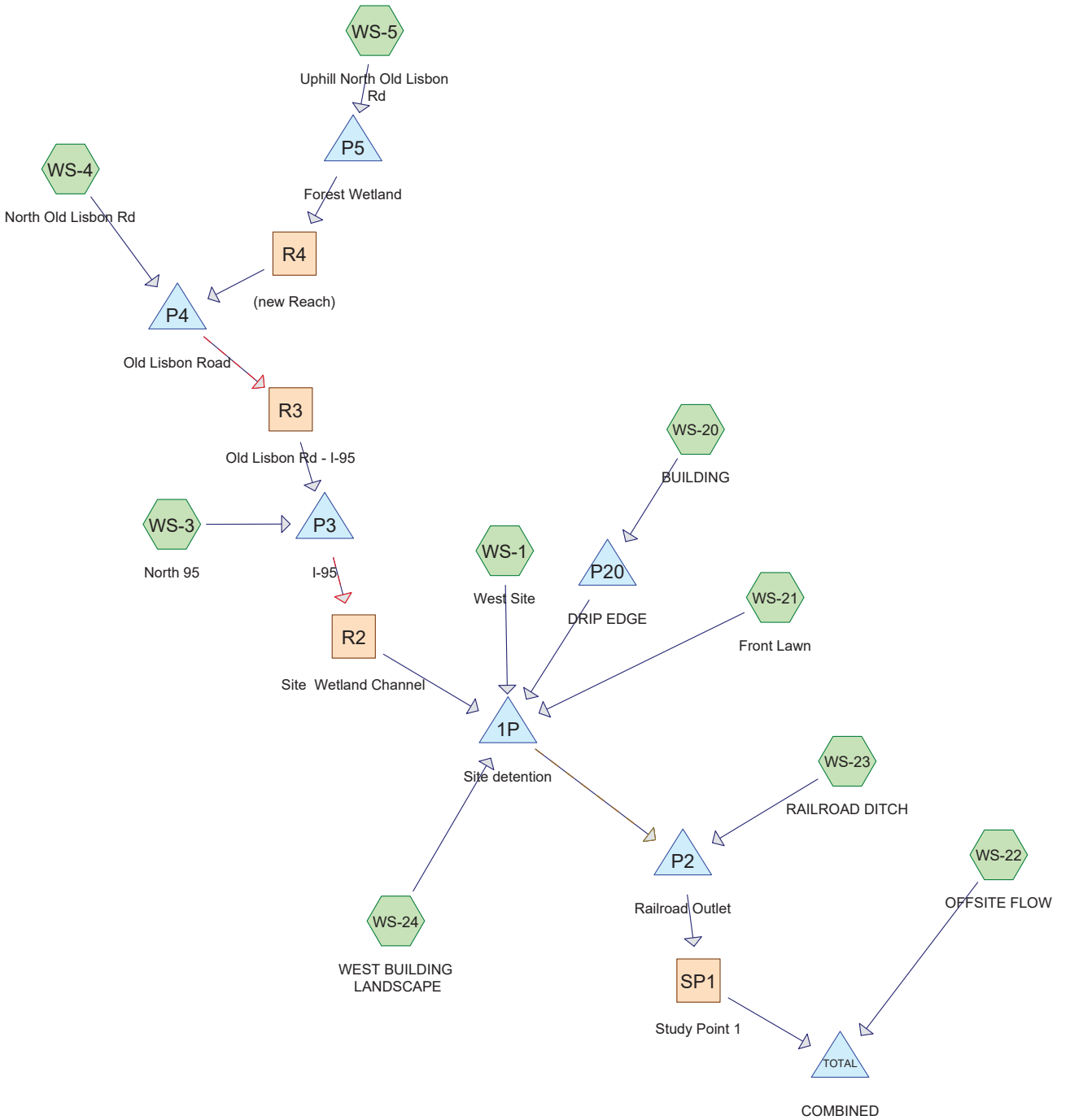
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

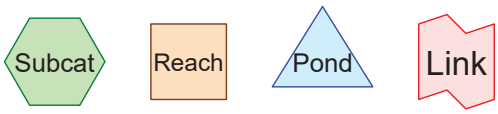
Pond TOTAL: COMBINED



APPENDIX 7

POST-DEVELOPMENT HYDROCAD MODEL





Routing Diagram for 2021 Post-Development
Prepared by {enter your company name here}, Printed 9/8/2020
HydroCAD® 10.00-25 s/n 11267 © 2019 HydroCAD Software Solutions LLC

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	1P	214.78	213.34	80.0	0.0180	0.013	24.0	0.0	0.0
2	1P	216.50	214.00	80.0	0.0313	0.013	15.0	0.0	0.0
3	P2	210.33	209.47	40.0	0.0215	0.025	24.0	24.0	0.0
4	P20	227.25	227.13	25.0	0.0048	0.010	6.0	0.0	0.0
5	P3	225.50	224.50	250.0	0.0040	0.013	30.0	0.0	0.0
6	P4	266.00	265.00	100.0	0.0100	0.013	24.0	0.0	0.0

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points x 3
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 WS-1: West Site Runoff Area=99,780 sf 1.00% Impervious Runoff Depth>1.13"
Flow Length=309' Tc=8.2 min CN=78 Runoff=2.73 cfs 0.215 af

Subcatchment WS-20: BUILDING Runoff Area=16,000 sf 100.00% Impervious Runoff Depth>2.77"
Tc=2.0 min CN=98 Runoff=1.23 cfs 0.085 af

Subcatchment WS-21: Front Lawn Runoff Area=26,518 sf 42.90% Impervious Runoff Depth>1.82"
Tc=5.0 min CN=88 Runoff=1.34 cfs 0.092 af

Subcatchment WS-22: OFFSITE FLOW Runoff Area=2,043 sf 82.18% Impervious Runoff Depth>2.45"
Tc=5.0 min CN=95 Runoff=0.13 cfs 0.010 af

Subcatchment WS-23: RAILROAD DITCH Runoff Area=26,852 sf 44.32% Impervious Runoff Depth>1.74"
Tc=5.0 min CN=87 Runoff=1.30 cfs 0.089 af

Subcatchment WS-24: WEST BUILDING Runoff Area=27,424 sf 0.00% Impervious Runoff Depth>1.18"
Flow Length=139' Slope=0.0580 '/' Tc=12.5 min CN=79 Runoff=0.69 cfs 0.062 af

Subcatchment WS-3: North 95 Runoff Area=22.655 ac 5.19% Impervious Runoff Depth>0.85"
Flow Length=1,483' Tc=43.6 min CN=73 Runoff=9.85 cfs 1.598 af

Subcatchment WS-4: North Old Lisbon Rd Runoff Area=13.983 ac 6.44% Impervious Runoff Depth>1.05"
Flow Length=1,349' Tc=56.4 min CN=77 Runoff=6.85 cfs 1.229 af

Subcatchment WS-5: Uphill North Old Runoff Area=34.550 ac 0.00% Impervious Runoff Depth>0.69"
Flow Length=2,370' Tc=104.0 min CN=70 Runoff=6.84 cfs 1.983 af

Reach R2: Site Wetland Channel Avg. Flow Depth=0.55' Max Vel=6.34 fps Inflow=16.36 cfs 4.732 af
n=0.030 L=330.0' S=0.0561 '/' Capacity=231.75 cfs Outflow=16.35 cfs 4.729 af

Reach R3: Old Lisbon Rd - I-95 Avg. Flow Depth=0.46' Max Vel=4.18 fps Inflow=8.37 cfs 3.142 af
n=0.030 L=730.0' S=0.0301 '/' Capacity=169.92 cfs Outflow=8.37 cfs 3.135 af

Reach R4: (new Reach) Avg. Flow Depth=0.18' Max Vel=7.34 fps Inflow=5.99 cfs 1.920 af
n=0.012 L=540.0' S=0.0407 '/' Capacity=564.90 cfs Outflow=5.99 cfs 1.917 af

Reach SP1: Study Point 1 Inflow=16.34 cfs 5.162 af
Outflow=16.34 cfs 5.162 af

Pond 1P: Site detention Peak Elev=216.86' Storage=12,785 cf Inflow=17.36 cfs 5.178 af
Primary=16.21 cfs 5.077 af Tertiary=0.00 cfs 0.000 af Outflow=16.21 cfs 5.077 af

Pond P2: Railroad Outlet Peak Elev=212.33' Storage=460 cf Inflow=16.34 cfs 5.166 af
Outflow=16.34 cfs 5.162 af

Pond P20: DRIP EDGE Peak Elev=228.78' Storage=0.027 af Inflow=1.23 cfs 0.085 af
Outflow=0.29 cfs 0.080 af

Pond P3: I-95 Peak Elev=236.00' Storage=0 cf Inflow=16.36 cfs 4.732 af
Primary=0.03 cfs 0.010 af Secondary=16.33 cfs 4.723 af Outflow=16.36 cfs 4.732 af

Pond P4: Old Lisbon Road Peak Elev=267.51' Storage=896 cf Inflow=8.37 cfs 3.146 af
Primary=8.37 cfs 3.142 af Secondary=0.00 cfs 0.000 af Outflow=8.37 cfs 3.142 af

Pond P5: Forest Wetland Peak Elev=296.20' Storage=0.265 af Inflow=6.84 cfs 1.983 af
Outflow=5.99 cfs 1.920 af

Pond TOTAL: COMBINED Inflow=16.35 cfs 5.172 af
Primary=16.35 cfs 5.172 af

Total Runoff Area = 75.748 ac Runoff Volume = 5.363 af Average Runoff Depth = 0.85"
95.99% Pervious = 72.710 ac 4.01% Impervious = 3.038 ac

Summary for Subcatchment WS-1: West Site

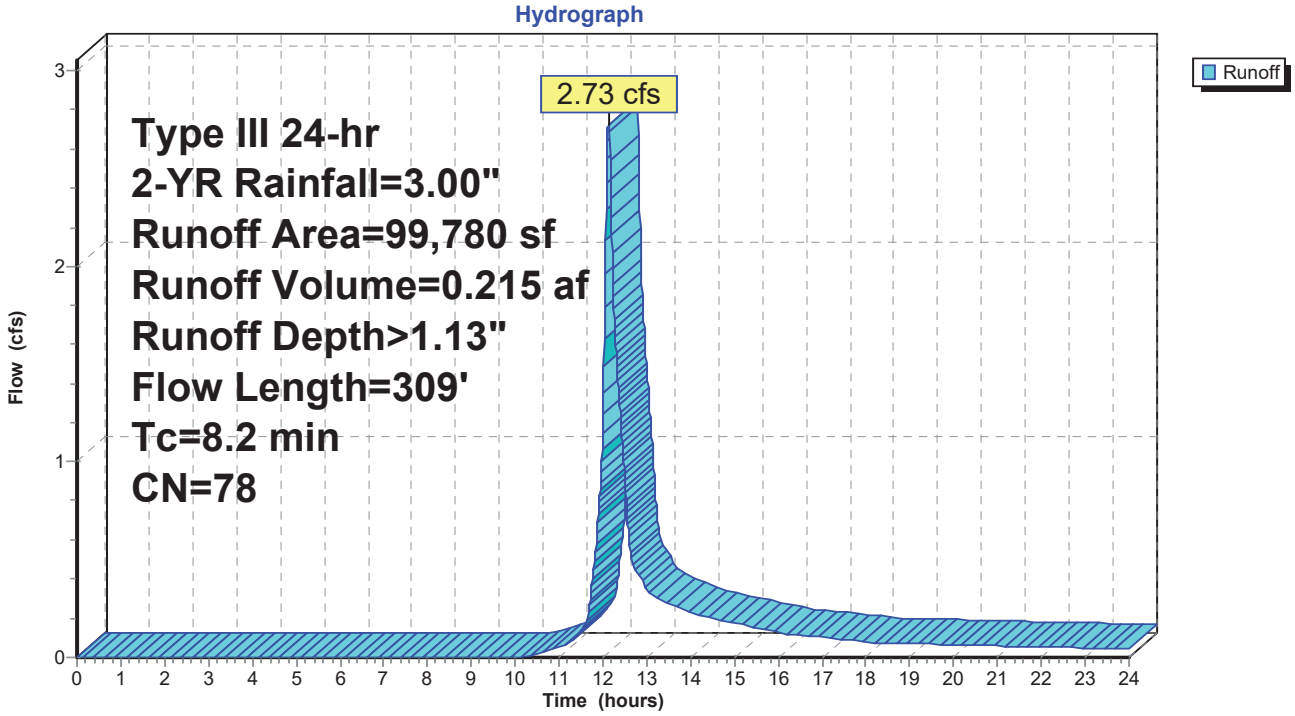
Runoff = 2.73 cfs @ 12.12 hrs, Volume= 0.215 af, Depth> 1.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.00"

Area (sf)	CN	Description
98,785	78	Meadow, non-grazed, HSG D
995	98	Paved roads w/curbs & sewers, HSG D
99,780	78	Weighted Average
98,785		99.00% Pervious Area
995		1.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	118	0.1530	0.26		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.00"
0.7	191	0.0300	4.38	9.86	**Trap/Vee/Rect Channel Flow, B-C** Bot.W=3.00' D=0.50' Z= 3.0 '/' Top.W=6.00' n= 0.030 Earth, grassed & winding
8.2	309	Total			

Subcatchment WS-1: West Site



Summary for Subcatchment WS-20: BUILDING

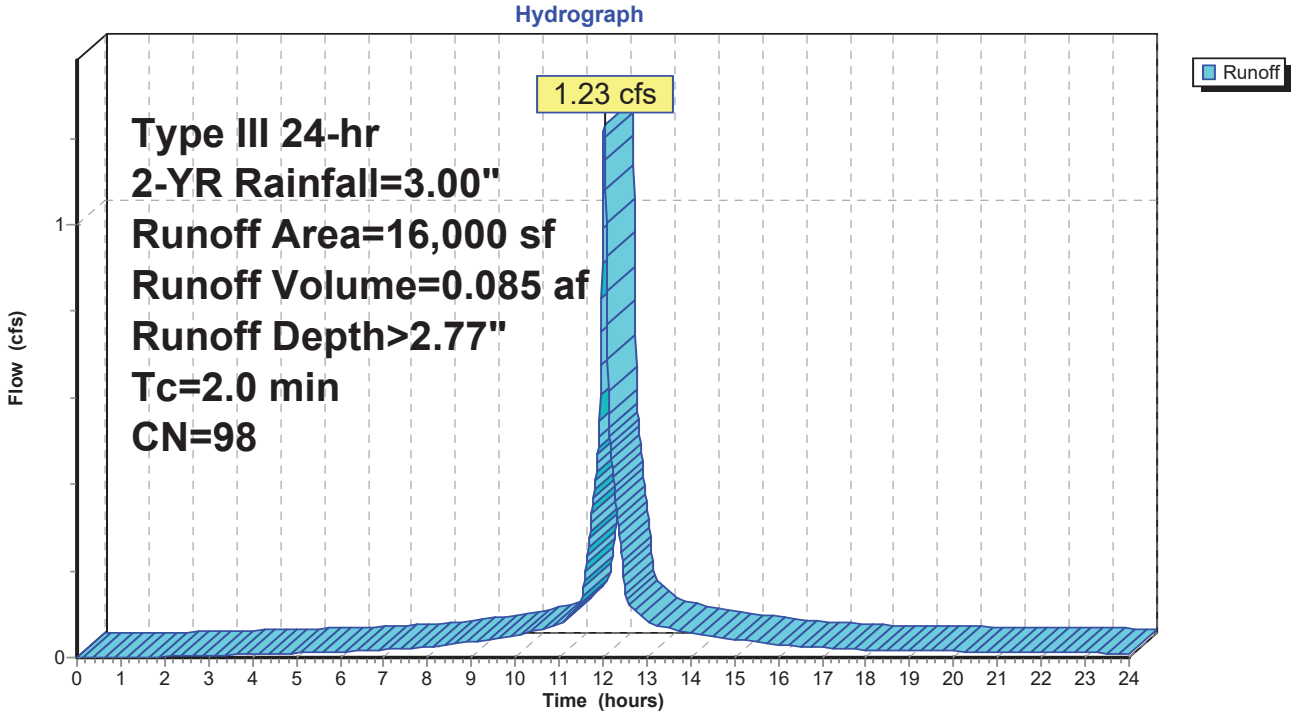
Runoff = 1.23 cfs @ 12.03 hrs, Volume= 0.085 af, Depth> 2.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.00"

Area (sf)	CN	Description
16,000	98	Unconnected roofs, HSG D
16,000		100.00% Impervious Area
16,000		100.00% Unconnected

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

Subcatchment WS-20: BUILDING



Summary for Subcatchment WS-21: Front Lawn

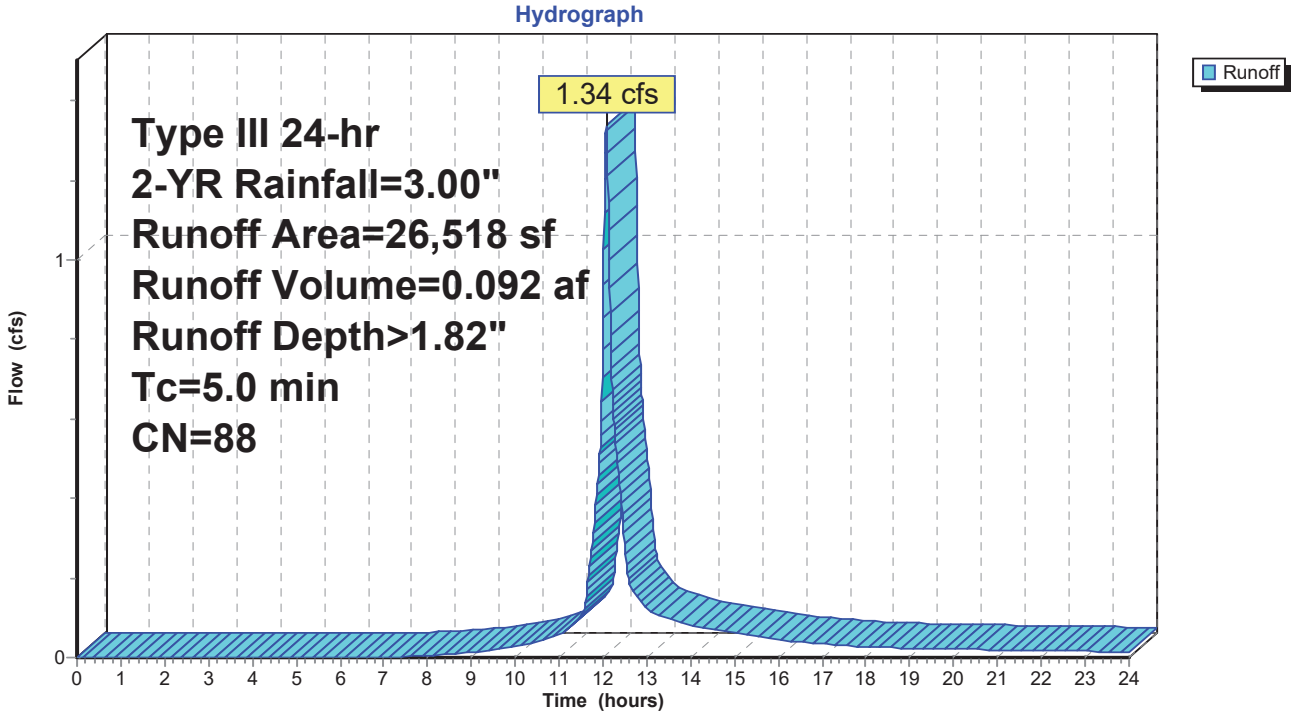
Runoff = 1.34 cfs @ 12.07 hrs, Volume= 0.092 af, Depth> 1.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.00"

Area (sf)	CN	Description
15,143	80	>75% Grass cover, Good, HSG D
11,375	98	Paved parking, HSG D
26,518	88	Weighted Average
15,143		57.10% Pervious Area
11,375		42.90% Impervious Area

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

Subcatchment WS-21: Front Lawn



Summary for Subcatchment WS-22: OFFSITE FLOW

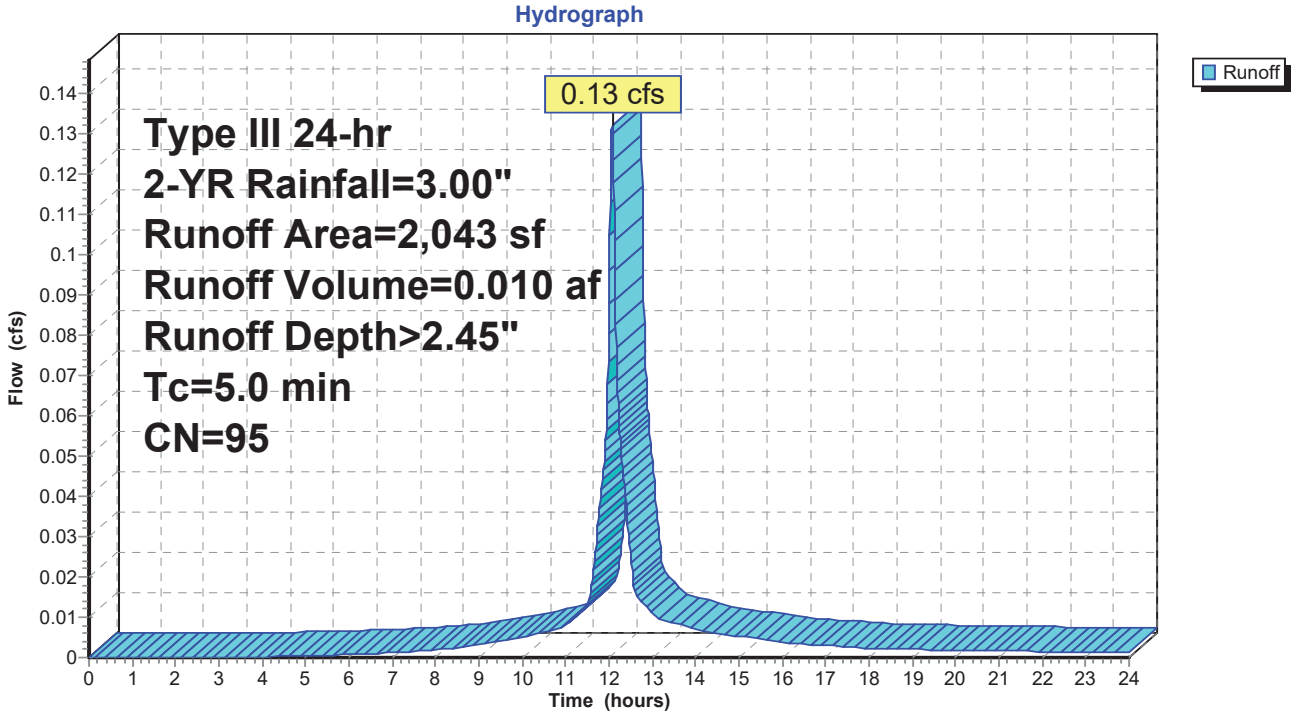
Runoff = 0.13 cfs @ 12.07 hrs, Volume= 0.010 af, Depth> 2.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.00"

Area (sf)	CN	Description
1,679	98	Paved parking, HSG D
364	80	>75% Grass cover, Good, HSG D
2,043	95	Weighted Average
364		17.82% Pervious Area
1,679		82.18% Impervious Area

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

Subcatchment WS-22: OFFSITE FLOW



Summary for Subcatchment WS-23: RAILROAD DITCH

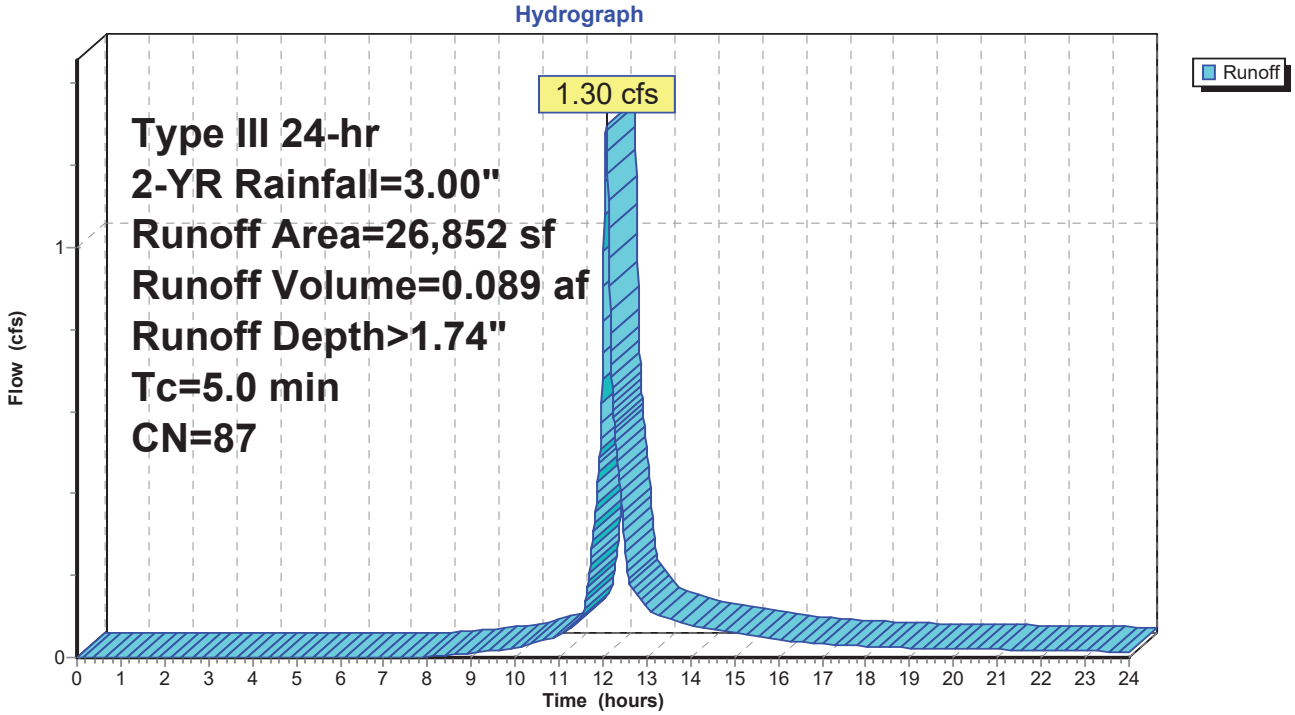
Runoff = 1.30 cfs @ 12.07 hrs, Volume= 0.089 af, Depth> 1.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.00"

	Area (sf)	CN	Description
	14,952	78	Meadow, non-grazed, HSG D
*	11,900	98	entrance drive
	26,852	87	Weighted Average
	14,952		55.68% Pervious Area
	11,900		44.32% Impervious Area

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

Subcatchment WS-23: RAILROAD DITCH



Summary for Subcatchment WS-24: WEST BUILDING LANDSCAPE

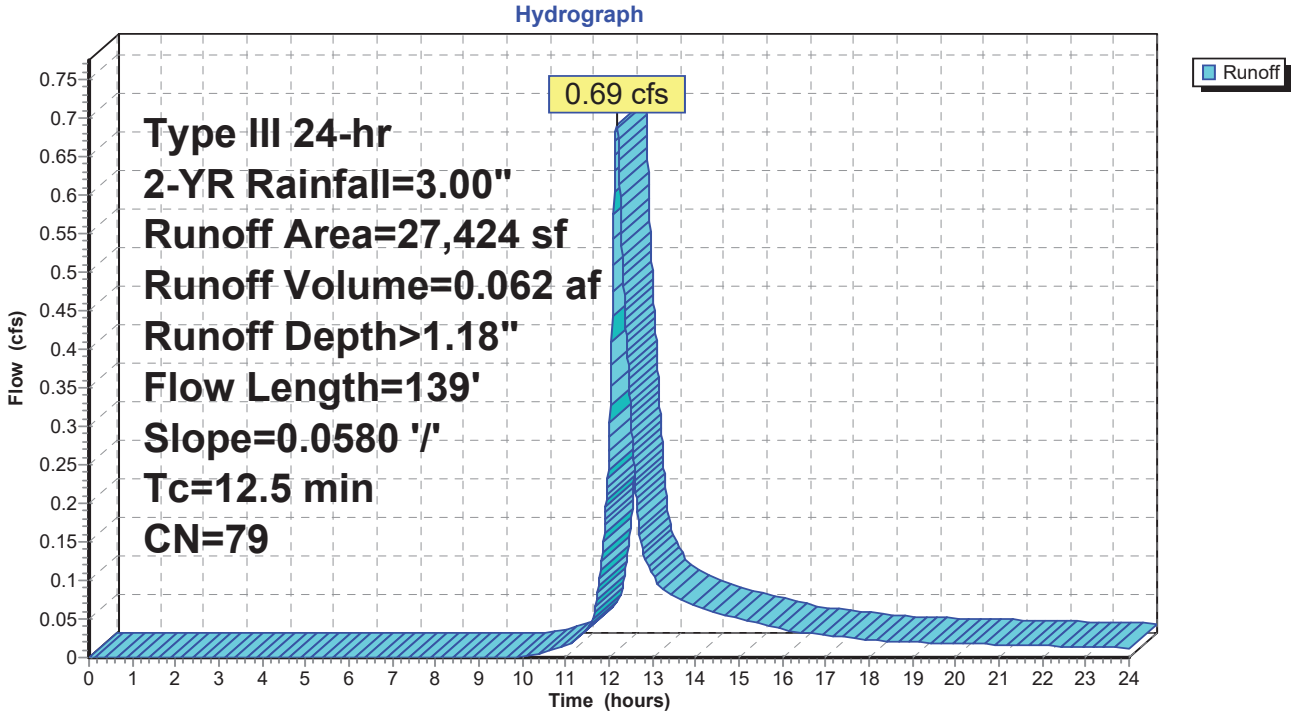
Runoff = 0.69 cfs @ 12.18 hrs, Volume= 0.062 af, Depth> 1.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.00"

Area (sf)	CN	Description
10,259	80	>75% Grass cover, Good, HSG D
17,165	78	Meadow, non-grazed, HSG D
27,424	79	Weighted Average
27,424		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	139	0.0580	0.18		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.00"

Subcatchment WS-24: WEST BUILDING LANDSCAPE



Summary for Subcatchment WS-3: North 95

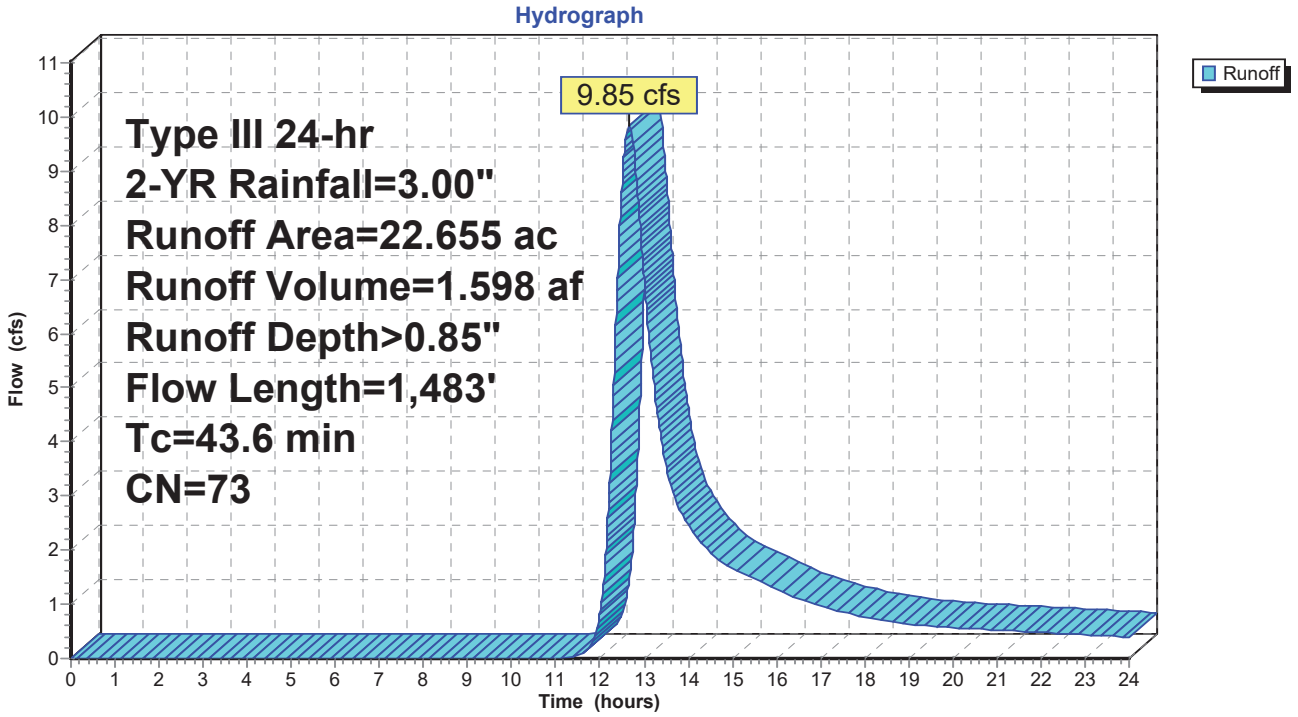
Runoff = 9.85 cfs @ 12.65 hrs, Volume= 1.598 af, Depth> 0.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.00"

Area (ac)	CN	Description
2.000	80	1/2 acre lots, 25% imp, HSG C
0.500	85	1/2 acre lots, 25% imp, HSG D
0.550	98	Paved roads w/curbs & sewers, HSG C
15.380	70	Woods, Good, HSG C
4.225	77	Woods, Good, HSG D
22.655	73	Weighted Average
21.480		94.81% Pervious Area
1.175		5.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.7	150	0.0870	0.08		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 3.00"
12.6	947	0.0630	1.25		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
1.3	386	0.0210	5.00	11.25	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=3.00' D=0.50' Z= 3.0 '/' Top.W=6.00' n= 0.022 Earth, clean & straight
43.6	1,483	Total			

Subcatchment WS-3: North 95



Summary for Subcatchment WS-4: North Old Lisbon Rd

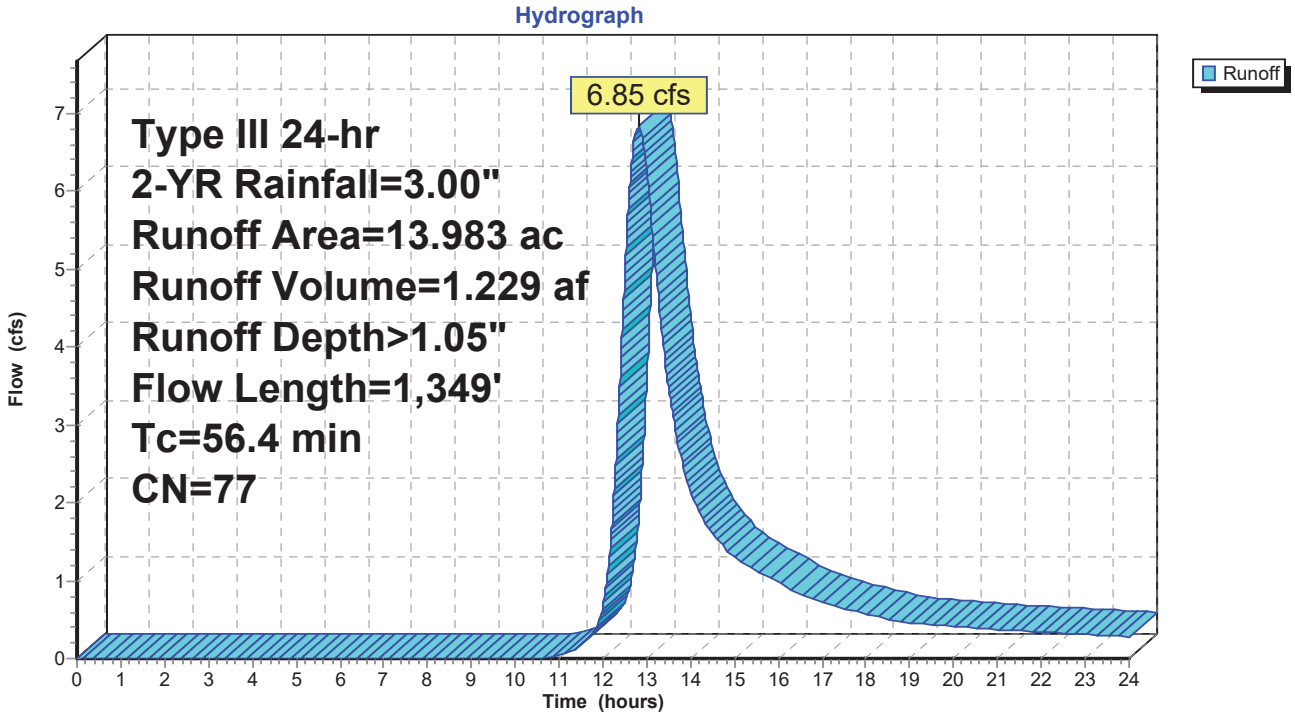
Runoff = 6.85 cfs @ 12.84 hrs, Volume= 1.229 af, Depth> 1.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.00"

Area (ac)	CN	Description
0.500	85	1/2 acre lots, 25% imp, HSG D
2.000	80	1/2 acre lots, 25% imp, HSG C
0.275	98	Paved roads w/curbs & sewers, HSG D
8.450	77	Woods, Good, HSG D
2.758	70	Woods, Good, HSG C
13.983	77	Weighted Average
13.083		93.56% Pervious Area
0.900		6.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.9	150	0.0470	0.07		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 3.00"
18.3	1,097	0.0400	1.00		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.2	102	0.0590	7.98	13.96	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=2.00' D=0.50' Z= 3.0 '/' Top.W=5.00' n= 0.022 Earth, clean & straight
56.4	1,349	Total			

Subcatchment WS-4: North Old Lisbon Rd



Summary for Subcatchment WS-5: Uphill North Old Lisbon Rd

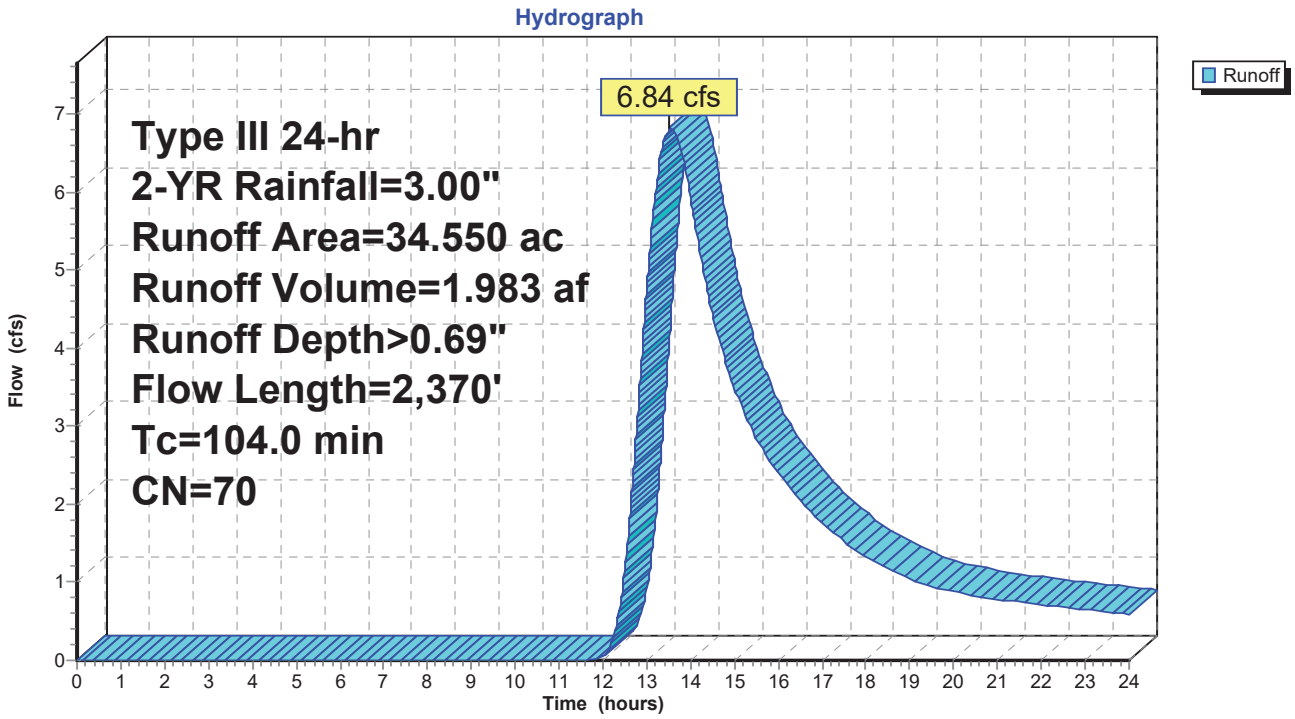
Runoff = 6.84 cfs @ 13.52 hrs, Volume= 1.983 af, Depth> 0.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.00"

Area (ac)	CN	Description
34.550	70	Woods, Good, HSG C
34.550		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
47.7	150	0.0266	0.05		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 3.00"
9.7	970	0.1100	1.66		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
46.6	1,250	0.0080	0.45		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
104.0	2,370	Total			

Subcatchment WS-5: Uphill North Old Lisbon Rd



Summary for Reach R2: Site Wetland Channel

Inflow Area = 71.188 ac, 2.91% Impervious, Inflow Depth > 0.80" for 2-YR event
Inflow = 16.36 cfs @ 12.74 hrs, Volume= 4.732 af
Outflow = 16.35 cfs @ 12.76 hrs, Volume= 4.729 af, Atten= 0%, Lag= 0.8 min

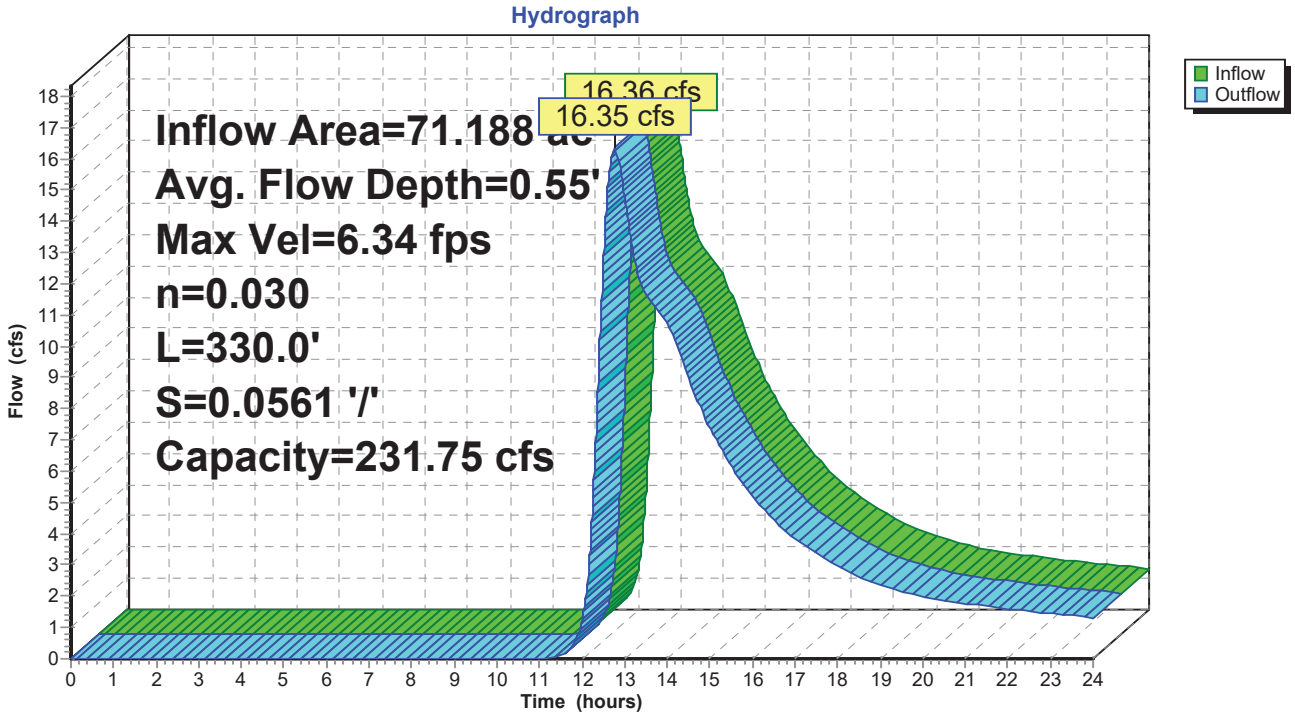
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 6.34 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 3.80 fps, Avg. Travel Time= 1.4 min

Peak Storage= 852 cf @ 12.76 hrs
Average Depth at Peak Storage= 0.55'
Bank-Full Depth= 2.00' Flow Area= 18.0 sf, Capacity= 231.75 cfs

3.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 15.00'
Length= 330.0' Slope= 0.0561 '/'
Inlet Invert= 234.50', Outlet Invert= 216.00'

‡

Reach R2: Site Wetland Channel



Summary for Reach R3: Old Lisbon Rd - I-95

Inflow Area = 48.533 ac, 1.85% Impervious, Inflow Depth > 0.78" for 2-YR event
Inflow = 8.37 cfs @ 13.77 hrs, Volume= 3.142 af
Outflow = 8.37 cfs @ 13.81 hrs, Volume= 3.135 af, Atten= 0%, Lag= 2.2 min

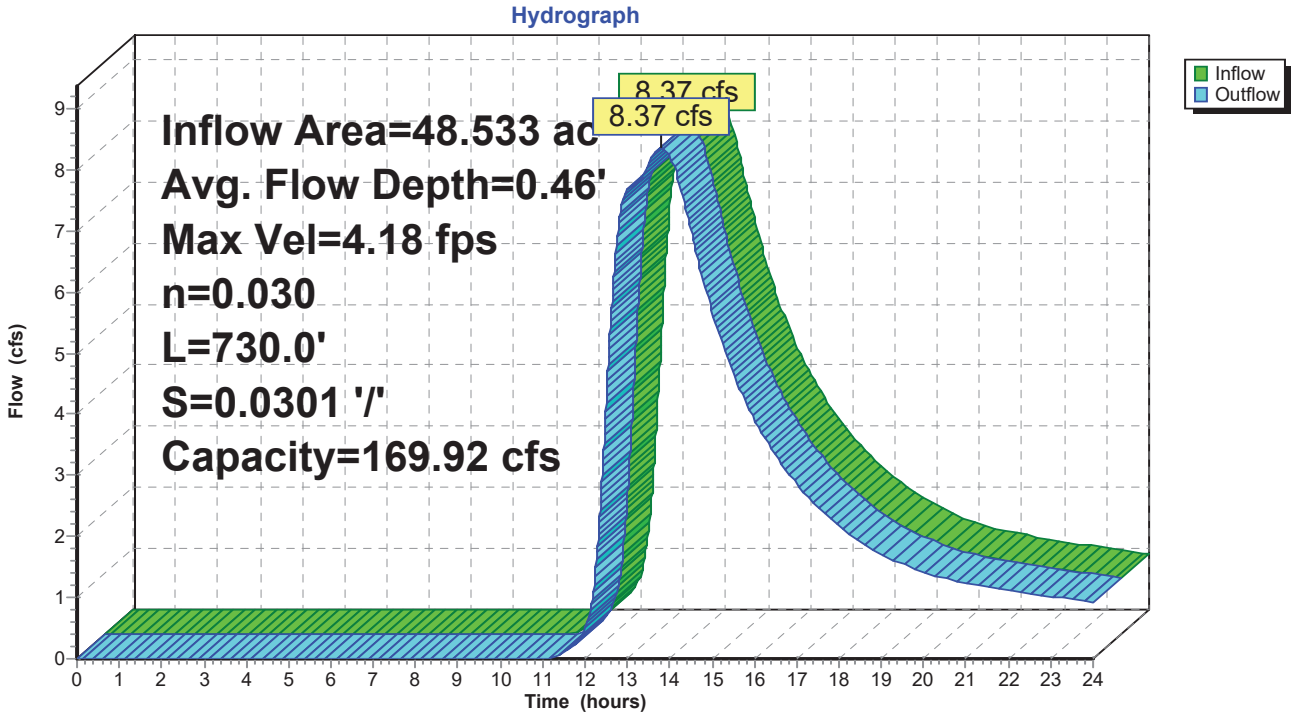
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 4.18 fps, Min. Travel Time= 2.9 min
Avg. Velocity = 2.71 fps, Avg. Travel Time= 4.5 min

Peak Storage= 1,460 cf @ 13.81 hrs
Average Depth at Peak Storage= 0.46'
Bank-Full Depth= 2.00' Flow Area= 18.0 sf, Capacity= 169.92 cfs

3.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 15.00'
Length= 730.0' Slope= 0.0301 '/'
Inlet Invert= 258.00', Outlet Invert= 236.00'

‡

Reach R3: Old Lisbon Rd - I-95



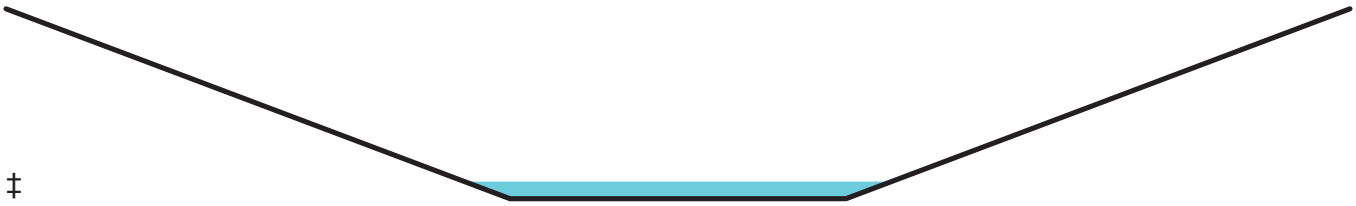
Summary for Reach R4: (new Reach)

Inflow Area = 34.550 ac, 0.00% Impervious, Inflow Depth > 0.67" for 2-YR event
Inflow = 5.99 cfs @ 13.97 hrs, Volume= 1.920 af
Outflow = 5.99 cfs @ 13.99 hrs, Volume= 1.917 af, Atten= 0%, Lag= 0.8 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 7.34 fps, Min. Travel Time= 1.2 min
Avg. Velocity = 4.52 fps, Avg. Travel Time= 2.0 min

Peak Storage= 441 cf @ 13.99 hrs
Average Depth at Peak Storage= 0.18'
Bank-Full Depth= 2.00' Flow Area= 20.0 sf, Capacity= 564.90 cfs

4.00' x 2.00' deep channel, n= 0.012 Wood, Planed
Side Slope Z-value= 3.0 '/' Top Width= 16.00'
Length= 540.0' Slope= 0.0407 '/'
Inlet Invert= 296.00', Outlet Invert= 274.00'



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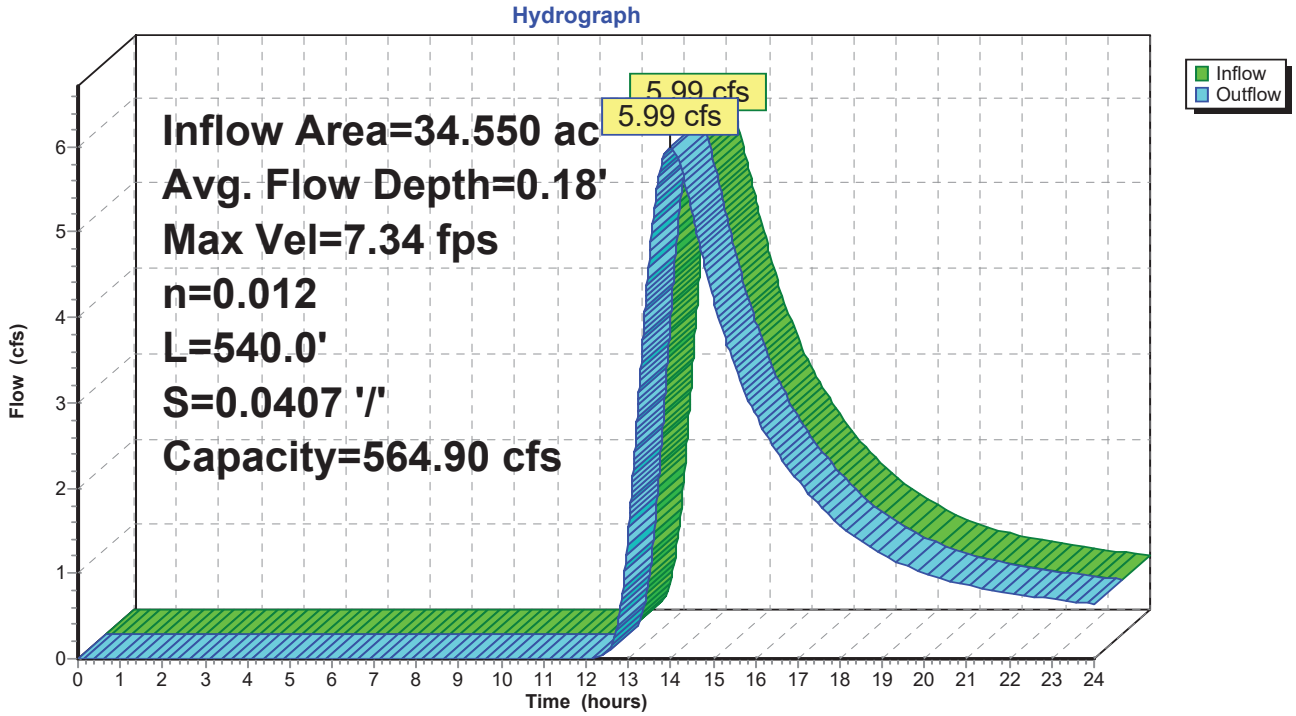
Reach R4: (new Reach)



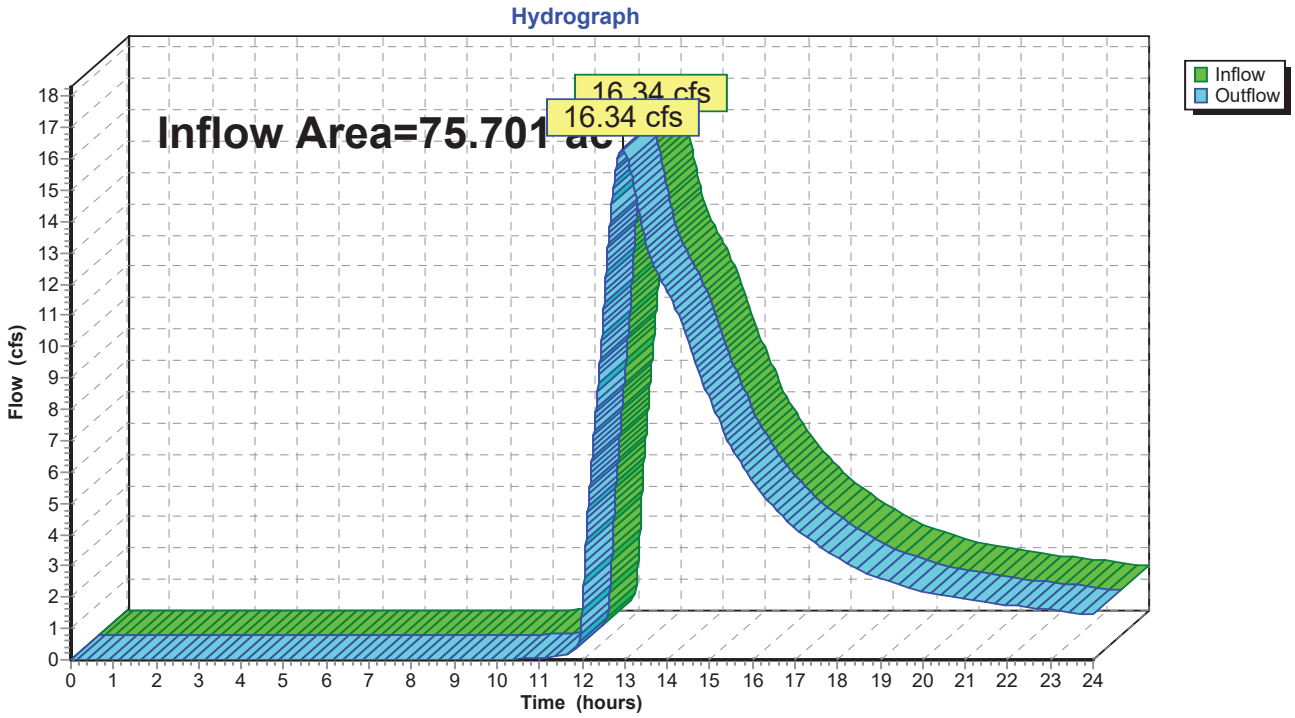
Summary for Reach SP1: Study Point 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 75.701 ac, 3.96% Impervious, Inflow Depth > 0.82" for 2-YR event
Inflow = 16.34 cfs @ 12.95 hrs, Volume= 5.162 af
Outflow = 16.34 cfs @ 12.95 hrs, Volume= 5.162 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Reach SP1: Study Point 1



Summary for Pond 1P: Site detention

[62] Hint: Exceeded Reach R2 OUTLET depth by 0.33' @ 12.98 hrs

Inflow Area =	75.084 ac,	3.63% Impervious,	Inflow Depth >	0.83"	for 2-YR event
Inflow =	17.36 cfs @	12.75 hrs,	Volume=	5.178 af	
Outflow =	16.21 cfs @	12.94 hrs,	Volume=	5.077 af,	Atten= 7%, Lag= 11.4 min
Primary =	16.21 cfs @	12.94 hrs,	Volume=	5.077 af	
Tertiary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 216.86' @ 12.94 hrs Surf.Area= 6,207 sf Storage= 12,785 cf

Plug-Flow detention time= 20.9 min calculated for 5.075 af (98% of inflow)
Center-of-Mass det. time= 11.2 min (936.8 - 925.7)

Volume	Invert	Avail.Storage	Storage Description
#1	213.00'	150,519 cf	**Custom Stage Data (Prismatic)** Listed below

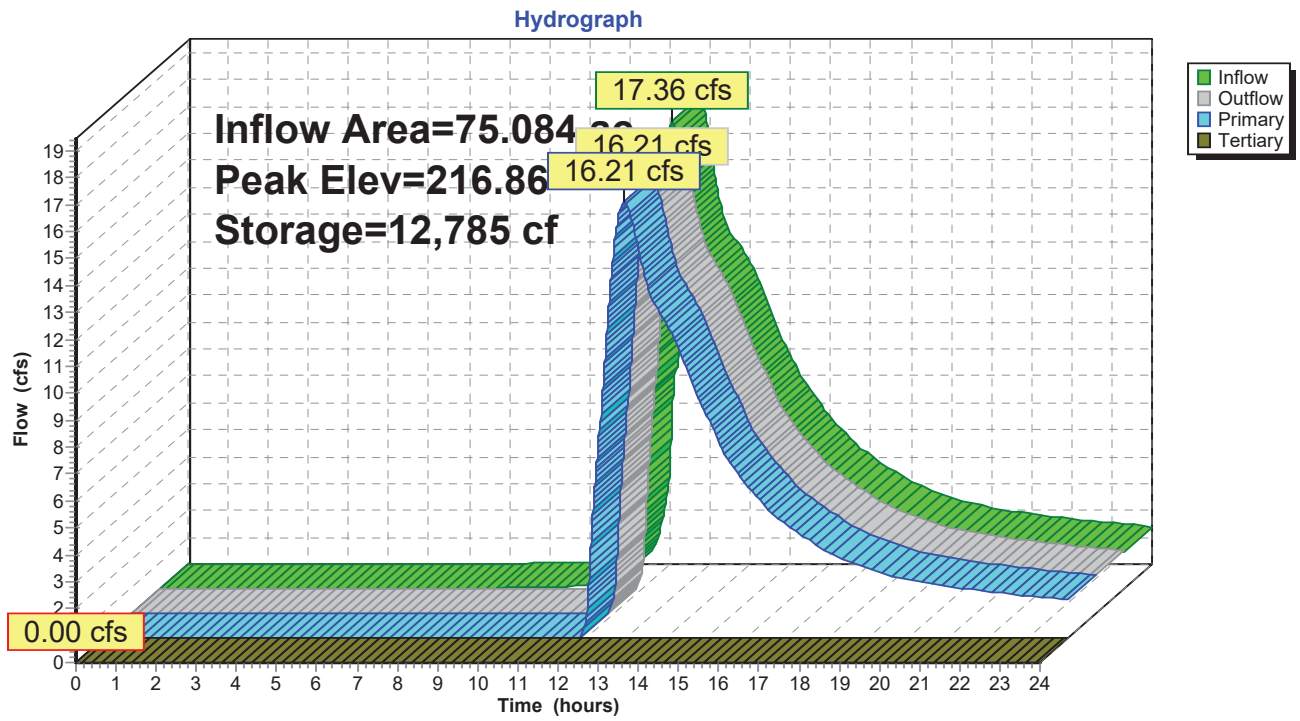
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
213.00	800	0	0
214.00	1,569	1,185	1,185
215.00	2,800	2,185	3,369
216.00	5,000	3,900	7,269
218.00	7,800	12,800	20,069
220.00	13,250	21,050	41,119
222.00	20,100	33,350	74,469
223.00	24,000	22,050	96,519
225.00	30,000	54,000	150,519

Device	Routing	Invert	Outlet Devices
#1	Tertiary	223.50'	**50.0' long x 24.0' 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	Primary	214.78'	**24.0" Round Culvert** L= 80.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 214.78' / 213.34' S= 0.0180 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#3	Primary	216.50'	**15.0" Round Overflow Culvert** L= 80.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 216.50' / 214.00' S= 0.0313 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=16.21 cfs @ 12.94 hrs HW=216.86' TW=212.33' (Dynamic Tailwater)
└─**2=Culvert** (Inlet Controls 15.73 cfs @ 5.01 fps)
└─**3=Overflow Culvert** (Inlet Controls 0.48 cfs @ 1.62 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=213.00' TW=209.00' (Dynamic Tailwater)
└─**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Site detention



Summary for Pond P2: Railroad Outlet

Inflow Area = 75.701 ac, 3.96% Impervious, Inflow Depth > 0.82" for 2-YR event
Inflow = 16.34 cfs @ 12.94 hrs, Volume= 5.166 af
Outflow = 16.34 cfs @ 12.95 hrs, Volume= 5.162 af, Atten= 0%, Lag= 0.5 min
Primary = 16.34 cfs @ 12.95 hrs, Volume= 5.162 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 212.33' @ 12.95 hrs Surf.Area= 318 sf Storage= 460 cf

Plug-Flow detention time= 0.8 min calculated for 5.162 af (100% of inflow)
Center-of-Mass det. time= 0.5 min (935.3 - 934.8)

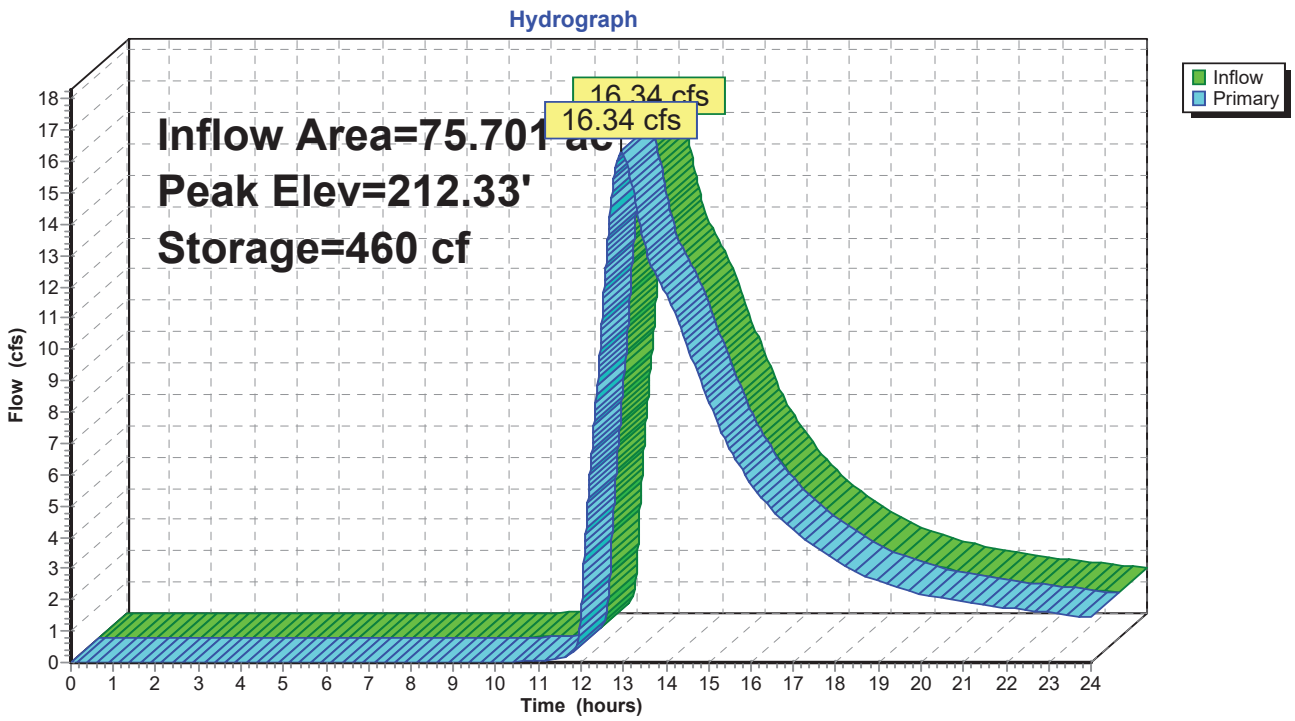
Volume	Invert	Avail.Storage	Storage Description
#1	209.00'	34,075 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
209.00	50	0	0
210.00	100	75	75
212.00	200	300	375
214.00	918	1,118	1,493
216.00	2,151	3,069	4,562
218.00	3,693	5,844	10,406
220.00	5,588	9,281	19,687
222.00	8,800	14,388	34,075

Device	Routing	Invert	Outlet Devices
#1	Primary	210.33'	**24.0" W x 24.0" H Box Culvert** L= 40.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 210.33' / 209.47' S= 0.0215 '/' Cc= 0.900 n= 0.025 Rubble masonry, cemented, Flow Area= 4.00 sf
#2	Primary	221.50'	**50.0' long x 50.0' 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

Primary OutFlow Max=16.34 cfs @ 12.95 hrs HW=212.33' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 16.34 cfs @ 5.45 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P2: Railroad Outlet



Summary for Pond P20: DRIP EDGE

Inflow Area = 0.367 ac,100.00% Impervious, Inflow Depth > 2.77" for 2-YR event
Inflow = 1.23 cfs @ 12.03 hrs, Volume= 0.085 af
Outflow = 0.29 cfs @ 12.37 hrs, Volume= 0.080 af, Atten= 76%, Lag= 20.2 min
Primary = 0.29 cfs @ 12.37 hrs, Volume= 0.080 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 228.78' @ 12.37 hrs Surf.Area= 0.037 ac Storage= 0.027 af

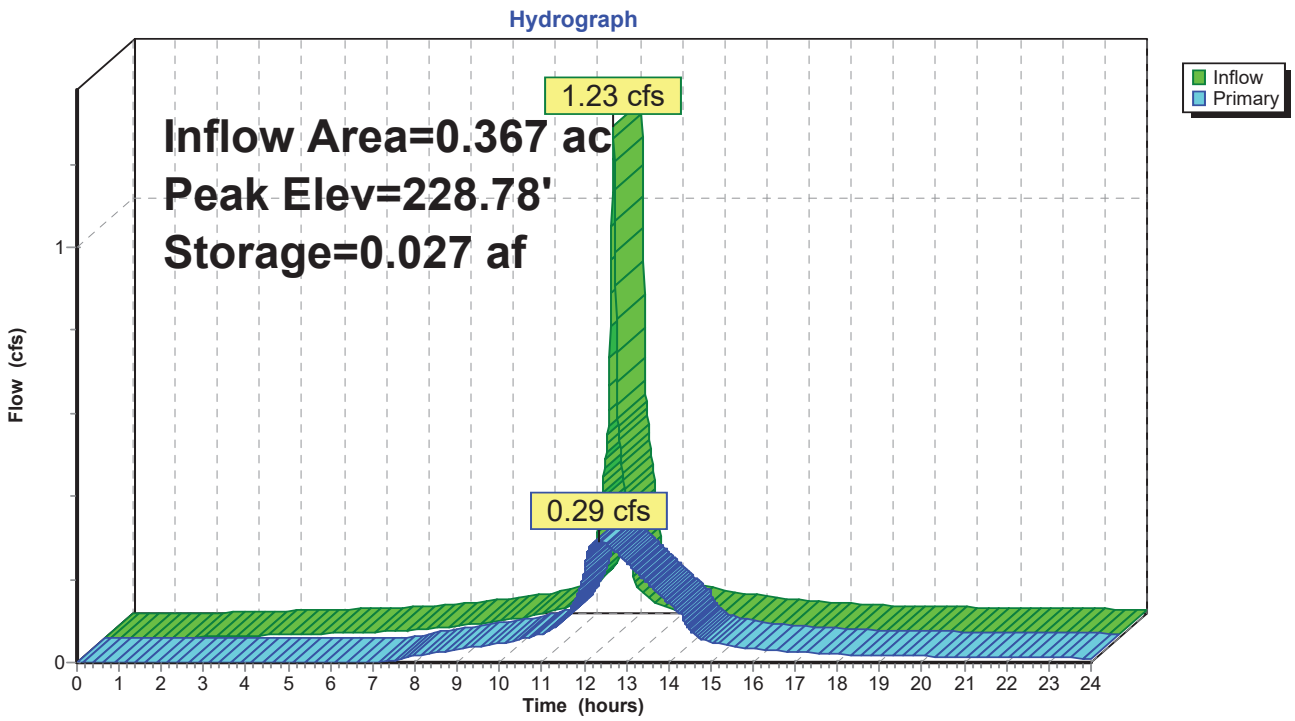
Plug-Flow detention time= 85.5 min calculated for 0.080 af (94% of inflow)
Center-of-Mass det. time= 54.3 min (808.2 - 753.9)

Volume	Invert	Avail.Storage	Storage Description
#1	227.00'	0.058 af	**4.00'W x 400.00'L x 4.00'H Prismatoid** 0.147 af Overall - 0.001 af Embedded = 0.146 af x 40.0% Voids
#2	227.25'	0.001 af	**4.0" Round Pipe Storage** Inside #1 L= 410.0' S= 0.0043 '/' 0.001 af Overall - 0.2" Wall Thickness = 0.001 af
#3	227.25'	0.000 af	**4.0" Round Pipe Storage** Inside #1 L= 80.0' S= 0.0100 '/' 0.000 af Overall - 0.2" Wall Thickness = 0.000 af
		0.059 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Device 2	227.25'	**6.0" Round Culvert** L= 25.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 227.25' / 227.13' S= 0.0048 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Primary	227.13'	**3.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=0.29 cfs @ 12.37 hrs HW=228.78' TW=216.06' (Dynamic Tailwater)
└─**2=Orifice/Grate** (Orifice Controls 0.29 cfs @ 5.94 fps)
  └─**1=Culvert** (Passes 0.29 cfs of 0.84 cfs potential flow)

Pond P20: DRIP EDGE



Summary for Pond P3: I-95

[44] Hint: Outlet device #1 is below defined storage
[44] Hint: Outlet device #2 is below defined storage

Inflow Area =	71.188 ac,	2.91% Impervious,	Inflow Depth >	0.80"	for 2-YR event
Inflow =	16.36 cfs @	12.74 hrs,	Volume=	4.732 af	
Outflow =	16.36 cfs @	12.74 hrs,	Volume=	4.732 af,	Atten= 0%, Lag= 0.0 min
Primary =	0.03 cfs @	12.74 hrs,	Volume=	0.010 af	
Secondary =	16.33 cfs @	12.74 hrs,	Volume=	4.723 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 236.00' @ 0.00 hrs Surf.Area= 13,500 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (933.2 - 933.2)

Volume	Invert	Avail.Storage	Storage Description
#1	236.00'	33,973 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

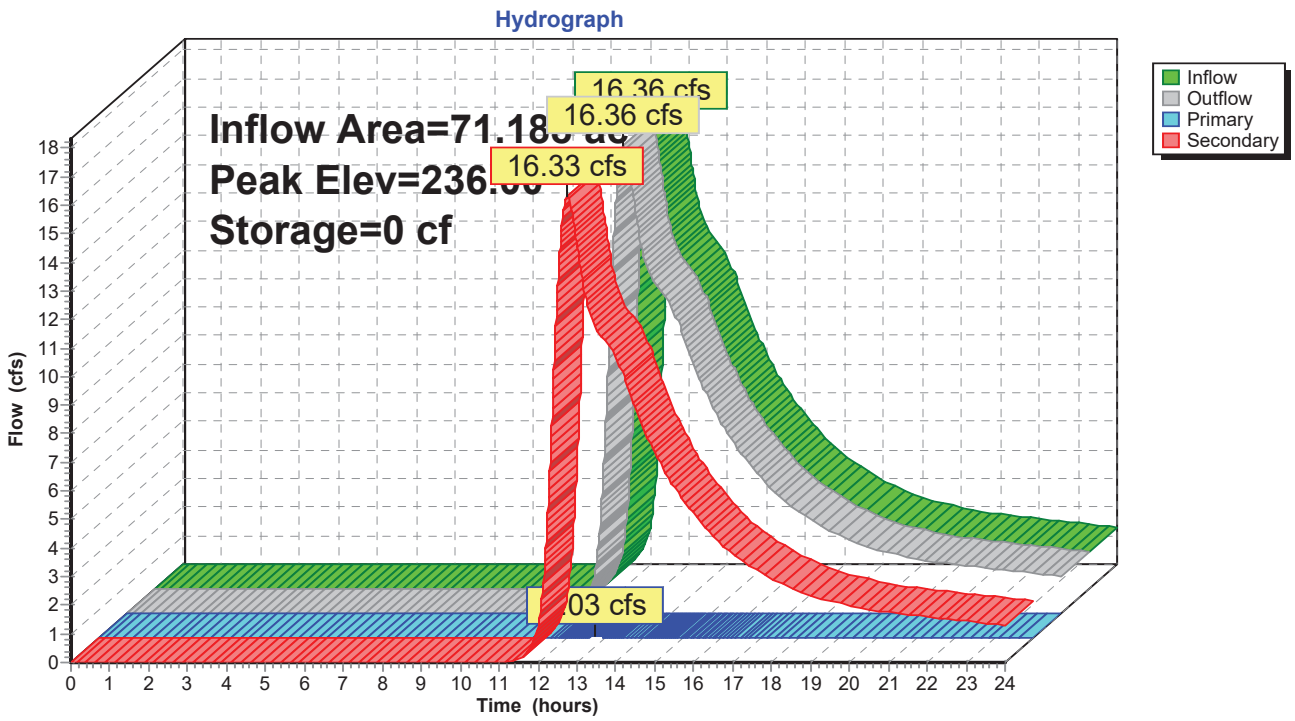
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
236.00	13,500	0	0
238.00	20,473	33,973	33,973

Device	Routing	Invert	Outlet Devices
#1	Primary	225.50'	**30.0" Round Culvert** L= 250.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 225.50' / 224.50' S= 0.0040 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf
#2	Secondary	228.00'	**300.0' long x 90.0' 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

Primary OutFlow Max=0.00 cfs @ 12.74 hrs HW=236.00' TW=235.05' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.00 cfs of 18.16 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 12.74 hrs HW=236.00' TW=235.05' (Dynamic Tailwater)
└─**2=Broad-Crested Rectangular Weir** (Passes 0.00 cfs of 9,068.23 cfs potential flow)

Pond P3: I-95


Hydrograph
Inflow Area=71.18
Peak Elev=236.
Storage=0 cf
16.36 cfs
16.36 cfs
16.33 cfs
03 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)

Summary for Pond P4: Old Lisbon Road

Inflow Area =	48.533 ac,	1.85% Impervious,	Inflow Depth >	0.78" for 2-YR event
Inflow =	8.37 cfs @	13.75 hrs, Volume=	3.146 af	
Outflow =	8.37 cfs @	13.77 hrs, Volume=	3.142 af, Atten= 0%, Lag= 1.4 min	
Primary =	8.37 cfs @	13.77 hrs, Volume=	3.142 af	
Secondary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 267.51' @ 13.77 hrs Surf.Area= 839 sf Storage= 896 cf

Plug-Flow detention time= 2.2 min calculated for 3.141 af (100% of inflow)
Center-of-Mass det. time= 1.5 min (948.9 - 947.4)

Volume	Invert	Avail.Storage	Storage Description
#1	266.00'	51,550 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

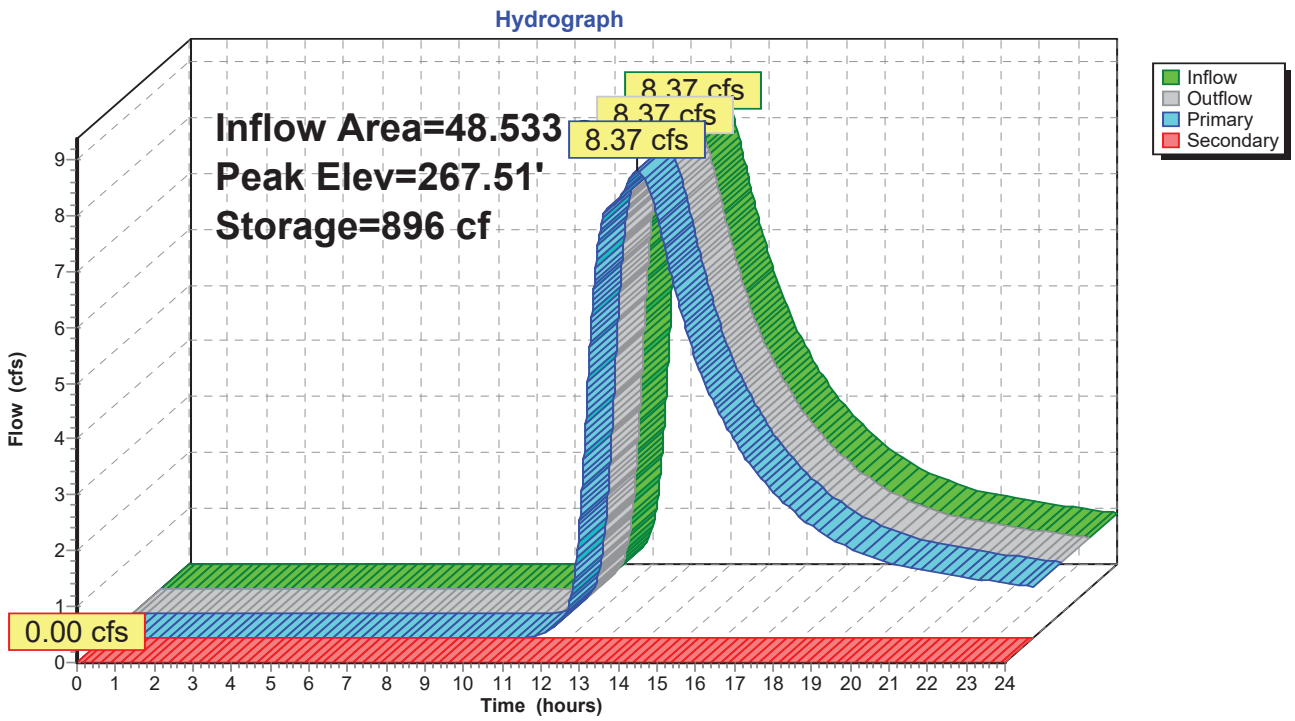
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
266.00	350	0	0
268.00	1,000	1,350	1,350
270.00	2,100	3,100	4,450
272.00	6,000	8,100	12,550
274.00	9,500	15,500	28,050
276.00	14,000	23,500	51,550

Device	Routing	Invert	Outlet Devices
#1	Primary	266.00'	**24.0" Round Culvert** L= 100.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 266.00' / 265.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Secondary	274.00'	**50.0' long x 24.0' 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

Primary OutFlow Max=8.37 cfs @ 13.77 hrs HW=267.51' TW=258.46' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 8.37 cfs @ 3.30 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=266.00' TW=258.00' (Dynamic Tailwater)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P4: Old Lisbon Road



Summary for Pond P5: Forest Wetland

Inflow Area = 34.550 ac, 0.00% Impervious, Inflow Depth > 0.69" for 2-YR event
Inflow = 6.84 cfs @ 13.52 hrs, Volume= 1.983 af
Outflow = 5.99 cfs @ 13.97 hrs, Volume= 1.920 af, Atten= 12%, Lag= 26.9 min
Primary = 5.99 cfs @ 13.97 hrs, Volume= 1.920 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 296.20' @ 13.98 hrs Surf.Area= 1.371 ac Storage= 0.265 af

Plug-Flow detention time= 43.3 min calculated for 1.919 af (97% of inflow)
Center-of-Mass det. time= 28.4 min (980.5 - 952.1)

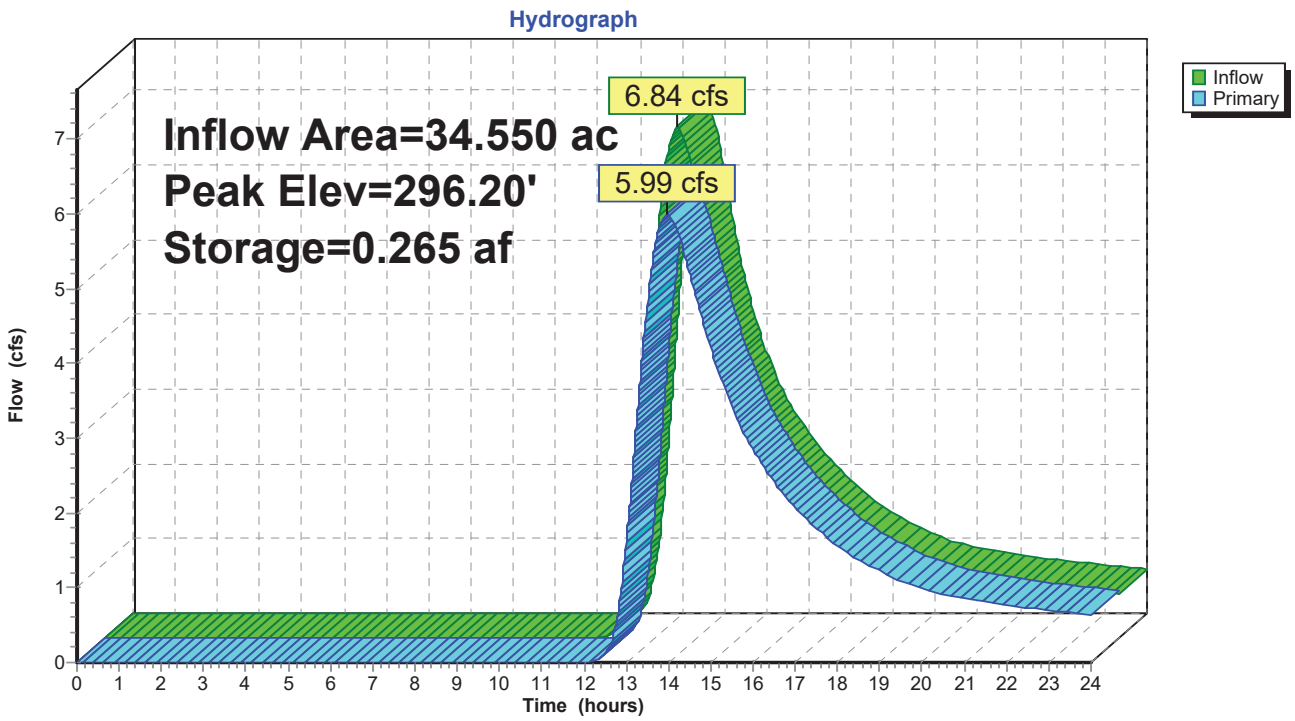
Volume	Invert	Avail.Storage	Storage Description
#1	296.00'	3.920 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
296.00	1.220	0.000	0.000
298.00	2.700	3.920	3.920

Device	Routing	Invert	Outlet Devices
#1	Primary	296.00'	**50.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=5.99 cfs @ 13.97 hrs HW=296.20' TW=296.18' (Dynamic Tailwater)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 5.99 cfs @ 0.59 fps)

Pond P5: Forest Wetland



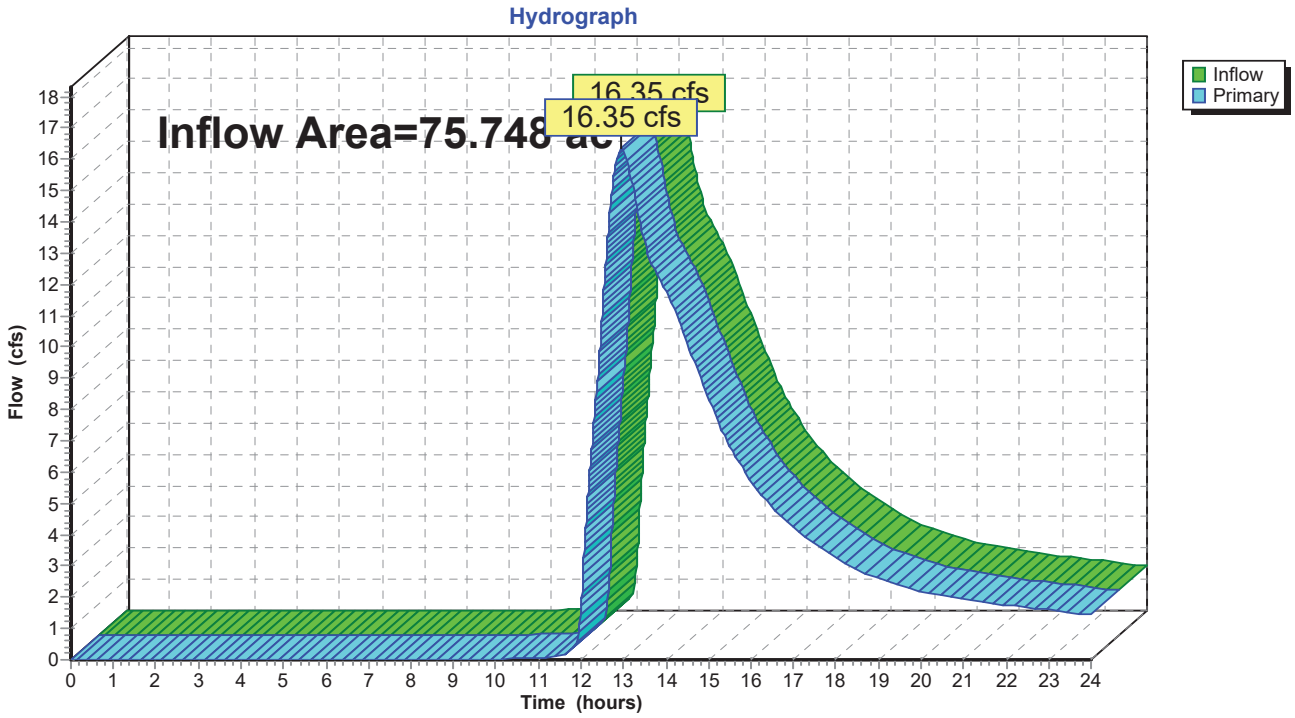
Summary for Pond TOTAL: COMBINED

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 75.748 ac, 4.01% Impervious, Inflow Depth > 0.82" for 2-YR event
Inflow = 16.35 cfs @ 12.95 hrs, Volume= 5.172 af
Primary = 16.35 cfs @ 12.95 hrs, Volume= 5.172 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Pond TOTAL: COMBINED



Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points x 3
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 WS-1: West Site Runoff Area=99,780 sf 1.00% Impervious Runoff Depth>2.13"
Flow Length=309' Tc=8.2 min CN=78 Runoff=5.28 cfs 0.406 af

Subcatchment WS-20: BUILDING Runoff Area=16,000 sf 100.00% Impervious Runoff Depth>4.06"
Tc=2.0 min CN=98 Runoff=1.78 cfs 0.124 af

Subcatchment WS-21: Front Lawn Runoff Area=26,518 sf 42.90% Impervious Runoff Depth>3.01"
Tc=5.0 min CN=88 Runoff=2.19 cfs 0.153 af

Subcatchment WS-22: OFFSITE FLOW Runoff Area=2,043 sf 82.18% Impervious Runoff Depth>3.72"
Tc=5.0 min CN=95 Runoff=0.20 cfs 0.015 af

Subcatchment WS-23: RAILROAD DITCH Runoff Area=26,852 sf 44.32% Impervious Runoff Depth>2.91"
Tc=5.0 min CN=87 Runoff=2.16 cfs 0.150 af

Subcatchment WS-24: WEST BUILDING Runoff Area=27,424 sf 0.00% Impervious Runoff Depth>2.20"
Flow Length=139' Slope=0.0580 '/' Tc=12.5 min CN=79 Runoff=1.32 cfs 0.116 af

Subcatchment WS-3: North 95 Runoff Area=22.655 ac 5.19% Impervious Runoff Depth>1.73"
Flow Length=1,483' Tc=43.6 min CN=73 Runoff=21.38 cfs 3.261 af

Subcatchment WS-4: North Old Lisbon Rd Runoff Area=13.983 ac 6.44% Impervious Runoff Depth>2.02"
Flow Length=1,349' Tc=56.4 min CN=77 Runoff=13.58 cfs 2.356 af

Subcatchment WS-5: Uphill North Old Runoff Area=34.550 ac 0.00% Impervious Runoff Depth>1.49"
Flow Length=2,370' Tc=104.0 min CN=70 Runoff=16.21 cfs 4.284 af

Reach R2: Site Wetland Channel Avg. Flow Depth=0.82' Max Vel=7.84 fps Inflow=35.14 cfs 9.790 af
n=0.030 L=330.0' S=0.0561 '/' Capacity=231.75 cfs Outflow=35.13 cfs 9.785 af

Reach R3: Old Lisbon Rd - I-95 Avg. Flow Depth=0.73' Max Vel=5.38 fps Inflow=20.24 cfs 6.540 af
n=0.030 L=730.0' S=0.0301 '/' Capacity=169.92 cfs Outflow=20.23 cfs 6.529 af

Reach R4: (new Reach) Avg. Flow Depth=0.31' Max Vel=10.01 fps Inflow=15.07 cfs 4.193 af
n=0.012 L=540.0' S=0.0407 '/' Capacity=564.90 cfs Outflow=15.07 cfs 4.190 af

Reach SP1: Study Point 1 Inflow=32.38 cfs 10.608 af
Outflow=32.38 cfs 10.608 af

Pond 1P: Site detention Peak Elev=218.80' Storage=28,484 cf Inflow=36.76 cfs 10.578 af
Primary=32.32 cfs 10.462 af Tertiary=0.00 cfs 0.000 af Outflow=32.32 cfs 10.462 af

Pond P2: Railroad Outlet Peak Elev=214.87' Storage=2,530 cf Inflow=32.50 cfs 10.612 af
Outflow=32.38 cfs 10.608 af

Pond P20: DRIP EDGE Peak Elev=229.66' Storage=0.040 af Inflow=1.78 cfs 0.124 af
Outflow=0.37 cfs 0.120 af

Pond P3: I-95 Peak Elev=236.00' Storage=0 cf Inflow=35.14 cfs 9.790 af
Primary=0.07 cfs 0.020 af Secondary=35.08 cfs 9.770 af Outflow=35.14 cfs 9.790 af

Pond P4: Old Lisbon Road Peak Elev=269.87' Storage=4,185 cf Inflow=20.40 cfs 6.546 af
Primary=20.24 cfs 6.540 af Secondary=0.00 cfs 0.000 af Outflow=20.24 cfs 6.540 af

Pond P5: Forest Wetland Peak Elev=296.36' Storage=0.482 af Inflow=16.21 cfs 4.284 af
Outflow=15.07 cfs 4.193 af

Pond TOTAL: COMBINED Inflow=32.40 cfs 10.622 af
Primary=32.40 cfs 10.622 af

Total Runoff Area = 75.748 ac Runoff Volume = 10.864 af Average Runoff Depth = 1.72"
95.99% Pervious = 72.710 ac 4.01% Impervious = 3.038 ac

Summary for Subcatchment WS-1: West Site

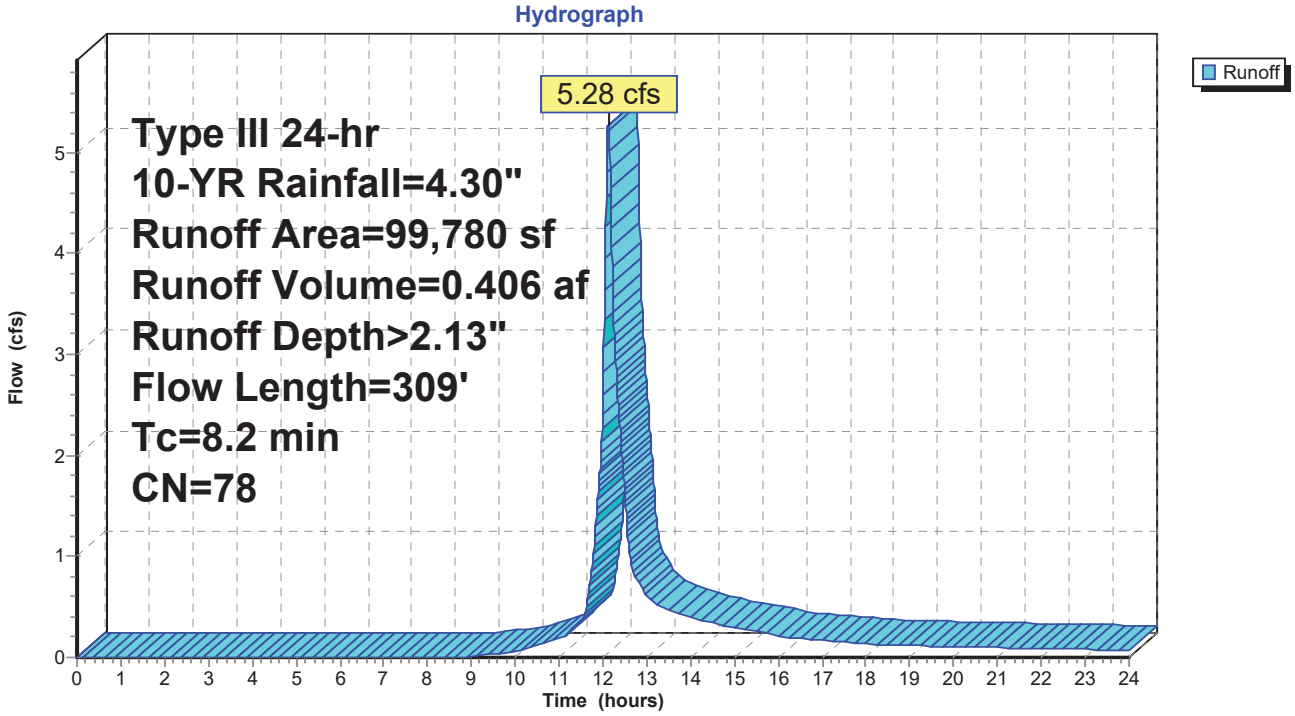
Runoff = 5.28 cfs @ 12.12 hrs, Volume= 0.406 af, Depth> 2.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.30"

Area (sf)	CN	Description
98,785	78	Meadow, non-grazed, HSG D
995	98	Paved roads w/curbs & sewers, HSG D
99,780	78	Weighted Average
98,785		99.00% Pervious Area
995		1.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	118	0.1530	0.26		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.00"
0.7	191	0.0300	4.38	9.86	**Trap/Vee/Rect Channel Flow, B-C** Bot.W=3.00' D=0.50' Z= 3.0 '/' Top.W=6.00' n= 0.030 Earth, grassed & winding
8.2	309	Total			

Subcatchment WS-1: West Site



Summary for Subcatchment WS-20: BUILDING

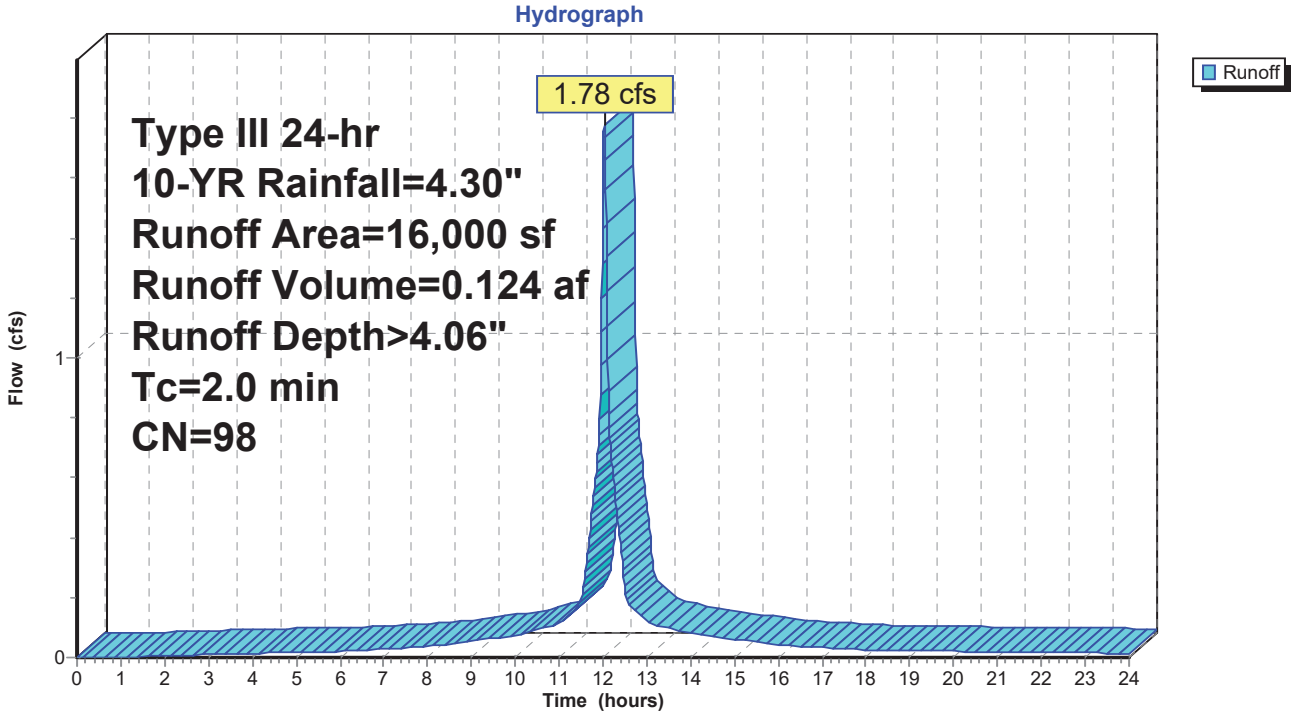
Runoff = 1.78 cfs @ 12.03 hrs, Volume= 0.124 af, Depth> 4.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.30"

Area (sf)	CN	Description
16,000	98	Unconnected roofs, HSG D
16,000		100.00% Impervious Area
16,000		100.00% Unconnected

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

Subcatchment WS-20: BUILDING



Summary for Subcatchment WS-21: Front Lawn

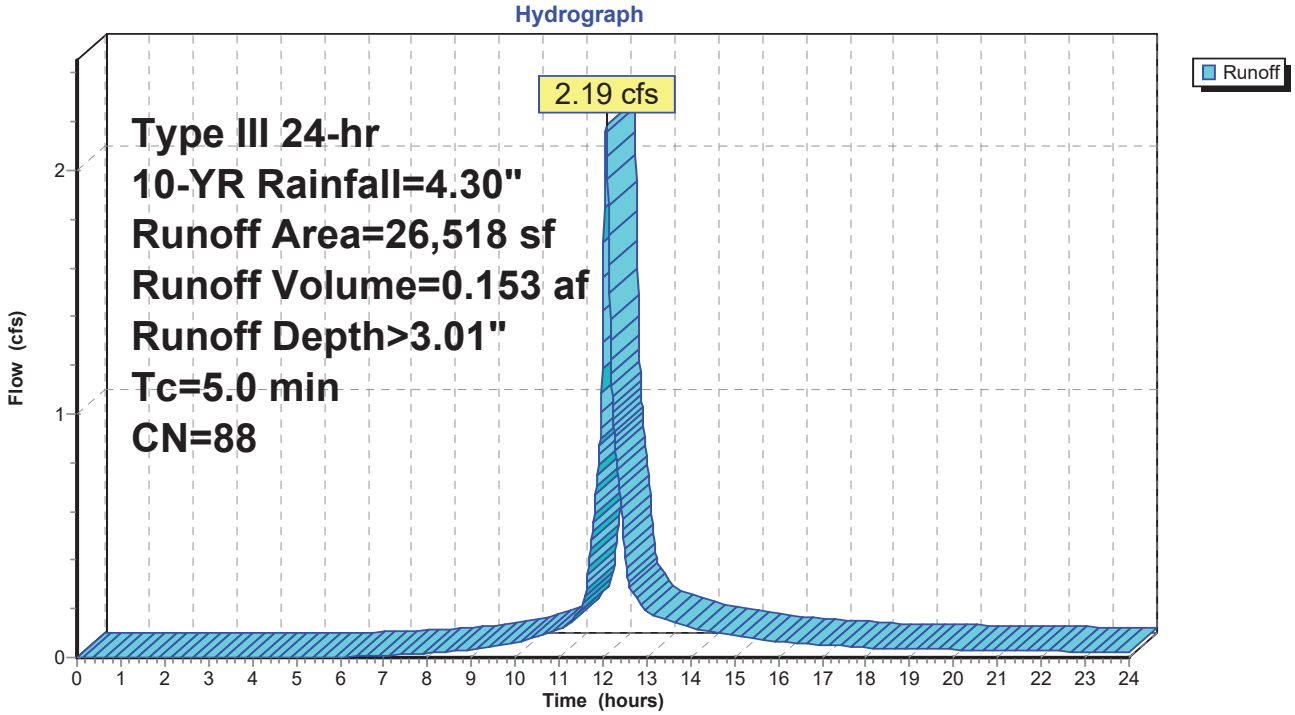
Runoff = 2.19 cfs @ 12.07 hrs, Volume= 0.153 af, Depth> 3.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.30"

Area (sf)	CN	Description
15,143	80	>75% Grass cover, Good, HSG D
11,375	98	Paved parking, HSG D
26,518	88	Weighted Average
15,143		57.10% Pervious Area
11,375		42.90% Impervious Area

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

Subcatchment WS-21: Front Lawn



Summary for Subcatchment WS-22: OFFSITE FLOW

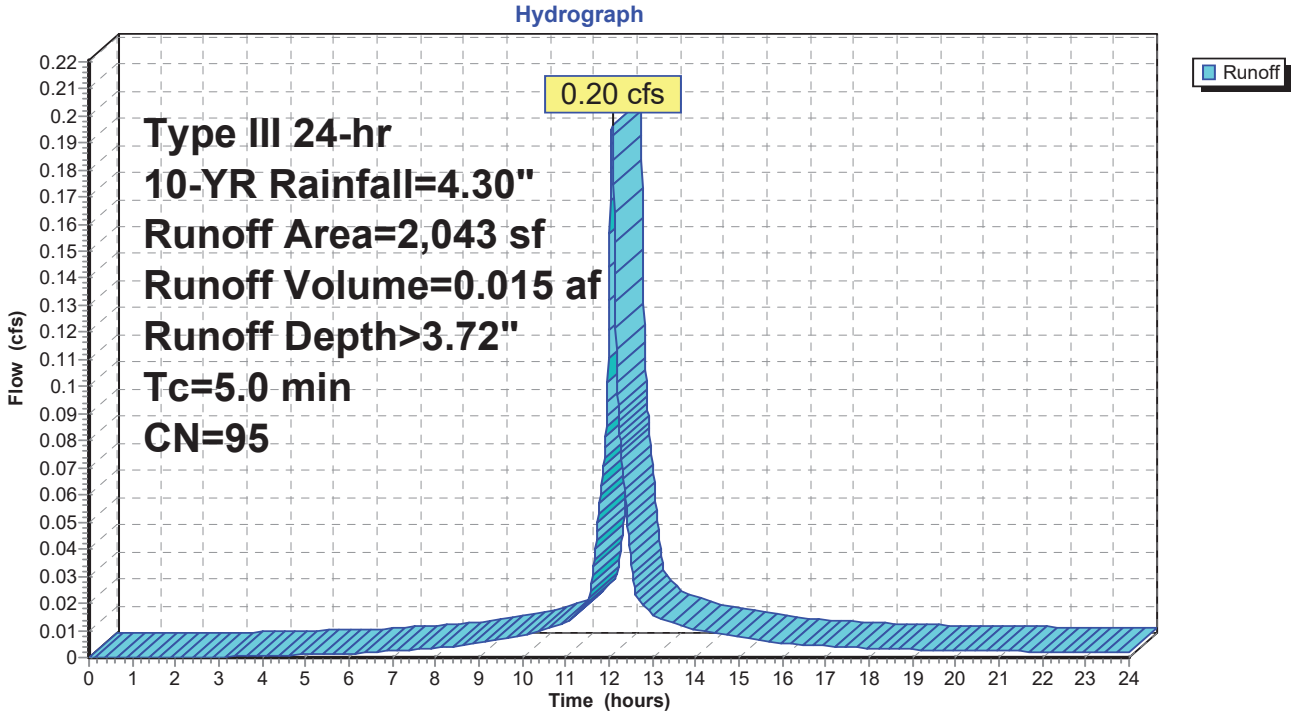
Runoff = 0.20 cfs @ 12.07 hrs, Volume= 0.015 af, Depth> 3.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.30"

Area (sf)	CN	Description
1,679	98	Paved parking, HSG D
364	80	>75% Grass cover, Good, HSG D
2,043	95	Weighted Average
364		17.82% Pervious Area
1,679		82.18% Impervious Area

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

Subcatchment WS-22: OFFSITE FLOW



Summary for Subcatchment WS-23: RAILROAD DITCH

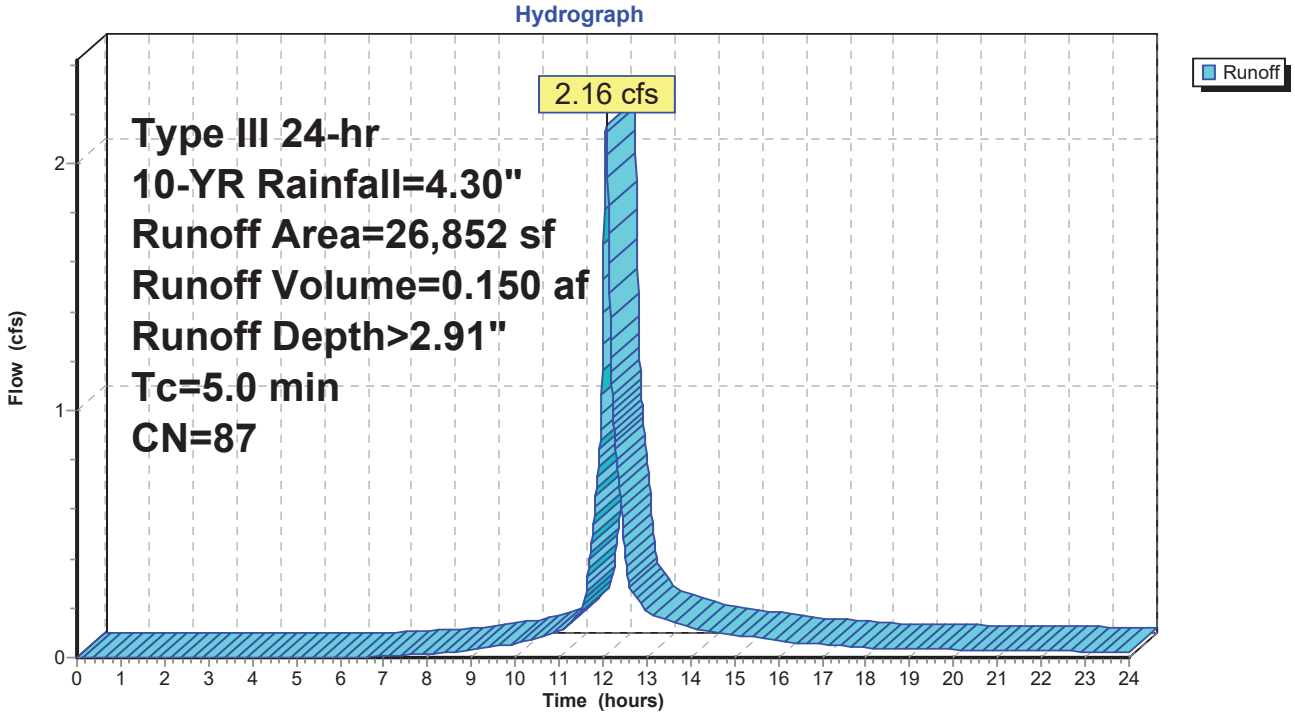
Runoff = 2.16 cfs @ 12.07 hrs, Volume= 0.150 af, Depth> 2.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.30"

	Area (sf)	CN	Description
	14,952	78	Meadow, non-grazed, HSG D
*	11,900	98	entrance drive
	26,852	87	Weighted Average
	14,952		55.68% Pervious Area
	11,900		44.32% Impervious Area

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

Subcatchment WS-23: RAILROAD DITCH



Summary for Subcatchment WS-24: WEST BUILDING LANDSCAPE

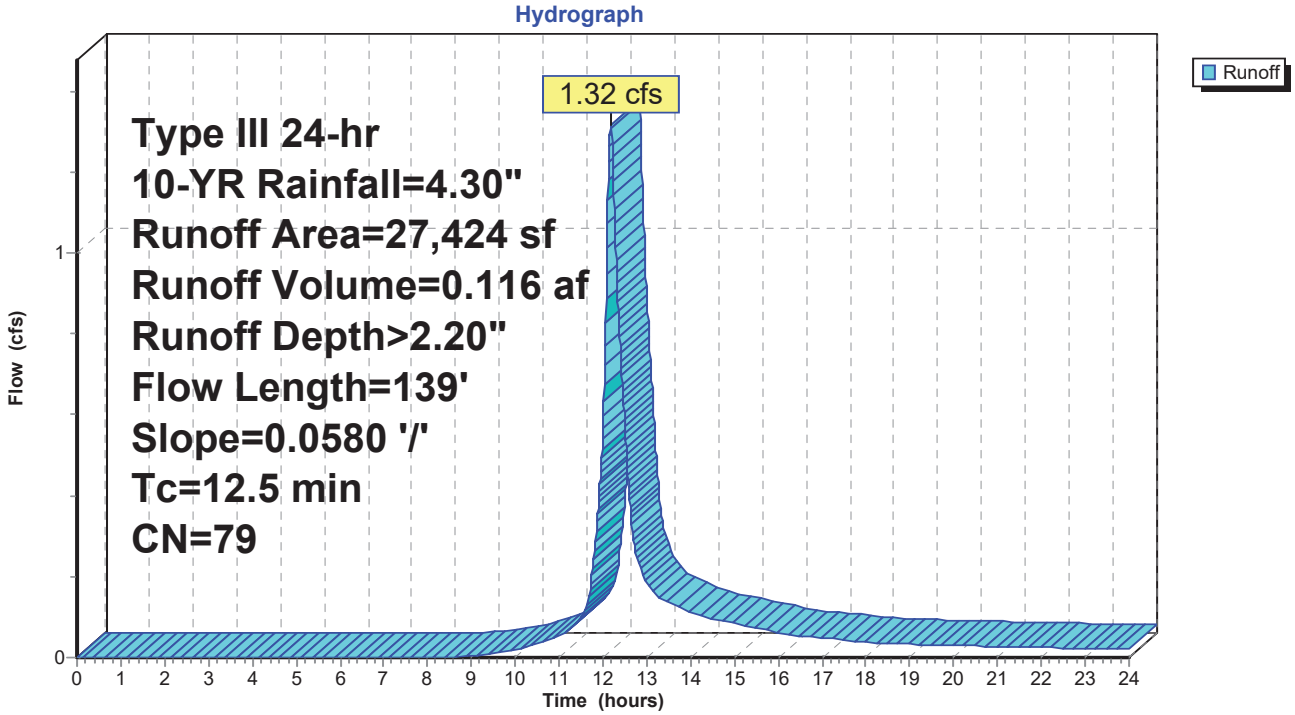
Runoff = 1.32 cfs @ 12.18 hrs, Volume= 0.116 af, Depth> 2.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.30"

Area (sf)	CN	Description
10,259	80	>75% Grass cover, Good, HSG D
17,165	78	Meadow, non-grazed, HSG D
27,424	79	Weighted Average
27,424		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	139	0.0580	0.18		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.00"

Subcatchment WS-24: WEST BUILDING LANDSCAPE



Summary for Subcatchment WS-3: North 95

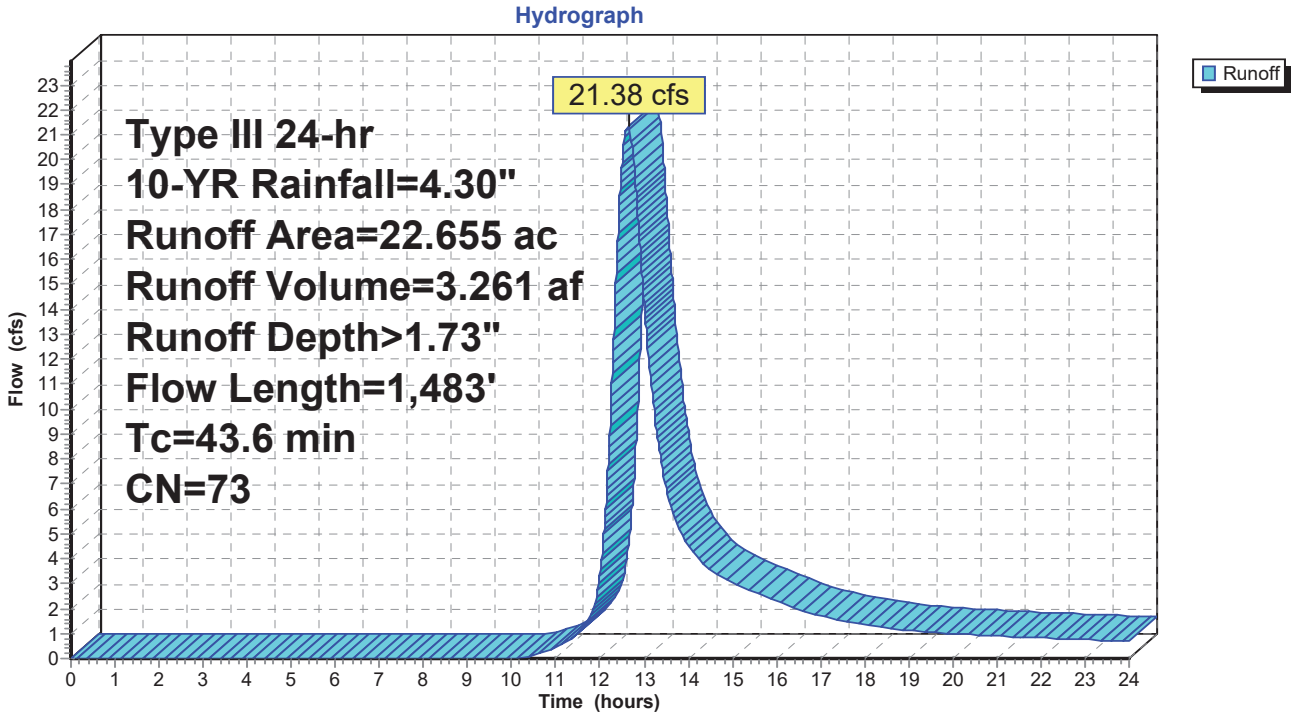
Runoff = 21.38 cfs @ 12.64 hrs, Volume= 3.261 af, Depth> 1.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.30"

Area (ac)	CN	Description
2.000	80	1/2 acre lots, 25% imp, HSG C
0.500	85	1/2 acre lots, 25% imp, HSG D
0.550	98	Paved roads w/curbs & sewers, HSG C
15.380	70	Woods, Good, HSG C
4.225	77	Woods, Good, HSG D
22.655	73	Weighted Average
21.480		94.81% Pervious Area
1.175		5.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.7	150	0.0870	0.08		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 3.00"
12.6	947	0.0630	1.25		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
1.3	386	0.0210	5.00	11.25	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=3.00' D=0.50' Z= 3.0 '/' Top.W=6.00' n= 0.022 Earth, clean & straight
43.6	1,483	Total			

Subcatchment WS-3: North 95



Summary for Subcatchment WS-4: North Old Lisbon Rd

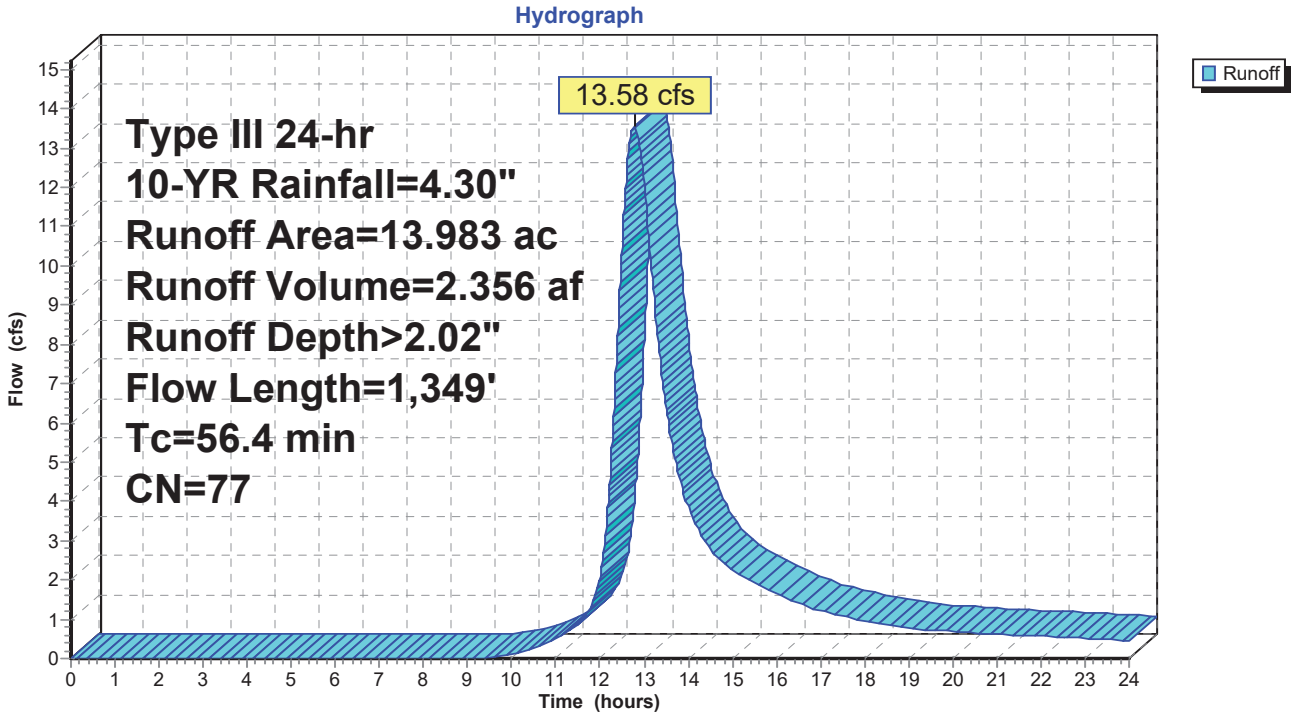
Runoff = 13.58 cfs @ 12.78 hrs, Volume= 2.356 af, Depth> 2.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.30"

Area (ac)	CN	Description
0.500	85	1/2 acre lots, 25% imp, HSG D
2.000	80	1/2 acre lots, 25% imp, HSG C
0.275	98	Paved roads w/curbs & sewers, HSG D
8.450	77	Woods, Good, HSG D
2.758	70	Woods, Good, HSG C
13.983	77	Weighted Average
13.083		93.56% Pervious Area
0.900		6.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.9	150	0.0470	0.07		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 3.00"
18.3	1,097	0.0400	1.00		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.2	102	0.0590	7.98	13.96	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=2.00' D=0.50' Z= 3.0 '/' Top.W=5.00' n= 0.022 Earth, clean & straight
56.4	1,349	Total			

Subcatchment WS-4: North Old Lisbon Rd



Summary for Subcatchment WS-5: Uphill North Old Lisbon Rd

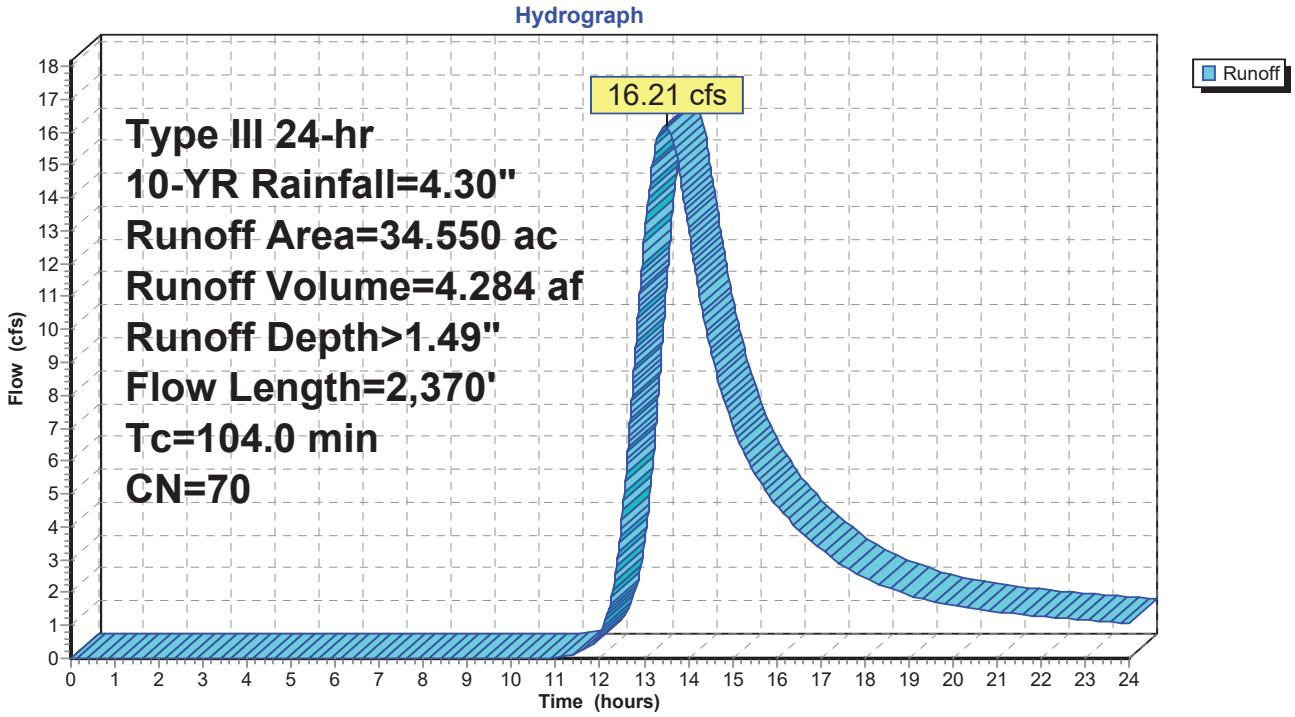
Runoff = 16.21 cfs @ 13.52 hrs, Volume= 4.284 af, Depth> 1.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.30"

Area (ac)	CN	Description
34.550	70	Woods, Good, HSG C
34.550		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
47.7	150	0.0266	0.05		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 3.00"
9.7	970	0.1100	1.66		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
46.6	1,250	0.0080	0.45		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
104.0	2,370	Total			

Subcatchment WS-5: Uphill North Old Lisbon Rd



Summary for Reach R2: Site Wetland Channel

Inflow Area = 71.188 ac, 2.91% Impervious, Inflow Depth > 1.65" for 10-YR event
Inflow = 35.14 cfs @ 12.74 hrs, Volume= 9.790 af
Outflow = 35.13 cfs @ 12.75 hrs, Volume= 9.785 af, Atten= 0%, Lag= 0.5 min

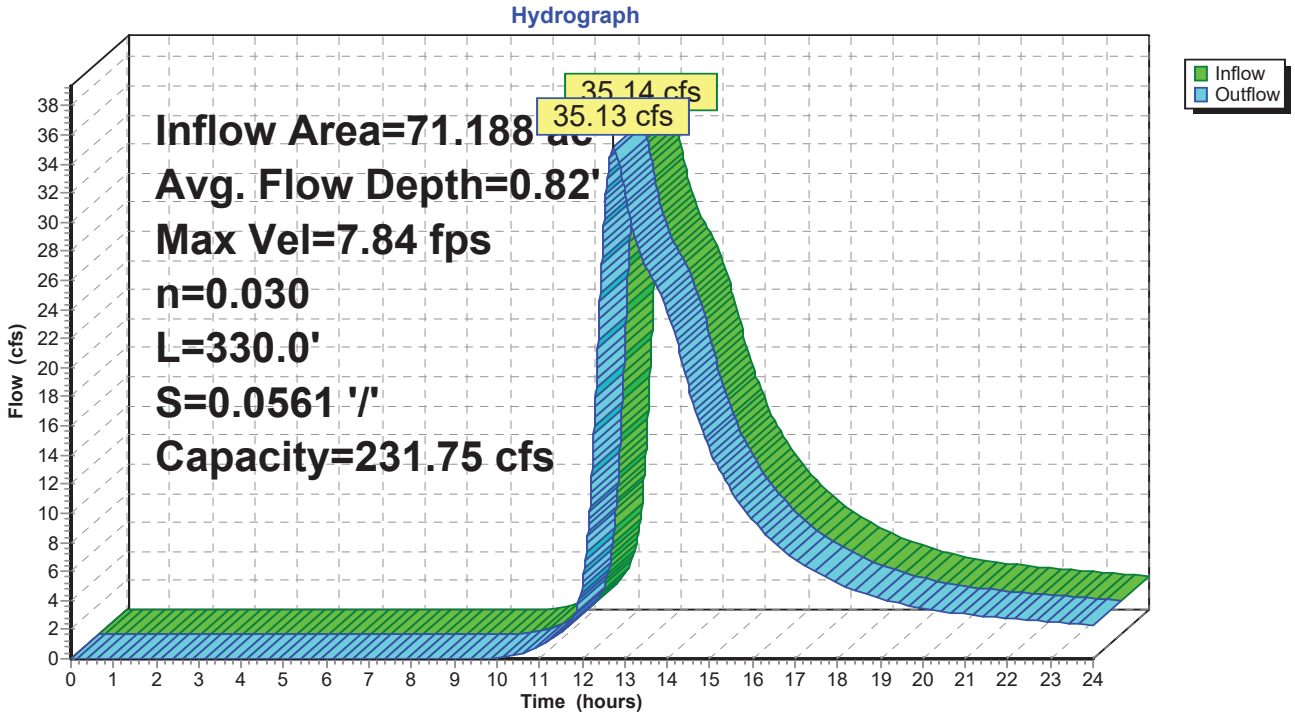
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 7.84 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 4.46 fps, Avg. Travel Time= 1.2 min

Peak Storage= 1,478 cf @ 12.75 hrs
Average Depth at Peak Storage= 0.82'
Bank-Full Depth= 2.00' Flow Area= 18.0 sf, Capacity= 231.75 cfs

3.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 15.00'
Length= 330.0' Slope= 0.0561 '/'
Inlet Invert= 234.50', Outlet Invert= 216.00'

‡

Reach R2: Site Wetland Channel



Summary for Reach R3: Old Lisbon Rd - I-95

Inflow Area = 48.533 ac, 1.85% Impervious, Inflow Depth > 1.62" for 10-YR event
Inflow = 20.24 cfs @ 13.65 hrs, Volume= 6.540 af
Outflow = 20.23 cfs @ 13.67 hrs, Volume= 6.529 af, Atten= 0%, Lag= 1.6 min

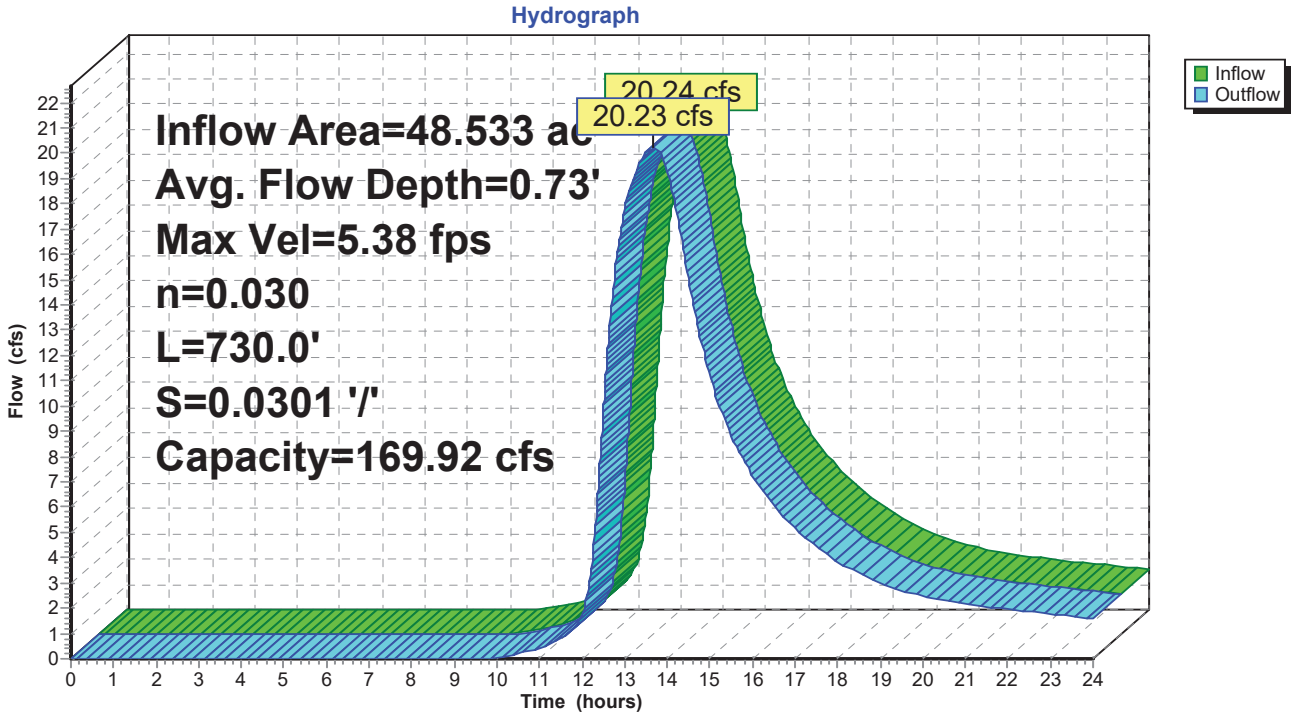
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 5.38 fps, Min. Travel Time= 2.3 min
Avg. Velocity = 3.17 fps, Avg. Travel Time= 3.8 min

Peak Storage= 2,744 cf @ 13.67 hrs
Average Depth at Peak Storage= 0.73'
Bank-Full Depth= 2.00' Flow Area= 18.0 sf, Capacity= 169.92 cfs

3.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 15.00'
Length= 730.0' Slope= 0.0301 '/'
Inlet Invert= 258.00', Outlet Invert= 236.00'

‡

Reach R3: Old Lisbon Rd - I-95



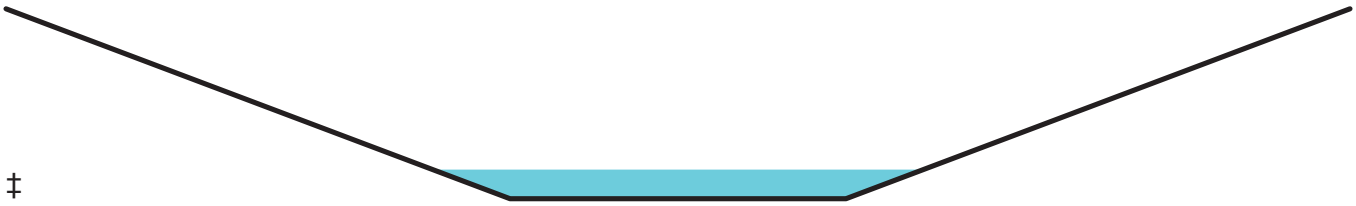
Summary for Reach R4: (new Reach)

Inflow Area = 34.550 ac, 0.00% Impervious, Inflow Depth > 1.46" for 10-YR event
Inflow = 15.07 cfs @ 13.76 hrs, Volume= 4.193 af
Outflow = 15.07 cfs @ 13.77 hrs, Volume= 4.190 af, Atten= 0%, Lag= 0.6 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 10.01 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 5.56 fps, Avg. Travel Time= 1.6 min

Peak Storage= 812 cf @ 13.77 hrs
Average Depth at Peak Storage= 0.31'
Bank-Full Depth= 2.00' Flow Area= 20.0 sf, Capacity= 564.90 cfs

4.00' x 2.00' deep channel, n= 0.012 Wood, Planed
Side Slope Z-value= 3.0 '/' Top Width= 16.00'
Length= 540.0' Slope= 0.0407 '/'
Inlet Invert= 296.00', Outlet Invert= 274.00'



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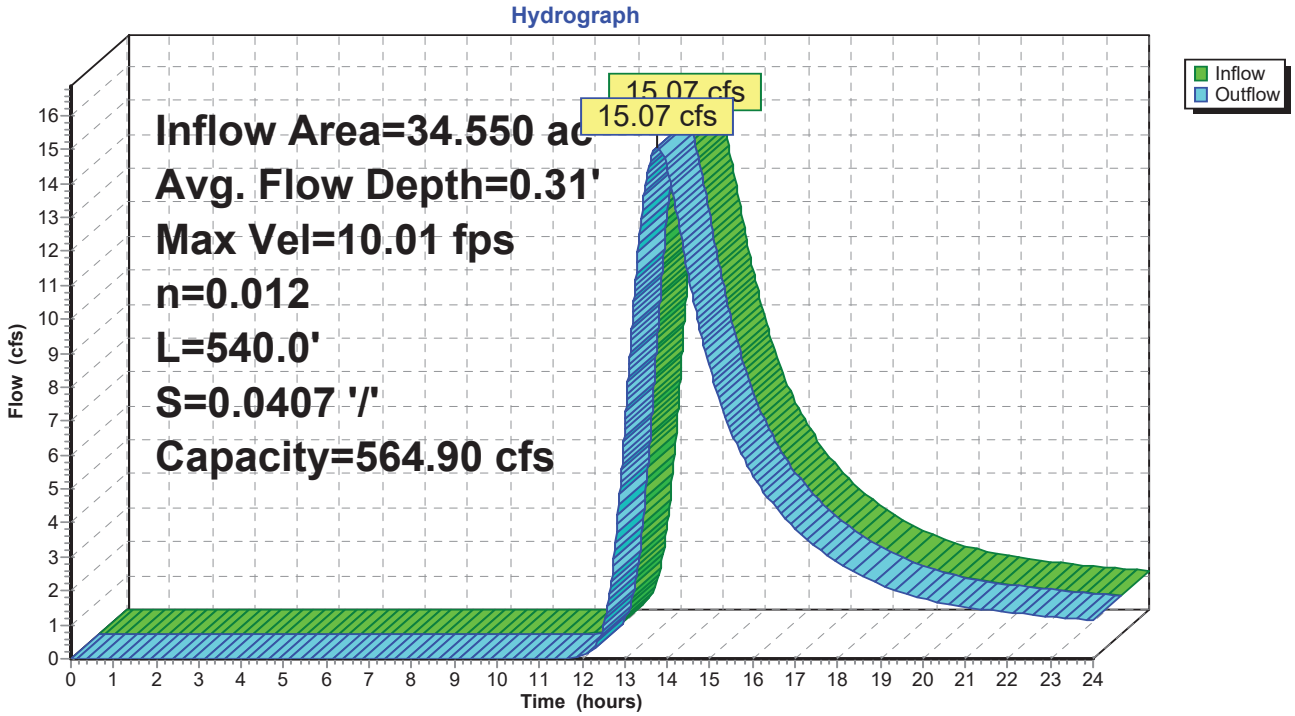
Reach R4: (new Reach)



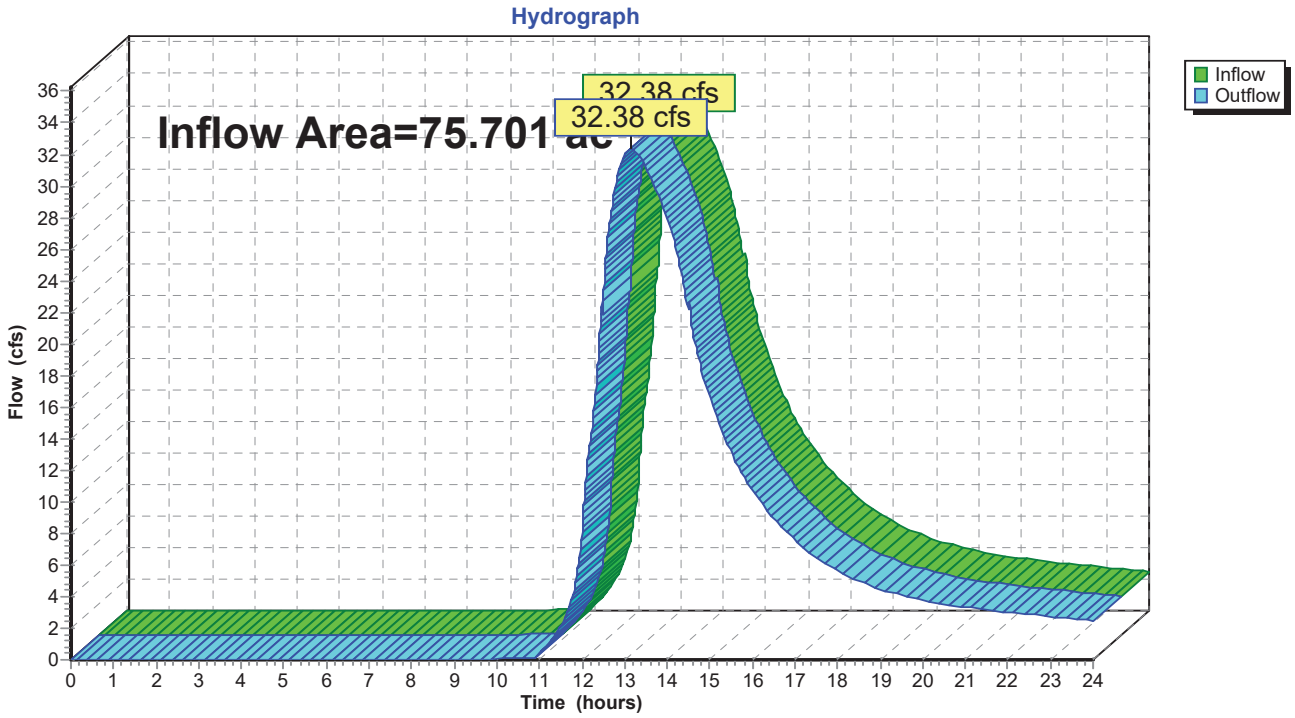
Summary for Reach SP1: Study Point 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 75.701 ac, 3.96% Impervious, Inflow Depth > 1.68" for 10-YR event
Inflow = 32.38 cfs @ 13.16 hrs, Volume= 10.608 af
Outflow = 32.38 cfs @ 13.16 hrs, Volume= 10.608 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Reach SP1: Study Point 1



Summary for Pond 1P: Site detention

[62] Hint: Exceeded Reach R2 OUTLET depth by 2.03' @ 13.11 hrs

Inflow Area =	75.084 ac,	3.63% Impervious,	Inflow Depth >	1.69"	for 10-YR event
Inflow =	36.76 cfs @	12.74 hrs,	Volume=	10.578 af	
Outflow =	32.32 cfs @	13.07 hrs,	Volume=	10.462 af,	Atten= 12%, Lag= 19.9 min
Primary =	32.32 cfs @	13.07 hrs,	Volume=	10.462 af	
Tertiary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 218.80' @ 13.07 hrs Surf.Area= 9,979 sf Storage= 28,484 cf

Plug-Flow detention time= 16.5 min calculated for 10.458 af (99% of inflow)
Center-of-Mass det. time= 10.8 min (916.6 - 905.8)

Volume	Invert	Avail.Storage	Storage Description
#1	213.00'	150,519 cf	**Custom Stage Data (Prismatic)** Listed below

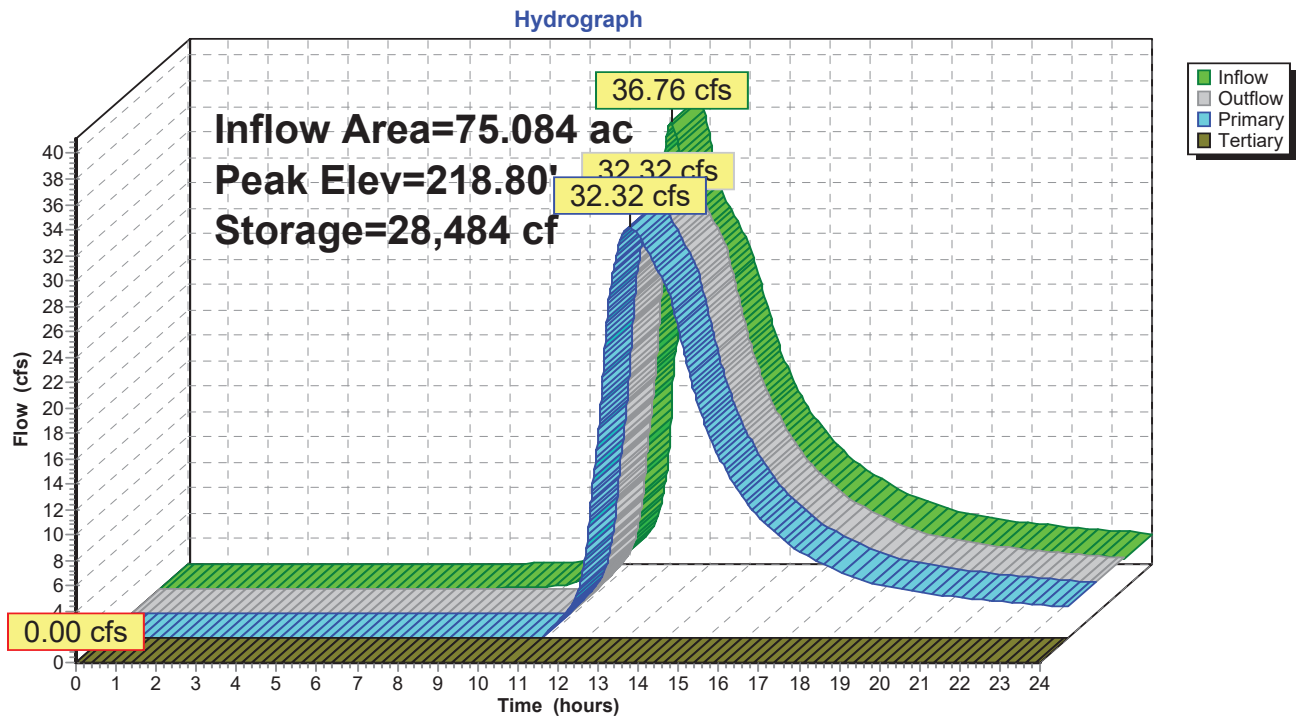
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
213.00	800	0	0
214.00	1,569	1,185	1,185
215.00	2,800	2,185	3,369
216.00	5,000	3,900	7,269
218.00	7,800	12,800	20,069
220.00	13,250	21,050	41,119
222.00	20,100	33,350	74,469
223.00	24,000	22,050	96,519
225.00	30,000	54,000	150,519

Device	Routing	Invert	Outlet Devices
#1	Tertiary	223.50'	**50.0' long x 24.0' 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	Primary	214.78'	**24.0" Round Culvert** L= 80.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 214.78' / 213.34' S= 0.0180 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#3	Primary	216.50'	**15.0" Round Overflow Culvert** L= 80.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 216.50' / 214.00' S= 0.0313 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=32.32 cfs @ 13.07 hrs HW=218.80' TW=214.85' (Dynamic Tailwater)
└─**2=Culvert** (Inlet Controls 26.29 cfs @ 8.37 fps)
└─**3=Overflow Culvert** (Inlet Controls 6.04 cfs @ 4.92 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=213.00' TW=209.00' (Dynamic Tailwater)
└─**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Site detention



Summary for Pond P2: Railroad Outlet

Inflow Area = 75.701 ac, 3.96% Impervious, Inflow Depth > 1.68" for 10-YR event
Inflow = 32.50 cfs @ 13.07 hrs, Volume= 10.612 af
Outflow = 32.38 cfs @ 13.16 hrs, Volume= 10.608 af, Atten= 0%, Lag= 5.3 min
Primary = 32.38 cfs @ 13.16 hrs, Volume= 10.608 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 214.87' @ 13.16 hrs Surf.Area= 1,456 sf Storage= 2,530 cf

Plug-Flow detention time= 0.9 min calculated for 10.603 af (100% of inflow)
Center-of-Mass det. time= 0.7 min (915.7 - 915.0)

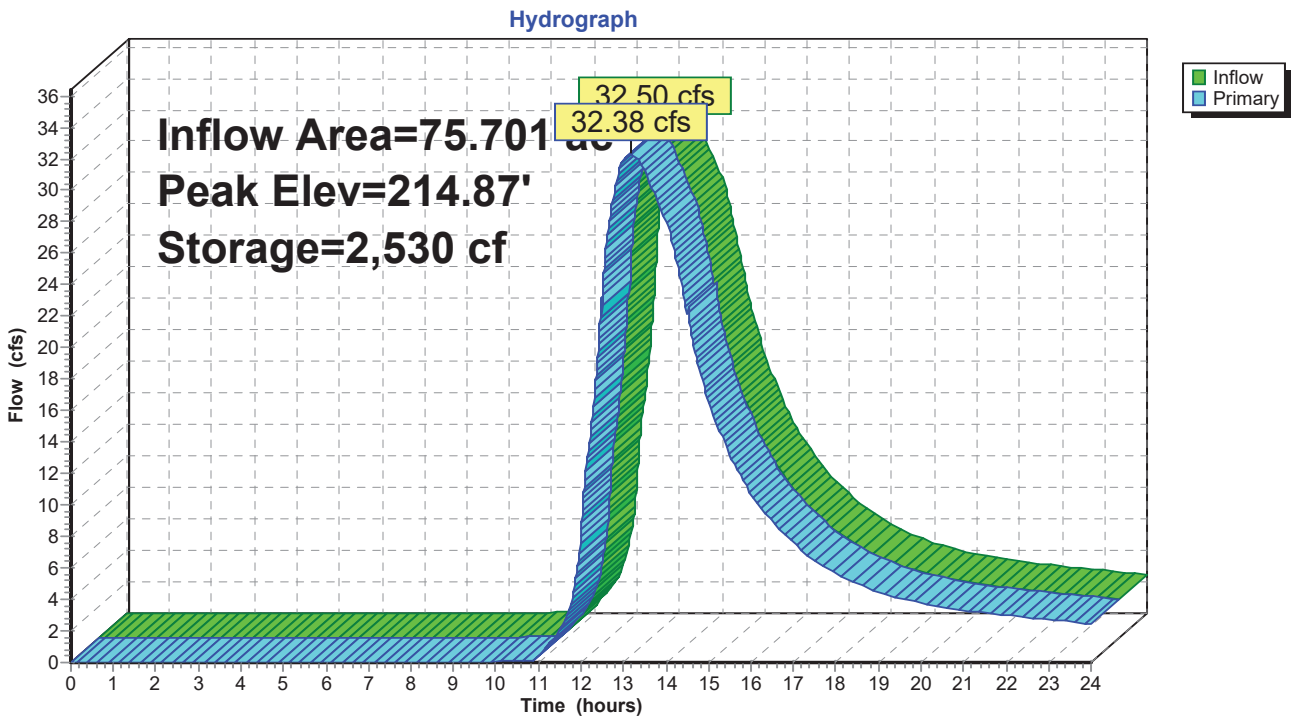
Volume	Invert	Avail.Storage	Storage Description
#1	209.00'	34,075 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
209.00	50	0	0
210.00	100	75	75
212.00	200	300	375
214.00	918	1,118	1,493
216.00	2,151	3,069	4,562
218.00	3,693	5,844	10,406
220.00	5,588	9,281	19,687
222.00	8,800	14,388	34,075

Device	Routing	Invert	Outlet Devices
#1	Primary	210.33'	**24.0" W x 24.0" H Box Culvert** L= 40.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 210.33' / 209.47' S= 0.0215 '/' Cc= 0.900 n= 0.025 Rubble masonry, cemented, Flow Area= 4.00 sf
#2	Primary	221.50'	**50.0' long x 50.0' 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

Primary OutFlow Max=32.38 cfs @ 13.16 hrs HW=214.87' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 32.38 cfs @ 8.10 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P2: Railroad Outlet



Summary for Pond P20: DRIP EDGE

Inflow Area = 0.367 ac,100.00% Impervious, Inflow Depth > 4.06" for 10-YR event
Inflow = 1.78 cfs @ 12.03 hrs, Volume= 0.124 af
Outflow = 0.37 cfs @ 12.40 hrs, Volume= 0.120 af, Atten= 79%, Lag= 22.5 min
Primary = 0.37 cfs @ 12.40 hrs, Volume= 0.120 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 229.66' @ 12.40 hrs Surf.Area= 0.037 ac Storage= 0.040 af

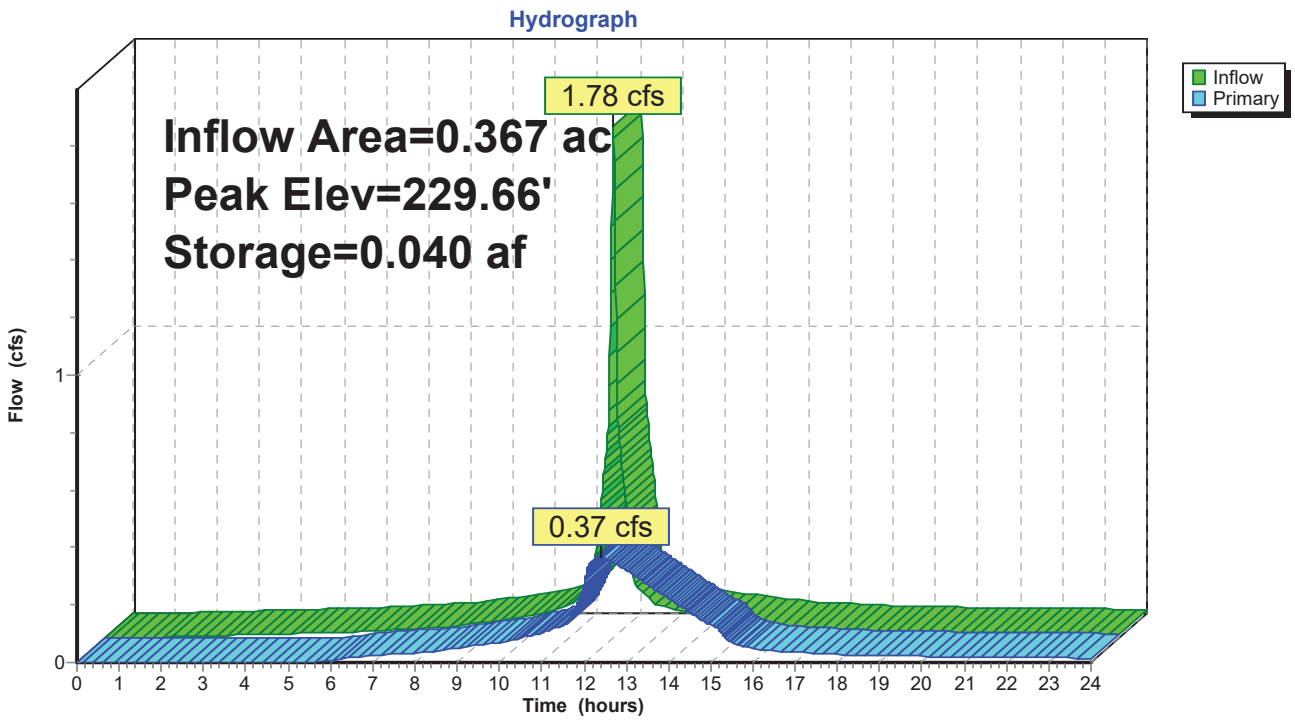
Plug-Flow detention time= 79.0 min calculated for 0.120 af (96% of inflow)
Center-of-Mass det. time= 55.5 min (802.3 - 746.8)

Volume	Invert	Avail.Storage	Storage Description
#1	227.00'	0.058 af	**4.00'W x 400.00'L x 4.00'H Prismatoid** 0.147 af Overall - 0.001 af Embedded = 0.146 af x 40.0% Voids
#2	227.25'	0.001 af	**4.0" Round Pipe Storage** Inside #1 L= 410.0' S= 0.0043 '/' 0.001 af Overall - 0.2" Wall Thickness = 0.001 af
#3	227.25'	0.000 af	**4.0" Round Pipe Storage** Inside #1 L= 80.0' S= 0.0100 '/' 0.000 af Overall - 0.2" Wall Thickness = 0.000 af
		0.059 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Device 2	227.25'	**6.0" Round Culvert** L= 25.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 227.25' / 227.13' S= 0.0048 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Primary	227.13'	**3.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=0.37 cfs @ 12.40 hrs HW=229.66' TW=217.21' (Dynamic Tailwater)
└─**2=Orifice/Grate** (Orifice Controls 0.37 cfs @ 7.46 fps)
  └─**1=Culvert** (Passes 0.37 cfs of 1.10 cfs potential flow)

Pond P20: DRIP EDGE



Summary for Pond P3: I-95

[44] Hint: Outlet device #1 is below defined storage
[44] Hint: Outlet device #2 is below defined storage

Inflow Area =	71.188 ac,	2.91% Impervious,	Inflow Depth >	1.65"	for 10-YR event
Inflow =	35.14 cfs @	12.74 hrs,	Volume=	9.790 af	
Outflow =	35.14 cfs @	12.74 hrs,	Volume=	9.790 af,	Atten= 0%, Lag= 0.0 min
Primary =	0.07 cfs @	12.74 hrs,	Volume=	0.020 af	
Secondary =	35.08 cfs @	12.74 hrs,	Volume=	9.770 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 236.00' @ 0.00 hrs Surf.Area= 13,500 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	236.00'	33,973 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

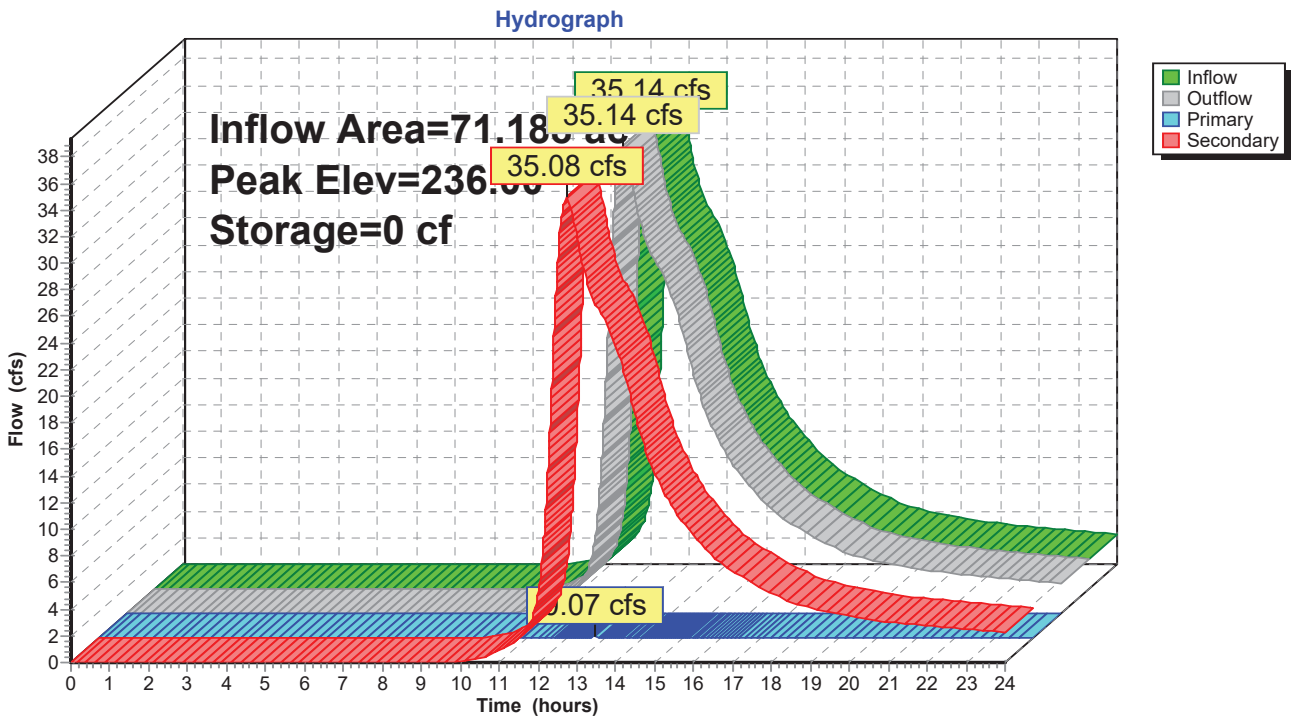
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
236.00	13,500	0	0
238.00	20,473	33,973	33,973

Device	Routing	Invert	Outlet Devices
#1	Primary	225.50'	**30.0" Round Culvert** L= 250.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 225.50' / 224.50' S= 0.0040 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf
#2	Secondary	228.00'	**300.0' long x 90.0' 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

Primary OutFlow Max=0.00 cfs @ 12.74 hrs HW=236.00' TW=235.32' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.00 cfs of 15.39 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 12.74 hrs HW=236.00' TW=235.32' (Dynamic Tailwater)
└─**2=Broad-Crested Rectangular Weir** (Passes 0.00 cfs of 8,011.20 cfs potential flow)

Pond P3: I-95


Hydrograph
Inflow
Outflow
Primary
Secondary
35.14 cfs
35.14 cfs
35.08 cfs
Storage=0 cf
Flow (cfs)
Time (hours)

Summary for Pond P4: Old Lisbon Road

Inflow Area =	48.533 ac,	1.85% Impervious,	Inflow Depth >	1.62"	for 10-YR event
Inflow =	20.40 cfs @	13.51 hrs,	Volume=	6.546 af	
Outflow =	20.24 cfs @	13.65 hrs,	Volume=	6.540 af,	Atten= 1%, Lag= 8.2 min
Primary =	20.24 cfs @	13.65 hrs,	Volume=	6.540 af	
Secondary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 269.87' @ 13.65 hrs Surf.Area= 2,029 sf Storage= 4,185 cf

Plug-Flow detention time= 2.5 min calculated for 6.540 af (100% of inflow)
Center-of-Mass det. time= 2.0 min (927.3 - 925.3)

Volume	Invert	Avail.Storage	Storage Description
#1	266.00'	51,550 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

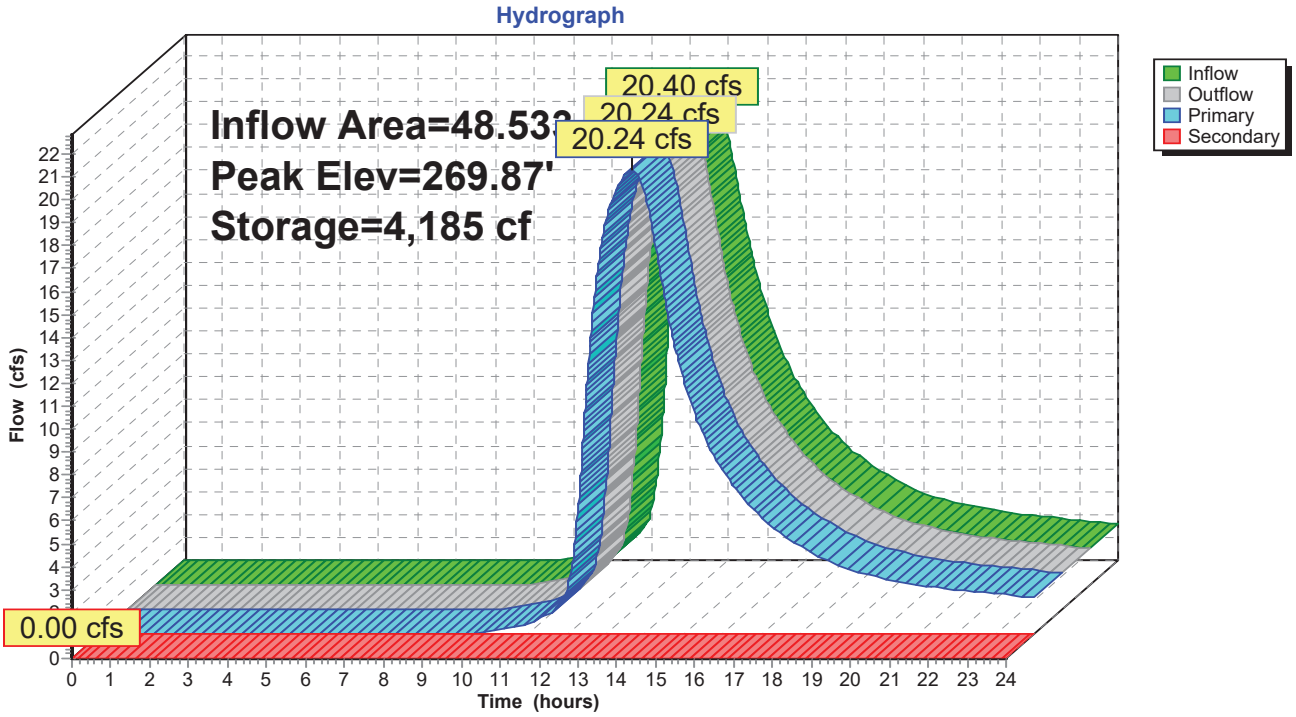
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
266.00	350	0	0
268.00	1,000	1,350	1,350
270.00	2,100	3,100	4,450
272.00	6,000	8,100	12,550
274.00	9,500	15,500	28,050
276.00	14,000	23,500	51,550

Device	Routing	Invert	Outlet Devices
#1	Primary	266.00'	**24.0" Round Culvert** L= 100.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 266.00' / 265.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Secondary	274.00'	**50.0' long x 24.0' 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

Primary OutFlow Max=20.24 cfs @ 13.65 hrs HW=269.87' TW=258.73' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 20.24 cfs @ 6.44 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=266.00' TW=258.00' (Dynamic Tailwater)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P4: Old Lisbon Road



Summary for Pond P5: Forest Wetland

Inflow Area = 34.550 ac, 0.00% Impervious, Inflow Depth > 1.49" for 10-YR event
Inflow = 16.21 cfs @ 13.52 hrs, Volume= 4.284 af
Outflow = 15.07 cfs @ 13.76 hrs, Volume= 4.193 af, Atten= 7%, Lag= 14.8 min
Primary = 15.07 cfs @ 13.76 hrs, Volume= 4.193 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 296.36' @ 13.77 hrs Surf.Area= 1.484 ac Storage= 0.482 af

Plug-Flow detention time= 32.7 min calculated for 4.191 af (98% of inflow)
Center-of-Mass det. time= 22.2 min (952.3 - 930.1)

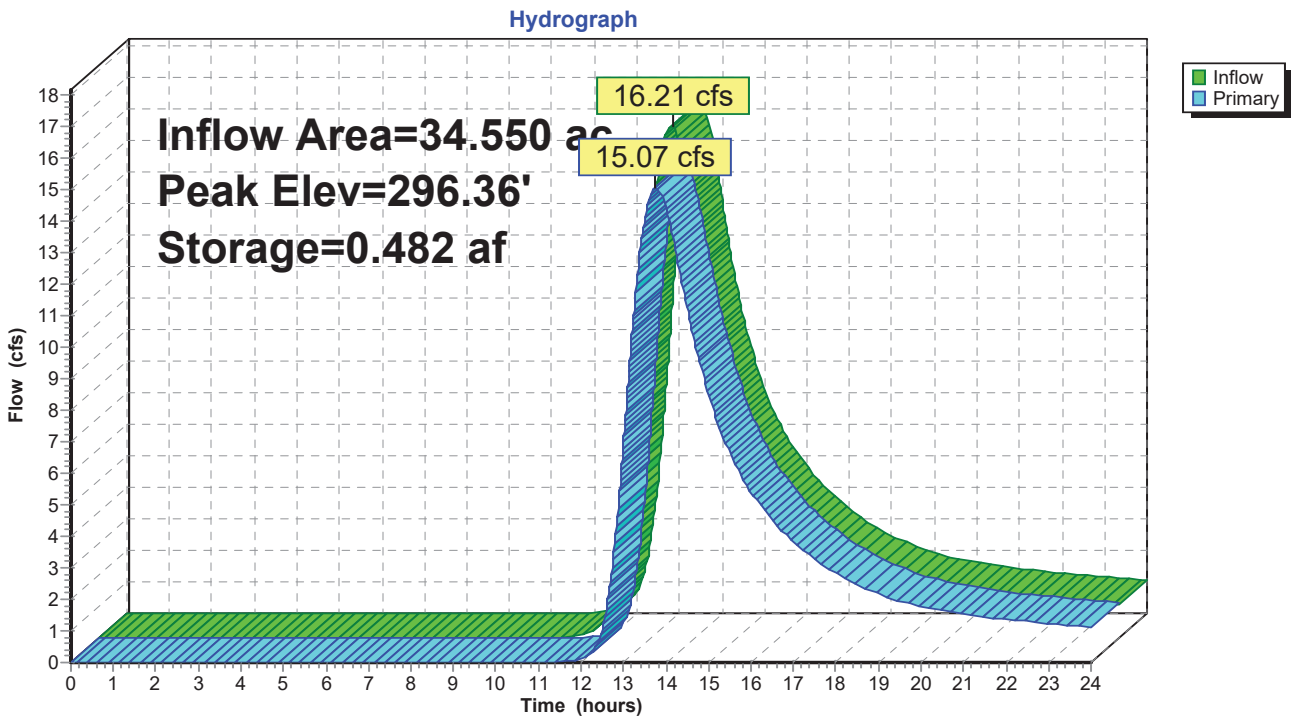
Volume	Invert	Avail.Storage	Storage Description
#1	296.00'	3.920 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
296.00	1.220	0.000	0.000
298.00	2.700	3.920	3.920

Device	Routing	Invert	Outlet Devices
#1	Primary	296.00'	**50.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=15.07 cfs @ 13.76 hrs HW=296.36' TW=296.31' (Dynamic Tailwater)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 15.07 cfs @ 0.84 fps)

Pond P5: Forest Wetland



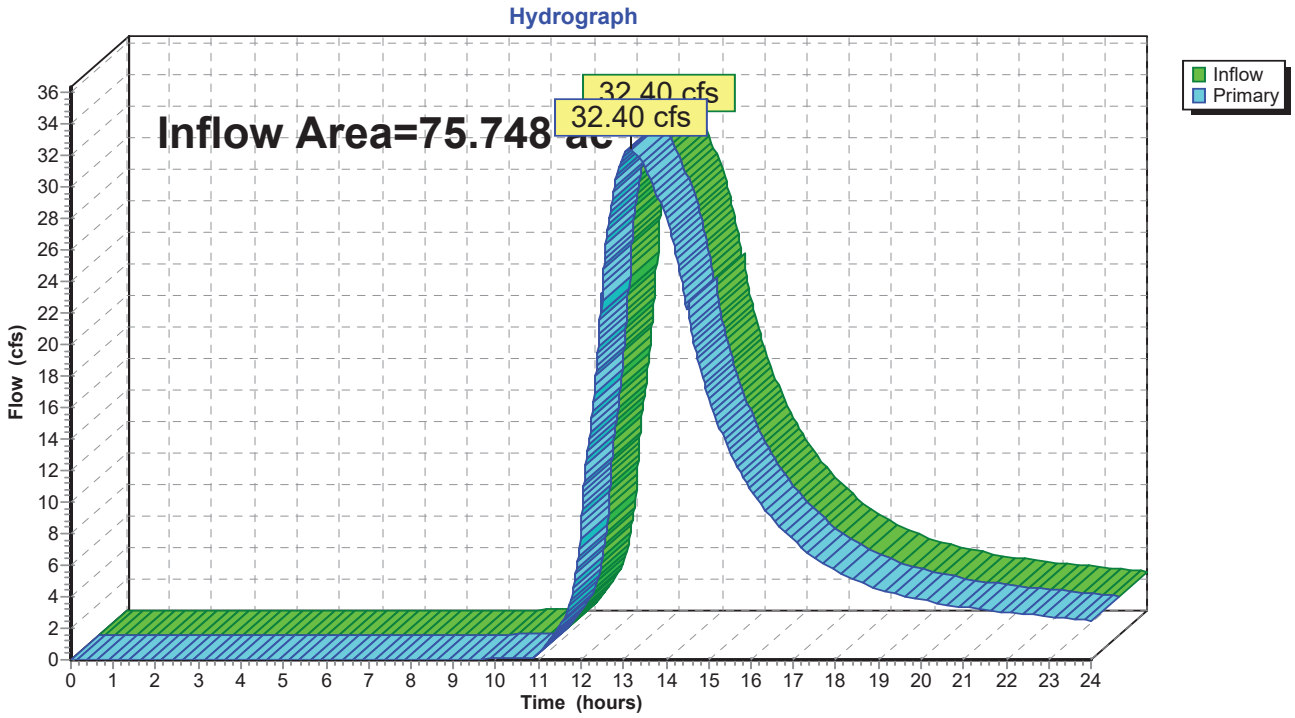
Summary for Pond TOTAL: COMBINED

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 75.748 ac, 4.01% Impervious, Inflow Depth > 1.68" for 10-YR event
Inflow = 32.40 cfs @ 13.16 hrs, Volume= 10.622 af
Primary = 32.40 cfs @ 13.16 hrs, Volume= 10.622 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Pond TOTAL: COMBINED



Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points x 3
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 WS-1: West Site Runoff Area=99,780 sf 1.00% Impervious Runoff Depth>3.05"
Flow Length=309' Tc=8.2 min CN=78 Runoff=7.60 cfs 0.582 af

Subcatchment WS-20: BUILDING Runoff Area=16,000 sf 100.00% Impervious Runoff Depth>5.16"
Tc=2.0 min CN=98 Runoff=2.24 cfs 0.158 af

Subcatchment WS-21: Front Lawn Runoff Area=26,518 sf 42.90% Impervious Runoff Depth>4.05"
Tc=5.0 min CN=88 Runoff=2.91 cfs 0.205 af

Subcatchment WS-22: OFFSITE FLOW Runoff Area=2,043 sf 82.18% Impervious Runoff Depth>4.81"
Tc=5.0 min CN=95 Runoff=0.25 cfs 0.019 af

Subcatchment WS-23: RAILROAD DITCH Runoff Area=26,852 sf 44.32% Impervious Runoff Depth>3.94"
Tc=5.0 min CN=87 Runoff=2.89 cfs 0.203 af

Subcatchment WS-24: WEST BUILDING Runoff Area=27,424 sf 0.00% Impervious Runoff Depth>3.14"
Flow Length=139' Slope=0.0580 '/' Tc=12.5 min CN=79 Runoff=1.88 cfs 0.165 af

Subcatchment WS-3: North 95 Runoff Area=22.655 ac 5.19% Impervious Runoff Depth>2.57"
Flow Length=1,483' Tc=43.6 min CN=73 Runoff=32.26 cfs 4.856 af

Subcatchment WS-4: North Old Lisbon Rd Runoff Area=13.983 ac 6.44% Impervious Runoff Depth>2.92"
Flow Length=1,349' Tc=56.4 min CN=77 Runoff=19.77 cfs 3.408 af

Subcatchment WS-5: Uphill North Old Runoff Area=34.550 ac 0.00% Impervious Runoff Depth>2.27"
Flow Length=2,370' Tc=104.0 min CN=70 Runoff=25.43 cfs 6.548 af

Reach R2: Site Wetland Channel Avg. Flow Depth=1.00' Max Vel=8.73 fps Inflow=52.09 cfs 14.675 af
n=0.030 L=330.0' S=0.0561 '/' Capacity=231.75 cfs Outflow=52.09 cfs 14.669 af

Reach R3: Old Lisbon Rd - I-95 Avg. Flow Depth=0.88' Max Vel=5.97 fps Inflow=29.62 cfs 9.832 af
n=0.030 L=730.0' S=0.0301 '/' Capacity=169.92 cfs Outflow=29.62 cfs 9.819 af

Reach R4: (new Reach) Avg. Flow Depth=0.40' Max Vel=11.63 fps Inflow=24.09 cfs 6.436 af
n=0.012 L=540.0' S=0.0407 '/' Capacity=564.90 cfs Outflow=24.09 cfs 6.432 af

Reach SP1: Study Point 1 Inflow=40.59 cfs 15.846 af
Outflow=40.59 cfs 15.846 af

Pond 1P: Site detention Peak Elev=221.07' Storage=58,932 cf Inflow=54.33 cfs 15.774 af
Primary=40.53 cfs 15.648 af Tertiary=0.00 cfs 0.000 af Outflow=40.53 cfs 15.648 af

Pond P2: Railroad Outlet Peak Elev=216.82' Storage=6,577 cf Inflow=40.74 cfs 15.850 af
Outflow=40.59 cfs 15.846 af

Pond P20: DRIP EDGE Peak Elev=230.46' Storage=0.051 af Inflow=2.24 cfs 0.158 af
Outflow=0.42 cfs 0.153 af

Pond P3: I-95 Peak Elev=236.00' Storage=0 cf Inflow=52.09 cfs 14.675 af
Primary=0.10 cfs 0.029 af Secondary=51.99 cfs 14.646 af Outflow=52.09 cfs 14.675 af

Pond P4: Old Lisbon Road Peak Elev=273.15' Storage=20,621 cf Inflow=32.40 cfs 9.840 af
Primary=29.62 cfs 9.832 af Secondary=0.00 cfs 0.000 af Outflow=29.62 cfs 9.832 af

Pond P5: Forest Wetland Peak Elev=296.47' Storage=0.661 af Inflow=25.43 cfs 6.548 af
Outflow=24.09 cfs 6.436 af

Pond TOTAL: COMBINED Inflow=40.61 cfs 15.864 af
Primary=40.61 cfs 15.864 af

Total Runoff Area = 75.748 ac Runoff Volume = 16.144 af Average Runoff Depth = 2.56"
95.99% Pervious = 72.710 ac 4.01% Impervious = 3.038 ac

Summary for Subcatchment WS-1: West Site

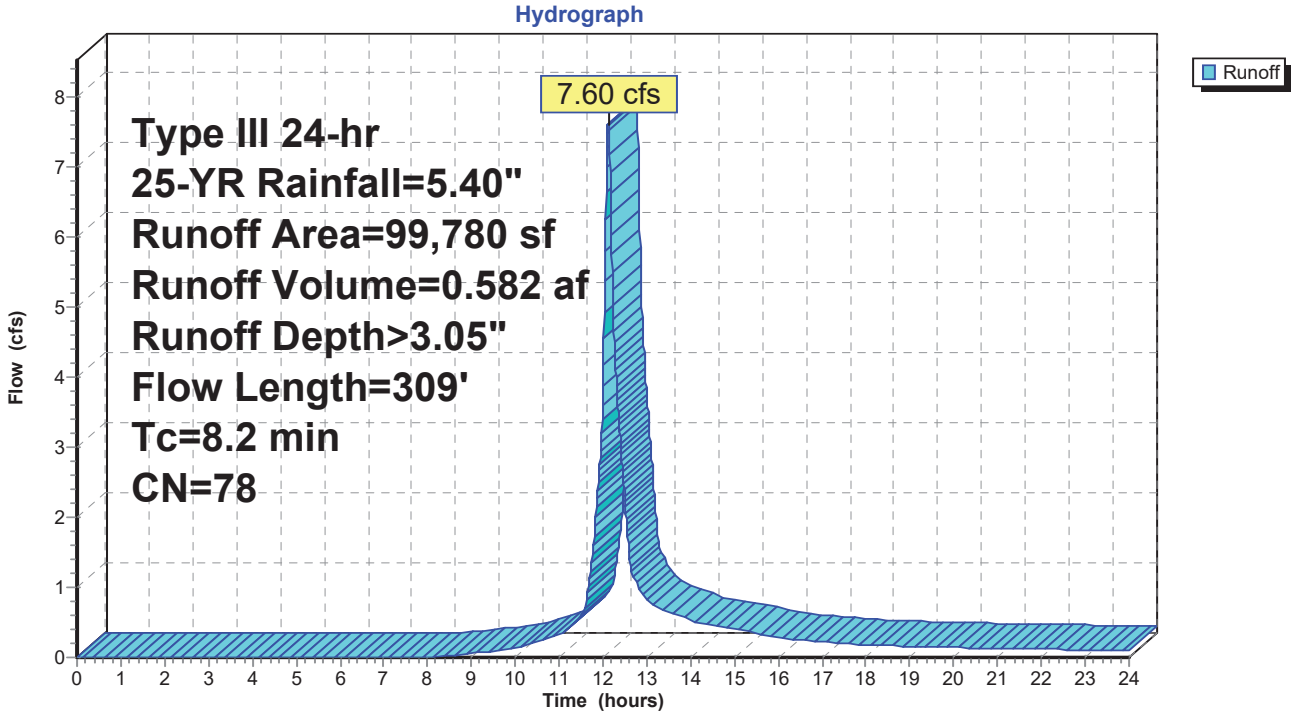
Runoff = 7.60 cfs @ 12.12 hrs, Volume= 0.582 af, Depth> 3.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (sf)	CN	Description
98,785	78	Meadow, non-grazed, HSG D
995	98	Paved roads w/curbs & sewers, HSG D
99,780	78	Weighted Average
98,785		99.00% Pervious Area
995		1.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	118	0.1530	0.26		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.00"
0.7	191	0.0300	4.38	9.86	**Trap/Vee/Rect Channel Flow, B-C** Bot.W=3.00' D=0.50' Z= 3.0 '/' Top.W=6.00' n= 0.030 Earth, grassed & winding
8.2	309	Total			

Subcatchment WS-1: West Site



Summary for Subcatchment WS-20: BUILDING

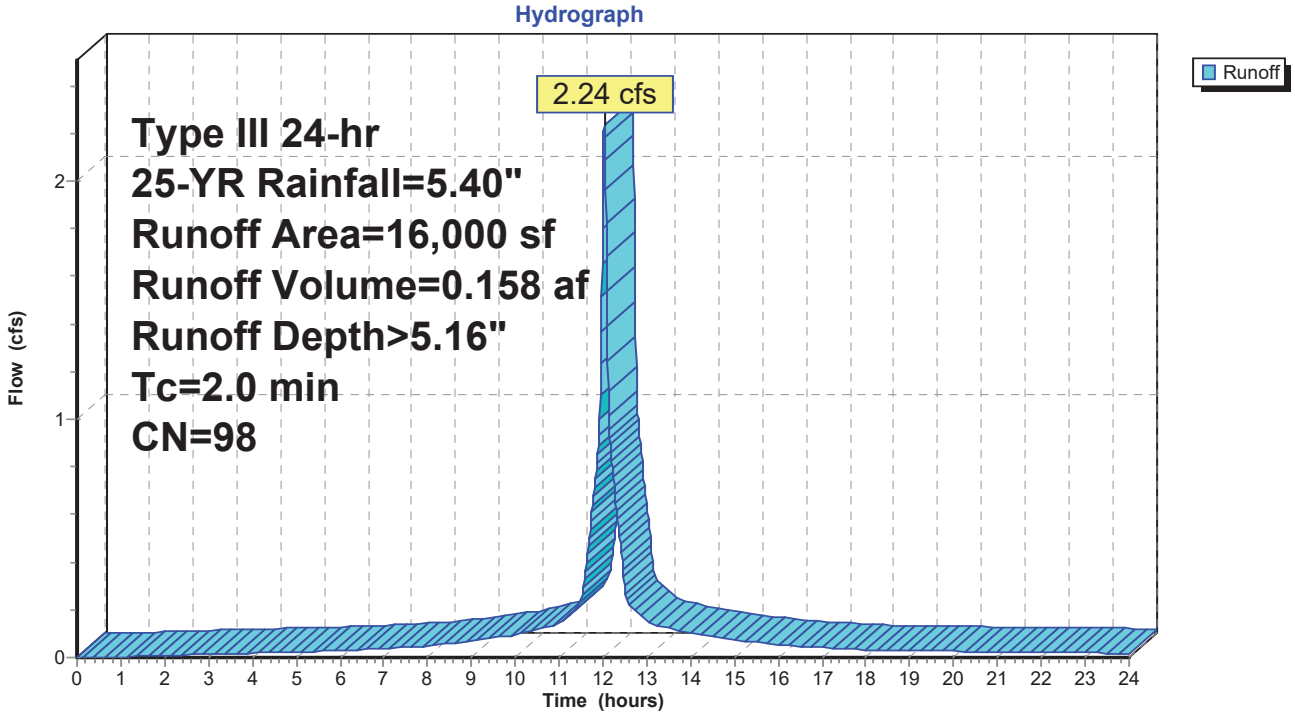
Runoff = 2.24 cfs @ 12.03 hrs, Volume= 0.158 af, Depth> 5.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (sf)	CN	Description
16,000	98	Unconnected roofs, HSG D
16,000		100.00% Impervious Area
16,000		100.00% Unconnected

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

Subcatchment WS-20: BUILDING



Summary for Subcatchment WS-21: Front Lawn

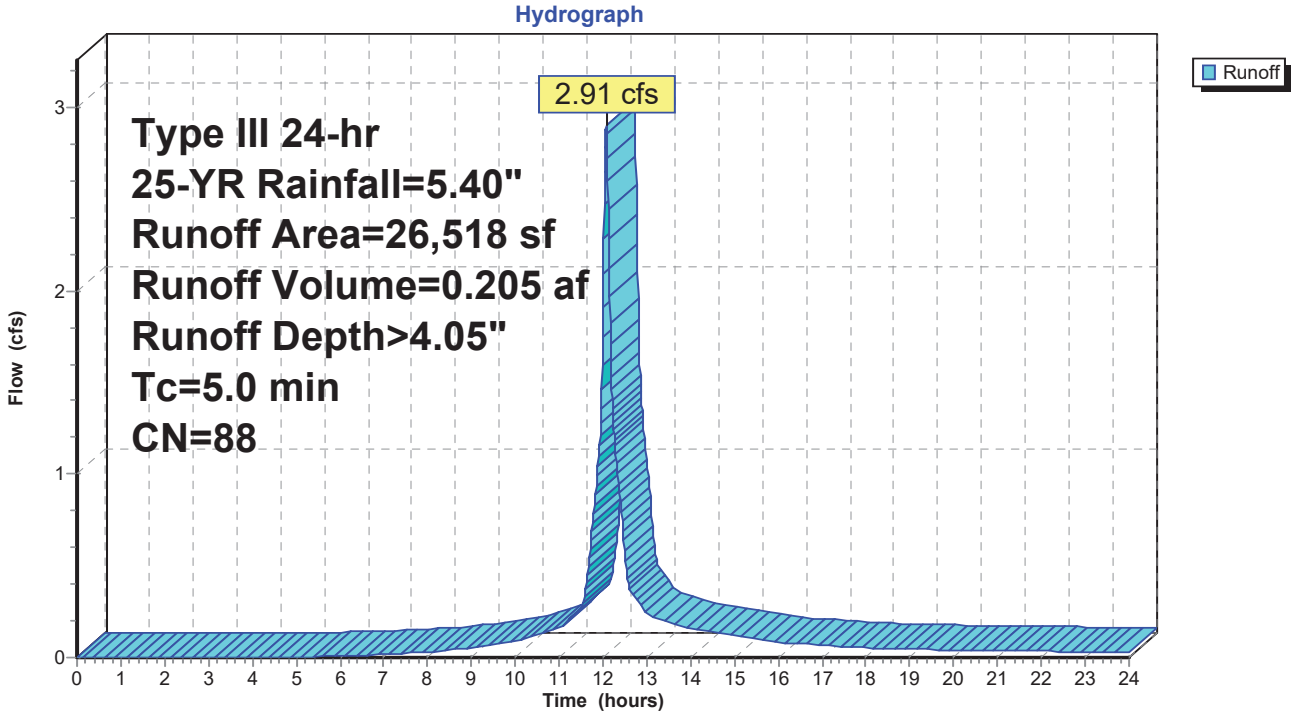
Runoff = 2.91 cfs @ 12.07 hrs, Volume= 0.205 af, Depth> 4.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (sf)	CN	Description
15,143	80	>75% Grass cover, Good, HSG D
11,375	98	Paved parking, HSG D
26,518	88	Weighted Average
15,143		57.10% Pervious Area
11,375		42.90% Impervious Area

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

Subcatchment WS-21: Front Lawn



Summary for Subcatchment WS-22: OFFSITE FLOW

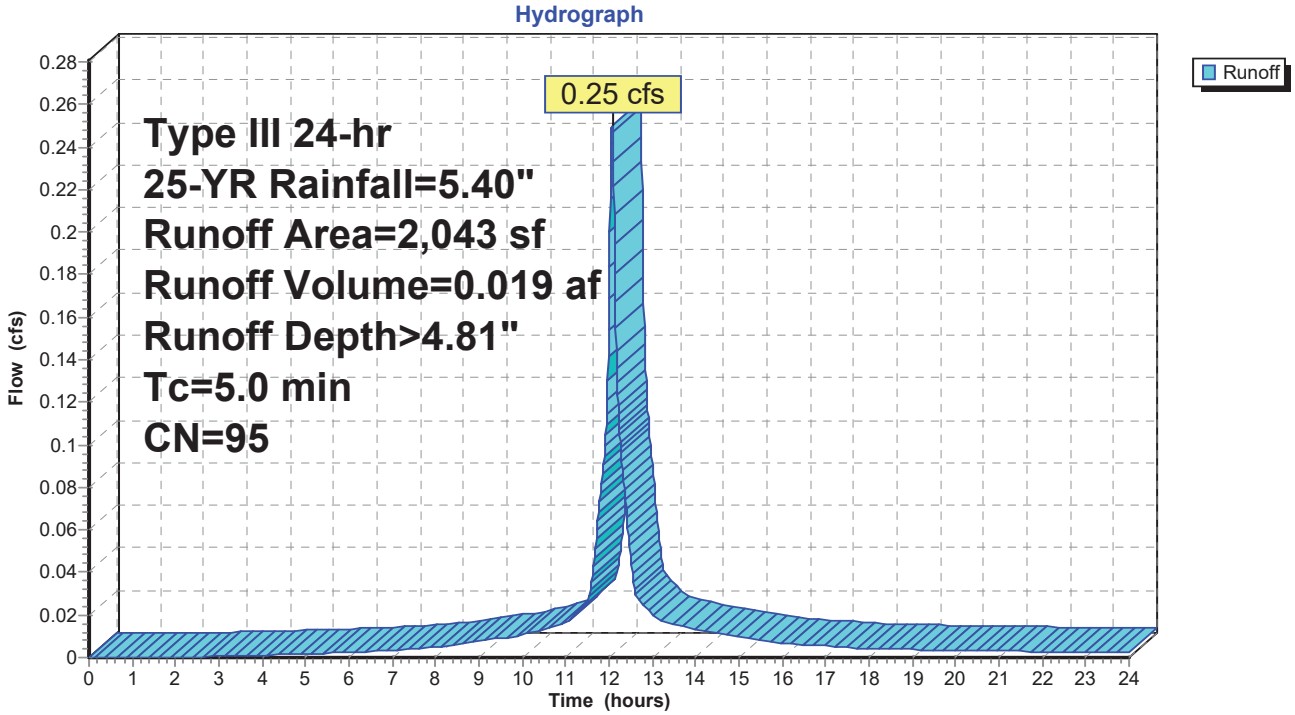
Runoff = 0.25 cfs @ 12.07 hrs, Volume= 0.019 af, Depth> 4.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (sf)	CN	Description
1,679	98	Paved parking, HSG D
364	80	>75% Grass cover, Good, HSG D
2,043	95	Weighted Average
364		17.82% Pervious Area
1,679		82.18% Impervious Area

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

Subcatchment WS-22: OFFSITE FLOW



Summary for Subcatchment WS-23: RAILROAD DITCH

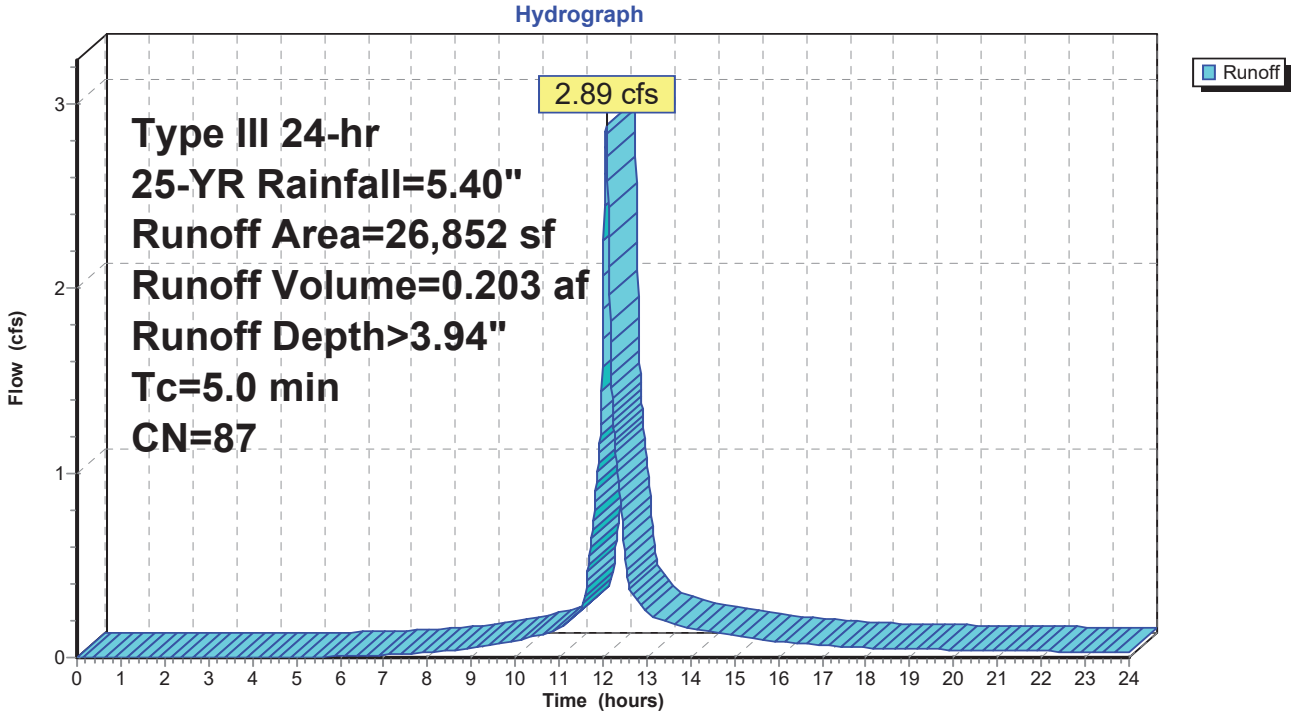
Runoff = 2.89 cfs @ 12.07 hrs, Volume= 0.203 af, Depth> 3.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

	Area (sf)	CN	Description
	14,952	78	Meadow, non-grazed, HSG D
*	11,900	98	entrance drive
	26,852	87	Weighted Average
	14,952		55.68% Pervious Area
	11,900		44.32% Impervious Area

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

Subcatchment WS-23: RAILROAD DITCH



Summary for Subcatchment WS-24: WEST BUILDING LANDSCAPE

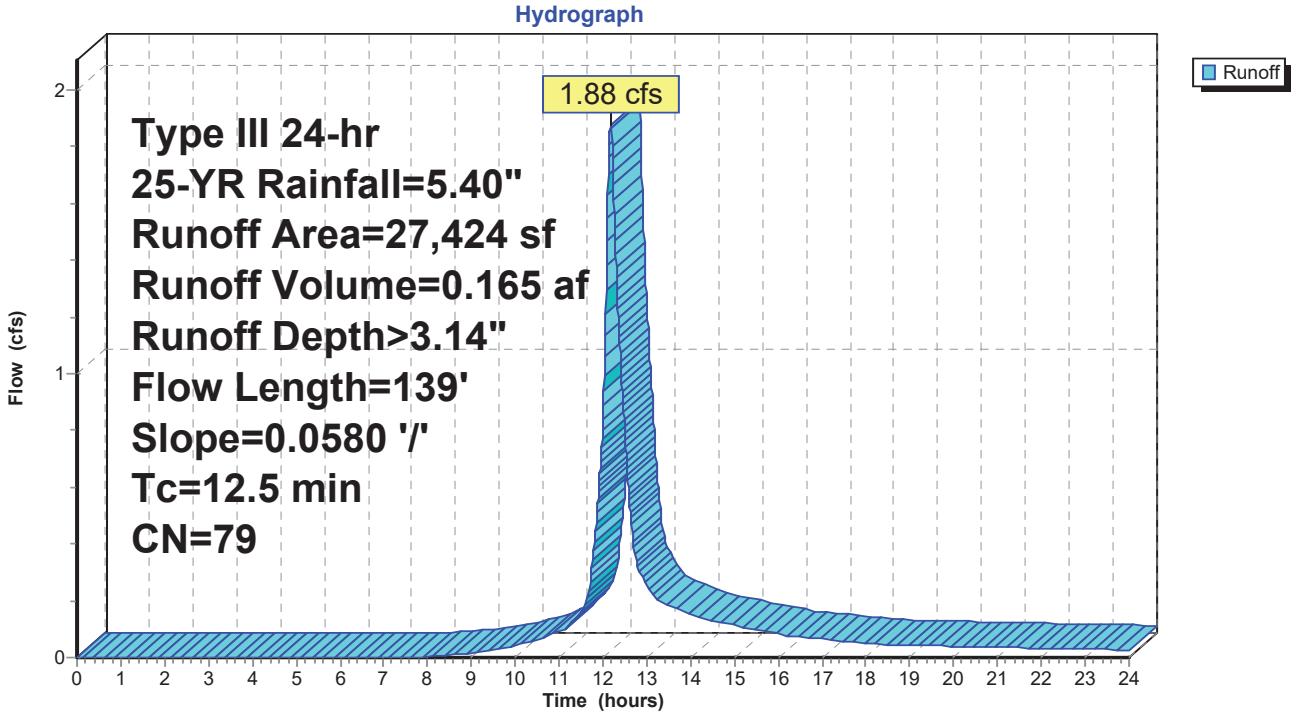
Runoff = 1.88 cfs @ 12.17 hrs, Volume= 0.165 af, Depth> 3.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (sf)	CN	Description
10,259	80	>75% Grass cover, Good, HSG D
17,165	78	Meadow, non-grazed, HSG D
27,424	79	Weighted Average
27,424		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	139	0.0580	0.18		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.00"

Subcatchment WS-24: WEST BUILDING LANDSCAPE



Summary for Subcatchment WS-3: North 95

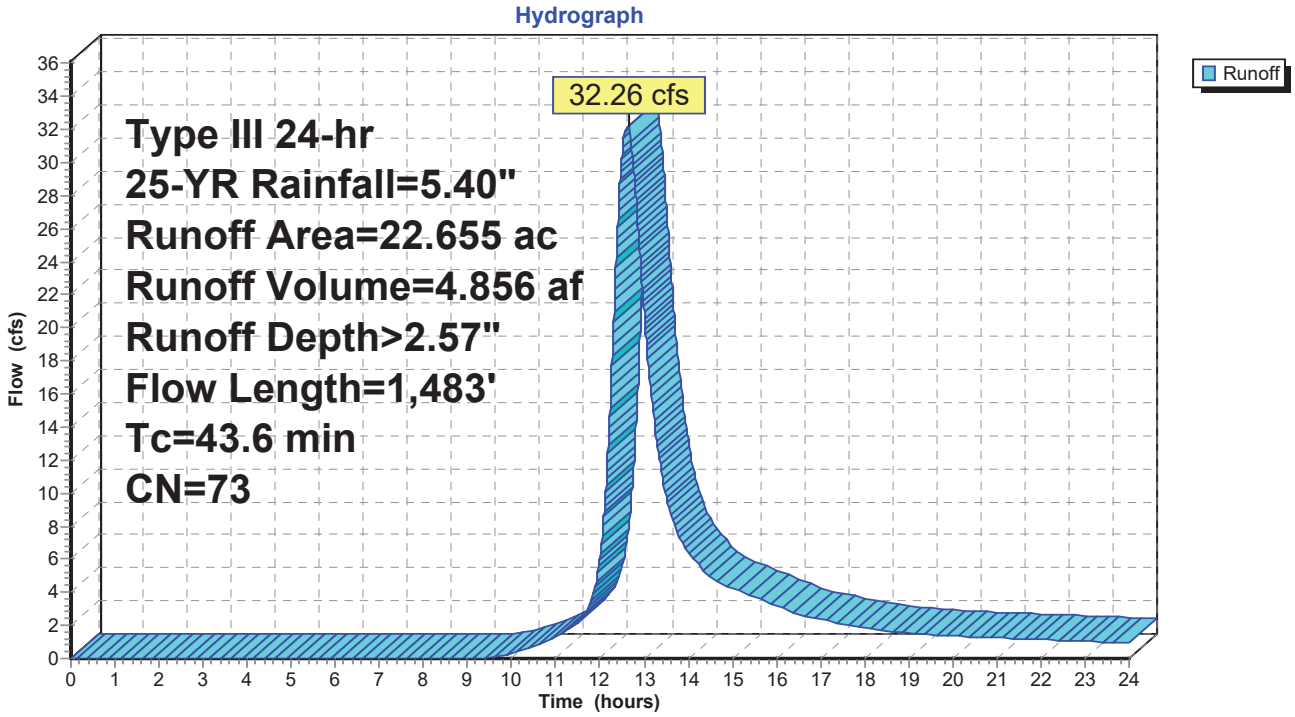
Runoff = 32.26 cfs @ 12.64 hrs, Volume= 4.856 af, Depth> 2.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (ac)	CN	Description
2.000	80	1/2 acre lots, 25% imp, HSG C
0.500	85	1/2 acre lots, 25% imp, HSG D
0.550	98	Paved roads w/curbs & sewers, HSG C
15.380	70	Woods, Good, HSG C
4.225	77	Woods, Good, HSG D
22.655	73	Weighted Average
21.480		94.81% Pervious Area
1.175		5.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.7	150	0.0870	0.08		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 3.00"
12.6	947	0.0630	1.25		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
1.3	386	0.0210	5.00	11.25	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=3.00' D=0.50' Z= 3.0 '/' Top.W=6.00' n= 0.022 Earth, clean & straight
43.6	1,483	Total			

Subcatchment WS-3: North 95



Summary for Subcatchment WS-4: North Old Lisbon Rd

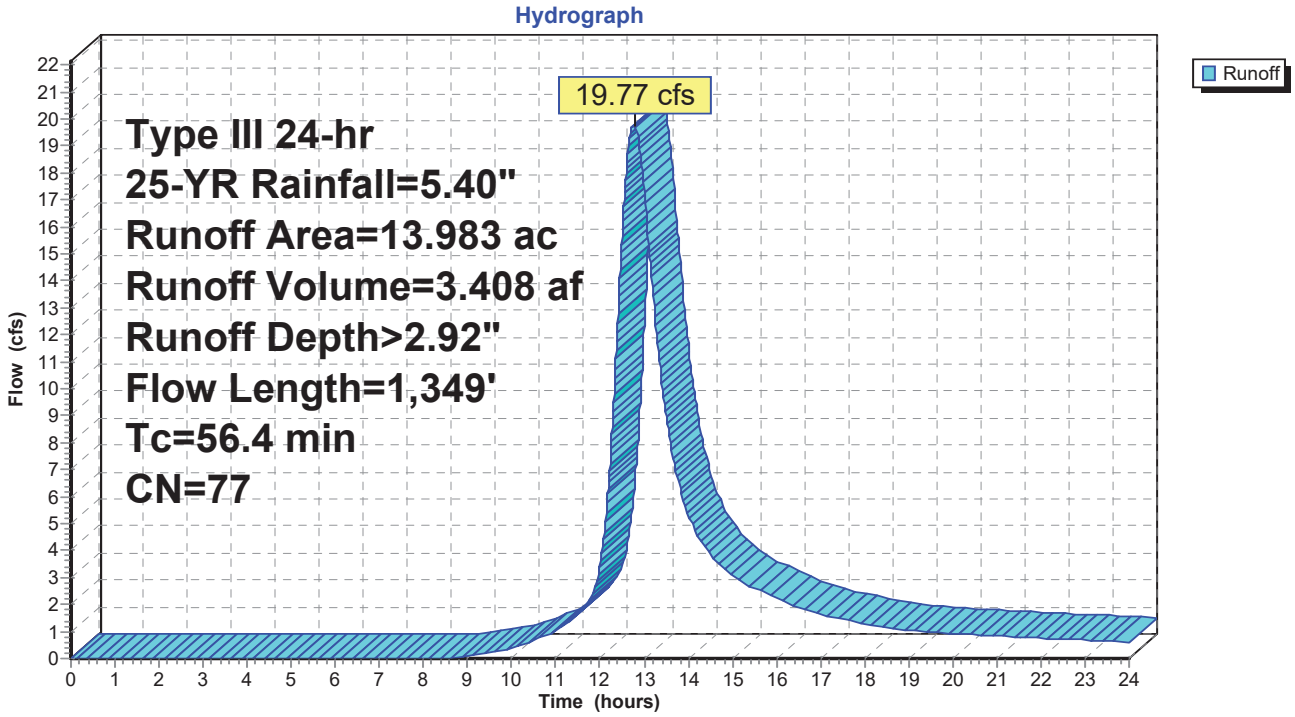
Runoff = 19.77 cfs @ 12.78 hrs, Volume= 3.408 af, Depth> 2.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (ac)	CN	Description
0.500	85	1/2 acre lots, 25% imp, HSG D
2.000	80	1/2 acre lots, 25% imp, HSG C
0.275	98	Paved roads w/curbs & sewers, HSG D
8.450	77	Woods, Good, HSG D
2.758	70	Woods, Good, HSG C
13.983	77	Weighted Average
13.083		93.56% Pervious Area
0.900		6.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.9	150	0.0470	0.07		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 3.00"
18.3	1,097	0.0400	1.00		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.2	102	0.0590	7.98	13.96	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=2.00' D=0.50' Z= 3.0 '/' Top.W=5.00' n= 0.022 Earth, clean & straight
56.4	1,349	Total			

Subcatchment WS-4: North Old Lisbon Rd



Summary for Subcatchment WS-5: Uphill North Old Lisbon Rd

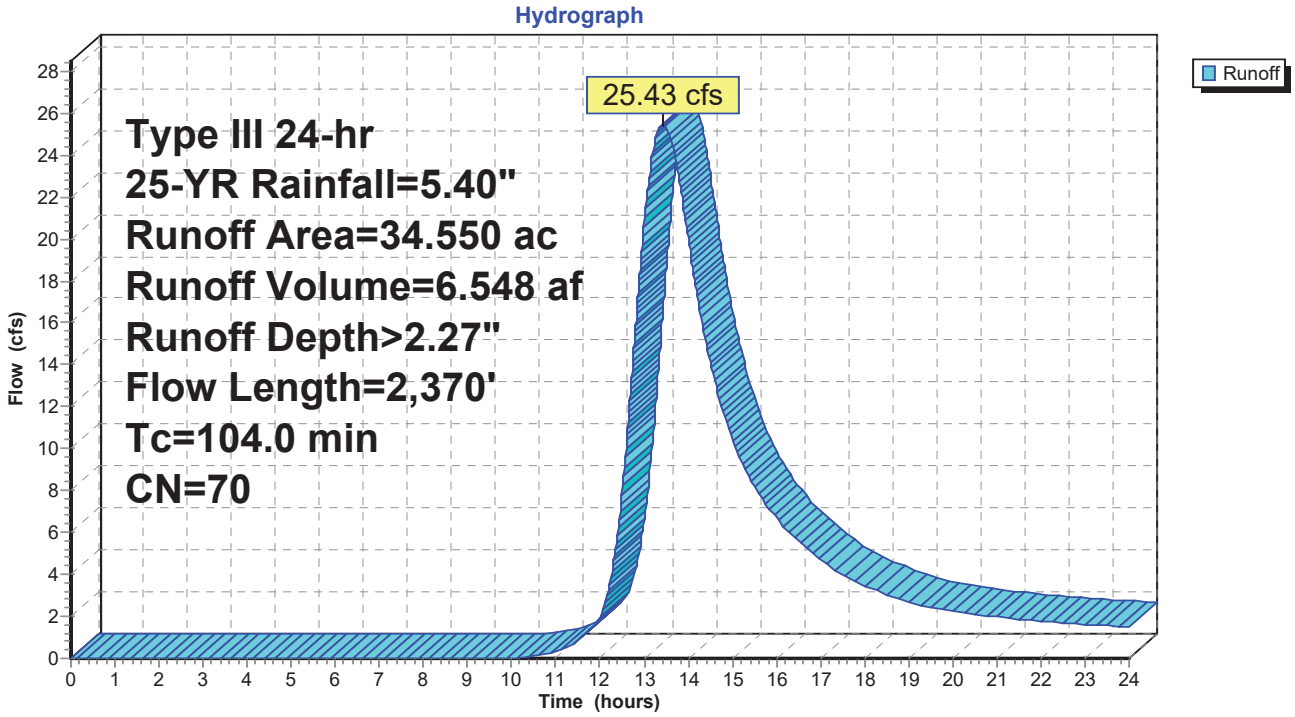
Runoff = 25.43 cfs @ 13.41 hrs, Volume= 6.548 af, Depth> 2.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.40"

Area (ac)	CN	Description
34.550	70	Woods, Good, HSG C
34.550		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
47.7	150	0.0266	0.05		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 3.00"
9.7	970	0.1100	1.66		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
46.6	1,250	0.0080	0.45		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
104.0	2,370	Total			

Subcatchment WS-5: Uphill North Old Lisbon Rd



Summary for Reach R2: Site Wetland Channel

Inflow Area = 71.188 ac, 2.91% Impervious, Inflow Depth > 2.47" for 25-YR event
Inflow = 52.09 cfs @ 12.71 hrs, Volume= 14.675 af
Outflow = 52.09 cfs @ 12.72 hrs, Volume= 14.669 af, Atten= 0%, Lag= 0.6 min

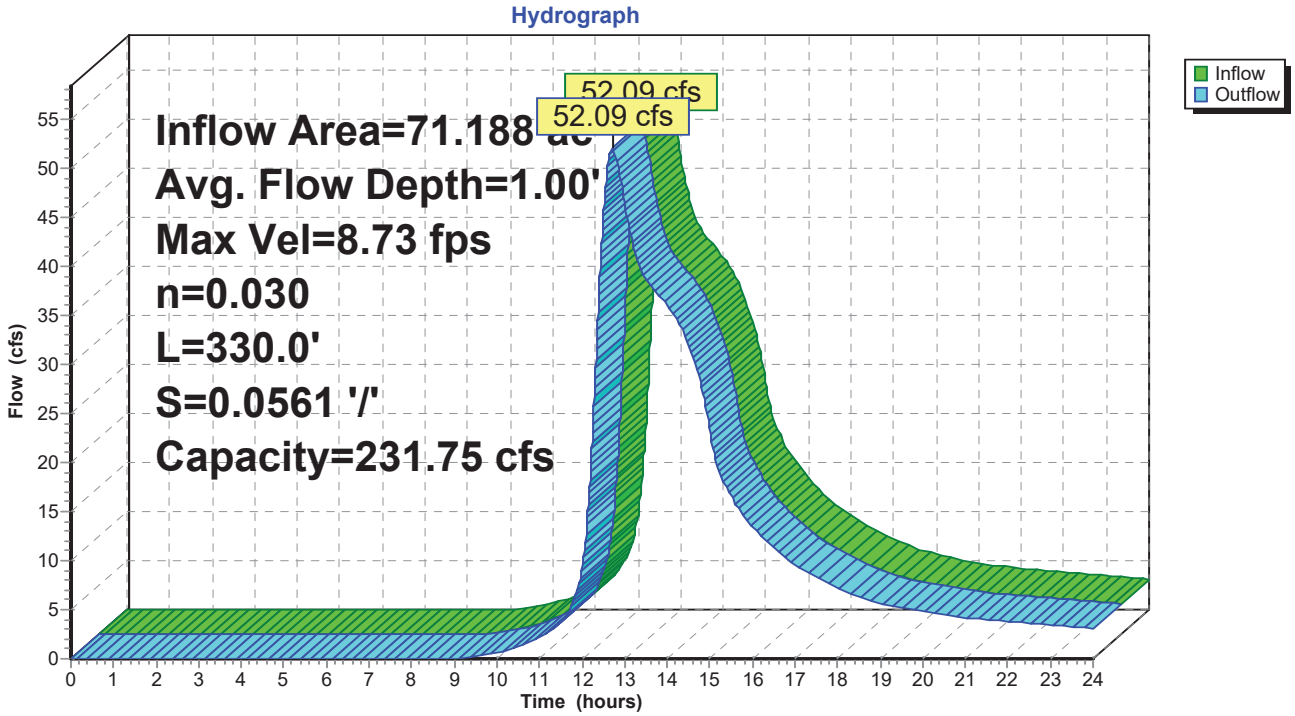
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 8.73 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 4.87 fps, Avg. Travel Time= 1.1 min

Peak Storage= 1,970 cf @ 12.72 hrs
Average Depth at Peak Storage= 1.00'
Bank-Full Depth= 2.00' Flow Area= 18.0 sf, Capacity= 231.75 cfs

3.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 15.00'
Length= 330.0' Slope= 0.0561 '/'
Inlet Invert= 234.50', Outlet Invert= 216.00'

‡

Reach R2: Site Wetland Channel



Summary for Reach R3: Old Lisbon Rd - I-95

Inflow Area = 48.533 ac, 1.85% Impervious, Inflow Depth > 2.43" for 25-YR event
Inflow = 29.62 cfs @ 13.86 hrs, Volume= 9.832 af
Outflow = 29.62 cfs @ 13.88 hrs, Volume= 9.819 af, Atten= 0%, Lag= 1.5 min

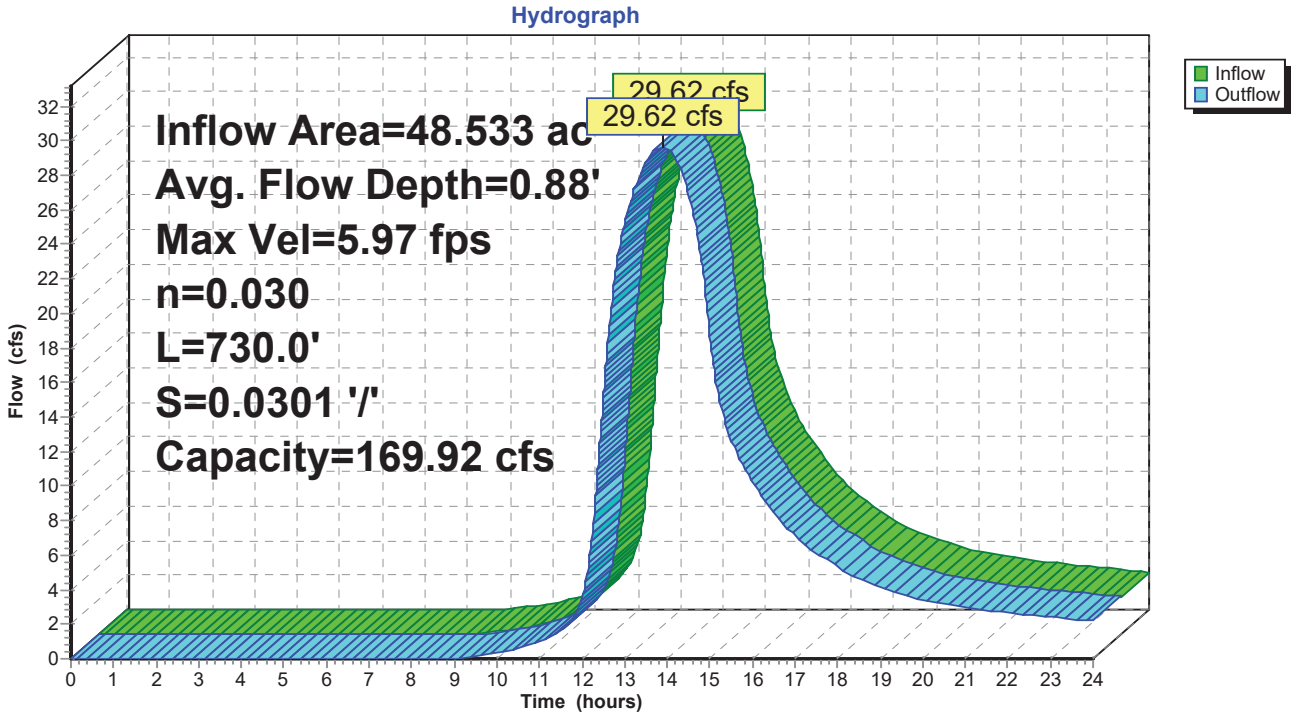
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 5.97 fps, Min. Travel Time= 2.0 min
Avg. Velocity = 3.45 fps, Avg. Travel Time= 3.5 min

Peak Storage= 3,619 cf @ 13.88 hrs
Average Depth at Peak Storage= 0.88'
Bank-Full Depth= 2.00' Flow Area= 18.0 sf, Capacity= 169.92 cfs

3.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 15.00'
Length= 730.0' Slope= 0.0301 '/'
Inlet Invert= 258.00', Outlet Invert= 236.00'

‡

Reach R3: Old Lisbon Rd - I-95



Summary for Reach R4: (new Reach)

Inflow Area = 34.550 ac, 0.00% Impervious, Inflow Depth > 2.24" for 25-YR event
Inflow = 24.09 cfs @ 13.68 hrs, Volume= 6.436 af
Outflow = 24.09 cfs @ 13.69 hrs, Volume= 6.432 af, Atten= 0%, Lag= 0.5 min

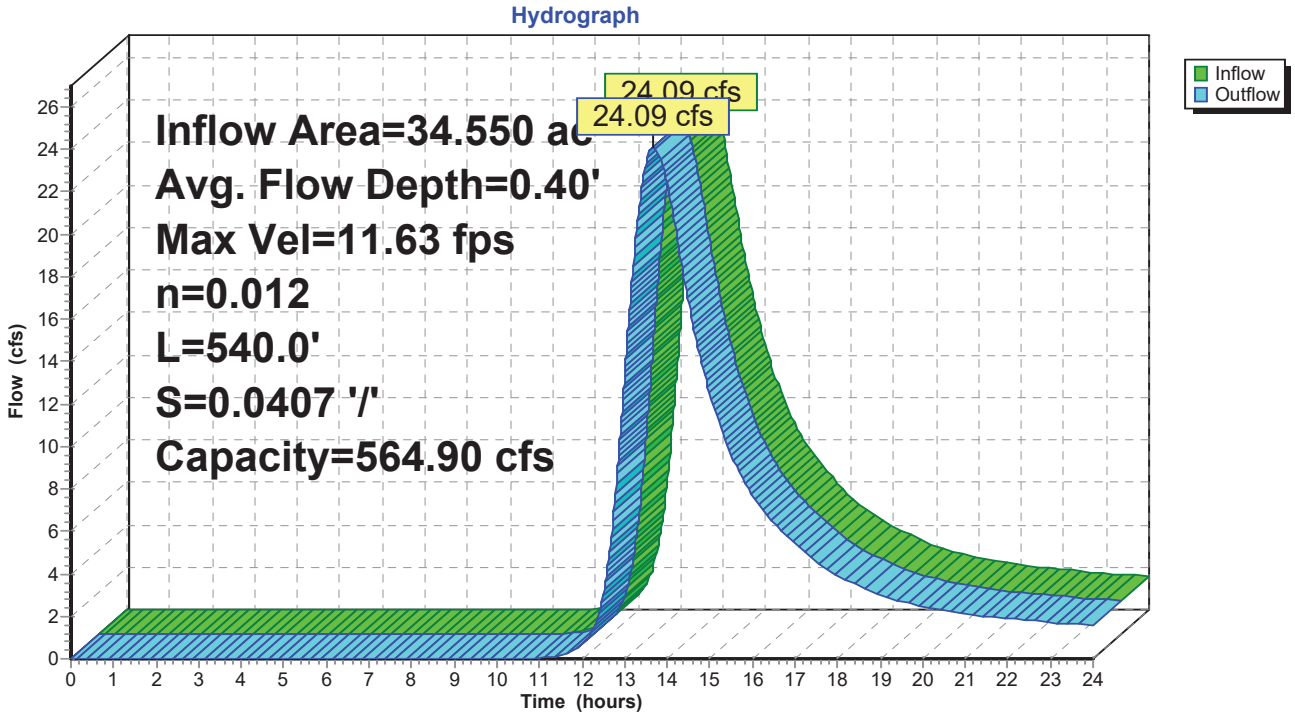
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 11.63 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 6.16 fps, Avg. Travel Time= 1.5 min

Peak Storage= 1,118 cf @ 13.69 hrs
Average Depth at Peak Storage= 0.40'
Bank-Full Depth= 2.00' Flow Area= 20.0 sf, Capacity= 564.90 cfs

4.00' x 2.00' deep channel, n= 0.012 Wood, Planed
Side Slope Z-value= 3.0 '/' Top Width= 16.00'
Length= 540.0' Slope= 0.0407 '/'
Inlet Invert= 296.00', Outlet Invert= 274.00'

‡

Reach R4: (new Reach)



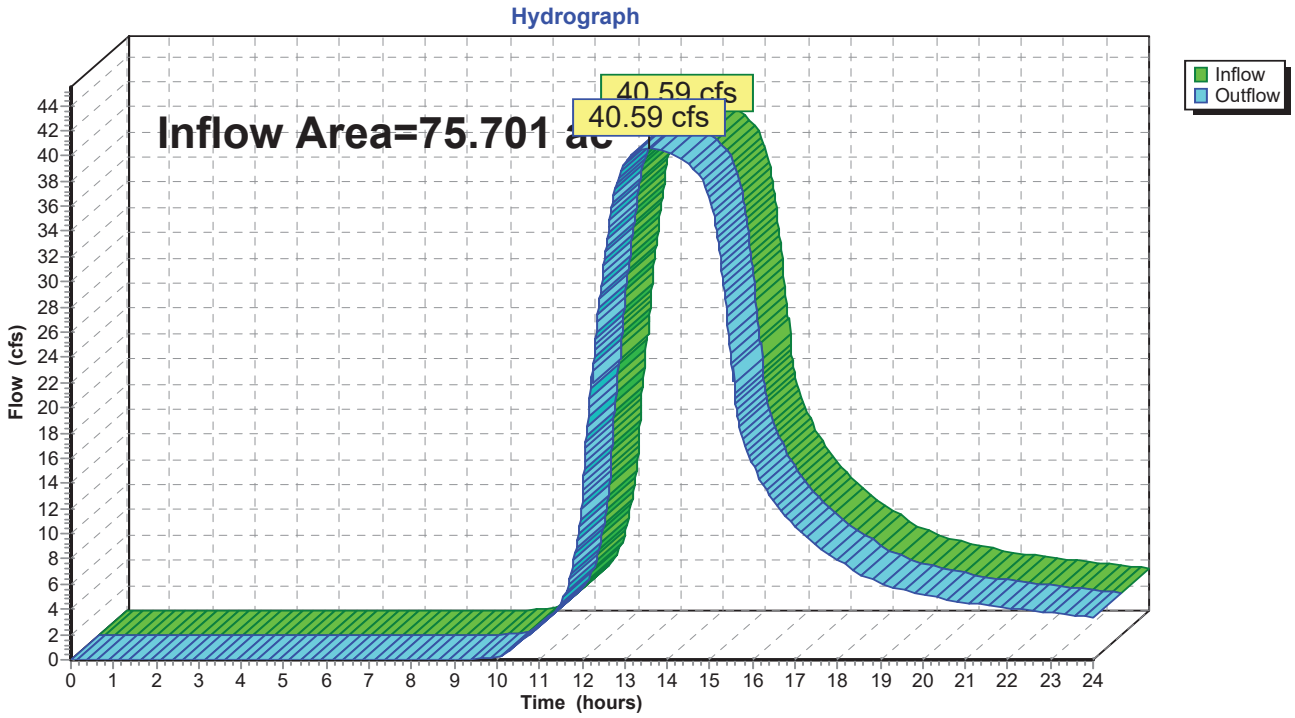
Summary for Reach SP1: Study Point 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 75.701 ac, 3.96% Impervious, Inflow Depth > 2.51" for 25-YR event
Inflow = 40.59 cfs @ 13.56 hrs, Volume= 15.846 af
Outflow = 40.59 cfs @ 13.56 hrs, Volume= 15.846 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Reach SP1: Study Point 1



Summary for Pond 1P: Site detention

[62] Hint: Exceeded Reach R2 OUTLET depth by 4.21' @ 13.49 hrs

Inflow Area =	75.084 ac,	3.63% Impervious,	Inflow Depth >	2.52"	for 25-YR event
Inflow =	54.33 cfs @	12.71 hrs,	Volume=	15.774 af	
Outflow =	40.53 cfs @	13.30 hrs,	Volume=	15.648 af,	Atten= 25%, Lag= 35.9 min
Primary =	40.53 cfs @	13.30 hrs,	Volume=	15.648 af	
Tertiary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 221.07' @ 13.45 hrs Surf.Area= 16,909 sf Storage= 58,932 cf

Plug-Flow detention time= 19.5 min calculated for 15.648 af (99% of inflow)
Center-of-Mass det. time= 15.2 min (912.0 - 896.8)

Volume	Invert	Avail.Storage	Storage Description
#1	213.00'	150,519 cf	**Custom Stage Data (Prismatic)** Listed below

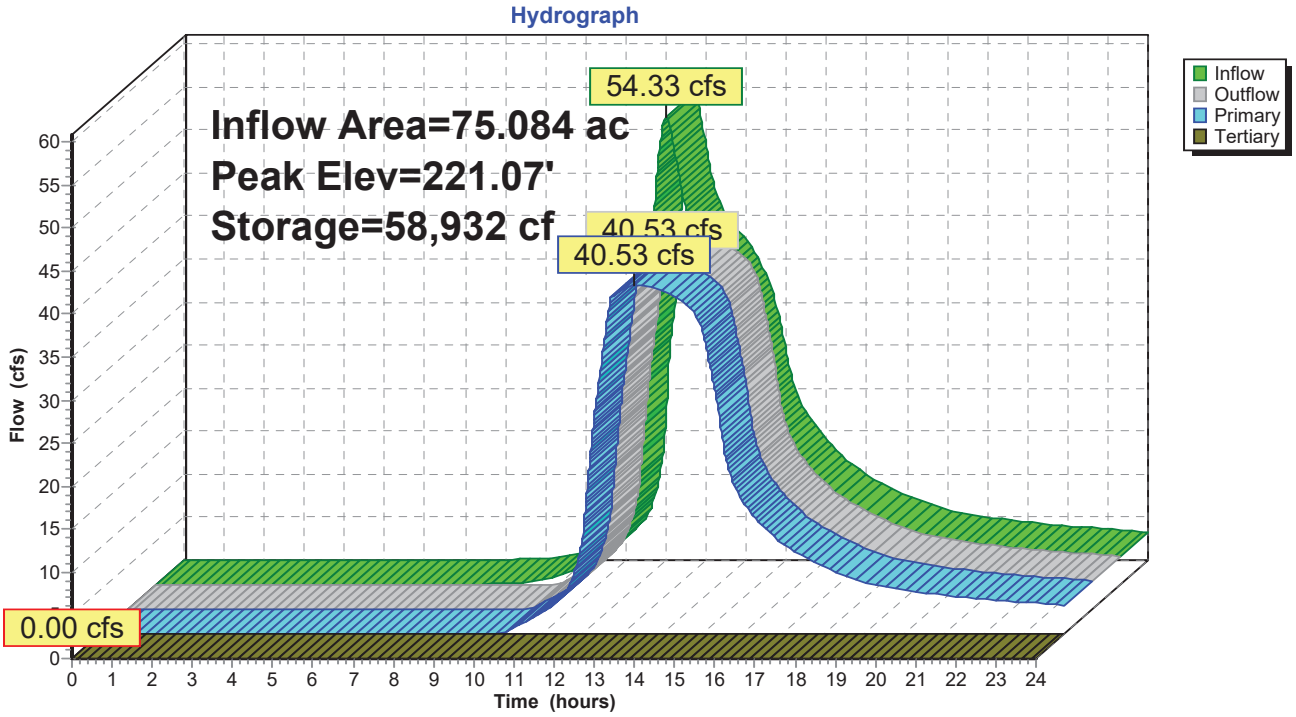
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
213.00	800	0	0
214.00	1,569	1,185	1,185
215.00	2,800	2,185	3,369
216.00	5,000	3,900	7,269
218.00	7,800	12,800	20,069
220.00	13,250	21,050	41,119
222.00	20,100	33,350	74,469
223.00	24,000	22,050	96,519
225.00	30,000	54,000	150,519

Device	Routing	Invert	Outlet Devices
#1	Tertiary	223.50'	**50.0' long x 24.0' 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	Primary	214.78'	**24.0" Round Culvert** L= 80.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 214.78' / 213.34' S= 0.0180 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#3	Primary	216.50'	**15.0" Round Overflow Culvert** L= 80.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 216.50' / 214.00' S= 0.0313 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=40.53 cfs @ 13.30 hrs HW=221.05' TW=216.77' (Dynamic Tailwater)
└─**2=Culvert** (Inlet Controls 31.29 cfs @ 9.96 fps)
└─**3=Overflow Culvert** (Inlet Controls 9.24 cfs @ 7.53 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=213.00' TW=209.00' (Dynamic Tailwater)
└─**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Site detention



Summary for Pond P2: Railroad Outlet

Inflow Area = 75.701 ac, 3.96% Impervious, Inflow Depth > 2.51" for 25-YR event
Inflow = 40.74 cfs @ 13.29 hrs, Volume= 15.850 af
Outflow = 40.59 cfs @ 13.56 hrs, Volume= 15.846 af, Atten= 0%, Lag= 16.2 min
Primary = 40.59 cfs @ 13.56 hrs, Volume= 15.846 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 216.82' @ 13.56 hrs Surf.Area= 2,781 sf Storage= 6,577 cf

Plug-Flow detention time= 1.6 min calculated for 15.839 af (100% of inflow)
Center-of-Mass det. time= 1.5 min (912.0 - 910.6)

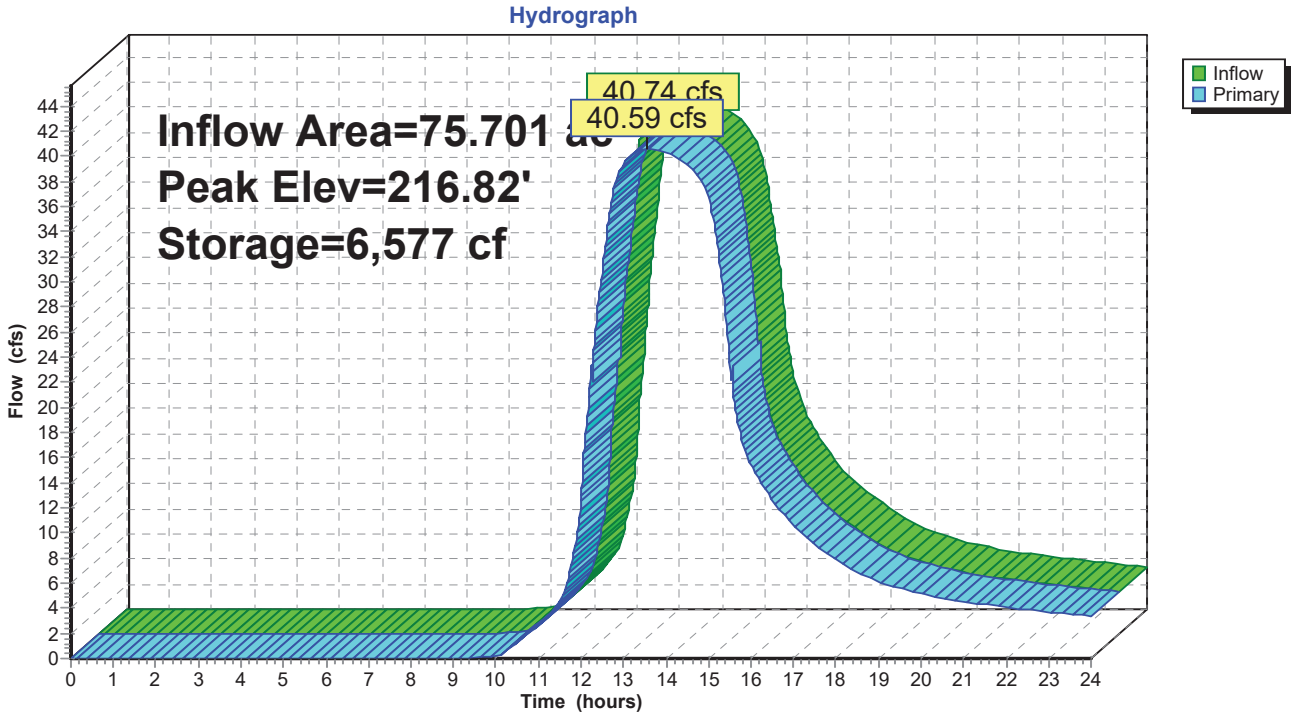
Volume	Invert	Avail.Storage	Storage Description
#1	209.00'	34,075 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
209.00	50	0	0
210.00	100	75	75
212.00	200	300	375
214.00	918	1,118	1,493
216.00	2,151	3,069	4,562
218.00	3,693	5,844	10,406
220.00	5,588	9,281	19,687
222.00	8,800	14,388	34,075

Device	Routing	Invert	Outlet Devices
#1	Primary	210.33'	**24.0" W x 24.0" H Box Culvert** L= 40.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 210.33' / 209.47' S= 0.0215 '/' Cc= 0.900 n= 0.025 Rubble masonry, cemented, Flow Area= 4.00 sf
#2	Primary	221.50'	**50.0' long x 50.0' 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

Primary OutFlow Max=40.59 cfs @ 13.56 hrs HW=216.82' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 40.59 cfs @ 10.15 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P2: Railroad Outlet



Summary for Pond P20: DRIP EDGE

Inflow Area = 0.367 ac,100.00% Impervious, Inflow Depth > 5.16" for 25-YR event
Inflow = 2.24 cfs @ 12.03 hrs, Volume= 0.158 af
Outflow = 0.42 cfs @ 12.43 hrs, Volume= 0.153 af, Atten= 81%, Lag= 23.8 min
Primary = 0.42 cfs @ 12.43 hrs, Volume= 0.153 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 230.46' @ 12.43 hrs Surf.Area= 0.037 ac Storage= 0.051 af

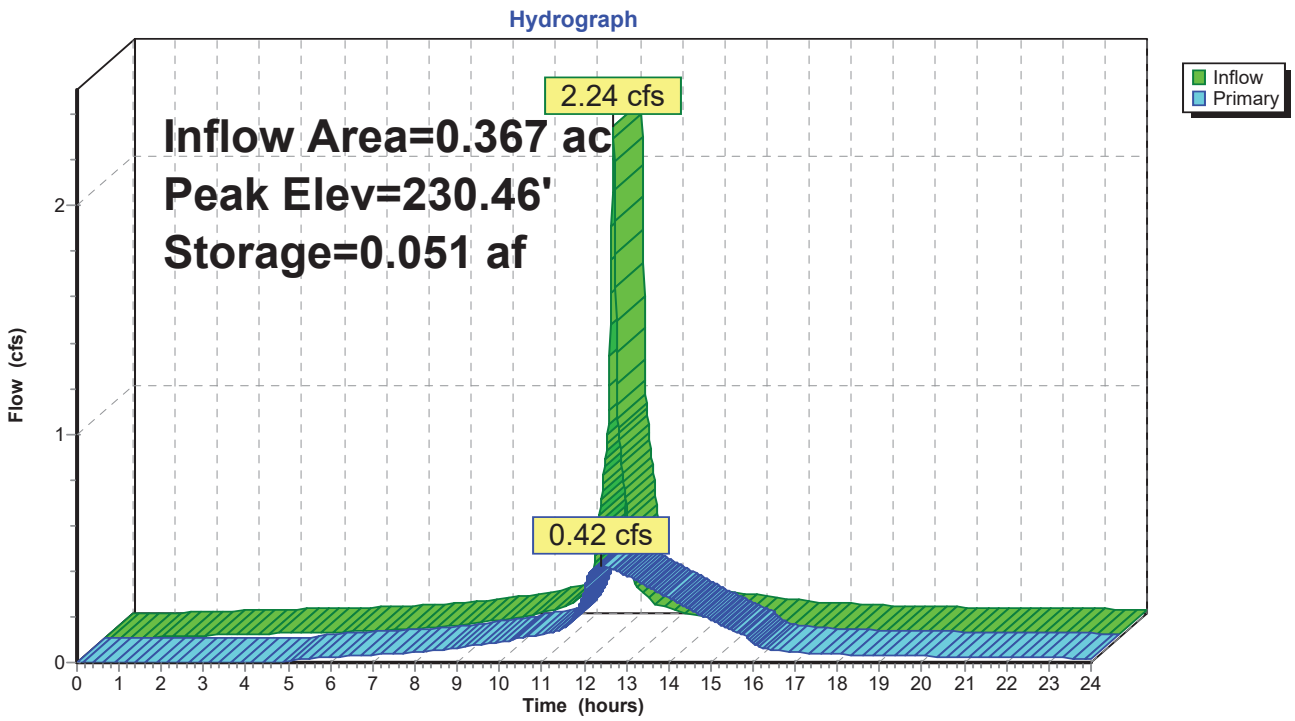
Plug-Flow detention time= 77.6 min calculated for 0.153 af (97% of inflow)
Center-of-Mass det. time= 58.0 min (800.9 - 742.9)

Volume	Invert	Avail.Storage	Storage Description
#1	227.00'	0.058 af	**4.00'W x 400.00'L x 4.00'H Prismatoid** 0.147 af Overall - 0.001 af Embedded = 0.146 af x 40.0% Voids
#2	227.25'	0.001 af	**4.0" Round Pipe Storage** Inside #1 L= 410.0' S= 0.0043 '/' 0.001 af Overall - 0.2" Wall Thickness = 0.001 af
#3	227.25'	0.000 af	**4.0" Round Pipe Storage** Inside #1 L= 80.0' S= 0.0100 '/' 0.000 af Overall - 0.2" Wall Thickness = 0.000 af
		0.059 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Device 2	227.25'	**6.0" Round Culvert** L= 25.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 227.25' / 227.13' S= 0.0048 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Primary	227.13'	**3.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=0.42 cfs @ 12.43 hrs HW=230.46' TW=218.37' (Dynamic Tailwater)
└─**2=Orifice/Grate** (Orifice Controls 0.42 cfs @ 8.61 fps)
  └─**1=Culvert** (Passes 0.42 cfs of 1.28 cfs potential flow)

Pond P20: DRIP EDGE



Summary for Pond P3: I-95

[44] Hint: Outlet device #1 is below defined storage
[44] Hint: Outlet device #2 is below defined storage

Inflow Area =	71.188 ac,	2.91% Impervious,	Inflow Depth >	2.47"	for 25-YR event
Inflow =	52.09 cfs @	12.71 hrs,	Volume=	14.675 af	
Outflow =	52.09 cfs @	12.71 hrs,	Volume=	14.675 af,	Atten= 0%, Lag= 0.0 min
Primary =	0.10 cfs @	12.71 hrs,	Volume=	0.029 af	
Secondary =	51.99 cfs @	12.71 hrs,	Volume=	14.646 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 236.00' @ 0.00 hrs Surf.Area= 13,500 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (902.3 - 902.3)

Volume	Invert	Avail.Storage	Storage Description
#1	236.00'	33,973 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

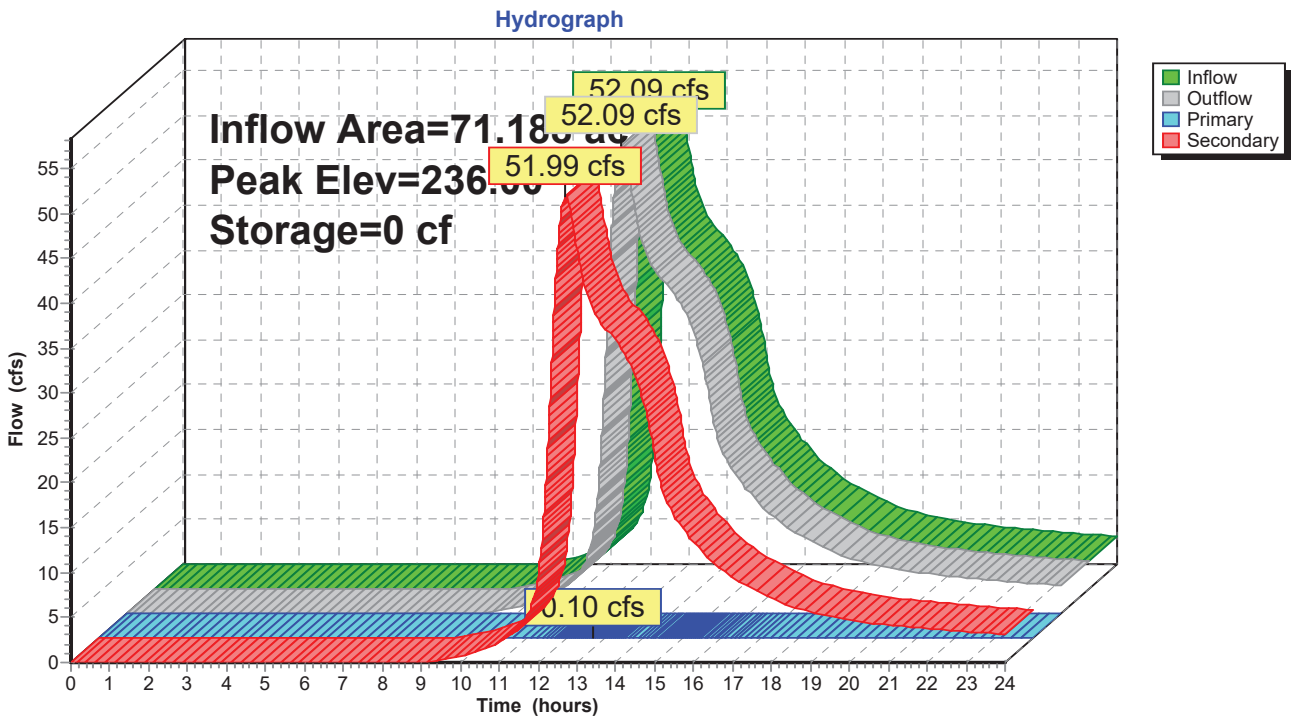
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
236.00	13,500	0	0
238.00	20,473	33,973	33,973

Device	Routing	Invert	Outlet Devices
#1	Primary	225.50'	**30.0" Round Culvert** L= 250.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 225.50' / 224.50' S= 0.0040 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf
#2	Secondary	228.00'	**300.0' long x 90.0' 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

Primary OutFlow Max=0.00 cfs @ 12.71 hrs HW=236.00' TW=235.50' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.00 cfs of 13.24 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 12.71 hrs HW=236.00' TW=235.50' (Dynamic Tailwater)
└─**2=Broad-Crested Rectangular Weir** (Passes 0.00 cfs of 7,151.47 cfs potential flow)

Pond P3: I-95


Hydrograph
Inflow Area=71.18
Peak Elev=236.
Storage=0 cf
52.09 cfs
52.09 cfs
51.99 cfs
0.10 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)

Summary for Pond P4: Old Lisbon Road

Inflow Area =	48.533 ac,	1.85% Impervious,	Inflow Depth >	2.43"	for 25-YR event
Inflow =	32.40 cfs @	13.38 hrs,	Volume=	9.840 af	
Outflow =	29.62 cfs @	13.86 hrs,	Volume=	9.832 af,	Atten= 9%, Lag= 28.4 min
Primary =	29.62 cfs @	13.86 hrs,	Volume=	9.832 af	
Secondary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 273.15' @ 13.86 hrs Surf.Area= 8,015 sf Storage= 20,621 cf

Plug-Flow detention time= 5.5 min calculated for 9.832 af (100% of inflow)
Center-of-Mass det. time= 5.1 min (918.7 - 913.6)

Volume	Invert	Avail.Storage	Storage Description
#1	266.00'	51,550 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

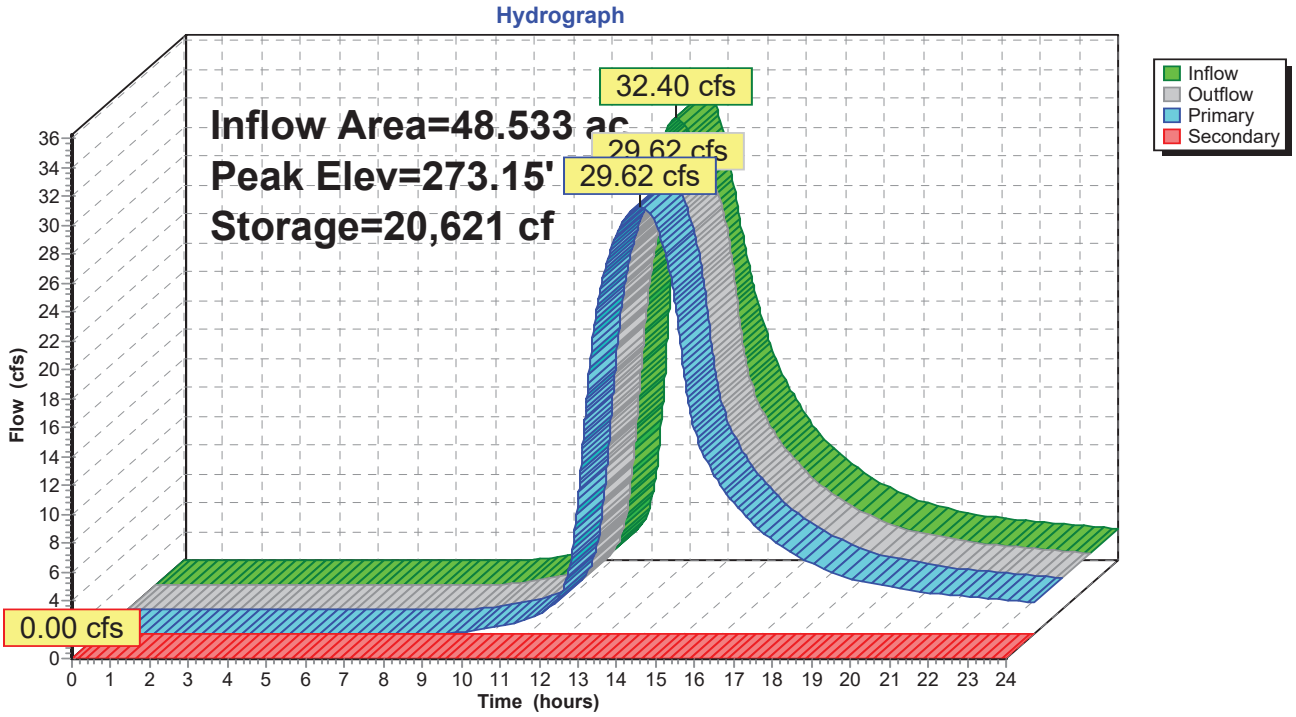
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
266.00	350	0	0
268.00	1,000	1,350	1,350
270.00	2,100	3,100	4,450
272.00	6,000	8,100	12,550
274.00	9,500	15,500	28,050
276.00	14,000	23,500	51,550

Device	Routing	Invert	Outlet Devices
#1	Primary	266.00'	**24.0" Round Culvert** L= 100.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 266.00' / 265.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Secondary	274.00'	**50.0' long x 24.0' 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

Primary OutFlow Max=29.62 cfs @ 13.86 hrs HW=273.15' TW=258.88' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 29.62 cfs @ 9.43 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=266.00' TW=258.00' (Dynamic Tailwater)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P4: Old Lisbon Road



Summary for Pond P5: Forest Wetland

Inflow Area = 34.550 ac, 0.00% Impervious, Inflow Depth > 2.27" for 25-YR event
Inflow = 25.43 cfs @ 13.41 hrs, Volume= 6.548 af
Outflow = 24.09 cfs @ 13.68 hrs, Volume= 6.436 af, Atten= 5%, Lag= 16.2 min
Primary = 24.09 cfs @ 13.68 hrs, Volume= 6.436 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 296.47' @ 13.69 hrs Surf.Area= 1.571 ac Storage= 0.661 af

Plug-Flow detention time= 28.3 min calculated for 6.433 af (98% of inflow)
Center-of-Mass det. time= 19.7 min (938.4 - 918.7)

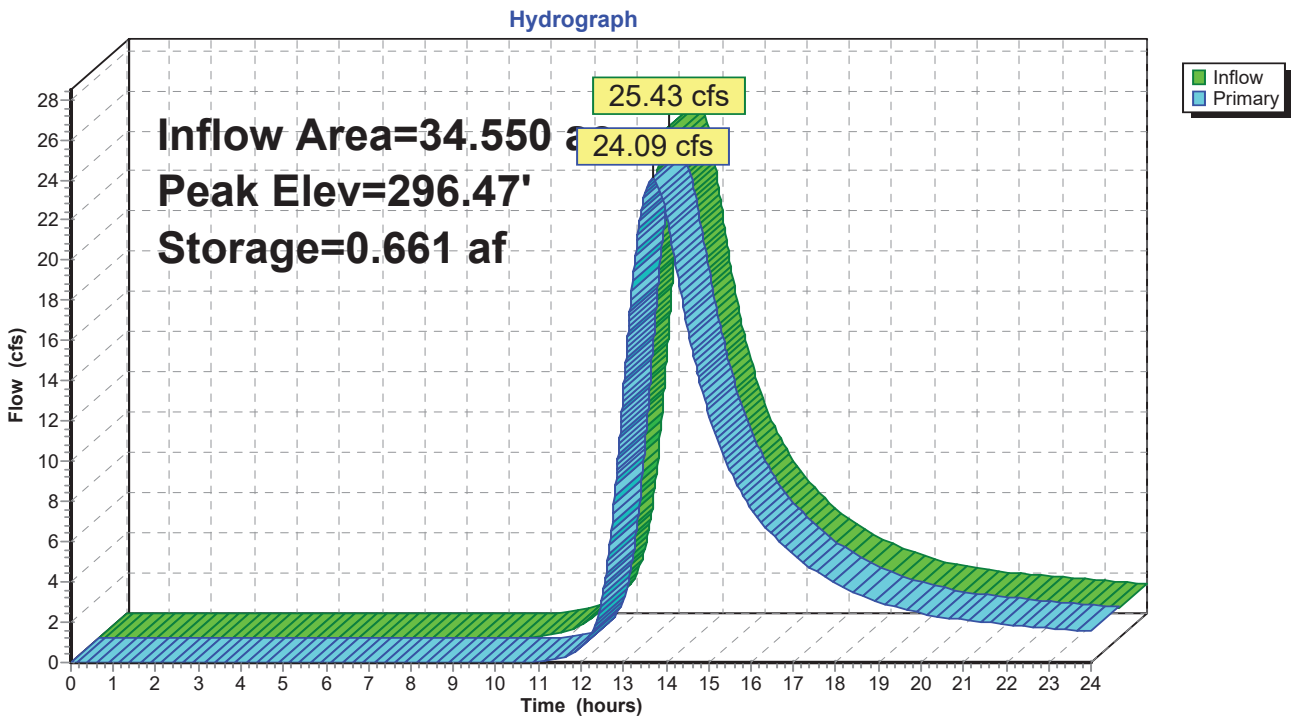
Volume	Invert	Avail.Storage	Storage Description
#1	296.00'	3.920 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
296.00	1.220	0.000	0.000
298.00	2.700	3.920	3.920

Device	Routing	Invert	Outlet Devices
#1	Primary	296.00'	**50.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=24.09 cfs @ 13.68 hrs HW=296.47' TW=296.40' (Dynamic Tailwater)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 24.09 cfs @ 1.02 fps)

Pond P5: Forest Wetland



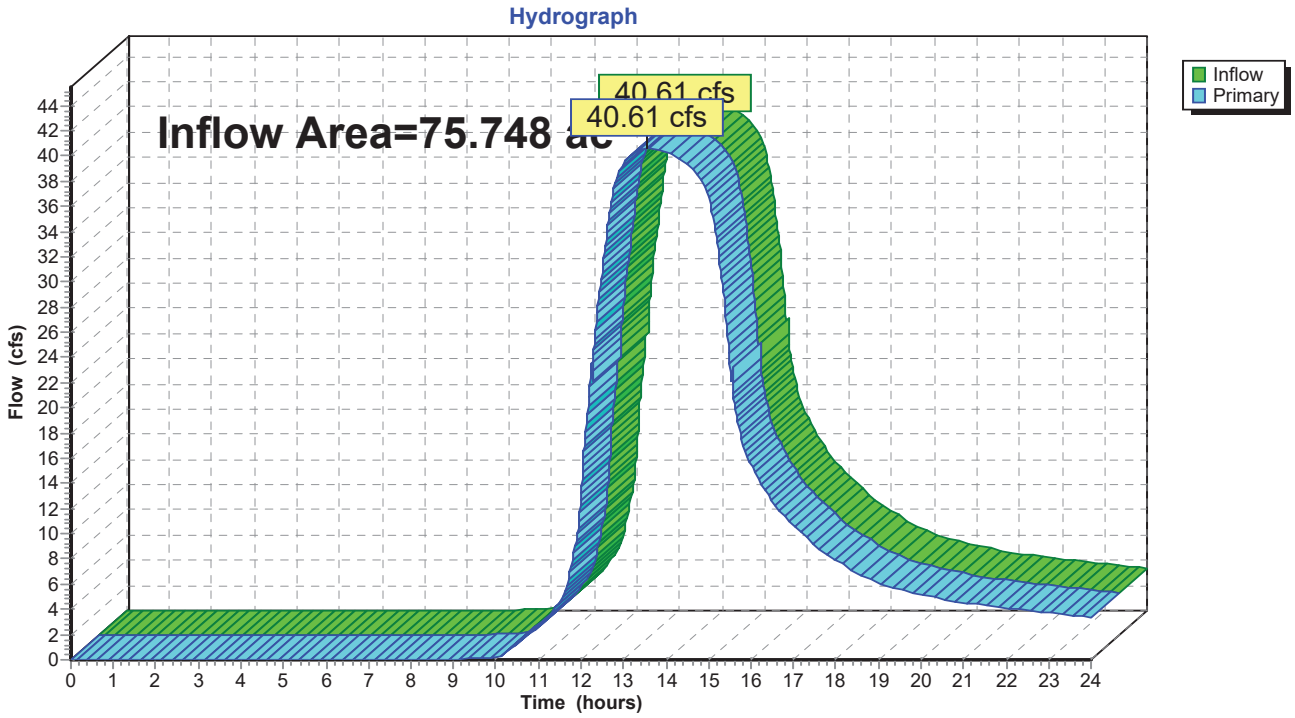
Summary for Pond TOTAL: COMBINED

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 75.748 ac, 4.01% Impervious, Inflow Depth > 2.51" for 25-YR event
Inflow = 40.61 cfs @ 13.56 hrs, Volume= 15.864 af
Primary = 40.61 cfs @ 13.56 hrs, Volume= 15.864 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Pond TOTAL: COMBINED



Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points x 3
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 WS-1: West Site Runoff Area=99,780 sf 1.00% Impervious Runoff Depth>3.05"
Flow Length=309' Tc=8.2 min CN=78 Runoff=7.60 cfs 0.582 af

Subcatchment WS-20: BUILDING Runoff Area=16,000 sf 100.00% Impervious Runoff Depth>5.16"
Tc=2.0 min CN=98 Runoff=2.24 cfs 0.158 af

Subcatchment WS-21: Front Lawn Runoff Area=26,518 sf 42.90% Impervious Runoff Depth>4.05"
Tc=5.0 min CN=88 Runoff=2.91 cfs 0.205 af

Subcatchment WS-22: OFFSITE FLOW Runoff Area=2,043 sf 82.18% Impervious Runoff Depth>4.81"
Tc=5.0 min CN=95 Runoff=0.25 cfs 0.019 af

Subcatchment WS-23: RAILROAD DITCH Runoff Area=26,852 sf 44.32% Impervious Runoff Depth>3.94"
Tc=5.0 min CN=87 Runoff=2.89 cfs 0.203 af

Subcatchment WS-24: WEST BUILDING Runoff Area=27,424 sf 0.00% Impervious Runoff Depth>3.14"
Flow Length=139' Slope=0.0580 '/' Tc=12.5 min CN=79 Runoff=1.88 cfs 0.165 af

Subcatchment WS-3: North 95 Runoff Area=22.655 ac 5.19% Impervious Runoff Depth>2.57"
Flow Length=1,483' Tc=43.6 min CN=73 Runoff=32.26 cfs 4.856 af

Subcatchment WS-4: North Old Lisbon Rd Runoff Area=13.983 ac 6.44% Impervious Runoff Depth>2.92"
Flow Length=1,349' Tc=56.4 min CN=77 Runoff=19.77 cfs 3.408 af

Subcatchment WS-5: Uphill North Old Runoff Area=34.550 ac 0.00% Impervious Runoff Depth>2.27"
Flow Length=2,370' Tc=104.0 min CN=70 Runoff=25.43 cfs 6.548 af

Reach R2: Site Wetland Channel Avg. Flow Depth=1.00' Max Vel=8.73 fps Inflow=52.09 cfs 14.675 af
n=0.030 L=330.0' S=0.0561 '/' Capacity=231.75 cfs Outflow=52.09 cfs 14.669 af

Reach R3: Old Lisbon Rd - I-95 Avg. Flow Depth=0.88' Max Vel=5.97 fps Inflow=29.62 cfs 9.832 af
n=0.030 L=730.0' S=0.0301 '/' Capacity=169.92 cfs Outflow=29.62 cfs 9.819 af

Reach R4: (new Reach) Avg. Flow Depth=0.40' Max Vel=11.63 fps Inflow=24.09 cfs 6.436 af
n=0.012 L=540.0' S=0.0407 '/' Capacity=564.90 cfs Outflow=24.09 cfs 6.432 af

Reach SP1: Study Point 1 Inflow=40.59 cfs 15.846 af
Outflow=40.59 cfs 15.846 af

Pond 1P: Site detention Peak Elev=221.07' Storage=58,932 cf Inflow=54.33 cfs 15.774 af
Primary=40.53 cfs 15.648 af Tertiary=0.00 cfs 0.000 af Outflow=40.53 cfs 15.648 af

Pond P2: Railroad Outlet Peak Elev=216.82' Storage=6,577 cf Inflow=40.74 cfs 15.850 af
Outflow=40.59 cfs 15.846 af

Pond P20: DRIP EDGE Peak Elev=230.46' Storage=0.051 af Inflow=2.24 cfs 0.158 af
Outflow=0.42 cfs 0.153 af

Pond P3: I-95 Peak Elev=236.00' Storage=0 cf Inflow=52.09 cfs 14.675 af
Primary=0.10 cfs 0.029 af Secondary=51.99 cfs 14.646 af Outflow=52.09 cfs 14.675 af

Pond P4: Old Lisbon Road Peak Elev=273.15' Storage=20,621 cf Inflow=32.40 cfs 9.840 af
Primary=29.62 cfs 9.832 af Secondary=0.00 cfs 0.000 af Outflow=29.62 cfs 9.832 af

Pond P5: Forest Wetland Peak Elev=296.47' Storage=0.661 af Inflow=25.43 cfs 6.548 af
Outflow=24.09 cfs 6.436 af

Pond TOTAL: COMBINED Inflow=40.61 cfs 15.864 af
Primary=40.61 cfs 15.864 af

Total Runoff Area = 75.748 ac Runoff Volume = 16.144 af Average Runoff Depth = 2.56"
95.99% Pervious = 72.710 ac 4.01% Impervious = 3.038 ac

Summary for Subcatchment WS-1: West Site

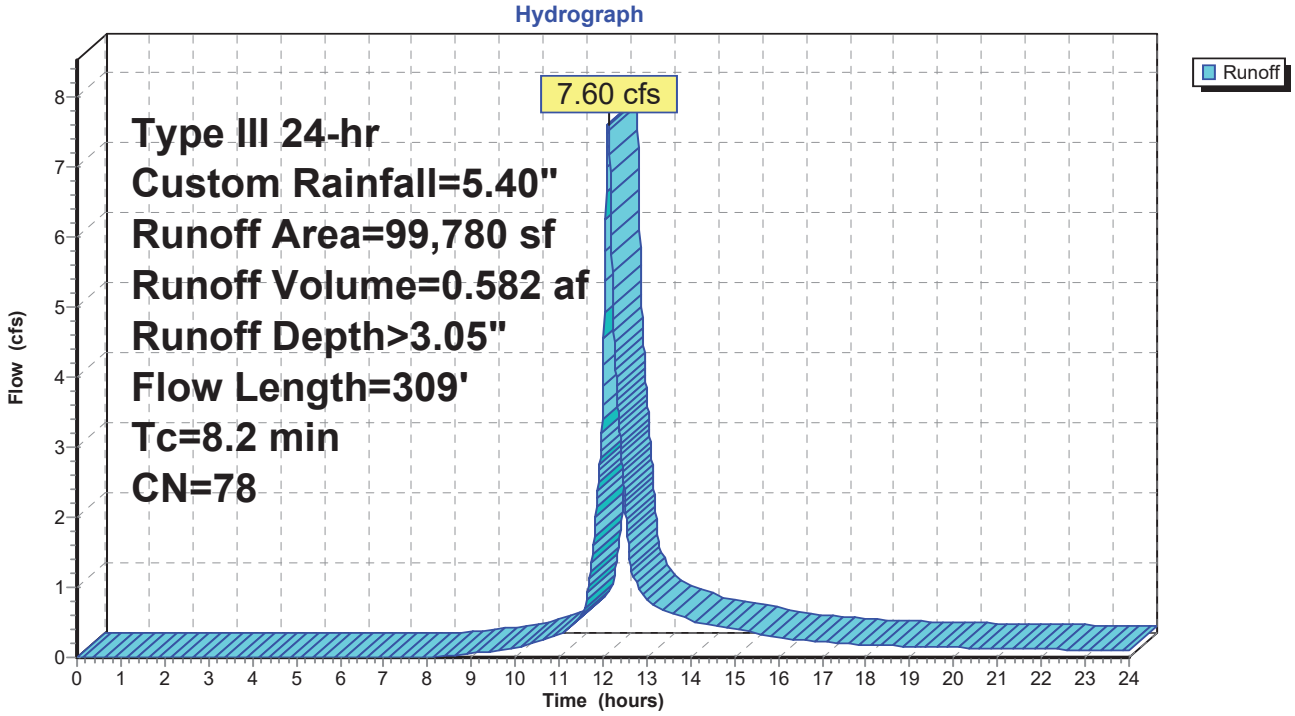
Runoff = 7.60 cfs @ 12.12 hrs, Volume= 0.582 af, Depth> 3.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr Custom Rainfall=5.40"

Area (sf)	CN	Description
98,785	78	Meadow, non-grazed, HSG D
995	98	Paved roads w/curbs & sewers, HSG D
99,780	78	Weighted Average
98,785		99.00% Pervious Area
995		1.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	118	0.1530	0.26		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.00"
0.7	191	0.0300	4.38	9.86	**Trap/Vee/Rect Channel Flow, B-C** Bot.W=3.00' D=0.50' Z= 3.0 '/' Top.W=6.00' n= 0.030 Earth, grassed & winding
8.2	309	Total			

Subcatchment WS-1: West Site



Summary for Subcatchment WS-20: BUILDING

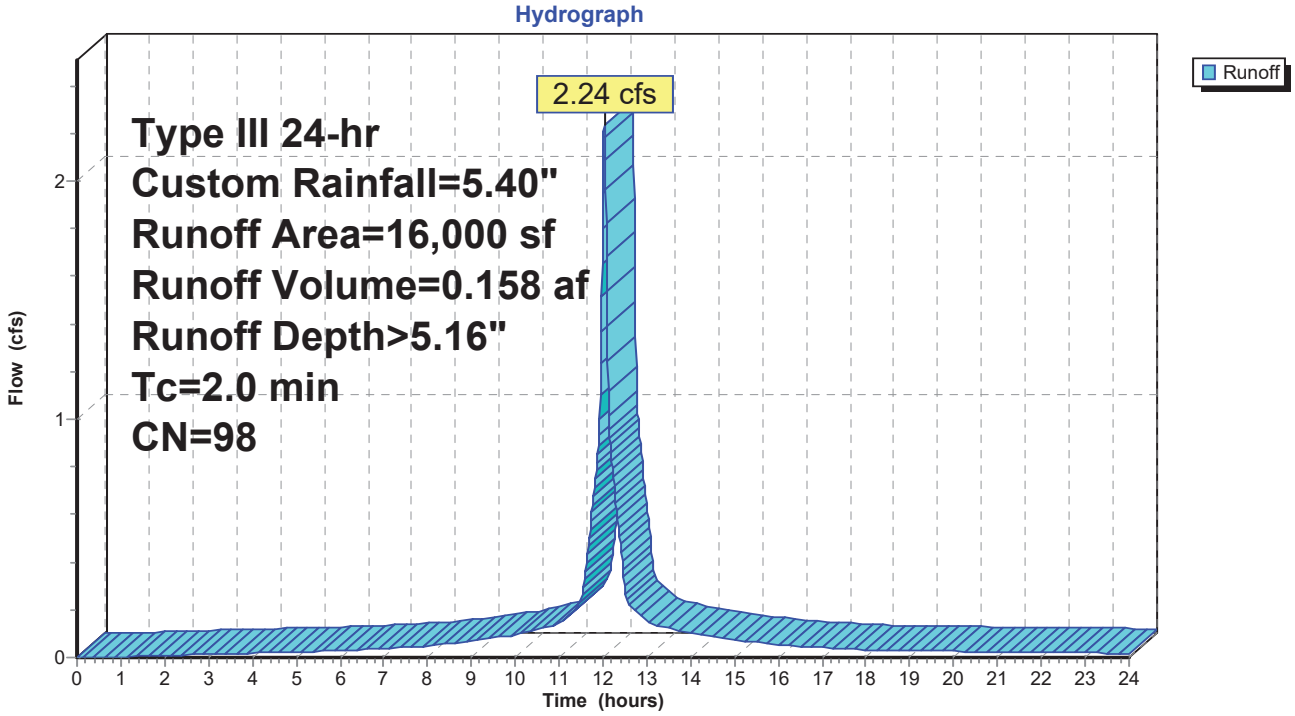
Runoff = 2.24 cfs @ 12.03 hrs, Volume= 0.158 af, Depth> 5.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr Custom Rainfall=5.40"

Area (sf)	CN	Description
16,000	98	Unconnected roofs, HSG D
16,000		100.00% Impervious Area
16,000		100.00% Unconnected

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

Subcatchment WS-20: BUILDING



Summary for Subcatchment WS-21: Front Lawn

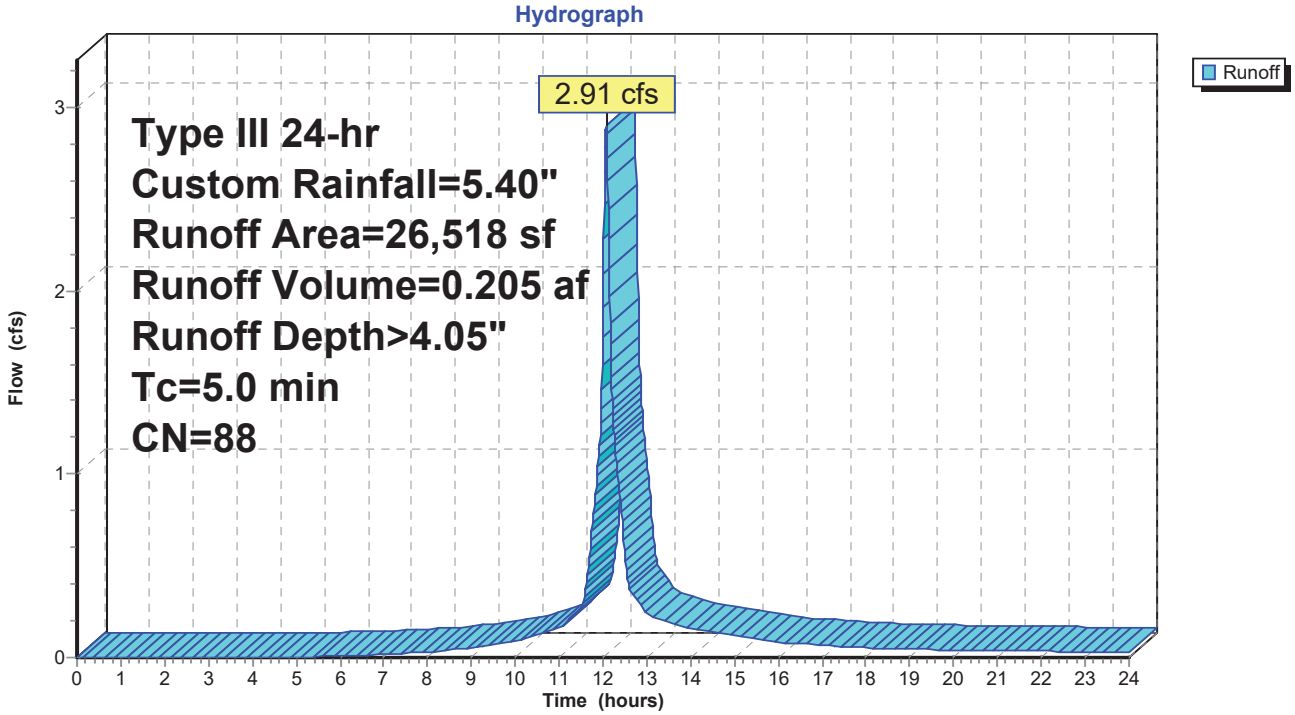
Runoff = 2.91 cfs @ 12.07 hrs, Volume= 0.205 af, Depth> 4.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr Custom Rainfall=5.40"

Area (sf)	CN	Description
15,143	80	>75% Grass cover, Good, HSG D
11,375	98	Paved parking, HSG D
26,518	88	Weighted Average
15,143		57.10% Pervious Area
11,375		42.90% Impervious Area

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

Subcatchment WS-21: Front Lawn



Summary for Subcatchment WS-22: OFFSITE FLOW

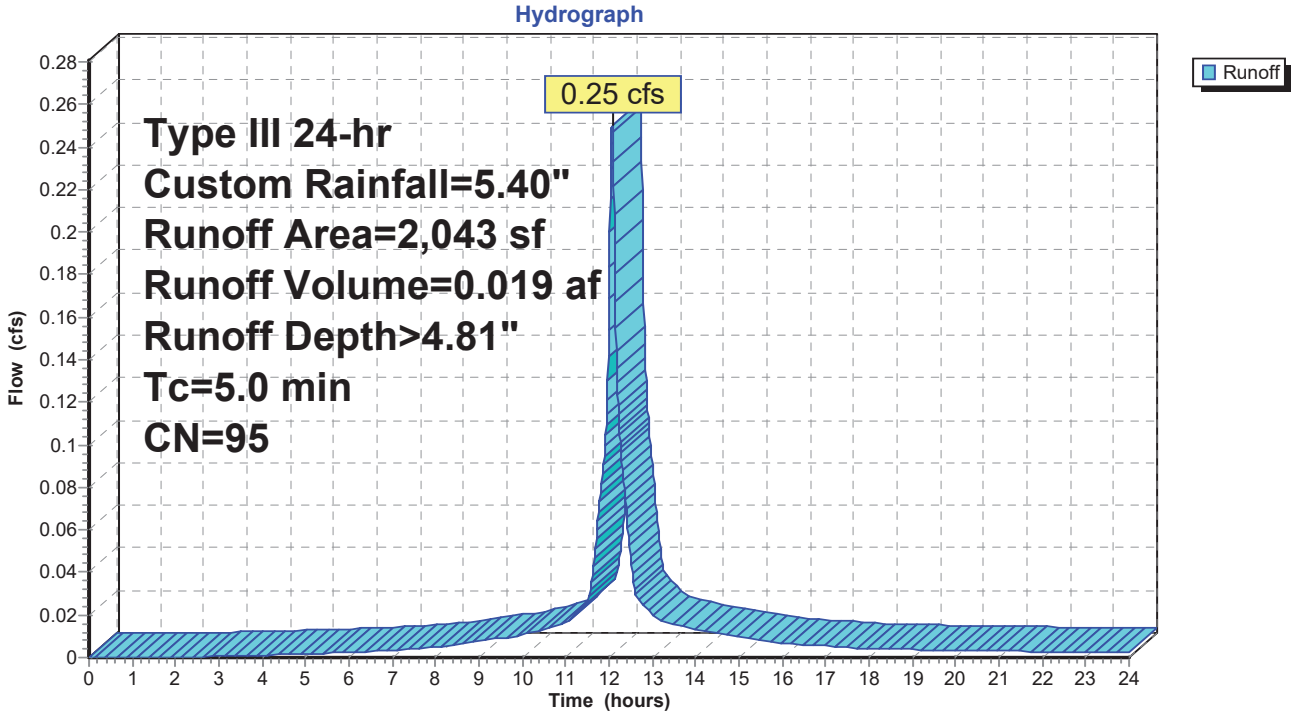
Runoff = 0.25 cfs @ 12.07 hrs, Volume= 0.019 af, Depth> 4.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr Custom Rainfall=5.40"

Area (sf)	CN	Description
1,679	98	Paved parking, HSG D
364	80	>75% Grass cover, Good, HSG D
2,043	95	Weighted Average
364		17.82% Pervious Area
1,679		82.18% Impervious Area

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

Subcatchment WS-22: OFFSITE FLOW



Summary for Subcatchment WS-23: RAILROAD DITCH

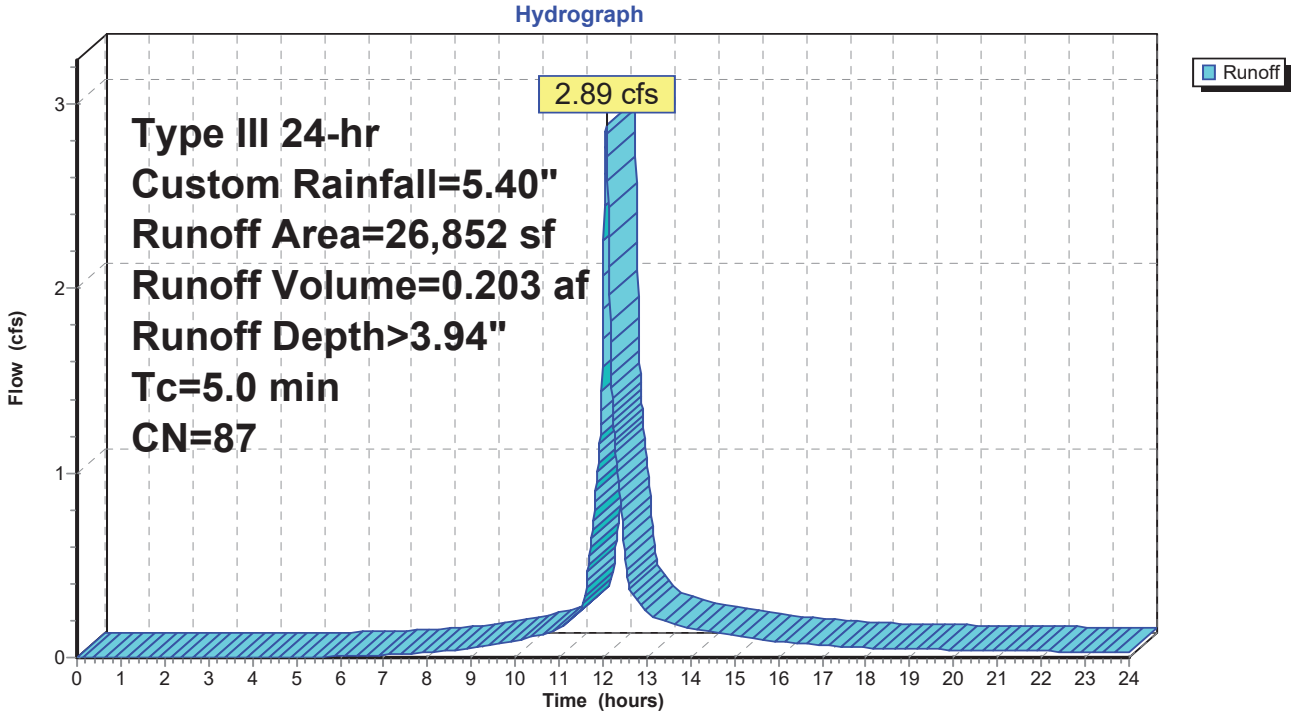
Runoff = 2.89 cfs @ 12.07 hrs, Volume= 0.203 af, Depth> 3.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr Custom Rainfall=5.40"

	Area (sf)	CN	Description
	14,952	78	Meadow, non-grazed, HSG D
*	11,900	98	entrance drive
	26,852	87	Weighted Average
	14,952		55.68% Pervious Area
	11,900		44.32% Impervious Area

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

Subcatchment WS-23: RAILROAD DITCH



Summary for Subcatchment WS-24: WEST BUILDING LANDSCAPE

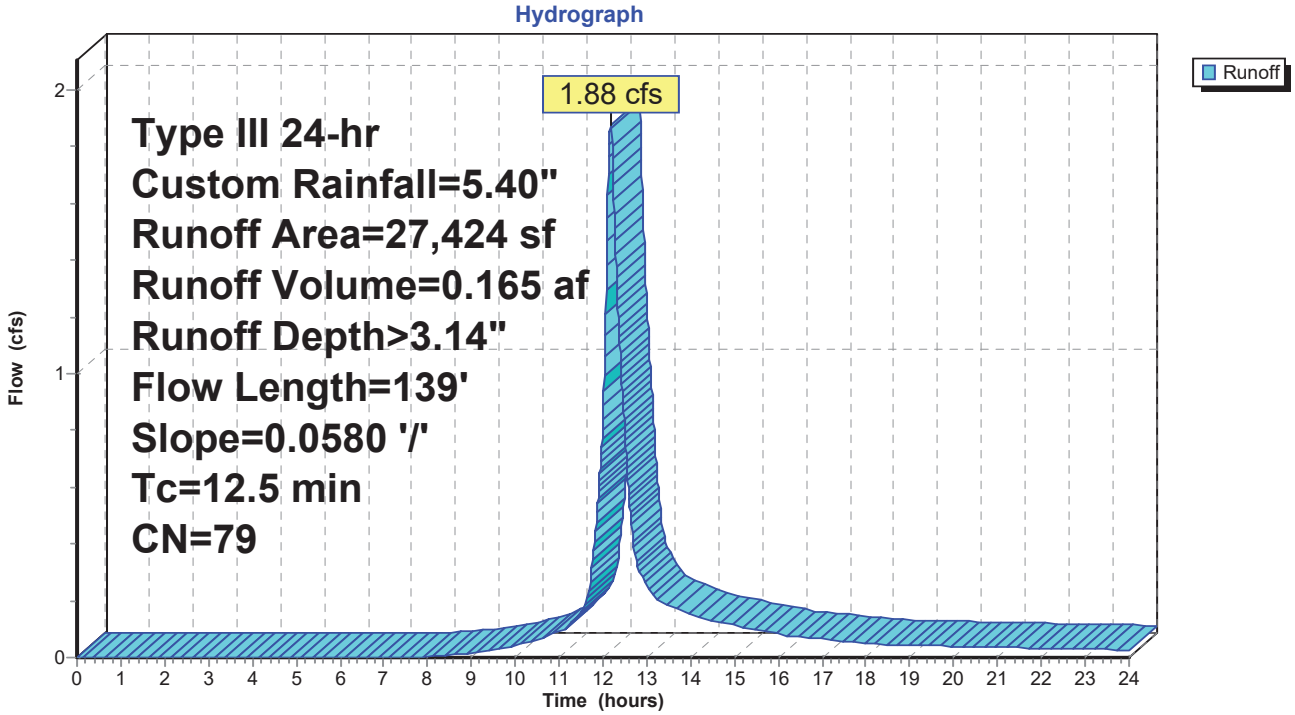
Runoff = 1.88 cfs @ 12.17 hrs, Volume= 0.165 af, Depth> 3.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr Custom Rainfall=5.40"

Area (sf)	CN	Description
10,259	80	>75% Grass cover, Good, HSG D
17,165	78	Meadow, non-grazed, HSG D
27,424	79	Weighted Average
27,424		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	139	0.0580	0.18		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.00"

Subcatchment WS-24: WEST BUILDING LANDSCAPE



Summary for Subcatchment WS-3: North 95

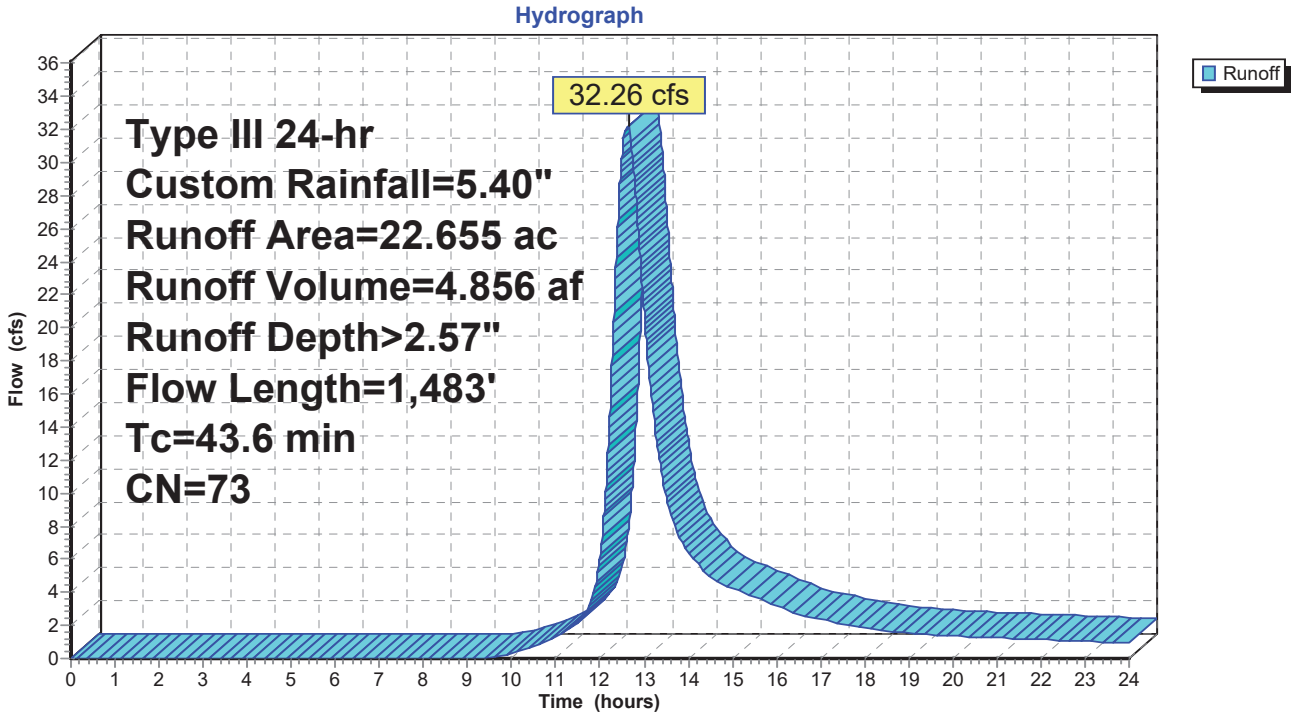
Runoff = 32.26 cfs @ 12.64 hrs, Volume= 4.856 af, Depth> 2.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr Custom Rainfall=5.40"

Area (ac)	CN	Description
2.000	80	1/2 acre lots, 25% imp, HSG C
0.500	85	1/2 acre lots, 25% imp, HSG D
0.550	98	Paved roads w/curbs & sewers, HSG C
15.380	70	Woods, Good, HSG C
4.225	77	Woods, Good, HSG D
22.655	73	Weighted Average
21.480		94.81% Pervious Area
1.175		5.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.7	150	0.0870	0.08		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 3.00"
12.6	947	0.0630	1.25		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
1.3	386	0.0210	5.00	11.25	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=3.00' D=0.50' Z= 3.0 '/' Top.W=6.00' n= 0.022 Earth, clean & straight
43.6	1,483	Total			

Subcatchment WS-3: North 95



Summary for Subcatchment WS-4: North Old Lisbon Rd

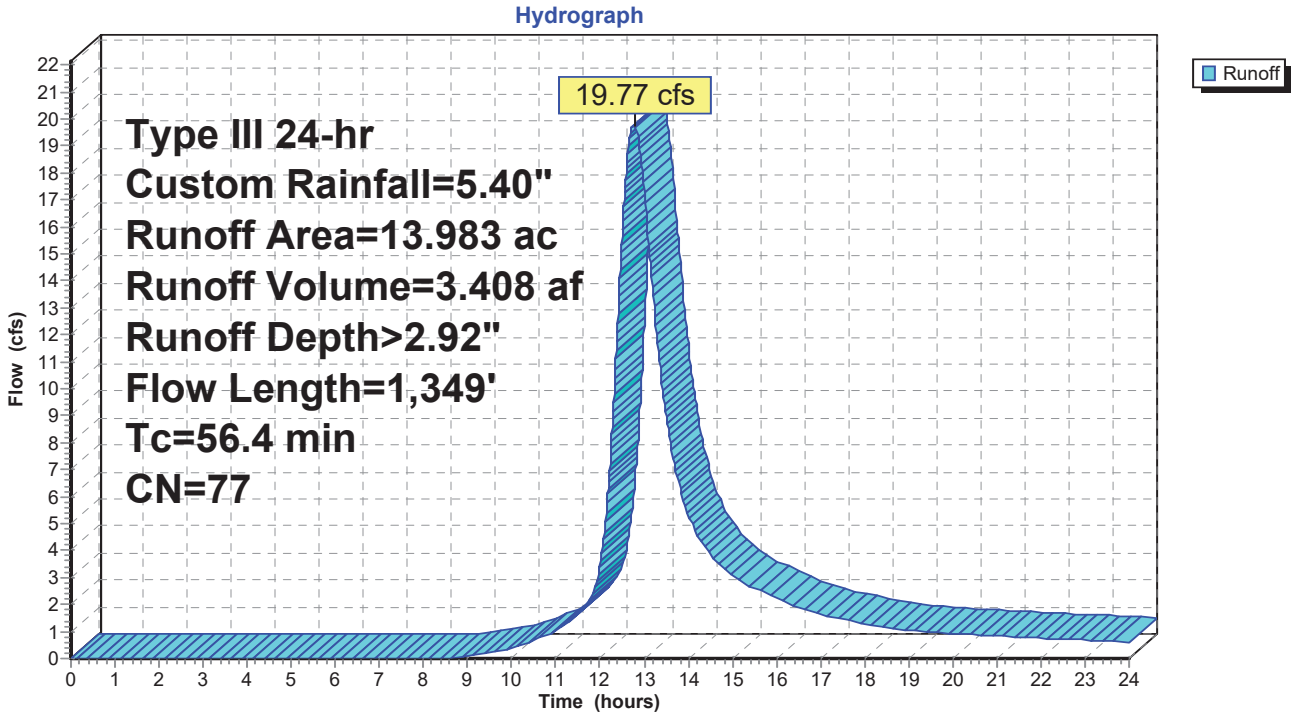
Runoff = 19.77 cfs @ 12.78 hrs, Volume= 3.408 af, Depth> 2.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr Custom Rainfall=5.40"

Area (ac)	CN	Description
0.500	85	1/2 acre lots, 25% imp, HSG D
2.000	80	1/2 acre lots, 25% imp, HSG C
0.275	98	Paved roads w/curbs & sewers, HSG D
8.450	77	Woods, Good, HSG D
2.758	70	Woods, Good, HSG C
13.983	77	Weighted Average
13.083		93.56% Pervious Area
0.900		6.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.9	150	0.0470	0.07		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 3.00"
18.3	1,097	0.0400	1.00		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.2	102	0.0590	7.98	13.96	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=2.00' D=0.50' Z= 3.0 '/' Top.W=5.00' n= 0.022 Earth, clean & straight
56.4	1,349	Total			

Subcatchment WS-4: North Old Lisbon Rd



Summary for Subcatchment WS-5: Uphill North Old Lisbon Rd

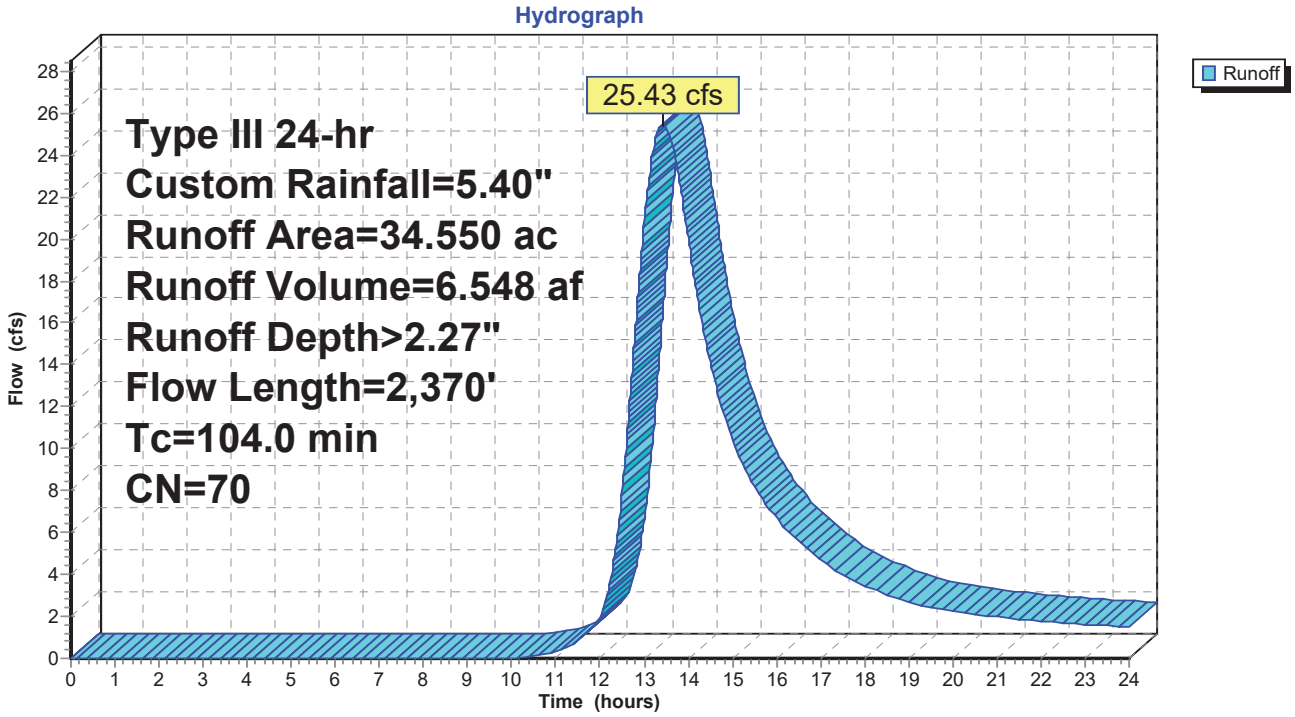
Runoff = 25.43 cfs @ 13.41 hrs, Volume= 6.548 af, Depth> 2.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr Custom Rainfall=5.40"

Area (ac)	CN	Description
34.550	70	Woods, Good, HSG C
34.550		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
47.7	150	0.0266	0.05		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 3.00"
9.7	970	0.1100	1.66		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
46.6	1,250	0.0080	0.45		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
104.0	2,370	Total			

Subcatchment WS-5: Uphill North Old Lisbon Rd



Summary for Reach R2: Site Wetland Channel

Inflow Area = 71.188 ac, 2.91% Impervious, Inflow Depth > 2.47" for Custom event
Inflow = 52.09 cfs @ 12.71 hrs, Volume= 14.675 af
Outflow = 52.09 cfs @ 12.72 hrs, Volume= 14.669 af, Atten= 0%, Lag= 0.6 min

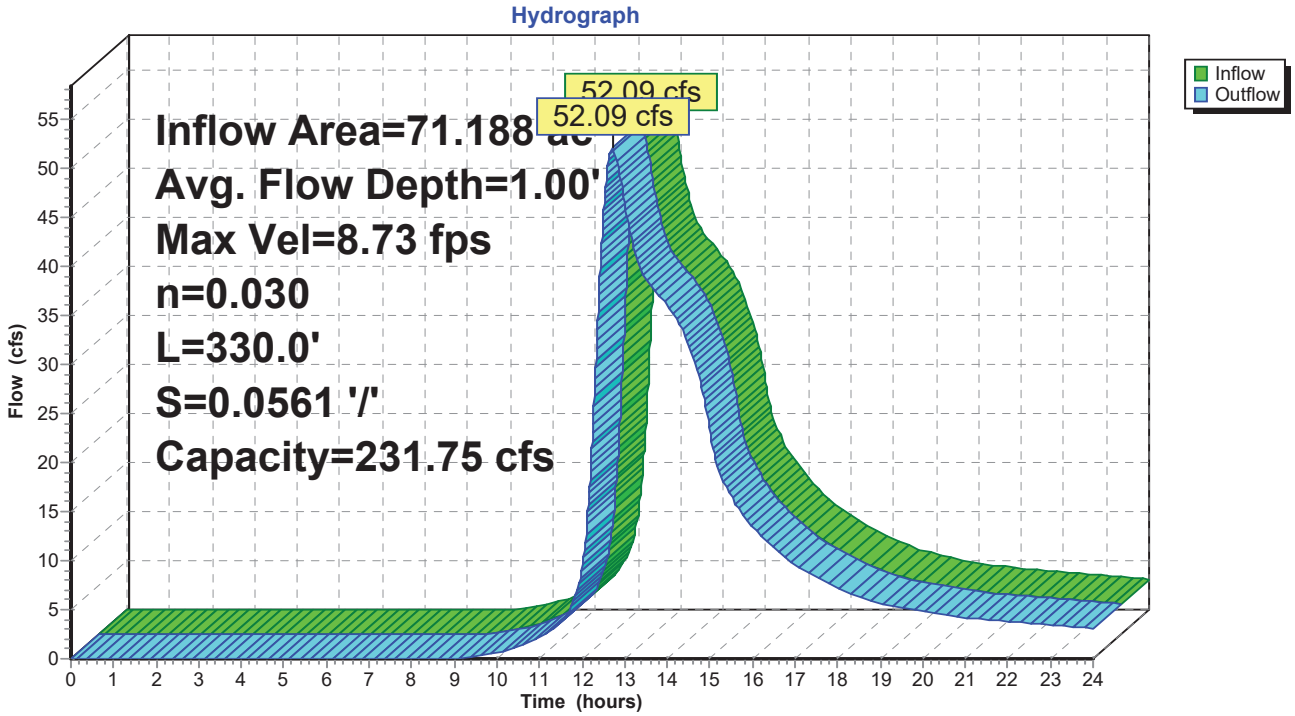
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 8.73 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 4.87 fps, Avg. Travel Time= 1.1 min

Peak Storage= 1,970 cf @ 12.72 hrs
Average Depth at Peak Storage= 1.00'
Bank-Full Depth= 2.00' Flow Area= 18.0 sf, Capacity= 231.75 cfs

3.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 15.00'
Length= 330.0' Slope= 0.0561 '/'
Inlet Invert= 234.50', Outlet Invert= 216.00'

‡

Reach R2: Site Wetland Channel



Summary for Reach R3: Old Lisbon Rd - I-95

Inflow Area = 48.533 ac, 1.85% Impervious, Inflow Depth > 2.43" for Custom event
Inflow = 29.62 cfs @ 13.86 hrs, Volume= 9.832 af
Outflow = 29.62 cfs @ 13.88 hrs, Volume= 9.819 af, Atten= 0%, Lag= 1.5 min

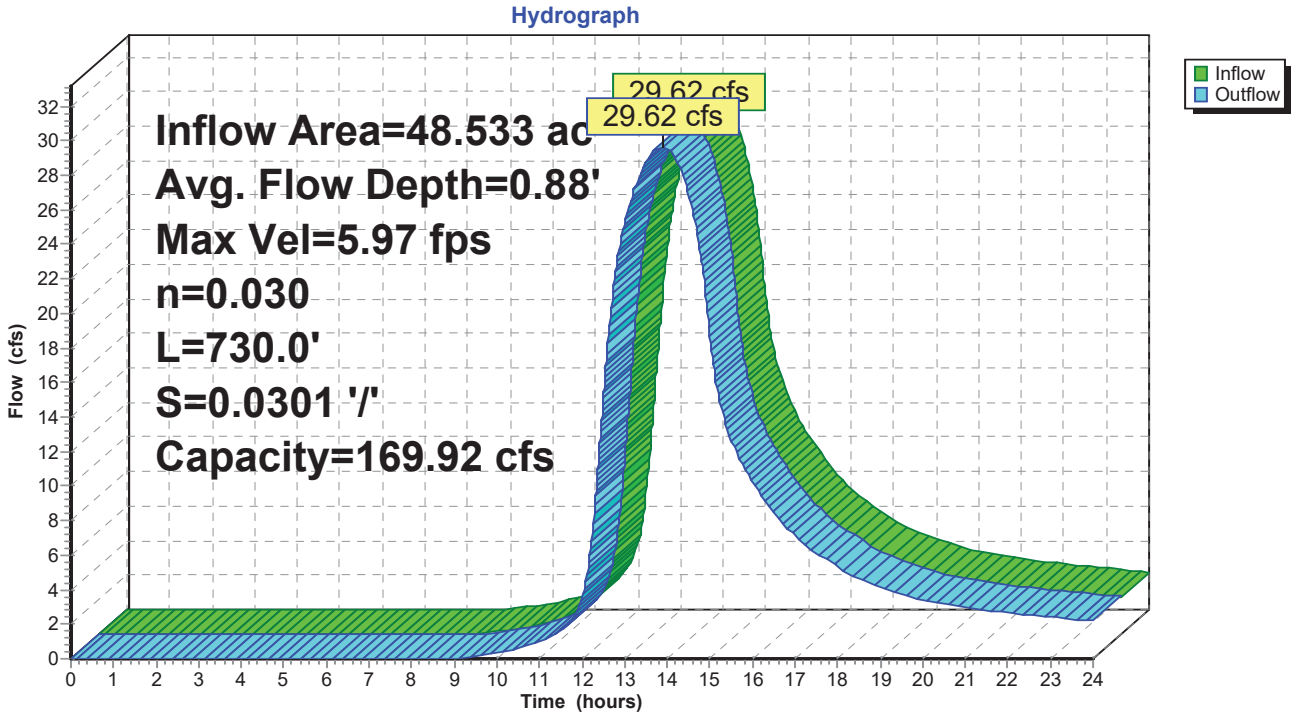
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 5.97 fps, Min. Travel Time= 2.0 min
Avg. Velocity = 3.45 fps, Avg. Travel Time= 3.5 min

Peak Storage= 3,619 cf @ 13.88 hrs
Average Depth at Peak Storage= 0.88'
Bank-Full Depth= 2.00' Flow Area= 18.0 sf, Capacity= 169.92 cfs

3.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 15.00'
Length= 730.0' Slope= 0.0301 '/'
Inlet Invert= 258.00', Outlet Invert= 236.00'

‡

Reach R3: Old Lisbon Rd - I-95



Summary for Reach R4: (new Reach)

Inflow Area = 34.550 ac, 0.00% Impervious, Inflow Depth > 2.24" for Custom event
Inflow = 24.09 cfs @ 13.68 hrs, Volume= 6.436 af
Outflow = 24.09 cfs @ 13.69 hrs, Volume= 6.432 af, Atten= 0%, Lag= 0.5 min

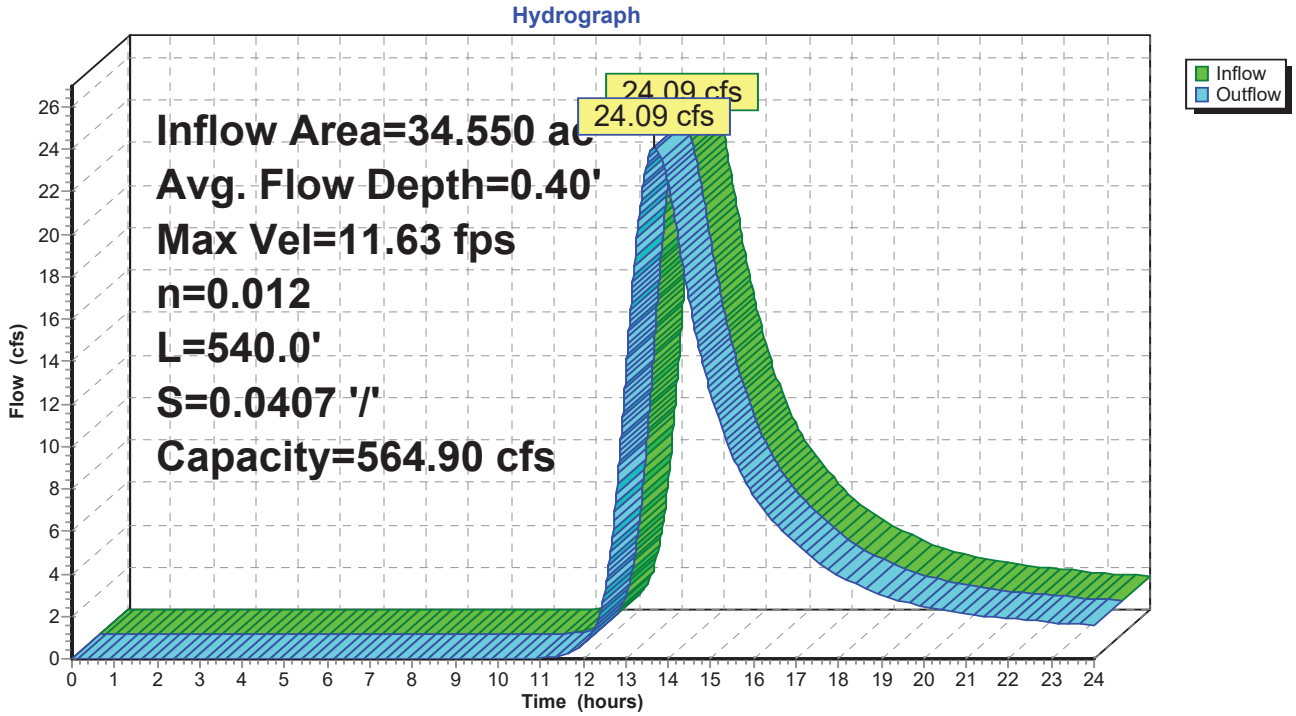
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 11.63 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 6.16 fps, Avg. Travel Time= 1.5 min

Peak Storage= 1,118 cf @ 13.69 hrs
Average Depth at Peak Storage= 0.40'
Bank-Full Depth= 2.00' Flow Area= 20.0 sf, Capacity= 564.90 cfs

4.00' x 2.00' deep channel, n= 0.012 Wood, Planed
Side Slope Z-value= 3.0 '/' Top Width= 16.00'
Length= 540.0' Slope= 0.0407 '/'
Inlet Invert= 296.00', Outlet Invert= 274.00'

‡

Reach R4: (new Reach)



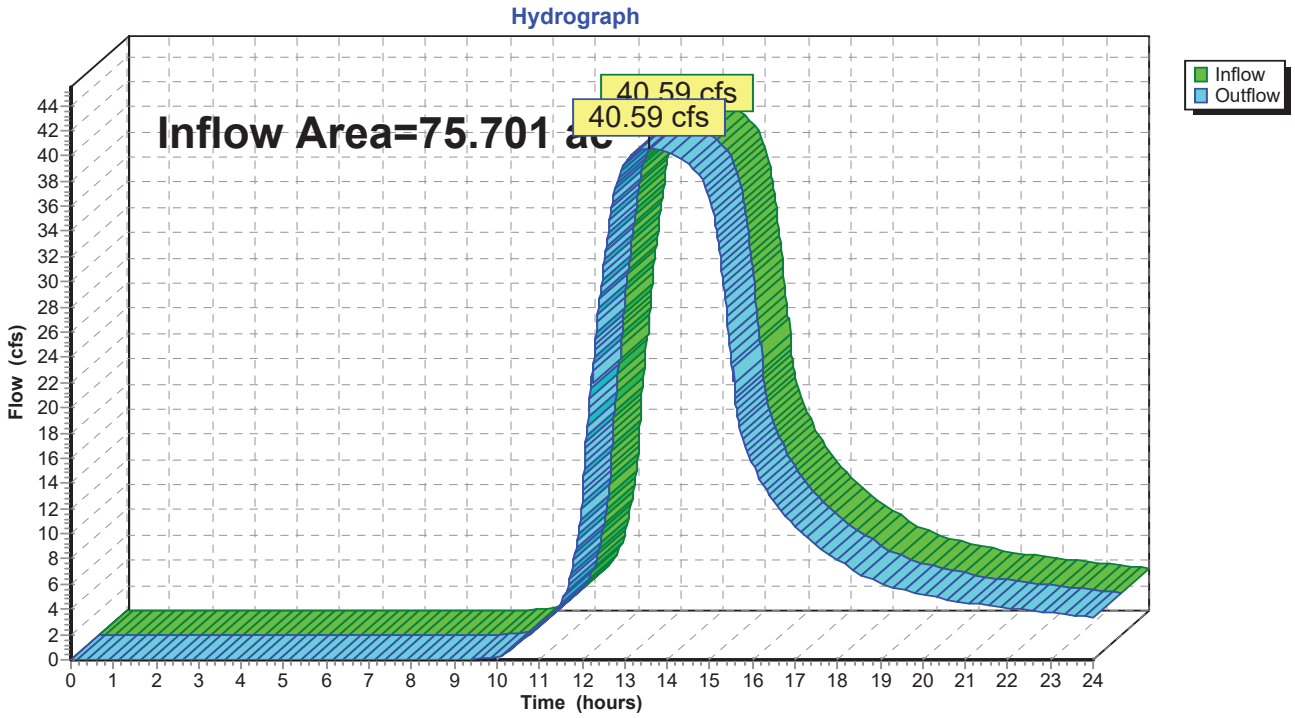
Summary for Reach SP1: Study Point 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 75.701 ac, 3.96% Impervious, Inflow Depth > 2.51" for Custom event
Inflow = 40.59 cfs @ 13.56 hrs, Volume= 15.846 af
Outflow = 40.59 cfs @ 13.56 hrs, Volume= 15.846 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Reach SP1: Study Point 1



Summary for Pond 1P: Site detention

[62] Hint: Exceeded Reach R2 OUTLET depth by 4.21' @ 13.49 hrs

Inflow Area =	75.084 ac,	3.63% Impervious,	Inflow Depth >	2.52"	for Custom event
Inflow =	54.33 cfs @	12.71 hrs,	Volume=	15.774 af	
Outflow =	40.53 cfs @	13.30 hrs,	Volume=	15.648 af,	Atten= 25%, Lag= 35.9 min
Primary =	40.53 cfs @	13.30 hrs,	Volume=	15.648 af	
Tertiary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 221.07' @ 13.45 hrs Surf.Area= 16,909 sf Storage= 58,932 cf

Plug-Flow detention time= 19.5 min calculated for 15.648 af (99% of inflow)
Center-of-Mass det. time= 15.2 min (912.0 - 896.8)

Volume	Invert	Avail.Storage	Storage Description
#1	213.00'	150,519 cf	**Custom Stage Data (Prismatic)** Listed below

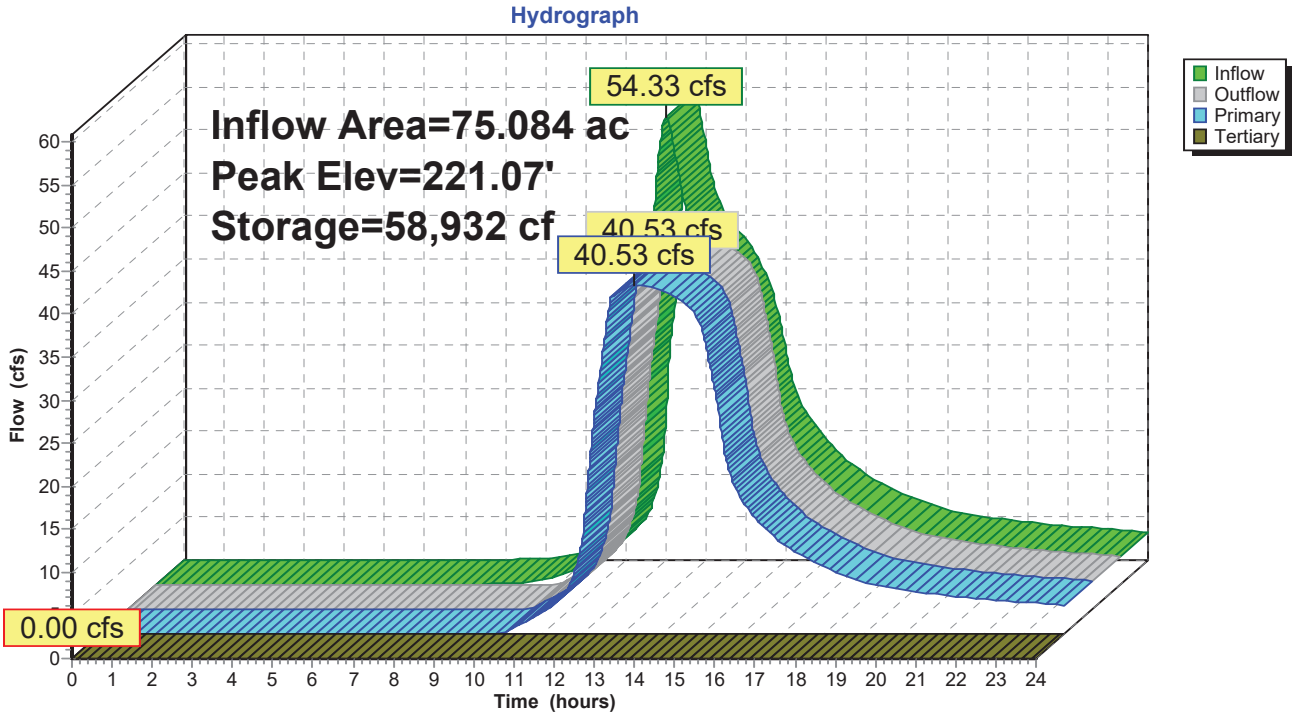
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
213.00	800	0	0
214.00	1,569	1,185	1,185
215.00	2,800	2,185	3,369
216.00	5,000	3,900	7,269
218.00	7,800	12,800	20,069
220.00	13,250	21,050	41,119
222.00	20,100	33,350	74,469
223.00	24,000	22,050	96,519
225.00	30,000	54,000	150,519

Device	Routing	Invert	Outlet Devices
#1	Tertiary	223.50'	**50.0' long x 24.0' 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	Primary	214.78'	**24.0" Round Culvert** L= 80.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 214.78' / 213.34' S= 0.0180 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#3	Primary	216.50'	**15.0" Round Overflow Culvert** L= 80.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 216.50' / 214.00' S= 0.0313 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=40.53 cfs @ 13.30 hrs HW=221.05' TW=216.77' (Dynamic Tailwater)
└─**2=Culvert** (Inlet Controls 31.29 cfs @ 9.96 fps)
└─**3=Overflow Culvert** (Inlet Controls 9.24 cfs @ 7.53 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=213.00' TW=209.00' (Dynamic Tailwater)
└─**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Site detention



Summary for Pond P2: Railroad Outlet

Inflow Area = 75.701 ac, 3.96% Impervious, Inflow Depth > 2.51" for Custom event
Inflow = 40.74 cfs @ 13.29 hrs, Volume= 15.850 af
Outflow = 40.59 cfs @ 13.56 hrs, Volume= 15.846 af, Atten= 0%, Lag= 16.2 min
Primary = 40.59 cfs @ 13.56 hrs, Volume= 15.846 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 216.82' @ 13.56 hrs Surf.Area= 2,781 sf Storage= 6,577 cf

Plug-Flow detention time= 1.6 min calculated for 15.839 af (100% of inflow)
Center-of-Mass det. time= 1.5 min (912.0 - 910.6)

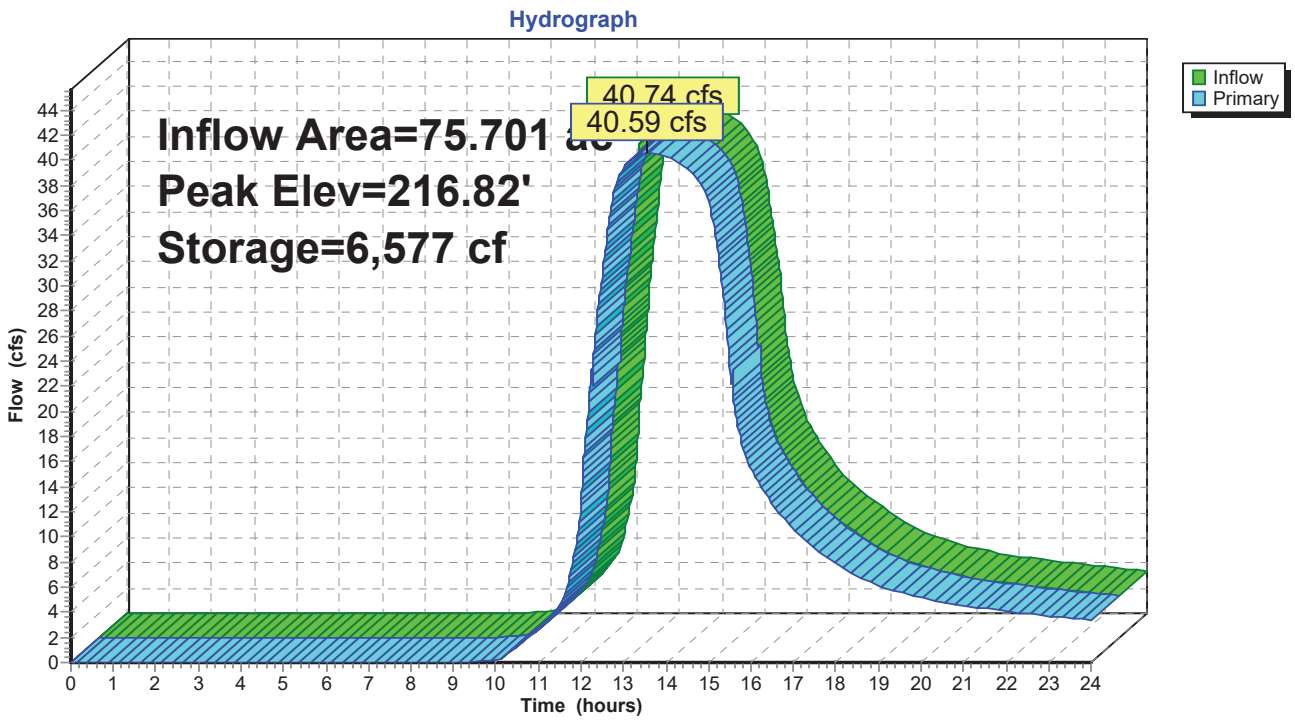
Volume	Invert	Avail.Storage	Storage Description
#1	209.00'	34,075 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
209.00	50	0	0
210.00	100	75	75
212.00	200	300	375
214.00	918	1,118	1,493
216.00	2,151	3,069	4,562
218.00	3,693	5,844	10,406
220.00	5,588	9,281	19,687
222.00	8,800	14,388	34,075

Device	Routing	Invert	Outlet Devices
#1	Primary	210.33'	**24.0" W x 24.0" H Box Culvert** L= 40.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 210.33' / 209.47' S= 0.0215 '/' Cc= 0.900 n= 0.025 Rubble masonry, cemented, Flow Area= 4.00 sf
#2	Primary	221.50'	**50.0' long x 50.0' 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

Primary OutFlow Max=40.59 cfs @ 13.56 hrs HW=216.82' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 40.59 cfs @ 10.15 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P2: Railroad Outlet



Summary for Pond P20: DRIP EDGE

Inflow Area = 0.367 ac,100.00% Impervious, Inflow Depth > 5.16" for Custom event
Inflow = 2.24 cfs @ 12.03 hrs, Volume= 0.158 af
Outflow = 0.42 cfs @ 12.43 hrs, Volume= 0.153 af, Atten= 81%, Lag= 23.8 min
Primary = 0.42 cfs @ 12.43 hrs, Volume= 0.153 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 230.46' @ 12.43 hrs Surf.Area= 0.037 ac Storage= 0.051 af

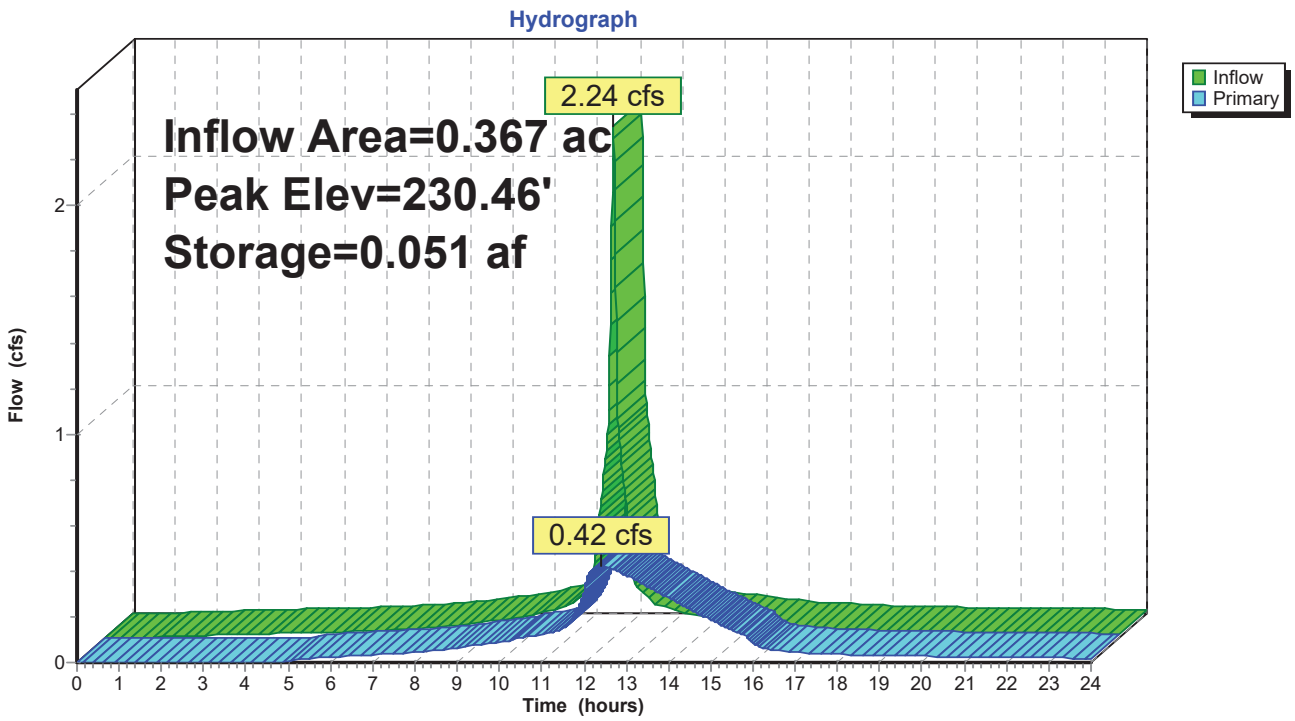
Plug-Flow detention time= 77.6 min calculated for 0.153 af (97% of inflow)
Center-of-Mass det. time= 58.0 min (800.9 - 742.9)

Volume	Invert	Avail.Storage	Storage Description
#1	227.00'	0.058 af	**4.00'W x 400.00'L x 4.00'H Prismatoid** 0.147 af Overall - 0.001 af Embedded = 0.146 af x 40.0% Voids
#2	227.25'	0.001 af	**4.0" Round Pipe Storage** Inside #1 L= 410.0' S= 0.0043 '/' 0.001 af Overall - 0.2" Wall Thickness = 0.001 af
#3	227.25'	0.000 af	**4.0" Round Pipe Storage** Inside #1 L= 80.0' S= 0.0100 '/' 0.000 af Overall - 0.2" Wall Thickness = 0.000 af
		0.059 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Device 2	227.25'	**6.0" Round Culvert** L= 25.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 227.25' / 227.13' S= 0.0048 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Primary	227.13'	**3.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=0.42 cfs @ 12.43 hrs HW=230.46' TW=218.37' (Dynamic Tailwater)
└─**2=Orifice/Grate** (Orifice Controls 0.42 cfs @ 8.61 fps)
  └─**1=Culvert** (Passes 0.42 cfs of 1.28 cfs potential flow)

Pond P20: DRIP EDGE



Summary for Pond P3: I-95

[44] Hint: Outlet device #1 is below defined storage
[44] Hint: Outlet device #2 is below defined storage

Inflow Area =	71.188 ac,	2.91% Impervious,	Inflow Depth >	2.47"	for Custom event
Inflow =	52.09 cfs @	12.71 hrs,	Volume=	14.675 af	
Outflow =	52.09 cfs @	12.71 hrs,	Volume=	14.675 af,	Atten= 0%, Lag= 0.0 min
Primary =	0.10 cfs @	12.71 hrs,	Volume=	0.029 af	
Secondary =	51.99 cfs @	12.71 hrs,	Volume=	14.646 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 236.00' @ 0.00 hrs Surf.Area= 13,500 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (902.3 - 902.3)

Volume	Invert	Avail.Storage	Storage Description
#1	236.00'	33,973 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

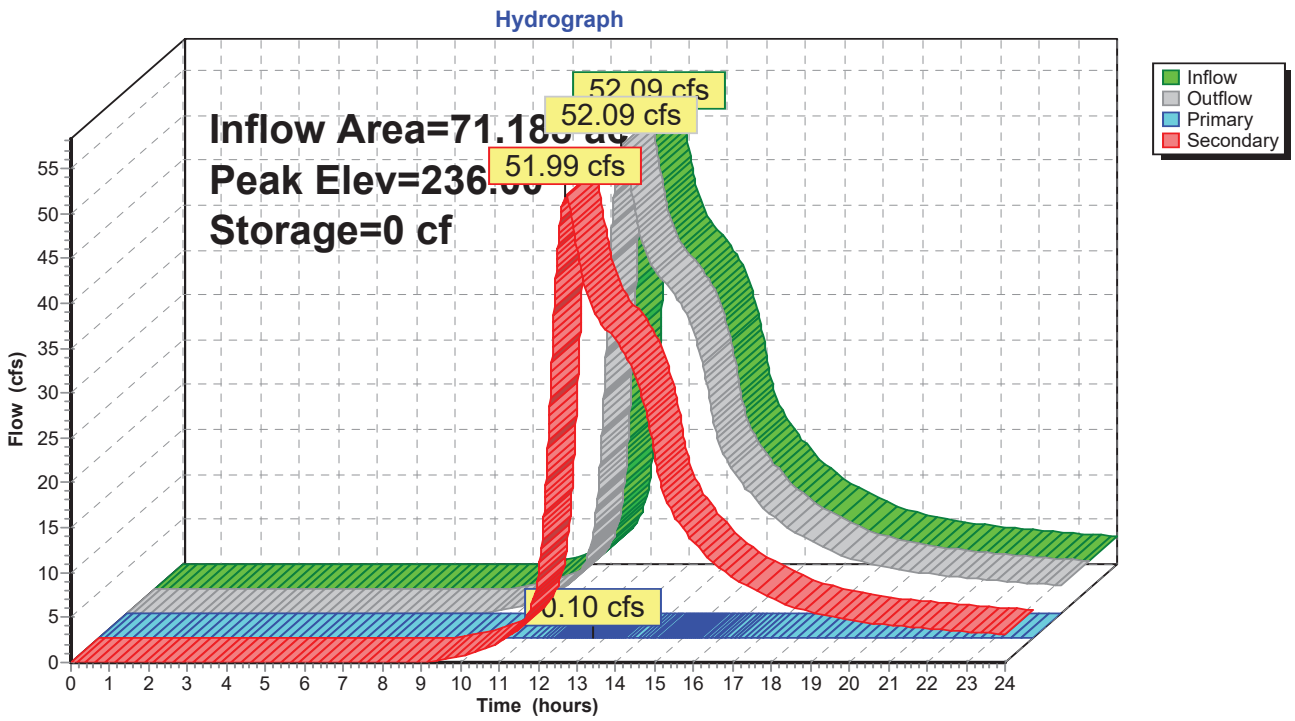
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
236.00	13,500	0	0
238.00	20,473	33,973	33,973

Device	Routing	Invert	Outlet Devices
#1	Primary	225.50'	**30.0" Round Culvert** L= 250.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 225.50' / 224.50' S= 0.0040 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf
#2	Secondary	228.00'	**300.0' long x 90.0' 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

Primary OutFlow Max=0.00 cfs @ 12.71 hrs HW=236.00' TW=235.50' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.00 cfs of 13.24 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 12.71 hrs HW=236.00' TW=235.50' (Dynamic Tailwater)
└─**2=Broad-Crested Rectangular Weir** (Passes 0.00 cfs of 7,151.47 cfs potential flow)

Pond P3: I-95


Hydrograph
Inflow Area=71.18
Peak Elev=236.
Storage=0 cf
52.09 cfs
52.09 cfs
51.99 cfs
0.10 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)

Summary for Pond P4: Old Lisbon Road

Inflow Area = 48.533 ac, 1.85% Impervious, Inflow Depth > 2.43" for Custom event
Inflow = 32.40 cfs @ 13.38 hrs, Volume= 9.840 af
Outflow = 29.62 cfs @ 13.86 hrs, Volume= 9.832 af, Atten= 9%, Lag= 28.4 min
Primary = 29.62 cfs @ 13.86 hrs, Volume= 9.832 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 273.15' @ 13.86 hrs Surf.Area= 8,015 sf Storage= 20,621 cf

Plug-Flow detention time= 5.5 min calculated for 9.832 af (100% of inflow)
Center-of-Mass det. time= 5.1 min (918.7 - 913.6)

Volume	Invert	Avail.Storage	Storage Description
#1	266.00'	51,550 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

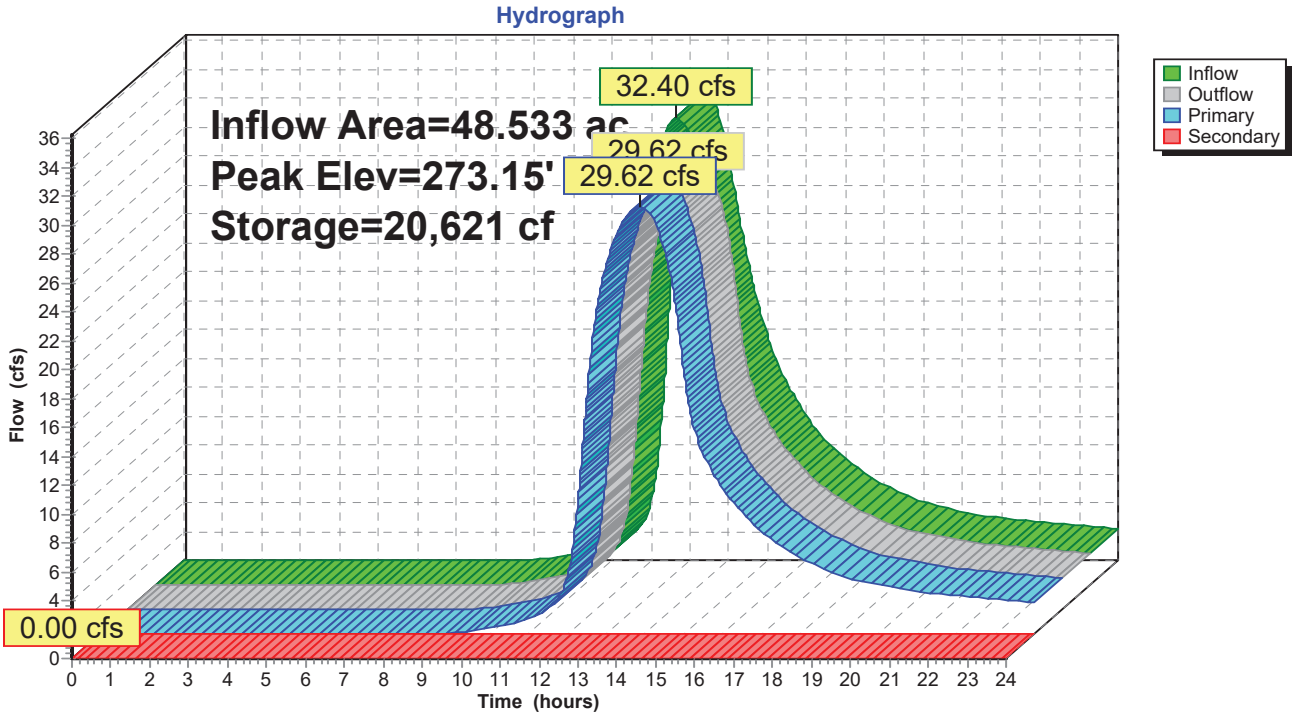
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
266.00	350	0	0
268.00	1,000	1,350	1,350
270.00	2,100	3,100	4,450
272.00	6,000	8,100	12,550
274.00	9,500	15,500	28,050
276.00	14,000	23,500	51,550

Device	Routing	Invert	Outlet Devices
#1	Primary	266.00'	**24.0" Round Culvert** L= 100.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 266.00' / 265.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Secondary	274.00'	**50.0' long x 24.0' 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

Primary OutFlow Max=29.62 cfs @ 13.86 hrs HW=273.15' TW=258.88' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 29.62 cfs @ 9.43 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=266.00' TW=258.00' (Dynamic Tailwater)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P4: Old Lisbon Road



Summary for Pond P5: Forest Wetland

Inflow Area = 34.550 ac, 0.00% Impervious, Inflow Depth > 2.27" for Custom event
Inflow = 25.43 cfs @ 13.41 hrs, Volume= 6.548 af
Outflow = 24.09 cfs @ 13.68 hrs, Volume= 6.436 af, Atten= 5%, Lag= 16.2 min
Primary = 24.09 cfs @ 13.68 hrs, Volume= 6.436 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 296.47' @ 13.69 hrs Surf.Area= 1.571 ac Storage= 0.661 af

Plug-Flow detention time= 28.3 min calculated for 6.433 af (98% of inflow)
Center-of-Mass det. time= 19.7 min (938.4 - 918.7)

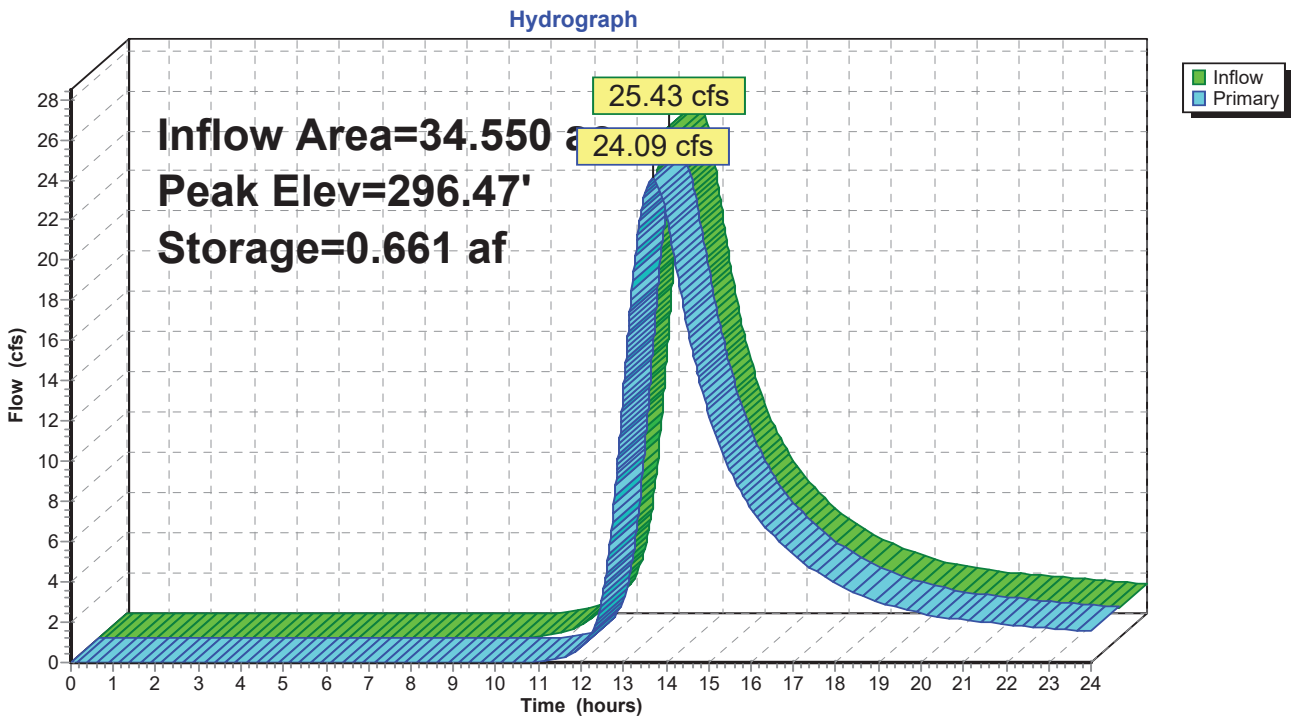
Volume	Invert	Avail.Storage	Storage Description
#1	296.00'	3.920 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
296.00	1.220	0.000	0.000
298.00	2.700	3.920	3.920

Device	Routing	Invert	Outlet Devices
#1	Primary	296.00'	**50.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=24.09 cfs @ 13.68 hrs HW=296.47' TW=296.40' (Dynamic Tailwater)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 24.09 cfs @ 1.02 fps)

Pond P5: Forest Wetland



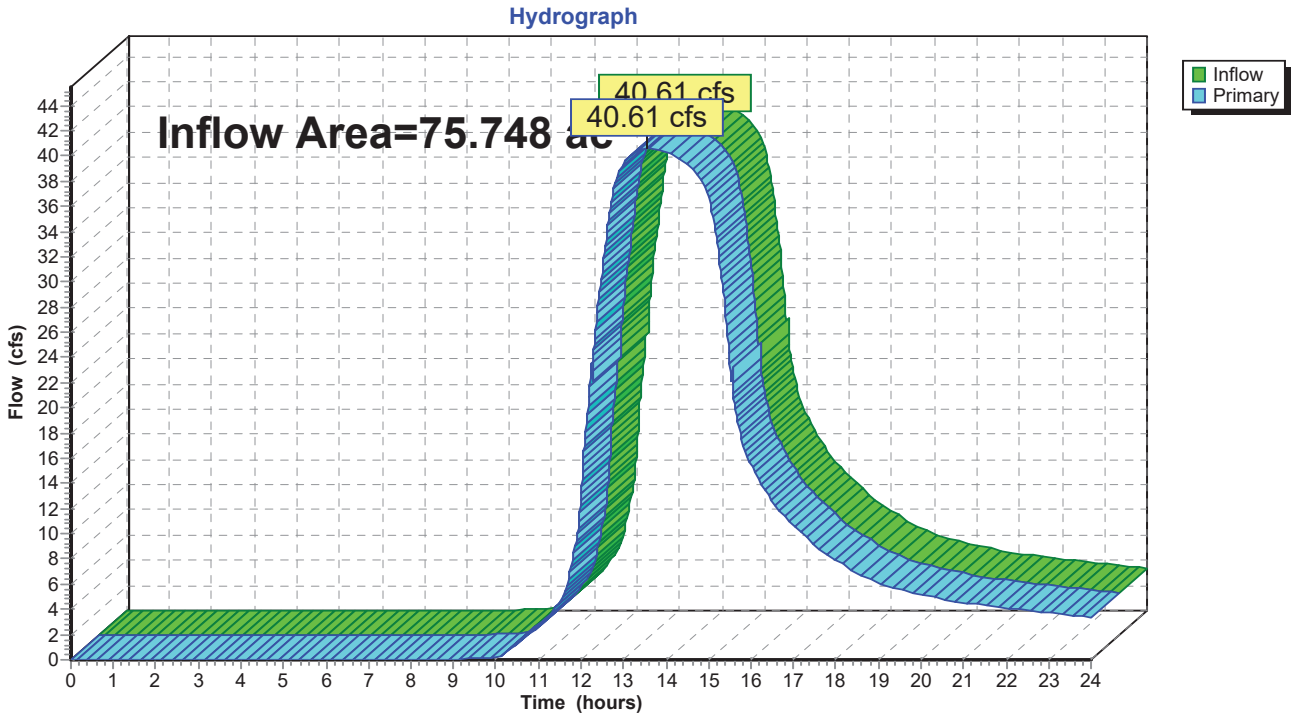
Summary for Pond TOTAL: COMBINED

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 75.748 ac, 4.01% Impervious, Inflow Depth > 2.51" for Custom event
Inflow = 40.61 cfs @ 13.56 hrs, Volume= 15.864 af
Primary = 40.61 cfs @ 13.56 hrs, Volume= 15.864 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Pond TOTAL: COMBINED



ATTACHMENT 4

Revised Plans

PROPOSED INDUSTRIAL BUILDING

10 GOULD STREET, LEWISTON, MAINE

PREPARED BY:

CIVIL ENGINEER:
TERRADYN CONSULTANTS, LLC
41 CAMPUS DR. SUITE 101
NEW GLOUCESTER, MAINE 04260
(207)926-5111

SURVEYING & WETLAND DELINEATION:
SURVEY WORKS, INC.
7 COBBLESTONE DRIVE, SUITE 4
TURNER, MAINE 04282

APPLICANT/OWNER:

10 GOULD STREET, LLC.
155 CENTER STREET, BUILDING G, BOX 6
AUBURN, MAINE 04210

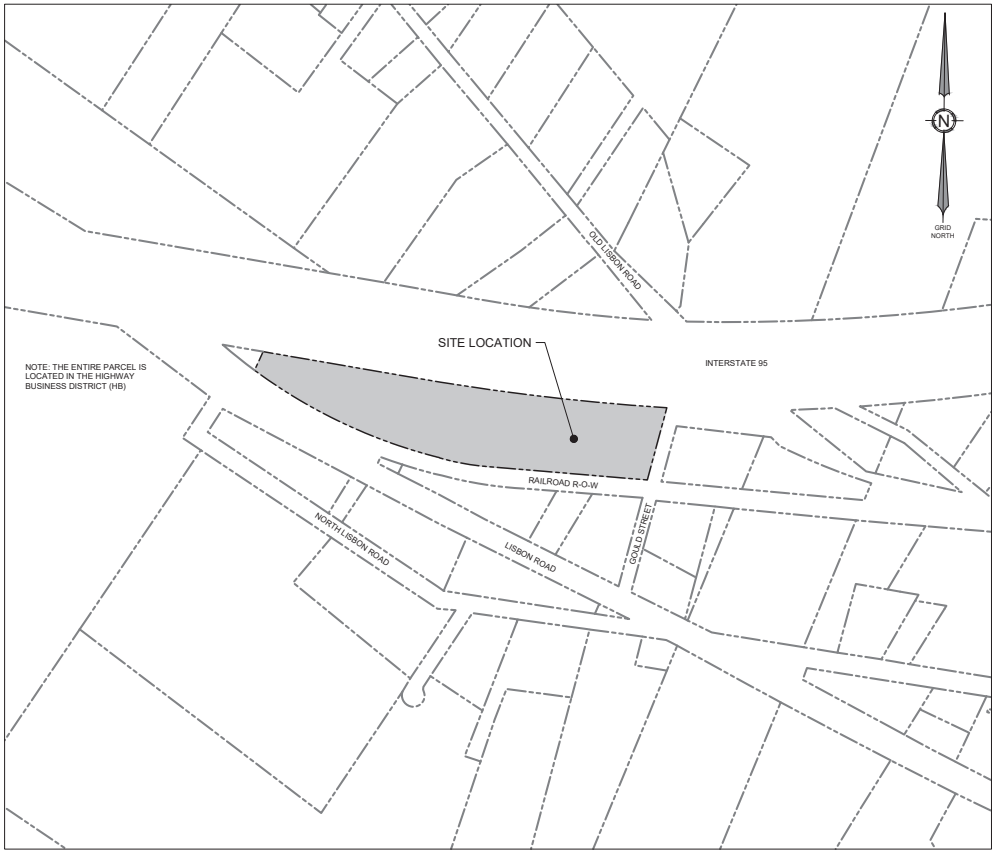
PROJECT PARCEL SITE

CITY OF LEWISTON TAX ASSESSOR'S MAP & LOT NUMBERS

MAP	LOT
69	13

APPROVED: CITY OF LEWISTON
PLANNING BOARD

DATE



LOCATION MAP
1" = 200'

SHEET INDEX

C-0.0	COVER SHEET & LOCATION MAP
S-1.0	BOUNDARY SURVEY
C-1.0	SITE LAYOUT PLAN
C-2.0	GRADING PLAN
C-3.0	UTILITY PLAN
C-4.0	EROSION CONTROL DETAILS & NOTES
C-4.1	DETAILS
C-4.2	DETAILS

LEGEND

EXISTING PROPERTY LINE
PROPOSED PROPERTY LINE
PROPOSED SETBACK LINE
EXISTING SETBACK LINE
EXISTING EASEMENT
PROPOSED EASEMENT
ROAD CENTERLINE
124 EXISTING MINOR CONTOUR
124 EXISTING MAJOR CONTOUR
124 PROPOSED CONTOUR
SD EXISTING STORMDRAIN
SD PROPOSED STORMDRAIN
S EXISTING SANITARY SEWER
S PROPOSED SANITARY SEWER
W EXISTING WATER LINE
W PROPOSED WATER LINE
UD EXISTING UNDERDRAIN
UD PROPOSED UNDERDRAIN
OHE EXISTING OVERHEAD ELECTRIC & TELEPHONE
OHE PROPOSED OVERHEAD ELECTRIC & TELEPHONE
UGE EXISTING UNDERGROUND ELECTRIC & TELEPHONE
UGE PROPOSED UNDERGROUND ELECTRIC & TELEPHONE
SD EXISTING EDGE OF PAVEMENT
SD PROPOSED EDGE OF PAVEMENT
EXISTING EDGE OF GRAVEL
PROPOSED EDGE OF GRAVEL
EXISTING CURB
PROPOSED CURB
EDGE OF WATER
EXISTING TREE LINE
PROPOSED TREE LINE
CHAIN LINK FENCE
PROPOSED FENCE
EXISTING GUARDRAIL
PROPOSED GUARDRAIL
SF SILT FENCE
TP-A TEST PIT
EXISTING VALVE
PROPOSED VALVE
EXISTING HYDRANT
PROPOSED HYDRANT
EXISTING TRANSFORMER
PROPOSED TRANSFORMER
EXISTING LIGHT POLE
PROPOSED LIGHT POLE
EXISTING UTILITY POLE
PROPOSED UTILITY POLE
EXISTING CATCH BASIN
PROPOSED CATCH BASIN
EXISTING SEWER MANHOLE
PROPOSED SEWER MANHOLE
+ 30.20 EXISTING SPOT GRADE
× 30.20 PROPOSED SPOT GRADE
EXISTING SIGN
PROPOSED SIGN
EXISTING BUILDING
PROPOSED BUILDING
WETLAND AREA
PROPOSED PAVEMENT
RIPRAP

STATE OF MAINE
CRAIG SWEET
No. 15080
LICENSED
PROFESSIONAL ENGINEER

DATE: 09/08/2020
P.E.: CRAIG SWEET, P.E.

NO.	DATE	REVISIONS	CHKD BY
1	09/08/2020	REVISED PER CITY COMMENTS	CWS

41 CAMPUS DRIVE
SUITE 101
NEW GLOUCESTER, ME 04260
OFFICE: (207) 926-5111 FAX: (207) 221-1317
www.terradyncontsultants.com
565 CONGRESS STREET
SUITE 201
PORTLAND, ME 04102
TERRADYN CONSULTANTS, LLC
Civil Engineering | Land Planning | Stormwater Design | Environmental Permitting

PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT: 10 GOULD STREET, LLC.
LEWISTON, MAINE
SHEET TITLE: COVER/LOCATION MAP
CLIENT: SURVEY WORKS INC.
7 COBBLESTONE DRIVE, SUITE 4,
TURNER, MAINE 04282

DATE:	8/3/2020
SCALE:	AS NOTED
DESIGNED:	
JOB NO:	2021
FILE: 2021 C	
SHEET	C-0.0

GENERAL NOTES

1. THE RECORD OWNER OF THE PARCELS IS 10 GOULD STREET, LLC. BY DEED RECORDED IN THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS IN BOOK 10362 PAGE 336 .

2. THE PROPERTIES ARE SHOWN AS LOT 13 ON THE CITY OF LEWISTON TAX MAP 69 AND ARE LOCATED IN THE BUSINESS DISTRICT (HB).

3. SURVEY AND WETLAND DELINEATION IS BY SURVEY WORKS, INC. 7 COBBLESTONE DRIVE, SUITE 4, TURNER, MAINE 04282.

4. THE TOTAL AREA OF THIS PROJECT SITE IS APPROXIMATELY 6.68 AC.

HOUSEKEEPING NOTES:

1. SPILL PREVENTION. CONTROLS MUST BE USED TO PREVENT POLLUTANTS FROM BEING DISCHARGED FROM MATERIALS ON SITE, INCLUDING STORAGE PRACTICES TO MINIMIZE EXPOSURE OF THE MATERIALS TO STORMWATER, AND APPROPRIATE SPILL PREVENTION, CONTAINMENT, AND RESPONSE PLANNING AND IMPLEMENTATION.

2. GROUNDWATER PROTECTION. DURING CONSTRUCTION, LIQUID PETROLEUM PRODUCTS AND OTHER HAZARDOUS MATERIALS WITH THE POTENTIAL TO CONTAMINATE GROUNDWATER MAY NOT BE STORED OR HANDLED IN AREAS OF THE SITE DRAINING TO AN INFILTRATION AREA. AN "INFILTRATION AREA" IS ANY AREA OF THE SITE THAT BY DESIGN OR AS A RESULT OF SOILS, TOPOGRAPHY AND OTHER RELEVANT FACTORS ACCUMULATES RUNOFF THAT INFILTRATES INTO THE SOIL. DIKES, BERMS, SUMPS, AND OTHER FORMS OF SECONDARY CONTAINMENT THAT PREVENT DISCHARGE TO GROUNDWATER MAY BE USED TO ISOLATE PORTIONS OF THE SITE FOR THE PURPOSES OF STORAGE AND HANDLING OF THESE MATERIALS.

3. FUGITIVE SEDIMENT AND DUST. ACTIONS MUST BE TAKEN TO ENSURE THAT ACTIVITIES DO NOT RESULT IN NOTICEABLE EROSION OF SOILS OR FUGITIVE DUST EMISSIONS DURING OR AFTER CONSTRUCTION. OIL MAY NOT BE USED FOR DUST CONTROL.

4. DEBRIS AND OTHER MATERIALS. LITTER, CONSTRUCTION DEBRIS, AND CHEMICALS EXPOSED TO STORMWATER MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE.

5. TRENCH OR FOUNDATION DE-WATERING. TRENCH DE-WATERING IS THE REMOVAL OF WATER FROM TRENCHES, FOUNDATIONS, COFFER DAMS, PONDS, AND OTHER AREAS WITHIN THE CONSTRUCTION AREA THAT RETAIN WATER AFTER EXCAVATION. IN MOST CASES THE COLLECTED WATER IS HEAVILY SILTED AND HINDERS CORRECT AND SAFE CONSTRUCTION PRACTICES. THE COLLECTED WATER MUST BE REMOVED FROM THE PONDED AREA, EITHER THROUGH GRAVITY OR PUMPING, AND MUST BE SPREAD THROUGH NATURAL WOODED BUFFERS OR REMOVED TO AREAS THAT ARE SPECIFICALLY DESIGNED TO COLLECT THE MAXIMUM AMOUNT OF SEDIMENT POSSIBLE, LIKE A COFFERDAM SEDIMENTATION BASIN. AVOID ALLOWING THE WATER TO FLOW OVER DISTURBED AREAS OF THE SITE. EQUIVALENT MEASURES MAY BE TAKEN IF APPROVED BY THE DEPARTMENT.

6. NON-STORMWATER DISCHARGES. IDENTIFY AND PREVENT CONTAMINATION BY NON-STORMWATER DISCHARGES.

7. ADDITIONAL REQUIREMENTS. ADDITIONAL REQUIREMENTS MAY BE APPLIED ON A SITE-SPECIFIC BASIS.

STANDARDS NOTES FOR MAJOR DEVELOPMENT REVIEW PLANS:

1. 'PRIOR TO ANY CERTIFICATE OF OCCUPANCY BEING ISSUED, THE APPLICANT SHALL MEET THE PROVISIONS OF ARTICLE XIII, SECTION 15(E), POST–CONSTRUCTION STORMWATER MANAGEMENT SYSTEM PLAN APPROVAL AND (F), POST–CONSTRUCTION STORMWATER MANAGEMENT SYSTEM PLAN COMPLIANCE.'

2. 'PRIOR TO ANY CERTIFICATE OF OCCUPANCY BEING ISSUED, THE APPLICANT'S DESIGNING ENGINEER SHALL SUBMIT A FINAL INSPECTION REPORT TO THE CITY INDICATING THAT THE STORMWATER SYSTEM AND ALL SITE IMPROVEMENTS HAVE BEEN COMPLETED IN ACCORDANCE WITH THE APPROVED PLAN'.

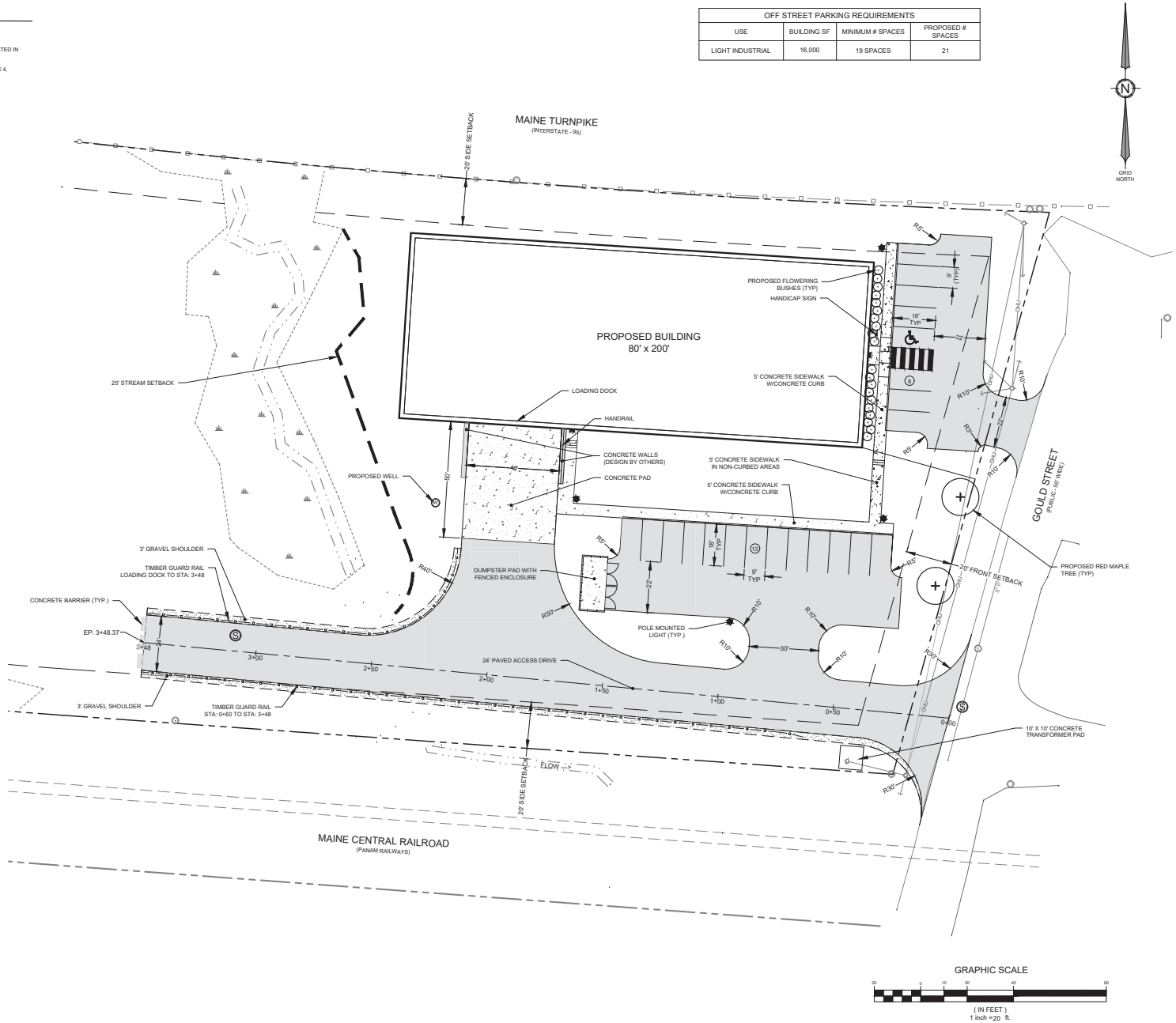
3. 'A BUILDING/USE PERMIT SHALL BE REQUIRED FOR ALL ACTIVITIES REGULATED BY THE ZONING AND LAND USE CODE INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:
   (a) THE CONSTRUCTION, ALTERATION, RELOCATION, DEMOLITION, PLACEMENT, OR REMOVAL OF OR THE ADDITION TO ANY STRUCTURE OR BUILDING OR PART THEREOF;
   (b) THE CONSTRUCTION/ INSTALLATION OF A WALL OR FENCE 3.5 FEET OR GREATER IN HEIGHT IN ACCORDANCE WITH ARTICLE XII, SEC. 7;
   (c) THE ERECTION/ INSTALLATION OF A SIGN OR THE REPLACEMENT OF A SIGN FACE REGULATED IN ACCORDANCE WITH ARTICLE XII, SECTION 16 OF THIS CODE;
   (d) THE CONSTRUCTION OF A DRIVEWAY OR PARKING LOT;
   (e) THE CHANGE OF USE OR OCCUPANCY OF A BUILDING, STRUCTURE, OR LOT OF LAND'

4. 'NO PERMIT SHALL BE ISSUED FOR THE CONSTRUCTION, ADDITION, ALTERATION, REMOVAL, DEMOLITION OR CHANGE OF USE OF ANY BUILDING, STRUCTURE OR PART THEREOF, OR FOR THE USE OF ANY PREMISES UNLESS THE PLANS AND INTENDED USE INDICATE THAT THE BUILDING, STRUCTURE OR PREMISES IS TO CONFORM IN ALL RESPECTS TO ZONING AND LAND USE CODE OF THE CITY OF LEWISTON AND THE LAND USE LAWS OF THE STATE OF MAINE.'

5. 'THE GRANTING OF THIS APPROVAL IS DEPENDENT UPON AND LIMITED TO THE PROPOSALS AND PLANS CONTAINED IN THE APPLICATION AND SUPPORTING DOCUMENTS SUBMITTED AND AFFIRMED TO BY THE APPLICANT. ANY VARIATION FROM THESE PLANS, PROPOSALS, AND SUPPORTING DOCUMENTS IS SUBJECT TO REVIEW AND APPROVAL PRIOR TO IMPLEMENTATION. FURTHER SUBDIVISION OF PROPOSED LOTS BY THE APPLICANT OR FUTURE OWNERS IS SPECIFICALLY PROHIBITED WITHOUT PRIOR APPROVAL OF THE BOARD.'

6. 'THE APPLICANT SHALL SECURE AND COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL LICENSES, PERMITS, AUTHORIZATIONS, CONDITIONS, AGREEMENTS, AND ORDERS PRIOR TO OR DURING CONSTRUCTION AND OPERATION, AS APPROPRIATE.'

OFF STREET PARKING REQUIREMENTS			
USE	BUILDING SF	MINIMUM # SPACES	PROPOSED # SPACES
LIGHT INDUSTRIAL	16,000	19 SPACES	21



GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.

STATE OF MAINE
CRAIG SWEET
No. 15060
LICENSED
PROFESSIONAL ENGINEER

DATE: 09/08/2020
P.E.: CRAIG SWEET, P.E.

NO	DATE	REVISIONS	CMS APP'D BY
1	09/08/2020	REVISED PER CITY COMMENTS	

TERRADYN CONSULTANTS, LLC
Civil Engineering | Land Planning | Stormwater Design | Environmental Permitting
41 CAMPUS DRIVE
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565 CONGRESS STREET
SUITE 201
PORTLAND, ME 04102
OFFICE: (207) 926-5111 FAX: (207) 221-1317
www.terradynconsultantlle.com

PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT: 10 GOULD STREET, LLC.
LEWISTON, MAINE
SHEET TITLE: SITE LAYOUT PLAN
CLIENT: SURVEY WORKS INC.
7 COBBLESTONE DRIVE, SUITE 4,
TURNER, MAINE 04282

DATE:	8/3/2020
SCALE:	1"=20'
DESIGNED:	
JOB NO:	2021
FILE:	2021 S.DWG
SHEET	C-1.0

CONSTRUCTION NOTES

1. ALL WORK SHALL CONFORM TO THE APPLICABLE CODES AND ORDINANCES.

2. CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIM OR HERSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIM OR HERSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.

3. CONTRACTOR SHALL NOTIFY ENGINEER OF ALL PRODUCTS OR ITEMS NOTED AS "EXISTING" WHICH ARE NOT FOUND IN THE FIELD.

4. INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND OWNER'S REQUIREMENTS UNLESS SPECIFICALLY OTHERWISE INDICATED OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.

5. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE ENGINEER.

6. CONTRACTOR SHALL CLEAN AND REMOVE DEBRIS AND SEDIMENT DEPOSITED ON PUBLIC STREETS, SIDEWALKS, ADJACENT AREAS, OR OTHER PUBLIC WAYS DUE TO CONSTRUCTION.

7. CONTRACTOR SHALL INCORPORATE PROVISIONS AS NECESSARY IN CONSTRUCTION TO PROTECT EXISTING STRUCTURES, PHYSICAL FEATURES, AND MAINTAIN SITE STABILITY DURING CONSTRUCTION. CONTRACTOR SHALL RESTORE ALL AREAS TO ORIGINAL CONDITION AND AS DIRECTED BY DESIGN DRAWINGS.

8. SITE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS PRIOR TO CONSTRUCTION.

9. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH "MAINE EROSION AND SEDIMENTATION CONTROL HANDBOOK FOR CONSTRUCTION: BEST MANAGEMENT PRACTICES" PUBLISHED BY THE CUMBERLAND COUNTY SOIL AND WATER CONSERVATION DISTRICT AND MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, MARCH 2016 OR LATEST EDITION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO POSSESS A COPY OF THE EROSION CONTROL PLAN AT ALL TIMES.

10. THE CONTRACTOR IS HEREBY CAUTIONED THAT ALL SITE FEATURES SHOWN HEREON ARE BASED ON FIELD OBSERVATIONS BY THE SURVEYOR AND BY INFORMATION PROVIDED BY UTILITY COMPANIES. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT DIG SAFE (1-888-DIGSAFE) AT LEAST THREE (3) BUT NOT MORE THAN THIRTY (30) DAYS PRIOR TO COMMENCEMENT OF EXCAVATION OR DEMOLITION TO VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES.

11. CONTRACTOR SHALL BE AWARE THAT DIG SAFE ONLY NOTIFIES ITS "MEMBER" UTILITIES ABOUT THE DIG. WHEN NOTIFIED, DIG SAFE WILL ADVISE CONTRACTOR OF MEMBER UTILITIES IN THE AREA. CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING AND CONTACTING NON-MEMBER UTILITIES DIRECTLY. NON-MEMBER UTILITIES MAY INCLUDE TOWN OR CITY WATER AND SEWER DISTRICTS AND SMALL LOCAL UTILITIES, AS WELL AS USG PUBLIC WORKS SYSTEMS.

12. CONTRACTORS SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THE REQUIREMENTS OF 23 MRSA 3360-A. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE APPROPRIATE UTILITIES TO OBTAIN AUTHORIZATION PRIOR TO RELOCATION OF ANY EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS. IF A UTILITY CONFLICT ARISES, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER, THE MUNICIPALITY AND APPROPRIATE UTILITY COMPANY PRIOR TO PROCEEDING WITH ANY RELOCATION.

13. ALL PAVEMENT MARKINGS AND DIRECTIONAL SIGNAGE SHOWN ON THE PLAN SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) STANDARDS.

14. ALL PAVEMENT JOINTS SHALL BE SAWCUT PRIOR TO PAVING TO PROVIDE A DURABLE AND UNIFORM JOINT.

15. NO HOLES, TRENCHES OR STRUCTURES SHALL BE LEFT OPEN OVERNIGHT IN ANY EXCAVATION ACCESSIBLE TO THE PUBLIC OR IN PUBLIC RIGHTS-OF-WAY.

16. ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY SHALL REQUIRE A M.D.O.T. PERMIT AS WELL AS PERMITS FROM THE TOWN AS APPLICABLE.

17. THE PROPOSED LIMITS OF CLEARING SHOWN HEREON ARE APPROXIMATE BASED UPON THE PROPOSED LIMITS OF SITE GRADING. THE APPLICANT RESERVES THE RIGHT TO PERFORM NORMAL FOREST MANAGEMENT ACTIVITIES OUTSIDE OF THE CLEARING LIMIT AS SHOWN. TREE REMOVAL OUTSIDE OF THE LIMITS OF CLEARING MAY BE NECESSARY TO REMOVE DEAD OR DYING TREES OR TREE LIMBS. THIS REMOVAL IS DUE TO POTENTIAL SAFETY HAZARDS AND TO PROMOTE PROPER FOREST GROWTH.

18. IMMEDIATELY UPON COMPLETION OF CUTS/FILLS, THE CONTRACTOR SHALL STABILIZE DISTURBED AREAS IN ACCORDANCE WITH EROSION CONTROL NOTES AND AS SPECIFIED ON PLANS.

19. THE CONTRACTOR SHALL BE FULLY AND SOLELY RESPONSIBLE FOR THE REMOVAL, REPLACEMENT AND RECTIFICATION OF ALL DAMAGED AND DEFECTIVE MATERIAL AND WORKMANSHIP IN CONNECTION WITH THE CONTRACT WORK. THE CONTRACTOR SHALL REPLACE OR REPAIR AS DIRECTED BY THE OWNER ALL SUCH DAMAGED OR DEFECTIVE MATERIALS WHICH APPEAR WITHIN A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION.

20. ALL WORK PERFORMED BY THE GENERAL CONTRACTOR AND/OR TRADE SUBCONTRACTOR SHALL CONFORM TO THE REQUIREMENTS OF LOCAL, STATE OR FEDERAL LAWS, AS WELL AS ANY OTHER GOVERNING REQUIREMENTS, WHETHER OR NOT SPECIFIED ON THE DRAWINGS.

21. WHERE THE TERMS "APPROVED EQUAL", "OTHER APPROVED", "EQUAL TO", "ACCEPTABLE" OR OTHER GENERAL QUALIFYING TERMS ARE USED IN THESE NOTES, IT SHALL BE UNDERSTOOD THAT REFERENCE IS MADE TO THE RULING AND JUDGMENT OF TERRADYN CONSULTANTS, LLC.

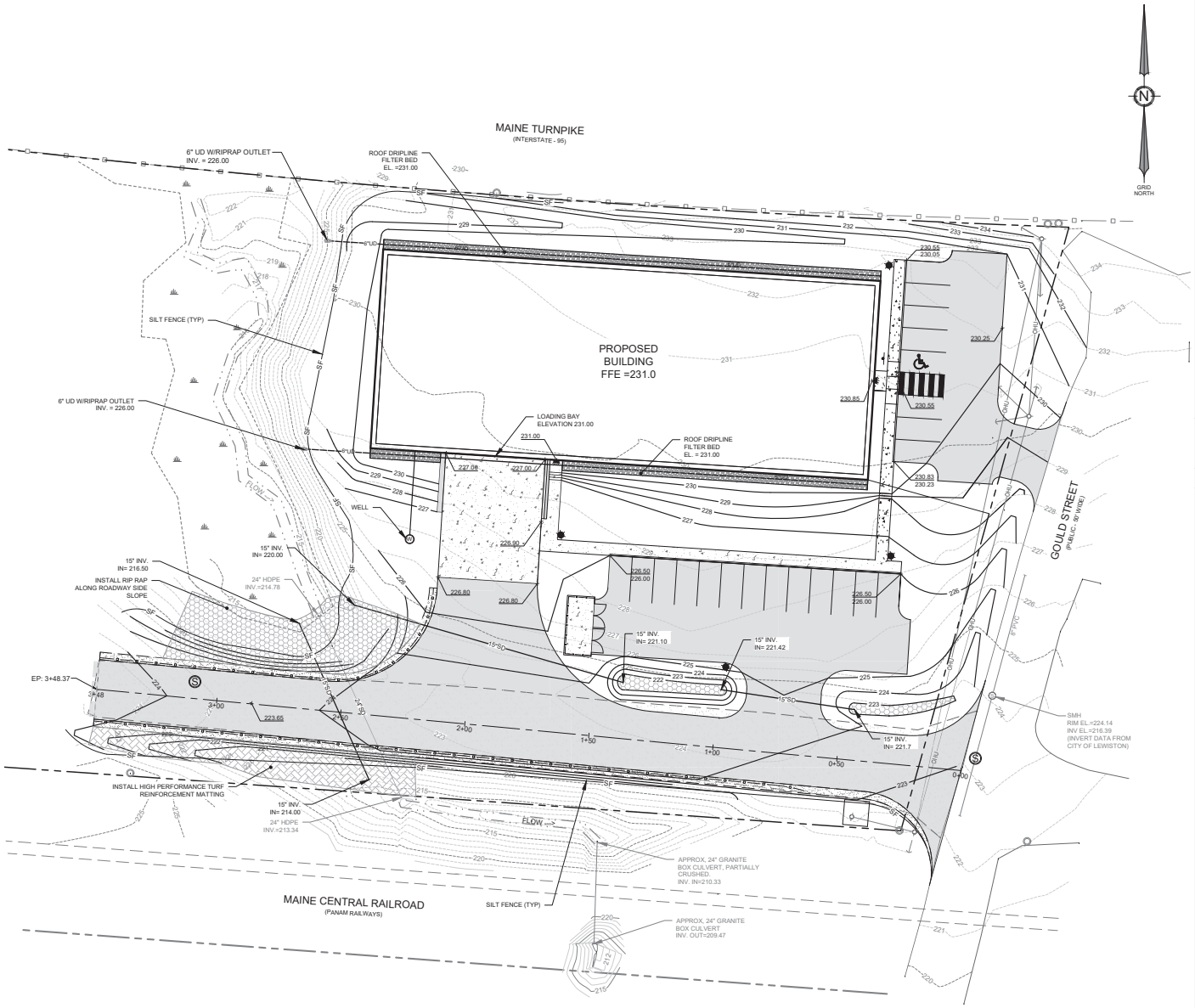
22. THE GENERAL CONTRACTOR SHALL PROVIDE ALL NECESSARY PROTECTION FOR THE WORK UNTIL TURNED OVER TO THE OWNER.

23. THE GENERAL CONTRACTOR SHALL MAINTAIN A CURRENT AND COMPLETE SET OF CONSTRUCTION DRAWINGS ON SITE DURING ALL PHASES OF CONSTRUCTION FOR USE OF ALL TRADES.

24. THE CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ANY CHANGES AND DEVIATION OF APPROVED PLANS NOT AUTHORIZED BY THE ARCHITECT/ENGINEER AND/OR CLIENT/OWNER.

25. DETAILS ARE INTENDED TO SHOW END RESULT OF DESIGN. ANY MODIFICATION TO SUIT FIELD DIMENSION AND CONDITION SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ANY WORK.

26. BEFORE THE FINAL ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL REMOVE ALL EQUIPMENT AND MATERIALS, REPAIR OR REPLACE PRIVATE OR PUBLIC PROPERTY WHICH MAY HAVE BEEN DAMAGED OR DESTROYED DURING CONSTRUCTION, CLEAN THE AREAS WITHIN AND ADJACENT TO THE PROJECT WHICH HAVE BEEN OBSTRUCTED BY HIS/HER OPERATIONS, AND LEAVE THE PROJECT AREA NEAT AND PRESENTABLE.



STATE OF MAINE
CRAIG SWEET
No. 15060
LICENSED
PROFESSIONAL ENGINEER

DATE: 09/08/2020
P.E.: CRAIG SWEET, P.E.

NO.	DATE	REVISIONS	CMS APP'D BY
1	09/08/2020	REVISED PER CITY COMMENTS	

TERRADYN CONSULTANTS, LLC
Civil Engineering | Land Planning | Stormwater Design | Environmental Permitting
41 CAMPUS DRIVE
SUITE 1
NEW GLOUCESTER, ME 04260
OFFICE: (207) 926-5111 FAX: (207) 221-1317
www.terradynconsultantsllc.com
565 CONGRESS STREET
SUITE 200
PORTLAND, ME 04102

PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
10 GOULD STREET, LLC.
LEWISTON, MAINE

SHEET TITLE:
GRADING PLAN

CLIENT:
SURVEY WORKS INC.
7 COBBLESTONE DRIVE, SUITE 4,
TURNER, MAINE 04282

DATE:	8/3/2020
SCALE:	1"=20'
DESIGNED:	
JOB NO:	2021
FILE:	2021 B.DWG
SHEET	C-2.0

CITY OF LEWISTON

Department of Planning & Code Enforcement

TO: Lewiston Planning Board

FROM: Douglas Greene, AICP, RLA, City Planner

DATE: September 14, 2020

RE: Agenda Item 4 c, Zoning Map Amendment for the Blake Street Area

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The Lewiston Planning Board initiated a zoning map amendment request to change the zoning in the Blake Street area from Downtown Residential (DR) to Centreville (CV) at their August 24, 2020 meeting. The Planning Board is now asked to review the application produced by Staff and make a recommendation to the City Council for their consideration.

PROJECT DESCRIPTION

The Lewiston Housing Authority (LHA) approached the Departments of Economic Development and Planning and Code Enforcement about constructing a new 40 unit apartment building at 70 Blake Street. The new building would be located along the property's Ash Street frontage in an area of underutilized parking and greenspace. The current zoning of Downtown Residential (DR) requires 1,250 sf of lot size for each proposed residential unit. The initial conversation focused on a contract rezoning of the property from DR to CV in order to allow the density desired by the LHA. The Staff looked at other nearby properties owned by LHA and surrounding properties and recommended a "straight zoning," which would expand the nearby CV zoning into the LHA property and other nearby properties on Ash Street, Blake Street, Bartlett Street, College Street, Oak Street, and Jack Court.

The Planning Staff evaluated the residential area between Blake Street, College Street, Oak Street, and Jack Court and found a significant number of non-conforming lots based on the existing DR zoning. Changing the zoning to CV would eliminate almost all of the non-conformities and facilitate the redevelopment of this area as well.

The amendment to the zoning ordinance and map submitted by Staff provides the reason for the amendment and lists how the request is in conformance with the 2017 Comprehensive Plan.

1. "The plan envisions that most residential and non-residential development over the next ten years will occur in this growth sector." (pg. 125)
2. "Focus Housing within Growth Areas" The Comprehensive Plan encourages the development of "new, high-quality, multi-family residences" in areas already served by municipal services such as water and sewer. (pg. 172)
3. "Improve the Quality of Affordable Housing" The zone change will allow Lewiston Housing Authority to develop an underutilized portion of land in the Downtown area to provide quality and attractive, affordable housing, subject to design standards, rather than

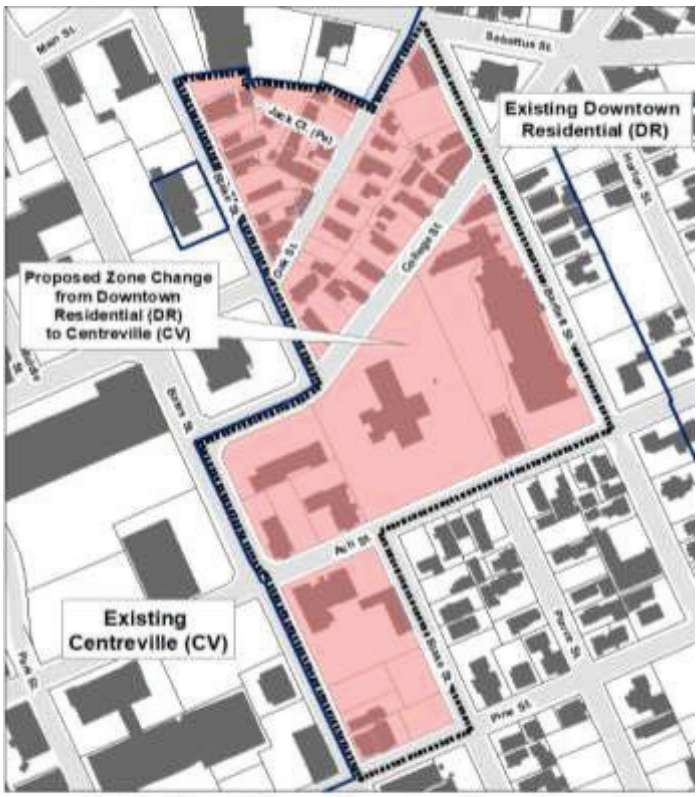
congregating such housing in areas of the City separated from services and other uses. (pgs. 172-173)

Rezoning this area to allow for redevelopment at a slightly higher density and form will allow the City to accommodate future growth in a part of town already served by employment, retail, services, and infrastructure.

LIST TYPES OF APPROVALS
The Planning Board needs to make a recommendation to the City Council pursuant to Article VII, Planning Board, Section 4, Powers and Duties and Article XVII, Amendments, and Other Legal Provisions, Section 5, Amendments.

STAFF RECOMMENDATION
Staff recommends the Planning Board send a favorable recommendation to the City Council for the proposed zone change.

ACTION NECESSARY
Make a motion that the Planning Board provide a favorable recommendation pursuant to Article VII, Section 4 and Article XVII, Section 5 to the City Council for a Zoning Map Amendment to rezone properties along Ash Street, Blake Street, Bartlett Street, College Street, Oak Street and Jack Court as depicted in the attached map, (including, if any, specific conditions raised by the Planning Board or Staff).

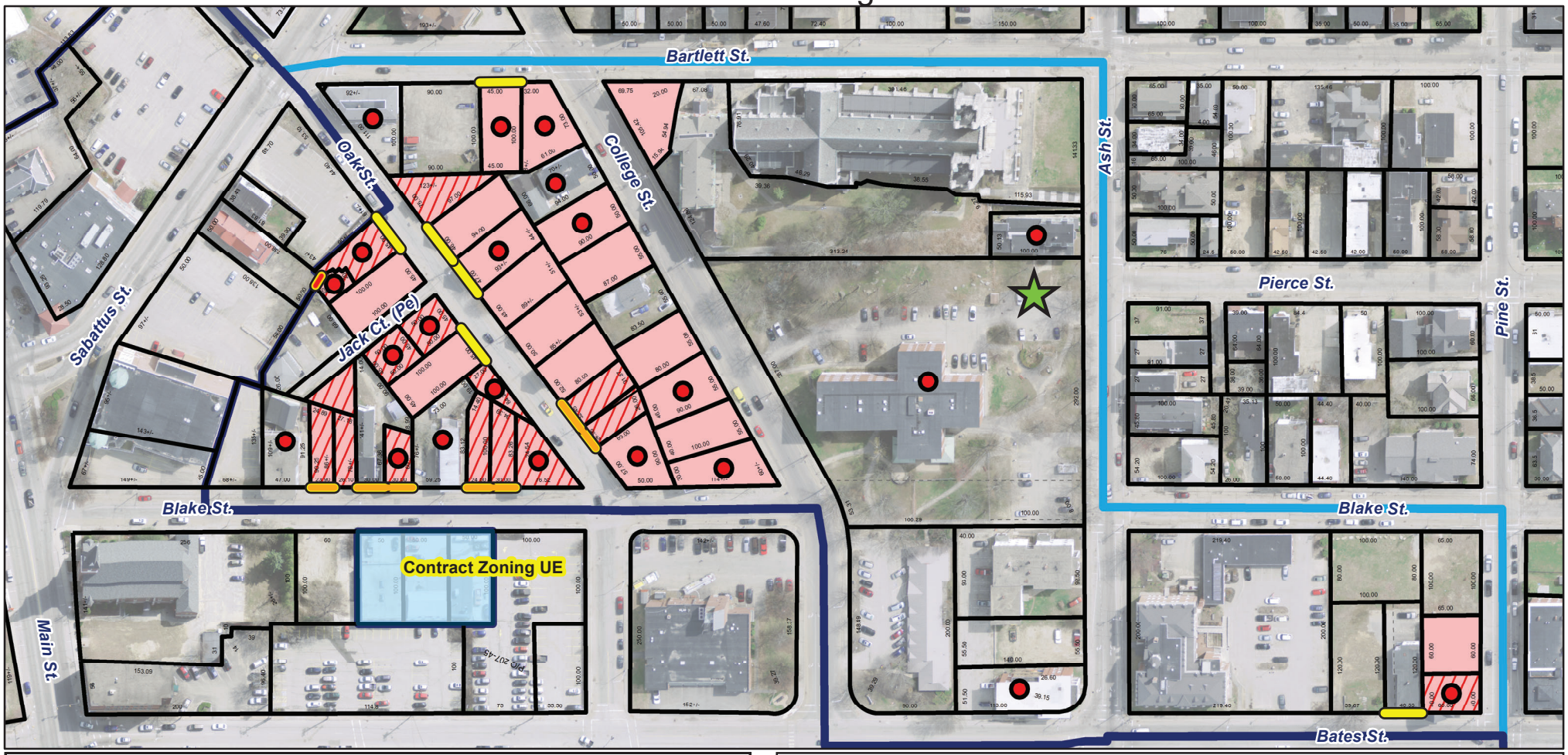


Blake Street Area Rezoning From Downtown Residential (DR) to Centreville (CV)

September 2020

Attached Map 1

Blake Street Rezoning Discussion



Nonconforming Parcels

	Current DR standards	%	Proposed DR standards	%	CV standards	%
Lot size	34	61%	16	29%	0	-
Lot density	22	50%	22	50%	0	-
Frontage	14	25%	8	14%	1	1%

Note: Density calculations are meant to provide context as to the current land use pattern in the neighborhood. Density is not necessarily a concern with respect to the continuation or reconstruction of the nonconforming use for 1, 2, or 3 unit dwellings, per Article VI of Appendix A: Zoning and Land Use Code of the City of Lewiston Code of Ordinances.

Total lots: 56 | Approx. 44 in residential use. Lot density calculations are based on total residential lots.

- Current CV Zoning Line
- Proposed CV Zoning Line
- Nonconforming lot size under current DR standards
- Nonconforming lot size under proposed DR standards
- Nonconforming density under current and proposed DR standards
- Nonconforming frontage under current DR standards
- Nonconforming frontage under proposed DR standards
- Nonconforming frontage under CV standards

90 45 0 90 Feet

LEWISTON HOUSING

September 2, 2020

David Hediger
City of Lewiston
27 Pine Street
Lewiston, ME 04240

RE: Proposed Expansion of the Centreville Zone

Dear David:

I am writing to support the City's proposal to expand the Centreville zone so that it will include LHA's Blake Street Tower campus (along with several other properties).

As you recall, I wrote the City about a month ago seeking guidance on how to best approach the possible development of the approximately 300' x 100' portion of the Blake Street Tower site bound by Ash Street, Blake Street Tower and the buildings at 90 Ash and 110 Ash.

While our initial interest in the topic was confined to our site, we are fully supportive of the holistic approach staff has taken to the initiative. You have identified a series of properties that are currently non-conforming under the Downtown Residential zone that appear to be better suited both now and in the future to the Centreville zone.

This approach makes sense for our site as well as the immediate vicinity. This zone change, when implemented alongside the new Design Lewiston Site Plan Review and Design Guidelines/Standards, will allow for infill development in the area that is sensitive to the neighborhood context.

We look forward to collaborating with the City and the community in the coming years in strengthening this critical part of the City.

Yours Truly,

Christopher Kilmurry

Chris Kilmurry
Executive Director

Cc: Lincoln Jeffers, Douglas Greene, Misty Parker, James Buzzell

AN ORDINANCE PERTAINING TO ZONING DISTRICT BOUNDARIES THE CITY OF LEWISTON HEREBY ORDAINS:
Appendix A of the Code of Ordinances of the City of Lewiston, Maine is hereby amended as follows:

APPENDIX A
ZONING AND LAND USE CODE
ARTICLE IV. ESTABLISHMENT OF DISTRICTS

Sec. 1. Zoning map.

The "Official Zoning Map, City of Lewiston" (herein, "Zoning Map") is amended as follows: The properties listed below and displayed on the map attached as **Exhibit A**, are rezoned from Downtown Residential (DR) to Centreville (CV):

1 BARTLETT ST	Bk 516 Pg 399	4 COLLEGE ST	Bk 5854 Pg 146
1 COLLEGE ST	Bk 1005 Pg 592	40 COLLEGE ST	Bk 9922 Pg 52
10 COLLEGE ST	Bk 9186 Pg 298	42 BLAKE ST	Bk 6974 Pg 81
110 ASH ST	Bk 1472 Pg 327	54 BLAKE ST	Bk 6974 Pg 81
111 BLAKE ST	Bk 10325 Pg 292	65 OAK ST	Bk 9545 Pg 162
12 COLLEGE ST	Bk 10245 Pg 349	67 OAK ST	Bk 1399 Pg 142
12 JACK COURT	Bk 9856 Pg 300	68 PINE ST	Bk 4594 Pg 109
122 ASH ST	Bk 2080 Pg 278	7 BARTLETT ST	Bk 9926 Pg 6
13 JACK COURT	Bk 4432 Pg 206	7 JACK COURT	Bk 10384 Pg 18
15 BARTLETT ST	Bk 9922 Pg 54	70 BLAKE ST	Bk 1010 Pg 395
16 BLAKE ST	Bk 219 Pg 260	71 OAK ST	Bk 2321 Pg 176
172 BATES ST	Bk 8971 Pg 301	72 PINE ST	Bk 8280 Pg 212
174 BATES ST	Bk 10265 Pg 225	74 OAK ST	Bk 9714 Pg 61
18 BLAKE ST	Bk 9167 Pg 59	75 OAK ST	Bk 7896 Pg 251
18 COLLEGE ST	Bk 5464 Pg 86	76 ASH ST	Bk 8946 Pg 132
22 BLAKE ST	Bk 8159 Pg 102	76 OAK ST	Bk 10217 Pg 201
23 BARTLETT ST	Bk 3372 Pg 136	77 OAK ST	Bk 10261 Pg 314
24 BLAKE ST	Bk 9695 Pg 130	8 JACK COURT	Bk 9226 Pg 66
26 BLAKE ST	Bk 10361 Pg 228	80 ASH ST	Bk 4913 Pg 209
26 COLLEGE ST	Bk 5981 Pg 21	81 ASH ST	Bk 8115 Pg 104
27 BARTLETT ST	Bk 3372 Pg 128	81 OAK ST	Bk 10383 Pg 335
3 BARTLETT ST	Bk 9742 Pg 119	82 OAK ST	Bk 10217 Pg 203
30 BLAKE ST	Bk 3878 Pg 347	82 PINE ST	Bk 10345 Pg 87
30 COLLEGE ST	Bk 2188 Pg 327	85 OAK ST	Bk 4101 Pg 272
34 BLAKE ST	Bk 10074 Pg 198	89 OAK ST	Bk 3731 Pg 148
34 COLLEGE ST	Bk 9343 Pg 68	90 ASH ST	Bk 8246 Pg 342
36 BLAKE ST	Bk 2180 Pg 114	90 OAK ST REAR	Bk 2660 Pg 178
36 COLLEGE ST	Bk 9343 Pg 210	92 OAK ST	Bk 10367 Pg 12
38 BLAKE ST	Bk 7575 Pg 54		

REASON FOR THE PROPOSED AMENDMENT

Rezoning these parcels from Downtown Residential to Centreville supports many of the ongoing initiatives between the departments of Economic and Community Development and Planning

and Code Enforcement and their community partners. This proposal was initiated by Lewiston Housing Authority which sought a contract zone to allow for the redevelopment of a portion of 70 Blake Street and the construction of a new building on the lot through the Choice Neighborhood Implementation grant. A straight rezoning of the larger area between 70 Blake Street and the existing Centreville boundary will allow the City to address a number of existing nonconformities in these neighborhood blocks. Finally, by opening the area to Centreville zoning standards, the City will be in a position to target redevelopment to an area that is ideal for housing and mixed uses close to retail, services, employment, and existing infrastructure.

CONFORMANCE WITH 2017 COMPREHENSIVE PLAN

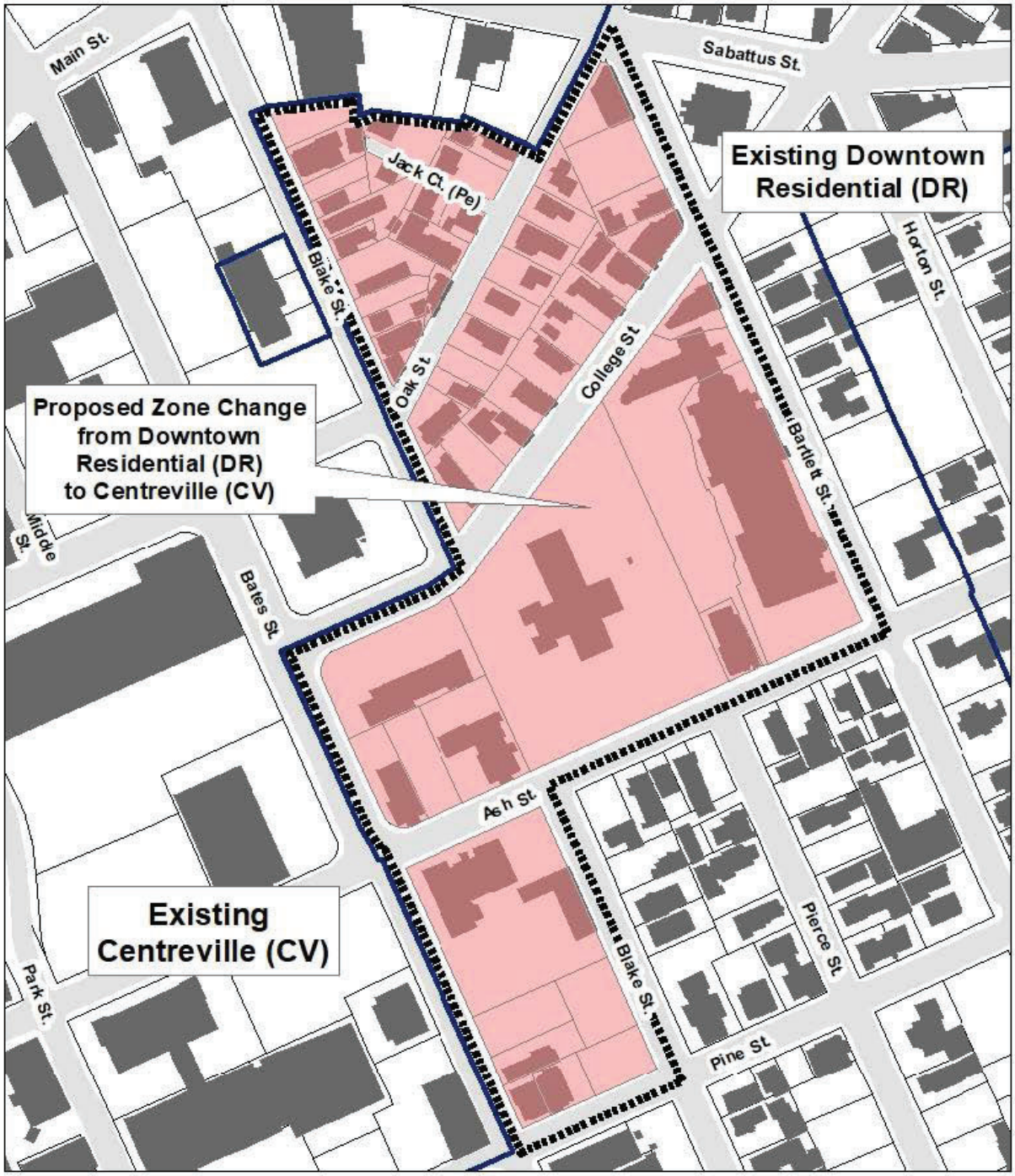
The area proposed for rezoning falls within the G-5 Infill Growth Sector in the Legacy Lewiston Comprehensive Plan. (pg. 125) "The plan envisions that most residential and nonresidential development over the next ten years will occur in this growth sector."

"Focus Housing within Growth Areas" (pg. 172) The Comprehensive Plan encourages the development of "new, high-quality, multi-family residences" in areas already served by municipal services such as water and sewer.

"Improve the Quality of Affordable Housing" (pgs. 172-173) The zone change will allow Lewiston Housing Authority to develop an underutilized portion of land in the Downtown area to provide quality and attractive affordable housing, subject to design standards, rather than congregating such housing in areas of the city separated from services and other uses.

Rezoning this area to allow for redevelopment at a slightly higher density and form will allow the City to accommodate future growth in a part of town already served by employment, retail, services, and infrastructure.

Exhibit A



Blake Street Area Rezoning From Downtown Residential (DR) to Centreville (CV)

September 2020

CITY OF LEWISTON

Department of Planning & Code Enforcement

TO: Lewiston Planning Board

FROM: Douglas Greene, AICP, RLA; Deputy Director/City Planner

DATE: September 14, 2020

RE: Request for Planning Board to Remove Condition for Pierce Place Apartments

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Back on March 9, 2015, the Planning Board approved a 29 unit, scattered site multi-housing project with 3 separate buildings at properties located at 139 and 149 Bartlett Street and 110 and 118 Pierce Street. One of the conditions of approval was applied to a vacant lot at 82 Pierce Street.

> *4. Upon full occupancy, but no later than one year from the City's certificate of occupancy, that the applicant will commission and provide to the City a parking demand study by a qualified independent traffic engineer. If the study and the Planning Board's review find that the spaces located on site are not adequate to the needs of the property, the applicant shall be required to construct the additional 20 spaces. If the study finds that the 38 on-site parking spaces are adequate, then the applicant shall be released from any further obligation to develop off-site spaces.* ***If determined that the additional spaces are not needed, under the current code provisions, the land must be held in reserve and remain available should future demand require additional parking.*** *Should it be determined additional parking is needed, the development of that parking shall be subject to approval from the Planning Board.*

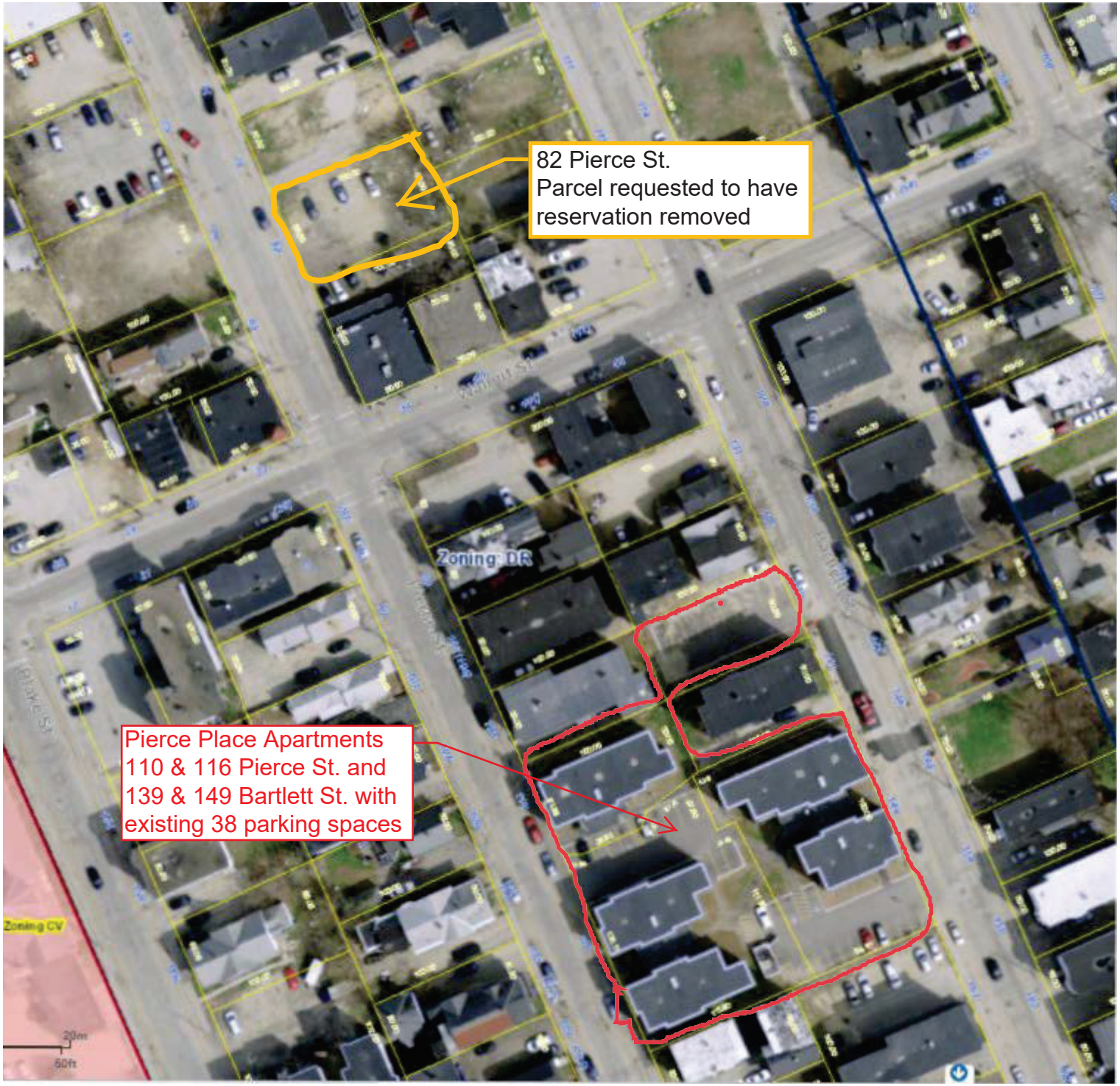
On March 26, 2018, the Planning Board voted unanimously that the existing 38 parking spaces were sufficient for the project, and that no additional parking at 82 Pierce Street would need to be constructed. The Board did require that the property be held in reserve and remain available for future parking needs.

In 2018, the City Council approved a zoning ordinance text amendment to reduce the required parking for multi-family dwellings to one parking space per dwelling unit plus .1 spaces per dwelling unit for guest parking. With the adoption of that text amendment, the required parking for the Pierce Place Apartments has been reduced to 32 on-site parking spaces. The project provides 38 on-site spaces, which exceeds the required parking.

The applicant is asking the Planning Board for a motion to remove condition # 4 as depicted above as the Pierce Place Apartment Project now meets the on-site parking requirement.

ACTION NECESSARY

Make a motion that the request by Pierce Place Apartments to remove the condition of approval set by the Planning Board at their March 9, 2015 meeting to reserve the property located at 82 Pierce Street for future parking be granted as the project now meets the parking requirements of Article XII, Performance Standards, Section 17, Parking and Loading.


82 Pierce St.
Parcel requested to have reservation removed
Zoning: DR
Pierce Place Apartments
110 & 116 Pierce St. and
139 & 149 Bartlett St. with
existing 38 parking spaces
Zoning CV
20m
60ft

AFFIDAVIT REGARDING ELIMINATION OF PLANNING BOARD CONDITION OF APPROVAL

PIERCE PLACE APARTMENTS, LEWISTON, MAINE

I, _____, being first duly sworn, do hereby depose and state as follows:

1) My name is _____, and I am a duly qualified member and Chairman of the City of Lewiston Planning Board (the "Planning Board").

2) On March 9, 2015, the Planning Board granted subdivision and site plan approval (the "Planning Board Approvals") for construction of a scattered-site multifamily housing project containing 29 dwelling units in three separate buildings, and accessory parking, at 139 and 149 Bartlett Street and 110 and 118 Pierce Street in Lewiston, Androscoggin County, Maine, known as Pierce Place Apartments (collectively, the "Project") owned by Pierce Place Associates LP, a Maine limited partnership (the "Property Owner"). The Project is shown on a plan entitled "Amended Subdivision Plat of Pierce Place" dated September 2, 2015 and recorded in the Androscoggin County Registry of Deeds in **Plan Book 51, Page 73**. The conditions of approval are set forth on the plan entitled "Site Development Plans for Pierce Place Residential Development" recorded in said Registry in **Plan Book 51, Page 72** (the "Recorded Plan").

3) The following condition of approval, relating to a vacant lot owned by the Property Owner located at 82 Pierce Street, Lewiston, Androscoggin County, Maine, is set forth in the Planning Board Approvals and is shown on the Recorded Plan:

> *4. Upon full occupancy, but no later than one year from the City's certificate of occupancy, that the applicant will commission and provide to the City a parking demand study by a qualified independent traffic engineer. If the study and the Planning Board's review find that the spaces located on site are not adequate to the needs of the property, the applicant shall be required to construct the additional 20 spaces. If the study finds that the 38 on-site parking spaces are adequate, then the applicant shall be released from any further obligation to develop off-site spaces. If determined that the additional spaces are not needed, under the current code provisions, the land must be held in reserve and remain available should future demand require additional parking. Should it be determined additional parking is needed, the development of that parking shall be subject to approval from the Planning Board.*

4) On March 26, 2018, the Planning Board, at a duly held meeting, voted unanimously that the 38 existing on-site parking spaces were sufficient for the Project, and that no additional parking at 82 Pierce Street needed to be constructed at that time, but required that 82 Pierce Street still be held in reserve by the Property Owner and remain available should the Project require additional parking in the future.

5) On, November ____, 2018, Article XII, Section 17(d) of Appendix A of the City Zoning and Land Use Code (the "Ordinance") was amended to reduce the amount of parking required for multifamily dwellings to one parking space per dwelling unit plus 0.1 space per dwelling unit for visitor parking. The Ordinance now requires a total of 32 on-site parking spaces for the Project. The Project provides 38 on-site parking spaces, which exceeds the minimum requirements required under the Ordinance.

6) On September 14, 2020, the Planning Board, at a duly held meeting, voted that because the Project satisfies the on-site parking requirement set forth in the Ordinance, 82 Pierce Street may be sold, used or developed for purposes unrelated to the Project, without affecting the Planning Board Approvals, and no longer needs to be held in reserve or remain available for future parking for the Project, and that the Chairman of the Planning Board be authorized and directed to execute an affidavit to that effect to be recorded in the Androscoggin County Registry of Deeds.

Subscribed and sworn to this ____ day of _____, 2020 at the City of Lewiston, Maine.

_____, Chairman
Lewiston Planning Board

_____
Witness

STATE OF MAINE
COUNTY OF ANDROSCOGGIN, SS. September _____, 2020

Personally appeared the above named _____ and swore to the truth of the foregoing and acknowledged the foregoing to be his/her free act and deed.

_____
Notary Public/Attorney-at-Law

Printed name: _____
My commission expires: _____