Development Review Application

City of Auburn Planning and Permitting Department

PROJECT NAME: Bangor Savings Bank Auburn Branch and Office

PROPOSED DEVELOPMENT ADDRESS: 170 Turner Street, Auburn, ME

PARCEL ID#: Map 250 Lot 195

REVIEW TYPE:

Site Plan ☑	**Site Plan Amendment** ☐	**Special Exception** ☐
Subdivision ☐	**Subdivision Amendment** ☐	**Form Based Code Plan** ☐
Planned Unit Development ☐		

PROJECT DESCRIPTION:

Proposed project will include a single story 5,600 square foot building with a 3-lane drive thru and a 32 space parking lot. Relocation of existing 18-inch sanitary sewer and 60-inch storm drain. Additional site improvements include utilities, site lighting and landscaping.

CONTACT INFORMATION:

Applicant
Name: Bangor Savings Bank- Jason Donovan
Address: 99 Franklin Street, Bangor, Maine
Zip Code 04401
Work #: (207) 262-4991
Cell #: (207) 949-4027
Fax #:
Home #:
Email: Jason.Donovan@Bangor.com

Property Owner
Name: Bangor Savings Bank- Jason Donovan
Address: 99 Franklin Street, Bangor, Maine
Zip Code 04401
Work #: (207) 262-4991
Cell #: (207) 949-4027
Fax #:
Home #:
Email: Jason.Donovan@Bangor.com

Project Representative
Name: David Latulippe
Address: 35 Primrose Lane, Freeport, ME
Zip Code 04032
Work #: (207) 865-4323
Cell #: (207) 240-1074
Fax #:
Home #:
Email: ddlatulip@aol.com

Other professional representatives for the project (surveyors, engineers, etc.),
Name: Dan Diffin, PE, Sevee & Maher Engineers
Address: 4 Blanchard Road, Cumberland, ME
Zip Code 04021
Work #: (207) 829-5016
Cell #: (207) 240-3315
Fax #: (207) 829-5692
Home #:
Email: dpd@smemaine,com

PROJECT DATA

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

IMPERVIOUS SURFACE AREA/RATIO

Existing Total Impervious Area	31,816	sq. ft.
Proposed Total Paved Area	24,196	sq. ft.
Proposed Total Impervious Area Proposed	33,313	sq. ft.
Impervious Net Change	1,497	sq. ft.
Impervious surface ratio existing	59.3	% of lot area
Impervious surface ratio proposed	61.0	% of lot area

BUILDING AREA/LOT COVERAGE

Existing Building Footprint	4,012	sq. ft.
Proposed Building Footprint	5,600	sq. ft.
Proposed Building Footprint Net change	1,588	sq. ft.
Existing Total Building Floor Area	12,036	sq. ft.
Proposed Total Building Floor Area	5,600	sq. ft.
Proposed Building Floor Area Net Change	-6,436	sq. ft
New Building ?	Yes	(yes or no)
Building Area/Lot coverage existing	22.03	% of lot area
Building Area/Lot coverage proposed	10.25	% of lot area

ZONING or FORM BASED CODE DISTRICT

Existing	General Business
Proposed, if applicable	N/A

LAND USE

Existing	retail and apartments
Proposed	bank branch and offices

RESIDENTIAL, IF APPLICABLE

Existing Number of Residential Units	8 apartment units
Proposed Number of Residential Units	0
Subdivision Proposed Number of Lots	N/A

PARKING SPACES

Existing Number of Parking Spaces	16
Proposed Number of Parking Spaces	32
Number of Handicapped Parking Spaces	2
Proposed Total Parking Spaces	32

ESTIMATED COST OF PROJECT..... $1.7 M

DELEGATED REVIEW AUTHORITY CHECKLIST

SITE LOCATION OF DEVELOPMENT AND STORMWATER MANAGEMENT

Existing Impervious Area	31,816	sq. ft.
Proposed Disturbed Area	53,512	sq. ft.
Proposed Impervious Area	33,313	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 (Since July 1, 1997) 31 passenger car equivalents (PCE)

Total traffic estimated in the peak hour-proposed (Since July 1, 1997) 87 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

1. Property is located in the General Business zoning/form based code district.
2. Parcel Area: 1.23 acres / 53,635 square feet(sf).

Regulations	Required/Allowed	Provided
Min Lot Area	10,000 SF	/54,645 SF
Street Frontage	25' (14' on Turner St)	/ 25' (14' on Turner St)
Min Front Yard	25'	/25'
Min Rear Yard	35'	/60'
Min Side Yard	25'	/25'
Max. Building Height	45'	/ less than 45'
Use Designation	Bank/Office	/ Bank/Office
Parking Requirement	1 space/ per 200 square feet of floor area or dwelling unit	
Total Parking:	27	/ 32
Overlay zoning districts (if any):	N/A	/ /
Urban impaired stream watershed?	YES/NO If yes, watershed name No	

DEVELOPMENT REVIEW APPLICATION SUBMISSION

Submissions shall include fifteen (15) complete packets containing the following materials:

1. 5 Full size plans and 10 smaller (no larger than 11" x 17") plans containing the information found in the attached sample plan checklist.
2. Application form that is completed and signed by the property owner or designated representative. (NOTE: All applications will be reviewed by staff and any incomplete application will not be accepted until all deficiencies are corrected.
3. Cover letter stating the nature of the project.
4. Narrative which explains how the project meets the intent, objectives or conditions of the required Zoning sections, such as Special Exception, Site Plan Law, Subdivision Law or the Form Based Code Ordinance.
5. All written submittals including evidence of right, title and interest.
6. Copy of the checklist completed for the proposal listing the material contained in the submitted application.
7. Any additional materials as required by the Form Based Code (Chapter 60-546) if applicable.
8. PDF files for all plans and application materials.

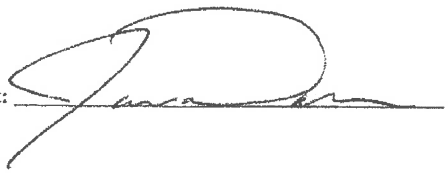
Refer to the application checklist for a detailed list of submittal requirements.

Additional information regarding zoning and form based code can be found on-line at:
http://www.auburnmaine.gov/Pages/Government/Planning-Permitting-and-Code or,
Contact the City Planner at: 207-333-6601 ext. 1156 or dgreene@auburnmaine.gov

Application Certification:

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:** 11/16/18

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: Bangor Savings Bank Auburn Branch and Office

PROPOSED DEVELOPMENT ADDRESS- 170 Turner Street

PARCEL #:- 250-195

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)	X			X
	Parking Space Calcs	X			X
	Drive Openings/Locations	X			X
	Subdivision Restrictions	N/A			X
	Proposed Use	X			X
	PB/BOA/Other Restrictions	X			X
	Fire Department Review	X			X
	Open Space/Lot Coverage	X			X
	Lot Layout (Lewiston only)	N/A			
	Existing Building (s)	N/A			
	Existing Streets, etc.	N/A			
	Existing Driveways, etc.	N/A			
	Proposed Building(s)	N/A			
	Proposed Driveways	N/A			
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	X			X
	Bonding and Inspection Fees	X			X
	Post-Construction Stormwater Plan	X			X
	Inspection/monitoring requirements	X			X
	Third Party Inspections (Lewiston only)	N/A			
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	N/A			
	Flood Plain	N/A			
	Wetlands or Streams	N/A			
	Urban Impaired Stream	N/A			
	Phosphorus Check	N/A			
	Aquifer/Groundwater Protection	N/A			
	Applicable State Permits	N/A			
	No Name Pond Watershed (Lewiston only)	N/A			

	Lake Auburn Watershed (Auburn only)	N/A			X
	Taylor Pond Watershed (Auburn only)	N/A			X
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	X			X
State Subdivision Law					
	Verify/Check	N/A			
	Covenants/Deed Restrictions	N/A			
	Offers of Conveyance to City	N/A			
	Association Documents	N/A			
	Location of Proposed Streets & Sidewalks	N/A			
	Proposed Lot Lines, etc.	N/A			
	Data to Determine Lots, etc.	N/A			
	Subdivision Lots/Blocks	N/A			
	Specified Dedication of Land	N/A			
Additional Subdivision Standards					
	Single-Family Cluster (Lewiston only)	N/A			
	Multi-Unit Residential Development (Lewiston only)	N/A			
	Mobile Home Parks	N/A			
	Private Commercial or Industrial Subdivisions (Lewiston only)	N/A			
	PUD (Auburn only)	N/A			
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		X			X

CITY OF AUBURN

Form Based Code Compliance Checklist

Property Location:	170 Turner Street	PID #:	
Transect District:	GB - General Business	(List)	
Owner:	Bangor Savings Bank	Contact Info:	
Plan Type: (Circle)	Site Plan Review, Special Exception, Subdivision, Staff Review		
Reviewed By:	Staff, Plan Review Group, Planning Board		

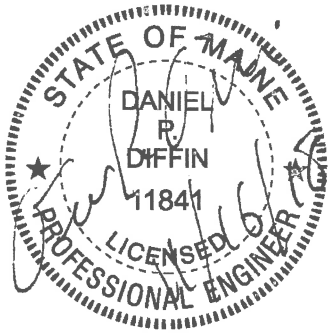
Complies With:		Required	Complies	Not Comply	N/A
	Intent and Purpose	X			
Plan Requirements:					
	Surrounding Info (Photos, Mapping, Sketches)	X			
	Topographic Info (FP, Steep Slopes)	X			
	Elevations	X			
	Materials				
	Fencing				
	Signage				
Building Placement:					
	Front Set-Back (Principal Street)	X			
	Front Set-Back (Secondary Street)	X			
	Side Yard Set-Back	X			
	Rear Yard Set-Back	X			
	Building Coverage	X			
	Useable Open Space	X			
	Frontage Build-Out	X			
	Lot Width (Min./Max)	X			
	Building Width	X			
	Building Height	X			
	Frontage Type	X			
	Primary Entrance on Front	X			
	Ground Story Windows and Doors Coverage	X			
	Upper Story Windows Coverage	X			
	Ground Floor Elevation (Residential/Commercial)	X			
	Front Facade Wall	X			
External Elements:					
	Front Yard Fence	Optional			
	Projections	Optional			
	Driveway Location	X			
	Parking Location	X			
	Accessory Building(s)	Optional			
	Landscaping	Optional			
	Sidewalk	X			
Proposed Use:					
	Residential, Commercial ,Mixed-Use	X			
	Parking Requirement-	X			

CITY OF AUBURN, MAINE
DEVELOPMENT REVIEW APPLICATION

Prepared for

BANGOR SAVINGS BANK
AUBURN BRANCH/OFFICE BUILDING
AUBURN, MAINE

November 2018



SME
SEVEE & MAHER
ENGINEERS

ENVIRONMENTAL • CIVIL • GEOTECHNICAL • WATER • COMPLIANCE

4 Blanchard Road, P.O. Box 85A, Cumberland, ME 04021 • Tel 207.829.5016 • Fax 207.829.5692 • smemaine.com

TABLE OF CONTENTS

LIST OF ATTACHMENTS

CITY OF AUBURN DEVELOPMENT REVIEW APPLICATION
BANK BRANCH AND OFFICE BUILDING
AUBURN, MAINE

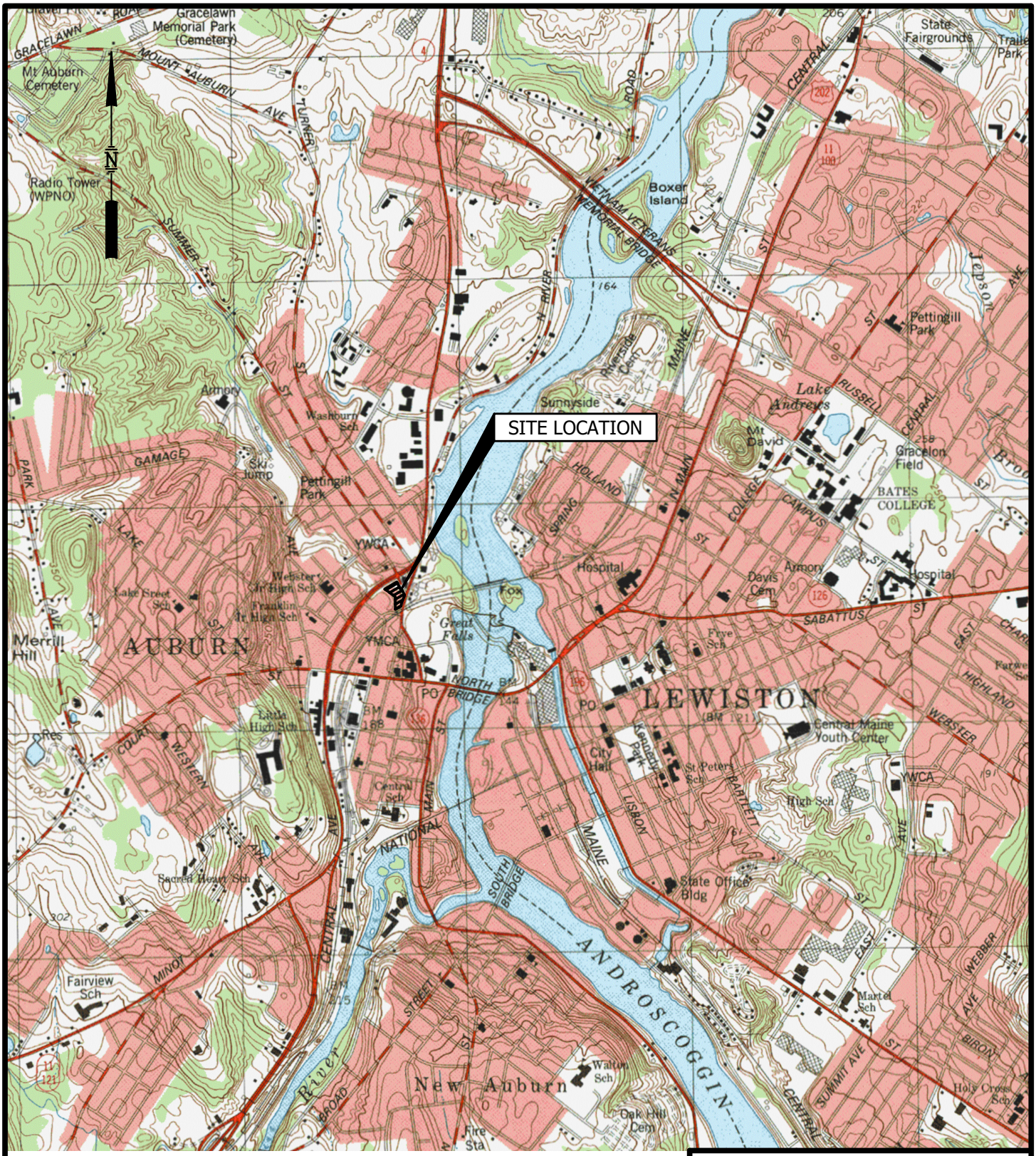
1.0 PROJECT DESCRIPTION

Bangor Savings Bank proposes to develop a new 1-story, 5,600 square-foot (sf) bank branch and office building at 170 Turner Street in Auburn. The location of the property is outlined in Figure 1. The property fronts to Turner Street on the southeast, Troy Street on the south, Benjamin Street on the northeast and Union Street to the northwest. The property is currently developed with An abandoned 4,000-sf, 3-story mixed used office and apartment building. The existing building will be removed prior to construction of the new bank branch and office building.

Proposed construction will include a single story 5,600 sf building with a 3-lane drive thru and a 33-space parking lot. The parking area for the bank branch and office building will have two entrances. The main entrance for the branch will be from Troy Street and the second entrance will be from Benjamin Street. An existing 18-inch sanitary sewer and 60-inch storm drain currently cross the property under the proposed building site and will have to be relocated. Additional site improvements include public water and sewer services, a closed storm drain system, underground electric and communications lines, site lighting, a retaining wall, and landscaping.

The project will include a property transfer between Auburn Wales, LLC (Office Max) and Bangor Savings Bank (BSB) for a 0.1-acre (ac) triangular portion of the Office Max property to the BSB parcel. This transfer will expand the BSB property to facilitate utility reconstruction, site circulation, additional parking, retaining wall construction, and landscaping.

Existing impervious area on the parcel is 31,816 sf. The existing developed area is 49,223 sf. Proposed site improvements will include approximately 33,313 sf of impervious area and 54,644 sf of developed area after the property transfer, resulting in a net increase in impervious area on the expanded property of approximately 1,497 sf. This project will result in less than one acre of total impervious surface and less than 5 acres of new developed area and has been



BASE MAP ADAPTED FROM 7.5 MIN
USGS TOPOGRAPHIC QUADRANGLE
LEWISTON, ME - 1979

1000 0 2000 FEET

DWG: SITELOC LMN: CTB: SME-STD REV: 6/22/2018

FIGURE 1
SITE LOCATION MAP
BANGOR SAVINGS BANK
AUBURN BRANCH/OFFICE BUILDING
AUBURN, MAINE

SME
SEVEE & MAHER
ENGINEERS

\\Serverlcfs\Bangor Savings Bank\Auburn\Acad\Figures\SITELOC.dwg, 6/22/2018 9:12:56 AM, bwb

designed to meet Basic Standards as outlined in Maine Department of Environmental Protection (MEDEP) Chapter 500. The project will not require a MEDEP Stormwater Management Permit.

Proposed site improvements and a schematic building design are outlined in the attached drawing set. Conformance with the requirements of Chapter 60 of the City of Auburn Code of Ordinances are outlined in the following sections of this application package.

2.0 SITE DESIGN CRITERIA

A. District Regulation (Chapter 60, Article IV, Division 12)

The project site is in the General Business District.

Use Regulation: The property will be developed as a bank branch and business office. Both uses are permitted use in section 60-499(a), Article IV of the City of Auburn Zoning Ordinance.

Setbacks: The proposed building has been designed to suit existing topography, landscape, and subsurface conditions on the property. Building setbacks meet the requirements of the zoning ordinance, including a 14-foot setback from Turner Street (as amended by the City), and 25-foot setbacks from Benjamin Street, Union Street and Troy Street. The rear building setback adjacent to the Office Max property is 35 feet. Building setbacks and a table outlining additional dimensional standards are included on Drawing C-102.

B. Off Street Parking and Loading: (Chapter 60, Article VI)

Off Street Parking: Off-street parking space requirements for multi-use building office and a branch are outlined in Section 60-608 of the City of Auburn Zoning Ordinance. The ordinance outlines 1 space per 200 sf of office area and 1 space per 300 sf of bank branch area. The square footage of the bank branch is 2,960 square feet, resulting in a minimum of 10 parking spaces for this use. The square footage of the office is 3,360 square feet, resulting in a minimum of 17 parking spaces required for office space use. Total required parking for the

proposed use is 27 spaces. Thirty-three parking spaces are proposed for this project, which exceeds the standard requirement.

Off Street Loading: Off-street loading space requirements are outlined in Section 60-609 of the City of Auburn Zoning Ordinance. Loading on the street is not anticipated under normal building operations, and adequate space for loading is provided on the property. The building will not require any additional loading space in the public right of way.

C. Signs – (Chapter 60, Article VI)

Two signs are proposed as part of this project. One will be located on the eastern portion of the property at the corner of Turner Street and Benjamin Street. A second sign will be located on the western portion of the property facing Union Street. Sign locations were designed to meet the standards of Article VI Section 60.637 of the City Zoning Ordinance.

D. Access Management Standards (Chapter 60, Article X)

Site Access: Access Management Standards are outlined in Article X of the City of Auburn Zoning Ordinance. Requirements include the following:

a) 60-799: Safe sight distance: Troy Street and Benjamin Street are a low volume, 20 mile-per-hour (mph) streets. City Ordinance requires 200 feet of sight distance for the 20-mph posted speed limit. More than 200 feet of sight distance is available both directions on Troy and Benjamin Streets, which meets the requirement of the ordinance.

b) 60-800: Curb cut and driveway spacing: City Ordinance requires a minimum curb cut separation distance of 85 feet from the midpoint of a proposed driveway to the intersection of two streets. The distance from the midpoint of the proposed Benjamin Street access to Union Street is approximately 89 feet, which meets the municipal separation distance. The distance from the midpoint of the Troy Street access to Turner Street is 85feet, which also meets the municipal standard.

c) 60-801: Number of driveways per lot: There are two driveways proposed as part of this project. Site access includes one two-way access to Troy

Street and one two-way driveway to Benjamin Street. City ordinance requires one two-way access per roadway. The proposed configuration meets the requirement of the Ordinance.

d) 60-803: Corner lot access: The Ordinance requires that corner lot access should be located on the minor road of the two adjacent streets. Proposed access for the property is located on Benjamin Street and Troy Street, which are minor roads. The proposed access meets the requirement of the Ordinance.

Peak Hour for On-Site: A total of 15 employees are anticipated for the proposed bank branch and office building. Seven employees will work at the bank branch, and 8 employees will occupy the office space.

The anticipated maximum peak hour vehicle trip ends for the bank branch will be 83 for the PM peak hour on a weekday and 4 for the office space during the AM peak hour on a weekday. The total combined trip ends for the site on a weekday is 87. Since the proposed total does not exceed 100 trips, a Traffic Movement Permit (TMP) will not be required from the Maine Department of Transportation (MEDOT). Total trips for the property will be divided between the two proposed site entrances, which will help reduce impact to adjacent streets.

Vehicle Movement and Pedestrian Circulation: The proposed parking area and drive aisles were designed of meet the requirements for off-street parking outlined in this Ordinance. The parking area will be paved and feature well defined circulation routes, traffic control signage and pedestrian crossings to minimize conflict between vehicles and pedestrians. The Site Layout Plan, Drawing C-102, outlines design and construction for the proposed parking area.

Fire protection: The National Fire Protection Association (NFPA) requires sprinkler systems for buildings that are greater than 10,000 square feet. The proposed building 5,600 square feet and will not require a sprinkler system.

Parking and service areas have been designed to accommodate fire truck access to the building. Concrete sidewalks are proposed on the south side of the building to improve building egress from the south side of the structure.

E. Environmental Regulations (Chapter 60, Article XII)

The project site is not in the Environment Regulated District and not required to meet the standards outlined in this section.

F. Environmental Performance Standard (Chapter 60, Article XIII)

The Environmental Performance Standard in Article XIII of the City of Auburn Zoning Ordinance includes the following sections:

a) 60-1036: Noise: Construction will occur between 7:00 am and 7:00 pm, in conformance with section 60-1036. Following construction, noise levels are not anticipated to be excessive.

b) 60-1037: Vibration: Construction of the site and building will not result in unnecessary vibration.

c) Phosphorus Control: The site is not in the Lake Auburn or Taylor Pond watershed. Phosphorus control is not required for this project.

G. Historic and Archaeological Resources (Chapter 60, Article XIV)

This project is currently developed with a multi-story apartment building and retail space. The Maine Historic Preservation Commission (MHPC) has not identified any historic and archaeological resources on this site. A map from MHPC outlining the historic and archaeological resources in the area is included in Attachment F.

H. Utilities

Existing development on the property includes a 60-inch diameter storm drain and an 18-inch diameter sanitary sewer main. Portions of these existing utilities exist under the proposed building location and will require relocation to enhance future maintenance and minimize settlement to the proposed structure. The existing 60-inch diameter storm drain and 18-inch diameter sewer will be relocated to the southwest portion of the property, approximately 20 feet away from the proposed building. The proposed 6-inch sanitary sewer service for the new building will connect to the relocated municipal 18-inch sewer on the property.

The building will include a new 2-inch water service connecting to the existing 8" water main in the Troy Street right-of-way, near the intersection of Troy Street and Turner Street. The Auburn, Maine Water and Sewerage District (AWSD) has verified they have capacity to serve the project. A copy of their letter is included in Attachment D.

Natural gas service will be provided from the existing 2-inch diameter gas main in the Benjamin Street right-of-way. Unitil has verified that capacity is available for the building from the existing main. A copy of their letter is included in Attachment D.

Electric and communications services will be provided to the site from the existing utility pole on east side of Turner Street. Development will include installation of a new riser pole and transformer adjacent to the project site on the west side of Turner Street. The new service will run underground from the new pole into the building.

I. Grading and Drainage

Attachment C includes a Stormwater Management Report describing the impacts of proposed development on projected stormwater runoff from the property. The property discharges directly to the municipal storm drain system. Our model indicates the existing system has adequate capacity to accommodate the

proposed development. We do not anticipate any adverse impacts to downstream properties or structures resulting from this project.

Attachment C also includes a Post-Construction Stormwater Management Report for the project to assist the owner with future operations and maintenance of stormwater management devices on the property.

Based on review of the flood hazard boundary maps, the site is not situated in a federally designated flood hazard zone. A FEMA FIRM map for the project area is included in Attachment G for reference.

J. Erosion Control

All grading, filling, and associated site construction will be conducted in accordance with the *Maine Erosion and Sediment Control Best Management Practices (BMPs)* latest edition, dated October 2016. This will be the minimum standard for erosion and sedimentation control for the project, as adopted by the City of Auburn from the MEDEP standards. A copy of the Erosion and Sedimentation Control Plan is included in Attachment E. Erosion and sedimentation control notes and details are included on Drawing C-103, Drawing C-300, and Drawing C-301 in the project plan set.

K. Landscaping

Screening, buffering, and landscaping on the property were designed by a registered landscape architect in accordance with the standards outlined in this section. Buffer yards and screening are shown on the Site Planting Plan L-1 included in the project plan set.

L. Right of Title or Interest, Technical and Financial Capacity

As previously outlined, this project will include a property transfer between Office Max and BSB for a 0.1-acre (ac) triangular portion of the Office Max property to the BSB parcel. A copy of the quitclaim deed for the main parcel and draft language for the parcel to be transferred to BSB from Auburn Wales, LLC, are included in Attachment A.

A description outlining technical and financial capacity for the project are included in Attachment B.

ATTACHMENT A

TITLE, RIGHT OR INTEREST

SME
SEVEE & MAHER
ENGINEERS

Bk 9897 Pg194 #13288
07-31-2018 @ 12:24p

QUITCLAIM DEED WITH COVENANT

KNOW ALL MEN BY THESE PRESENTS, that Double Eagle Properties, LLC , a Maine limited liability company with a mailing address of P. O. Box 737, Auburn, Maine 04210, in consideration of $1.00 and other good and valuable consideration, paid by BANGOR SAVINGS BANK, whose mailing address is 19 Maine Avenue, Bangor, Maine 04401, the receipt whereof it does hereby acknowledge, does hereby remise, release, bargain, sell and convey, and forever quitclaim unto the said Grantee, its successors, and assigns forever, the property located at Turner Avenue, City of Auburn, County of Androscoggin, State of Maine, as more particularly described in Exhibit A attached hereto.

TO HAVE AND TO HOLD the same, together with all the privileges and appurtenances thereunto belonging, to the said Grantee, its successors and assigns, to their own use and behoof forever.

AND the Grantor does COVENANT with the Grantee, its successors and assigns, that it shall and will WARRANT AND DEFEND the premises to the said Grantee, its successors and assigns forever, against the lawful claims and demands of all persons claiming by, through, or under it.

MAINE REAL ESTATE TRANSFER TAX PAID

In Witness Whereof Double Eagle Properties, LLC has caused this instrument to be executed by Richard F. Breton, its member and hereunto duly authorized

DATED: July 31, 2018

Double Eagle Properties,, LLC

By: _____
Its Member
Print Name: Richard F. ~~Brenton~~ Breton

STATE OF MAINE
Androscoggin, ss. July 31, 2018

Then personally appeared the above-named Richard F. Brentonin his capacity as Member of Double Eagle Properties, LLC, LLC, as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in said capacity and the free act and deed of said limited liability company.

Before me,

_____
~~Notary Public~~/Attorney at Law
Printed Name: Richard H. Spencer, JR

EXHIBIT A

A certain lot or parcel of land together with the building and improvements thereon situated in Auburn, Androscoggin County, Maine, bounded and described as follows:

154-156 Turner Street:

A certain lot or parcel of land situated in Auburn, County of Androscoggin, State of Maine, bounded and described as follows:

Beginning on the northerly line of Troy Street at an iron pipe driven into the ground at the ground at the southeasterly corner of land conveyed by Ferdinand Penley to National Shoemakers, by deed dated May 9, 1907, and recorded in the Androscoggin County Registry of Deeds, Book 211, Page 401; thence in a northeasterly direction by the southeasterly line of said National Shoemakers land, one hundred twenty-one and one tenth (121.1) feet; thence in a southeasterly direction, by an internal angle of eighty degrees and six minutes (80° 6') ninety-six and seven tenths (96.7) feet to the northwesterly line of Turner Street at a point one hundred eighty-two and six tenths (182.6) feet southwesterly from a granite monument located at the intersection of said northwesterly line of Turner Street with the easterly line of Summer Street; thence in a southwesterly direction by the said northwesterly line of Turner Street, sixteen and thirty-eight hundredths (1638) feet to an angle in said Turner Street; thence by a deflection angle to the left of eight degrees and twenty-four minutes (08° 24') and by the said northwesterly line of Turner Street thirty-seven and sixty-seven hundredths (37.67) feet to the said northerly line of Troy Street; thence in a westerly direction by a curved line to the left along the northerly line of Troy Street to the point of beginning, said point of beginning being ninety-seven and forty-five hundredths (97.45) feet from the intersection of the said northerly line of Troy Street with the said northwesterly line of Turner Street, measured along the long chord.

170 Turner Street, Auburn:

Another certain lot or parcel of land situated in Auburn, County of Androscoggin, State of Maine, bounded and described as follows

Commencing at the intersection of the westerly line of Summer Street with the northwesterly line of Turner Street; thence in a southwesterly direction, by the said northwesterly line of Turner Street, about one hundred thirteen (113) feet to the easterly corner of a lot of land conveyed by land now or formerly of Robert W. Vickery, et al., said point being one hundred eighty-two and six tenths (182.6) feet southwesterly from a granite monument located at the intersection of the said northwesterly line of Turner Street, with the easterly line of Summer Street; thence in a northwesterly direction by land now or formerly of said Vickery ninety-six and seven tenths (96.7) feet to land now or formerly by National Shoemakers; thence in a northerly direction, by land conveyed to said National Shoemakers, seventy and seven tenths (70.7) feet to the easterly corner of a lot of land conveyed now or formerly of Munroe, Packard and Linscott; thence in a northwesterly direction, by said land, to the Old Little Line, so-called, a distance of one hundred (100) feet; thence in a northeasterly direction, by the said Old Little Line, to the easterly corner of a lot of land now or formerly of Everett A. Bickford; thence in a northwesterly direction, by

land of said Bickford, to the Southeasterly line of Union Street, said line passes through the center of the capstone, over the culvert of Barron Brook, so-called; thence in a northeasterly direction, by the said Southeasterly line of Union Street, to the Southwesterly line of a ten (10) feet right-of-way, said Point being one hundred sixty-seven and eighty-five hundredths (167.85) feet southwesterly from the intersection of the said southeasterly line of Union Street with the westerly line of Summer Street; thence in a southeasterly direction to a point in the Old Little Line, one hundred ten (110) feet southwesterly from the intersection of the said Old Little Line with the westerly line of Summer Street; thence in a northeasterly direction, by the said Old Little Line, ten (10) feet; thence at right angles, in a northwesterly direction twenty-one and five tenths (21.5) feet; thence in a northeasterly direction, parallel with the Old Little Line, one hundred fourteen and one tenth (114.1) feet to the said westerly line of Summer Street; thence in a southerly direction, by the said westerly line of Summer Street, about two hundred seventy-seven and eighty-three hundredths (277.83) feet to the point of beginning.

Also a right-of-way ten (10) feet in width, lying southwesterly of the following described line: Commencing at a point in the southeasterly line of Union Street, one hundred fifty-seven and eighty-five hundredths (157.85) feet southwesterly from the intersection of the said southeasterly line of Union Street, with the westerly line of Summer Street; thence in a southeasterly direction to a point in the Old Little Line, one hundred (100) feet southwesterly from the intersection of said line with the westerly line of Summer Street recorded in said Registry of Deeds in Book 624, Page 420, to construct and maintain a public sewer in the Barron Brook, so-called, from the intersection of said Brook with the Old Little Line, in a general southeasterly direction to the northeasterly line of land now or formerly of Robert M. Vickery, et al.

ANDROSCOGGIN COUNTY
TINA M CHOUINARD
REGISTER OF DEEDS

PROPERTY TRANSFER

This project will include a property transfer between Auburn Wales, LLC (Office Max) and Bangor Savings Bank (BSB) for a 0.1-acre (ac) triangular portion of the Office Max property to the BSB parcel. The property transfer is in progress and final documentation of the transfer be submitted prior to the start of construction. The draft narrative for the property transfer is on the next page.

SME
SEVEE & MAHER
ENGINEERS

PARCEL TO BE CONVEYED FROM AUBURN WALES LLC

A certain lot or parcel of land situated northwesterly but not adjacent to Troy Street and southeasterly of, but not adjacent to Union Street, in the City of Auburn, County of Androscoggin, State of Maine, being more particularly bounded and described as follows:

Beginning at a 5/8” rebar with cap #2433 on the easterly line of land now or formerly of Auburn Wales LLC (Grantor) as described in a deed recorded at the Androscoggin County Registry of Deeds in Book 9277, Page 40, and on the westerly side of land now or formerly of Bangor Savings Bank, as described in a deed recorded at the said Registry of Deeds in Book 9897, Page 194, said point being located N 00°03'20" E a distance of 63.78 feet from a 1 inch iron pin found on the northwesterly sideline of Troy Street, at the southeast corner of said Grantor, and the southwest corner of said Bangor Savings Bank;

thence N 24°45'15" W through land of the Grantor, a distance of 202.03 feet to a 5/8 inch rebar with cap #2433 set at land of said Bangor Savings Bank ;

thence S 54°35'27" E along land of said Bangor Savings Bank, a distance of 103.94 feet to a 5/8 inch rebar with cap #2433 set ;

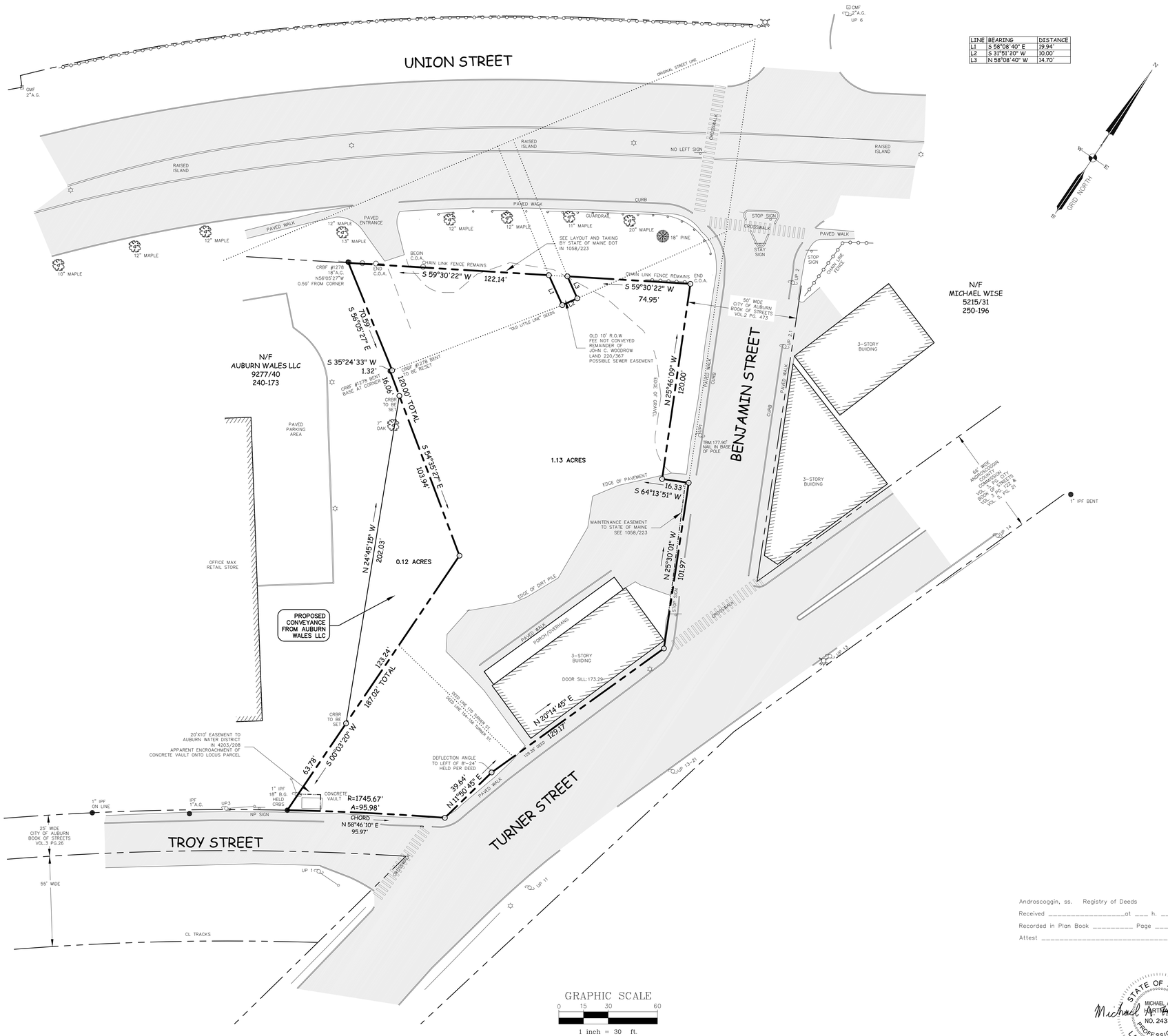
thence S 00°03'20" W along land of said Bangor Savings Bank, a distance of 123.24 feet to the point of beginning.

The above described parcel contains 0.12 acres.

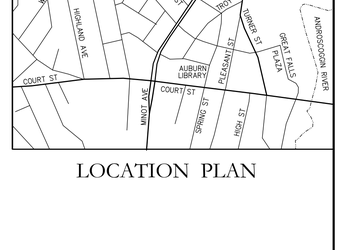
All bearings noted are referenced to NAD83 Maine State Plane West Zone Grid North.

Meaning and intending to convey a portion of the premises conveyed to Auburn Wales LLC by a deed from JTS Management, LLC dated December 5, 2015, recorded at the said Registry of Deeds in Book 9277, Page 40.

The above description is based on a boundary sketch by Jones Associates Inc., entitled “Proposed Conveyance Sketch of Portion of Tax Map 240 Lot 173” Bangor Savings Bank, 170 Turner Street, Auburn, Maine, dated September 27, 2018, revised October 1, 2018.



LINE	BEARING	DISTANCE
L1	S 58°08'40" E	19.94'
L2	S 31°51'20" W	10.00'
L3	N 58°08'40" W	14.70'



LOCATION PLAN

NOTES:

1. THIS PLAN BASED ON PLAN REFERENCE A. BELOW.
2. RECORD OWNER: BANGOR SAVINGS BANK
3. PARCEL DEED REFERENCE: SEE DEED FROM DOUBLE EAGLE PROPERTIES, LLC TO BANGOR SAVINGS BANK DATED JULY 31, 2018, RECORDED AT THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS IN BOOK 9897, PAGE 194.
4. ALL BOOK AND PAGE REFERENCES REFER TO THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS.
5. PARCEL TAX MAP REFERENCE: CITY OF AUBURN, MAP 250, LOT 195
6. ALL BEARINGS ARE REFERENCED TO NAD83 MAINE STATE PLANE WEST ZONE GRID NORTH.
7. ELEVATIONS SHOWN ARE TIED TO NAVD88 BY NETWORK RTK GPS, STATE OF MAINE VIRTUAL REFERENCE STATION UTILIZED.
8. THE LOCATION, SIZE, AND DEPTH OF UNDERGROUND UTILITY LINES, TANKS, AND OR STRUCTURES NOT DETERMINED BY THIS SURVEY.
9. PLAN REFERENCES:

A.) PLAN OF LAND OF DOUBLE EAGLE PROPERTIES LLC, 170 TURNER STREET, AUBURN, MAINE PREPARED FOR CJ DEVELOPERS, INC. PREPARED BY JONES ASSOCIATES INC DATED MARCH 19, 2018, LAST REVISED 8/2/2018.

LEGEND

- SUBJECT BOUNDARY LINE
- ABUTTER OR RIGHT OF WAY LINE
- W — W — APPROX. WATER LINE PER CITY SKETCH
- G — GAS LINE
- OE — OVERHEAD ELECTRIC
- STORMWATER DRAIN PIPE (SD)
- SEWER MAIN PIPE (S)
- N/F — NOW OR FORMERLY
- 000/000 — DEED BOOK PAGE REFERENCE
- 000-000 — TAX MAP AND LOT NUMBER
- DECIDUOUS / CONIFEROUS TREE
- ⊡ MF — GRANITE MONUMENT FOUND
- ● IPF/IRF/RBF — IRON PIPE/ROD/REBAR FOUND
- ○ CRBS — 5/8" REBAR W/ CAP #2433 SET (UNLESS NOTED OTHERWISE)
- UTILITY POLE
- Ⓢ SEWER MANHOLE
- Ⓓ DRAIN MANHOLE
- CATCH BASINS
- Ⓣ TELEPHONE MANHOLE

REVISIONS			
NO.	DATE	DESCRIPTION	BY
01	10/1/2018	UPDATED LOCUS DEED	MH

Androscoggin, ss. Registry of Deeds

Received _____at ___ h. __ m. __ M

Recorded in Plan Book _____ Page _____

Attest _____ Registrar

STATE OF MAINE — MICHAEL A. HARTMAN — NO. 2433 — PROFESSIONAL LAND SURVEYOR

PLAN OF LAND OF

BANGOR SAVINGS BANK

170 TURNER STREET

AUBURN, MAINE

PREPARED FOR:

C J DEVELOPERS, INC.
35 PRIMROSE LANE
FREEPORT, MAINE 04032

PREPARED BY:

JONES ASSOCIATES INC.
Foresters, Surveyors And Environmental Consultants
280 POLAND SPRING ROAD, AUBURN, MAINE 04210
(207) 241-0235

RECORD OWNERS:
BANGOR SAVINGS BANK
19 MAINE AVENUE
BANGOR, MAINE 04401

PLAN DATE: SEPTEMBER 27, 2018

SCALE: 1"=30'

PROJ. #: 18-013AU

ATTACHMENT B

FINANCIAL AND TECHNICAL CAPACITY

SME
SEVEE & MAHER
ENGINEERS

FINANCIAL CAPACITY

The Applicant is in the process of securing financing for the project and will provide a letter of Financial Capacity to the City prior to the start of construction. The Applicant requests that the letter be a condition of approval for the project.

TECHNICAL CAPACITY

A. PRIOR EXPERIENCE

The Bangor Savings Bank has contracted with experienced, qualified firms to manage the facility's design and construction. The following is a list of the firms and the roles for this project.

Construction Manager:

Landry French Construction
160 Pleasent Hill Road
Scarborough, ME 04074
Website: http://landryfrenchconstruction.com/

Building Architect:

TAC Architectural Group
40 Summer St, Suite 4
Bangor, ME 04401
Website: https://tac-arch.com/

Civil & Geotechnical Engineer:

Sevee & Maher Engineers, Inc.
4 Blanchard Road
Cumberland Center, ME 04021
Website: www.smemaine.com

Landscape Architect:

Land Design Solutions
160 Longwoods Road'
Cumberland, ME 04021

SME
SEVEE & MAHER
ENGINEERS

ATTACHMENT C

STORMWATER MANAGEMENT REPORT

SME
SEVEE & MAHER
ENGINEERS

STORMWATER MANAGEMENT REPORT

Prepared for

BANGOR SAVINGS BANK
AUBURN BRANCH/OFFICE BUILDING
AUBURN, MAINE

November 2018

SME
Sevee & Maher Engineers, Inc.

ENVIRONMENTAL • CIVIL • GEOTECHNICAL • WATER • COMPLIANCE

4 Blanchard Road, PO Box 85A, Cumberland Center, ME 04021 • Phone 207.829.5016 • Fax 207.829.5692 • www.smemaine.com

TABLE OF CONTENTS

LIST OF APPENDICES

LIST OF TABLES

STORMWATER MANAGEMENT REPORT
BANGOR SAVINGS BANK
AUBURN, MAINE

1.0 INTRODUCTION

This stormwater management report has been prepared by Sevee & Maher Engineers, Inc. (SME), to assess stormwater management design for proposed site development located at 170 Turner Street in Auburn, Maine. Stormwater design is based on the water quality and quantity objectives identified in Chapter 500 of the Maine Department of Environmental Protection (MEDEP) Stormwater Management Law and the City of Auburn Code of Ordinance.

2.0 PROJECT DESCRIPTION

Bangor Savings Bank proposes to develop a new 1-story, 5,600 square-foot (sf) bank branch and office building at 170 Turner Street in Auburn. The property fronts to Turner Street on the southeast, Troy Street on the south, Benjamin Street on the northeast and Union Street to the northwest. The property is currently developed with An abandoned 4,000-sf, 3-story mixed used office and apartment building. The existing building will be removed prior to construction of the new bank branch and office building.

Proposed construction will include a single story 5,600 sf building with a 3-lane drive thru and a 33-space parking lot. The parking area for the bank branch and office building will have two entrances. The main entrance for the branch will be from Troy Street and the second entrance will be from Benjamin Street. An existing 18-inch sanitary sewer and 60-inch storm drain currently cross the property under the proposed building site and will have to be relocated. Additional site improvements include public water and sewer services, a closed storm drain system, underground electric and communications lines, site lighting, a retaining wall, and landscaping.

The project will include a property transfer between Auburn Wales, LLC (Office Max) and Bangor Savings Bank (BSB) for a 0.1-acre (ac) triangular portion of the Office Max property to

the BSB parcel. This transfer will expand the BSB property to facilitate utility reconstruction, site circulation, additional parking, retaining wall construction, and landscaping.

Existing impervious area on the parcel is 31,816 sf. The existing developed area is 49,223 sf. Proposed site improvements will include approximately 33,313 sf of impervious area and 54,644 sf of developed area after the property transfer, resulting in a net increase in impervious area on the expanded property of approximately 1,497 sf. This project will result in less than one acre of total impervious surface and less than 5 acres of new developed area and has been designed to meet Basic Standards as outlined in Maine Department of Environmental Protection (MEDEP) Chapter 500. The project will not require a MEDEP Stormwater Management Permit.

3.0 SITE WATERSHED

On-site soils were identified using the Natural Resources Conservation Service (NRCS) online soil information for Androscoggin and Sagadahoc Counties, Maine. A copy of the custom Soil Resource Report is included in Appendix A. The soil within the work area consists of made land (Md) with slopes ranging from less than 1 percent to 35 percent. On-site soils are classified as "moderately well drained" and designated as hydrologic soil group (HSG) C for this investigation.

The project site is located in downtown Auburn across from Great Falls Plaza. The property fronts to Turner Street on the southeast, Troy Street on the south, Benjamin Street on the northeast and Union Street to the northwest. Boundary and topographic data for the attached project plan set was obtained from a survey completed by Jones Associates (Jones), dated August 2, 2018.

Under existing conditions, the site generally drains from northwest to southeast. Stormwater runoff is collected by a series of catch basins and a culvert that convey stormwater runoff off site to the City's storm drain system.

Stormwater flows were evaluated using two drainage subcatchments and a single Analysis Point (AP). The northern subcatchment (SC-1B) drains to an existing 12-inch culvert connected

to DMH-1, a drain manhole in the north central portion of the property that connects to an existing 60-inch municipal storm drain pipe crossing the parcel. Surface runoff in the southern drainage subcatchment (SC-1A) flows to an existing catch basin at the eastern end of the parcel that connects to DMH-2, an existing drain manhole in the south-central portion of the property connected to the existing 60-inch municipal storm drain pipe crossing the parcel. Runoff is analyzed at Analysis Point 1 (AP-1), a catch basin at the southwest corner of Troy Street and Turner Street. The existing catch basin as AP-1 is connected to the 60-inch municipal storm drain pipe that crosses the project site. AP-1 was established to estimate the combined flows from individual subcatchments and assess impact to the municipal storm drain system.

Under developed conditions, site drainage will be similar to existing conditions. Surface grading and curbing will be used to direct stormwater runoff to a series of new catch basins connected to DMH-201 and DMH-202, two replacement structures installed as part of the required storm drain relocation. These new drain manholes will connect to the existing 60-inch diameter storm drain crossing the property and discharge to existing DMH-2 and the existing municipal storm drain system in Troy Street. Portions of the existing 60-inch drainage pipe and 12-inch culvert will be bypassed and abandoned, and a new pipe will be installed to convey runoff to the municipal system. Runoff previously collected by the 12-inch storm drain will be routed to CB-105 and DMH-201.

Pre- and post-development stormwater management plans identify the on-site drainage patterns before and after development. Figures D-100 and D-101 are included in Appendix E of this report for reference. Appendices B and C provide pre- and post-development calculations using TR-20 methodologies prepared with the HydroCAD Version 10.0 computer stormwater modeling system by Applied Microcomputer Systems of Chocorua, New Hampshire.

4.0 STORMWATER QUALITY ANALYSIS

As previously outlined, stormwater treatment will not be required for this project based on Maine Department of Environmental Protection (MEDEP) Chapter 500 standards. Based on the size of the project and the scope of proposed development, we do not anticipate redevelopment of the parcel will adversely impact the quality of stormwater runoff from the property. The site is

located near the base of a large, urban watershed and currently discharges directly to a municipal storm drain system. New construction will include clearing the site, replacement of gravel parking surfaces with pavement, installation of landscaping, and construction of a closed stormwater management system. This project is designed to meet Basic Standards outlined in Maine Department of Environmental Protection (MEDEP) Chapter 500, and construction will adhere to MEDEP Best Management Practices (BMP's) for erosion and sedimentation control.

5.0 STORMWATER QUANTITY ANALYSIS

Stormwater quantity is managed by minimizing the amount of impervious area on the site and distributing the flow of stormwater runoff to the maximum extent practicable. This was accomplished grading the site to efficiently convey surface runoff to a series of new catch basins and storm drain piping connected to updated portions of the existing storm drain crossing the site. Table 1 demonstrates peak flow rates from the subcatchment areas to the AP-1 shown on Figures D-100 and D-101.

TABLE 1

STORMWATER QUANTITY SUMMARY (CFS)

	2-Year Storm		10-Year Storm		25-Year Storm	
	Existing	**Proposed**	**Existing**	**Proposed**	**Existing**	**Proposed**
AP-1	2.58	4.01	4.76	6.65	6.70	8.93

Our model shows increase in the peak flows for the redeveloped parcel, ranging from a 1.43 cfs increase for the 2 -year storm to a 2.23 cfs increase for the 25-year storm at AP-1. This was anticipated based on the increased impervious area on the property with the proposed development and was reviewed with City staff at the onset of the project. Based on the location of the property in the watershed and the existing pipe size, the City determined the municipal stormwater management system has adequate capacity to support the proposed increases in stormwater runoff from the property. Modeling assumptions and stormwater calculations are outlined in the HydroCAD reports included in Appendices B and C.

6.0 SUMMARY

This project will not have an adverse impact to the abutting properties or downstream drainage structures. The project discharges to an existing municipal storm drain system, located near the bottom of a large, urban watershed. Based on review with City staff, anticipated increases stormwater runoff from the property will not exceed the capacity the existing municipal storm drain system.

APPENDIX A

NRCS SOIL REPORT

SME
SEVEE & MAHER
ENGINEERS

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Androscoggin and Sagadahoc Counties, Maine

April 4, 2018

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

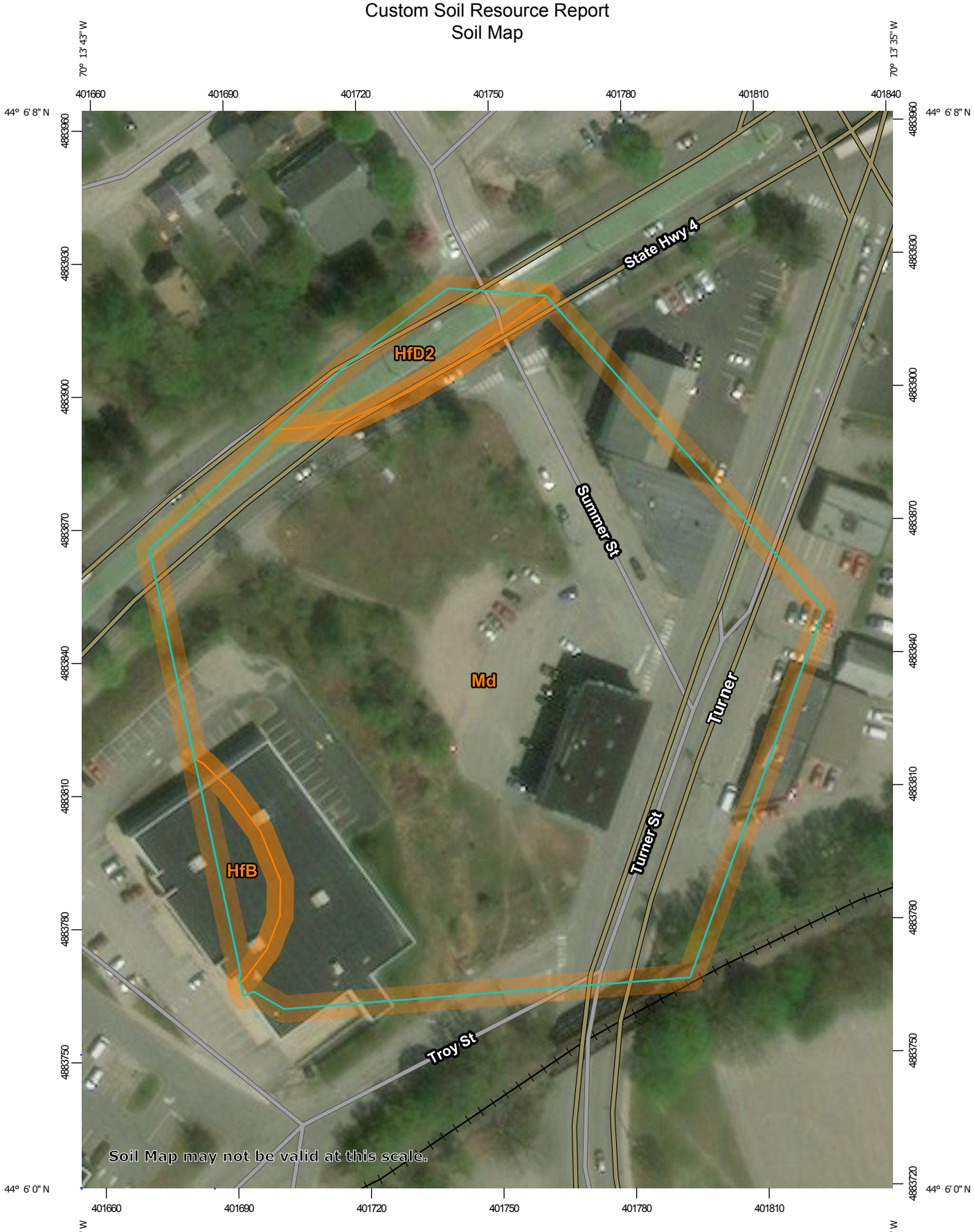
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:1,180 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 15 30 60 90

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 18, Sep 14, 2017

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

MAP LEGEND

MAP INFORMATION

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
HfB	Hartland very fine sandy loam, 2 to 8 percent slopes	0.1	2.5%
HfD2	Hartland very fine sandy loam, 15 to 25 percent slopes, eroded	0.2	3.8%
Md	Made land, loamy materials	4.1	93.6%
Totals for Area of Interest		**4.4**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or

landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Androscoggin and Sagadahoc Counties, Maine

HfB—Hartland very fine sandy loam, 2 to 8 percent slopes

Map Unit Composition

Hartland and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hartland

Setting

Landform: Lakebeds
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Coarse-silty glaciolacustrine deposits

Typical profile

H1 - 0 to 10 inches: very fine sandy loam
H2 - 10 to 19 inches: very fine sandy loam
H3 - 19 to 28 inches: very fine sandy loam
H4 - 28 to 65 inches: very fine sandy loam

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 11.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Hydric soil rating: No

HfD2—Hartland very fine sandy loam, 15 to 25 percent slopes, eroded

Map Unit Composition

Hartland and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hartland

Setting

Landform: Lakebeds
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread

Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Coarse-silty glaciolacustrine deposits

Typical profile

H1 - 0 to 10 inches: very fine sandy loam
H2 - 10 to 19 inches: very fine sandy loam
H3 - 19 to 28 inches: very fine sandy loam
H4 - 28 to 65 inches: very fine sandy loam

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 11.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Hydric soil rating: No

Md—Made land, loamy materials

Map Unit Composition

Made land: 91 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Made Land

Typical profile

H1 - 0 to 60 inches: very gravelly sandy loam

Properties and qualities

Slope: 0 to 35 percent
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to very high (0.06 to 20.00 in/hr)
Depth to water table: About 24 to 72 inches
Available water storage in profile: Moderate (about 6.6 inches)

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

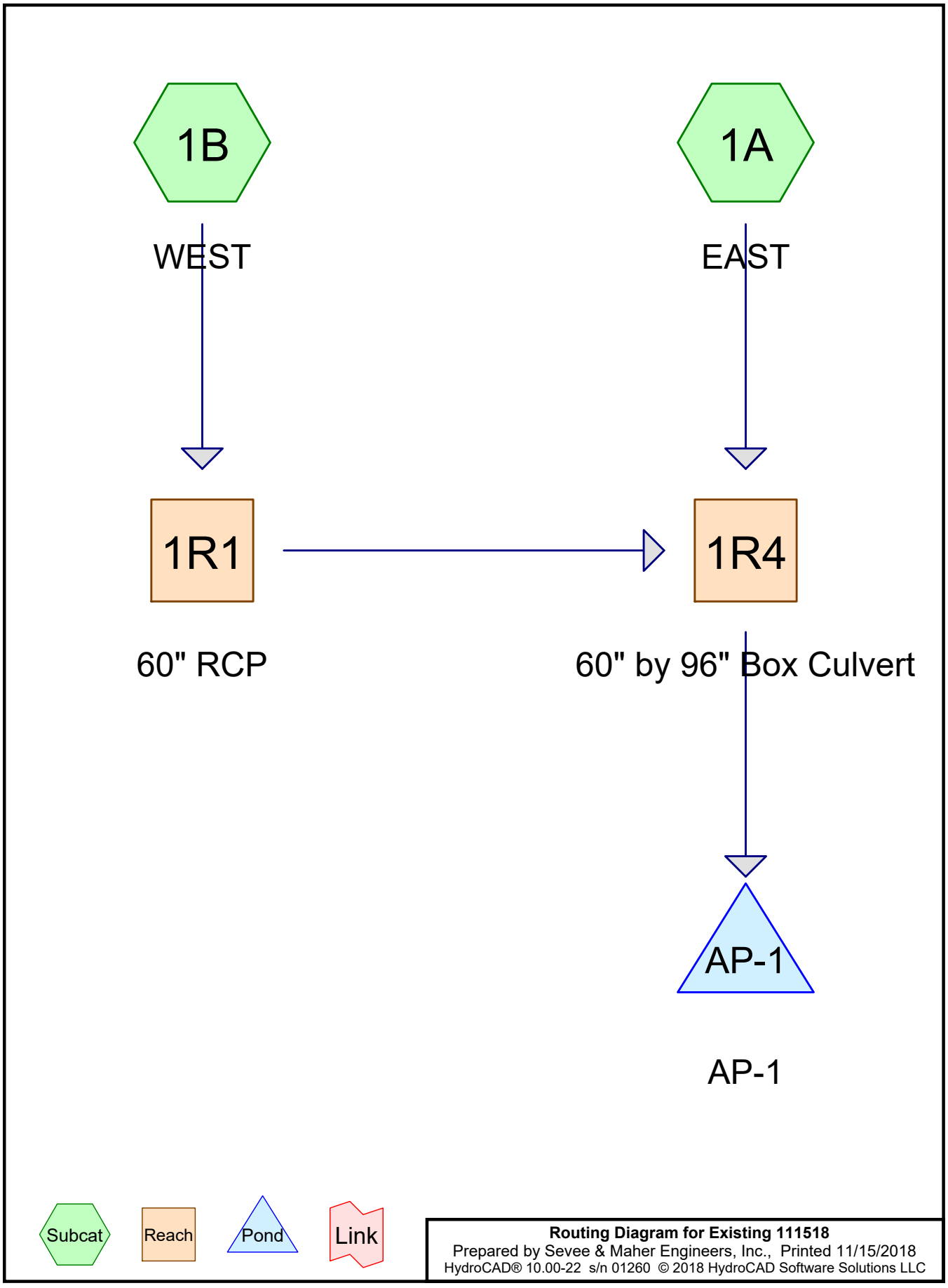
United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

APPENDIX B

PRE-DEVELOPMENT HYDROCAD CALCULATIONS

SME
SEVEE & MAHER
ENGINEERS



Routing Diagram for Existing 111518
Prepared by Sevee & Maher Engineers, Inc., Printed 11/15/2018

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: EAST Runoff Area=70,337 sf 40.77% Impervious Runoff Depth>1.34"
Flow Length=310' Tc=8.4 min CN=83 Runoff=2.47 cfs 0.180 af

Subcatchment 1B: WEST Runoff Area=27,712 sf 3.75% Impervious Runoff Depth>0.78"
Flow Length=376' Tc=7.9 min CN=73 Runoff=0.54 cfs 0.041 af

Reach 1R1: 60" RCP Avg. Flow Depth=0.13' Max Vel=3.70 fps Inflow=0.54 cfs 0.041 af
60.0" Round Pipe n=0.012 L=200.6' S=0.0219 '/' Capacity=417.86 cfs Outflow=0.52 cfs 0.041 af

Reach 1R4: 60" by 96" Box Culvert Avg. Flow Depth=0.27' Max Vel=2.21 fps Inflow=2.95 cfs 0.221 af
60.0" x 96.0" Box Pipe n=0.025 L=132.6' S=0.0090 '/' Capacity=301.43 cfs Outflow=2.89 cfs 0.221 af

Pond AP-1: AP-1 Inflow=2.89 cfs 0.221 af
Primary=2.89 cfs 0.221 af

Summary for Subcatchment 1A: EAST

Runoff = 2.47 cfs @ 12.12 hrs, Volume= 0.180 af, Depth> 1.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Storm Rainfall=3.00"

Area (sf)	CN	Description
6,861	98	Paved parking, HSG C
16,872	98	Paved roads w/curbs & sewers, HSG C
4,946	98	Roofs, HSG C
41,224	72	Woods/grass comb., Good, HSG C
434	65	Brush, Good, HSG C
70,337	83	Weighted Average
41,658		59.23% Pervious Area
28,679		40.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	100	0.0360	0.23		**Sheet Flow,** Range n= 0.130 P2= 3.00"
1.2	181	0.0292	2.56		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.1	29	0.0169	5.32	1.86	**Pipe Channel,** 8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.011 Concrete pipe, straight & clean
8.4	310	Total			

Summary for Subcatchment 1B: WEST

Runoff = 0.54 cfs @ 12.13 hrs, Volume= 0.041 af, Depth> 0.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Storm Rainfall=3.00"

Area (sf)	CN	Description
469	98	Paved parking, HSG C
569	98	Paved roads w/curbs & sewers, HSG C
26,674	72	Woods/grass comb., Good, HSG C
27,712	73	Weighted Average
26,674		96.25% Pervious Area
1,038		3.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	100	0.0460	0.26		**Sheet Flow,** Range n= 0.130 P2= 3.00"
0.8	142	0.0345	2.79		**Shallow Concentrated Flow, Shallow Concentatied flow** Grassed Waterway Kv= 15.0 fps
0.6	134	0.0055	3.64	2.86	**Pipe Channel, 12" Pipe** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Concrete pipe, finished
7.9	376	Total			

Summary for Reach 1R1: 60" RCP

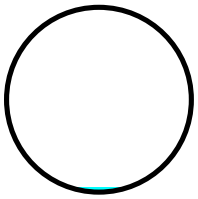
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 0.636 ac, 3.75% Impervious, Inflow Depth > 0.78" for 2-yr Storm event
Inflow = 0.54 cfs @ 12.13 hrs, Volume= 0.041 af
Outflow = 0.52 cfs @ 12.16 hrs, Volume= 0.041 af, Atten= 2%, Lag= 1.9 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.70 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 2.01 fps, Avg. Travel Time= 1.7 min

Peak Storage= 29 cf @ 12.14 hrs
Average Depth at Peak Storage= 0.13'
Bank-Full Depth= 5.00' Flow Area= 19.6 sf, Capacity= 417.86 cfs

60.0" Round Pipe
n= 0.012 Concrete pipe, finished
Length= 200.6' Slope= 0.0219 '/'
Inlet Invert= 146.70', Outlet Invert= 142.30'



Summary for Reach 1R4: 60" by 96" Box Culvert

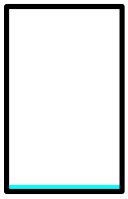
[52] Hint: Inlet/Outlet conditions not evaluated
[62] Hint: Exceeded Reach 1R1 OUTLET depth by 0.14' @ 12.15 hrs

Inflow Area = 2.251 ac, 30.31% Impervious, Inflow Depth > 1.18" for 2-yr Storm event
Inflow = 2.95 cfs @ 12.13 hrs, Volume= 0.221 af
Outflow = 2.89 cfs @ 12.16 hrs, Volume= 0.221 af, Atten= 2%, Lag= 1.8 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.21 fps, Min. Travel Time= 1.0 min
Avg. Velocity = 1.08 fps, Avg. Travel Time= 2.0 min

Peak Storage= 178 cf @ 12.14 hrs
Average Depth at Peak Storage= 0.27'
Bank-Full Depth= 8.00' Flow Area= 40.0 sf, Capacity= 301.43 cfs

60.0" W x 96.0" H Box Pipe
n= 0.025 Rubble masonry, cemented
Length= 132.6' Slope= 0.0090 '/'
Inlet Invert= 142.30', Outlet Invert= 141.10'



Summary for Pond AP-1: AP-1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.251 ac, 30.31% Impervious, Inflow Depth > 1.18" for 2-yr Storm event
Inflow = 2.89 cfs @ 12.16 hrs, Volume= 0.221 af
Primary = 2.89 cfs @ 12.16 hrs, Volume= 0.221 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: EAST Runoff Area=70,337 sf 40.77% Impervious Runoff Depth>2.38"
Flow Length=310' Tc=8.4 min CN=83 Runoff=4.38 cfs 0.320 af

Subcatchment 1B: WEST Runoff Area=27,712 sf 3.75% Impervious Runoff Depth>1.61"
Flow Length=376' Tc=7.9 min CN=73 Runoff=1.18 cfs 0.085 af

Reach 1R1: 60" RCP Avg. Flow Depth=0.19' Max Vel=4.63 fps Inflow=1.18 cfs 0.085 af
60.0" Round Pipe n=0.012 L=200.6' S=0.0219 '/' Capacity=417.86 cfs Outflow=1.14 cfs 0.085 af

Reach 1R4: 60" by 96" Box Culvert Avg. Flow Depth=0.39' Max Vel=2.76 fps Inflow=5.49 cfs 0.406 af
60.0" x 96.0" Box Pipe n=0.025 L=132.6' S=0.0090 '/' Capacity=301.43 cfs Outflow=5.35 cfs 0.405 af

Pond AP-1: AP-1 Inflow=5.35 cfs 0.405 af
Primary=5.35 cfs 0.405 af

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: EAST Runoff Area=70,337 sf 40.77% Impervious Runoff Depth>3.32"
Flow Length=310' Tc=8.4 min CN=83 Runoff=6.04 cfs 0.447 af

Subcatchment 1B: WEST Runoff Area=27,712 sf 3.75% Impervious Runoff Depth>2.41"
Flow Length=376' Tc=7.9 min CN=73 Runoff=1.78 cfs 0.128 af

Reach 1R1: 60" RCP Avg. Flow Depth=0.23' Max Vel=5.24 fps Inflow=1.78 cfs 0.128 af
60.0" Round Pipe n=0.012 L=200.6' S=0.0219 '/' Capacity=417.86 cfs Outflow=1.73 cfs 0.128 af

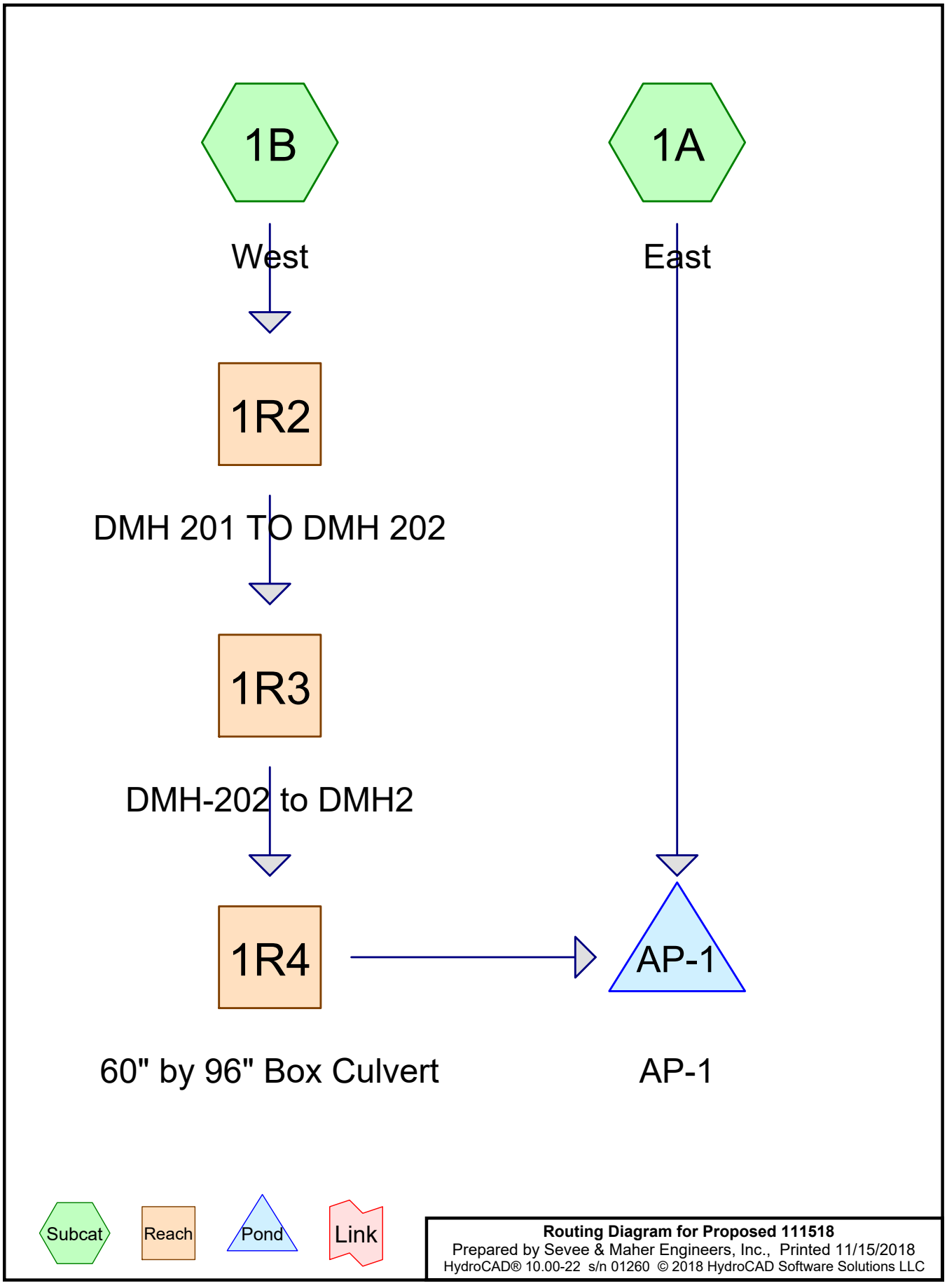
Reach 1R4: 60" by 96" Box Culvert Avg. Flow Depth=0.49' Max Vel=3.12 fps Inflow=7.75 cfs 0.574 af
60.0" x 96.0" Box Pipe n=0.025 L=132.6' S=0.0090 '/' Capacity=301.43 cfs Outflow=7.56 cfs 0.574 af

Pond AP-1: AP-1 Inflow=7.56 cfs 0.574 af
Primary=7.56 cfs 0.574 af

APPENDIX C

POST-DEVELOPMENT HYDROCAD CALCULATIONS

SME
SEVEE & MAHER
ENGINEERS



Routing Diagram for Proposed 111518
Prepared by Sevee & Maher Engineers, Inc., Printed 11/15/2018

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: East Runoff Area=74,525 sf 66.00% Impervious Runoff Depth>1.77"
Flow Length=308' Tc=20.6 min CN=89 Runoff=2.52 cfs 0.253 af

Subcatchment 1B: West Runoff Area=23,524 sf 4.94% Impervious Runoff Depth>0.78"
Flow Length=280' Tc=7.7 min CN=73 Runoff=0.46 cfs 0.035 af

Reach 1R2: DMH 201 TO DMH 202 Avg. Flow Depth=0.12' Max Vel=3.56 fps Inflow=0.46 cfs 0.035 af
60.0" Round Pipe n=0.011 L=240.1' S=0.0187 '/' Capacity=421.38 cfs Outflow=0.45 cfs 0.035 af

Reach 1R3: DMH-202 to DMH2 Avg. Flow Depth=0.22' Max Vel=1.40 fps Inflow=0.45 cfs 0.035 af
60.0" Round Pipe n=0.013 L=154.0' S=0.0019 '/' Capacity=114.95 cfs Outflow=0.43 cfs 0.035 af

Reach 1R4: 60" by 96" Box Culvert Avg. Flow Depth=0.08' Max Vel=1.03 fps Inflow=0.43 cfs 0.035 af
60.0" x 96.0" Box Pipe n=0.025 L=132.6' S=0.0090 '/' Capacity=301.43 cfs Outflow=0.40 cfs 0.035 af

Pond AP-1: AP-1 Inflow=2.92 cfs 0.288 af
Primary=2.92 cfs 0.288 af

Summary for Subcatchment 1A: East

Runoff = 2.52 cfs @ 12.28 hrs, Volume= 0.253 af, Depth> 1.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Storm Rainfall=3.00"

Area (sf)	CN	Description
16,163	98	Paved roads w/curbs & sewers, HSG C
7,348	98	Roofs, HSG C
25,672	98	Paved parking, HSG C
25,342	72	Woods/grass comb., Good, HSG C
74,525	89	Weighted Average
25,342		34.00% Pervious Area
49,183		66.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	23	0.0391	1.30		**Sheet Flow, Sheet Flow pavement** Smooth surfaces n= 0.011 P2= 3.00"
18.7	77	0.0065	0.07		**Sheet Flow, Sheet flow Grass** Grass: Dense n= 0.240 P2= 3.00"
1.2	167	0.0203	2.29		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.4	41	0.0071	1.71		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
20.6	308	Total			

Summary for Subcatchment 1B: West

Runoff = 0.46 cfs @ 12.12 hrs, Volume= 0.035 af, Depth> 0.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Storm Rainfall=3.00"

Area (sf)	CN	Description
22,361	72	Woods/grass comb., Good, HSG C
1,163	98	Paved roads w/curbs & sewers, HSG C
23,524	73	Weighted Average
22,361		95.06% Pervious Area
1,163		4.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	100	0.0420	0.25		**Sheet Flow,** Range n= 0.130 P2= 3.00"
0.8	102	0.0225	2.25		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.2	78	0.0100	5.36	4.21	**Pipe Channel, 12" pipe** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.011 Concrete pipe, straight & clean

7.7 280 Total

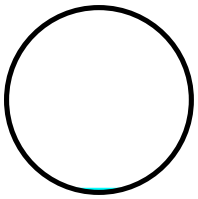
Summary for Reach 1R2: DMH 201 TO DMH 202

Inflow Area = 0.540 ac, 4.94% Impervious, Inflow Depth > 0.78" for 2-yr Storm event
Inflow = 0.46 cfs @ 12.12 hrs, Volume= 0.035 af
Outflow = 0.45 cfs @ 12.16 hrs, Volume= 0.035 af, Atten= 4%, Lag= 2.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.56 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 2.00 fps, Avg. Travel Time= 2.0 min

Peak Storage= 31 cf @ 12.14 hrs
Average Depth at Peak Storage= 0.12'
Bank-Full Depth= 5.00' Flow Area= 19.6 sf, Capacity= 421.38 cfs

60.0" Round Pipe
n= 0.011 Concrete pipe, straight & clean
Length= 240.1' Slope= 0.0187 '/'
Inlet Invert= 147.20', Outlet Invert= 142.70'



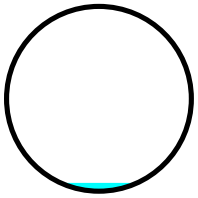
Summary for Reach 1R3: DMH-202 to DMH2

Inflow Area = 0.540 ac, 4.94% Impervious, Inflow Depth > 0.78" for 2-yr Storm event
Inflow = 0.45 cfs @ 12.16 hrs, Volume= 0.035 af
Outflow = 0.43 cfs @ 12.22 hrs, Volume= 0.035 af, Atten= 4%, Lag= 3.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.40 fps, Min. Travel Time= 1.8 min
Avg. Velocity = 0.67 fps, Avg. Travel Time= 3.9 min

Peak Storage= 47 cf @ 12.19 hrs
Average Depth at Peak Storage= 0.22'
Bank-Full Depth= 5.00' Flow Area= 19.6 sf, Capacity= 114.95 cfs

60.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 154.0' Slope= 0.0019 '/'
Inlet Invert= 142.30', Outlet Invert= 142.00'



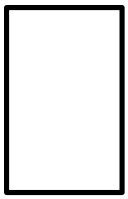
Summary for Reach 1R4: 60" by 96" Box Culvert

Inflow Area = 0.540 ac, 4.94% Impervious, Inflow Depth > 0.77" for 2-yr Storm event
Inflow = 0.43 cfs @ 12.22 hrs, Volume= 0.035 af
Outflow = 0.40 cfs @ 12.30 hrs, Volume= 0.035 af, Atten= 6%, Lag= 4.8 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.03 fps, Min. Travel Time= 2.1 min
Avg. Velocity = 1.03 fps, Avg. Travel Time= 2.1 min

Peak Storage= 53 cf @ 12.26 hrs
Average Depth at Peak Storage= 0.08'
Bank-Full Depth= 8.00' Flow Area= 40.0 sf, Capacity= 301.43 cfs

60.0" W x 96.0" H Box Pipe
n= 0.025 Rubble masonry, cemented
Length= 132.6' Slope= 0.0090 '/'
Inlet Invert= 142.30', Outlet Invert= 141.10'



Summary for Pond AP-1: AP-1

Inflow Area = 2.251 ac, 51.35% Impervious, Inflow Depth > 1.53" for 2-yr Storm event
Inflow = 2.92 cfs @ 12.29 hrs, Volume= 0.288 af
Primary = 2.92 cfs @ 12.29 hrs, Volume= 0.288 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: East Runoff Area=74,525 sf 66.00% Impervious Runoff Depth>2.92"
Flow Length=308' Tc=20.6 min CN=89 Runoff=4.07 cfs 0.416 af

Subcatchment 1B: West Runoff Area=23,524 sf 4.94% Impervious Runoff Depth>1.61"
Flow Length=280' Tc=7.7 min CN=73 Runoff=1.01 cfs 0.072 af

Reach 1R2: DMH 201 TO DMH 202 Avg. Flow Depth=0.18' Max Vel=4.46 fps Inflow=1.01 cfs 0.072 af
60.0" Round Pipe n=0.011 L=240.1' S=0.0187 '/' Capacity=421.38 cfs Outflow=0.97 cfs 0.072 af

Reach 1R3: DMH-202 to DMH2 Avg. Flow Depth=0.32' Max Vel=1.78 fps Inflow=0.97 cfs 0.072 af
60.0" Round Pipe n=0.013 L=154.0' S=0.0019 '/' Capacity=114.95 cfs Outflow=0.93 cfs 0.072 af

Reach 1R4: 60" by 96" Box Culvert Avg. Flow Depth=0.13' Max Vel=1.45 fps Inflow=0.93 cfs 0.072 af
60.0" x 96.0" Box Pipe n=0.025 L=132.6' S=0.0090 '/' Capacity=301.43 cfs Outflow=0.90 cfs 0.072 af

Pond AP-1: AP-1 Inflow=4.95 cfs 0.488 af
Primary=4.95 cfs 0.488 af

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: East Runoff Area=74,525 sf 66.00% Impervious Runoff Depth>3.91"
Flow Length=308' Tc=20.6 min CN=89 Runoff=5.39 cfs 0.558 af

Subcatchment 1B: West Runoff Area=23,524 sf 4.94% Impervious Runoff Depth>2.41"
Flow Length=280' Tc=7.7 min CN=73 Runoff=1.53 cfs 0.108 af

Reach 1R2: DMH 201 TO DMH 202 Avg. Flow Depth=0.22' Max Vel=5.02 fps Inflow=1.53 cfs 0.108 af
60.0" Round Pipe n=0.011 L=240.1' S=0.0187 '/' Capacity=421.38 cfs Outflow=1.47 cfs 0.108 af

Reach 1R3: DMH-202 to DMH2 Avg. Flow Depth=0.39' Max Vel=2.02 fps Inflow=1.47 cfs 0.108 af
60.0" Round Pipe n=0.013 L=154.0' S=0.0019 '/' Capacity=114.95 cfs Outflow=1.41 cfs 0.108 af

Reach 1R4: 60" by 96" Box Culvert Avg. Flow Depth=0.17' Max Vel=1.67 fps Inflow=1.41 cfs 0.108 af
60.0" x 96.0" Box Pipe n=0.025 L=132.6' S=0.0090 '/' Capacity=301.43 cfs Outflow=1.37 cfs 0.108 af

Pond AP-1: AP-1 Inflow=6.68 cfs 0.666 af
Primary=6.68 cfs 0.666 af

APPENDIX D

POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN

SME
SEVEE & MAHER
ENGINEERS

POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN

Prepared for

BANGOR SAVINGS BANK
AUBURN BRANCH/OFFICE BULDING
AUBURN, MAINE

November 2018

SME
SEVEE & MAHER
ENGINEERS

ENVIRONMENTAL • CIVIL • GEOTECHNICAL • WATER • COMPLIANCE

4 Blanchard Road, P.O. Box 85A, Cumberland, ME 04021 • Tel 207.829.5016 • Fax 207.829.5692 • smemaine.com

TABLE OF CONTENTS

LIST OF TABLES

POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN
BANGOR SAVINGS BANK
AUBURN, MAINE

1.0 SITE DESCRIPTION

Bangor Savings Bank proposes to develop a new 1-story, 5,600 square-foot (sf) bank branch and office building at 170 Turner Street in Auburn. The location of the property is outlined in Figure 1. The property fronts to Turner Street on the southeast, Troy Street on the south, Benjamin Street on the northeast and Union Street to the northwest. The property is currently developed with An abandoned 4,000-sf, 3-story mixed used office and apartment building. The existing building will be removed prior to construction of the new bank branch and office building.

Proposed construction will include a single story 5,600 sf building with a 3-lane drive thru and a 33-space parking lot. The parking area for the bank branch and office building will have two entrances. The main entrance for the branch will be from Troy Street and the second entrance will be from Benjamin Street. An existing 18-inch sanitary sewer and 60-inch storm drain currently cross the property under the proposed building site and will have to be relocated. Additional site improvements include public water and sewer services, a closed storm drain system, underground electric and communications lines, site lighting, a retaining wall, and landscaping.

The project will include a property transfer between Auburn Wales, LLC (Office Max) and Bangor Savings Bank (BSB) for a 0.1-acre (ac) triangular portion of the Office Max property to the BSB parcel. This transfer will expand the BSB property to facilitate utility reconstruction, site circulation, additional parking, retaining wall construction, and landscaping.

Existing impervious area on the parcel is 31,816 sf. The existing developed area is 49,223 sf. Proposed site improvements will include approximately 33,313 sf of impervious area and 54,644 sf of developed area after the property transfer, resulting in a net increase in impervious area on the expanded property of approximately 1,497 sf. This project will result in less than one acre of total impervious surface and less than 5 acres of new developed area and has been designed to

meet Basic Standards as outlined in Maine Department of Environmental Protection (MEDEP) Chapter 500. The project will not require a MEDEP Stormwater Management Permit.

2.0 FACILITY CONTACTS

Facility:	Bangor Savings Bank Auburn Branch and Offices 170 Turner Street Auburn, Maine 04210
Owner Representative:	Jason Donovan VP Facilities Manager Bangor Savings Bank Telephone: 207-262-4991
Maintenance Responsibility:	Jason Donovan Telephone: 207-262-4991
Consultant/Designer:	Sevee & Maher Engineers 4 Blanchard Road Cumberland, Maine 04021 Telephone: 207-829-5016 Daniel P. Diffin, P.E. dpd@smemaine.com

3.0 POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN OVERVIEW AND OBJECTIVES

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

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

3.1 Site Management Practices

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

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

3.2 Inspections

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

3.3 Routine Maintenance and Corrective Actions

Routine maintenance activities are designed to ensure proper function of the stormwater management system and minimize pollutant transport from the site. Routine maintenance activities must be completed according to the schedule (Table 1) provided in this plan. This schedule is the minimum amount of maintenance required; maintenance that is more frequent

may be needed when indicated by the inspections. Corrective actions (supplemental maintenance activities or repairs) should be completed within 7 days of the inspection identifying the problem. Each maintenance activity will be recorded on the attached Maintenance and Repair Log.

During construction, the Sitework Contractor shall be responsible for cleaning and maintaining stormwater components on the schedule outlined in Table 1.

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

Place removed sediments in an area of low erosion potential, either on-site or off-site, and seed with erosion control seed mix.

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

1. Open swales and ditches need to be inspected in the spring and fall, or after a major rainfall event, to assure that debris or sediments do not reduce the effectiveness of the system. Debris needs to be removed at that time. Sign of erosion or blockage shall be immediately repaired to assure a vigorous growth of vegetation for the stability of the structure and proper functioning. Swales that show newly formed channels or gullies will be immediately repaired by reseeding/sodding of bare spots, removal of trash, leaves and/or accumulated sediments, and the control of woody or other undesirable vegetation.
2. Vegetated ditches should be mowed at least once during the growing season. Larger brush or trees must not be allowed to become established in the channel. Any areas where the vegetation fails will be subject to erosion and should be repaired and revegetated.
3. If sediment in culverts or piped drainage systems exceeds 20 percent of the diameter of the pipe, it should be removed. This may be accomplished by hydraulic flushing or other mechanical means; however, care should be taken to

not flush the sediments into the wet pond or retention/detention pond as it will reduce the pond's capacity and hasten the time when it must be cleaned. Storm pipes should be inspected on an annual basis.

4. Paved surfaces shall be swept or vacuumed at least annually in the spring to remove winter sand and periodically during the year on an as-needed basis to minimize the transportation of sediment during rainfall events.
5. Pervious surfaces and pavement, whether asphalt, concrete or paving stones, have the potential to become impervious if not properly maintained. The following need to be planned for and be met:
    - Frequent inspections are performed during the first few months following construction. Then, the system is inspected routinely on an annual basis. Inspections should be made after significant storm events to check for surface ponding that could indicate failure due to clogging. Non-routine maintenance may require reconstruction of the surface treatment, and possibly the filter and reservoir layers, to relieve major clogging.
    - Prevent sedimentation due to the erosion of areas upgradient the pervious pavement structures.
    - Prevent vehicles with muddy wheels from accessing onto areas intended for pervious pavement.
    - Sweep, vacuum and/or pressure wash pavement twice annually at a minimum.
    - Limit salt use for deicing, and do not use sand.
    - Remove leaves and organic debris in the fall.
    - Measures should be taken to ensure that an area designed to be porous does not receive a future overlay of conventional non-porous paving.

3.4 City of Auburn Annual Inspection Requirements

Submit a certification of the following to the City before October 31 of each year on a form provided by the City certifying that the stormwater management structures have been adequately maintained and function as intended. The certification shall also describe any

maintenance completed or changes made to the stormwater structures on the property. The following are requirements of the annual certification:

1. The person or his or her designee shall, at least annually, inspect the stormwater management structures in accordance with all municipal and state inspections, cleaning and maintenance requirements, and any applicable post-construction stormwater maintenance plan provisions;

2. A qualified post-construction stormwater inspector shall, at least once every five years, inspect the stormwater management structures in accordance with all municipal and state inspection, cleaning and maintenance requirements, and any applicable post-construction stormwater maintenance plan provisions; and

3. If the stormwater management structures require maintenance and/or cleaning to function as intended, the person shall take corrective action(s) to address any deficiencies.

TABLE 1

SITE INSPECTION SCHEDULE

	Spring	Fall or Yearly	After a Major Storm
Vegetated Areas			
Inspect all slopes and embankments	X		X
Replant bare areas or areas with sparse growth	X		X
Armor areas with rill erosion with an appropriate lining or divert the erosive flows to on-site areas able to withstand concentrated flows.	X		X
Stormwater Channels			
Inspect ditches, swales and other open stormwater channels	X	X	X
Remove any obstructions and accumulated sediments or debris	X	X	
Control vegetated growth and woody vegetation		X	
Repair any erosion of the ditch lining		X	
Mow vegetated ditches		X	
Remove woody vegetation growing through riprap		X	
Repair any slumping side slopes		X	
Replace riprap where underlying filter fabric or underdrain gravel is showing or where stones have dislodged		X	
Culverts			
Remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit	X	X	X
Repair any erosion damage at the culvert's inlet and outlet	X	X	X
Driveways and Parking Surfaces			
Clear accumulated winter sand in parking lots and along roadways	X		
Grade road shoulders and remove excess sand either manually or by front-end loader	X		
Ensure that stormwater is not impeded by accumulations of material or false ditches in the shoulder	X		
Pervious Surface			
Sweep, vacuum and/or pressure wash porous surface	X	X	
Remove leaves and organic debris		X	

INSPECTION LOG

Date	Device/Area Inspected	Inspected By	Observations, Deficiencies & Recommended Corrective Actions

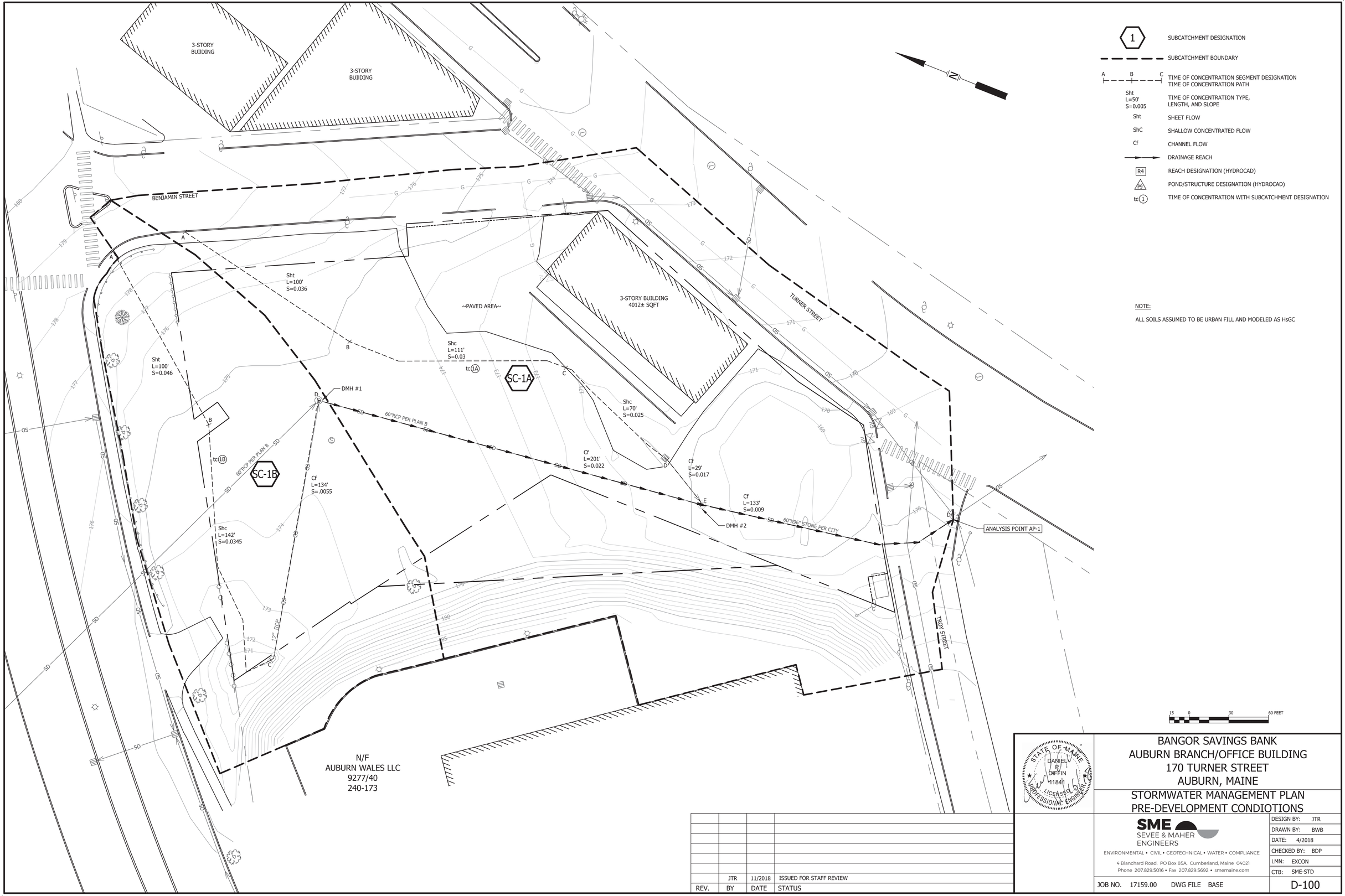
MAINTENANCE AND REPAIR LOG

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

APPENDIX E

PRE-, POST-DEVELOPMENT STORMWATER FIGURES

SME
SEVEE & MAHER
ENGINEERS



1 SUBCATCHMENT DESIGNATION

SUBCATCHMENT BOUNDARY

A B C TIME OF CONCENTRATION SEGMENT DESIGNATION
TIME OF CONCENTRATION PATH

Sht L=50' S=0.005 TIME OF CONCENTRATION TYPE, LENGTH, AND SLOPE

Sht SHEET FLOW

ShC SHALLOW CONCENTRATED FLOW

Cf CHANNEL FLOW

DRAINAGE REACH

R4 REACH DESIGNATION (HYDROCAD)

P9 POND/STRUCTURE DESIGNATION (HYDROCAD)

tc(1) TIME OF CONCENTRATION WITH SUBCATCHMENT DESIGNATION

NOTE:

ALL SOILS ASSUMED TO BE URBAN FILL AND MODELED AS HsGC

STATE OF MAINE
DANIEL B DIFFIN 11841
LICENSED PROFESSIONAL ENGINEER

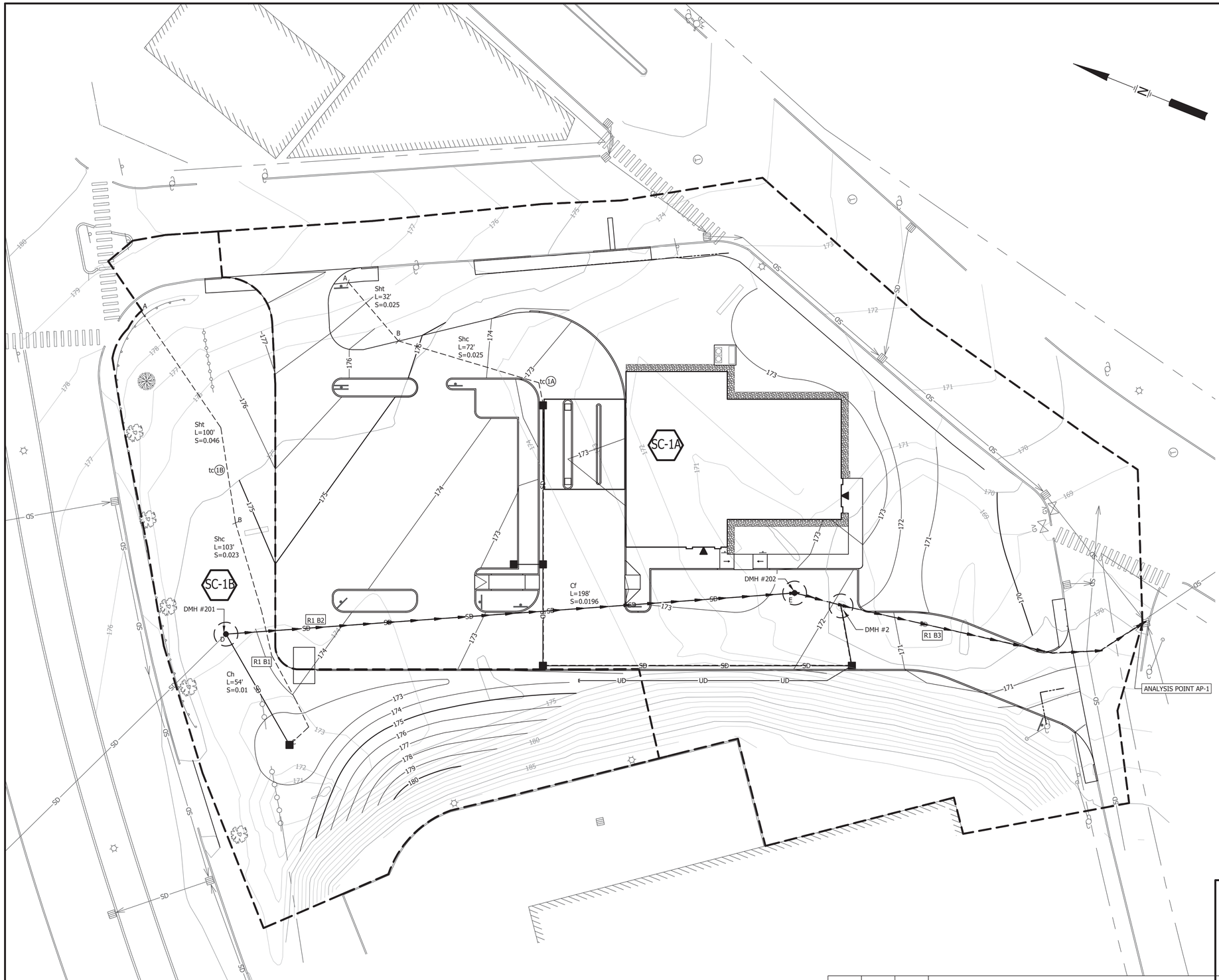
BANGOR SAVINGS BANK
AUBURN BRANCH/OFFICE BUILDING
170 TURNER STREET
AUBURN, MAINE

STORMWATER MANAGEMENT PLAN
PRE-DEVELOPMENT CONDIOTIONS

REV.	BY	DATE	STATUS
	JTR	11/2018	ISSUED FOR STAFF REVIEW

SME
SEVEE & MAHER ENGINEERS
ENVIRONMENTAL • CIVIL • GEOTECHNICAL • WATER • COMPLIANCE
4 Blanchard Road, PO Box 85A, Cumberland, Maine 04021
Phone 207.829.5016 • Fax 207.829.5692 • smemaine.com

DESIGN BY:	JTR
DRAWN BY:	BWB
DATE:	4/2018
CHECKED BY:	BDP
LMN:	EXCON
CTB:	SME-STD
JOB NO.	17159.00
DWG FILE	BASE
	D-100



STORMWATER MANAGEMENT LEGEND

- SC-2 — SUBCATCHMENT DESIGNATION
- SUBCATCHMENT BOUNDARY
- A — B — C — TIME OF CONCENTRATION SEGMENT DESIGNATION / TIME OF CONCENTRATION PATH
- Sht L=100' S=0.035 — TIME OF CONCENTRATION TYPE, LENGTH AND SLOPE
- Sht — SHEET FLOW
- Shc — SHALLOW CONCENTRATED FLOW
- Cf — CHANNEL FLOW
- DRAINAGE REACH
- R5 — REACH DESIGNATION (HYDROCAD)
- P4I — POND/STRUCTURE DESIGNATION (HYDROCAD)
- tc 2 — TIME OF CONCENTRATION WITH SUBCATCHMENT DESIGNATION

NOTE:

ALL SOILS ASSUMED TO BE URBAN FILL AND MODELED AS HsGC

REV.	BY	DATE	STATUS
	JTR	11/2018	ISSUED FOR STAFF REVIEW

STATE OF MAINE — DANIEL R. DUFFIN 11841 — LICENSED PROFESSIONAL ENGINEER

BANGOR SAVINGS BANK
AUBURN BRANCH/OFFICE BUILDING
170 TURNER STREET
AUBURN, MAINE

STORMWATER MANAGEMENT PLAN
POST DEVELOPMENT CONDIOTIONS

SME
SEVEE & MAHER ENGINEERS
ENVIRONMENTAL • CIVIL • GEOTECHNICAL • WATER • COMPLIANCE
4 Blanchard Road, PO Box 85A, Cumberland, Maine 04021
Phone 207.829.5016 • Fax 207.829.5692 • smemaine.com

DESIGN BY:	JTR
DRAWN BY:	BWB
DATE:	4/2018
CHECKED BY:	BDP
LMN:	EXCON
CTB:	SME-STD

JOB NO. 17159.00 DWG FILE BASE

D-101

ATTACHMENT D

CAPACITY TO SERVE LETTERS

SME
SEVEE & MAHER
ENGINEERS

(207) 784-6469 Fax (207) 784-6460

AUBURN WATER DISTRICT

MEMBER MAINE WATER UTILITIES ASSOCIATION

268 COURT ST. - P.O. BOX 414

AUBURN, MAINE 04212-0414

November 2, 2018

Daniel Diffin, P.E.
4 Blanchard Road, P.O. Box 85a
Cumberland, Me 04021

Subject: Bangor Savings Bank Brach and Office
170 Turner Street, Auburn Maine

Dear Dan,

The Auburn Water and Sewer District has sufficient capacity to serve the needs of the new Bangor Savings Bank planned for 170 Turner Street. Your plan to connect to the water main on Troy and the re-located sewer main on the property will be sufficient.

Please le me know if you have additional questions, we look forward to working with you and the folks at Bangor Savings Bank.

Sincerely,

Michael Broadbent
Assistant Superintendent
Auburn Water and Sewer District

November 2, 2018

Daniel P. Diffin, P.E.
Sevee & Maher Engineers
4 Blanchard Road P.O. Box 85A
Cumberland, ME 04021

Re: Bangor Savings Bank- 170 Turner Street, Auburn ME 04210

Dear Mr. Diffin:

Thank you for your interest in using natural gas for the above referenced project.

Unitil has natural gas in the vicinity of this project to provide service. The evaluation to complete the design, costs and determining if any customer contribution will be needed will need to be completed. Additional information will be required to complete that evaluation. Unitil welcomes the opportunity for further discussions regarding this project.

If you have any further questions or require additional information, please contact me directly at (207) 541-2506 or at deanej@unitil.com.

Sincerely,

James Deane
Business Development Representative

ME GAS OPERATIONS
376 Riverside Industrial Parkway
Portland, ME 04103-3586

T 866.486.4845 www.unitil.com

ATTACHMENT E

EROSION AND SEDIMENTION CONTROL PLAN

SME
SEVEE & MAHER
ENGINEERS

EROSION AND SEDIMENTATION CONTROL PLAN

Prepared for

BANGOR SAVINGS BANK
AUBURN BRANCH/OFFICE BUILDING
AUBURN, MAINE

November 2018

SME
SEVEE & MAHER
ENGINEERS

ENVIRONMENTAL • CIVIL • GEOTECHNICAL • WATER • COMPLIANCE

4 Blanchard Road, P.O. Box 85A, Cumberland, ME 04021 • Tel 207.829.5016 • Fax 207.829.5692 • smemaine.com

TABLE OF CONTENTS

LIST OF APPENDICES

LIST OF TABLES

EROSION AND SEDIMENTATION CONTROL PLAN
BANGOR SAVINGS BANK
AUBURN, MAINE

1.0 INTRODUCTION

This Erosion and Sedimentation Control Plan (Plan) for the proposed Bangor Savings Bank Branch and Office Building located at 170 Turner Street in Auburn (Project) was designed to comply with the Maine Erosion and Sediment Control BMP manual prepared by the Maine Department of Environmental Protection (MEDEP).

1. Design and implementation of erosion and sedimentation control measures that conform to the *Maine Erosion and Sediment Control Best Management Practices (BMPs) Manual for Designers and Engineers* dated October 2016 (or as currently revised) such that:
    a. Sediment caused by accelerated soil erosion will be minimized from runoff water before it leaves the site. Suitable erosion control measures will be in-place prior to any disturbance of soil.
    b. Any temporary and permanent structures designed and constructed for the conveyance of water around, though, or from the site will be designed to limit water flow to a non-erosive velocity.
    c. Permanent soil erosion control measures for all slopes, channel ditches, and disturbed areas will be completed as part of the Project.
    d. Vegetative cover for temporary and permanent erosion control will be established using seed selection, seeding rates, and mulching rates consistent with the Maine BMPs and based upon historical site-specific applications. Reseeding will be performed as necessary within a reasonable period of time if permanent vegetation is not established.
    e. The proposed Project will utilize existing topography and natural surroundings to the fullest extent possible.

2.0 PROJECT DESCRIPTION

Bangor Savings Bank proposes to develop a new 1-story, 5,600 square-foot (sf) bank branch and office building at 170 Turner Street in Auburn. The property fronts to Turner Street on the southeast, Troy Street on the south, Benjamin Street on the northeast and Union Street to the northwest. The property is currently developed with an abandoned 4,000-sf, 3-story mixed used office and apartment building. The existing building will be removed prior to construction of the new bank branch and office building.

Proposed construction will include a single story 5,600 sf building with a 3-lane drive thru and a 33-space parking lot. The parking area for the bank branch and office building will have two entrances. The main entrance for the branch will be from Troy Street and the second entrance will be from Benjamin Street. An existing 18-inch sanitary sewer and 60-inch storm drain currently cross the property under the proposed building site and will have to be relocated. Additional site improvements include public water and sewer services, a closed storm drain system, underground electric and communications lines, site lighting, a retaining wall, and landscaping.

The project will include a property transfer between Auburn Wales, LLC (Office Max) and Bangor Savings Bank (BSB) for a 0.1-acre (ac) triangular portion of the Office Max property to the BSB parcel. This transfer will expand the BSB property to facilitate utility reconstruction, site circulation, additional parking, retaining wall construction, and landscaping.

Existing impervious area on the parcel is 31,816 sf. The existing developed area is 49,223 sf. Proposed site improvements will include approximately 33,313 sf of impervious area and 54,644 sf of developed area after the property transfer, resulting in a net increase in impervious area on the expanded property of approximately 1,497 sf. This project will result in less than one acre of total impervious surface and less than 5 acres of new developed area and has been designed to meet Basic Standards as outlined in Maine Department of Environmental Protection (MEDEP) Chapter 500. The project will not require a MEDEP Stormwater Management Permit.

3.0 EROSION CONTROL MEASURES

In developed conditions, the site will drain similar to existing conditions. The proposed driveways and parking lot will be curbed to direct stormwater runoff to a new series of catch basins connected to an existing manhole DMH#2 which drains into the existing municipal storm drain in Troy Street.

Erosion and sedimentation control details and specifications associated with the driveways, developed site areas, and treatment measures are shown on Drawings C-103 and C-300 (Appendix A and B, respectively) submitted with this application.

4.0 SITE STABILIZATION

All Erosion and Sedimentation Control Devices will be constructed in conformance with the *Maine Erosion and Sediment Control Best Management Practices (BMPs) Manual for Designers and Engineers* dated October 2016, as currently revised; the Erosion and Sedimentation Control Plan as outlined herein and shown on the Construction Drawings; and any conditions of approval as may be contained in the MEDEP Stormwater Law permit for this project.

Disturbed areas will be permanently stabilized within 7 days of final grading. Disturbed areas not to be worked on within 14 days of disturbance will be temporarily stabilized within 7 days of the disturbance. Temporary and permanent seeding and mulching requirements are presented in Section 6.1 Temporary Measures, and Section 6.2, Permanent Measures, on Drawing C-300.

The following devices will be used to stabilize the site during and after construction. Details for construction and maintenance of erosion and sedimentation control features are provided on Drawing C-300.

- Siltation fence will be installed at locations shown on the Construction Drawings and down slope of disturbed areas every 100 feet until the site is revegetated.

- Mulch to provide cover for denuded or seeded areas until vegetation is established. Hay/straw mulch will be available on site at all times to provide immediate temporary stabilization when necessary.
- Revegetation of drainage channels with S75 erosion control blanket as manufactured by North American Green or an approved equal.
- Stone check dams, hay bale barriers, and riprapped culvert inlet and outlet aprons to reduce runoff velocities and protect denuded soil surfaces from concentrated flows.
- Stabilized construction entrance(s)/exit(s) at all access points to the site to prevent tracking of soil onto adjacent local roads.
- Loam, seed, and mulch to revegetate all denuded areas not stabilized by other means, such as riprap, intended to be roof, or be a paved or gravel surfaced.

5.0 IMPLEMENTATION SCHEDULE

Bangor Savings Bank will establish the timing and sequencing of land disturbance. This work will be subject to the limits set forth herein, as may be specified by the Maine Erosion, *and Sediment Control Best Management Practices (BMPs) Manual for Designers and Engineers* dated October 2016, as currently revised.

In general, construction is expected to begin in the fall of 2018.

The Erosion and Sedimentation Control features are presented on6.1 Drawings C-103 and C-300 This plan includes the following elements:

- driveways,
- property boundaries,
- buildings,
- drainage channels,
- catch basins, and
- subsurface drainage pipes.

The general construction sequence of the site is expected to be as follows:

- Site preparation through demolition of existing structures, concrete slabs, and foundation materials as appropriate.
- Install temporary erosion control measures.
- Stockpile topsoil at designated areas on the property.
- Complete utility relocation for sanitary sewer and storm drain.
- Construct stormwater management facilities.
- Install utilities, and construct subgrade of driveways and parking areas.
- Prepare the building site and construct foundations.
- Perform site stabilization (complete roadway and parking area gravel and bituminous pavement; loam, seed, and mulch) and other miscellaneous items (plantings).
- Clean sediment from temporary collection structures; complete construction of stormwater management structures.
- Remove temporary erosion control measures after all disturbed areas are stabilized.

6.0 DETAILS AND SPECIFICATIONS

The details and specifications for all temporary and permanent erosion controls to be installed at the site are provided in Drawing C-300, Erosion Control Notes and Details.

Temporary and permanent erosion control measures will be implemented to minimize erosion during construction and cover placement. Temporary measures (i.e., silt barriers and silt socks) and permanent measures (i.e., permanent seeding, and mulching) will be monitored on a regular basis. The contractor will ensure that structures are functioning properly and will perform necessary maintenance described in the Maine Construction General Permit and the Maine BMPs. Erosion and Sedimentation Control Sections and Details (Drawing C-300) specified for the Project are contained in Appendix B.

6.1 Temporary Erosion Control

The greatest potential for erosion will occur during grading operations. This occurs as topsoil is removed from or disturbed on the site and base grades are prepared. Before beginning the grading phase, a siltation barrier will be placed. In addition, a siltsack catch basin protection will be installed in downstream catch basins. Materials and construction methods for siltation barrier and siltsacks shall be as specified on Drawing C-300 contained in Appendix B of this report.

6.2 Permanent Erosion Control

Permanent erosion control measures will be implemented during site construction. Materials and construction methods for permanent measures shall be as specified on Drawing C-300 contained in Appendix B of this report.

The disturbed areas that will be left as open space will be seeded and mulched to minimize erosion. The cover will be seeded with a permanent seeding mixture within 14 days of placing the cover material.

TABLE 6-1

PERMANENT SEEDING RATES

Seed	Rate (180 lbs/Ac)
Red Fescue	50%
Red Top	2%
White Clover	5%
Annual Ryegrass	25%
Birdsfoot Trefoil	3%
Kentucky Bluegrass	15%

Notes:
1. Apply 10-10-10 fertilizer at a rate of 1,300 lbs. / Ac. (29.8 lbs. / 1,000 S.F.), or as required by topsoil testing Specification Section 02800.
2. Apply liquid limestone at a rate of 3 tons / Ac. (138 lbs. / S.F.) or as required by topsoil testing Specification Section 02800.
3. Apply weed-free hay or straw mulch with tack at a rate of 2 tons / Ac. or 300 lbs. / Ac. of fiber mulch.

Permanent seeding operations typically occur no later than October 1. After October 1, disturbed soil shall be protected with mulch consisting of either hay or straw and the temporary seed mixture. The mulch may be required to be secured with netting, twine, or other approved methods. Seeding operations shall be done sequentially as the project development progresses, to minimize, to the great practical extent, areas of the completed cover system exposed to the elements. Problem areas and continually eroding areas shall be repaired immediately with temporary erosion control blankets. The blankets shall conform and be installed in accordance with the manufacturer's recommendations.

6.3 Standard Erosion Control Procedures

In addition to these measures, the following erosion and sedimentation control procedures will be implemented during construction and cover placement:

1. Soil erosion and sedimentation control measures will be performed in accordance with procedures outlined in the *Maine Erosion and Sediment Control BMPs* (Maine Department of Environmental Protection, October 2016) as currently revised.

2. Removal of trees, brush, and other vegetation, as well as disturbance of soil, will be kept to a minimum during site development.

3. Erosion and sedimentation control measures such as bark mulch sediment barriers, siltsacks, and a siltation barrier will be installed at locations shown on the Contract Drawings.

4. Siltation barriers will be inspected after each rainfall and at least daily during prolonged rainfall. Required repairs will be made. Sediment deposits will be removed periodically from the upstream side of the siltation barriers and will be spread and stabilized in site areas not subject to erosion. Siltation barriers will be replaced, as necessary, to provide proper filtering action.

5. Riprap required at culverts and down spouts will consist of fieldstone or rough unhewn quarry stone of approximately rectangular shape. Stones will be of a size as noted on the construction drawings.

6. Following final grading, all graded or disturbed areas, not to be used as gravel roadways or parking areas will be spread with a minimum compacted depth of 4 inches of topsoil and seeded to provide a permanent vegetative cover.

7. All areas receiving topsoil will be seeded. Seeding normally will occur between April 1 and October 1. Surface water runoff control measures (i.e., drainage ditches, berms, and culverts) will be constructed before seeding; all grading will be performed before seeding. The top layer of soil will be loosened by raking, discing, or other acceptable means before seeding. Application rates for the lime, fertilizer, seed, and mulch are presented in Table 6-1. The seed will be applied uniformly with a cyclone seeder, drill, cultipack seeder, or hydroseeder. Seed will not be planted if there is danger of frost shortly after seed germination. Maximum seeding depth is ¼ inch when using methods other than hydroseeding. Wood fiber cellulose mulch or hay mulch will be spread uniformly upon completion of the seedbed preparation, liming, fertilization, and seeding. The mulch may be anchored in place by uniformly applying an acceptable mulch binder such a Curasol or Terratac.

8. If germination is unsuccessful (i.e., less than 90-percent catch) within 30 days of seeding or there is unsatisfactory growth in the next year, the area will be reseeded in accordance with seeding specifications described herein.

7.0 MAINTENANCE

7.1 Routine Maintenance

During construction, inspections will be undertaken by the contractor to assure that temporary and permanent erosion and sedimentation controls are properly installed and correctly functioning, and that additional erosion control measures are installed if needed. Such inspections will occur bi-weekly and after each significant rainfall event (1 inch or more within a 24-hour period) during construction until permanent erosion control measures have been properly installed and the site is stabilized. The contractor shall perform all inspections and documentation required by the Maine General Construction Permit.

7.2 Grassed Areas

Fertilize and lime, as necessary, according to a soil test performed by University of Maine as described in the Contract Specifications.

7.3 Culverts and Gutters

Culverts and gutters will be inspected in early spring, late fall, and after significant rain events. All debris and sediment will be removed and any erosion of inlet or outlet channels repaired.

8.0 EROSION CONTROL REMOVAL

Removal of temporary erosion control measures shall be the responsibility of the contractor. Erosion controls shall remain in place and maintained by the contractor until all related construction is complete and the area is stable. An area is considered stable if 90 percent cover of grass has been established or riprap or other permanent measures are in place and functioning properly.

Silt barriers shall be removed once the areas upstream are stable. The silt barriers shall be disposed of legally and properly off-site. Sediment trapped behind these controls shall be distributed to an area undergoing final grading and graded in an aesthetic manner to conform to the topography and fertilized, seeded, and mulched in accordance with the rates listed in Table 6-1. The sediment trapped by these devices shall not be regraded within the existing drainage ways.

Once the trapped sediments have been removed from the temporary sedimentation devices, the disturbed areas must be loamed (if necessary), fertilized, seeded, and mulched in accordance with the rates listed in Table 6-1.

9.0 CONCLUSION

The proposed project has been designed with stormwater management and erosion controls to manage surface water runoff from the site during construction and post-closure such that clean stormwater is directed to downstream water bodies. The foregoing measures and controls will help to assure that no unreasonable erosion of soil or sediment will occur as a result from construction or operations.

All proposed structures to be used within this project have been designed using engineering procedures commonly used in stormwater analyses.

To minimize erosion during and after construction, temporary and permanent erosion control measures will be implemented. Temporary measures (i.e., silt barriers and siltsacks) and

permanent measures (i.e., permanent seeding, mulching, and culvert inlet and outlet protection) will be monitored on a regular basis. As part of the contractor's scope of work to ensure that devices are functioning properly, the contractor will perform necessary inspections and maintenance for the erosion control systems.

During construction, the Contractor will be responsible for inspecting the silt fence, siltsacks and other components of the erosion control system on a bi-weekly basis after each rainfall and at least daily during prolonged rainfall. Any necessary repairs shall be made immediately.

APPENDIX A

EROSION AND SEDIMENTATION CONTROL PLAN

SME
SEVEE & MAHER
ENGINEERS

PROPOSED STORM DRAIN SCHEDULE

STRUCTURE	DIA	LOCATION		RIM EL	INV IN	FROM STRUCTURE	INV OUT	TO STRUCTURE	PIPE
		NORTHING	EASTING						
CB #100	4'	462128.63	2936787.02	172.2	-	-	167.2	CB #101	63 LF OF 12" DIA PVC SD35 PIPE
CB #101	4'	462103.82	2936724.78	172.3	166.9 167.5	CB #100 CB #104	166.8	CB #102	39 LF OF 12" DIA PVC SD35 PIPE
CB #102	4'	462087.99	2936685.09	172.8	166.6	CB #101	166.5	CB #103	88 LF OF 15" DIA PVC SD35 PIPE
CB #103	4'	2936733.28	2936733.28	171.4	165.9 165.9	CB #102 UNDERDRAIN	165.8	DMH #202	61 LF OF 15" DIA PVC SD35 PIPE
CB #104	4'	462115.18	2936720.25	172.6	167.6	-	-	CB #101	9 LF OF 15" DIA PVC SD35 PIPE
CB #105	4'	462174.79	2936614.61	172.5	-	-	167.5	DMH #201	50 LF OF PVC SDR 35 PIPE
DMH #201	10'	462224.59	2936630.63	174.2	147.2 167.0	EX 60" DIA PIPE CB #105	147.2	DMH #202	230 LF OF 60" DIA RCP SD PIPE (TYPE 4)
DMH #202	10'	462010.44	2936751.75	172.6	142.7	DMH #201	142.7	DMH #2	CONNECT TO EXISTING 60" RCP PIPE
DMH #2	EX	461980.69	2936755.04	169.90	164.63 164.63	DMH #202 CB #103	142.3	-	

BENJAMIN STREET

UNION STREET

TURNER STREET

STABILIZED CONSTRUCTION ENTRANCE/EXIT (TYP) SEE DWG C-300

CB #100 CATCH BASIN (TYP) SEE DWG C-303

BANK BRANCH/OFFICE BUILDING FFE: 174.0

CB #104

CB #101

CB #102

CB #103

CB #105

DMH #201 SEE TABLE THIS DWG (TYP)

DMH #202

DMH #2

LOAM AND SEED DISTURBED AREAS UNLESS OTHERWISE NOTED

PROVIDE EROSION CONTROL MESH ON SLOPES STEEPER THAN 6H:1V

CONNECT TO EXISTING 60" DIA STORM DRAIN PIPE

10' DIA STRUCTURE (TYP)

END CAP (TYP)

230± LF OF 60" DIA RCP TYPE 4 (AMERICAN CONCRETE PIPE ASSOCIATION CLASSIFICATION) SEE NOTE 4 DWG C-101

PRECAST MODULAR BLOCK RETAINING WALL SEE DWG C-301 CONTRACTOR TO PROVIDE WALL PLAN/PROFILE AND DETAILS TO ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION

4" PERFORATED UNDERDRAIN PIPE

4" HDPE PIPE

4" PVC

SILT SACK CATCH BASIN PROTECTION (TYP) SEE DWG C-300

SILT FENCE (TYP) SEE DWG C-300

60"X96" STONE PER CITY

18"PER PLAN B

12" HDPE

36" RCP

12" RCP

18" CMP

12" CMP

10 0 20 40 FEET

REV.	BY	DATE	STATUS
	JTR	11/2018	ISSUED FOR STAFF REVIEW

STATE OF MAINE
DANIEL V. DIFFIN
11841
LICENSED PROFESSIONAL ENGINEER

BANGOR SAVINGS BANK
AUBURN BRANCH/OFFICE BUILDING
170 TURNER STREET
AUBURN, MAINE

SITE GRADING AND EROSION CONTROL PLAN

SME
SEVEE & MAHER ENGINEERS
ENVIRONMENTAL • CIVIL • GEOTECHNICAL • WATER • COMPLIANCE
4 Blanchard Road, PO Box 85A, Cumberland, Maine 04021
Phone 207.829.5016 • Fax 207.829.5692 • smemaine.com

DESIGN BY:	JTR
DRAWN BY:	BWB
DATE:	4/2018
CHECKED BY:	BDP
LMN:	GRADING
CTB:	SME-STD

JOB NO. 17159.00 DWG FILE BASE

C-103

APPENDIX B

EROSION AND SEDIMENTATION CONTROL NOTES AND DETAILS

SME
SEVEE & MAHER
ENGINEERS

EROSION CONTROL NOTES:

A. GENERAL

1. All soil erosion and sediment control will be done in accordance with: (1) the Maine Erosion and Sediment Control Handbook: Best Management Practices, Maine Department of Environmental Protection (MEDEP), October 2016.

2. The site Contractor (to be determined) will be responsible for the repair/replacement/maintenance of all erosion control measures until all disturbed areas are stabilized.

3. Disturbed areas will be permanently stabilized within 7 days of final grading. Disturbed areas not to be worked upon within 14 days of disturbance will be temporarily stabilized within 7 days of the disturbance.

4. In all areas, removal of trees, bushes and other vegetation, as well as disturbance of topsoil will be kept to a minimum while allowing proper site operations.

5. Any suitable topsoil will be stripped and stockpiled for reuse as directed by the Owner. Topsoil will be stockpiled in a manner such that natural drainage is not obstructed and no off-site sediment damage will result. In any event, stockpiles will not be located within 100 feet of wetlands and will be at least 50 feet upgradient of the stockpile's perimeter silt fence. The sideslopes of the topsoil stockpile will not exceed 2:1. Silt fence will be installed around the perimeter of all topsoil stockpiles. Topsoil stockpiles will be surrounded with siltation fencing and will be temporarily seeded with Aroostook rye, annual or perennial ryegrass within 7 days of formation, or temporarily mulched.

B. TEMPORARY MEASURES

1. STABILIZED CONSTRUCTION ENTRANCE/EXIT

A crushed stone stabilized construction entrance/exit will be placed at any point of vehicular access to the site, in accordance with the detail shown on this sheet.

2. SILT FENCE

a. Silt fence will be installed prior to all construction activity, where soil disturbance may result in erosion. Silt fence will be erected at locations shown on the plans and/or downgradient of all construction activity.

b. Silt fences will be removed when they have served their useful purpose, but not before the upgradient areas have been permanently stabilized.

c. Silt fences will be inspected immediately after each rainfall and at least daily during prolonged rainfall. They will be inspected if there are any signs of erosion or sedimentation below them. Any required repairs will be made immediately. If there are signs of undercutting at the center or the edges, or impounding of large volumes of water behind them, they will be replaced with a temporary crushed stone check dam.

d. Sediment deposits will be removed after each storm event if significant build-up has occurred or if deposits exceed half the height of the barrier.

3. STONE CHECK DAMS

Stone check dams will be installed in grass-lined swales and ditches during construction.

4. EROSION CONTROL MIX SEDIMENT BARRIER

a. Where approved, erosion control mix sediment barriers may be used as a substitute for silt fence. See the details in this drawing set for specifications.

b. Rock Filter Berms: To provide more filtering capacity or to act as a velocity check dam, a berm's center can be composed of clean crushed rock ranging in size from the french drain stone to riprap.

5. TEMPORARY SEEDING

Stabilize disturbed areas that will not be brought to final grade and reduce problems associated with mud and dust production from exposed soil surface during construction with temporary vegetation.

6. TEMPORARY MULCHING

Use temporary mulch in the following locations and/or circumstances:

- In sensitive areas (within 100 feet of streams, wetlands and in lake watersheds) temporary mulch will be applied within 7 days of exposing soil or prior to any storm event.
- Apply temporary mulch within 14 days of disturbance or prior to any storm event in all other areas.
- Areas which have been temporarily or permanently seeded will be mulched immediately following seeding.
- Areas which cannot be seeded within the growing season will be mulched for over-winter protection and the area will be seeded at the beginning of the growing season.
- Mulch can be used in conjunction with tree, shrub, vine, and ground cover plantings.
- Mulch anchoring will be used on slopes greater than 5 percent in late fall (past October 15), and over-winter (October 15 - April 15).

The following materials may be used for temporary mulch:

a. Hay or Straw mulch shall be air-dried, free of seeds and coarse material. Apply 2 bales/1,000 sf or 1.5 to 2 tons/acre to cover 90% of ground surface.

b. Erosion Control Mix: It can be used as a stand-alone reinforcement:
- on slopes 2 horizontal to 1 vertical or less;
- on frozen ground or forested areas; and
- at the edge of gravel parking areas and areas under construction.

c. Erosion control mix alone is not suitable:
- on slopes with groundwater seepage;
- at low points with concentrated flows and in gullies;
- at the bottom of steep perimeter slopes exceeding 100 feet in length;
- below culvert outlet aprons; and around catch basins and closed storm systems.

d. Chemical Mulches and Soil Binders: Wide ranges of synthetic spray-on materials are marketed to protect the soil surface. These are emulsions that are mixed with water and applied to the soil. They may be used alone, but most often are used to hold wood fiber, hydro-mulches or straw to the soil surface.

e. Erosion Control Blankets and Mats: Mats are manufactured combinations of mulch and netting designed to retain soil moisture and modify soil temperature. During the growing season (April 15 to October 15) use mats indicated on drawings or North American Green (NAG) S75 (or mulch and netting) on:
- the base of grassed waterways;
- steep slopes (15 percent or greater); and
- any disturbed soil within 100 feet of lakes, streams, or wetlands.

During the late fall and winter (October 15 to April 15) use heavy grade mats indicated on drawings for NAG SC250 on all areas noted above plus use lighter grade mats NAG S75 (or mulch and netting) on:
- sideslopes of grassed waterways; and moderate slopes (between 8 and 15 percent).

C. TEMPORARY DUST CONTROL

To prevent the blowing and movement of dust from exposed soil surfaces, and reduce the presence of dust, use water or calcium chloride to control dusting by preserving the moisture level in the road surface materials.

D. CONSTRUCTION DE-WATERING

1. Water from construction de-watering operations shall be cleaned of sediment before reaching wetlands, water bodies, streams or site boundaries. Utilize temporary sediment basins, erosion control soil filter berms backed by staked hay bales, A Dirt Bag 55" sediment filter bag by ACF Environmental, or other approved Best Management Practices (BMP's).

2. In sensitive areas near streams or ponds, discharge the water from the de-watering operation into a temporary sediment basin created by a surrounding filter berm of uncompacted erosion control mix immediately backed by staked hay bales (see the site details). Locate the temporary sediment basin at lease 100 feet from the nearest water body, such that the filtered water will flow through undisturbed vegetated soil areas prior to reaching the water body or property line.

E. PERMANENT MEASURES

1. Riprapped Aprons: All storm drain pipe outlets and the inlet and outlet of culverts will have riprap aprons to protect against scour and deterioration.

2. Topsoil, Seed, and Mulch: All areas disturbed during construction, but not subject to other restoration (paving, riprap, etc.) will be loamed, limed, fertilized, seeded, and mulched.

Seeded Preparation: Use stockpiled materials spread to the depths shown on the plans, if available. Approved topsoil substitutes may be used. Grade the site as needed.

a. Seeding will be completed by August 15 of each year. Late season seeding may be done between August 15 and October 15. Areas not seeded or which do not obtain satisfactory growth by October 15, will be seeded with Aroostook Rye or mulched. After November 1, or the first killing frost, disturbed areas will be seeded at double the specified application rates, mulched, and anchored.

PERMANENT SEEDING SPECIFICATIONS

Mixture:	Roadside (lbs/acre)	Lawn (lbs/acre)
Kentucky Bluegrass	20	55
White Clover	5	0
Creeping Red Fescue	20	55
Perennial Ryegrass	5	15

b. Mulch in accordance with specifications for temporary mulching.

c. If permanent vegetated stabilization cannot be established due to the season of the year, all exposed and disturbed areas not to undergo further disturbance are to have dormant seeding applied and be temporarily mulched to protect the site.

3. Ditches and Channels: All ditches on-site will be lined with North American Green S75 erosion control mesh (or an approved equal) upon installation of loam and seed.

F. WINTER CONSTRUCTION AND STABILIZATION

1. Winter excavation and earthwork will be completed so as to minimize exposed areas while satisfactorily completing the project. Limit exposed areas to those areas in which work is to occur during the following 15 days and that can be mulched in one day prior to any snow event. All areas will be considered denuded until the subbase gravel is installed in roadway areas or the areas of future loam and seed have been loamed, seeded, and mulched.

Install any added measures necessary to control erosion/sedimentation. The particular measure used will be dependent upon site conditions, the size of the area to be protected, and weather conditions.

To minimize areas without erosion control protection, continuation of earthwork operations on additional areas will not begin until the exposed soil surface on the area being worked has been stabilized.

2. Natural Resource Protection: During winter construction, a double-row 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 will be protected a minimum distance of 100 feet on either side from the resource.

3. Sediment Barriers: During frozen conditions, sediment barriers may consist of erosion control mix berms or any other recognized sediment barriers as frozen soil prevents the proper installation of hay bales or silt fences.

4. Mulching:

- All areas will be considered to be denuded until seeded and mulched. Hay and straw mulch will be applied at a rate of twice the normal accepted rate.
- Mulch will not be spread on top of snow.
- After each day of final grading, the area will be properly stabilized with anchored hay or straw or erosion control matting.
- Between the dates of November 1 and April 15, all mulch will be anchored by either mulch netting, emulsion chemical, tracking or wood cellulose fiber.

5. Soil Stockpiling: Stockpiles of soil or subsoil will be mulched for over-winter protection with hay or straw at twice the normal rate or with a 4-inch layer of erosion control mix. This will be done within 24 hours of stocking and re-established prior to any rainfall or snowfall. Any soil stockpiles shall not be placed (even covered with mulch) within 100 feet from any natural resources.

6. Seeding: Dormant seeding may be placed prior to the placement of mulch or erosion control blankets. If dormant seeding is used for the site, all disturbed areas will receive 4 inches of loam and seed at an application rate of three times the rate for permanent seeding. All areas seeded during the winter will be inspected in the spring for adequate catch. All areas insufficiently vegetated (less than 75 percent catch) will be revegetated by replacing loam, seed, and mulch.

If dormant seeding is not used for the site, all disturbed areas will be revegetated in the spring.

7. Maintenance: Maintenance measures will be applied as needed during the entire construction season. After each rainfall, snow storm, or period of thawing and runoff, the site Contractor will perform a visual inspection of all installed erosion control measures and perform repairs as needed to ensure their continuous function.

Following the temporary and/or final seeding and mulching, the Contractor will, in the spring, inspect and repair any damages and/or bare spots. An established vegetative cover means a minimum of 85 to 90 percent of areas vegetated with vigorous growth.

G. OVER-WINTER CONSTRUCTION EROSION CONTROL MEASURES

1. Stabilization of Disturbed Soil: By October 15, all disturbed soils on areas having a slope less than 15 percent will be seeded and mulched. If the Contractor fails to stabilize these soils by this date, then the Contractor shall stabilize the soil for late fall and winter, by using either temporary seeding or mulching.

2. Stabilization of Disturbed Slopes: All slopes to be vegetated will be completed by October 15. The Owner will consider any area having a grade greater than 15 percent (6.5H:1V) to be a slope. Slopes not vegetated by October 15 will receive one of the following actions to stabilize the slope for late fall and winter:

a. Stabilize the soil with temporary vegetation and erosion control mesh.
b. Stabilize the slope with erosion control mix.
c. Stabilize the slope with stone riprap.

3. Stabilization of Ditches and Channels: All stone-lined ditches and channels to be used to convey runoff through the winter will be constructed and stabilized by November 15. Grass-lined ditches and channels will be complete by September 15. Grass-lined ditches not stabilized by September 15 shall be lined with either sod or riprap.

H. MAINTENANCE PLAN

1. Routine Maintenance: Inspection will be performed as outlined in the project's Erosion Control Plan. Inspection will be by a qualified person during wet weather to ensure that the facility performs as intended. Inspection priorities will include checking erosion controls for accumulation of sediments.

I. Housekeeping

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.

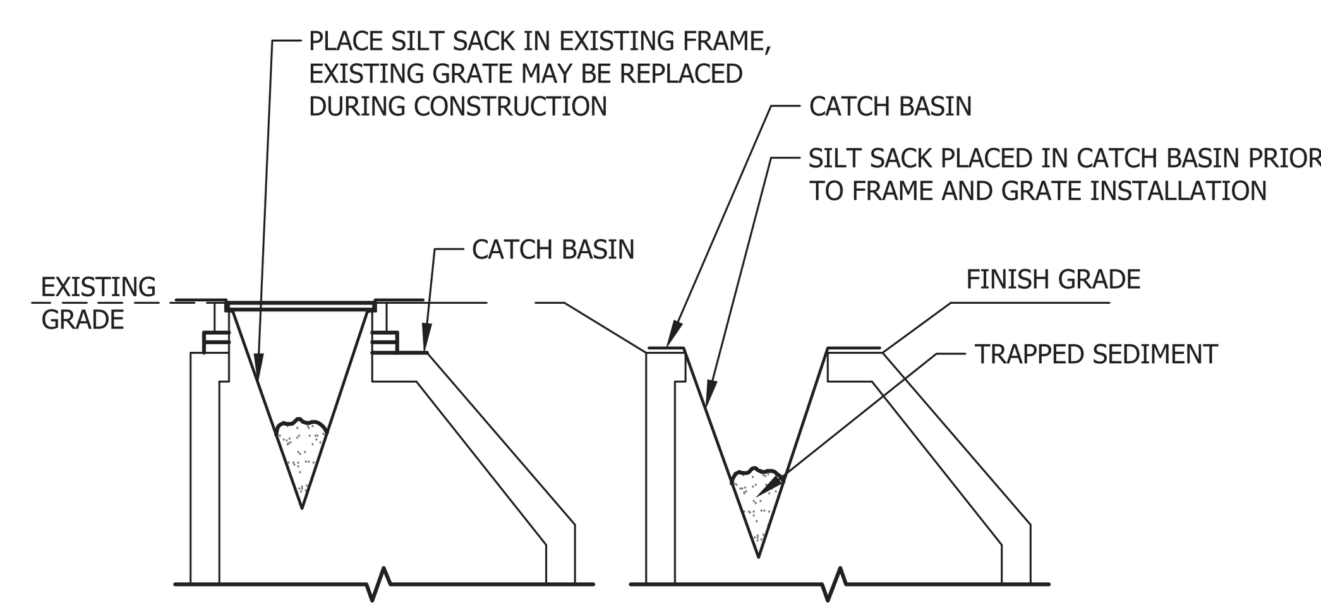
6. Non-stormwater discharges. Identify and prevent contamination by non-stormwater discharges.

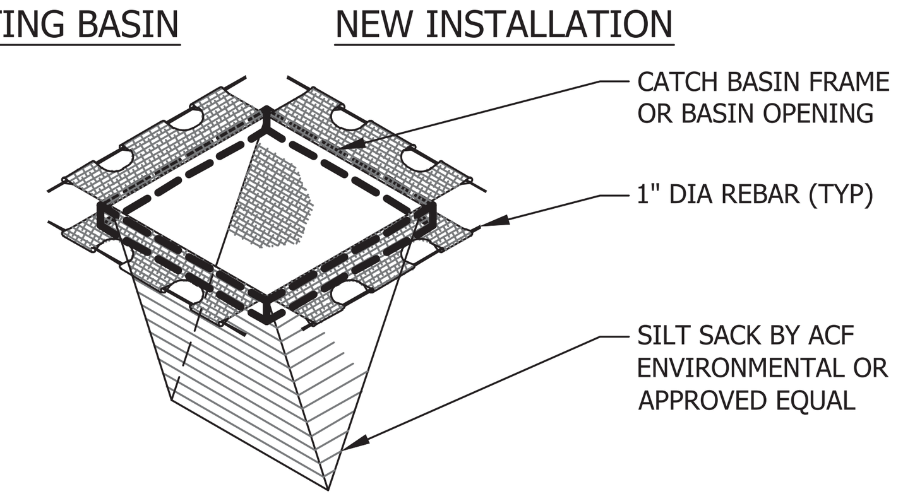
7. Additional requirements. Additional requirements may be applied on a site-specific basis.

J. CONSTRUCTION SEQUENCE

In general, the expected sequence of construction for each phase is provided below. Construction is proposed to start in Spring 2019 and be complete in Spring 2020.

- Mobilization
- Install temporary erosion control measures
- Demolition, clearing, and grubbing
- Divert storm drain and sanitary sewer
- Remove/abandon existing storm drain and sanitary sewer
- Site Grading
- Construct storm drains
- Install retaining wall/site utilities
- Construct building
- Site stabilization, pavement, loam and seed, and landscaping
- Remove temporary erosion control measures





SILT SACK CATCH BASIN PROTECTION

NTS

NOTES:

1. EROSION CONTROL MIX CAN BE MANUFACTURED ON OR OFF THE SITE. IT MUST CONSIST PRIMARILY OF ORGANIC MATERIAL SEPARATED AT THE POINT OF GENERATION, AND MAY INCLUDE: SHREDDED BARK, STUMP GRINDINGS, COMPOSTED BARK, OR FLUME GRIT AND FRAGMENTED WOOD GENERATED FROM WATER-FLUME LOG HANDLING SYSTEMS. WOOD CHIPS, GROUND CONSTRUCTION DEBRIS, REPROCESSED WOOD PRODUCTS OR BARK CHIPS WILL NOT BE ACCEPTABLE AS THE ORGANIC COMPONENT OF THE MIX. EROSION CONTROL MIX SHALL CONTAIN A WELL-GRADED MIXTURE OF PARTICLE SIZES AND MAY CONTAIN ROCKS LESS THAN 4" IN DIAMETER. EROSION CONTROL MIX MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH.

THE MIX COMPOSITION SHALL MEET THE FOLLOWING STANDARDS:
A. ORGANIC MATERIAL: BETWEEN 20% - 100% (DRY WEIGHT BASIS)
B. PARTICLE SIZE: BY WEIGHT, 100% PASSING 6" SCREEN, 70-85% PASSING 0.75" SCREEN
C. THE ORGANIC PORTION NEEDS TO BE FIBROUS AND ELONGATED.
D. LARGE PORTIONS OF SILTS, CLAYS OR FINE SANDS ARE NOT ACCEPTABLE IN THE MIX.
E. SOLUBLE SALTS CONTENT SHALL BE LESS THAN 4.0 MMHOS/CM.
F. PH: 5.0 - 8.0

2. ON SLOPES LESS THAN 5% OR AT THE BOTTOM OF SLOPES 2:1 OR LESS UP TO 20 FEET LONG, THE BARRIER MUST CONFORM TO THE ABOVE DIMENSIONS. ON THE LONGER OR STEEPER SLOPES, THE BARRIER SHOULD BE WIDER TO ACCOMMODATE THE ADDITIONAL FLOW.

3. THE BARRIER MUST BE PLACED ALONG A RELATIVELY LEVEL ELEVATION. IT MAY BE NECESSARY TO CUT TALL GRASSES OR WOODY VEGETATION TO AVOID CREATING VOIDS AND BRIDGES THAT WOULD ENABLE FINES TO WASH UNDER THE BARRIER THROUGH THE GRASS BLADES OR PLANT STEMS.

4. LOCATIONS WHERE OTHER BMP'S SHOULD BE USED:
A. AT LOW POINTS OF CONCENTRATED FLOW
B. BELOW CULVERT OUTLET APRONS
C. WHERE A PREVIOUS STAND-ALONE EROSION CONTROL MIX APPLICATION HAS FAILED
D. AT THE BOTTOM OF STEEP PERIMETER SLOPES THAT ARE MORE THAN 50 FEET FROM TOP TO BOTTOM (LARGE UPGRADIENT WATERSHED)
E. AROUND CATCH BASINS AND CLOSED STORM DRAIN SYSTEMS.

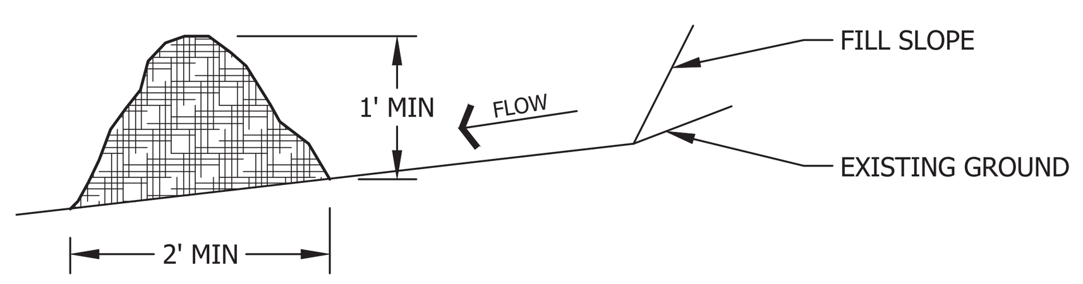
5. THE EROSION CONTROL MIX BARRIERS SHOULD BE INSPECTED REGULARLY AND AFTER EACH LARGE RAINFALL. REPAIR ALL DAMAGED SECTIONS OF BERM IMMEDIATELY BY REPLACING OR ADDING ADDITIONAL MATERIAL PLACED ON THE BERM TO THE DESIRED HEIGHT AND WIDTH.

6. IT MAY BE NECESSARY TO REINFORCE THE BARRIER WITH SILT FENCE OR STONE CHECK DAMS IF THERE ARE SIGNS OF UNDERCUTTING OR THE IMPOUNDMENT OF LARGE VOLUMES OF WATER.

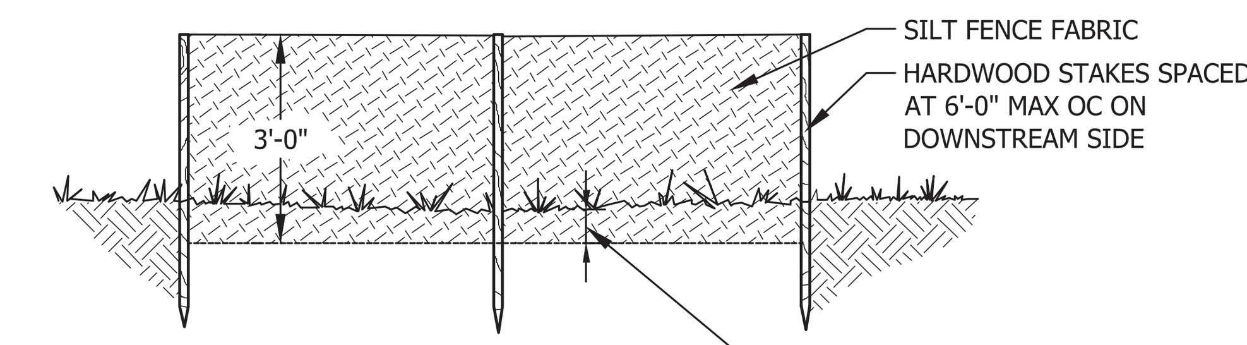
7. SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN THEY REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.

8. REPLACE SECTIONS OF BERM THAT DECOMPOSE, BECOME CLOGGED WITH SEDIMENT OR OTHERWISE BECOME INEFFECTIVE. THE BARRIER SHOULD BE RESHAPED AS NEEDED.

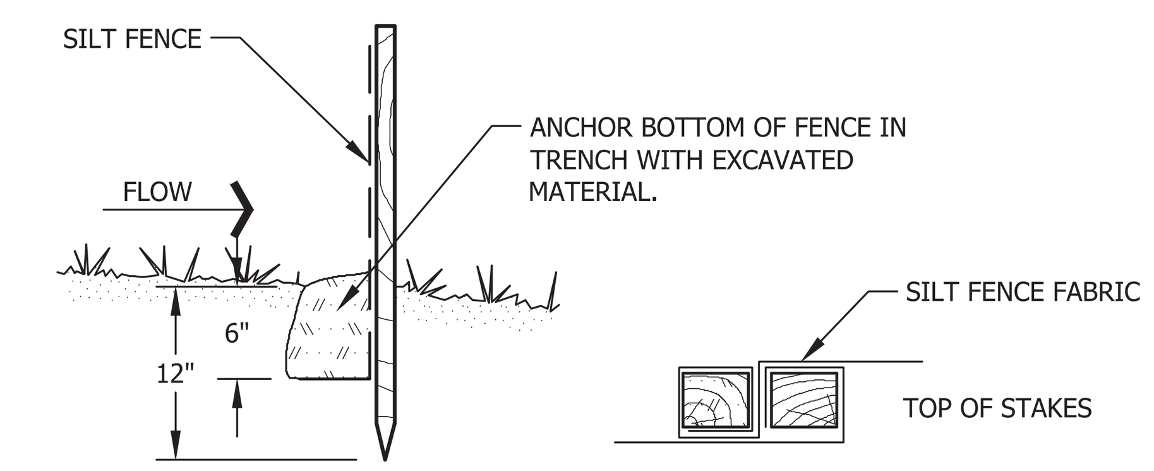
9. EROSION CONTROL MIX BARRIERS CAN BE LEFT IN PLACE AFTER CONSTRUCTION. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER BARRIER IS NO LONGER REQUIRED SHOULD BE SPREAD TO CONFORM TO THE EXISTING GRADE AND BE SEEDED AND MULCHED. WOODY VEGETATION CAN BE PLANTED INTO THE BARRIERS, OR THEY CAN BE OVER-SEEDED WITH LEGUMES. IF THE BARRIER NEEDS TO BE REMOVED, IT CAN BE SPREAD OUT INTO THE LANDSCAPE.



EROSION CONTROL MIX SEDIMENT BARRIER



ELEVATION



SECTION

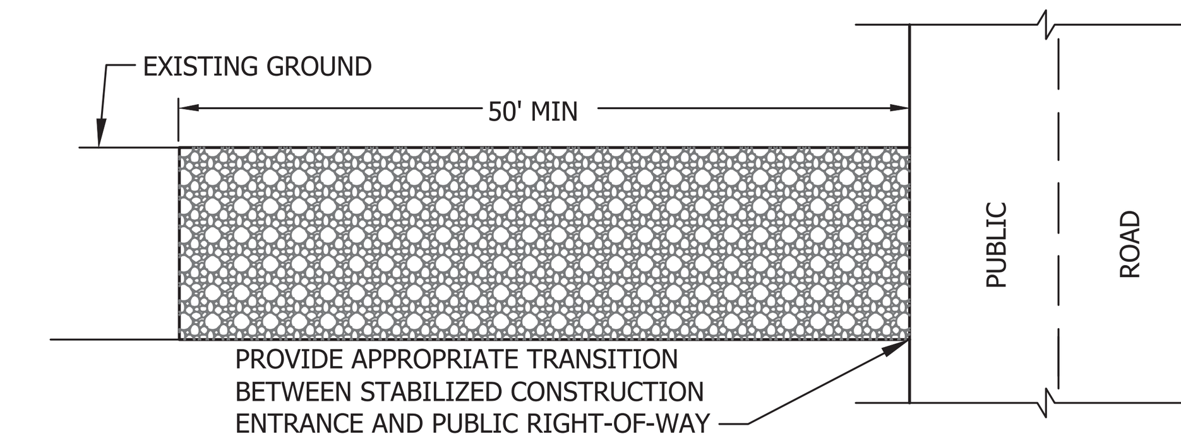
OVERLAP JOINTS

SILT FENCE

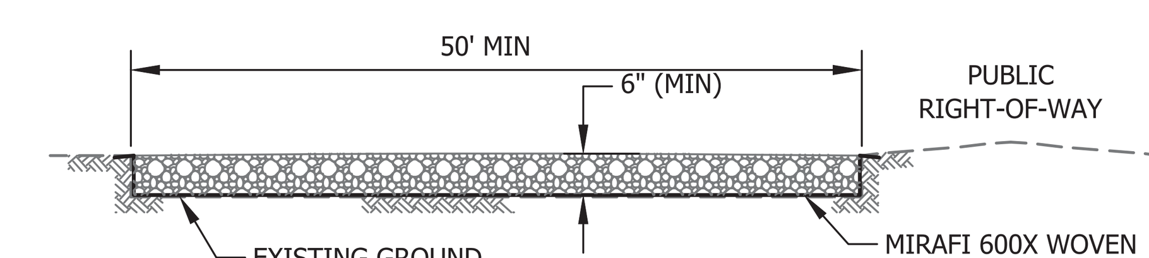
NOTE:
CONTRACTORS OPTION TO USE SEDIMENT BARRIER OR SILT FENCE FOR SLOPE PROTECTION.

SURFACE DRAINAGE SEDIMENT CONTROL

NTS



PLAN



PROFILE

CONSTRUCTION SPECIFICATIONS

NOTES:
1. STONE SIZE - 2" TO 3" STONE OR RECLAIMED OR RECYCLED CONCRETE,
2. OR EQUIVALENT.
3. LENGTH - AS EFFECTIVE, BUT NOT LESS THAN 50 FEET.
4. THICKNESS - NOT LESS THAN SIX (6) INCHES.
5. WIDTH - 10 FEET MINIMUM, OR NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
6. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC REPAIR AND TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.

STABILIZED CONSTRUCTION ENTRANCE/EXIT

NTS

STATE OF MAINE
DANIEL P. DIFFIN
11841
LICENSED PROFESSIONAL ENGINEER

BANGOR SAVINGS BANK
AUBURN BRANCH/OFFICE BUILDING
170 TURNER STREET
AUBURN, MAINE

EROSION CONTROL NOTES AND DETAILS

SME
SEVEE & MAHER ENGINEERS
ENVIRONMENTAL • CIVIL • GEOTECHNICAL • WATER • COMPLIANCE
4 Blanchard Road, PO Box 85A, Cumberland, Maine 04021
Phone 207.829.5016 • Fax 207.829.5692 • smemaine.com

DESIGN BY:	JTR
DRAWN BY:	BWB
DATE:	4/2018
CHECKED BY:	
LMN:	NONE
CTB:	SME-STD

JOB NO. 17159.00 DWG FILE DETAILS

C-300

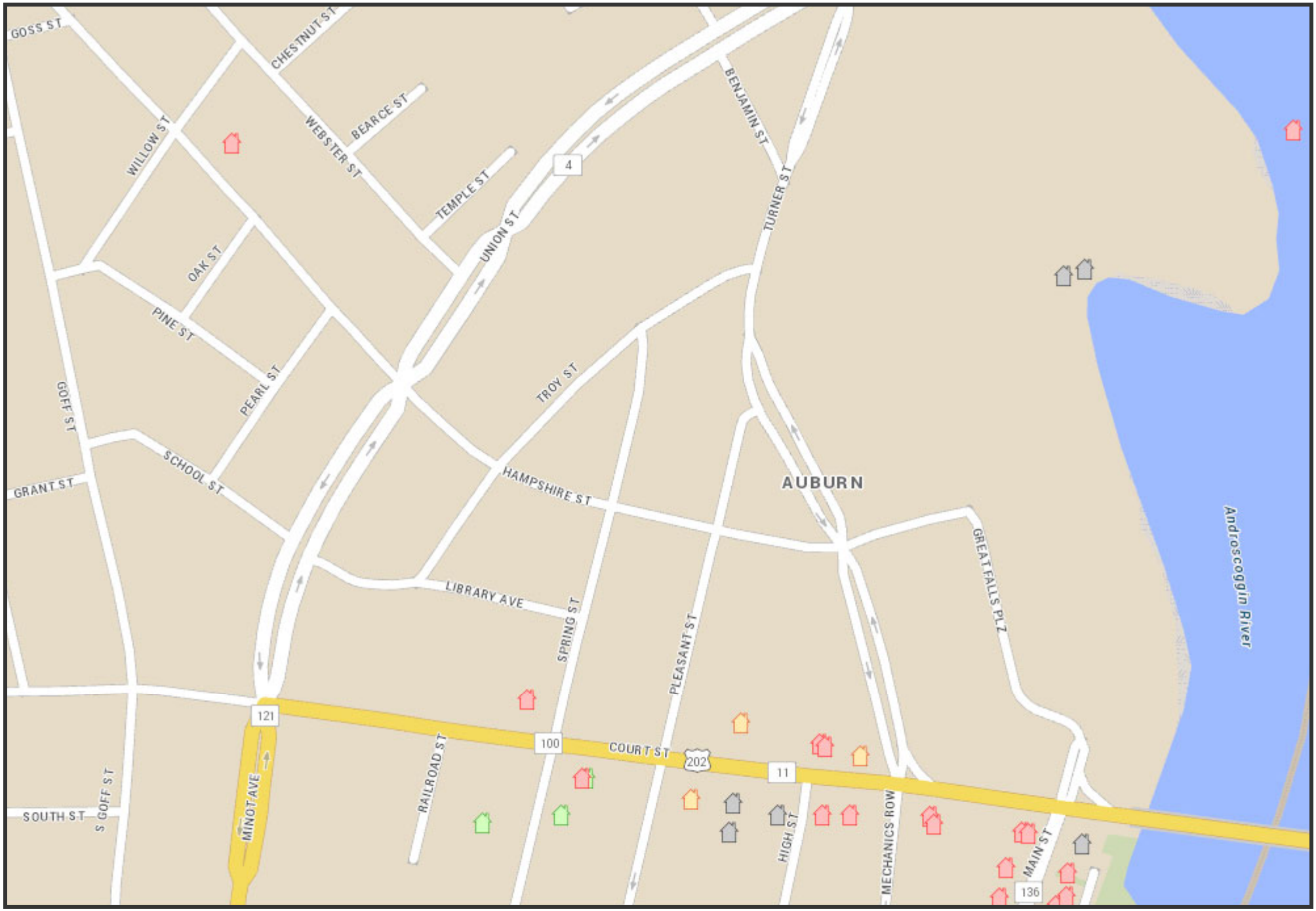
REV.	BY	DATE	STATUS
	JTR	11/2018	ISSUED FOR STAFF REVIEW

ATTACHMENT F

MHPC MAP

SME
SEVEE & MAHER
ENGINEERS

MHPC MAP



The Maine Department of Transportation provides this publication for information only. Reliance upon this information is at user risk. It is subject to revision and may be incomplete depending upon changing conditions. The Department assumes no liability if injuries or damages result from this information. This map is not intended to support emergency dispatch.

0.1 Miles

1 inch = 0.07 miles

Date: 10/16/2018
Time: 1:37:55 PM

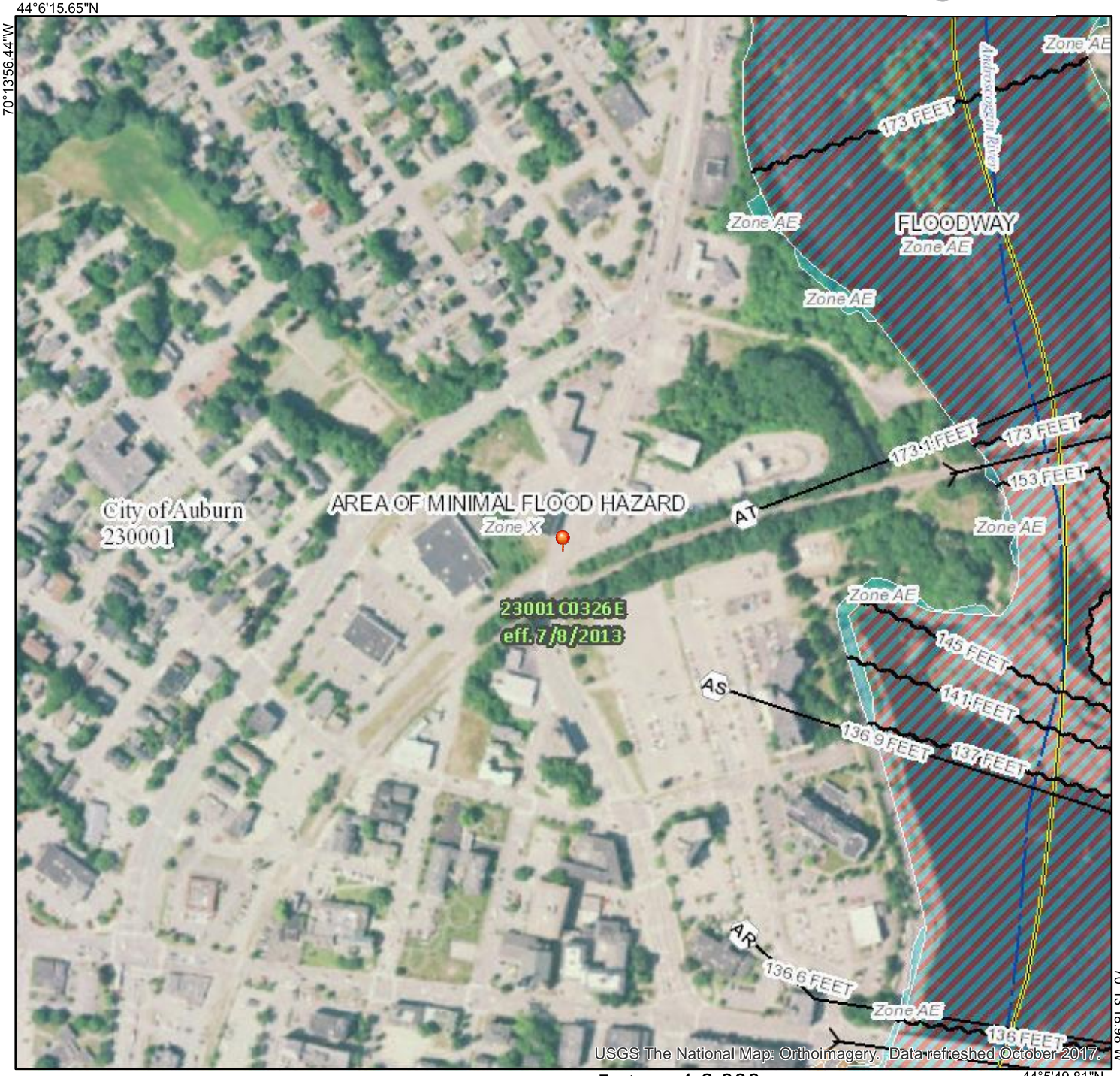
ATTACHMENT G

FEMA FIRM MAP

SME
SEVEE & MAHER
ENGINEERS

National Flood Hazard Layer FIRMette

FEMA



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
- 513 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 10/22/2018 at 2:23:40 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.