SEBAGO TECHNICS

CIVIL ENGINEERING • SURVEYING • LANDSCAPE ARCHITECTURE

Town of Windham
Final – Major Site Plan

For:

Windham Public Safety Renovation & Expansion Project
375 Gray Road
Windham, Maine

Prepared for:

Town of Windham
8 School Street
Windham, Maine

Prepared by:

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

March 2021

Windham Public Safety
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April 5, 2021
20566

Ms. Amanda Lessard, Planning Director
Town of Windham Planning Board
8 School Road
Windham ME, 04062

Major Site Plan Submittal
Windham Public Safety Rénovation and Expansion Project

Dear Ms. Lessard:

On behalf of the Town of Windham and the Project Team, we have prepared the following Major Site Plan Application for the renovation and expansion of the Windham Public Safety Building located at 375 Gray Road in Windham. The Town of Windham approved the construction of the addition and renovations on June 13, 2020. Since that time, the Town has solicited design-build contractors and awarded a design-build contract to Great Falls Construction of Gorham, Maine. Sebago Technics, Inc., has been retained by Great Falls Construction as part of the project team to assemble this site plan application for staff and Planning Board Consideration.

Introduction:

The project will include renovation of the existing public safety building to include a new 10,920 square foot expansion for six fire bays along with the construction of a new 29' by 45' evidence building and associated site improvements. The project will principally occupy the existing developed area on the site. The fire apparatus apron will be relocated from the south-facing side of the current fire station to a north-facing orientation (facing Route 202) as part of the building addition. Exterior apparatus parking will be added to the site where the prior apparatus bay apron was located with a small enlargement.

The existing parking lots and associated circulation areas will remain unchanged with the site improvements limited to the addition area for the new building and apparatus apron. A 29' by 45' single-story secure evidence building is also proposed and will be located within the existing paved area at the northwest end of the site.

The purpose of the project is to modernize the facility and alleviate space constraints that currently exist.

Building Architecture:

The existing building was constructed in 1989 and consists of a two-story brick façade and asphalt single roof building. The total gross square footage is approximately 27,276 square feet (GFA) and approximately 17,000 square feet of living area. The proposed addition will be two stories and will total approximately 10,920 square feet. The addition will include a connector to the existing building, six apparatus bays and associated uses, office space, staff space, bunk rooms, and a break/day room.

The new building will include a partial brick façade, horizontal oriented metal sidings, a flush metal siding frame, windows, six new bay doors, and a flat membrane roof.

Permitting:

The project will require Town of Windham Site Plan approval. The project is small enough that it will not require any state permitting such as a Maine DEP Stormwater Permit, SLODA, or NRPA permit. The project site will not impact any natural resources and will be fully developed within existing developed spaces.

Funding:

The project received municipal authorization through the town warrant process on June 13, 2020 (attached). After the funding was approved, the town solicited competitive design-build proposals and selected Great Falls Construction, Inc. of Gorham, Maine. The town awarded the construction contract on December 22, 2020.

Utilities:

The existing facility is served by public water from the Portland Water District. The project will utilize the existing fire and domestic services to the site with no alternations.

The project site is currently served by an onsite subsurface wastewater system. The proposed addition is not expected to increase the generation of wastewater as it is an expansion and modernization project to accommodate existing building occupancy and uses. Attached is a spreadsheet using the Maine State Plumbing Code wastewater generation rules that demonstrates the current system is adequately sized.

Electrical and telecommunications currently serve the project site and will be internally expanded from within the building.

Natural gas is currently stubbed at the front of the building. The gas will enter the building front of the building and be routed to the existing heat plant.

Stormwater & Erosion Control:

The project site is currently developed. As part of the original 1989 project, a stormwater collection system and detention pond was constructed to limit run-off from the development to pre-development rates. The proposed project will continue to utilize this infrastructure. A Hydro-Cad model was prepared and watershed mapping completed to confirm the proposed addition will not adversely impact the existing stormwater system. Results of the assessment indicate no change in hydraulic conditions as the expansion will principally occur in existing developed areas and the existing detention pond has adequate capacity. The Hydro-Cad model and watershed maps are included in this application.

The plans include an entire plan sheet dedicated to erosion and sedimentation control for the project. We have placed the erosion control notes directly on the plan set for ease of reference during construction. The erosion control plan was developed consisting of the Maine DEP BMP's.

Lighting:

As part of the project, the existing exterior pole-mounted lighting will be replaced with more efficient LED lighting. Attached is the photometric plan prepared by Swaney Lighting for the project. LED building-mounted wall packs will also be installed and have been included in the photometric modeling.

Technical Capacity:

The Town of Windham retained Harriman Associates to complete the programming and conceptual design phase of the project along with assistance in developing the design-build documents. Through the design-build process, the town selected Great Falls Construction who in turn will utilize the following design professionals:

1. Sebago Technics, Inc. for the site, civil, and permitting.
2. Grant-Hays Associates for Architectural services.
3. Allied Engineering for mechanical, electrical, and structural services.
4. S.W. Cole Engineering for geotechnical services.

This professional consultant team and the D-B contractor have established firms with direct experience in fire station building projects. The project just completed a 7-million-dollar fire station for the City of South Portland. Collectively, the team has the technical capacity and experience to complete a project of this type.

Traffic:

The project is intended as a modernization project to accommodate space constraints for the existing facility. As such, traffic generation will remain similar to the existing use and is not expected to change.

Project Costs:

The contract awarded to Great Falls Construction was for $4,300,000.00. The Town approved up to $4,960,544 in general obligation bonds.

1. Building Costs: $3,977,153
2. Site Work: $ 322,000

Balance of costs will include contingencies, owner items, IT, and related.

Schedule:

Pending Planning Board approval, the Town hopes to start construction in the spring of 2021 and complete the project by the summer of 2022.

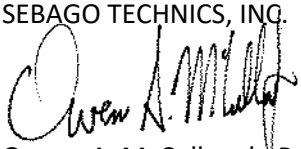
Closure:

On behalf of the Town of Windham and the Project Team, we look forward to working with the Planning Staff and Planning Board to permit this project. As always, please feel free to contact me with any questions or if you need additional information.

SEBAGO TECHNICS, INC.

Sincerely,

SEBAGO TECHNICS, INC.



Owens A. McCullough, P.E., LEED-AP
Sr. Vice President, Strategy and Client Development

Cc: Barry Tibbets, Town Manager
Valerie Paquin-Gould, Great Falls Construction

TOWN OF WINDHAM
MAJOR SITE PLAN APPLICATION

Final Plan

(Section 811 – Site Plan Review, Submission Requirements)

The original signed copy of this application must be accompanied by:

- The required application and review escrow fees,
- Five (5) collated submission packets, which must include
    - Full size paper copies of each plan, map, or drawing, and
    - A bound copy of the required information found in Section 811 of the Land Use Ordinance.
        - The checklist below offers a brief description of these requirements for the purpose of determining the completeness of a submission. Please use the Ordinance for assembling the submission packets.
        - Only two (2) full copies of Stormwater Management Plan and Traffic Impact Study are required. Summaries and conclusions of the Stormwater Management Plan and Traffic Impact Study are adequate for the remaining three (3) submission packets.
- Electronic submission in PDF format of:
    - All plans, maps, and drawings.
        - These may be submitted as a single PDF file or a PDF for each sheet in the plan set.
    - A PDF of the required information found in Section 811 of the Land Use Ordinance

The submission deadline for Final plans is three (3) weeks before the Planning Board meeting for which it will be scheduled.

Applicants are strongly encouraged to schedule a brief submission meeting with Planning Staff, to walk through the application checklist at the time a Planning Board submission is made. This will allow applicants to receive a determination of completeness, or a punch list of outstanding items, at the time a submission is made.

If you have questions about the submission requirements, please contact:

Windham Planning Department	(207) 894-5960, ext. 2
Jenn Curtis, Planner	jcurtis@windhammaine.us
Amanda Lessard, Planning Director	allessard@windhammaine.us

Final Plan - Major Site Plan

Project Name: Windham Public Safety Building Addition

Tax Map: 9 **Lot:** 71

Estimated square footage of building(s): 27,276 s.f. (Existing), 12,225 s.f. (New - Includes Evidence Bldg.)

If no buildings proposed, estimated square footage of total development: _____

Is the total disturbance proposed > 1 acre? ☐ **Yes** ☒ **No** 35,000 s.f. +/-

Contact Information

1. Applicant

Name: Town of Windham

Mailing Address: 8 School Street, Windham, Maine 04062

Telephone: 207-892-1907 Fax: _____ E-mail: batibbetts@windhammaine.us

2. Record owner of property

X (Check here if same as applicant)

Name: _____

Mailing Address: _____

Telephone: _____ Fax: _____ E-mail: _____

3. Contact Person/Agent (if completed and signed by applicant's agent, provide written documentation of authority to act on behalf of applicant)

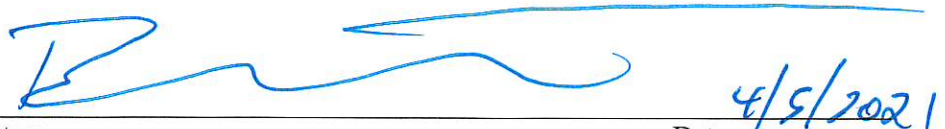
Name: Owens A. McCullough

Company Name: Sebago Technics, Inc.

Mailing Address: 75 John Roberts Road, Suite 4A, South Portland, Maine 04106

Telephone: 207-200-2100 Fax: 207-856-2206 E-mail: oamccullough@sebagotechnics.com

I certify all the information in this application form and accompanying materials is true and accurate to the best of my knowledge.



Signature Date 4/5/2021

Final Plan - Major Site Plan: Submission Requirements		Applicant	Staff
a.	Complete Sketch Plan Application form	N/A	
b.	Evidence of payment of application and escrow fees Town Project	N/A	
c.	Written information - submitted in bound report	X	
1	A narrative describing the proposed use or activity	X	
2	Name, address, & phone number of record owner, and applicant if different	N/A	
3	Names and addresses of all abutting property owners	X	
4	Documentation demonstrating right, title, or interest in property	X	
5	Copies of existing proposed covenants or deed restrictions	N/A	
6	Copies of existing or proposed easements on the property	N/A	
7	Name, registration number, and seal of the licensed professional who prepared the plan, if applicable	X	
8	Evidence of applicant's technical capability to carry out the project	X	
9	Assessment of the adequacy of any existing sewer and water mains, culverts and drains, on-site sewage disposal systems, wells, underground tanks or installations, and power and telephone lines and poles on the property	X	
10	Estimated demand for water supply and sewage disposal	X	
11	Provisions for handling all solid wastes, including hazardous and special wastes	X	
12	Detail sheets of proposed light fixtures	X	
13	Listing of proposed trees or shrubs to be used for landscaping		
14	Estimate weekday AM and PM and Saturday peak hour and daily traffic to be generated by the project No change in intensity of use is proposed.	N/A	
15	Description of important or unique natural areas and site features, including floodplains, deer wintering areas, significant wildlife habitats, fisheries, scenic areas, habitat for rare and endangered plants and animals, unique natural communities and natural areas, sand and gravel aquifers, and historic and/or archeological resources	None Developed Parcel	
16	If the project requires a stormwater permit from MaineDEP or if the Planning Board or if the Staff Review Committee determines that such information is required, submit the following:		
	stormwater calculations	X	
	erosion and sedimentation control measures	X	
	water quality and/or phosphorous export management provisions	N/A	
17	If public water or sewerage will be utilized, provide statement from utility district regarding the adequacy of water supply in terms of quantity and pressure for both domestic and fire flows, and the capacity of the sewer system to accommodate additional wastewater.	N/A Existing Service	
18	Financial Capacity		
	i. Estimated costs of development and itemize estimated major expenses	X	
	ii. Financing (submit one of the following)		
	a. Letter of commitment to fund	X	

	b. Self-financing Municipal Bond	N/A	
	1. Annual corporate report		
	2. Bank Statement		
	c. Other		
	1. Cash equity commitment of 20% of total cost of development	N/A	
	2. Financial plan for remaining financing		
	3. Letter from institution indicating intent to finance		
	iii. If a registered corporation a Certificate of Good Standing from:		
	Secretary of State, or	N/A	
	statement signed by corporate officer		
19	Technical Capacity (address both)		
	i. Prior experience	X	
	ii. Personnel	X	
d.	**Plan Requirements - Existing Conditions**		
i.	Location Map adequate to locate project within the municipality	X	
ii.	Vicinity Plan. Drawn to scale of not over 400 feet to the inch, and showing area within 250 feet of the property line, and shall show the following:	X - Plan Cover Sht.	
	a. Approximate location of all property lines and acreage of parcels	X	
	b. Locations, widths and names of existing, filed or proposed streets, easements or building footprints	N/A	
	c. Location and designations of any public spaces	N/A	
	d. Outline of proposed subdivision, together with its street system and an indication of the future probable street system of the remaining portion of the tract	N/A	
iii.	North Arrow identifying Grid North; Magnetic North with the declination between Grid and Magnetic; and whether Magnetic or Grid bearings were used	X	
iv.	Location of all required building setbacks, yards, and buffers	X	
v.	Boundaries of all contiguous property under the total or partial control of the owner or applicant	X	
vi.	Tax map and lot number of the parcel or parcels on which the project is located	X	
vii.	Zoning classification(s), including overlay and/or subdistricts, of the property and the location of zoning district boundaries if the property is located in 2 or more districts or abuts a different district.	X	
viii.	Bearings and lengths of all property lines of the property to be developed, and the stamp of the surveyor that performed the survey.	X	
ix.	Existing topography of the site at 2-foot contour intervals	X	
x.	Location and size of any existing sewer and water mains, culvers and drains, on-site sewage disposal systems, wells, underground tanks or installations, and power and telephone lines and poles on the property and on abutting streets or land that may serve the development.	X	
xi.	Location, names, and present widths of existing public and/or private streets and rights-of way within or adjacent to the proposed development	X	
xii.	Location, dimensions, and ground floor elevation of all existing buildings	X	

xiii.	Location and dimensions of existing driveways, parking and loading areas, walkways, and sidewalks on or adjacent to the site.	X	
xiv.	Location of intersecting roads or driveways within 200 feet of the site.	X	
xv.	Location of the following:		
	a. Open drainage courses	X	
	b. Wetlands	N/A	
	c. Stone walls	N/A	
	d. Graveyards	N/A	
	e. Fences	X	
	f. Stands of trees or treeline, and	X	
	g. Other important or unique natural areas and site features, including but not limited to, floodplains, deer wintering areas, significant wildlife habitats, fisheries, scenic areas, habitat for rare and endangered plants and animals, unique natural communities and natural areas, sand and gravel aquifers, and historic and/or archaeological resources	None Known	
xvi.	Direction of existing surface water drainage across the site	X	
xvii.	Location, front view, dimensions, and lighting of existing signs	Existing	
xviii.	Location & dimensions of existing easements that encumber or benefit the site	N/A	
xix.	Location of the nearest fire hydrant, dry hydrant, or other water supply	X	
	Plan Requirements - Proposed Development Activity		
i.	Location and dimensions of all provisions for water supply and wastewater disposal, and evidence of their adequacy for the proposed use, including soils test pit data if on-site sewage disposal is proposed	X	
ii.	Grading plan showing the proposed topography of the site at 2-foot contour intervals	X	
iii.	Direction of proposed surface water drainage across the site and from the site, with an assessment of impacts on downstream properties.	X	
iv.	Location and proposed screening of any on-site collection or storage facilities	X	
v.	Location, dimensions, and materials to be used in the construction of proposed driveways, parking and loading areas, and walkways, and any changes in traffic flow onto or off-site	X	
vi.	Proposed landscaping and buffering	X	
vii.	Location, dimensions, and ground floor elevation of all buildings or expansions	X	
viii.	Location, front view, materials and dimensions of proposed signs together with method for securing sign	Existing	
ix.	Location and type of exterior lighting. Photometric plan to demonstrate coverage area of all lighting may be required by Planning Board.	X	
x.	Location of all utilities, including fire protection systems	X	
xi.	Approval block: Provide space on the plan drawing for the following words, "Approved: Town of Windham Planning Board" along with space for signatures and date	X	

2.	**Major Final Site Plan Requirements**		
a.	Narrative and/or plan describing how the proposed development plan relates to the sketch plan	N/A	
b.	Stormwater drainage and erosion control program showing:		
	1. Existing and proposed method of handling stormwater runoff	X	
	2. Direction of the flow of the runoff, through the use of arrows and a description of the type of flow (e.g. sheet flow, concentrated flow, etc.)	X	
	3. Location, elevation, and size of all catch basins, dry wells, drainage ditches, swales, retention basins, and storm sewers	X	
	4. Engineering calculations used to determine drainage requirements based on the 25-year, 24-hour storm frequency.	X	
	5. Methods of minimizing erosion and controlling sedimentation during and after construction.	X	
c.	A groundwater impact analysis prepared by a groundwater hydrologist for projects involving on-site water supply or sewage disposal facilities with a capacity of 2,000 gallons or more per day	N/A	
d.	Name, registration number, and seal of the Maine Licensed Professional Architect, Engineer, Surveyor, Landscape Architect and/or similar professional who prepared the plan	X	
e.	A utility plan showing, in addition to provisions for water supply and wastewater disposal, the location and nature of electrical, telephone, cable TV, and any other utility services to be installed on the site	X	
f.	A planting schedule keyed to the site plan indicating the general varieties and sizes of trees, shrubs, and other vegetation to be planted on the site, as well as information pertaining to provisions that will be made to retain and protect existing trees, shrubs, and other vegetation	X	
g.	Digital transfer of any site plan data to the town (GIS format)	To be Provided	
h.	A traffic impact study if the project expansion will generate 50 or more trips during the AM or PM peak hour, or if required by the Planning Board	N/A No Change	
Electronic Submission		X	

Exhibit 1

Vicinity Maps

Windham Public Safety

April 2, 2021

- Municipal Boundaries
- Parcels
- Town Polygon

1:4,514

0 305 610 1,220 ft

0 90 180 360 m

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Exhibit 2

Abutting Property Owners

Abutters

March 31, 2021

1:4,514

0 210 420 840 ft

0 62.5 125 250 m

- Municipal Boundaries
- Parcels
- Town Polygon

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Abutting Properties for
375 GRAY RD WINDHAM, ME 04062
9/ 71/ / /
(100 Feet)

Exhibit 2: Abutters List

Location:
9/ 27/ E/ /
360 GRAY RD
Owner:
LAIDLAW ERIC &
LAIDLAW AESOOK CHO
360 GRAY ROAD
WINDHAM, ME 04062

Location:
9/ 74/ / /
89 SWETT RD
Owner:
JOHNSON DANIEL M
JOHNSON SHANNON L
89 SWETT RD
WINDHAM, ME 04062

Location:
43/ 73/ / /
377 GRAY RD
Owner:
TOWN OF WINDHAM
HUMAN SERVICES BLDG
8 SCHOOL ROAD
WINDHAM, ME 04062

Location:
9/ 27/ K03/ /
6 CONIFER DR
Owner:
MILLS ENTERPRISES LLC
13 VICTORIA LANE
WINDHAM, ME 04062

Location:
9/ 27/ K06/ /
12 CONIFER DR
Owner:
GILLIAM RAYMOND
GILLIAM JANICE
12 CONIFER DR
WINDHAM, ME 04062

Location:
9/ 27/ K09/ /
18 CONIFER DR
Owner:
GUERRETTE JOHN A
18 CONIFER DR
WINDHAM, ME 04062

Location:
9/ 27/ K12/ /
24 CONIFER DR
Owner:
AUSTIN SUSAN R
24 CONIFER DR
WINDHAM, ME 04062

Location:
9/ 27/ K01/ /
2 CONIFER DR
Owner:
WELD LLC
PO BOX 1361
WINDHAM, ME 04062

Location:
9/ 69/ D/ /
11 TOWN FARM RD
Owner:
CLARK REBECCA K
11 TOWN FARM RD
WINDHAM, ME 04062

Location:
9/ 75/ C/ /
1 TOWN FARM RD
Owner:
HALL SUSAN E &
HALL ADELAIDE B
1 TOWN FARM ROAD
WINDHAM, ME 04062

Location:
9/ 69/ / /
340 GRAY RD
Owner:
HASKELL CLAYTON W &
HASKELL KATHRYN C
9 HARRIETT AVENUE
WINDHAM, ME 04062

Location:
9/ 27/ K04/ /
8 CONIFER DR
Owner:
SMALL KIRK
SMALL PATRICIA
8 CONIFER DR
WINDHAM, ME 04062

Location:
9/ 27/ K07/ /
14 CONIFER DR
Owner:
SYPHERS ANNE M
14 CONIFER DR
WINDHAM, ME 04062

Location:
9/ 27/ K10/ /
20 CONIFER DR
Owner:
DAVIS DEBORAH T
DAVIS PETER R
20 CONIFER DR
WINDHAM, ME 04062

Location:
9/ 27/ K13/ /
26 CONIFER DR
Owner:
BELL RUTH I
SMITH KIMBERLY A
26 CONIFER DRIVE
WINDHAM, ME 04062

Location:
9/ 27/ K45/ /
15 UNITY LN
Owner:
WELD LLC
PO BOX 1361
WINDHAM, ME 04062

Location:
9/ 70/ / /
3 TOWN FARM RD
Owner:
DUPUIS JOSEPH ADRENA RAYMOND
3 TOWN FARM RD
WINDHAM, ME 04062

Location:
43/ 72/ B/ /
16 TOWN FARM RD
Owner:
PARKER DONALD &
PARKER SHARON
16 TOWN FARM ROAD
WINDHAM, ME 04062

Location:
9/ 27/ K02/ /
4 CONIFER DR
Owner:
WELD LLC
PO BOX 1361
WINDHAM, ME 04062

Location:
9/ 27/ K05/ /
10 CONIFER DR
Owner:
ABENA ALBERT
10 CONIFER DR
WINDHAM, ME 04062

Location:
9/ 27/ K08/ /
16 CONIFER DR
Owner:
HELLEN KAREN
16 CONIFER DRIVE
WINDHAM, ME 04062

Location:
9/ 27/ K11/ /
22 CONIFER DR
Owner:
KENNEY MARVIN
22 CONIFER DRIVE
WINDHAM, ME 04062

Location:
9/ 27/ K14/ /
28 CONIFER DR
Owner:
MCCLUSKEY SUZANNE
102 RUNNING BROOK RD
WINDHAM, ME 04062

Location:
9/ 27/ K46/ /
13 UNITY LN
Owner:
WELD LLC
PO BOX 1361
WINDHAM, ME 04062

Location:
9/ 27/ K47/ /
11 UNITY LN
Owner:
WELD LLC
PO BOX 1361
WINDHAM, ME 04062

Location:
9/ 27/ K48/ /
9 UNITY LN
Owner:
WELD LLC
PO BOX 1361
WINDHAM, ME 04062

Location:
9/ 27/ K49/ /
7 UNITY LN
Owner:
WELD LLC
PO BOX 1361
WINDHAM, ME 04062

Location:
9/ 27/ K50/ /
5 UNITY LN
Owner:
WELD LLC
PO BOX 1361
WINDHAM, ME 04062

Exhibit 3

Right, Title Interest

375 GRAY RD

Location	375 GRAY RD	**Mblu**	9/ 71/ / /
Acct#	T2665R	**Owner**	TOWN OF WINDHAM
Assessment	$1,803,500	**PID**	1148
Building Count	1		

Current Value

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
0	$1,694,900	$108,600	$1,803,500

Owner of Record

Owner	TOWN OF WINDHAM	**Sale Price**	$0
Co-Owner	PUBLIC SAFETY BLDG	**Certificate**	1
Address	8 SCHOOL ROAD WINDHAM, ME 04062	**Book & Page**	8273/0069
		Sale Date	04/27/1988

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
TOWN OF WINDHAM	$0	1	8273/0069	04/27/1988

Building Information

Building 1 : Section 1

Year Built:	1989
Living Area:	16,888
Replacement Cost:	$2,287,081
Building Percent Good:	74
Replacement Cost Less Depreciation:	$1,692,400

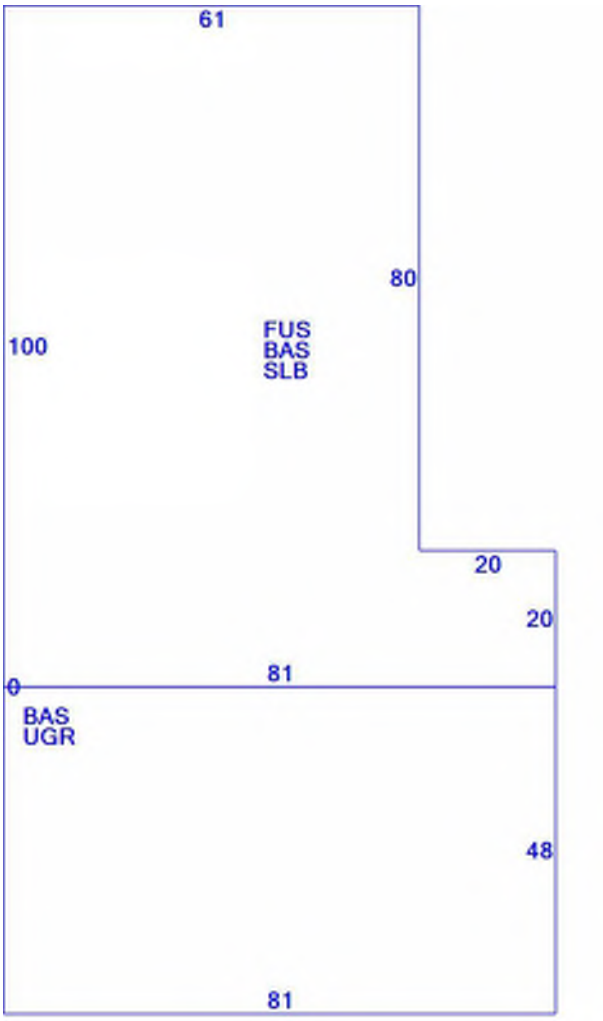
Building Attributes	
Field	**Description**
STYLE	Govt Municipal
MODEL	Commercial
Grade	Average
Stories:	2
Occupancy	

Building Photo

(http://images.vgsi.com/photos/WindhamMEPhotos//\00\00\84\59.jpg)

Exterior Wall 1	Brick Veneer
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Asph/F Gls/Cmp
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Vinyl/Asphalt
Interior Floor 2	Carpet
Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	Central
Struct Class	
Bldg Use	TOWN OF WINDHAM
Total Rooms	5
Total Bedrms	0
Total Baths	9
Usrfld 218	
Usrfld 219	
1st Floor Use:	
Heat/AC	HEAT/AC PKGS
Frame Type	WOOD FRAME
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	8.00
% Comn Wall	

Building Layout



(ParcelSketch.ashx?pid=1148&bid=1148)

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	10,388	10,388
FUS	Upper Story, Finished	6,500	6,500
SLB	Slab	6,500	0
UGR	Garage, Under	3,888	0
		27,276	16,888

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code 903C

Land Line Valuation

Size (Acres) 12.80

Description	TOWN OF WINDHAM	**Frontage**	
Zone	FR	**Depth**	
Neighborhood	001	**Assessed Value**	$108,600
Alt Land Appr	No		
Category			

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
SHD1	SHED FRAME			80.00 S.F.	$800	1
SHD1	SHED FRAME			168.00 S.F.	$1,700	1

Valuation History

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$1,694,900	$108,600	$1,803,500
2019	$1,694,900	$108,600	$1,803,500
2018	$1,694,900	$97,700	$1,792,600

Exhibit 4

Financial Capacity

Town of Windham

Town Offices
8 School Road
Windham, Maine

Cover Sheet

File Number: 20-263

Agenda Date: 12/22/2020 **Version:** 1 **Status:** Passed

In Control: Town Council **File Type:** Order

Agenda Number:

I. Council Action Requested.

To award a contract for the Public Safety Building - Central Fire Station expansion and Police Station renovation to Great Falls Construction of Gorham, Maine in the amount of $4,300,000, said amount to be paid from the proceeds of general obligation bonds to be issued and estimated revenue surplus, and to authorize the town manager to execute a contract with Great Falls Construction and to take any other necessary action related thereto. This pricing for the project is a guaranteed not to exceed price within the RFP parameters.

II. Basis for Council Action.

Council approval of this item is required because;

a. The Council has the authority to enter into contracts as the legislative body of the Town pursuant to Article II, Section 3(I) of the Charter, and
b. Article 22 of the approved town warrant of June 13, 2020 authorized “the Town to fund the appropriation by approving the terms and conditions of one or more agreements to effectuate the issuance of general obligation bonds (an notes in anticipation thereof) of the Town in a sum not to exceed $4,960,554, and
c. $3,600,000 of said amount is allotted “for the design, construction, improvement, expansion, repair and equipping of the police and fire station located at 375 Gray Road in the Town and related development of the site.

III. Issue Summary.

At its meeting of December 11, 2020, the Building Committee reviewed the proposals received along with recommendations of Harriman Architecture, lead on the town’s design team for the project, for the award of the construction contract.

Seven proposals for construction were received with the following base bids:

Company	Base Bid	Grand Total
Benchmark	$ 4,247,173	$ 4,944,007
Blane Casey	$ 5,104,130	$ 5,631,814
Doten's Construction	$ 4,378,504	$ 4,813,704
Great Falls Construction	$ 3,803,745	$ 4,271,310
Hardypond Construction	$ 4,549,451	$ 4,885,858
Structuretone	$ 4,528,564	$ 5,054,968

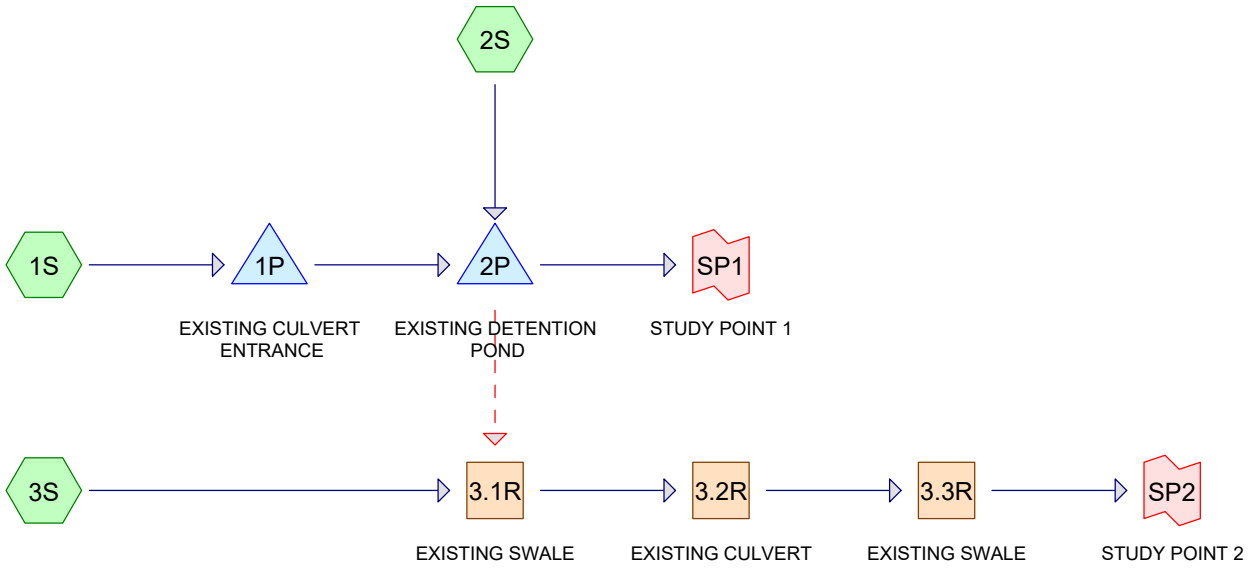
The Penobscot Company	$ 4,954,009	$ 5,255,627

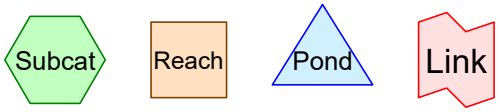
Proposals are available for review at the Town Manager's Office.

The proposal received from Great Falls complies with the RFP. This total represents a "Guaranteed not to exceed price." As the parameters are identified in the RFP and is within the approved budget for the project. The Building Committee, on a vote of 7-0, recommended award of the contract to Great Falls in the amount of $4,300,000.

Attachments

HydroCAD and Watershed Maps
Subsurface Wastewater Capacity Assessment
Site Development Plans
Photometric Plan
Elevations and Floor Plans





Routing Diagram for 20566 PRE
Prepared by Sebago Technics, Inc., Printed 4/2/2021

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.924	74	>75% Grass cover, Good, HSG C (1S, 2S, 3S)
1.226	98	EXISTING IMPERVIOUS (1S, 2S, 3S)
0.499	70	Woods, Good, HSG C (3S)
3.649	**82**	**TOTAL AREA**

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Runoff Area=40,950 sf 56.65% Impervious Runoff Depth=1.91"
Tc=6.0 min CN=88 Runoff=2.10 cfs 0.149 af

Subcatchment 2S: Runoff Area=53,250 sf 37.28% Impervious Runoff Depth=1.53"
Flow Length=85' Slope=0.0800 '/' Tc=7.3 min CN=83 Runoff=2.09 cfs 0.156 af

Subcatchment 3S: Runoff Area=64,750 sf 15.98% Impervious Runoff Depth=1.08"
Flow Length=270' Tc=8.6 min CN=76 Runoff=1.65 cfs 0.134 af

Reach 3.1R: EXISTING SWALE Avg. Flow Depth=0.12' Max Vel=2.34 fps Inflow=1.65 cfs 0.134 af
n=0.030 L=150.0' S=0.0412 '/' Capacity=76.06 cfs Outflow=1.64 cfs 0.134 af

Reach 3.2R: EXISTING CULVERT Avg. Flow Depth=0.32' Max Vel=6.07 fps Inflow=1.64 cfs 0.134 af
18.0" Round Pipe n=0.013 L=40.0' S=0.0260 '/' Capacity=16.94 cfs Outflow=1.64 cfs 0.134 af

Reach 3.3R: EXISTING SWALE Avg. Flow Depth=0.21' Max Vel=1.31 fps Inflow=1.64 cfs 0.134 af
n=0.100 L=80.0' S=0.0788 '/' Capacity=31.55 cfs Outflow=1.63 cfs 0.134 af

Pond 1P: EXISTING CULVERT ENTRANCE Peak Elev=242.00' Storage=0 cf Inflow=2.10 cfs 0.149 af
Discarded=2.10 cfs 0.149 af Primary=0.00 cfs 0.000 af Outflow=2.10 cfs 0.149 af

Pond 2P: EXISTING DETENTION POND Peak Elev=237.00' Storage=0 cf Inflow=2.09 cfs 0.156 af
Discarded=2.09 cfs 0.156 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=2.09 cfs 0.156 af

Link SP1: STUDY POINT 1 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link SP2: STUDY POINT 2 Inflow=1.63 cfs 0.134 af
Primary=1.63 cfs 0.134 af

Total Runoff Area = 3.649 ac Runoff Volume = 0.439 af Average Runoff Depth = 1.44"
66.40% Pervious = 2.423 ac 33.60% Impervious = 1.226 ac

Summary for Subcatchment 1S:

Runoff = 2.10 cfs @ 12.09 hrs, Volume= 0.149 af, Depth= 1.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.10"

	Area (sf)	CN	Description
*	23,200	98	EXISTING IMPERVIOUS
	17,750	74	>75% Grass cover, Good, HSG C
	40,950	88	Weighted Average
	17,750		43.35% Pervious Area
	23,200		56.65% Impervious Area

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

Summary for Subcatchment 2S:

Runoff = 2.09 cfs @ 12.11 hrs, Volume= 0.156 af, Depth= 1.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.10"

	Area (sf)	CN	Description
*	19,850	98	EXISTING IMPERVIOUS
	33,400	74	>75% Grass cover, Good, HSG C
	53,250	83	Weighted Average
	33,400		62.72% Pervious Area
	19,850		37.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	85	0.0800	0.19		**Sheet Flow, A-B**
					Grass: Dense n= 0.240 P2= 3.10"

Summary for Subcatchment 3S:

Runoff = 1.65 cfs @ 12.13 hrs, Volume= 0.134 af, Depth= 1.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.10"

	Area (sf)	CN	Description
*	10,350	98	EXISTING IMPERVIOUS
	32,650	74	>75% Grass cover, Good, HSG C
	21,750	70	Woods, Good, HSG C
	64,750	76	Weighted Average
	54,400		84.02% Pervious Area
	10,350		15.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	65	0.0620	0.17		**Sheet Flow, A-B**
					Grass: Dense n= 0.240 P2= 3.10"
2.0	135	0.0260	1.13		**Shallow Concentrated Flow, B-C**
					Short Grass Pasture Kv= 7.0 fps
0.1	70	0.0410	12.04	21.27	**Pipe Channel, C-D**
					18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38'
					n= 0.013 Corrugated PE, smooth interior
8.6	270	Total			

Summary for Reach 3.1R: EXISTING SWALE

Inflow Area = 1.486 ac, 15.98% Impervious, Inflow Depth = 1.08" for 2 YR event
Inflow = 1.65 cfs @ 12.13 hrs, Volume= 0.134 af
Outflow = 1.64 cfs @ 12.14 hrs, Volume= 0.134 af, Atten= 1%, Lag= 0.7 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.34 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 0.75 fps, Avg. Travel Time= 3.3 min

Peak Storage= 105 cf @ 12.14 hrs
Average Depth at Peak Storage= 0.12'
Bank-Full Depth= 1.00' Flow Area= 10.0 sf, Capacity= 76.06 cfs

5.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 5.0 '/' Top Width= 15.00'
Length= 150.0' Slope= 0.0412 '/'
Inlet Invert= 238.68', Outlet Invert= 232.50'

‡

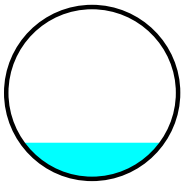
Summary for Reach 3.2R: EXISTING CULVERT

Inflow Area = 1.486 ac, 15.98% Impervious, Inflow Depth = 1.08" for 2 YR event
Inflow = 1.64 cfs @ 12.14 hrs, Volume= 0.134 af
Outflow = 1.64 cfs @ 12.14 hrs, Volume= 0.134 af, Atten= 0%, Lag= 0.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Max. Velocity= 6.07 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.35 fps, Avg. Travel Time= 0.3 min

Peak Storage= 11 cf @ 12.14 hrs
Average Depth at Peak Storage= 0.32'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 16.94 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 40.0' Slope= 0.0260 '/'
Inlet Invert= 232.34', Outlet Invert= 231.30'



Summary for Reach 3.3R: EXISTING SWALE

Inflow Area = 1.486 ac, 15.98% Impervious, Inflow Depth = 1.08" for 2 YR event
Inflow = 1.64 cfs @ 12.14 hrs, Volume= 0.134 af
Outflow = 1.63 cfs @ 12.15 hrs, Volume= 0.134 af, Atten= 1%, Lag= 0.7 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.31 fps, Min. Travel Time= 1.0 min
Avg. Velocity = 0.42 fps, Avg. Travel Time= 3.2 min

Peak Storage= 100 cf @ 12.15 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 1.00' Flow Area= 10.0 sf, Capacity= 31.55 cfs

5.00' x 1.00' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 5.0 '/' Top Width= 15.00'
Length= 80.0' Slope= 0.0788 '/'
Inlet Invert= 231.30', Outlet Invert= 225.00'

‡

Summary for Pond 1P: EXISTING CULVERT ENTRANCE

Inflow Area = 0.940 ac, 56.65% Impervious, Inflow Depth = 1.91" for 2 YR event
Inflow = 2.10 cfs @ 12.09 hrs, Volume= 0.149 af
Outflow = 2.10 cfs @ 12.09 hrs, Volume= 0.149 af, Atten= 0%, Lag= 0.0 min
Discarded = 2.10 cfs @ 12.09 hrs, Volume= 0.149 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 242.00' @ 12.09 hrs Surf.Area= 20 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (816.4 - 816.4)

Volume	Invert	Avail.Storage	Storage Description
#1	242.00'	5,147 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
242.00	20	15.0	0	0	20
243.00	35	25.0	27	27	58
244.00	55	35.0	45	72	114
245.00	750	150.0	336	408	1,810
246.00	2,580	225.0	1,574	1,981	4,055
247.00	3,790	260.0	3,166	5,147	5,428

Device	Routing	Invert	Outlet Devices
#1	Primary	242.60'	**12.0" Round Culvert** L= 135.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 242.60' / 241.40' S= 0.0089 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Discarded	242.00'	**2.41 cfs Infiltration at all elevations**

Discarded OutFlow Max=2.41 cfs @ 12.09 hrs HW=242.00' (Free Discharge)
↑└**2=Infiltration** (Exfiltration Controls 2.41 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=242.00' TW=237.00' (Dynamic Tailwater)
↑└**1=Culvert** (Controls 0.00 cfs)

Summary for Pond 2P: EXISTING DETENTION POND

Inflow Area = 2.163 ac, 45.70% Impervious, Inflow Depth = 0.86" for 2 YR event
Inflow = 2.09 cfs @ 12.11 hrs, Volume= 0.156 af
Outflow = 2.09 cfs @ 12.11 hrs, Volume= 0.156 af, Atten= 0%, Lag= 0.0 min
Discarded = 2.09 cfs @ 12.11 hrs, Volume= 0.156 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 237.00' @ 12.11 hrs Surf.Area= 660 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (835.7 - 835.7)

Volume	Invert	Avail.Storage	Storage Description
#1	237.00'	30,050 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
237.00	660	115.0	0	0	660
238.00	4,350	430.0	2,235	2,235	14,324
239.00	8,000	550.0	6,083	8,318	23,695
240.00	10,850	590.0	9,389	17,707	27,369
241.00	13,900	630.0	12,344	30,050	31,300

Device	Routing	Invert	Outlet Devices
#1	Primary	239.50'	**25.0' long x 18.0' breadth OVERFLOW SPILLWAY** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Secondary	239.50'	**25.0' long x 18.0' breadth OVERFLOW SPILLWAY 2** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Discarded	237.00'	**2.41 cfs Infiltration at all elevations**

Discarded OutFlow Max=2.41 cfs @ 12.11 hrs HW=237.00' (Free Discharge)
└**3=Infiltration** (Exfiltration Controls 2.41 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=237.00' TW=0.00' (Dynamic Tailwater)
└**1=OVERFLOW SPILLWAY** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=237.00' TW=238.68' (Dynamic Tailwater)
└**2=OVERFLOW SPILLWAY 2** (Controls 0.00 cfs)

Summary for Link SP1: STUDY POINT 1

Inflow Area = 2.163 ac, 45.70% Impervious, Inflow Depth = 0.00" for 2 YR event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Summary for Link SP2: STUDY POINT 2

Inflow Area = 1.486 ac, 15.98% Impervious, Inflow Depth = 1.08" for 2 YR event
Inflow = 1.63 cfs @ 12.15 hrs, Volume= 0.134 af
Primary = 1.63 cfs @ 12.15 hrs, Volume= 0.134 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Runoff Area=40,950 sf 56.65% Impervious Runoff Depth=3.29"
Tc=6.0 min CN=88 Runoff=3.56 cfs 0.258 af

Subcatchment 2S: Runoff Area=53,250 sf 37.28% Impervious Runoff Depth=2.81"
Flow Length=85' Slope=0.0800 '/' Tc=7.3 min CN=83 Runoff=3.85 cfs 0.287 af

Subcatchment 3S: Runoff Area=64,750 sf 15.98% Impervious Runoff Depth=2.21"
Flow Length=270' Tc=8.6 min CN=76 Runoff=3.50 cfs 0.274 af

Reach 3.1R: EXISTING SWALE Avg. Flow Depth=0.19' Max Vel=3.03 fps Inflow=3.50 cfs 0.274 af
n=0.030 L=150.0' S=0.0412 '/' Capacity=76.06 cfs Outflow=3.49 cfs 0.274 af

Reach 3.2R: EXISTING CULVERT Avg. Flow Depth=0.46' Max Vel=7.54 fps Inflow=3.49 cfs 0.274 af
18.0" Round Pipe n=0.013 L=40.0' S=0.0260 '/' Capacity=16.94 cfs Outflow=3.49 cfs 0.274 af

Reach 3.3R: EXISTING SWALE Avg. Flow Depth=0.32' Max Vel=1.67 fps Inflow=3.49 cfs 0.274 af
n=0.100 L=80.0' S=0.0788 '/' Capacity=31.55 cfs Outflow=3.47 cfs 0.274 af

Pond 1P: EXISTING CULVERT ENTRANCE Peak Elev=243.16' Storage=33 cf Inflow=3.56 cfs 0.258 af
Discarded=2.41 cfs 0.249 af Primary=1.15 cfs 0.009 af Outflow=3.56 cfs 0.258 af

Pond 2P: EXISTING DETENTION POND Peak Elev=237.64' Storage=983 cf Inflow=4.96 cfs 0.295 af
Discarded=2.41 cfs 0.296 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=2.41 cfs 0.296 af

Link SP1: STUDY POINT 1 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link SP2: STUDY POINT 2 Inflow=3.47 cfs 0.274 af
Primary=3.47 cfs 0.274 af

Total Runoff Area = 3.649 ac Runoff Volume = 0.818 af Average Runoff Depth = 2.69"
66.40% Pervious = 2.423 ac 33.60% Impervious = 1.226 ac

Summary for Subcatchment 1S:

Runoff = 3.56 cfs @ 12.09 hrs, Volume= 0.258 af, Depth= 3.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 YR Rainfall=4.60"

	Area (sf)	CN	Description
*	23,200	98	EXISTING IMPERVIOUS
	17,750	74	>75% Grass cover, Good, HSG C
	40,950	88	Weighted Average
	17,750		43.35% Pervious Area
	23,200		56.65% Impervious Area

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

Summary for Subcatchment 2S:

Runoff = 3.85 cfs @ 12.10 hrs, Volume= 0.287 af, Depth= 2.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 YR Rainfall=4.60"

	Area (sf)	CN	Description
*	19,850	98	EXISTING IMPERVIOUS
	33,400	74	>75% Grass cover, Good, HSG C
	53,250	83	Weighted Average
	33,400		62.72% Pervious Area
	19,850		37.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	85	0.0800	0.19		**Sheet Flow, A-B**
					Grass: Dense n= 0.240 P2= 3.10"

Summary for Subcatchment 3S:

Runoff = 3.50 cfs @ 12.12 hrs, Volume= 0.274 af, Depth= 2.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 YR Rainfall=4.60"

	Area (sf)	CN	Description
*	10,350	98	EXISTING IMPERVIOUS
	32,650	74	>75% Grass cover, Good, HSG C
	21,750	70	Woods, Good, HSG C
	64,750	76	Weighted Average
	54,400		84.02% Pervious Area
	10,350		15.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	65	0.0620	0.17		**Sheet Flow, A-B**
					Grass: Dense n= 0.240 P2= 3.10"
2.0	135	0.0260	1.13		**Shallow Concentrated Flow, B-C**
					Short Grass Pasture Kv= 7.0 fps
0.1	70	0.0410	12.04	21.27	**Pipe Channel, C-D**
					18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38'
					n= 0.013 Corrugated PE, smooth interior
8.6	270	Total			

Summary for Reach 3.1R: EXISTING SWALE

Inflow Area = 1.486 ac, 15.98% Impervious, Inflow Depth = 2.21" for 10 YR event
Inflow = 3.50 cfs @ 12.12 hrs, Volume= 0.274 af
Outflow = 3.49 cfs @ 12.13 hrs, Volume= 0.274 af, Atten= 0%, Lag= 0.5 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.03 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 0.91 fps, Avg. Travel Time= 2.7 min

Peak Storage= 173 cf @ 12.13 hrs
Average Depth at Peak Storage= 0.19'
Bank-Full Depth= 1.00' Flow Area= 10.0 sf, Capacity= 76.06 cfs

5.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 5.0 '/' Top Width= 15.00'
Length= 150.0' Slope= 0.0412 '/'
Inlet Invert= 238.68', Outlet Invert= 232.50'

‡

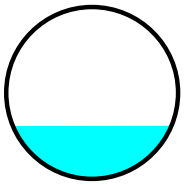
Summary for Reach 3.2R: EXISTING CULVERT

Inflow Area = 1.486 ac, 15.98% Impervious, Inflow Depth = 2.21" for 10 YR event
Inflow = 3.49 cfs @ 12.13 hrs, Volume= 0.274 af
Outflow = 3.49 cfs @ 12.13 hrs, Volume= 0.274 af, Atten= 0%, Lag= 0.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Max. Velocity= 7.54 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.77 fps, Avg. Travel Time= 0.2 min

Peak Storage= 18 cf @ 12.13 hrs
Average Depth at Peak Storage= 0.46'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 16.94 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 40.0' Slope= 0.0260 '/'
Inlet Invert= 232.34', Outlet Invert= 231.30'



Summary for Reach 3.3R: EXISTING SWALE

Inflow Area = 1.486 ac, 15.98% Impervious, Inflow Depth = 2.21" for 10 YR event
Inflow = 3.49 cfs @ 12.13 hrs, Volume= 0.274 af
Outflow = 3.47 cfs @ 12.14 hrs, Volume= 0.274 af, Atten= 0%, Lag= 0.6 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.67 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 0.51 fps, Avg. Travel Time= 2.6 min

Peak Storage= 167 cf @ 12.14 hrs
Average Depth at Peak Storage= 0.32'
Bank-Full Depth= 1.00' Flow Area= 10.0 sf, Capacity= 31.55 cfs

5.00' x 1.00' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 5.0 '/' Top Width= 15.00'
Length= 80.0' Slope= 0.0788 '/'
Inlet Invert= 231.30', Outlet Invert= 225.00'

‡

Summary for Pond 1P: EXISTING CULVERT ENTRANCE

Inflow Area = 0.940 ac, 56.65% Impervious, Inflow Depth = 3.29" for 10 YR event
Inflow = 3.56 cfs @ 12.09 hrs, Volume= 0.258 af
Outflow = 3.56 cfs @ 12.09 hrs, Volume= 0.258 af, Atten= 0%, Lag= 0.2 min
Discarded = 2.41 cfs @ 12.02 hrs, Volume= 0.249 af
Primary = 1.15 cfs @ 12.09 hrs, Volume= 0.009 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 243.16' @ 12.09 hrs Surf.Area= 38 sf Storage= 33 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.1 min (801.0 - 800.9)

Volume	Invert	Avail.Storage	Storage Description
#1	242.00'	5,147 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
242.00	20	15.0	0	0	20
243.00	35	25.0	27	27	58
244.00	55	35.0	45	72	114
245.00	750	150.0	336	408	1,810
246.00	2,580	225.0	1,574	1,981	4,055
247.00	3,790	260.0	3,166	5,147	5,428

Device	Routing	Invert	Outlet Devices
#1	Primary	242.60'	**12.0" Round Culvert** L= 135.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 242.60' / 241.40' S= 0.0089 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Discarded	242.00'	**2.41 cfs Infiltration at all elevations**

Discarded OutFlow Max=2.41 cfs @ 12.02 hrs HW=242.16' (Free Discharge)
2=Infiltration (Exfiltration Controls 2.41 cfs)

Primary OutFlow Max=1.14 cfs @ 12.09 hrs HW=243.16' TW=237.34' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.14 cfs @ 3.65 fps)

Summary for Pond 2P: EXISTING DETENTION POND

Inflow Area = 2.163 ac, 45.70% Impervious, Inflow Depth = 1.64" for 10 YR event
Inflow = 4.96 cfs @ 12.10 hrs, Volume= 0.295 af
Outflow = 2.41 cfs @ 12.04 hrs, Volume= 0.296 af, Atten= 51%, Lag= 0.0 min
Discarded = 2.41 cfs @ 12.04 hrs, Volume= 0.296 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 237.64' @ 12.22 hrs Surf.Area= 2,640 sf Storage= 983 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 1.5 min (816.8 - 815.4)

Volume	Invert	Avail.Storage	Storage Description
#1	237.00'	30,050 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
237.00	660	115.0	0	0	660
238.00	4,350	430.0	2,235	2,235	14,324
239.00	8,000	550.0	6,083	8,318	23,695
240.00	10,850	590.0	9,389	17,707	27,369
241.00	13,900	630.0	12,344	30,050	31,300

Device	Routing	Invert	Outlet Devices
#1	Primary	239.50'	**25.0' long x 18.0' breadth OVERFLOW SPILLWAY** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Secondary	239.50'	**25.0' long x 18.0' breadth OVERFLOW SPILLWAY 2** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Discarded	237.00'	**2.41 cfs Infiltration at all elevations**

Discarded OutFlow Max=2.41 cfs @ 12.04 hrs HW=237.04' (Free Discharge)
└**3=Infiltration** (Exfiltration Controls 2.41 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=237.00' TW=0.00' (Dynamic Tailwater)
└**1=OVERFLOW SPILLWAY** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=237.00' TW=238.68' (Dynamic Tailwater)
└**2=OVERFLOW SPILLWAY 2** (Controls 0.00 cfs)

Summary for Link SP1: STUDY POINT 1

Inflow Area = 2.163 ac, 45.70% Impervious, Inflow Depth = 0.00" for 10 YR event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Summary for Link SP2: STUDY POINT 2

Inflow Area = 1.486 ac, 15.98% Impervious, Inflow Depth = 2.21" for 10 YR event
Inflow = 3.47 cfs @ 12.14 hrs, Volume= 0.274 af
Primary = 3.47 cfs @ 12.14 hrs, Volume= 0.274 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Runoff Area=40,950 sf 56.65% Impervious Runoff Depth=4.43"
Tc=6.0 min CN=88 Runoff=4.73 cfs 0.347 af

Subcatchment 2S: Runoff Area=53,250 sf 37.28% Impervious Runoff Depth=3.91"
Flow Length=85' Slope=0.0800 '/' Tc=7.3 min CN=83 Runoff=5.30 cfs 0.398 af

Subcatchment 3S: Runoff Area=64,750 sf 15.98% Impervious Runoff Depth=3.21"
Flow Length=270' Tc=8.6 min CN=76 Runoff=5.11 cfs 0.397 af

Reach 3.1R: EXISTING SWALE Avg. Flow Depth=0.24' Max Vel=3.43 fps Inflow=5.11 cfs 0.397 af
n=0.030 L=150.0' S=0.0412 '/' Capacity=76.06 cfs Outflow=5.09 cfs 0.397 af

Reach 3.2R: EXISTING CULVERT Avg. Flow Depth=0.56' Max Vel=8.38 fps Inflow=5.09 cfs 0.397 af
18.0" Round Pipe n=0.013 L=40.0' S=0.0260 '/' Capacity=16.94 cfs Outflow=5.09 cfs 0.397 af

Reach 3.3R: EXISTING SWALE Avg. Flow Depth=0.39' Max Vel=1.88 fps Inflow=5.09 cfs 0.397 af
n=0.100 L=80.0' S=0.0788 '/' Capacity=31.55 cfs Outflow=5.07 cfs 0.397 af

Pond 1P: EXISTING CULVERT ENTRANCE Peak Elev=243.47' Storage=46 cf Inflow=4.73 cfs 0.347 af
Discarded=2.41 cfs 0.323 af Primary=2.32 cfs 0.025 af Outflow=4.73 cfs 0.347 af

Pond 2P: EXISTING DETENTION POND Peak Elev=238.11' Storage=2,755 cf Inflow=7.58 cfs 0.423 af
Discarded=2.41 cfs 0.423 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=2.41 cfs 0.423 af

Link SP1: STUDY POINT 1 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link SP2: STUDY POINT 2 Inflow=5.07 cfs 0.397 af
Primary=5.07 cfs 0.397 af

Total Runoff Area = 3.649 ac Runoff Volume = 1.143 af Average Runoff Depth = 3.76"
66.40% Pervious = 2.423 ac 33.60% Impervious = 1.226 ac

Summary for Subcatchment 1S:

Runoff = 4.73 cfs @ 12.09 hrs, Volume= 0.347 af, Depth= 4.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 YR Rainfall=5.80"

	Area (sf)	CN	Description
*	23,200	98	EXISTING IMPERVIOUS
	17,750	74	>75% Grass cover, Good, HSG C
	40,950	88	Weighted Average
	17,750		43.35% Pervious Area
	23,200		56.65% Impervious Area

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

Summary for Subcatchment 2S:

Runoff = 5.30 cfs @ 12.10 hrs, Volume= 0.398 af, Depth= 3.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 YR Rainfall=5.80"

	Area (sf)	CN	Description
*	19,850	98	EXISTING IMPERVIOUS
	33,400	74	>75% Grass cover, Good, HSG C
	53,250	83	Weighted Average
	33,400		62.72% Pervious Area
	19,850		37.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	85	0.0800	0.19		**Sheet Flow, A-B**
					Grass: Dense n= 0.240 P2= 3.10"

Summary for Subcatchment 3S:

Runoff = 5.11 cfs @ 12.12 hrs, Volume= 0.397 af, Depth= 3.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 YR Rainfall=5.80"

	Area (sf)	CN	Description
*	10,350	98	EXISTING IMPERVIOUS
	32,650	74	>75% Grass cover, Good, HSG C
	21,750	70	Woods, Good, HSG C
	64,750	76	Weighted Average
	54,400		84.02% Pervious Area
	10,350		15.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	65	0.0620	0.17		**Sheet Flow, A-B**
					Grass: Dense n= 0.240 P2= 3.10"
2.0	135	0.0260	1.13		**Shallow Concentrated Flow, B-C**
					Short Grass Pasture Kv= 7.0 fps
0.1	70	0.0410	12.04	21.27	**Pipe Channel, C-D**
					18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38'
					n= 0.013 Corrugated PE, smooth interior
8.6	270	Total			

Summary for Reach 3.1R: EXISTING SWALE

Inflow Area = 1.486 ac, 15.98% Impervious, Inflow Depth = 3.21" for 25 YR event
Inflow = 5.11 cfs @ 12.12 hrs, Volume= 0.397 af
Outflow = 5.09 cfs @ 12.13 hrs, Volume= 0.397 af, Atten= 0%, Lag= 0.5 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.43 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 1.01 fps, Avg. Travel Time= 2.5 min

Peak Storage= 223 cf @ 12.13 hrs
Average Depth at Peak Storage= 0.24'
Bank-Full Depth= 1.00' Flow Area= 10.0 sf, Capacity= 76.06 cfs

5.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 5.0 '/' Top Width= 15.00'
Length= 150.0' Slope= 0.0412 '/'
Inlet Invert= 238.68', Outlet Invert= 232.50'

‡

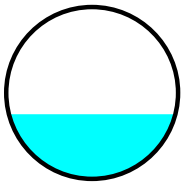
Summary for Reach 3.2R: EXISTING CULVERT

Inflow Area = 1.486 ac, 15.98% Impervious, Inflow Depth = 3.21" for 25 YR event
Inflow = 5.09 cfs @ 12.13 hrs, Volume= 0.397 af
Outflow = 5.09 cfs @ 12.13 hrs, Volume= 0.397 af, Atten= 0%, Lag= 0.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Max. Velocity= 8.38 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 3.01 fps, Avg. Travel Time= 0.2 min

Peak Storage= 24 cf @ 12.13 hrs
Average Depth at Peak Storage= 0.56'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 16.94 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 40.0' Slope= 0.0260 '/'
Inlet Invert= 232.34', Outlet Invert= 231.30'



Summary for Reach 3.3R: EXISTING SWALE

Inflow Area = 1.486 ac, 15.98% Impervious, Inflow Depth = 3.21" for 25 YR event
Inflow = 5.09 cfs @ 12.13 hrs, Volume= 0.397 af
Outflow = 5.07 cfs @ 12.14 hrs, Volume= 0.397 af, Atten= 0%, Lag= 0.5 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.88 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 0.57 fps, Avg. Travel Time= 2.4 min

Peak Storage= 216 cf @ 12.14 hrs
Average Depth at Peak Storage= 0.39'
Bank-Full Depth= 1.00' Flow Area= 10.0 sf, Capacity= 31.55 cfs

5.00' x 1.00' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 5.0 '/' Top Width= 15.00'
Length= 80.0' Slope= 0.0788 '/'
Inlet Invert= 231.30', Outlet Invert= 225.00'

‡

Summary for Pond 1P: EXISTING CULVERT ENTRANCE

Inflow Area = 0.940 ac, 56.65% Impervious, Inflow Depth = 4.43" for 25 YR event
Inflow = 4.73 cfs @ 12.09 hrs, Volume= 0.347 af
Outflow = 4.73 cfs @ 12.09 hrs, Volume= 0.347 af, Atten= 0%, Lag= 0.2 min
Discarded = 2.41 cfs @ 11.98 hrs, Volume= 0.323 af
Primary = 2.32 cfs @ 12.09 hrs, Volume= 0.025 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 243.47' @ 12.09 hrs Surf.Area= 44 sf Storage= 46 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.1 min (792.8 - 792.7)

Volume	Invert	Avail.Storage	Storage Description
#1	242.00'	5,147 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
242.00	20	15.0	0	0	20
243.00	35	25.0	27	27	58
244.00	55	35.0	45	72	114
245.00	750	150.0	336	408	1,810
246.00	2,580	225.0	1,574	1,981	4,055
247.00	3,790	260.0	3,166	5,147	5,428

Device	Routing	Invert	Outlet Devices
#1	Primary	242.60'	**12.0" Round Culvert** L= 135.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 242.60' / 241.40' S= 0.0089 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Discarded	242.00'	**2.41 cfs Infiltration at all elevations**

Discarded OutFlow Max=2.41 cfs @ 11.98 hrs HW=242.05' (Free Discharge)
2=Infiltration (Exfiltration Controls 2.41 cfs)

Primary OutFlow Max=2.31 cfs @ 12.09 hrs HW=243.47' TW=237.67' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.31 cfs @ 3.18 fps)

Summary for Pond 2P: EXISTING DETENTION POND

Inflow Area = 2.163 ac, 45.70% Impervious, Inflow Depth = 2.34" for 25 YR event
Inflow = 7.58 cfs @ 12.10 hrs, Volume= 0.423 af
Outflow = 2.41 cfs @ 12.00 hrs, Volume= 0.423 af, Atten= 68%, Lag= 0.0 min
Discarded = 2.41 cfs @ 12.00 hrs, Volume= 0.423 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 238.11' @ 12.31 hrs Surf.Area= 4,713 sf Storage= 2,755 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 5.2 min (809.1 - 803.9)

Volume	Invert	Avail.Storage	Storage Description
#1	237.00'	30,050 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
237.00	660	115.0	0	0	660
238.00	4,350	430.0	2,235	2,235	14,324
239.00	8,000	550.0	6,083	8,318	23,695
240.00	10,850	590.0	9,389	17,707	27,369
241.00	13,900	630.0	12,344	30,050	31,300

Device	Routing	Invert	Outlet Devices
#1	Primary	239.50'	**25.0' long x 18.0' breadth OVERFLOW SPILLWAY** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Secondary	239.50'	**25.0' long x 18.0' breadth OVERFLOW SPILLWAY 2** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Discarded	237.00'	**2.41 cfs Infiltration at all elevations**

Discarded OutFlow Max=2.41 cfs @ 12.00 hrs HW=237.04' (Free Discharge)
└**3=Infiltration** (Exfiltration Controls 2.41 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=237.00' TW=0.00' (Dynamic Tailwater)
└**1=OVERFLOW SPILLWAY** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=237.00' TW=238.68' (Dynamic Tailwater)
└**2=OVERFLOW SPILLWAY 2** (Controls 0.00 cfs)

Summary for Link SP1: STUDY POINT 1

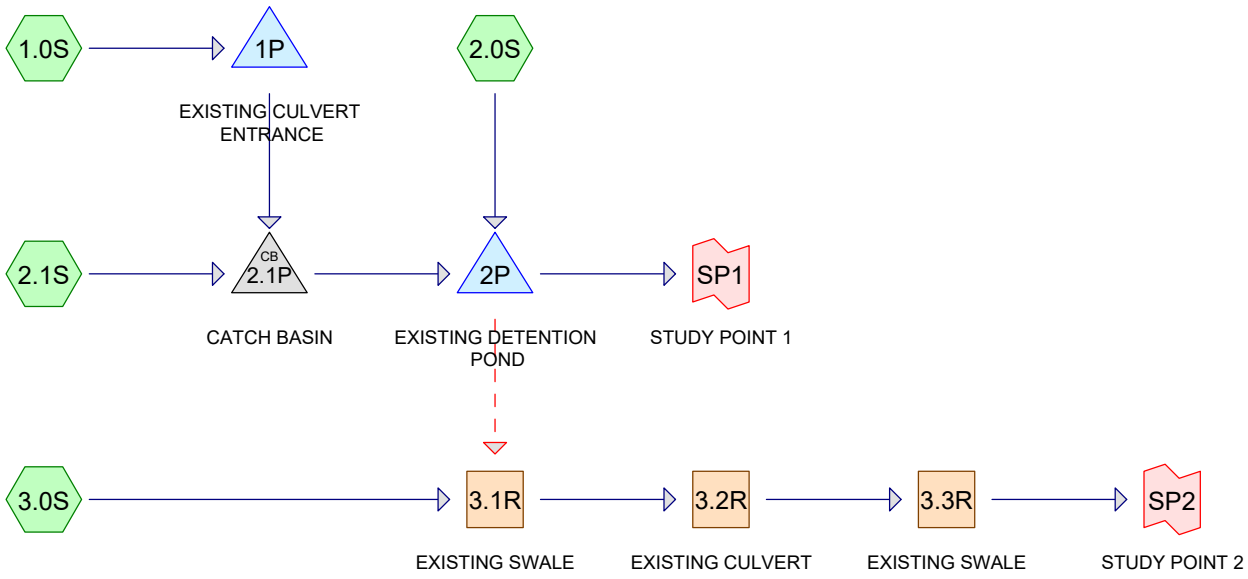
Inflow Area = 2.163 ac, 45.70% Impervious, Inflow Depth = 0.00" for 25 YR event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Summary for Link SP2: STUDY POINT 2

Inflow Area = 1.486 ac, 15.98% Impervious, Inflow Depth = 3.21" for 25 YR event
Inflow = 5.07 cfs @ 12.14 hrs, Volume= 0.397 af
Primary = 5.07 cfs @ 12.14 hrs, Volume= 0.397 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs



Subcat Reach Pond Link

Routing Diagram for 20566 POST
Prepared by Sebago Technics, Inc., Printed 4/2/2021

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.792	74	>75% Grass cover, Good, HSG C (1.0S, 2.0S, 3.0S)
1.057	98	EXISTING IMPERVIOUS (1.0S, 2.0S, 3.0S)
0.300	98	PROPOSED IMPERVIOUS (1.0S, 2.0S, 2.1S)
0.499	70	Woods, Good, HSG C (3.0S)
3.648	**82**	**TOTAL AREA**

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1.0S: Runoff Area=39,850 sf 63.24% Impervious Runoff Depth=1.99"
Tc=6.0 min CN=89 Runoff=2.12 cfs 0.152 af

Subcatchment 2.0S: Runoff Area=54,700 sf 38.48% Impervious Runoff Depth=1.53"
Flow Length=85' Slope=0.0800 '/' Tc=7.3 min CN=83 Runoff=2.14 cfs 0.160 af

Subcatchment 2.1S: Runoff Area=9,850 sf 100.00% Impervious Runoff Depth=2.87"
Tc=6.0 min CN=98 Runoff=0.68 cfs 0.054 af

Subcatchment 3.0S: Runoff Area=54,500 sf 5.50% Impervious Runoff Depth=0.97"
Flow Length=265' Tc=9.5 min CN=74 Runoff=1.19 cfs 0.101 af

Reach 3.1R: EXISTING SWALE Avg. Flow Depth=0.10' Max Vel=2.08 fps Inflow=1.19 cfs 0.101 af
n=0.030 L=150.0' S=0.0412 '/' Capacity=76.06 cfs Outflow=1.18 cfs 0.101 af

Reach 3.2R: EXISTING CULVERT Avg. Flow Depth=0.27' Max Vel=5.51 fps Inflow=1.18 cfs 0.101 af
18.0" Round Pipe n=0.013 L=40.0' S=0.0260 '/' Capacity=16.94 cfs Outflow=1.18 cfs 0.101 af

Reach 3.3R: EXISTING SWALE Avg. Flow Depth=0.17' Max Vel=1.17 fps Inflow=1.18 cfs 0.101 af
n=0.100 L=80.0' S=0.0788 '/' Capacity=31.55 cfs Outflow=1.17 cfs 0.101 af

Pond 1P: EXISTING CULVERT ENTRANCE Peak Elev=242.00' Storage=0 cf Inflow=2.12 cfs 0.152 af
Discarded=2.12 cfs 0.152 af Primary=0.00 cfs 0.000 af Outflow=2.12 cfs 0.152 af

Pond 2.1P: CATCH BASIN Peak Elev=242.07' Inflow=0.68 cfs 0.054 af
12.0" Round Culvert n=0.013 L=55.0' S=0.0051 '/' Outflow=0.68 cfs 0.054 af

Pond 2P: EXISTING DETENTION POND Peak Elev=237.12' Storage=92 cf Inflow=2.80 cfs 0.214 af
Discarded=2.41 cfs 0.214 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=2.41 cfs 0.214 af

Link SP1: STUDY POINT 1 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link SP2: STUDY POINT 2 Inflow=1.17 cfs 0.101 af
Primary=1.17 cfs 0.101 af

Total Runoff Area = 3.648 ac Runoff Volume = 0.467 af Average Runoff Depth = 1.54"
62.81% Pervious = 2.291 ac 37.19% Impervious = 1.357 ac

Summary for Subcatchment 1.0S:

Runoff = 2.12 cfs @ 12.09 hrs, Volume= 0.152 af, Depth= 1.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.10"

	Area (sf)	CN	Description
*	23,200	98	EXISTING IMPERVIOUS
*	2,000	98	PROPOSED IMPERVIOUS
	14,650	74	>75% Grass cover, Good, HSG C
	39,850	89	Weighted Average
	14,650		36.76% Pervious Area
	25,200		63.24% Impervious Area

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

Summary for Subcatchment 2.0S:

Runoff = 2.14 cfs @ 12.11 hrs, Volume= 0.160 af, Depth= 1.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.10"

	Area (sf)	CN	Description
*	19,850	98	EXISTING IMPERVIOUS
*	1,200	98	PROPOSED IMPERVIOUS
	33,650	74	>75% Grass cover, Good, HSG C
	54,700	83	Weighted Average
	33,650		61.52% Pervious Area
	21,050		38.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	85	0.0800	0.19		**Sheet Flow, A-B**
					Grass: Dense n= 0.240 P2= 3.10"

Summary for Subcatchment 2.1S:

Runoff = 0.68 cfs @ 12.08 hrs, Volume= 0.054 af, Depth= 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.10"

	Area (sf)	CN	Description
*	9,850	98	PROPOSED IMPERVIOUS
	9,850		100.00% Impervious Area

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

Summary for Subcatchment 3.0S:

Runoff = 1.19 cfs @ 12.14 hrs, Volume= 0.101 af, Depth= 0.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.10"

	Area (sf)	CN	Description
*	3,000	98	EXISTING IMPERVIOUS
	29,750	74	>75% Grass cover, Good, HSG C
	21,750	70	Woods, Good, HSG C
	54,500	74	Weighted Average
	51,500		94.50% Pervious Area
	3,000		5.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	65	0.0620	0.17		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.10"
3.0	200	0.0250	1.11		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
9.5	265	Total			

Summary for Reach 3.1R: EXISTING SWALE

Inflow Area = 1.251 ac, 5.50% Impervious, Inflow Depth = 0.97" for 2 YR event
Inflow = 1.19 cfs @ 12.14 hrs, Volume= 0.101 af
Outflow = 1.18 cfs @ 12.16 hrs, Volume= 0.101 af, Atten= 1%, Lag= 0.7 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.08 fps, Min. Travel Time= 1.2 min
Avg. Velocity = 0.69 fps, Avg. Travel Time= 3.6 min

Peak Storage= 85 cf @ 12.16 hrs
Average Depth at Peak Storage= 0.10'
Bank-Full Depth= 1.00' Flow Area= 10.0 sf, Capacity= 76.06 cfs

5.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 5.0 '/' Top Width= 15.00'
Length= 150.0' Slope= 0.0412 '/'
Inlet Invert= 238.68', Outlet Invert= 232.50'

‡

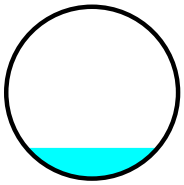
Summary for Reach 3.2R: EXISTING CULVERT

Inflow Area = 1.251 ac, 5.50% Impervious, Inflow Depth = 0.97" for 2 YR event
Inflow = 1.18 cfs @ 12.16 hrs, Volume= 0.101 af
Outflow = 1.18 cfs @ 12.16 hrs, Volume= 0.101 af, Atten= 0%, Lag= 0.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.51 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.20 fps, Avg. Travel Time= 0.3 min

Peak Storage= 9 cf @ 12.16 hrs
Average Depth at Peak Storage= 0.27'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 16.94 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 40.0' Slope= 0.0260 '/'
Inlet Invert= 232.34', Outlet Invert= 231.30'



Summary for Reach 3.3R: EXISTING SWALE

Inflow Area = 1.251 ac, 5.50% Impervious, Inflow Depth = 0.97" for 2 YR event
Inflow = 1.18 cfs @ 12.16 hrs, Volume= 0.101 af
Outflow = 1.17 cfs @ 12.17 hrs, Volume= 0.101 af, Atten= 1%, Lag= 0.8 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.17 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 0.38 fps, Avg. Travel Time= 3.5 min

Peak Storage= 80 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.17'
Bank-Full Depth= 1.00' Flow Area= 10.0 sf, Capacity= 31.55 cfs

5.00' x 1.00' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 5.0 '/' Top Width= 15.00'
Length= 80.0' Slope= 0.0788 '/'
Inlet Invert= 231.30', Outlet Invert= 225.00'

‡

Summary for Pond 1P: EXISTING CULVERT ENTRANCE

Inflow Area = 0.915 ac, 63.24% Impervious, Inflow Depth = 1.99" for 2 YR event
Inflow = 2.12 cfs @ 12.09 hrs, Volume= 0.152 af
Outflow = 2.12 cfs @ 12.09 hrs, Volume= 0.152 af, Atten= 0%, Lag= 0.0 min
Discarded = 2.12 cfs @ 12.09 hrs, Volume= 0.152 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Peak Elev= 242.00' @ 12.09 hrs Surf.Area= 20 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (812.3 - 812.3)

Volume	Invert	Avail.Storage	Storage Description
#1	242.00'	5,147 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
242.00	20	15.0	0	0	20
243.00	35	25.0	27	27	58
244.00	55	35.0	45	72	114
245.00	750	150.0	336	408	1,810
246.00	2,580	225.0	1,574	1,981	4,055
247.00	3,790	260.0	3,166	5,147	5,428

Device	Routing	Invert	Outlet Devices
#1	Primary	243.50'	**12.0" Round Culvert** L= 55.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 243.50' / 241.68' S= 0.0331 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Discarded	242.00'	**2.41 cfs Infiltration at all elevations**

Discarded OutFlow Max=2.41 cfs @ 12.09 hrs HW=242.00' (Free Discharge)
2=Infiltration (Exfiltration Controls 2.41 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=242.00' TW=241.58' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Summary for Pond 2.1P: CATCH BASIN

Inflow Area = 1.141 ac, 70.52% Impervious, Inflow Depth = 0.57" for 2 YR event
Inflow = 0.68 cfs @ 12.08 hrs, Volume= 0.054 af
Outflow = 0.68 cfs @ 12.08 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min
Primary = 0.68 cfs @ 12.08 hrs, Volume= 0.054 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 242.07' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	241.58'	**12.0" Round Culvert** L= 55.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 241.58' / 241.30' S= 0.0051 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.68 cfs @ 12.08 hrs HW=242.07' TW=237.03' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.68 cfs @ 2.60 fps)

Summary for Pond 2P: EXISTING DETENTION POND

Inflow Area = 2.397 ac, 53.74% Impervious, Inflow Depth = 1.07" for 2 YR event
Inflow = 2.80 cfs @ 12.10 hrs, Volume= 0.214 af
Outflow = 2.41 cfs @ 12.09 hrs, Volume= 0.214 af, Atten= 14%, Lag= 0.0 min
Discarded = 2.41 cfs @ 12.09 hrs, Volume= 0.214 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 237.12' @ 12.15 hrs Surf.Area= 923 sf Storage= 92 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.1 min (815.9 - 815.8)

Volume	Invert	Avail.Storage	Storage Description
#1	237.00'	30,050 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
237.00	660	115.0	0	0	660
238.00	4,350	430.0	2,235	2,235	14,324
239.00	8,000	550.0	6,083	8,318	23,695
240.00	10,850	590.0	9,389	17,707	27,369
241.00	13,900	630.0	12,344	30,050	31,300

Device	Routing	Invert	Outlet Devices
#1	Primary	239.50'	**25.0' long x 18.0' breadth OVERFLOW SPILLWAY**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Secondary	239.50'	**25.0' long x 18.0' breadth OVERFLOW SPILLWAY 2**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Discarded	237.00'	**2.41 cfs Infiltration at all elevations**

Discarded OutFlow Max=2.41 cfs @ 12.09 hrs HW=237.04' (Free Discharge)
└**3=Infiltration** (Exfiltration Controls 2.41 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=237.00' TW=0.00' (Dynamic Tailwater)
└**1=OVERFLOW SPILLWAY** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=237.00' TW=238.68' (Dynamic Tailwater)
└**2=OVERFLOW SPILLWAY 2** (Controls 0.00 cfs)

Summary for Link SP1: STUDY POINT 1

Inflow Area = 2.397 ac, 53.74% Impervious, Inflow Depth = 0.00" for 2 YR event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Summary for Link SP2: STUDY POINT 2

Inflow Area = 1.251 ac, 5.50% Impervious, Inflow Depth = 0.97" for 2 YR event
Inflow = 1.17 cfs @ 12.17 hrs, Volume= 0.101 af
Primary = 1.17 cfs @ 12.17 hrs, Volume= 0.101 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1.0S: Runoff Area=39,850 sf 63.24% Impervious Runoff Depth=3.39"
Tc=6.0 min CN=89 Runoff=3.55 cfs 0.258 af

Subcatchment 2.0S: Runoff Area=54,700 sf 38.48% Impervious Runoff Depth=2.81"
Flow Length=85' Slope=0.0800 '/' Tc=7.3 min CN=83 Runoff=3.95 cfs 0.295 af

Subcatchment 2.1S: Runoff Area=9,850 sf 100.00% Impervious Runoff Depth=4.36"
Tc=6.0 min CN=98 Runoff=1.02 cfs 0.082 af

Subcatchment 3.0S: Runoff Area=54,500 sf 5.50% Impervious Runoff Depth=2.05"
Flow Length=265' Tc=9.5 min CN=74 Runoff=2.64 cfs 0.214 af

Reach 3.1R: EXISTING SWALE Avg. Flow Depth=0.16' Max Vel=2.75 fps Inflow=2.64 cfs 0.214 af
n=0.030 L=150.0' S=0.0412 '/' Capacity=76.06 cfs Outflow=2.63 cfs 0.214 af

Reach 3.2R: EXISTING CULVERT Avg. Flow Depth=0.40' Max Vel=6.96 fps Inflow=2.63 cfs 0.214 af
18.0" Round Pipe n=0.013 L=40.0' S=0.0260 '/' Capacity=16.94 cfs Outflow=2.63 cfs 0.214 af

Reach 3.3R: EXISTING SWALE Avg. Flow Depth=0.27' Max Vel=1.52 fps Inflow=2.63 cfs 0.214 af
n=0.100 L=80.0' S=0.0788 '/' Capacity=31.55 cfs Outflow=2.61 cfs 0.214 af

Pond 1P: EXISTING CULVERT ENTRANCE Peak Elev=244.05' Storage=75 cf Inflow=3.55 cfs 0.258 af
Discarded=2.41 cfs 0.251 af Primary=1.13 cfs 0.008 af Outflow=3.54 cfs 0.259 af

Pond 2.1P: CATCH BASIN Peak Elev=242.56' Inflow=2.14 cfs 0.090 af
12.0" Round Culvert n=0.013 L=55.0' S=0.0051 '/' Outflow=2.14 cfs 0.090 af

Pond 2P: EXISTING DETENTION POND Peak Elev=237.87' Storage=1,707 cf Inflow=6.06 cfs 0.385 af
Discarded=2.41 cfs 0.385 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=2.41 cfs 0.385 af

Link SP1: STUDY POINT 1 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link SP2: STUDY POINT 2 Inflow=2.61 cfs 0.214 af
Primary=2.61 cfs 0.214 af

Total Runoff Area = 3.648 ac Runoff Volume = 0.849 af Average Runoff Depth = 2.79"
62.81% Pervious = 2.291 ac 37.19% Impervious = 1.357 ac

Summary for Subcatchment 1.0S:

Runoff = 3.55 cfs @ 12.09 hrs, Volume= 0.258 af, Depth= 3.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 YR Rainfall=4.60"

	Area (sf)	CN	Description
*	23,200	98	EXISTING IMPERVIOUS
*	2,000	98	PROPOSED IMPERVIOUS
	14,650	74	>75% Grass cover, Good, HSG C
	39,850	89	Weighted Average
	14,650		36.76% Pervious Area
	25,200		63.24% Impervious Area

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

Summary for Subcatchment 2.0S:

Runoff = 3.95 cfs @ 12.10 hrs, Volume= 0.295 af, Depth= 2.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 YR Rainfall=4.60"

	Area (sf)	CN	Description
*	19,850	98	EXISTING IMPERVIOUS
*	1,200	98	PROPOSED IMPERVIOUS
	33,650	74	>75% Grass cover, Good, HSG C
	54,700	83	Weighted Average
	33,650		61.52% Pervious Area
	21,050		38.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	85	0.0800	0.19		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.10"

Summary for Subcatchment 2.1S:

Runoff = 1.02 cfs @ 12.08 hrs, Volume= 0.082 af, Depth= 4.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 YR Rainfall=4.60"

	Area (sf)	CN	Description
*	9,850	98	PROPOSED IMPERVIOUS
	9,850		100.00% Impervious Area

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

Summary for Subcatchment 3.0S:

Runoff = 2.64 cfs @ 12.14 hrs, Volume= 0.214 af, Depth= 2.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 YR Rainfall=4.60"

	Area (sf)	CN	Description
*	3,000	98	EXISTING IMPERVIOUS
	29,750	74	>75% Grass cover, Good, HSG C
	21,750	70	Woods, Good, HSG C
	54,500	74	Weighted Average
	51,500		94.50% Pervious Area
	3,000		5.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	65	0.0620	0.17		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.10"
3.0	200	0.0250	1.11		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
9.5	265	Total			

Summary for Reach 3.1R: EXISTING SWALE

Inflow Area = 1.251 ac, 5.50% Impervious, Inflow Depth = 2.05" for 10 YR event
Inflow = 2.64 cfs @ 12.14 hrs, Volume= 0.214 af
Outflow = 2.63 cfs @ 12.15 hrs, Volume= 0.214 af, Atten= 0%, Lag= 0.7 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.75 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 0.85 fps, Avg. Travel Time= 2.9 min

Peak Storage= 143 cf @ 12.15 hrs
Average Depth at Peak Storage= 0.16'
Bank-Full Depth= 1.00' Flow Area= 10.0 sf, Capacity= 76.06 cfs

5.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 5.0 '/' Top Width= 15.00'
Length= 150.0' Slope= 0.0412 '/'
Inlet Invert= 238.68', Outlet Invert= 232.50'

‡

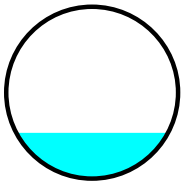
Summary for Reach 3.2R: EXISTING CULVERT

Inflow Area = 1.251 ac, 5.50% Impervious, Inflow Depth = 2.05" for 10 YR event
Inflow = 2.63 cfs @ 12.15 hrs, Volume= 0.214 af
Outflow = 2.63 cfs @ 12.15 hrs, Volume= 0.214 af, Atten= 0%, Lag= 0.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Max. Velocity= 6.96 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.60 fps, Avg. Travel Time= 0.3 min

Peak Storage= 15 cf @ 12.15 hrs
Average Depth at Peak Storage= 0.40'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 16.94 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 40.0' Slope= 0.0260 '/'
Inlet Invert= 232.34', Outlet Invert= 231.30'



Summary for Reach 3.3R: EXISTING SWALE

Inflow Area = 1.251 ac, 5.50% Impervious, Inflow Depth = 2.05" for 10 YR event
Inflow = 2.63 cfs @ 12.15 hrs, Volume= 0.214 af
Outflow = 2.61 cfs @ 12.16 hrs, Volume= 0.214 af, Atten= 0%, Lag= 0.6 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.52 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 0.47 fps, Avg. Travel Time= 2.8 min

Peak Storage= 137 cf @ 12.16 hrs
Average Depth at Peak Storage= 0.27'
Bank-Full Depth= 1.00' Flow Area= 10.0 sf, Capacity= 31.55 cfs

5.00' x 1.00' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 5.0 '/' Top Width= 15.00'
Length= 80.0' Slope= 0.0788 '/'
Inlet Invert= 231.30', Outlet Invert= 225.00'

‡

Summary for Pond 1P: EXISTING CULVERT ENTRANCE

Inflow Area = 0.915 ac, 63.24% Impervious, Inflow Depth = 3.39" for 10 YR event
Inflow = 3.55 cfs @ 12.09 hrs, Volume= 0.258 af
Outflow = 3.54 cfs @ 12.09 hrs, Volume= 0.259 af, Atten= 0%, Lag= 0.3 min
Discarded = 2.41 cfs @ 12.02 hrs, Volume= 0.251 af
Primary = 1.13 cfs @ 12.09 hrs, Volume= 0.008 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Peak Elev= 244.05' @ 12.09 hrs Surf.Area= 72 sf Storage= 75 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.1 min (797.5 - 797.3)

Volume	Invert	Avail.Storage	Storage Description
#1	242.00'	5,147 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
242.00	20	15.0	0	0	20
243.00	35	25.0	27	27	58
244.00	55	35.0	45	72	114
245.00	750	150.0	336	408	1,810
246.00	2,580	225.0	1,574	1,981	4,055
247.00	3,790	260.0	3,166	5,147	5,428

Device	Routing	Invert	Outlet Devices
#1	Primary	243.50'	**12.0" Round Culvert** L= 55.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 243.50' / 241.68' S= 0.0331 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Discarded	242.00'	**2.41 cfs Infiltration at all elevations**

Discarded OutFlow Max=2.41 cfs @ 12.02 hrs HW=242.17' (Free Discharge)
↑**2=Infiltration** (Exfiltration Controls 2.41 cfs)

Primary OutFlow Max=1.13 cfs @ 12.09 hrs HW=244.05' TW=242.56' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 1.13 cfs @ 2.53 fps)

Summary for Pond 2.1P: CATCH BASIN

Inflow Area = 1.141 ac, 70.52% Impervious, Inflow Depth = 0.95" for 10 YR event
Inflow = 2.14 cfs @ 12.09 hrs, Volume= 0.090 af
Outflow = 2.14 cfs @ 12.09 hrs, Volume= 0.090 af, Atten= 0%, Lag= 0.0 min
Primary = 2.14 cfs @ 12.09 hrs, Volume= 0.090 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 242.56' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	241.58'	**12.0" Round Culvert** L= 55.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 241.58' / 241.30' S= 0.0051 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.14 cfs @ 12.09 hrs HW=242.56' TW=237.49' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 2.14 cfs @ 3.45 fps)

Summary for Pond 2P: EXISTING DETENTION POND

Inflow Area = 2.397 ac, 53.74% Impervious, Inflow Depth = 1.93" for 10 YR event
Inflow = 6.06 cfs @ 12.10 hrs, Volume= 0.385 af
Outflow = 2.41 cfs @ 12.01 hrs, Volume= 0.385 af, Atten= 60%, Lag= 0.0 min
Discarded = 2.41 cfs @ 12.01 hrs, Volume= 0.385 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 237.87' @ 12.28 hrs Surf.Area= 3,679 sf Storage= 1,707 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 2.8 min (804.4 - 801.5)

Volume	Invert	Avail.Storage	Storage Description
#1	237.00'	30,050 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
237.00	660	115.0	0	0	660
238.00	4,350	430.0	2,235	2,235	14,324
239.00	8,000	550.0	6,083	8,318	23,695
240.00	10,850	590.0	9,389	17,707	27,369
241.00	13,900	630.0	12,344	30,050	31,300

Device	Routing	Invert	Outlet Devices
#1	Primary	239.50'	**25.0' long x 18.0' breadth OVERFLOW SPILLWAY**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Secondary	239.50'	**25.0' long x 18.0' breadth OVERFLOW SPILLWAY 2**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Discarded	237.00'	**2.41 cfs Infiltration at all elevations**

Discarded OutFlow Max=2.41 cfs @ 12.01 hrs HW=237.05' (Free Discharge)
└**3=Infiltration** (Exfiltration Controls 2.41 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=237.00' TW=0.00' (Dynamic Tailwater)
└**1=OVERFLOW SPILLWAY** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=237.00' TW=238.68' (Dynamic Tailwater)
└**2=OVERFLOW SPILLWAY 2** (Controls 0.00 cfs)

Summary for Link SP1: STUDY POINT 1

Inflow Area = 2.397 ac, 53.74% Impervious, Inflow Depth = 0.00" for 10 YR event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Summary for Link SP2: STUDY POINT 2

Inflow Area = 1.251 ac, 5.50% Impervious, Inflow Depth = 2.05" for 10 YR event
Inflow = 2.61 cfs @ 12.16 hrs, Volume= 0.214 af
Primary = 2.61 cfs @ 12.16 hrs, Volume= 0.214 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1.0S: Runoff Area=39,850 sf 63.24% Impervious Runoff Depth=4.54"
Tc=6.0 min CN=89 Runoff=4.69 cfs 0.346 af

Subcatchment 2.0S: Runoff Area=54,700 sf 38.48% Impervious Runoff Depth=3.91"
Flow Length=85' Slope=0.0800 '/' Tc=7.3 min CN=83 Runoff=5.44 cfs 0.409 af

Subcatchment 2.1S: Runoff Area=9,850 sf 100.00% Impervious Runoff Depth=5.56"
Tc=6.0 min CN=98 Runoff=1.28 cfs 0.105 af

Subcatchment 3.0S: Runoff Area=54,500 sf 5.50% Impervious Runoff Depth=3.02"
Flow Length=265' Tc=9.5 min CN=74 Runoff=3.93 cfs 0.315 af

Reach 3.1R: EXISTING SWALE Avg. Flow Depth=0.21' Max Vel=3.15 fps Inflow=3.93 cfs 0.315 af
n=0.030 L=150.0' S=0.0412 '/' Capacity=76.06 cfs Outflow=3.91 cfs 0.315 af

Reach 3.2R: EXISTING CULVERT Avg. Flow Depth=0.49' Max Vel=7.79 fps Inflow=3.91 cfs 0.315 af
18.0" Round Pipe n=0.013 L=40.0' S=0.0260 '/' Capacity=16.94 cfs Outflow=3.91 cfs 0.315 af

Reach 3.3R: EXISTING SWALE Avg. Flow Depth=0.34' Max Vel=1.73 fps Inflow=3.91 cfs 0.315 af
n=0.100 L=80.0' S=0.0788 '/' Capacity=31.55 cfs Outflow=3.89 cfs 0.315 af

Pond 1P: EXISTING CULVERT ENTRANCE Peak Elev=244.35' Storage=114 cf Inflow=4.69 cfs 0.346 af
Discarded=2.41 cfs 0.323 af Primary=2.22 cfs 0.023 af Outflow=4.63 cfs 0.346 af

Pond 2.1P: CATCH BASIN Peak Elev=243.29' Inflow=3.49 cfs 0.128 af
12.0" Round Culvert n=0.013 L=55.0' S=0.0051 '/' Outflow=3.49 cfs 0.128 af

Pond 2P: EXISTING DETENTION POND Peak Elev=238.36' Storage=4,037 cf Inflow=8.91 cfs 0.537 af
Discarded=2.41 cfs 0.537 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=2.41 cfs 0.537 af

Link SP1: STUDY POINT 1 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link SP2: STUDY POINT 2 Inflow=3.89 cfs 0.315 af
Primary=3.89 cfs 0.315 af

Total Runoff Area = 3.648 ac Runoff Volume = 1.174 af Average Runoff Depth = 3.86"
62.81% Pervious = 2.291 ac 37.19% Impervious = 1.357 ac

Summary for Subcatchment 1.0S:

Runoff = 4.69 cfs @ 12.08 hrs, Volume= 0.346 af, Depth= 4.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 YR Rainfall=5.80"

	Area (sf)	CN	Description
*	23,200	98	EXISTING IMPERVIOUS
*	2,000	98	PROPOSED IMPERVIOUS
	14,650	74	>75% Grass cover, Good, HSG C
	39,850	89	Weighted Average
	14,650		36.76% Pervious Area
	25,200		63.24% Impervious Area

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

Summary for Subcatchment 2.0S:

Runoff = 5.44 cfs @ 12.10 hrs, Volume= 0.409 af, Depth= 3.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 YR Rainfall=5.80"

	Area (sf)	CN	Description
*	19,850	98	EXISTING IMPERVIOUS
*	1,200	98	PROPOSED IMPERVIOUS
	33,650	74	>75% Grass cover, Good, HSG C
	54,700	83	Weighted Average
	33,650		61.52% Pervious Area
	21,050		38.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	85	0.0800	0.19		**Sheet Flow, A-B**
					Grass: Dense n= 0.240 P2= 3.10"

Summary for Subcatchment 2.1S:

Runoff = 1.28 cfs @ 12.08 hrs, Volume= 0.105 af, Depth= 5.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 YR Rainfall=5.80"

	Area (sf)	CN	Description
*	9,850	98	PROPOSED IMPERVIOUS
	9,850		100.00% Impervious Area

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

Summary for Subcatchment 3.0S:

Runoff = 3.93 cfs @ 12.13 hrs, Volume= 0.315 af, Depth= 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 YR Rainfall=5.80"

	Area (sf)	CN	Description
*	3,000	98	EXISTING IMPERVIOUS
	29,750	74	>75% Grass cover, Good, HSG C
	21,750	70	Woods, Good, HSG C
	54,500	74	Weighted Average
	51,500		94.50% Pervious Area
	3,000		5.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	65	0.0620	0.17		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.10"
3.0	200	0.0250	1.11		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
9.5	265	Total			

Summary for Reach 3.1R: EXISTING SWALE

Inflow Area = 1.251 ac, 5.50% Impervious, Inflow Depth = 3.02" for 25 YR event
Inflow = 3.93 cfs @ 12.13 hrs, Volume= 0.315 af
Outflow = 3.91 cfs @ 12.14 hrs, Volume= 0.315 af, Atten= 0%, Lag= 0.6 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.15 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 0.94 fps, Avg. Travel Time= 2.7 min

Peak Storage= 186 cf @ 12.14 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 1.00' Flow Area= 10.0 sf, Capacity= 76.06 cfs

5.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 5.0 '/' Top Width= 15.00'
Length= 150.0' Slope= 0.0412 '/'
Inlet Invert= 238.68', Outlet Invert= 232.50'

‡

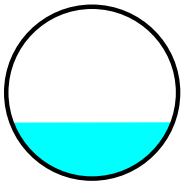
Summary for Reach 3.2R: EXISTING CULVERT

Inflow Area = 1.251 ac, 5.50% Impervious, Inflow Depth = 3.02" for 25 YR event
Inflow = 3.91 cfs @ 12.14 hrs, Volume= 0.315 af
Outflow = 3.91 cfs @ 12.14 hrs, Volume= 0.315 af, Atten= 0%, Lag= 0.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Max. Velocity= 7.79 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.84 fps, Avg. Travel Time= 0.2 min

Peak Storage= 20 cf @ 12.14 hrs
Average Depth at Peak Storage= 0.49'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 16.94 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 40.0' Slope= 0.0260 '/'
Inlet Invert= 232.34', Outlet Invert= 231.30'



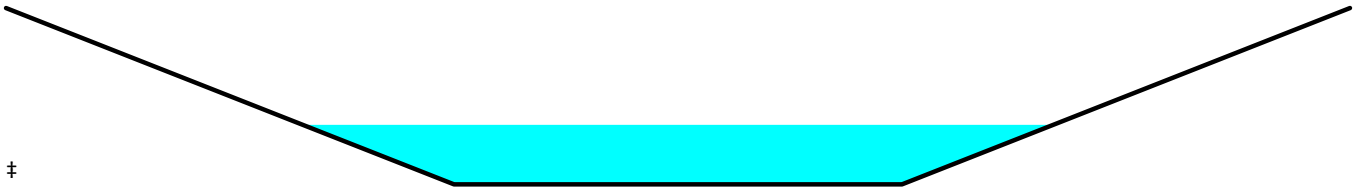
Summary for Reach 3.3R: EXISTING SWALE

Inflow Area = 1.251 ac, 5.50% Impervious, Inflow Depth = 3.02" for 25 YR event
Inflow = 3.91 cfs @ 12.14 hrs, Volume= 0.315 af
Outflow = 3.89 cfs @ 12.15 hrs, Volume= 0.315 af, Atten= 0%, Lag= 0.5 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.73 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 0.53 fps, Avg. Travel Time= 2.5 min

Peak Storage= 180 cf @ 12.15 hrs
Average Depth at Peak Storage= 0.34'
Bank-Full Depth= 1.00' Flow Area= 10.0 sf, Capacity= 31.55 cfs

5.00' x 1.00' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 5.0 '/' Top Width= 15.00'
Length= 80.0' Slope= 0.0788 '/'
Inlet Invert= 231.30', Outlet Invert= 225.00'



‡

Summary for Pond 1P: EXISTING CULVERT ENTRANCE

Inflow Area = 0.915 ac, 63.24% Impervious, Inflow Depth = 4.54" for 25 YR event
Inflow = 4.69 cfs @ 12.08 hrs, Volume= 0.346 af
Outflow = 4.63 cfs @ 12.10 hrs, Volume= 0.346 af, Atten= 1%, Lag= 0.8 min
Discarded = 2.41 cfs @ 11.99 hrs, Volume= 0.323 af
Primary = 2.22 cfs @ 12.10 hrs, Volume= 0.023 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Peak Elev= 244.35' @ 12.10 hrs Surf.Area= 205 sf Storage= 114 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.1 min (789.4 - 789.3)

Volume	Invert	Avail.Storage	Storage Description
#1	242.00'	5,147 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
242.00	20	15.0	0	0	20
243.00	35	25.0	27	27	58
244.00	55	35.0	45	72	114
245.00	750	150.0	336	408	1,810
246.00	2,580	225.0	1,574	1,981	4,055
247.00	3,790	260.0	3,166	5,147	5,428

Device	Routing	Invert	Outlet Devices
#1	Primary	243.50'	**12.0" Round Culvert** L= 55.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 243.50' / 241.68' S= 0.0331 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Discarded	242.00'	**2.41 cfs Infiltration at all elevations**

Discarded OutFlow Max=2.41 cfs @ 11.99 hrs HW=242.27' (Free Discharge)
2=Infiltration (Exfiltration Controls 2.41 cfs)

Primary OutFlow Max=2.21 cfs @ 12.10 hrs HW=244.34' TW=243.28' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.21 cfs @ 3.13 fps)

Summary for Pond 2.1P: CATCH BASIN

Inflow Area = 1.141 ac, 70.52% Impervious, Inflow Depth = 1.35" for 25 YR event
Inflow = 3.49 cfs @ 12.09 hrs, Volume= 0.128 af
Outflow = 3.49 cfs @ 12.09 hrs, Volume= 0.128 af, Atten= 0%, Lag= 0.0 min
Primary = 3.49 cfs @ 12.09 hrs, Volume= 0.128 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 243.29' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	241.58'	**12.0" Round Culvert** L= 55.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 241.58' / 241.30' S= 0.0051 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.48 cfs @ 12.09 hrs HW=243.28' TW=237.86' (Dynamic Tailwater)
1=Culvert (Barrel Controls 3.48 cfs @ 4.43 fps)

Summary for Pond 2P: EXISTING DETENTION POND

Inflow Area = 2.397 ac, 53.74% Impervious, Inflow Depth = 2.69" for 25 YR event
Inflow = 8.91 cfs @ 12.10 hrs, Volume= 0.537 af
Outflow = 2.41 cfs @ 11.94 hrs, Volume= 0.537 af, Atten= 73%, Lag= 0.0 min
Discarded = 2.41 cfs @ 11.94 hrs, Volume= 0.537 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 238.36' @ 12.39 hrs Surf.Area= 5,554 sf Storage= 4,037 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 7.7 min (800.6 - 792.9)

Volume	Invert	Avail.Storage	Storage Description
#1	237.00'	30,050 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
237.00	660	115.0	0	0	660
238.00	4,350	430.0	2,235	2,235	14,324
239.00	8,000	550.0	6,083	8,318	23,695
240.00	10,850	590.0	9,389	17,707	27,369
241.00	13,900	630.0	12,344	30,050	31,300

Device	Routing	Invert	Outlet Devices
#1	Primary	239.50'	**25.0' long x 18.0' breadth OVERFLOW SPILLWAY**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Secondary	239.50'	**25.0' long x 18.0' breadth OVERFLOW SPILLWAY 2**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Discarded	237.00'	**2.41 cfs Infiltration at all elevations**

Discarded OutFlow Max=2.41 cfs @ 11.94 hrs HW=237.04' (Free Discharge)
└**3=Infiltration** (Exfiltration Controls 2.41 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=237.00' TW=0.00' (Dynamic Tailwater)
└**1=OVERFLOW SPILLWAY** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=237.00' TW=238.68' (Dynamic Tailwater)
└**2=OVERFLOW SPILLWAY 2** (Controls 0.00 cfs)

Summary for Link SP1: STUDY POINT 1

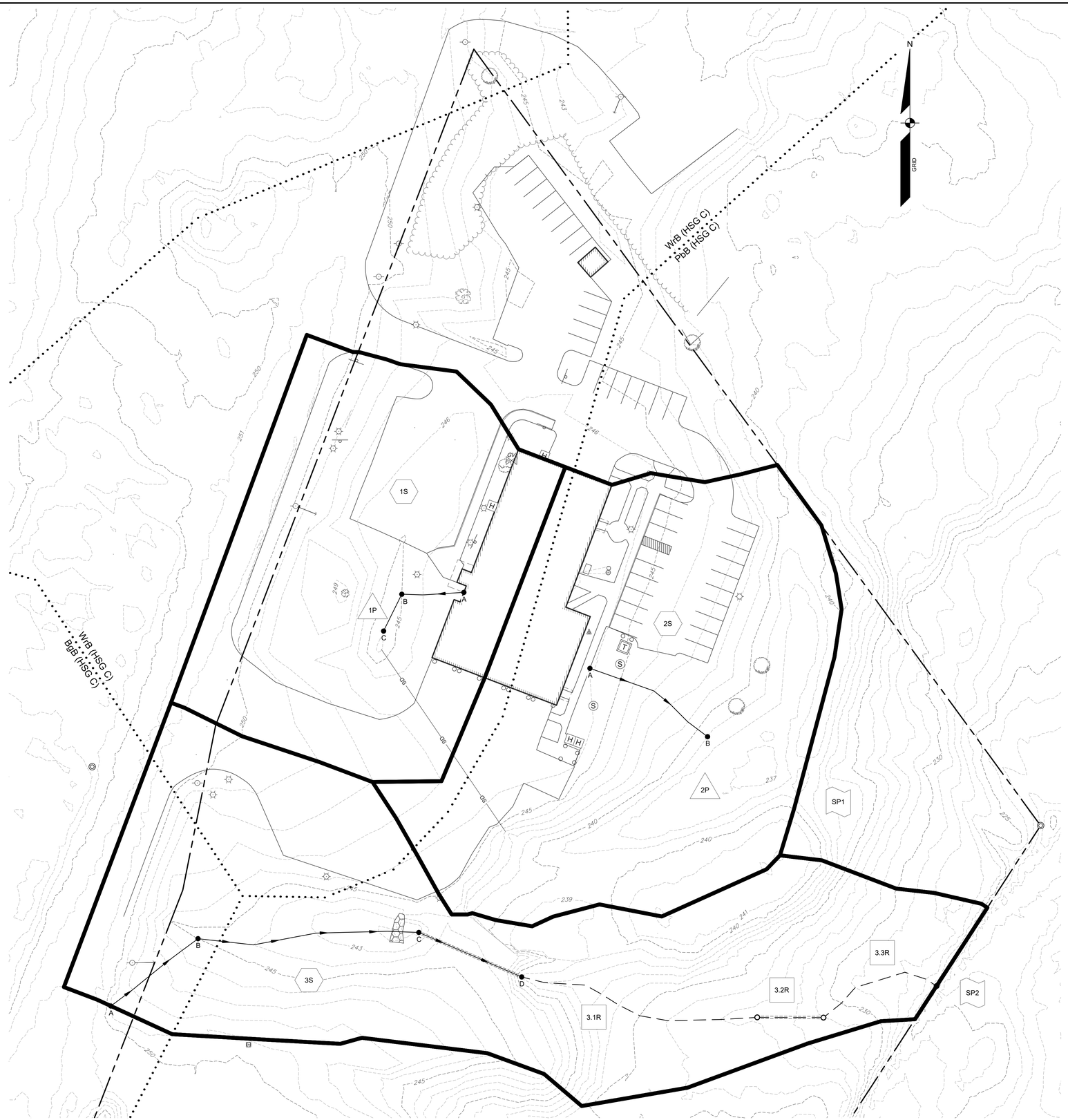
Inflow Area = 2.397 ac, 53.74% Impervious, Inflow Depth = 0.00" for 25 YR event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Summary for Link SP2: STUDY POINT 2

Inflow Area = 1.251 ac, 5.50% Impervious, Inflow Depth = 3.02" for 25 YR event
Inflow = 3.89 cfs @ 12.15 hrs, Volume= 0.315 af
Primary = 3.89 cfs @ 12.15 hrs, Volume= 0.315 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs



PRE-DEVELOPMENT LEGEND

- WATERSHED BOUNDARY
- TIME OF CONCENTRATION (A → B)
- REACH
- 1S — WATERSHED LABEL
- 1R — REACH
- SP1 — STUDY POINT
- 1P — STORMWATER TREATMENT/DETENTION POND
- SOIL (HSG) / SOIL (HSG) — SOILS BOUNDARY

STORMWATER PEAK RATES TABLE						
	2-YEAR		10-YEAR		25-YEAR	
	PRE	POST	PRE	POST	PRE	POST
SP-1	0.00	0.00	0.00	0.00	0.00	0.00
SP-2	1.63	1.17	3.47	2.61	5.07	3.89

GRAPHIC SCALE
30 0 15 30 60
(IN FEET)
1 INCH = 30 FT.

OWENS A. MCCULLOUGH, P.E. #7122

STATE OF MAINE — OWENS A. MCCULLOUGH — No. 7122 — REGISTERED PROFESSIONAL ENGINEER — 04/05/2021

REV	BY	DATE	STATUS
A	KJR	04/05/2021	ISSUED FOR SITE PLAN REVIEW

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

EXISTING STORMWATER MANAGEMENT PLAN
OF:
WINDHAM PUBLIC SAFETY BUILDING EXPANSION
375 GRAY ROAD/ROUTE 302
WINDHAM, MAINE
FOR:
GREAT FALLS CONSTRUCTION
20 MECHANIC STREET
GORHAM, MAINE 04038

DESIGNED	KJR
DRAWN	KJR
CHECKED	OAM
DATE	03/31/2021
SCALE	1" = 30'
PROJECT	20566

SHEET 1 OF 2

20566 SWP-Dwg_TAB.PRE

POST-DEVELOPMENT LEGEND

- WATERSHED BOUNDARY
- TIME OF CONCENTRATION (A — B)
- REACH
- 1.0S — WATERSHED LABEL
- 1R — REACH
- SP1 — STUDY POINT
- 1P — STORMWATER TREATMENT/DETENTION POND
- SOIL (HSG) / SOIL (HSG) — SOILS BOUNDARY

STORMWATER PEAK RATES TABLE

	2-YEAR		10-YEAR		25-YEAR	
	PRE	POST	PRE	POST	PRE	POST
SP-1	0.00	0.00	0.00	0.00	0.00	0.00
SP-2	1.63	1.17	3.47	2.61	5.07	3.89

OWENS A. MCCULLOUGH, P.E. #7122

STATE OF MAINE — OWENS A. MCCULLOUGH — No. 7122 — REGISTERED PROFESSIONAL ENGINEER — 04/05/2021

REV	BY	DATE	STATUS
A	KJR	04/05/2021	ISSUED FOR SITE PLAN REVIEW

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

PROPOSED STORMWATER MANAGEMENT PLAN

OF:
WINDHAM PUBLIC SAFETY BUILDING EXPANSION
375 GRAY ROAD/ROUTE 302
WINDHAM, MAINE

FOR:
GREAT FALLS CONSTRUCTION
20 MECHANIC STREET
GORHAM, MAINE 04038

DESIGNED	KJR
DRAWN	KJR
CHECKED	OAM
DATE	03/31/2021
SCALE	1" = 30'
PROJECT	20566

SHEET 2 OF 2

20568 SWP.dwg, TAB:POST

Windham Public Safety
Wastewater Assessement Calcuations

Current Septic System - Record HHE 200 - Paul Lawence 8/25/04

Septic Tank	1,500 gallons
Design Flow	1,000 gpd
Pumped	Yes
Bed Size	3,500 s.f.
Chambered System	

Employees and Staff

Monday - Friday						Saturday - Sunday			
Number of Staff (7 a.m to 4:30 p.m).	Number of Staff (4 p.m to 9:00 p.m).	Number of Staff (9 p.m. to 2 a.m.)	Custodial Staff (8 a.m. to 5 p.m.)	Number of Staff (2 a.m. to 6:30 a.m.)	Totals	Number of Staff (6:30 a.m. to 4:00 p.m.)	Number of Staff (4:30 p.m. to 9:00 p.m.)	Number of Staff (9:00 p.m. to 2:00 a.m.)	Totals
15	4	6	2	2	29	3	3	5	11

Flow Calculations		Closest comparrison - Hotels and motels with shared baths 80 gpd per bedroom plus 20 gpd per employee		
Max Number of Persons Per Day	Flow Per Person (gpd)	Total Flow Per Day - Staff	6 Bunk Rooms	**Total Daily Flow with Bunk Rooms**
29	20	480	480	**960**

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Maine Department of Human Services
Division of Health Engineering, 10 SHS
(207) 287-5672 FAX (207) 287-4172

>> Caution: Permit Required – Attach In Space Below <<

WINDHAM 9018 TOWN COPY
Date Permit Issued: 10 5 04 $ 120.00 ☐ If Double Fee Charged
Jonathan Thompson L.P.I. # 09.33
Local Plumbing Inspector Signature

PROPERTY LOCATION

City, Town, or Plantation	WINDHAM
Street or Road	ROUTE 202
Subdivision, Lot #	GRAY ROAD

OWNER/APPLICANT INFORMATION

Name (last, first, MI): TOWN OF WINDHAM ■ Owner ☐ Applicant

Mailing Address of Owner/Applicant: DAVID DICKSON-W.P.W. #8 SCHOOL ROAD, WINDHAM, ME 04062

Daytime Tel. #: 892-1904

Municipal Tax Map # 9 Lot # 71

Owner or Applicant Statement

I state and acknowledge that the information submitted is correct to the best of my knowledge and understand that any falsification is reason for the Department and/or Local Plumbing Inspector to deny a permit.

Signature of Owner or Applicant — Date: 10-5-04

Caution: Inspection Required

I have inspected the installation authorized above and found it to be in compliance with the Subsurface Wastewater Disposal Rules Application.

Local Plumbing Inspector Signature — (1st) Date Approved: 10/6/04 — (2nd) Date Approved: 10/7/04 field 10/8/04 pump tank

PERMIT INFORMATION

TYPE OF APPLICATION

1. ☐ First Time System
2. ■ Replacement System
   Type Replaced: UNK.
   Year Installed: 1989
3. ☐ Expanded System
   a. ☐ Minor Expansion
   b. ☐ Major Expansion
4. ☐ Experimental System
5. ☐ Seasonal Conversion

THIS APPLICATION REQUIRES

1. ■ No Rule Variance
2. ☐ First Time System Variance
   a. ☐ Local Plumbing Inspector Approval
   b. ☐ State & Local Plumbing Inspector Approval
3. ☐ Replacement System Variance
   a. ☐ Local Plumbing Inspector Approval
   b. ☐ State & Local Plumbing Inspector Approval
4. ☐ Minimum Lot Size Variance
5. ☐ Seasonal Conversion Approval

DISPOSAL SYSTEM COMPONENTS

1. ■ Complete Non-engineered System
2. ☐ Primitive System (graywater & pit toilet)
3. ☐ Alternative Toilet, specify:
4. ☐ Non-engineered Treatment Tank (only)
5. ☐ Holding Tank, ____ Gallons
6. ☐ Non-engineered Disposal Field (only)
7. ☐ Separated Laundry System
8. ☐ Complete Engineered System (2000gpd+)
9. ☐ Engineered Treatment Tank (only)
10. ☐ Engineered Disposal field (only)
11. ☐ Pre-treatment, specify:
12. ☐ Miscellaneous Components

SIZE OF PROPERTY

10.2 ☐ sq. ft. ■ acres

SHORELAND ZONING

☐ Yes ■ No

DISPOSAL SYSTEM TO SERVE

1. ☐ Single Family Dwelling Unit, No. of Bedrooms:
2. ☐ Multiple Family Dwelling, No of Units:
3. ■ Other: PUBLIC SAFETY FACILITY, POLICE, FIRE, RESCUE (SPECIFY) & ADMINISTRATORS

Current Use ☐ Seasonal ☐ Year Round ☐ Undeveloped

TYPE OF WATER SUPPLY

☐ Drilled Well 2. ☐ Dug Well 3. ☐ Private 4. ■ Public 5. ☐ Other:

DESIGN DETAILS (SYSTEM LAYOUT SHOWN ON PAGE 3)

TREATMENT TANK

1. ■ Concrete USE EXIST.
   a. ■ Regular IF OK
   b. ☐ Low Profile
2. ☐ Plastic
3. ☐ Other:

CAPACITY 1500 gallons

DISPOSAL FIELD TYPE & SIZE

1. ☐ Stone Bed 2. Stone Trench
3. ■ Proprietary Device
   a. ☐ cluster array c. ■ Linear
   b. ■ regular load d. ☐ H-20 loaded
4. ☐ Other:

SIZE: 3500 ■ sq. ft. ☐ lin. ft.

GARBAGE DISPOSAL UNIT

1. ■ No 3. ☐ Maybe
2. ☐ Yes >> Specify one below:
   a. ☐ multi-compartment tank
   b. ☐ ____ tanks in series
   c. ☐ increase in tank capacity
   d. ☐ Filter on tank outlet

DESIGN FLOW

1000 gallons per day
BASED ON:
1. ☐ Table 501.1 (dwelling unit(s))
2. ■ Table 501.2 (other facilities)
   SHOW CALCULATIONS
   - for other facilities -
3. ■ Section 503.0 (meter readings)
   ATTACH WATER METER DATA

SOIL DATA & DESIGN CLASS

PROFILE / CONDITION / DESIGN
3 / B / 1

at Observation Hole # TP-04-1
Depth 38 "
of Most Limiting Soil Factor

DISPOSAL FIELD SIZING

1. ☐ Small - 2.0 sq.ft./gpd
2. ☐ Medium - 2.6 sq.ft./gpd
3. ■ Medium-Large - 3.3 sq.ft./gpd
4. ☐ Large - 4.1 sq.ft./gpd
5. ☐ Extra-Large - 5.0 sq.ft./gpd

EFFLUENT/EJECTOR PUMP

1. ☐ Not required
2. ☐ May be required
3. ■ Required

Specify only for engineered systems:
DOSE: 75-150 Gallons

SITE EVALUATOR STATEMENT

I Certify that on 8/18/04 (date) I completed a site evaluation on this property and state that the data reported are accurate and that the proposed sytem is in compliance with the State of Maine Subsurface Wastewater Disposal Rules (10-144A CMR 241).

Paul W. Lawrence — Site Evaluator Signature
5216 — SE #
8/25/04 — Date

PAUL W. LAWRENCE CONSULTING – P.O. BOX 369, WINDHAM, MAINE 04062 – (207) 892-2175

Note: Changes to or deviations from the design should be confirmed with the Site Evaluator.

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

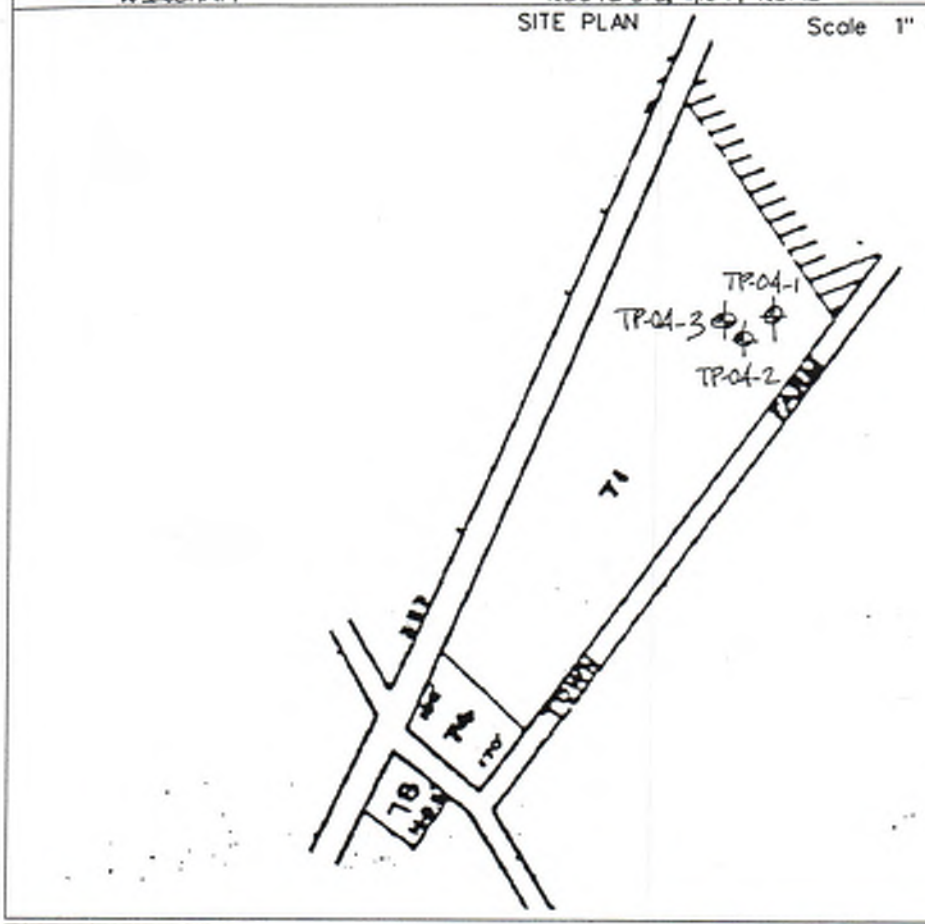
Maine Department of Human Services
Division of Health Engineering, Station 10
(207) 287-5672 FAX (207) 287-4172

Town, City, Plantation: WINDHAM

Street, Road Subdivision: ROUTE 202, GRAY ROAD

Owner or Applicant Name: TOWN OF WINDHAM

SITE PLAN Scale 1" = NTS Ft.



SITE LOCATION PLAN

N

NORTH ORIENTATION APPROXIMATE

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP-04-1 ■ Test Pit ☐ Boring

1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

	Texture	Consistency	Color	Mottling
0	STONY LOAMY SAND	VERY FRIABLE	DARK BROWN	
10	STONY GRAVELLY SAND	FRIABLE	DARK YELLOW BROWN	
30	STONY SILTY FINE SAND	FRIABLE TO SOMEWHAT FIRM	PALE OLIVE YELLOW	RESTRICTIVE
50				

Soil Classification		Slope	Limiting Factor	
3 Profile	B Condition	2-10%	38"	☐ Ground Water ■ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Observation Hole TP-04-2 ■ Test Pit ☐ Boring

1 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

	Texture	Consistency	Color	Mottling
0	STONY LOAMY SAND	VERY FRIABLE	DARK BROWN	
10	STONY GRAVELLY SAND	FRIABLE	DARK YELLOW BROWN	
30	STONY SILTY FINE SAND	FRIABLE TO SOMEWHAT FIRM	PALE OLIVE YELLOW	
50				

Soil Classification		Slope	Limiting Factor	
2 Profile	B Condition	2-10%	48"	☐ Ground Water ☐ Restrictive Layer ☐ Bedrock ■ Pit Depth

Paul W. Lawrence
Site Evaluator Signature

5216
SE #

8/25/04
Date

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering

Town, City, Plantation	Street, Road Subdivision	Owner's Name
WINDHAM	ROUTE 202, GRAY ROAD	TOWN OF WINDHAM

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP-04-3 ■ Test Pit ☐ Boring

1 " Depth of Organic Horizon Above Mineral Soil

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0–10	STONY LOAMY SAND	VERY FRIABLE	DARK BROWN	
10–20	STONY GRAVELLY SAND	FRIABLE	DARK YELLOW BROWN	
20–40	STONY SILTY FINE SAND	FRIABLE TO SOMEWHAT FIRM	PALE OLIVE YELLOW	

Soil Classification	Slope	Limiting Factor	
Profile: 2 / Condition: B	3-10 %	50 "	☐ Ground Water ☐ Restrictive Layer ☐ Bedrock ■ Pit Depth

Observation Hole _____ ☐ Test Pit ☐ Boring

_____ " Depth of Organic Horizon Above Mineral Soil

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0–50				

Soil Classification	Slope	Limiting Factor	
Profile / Condition	%	"	☐ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole _____ ☐ Test Pit ☐ Boring

_____ " Depth of Organic Horizon Above Mineral Soil

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0–50				

Soil Classification	Slope	Limiting Factor	
Profile / Condition	%	"	☐ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Observation Hole _____ ☐ Test Pit ☐ Boring

_____ " Depth of Organic Horizon Above Mineral Soil

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0–50				

Soil Classification	Slope	Limiting Factor	
Profile / Condition	%	"	☐ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Paul W. Lawrence
Site Evaluator Signature

5216
SE #

8/25/04
Date

PAUL W. LAWRENCE CONSULTING – P.O. BOX 369, WINDHAM, MAINE 04062 – (207) 892-2175

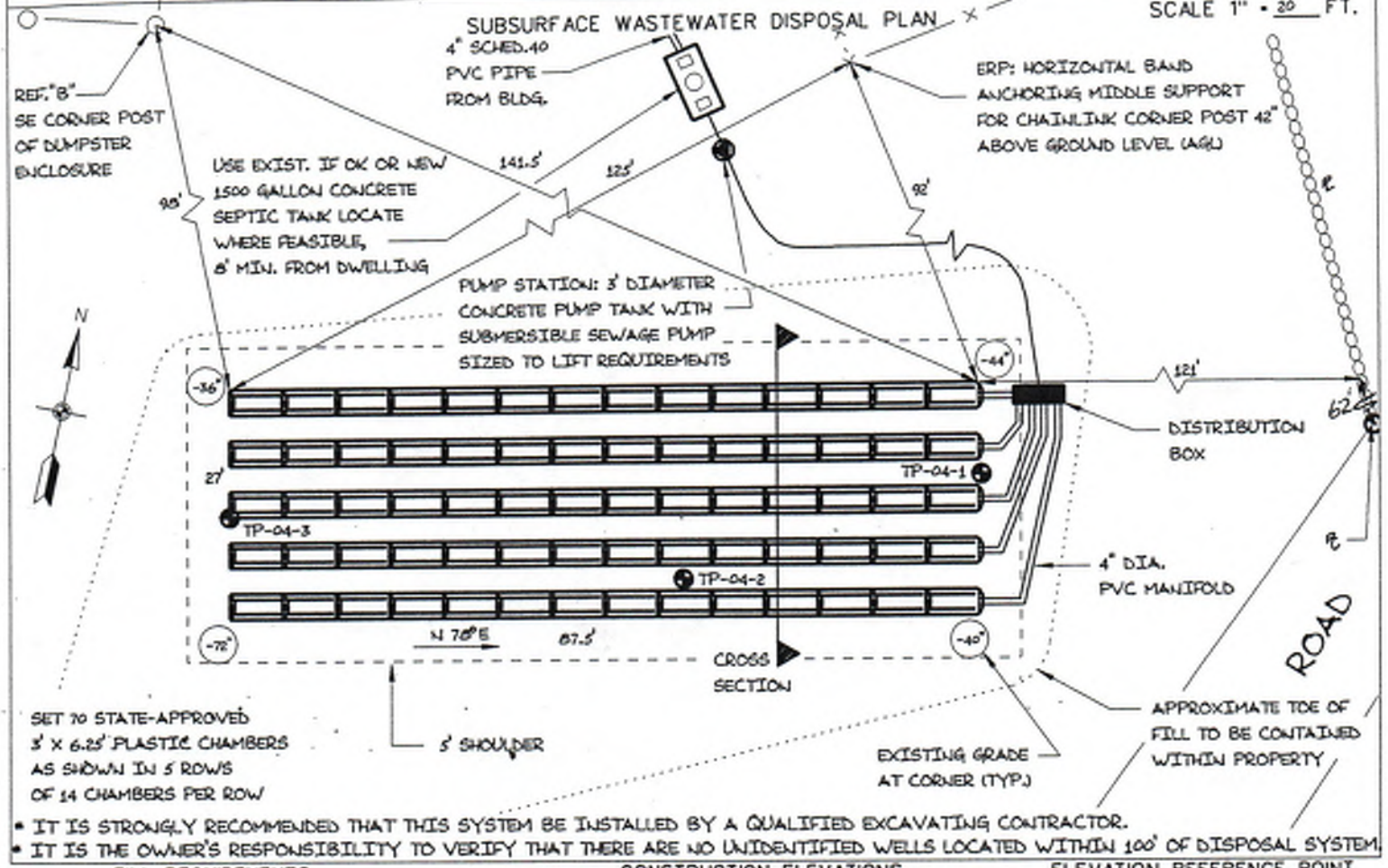
SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Maine Department of Human Services
Division of Health Engineering, Station 10
(207) 287-5672 FAX (207) 287-4172

Town, City, Plantation: WINDHAM
Street, Road, Subdivision: ROUTE 202, GRAY ROAD
Owner or Applicant Name: TOWN OF WINDHAM

SUBSURFACE WASTEWATER DISPOSAL PLAN

SCALE 1" = 20 FT.



- IT IS STRONGLY RECOMMENDED THAT THIS SYSTEM BE INSTALLED BY A QUALIFIED EXCAVATING CONTRACTOR.
- IT IS THE OWNER'S RESPONSIBILITY TO VERIFY THAT THERE ARE NO UNIDENTIFIED WELLS LOCATED WITHIN 100' OF DISPOSAL SYSTEM.

FILL REQUIREMENTS

Depth of Fill (Upslope): 26" AVG. : 14" - 22"
Depth of Fill (Downslope): : 18" - 50"

CONSTRUCTION ELEVATIONS

Finished Grade Elevation
Top of Distribution Pipe or Proprietary Device: 46 -22" -34"
Bottom of Disposal Area: 62 -50"

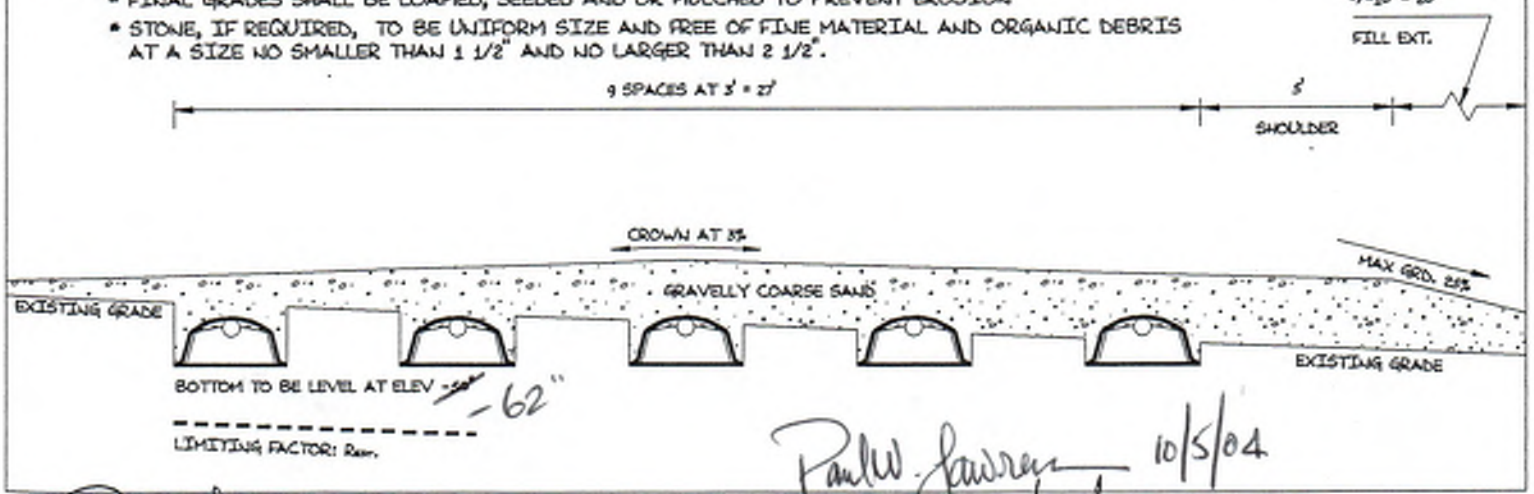
ELEVATION REFERENCE POINT

Location & Description: BAND ON SUPPORT ON FENCE POST 42" AGL
Reference Elevation: -0"

DISPOSAL FIELD CROSS-SECTION

SCALES:
VERTICAL: 1" = 5 FT
HORIZONTAL: 1" = 5 FT

NOTES:
- CHAMBERS TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS
- BACKFILL TO BE GRAVELLY COARSE SAND FREE OF FINES AND ORGANIC DEBRIS
- FINAL GRADES SHALL BE LOAMED, SEEDED AND OR MULCHED TO PREVENT EROSION
- STONE, IF REQUIRED, TO BE UNIFORM SIZE AND FREE OF FINE MATERIAL AND ORGANIC DEBRIS AT A SIZE NO SMALLER THAN 1 1/2" AND NO LARGER THAN 2 1/2".



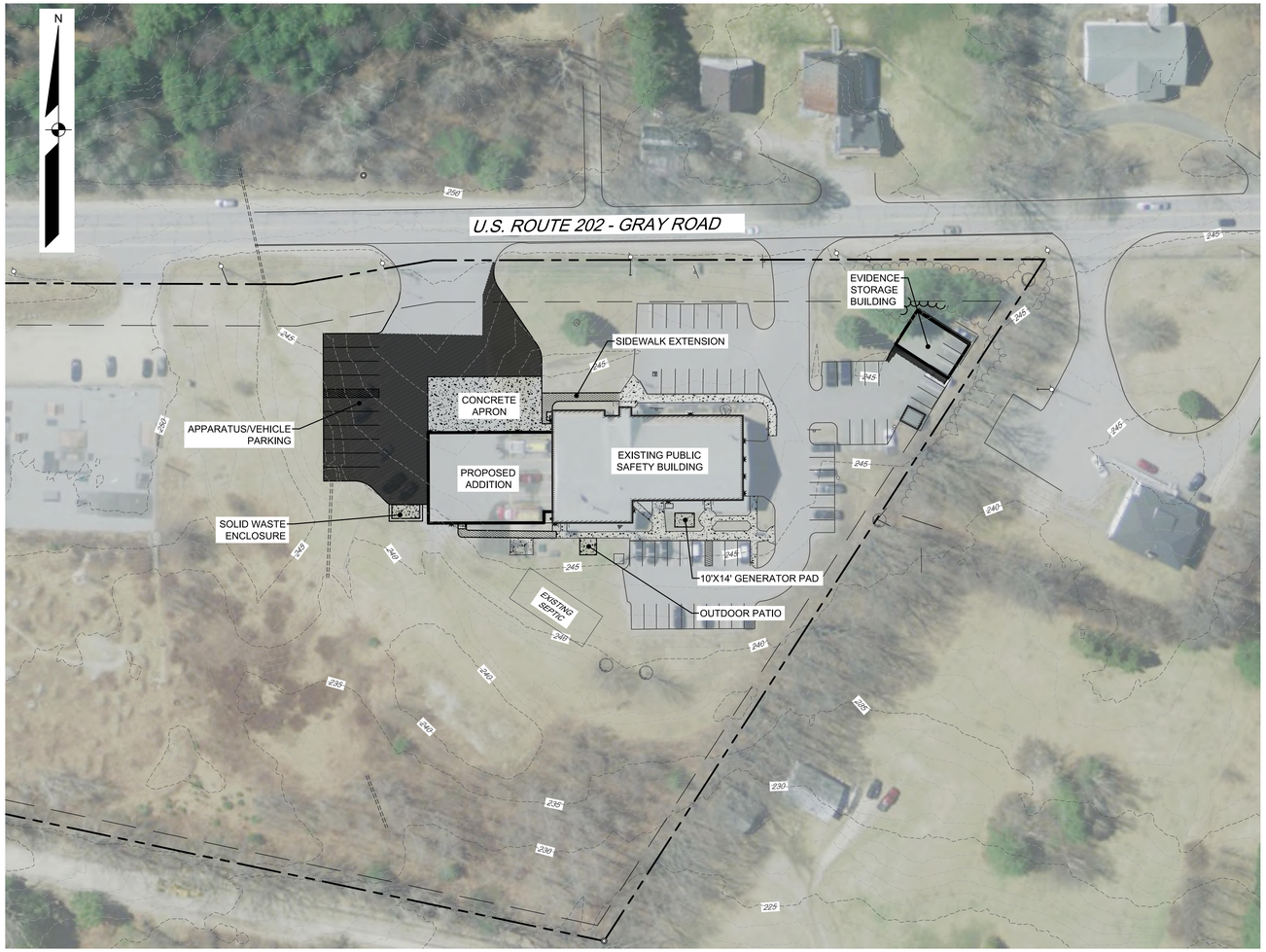
Paul W. Lawrence 10/5/04

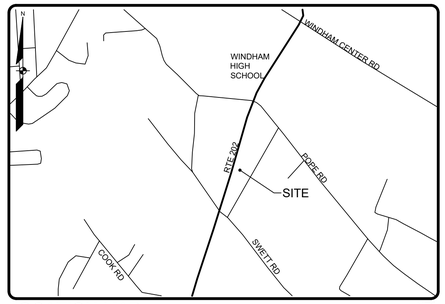
Paul W. Lawrence — Site Evaluator Signature
S216 — SE #
8/25/04 — Date

PAUL W. LAWRENCE CONSULTING – P.O. BOX 369, WINDHAM, MAINE 04062 – (207) 892-2175

WINDHAM PUBLIC SAFETY BUILDING EXPANSION

375 GRAY ROAD/ROUTE 202
WINDHAM, MAINE





LOCATION MAP NTS

GRAPHIC SCALE
40 0 20 40 80
(IN FEET)
1 INCH = 40 FT.

SHEET LIST TABLE	
SHEET NUMBER	SHEET TITLE
1	COVER SHEET
2	EXISTING CONDITION PLAN
3	SITE PLAN
4	GRADING AND UTILITY PLAN
5	LANDSCAPE PLAN
6	EROSION CONTROL NOTES
7	DETAILS 1
8	DETAILS 2
9	DETAILS 3

REVISED THROUGH 04/05/2021

OWNER:
TOWN OF WINDHAM
PUBLIC SAFETY DEPARTMENT
375 GRAY ROAD
WINDHAM, MAINE

DESIGN-BUILD CONTRACTOR:
GREAT FALLS CONSTRUCTION

20 MECHANIC STREET
GORHAM, MAINE 04038

ENGINEER/SURVEYOR/ LANDSCAPE ARCHITECT:

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

ENGINEER:

ALLIED ENGINEERING, INC

160 VERANDA STREET
PORTLAND, MAINE 04103

PROJECT ARCHITECT:

GRANT-HAYS ASSOCIATES

28 OAK RIDGE LANE
FALMOUTH, MAINE 04105

PROGRESS PRINT

PLS OR PE

OWENS A. McCULLOUGH PE 7122

STATE OF MAINE
OWENS A. McCULLOUGH
No. 7122
REGISTERED PROFESSIONAL ENGINEER

REV:	BY:	DATE:	STATUS:
A	OAM	04/05/2021	ISSUED FOR SITE PLAN REVIEW

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

COVER SHEET
OF:
WINDHAM PUBLIC SAFETY BUILDING EXPANSION
375 GRAY ROAD/ROUTE 202
WINDHAM, MAINE
FOR:
GREAT FALLS CONSTRUCTION
20 MECHANIC STREET
GORHAM, MAINE 04038

DESIGNED	OAM
DRAWN	MRS
CHECKED	OAM
DATE	02/19/2021
SCALE	AS NOTED
PROJECT	20566

SHEET 1 OF 8

20566 C.dwg, T.AB.1 COVER SHEET

GENERAL NOTES:

1. THE RECORD OWNER OF THE PARCEL IS THE TOWN OF WINDHAM BY DEED DATED RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS (CCRD) IN BOOK 8273, PAGE 69.
2. THE PROPERTY IS SHOWN AS LOT 71 ON THE TOWN OF WINDHAM TAX MAP 9.
3. SPACE AND BULK CRITERIA FOR THE FAR, RESIDENTIAL DISTRICT ARE AS FOLLOWS:

	LIMITED BUSINESS
MINIMUM LOT SIZE:	50,000 SQ FT
MINIMUM STREET FRONTAGE:	150 FT
MINIMUM FRONT YARD:	30 FT AND PER ORDINANCE
MINIMUM SIDE YARD:	10 FT
MINIMUM REAR YARD:	10 FT
MAXIMUM BUILDING HEIGHT	35 FT (NO LIMIT FOR PUBLIC BUILDING)
MAXIMUM BUILDING COVERAGE:	20 PERCENT

* SEE ORDINANCE FOR MORE PARTICULAR INFORMATION.

4. TOTAL AREA OF PARCEL IS APPROXIMATELY 13 ACRES.
5. FIELD SURVEY BY SEBAGO TECHNICS, INC. IN MARCH 2021 AND COMPILATION OF LLIDAR PRIOR TO SURVEYS.
7. PLAN ORIENTATION IS GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE 1802-NAD83, ELEVATIONS DEPICTED HEREON ARE NAVD88, BASED ON DUAL FREQUENCY GPS OBSERVATIONS.
8. PARKING SUMMARY:
   PASSENGER VEHICLES: 52 SPACES
   APPARATUS PARKING: 10 SPACES

GRADING & EROSION NOTES

1. SIDESLOPES SHALL NOT BE STEEPER THAN 3:1 (H:V) EXCEPT AS OTHERWISE IDENTIFIED ON THIS PLAN. ALL SIDESLOPES STEEPER THAN 3:1 (H: V) SHALL BE LINED WITH EROSION CONTROL BLANKET.
2. GRADING AND CLEARING LIMITS SHALL NOT ENCROACH ON ADJACENT PROPERTIES.
3. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH "MAINE EROSION AND SEDIMENT CONTROL BMPS" MANUAL PUBLISHED BY BUREAU OF LAND AND WATER QUALITY MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, LATEST EDITION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO POSSESS A COPY OF THE EROSION CONTROL PLAN AT ALL TIMES.
4. SEE EROSION AND SEDIMENT CONTROL NOTES.

UTILITY NOTES

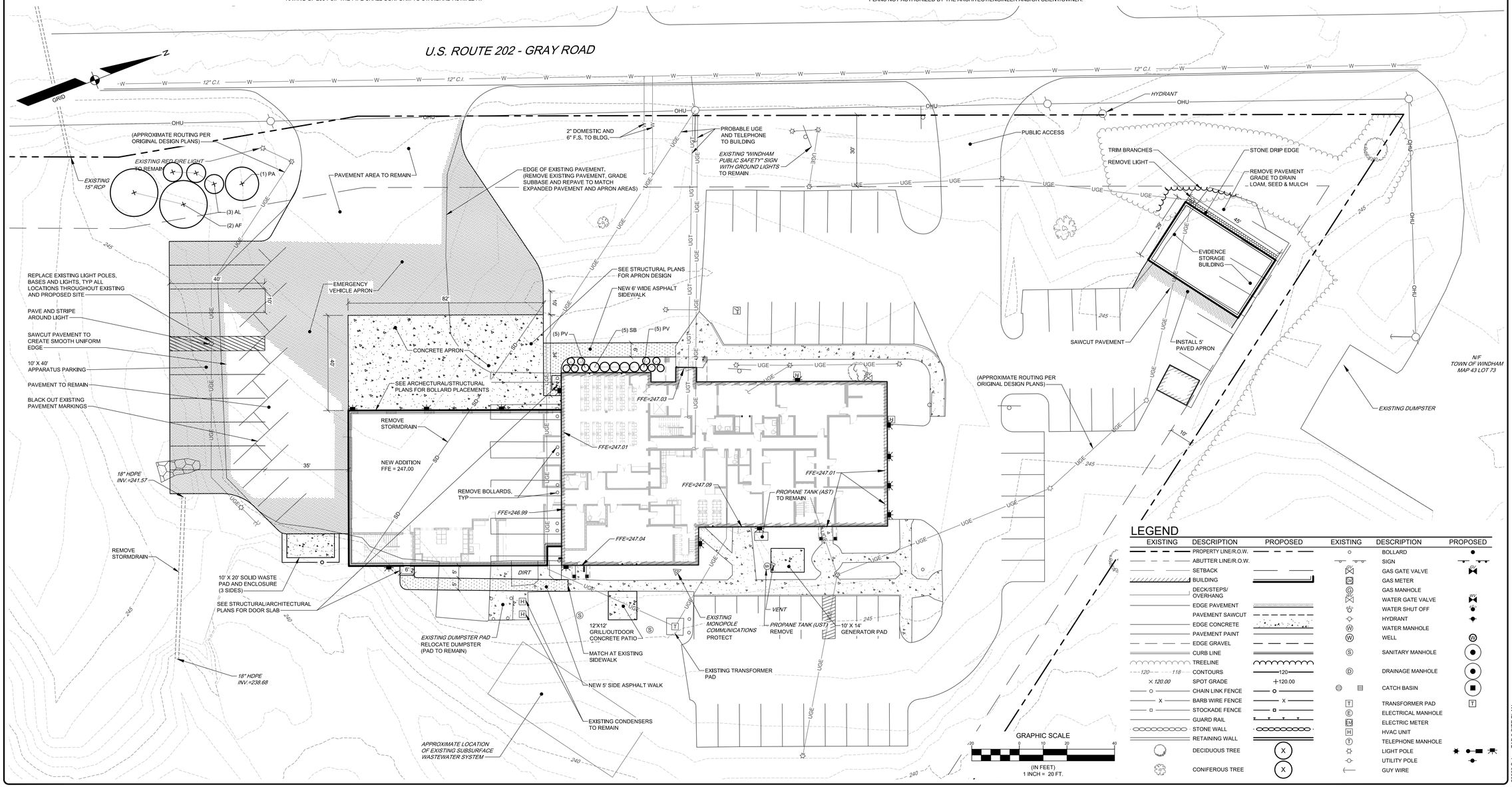
1. UTILITY INFORMATION DEPICTED HEREON IS COMPILED USING PHYSICAL EVIDENCE LOCATED IN THE FIELD. UTILITIES DEPICTED HEREON MAY NOT NECESSARILY REPRESENT ALL EXISTING UTILITIES. CONTRACTORS AND/OR DESIGNERS NEED TO CONTACT DIG-SAFE SYSTEMS, INC. (1-888-DIG-SAFE) AND FIELD VERIFY EXISTING UTILITIES PRIOR TO CONSTRUCTION AND/OR EXCAVATION.
2. MAINTAIN MINIMUM 10 FEET HORIZONTAL SEPARATION BETWEEN SEWER AND WATER LINES.
3. LOWER WATER MAIN AND SERVICES AS REQUIRED TO MAINTAIN VERTICAL SEPARATION FROM OTHER UTILITIES. MAINTAIN MINIMUM 12" VERTICAL SEPARATION. WATERLINES CROSSING SEWERS SHALL BE PROVIDE 12" MINIMUM SEPARATION BETWEEN THE BOTTOM OF WATER LINE AND TOP OF SEWER.
4. PIPE:
   - SEWER PIPE SHALL BE SDR 35 PVC OR APPROVED EQUAL.
   - FORCEMAIN PIPE SHALL BE DR-18 PVC OR APPROVED EQUAL.
   - STORMDRAIN SHALL BE ADS N-12 DUAL WALL HDPE PIPE WITH SMOOTH-WALLED INTERIOR OR APPROVED EQUAL.
   - WATERMAIN (6" OR LARGER) SHALL BE DUCTILE IRON, CLASS 52 PIPE MEETING THE REQUIREMENTS OF AWWA STANDARD C-151 (LATEST REVISION). PIPE SHALL BE CEMENT-LINED AND SEAL COATED TO MEET AWA STANDARD C-104 (LATEST REVISION). DUCTILE IRON PIPE SHALL CONFORM TO PWD STANDARDS POLYWRAP PIPE..
   - WATER SERVICE SHALL BE 2" PVC (SDR-21) PIPE WITH MINIMUM WORKING PRESSURE RATING OF 200 PSI. THE PIPE SHALL CONFORM TO STANDARD ASTM 2241.

CONSTRUCTION NOTES

1. ALL WORK SHALL CONFORM TO THE APPLICABLE CODES AND ORDINANCES.
2. CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIM OR HERSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIM OR HERSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
3. CONTRACTOR SHALL NOTIFY ENGINEER OF ALL PRODUCTS OR ITEMS NOTED AS "EXISTING" WHICH ARE NOT FOUND IN THE FIELD.
4. INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND OWNER'S REQUIREMENTS UNLESS SPECIFICALLY OTHERWISE INDICATED OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
5. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE ENGINEER.
6. CONTRACTOR SHALL CLEAN AND REMOVE DEBRIS AND SEDIMENT DEPOSITED ON PUBLIC STREETS, SIDEWALKS, ADJACENT AREAS, OR OTHER PUBLIC WAYS DUE TO CONSTRUCTION.
7. CONTRACTOR SHALL INCORPORATE PROVISIONS AS NECESSARY IN CONSTRUCTION TO PROTECT EXISTING STRUCTURES, PHYSICAL FEATURES, AND MAINTAIN SITE STABILITY DURING CONSTRUCTION. CONTRACTOR SHALL RESTORE ALL AREAS TO ORIGINAL CONDITION AND AS DIRECTED BY DESIGN DRAWINGS.
8. SITE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS PRIOR TO CONSTRUCTION.
9. THE CONTRACTOR IS HEREBY CAUTIONED THAT ALL SITE FEATURES SHOWN HEREON ARE BASED ON FIELD OBSERVATIONS BY THE SURVEYOR AND BY INFORMATION PROVIDED BY UTILITY COMPANIES. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT DIG SAFE (811) AT LEAST THREE (3) BUT NOT MORE THAN THIRTY (30) DAYS PRIOR TO COMMENCEMENT OF EXCAVATION OR DEMOLITION TO VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES.
10. CONTRACTOR SHALL BE AWARE THAT DIG SAFE ONLY NOTIFIES ITS "MEMBER" UTILITIES ABOUT THE DIG. WHEN NOTIFIED, DIG SAFE WILL ADVISE CONTRACTOR OF MEMBER UTILITIES IN THE AREA. CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING AND CONTACTING NON-MEMBER UTILITIES DIRECTLY. NON-MEMBER UTILITIES MAY INCLUDE CITY WATER AND SEWER DISTRICTS AND SMALL LOCAL UTILITIES, AS WELL AS USG PUBLIC WORKS SYSTEMS.
11. CONTRACTORS SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THE REQUIREMENTS OF 23 MRSA 3360-A. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE APPROPRIATE UTILITIES TO OBTAIN AUTHORIZATION PRIOR TO RELOCATION OF ANY EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS. IF A UTILITY CONFLICT ARISES, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER, THE MUNICIPALITY AND APPROPRIATE UTILITY COMPANY PRIOR TO PROCEEDING WITH ANY RELOCATION.
12. ALL PAVEMENT MARKINGS AND DIRECTIONAL SIGNAGE SHOWN ON THE PLAN SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) STANDARDS.
13. ALL PAVEMENT JOINTS SHALL BE SAWCUT PRIOR TO PAVING TO PROVIDE A DURABLE AND UNIFORM JOINT.
14. NO HOLES, TRENCHES OR STRUCTURES SHALL BE LEFT OPEN OVERNIGHT IN ANY EXCAVATION ACCESSIBLE TO THE PUBLIC OR IN PUBLIC RIGHTS-OF-WAY.
15. ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY SHALL REQUIRE PERMIT FROM THE TOWN OF WINDHAM AND/OR MDOT.
16. IMMEDIATELY UPON COMPLETION OF CUTS/FILLS, THE CONTRACTOR SHALL STABILIZE DISTURBED AREAS IN ACCORDANCE WITH EROSION CONTROL NOTES AND AS SPECIFIED ON PLANS.
17. THE CONTRACTOR SHALL BE FULLY AND SOLELY RESPONSIBLE FOR THE REMOVAL, REPLACEMENT AND RECTIFICATION OF ALL DAMAGED AND DEFECTIVE MATERIAL AND WORKMANSHIP IN CONNECTION WITH THE CONTRACT WORK. THE CONTRACTOR SHALL REPLACE OR REPAIR AS DIRECTED BY THE OWNER ALL SUCH DAMAGED OR DEFECTIVE MATERIALS WHICH APPEAR WITHIN A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION.
18. ALL WORK PERFORMED BY THE GENERAL CONTRACTOR AND/OR TRADE SUBCONTRACTOR SHALL CONFORM TO THE REQUIREMENTS OF LOCAL, STATE OR FEDERAL LAWS, AS WELL AS ANY OTHER GOVERNING REQUIREMENTS, WHETHER OR NOT SPECIFIED ON THE DRAWINGS.
19. WHERE THE TERMS "APPROVED EQUAL", "OTHER APPROVED", "EQUAL TO", "ACCEPTABLE" OR OTHER GENERAL QUALIFYING TERMS ARE USED IN THESE NOTES, IT SHALL BE UNDERSTOOD THAT REFERENCE IS MADE TO THE RULING AND JUDGMENT OF SEBAGO TECHNICS, INC.
20. THE GENERAL CONTRACTOR SHALL PROVIDE ALL NECESSARY PROTECTION FOR THE WORK UNTIL TURNED OVER TO THE OWNER.
21. THE GENERAL CONTRACTOR SHALL MAINTAIN A CURRENT AND COMPLETE SET OF CONSTRUCTION DRAWINGS ON SITE DURING ALL PHASES OF CONSTRUCTION FOR USE OF ALL TRADES.
22. THE CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ANY CHANGES AND DEVIATION OF APPROVED PLANS NOT AUTHORIZED BY THE ARCHITECT/ENGINEER AND/OR CLIENT/OWNER.
23. DETAILS ARE INTENDED TO SHOW END RESULT OF DESIGN. ANY MODIFICATION TO SUIT FIELD DIMENSION AND CONDITION SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ANY WORK.
24. BEFORE THE FINAL ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL REMOVE ALL EQUIPMENT AND MATERIALS, REPAIR OR REPLACE PRIVATE OR PUBLIC PROPERTY WHICH MAY HAVE BEEN DAMAGED OR DESTROYED DURING CONSTRUCTION, CLEAN THE AREAS WITHIN AND ADJACENT TO THE PROJECT WHICH HAVE BEEN OBSTRUCTED BY HIS/HER OPERATIONS, AND LEAVE THE PROJECT AREA NEAT AND PRESENTABLE.
25. ALL SUBSURFACE UTILITY LINES SHOWN HEREON ARE BASED SOLELY ON THE FIELD LOCATION OF VISIBLE STRUCTURES, SMH'S, CB'S, HYDRANTS, ETC.. IN CONJUNCTION WITH DESIGN AND OR AS-BUILT PLANS SUPPLIED TO SEBAGO TECHNICS INC. BY OTHERS. PRIOR TO ANY CONSTRUCTION, EXCAVATION, TEST BORINGS, DRILLING, ETC.. DIG SAFE MUST BE NOTIFIED AND A SITE IDENTIFICATION NUMBER ALONG WITH A SAFE TO DIG DATE OBTAINED. THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING THE LOCATION, DEPTH AND MATERIAL OF ALL SUBSURFACE UTILITY LINES SHOWN HEREON AND ANY AND ALL OTHERS LOCATED ON SITE WITHIN THE CONSTRUCTION AREA.
26. REFER TO STRUCTURAL FOUNDATION PLANS FOR BOLLARD LOCATIONS.

PLANT SCHEDULE

KEY	BOTANICAL NAME	COMMON NAME	SIZE
AF	ABIES FRASERII	FRASER FIR	8'-10' HGT.
AL	AMELANCHIER LAEVIS	SHADBUSH	5'-6' HGT.
PA	PRUNUS ACCOLADE	ACCOLADE CHERRY	3" CAL.
PV	PANICUM VIRGATUM 'CAPE BREEZE'	CAPE BREEZE SWITCH GRASS	#3 CONT.
SB	SPIREA BETULIFOLIA 'TOR'	BIRCHLEAF SPIREA	#3 CONT.



LEGEND

EXISTING	DESCRIPTION	PROPOSED	EXISTING	DESCRIPTION	PROPOSED
	PROPERTY LINE/R.O.W.			BOLLARD	
	ABUTTER LINE/R.O.W.			SIGN	
	SETBACK		GV	GAS GATE VALVE	GV
	BUILDING		GM	GAS METER	
	DECK/STEPS/ OVERHANG		G	GAS MANHOLE	
	EDGE PAVEMENT		WV	WATER GATE VALVE	WV
	PAVEMENT SAWCUT		WS	WATER SHUT OFF	WS
	EDGE CONCRETE			HYDRANT	
	PAVEMENT PAINT		W	WATER MANHOLE	
	EDGE GRAVEL		W	WELL	W
	CURB LINE		S	SANITARY MANHOLE	
	TREELINE		D	DRAINAGE MANHOLE	
120 118	CONTOURS	120		CATCH BASIN	
× 120.00	SPOT GRADE	+120.00			
	CHAIN LINK FENCE		T	TRANSFORMER PAD	T
X	BARB WIRE FENCE	X	E	ELECTRICAL MANHOLE	
	STOCKADE FENCE		EM	ELECTRIC METER	
	GUARD RAIL		H	HVAC UNIT	
	STONE WALL		T	TELEPHONE MANHOLE	
	RETAINING WALL			LIGHT POLE	
	DECIDUOUS TREE	X		UTILITY POLE	
	CONIFEROUS TREE	X		GUY WIRE	

PROGRESS PRINT

DANIEL M. DANVERS, RLA 4815

STATE OF MAINE — OWENS A. McCULLOUGH — No. 1722 — REGISTERED LANDSCAPE ARCHITECT

OWENS A. McCULLOUGH PE 7122

REV.	BY:	DATE:	STATUS:
A	OAM	04/05/2021	ISSUED FOR SITE PLAN REVIEW

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

SITE PLAN
OF:
WINDHAM PUBLIC SAFETY BUILDING EXPANSION
375 GRAY ROAD/ROUTE 202
WINDHAM, MAINE
FOR:
GREAT FALLS CONSTRUCTION
20 MECHANIC STREET
GORHAM, MAINE 04038

DESIGNED	OAM
DRAWN	MRS
CHECKED	OAM
DATE	02/19/2021
SCALE	1" = 20'
PROJECT	20566

20566 S dwg, TAB-2 SITE PLAN

SHEET 3 OF 8

U.S. ROUTE 202 - GRAY ROAD

APPROXIMATE LOCATION OF EXISTING WATERMAIN CONFIRM WITH PORTLAND WATER DISTRICT (PWD)

EXISTING RED FIRE LIGHT

EXISTING 15" RCP

PROTECT EXISTING UGE

EXTEND SUBBASE GRAVEL 2' BEYOND EDGE OF PAVEMENT, APPLY 4" LOAM, SEED & MULCH OVER. FOR ALL PAVED AREAS

SAWCUT PAVEMENT TO CREATE SMOOTH UNIFORM EDGE

GRADE TO DRAIN

DEMOLISH EXISTING CULVERT

CONCRETE APRON

RIPRAP INLET 4/RIPRAP INLET IN 12" SD INV=243.50

RELOCATE UGE

SLOPE TO DRAIN

MATCH AT EXISTING SIDEWALK

DMH-1
RIM: 246.15
INV, IN: 241,98 (SD-2)
INV. OUT: 241.88 (SD-3)

12" HDPE L=106' S=0.005

12" HDPE L=45' S=0.020

12" HDPE L=40' S=0.005

12" HDPE L=55' S=0.005

18" HDPE INV.=244.87

CB-2
RIM: 244.70
INV. IN: 241.68 (SD-3)
INV. OUT: 241.58 (SD-4)

6" SCHD 40 PVC

OIL/GRIT CHAMBER 1
RIM: 246.75
INV, IN: 242.75
INV, OUT: 242.65

4,000 GALLON HOLDING TANK
RIM: 246.85 (ACCESS PORTS)
INV, IN: 242.45

FFE = 247.00

CB-1
RIM: 246.50
INV, IN: 242.61 (SD-1)
INV, OUT: 242.51 (SD-2)

FFE=247.03

FFE=247.01

FFE=247.09

PROPANE TANK (AST)

FFE=246.99

FFE=247.04

MATCH AT EXISTING SIDEWALK

LOAM SEED AND MULCH

EROSION CONTROL BLANKET

STONE CHECK DAM, TYP

REMOVE CULVERT

12" SD INV=241.30

EXISTING DUMPSTER PAD

6" FOUNDATION DRAIN

INV = 240.00

RIPRAP APRON

RIPRAP SWALE

18" HDPE INV.=239.69

RIPRAP APRON

STONE CHECK DAM, TYP

FILTER BARRIER, TYP

SMH 1458
RIM=245.50

SMH 1456
RIM=245.49

PROVIDE 0.005 SLOPE COORDINATE FFE @ TIME OF CONSTRUCTION WITH ENGINEER

EXISTING POLICE

GENERATOR PAD
FFE = 247.50

APPROXIMATE LOCATION OF EXISTING SEPTIC FIELD

APPROXIMATE LOCATION OF EXISTING SUBSURFACE WASTEWATER SYSTEM

DETENTION POND

OVERFLOW SPILLWAY

18" HDPE INV.=232.34

N/F
DONALD PARKER
&
SHARON PARKER
3443/93
MAP 43 LOT 72B

HYDRANT

EVIDENCE STORAGE BUILDING

4" SCHD 40 PVC

FFE = 247.00
TOP OF FND WALL = 247.50

2,000 GALLON HOLDING TANK
RIM:245.2 (ACCESS PORTS)
INV, IN: 242.20

OIL/GRIT CHAMBER 2
RIM: 246.00
INV, IN: 242.50
INV, OUT: 242.40

COORDINATE NEW ELECTRICAL SERVICE TO BUILDING WITH ELECTRICIAN

LEGEND

EXISTING	DESCRIPTION	PROPOSED
	PROPERTY LINE/R.O.W.	
	ABUTTER LINE/R.O.W.	
	SETBACK	
	BUILDING	
	DECK/STEPS/ OVERHANG	
	EDGE PAVEMENT	
	PAVEMENT SAWCUT	
	EDGE CONCRETE	
	PAVEMENT PAINT	
	EDGE GRAVEL	
	CURB LINE	
	EDGE OF WATER	
	TREELINE	
120 110	CONTOURS	120
× 120.00	SPOT GRADE	+120.00
O	CHAIN LINK FENCE	O
X	BARB WIRE FENCE	X
□	STOCKADE FENCE	□
	GUARD RAIL	
	STONE WALL	
	RETAINING WALL	
	DECIDUOUS TREE	X
	CONIFEROUS TREE	X
	MULCH LINE	
	BOLLARD	
	SIGN	
	RAILROAD	
G	GAS	G
	GAS GATE VALVE	
G	GAS METER	
G	GAS MANHOLE	
W	WATER	W
	WATER GATE VALVE	
	WATER SHUT OFF	
	HYDRANT	
W	WATER MANHOLE	
W	WELL	W
S	SANITARY SEWER	S
FM	FORCE MAIN	FM
S	SANITARY MANHOLE	
SD	STORM DRAIN	SD
UD	UNDER DRAIN	UD
D	DRAINAGE MANHOLE	
	CATCH BASIN	
OHU	OVERHEAD UTILITY	OHU
UGU	UNDERGROUND UTILITY	UGU
T	TRANSFORMER PAD	T
E	ELECTRICAL MANHOLE	
EM	ELECTRIC METER	
H	HVAC UNIT	
T	TELEPHONE MANHOLE	
	LIGHT POLE	
	UTILITY POLE	
	GUY WIRE	
	DRAINAGE DITCH	
	EROSION CONTROL BLANKET	
FB	FILTER BARRIER	FB
	RIPRAP	
	CHECK DAM	
	INLET PROTECTION	

GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 INCH = 20 FT.

PROGRESS PRINT

PLS OR PE

STATE OF MAINE
OWENS A. McCULLOUGH
No. 7122
REGISTERED PROFESSIONAL ENGINEER

OWENS A. McCULLOUGH PE 7122

REV.	BY:	DATE:	STATUS
A	OAM	04/05/2021	ISSUED FOR SITE PLAN REVIEW

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

GRADING AND UTILITY PLAN
OF:
WINDHAM PUBLIC SAFETY BUILDING EXPANSION
375 GRAY ROAD/ROUTE 202
WINDHAM, MAINE
FOR:
GREAT FALLS CONSTRUCTION
20 MECHANIC STREET
GORHAM, MAINE 04038

DESIGNED	OAM
DRAWN	MRS
CHECKED	OAM
DATE	02/19/2021
SCALE	1" = 20'
PROJECT	20566

20566 GU dwg, TAB-3 GRADING AND UTILITY PLAN

SHEET 4 OF 8

EROSION CONTROL MEASURES

PRE-CONSTRUCTION PHASE

PRIOR TO THE BEGINNING OF ANY CONSTRUCTION, SEDIMENT BARRIERS (SILT FENCE) WILL BE STAKED/INSTALLED ACROSS THE SLOPE(S), ON THE CONTOUR AT OR JUST BELOW THE LIMITS OF CLEARING OR GRUBBING, AND/OR JUST ABOVE ANY ADJACENT PROPERTY LINE OR WATERCOURSE TO PROTECT AGAINST CONSTRUCTION RELATED EROSION. THE PLACEMENT OF SEDIMENT BARRIERS SHALL BE COMPLETED IN ACCORDANCE WITH GUIDELINES ESTABLISHED IN BEST MANAGEMENT PRACTICES AND IN ACCORDANCE WITH THIS EROSION CONTROL PLAN AND DETAILS IN THIS PLAN SET. THIS NETWORK IS TO BE MAINTAINED BY THE CONTRACTOR UNTIL ALL EXPOSED SLOPES HAVE AT LEAST 90% VIGOROUS PERENNIAL VEGETATIVE COVER TO PREVENT EROSION. TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER PERMANENT STABILIZATION IS ATTAINED.

PRIOR TO ANY CLEARING OR GRUBBING, A CONSTRUCTION ENTRANCE/EXIT SHALL BE CONSTRUCTED AT THE INTERSECTION OF THE PROPOSED ENTRANCES AND EXISTING ROADWAY TO AVOID TRACKING OF MUD, DUST AND DEBRIS FROM THE SITE.

PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL PREPARE A DETAILED SCHEDULE AND MARKED UP PLAN INDICATING AREAS AND COMPONENTS OF THE WORK AND KEY DATES SHOWING DATE OF DISTURBANCE AND COMPLETION OF THE WORK. THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE MUNICIPAL STAFF. THREE COPIES OF THE SCHEDULE AND MARKED UP PLAN SHALL BE PROVIDED TO THE MUNICIPALITY THREE DAYS PRIOR TO THE SCHEDULED PRE-CONSTRUCTION MEETING. SPECIAL ATTENTION SHALL BE GIVEN TO THE 14 DAY LIMIT OF DISTURBANCE IN THE SCHEDULE ADDRESSING TEMPORARY AND PERMANENT VEGETATION MEASURES.

CONSTRUCTION AND POST-CONSTRUCTION PHASE

AREAS UNDERGOING ACTUAL CONSTRUCTION SHALL ONLY EXPOSE THAT AMOUNT OF MINERAL SOIL NECESSARY FOR PROGRESSIVE AND EFFICIENT CONSTRUCTION. AN AREA CONSIDERED OPEN IS ANY AREA NOT STABILIZED WITH PAVEMENT, VEGETATION, MULCHING, EROSION CONTROL MATS, RIPRAP OR GRAVEL BASE ON A ROAD, SUCH AS ACTIVE EXCAVATION AND ACTIVE GRADING. LIMIT THE EXPOSED AREA TO THOSE AREAS IN WHICH WORK IS ACTIVELY OCCURRING OR CAN BE MULCHED IN THE SAME DAY. OPEN AREAS SHALL BE ANCHORED WITH TEMPORARY EROSION CONTROL AS SHOWN ON THE DESIGN PLANS AND AS DESCRIBED WITHIN THIS EROSION CONTROL PLAN WITHIN SEVEN (7) DAYS OF DISTURBANCE. AREAS LOCATED WITHIN 100 FEET OF STREAMS SHALL BE ANCHORED WITH TEMPORARY EROSION CONTROL WITHIN SEVEN (7) DAYS. REFER TO WINTER EROSION CONTROL NOTES FOR THE TREATMENT OF OPEN AREAS AFTER OCTOBER 1ST OF THE CONSTRUCTION YEAR.

THE CONTRACTOR MUST INSTALL ANY ADDED MEASURES WHICH MAY BE NECESSARY TO CONTROL EROSION/SEDIMENTATION FROM THE SITE DEPENDENT UPON THE ACTUAL SITE AND WEATHER CONDITIONS. CONTINUATION OF EARTHWORK OPERATIONS ON ADDITIONAL AREAS SHALL NOT BEGIN UNTIL THE EXPOSED SOIL SURFACE ON THE AREA BEING WORKED HAS BEEN STABILIZED, IN ORDER TO MINIMIZE AREAS WITHOUT EROSION CONTROL PROTECTION.

EROSION CONTROL APPLICATIONS & MEASURES
THE PLACEMENT OF EROSION CONTROL MEASURES SHALL BE COMPLETED IN ACCORDANCE WITH GUIDELINES ESTABLISHED IN BEST MANAGEMENT PRACTICES AND IN ACCORDANCE WITH THE EROSION CONTROL PLAN AND DETAILS IN THE PLAN SET.

1. TEMPORARY MULCHING:

ALL DISTURBED AREAS SHALL BE MULCHED WITH MATERIALS SPECIFIED BELOW PRIOR TO ANY STORM EVENT. ALL DISTURBED AREAS NOT FINAL GRADED WITHIN 14 DAYS SHALL BE MULCHED. DISTURBED AREAS ADJACENT TO NATURAL RESOURCES THAT ARE NOT GRADED WITHIN SEVEN (7) DAYS SHALL BE MULCHED. ALSO, AREAS, WHICH HAVE BEEN TEMPORARILY OR PERMANENTLY SEEDED, SHALL BE MULCHED IMMEDIATELY FOLLOWING SEEDING. EROSION CONTROL BLANKETS ARE RECOMMENDED TO BE USED AT THE BASE OF GRASSED WATERWAYS AND ON SLOPES GREATER THAN 33%. MULCH ANCHORING SHOULD BE USED ON SLOPES GREATER THAN 5% AFTER SEPTEMBER 15TH OF THE CONSTRUCTION YEAR (SEE WINTER EROSION CONTROL NOTES).
TYPES OF MULCH:

HAY OR STRAW: SHALL BE APPLIED AT A RATE OF 75 LBS/1,000 S.F. (1.5 TONS PER ACRE).

EROSION CONTROL MIX: SHALL BE PLACED EVENLY AND MUST PROVIDE 100% SOIL COVERAGE. EROSION CONTROL MIX SHALL BE APPLIED SUCH THAT THE THICKNESS ON SLOPES 3:1 OR LESS IS 2 INCHES PLUS 1/2 INCH PER 20 FEET OF SLOPE UP TO 100 FEET. THE THICKNESS ON SLOPES BETWEEN 3:1 AND 2:1 SHALL BE 4 INCHES PLUS 1/2 INCH PER 20 FEET OF SLOPE UP TO 100 FEET. THIS SHALL NOT BE USED ON SLOPES GREATER THAN 2:1.

EROSION CONTROL BLANKET: SHALL BE INSTALLED SUCH THAT CONTINUOUS CONTACT BETWEEN THE MAT AND THE SOIL IS OBTAINED. INSTALL BLANKETS AND STAPLE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

2. SOIL STOCKPILES:

STOCKPILES OF SOIL OR SUBSOIL SHALL BE MULCHED WITH HAY OR STRAW AT A RATE OF 75 LBS/1,000 S.F. (1.5 TONS PER ACRE) OR WITH A FOUR-INCH LAYER OF WOOD WASTE EROSION CONTROL MIX. THIS WILL BE DONE WITHIN 24 HOURS OF STOCKING AND RE-ESTABLISHED PRIOR TO ANY RAINFALL. ANY SOIL STOCKPILE WILL NOT BE PLACED (EVEN COVERED WITH HAY OR STRAW) WITHIN 100 FEET FROM ANY NATURAL RESOURCES. SEDIMENT BARRIERS SHALL BE INSTALLED DOWNGRADIENT OF STOCKPILES, AND STORMWATER SHALL BE PREVENTED FROM RUNNING ONTO THE STOCKPILE.

3. NATURAL RESOURCES PROTECTION:

ANY AREAS WITHIN 100 FEET FROM ANY NATURAL RESOURCES SHALL BE MULCHED USING TEMPORARY MULCHING (AS DESCRIBED IN PART 1 OF THIS SECTION) WITHIN 7 DAYS OF EXPOSURE OR PRIOR TO ANY STORM EVENT. SEDIMENT BARRIERS (AS DESCRIBED IN PART 4 OF THIS SECTION) SHALL BE PLACED BETWEEN ANY NATURAL RESOURCE AND THE DISTURBED AREA. PROJECTS CROSSING THE NATURAL RESOURCE SHALL BE PROTECTED A MINIMUM DISTANCE OF 100 FEET ON EITHER SIDE FROM THE RESOURCE.

4. SEDIMENT BARRIERS:

PRIOR TO THE BEGINNING OF ANY CONSTRUCTION, SEDIMENT BARRIERS SHALL BE STAKED ACROSS THE SLOPE(S), ON THE CONTOUR AT OR JUST BELOW THE LIMITS OF CLEARING OR GRUBBING, AND/OR JUST ABOVE ANY ADJACENT PROPERTY LINE OR WATERCOURSE TO PROTECT AGAINST CONSTRUCTION RELATED EROSION. SEDIMENT BARRIERS SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL ALL EXPOSED SLOPES HAVE AT LEAST 90% VIGOROUS PERENNIAL VEGETATIVE COVER TO PREVENT EROSION.

SILT FENCE: SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. THE EFFECTIVE HEIGHT OF THE FENCE SHALL NOT EXCEED 36 INCHES. IT IS RECOMMENDED THAT SILT FENCE BE REMOVED BY CUTTING THE FENCE MATERIALS AT GROUND LEVEL SO AS TO AVOID ADDITIONAL SOIL DISTURBANCE.

HAY BALES: SHALL NOT BE INSTALLED ADJACENT TO WETLAND. INSTALL PER THE DETAIL ON THE PLANS. BALES SHALL BE WIRE-BOUND OR STRING-TIED AND THESE BINDINGS MUST REMAIN PARALLEL WITH THE GROUND SURFACE DURING INSTALLATION TO PREVENT DETERIORATION OF THE BINDINGS. BALES SHALL BE INSTALLED WITHIN A MINIMUM 4 INCH DEEP TRENCH LINE WITH ENDS OF ADJACENT BALES TIGHTLY ABUTTING ONE ANOTHER.

EROSION CONTROL MIX: SHALL NOT BE USED ADJACENT TO WETLANDS. INSTALL PER THE DETAIL ON THE PLANS. THE MIX SHALL CONSIST PRIMARILY OF ORGANIC MATERIAL AND CONTAIN A WELL-GRADED MIXTURE OF PARTICLE SIZES AND MAY CONTAIN ROCKS LESS THAN 4 INCHES IN DIAMETER. THE MIX COMPOSITION SHALL MEET THE STANDARDS DESCRIBED WITHIN THE MDEP BEST MANAGEMENT PRACTICES. NO TRENCHING IS REQUIRED FOR INSTALLATION OF THIS BARRIER. EROSION CONTROL MIX BERMS SHALL NOT BE USED AT THE BOTTOM OF STEEP SLOPES (>8%) OR SLOPES WITH FLOWING WATER.

CONTINUOUS CONTAINED BERM: SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. THIS SEDIMENT BARRIER IS EROSION CONTROL MIX PLACED WITHIN A SYNTHETIC TUBULAR NETTING AND PERFORMS AS A STURDY SEDIMENT BARRIER THAT WORKS WELL ON HARD GROUND SUCH AS FROZEN CONDITIONS, TRAVELED AREAS OR PAVEMENT. NO TRENCHING IS REQUIRED FOR INSTALLATION OF THIS BARRIER.

5. TEMPORARY CHECK DAMS:

SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. CHECK DAMS ARE TO BE PLACED WITHIN DITCHES/ SWALES AS SPECIFIED ON THE DESIGN PLANS IMMEDIATELY AFTER FINAL GRADING. CHECK DAMS SHALL BE 2 FEET HIGH. TEMPORARY CHECK DAMS MAY BE REMOVED ONLY AFTER THE ROADWAYS ARE PAVED AND THE VEGETATED SWALE ARE ESTABLISHED WITH AT LEAST 90% OF VIGOROUS PERENNIAL GROWTH. THE AREA BENEATH THE CHECK DAM MUST BE SEEDED AND MULCHED IMMEDIATELY AFTER REMOVAL OF THE CHECK DAM.

STONE CHECK DAMS: STONE DAMS SHOULD BE CONSTRUCTED OF 2 TO 3 INCH STONE AND PLACED SUCH THAT COMPLETE COVERAGE OF THE SWALE IS OBTAINED AND THAT THE CENTER OF THE DAM IS 6 INCHES LOWER THAT THE OUTER EDGES.

HAY BALE CHECK DAMS: BALES SHALL BE WIRE-BOUND OR STRING-TIED. BALES SHALL BE INSTALLED WITHIN A MINIMUM 4 INCH DEEP TRENCH LINE WITH ENDS OF ADJACENT BALES TIGHTLY ABUTTING ONE ANOTHER. HAY BALES SHALL BE PLACED SUCH THAT COMPLETE COVERAGE OF THE SWALE IS OBTAINED AND THAT THE CENTER OF THE DAM IS 6 INCHES LOWER THAT THE OUTER EDGES.

MANUFACTURED CHECK DAMS: MANUFACTURED CHECK DAMS, AS SPECIFIED IN THE DETAIL ON THE PLANS, MAY BE USED IF AUTHORIZED BY THE PROPER LOCAL, STATE OR FEDERAL REGULATING AGENCIES. THESE UNITS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURE'S RECOMMENDATIONS.

6. STORMDRAIN INLET PROTECTION:

INLET PROTECTION SHALL BE PLACED AROUND A STORMDRAIN DROP INLET OR CURB INLET PRIOR TO PERMANENT STABILIZATION OF THE IMMEDIATE AND UPSTREAM DISTURBED AREAS. THEY SHALL BE CONSTRUCTED IN A MANNER THAT WILL FACILITATE CLEAN-OUT AND DISPOSAL OF TRAPPED SEDIMENTS AND MINIMIZE INTERFERENCE WITH CONSTRUCTION ACTIVITIES. ANY RESULTANT PONDING OF WATER FROM THE PROTECTION METHOD MUST NOT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT AREAS OR STRUCTURES.

HAY BALE DROP INLET PROTECTION: WE DO NOT RECOMMEND THE USE OF HAY BALES AS INLET PROTECTION.

CONCRETE BLOCK AND STONE INLET SEDIMENT FILTER (DROP OR CURB INLET): SHALL BE INSTALLED PER THE DETAIL ON THE PLANS. THE HEIGHT OF THE CONCRETE BLOCK BARRIER CAN VARY BUT MUST BE BETWEEN 12 AND 24 INCHES TALL. A MINIMUM OF 1 INCH CRUSHED STONE SHALL BE USED.

MANUFACTURED SEDIMENT BARRIERS AND FILTER (DROP OR CURB INLET): MANUFACTURED FILTERS, AS SPECIFIED IN THE DETAIL ON THE PLANS, MAY BE USED IF INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

7. STABILIZED CONSTRUCTION ENTRANCE/EXIT:

PRIOR TO CLEARING AND/OR GRUBBING THE SITE A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE CONSTRUCTED WHEREVER TRAFFIC WILL EXIT THE CONSTRUCTION SITE ONTO A PAVED ROADWAY IN ORDER TO MINIMIZE THE TRACKING OF SEDIMENT AND DEBRIS FROM THE CONSTRUCTION SITE ONTO PUBLIC ROADWAYS. THE ENTRANCES AND ADJACENT ROADWAY AREAS SHALL BE PERIODICALLY SWEPT TO FURTHER MINIMIZE THE TRACKING OF MUD, DUST OR DEBRIS FROM THE CONSTRUCTION AREA. THE TERM "SWEEP" IS UNDERSTOOD TO MEAN REMOVAL AND RECOVERY OF TRACKED SEDIMENT WITH A STREET SWEEPER, NOT BRUSHING THE MATERIAL INTO SWALES OR STRUCTURES WITH A MECHANICAL BROOM. STABILIZED CONSTRUCTION EXITS SHALL BE CONSTRUCTED IN AREAS SPECIFIED ON THE PLANS AND AS DETAILED ON THE PLANS. THE CONTRACTOR SHALL MAINTAIN THE STABILIZED CONSTRUCTION ENTRANCE UNTIL ALL DISTURBED AREAS ARE STABILIZED.

DUST CONTROL:

DUST CONTROL DURING CONSTRUCTION SHALL BE ACHIEVED BY THE USE OF A WATERING TRUCK TO PERIODICALLY SPRINKLE THE EXPOSED ROADWAY AREAS AS NECESSARY TO REDUCE DUST DURING THE DRY MONTHS. APPLYING OTHER DUST CONTROL PRODUCTS SUCH AS CALCIUM CHLORIDE OR OTHER MANUFACTURED PRODUCTS ARE ALLOWED IF AUTHORIZED BY THE PROPER LOCAL, STATE AND/OR FEDERAL REGULATING AGENCIES. HOWEVER, IT IS THE CONTRACTOR'S ULTIMATE RESPONSIBILITY TO MITIGATE DUST AND SOIL LOSS FROM THE SITE. IF OFFSITE TRACKING OCCURS, PUBLIC ROADS SHOULD BE SWEPT IMMEDIATELY AND NOT LESS THAN ONCE A WEEK AND PRIOR TO SIGNIFICANT STORM EVENTS.

TEMPORARY VEGETATION:

TEMPORARY VEGETATION SHALL BE APPLIED TO DISTURBED AREAS THAT WILL NOT RECEIVE FINAL GRADING FOR PERIODS UP TO 12 MONTHS. THIS PROCEDURE SHOULD BE USED EXTENSIVELY IN AREAS ADJACENT TO NATURAL RESOURCES. SEEDBED PREPARATION AND APPLICATION OF SEED SHALL BE CONDUCTED AS INDICATED IN THE PERMANENT VEGETATION SECTION OF THIS NARRATIVE. SPECIFIC SEEDS (FAST GROWING AND SHORT LIVING) SHALL BE SELECTED FROM THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUALS FOR CONTRACTORS AND ENGINEERS, 2016 OR LATEST REVISION. ALTERNATIVE EROSION CONTROL MEASURES SHOULD BE USED IF SEEDING CAN NOT BE DONE BEFORE SEPTEMBER 15TH OF THE CONSTRUCTION YEAR.

PERMANENT VEGETATION:

REVEGETATION MEASURES SHALL COMMENCE IMMEDIATELY UPON COMPLETION OF FINAL GRADING OF AREAS TO BE LOAMED AND SEEDED. THE APPLICATION OF SEED SHALL BE CONDUCTED BETWEEN APRIL 1ST AND OCTOBER 1ST OF THE CONSTRUCTION YEAR, PLEASE REFER TO THE WINTER EROSION CONTROL NOTES FOR MORE DETAIL. REVEGETATION MEASURES SHALL CONSIST OF THE FOLLOWING:

SEEDBED PREPARATION:

A. FOUR (4) INCHES OF LOAM SHALL BE SPREAD OVER DISTURBED AREAS AND SMOOTHED TO A UNIFORM SURFACE. LOAM SHALL BE FREE OF SUBSOIL, CLAY LUMPS, STONES AND OTHER OBJECTS OVER 2 INCHES OR LARGER IN ANY DIMENSION, AND WITHOUT WEEDS, ROOTS OR OTHER OBJECTIONABLE MATERIAL.

B. SOILS TESTS SHALL BE TAKEN AT THE TIME OF SOIL STRIPPING TO DETERMINE FERTILIZATION REQUIREMENTS. SOILS TESTS SHALL BE TAKEN PROMPTLY AS TO NOT INTERFERE WITH THE 14-DAY LIMIT ON SOIL EXPOSURE. BASED UPON TEST RESULTS, SOIL AMENDMENTS SHALL BE INCORPORATED INTO THE SOIL PRIOR TO FINAL SEEDING. IN LIEU OF SOIL TESTS, SOIL AMENDMENTS MAY BE APPLIED AS FOLLOWS:

ITEM	APPLICATION RATE
10-20-20 FERTILIZER (N-P205-K20 OR EQUAL)	18.4 LBS./1,000 S.F.
GROUND LIMESTONE (50% CALCIUM & MAGNESIUM OXIDE)	138 LBS./1,000 S.F.

C. WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH PROPER EQUIPMENT. ROLL THE AREA TO FIRM THE SEEDBED EXCEPT ON CLAY OR SILTY SOILS OR COARSE SAND.

APPLICATION OF SEED:

A. SEEDING: SHALL BE CONDUCTED BETWEEN APRIL 1ST AND OCTOBER 1ST OF THE CONSTRUCTION YEAR. GENERALLY A SEED MIXTURE MAY BE APPLIED AS FOLLOWS: (MDEP SEED MIX 2 IS DISPLAYED)

SEED TYPE	APPLICATION RATE
CREEPING RED FESCUE	0.46 LBS/1,000 S.F. (20 LBS/ACRE)
REDTOP	0.05 LBS/1,000 S.F. (2 LBS/ACRE)
TALL FESCUE	0.46 LBS/1,000 S.F. (20 LBS/ACRE)
TOTAL:	0.97 LBS/1,000 S.F. (42 LBS/ACRE)

NOTE: A SPECIFIC SEED MIXTURE SHOULD BE CHOSEN TO MATCH THE SOILS CONDITION OF THE SITE. VARIOUS AGENCIES CAN RECOMMEND SEED MIXTURES. MDEP RECOMMENDED SEED MIXTURES ARE IN THE EROSION AND SEDIMENT CONTROL BMP MANUAL DATED 2016 OR LATEST REVISION.

B. HYDROSEEDING: SHALL BE CONDUCTED ON PREPARED AREAS WITH SLOPES LESS THAN 2:1. LIME AND FERTILIZER MAY BE APPLIED SIMULTANEOUSLY WITH THE SEED. RECOMMENDED SEEDING RATES MUST BE INCREASED BY 10% WHEN HYDROSEEDING.

C. MULCHING: SHALL COMMENCE IMMEDIATELY AFTER SEED IS APPLIED. REFER TO THE TEMPORARY MULCHING SECTION OF THIS NARRATIVE FOR DETAILS.

SODDING:
FOLLOWING SEEDBED PREPARATION, SOD CAN BE APPLIED IN LIEU OF SEEDING IN AREAS WHERE IMMEDIATE VEGETATION IS MOST BENEFICIAL SUCH AS DITCHES, AROUND STORMWATER DROP INLETS AND AREAS OF AESTHETIC VALUE. SOD SHOULD BE LAID AT RIGHT ANGLES TO THE DIRECTION OF FLOW, STARTING AT THE LOWEST ELEVATION. SOD SHOULD BE ROLLED OR TAMPED DOWN TO EVEN OUT THE JOINTS ONCE LAID DOWN. WHERE FLOW IS PREVALENT THE SOD MUST BE PROPERLY ANCHORED DOWN. IRRIGATE THE SOD IMMEDIATELY AFTER INSTALLATION. IN MOST CASES, SOD CAN BE ESTABLISHED BETWEEN APRIL 1ST AND NOVEMBER 15TH OF THE CONSTRUCTION YEAR, HOWEVER, REFER TO THE WINTER EROSION CONTROL NOTES FOR ANY ACTIVITIES AFTER OCTOBER 1ST.

STANDARDS FOR TIMELY STABILIZATION:

STANDARD FOR THE TIMELY STABILIZATION OF DISTURBED SLOPES -- THE CONTRACTOR WILL CONSTRUCT AND STABILIZE STONE-COVERED SLOPES BY NOVEMBER 15. THE CONTRACTOR WILL SEED AND MULCH ALL SLOPES TO BE VEGETATED BY SEPTEMBER 15. THE MDEP WILL CONSIDER ANY AREA HAVING A GRADE GREATER THAN 15% (10H:1V) TO BE A SLOPE. IF THE CONTRACTOR FAILS TO STABILIZE ANY SLOPE TO BE VEGETATED BY SEPTEMBER 15, THEN THE CONTRACTOR WILL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE SLOPE FOR LATE FALL AND WINTER.

A. STABILIZE THE SOIL WITH TEMPORARY VEGETATION AND EROSION CONTROL MATS -- BY OCTOBER 1 THE CONTRACTOR WILL SEED THE DISTURBED SLOPE WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1,000 SQUARE FEET AND APPLY EROSION CONTROL MATS OVER THE MULCHED SLOPE. THE CONTRACTOR WILL MONITOR GROWTH OF THE RYE OVER THE NEXT 30 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR COVER AT LEAST 75% OF THE DISTURBED SLOPE BY NOVEMBER 1, THEN THE APPLICANT WILL COVER THE SLOPE WITH A LAYER OF WOOD WASTE COMPOST AS DESCRIBED IN ITEM 2(C.) OF THIS STANDARD OR WITH STONE RIPRAP AS DESCRIBED IN ITEM 2(D.) OF THIS STANDARD.
B. STABILIZE THE SLOPE WITH SOD -- THE CONTRACTOR WILL STABILIZE THE DISTURBED SLOPE WITH PROPERLY INSTALLED SOD BY OCTOBER 1. PROPER INSTALLATION INCLUDES THE APPLICANT PINNING THE SOD ONTO THE SLOPE WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL. THE APPLICANT WILL NOT USE LATE-SEASON SOD INSTALLATION TO STABILIZE SLOPES HAVING A GRADE GREATER THAN 33% (3H:1V).
C. STABILIZE THE SLOPE WITH WOOD WASTE COMPOST -- THE CONTRACTOR WILL PLACE A SIX-INCH LAYER OF WOOD WASTE COMPOST ON THE SLOPE BY NOVEMBER 15. PRIOR TO PLACING THE WOOD WASTE COMPOST, THE APPLICANT WILL REMOVE ANY SNOW ACCUMULATION ON THE DISTURBED SLOPE. THE APPLICANT WILL NOT USE WOOD WASTE COMPOST TO STABILIZE SLOPES HAVING GRADES GREATER THAN 50% (2H:1V) OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.
D. STABILIZE THE SLOPE WITH STONE RIPRAP -- THE CONTRACTOR WILL PLACE A LAYER OF STONE RIPRAP ON THE SLOPE BY NOVEMBER 15. THE APPLICANT WILL HIRE A REGISTERED PROFESSIONAL ENGINEER TO DETERMINE THE STONE SIZE NEEDED FOR STABILITY AND TO DESIGN A FILTER LAYER FOR UNDERNEATH THE RIPRAP.

STANDARD FOR THE TIMELY STABILIZATION OF DISTURBED SOILS -- BY SEPTEMBER 15 THE CONTRACTOR WILL SEED AND MULCH ALL DISTURBED SOILS ON AREAS HAVING A SLOPE LESS THAN 15%. IF THE CONTRACTOR FAILS TO STABILIZE THESE SOILS BY THIS DATE, THEN THE CONTRACTOR WILL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE SOIL FOR LATE FALL AND WINTER.

A. STABILIZE THE SOIL WITH TEMPORARY VEGETATION -- BY OCTOBER 1 THE CONTRACTOR WILL SEED THE DISTURBED SOIL WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1000 SQUARE FEET, LIGHTLY MULCH THE SEEDED SOIL WITH HAY OR STRAW AT 75 POUNDS PER 1000 SQUARE FEET, AND ANCHOR THE MULCH WITH PLASTIC NETTING. THE APPLICANT WILL MONITOR GROWTH OF THE RYE OVER THE NEXT 30 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR COVER AT LEAST 75% OF THE DISTURBED SOIL BEFORE NOVEMBER 15, THEN THE APPLICANT WILL MULCH THE AREA FOR OVER-WINTER PROTECTION AS DESCRIBED IN ITEM 3(C.) OF THIS STANDARD.
B. STABILIZE THE SOIL WITH SOD -- THE APPLICANT WILL STABILIZE THE DISTURBED SOIL WITH PROPERLY INSTALLED SOD BY OCTOBER 1. PROPER INSTALLATION INCLUDES THE APPLICANT PINNING THE SOD ONTO THE SOIL WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL.
C. STABILIZE THE SOIL WITH MULCH -- BY NOVEMBER 15 THE APPLICANT WILL MULCH THE DISTURBED SOIL BY SPREADING HAY OR STRAW AT A RATE OF AT LEAST 150 POUNDS PER 1000 SQUARE FEET ON THE AREA SO THAT NO SOIL IS VISIBLE THROUGH THE MULCH. PRIOR TO APPLYING THE MULCH, THE APPLICANT WILL REMOVE ANY SNOW ACCUMULATION ON THE DISTURBED AREA. IMMEDIATELY AFTER APPLYING THE MULCH, THE APPLICANT WILL ANCHOR THE MULCH WITH PLASTIC NETTING TO PREVENT WIND FROM MOVING THE MULCH OFF THE DISTURBED SOIL.

1. MAINTENANCE MEASURES SHALL BE APPLIED AS NEEDED DURING THE ENTIRE CONSTRUCTION CYCLE. AFTER EACH RAINFALL, SNOW STORM OR PERIOD OF THAWING AND RUNOFF, AND AT LEAST EVERY SEVEN (7) DAYS, THE CONTRACTOR SHALL PERFORM A VISUAL INSPECTION OF ALL INSTALLED EROSION CONTROL MEASURES. THE CONTRACTOR SHALL PERFORM REPAIRS NO LATER THAN THE END OF THE NEXT WORKDAY, TO ALLOW CONTINUED PROPER FUNCTIONING OF THE EROSION CONTROL MEASURE. THE CONTRACTOR SHALL PROVIDE THE NECESSARY REGULATING AGENCIES WITH WRITTEN DOCUMENTATION DESCRIBING DATES OF INSPECTIONS AND NECESSARY FOLLOW-UP WORK TO MAINTAIN EROSION CONTROL MEASURES MEETING THE REQUIREMENTS OF THIS PLAN WITHIN SEVEN (7) DAYS.

2. FOLLOWING THE TEMPORARY AND/OR FINAL SEEDINGS, THE CONTRACTOR SHALL INSPECT THE WORK AREA SEMIMONTHLY UNTIL THE SEEDINGS HAVE BEEN ESTABLISHED. ESTABLISHED MEANS A MINIMUM OF 90% OF AREAS VEGETATED WITH VIGOROUS GROWTH. RESEEDING SHALL BE CARRIED OUT BY THE CONTRACTOR WITH FOLLOW-UP INSPECTIONS IN THE EVENT OF ANY FAILURES UNTIL VEGETATION IS ADEQUATELY ESTABLISHED.

HOUSEKEEPING:

1. SPILL PREVENTION. CONTROLS MUST BE USED TO PREVENT POLLUTANTS FROM CONSTRUCTION AND WASTE MATERIALS STORED ON SITE TO ENTER STORMWATER, WHICH INCLUDES STORAGE PRACTICES TO MINIMIZE EXPOSURE OF THE MATERIALS TO STORMWATER. THE SITE CONTRACTOR OR OPERATOR MUST DEVELOP, AND IMPLEMENT AS NECESSARY, APPROPRIATE SPILL PREVENTION, CONTAINMENT, AND RESPONSE PLANNING MEASURES.

2. GROUNDWATER PROTECTION. DURING CONSTRUCTION, LIQUID PETROLEUM PRODUCTS AND OTHER HAZARDOUS MATERIALS WITH THE POTENTIAL TO CONTAMINATE GROUNDWATER MAY NOT BE STORED OR HANDLED IN AREAS OF THE SITE DRAINING TO AN INFILTRATION AREA. AN "INFILTRATION AREA" IS ANY AREA OF THE SITE THAT BY DESIGN OR AS A RESULT OF SOILS, TOPOGRAPHY AND OTHER RELEVANT FACTORS ACCUMULATES RUNOFF THAT INFILTRATES INTO THE SOIL. DIKES, BERMS, SUMPS, AND OTHER FORMS OF SECONDARY CONTAINMENT THAT PREVENT DISCHARGE TO GROUNDWATER MAY BE USED TO ISOLATE PORTIONS OF THE SITE FOR THE PURPOSES OF STORAGE AND HANDLING OF THESE MATERIALS. ANY PROJECT PROPOSING INFILTRATION OF STORMWATER MUST PROVIDE ADEQUATE PRE-TREATMENT OF STORMWATER PRIOR TO DISCHARGE OF STORMWATER TO THE INFILTRATION AREA, OR PROVIDE FOR TREATMENT WITHIN THE INFILTRATION AREA, IN ORDER TO PREVENT THE ACCUMULATION OF FINES, REDUCTION IN INFILTRATION RATE, AND CONSEQUENT FLOODING AND DESTABILIZATION.

3. FUGITIVE SEDIMENT AND DUST. ACTIONS MUST BE TAKEN TO ENSURE THAT ACTIVITIES DO NOT RESULT IN NOTICEABLE EROSION OF SOILS OR FUGITIVE DUST EMISSIONS DURING OR AFTER CONSTRUCTION. OIL MAY NOT BE USED FOR DUST CONTROL, BUT OTHER WATER ADDITIVES MAY BE CONSIDERED AS NEEDED. A STABILIZED CONSTRUCTION ENTRANCE (SCE) SHOULD BE INCLUDED TO MINIMIZE TRACKING OF MUD AND SEDIMENT. IF OFF-SITE TRACKING OCCURS, PUBLIC ROADS SHOULD BE SWEPT IMMEDIATELY AND NO LESS THAN ONCE A WEEK AND PRIOR TO SIGNIFICANT STORM EVENTS. OPERATIONS DURING DRY MONTHS, THAT EXPERIENCE FUGITIVE DUST PROBLEMS, SHOULD WET DOWN UNPAVED ACCESS ROADS ONCE A WEEK OR MORE FREQUENTLY AS NEEDED WITH A WATER ADDITIVE TO SUPPRESS FUGITIVE SEDIMENT AND DUST.

4. DEBRIS AND OTHER MATERIALS. MINIMIZE THE EXPOSURE OF CONSTRUCTION DEBRIS, BUILDING AND LANDSCAPING MATERIALS, TRASH, FERTILIZERS, PESTICIDES, HERBICIDES, DETERGENTS, SANITARY WASTE AND OTHER MATERIALS TO PRECIPITATION AND STORMWATER RUNOFF. THESE MATERIALS MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE.

5. EXCAVATION DE-WATERING. EXCAVATION DE-WATERING IS THE REMOVAL OF WATER FROM TRENCHES, FOUNDATIONS, COFFER DAMS, PONDS, AND OTHER AREAS WITHIN THE CONSTRUCTION AREA THAT RETAIN WATER AFTER EXCAVATION. IN MOST CASES THE COLLECTED WATER IS HEAVILY SILTED AND HINDERS CORRECT AND SAFE CONSTRUCTION PRACTICES. THE COLLECTED WATER REMOVED FROM THE PONDED AREA, EITHER THROUGH GRAVITY OR PUMPING, MUST BE SPREAD THROUGH NATURAL WOODED BUFFERS OR REMOVED TO AREAS THAT ARE SPECIFICALLY DESIGNED TO COLLECT THE MAXIMUM AMOUNT OF SEDIMENT POSSIBLE, LIKE A COFFERDAM SEDIMENTATION BASIN. AVOID ALLOWING THE WATER TO FLOW OVER DISTURBED AREAS OF THE SITE. EQUIVALENT MEASURES MAY BE TAKEN IF APPROVED BY THE DEPARTMENT.

6. AUTHORIZED NON-STORMWATER DISCHARGES. IDENTIFY AND PREVENT CONTAMINATION BY NON-STORMWATER DISCHARGES. WHERE ALLOWED NON-STORMWATER DISCHARGES EXIST, THEY MUST BE IDENTIFIED AND STEPS SHOULD BE TAKEN TO ENSURE THE IMPLEMENTATION OF APPROPRIATE POLLUTION PREVENTION MEASURES FOR THE NON-STORMWATER COMPONENT(S) OF THE DISCHARGE. AUTHORIZED NON-STORMWATER DISCHARGES ARE:
   A. DISCHARGES FROM FIREFIGHTING ACTIVITY;
   B. FIRE HYDRANT FLUSHINGS;
   C. VEHICLE WASHWATER IF DETERGENTS ARE NOT USED AND WASHING IS LIMITED TO THE EXTERIOR OF VEHICLES (ENGINE, UNDERCARRIAGE AND TRANSMISSION WASHING IS PROHIBITED);
   D. DUST CONTROL RUNOFF IN ACCORDANCE WITH PERMIT CONDITIONS;
   E. ROUTINE EXTERNAL BUILDING WASHDOWN, NOT INCLUDING SURFACE PAINT REMOVAL, THAT DOES NOT INVOLVE DETERGENTS;
   F. PAVEMENT WASHWATER (WHERE SPILLS/LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE NOT OCCURRED, UNLESS ALL SPILLED MATERIAL HAD BEEN REMOVED) IF DETERGENTS ARE NOT USED;
   G. UNCONTAMINATED AIR CONDITIONING OR COMPRESSOR CONDENSATE;
   H. UNCONTAMINATED GROUNDWATER OR SPRING WATER;
   I. FOUNDATION OR FOOTER DRAIN-WATER WHERE FLOWS ARE NOT CONTAMINATED;
   J. UNCONTAMINATED EXCAVATION DEWATERING;
   K. POTABLE WATER SOURCES INCLUDING WATERLINE FLUSHINGS; AND
   L. LANDSCAPE IRRIGATION.

7. UNAUTHORIZED NON-STORMWATER DISCHARGES. THE DEPARTMENT'S APPROVAL DOES NOT AUTHORIZE A DISCHARGE THAT IS MIXED WITH A SOURCE OF NON-STORMWATER, OTHER THAN THOSE DISCHARGES. SPECIFICALLY, THE DEPARTMENT'S APPROVAL DOES NOT AUTHORIZE DISCHARGES OF THE FOLLOWING:
   A. WASTEWATER FROM THE WASHOUT OR CLEAN OUT OF CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS OR OTHER CONSTRUCTION MATERIALS;
   B. FUELS, OILS OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE;
   C. SOAPS, SOLVENTS, OR DETERGENTS USED IN VEHICLE AND EQUIPMENT WASHING; AND
   D. TOXIC OR HAZARDOUS SUBSTANCES FROM A SPILL OR OTHER RELEASE.

WINTER EROSION CONTROL MEASURES

THE WINTER CONSTRUCTION PERIOD IS FROM NOVEMBER 1 THROUGH APRIL 15. IF THE CONSTRUCTION SITE IS NOT STABILIZED WITH PAVEMENT, A ROAD GRAVEL BASE, 75% MATURE VEGETATION COVER OR RIPRAP BY NOVEMBER 1 THEN THE SITE NEEDS TO BE PROTECTED WITH OVER-WINTER STABILIZATION. AN AREA CONSIDERED OPEN IS ANY AREA NOT STABILIZED WITH PAVEMENT, VEGETATION, MULCHING, EROSION CONTROL MATS, RIPRAP OR GRAVEL BASE ON A ROAD. LIMIT THE EXPOSED AREA TO THOSE AREAS IN WHICH WORK IS EXPECTED TO BE UNDER TAKEN DURING THE PROCEEDING 15 DAYS AND THAT CAN BE MULCHED IN ONE DAY PRIOR TO ANY SNOW EVENT. ALL AREAS SHALL BE CONSIDERED TO BE DENUDED UNTIL THE SUBBASE GRAVEL IS INSTALLED IN ROADWAY AREAS OR THE AREAS OF FUTURE LOAM AND SEED HAVE BEEN LOAMED, SEEDED AND MULCHED. HAY AND STRAW MULCH RATE SHALL BE A MINIMUM OF 150 LBS./1,000 S.F. (3 TONS/ACRE) AND SHALL BE PROPERLY ANCHORED. THE CONTRACTOR MUST INSTALL ANY ADDED MEASURES WHICH MAY BE NECESSARY TO CONTROL EROSION/SEDIMENTATION FROM THE SITE DEPENDENT UPON THE ACTUAL SITE AND WEATHER CONDITIONS. CONTINUATION OF EARTHWORK OPERATIONS ON ADDITIONAL AREAS SHALL NOT BEGIN UNTIL THE EXPOSED SOIL SURFACE ON THE AREA BEING WORKED HAS BEEN STABILIZED, IN ORDER TO MINIMIZE AREAS WITHOUT EROSION CONTROL PROTECTION.

1. SOIL STOCKPILES

STOCKPILES OF SOIL OR SUBSOIL WILL BE MULCHED FOR OVER WINTER PROTECTION WITH HAY OR STRAW AT TWICE THE NORMAL RATE OR AT 150 LBS/1,000 S.F. (3 TONS PER ACRE) OR WITH A FOUR-INCH LAYER OF WOOD WASTE EROSION CONTROL MIX. THIS WILL BE DONE WITHIN 24 HOURS OF STOCKING AND RE-ESTABLISHED PRIOR TO ANY RAINFALL OR SNOWFALL. ANY SOIL STOCKPILE WILL NOT BE PLACED (EVEN COVERED WITH HAY OR STRAW) WITHIN 100 FEET FROM ANY NATURAL RESOURCES.

2. NATURAL RESOURCES PROTECTION

ANY AREAS WITHIN 100 FEET FROM ANY NATURAL RESOURCES, IF NOT STABILIZED WITH A MINIMUM OF 75% MATURE VEGETATION CATCH, SHALL BE MULCHED BY DECEMBER 1 AND ANCHORED WITH PLASTIC NETTING OR PROTECTED WITH EROSION CONTROL MATS. DURING WINTER CONSTRUCTION, A DOUBLE LINE OF SEDIMENT BARRIERS (I.E. SILT FENCE BACKED WITH HAY BALES OR EROSION CONTROL MIX) WILL BE PLACED BETWEEN ANY NATURAL RESOURCE AND THE DISTURBED AREA.

PROJECTS CROSSING THE NATURAL RESOURCE SHALL BE PROTECTED A MINIMUM DISTANCE OF 100 FEET ON EITHER SIDE FROM THE RESOURCE. EXISTING PROJECTS NOT STABILIZED BY DECEMBER 1 SHALL BE PROTECTED WITH THE SECOND LINE OF SEDIMENT BARRIER TO ENSURE FUNCTIONALITY DURING THE SPRING THAW AND RAINS.

3. SEDIMENT BARRIERS

DURING FROZEN CONDITIONS, SEDIMENT BARRIERS SHALL CONSIST OF WOOD WASTE FILTER BERMS AS FROZEN SOIL PREVENTS THE PROPER INSTALLATION OF HAY BALES AND SEDIMENT SILT FENCES.

4. MULCHING

ALL AREA SHALL BE CONSIDERED TO BE DENUDED UNTIL AREAS OF FUTURE LOAM AND SEED HAVE BEEN LOAMED, SEEDED AND MULCHED. HAY AND STRAW MULCH SHALL BE APPLIED AT A RATE OF 150 LB. PER 1.000 SQUARE FEET OR 3 TONS/ACRE (TWICE THE NORMAL ACCEPTED RATE OF 75-LBS./1,000 S.F. OR 1.5 TONS/ACRE) AND SHALL BE PROPERLY ANCHORED. MULCH SHALL NOT BE SPREAD ON TOP OF SNOW. THE SNOW WILL BE REMOVED DOWN TO A ONE-INCH DEPTH OR LESS PRIOR TO APPLICATION. AFTER EACH DAY OF FINAL GRADING, THE AREA WILL BE PROPERLY STABILIZED WITH ANCHORED HAY OR STRAW OR EROSION CONTROL MATTING. AN AREA SHALL BE CONSIDERED TO HAVE BEEN STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED WITH STRAW OR HAY AT A RATE OF 150 LB. PER 1.000 SQUARE FEET (3TONS/ACRE) AND ADEQUATELY ANCHORED THAT GROUND SURFACE IS NOT VISIBLE THOUGH THE MULCH.

BETWEEN THE DATES OF SEPTEMBER 1 AND APRIL 15, ALL MULCH SHALL BE ANCHORED BY EITHER PEG LINE, MULCH NETTING, ASPHALT EMULSION CHEMICAL, TRACK OR WOOD CELLULOSE FIBER. WHEN GROUND SURFACE IS NOT VISIBLE THOUGH THE MULCH THEN COVER IS SUFFICIENT.
AFTER NOVEMBER 1ST, MULCH AND ANCHORING OF ALL BARE SOIL SHALL OCCUR AT THE END OF EACH FINAL GRADING WORK DAY.

5. MULCHING ON SLOPES AND DITCHES

SLOPES SHALL NOT BE LEFT EXPOSED FOR ANY EXTENDED TIME OF WORK SUSPENSION UNLESS FULLY MULCHED AND ANCHORED WITH PEG AND NETTING OR WITH EROSION CONTROL BLANKETS. MULCHING SHALL BE APPLIED AT A RATE OF 230 LBS/1,000 S.F. ON ALL SLOPES GREATER THAN 8%. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH A SLOPE GREATER THAN 3% FOR SLOPES EXPOSED TO DIRECT WINDS AND FOR ALL OTHER SLOPES GREATER THAN 5%. EROSION CONTROL BLANKETS SHALL BE USED IN LIEU OF MULCH IN ALL DRAINAGE WAYS WITH SLOPES 8%. EROSION CONTROL MIX CAN BE USED TO SUBSTITUTE EROSION CONTROL BLANKETS ON ALL SLOPES EXCEPT DITCHES.

6. SEEDING

BETWEEN THE DATES OF OCTOBER 15 AND APRIL 1ST, LOAM OR SEED WILL NOT BE REQUIRED. DURING PERIODS OF ABOVE FREEZING TEMPERATURES FINISHED AREAS SHALL BE FINE GRADED AND EITHER PROTECTED WITH MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL SUCH TIME AS THE FINAL TREATMENT CAN BE APPLIED. IF THE DATE IS AFTER NOVEMBER 1ST AND IF THE EXPOSED AREA HAS BEEN LOOMED, FINAL GRADED WITH A UNIFORM SURFACE, THEN THE AREA MAY BE DORMANT SEEDED AT A RATE OF 3 TIMES HIGHER THAN SPECIFIED FOR PERMANENT SEED AND THEN MULCHED. DORMANT SEEDING MAY BE SELECTED TO BE PLACED PRIOR TO THE PLACEMENT OF MULCH AND FABRIC NETTING ANCHORED WITH STAPLES. IF DORMANT SEEDING IS USED FOR THE SITE, ALL DISTURBED AREAS SHALL RECEIVE 4' OF LOAM AND SEED AT AN APPLICATION RATE OF 5LBS/1000 S.F. ALL AREAS SEEDED DURING THE WINTER WILL BE INSPECTED IN THE SPRING FOR ADEQUATE CATCH. ALL AREAS SUFFICIENTLY VEGETATED (LESS THAN 75% CATCH) SHALL BE REVEGETATED BY REPLACING LOAM, SEED AND MULCH. IF DORMANT SEEDING IS NOT USED FOR THE SITE, ALL DISTURBED AREAS SHALL BE REVEGETATED IN THE SPRING. SEED TYPE SHALL BE WINTER RYE.

7. INSPECTION AND MONITORING

MAINTENANCE MEASURES SHALL BE APPLIED AS NEEDED DURING THE ENTIRE CONSTRUCTION SEASON. AT A MINIMUM, AFTER EACH RAINFALL, SNOW STORM OR PERIOD OF THAWING AND RUNOFF, THE SITE CONTRACTOR SHALL PERFORM A VISUAL INSPECTION OF ALL INSTALLED EROSION CONTROL MEASURES AND PERFORM REPAIRS AS NEEDED TO INSURE THEIR CONTINUOUS FUNCTION.
FOLLOWING THE TEMPORARY AND OR FINAL SEEDING AND MULCHING, THE CONTRACTOR SHALL IN THE SPRING INSPECT AND REPAIR ANY DAMAGES AND/ OR UNESTABLISHED SPOTS. ESTABLISHED VEGETATIVE COVER MEANS A MINIMUM OF 90% OF AREAS VEGETATED WITH VIGOROUS GROWTH.

STANDARDS FOR TIMELY STABILIZATION OF CONSTRUCTION SITES DURING WINTER

1. STANDARD FOR THE TIMELY STABILIZATION OF DITCHES AND CHANNELS -- THE APPLICANT WILL CONSTRUCT AND STABILIZE ALL STONE-LINED DITCHES AND CHANNELS ON THE SITE BY NOVEMBER 15. THE APPLICANT WILL CONSTRUCT AND STABILIZE ALL GRASS-LINED DITCHES AND CHANNELS ON THE SITE BY SEPTEMBER 15. IF THE APPLICANT FAILS TO STABILIZE A DITCH OR CHANNEL TO BE GRASS-LINED BY SEPTEMBER 15, THEN THE APPLICANT WILL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE DITCH FOR LATE FALL AND WINTER.

   INSTALL A SOD LINING IN THE DITCH -- THE APPLICANT WILL LINE THE DITCH WITH PROPERLY INSTALLED SOD BY OCTOBER 1. PROPER INSTALLATION INCLUDES THE APPLICANT PINNING THE SOD ONTO THE SOIL WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL, AND ANCHORING THE SOD WITH JUTE OR PLASTIC MESH TO PREVENT THE SOD STRIPS FROM SLOUGHING DURING FLOW CONDITIONS.
   INSTALL A STONE LINING IN THE DITCH --THE APPLICANT WILL LINE THE DITCH WITH STONE RIPRAP BY NOVEMBER 15. THE APPLICANT WILL HIRE A REGISTERED PROFESSIONAL ENGINEER TO DETERMINE THE STONE SIZE AND LINING THICKNESS NEEDED TO WITHSTAND THE ANTICIPATED FLOW VELOCITIES AND FLOW DEPTHS WITHIN THE DITCH. IF NECESSARY, THE APPLICANT WILL REGRADE THE DITCH PRIOR TO PLACING THE STONE LINING SO TO PREVENT THE STONE LINING FROM REDUCING THE DITCH'S CROSS-SECTIONAL AREA.

2. STANDARD FOR THE TIMELY STABILIZATION OF DISTURBED SLOPES -- THE APPLICANT WILL CONSTRUCT AND STABILIZE STONE-COVERED SLOPES BY NOVEMBER 15. THE APPLICANT WILL SEED AND MULCH ALL SLOPES TO BE VEGETATED BY SEPTEMBER 15. THE DEPARTMENT WILL CONSIDER ANY AREA HAVING A GRADE GREATER THAN 15% (10H:1V) TO BE A SLOPE. IF THE APPLICANT FAILS TO STABILIZE ANY SLOPE TO BE VEGETATED BY SEPTEMBER 15, THEN THE APPLICANT WILL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE SLOPE FOR LATE FALL AND WINTER.

   STABILIZE THE SOIL WITH TEMPORARY VEGETATION AND EROSION CONTROL MATS -- BY OCTOBER 1 THE APPLICANT WILL SEED THE DISTURBED SLOPE WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1000 SQUARE FEET AND APPLY EROSION CONTROL MATS OVER THE MULCHED SLOPE. THE APPLICANT WILL MONITOR GROWTH OF THE RYE OVER THE NEXT 30 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR COVER AT LEAST 75% OF THE DISTURBED SLOPE BY NOVEMBER 1, THEN THE APPLICANT WILL COVER THE SLOPE WITH A LAYER OF WOOD WASTE COMPOST AS DESCRIBED IN ITEM III OF THIS CONDITION OR WITH STONE RIPRAP AS DESCRIBED IN ITEM IV OF THIS CONDITION.

   STABILIZE THE SLOPE WITH SOD -- THE APPLICANT WILL STABILIZE THE DISTURBED SLOPE WITH PROPERLY INSTALLED SOD BY OCTOBER 1. PROPER INSTALLATION INCLUDES THE APPLICANT PINNING THE SOD ONTO THE SLOPE WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL. THE APPLICANT WILL NOT USE LATE-SEASON SOD INSTALLATION TO STABILIZE SLOPES HAVING A GRADE GREATER THAN 33% (3H:1V).

   STABILIZE THE SLOPE WITH WOOD WASTE COMPOST -- THE APPLICANT WILL PLACE A SIX-INCH LAYER OF WOOD WASTE COMPOST ON THE SLOPE BY NOVEMBER 15. PRIOR TO PLACING THE WOOD WASTE COMPOST, THE APPLICANT WILL REMOVE ANY SNOW ACCUMULATION ON THE DISTURBED SLOPE. THE APPLICANT WILL NOT USE WOOD WASTE COMPOST TO STABILIZE SLOPES HAVING GRADES GREATER THAN 50% (2H:1V) OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.

   STABILIZE THE SLOPE WITH STONE RIPRAP -- THE APPLICANT WILL PLACE A LAYER OF STONE RIPRAP ON THE SLOPE BY NOVEMBER 15. THE APPLICANT WILL HIRE A REGISTERED PROFESSIONAL ENGINEER TO DETERMINE THE STONE SIZE NEEDED FOR STABILITY AND TO DESIGN A FILTER LAYER FOR UNDERNEATH THE RIPRAP.

3. STANDARD FOR THE TIMELY STABILIZATION OF DISTURBED SOILS -- BY SEPTEMBER 15 THE APPLICANT WILL SEED AND MULCH ALL DISTURBED SOILS ON AREAS HAVING A SLOPE LESS THAN 15%. IF THE APPLICANT FAILS TO STABILIZE THESE SOILS BY THIS DATE, THEN THE APPLICANT WILL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE SOIL FOR LATE FALL AND WINTER.
   STABILIZE THE SOIL WITH TEMPORARY VEGETATION -- BY OCTOBER 1 THE APPLICANT WILL SEED THE DISTURBED SOIL WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1000 SQUARE FEET, LIGHTLY MULCH THE SEEDED SOIL WITH HAY OR STRAW AT 75 POUNDS PER 1000 SQUARE FEET, AND ANCHOR THE MULCH WITH PLASTIC NETTING. THE APPLICANT WILL MONITOR GROWTH OF THE RYE OVER THE NEXT 30 DAYS. IF THE RYE FAILS GROW AT LEAST THREE INCHES OR COVER AT LEAST 75% OF THE DISTURBED SOIL BEFORE NOVEMBER 15, THEN THE APPLICANT WILL MULCH THE AREA FOR OVER-WINTER PROTECTION AS DESCRIBED IN ITEM III OF THIS STANDARD.
   STABILIZE THE SOIL WITH SOD -- THE APPLICANT WILL STABILIZE THE DISTURBED SOIL WITH PROPERLY INSTALLED SOD BY OCTOBER 1. PROPER INSTALLATION INCLUDES THE APPLICANT PINNING THE SOD ONTO THE SOIL WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL.
   STABILIZE THE SOIL WITH MULCH -- BY NOVEMBER 15 THE APPLICANT WILL MULCH THE DISTURBED SOIL BY SPREADING HAY OR STRAW AT A RATE OF AT LEAST 150 POUNDS PER 1000 SQUARE FEET ON THE AREA SO THAT NO SOIL IS VISIBLE THROUGH THE MULCH. PRIOR TO APPLYING THE MULCH, THE APPLICANT WILL REMOVE ANY SNOW ACCUMULATION ON THE DISTURBED AREA. IMMEDIATELY AFTER APPLYING THE MULCH, THE APPLICANT WILL ANCHOR THE MULCH WITH PLASTIC NETTING TO PREVENT WIND FROM MOVING THE MULCH OFF THE DISTURBED SOIL.

PLS OR PE

PROGRESS PRINT

OWENS A. McCULLOUGH PE 7122

STATE OF MAINE
OWENS A. McCULLOUGH
No. 7122
PROFESSIONAL ENGINEER

REV.	BY:	DATE:	STATUS:
A	OAM	04/05/2021	ISSUED FOR SITE PLAN REVIEW

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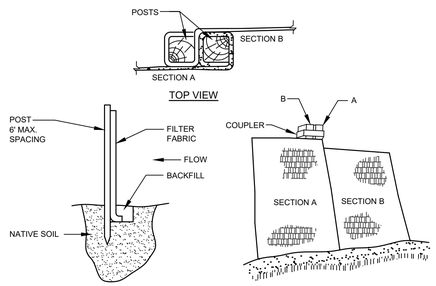
75 John Roberts Rd.
Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

EROSION CONTROL NOTES
OF:
WINDHAM PUBLIC SAFETY BUILDING EXPANSION
375 GRAY ROAD/ROUTE 202
WINDHAM, MAINE
FOR:
GREAT FALLS CONSTRUCTION
20 MECHANIC STREET
GORHAM, MAINE 04038

DESIGNED	OAM
DRAWN	MRS
CHECKED	OAM
DATE	02/19/2021
SCALE	1" = 20'
PROJECT	20566

SHEET 5 OF 8

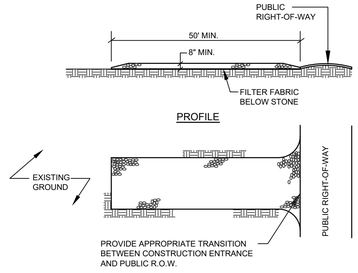
20566 D.dwg TAB 24x36



INSTALLATION NOTES:

1. EXCAVATE A 6"x 6" TRENCH ALONG THE LINE OF PLACEMENT FOR THE FILTER BARRIER.
2. UNROLL A SECTION AT A TIME AND POSITION THE POSTS AGAINST THE BACK (DOWNSTREAM) WALL OF THE TRENCH.
3. DRIVE POSTS INTO THE GROUND UNTIL APPROXIMATELY 2" OF FABRIC IS LYING ON THE TRENCH BOTTOM.
4. LAY THE TOE-IN FLAP OF FABRIC ONTO THE UNDISTURBED BOTTOM OF THE TRENCH, BACKFILL THE TRENCH AND TAMP THE SOIL. TOE-IN CAN ALSO BE ACCOMPLISHED BY LAYING THE FABRIC FLAP ON UNDISTURBED GROUND AND PILING AND TAMPING FILL AT THE BASE, BUT MUST BE ACCOMPANIED BY AN INTERCEPTION DITCH.
5. JOIN SECTION AS SHOWN ABOVE.
6. BARRIER SHALL BE MIRAFI SILT FENCE OR EQUAL.

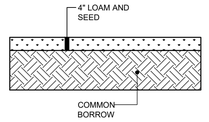
FILTER BARRIER
NOT TO SCALE



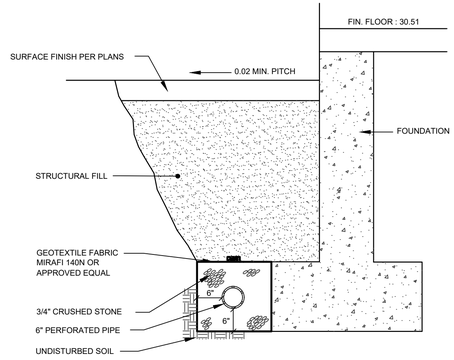
NOTES:

1. STONE SIZE- AASHTO DESIGNATION M43, SIZE NO. 2 (2 1/2" TO 1 1/2"). USE CRUSHED STONE.
2. LENGTH- AS SHOWN ON PLANS, MIN. 50 FEET.
3. THICKNESS- NOT LESS THAN EIGHT (8) INCHES.
4. WIDTH- NOT LESS THAN FULL WIDTH OF ALL POINT OF INGRESS OR EGRESS.
5. MAINTENANCE- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED IMMEDIATELY.

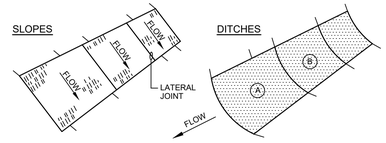
STABILIZED CONSTRUCTION ENTRANCE/EXIT
NOT TO SCALE



LOAM AND SEED DETAIL
NOT TO SCALE



TYPICAL FOUNDATION DRAIN SECTION
NOT TO SCALE



NOTES:

1. BURY THE TOP END OF THE MESH MATERIAL IN A 6" TRENCH AND BACKFILL AND TAMP TRENCHING SECURE END WITH STAPLES AT 6" SPACING, 4" DOWN FROM EXPOSED END.
2. FLOW DIRECTION JOINTS TO HAVE UPPER END OF LOWER STRIP BURIED WITH UPPER LAYERS OVERLAPPED 4" AND STAPLED. OVERLAP B OVER A.
3. LATERAL JOINTS TO HAVE 4" OVERLAP OF STRIPS. STAPLE 18" ON CENTER.
4. STAPLE OUTSIDE LATERAL EDGE 2' ON CENTER.
5. WIRE STAPLES TO BE MIN. OF # 11 WIRE 6" LONG AND 1-1/2" WIDE.
6. USE NORTH AMERICAN GREEN DS 150 OR APPROVED EQUAL, UNLESS SPECIFIED OTHERWISE.

EROSION CONTROL BLANKET
NOT TO SCALE

NOTES:

1. CABLES TO BE ENCASED IN SCHEDULE 40 PVC CONDUIT WHEN RUN BENEATH PAVED AREAS.
2. NUMBER OF CONDUITS PER ELECTRICAL PLANS

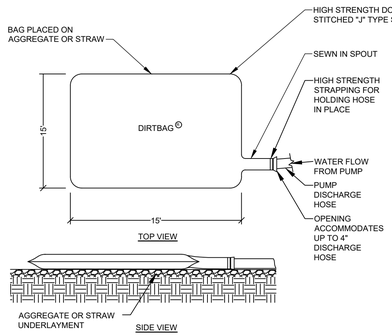
TYPICAL UNDERGROUND CABLE INSTALLATION
NOT TO SCALE

TYPICAL TRENCH SECTION
NOT TO SCALE

NOTES:

PRIOR TO FINAL GRADING AND PAVING OPERATIONS BEGIN A CATCH BASIN INSERT (SUCH AS A SILT SACK OR A SANDY BAG ®) MUST BE INSTALLED IN EACH BASIN PER MANUFACTURES INSTRUCTIONS. HAY BALES SHOULD BE REMOVED ONCE INSERTS ARE INSTALLED.

CATCH BASIN PROTECTION DETAIL
NOT TO SCALE



INSTALLATION NOTES

1. DEWATERING IF NECESSARY FOR UNDERDRAINED POND CONSTRUCTION AND REMOVAL OF ACCUMULATED SEDIMENT SHALL BE ACCOMPLISHED WITHOUT DISCHARGING SEDIMENT LADEN WATER TO THE WETLANDS ABUTTING THE SITE.
2. CONTRACTOR MAY UTILIZE A GEOTEXTILE PUMPED SEDIMENT CONTROL DEVICE ("DIRTBAG" OR EQUIVALENT).
3. DIRTBAG SHALL BE INSTALLED TO MAINTAIN A MINIMUM 75' UNDISTURBED BUFFER FROM WETLANDS.
4. INSTALL DIRTBAG ON A 3" BED OF HAY TO MAXIMIZE FLOW OF WATER THROUGH ALL SURFACES OF THE BAG.
5. SURROUND DIRTBAG WITH A DOUBLE ROW OF SILTATION FENCE, OR AN EROSION CONTROL BERM BACKED BY SILTATION FENCE.

DIRTBAG PUMPED SILT CONTROL SYSTEM
NOT TO SCALE

NOTES:

1. 4'-0" I.D. TYPICAL. SOME STRUCTURES MAY REQUIRE LARGER I.D. PROVIDE SHOP DRAWINGS AS REQUIRED.
2. STRUCTURES TO BE DESIGNED FOR H-20 LOADING.
3. PIPE SIZES AND INVERTS AS NOTED ON PLANS.
4. MANHOLE FRAME AND GRATE TO BE EAST JORDAN "EJ" 1122 FRAME & COVER OR APPROVED EQUAL. COVER SHALL BE MARKED "DRAIN".
5. H2O LOAD RATED.

TYPICAL OIL/SAND SEPARATOR
NOT TO SCALE

NOTES:

1. 4'-0" I.D. TYPICAL. SOME STRUCTURES MAY REQUIRE LARGER I.D. (6'-0" I.D.) AND DOUBLE GRATE. PROVIDE SHOP DRAWINGS AS REQUIRED.
2. DRAINAGE STRUCTURES TO BE DESIGNED FOR H-20 LOADING.
3. PIPE SIZES AND INVERTS AS NOTED ON PLANS.
4. DRAINAGE MANHOLE FRAME AND GRATE TO BE EAST JORDAN "EJ" 1122 FRAME & COVER OR APPROVED EQUAL. COVER SHALL BE MARKED "DRAIN".
5. CATCH BASIN FRAME AND COVER TO BE EAST JORDAN "E.J.", 5250 FRAME & COVER, TYPE M OR APPROVED EQUAL.

TYPICAL CATCH BASIN
NOT TO SCALE

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P.S OR P.E

OWENS A. McCULLOUGH PE 7122

STATE OF MAINE
OWENS A. McCULLOUGH
No. 7122
REGISTERED PROFESSIONAL ENGINEER

REV	BY	DATE	STATUS
A	OAM	04/05/2021	ISSUED FOR SITE PLAN REVIEW

DETAILS 1

OF:

WINDHAM PUBLIC SAFETY BUILDING EXPANSION
375 GRAY ROAD/ROUTE 202
WINDHAM, MAINE

FOR:

GREAT FALLS CONSTRUCTION
20 MECHANIC STREET
GORHAM, MAINE 04038

DESIGNED	OAM
DRAWN	MRS
CHECKED	OAM
DATE	02/19/2021
SCALE	1" = 20'
PROJECT	20566

SHEET 6 OF 8

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75 John Roberts Rd.
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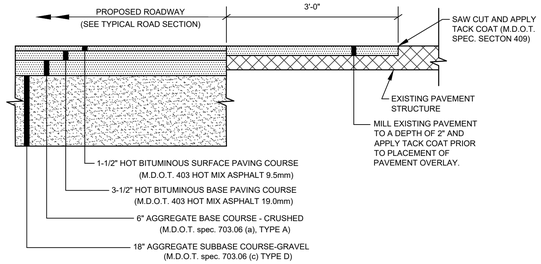
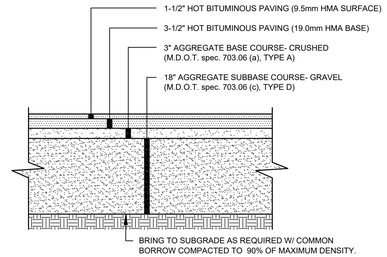
20566 D.dwg, TAB-24x36 (2)

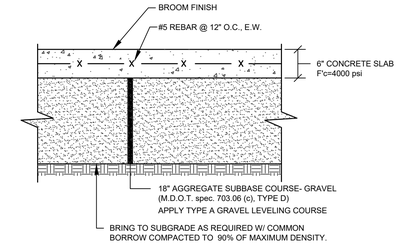


TYPICAL PAVEMENT JOINT
NOT TO SCALE



NOTES:
1. COMPACT GRAVEL SUBBASE, BASE COURSE TO 95% OF MAXIMUM DENSITY USING HEAVY ROLLER COMPACTION.
2. CONTRACTOR SHALL SET GRADE STAKES MARKING SUBBASE AND FINISH GRADE ELEVATIONS FOR CONSTRUCTION REFERENCE.
3. PROOF ROLL SUBGRADE PER GEOTECHNICAL REPORT.

VEHICULAR PAVEMENT SECTION
NOT TO SCALE



NOTES:
1. COMPACT GRAVEL SUBBASE, BASE COURSE TO 95% OF MAXIMUM DENSITY USING HEAVY ROLLER COMPACTION.
2. CONTRACTOR SHALL SET GRADE STAKES MARKING SUBBASE AND FINISH GRADE ELEVATIONS FOR CONSTRUCTION REFERENCE.
3. PROOF ROLL SUBGRADE PER GEOTECHNICAL REPORT.

TYPICAL CONCRETE GENERATOR SLAB/DUMPSTER PAD
NOT TO SCALE

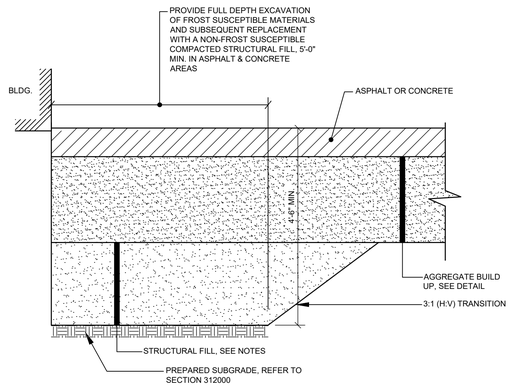
PEDESTRIAN PAVEMENT- PAVED SIDEWALKS
NOT TO SCALE

NOTES:
1. COMPACT GRAVEL SUBBASE, BASE COURSE TO 95% OF MAXIMUM DENSITY USING HEAVY ROLLER COMPACTION.
2. CONTRACTOR SHALL SET GRADE STAKES MARKING SUBBASE AND FINISH GRADE ELEVATIONS FOR CONSTRUCTION REFERENCE.
3. PROOF ROLL SUBGRADE PER GEOTECHNICAL REPORT.

TYPICAL CONCRETE PATIO SLAB
NOT TO SCALE

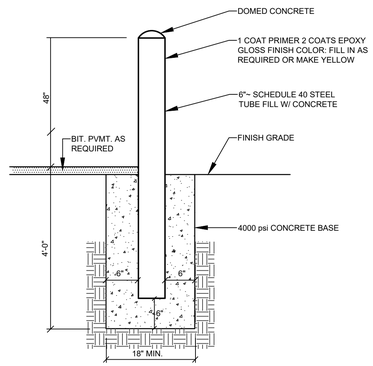
NOTES:
1. SUBMIT SHOP DRAWING FOR FENCE.
2. FENCE & GATE SHALL BE DELEGATED DESIGN AND SHALL BE ABLE TO WITHSTAND HURRICANE FORCE WINDS.
3. DIMENSIONS SHOWN ARE MINIMUM.
4. APPLY CLEAR WOOD PRESERVATIVE TO FENCE.
5. PROVIDE AND INSTALL HEAVY DUTY HINGES, LATCHING, MECHANISM AND KEEPER. LATCH SHALL BE LOCKABLE

TYPICAL DUMPSTER ENCLOSURE
NOT TO SCALE



NOTES:
1. REFER TO DETAILS FOR PAVEMENT AND CONCRETE.
2. PROVIDE FULL DEPTH EXCAVATION OF FROST SUSCEPTIBLE MATERIALS AND SUBSEQUENT REPLACEMENT WITH A NON-FROST SUSCEPTIBLE COMPACTED STRUCTURAL FILL. STRUCTURAL FILL DEPTH SHALL BE MIN. 4.5' FROM FINISHED GRADE. REFER TO GEOTECHNICAL REPORT.

PAVEMENT SECTION @ BUILDING
NOT TO SCALE



METAL BOLLARD
NOT TO SCALE

PE STAMP
STATE OF MAINE
OWENS A. McCULLOUGH
No. 7122
REGISTERED PROFESSIONAL ENGINEER

OWENS A. McCULLOUGH PE 7122

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DETAILS 2
OF:
WINDHAM PUBLIC SAFETY BUILDING EXPANSION
375 GRAY ROAD/ROUTE 202
WINDHAM, MAINE
FOR:
GREAT FALLS CONSTRUCTION
20 MECHANIC STREET
GORHAM, MAINE 04038

DESIGNED	OAM
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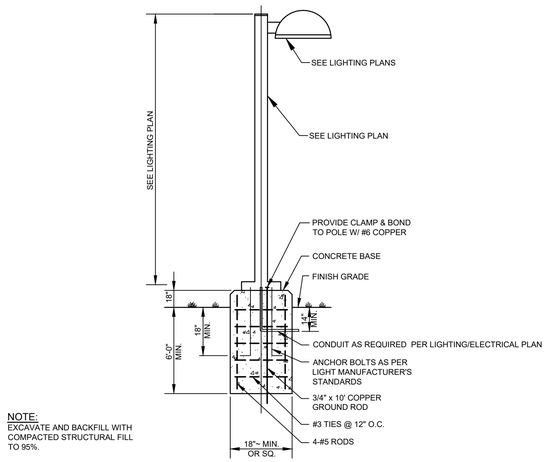
SCALE	1" = 20'
PROJECT	20566

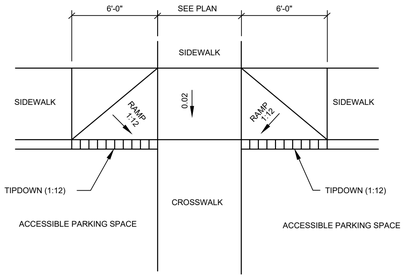
20566 D.dwg, T-AB-24x36 (3)

SHEET 7 OF 8

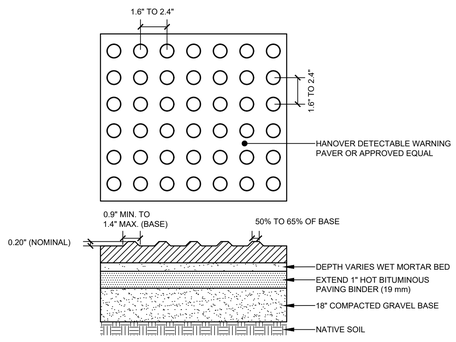


NOTE:
EXCAVATE AND BACKFILL WITH COMPACTED STRUCTURAL FILL TO 95%.

TYPICAL LIGHT POLE DETAIL
NOT TO SCALE



ADA RAMP AT BUILDING ENTRANCE
NOT TO SCALE



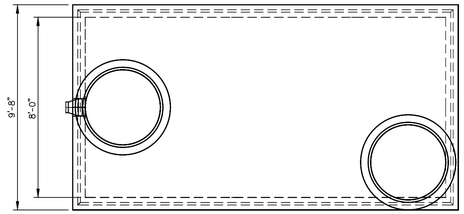
NOTES:
1. PAVERS ARE INSTALLED IN A WET MORTAR BED OVER HOT BITUMINOUS OR COMPACTED FILL BASE. THE WET MORTAR BED IS REQUIRED TO LEVEL THE PAVERS.
2. SPACING REQUIREMENTS:
   A. TRUNCATED DOME PAVERS HAVE A BASE DIAMETER OF 0.9" (23 MM) MINIMUM TO 1.4" (36 MM) MAXIMUM, A TOP DIAMETER OF 50% OF THE BASE DIAMETER MINIMUM TO 65% OF THE BASE DIAMETER MAXIMUM, AND A NOMINAL DOME HEIGHT OF 0.2" (5 MM).
   B. TRUNCATED DOME PAVERS IN A DETECTABLE WARNING SURFACE HAVE A CENTER-TO-CENTER SPACING OF 1.6" (41 MM) MINIMUM AND 2.4" (61 MM) MAXIMUM, AND A BASE-TO-BASE SPACING OF 0.65" (16 MM) MINIMUM, MEASURED BETWEEN THE MOST ADJACENT DOMES ON THE SQUARE GRID.
   C. DETECTABLE WARNING SURFACES COLOR: YELLOW.

DETECTABLE WARNING SURFACE
NOT TO SCALE

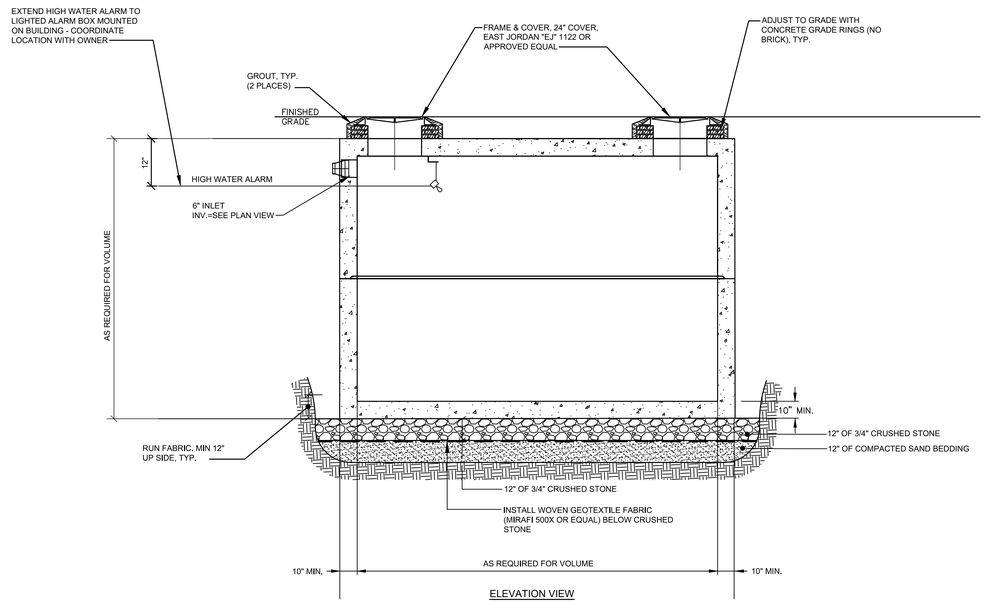
STRUCTURAL NOTES:
1. CONCRETE:
   a) 28 DAY COMPRESSIVE STRENGTH F'C= 5,000 PSI.
   b) CEMENT TO BE TYPE III PER ASTM C-150
   c) AIR ENTRAINMENT: MIN. 5.5%
2. STRUCTURAL REINFORCEMENT:
   a) REINFORCED FOR H-20 LOADING
3. BAR CLEARANCE/PROTECTION:
   a) 1 1/2" CLR (UNLESS OTHERWISE NOTED

INSTALLATION REQUIREMENTS:
1. USE 1" CON-SEAL 102 AT JOINTS.
2. JOINT GAPS LESS THAN 0.5", GROUT TO FILL VOIDS.

GENERAL NOTES:
1. ALL BAFFLES AND WEIRS TO BE PRECAST CONCRETE.
2. CONTRACTOR TO SUBMIT SPECIFICATIONS FOR ALARM FOR OWNER AND ENGINEERS APPROVAL.
3. ALL COMPONENTS TO BE EXPLOSION PROOF.
4. CONTRACTOR SHALL PROVIDE AND INSTALL WIRING, ELECTRICAL SERVICES, AND CONDUIT FOR ALARM. MOUNT ALARM AND LIGHT ON BUILDING. COORDINATE LOCATION WITH OWNER.
5. ALL UNDERGROUND ELECTRIC POWER LINES SHALL BE INSTALLED IN PVC CONDUIT. ABOVE GROUND SERVICES SHALL BE INSTALLED IN SCHEDULE 40 GALVANIZED CONDUIT. SIZES AS REQUIRED BY ELECTRIC COMPANY.
6. COAT EXTERIOR AND INTERIOR OF STRUCTURES WITH KOPPERS BITUMASTIC 3000 M OR EQUAL.
7. ALL PIPE CONNECTIONS THROUGH WALLS SHALL BE WATERTIGHT.
8. SUBMIT SHOP DRAWINGS FOR OWNER'S AND ENGINEER'S APPROVAL.



PLAN VIEW



ELEVATION VIEW

2,000 GAL. AND 5,000 GAL. PRECAST HOLDING TANK
NOT TO SCALE

PROGRESS PRINT

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OWENS A. McCULLOUGH PE 7122

STATE OF MAINE
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DETAILS 3
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20566 D.dwg, TAB.24x36 (4)

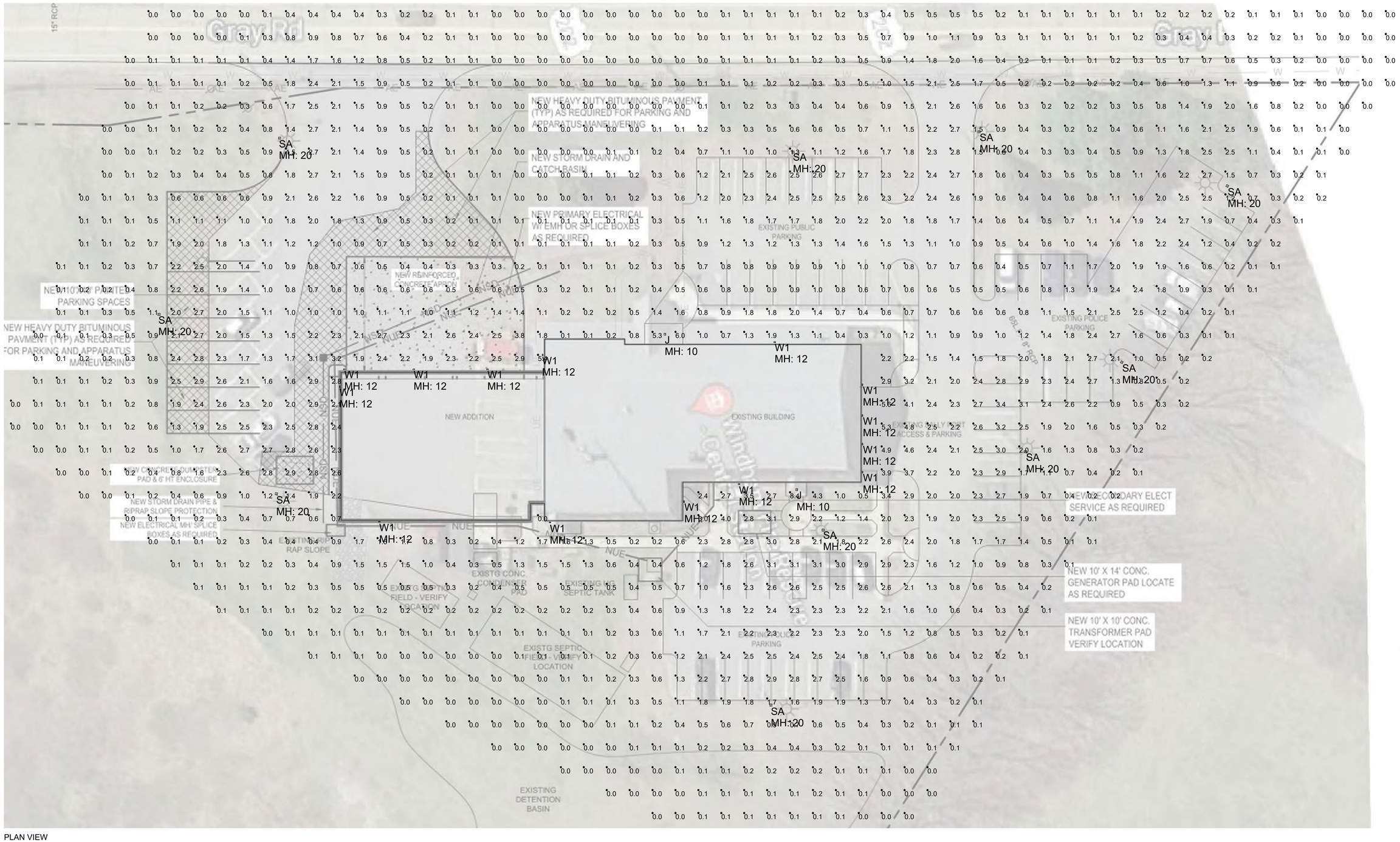
SHEET 8 OF 8

Calculation Summary					
Label	**Avg**	**Max**	**Min**	**Avg/Min**	**Max/Min**
SITE	0.90	8.4	0.0	N.A.	N.A.

POLE LOCATIONS BASED ON RFP DOCUMENTS SHEET C20-1

Luminaire Schedule (note fixture cataloge numbers are not complete)					
Type	**Qty**	**Lum. Lumens**	**LLF**	**Lum. Watts**	**Description**
SA	10	11885	0.900	90	RAR1-160L-100-4K7-4W
W1	14	2588	0.900	28.6	LNC2-12L-3K-070-4
J	2	3055	0.900	24.3	LSQ1-25-3K7-UNV-X

NOTES:
1) EXACT MOUNTING DETAILS TO BE DETERMINED AT JOBSITE BY OTHERS.
2) CALCULATIONS MAY or MAY NOT SHOW THE EFFECT OF SHADOWING CAUSED BY BUILDINGS AND OBJECTS WITHIN THE CALCULATED SPACE OR IN THE SITE AREA.
3) READINGS SHOWN ARE INITIAL HORIZONTAL FOOTCANDLES ON A FLAT SITE WITHOUT REFLECTIONS OR OBSTRUCTIONS UNLESS OTHERWISE INDICATED.
4) THIS CALCULATION IS BASED ON LIMITED INFORMATION SUPPLIED BY OTHERS TO SWANEY LIGHTING ASSOCIATES AND STANDARD ASSUMPTIONS OF THE SPACE AND/OR SITE.
5) CONFORMANCE TO CODES AND OTHER LOCAL REQUIREMENTS AS DETERMINED BY THE AHJ ARE THE RESPONSIBILITY OF THE OWNER AND/OR THE OWNER'S REPRESENTATIVE.
6) THIS LAYOUT DRAWING MUST BE COORDINATED WITH THE SITE LOCATION FOR CORRECT FIXTURE ORIENTATION.
7) DOCUMENTS PRINTED OR PLOTTED FROM ELECTRONIC FILES MAY APPEAR AT OTHER THAN THE DESIRED OR ASSUMED GRAPHIC SCALES. IT IS THE RESPONSIBILITY OF THE RECIPIENT TO VERIFY THAT THE PRINTED OR PLOTTED-TO-SCALE DRAWING IS PRINTED TO SCALE.



PLAN VIEW

TITLE
WINDHAM PUBLIC SAFETY BUILDING
WINDHAM, ME
SITE LIGHTING LAYOUT

SITE 3-2-21.AGI

GENERATED BY SWANEY LIGHTING, SCARBOROUGH ME - 207-883-7100 - swaneylighting.com

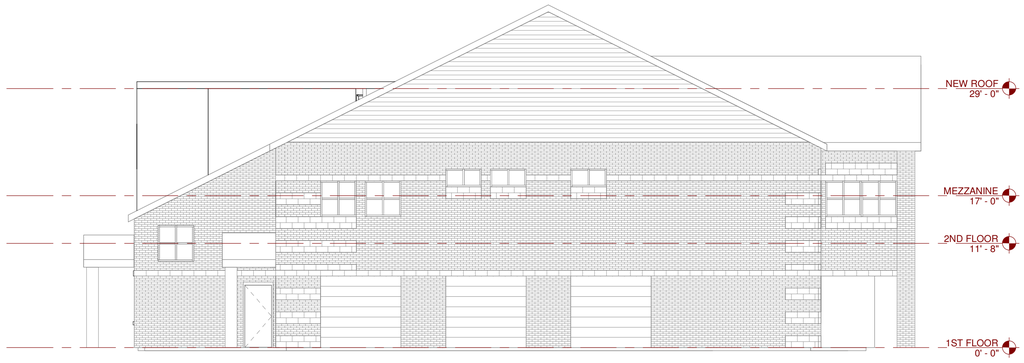
Date:3/2/2021

GENERATED FOR:
EAST COAST ELECTRIC

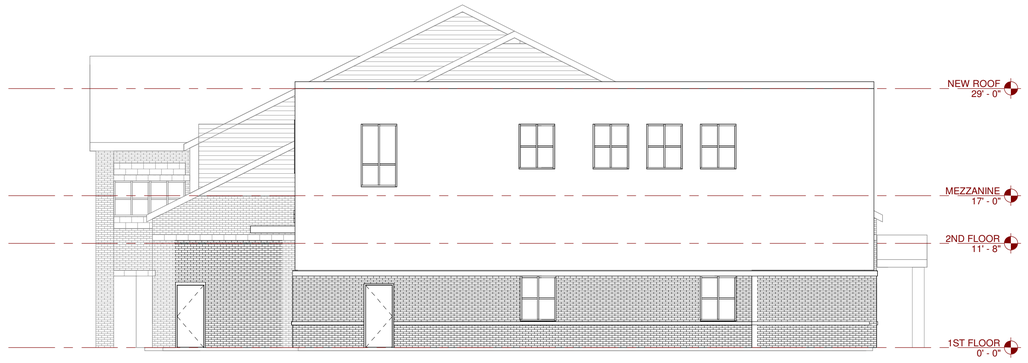
SCALE NOT TO SCALE

Page 1 of 1

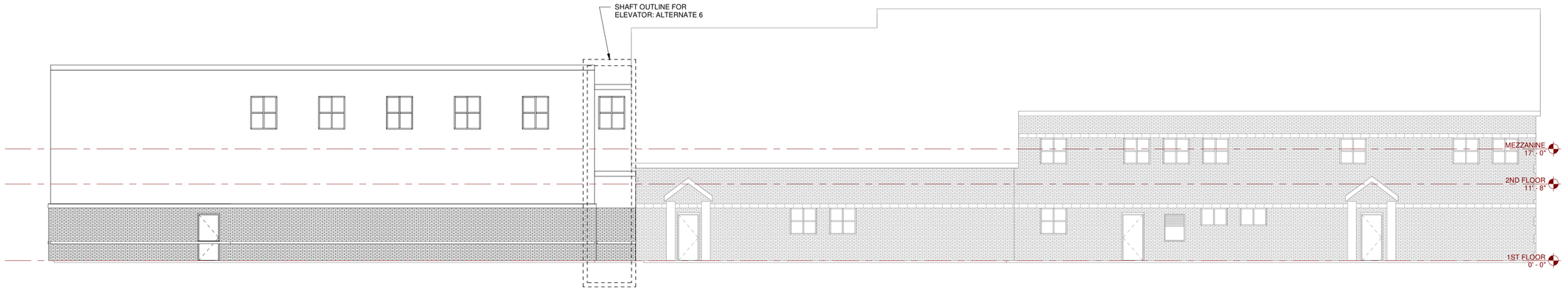
SWANEY LIGHTING ASSOCIATES, INC.



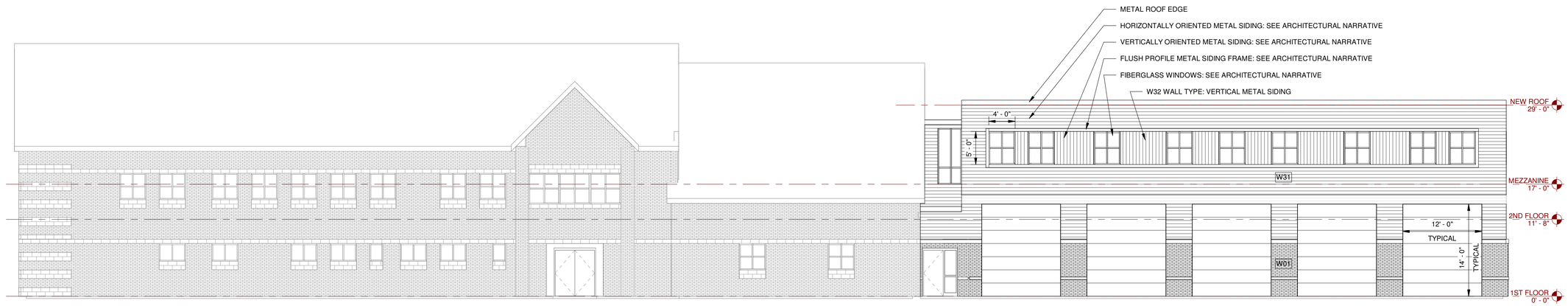
C1 NORTH EXTERIOR ELEVATION
SCALE: 1/8" = 1'-0"



C2 SOUTH EXTERIOR ELEVATION
SCALE: 1/8" = 1'-0"



B1 EAST EXTERIOR ELEVATION
SCALE: 1/8" = 1'-0"



A1 WEST EXTERIOR ELEVATION
SCALE: 1/8" = 1'-0"

HARRIMAN

TOWN OF WINDHAM
PUBLIC SAFETY
BUILDING RENOVATION

WINDHAM, MAINE

Harriman Project No.	20419

Proj North

SCHEMATIC
OCTOBER 21, 2020

Rev Date	Revision Description

PRELIMINARY
NOT FOR
CONSTRUCTION

PA / PE: JLJ
Drawn By: WHG

EXTERIOR ELEVATIONS

A20-1

C1 VIEW 02 - OLD TO NEW
SCALE:

C4 VIEW 03 - EXG ENTRANCE TO NEW
SCALE:

A1 VIEW 01 - NEW ADDITION
SCALE:

A4 VIEW 04 - RESCUE ENTRANCE
SCALE:

HARRIMAN

TOWN OF WINDHAM
PUBLIC SAFETY
BUILDING RENOVATION

WINDHAM, MAINE

Harriman Project No.	20419

Key Plan

Proj North

SCHEMATIC

OCTOBER 21, 2020

Rev Date	Revision Description

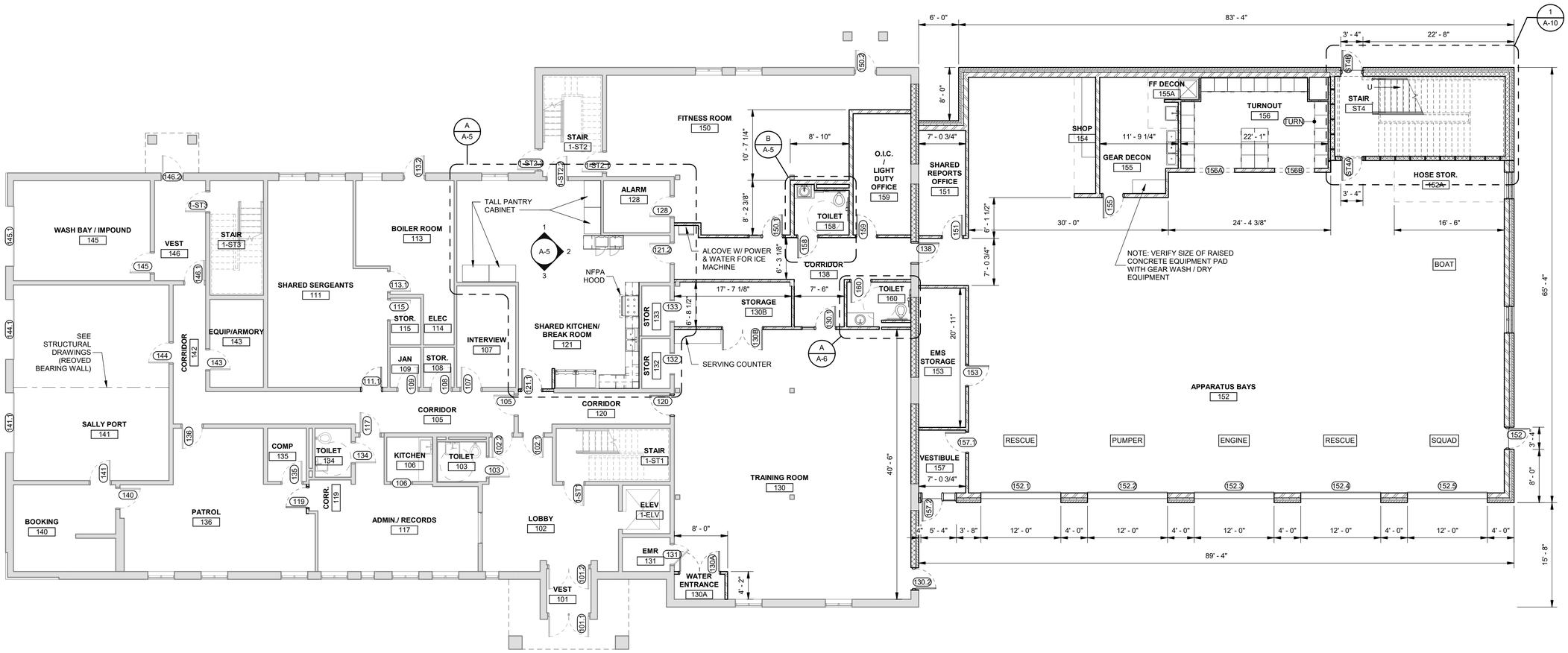
PRELIMINARY
NOT FOR
CONSTRUCTION

PA / PE: JLJ

Drawn By: WHG

EXTERIOR VIEWS

A20-2



A1 FIRST FLOOR PLAN
SCALE: 1/8" = 1'-0"

GRANT HAYS ASSOCIATES
ARCHITECTURE & INTERIOR DESIGN
P.O. BOX 6179 FALMOUTH MAINE 04105
207.871.5900 www.granthays.com

SEAL

REVISIONS

DRAWING NAME

ALTERATIONS & ADDITION TO THE
TOWN OF WINDHAM
PUBLIC SAFETY BUILDING

375 GRAY ROAD
WINDHAM, MAINE 04062

SHEET
FIRST FLOOR PLAN

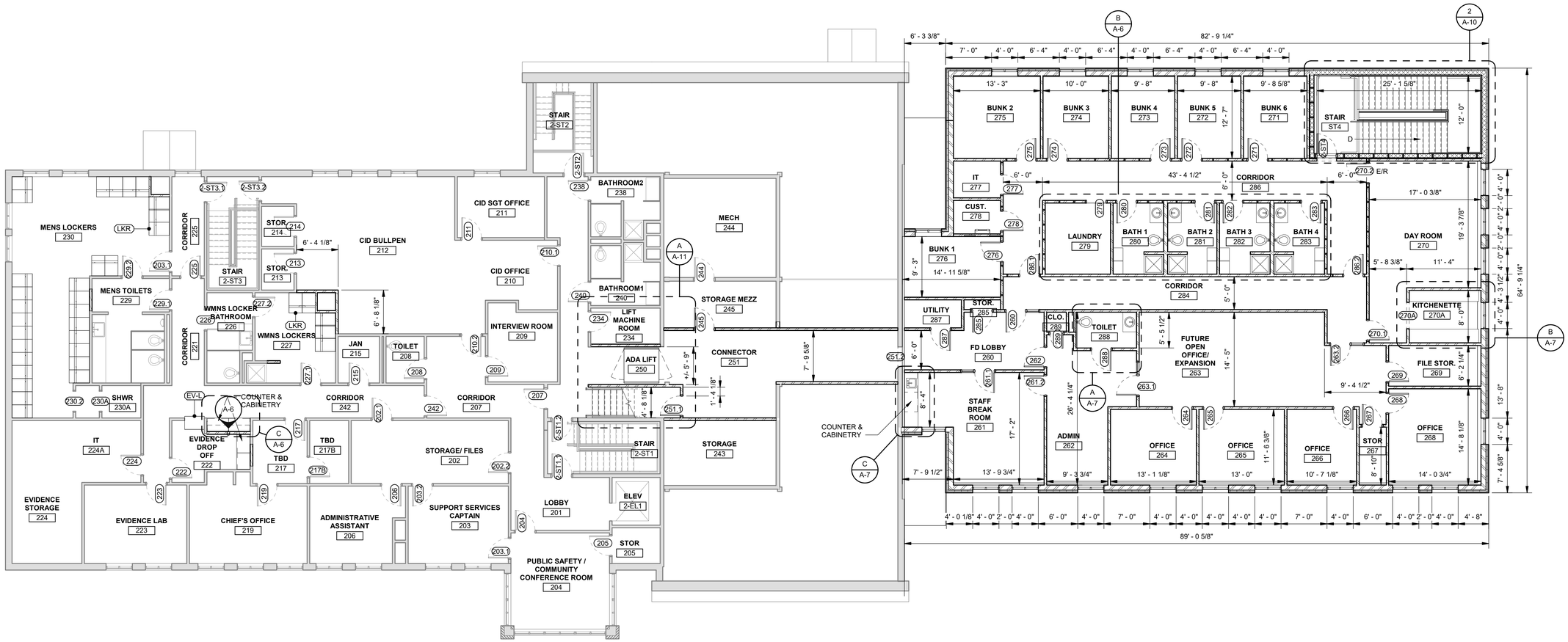
DATE
25 MAR 2021

SCALE
1/8" = 1'-0"

DRAWN
MFH/mgk

JOB NO.
210302

SHEET
A-3



A1 SECOND FLOOR PLAN

SCALE: 1/8" = 1'-0"

GRANT HAYS ASSOCIATES

ARCHITECTURE & INTERIOR DESIGN
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SEAL

REVISIONS

DRAWING NAME

ALTERATIONS & ADDITION TO THE
TOWN OF WINDHAM
PUBLIC SAFETY BUILDING

375 GRAY ROAD
WINDHAM, MAINE 04062

SHEET

SECOND FLOOR PLAN

DATE
25 MAR 2021

SCALE
1/8" = 1'-0"

DRAWN
MFH/mgk

JOB NO.
210302

SHEET
A-4