



Memorandum

To: Jay Peak WQRP Project File

Date: July 13, 2018

Revised: August 3, 2018

Project #: 57201.11

From: Andrew Mills, P.E.
Robert Wildey, P.E., CPESC

Re: Proposed Route 242 Parking Lot Treatment System -
2018 Large Scale BMP

Under the Settlement Agreement with VNRC and DEC, Jay Peak Resort ("JPR") annually monitors water quality in Tributary 3 of the South Mountain Branch and compares the results to the interim and attainment targets incorporated in the Settlement Agreement. Because Tributary 3 to South Mountain Branch did not meet the applicable interim targets or Vermont Water Quality Standards ("VWQS") attainment criteria at compliance station SMB-T3-0.1 during the previous three years (2015, 2016, and 2017), JPR is required to implement a "large scale" BMP in 2018. Small- and Medium-scale BMPs were previously implemented in this watershed during 2016 and 2017. Per the Settlement Agreement, a "large scale" BMP may consist of "Additional Stormwater Basin Construction, Culvert Replacements, [or] Channel Restoration."

The large-scale BMP proposed to be implemented in 2018 will consist of a new subsurface stormwater treatment system that will provide equivalent treatment to an "additional stormwater basin." The proposed system will be installed at the Route 242 Lot and will treat stormwater runoff from the parking lot and from the adjacent upgradient developed areas that contribute sediment to Tributary 3. As required by the Settlement Agreement, calculations have been performed to demonstrate that sufficient credits are available in the existing offset bank to offset the sediment loads associated with the construction of this treatment practice. This memorandum and supporting documentation is being submitted for review and comment, with the expectation that these materials will be incorporated as an update to the Jay Peak Water Quality Remediation Plan ("WQRP").

Existing Conditions

The primary source of runoff from untreated impervious area within the Tributary 3 watershed that is within the Jay Peak Resort boundary is the gravel parking lot (the "Route 242 Lot"), located at the intersection of Stateside Road and Route 242. Additional runoff from untreated impervious surfaces enter this area from the equipment maintenance yard and sand stockpile located west and upgradient from the Route 242 lot. Sediment is the primary pollutant in runoff from these areas and is a key factor in the failure of Tributary 3 to attain the VWQS related to aquatic biota (macroinvertebrates).

Under existing conditions, runoff from these areas drains northerly to a culvert under Stateside Road and into Tributary 3. Because this portion of the development pre-dates current stormwater regulations, it is not covered by a stormwater discharge permit. A proposed stormwater treatment practice for this impervious area would not be required to fully comply with the current Vermont Stormwater Management Manual unless it were to be enlarged, redeveloped with additional uses, or if full-depth reconstruction of the parking lot was proposed.

Because space and natural resource constraints limit the available area, subsurface stormwater treatment practices were evaluated for use at the site. A subsurface system could also be designed to maintain existing drainage patterns and to discharge treated stormwater to Tributary 3 at the same rock-lined swale as under existing conditions. Due to the underlying soils classification (Cabot silt loam, hydrologic soil group "D"), infiltration is not practicable at this location. In addition, volume storage for peak rate control and advanced filtration processes were considered but were determined not to be necessary. In 2014, Tributary 3 met most of the VWQS aquatic biota criteria, except for an

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exceedance of % oligochaetes (worms), which is indicative of excessive quantities of sediment rather than other types of pollutants.

Proposed Treatment Practice

The BMP that JPR has selected to treat runoff at the Route 242 parking lot is StormTrap's SiteSaver water quality unit. A conceptual layout of this unit and associated infrastructure is included on page 1 of the Attachment. This BMP was selected for its ability to remove 80% Total Suspended Solids (TSS) from runoff while also maintaining the size of the existing parking lot, and for not disrupting the other BMP's that have been previously constructed around the parking lot and up gradient. Based on the watershed area and anticipated flow rates, StormTrap recommended the STSS-4 unit, a concrete vault structure that is approximately 17-ft (L) by 6-ft (W) by 11-ft (D). This unit is anticipated to achieve greater than 80% TSS removal at the peak water quality volume (WQv) flow rate of 3.1 cubic foot per second (cfs) and to safely pass the 100-year peak flow rate of 25 cfs at a velocity that should not exceed the resuspension velocity. Manufacturer's literature about the SiteSaver system, including sediment removal efficiency calculations and schematic drawings of the unit, is included on pages 2 through 10 of the Attachment. Simple method calculations for the site under existing conditions and following the installation of the proposed water quality unit is included on page 11 of the Attachment. According to this calculation, the treatment system would capture 20,080 pounds of sediment per year and prevent it from entering Tributary 3. It is anticipated that the reduction in sediment delivered to the stream will help the stream reach attainment.

Construction Phase Sediment Loading Calculations

Construction phase sediment loading calculations were conducted using the Revised Universal Soil Loss Equation ("RUSLE") method, as outlined in the Settlement Agreement. The Limits of Disturbance (LOD) associated with the installation of the subsurface unit and associated drainage improvements are shown on the Project plans included on pages 12 through 15 of the Attachment. A construction duration of two weeks has been used to estimate the sediment loading presented in the calculations. The basis for the selection of specific variables used in the RUSLE method analysis are described below.

Erosivity Factor (R): Based on the Isoerodent Map produced by the EPA (EPA 2012) and as specified in the Settlement Agreement, a value of 71 is assumed for Jay, Vermont.

Erosion Factor Rating (K): Based on the Natural Resources Conservation Service ("NRCS") soils map (see page 16 of the Attachment), native soils on the site consist of Cabot silt loam, 8 to 15 percent slopes. This soil has an erosion factor rating (K value) of 0.55. The use of this value is conservative because no mass grading is proposed that would expose large quantities of this soil type.

Slope Length Factor (LS): The slope length factor is characterized as the ratio of soil loss to slope, calculated from the distance of origin of overland flow to a location of concentrated flow. These values are calculated from Table 1, *Values for Topographic Factor LS* that was included in the Settlement Agreement.

Crop Management Factor (C): The surface of the construction area consists of a gravel parking lot that will be maintained during and after the construction period, except for areas that will be excavated to install the subsurface unit and associated utility infrastructure. A "C" value of 0.05 was used in the sediment loading calculations,

corresponding to the application of crushed stone at 135 tons/acre in the RUSLE methodology.

Sediment Delivery Ratio (SDR): Due to the proximity of the Project to Tributary 3 and the potential for a direct hydraulic connection between the Project and the stream during the installation of the outlet culvert, the SDR has conservatively been set to 100 percent. Construction sequencing and BMPs (wattles, check dams) will work to minimize the release of sediment during the construction period.

The completed RUSLE calculations are provided on page 19 of the Attachment and indicate that offsets equivalent to 242 pounds are required to construct the Project. As shown in Table 1, previously-completed offset projects in the South Mountain Branch watershed provide sufficient sediment load reductions to offset this work.

Table 1. 2018 Large Scale BMP Sediment Load and Offset Bank Summary

Project Component	Annual Sediment Load
South Mountain Branch Offset Bank (Hell's Crossing and Angel's Wiggle Offset Projects)	28,016 lbs.
2018 Large Scale BMP Project	(242 lbs.)
Remaining Sediment Load Credit (South Mountain Branch Offset Bank)	27,774 lbs.

Summary

The proposed water quality treatment unit would significantly reduce the volume of sediment delivered to Tributary 3 and supports the objective of achieving attainment of the VWQS in Tributary 3 and complying with the requirements of the Settlement Agreement. The Route 242 lot and adjacent areas that will be treated by this stormwater practice constitute some of the last remaining areas of untreated impervious surfaces on the Resort property and the Project would further support the goal of providing treatment for these areas.

References:

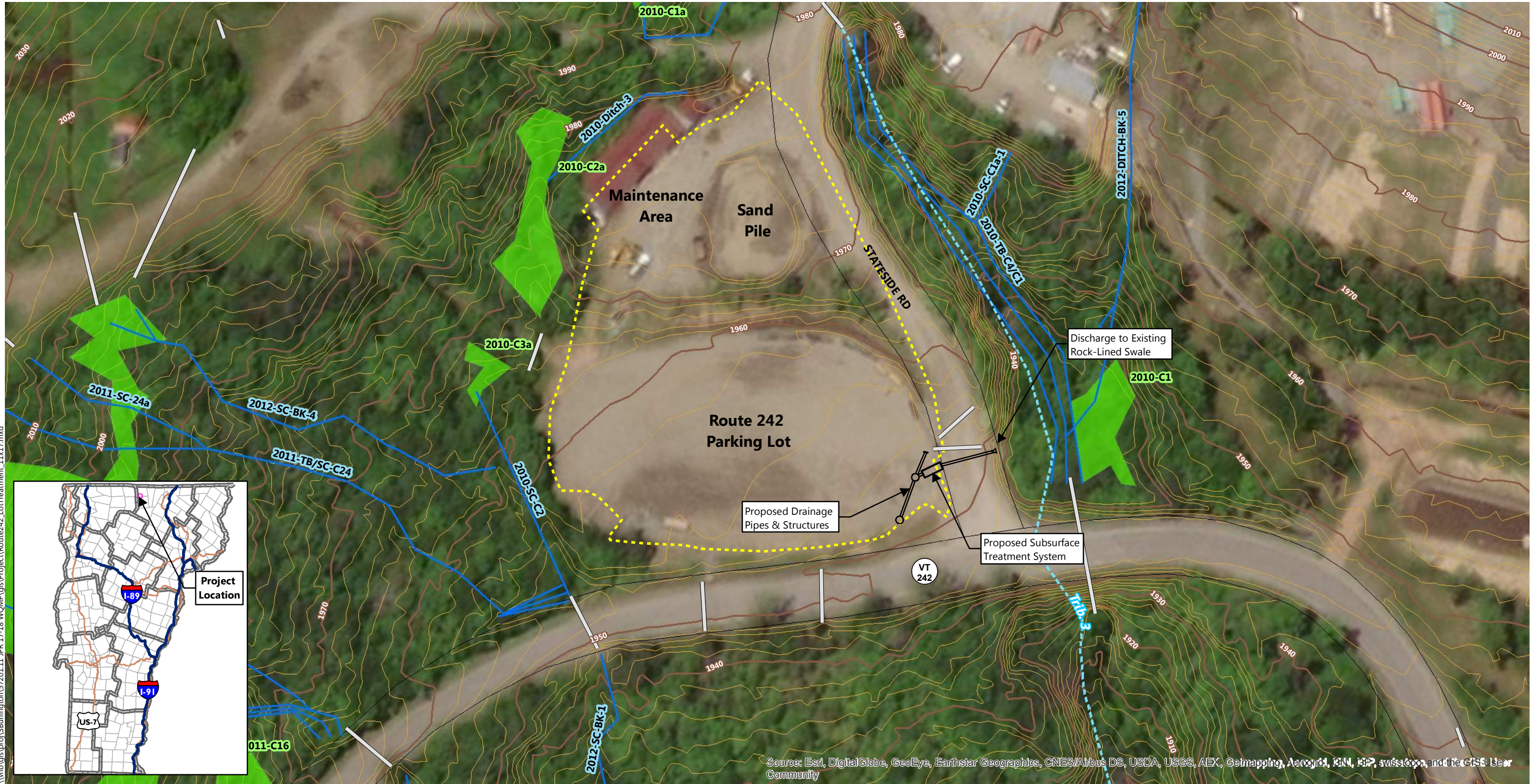
EPA 2012. Stormwater Phase II Final Rule Construction Rainfall Erosivity Waiver, EPA 833-F-00-014. Revised March 2012, Fact Sheet 3.1.

Vermont Department of Environmental Conservation 2006. The Vermont Standards & Specifications for Erosion

Proposed Route 242 Parking Lot Treatment System -
2018 Large Scale BMP
Ref: 58085.00
August 3, 2018
Page 4

Prevention & Sediment Control. Last revised February 20, 2008.

ATTACHMENT



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



- Existing Culvert (VHB)
- VHD Stream (VCGI)
- - - Proposed Subcatchment (VHB)
- ▭ Parcel Boundary (VCGI)
- Delineated Stream (VHB)
- 10 ft Contour (VCGI)
- Delineated Wetland (VHB)
- 2 ft Contour (VCGI)

Route 242 Parking Lot Stormwater Retrofit

Jay, Vermont

Overall Site Plan

Sources:
ESRI Imagery Basemap - Digital Globe, 2015
VCGI (Vermont Center for Geographic Information - Various Dates)
VHB - 2010-2018

**StormTrap®**MODULAR CONCRETE
STORMWATER MANAGEMENT

TREATMENT SOLUTIONS

FOR

**Stormwater,
Urban Runoff and
Combined Sewer Overflow
(CSO) Discharges**

SiteSaver®

StormTrap® is committed to improving water quality and offers innovative solutions for removing pollutants from stormwater before they are discharged into rivers, lakes and oceans. StormTrap's patented treatment solution, SiteSaver®, is a unique hydrodynamic separator that utilizes disposable mesh nets, inclined plate technology and baffles to capture and easily remove trash, debris, floatables, hydrocarbons and sediment.

ADVANTAGES

Proven Performance

- More than 20 years of product experience in manufacturing, installing and maintaining netting systems
- U.S. EPA-sponsored netting projects recorded 97% removal efficiencies
- Netting systems certified by LARWQCB (Los Angeles Regional Water Quality Control Board) for full capture with 5-mm nets
- NJDEP Certified HDS
- NJCAT Verified Test Data 98% removal particles 0-500mm



Trusted Technology

- Three dimensional netting technology removes floatables, trash, and debris while providing a larger surface area than traditional two dimensional screens
- Nets can accommodate a large volume of material (standard sizes - 25-50cf/net)
- Nets do not need mechanical mechanisms to remove blockages, therefore decreasing operational maintenance frequency
- Inclined plate settling technology dramatically increases the effective settling area of a physical footprint by creating parallel operating settling cells that overlap and self-clean during flow events

Quick Installation

- Prefabricated, modular system enables quick installations
- Low capital and installation costs
- On-site supervision available on each project

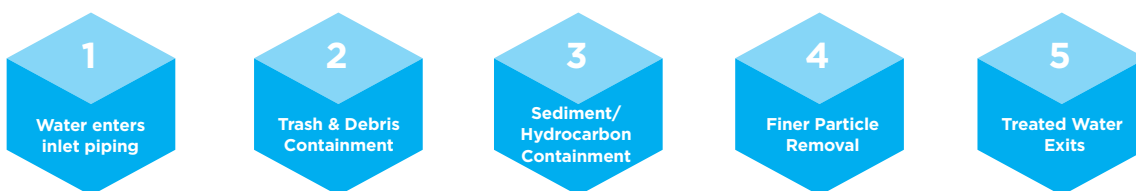
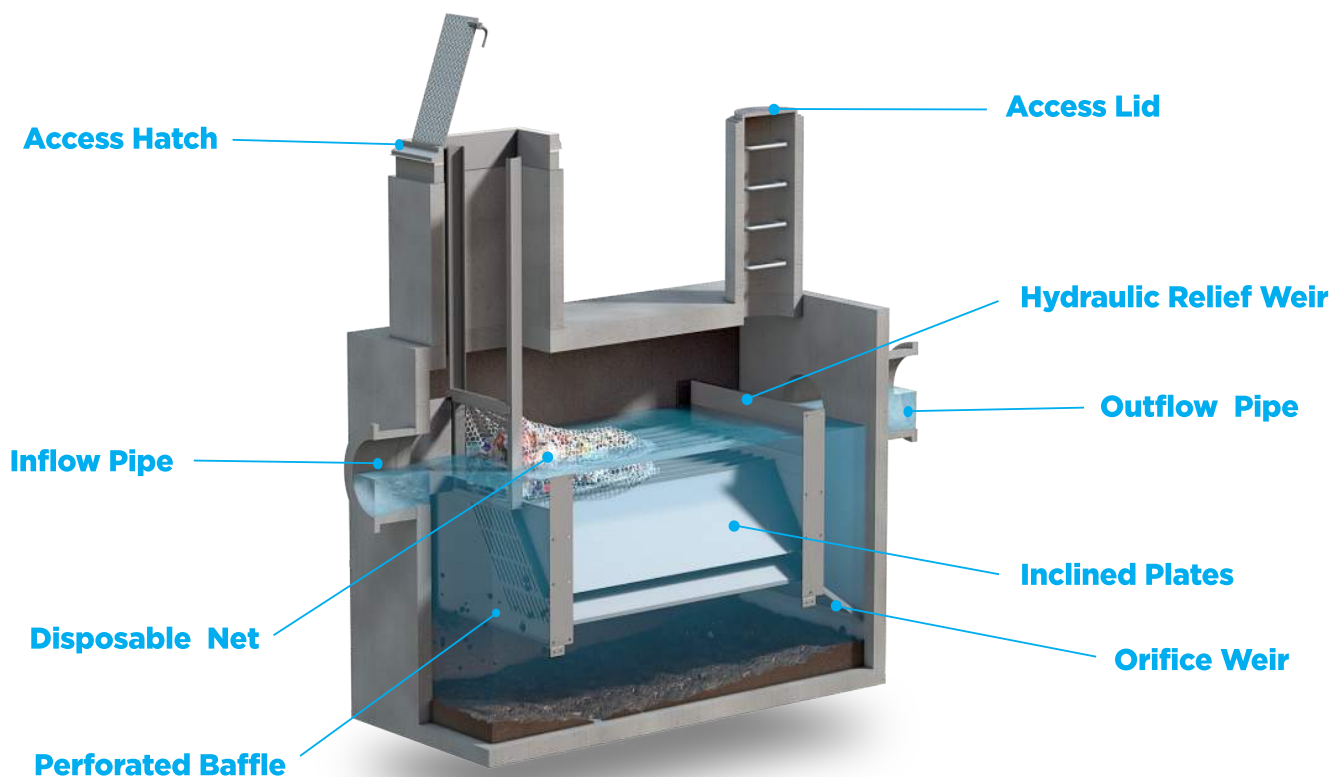
Efficient Design

- Engineered to meet site-specific requirements, can accommodate any flow
- Internal hydraulic relief prevents flooding while completely containing trash and debris, even when the event exceeds the design flow
- Trash and debris are contained and drain dry reducing further decay and leaching of pollutants into water
- Durable, high-strength precast concrete modules can be easily retrofit into almost any stormwater system
- HS-20 standard loading and can accommodate higher load capacities
- Negligible headloss, as system does not rely on head pressure to function
- Excels in a variety of markets including residential, commercial, manufacturing and industrial applications
- Shallow depth of system reduces overall excavation

Easy Maintenance

- Accessible for inspection and maintenance
- No confined space entry is required, as net change-out is done at the surface
- Long service life, with cost-effective maintenance
- Scales can be attached to lifting equipment for easy measurement of debris for environmental permit requirements
- Maintenance contract services are available through StormTrap
- Remote monitoring available through StormTrap's Telnet® technology

COMPONENTS



SYSTEM FUNCTIONALITY

Stormwater enters the SiteSaver through an inflow pipe and exits through an outflow pipe that is placed at the same elevation. Upon entering the system, floating matter is contained in the net or trash rack while hydrocarbons are contained on the inlet side of the hydraulic relief weir. Stormwater is then conveyed through the insert, first through a perforated baffle and then into the inclined plate settling area where sedimentation removal occurs. The stormwater then travels through a perforated weir prior to discharge via the outlet pipe. During high flow events, the weir also acts as an internal bypass when flows exceed the capacity of the inclined plates. A hinged baffle is also attached to the hydraulic relief weir to decrease resuspension of captured pollutants.

SiteSaver also contains and removes gross pollutants, such as trash and debris, using netting or trash rack components that can also be housed within the same structure as the inclined plates, baffles and weir insert. If the netting component is utilized, the stormwater travels through the netting prior to entering the insert of inclined settling plates in order to avoid clogging the insert with large debris. Hydrocarbons are contained within the device throughout the entire footprint area prior to the hydraulic relief weir and to a depth from the invert of the outlet pipe to the top of the orifice openings in the perforated baffles. Additional hydrocarbon treatment can be achieved by the addition of optional oil sorbent socks behind the trash containing device.

TREATMENT TRAIN



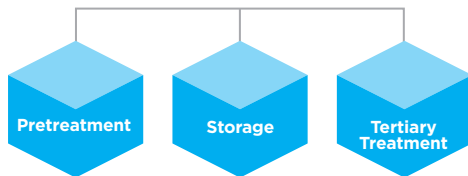
The SiteSaver system can be utilized as a stand-alone device or work in a treatment train approach.

A treatment train is comprised of three main components: pretreatment, storage, and tertiary treatment. In this approach, SiteSaver is utilized as a pretreatment product that handles a variety of TMDL solutions including: trash, sediment, hydrocarbons, total phosphorus, nitrogen and heavy metals.

The second phase of the treatment train is the storage component, which is used to manage and control the volume and release rate of stormwater runoff. StormTrap's SingleTrap and DoubleTrap products can be easily designed to provide this solution.

The tertiary stage is the final element of the treatment train process and includes the filtration component. Designed to remove pollutants, such as heavy metals and bacteria, the filtration component can be integrated into the storage system or can remain separate to better fit project specifications.

Treatment Train Approach



COMPLETE SERVICE



Continuing Education

Learn what StormTrap's innovative stormwater solutions can do for your next project while earning PDH credits



Design

Our experienced stormwater professionals will create a customized design and budget with complete set of drawings for your next project



Specifications

Download our product guide specifications to easily integrate StormTrap's products into your plans



Installation

Pre-construction meeting and start-up training
On-site supervision available during installation



Maintenance

StormTrap offers replacement net assemblies as well as maintenance contracts to conduct routine net change-out and disposal for optimal product function. Coupling annual maintenance with Telnet technology – solar powered systems that remotely monitor net capacity – ensures efficient, worry-free protection of water quality products.



Design Calculations - OK-110 Particle Size Distribution

SiteSaver STSS-4 - Jay Peak - 242 Parking Lot - Jay, VT

Design Parameters:

Water Quality Flow	WQF	3.11	ft ³ /s
gravity constant	g	981.5	cm/s ²
density of water	ρ_{water}	1.00	g/cm ³
viscosity of water	μ_{water}	0.01	g/cm·sec
Settling Surface Area Provided	Area _{provided}	86.04	ft ²

Particle Settling Velocity (v_s):

$$\text{Stokes Law: } v_s = (g)(\rho_{\text{particle}} - \rho_{\text{water}})(d)^2 / (18)(\mu_{\text{water}})(30.48 \text{ cm/ft})$$

Settling Surface Area for 100% Removal:

$$\text{Camp-Hazen Equation: } \text{Area}_{\text{for 100\% Removal}} = \text{WQF} / v_s$$

Removal Efficiency:

$$\begin{aligned} \text{Removal Efficiency} &= (\text{Area}_{\text{provided}}) / (\text{Area}_{\text{for 100\% Removal}}) = (\text{Area}_{\text{provided}}) / (\text{WQF} / v_s) \\ \text{System Removal Efficiency} &= (\text{Particle Size Distribution \%}) * (\text{Removal Efficiency \%}) / 100 \end{aligned}$$

<i>OK-110 Particle Size Distribution</i>				
Particle Size (μm)	Particle Size Distribution (%)	Density of Particle (g/cm ³)	Particle Settling Velocity (ft/sec)	Removal Efficiency (%)
1	0.2	2.65	0.000030	0.0082
53	1.9	2.65	0.0083	22.9
75	9.7	2.65	0.0166	45.9
88	24.2	2.65	0.0229	63.2
106	48	2.65	0.0332	91.8
125	15	2.65	0.0461	100.0
150	1	2.65	0.0664	100.0
System Removal Efficiency (%) =				80.2

Proprietary Note: These calculations are provided for the sole use of the intended recipient(s) and may contain confidential and privileged information. Any unauthorized review, use, disclosure or distribution is strictly prohibited.

SiteSaver STSS-4 - Jay Peak - 242 Parking Lot - 100 year

Design Parameters:

Design particle size	d	0.0175 cm	175 μm
gravity constant	g	981.5 cm/s ²	
density of water	ρ _{water}	1.00 g/cm ³	
density of particle	ρ _{particle}	2.65 g/cm ³	
viscosity of water	μ _{water}	0.01 g/cm·sec	
Darcy-Weisbach friction factor	f	0.025	
Flow rate at inlet	Q _{in}	24.90 ft ³ /s	(Peak Flow)
Open area of baffle wall	A _b	18.7 ft ²	
Open area of baffle wall assuming 6" layer of sediment	A _{bs}	15.7 ft ²	

Particle Settling Velocity (v_s):

$$v_s = (g)(\rho_{particle} - \rho_{water})(d)^2 / (18)(\mu_{water})(30.48 \text{ cm/ft})$$

0.0904 ft/sec

Resuspension Velocity (V_r):

$$V_r = (8/f)^{0.5}(v_s)$$

1.617 ft/sec
(V_b < V_r)

Velocities in WQ Structure:

Velocity through open baffle area of WQ structure (V_b):

$$V_b = Q_{in} / A_b$$

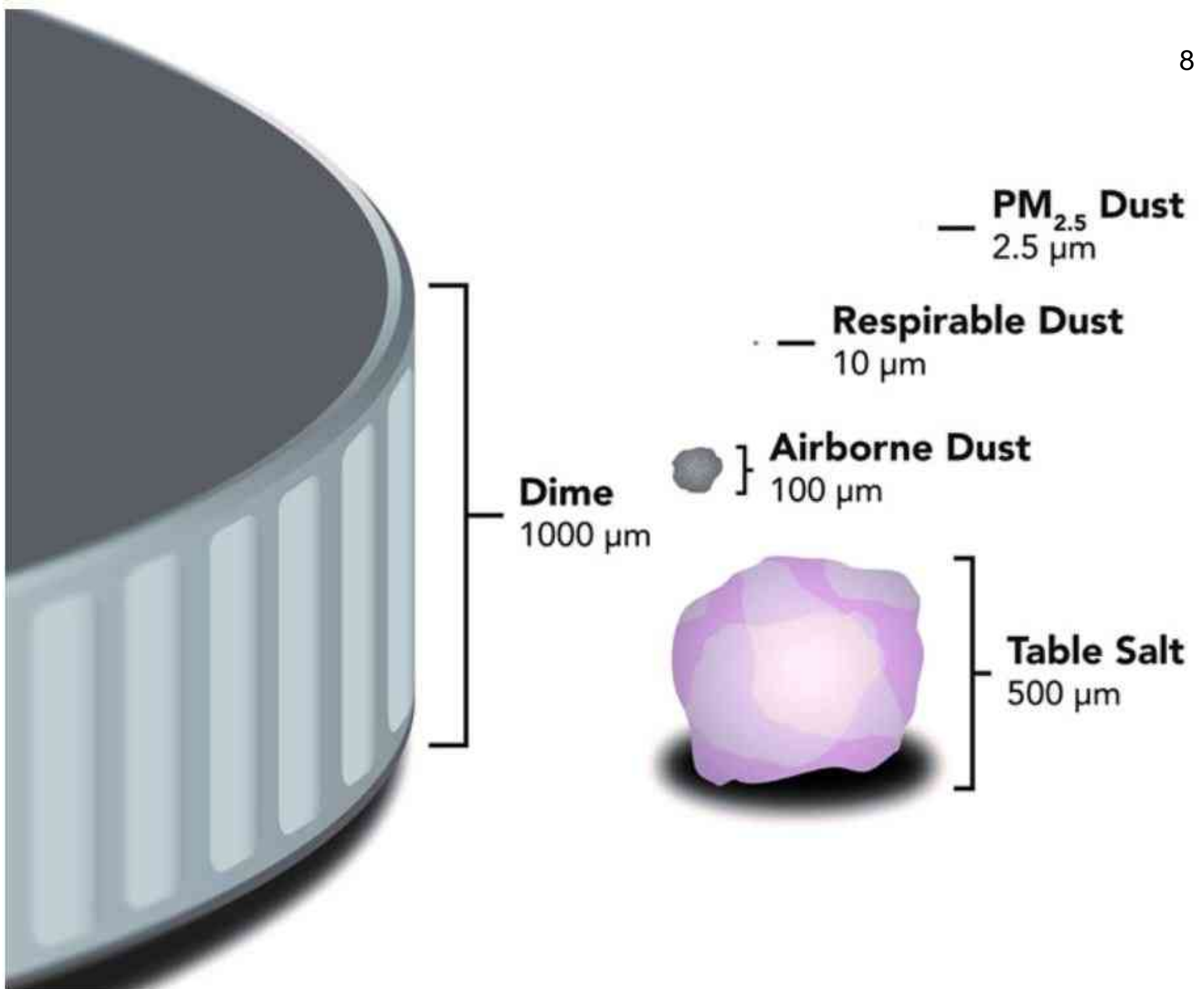
1.330 ft/sec

Velocity through open baffle area of WQ structure assuming 6" layer of sediment (V_{bs}):

$$V_{bs} = Q_{in} / A_{bs}$$

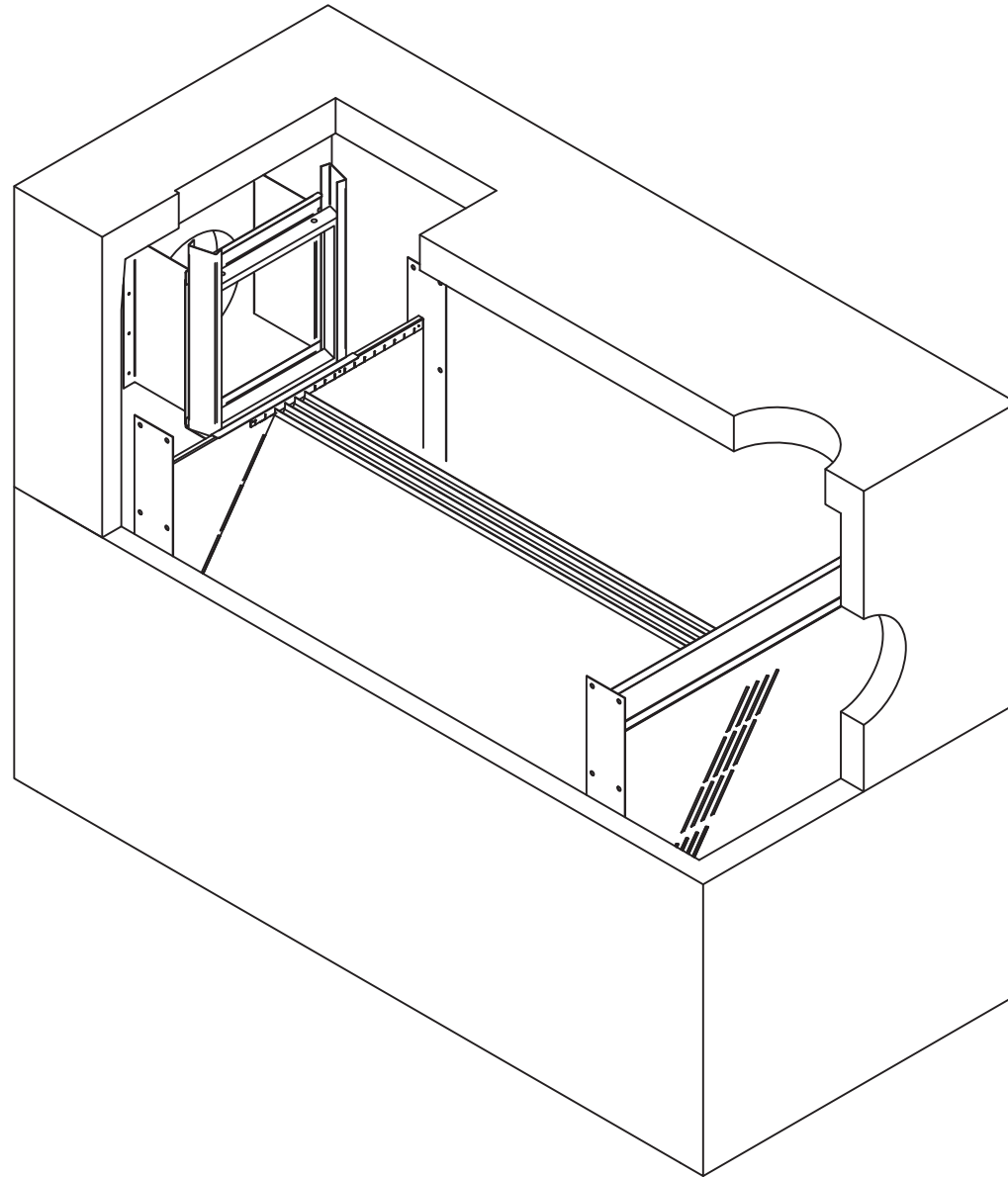
1.584 ft/sec
(V_{bs} < V_r)

*** The velocity through the WQ structure should not exceed the resuspension velocity.***



SiteSaver®

STORMWATER TREATMENT SYSTEMS



SHEET INDEX	
PAGE	DESCRIPTION
0.0	COVER SHEET
1.0	SITESAVER DESIGN CRITERIA
2.0	SITESAVER SYSTEM LAYOUT
3.0	SITESAVER INSTALLATION SPECIFICATIONS
3.1	SITESAVER INSTALLATION PROCEDURE
4.0	SITESAVER BACKFILL SPECIFICATIONS
5.0	RECOMMENDED PIPE / ACCESS OPENING SPECIFICATIONS

STORMTRAP CONTACT INFORMATION

SITESAVER SUPPLIER: STORMTRAP
 CONTACT NAME: Patrick H. Gordon
 CELL PHONE: 603-391-1206
 SALES EMAIL: pqgordon@stormtrap.com

StormTrap®

PATENTS LISTED AT: [HTTP://STORMTRAP.COM/PATENT]

SiteSaver®

ENGINEER INFORMATION:

ENGINEERING FIRM:
 VHB
 ADDRESS:
 40 IDX Drive, Bldg 100
 CITY & STATE: South Burlington, VT

PROJECT INFORMATION:

PROJECT NAME:
 Jay Peak - 242 Parking Lot
 CITY & STATE:
 Jay, VT

CURRENT ISSUE DATE:

6-26-2018

ISSUED FOR:

PRELIMINARY

REVISIONS:

REV.	DATE:	ISSUED FOR:	DWN BY:

SCALE:

NTS

SHEET TITLE:

COVER SHEET

SHEET NUMBER:

0.0

SITESAVER® STSS-4

SYSTEM INFORMATION

WATER QUALITY FLOW RATE:	CFS
PEAK FLOW RATE:	CFS
OIL SPILL CAPACITY:	GALLONS
OIL SORBING MAT:	
SEDIMENT STORAGE:	FT ³
EFFECTIVE SETTLING AREA:	86.0 FT ²
FOOTPRINT AREA:	104.8 FT ²
INLET TYPE:	MTRL
OUTLET TYPE:	MTRL

BILL OF MATERIALS

ITEM	QTY	DESCRIPTION
1	1	SITESAVER MODULE (TOP & BOTTOM)
2	1	42" X 42" HATCH (SUPPLIED BY OTHERS)
3	1	Ø24" MANHOLE FRAME & COVER (SUPPLIED BY OTHERS)
4	1	SITESAVER SS4 INSERT
5	1	NET BAG 303048
6	1	NET FRAME
7		NET LIFTING SLING (CABLE W/RING)
8	1	FIBERGLASS GRATING
9	1	INSTALLATION HARDWARE KIT
10	3	SWELLSTOP ROLLS
11		OIL SORBING MATS

NOTES & SPECIFICATIONS:

- SITESAVER MODULES SHALL BE MANUFACTURED AND INSTALLED ACCORDING TO SHOP DRAWINGS APPROVED BY THE INSTALLING CONTRACTOR AND ENGINEER OF RECORD. THE SHOP DRAWINGS SHALL INDICATE SIZE AND LOCATION OF ROOF OPENINGS AND INLET/OUTLET PIPE TYPES, SIZES, INVERT ELEVATIONS, AND SIZES OF OPENINGS.
- COVER RANGE MIN 0.50' MAX 10.00' (CONSULT STORMTRAP FOR ADDITIONAL COVER OPTIONS)
- ALL DIMENSIONS AND SOIL CONDITIONS, INCLUDING BUT NOT LIMITED TO GROUNDWATER AND SOIL BEARING CAPACITY, ARE REQUIRED TO BE VERIFIED IN THE FIELD BY OTHERS PRIOR TO SITESAVER INSTALLATION.
- CONTRACTOR TO MAKE STRUCTURE WATERTIGHT IN THE FIELD.
- CONTRACTOR TO ENSURE FRAMES & COVER CLEAR OPENING DIMENSIONS & LOAD RATINGS ARE MET.
- NET BAGS: 48" LG. WITH 30" x 30" INLET OPENING (NOMINAL DIMENSIONS).
- CONCRETE: 6,000 P.S.I. @ 28 DAYS 5%-8% ENTRAINED AIR.
- HS-20 LOAD RATING WITH 6" MIN TO 10'-0" MAX EARTH COVER.
- WATER TABLE IS ASSUMED BELOW SYSTEM INVERT AND SOIL DENSITY OF 120 PCF
- LIFTING: (8) 6" MIN. SLAB UTILITY ANCHORS. (4) UTILITY ANCHORS FOR RISER SECTIONS.
- STRUCTURE TOLERANCE= 1/4".
- WEIGHT: INSERT: 1,500#
BOTTOM SECTION: 20,700# (WEIGHT VARIES)
TOP SECTION: 21,700# (WEIGHT VARIES)

StormTrap
PATENTS LISTED AT: [HTTP://STORMTRAP.COM/PATENT]

SiteSaver

ENGINEER INFORMATION:

ENGINEERING FIRM:
VHB
ADDRESS:
40 IDX Drive, Bldg 100
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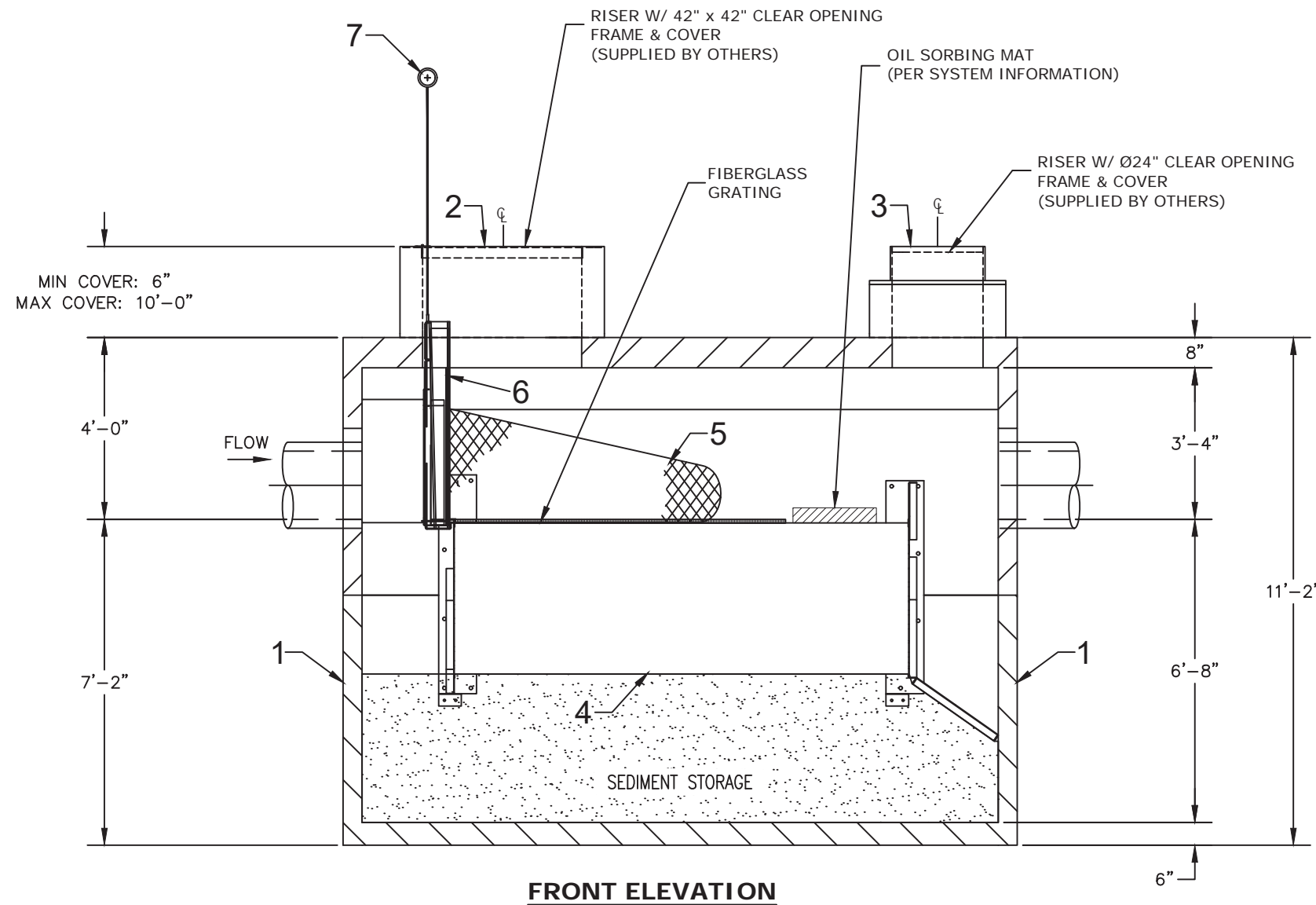
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SHEET TITLE:

SITESAVER
DESIGN
CRITERIA

SHEET NUMBER:

1.0



Simple Method Pollutant Loading Calculation Worksheet- Sediment

The Simple Method estimates pollutant loading of stormwater runoff for urban and developed areas. This worksheet includes the data and calculations to be used for computation of existing and post-development loads under the Interim Procedure for Offsets for Discharges of Phosphorus to Lake Champlain and Waters that Contribute to the Impairment of Lake Champlain. Fill in the shaded fields based on the project site attributes.

$$L = 0.226 * P * P_j * R_v * A * C$$

Additional information on the Simple Method can be found on the 'Guidance' tab

Where:

- L** = Annual load (lbs)
- P** = Yearly rainfall depth (in)
- P_j** = Fraction of rainfall events producing runoff (use 0.9)
- A** = Site area (acres)
- C** = Average annual pollutant concentration (mg/l), see 'Guidance'
- 0.226** = Unit conversion factor

And:

$$R_v = 0.05 + 0.009 * I_a$$

Where:

- R_v** = Runoff Coefficient
- I_a** = Whole number percent impervious

Offset Calculations	
Project Name:	Jay Peak Rt 242 Parking Lot
C-Values	See References
P _j	0.9
Project P*	64.8
http://www.ncdc.noaa.gov/cdo-web/datatools/normals	

Pre-Development	Land Cover	Site Area (ac)	Imp. Area (ac)	I _a (%)	R _v	C (mg/L)*	Load (lbs)
	Gravel 1	1.821	1.821	100	0.95	1100	25,081
	Lawn	0.353	0	0	0.05	80	19
				0	0.05		0
				0	0.05		0
	Pre-Dev. Total						25,100

Post-Development	Land Cover	Site Area (ac)	Imp. Area (ac)	I _a (%)	R _v	C (mg/L)	Load (lbs)
	Gravel 1	1.821	1.821	100	0.95	1100	25,081
	Lawn	0.353	0	0	0.05	80	19
				0	0.05		0
				0	0.05		0
	Post-Dev. Total						25,100
	Load reduction from treatment (%)						80
	Post-dev. load after treatment is provided						5,020

Lbs Reduced **20,080**

References

Clayton and Schueler (1996) as referenced in NH DES Simple Method guidance document
 Brown, "The effect of increasing gravel cover on forest roads for reduced sediment delivery to stream crossings," Hydrol. Process., 2014

Site Plans

Issued for	Review
Date Issued	July 30th, 2018
Latest Issue	July 30th, 2018

Jay Peak Resort 242 Parking Lot

Stateside Road
Jay, Vermont

Jay Peak Resort
C/O Walter Elander
830 Jay Peak Road
Jay, Vermont 05859



Sheet Index

No.	Drawing Title	Latest Issue
C1.00	EPSC Notes and Narrative	July 30, 2018
C2.00	Site Plan	July 30, 2018
C3.00	Site Details	July 30, 2018

Reference Drawings

No.	Drawing Title	Latest Issue
0.0	Cover Sheet	June 26, 2018
1.0	SiteSaver Design Criteria	June 26, 2018
2.0	SiteSaver System Layout	June 26, 2018
3.0	SiteSaver Installation Specifications	June 26, 2018
3.1	SiteSaver Installation Procedure	June 26, 2018
4.0	SiteSaver Backfill Specification	June 26, 2018
5.0	Recommended Pipe / Access Opening Specifications	June 26, 2018





40 IDX Dr
Building 100 Suite 200
South Burlington, VT 05403
802.497.6100

General Erosion Control Notes

- 1. PRIOR TO STARTING ANY OTHER WORK ON THE SITE, THE CONTRACTOR SHALL NOTIFY APPROPRIATE AGENCIES AND SHALL INSTALL EROSION CONTROL MEASURES AS SHOWN ON THE PLANS AND AS IDENTIFIED IN FEDERAL, STATE, AND LOCAL APPROVAL DOCUMENTS PERTAINING TO THIS PROJECT.
2. EPSC MEASURES SHALL BE INSTALLED PRIOR TO EARTH DISTURBING ACTIVITIES WITH THE EXCEPTION OF LAND DISTURBANCE THAT MAY RESULT FROM ACCESSING THE AREA(S) WITH EQUIPMENT IN ORDER TO INSTALL THOSE EPSC MEASURES. TEMPORARY EPSC MEASURES INTENDED TO TRAP SEDIMENT SHALL BE INSTALLED AS A FIRST STEP IN LAND DISTURBING ACTIVITIES AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE. WITH THE EXCEPTION OF THOSE LAND DISTURBING ACTIVITIES THAT ARE NECESSARY TO INSTALL MEASURES.
3. CONTRACTOR SHALL INSPECT AND MAINTAIN EROSION CONTROL MEASURES ON A WEEKLY BASIS (MINIMUM) OR AS REQUIRED PER THE CONSTRUCTION STORMWATER DISCHARGE PERMIT. THE CONTRACTOR SHALL ADDRESS DEFICIENCIES AND MAINTENANCE ITEMS WITHIN TWENTY-FOUR HOURS OF INSPECTION. CONTRACTOR SHALL PROPERLY DISPOSE OF SEDIMENT SUCH THAT IT DOES NOT ENCUMBER OTHER DRAINAGE STRUCTURES AND PROTECTED AREAS.
4. PROPOSED CHANGES TO THE EPSC PLAN SHALL BE APPROVED BY THE PERMITTEE OR HIS/HER DESIGNEE PRIOR TO IMPLEMENTATION.
5. PERMISSION MUST BE GRANTED BY VT DEC PRIOR TO USE OF ANY SUPPORT ACTIVITIES OCCURRING OUTSIDE OF THE APPROVED PROJECT BOUNDARIES. THIS INCLUDES USE OF OFF-SITE WASTE AND BORROW AREAS.
6. ALL PARTIES ASSOCIATED WITH CONSTRUCTION ACTIVITIES WHO MEET EITHER OF THE FOLLOWING TWO CRITERIA OF "PRINCIPAL OPERATOR" MUST OBTAIN COVERAGE UNDER THE CONSTRUCTION STORMWATER DISCHARGE PERMIT FOR THE PROJECT PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES BY THAT OPERATOR:
a. THE PARTY HAS OPERATIONAL CONTROL OVER CONSTRUCTION PLANS AND SPECIFICATIONS, INCLUDING BUT NOT LIMITED TO THE ABILITY TO MAKE MODIFICATIONS TO THOSE PLANS AND SPECIFICATIONS; OR
b. THE PARTY HAS CONTINUOUS DAY-TO-DAY OPERATIONAL CONTROL OF THOSE ACTIVITIES AT THE PROJECT THAT ARE NECESSARY TO ENSURE COMPLIANCE WITH AN EPSC PLAN FOR THE SITE OR OTHER PERMIT CONDITIONS (E.G., THEY ARE AUTHORIZED TO DIRECT WORKERS AT A SITE TO CARRY OUT ACTIVITIES REQUIRED BY THE EPSC PLAN OR COMPLY WITH OTHER PERMIT CONDITIONS).
7. CONTRACTOR SHALL BE FULLY RESPONSIBLE TO CONTROL CONSTRUCTION SUCH THAT SEDIMENTATION SHALL NOT AFFECT REGULATORY PROTECTED AREAS, WHETHER SUCH SEDIMENTATION IS CAUSED BY WATER, WIND, OR DIRECT DEPOSIT.
8. CONTRACTOR SHALL PERFORM CONSTRUCTION SEQUENCING SUCH THAT EARTH MATERIALS ARE EXPOSED FOR NO MORE THAN 7 CONSECUTIVE CALENDAR DAYS PRIOR TO BEING STABILIZED.
9. UPON COMPLETION OF CONSTRUCTION AND ESTABLISHMENT OF PERMANENT GROUND COVER, CONTRACTOR SHALL REMOVE AND DISPOSE OF EROSION CONTROL MEASURES AND CLEAN SEDIMENT AND DEBRIS FROM ENTIRE DRAINAGE AND SEWER SYSTEMS.
10. EXISTING VEGETATION SHALL BE PROTECTED AND MAINTAINED TO THE EXTENT PRACTICABLE.
11. A VEGETATED BUFFER SHALL BE MAINTAINED FOR WATER RESOURCES (E.G., WETLANDS AND STREAMS) TO THE EXTENT PRACTICABLE.
12. TO THE EXTENT PRACTICABLE, SURFACE FLOW SHALL BE DIVERTED AWAY FROM EXPOSED SOILS AND WATER RESOURCES. CONTRACTOR SHALL CONTROL STORMWATER RUNOFF DURING CONSTRUCTION TO PREVENT ADVERSE IMPACTS TO OFF SITE AREAS, AND SHALL BE RESPONSIBLE TO REPAIR RESULTING DAMAGES, IF ANY, AT NO COST TO OWNER.
13. RESOURCE AREAS (E.G. STREAMS) WITHIN THE PROJECT AREA SHALL BE FLAGGED PRIOR TO ANY CONSTRUCTION RELATED ACTIVITIES OCCURRING WITHIN CLOSE PROXIMITY TO THOSE AREAS.
14. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH A SEDIMENT TRAPPING DEVICE AND DISCHARGED IN A MANNER THAT DOES NOT RESULT IN IMPACTS TO WATER QUALITY OR CONTRIBUTE TO EROSION. SEE DETAILS FOR MORE INFORMATION.
15. UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO THE OTHER APPLICABLE CRITERIA:
a. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.
b. EXCAVATED MATERIAL SHALL BE PLACED IN UPLAND AREAS ON THE UPHILL SIDE OF THE TRENCHES, WHERE FEASIBLE.
7. SEDIMENT REMOVED FROM SEDIMENT CONTROL PRACTICES SHALL BE DISPOSED OF IN AN UPLAND AREA WITH STABILIZATION FOLLOWING DISPOSAL OF MATERIAL.
8. IN ADVANCE OF FORECASTED RAINFALL OR SNOWMELT, EPSC MEASURES THAT ARE LOCATED IN AREAS OF ACTIVE EARTH DISTURBANCE SHALL BE INSPECTED AND REPAIRED, AS NEEDED.
9. CONTRACTOR SHALL PREVENT DUST, SEDIMENT, AND DEBRIS FROM EXITING THE SITE AND SHALL BE RESPONSIBLE FOR CLEANUP, REPAIRS AND CORRECTIVE ACTION IF SUCH OCCURS. DUST CONTROL SHALL BE HANDLED VIA WATER OR CALCIUM CHLORIDE APPLICATION TO ROADWAYS AND OTHER AREAS WHERE DUST MAY BE GENERATED.
10. STABILIZED CONSTRUCTION ENTRANCES SHALL BE REGULARLY MAINTAINED TO CONTROL EQUIPMENT AND VEHICLES FROM TRACKING MATERIAL OFF SITE.
11. PERIMETER CONTROLS (E.G., SILT FENCE) SHALL BE INSTALLED ON THE DOWNSLOPE SIDE OF AREAS WHERE THERE IS POTENTIAL FOR SOIL EROSION AND/OR SEDIMENT RUNOFF. IN SOME AREAS WHERE THE GROUND SURFACE IS LEVEL AND THERE ARE NO PATHWAYS (E.G., DITCHES OR RUTS) THAT COULD TRANSPORT RUNOFF FROM THE PROJECT AREA, INSTALLATION OF PERIMETER CONTROLS MAY NOT BE NECESSARY PER APPROVAL BY THE ON-SITE PLAN COORDINATOR (OSPC).
12. PRIOR TO STUMPING AND GRUBBING, LOGGING ACTIVITIES SHALL BE CONDUCTED IN ACCORDANCE WITH ACCEPTABLE MANAGEMENT PRACTICES FOR MAINTAINING WATER QUALITY ON LOGGING JOBS IN VERMONT (AMPS, 2011). CONSTRUCTION MATS AND MAT BRIDGES SHALL BE IN PLACE IN WETLANDS AND STREAM CROSSINGS PRIOR TO ACCESS BY ANY TREE CLEARING EQUIPMENT.
13. STUMPING AND GRUBBING ACTIVITIES SHALL BE CONDUCTED IN ACCORDANCE WITH THE PROJECTS CONSTRUCTION STORMWATER DISCHARGE PERMIT AND EPSC PLAN.
14. CONSTRUCTION DEMARCATION AND PERIMETER CONTROLS SHALL COMPLY WITH THE FOLLOWING:

CONSTRUCTION DEMARCATION:

- a. CONSTRUCTION DEMARCATION TO BE INSTALLED ALONG PERIMETER OF LIMITS OF DISTURBANCE PER THE EPSC PLANS
b. WITHIN 50 FEET OF RESOURCE AREA, DEMARCATION MUST INCLUDE:
• 2 TO 3 ROWS OF STAKED (OR STAPLED) 3-INCH (MIN.) ORANGE BARRIER MESH TAPE OR,
• ORANGE CONSTRUCTION FENCE OR,
• ORANGE SNOW FENCE
c. WHEN GREATER THAN 50 FEET FROM A WATER RESOURCE AREA, DEMARCATION MAY INCLUDE:
• ONE ROW OF STAKED (OR STAPLED) 3-INCH (MIN.) ORANGE BARRIER MESH TAPE OR,
• ORANGE CONSTRUCTION FENCE OR,
• ORANGE SNOW FENCE

PERIMETER CONTROLS:

- a. PERIMETER CONTROLS ARE TO BE INSTALLED ON THE DOWNSLOPE SIDE OF AREAS OF DISTURBANCE WHERE THERE IS POTENTIAL FOR SEDIMENT RUNOFF AND/OR SOIL EROSION.
b. PERIMETER CONTROLS ARE NOT TO CROSS ACTIVE ACCESS ROUTES OR PERENNIAL FLOW PATHS (E.G. A STREAM).
c. PARTICULAR CARE IS TO BE TAKEN WHEN INSTALLING PERIMETER CONTROLS IN A WETLAND.
d. WITHIN 50 FEET OF A WATER RESOURCE AREA, PERIMETER CONTROLS MUST INCLUDE:
• REINFORCED SILT FENCE - TO BE REINFORCED WITH WIRE MESH, STAKED HAYBALES, OR STAKED FIBER ROLLS.
e. WHEN GREATER THAN 50 FEET FROM A WATER RESOURCE AREA, PERIMETER CONTROLS MAY INCLUDE:
• SILT FENCE (NON-REINFORCED), OR
• STAKED FIBER ROLLS.
15. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
16. PROJECT DEMARCATION OF AN AREA SHALL BE INSTALLED PRIOR TO EARTH DISTURBING ACTIVITIES WITHIN THAT AREA. AN EXCEPTION IS LAND DISTURBANCE THAT MAY BE NEEDED TO ACCESS THE AREA WITH EQUIPMENT IN OR TO INSTALL THE EPSC MEASURES.

Pre-construction and Permitting Notes:

- 1. THE NAME AND DAYTIME PHONE NUMBER OF THE OSPC SHALL BE PROVIDED IN WRITING TO VT DEC PRIOR TO THE START OF CONSTRUCTION.
2. THE NOTICE OF AUTHORIZATION (NOA) ISSUED BY VT DEC SHALL BE POSTED IN A LOCATION THAT IS VISIBLE TO THE PUBLIC (E.G., NEAR THE CONSTRUCTION ENTRANCE).
3. A COPY OF THE EPSC PLAN SHALL BE MAINTAINED ON-SITE DURING NORMAL WORKING HOURS FROM THE DATE OF COMMENCEMENT OF CONSTRUCTION ACTIVITIES TO THE DATE OF FINAL STABILIZATION. THE EPSC PLAN SHALL BE MADE AVAILABLE TO VT DEC UPON REQUEST.

Winter Construction Notes:

- 1. WINTER CONSTRUCTION SEASON IS DEFINED BY VT DEC AS OCTOBER 15 TO APRIL 15.
2. THE FOLLOWING WINTER CONSTRUCTION CONDITIONS APPLY TO THOSE CONSTRUCTION ACTIVITIES INVOLVING EARTH DISTURBANCE BETWEEN OCTOBER 15 AND APRIL 15:
a. FOR AREAS STABILIZED BY VEGETATION, SEED SHALL BE APPLIED NO LATER THAN SEPTEMBER 15.
b. MULCH SHALL BE APPLIED AT DOUBLE THE REGULAR CONSTRUCTION SEASON RATE OR ROUGHLY 2 INCHES OF MULCH WITH 80 TO 90% COVER (SEE MULCH DETAIL). MULCH SHALL BE TRACKED IN OR STABILIZED WITH NETTING.
c. ENLARGE ACCESS POINTS AS PERMITTABLE TO PROVIDE SPACE FOR SNOW STOCKPILING.
d. LIMITS OF DISTURBANCE SHALL BE MOVED OR REPLACED TO REFLECT BOUNDARY OF WINTER WORK, AS NEEDED.
e. CLEARED SNOW SHALL BE PLACED DOWN GRADIENT OF ALL AREAS OF DISTURBANCE WHERE FEASIBLE.
f. SNOW SHALL NOT BE PLACED IN STORMWATER TREATMENT STRUCTURES. (E.G. BASINS)
g. TO THE EXTENT PRACTICABLE, A MINIMUM 25-FOOT BUFFER FROM PERIMETER CONTROLS (E.G., SILT FENCE) SHALL BE MAINTAINED TO ALLOW FOR SNOW CLEARING AND MAINTENANCE.
h. FOR AREAS OF DISTURBANCE WITHIN 100 FEET OF A RECEIVING WATER, SILT FENCE SHALL BE REINFORCED OR ELSE REPLACED WITH PERIMETER DIKES, SWALES, OR OTHER PRACTICES RESISTANT TO THE FORCES OF SNOW LOADS.
i. DRAINAGE STRUCTURES ARE TO BE KEPT OPEN AND FREE OF SNOW AND ICE DAMS AS DETERMINED BY THE ON-SITE PROJECT COORDINATOR.
j. EPSC MEASURES THAT REQUIRE SOIL DISTURBANCE TO INSTALL (E.G., SILT FENCE) SHALL BE INSTALLED PRIOR TO GROUND FREEZING.
k. SNOW AND ICE SHALL BE REMOVED TO LESS THAN 1 INCH THICKNESS PRIOR TO STABILIZATION.
l. A 10 TO 20-FOOT WIDE STONE PAD SHALL BE USED IN AREAS WHERE CONSTRUCTION VEHICLE TRAFFIC IS ANTICIPATED (E.G., AROUND THE PERIMETER OF A BUILDING, WHERE APPLICABLE.
m. TO ENSURE COVER OF DISTURBED SOIL IN ADVANCE OF A SNOWMELT EVENT, AREAS OF DISTURBED SOIL SHALL BE STABILIZED AT THE END OF EACH WORKDAY, UNLESS:
I. WORK IS TO CONTINUE WITHIN THE AREA WITHIN THE NEXT 24 HOURS AND THERE IS NO PRECIPITATION FORECAST OF THE NEXT 24 HOURS OR
II. WORK IS OCCURRING IN A SELF-CONTAINED EXCAVATION (I.E., NO OUTLET) WITH A DEPTH OF 2 FEET OR GREATER (E.G., UTILITY TRENCHES).

Temporary and Final Stabilization Notes:

- 1. DURING REGULAR CONSTRUCTION SEASON, ALL AREAS OF EARTH DISTURBANCE MUST BE STABILIZED WITHIN 7 DAYS OF INITIAL DISTURBANCE. AFTER THIS INITIAL 7-DAY PERIOD, ALL EARTH DISTURBANCE AREAS MUST BE STABILIZED ON A DAILY BASIS, WITH THE FOLLOWING EXCEPTIONS:
a. STABILIZATION IS NOT REQUIRED IF WORK IS TO CONTINUE WITHIN THE AREA WITHIN THE NEXT 24 HOURS AND THERE IS NO PRECIPITATION FORECAST FOR THE NEXT 24 HOURS.
b. STABILIZATION IS NOT REQUIRED IF THE WORK IS OCCURRING IN A SELF-CONTAINED EXCAVATION (I.E., NO OUTLET FOR STORMWATER) WITH A DEPTH OF 2 FEET OR GREATER (E.G., UNDERGROUND UTILITY INSTALLATION).
2. DURING "WINTER CONSTRUCTION," (OCTOBER 15 TO APRIL 15) DISTURBED SOIL MUST BE STABILIZED AT THE END OF EACH DAY, WITH THE FOLLOWING EXCEPTIONS:
a. IF NO PRECIPITATION WITHIN 24 HOURS IS FORECAST AND WORK WILL RESUME IN THE SAME DISTURBED AREA WITHIN 24 HOURS, DAILY STABILIZATION IS NOT NECESSARY.
b. STABILIZATION IS NOT REQUIRED IF THE WORK IS OCCURRING IN A SELF-CONTAINED EXCAVATION (I.E., NO OUTLET FOR STORMWATER) WITH A DEPTH OF 2 FEET OR GREATER (E.G., UNDERGROUND UTILITY INSTALLATION).
3. DISTURBANCE ACTIVITIES MUST BE COORDINATED TO ENSURE THAT THE ALLOWABLE CONCURRENT EARTH DISTURBANCE IS NOT EXCEEDED. THE MAXIMUM AREA OF EARTH DISTURBANCE THAT IS ALLOWED AT ANY ONE TIME IS 0.29 ACRES.
4. WORK IS TO PROCEED INCREMENTALLY, WITH STABILIZATION OCCURRING IMMEDIATELY FOLLOWING COMPLETION OF AN INDIVIDUAL AREA (E.G. ONE BUILDING PAD OR PARKING AREA) TEMPORARY SOIL STABILIZATION SHALL BE ACHIEVED BY MULCH, SEED AND MULCH, HYDROSEEDING WITH MULCH TACKIFIER, SOD, STONE, AND/OR ROLLED EROSION CONTROL PRODUCTS (E.G., EROSION CONTROL BLANKET). MULCH SHALL BE COMPRISED OF STRAW, HAY, COMPOST, WOOD CHIPS, WOOD STUMP GRINDINGS, AND/OR EROSION CONTROL MIX.
5. PERMANENT STABILIZATION SHALL BE ACHIEVED BY 70% VEGETATION COVER, STONE, ASPHALT, BEDROCK, OR OTHER PERMANENT MATERIAL THAT PROVIDES COMPLETE COVER OF EXPOSED SOILS.
6. AREAS THAT HAVE REACHED TEMPORARY OR FINAL STABILIZATION SHALL NOT BE CONSIDERED PART OF TOTAL AREA OF EARTH DISTURBANCE.
7. APPROPRIATE SEED MIX SHALL BE APPLIED TO DESIGNATED AREAS PER THE SEED DETAIL SPECIFICATIONS. FOR AN AREA TO BE STABILIZED FOR WINTER BY VEGETATED COVER, SEEDING MUST BE COMPLETED BY SEPTEMBER 15.
8. AREAS TO BE STABILIZED FOR WINTER THAT DO NOT HAVE ESTABLISHED VEGETATION BY OCTOBER 15 SHALL BE STABILIZED BY ANCHORED MULCH AT THE WINTER APPLICATION RATE, OR OTHER APPROVED STABILIZATION MEASURES (E.G., ROLLED EROSION CONTROL PRODUCT, DORMANT SEEDING WITH WINTER RYE IS RECOMMENDED).
9. ALL FINAL GRADE SLOPES STEEPER THAN 3H:1V SHALL BE STABILIZED WITH BIODEGRADABLE EROSION CONTROL MATTING, UNLESS SHOWN OTHERWISE ON THE SITE STABILIZATION PLAN.
10. ALL TEMPORARY EPSC MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY EPSC MEASURES ARE NO LONGER NEEDED.

OSPC Inspection Requirements:

- 1. EPSC INSPECTION, MONITORING, AND REPORTING ARE REQUIRED PER THE CONDITIONS OF THE INDIVIDUAL CONSTRUCTION STORMWATER DISCHARGE PERMIT. THE CONTRACTOR IS RESPONSIBLE FOR INSPECTING AND MAINTAINING EROSION PREVENTION AND SEDIMENT CONTROLS THAT MINIMIZE OR ELIMINATE POLLUTANTS IN STORMWATER DISCHARGE.
2. INSPECTIONS BY THE ON-SITE PLAN COORDINATOR (OSPC) SHALL BE CONDUCTED AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS, WITH ADDITIONAL INSPECTION FREQUENCY REQUIRED FOR RAIN EVENTS, WINTER CONSTRUCTION, AND VISIBLE DISCHARGES PER THE CONDITIONS OF THE INDIVIDUAL CONSTRUCTION STORMWATER DISCHARGE PERMIT. A WRITTEN REPORT SHALL BE COMPLETED FOR EACH INSPECTION AND SIGNED BY THE OSPC. ALL REPORTS ARE TO BE MAINTAINED ON-SITE AND MADE AVAILABLE TO STATE DEC REPRESENTATIVES UPON REQUEST.
3. IF VISIBLY DISCOLORED STORMWATER RUNS OFF THE CONSTRUCTION SITE OR RUNS OFF THE CONSTRUCTION SITE AND DISCHARGES TO RECEIVING WATERS, THE CONTRACTOR SHALL TAKE IMMEDIATE CORRECTIVE ACTION TO CORRECT THE DISCHARGE, INCLUDING MAINTAINING EXISTING EPSC MEASURES, AND INSTALLING SUPPLEMENTAL EPSC MEASURES.
4. THE OSPC IS RESPONSIBLE FOR MONITORING, INSPECTING, AND SAMPLING DISCHARGES FROM THE SITE TO MAINTAIN COMPLIANCE WITH THE PERMIT. THIS INCLUDES VISUAL MONITORING OF EPSC MEASURES AND DISCHARGES, DISCHARGE SAMPLING, TURBIDITY MONITORING, AND REPORTING. THE MAXIMUM TURBIDITY PERMISSIBLE FOR CONSTRUCTION SITE DISCHARGE IS 25 NTU.

On-Site Plan Coordinator (OSPC) Notes:

- 1. THE OSPC DESIGNATED TO THE PROJECT (AND HIS/HER DESIGNEE) SHALL:
a. REVIEW VT DEC'S "ON-SITE PLAN COORDINATOR MANUAL".
b. BE ON-SITE ON A DAILY BASIS (OR HAVE A DESIGNEE THAT IS ON-SITE WHEN HE/SHE CANNOT BE).
c. BE DIRECTLY RESPONSIBLE FOR ON-SITE IMPLEMENTATION OF THE EPSC PLAN.
d. BE KNOWLEDGEABLE IN THE PRINCIPLES AND PRACTICES OF EPSC.
e. POSSESS THE SKILLS TO ASSESS CONDITIONS AT THE CONSTRUCTION SITE THAT COULD IMPACT STORMWATER QUALITY.
f. POSSESS THE SKILLS TO ASSESS THE EFFECTIVENESS OF EPSC MEASURES SELECTED TO CONTROL THE QUALITY OF STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITY.
g. POSSESS THE SKILLS AND EQUIPMENT TO CONDUCT TURBIDITY MONITORING PURSUANT TO THE CONSTRUCTION STORMWATER DISCHARGE PERMIT, AND
h. HAVE THE AUTHORITY TO STOP AND/OR MODIFY CONSTRUCTION ACTIVITIES AS NECESSARY TO COMPLY WITH THE EPSC PLAN AND THE CONSTRUCTION STORMWATER DISCHARGE PERMIT.
2. ALL PROPOSED CHANGES TO THE EPSC PLAN MUST BE APPROVED BY THE OSPC OR HIS/HER DESIGNEE, THE PLAN DESIGNER OR A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC) PRIOR TO IMPLEMENTATION, AND BE CONSIDERED MINOR AMENDMENTS AS DEFINED IN THE OSPC HANDBOOK. ALL MINOR AMENDMENTS ARE TO BE RECORDED USING THE MINOR AMENDMENT RECORD FORM AND MARKED ON THE MASTER OSPC PLAN SET. ALL MODIFICATIONS THAT FALL OUTSIDE OF THE MINOR AMENDMENT DEFINITION MUST BE APPROVED BY VT-DEC.
3. DURING THE REGULAR CONSTRUCTION SEASON (APRIL 15 TO OCT 15), THE OSPC OR HIS/HER DESIGNEE SHALL CONDUCT INSPECTIONS AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HRS FOLLOWING A STORM EVENT RESULTING IN DISCHARGE OF STORMWATER FROM THE CONSTRUCTION SITE.
4. DURING THE WINTER CONSTRUCTION SEASON (OCT 15 TO APRIL 15), THE OSPC OR HIS/HER DESIGNEE SHALL CONDUCT INSPECTIONS ON A DAILY BASIS DURING ACTIVE EARTHWORK.
5. THE OSPC AND HIS/HER DESIGNEE(S) SHALL FOLLOW TURBIDITY MONITORING PROTOCOLS OUTLINED IN VT DEC'S "MONITORING OF TURBIDITY IN STORMWATER RUNOFF FROM CONSTRUCTION ACTIVITIES" MANUAL.
6. INSPECTIONS CONDUCTED BY THE OSPC OR HIS/HER DESIGNEE SHALL COVER ALL AREAS OF THE SITE THAT ARE BEING ACTIVELY DISTURBED BY CONSTRUCTION OR CONSTRUCTION-RELATED ACTIVITIES, INCLUDING AREAS THAT HAVE BEEN TEMPORARILY STABILIZED.
7. OSPC INSPECTIONS SHALL BE DOCUMENTED USING THE VT DEC INSPECTION REPORT FORM OR A VT DEC-ACCEPTED INSPECTION REPORT FORM.
8. OSPC INSPECTION REPORTS SHALL BE MAINTAINED ON-SITE FOR THE DURATION OF THE PROJECT AND MADE AVAILABLE TO VT DEC UPON REQUEST.

EPSC NARRATIVE

Introduction:

ON BEHALF OF THE APPLICANT, THIS EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) PLAN NARRATIVE AND THE ENCLOSED MATERIALS PREPARED BY VHB COMPRISE AN APPLICATION TO OBTAIN COVERAGE FROM THE VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION (VT DEC) UNDER AN INDIVIDUAL CONSTRUCTION STORMWATER DISCHARGE PERMIT (INDC) FOR THE PLANNED CONSTRUCTION OF THE 242 PARKING LOT PROJECT (PROJECT) LOCATED IN THE TOWN OF JAY, VERMONT (SEE SITE LOCATION MAP IN ATTACHMENT 2). AS A STANDALONE PROJECT, THIS PROJECT WOULD NOT REQUIRE CONSTRUCTION STORMWATER PERMIT COVERAGE, BUT AS JAY PEAK IS CONSIDERED A COMMON PLAN OF DEVELOPMENT AND THERE ARE OTHER CONSTRUCTION ACTIVITIES OCCURRING WITHIN THAT DEVELOPMENT, THIS PROJECT MUST SEEK COVERAGE UNDER A COMMON PERMIT.

Project Description:

THE EPSC PLAN NARRATIVE HAS BEEN PREPARED USING PART 4.1 (C) AND APPENDIX B OF GENERAL PERMIT 3-9020. AS GUIDANCE, THE FOLLOWING SECTIONS (A) THROUGH (M) OF THIS NARRATIVE ADDRESS REQUIRED EPSC PLAN NARRATIVE ELEMENTS IN THE ORDER THAT THEY ARE PRESENTED IN APPENDIX B OF GENERAL PERMIT 3-9020. THIS EPSC PLAN NARRATIVE AND THE ASSOCIATED EPSC PLAN HAVE BEEN PREPARED IN CONFORMANCE WITH THE MOST RECENT EDITION OF THE VERMONT STANDARDS AND SPECIFICATIONS FOR EROSION PREVENTION AND SEDIMENT CONTROL (2008, AMENDED 2008).

- A. PROJECT TYPE AND DESCRIPTION: THE PROJECT WILL INVOLVE THE INSTALLATION A SUBSURFACE STORMWATER TREATMENT SYSTEM WITH ASSOCIATED SITE GRADING, DRAINAGE INFRASTRUCTURE INSTALLATION, AND MISCELLANEOUS ROADWAY ITEMS NECESSARY TO COMPLETE THE PROJECT.
B. MAJOR PROJECT COMPONENTS: MAJOR PROJECT COMPONENTS INCLUDE THE INSTALLATION OF THE PROPOSED TREATMENT SYSTEM, INSTALLATION OF AN ARMORED DRAINAGE SWALE, AND INSTALLATION OF STORMWATER PIPING AND STRUCTURES.
C. TOTAL EARTH DISTURBANCE: THE TOTAL EARTH DISTURBANCE ASSOCIATED WITH THIS PROJECT IS ESTIMATED TO BE 0.29 ACRES WITH A MAXIMUM CONCURRENT DISTURBANCE OF 0.29 ACRES.
D. SEQUENCE OF MAJOR PROJECT COMPONENTS: THE OVERALL SEQUENCE OF CONSTRUCTION SHOULD GENERALLY OCCUR AS DESCRIBED IN THIS SECTION OF THE NARRATIVE WITH REFERENCE TO SPECIFIC PROJECT COMPONENTS HEREIN. EPSC MEASURES WILL BE INSPECTED AND MAINTAINED DURING CONSTRUCTION AND THEN REMOVED ONCE THE PROJECT IS COMPLETE AND THE DISTURBED AREAS ARE STABILIZED. THE PROJECT GENERAL CONSTRUCTION SEQUENCE IS AS FOLLOWS:
1. INSTALLATION OF PROJECT DEMARCATION FLAGGING AROUND PERIMETER OF WORK AREA
2. INSTALLATION OF EPSC MEASURES (E.G. SILT FENCE) TO PREPARE FOR EARTH DISTURBANCE
3. INSTALLATION OF TREATMENT UNIT, DRAINAGE PIPING, AND OTHER STRUCTURES.
4. INSTALLATION OF ARMORED DRAINAGE SWALE
5. ON-GOING INSTALLATION AND MAINTENANCE (E.G. REPAIR AND REPLACEMENT) OF EPSC MEASURES AS CONSTRUCTION ACTIVITIES PROGRESS.
6. STABILIZATION, EPSC MEASURE REMOVAL, AND SITE CLEANUP
E. MAXIMUM CONCURRENT EARTH DISTURBANCE: THE TOTAL MAXIMUM CONCURRENT EARTH DISTURBANCE FOR THIS PROJECT WILL BE 0.29 ACRES. THE TOTAL MAXIMUM CONCURRENT DISTURBANCE FOR THE JAY PEAK RESORT DEVELOPMENT, OF WHICH THIS PROJECT IS A PART OF, IS APPROXIMATELY 15 ACRES. THIS TOTAL CONCURRENT DISTURBANCE ALLOWS FOR 2 ACRES OF DISTURBANCE AT EACH OF THE COTTAGES PROJECT, WHICH IS CONSISTENT WITH THE PREVIOUSLY PERMITTED CONCURRENT DISTURBANCE LIMITS FOR THIS PROJECT.
F. VEGETATED BUFFERS: THE CONSTRUCTION OF THE OUTFALL FOR THE STORMWATER TREATMENT SYSTEM FOR THIS PROJECT WILL REQUIRE DISTURBANCE WITHIN 50' OF THE RECEIVING WATER, AND THEREFORE A 50' VEGETATED BUFFER CANNOT BE MAINTAINED FOR THIS PROJECT.
G. DURATION OF EXPOSED SOILS: THE TOTAL DURATION OF EXPOSED SOILS FOR THE PROJECT WILL BE SEVEN DAYS FROM THE INITIAL DISTURBANCE, WHILE IMPLEMENTING THE PERMITTED EPSC PLAN TO TEMPORARILY OR PERMANENTLY STABILIZE AREAS AS SOON AS PRACTICABLE. THE RISK EVALUATION HAS BEEN SCORED ACCORDINGLY.
H. RECEIVING WATERS: THE RECEIVING WATER FOR THIS PROJECT IS TRIBUTARY 3 TO THE SOUTH MOUNTAIN BRANCH.
I. DRAINAGE AREAS AND SOIL TYPES: THERE IS A SINGLE DRAINAGE AREA ASSOCIATED WITH THE PROJECT. SOILS IN THE PROJECT AREA ARE MAPPED AS CABOT SILT LOAM, 8-15% SLOPES, VERY STONY. THIS SOIL HAS AN ERODIBILITY FACTOR OF 0.55.
J. STREAM CROSSINGS: THERE ARE NO STREAM CROSSINGS PROPOSED AS PART OF THIS PROJECT.
K. WETLAND IMPACTS: THERE ARE NO PROPOSED IMPACTS TO WETLANDS OR WETLAND BUFFERS FOR THIS PROJECT.
L. OFF-SITE WASTE AND BORROW AREAS: CONSTRUCTION OF THE PROJECT IS NOT EXPECTED TO GENERATE ANY ADDITIONAL WASTE TO BE DISPOSED OF OFF-SITE AND SOIL WASTE STOCKPILE AREAS WILL BE LOCATED WITHIN THE PROJECT AREA.

Erosion Prevention and Sediment Control Plan:

THE EPSC PLAN PROVIDES THE CONTRACTOR WITH SPECIFIC INSTRUCTIONS FOR CONSTRUCTION AND STABILIZATION ACTIVITIES DURING BOTH THE REGULAR AND WINTER CONSTRUCTION SEASONS. THE EPSC PLAN ALSO PROVIDES THE CONTRACTOR WITH INFORMATION SPECIFIC TO EPSC MEASURES TO BE INSTALLED IF CONSTRUCTION ACTIVITIES ARE OCCURRING WITHIN 50- FEET OF WATER RESOURCE AREAS (E.G. STREAMS AND WETLANDS). LASTLY, THE EPSC PLAN PROVIDES THE CONTRACTOR WITH INSTRUCTIONS TO BE FOLLOWED IN ANTICIPATION OF RAINFALL AND/OR THAW EVENTS IN ORDER TO MINIMIZED THE POTENTIAL FOR EROSION AND, IN TURN, MAINTAIN SEDIMENT ON-SITE TO THE EXTENT PRACTICABLE.

Jay Peak Resort Rt. 242 Parking Lot Stormwater

Stateside Road Jay, Vermont

Table with 4 columns: No., Revision, Date, Apprd.

Table with 2 columns: Designed by (TAS), Checked by (AGM)

Issued for: For Permitting Date: July 30, 2018

Not Approved for Construction

EPSC Notes and Narrative

Drawing Number

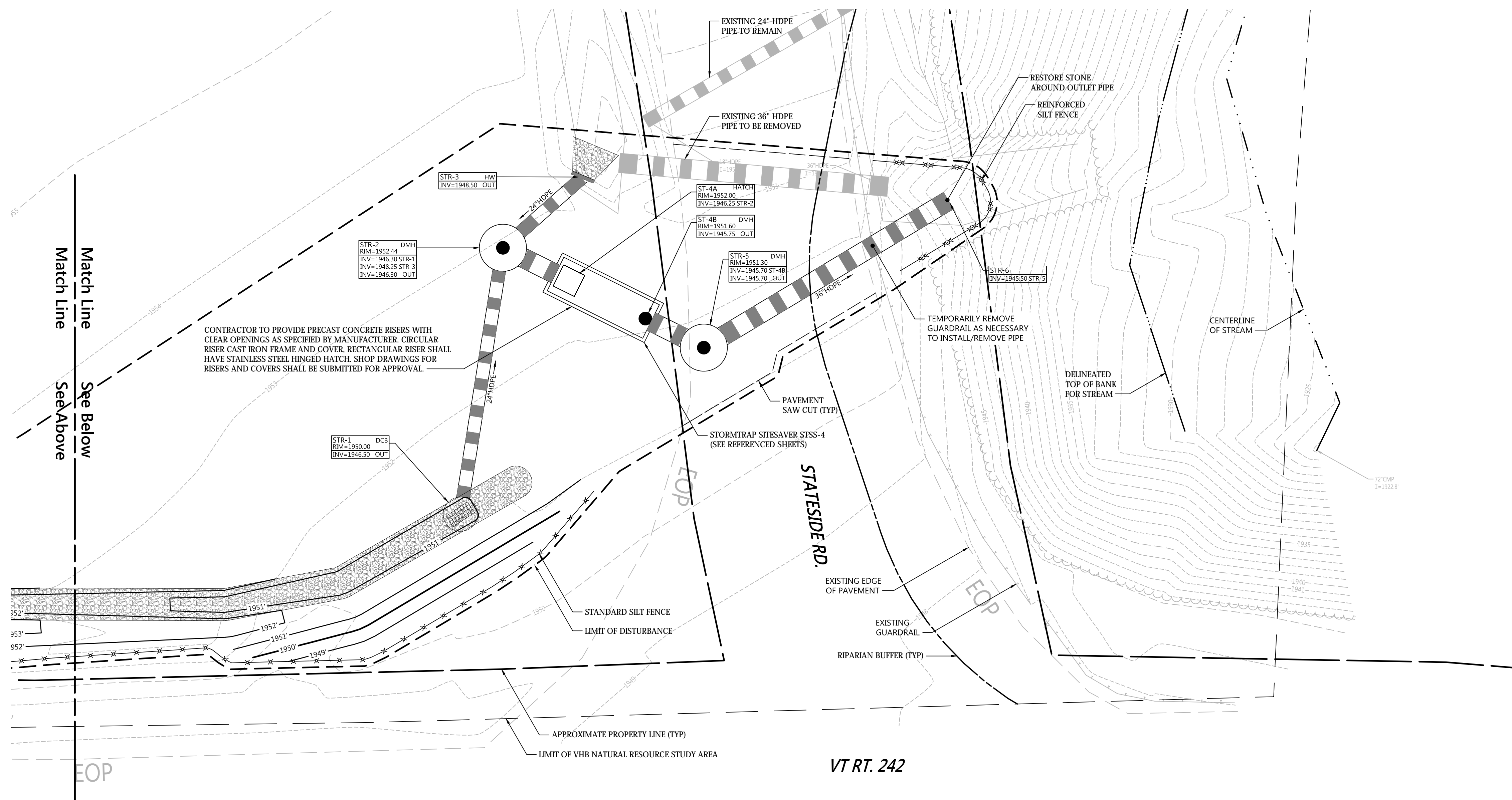
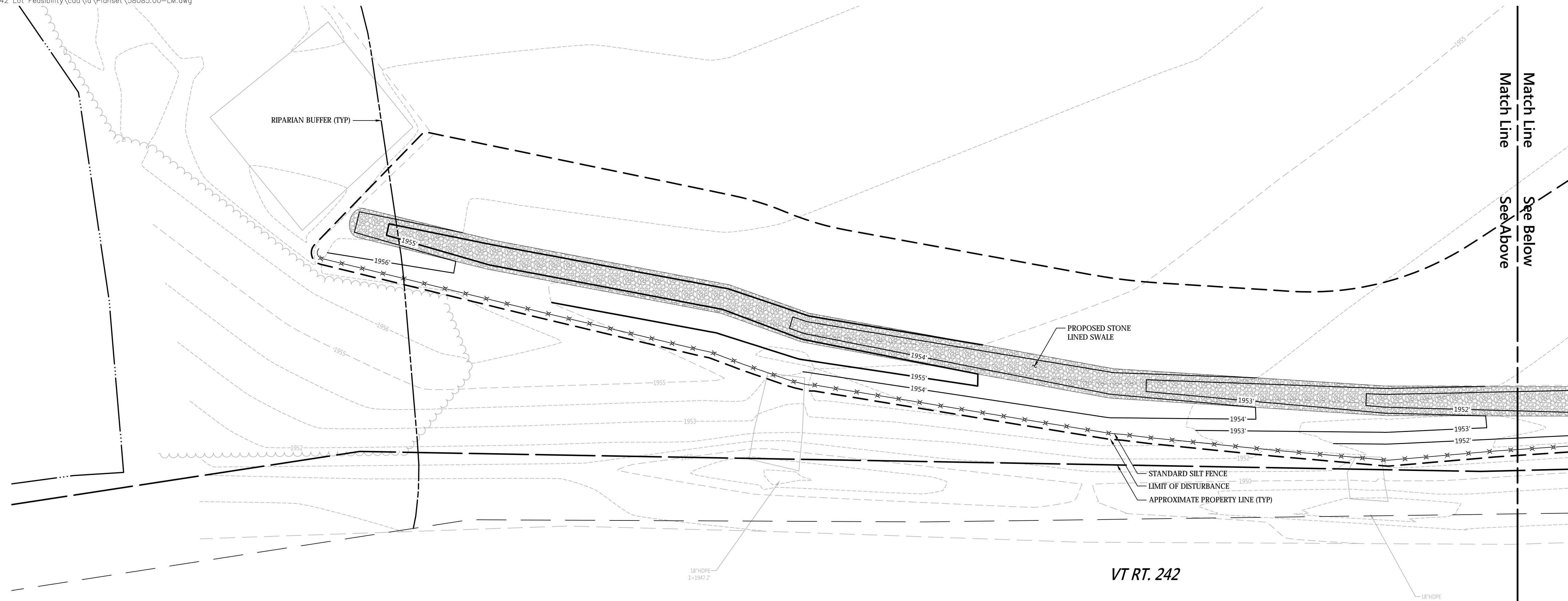
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Project Number 58085.00



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Jay Peak Resort Rt. 242
 Parking Lot Stormwater

Stateside Road
 Jay, Vermont

No.	Revision	Date	App'd.

Designed by: TAS
 Checked by: AGM
 Issued for: For Permitting
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Not Approved for Construction
 Drawing Title: Site Plan

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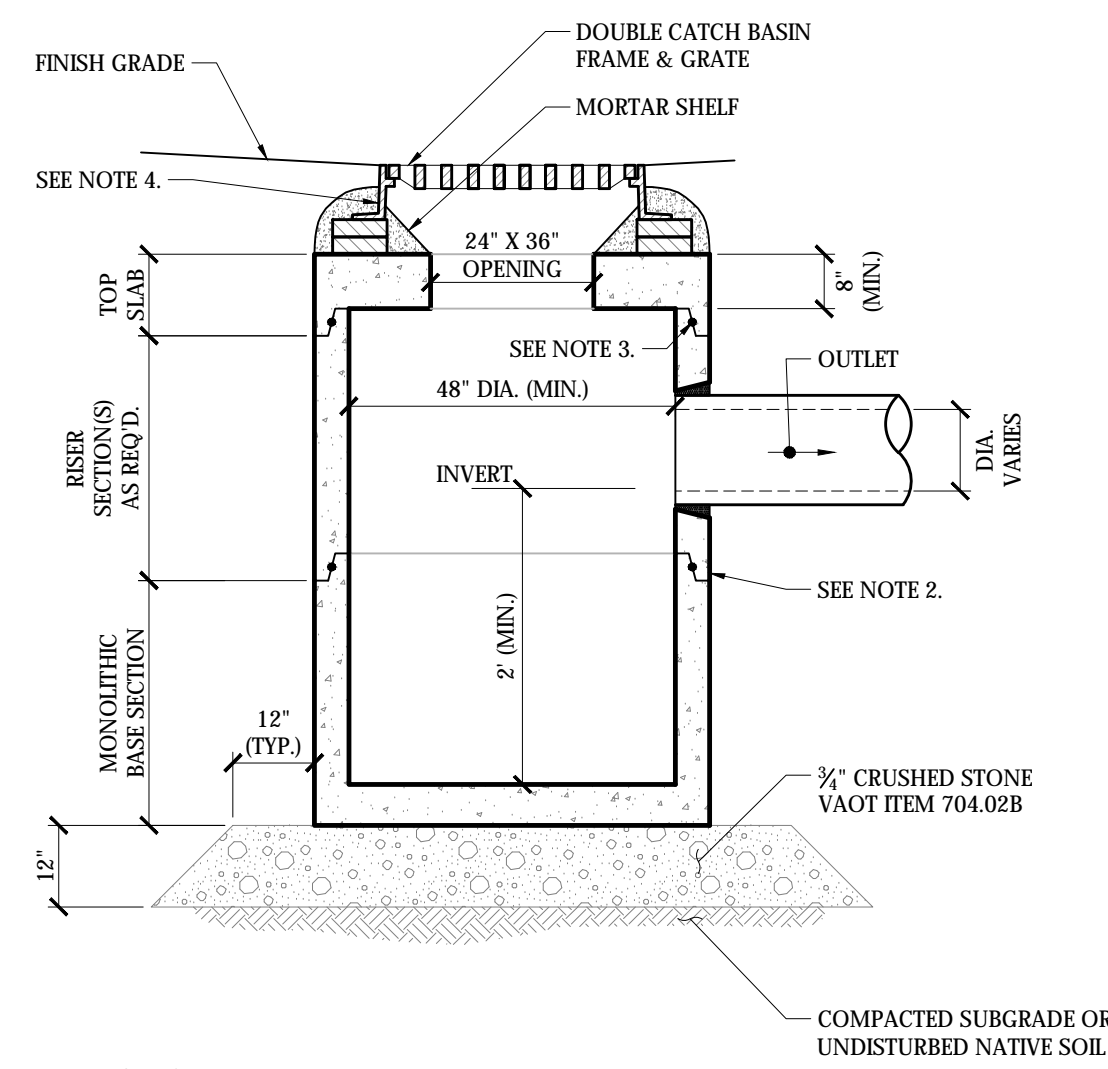
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Sheet 2 of 3

Project Number: 58085.00

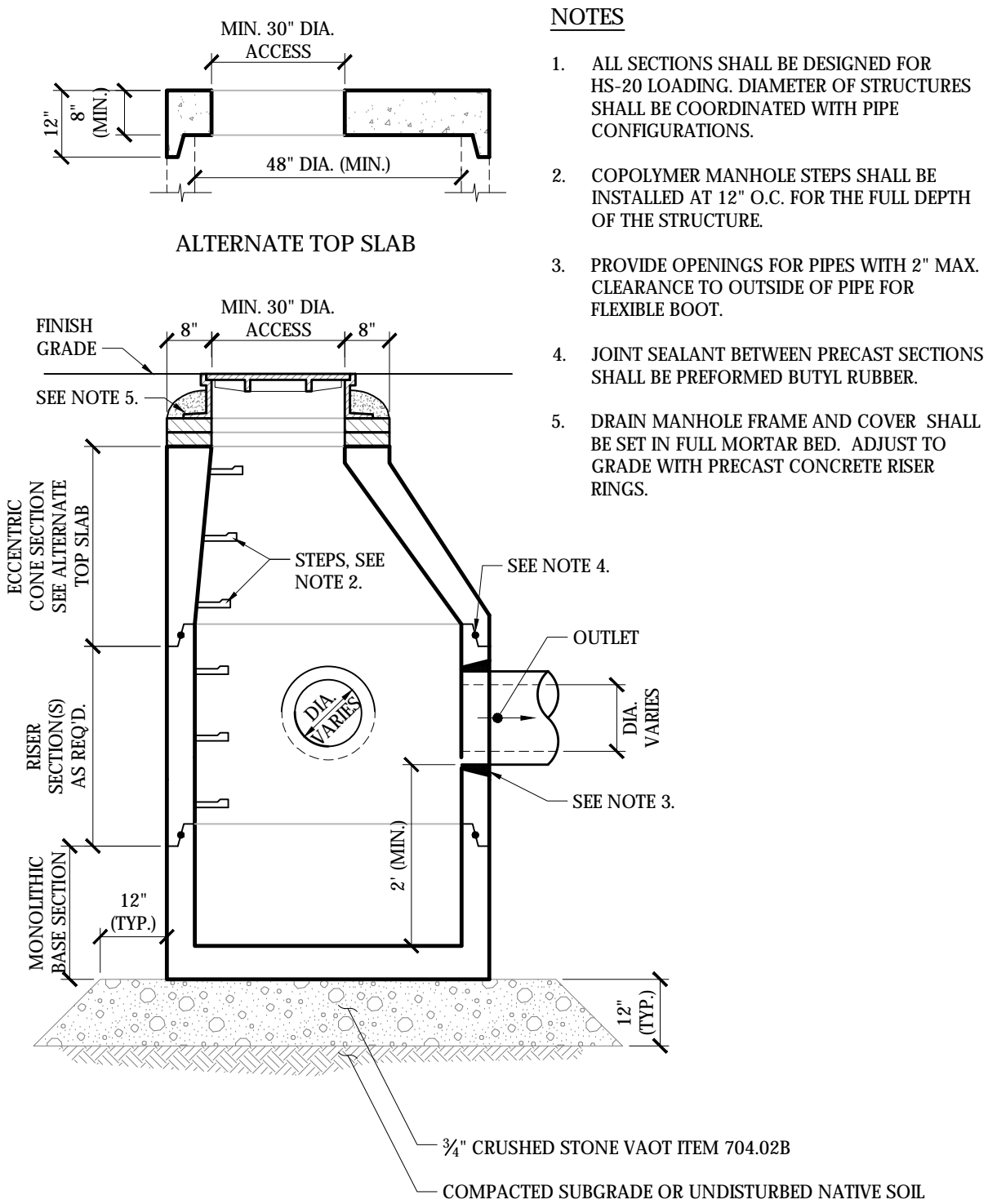


40 IDX Dr
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South Burlington, VT 05403
802.497.6100



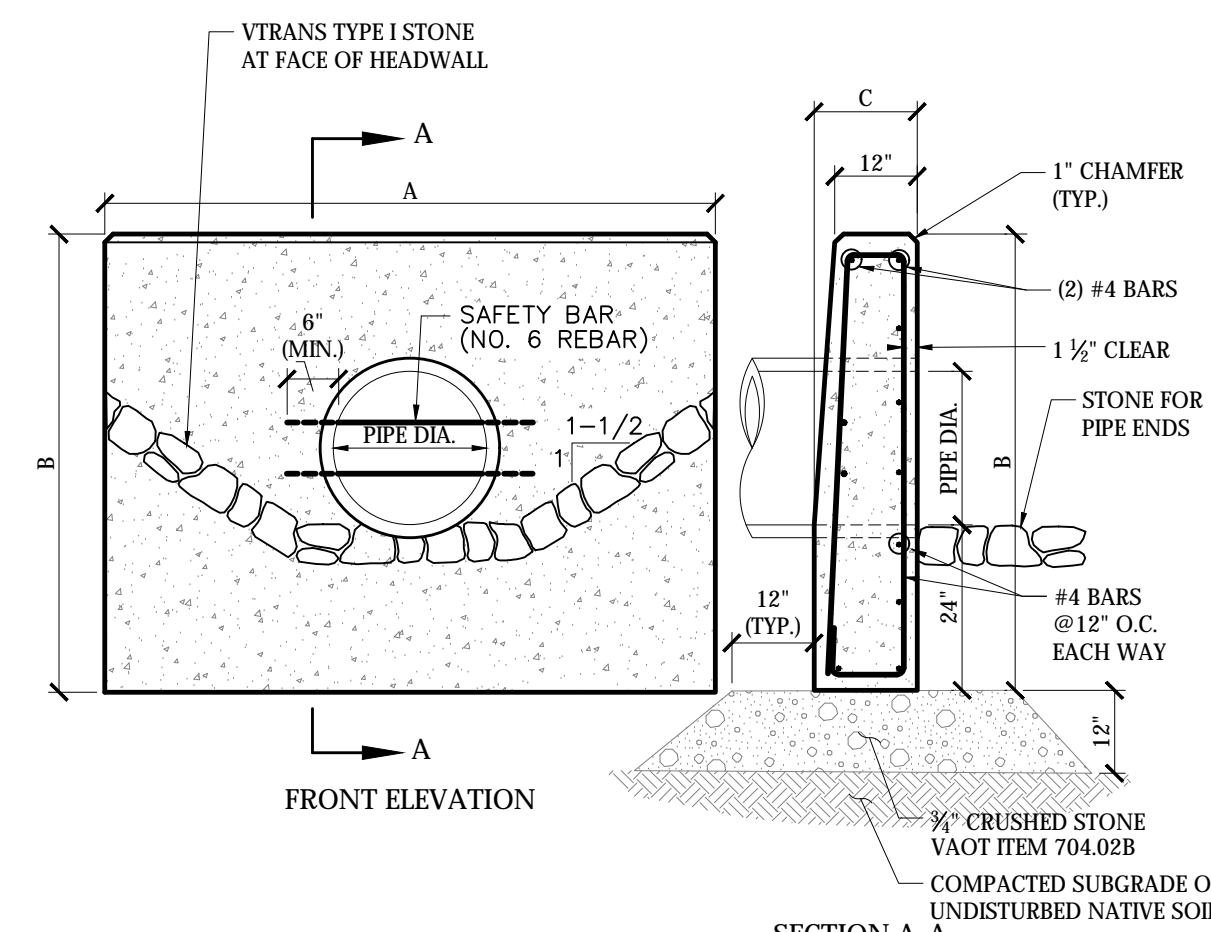
NOTES

1. ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING.
2. PROVIDE OPENINGS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE FOR FLEXIBLE BOOT.
3. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE BUTYL RUBBER.
4. DOUBLE CATCH BASIN FRAME AND GRATE SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH PRECAST CONCRETE RISER RINGS.



NOTES

1. ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING. DIAMETER OF STRUCTURES SHALL BE COORDINATED WITH PIPE CONFIGURATIONS.
2. COPOLYMER MANHOLE STEPS SHALL BE INSTALLED AT 12" O.C. FOR THE FULL DEPTH OF THE STRUCTURE.
3. PROVIDE OPENINGS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE FOR FLEXIBLE BOOT.
4. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PERFORMED BUTYL RUBBER.
5. DRAIN MANHOLE FRAME AND COVER SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH PRECAST CONCRETE RISER RINGS.

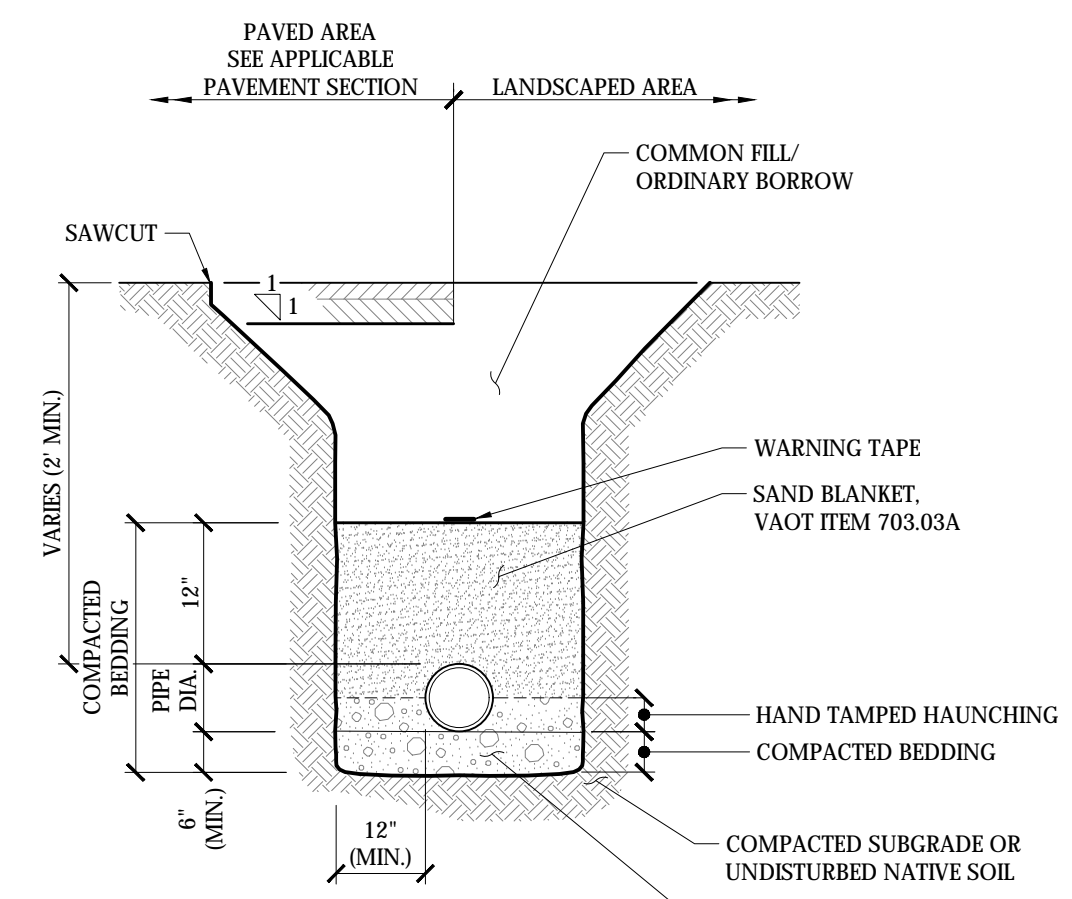


DIMENSIONAL TABLE

PIPE DIA.	A	B	C	#OF SAFETY BARS
24"	9'-0"	5'-3"	1'-6"	1
36"	13'-0"	6'-4"	1'-9"	2

NOTES

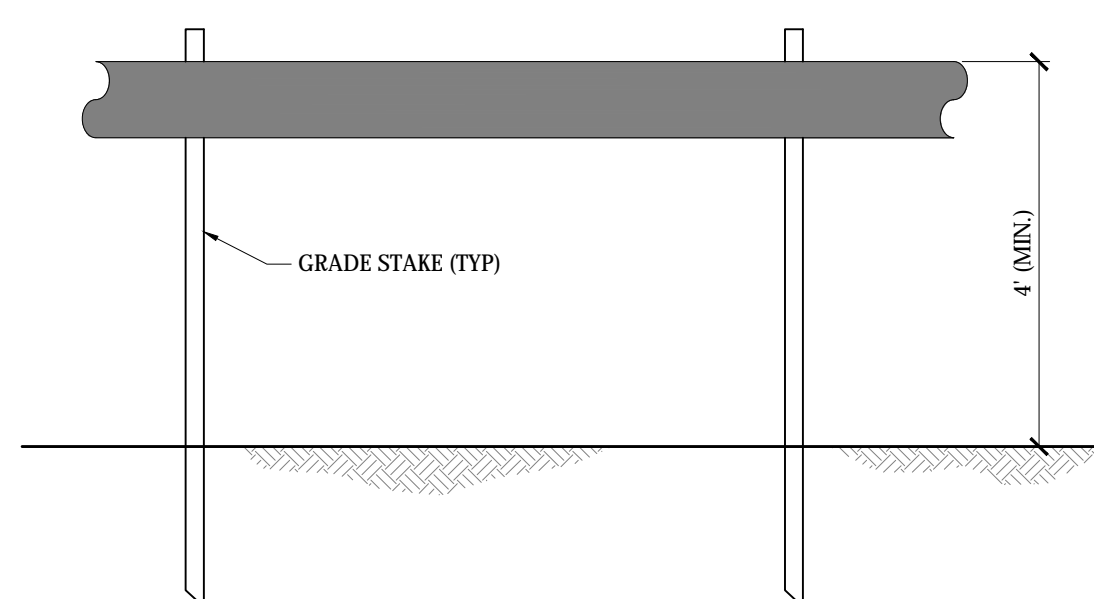
1. CONCRETE SHALL BE AIR ENTRAINED TYPE II CEMENT WITH MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI
2. SAFETY BARS TO BE OMITTED WHERE INDICATED ON PLANS.
3. SAFETY BARS SHALL BE SET TO CREATE EQUAL OPENING DIMENSIONS.



NOTES

1. WHERE UTILITY TRENCHES ARE CONSTRUCTED THROUGH DETENTION BASIN BERMS OR OTHER SUCH SPECIAL SECTIONS, PLACE TRENCH BACKFILL WITH MATERIALS SIMILAR TO THE SPECIAL SECTION REQUIREMENTS.
2. USE METALLIC TRACING/WARNING TAPE OVER ALL PIPES.
3. BEDDING TO PROVIDE A FIRM, STABLE, CONTINUOUS, AND UNIFORM SUPPORT FOR THE FULL LENGTH OF THE PIPE.
4. NO MECHANICAL TAMPERS SHALL BE USED DIRECTLY OVER THE PIPE TO ENSURE PIPE IS NOT DAMAGED

Double Grate Catch Basin (DCB) 1/16
N.T.S. Source: VHB REV LD_102

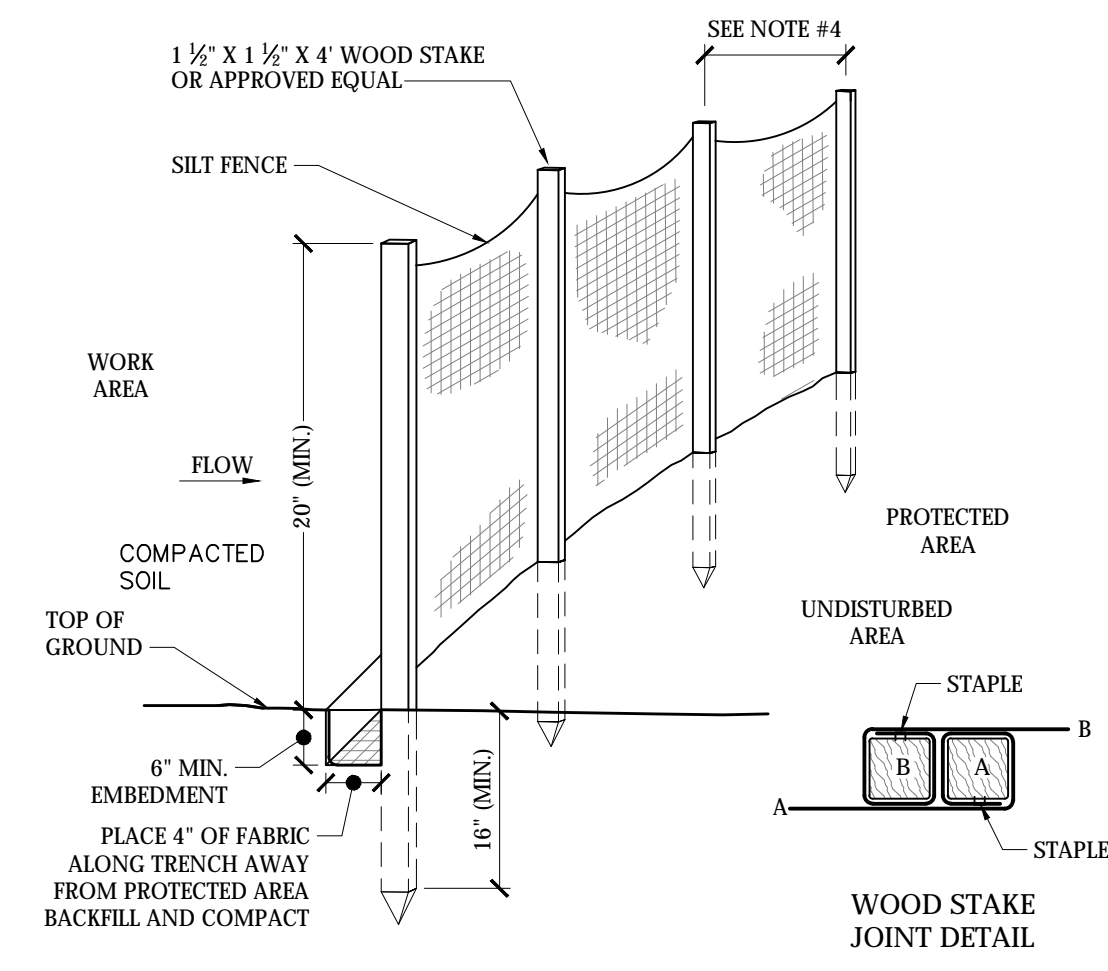


NOTES

1. BARRIER MESH TAPE OR ROPE SHALL BE INSTALLED ALONG THE PERIMETER OF THE PROJECT AREA TO DEMARCAT THE LIMIT OF DISTURBANCE. NO EARTHWORK OR STORAGE OF MATERIALS SHALL BE CONDUCTED BEYOND THIS LIMIT WITHOUT PRIOR APPROVAL FROM THE OSPC.
2. USE 3" ORANGE BARRIER MESH TAPE OR 1/2" YELLOW POLYPROPYLENE ROPE.
3. WITHIN 50' OF WATER RESOURCE AREAS, USE 2-3 ROWS OF TAPE OR ROPE. BEYOND 50' OF WATER RESOURCE AREAS USE 1 ROW OF TAPE OR ROPE.
4. TAPE OR ROPE MAY BE FASTENED TO STAKES, TREES, OR OTHER APPROPRIATE FIXED OBJECTS.
5. PROJECT DEMARCATON SHALL NOT CROSS ACTIVE ACCESS ROUTES (E.G. ROADS). PROJECT DEMARCATON MAY CROSS RESOURCES AREAS WITH EXCEPTION OF LARGER WATER BODIES WHERE IT IS NOT FEASIBLE OR ADVISABLE.
6. PROJECT DEMARCATON SHALL REMAIN IN PLACE AND BE MAINTAINED/REPLACED AS NEEDED UNTIL FINAL STABILIZATION IN THE AREA HAS BEEN ACHIEVED.

Barrier Mesh Tape or Rope 08/16
N.T.S. Source: VHB REV LD_VT

Drain Manhole (DMH) 1/16
N.T.S. Source: VHB REV LD_115

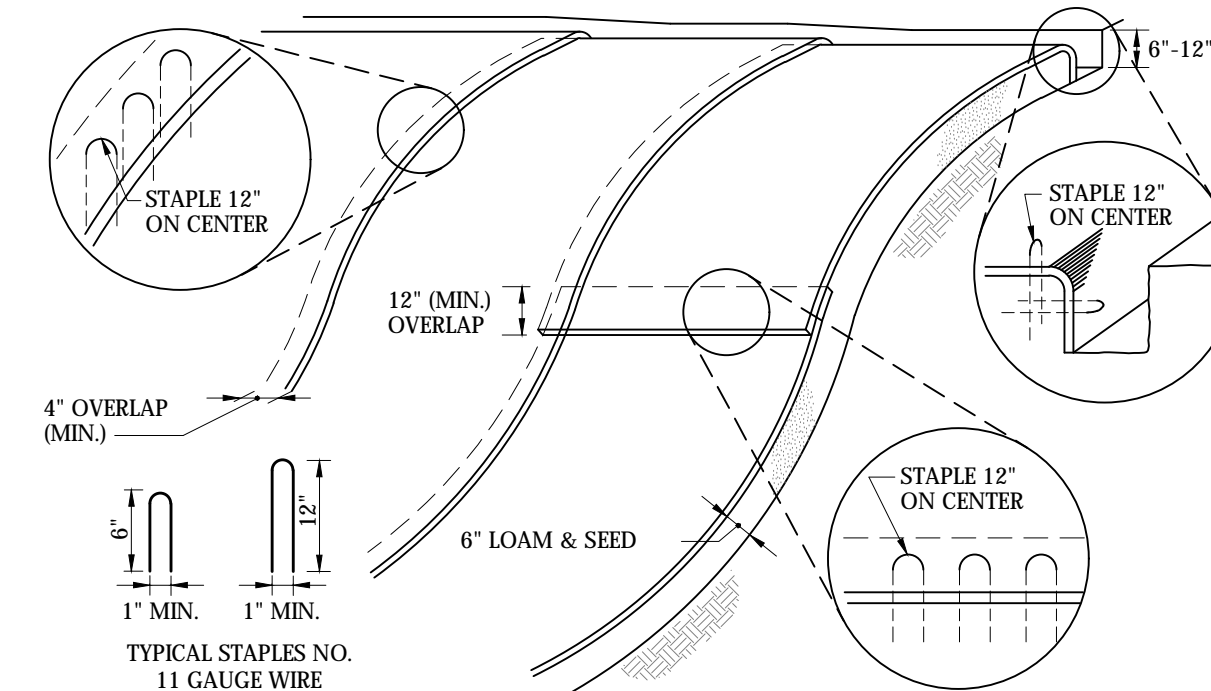


NOTES

1. WOVEN WIRE FENCE REINFORCEMENT IS REQUIRED WITHIN 50 FT UPSLOPE OF RECEIVING WATERS.
2. WHERE REQUIRED FENCE SHALL BE WOVEN WIRE, MIN. 14 GAUGE WITH A 6" MESH OPENING SHALL BE USED.
3. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUIVALENT.
4. POST SPACING FOR WIRE BACKED FENCE SHALL BE 10 FT. MAX. FOR FILTER CLOTH FENCE WHEN ELONGATION IS >50%, POST SPACING SHALL NOT EXCEED 4 FT. FOR FILTER CLOTH FENCE WHEN ELONGATION IS <50%, POST SPACING SHALL NOT EXCEED 6 FT.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY 6 INCHES AND FOLDED.
6. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE OR APPROVED EQUIVALENT.
7. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF OF FABRIC HEIGHT.
8. SILT FENCE SHALL NOT BE USED TO DEMARCAT LIMITS OF DISTURBANCE.

Silt Fence/ Reinforced Silt Fence Barrier 08/16
N.T.S. Source: VHB REV LD_650-VT

Concrete Headwall (HW) 1/16
N.T.S. Source: VHB REV LD_130

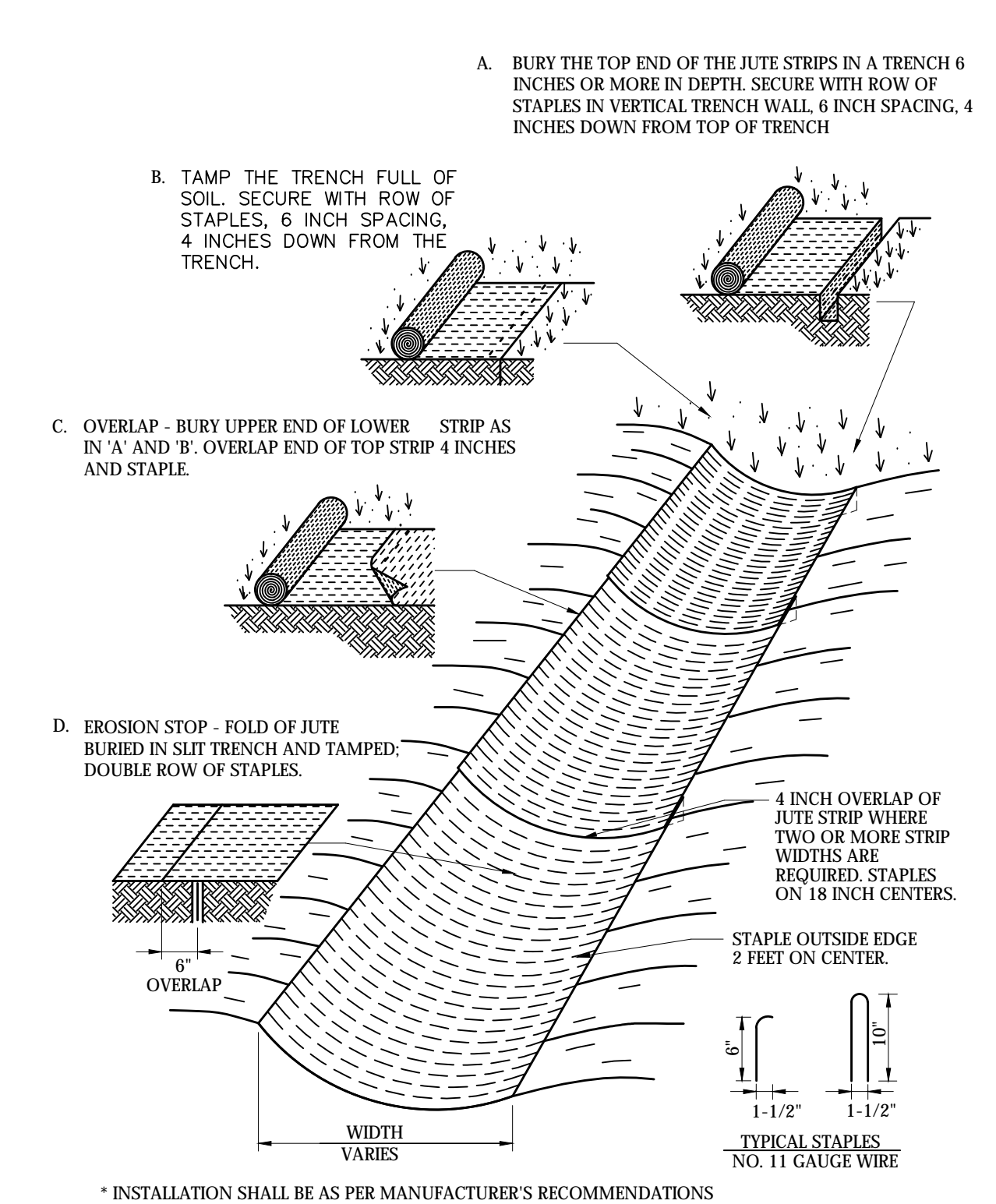


NOTES

1. APPLY TO SLOPES GREATER THAN 3H:1V OR WHERE NECESSARY TO AID IN ESTABLISHING VEGETATION.
2. METHOD OF INSTALLATION SHALL BE AS PER MANUFACTURER'S RECOMMENDATIONS.
3. APPLY TOP SOIL, FERTILIZER, LIME AND SEED PRIOR TO PLACING MATTING.
4. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4'x150' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4'x150' ROLL OF MATERIAL.
5. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION PREVENTION AND SEDIMENT CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH AND ENSURE CLOSE CONTACT WITH THE GROUND SURFACE.
6. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.
7. BEGIN AT THE TOP OF BLANKET INSTALLATION AREA BY ANCHORING BLANKET IN A 6" TO 12" DEEP TRENCH BACKFILL AND COMPACT TRENCH AFTER STAPLING.
8. ROLL THE BLANKET DOWN IN THE DIRECTION OF THE WATER FLOW.
9. THE EDGES OF BLANKETS MUST BE STAPLED WITH APPROX. 4" OVERLAP WHERE 2 OR MORE STRIP WIDTHS ARE REQUIRED.
10. WHEN BLANKETS MUST BE SPLICED, PLACE UPPER BLANKET END OVER LOWER END WITH 12" (MIN) OVERLAP AND STAPLE BOTH TOGETHER.

Erosion Control Blanket Slope Installation 08/16
N.T.S. Source: VHB REV LD_703-VT

Storm Drain and Foundation Drain 1/16
N.T.S. Source: VHB REV LD_



Erosion Control Blanket Swale Installation 08/16
N.T.S. Source: VHB REV LD_681-VT

**Jay Peak Resort Rt. 242
Parking Lot Stormwater**

Stateside Road
Jay, Vermont

No.	Revision	Date	Apprd.

Designed by **TAS** Checked by **AGM**

Issued for **For Permitting** Date **July 30, 2018**

Not Approved for Construction

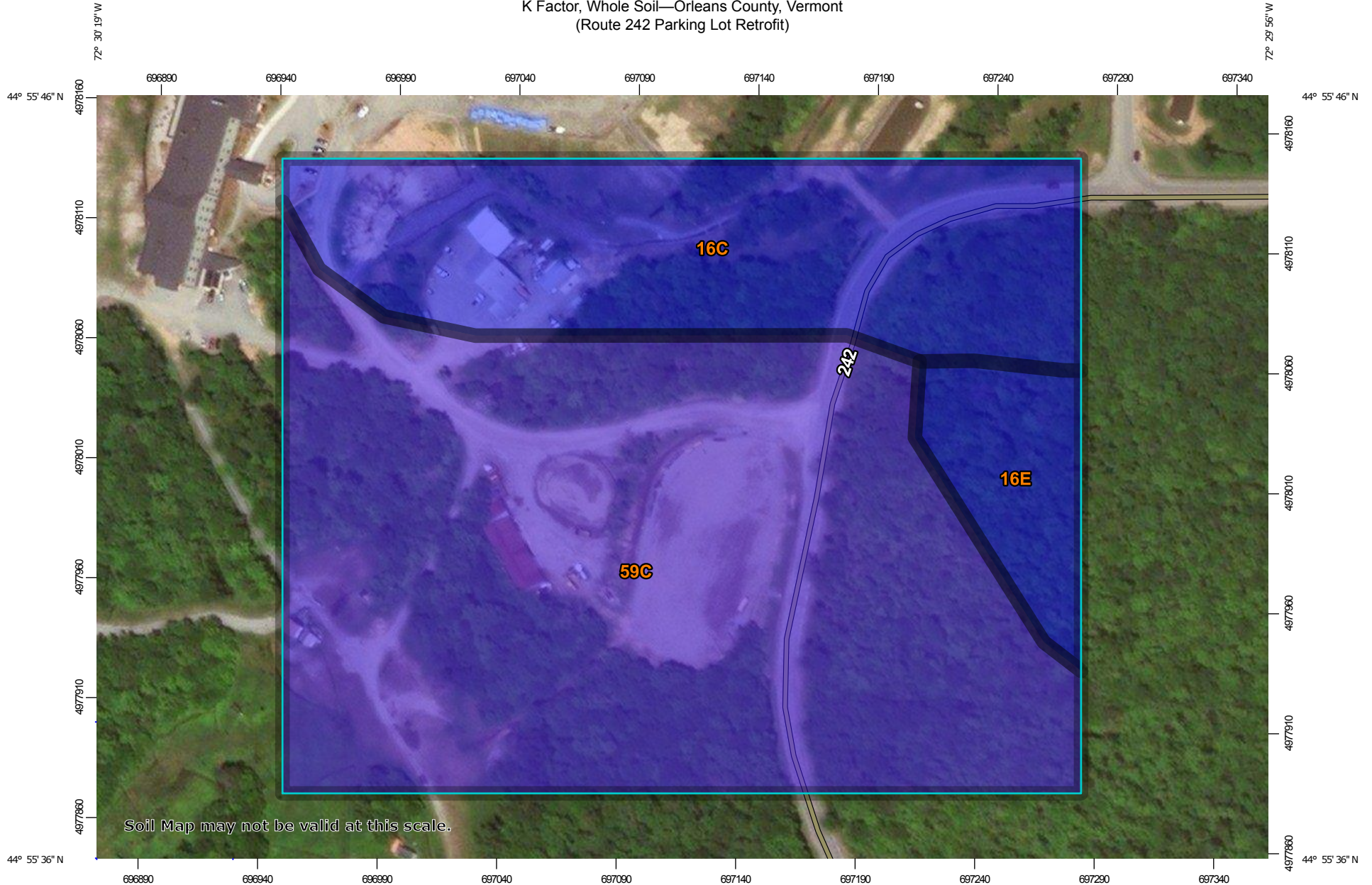


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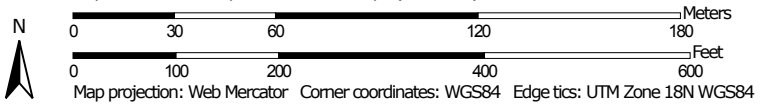
Sheet 3 of 3

Project Number 58085.00

K Factor, Whole Soil—Orleans County, Vermont
(Route 242 Parking Lot Retrofit)



Map Scale: 1:2,240 if printed on A landscape (11" x 8.5") sheet.



K Factor, Whole Soil—Orleans County, Vermont
(Route 242 Parking Lot Retrofit)
















MAP LEGEND

Area of Interest (AOI)







Area of Interest (AOI)










Soils

Soil Rating Polygons
















-  .02
-  .05
-  .10
-  .15
-  .17
-  .20
-  .24
-  .28
-  .32
-  .37
-  .43
-  .49
-  .55
-  .64
-  Not rated or not available

Soil Rating Lines








-  .02
-  .05
-  .10
-  .15
-  .17
-  .20

-  .24
-  .28
-  .32
-  .37
-  .43
-  .49
-  .55
-  .64
-  Not rated or not available

Soil Rating Points

-  .02
-  .05
-  .10
-  .15
-  .17
-  .20
-  .24
-  .28
-  .32
-  .37
-  .43
-  .49
-  .55
-  .64
-  Not rated or not available

Water Features

-  Streams and Canals
- Transportation**
-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads
- Background**
-  Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Orleans County, Vermont
Survey Area Data: Version 25, Feb 23, 2018

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

Date(s) aerial images were photographed: Jun 28, 2012—Mar 7, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

K Factor, Whole Soil

Map unit symbol		Map unit name		Rating
16C	to 15 percent slopes, very stony	Peru fine sandy loam, 8		6.0
16E	35 to 60 percent slopes, very stony	Peru fine sandy loam,		1.4
59C	percent slopes, very stony	5500 silt loam, 8 to 15		14.5
Totals for Area of Interest				

Description

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

"Erosion factor Kw (whole soil)" indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Layer Options (Horizon Aggregation Method): Depth Range (Weighted Average)

Top Depth: 1

Bottom Depth: 120

Units of Measure: Inches



Computations

Project: Jay Peak 242 Parking Lot	Project #: 58085.00
Location: Jay Peak Resort, Jay, Vermont	Sheet: 1 of 1
Calculated by: Tyler Shedd	Date: 7/26/18
Checked by: Robert Wildey	Date: 7/27/18
Title: Construction Phase Sediment Loading Analysis (RUSLE Method)	

242 Parking Lot Stormwater Retrofit - Construction Phase Sediment Loading Calculation

Construction Start Date: 9/16/18
Construction End Date: 9/29/18
Site Area (acres): 0.29
Slope (%): 5%
Slope Length (ft): 75
Cover and Mulching Rate: Crushed Stone (135 tons/acre)
Surface Practice: Compacted and smooth

Area = 0.29
Erosivity Factor, R = 71
Erodibility Factor, K = 0.55
Slope Length Factor, LS = 0.46
Cover Management Factor, C = 0.05
Practice Factor, P = 1.3
Construction Duration Factor, M = 0.36
Sediment Delivery Ratio, SDR = 100%

Total Sediment Load (Construction Phase)		
A =	0.121	tons/yr
A =	241.6	pounds/yr

Notes:

The underlying soils at the Route 242 parking lot are mapped by NRCS as Map Unit 59C - Cabot silt loam, 8 to 15 percent slopes, very stony. This soil type is classified as having a K-factor of 0.55. The cover management C-factor is assumed that crushed stone of the gravel parking lot surface that is representative of the before, during and after construction condition. Given the proximity of the work to Tributary 3, the SDR assumes that any disturbed sediments are transported to the stream, regardless of EPSC measures that are implemented.