T. Buck Construction, Inc.

249 Merrow Road, Auburn, Maine 04210-8319
(207) 783-6223 * (FAX) 783-3970

EROSION PREVENTION AND SEDIMENT CONTROL PLAN

Vermont Agency of Transportation

Bridge Improvement Project in the Town of Middlebury, VT

RS - 0174 (8)

Submitted: 11/19/13

1.1 Project Description

This project involves the removal and replacement of the existing filled concrete arch and wing walls and associated approach work. During construction, the bridge will be closed and traffic will be detoured around the project site. This project is located on route 125 approximately 1.6 miles east of trout 7 over Middlebury River in the town of East Middlebury. The Existing arch is approximately 42 feet long and approximately 25 feet from fascia to fascia.

The bridge replacement includes the removal of the existing structure in its entirety and the construction of a new 61.5 foot single span precast NEXT beam bridge over a new 48 foot precast arch. The new structure will be approximately 36 feet from fascia to fascia. New precast concrete footings, abutments, and wing wall will be constructed to suppose the new superstructure. The associated approach work includes approach slabs, and approximately 600 feet of reconstructed roadway and new bridge approach rail. Once the bridge is completed the roadway will be restored to previous conditions.

NOTE: area of disturbance includes limits of earth disturbance within the project area, as well as waste, borrow and staging areas, and other earth disturbing activities within or directly adjacent to the project limits as shown on the attached EPSC plan.

Total area of disturbance as shown on the attached EPSC plan is approximately .94 acres. It is anticipated this project will last one construction season.

1.2 Site Inventory

1.2.1 Topography

The topography of the area is steep wooded banks ascending from the Middlebury River to rolling hills mostly covered by forest with occasional open areas. VT route 125 and north branch road are within the project site. There are residence to the north and west of the project site along north branch road and route 125 with a tree buffer.

1.2.2. Drainage, waterways, bodies of water, and proximity to natural or man-made water features

The Middlebury River is the only water source on the project site. The river is classified as wide and curing with a bend upstream of the project site and a moderate current. The river bed consists of gravel, cobbles, boulders and ledge the tributary area at the bridge crossing is approximately 44.44 sq. miles. There is one culvert within the project area. There is a 15" CMP culvert beneath route 125 and daylights on the north side of route 125 and drains to the river down a heavily wooded embankment.

1.2.3 Vegetation

The Vegetation in the project area consists of Hardwood and Softwood trees and Undergrowth. The impact to Vegetation will be limited to that which is directly affected by replacement of the existing bridge and the reconstruction of the approach roadway. Disturbed vegetation will be reestablished with standard seed and mulch practices per the EPSC plan, except of the side slopes of the north approaches where due to the steepness of the side slopes stone fill, type II will be used for slope stabilization.

1.2.4 Soils

All soil data came from the U.S. Department of Agriculture soil conservation service for the couth of Orange, Vermont. Soils on the project are:

- Berkshire and Marlow extremely stony loam (BsC), 3%-20% slopes, "K Factor" = 0.20, classified low erosion potential, Northern half and Southern extent of project site.
- Stetson Gravelly fine sandy loam (StA), 0% to 5% slopes, "K Factor" = 0.10, Classified low erosion potential, Northern extent of project site.
- Colton Gravelly Sandy Loam (CtA), 0% to 5% slopes, "K Factor" = 0.20, Classified low erosion potential, Western extent of project site.
- Colton Gravelly Sandy Loam (CtA), 30% to 50% slopes, "K Factor" = 0.20, Classified low erosion potential, Southern half and Eastern extent of project site.

NOTE: K-Values Generally indicate the following:

- 0.0 – 0.23 = Low erosion Potential
- 0.24 – 0.36 = Moderate Erosion Potential
- 0.37 and Higher = High Erosion Potential

1.2.5 Sensitive Resource Areas

- Critical Habitat: **NO**
- Historical or Archeological Areas: **YES**
    - Item 653.5, "Barrier Fence" will be placed along the project limits outside the archaeology site on the Northwest quad to protect the known archaeological site known as the East Middlebury Iron Works Site (VT-AD-299 During Construction.
- Prime agricultural Land: NO
- Threatened and Endangered Species: **NO**
- Water Resource: **Middlebury River**
- Wetlands: **NO**

1.3 Risk Evaluation

With <1 Acre of soil disturbance, this project does not fall under the jurisdiction of General permit 3-9020 for storm water runoff from construction sites. Should Changes prior to or during construction result in one or more acres of earth disturbance or should the project become part of a large plan of development, the contractor will be responsible for any additional permitting.

1.4 Erosion Prevention and Sediment Control

The EPSC plan is meant as a guideline for preventing erosion and control sediment transport to the extent feasible. The principles outlined in this narrative consist of applying measures throughout construction of the project in order to minimize sediment transport to the receiving waters. The measures include stabilization and structural practices, storm water controls and other pollution prevention practices. They have been propose by the designer as a basis for protecting resources and will need to be built upon based on the specific means and methods of the contractor. Refer to the low risk site handbook and appropriate detail sheets for specific guidance and construction detailing.

All measure shall be regularly maintained and shall be checked for sediment build-up. Sediment shall be disposed of at an approved site where it will not be subject to erosion.

1.4.1 Mark Site Boundaries

Site boundaries and areas construction equipment can access shall be delineated. Project Demarcation Fencing (PDF) shall be used to physically mark site boundaries.

1.4.2 Limit Disturbance Area

Preventing Initial soil erosion by minimizing the exposed area is much more effective than treating eroded sediment. Earth disturbance can be minimized through construction phasing by only opening up earth as necessary. This can limit the area that will be disturbed and exposed to erosion. Employ temporary construction stabilization practices in incremental stages as phases change.

Maintaining Vegetated buffers along stream banks, Wetlands or other sensitive areas is a crucial erosion and sediment control measure that should be established wherever possible.

1.4.3 Site Entrance/ Exist Stabilization

Tracking of sediment onto public highways shall be minimized for public safety and to reduce the potential for runoff entering receiving waters. Installation shall coincide with the progress schedule.

Stabilized construction entrances shall be installed as proposed on the SPSC plan and anywhere equipment will be going from areas of exposed soils to paved surfaces.

1.4.4 Install Sediment Barriers

Sediment barriers shall be utilized to intercept runoff and allow suspended sediment to settle out. They shall be installed prior to any up slope work.

Woven Wire reinforced silt fence shall be installed as proposed on the EPSC Plan.

1.4.5 Divert Upland Runoff

Diversionary measures shall be used to intercept runoff from above the construction and direct it around the disturbed area so that clean water does not become muddied while traveling over exposed soils on the construction site.

It is not anticipated that diversionary measures will be necessary for this project site.

1.4.6 Slow Down Channelized Runoff

Check Structures shall be utilized to reduce the velocity, and thus the erosive potential, of concentrated flow in channels.

Check Structures are not anticipated for this project

1.4.7 Construct Permanent Controls

Permanent Erosion Control Structures are not anticipated for this project.

1.4.8 Stabilize Exposed Soils during Construction

All areas of disturbance must have temporary stabilization in place within 48 hours of disturbance.

Surface roughening of all exposed slopes, combined with temporary mulching, shall be utilized on a regular basis. Biodegradable erosion control matting or an equivalent shall be used to stabilize all slopes steeper than 1:3. Stone fill, Type II shall be used to stabilize all slopes steeper than 1:2.

The forecast of rainfall events shall trigger immediate protection of exposed soils.

1.4.9 Winter Stabilization

Various measures specific to winter may be necessary should the project extend into winter (October 15th to April 15th). Refer to the Low Risk Site Handbook for Guidance.

1.4.10 Stabilize Soil at Final Grade

Exposed soils must be stabilized within 48 hours or reaching final grade

Seed, Mulch, Fertilizer and Lime shall be used to establish permanent vegetation. For slopes steeper than 1:3 biodegradable erosion control matting or an equivalent shall be used instead of mulch, for slopes steeper than 1:2, Stone Fill Type II shall be used instead of biodegradable erosion control matting.

1.4.11 De-Watering Activities

Discharge from Dewatering Activities that flows off the construction site must no cause or contribute to a violation of the Vermont water quality standards.

Treatment of dewatering cofferdam is not anticipated for this project.

1.4.12 Inspect your site

Inspect the project site based on special provision requirements.

1.5 Sequence and Staging

1.5.1 Construction Sequence

The project schedule is particularly important on this project and it can be divided into three major categories, Pre Closure, Closure, and Post Closure. The following sequence outlines what measures will be installed in each phase, and how we plan on minimizing erosion and sedimentation on the project throughout all phases. The dates given below are approximate and subject to review/permission to work outside the specified construction season.

Pre Closure: December 2012 – April 19th 2014

1) Mobilize jobsite trailers and project materials
2) Install project demarcation fence and applicable silt fence(s).
3) Install access roads (as shown on attached plan).
4) Install platform under existing arch. The proposed location of the platform may be subject to review by ANR and the Army Corp of Engineers.
4) Stabilize construction site in preparation for closure period

During this phase, all typical erosion control measure described in section 1.4 will be installed. Silt fence, erosion log (if necessary) and check structures head the list of temporary erosion control measures. The access road(s) will be have stabilized construction entrances using the vehicle tracking pad item and the slopes will be stabilized with erosion control blanket and or mulch.

Closure Period: April 19th – June 2nd.

1) Demolish Arch and excavate approaches.
    - Debris will be collected and removed from the platform
    - All concrete debris and earthen material will be taken to approved waste area located at 14 schoolhouse hill road. (see attached off-site activity exemption record.
    - Approximately 400 cy of ledge will be removed during the demolition and excavation process.
2) The new bridge will be erected and constructed in accordance with plans and specs.
3) The road will be opened to traffic before June 2nd.

Post Closure Period: June 2nd – August 22nd

1) Remaining contract work completed
2) All temporary access roads / platform removed
3) Installation of Type II stone
4) Install all other permanent erosion control measures as specified
5) Establish grass/vegetation growth

This phase will begin when the road is open to traffic, the final slope/site stabilization will commence once all the other contract work is completed. During the removal of the access road, all temporary erosion control measures will be removed. If necessary, we will reinstall or leave some silt fence to ensure any finalized topsoil is not eroded during a rain event.

1.5.2 Off Site Activities

Copies of all approved waste areas will become part of this plan. In general, we anticipate one waste area and one staging area for trailers and job equipment. The location for the waste area is at 14 schoolhouse hill road and it is owned and operated by JP Carrara. (see attached exemption record)

1.5.3 Updates

As changes are required in the field, T Buck will alter this plan and describe such changes meeting the guidelines of section 1.5.1.

1.6 CONTACT INFORMATION

1.6.1 The on-site plan coordinator will be Harry Pottle. He can be reached at 207-754-2169 or at his office number (TBD). Harry has managed several projects in Vermont, most recently a bridge project in Jamaica. Harry has been to erosion control training and understands the intent and requirements of erosion control procedures. Harry will be on-site every day and has the ability to halt construction. And Harry is capable and responsible for making sure the project is constructed in accordance with the plans and specs.

1.6.2 The Plan Preparer is Brian Emmons. He can be reached at the main office in Auburn, Me 207-783-6223 x 205. His cell phone number is 207-212-0960. Brian has prepared several erosion control plans for the state of Vermont in recent years as well as numerous plans in Maine and NH over the past 8 years. Brian estimated the project and understands the applicable spec sections and the intent of the plans as it relates to erosion control as well as the structural concept. Brian will communicate with Harry on a daily basis to ensure the project is being constructed properly.

1.7 CONSTRUCTION SCHEDULE

See the attached Construction Schedule.

1.8 INSPECTION FORM

T Buck Construction will utilize the standard inspection form found at:
http://www.aot.state.vt.us/TechServices/EnvPermit/erosionpreventionandsedimentcontrol.htm)

2.0 EROSION PREVETION AND SEDIMENT CONTOL PLAN

Construction Sequence

- The colored site plan corresponds to the steps described in section 1.5.1
- See attached Contract drawings

Offsite Activity

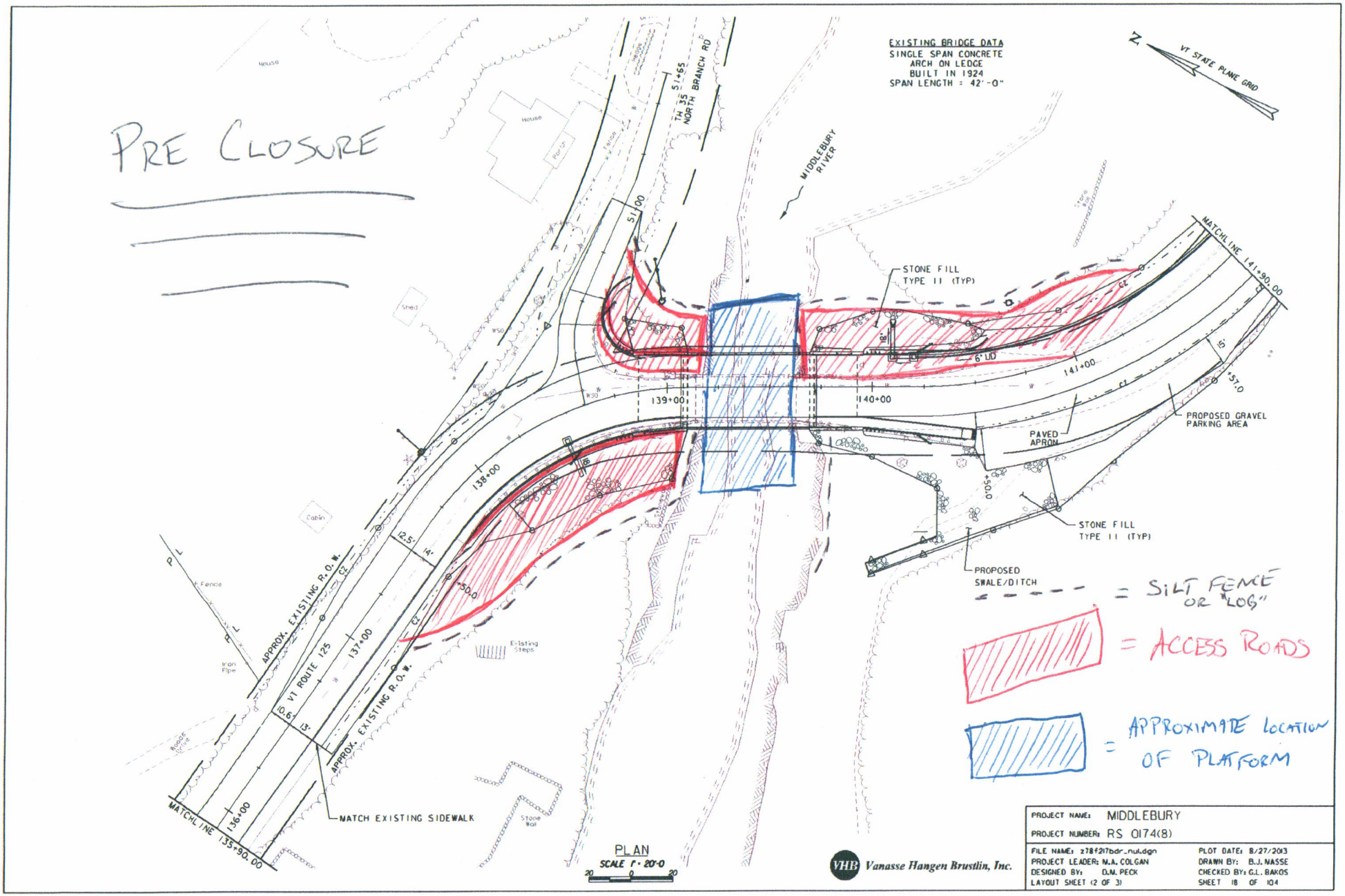
- Staging location to be determined for engineers trailer.
- We anticipate using JP Carrara "grandfathered" pit to dispose of all earthen and concrete debris from the existing bridge.

Details

- See attached standard details in applicable contract drawings

Updates

- In the event that actual site conditions make it impossible or impracticable to drive stakes for proper installation of silt fence. T Buck intends on using Curlex Sediment Log. A cut sheet is attached to this plan.


PRE CLOSURE
EXISTING BRIDGE DATA
SINGLE SPAN CONCRETE
ARCH ON LEDGE
BUILT IN 1924
SPAN LENGTH = 42'-0"
VT STATE PLANE GRID
MIDDLEBURY RIVER
TH 35 NORTH BRANCH RD
51+65
51+00
STONE FILL TYPE II (TYP)
MATCHLINE 141+90.00
139+00
140+00
141+00
138+00
137+00
136+00
6" UD
PAVED APRON
PROPOSED GRAVEL PARKING AREA
STONE FILL TYPE II (TYP)
PROPOSED SWALE/DITCH
APPROX. EXISTING R.O.W.
VT ROUTE 125
APPROX. EXISTING R.O.W.
MATCH EXISTING SIDEWALK
MATCHLINE 135+90.00
= SILT FENCE OR "LOG"
= ACCESS ROADS
= APPROXIMATE LOCATION OF PLATFORM
PLAN
SCALE 1" = 20'-0
Vanasse Hangen Brustlin, Inc.
PROJECT NAME: MIDDLEBURY
PROJECT NUMBER: RS 0174(8)
FILE NAME: z78f217bdr_nul.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: D.M. PECK
LAYOUT SHEET (2 OF 3)
PLOT DATE: 8/27/2013
DRAWN BY: B.J. NASSE
CHECKED BY: G.L. BAKOS
SHEET 18 OF 104

CLOSURE PERIOD

EXISTING BRIDGE DATA
SINGLE SPAN CONCRETE
ARCH ON LEDGE
BUILT IN 1924
SPAN LENGTH = 42'-0"

N
VT STATE PLANE GRID

TH 35 51+65
NORTH BRANCH RD

MIDDLEBURY RIVER

MATCHLINE 141+90.00

STONE FILL TYPE II (TYP)

6.00

141+00

140+00

139+00

138+00

137+00

136+00

MATCHLINE 135+90.00

PROPOSED GRAVEL PARKING AREA

PAVED APRON

STONE FILL TYPE II (TYP)

PROPOSED SWALE/DITCH

APPROX. EXISTING R.O.W.

VT ROUTE 125

APPROX. EXISTING R.O.W.

MATCH EXISTING SIDEWALK

APPROXIMATE ARCHEOLOGICAL AREA

CONSTRUCTION AREA / DISTURBANCE

PLAN
SCALE 1" = 20'-0"

VHB Vanasse Hangen Brustlin, Inc.

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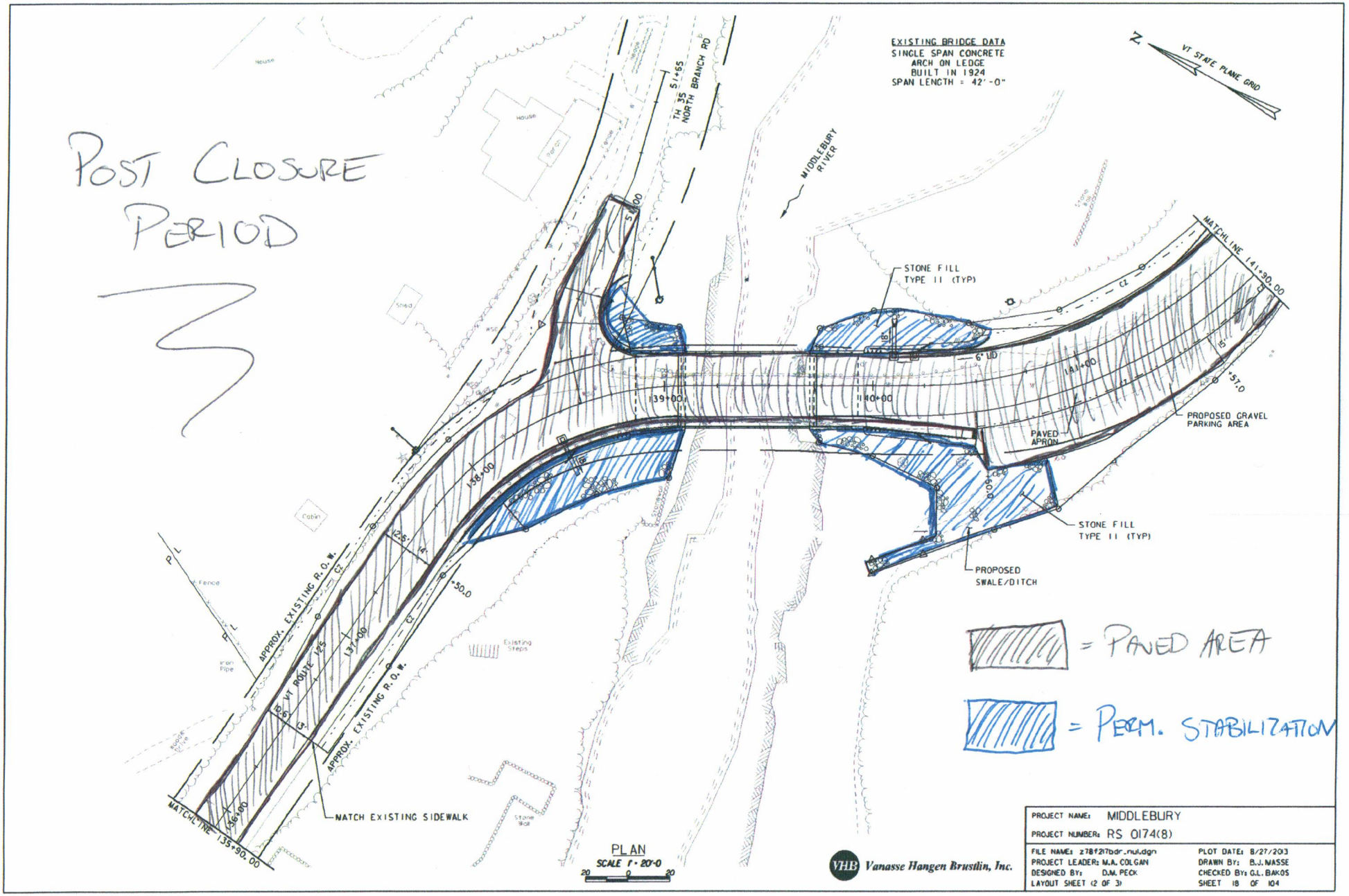
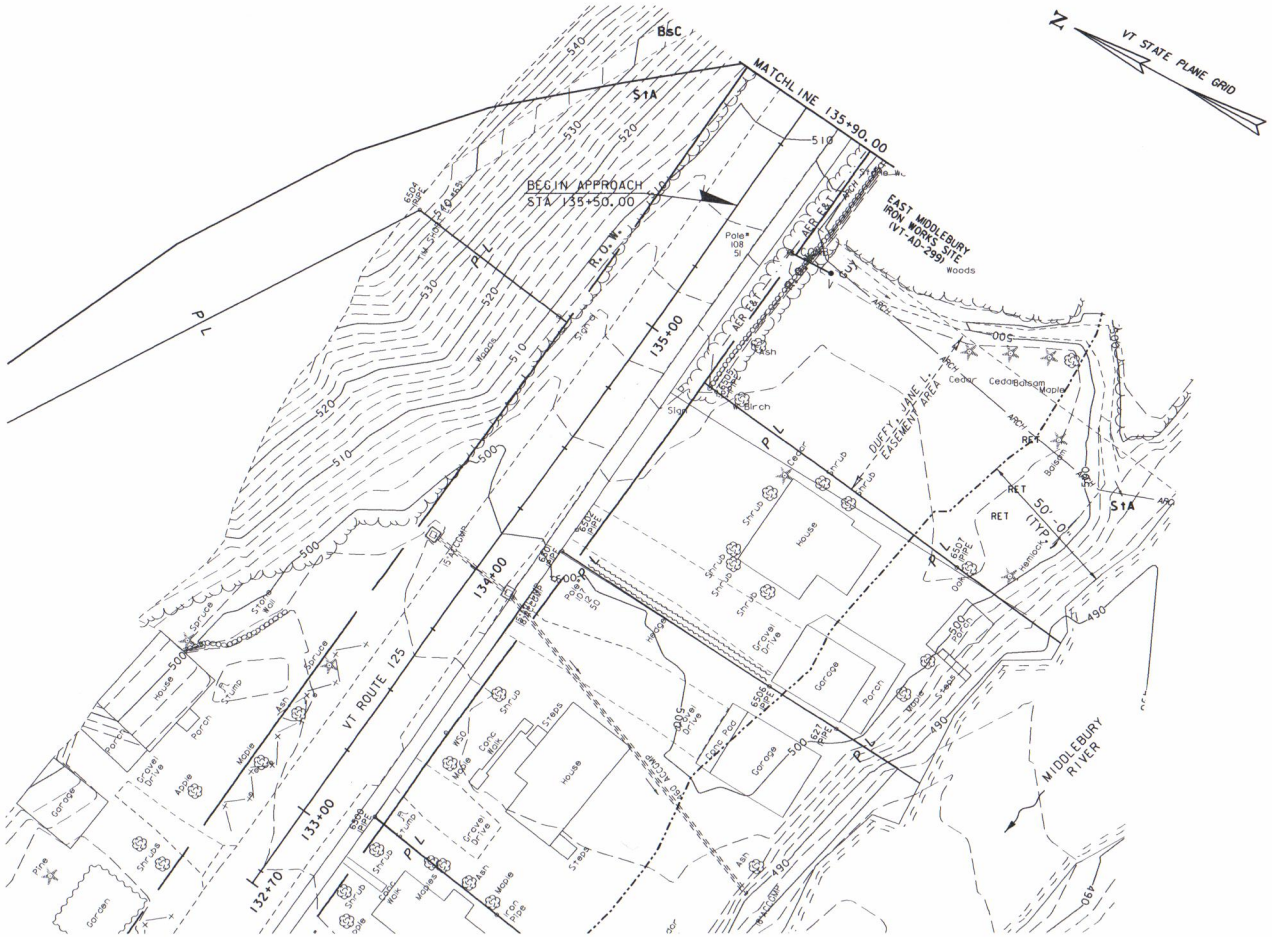
LAYOUT SHEET (2 OF 3)	SHEET 18 OF 104

POST CLOSURE PERIOD



= PAVED AREA

= PERM. STABILIZATION



SOIL CLASSIFICATION

BERKSHIRE AND MARLOW
EXTREMELY STONY LOAM (BsC)
3% TO 20% SLOPES
"K FACTOR" = 0.20
CLASSIFIED LOW EROSION POTENTIAL

STETSON GRAVELLY FINE SANDY LOAM (S1A)
0% TO 5% SLOPES
"K FACTOR" = 0.10
CLASSIFIED LOW EROSION POTENTIAL

PLAN
SCALE 1" = 20'-0
20 0 20

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (92)

VHB Vanasse Hangen Brustlin, Inc.

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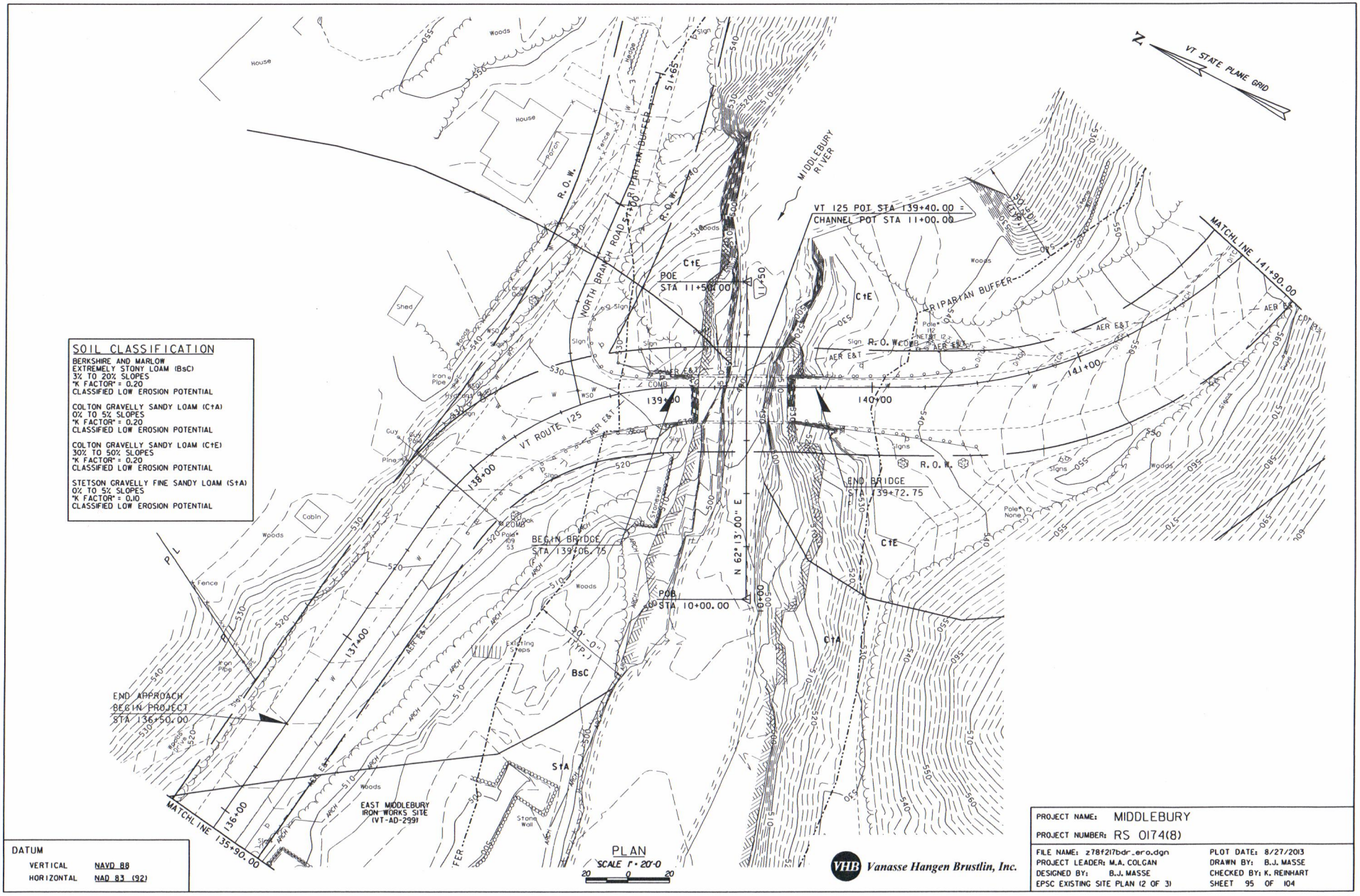
PROJECT NUMBER: RS 0174(8)

FILE NAME: z78f217bdr_ero.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: B.J. MASSE
EPSC EXISTING SITE PLAN (1 OF 3)

PLOT DATE: 8/27/2013
DRAWN BY: B.J. MASSE
CHECKED BY: K. REINHART
SHEET 94 OF 104

VHB 57438



SOIL CLASSIFICATION

BERKSHIRE AND MARLOW
EXTREMELY STONY LOAM (BsC)
3% TO 20% SLOPES
"K FACTOR" = 0.20
CLASSIFIED LOW EROSION POTENTIAL

COLTON GRAVELLY SANDY LOAM (C+A)
0% TO 5% SLOPES
"K FACTOR" = 0.20
CLASSIFIED LOW EROSION POTENTIAL

COLTON GRAVELLY SANDY LOAM (C+E)
30% TO 50% SLOPES
"K FACTOR" = 0.20
CLASSIFIED LOW EROSION POTENTIAL

STETSON GRAVELLY FINE SANDY LOAM (S+A)
0% TO 5% SLOPES
"K FACTOR" = 0.10
CLASSIFIED LOW EROSION POTENTIAL

PLAN
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EPSC EXISTING SITE PLAN (2 OF 3)	SHEET 95 OF 104

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SOIL CLASSIFICATION

BERKSHIRE AND MARLOW
EXTREMELY STONY LOAM (BsC)
3% TO 20% SLOPES
"K FACTOR" = 0.20
CLASSIFIED LOW EROSION POTENTIAL

COLTON GRAVELLY SANDY LOAM (CtE)
30% TO 50% SLOPES
"K FACTOR" = 0.20
CLASSIFIED LOW EROSION POTENTIAL

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (92)

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20 0 20

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EPSC EXISTING SITE PLAN (3 OF 3)	SHEET 96 OF 104

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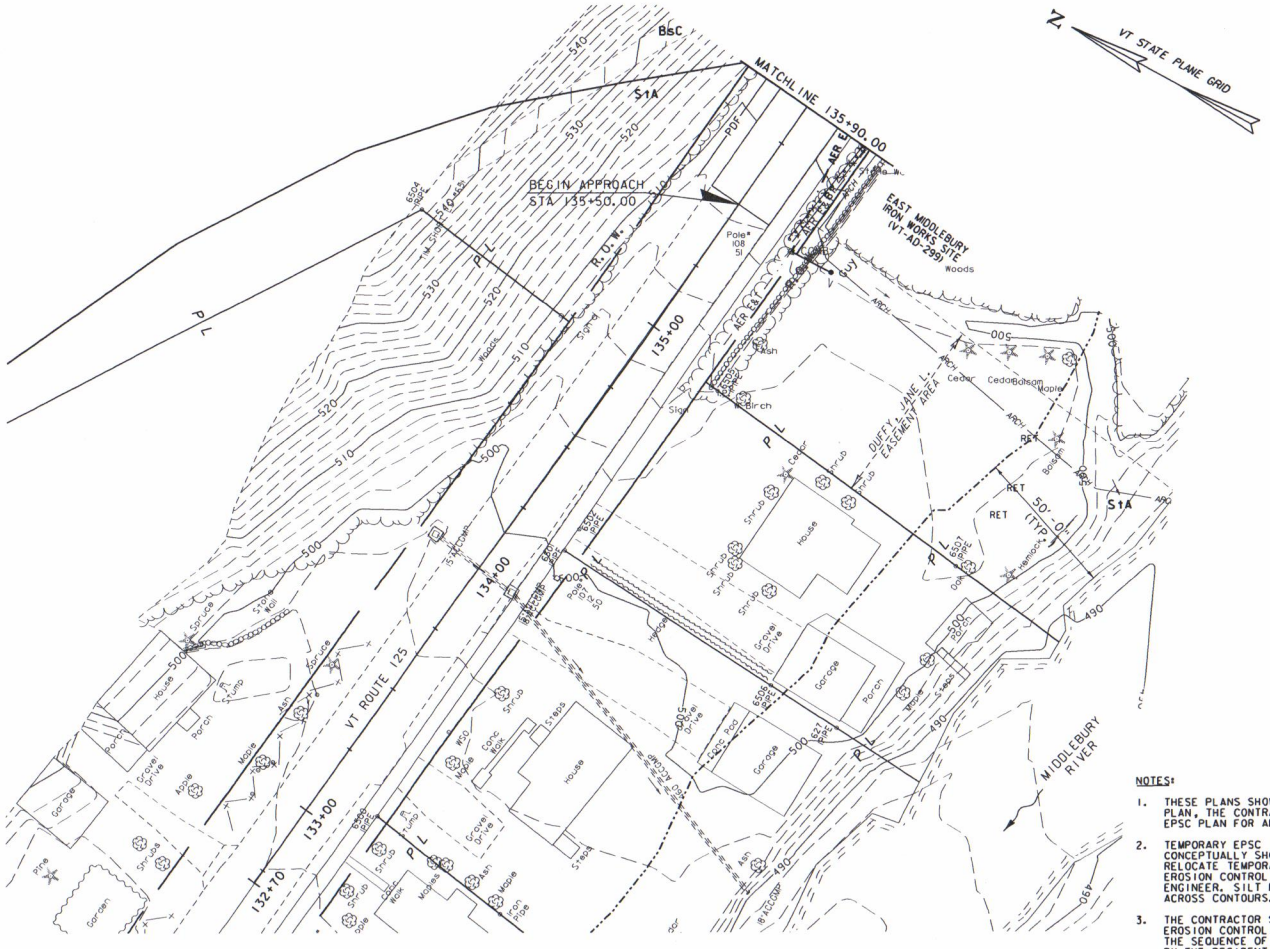

PLAN

SCALE 1" = 20'-0

20 0 20

NOTES:

1. THESE PLANS SHOW A CONCEPTUAL EROSION CONTROL PLAN, THE CONTRACTOR MUST SUBMIT A TEMPORARY EPSC PLAN FOR APPROVAL.
2. TEMPORARY EPSC PLAN MEASURES ARE CONCEPTUALLY SHOWN. THE CONTRACTOR MAY RELOCATE TEMPORARY MEASURES TO IMPROVE EROSION CONTROL WITH APPROVAL OF THE RESIDENT ENGINEER. SILT FENCE SHALL NOT BE INSTALLED ACROSS CONTOURS.
3. THE CONTRACTOR SHALL USE OTHER TEMPORARY EROSION CONTROL MEASURES AS NECESSITATED BY THE SEQUENCE OF CONSTRUCTION OR AS DIRECTED BY THE RESIDENT ENGINEER.
4. REFER TO TEMPORARY EROSION CONTROL DETAIL SHEETS FOR ADDITIONAL DETAILS.
5. SEE SHEET 14, CONVENTIONAL SYMBOLOGY LEGEND, FOR EPSC LAYOUT PLAN SYMBOLOGY.

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VERTICAL NAVD 88

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EPSC CONSTRUCTION SITE PLAN (1 OF 3)	SHEET 97 OF 104

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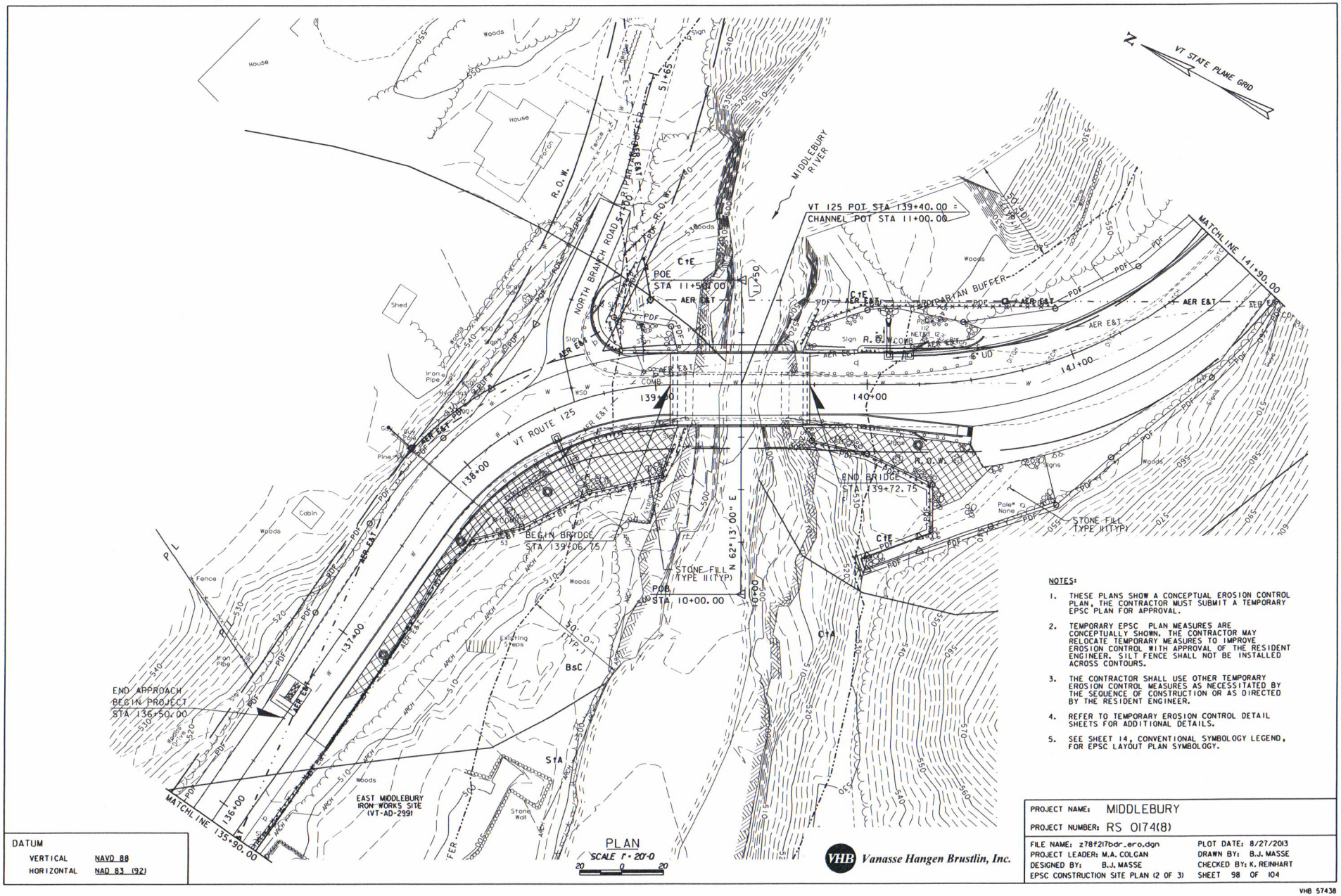

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VERTICAL	NAVD 88
HORIZONTAL	NAD 83 (92)

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EPSC CONSTRUCTION SITE PLAN (2 OF 3)	SHEET 98 OF 104

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HORIZONTAL NAD 83 (92)

PLAN
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EPSC CONSTRUCTION SITE PLAN (3 OF 3)
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SHEET 99 OF 104

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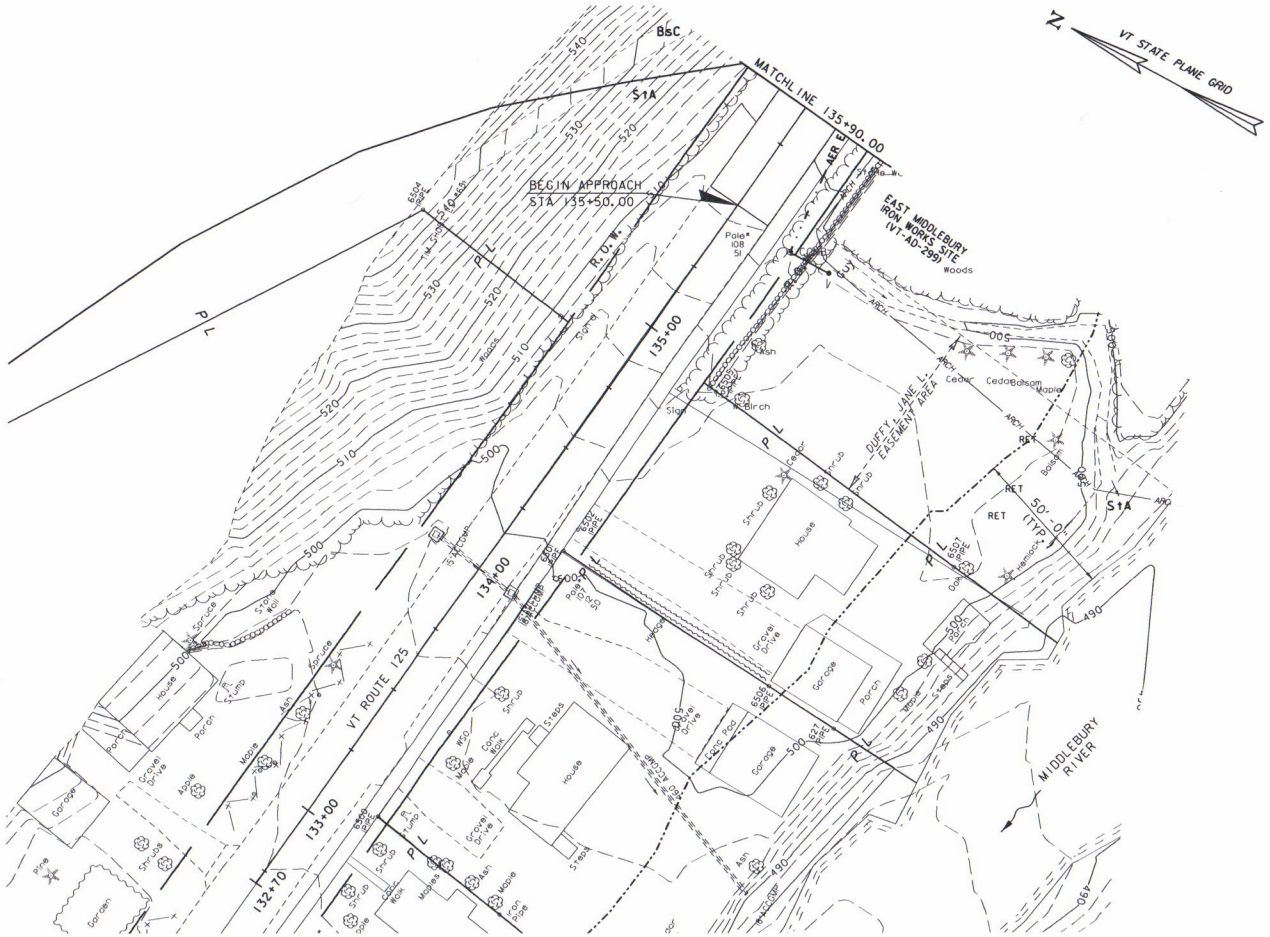

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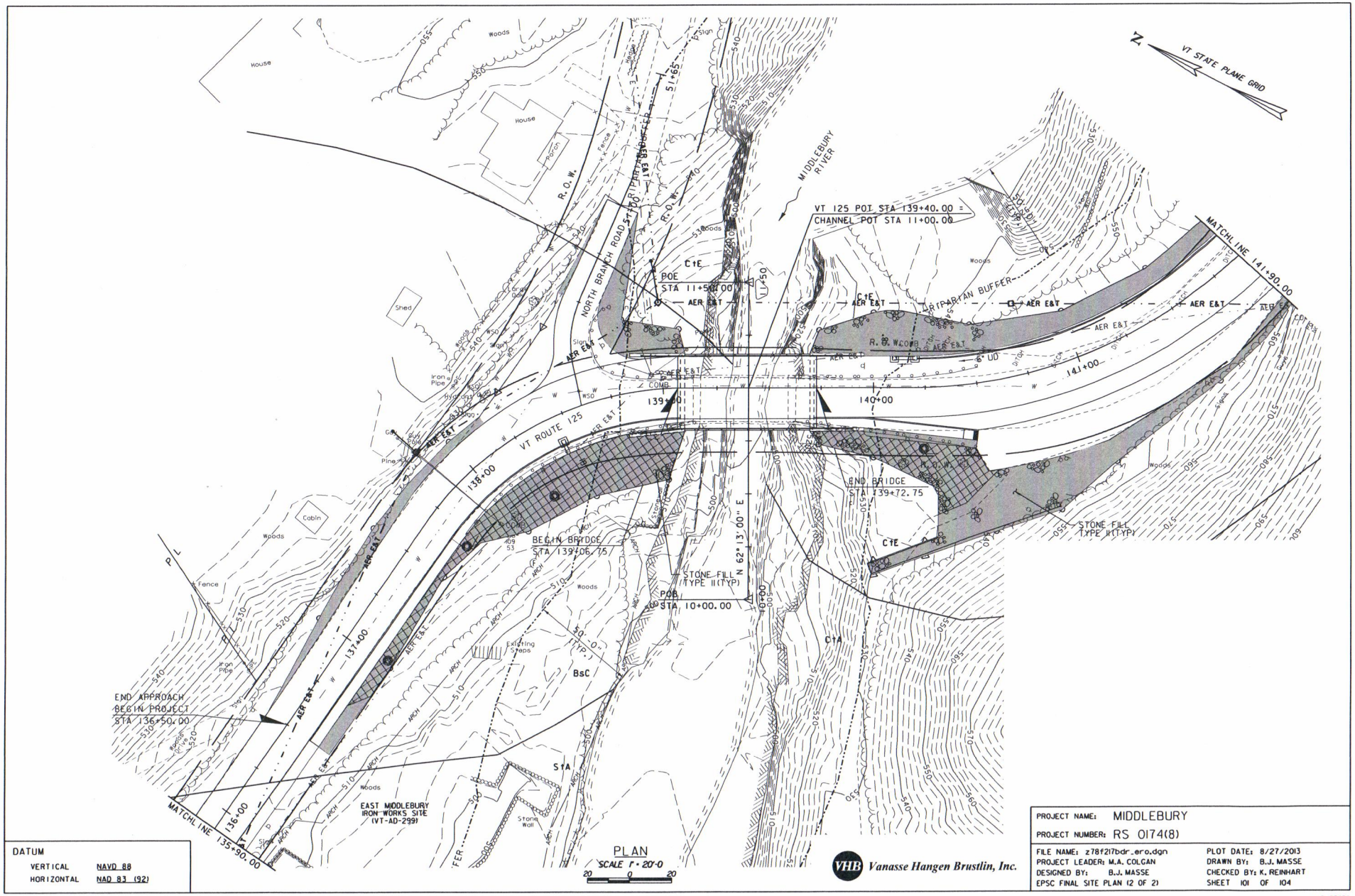
DESIGNED BY: B.J. MASSE	CHECKED BY: K. REINHART
EPSC FINAL SITE PLAN (1 OF 3)	SHEET 100 OF 104

DATUM

VERTICAL	NAVD 88
HORIZONTAL	NAD 83 (92)

VHB Vanasse Hangen Brustlin, Inc.

VHB 57438



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HORIZONTAL	NAD 83 (92)

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EPSC FINAL SITE PLAN (2 OF 2)	SHEET 101 OF 104

VHB 57438

DATUM

VERTICAL	NAVD 88
HORIZONTAL	NAD 83 (92)

PLAN

SCALE 1" = 20'-0

20 0 20

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EPSC FINAL SITE PLAN (3 OF 3)	SHEET 102 OF 104

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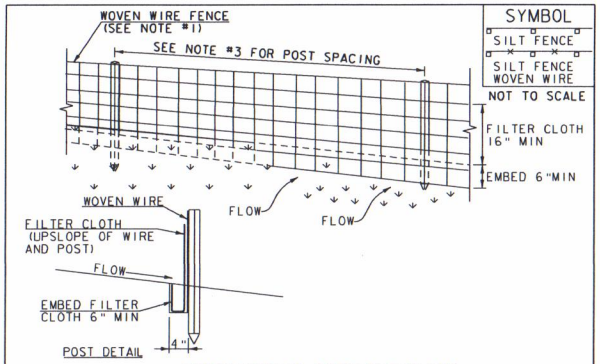


CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE REINFORCED FENCE IS REQUIRED WITHIN 50' UPSLOPE OF RECEIVING WATERS WHEN THE PROJECT FALLS UNDER A CONSTRUCTION STORMWATER PERMIT. WOVEN WIRE SHALL BE A MIN. 14 GAUGE WITH A 6" MAX. MESH OPENING.
2. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI100X, STABILINKA T140N OR APPROVED EQUIVALENT.
3. POST SPACING FOR WIRE-BACKED FENCE SHALL BE 10' MAXIMUM. FOR FILTER-CLOTH FENCE, WHEN ELONGATION IS >50%, POST SPACING SHALL NOT EXCEED 4' AND WHEN ELONGATION IS <50%, POST SPACING SHALL NOT EXCEED 6'.
4. WOVEN WIRE FENCE IS TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES. FILTER CLOTH IS TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY 6" AND FOLDED.
6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF OF FABRIC HEIGHT.

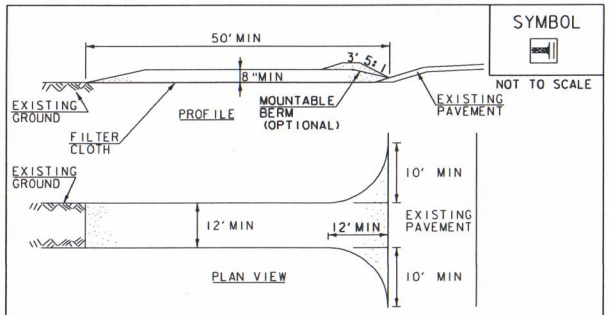
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SILT FENCE

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- " FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 AND AS SHOWN IN THE PLANS FOR ~~GEOTEXTILE FOR SILT FENCE (PAY ITEM 649.51) OR~~ GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED (PAY ITEM 649.515).

REVISIONS	
MARCH 21, 2008	WHF
DECEMBER 11, 2008	WHF
JANUARY 13, 2009	WHF



CONSTRUCTION SPECIFICATIONS

1. STONE SIZE- USE 1-4" STONE, RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH- NOT LESS THAN 50' (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30' MINIMUM LENGTH APPLIES).
3. THICKNESS- NOT LESS THAN 8".
4. WIDTH- 12' MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. 24' IF SINGLE ENTRANCE TO SITE.
5. GEOTEXTILE MUST BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE.
6. SURFACE WATER- ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED ACCORDING TO PERMIT REQUIREMENTS.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

STABILIZED CONSTRUCTION ENTRANCE

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- " FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR VEHICLE TRACKING PAD (PAY ITEM 653.35) OR AS SPECIFIED IN THE CONTRACT.

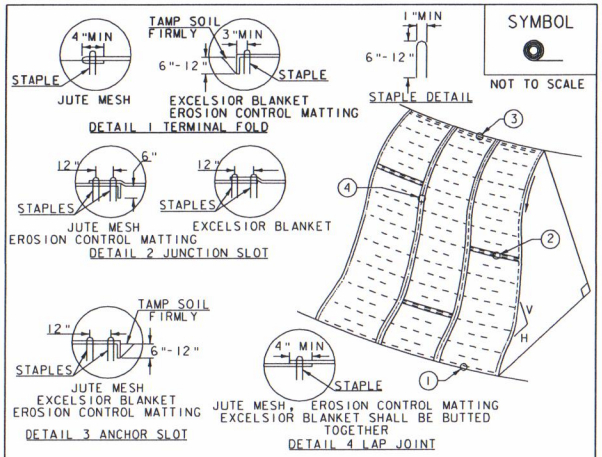
REVISIONS	
MARCH 24, 2008	WHF
JANUARY 13, 2009	WHF

VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME: MIDDLEBURY
PROJECT NUMBER: RS 0174(8)

FILE NAME: z78f217ero_details.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: VTRANS
EPSC DETAILS (1 OF 2)
PLOT DATE: 8/27/2013
DRAWN BY: B.J. MASSE
CHECKED BY: G.S. GOODRICH
SHEET 103 OF 104

VHB 57438



SYMBOL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. APPLY TO SLOPES GREATER THAN 3H: 1V OR WHERE NECESSARY TO AID IN ESTABLISHING VEGETATION.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4'X225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4'X150' ROLL OF MATERIAL.
4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC ORIGINALLY DEVELOPED BY USDA-NRCS VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

ROLLED EROSION CONTROL PRODUCT (RECP) SIDE SLOPE

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 AND AS SHOWN IN THE PLANS FOR TEMPORARY EROSION MATTING (PAY ITEM 653.20) ~~OR PERMANENT EROSION MATTING (PAY ITEM 653.21)~~.

REVISIONS	
APRIL 16, 2007	JMF
JANUARY 13, 2009	WHF

VAOT RURAL AREA MIX

% WEIGHT	LBS/AC BROADCAST	LBS/AC HYDROSEED	NAME	GERM %	PURITY %
37.5%	22.5	45	CREEPING RED FESCUE	85%	98%
37.5%	22.5	45	TALL FESCUE	90%	95%
5.0%	3	6	RED TOP	90%	95%
15.0%	9	18	BIRDSFOOT TREFOIL	85%	98%
5.0%	3	6	ANNUAL RYE GRASS	85%	95%
100%	60	120			

VAOT URBAN AREA MIX

% WEIGHT	LBS/AC BROADCAST	LBS/AC HYDROSEED	NAME	GERM %	PURITY %
42.5%	34	68	CREEPING RED FESCUE	85%	98%
10.0%	8	16	PERENNIAL RYE GRASS	90%	95%
42.5%	34	68	KENTUCKY BLUE GRASS	85%	85%
5.0%	4	8	ANNUAL RYE GRASS	85%	95%
100%	80	160			

GENERAL GUIDANCE

FERTILIZER		LIME	
BROADCAST	HYDROSEED	BROADCAST	HYDROSEED
10-20-10	19-19-19	PELLETIZED	LIQUID
500 LBS/AC		2 TONS/AC	4.4 GAL/AC

CONSTRUCTION GUIDANCE

1. RURAL SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
2. URBAN SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED LAWN AREAS DISTURBED BY THE CONTRACTOR.
3. ALL SEED MIXTURES: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.
4. FERTILIZER AND LIMESTONE: SHALL FOLLOW RATES SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER
5. HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, ACHIEVE 90% GROUND COVER OR AS DIRECTED BY THE ENGINEER.
6. TOPSOIL: TO BE USED WITH SEED AS INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.
7. HYDROSEEDING: ALTHOUGH GUIDANCE IS GIVEN ABOVE THE SITE CONDITIONS AND THE TYPE OF HYDROSEED WILL ULTIMATELY DICTATE THE AMOUNTS AND TYPES OF SOIL AMENDMENTS TO BE APPLIED
8. TURF ESTABLISHMENT: PLACING SEED, FERTILIZER, LIME AND MULCH PRIOR TO SEPTEMBER 15 AND AFTER APRIL 15 CAN BETTER ENSURE A VIGOROUS GROWTH OF GRASS.

ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MANUAL FOR ROADWAYS AND TRANSPORTATION FACILITIES

TURF ESTABLISHMENT

REVISIONS	
JUNE 23, 2009	WHF
JANUARY 15, 2010	WHF

VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME: MIDDLEBURY
PROJECT NUMBER: RS 0174(8)

FILE NAME: z78f217ero_details.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: VTRANS
EPSC DETAILS (2 OF 2)

PLOT DATE: 8/27/2013
DRAWN BY: B.J. MASSE
CHECKED BY: G.S. GOODRICH
SHEET 104 OF 104

VHB 57438

OFF-SITE ACTIVITY EXEMPTION RECORD

VTrans

To be completed by the Contractor and filed with the Resident Engineer.
Check the appropriate exemption category from the boxes below.

Staging Area Exemptions

The placement of construction trailers, equipment, and/or non-erodible materials

- ☐ On existing paved or gravel surfaces which will not require any additional earth disturbance

Borrow Site Exemptions

- ☐ Existing, in-use gravel pits which have an Act 250 Permit as long as the use does not modify the conditions of said permit (Act 250 Permit # provided by Contractor)
- ☐ Existing, in-use, commercial gravel pits that are "Grandfathered" from the Act 250 Permit Review Process as long as a landowner signature is provided
- ☐ Inter-project Material Usage - The use of surplus materials from one project as borrow for another in which the owner and contractor are the same in both projects and neither involve work outside the respective contract construction limits

Waste Disposal Exemptions

- ☐ The use of project generated Solid Wastes to build the same project, or another project owned by the same entity
- ☐ Batch plants for recycling of materials and subsequent re-use
- ☐ The disposal of any (erodible or non-erodible) materials in an existing shed at any public transportation facility to which the material will be stored for later re-use
- ☐ Existing, in-use gravel pits which have an Act 250 Permit as long as the use does not modify the conditions of said permit (Act 250 Permit # provided by Contractor)
- ☒ Existing, in-use, commercial gravel pits that are "Grandfathered" from the Act 250 Permit Review Process as long as a landowner signature is provided
- ☐ Inter-project Material Usage - The use of surplus materials from one project as borrow for another in which the owner and contractor are the same in both projects and neither involve work outside the respective contract construction limits
- ☐ The disposal of hazardous materials at a facility which has been reviewed and approved by the Agency's Hazardous Materials Specialist

Project Name: MIDDLEBURY RS 0179

Proposed Area Name: 14 SCHOOLHOUSE HILL ROAD

Landowner Signature: _____

Act 250 Permit # (for Existing, In-use sites) _____

Act 250 Grandfathered Signature _____
(Owner or authorized representative)-

http://vtransengineering.vermont.gov/sites/aot_program_development/files/documents/environmental/2011_Off_Site_Exemption_List_Form.pdf

Product Description

Curlex® Sediment Logs®

Excelsior Sediment Control Device

Curlex Sediment Logs use excelsior fibers to reduce hydraulic energy & filter sediment-laden runoff. Tired of straw and hay bale checks being blown out and the fibers washed downstream to clog the nearest outlet? Fed up with spending all of your time and effort installing silt fence only to see it get knocked down when it rains or a good wind comes along? How about when you have to go back and pick up the loose fibers and/or remove those worn out silt fences and take them to the landfill? Next time, consider giving our Bioengineered Sediment Logs a try. Water filters through (not underneath) the diameter of the porous, interlocked fiber log matrix. As it does, velocity is naturally reduced and sediment is collected on the upstream side of the excelsior fiber log. Install Curlex Sediment Logs over bare soil, over rolled erosion control products, on steep slopes, around inlets and outlets, or around jobsites for perimeter control.

Material Characteristics

Sediment Logs are versatile excelsior logs comprised of an outside containment fabric that is filled with unique Curlex fibers. Curlex fibers are made of Great Lakes Aspen excelsior fibers. The fibers are curled with soft interlocking barbs and 80% will be six inches in length or longer. The outside, open weave containment fabric is degradable, thus Sediment Logs will degrade in place if not removed. Sediment Logs are porous, allowing water to pass through the excelsior matrix, progressively slowing velocity and filtering sediment as it passes through the log diameter. Sediment Logs are extremely flexible and contour to the terrain to maintain intimate contact with the subgrade. In addition, they come with six other benefits; lightweight, no trenching, no weed seeds, no disposal hassles, are re-usable, and they hold their shape.

Performance Capabilities

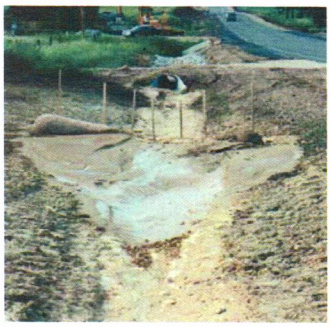
Product Names / Nominal Diameters

Type I - (20 in) energy dissipation in heavy duty concentrated flow areas, slope interruption, inlet protection, perimeter control

Type II - (12 in) energy dissipation in mild to medium concentrated flow areas, slope interruption, inlet protection, perimeter control

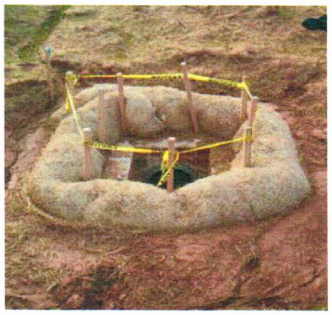
Type III - (9 in) energy dissipation in mild concentrated flow areas, slope interruption, inlet protection, perimeter control

Type IV - (6 in) energy dissipation in low concentrated flow areas, slope interruption, inlet protection, perimeter control



Typical Applications

- Ditch bottoms, swales, and waterways
- Over bare soils and/or temporary & turf reinforcement blankets
- Drop structures and let down structures
- 360 degree protection around catch basins & drop inlet structures
- Curb & drainage outlets
- Project ingress & egress termination points
- As wattles on steep slopes
- Site perimeter control
- Use in place of bales, silt fence, reinforced silt fence, and rock checks



American Excelsior Company®
Earth Science Division
Arlington, Texas (800) 777-SOIL • www.curlex.com

MADE IN THE U.S.A.

American Excelsior Company®
Earth Science Division

Curlex® Sediment Log®

Excelsior Sediment Control Device

SUGGESTED SPECIFICATIONS

General

Sediment Log consists of an outside, open weave, containment fabric filled with Great Lakes Aspen curled excelsior fibers. Its purpose is to provide a flexible, lightweight, porous, sediment control device demonstrating the ability to conform to terrain details and dissipate water velocity in concentrated flow areas.

Product

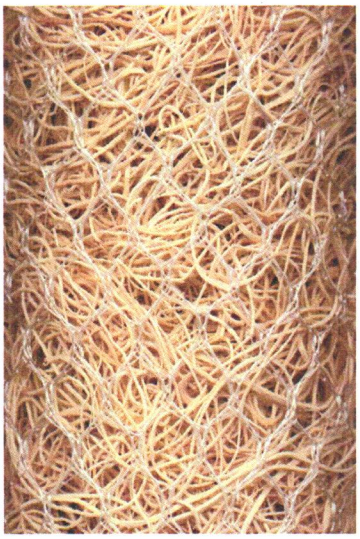
Sediment Control Device shall be Curlex Sediment Log, as manufactured by American Excelsior Company. Curlex Sediment Logs shall be made of Great Lakes Aspen Excelsior fibers encased in an outside, open weave containment fabric. Fibers shall be curled with soft, interlocking barbs to form a strong, organic filtration matrix. A minimum of 80 percent of the fibers shall be 15cm (6 in) or greater in length. Fibers shall be evenly distributed throughout the diameter and length of the Sediment Log. Excelsior fibers shall be weed seed free. Excelsior color shall be standard (natural). Netting at each end of the log shall be secured to assure fiber containment. Density of sediment logs shall not exceed 3 lb/ft^3 to ensure necessary flow rates for filtering.

	TYPE I*	TYPE II*	TYPE III*	TYPE IV*
Product Name/Nominal Diameter	20 in	12 in	9 in	6 in
Length (±10%)	3.05 m (10 ft)	3.05 m (10 ft)	7.62 m (25 ft)	7.62 m (25 ft)
Weight (±10%)**	13.62 kg (30 lb)	9.02 kg (20 lb)	11.35 kg (25 lb)	5.45 kg (12 lb)
Net opening (hexagonal-shaped)	3.2 cm (1.3 in)	2.5 cm (1 in)	1.9 cm (.75 in)	1.3 cm (.5 in)

*Custom sizes available

**Weight is based on a dry fiber weight basis at time of manufacture. Baseline moisture content of Great Lakes Aspen Excelsior is 22%.

Curlex Sediment Logs Design Values With Comparisons To Typical Straw Wattles



	Channel Design			Slope Design	
Product Name/ Nominal Diameter	Density* (lb/ft^3)	GPM/ft^2**	GPM/linear ft of installed product	P Factor*** (event-based)	% Soil Retained
6" Curlex Sediment Log	2.4	42.5	19.5	0.461	53.9
9" Straw Wattle	4.5	7.5	5.6	0.676	32.4
9" Curlex Sediment Log	2.3	42.5	29.0	0.461	53.9
12" Straw Wattle	3.8	8.0	8.0	0.828	17.2
12" Curlex Sediment Log	2.5	40.0	36.7	0.297	70.3
20" Curlex Sediment Log	1.4	37.5	46.9	0.297	70.3

*Weight is based on a dry fiber weight basis at time of manufacture. Baseline moisture content of Great Lakes Aspen excelsior and AEC Premier Straw fibers are 22% and 15%, respectively.

**Based on ASTM D5141.

***Based on large-scale simulated rainfall testing.

Installation

Sediment Logs may be installed over bare soil, over rolled erosion control products, on steep slopes, around inlets and outlets, or around jobsites for perimeter control. Sediment Logs should remain in place until fully established vegetation and root systems have completely developed and can survive on their own. Sediment Logs that are not removed from the job site will degrade in place. Visit www.curlex.com for complete Curlex Sediment Logs installation details, slope spacing guide, and channel spacing guide.

Disclaimer: Curlex Sediment Log is a system for sediment control in channels and on slopes. American Excelsior Company (AEC) believes that the information contained herein to be reliable and accurate for use in sediment control applications. However, since physical conditions vary from job site to job site and even within a given job site, AEC makes no performance guarantees and assumes no obligation or liability for the reliability or accuracy of information contained herein for the results, safety, or suitability of using Sediment Log, or for damages occurring in connection with the installation of any erosion control product whether or not made by AEC or its affiliates, except as separately and specifically made in writing by AEC. These specifications are subject to change without notice.

MADE IN THE U.S.A.

If you would like to receive more information or consult with one of our Customer Care Center Specialists, please call us toll free at (888-352-9582)

PDF download specifications available in the Technical Support Library at www.curlex.com

Form#205/072009E