CCS Constructors LLC

Supply & Erect Structural Steel and Precast
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EPSC Plan
Vermont Agency of Transportation Project
Craftsbury BO 1449 (34)
January 28 th, 2016

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STATE OF VERMONT
DEAN E. WALKER
NO. 2393
REGISTERED
PROFESSIONAL ENGINEER

2/4/16

Dean E. Walker, PE

CCS Constructors LLC

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Erosion Prevention & Sediment Control Plan for Craftsbury BO 1449 (34)

STATE OF VERMONT
DEAN E. WALKER
NO. 2393
REGISTERED PROFESSIONAL ENGINEER
2/4/16

Prepared by: **Dean E. Walker, PE**
Brian Richardson, Project Manager
CCS Constructors, Inc.
138 Munson Ave
Morrisville, VT 05661

Please accept the attached as Erosion & Sediment Control Plan for the Craftsbury BO 1449 (34) project. Erosion and sediment controls will be installed as called out on the attached plans and details.

EPSC Plan Narrative

1.1 Project Description

This project entails the construction of a new bridge with related approach work to replace bridge 4 on town highway 4 over the Whitney Brook in Craftsbury, Orleans County Vermont.

The bridge will be closed to traffic for 4 weeks during construction.

Total area of disturbance for the EPSC plan is approximately 0.46 acres and it is estimated that the project will last one construction season.

1.2 Site

1.2.1 Topography

The topography of the area is mostly well established forest with occasional open areas.

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

The Whitney Brook is the only water source on the project site. The brook is classified as incised, alluvial, and sinuous, with failing banks and high sediment load and with a stream bed consisting of sand, gravel, cobbles and boulders. The tributary area is 13.5 sq. miles.

1.2.3 Vegetation

The vegetation in the project area consists of mixed softwood trees, hardwood tress and undergrowth. The impact to vegetation will be limited to that which is directly affected by replacement of the existing bridge. Upon project completion, the channel will be armored with type IV stone fill. Disturbed vegetation will be reestablished with standard seed and mulch practices.

1.2.4 Soils

All soil data is from the US Dept. of Agriculture Soil Conservation Service for the county of Orleans, VT. Soils on the project site are:

Cabot silt loam, very stony 0-8% slopes hydro soil group D k-factor 0.32

Rumney fine sandy loam 0-2% slopes hydro soil group C k-factor 0.28

Colton-Duxbury Complex 15-25% slopes Hydro soil group A k-factor 0.20/.0.32

Buckland fine sandy loam, very stony 35-60% slopes hydro soil group C k-factor 0.43

- K-factor 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 Habitats: The area is a wildlife travel corridor for wildlife traveling from the Black River floodplain to the west and the upland/farmland habitat to the east of the project.

Archeological areas: there are two areas of archeological sensitivity, located on high terraces to the northwest and northeast of the bridge. These areas are well outside the project limits.

Historical places: No

Prime Agricultural land: No

Threatened and endangered species: Northern long-eared bat

Water resource: Whitney Brook

Wetlands: There is a small wetland to the south of the bridge and to the east of the town highway 4, Adjacent to the small pull-off area.

1.3 Risk Evaluation

This project does not fall under the jurisdiction of General Permit 3-9020 for stormwater 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 larger plan of development, the contractor will be responsible for any additional permitting.

1.4 Erosion Prevention and Sediment Control

The principles outlined in this narrative consist of applying standard erosion and sediment control measures throughout and during the project to minimize sediment transport to the receiving waters as described and shown on the attached erosion control plan and called out on the attached detail sheets. All measures will be regularly maintained as required.

1.4.1 Site Boundaries

Site boundaries and areas construction equipment can access will be delineated with Barrier fence (snow fence) within 100' of the water and standard PDF outside of this 100' area.

1.4.2 Limit Disturbance Area

Initial soil erosion will be minimized by limiting the disturbance area through the practice of construction phasing by only opening up earth as necessary.

Vegetated buffers will be maintained along the Whitney Brook to the maximum extent possible.

1.4.3 Site Entrance/Exit Stabilization

Tracking of sediment onto public highways shall be minimized to reduce the potential or runoff entering receiving waters. As this project is located on an unpaved road, stabilized construction entrances are not specified.

1.4.4 Sediment Barriers

Silt fence with woven wire will be used within 100' of water and standard silt fence will be used outside of this area, turbidity filter curtain and pipe inlet protection will also be

installed as proposed on the EPSC plan.

1.4.5 Upland Runoff

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

Diversionary measures are not anticipated on this project.

1.4.6 Slow down Channelized Runoff

Check structures stall be utilized to reduce the velocity, and thus the erosive potential, and concentrated flow in channels, if necessary. Due to site topography it is not anticipated check dams are needed.

1.4.7 Permanent Controls

Upon project completion , the channel with be armored with stone fill type IV, as specified on the plans.

1.4.8 Stabilization of Exposed Soils during Construction

All areas of disturbance will have temporary stabilization in place within 48 hours of soil disturbance. Temporary mulching combined with surface roughening of all exposed slopes will be utilized as necessary. Biodegradable erosion control matting or equivalent will be used to stabilize all slopes greater than 3:1. Forecast of a rainfall event will trigger immediate stabilization efforts to any exposed soils.

1.4.9 Winter Stabilization

Winter work is not anticipated for this project.

1.4.10 Soil Stabilization at Final Grade

Exposed soil will be stabilized within 48 hours of reaching final grade. Seed, mulch, fertilizer and lime shall be used to establish permanent vegetation as required by AOT Standards. On slopes greater than 3:1 biodegradable erosion control matting or equivalent shall be used instead of mulch.

1.4.11 Dewatering Activities

Dewatering is not anticipated for this project. If dewatering is necessary, discharge from

dewatering activities that flow off of the construction site must not cause or contribute to violation of the Vermont water quality standards.

1.4.12 Site Inspection

Inspect the project site based on special provision requirements or construction general permit authorization stipulations.

1.5 Sequence and Staging

Construction Sequence and Implementation of EPSC Measures

1. Install barrier fence.
2. Install erosion control silt fence.
3. Construct crane pads
4. Remove existing bridge
5. Drive pile
6. Construct new Bridge
7. Clean-up site
8. Demob

1.5.1 Offsite Activities

All staging for this project will be done within the road ROW. Material will be brought in as needed and hauled off as required. No dump site has been located as of yet for the waste material. All material will be dumped at a permitted location. Immediately upon environmental review/approval of the location, erosion control and BMP's will be installed at the waste area.

Waste site location: Concrete waste - Unknown

Earth waste – Unknown

Engineers Trailer - Unknown

1.6 Contact Information

1.6.1 The onsite Plan Coordinator will be Leonel Dufresne, Project Forman, can be reached at 802-793-2201. Mr. Dufresne will be onsite on a daily basis and in charge of all aspects of construction. In addition, he is knowledgeable of and responsible for all aspects of the project, construction sequencing and permit requirements and will be performing the EPSC inspections.

1.6.2 Plan preparer: identification, basic qualifications and contact information

The contract plan preparer, Dean E. Walker, is registered Vermont Professional Engineer

No. 2393 and is familiar with the VTrans Standard Specifications for Construction and Contract Special Provisions and project specific forms.

1.7 Schedule

The project will commence at a point in time when all required approvals have been received from the State. We estimate the commencement of the project to be approximately June 20th, 2016 and to be complete by September 30th, 2016.

STATE OF VERMONT
DEAN E. WALKER
NO. 2393
REGISTERED
PROFESSIONAL ENGINEER

2/4/16

EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT ENTAILS THE CONSTRUCTION OF A NEW BRIDGE WITH RELATED APPROACH WORK TO REPLACE BRIDGE 4 ON TOWN HIGHWAY 4 OVER THE WHITNEY BROOK IN CRAFTSBURY, ORLEANS COUNTY, VERMONT.

THE BRIDGE WILL BE CLOSED TO TRAFFIC FOR 4 WEEKS DURING CONSTRUCTION.

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 0.46 ACRES.

IT IS ANTICIPATED THAT THIS PROJECT WILL LAST ONE CONSTRUCTION SEASON.

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY

THE TERRAIN IS HILLY TO MOUNTAINOUS, WITH A MIXTURE OF FORESTED AND OPEN LAND COVER.

1.2.2 DRAINAGE, WATERWAYS, BODIES OF WATER, AND PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES

THE WHITNEY BROOK IS THE ONLY WATER SOURCE ON THE PROJECT SITE. THE BROOK IS CLASSIFIED AS INCISED, ALLUVIAL, AND SINUOUS, WITH FAILING BANKS AND A HIGH SEDIMENT LOAD AND WITH A STREAM BED CONSISTING OF SAND, GRAVEL, COBBLES, AND BOULDERS. THE TRIBUTARY AREA IS 13.5 SQUARE MILES.

1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF MIXED SOFT AND HARDWOOD TREES AND UNDERGROWTH. DISTURBED VEGETATION WILL BE RE-ESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES.

1.2.4 SOILS

ALL SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE FOR THE COUNTY OF ORLEANS, VERMONT.

CABOT SILT LOAM, VERY STONY 0-8% SLOPES HYDRO SOIL GROUP D K-FACTOR 0.32	COLTON-DUXBURY COMPLEX 15-25% SLOPES HYDRO SOIL GROUP A K-FACTOR 0.20/0.32
RUMNEY FINE SANDY LOAM 0-2% SLOPES HYDRO SOIL GROUP C K-FACTOR 0.28	BUCKLAND FINE SANDY LOAM, VERY STONY 35-60% SLOPES HYDRO SOIL GROUP C K-FACTOR 0.43

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 HABITATS: THE AREA IS A WILDLIFE TRAVEL CORRIDOR FOR WILDLIFE TRAVELING FROM THE BLACK RIVER FLOODPLAIN TO THE WEST AND THE UPLAND/FARMLAND HABITAT TO THE EAST OF THE PROJECT.
ARCHEOLOGICAL AREAS: THERE ARE TWO AREAS OF ARCHAEOLOGICAL SENSITIVITY, LOCATED ON HIGH TERRACES TO THE NORTHWEST AND NORTHEAST OF THE BRIDGE. THESE AREAS ARE WELL OUTSIDE THE PROJECT LIMITS.
HISTORICAL PLACES: NO
PRIME AGRICULTURAL LAND: NO
THREATENED AND ENDANGERED SPECIES: NORTHERN LONG-EARED BAT
WATER RESOURCE: WHITNEY BROOK
WETLANDS: THERE IS A SMALL WETLAND TO THE SOUTH OF THE BRIDGE AND TO THE EAST OF TOWN HIGHWAY 4, ADJACENT TO THE SMALL PULL-OFF AREA.

1.3 RISK EVALUATION

THIS PROJECT DOES NOT FALL UNDER THE JURISDICTION OF GENERAL PERMIT 3-9020 FOR STORMWATER RUNOFF FROM CONSTRUCTION SITES. SHOULD CHANGES PRIOR TO OR DURING CONDTRUCTION RESULT IN ONE OR MORE ARCES OF EARTH DISTURBANCE OR SHOULD THE PROJECT BECOME PART OF A LARGER PLAN OF DEVELOPMENT, THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY ADDITIONAL PERMITTING.

1.4 EROSION PREVENTION AND SEDIMENT CONTROL

THE EROSION CONTROL PLANS ARE MEANT AS A GUIDELINE FOR PREVENTING EROSION AND CONTROLLING SEDIMENT TRANSPORT. 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. REFER TO THE LOW RISK SITE HANDBOOK AND APPROPRIATE DETAIL SHEETS FOR SPECIFIC GUIDANCE AND CONSTRUCTION DETAILING.

ALL MEASURES 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) AND BARRIER FENCE SHALL BE INSTALLED AS SHOWN ON THE PLANS TO PHYSICALLY MARK SITE BOUNDARIES. THIS MEASURE LIMITS THE AREA THAT CAN BE DISTURBED AND EXPOSED TO EROSIVE EFFECTS.

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. FOR PROJECTS WHICH FALL UNDER THE CONSTRUCTION GENERAL PERMIT, ONLY THE ACREAGE LISTED ON THE PERMIT AUTHORIZATION MAY BE EXPOSED AT ANY GIVEN TIME.

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/EXIT STABILIZATION
TRACKING OF SEDIMENT ONTO PUBLIC HIGHWAYS SHALL BE MINIMIZED TO REDUCE THE POTENTIAL FOR RUNOFF ENTERING RECEIVING WATERS. AS THIS PROJECT IS LOCATED ON AN UNPAVED ROAD, STABILIZED CONSTRUCTION ENTRANCES ARE NOT SPECIFIED.

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.

SILT FENCE WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN.

FILTER CURTAIN WILL 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.

DIVERSIONARY MEASURES ARE NOT ANTICIPATED ON THIS PROJECT.

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, IF NECESSARY. DUE TO SITE TOPOGRAPHY IT IS NOT ANTICIPATED CHECK DAMS ARE NEEDED.

1.4.7 CONSTRUCT PERMANENT CONTROLS
UPON PROJECT COMPLETION, THE CHANNEL WILL BE ARMORED WITH STONE FILL TYPE IV, AS SPECIFIED ON THE PLANS.

1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION
ALL AREAS OF DISTURBANCE MUST HAVE TEMPORARY STABILIZATION IN PLACE WITHIN 48 HOURS OF DISTURBANCE OR IN ACCORDANCE WITH THE CONSTRUCTION GENERAL PERMIT 3-9020 AUTHORIZATION.

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.

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 15 THROUGH APRIL 15). REFER TO THE LOW RISK SITE HANDBOOK FOR GUIDANCE.

WINTER WORK IS NOT ANTICIPATED.

1.4.10 STABILIZE SOIL AT FINAL GRADE
EXPOSED SOIL MUST BE STABILIZED WITHIN 48 HOURS OF 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.

1.4.11 DE-WATERING ACTIVITIES
DISCHARGE FROM DEWATERING ACTIVITIES THAT FLOWS OFF OF THE CONSTRUCTION SITE MUST NOT CAUSE OR CONTRIBUTE TO A VIOLATION OF THE VERMONT WATER QUALITY STANDARDS.

DEWATERING ACTIVITIES ARE NOT ANTICIPATED ON THIS PROJECT.

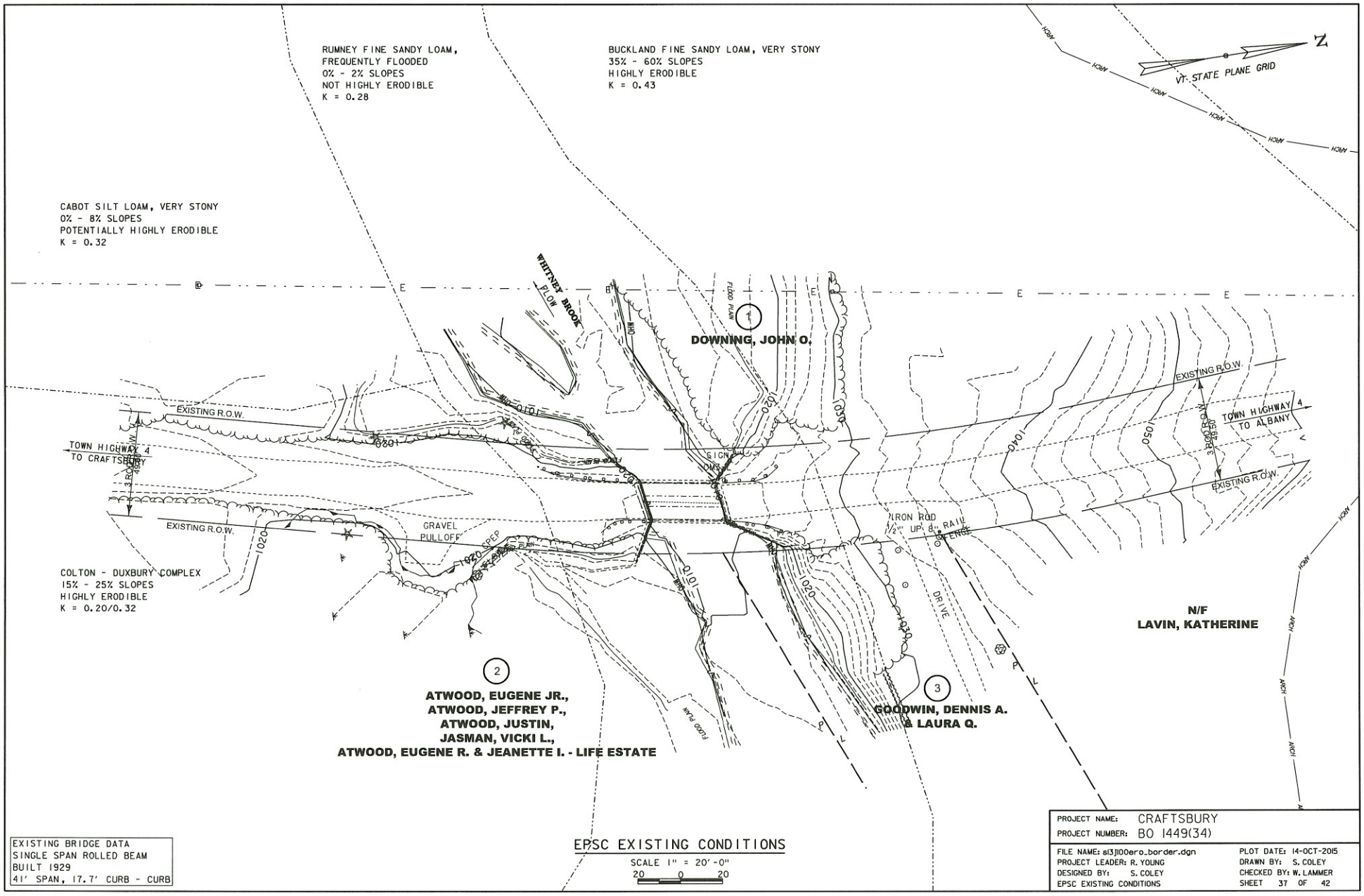
1.4.12 INSPECT YOUR SITE
INSPECT THE PROJECT SITE BASED ON SPECIAL PROVISION REQUIREMENTS OR CONSTRUCTION GENERAL PERMIT AUTHORIZATION STIPULATIONS.

1.5 SEQUENCE AND STAGING

THIS SECTION WILL BE DEVELOPED BY THE CONTRACTOR USING THE GUIDANCE OUTLINED IN THE VTRANS EPSC PLAN CONTRACTOR CHECKLIST.

1.5.1 CONSTRUCTION SEQUENCE

1.5.2 OFF-SITE ACTIVITIES
IN ADDITION TO THE CONTRACTOR CHECKLIST ANY ACTIVITIES OUTSIDE THE CONSTRUCTION LIMITS SHALL FOLLOW SUBSECTIONS 105.25- 105.29 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.

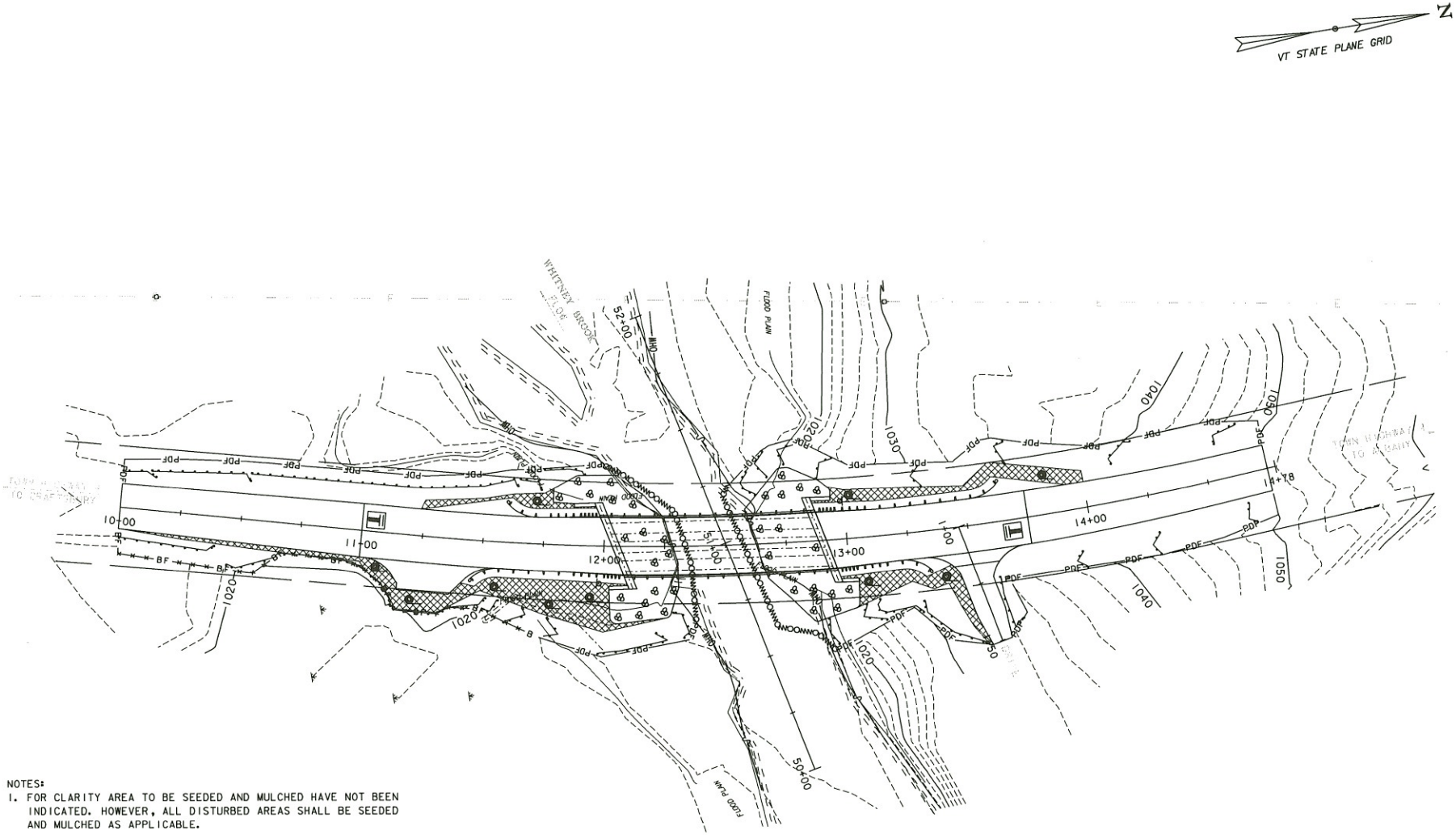


EXISTING BRIDGE DATA
SINGLE SPAN ROLLED BEAM
BUILT 1929
41' SPAN, 17.7' CURB - CURB

EPSC EXISTING CONDITIONS

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

PROJECT NAME: CRAFTSBURY	
PROJECT NUMBER: BO 1449(34)	
FILE NAME: s13j100ero_border.dgn	PLOT DATE: 14-OCT-2015
PROJECT LEADER: R. YOUNG	DRAWN BY: S. COLEY
DESIGNED BY: S. COLEY	CHECKED BY: W. LAMMER
EPSC EXISTING CONDITIONS	SHEET 37 OF 42

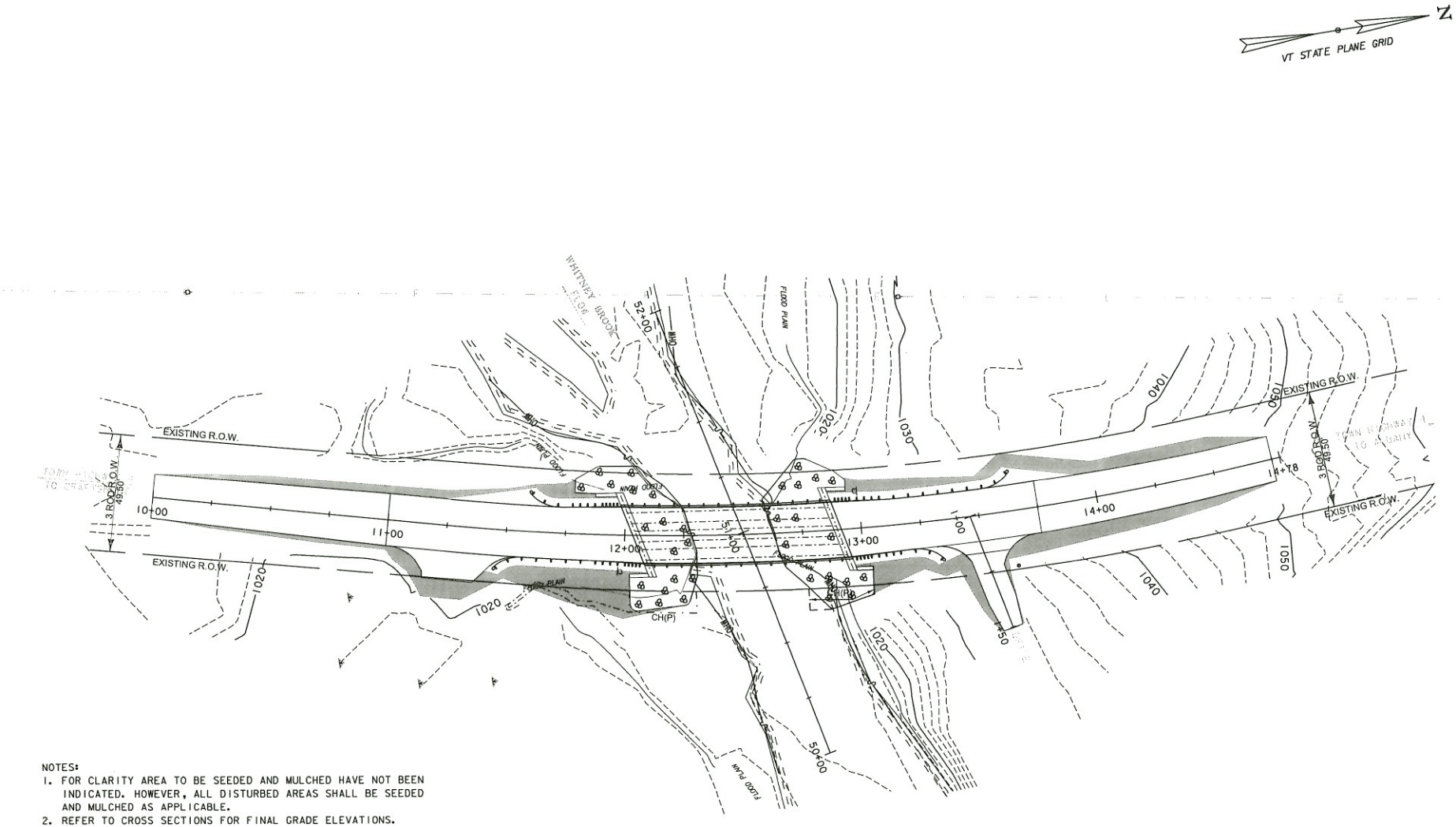


NOTES:
1. FOR CLARITY AREA TO BE SEEDED AND MULCHED HAVE NOT BEEN INDICATED. HOWEVER, ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED AS APPLICABLE.

EPSC CONSTRUCTION SITE PLAN

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

PROJECT NAME: CRAFTSBURY	
PROJECT NUMBER: BO 1449(34)	
FILE NAME:	PLOT DATE: 14-OCT-2015
PROJECT LEADER: R. YOUNG	DRAWN BY: S. COLEY
DESIGNED BY: S. COLEY	CHECKED BY: W. LAMMER
EPSC CONSTRUCTION SITE PLAN	SHEET 38 OF 42

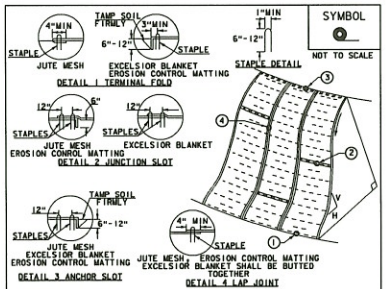


NOTES:
1. FOR CLARITY AREA TO BE SEEDED AND MULCHED HAVE NOT BEEN INDICATED. HOWEVER, ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED AS APPLICABLE.
2. REFER TO CROSS SECTIONS FOR FINAL GRADE ELEVATIONS.

EPSC FINAL SITE PLAN

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

PROJECT NAME: CRAFTSBURY	
PROJECT NUMBER: BO 1449(34)	
FILE NAME: s13j100ero_border.dgn	PLOT DATE: 14-OCT-2015
PROJECT LEADER: R. YOUNG	DRAWN BY: S. COLEY
DESIGNED BY: S. COLEY	CHECKED BY: W. LAMMER
EPSC FINAL SITE PLAN	SHEET 39 OF 42



CONSTRUCTION SPECIFICATIONS

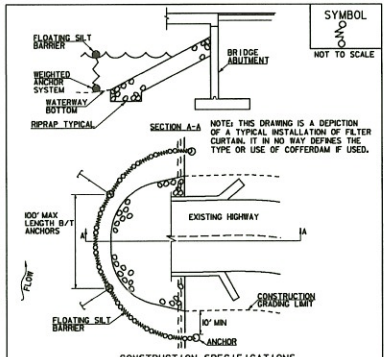
1. APPLY TO SLOPES GREATER THAN 3H: 1V OR WHERE NECESSARY TO AID IN ESTABLISHING VEGETATION.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 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



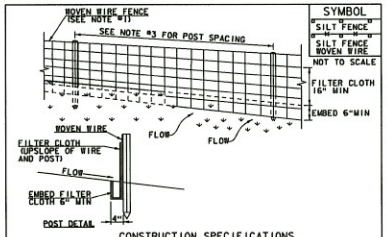
CONSTRUCTION SPECIFICATIONS

1. FILTER CURTAIN SHALL NOT BE PLACED ACROSS A FLOWING WATERWAY, OR IN A WATERWAY WITH STREAM VELOCITIES GREATER THAN 1.5 FEET/SECOND.
2. MAXIMUM 100' LENGTH BETWEEN ANCHORS.
3. LAST SECTION SHALL TERMINATE A MINIMUM OF 10' BEYOND LIMIT OF DISTURBANCE.
4. THE WEIGHTED ANCHOR SYSTEM SHALL BE A TYPE WHICH ALLOWS THE CURTAIN TO CONFORM TO THE BOTTOM OF THE WATERWAY.
5. THE CURTAIN SHALL BE REMOVED BY SLOWLY PULLING TOWARD THE SHORE MINIMIZING THE ESCAPE OF SEDIMENTS INTO WATERWAY.

FILTER CURTAIN

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 FOR GEOTEXTILE FOR FILTER CURTAIN (PAY ITEM 649.60).

REVISIONS	
APRIL 1, 2008	WHF
JANUARY 13, 2009	WHF
SEPTEMBER 4, 2009	WHF



CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE REINFORCED FENCE IS REQUIRED WITHIN 100' 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 649.50) ~~OR GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED (PAY ITEM 649.60)~~

REVISIONS	
MARCH 24, 2008	WHF
DECEMBER 8, 2008	WHF
JANUARY 13, 2009	WHF

VAOT LOW GROW/FINE FESCUE MIX

LBS/AC						
WEIGHT	BROADCAST	HYDROSEED	NAME	LATIN NAME	GERM	PURITY
38%	57	95	CREEPING RED FESCUE	FESTUCA RUBRA VAR. RUBRA	90%	98%
29%	43.5	72.5	HARD FESCUE	FESTUCA LONGIFOLIA	85%	93%
15%	22.5	37.5	CHEWINGS FESCUE	FESTUCA RUBRA VAR. COMMUTATA	87%	93%
15%	22.5	37.5	ANNUAL RYEGRASS	LOLIUM MULTIFLORUM	90%	95%
3%	4.5	7.5	INERTS			
100%	150	250				

VAOT RURAL AREA MIX

LBS/AC						
WEIGHT	BROADCAST	HYDROSEED	NAME	LATIN NAME	GERM	PURITY
37.5%	22.5	45	CREEPING RED FESCUE	FESTUCA RUBRA VAR. RUBRA	85%	98%
37.5%	22.5	45	TALL FESCUE	FESTUCA ARUNDINACEA	90%	95%
5.0%	3	6	RED TOP	AGROSTIS GIGANTEA	90%	95%
15.0%	9	18	WHITE FIELD CLOVER	TRIFOLIUM REPENS	85%	98%
5.0%	3	6	ANNUAL RYE GRASS	LOLIUM MULTIFLORUM	85%	95%
100%	60	120				

GENERAL AMENDMENT GUIDANCE		
FERTILIZER	LIME	
10-20-10	AG LIME	PELLETIZED
500 LBS/AC	2 TONS/AC	1 TONS/AC

CONSTRUCTION GUIDANCE

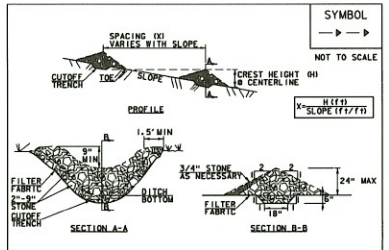
1. SEED MIX: THE CONTRACTOR SHALL COORDINATE WITH THE RESIDENT ENGINEER ON WHICH SEED MIX TO USE.
2. SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
3. ALL SEED MIXTURES: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT 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. HYDROSEEDING: ALTHOUGH GUIDANCE IS GIVEN ABOVE THE SITE CONDITIONS AND THE TYPE OF HYDROSEED PROPOSED FOR USE WILL ULTIMATELY DICTATE THE AMOUNTS AND TYPES OF SOIL AMENDMENTS TO BE APPLIED.
7. 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

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 616 FOR SEED (PAY ITEM 616.15)

REVISIONS	
JANUARY 12, 2015	WHF



CONSTRUCTION SPECIFICATIONS

1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION.
2. CHECK DAMS SHALL BE SPACED SO THAT THE ELEVATION OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION AS THE TOE OF THE UPSTREAM DAM.
3. 3/4" FILTERING STONE MAY BE ADDED TO THE FACE OF THE CHECK DAM AS NECESSARY.
4. EXTEND THE STONE A MINIMUM OF 1.5' BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
5. PROTECT CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
6. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.
7. MAXIMUM DRAINAGE AREA 2 ACRES.

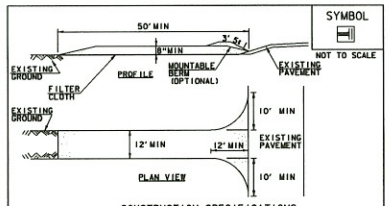
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC ORIGINALLY DEVELOPED BY USDA-NRCS VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

CHECK DAM

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 TEMPORARY STONE CHECK DAM, TYPE I (PAY ITEM 653.25)

REVISIONS	
MARCH 21, 2008	WHF
JANUARY 8, 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.

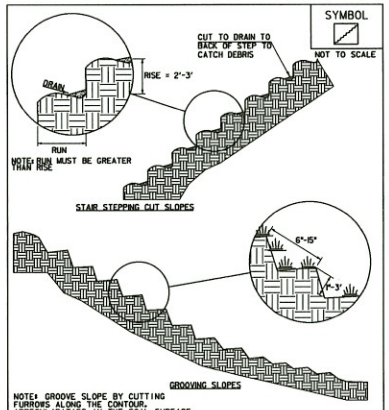
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC ORIGINALLY DEVELOPED BY USDA-NRCS VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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



NOTE: GROOVE SLOPE BY CUTTING FURROWS ALONG THE CONTOUR. IRREGULARITIES IN THE SOIL SURFACE CATCH RAINWATER AND RETAIN LIME, FERTILIZER AND SEED.

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

SURFACE ROUGHENING

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 CONSIDERED INCIDENTAL TO THE CONTRACT

REVISIONS	
APRIL 1, 2008	WHF
JANUARY 13, 2009	WHF

PROJECT NAME: CRAFTSBURY
PROJECT NUMBER: BO 1449(34)

FILE NAME: s13J100erodetails.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: W. LAMMER
EPSC DETAILS

PLOT DATE: 14-OCT-2015
DRAWN BY: W. LAMMER
CHECKED BY: J. SALVATORI
SHEET 40 OF 42