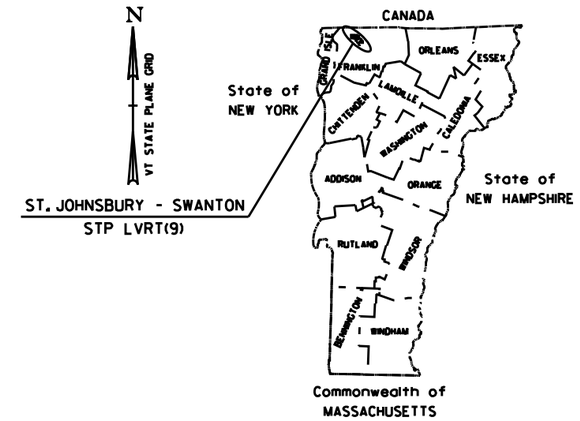
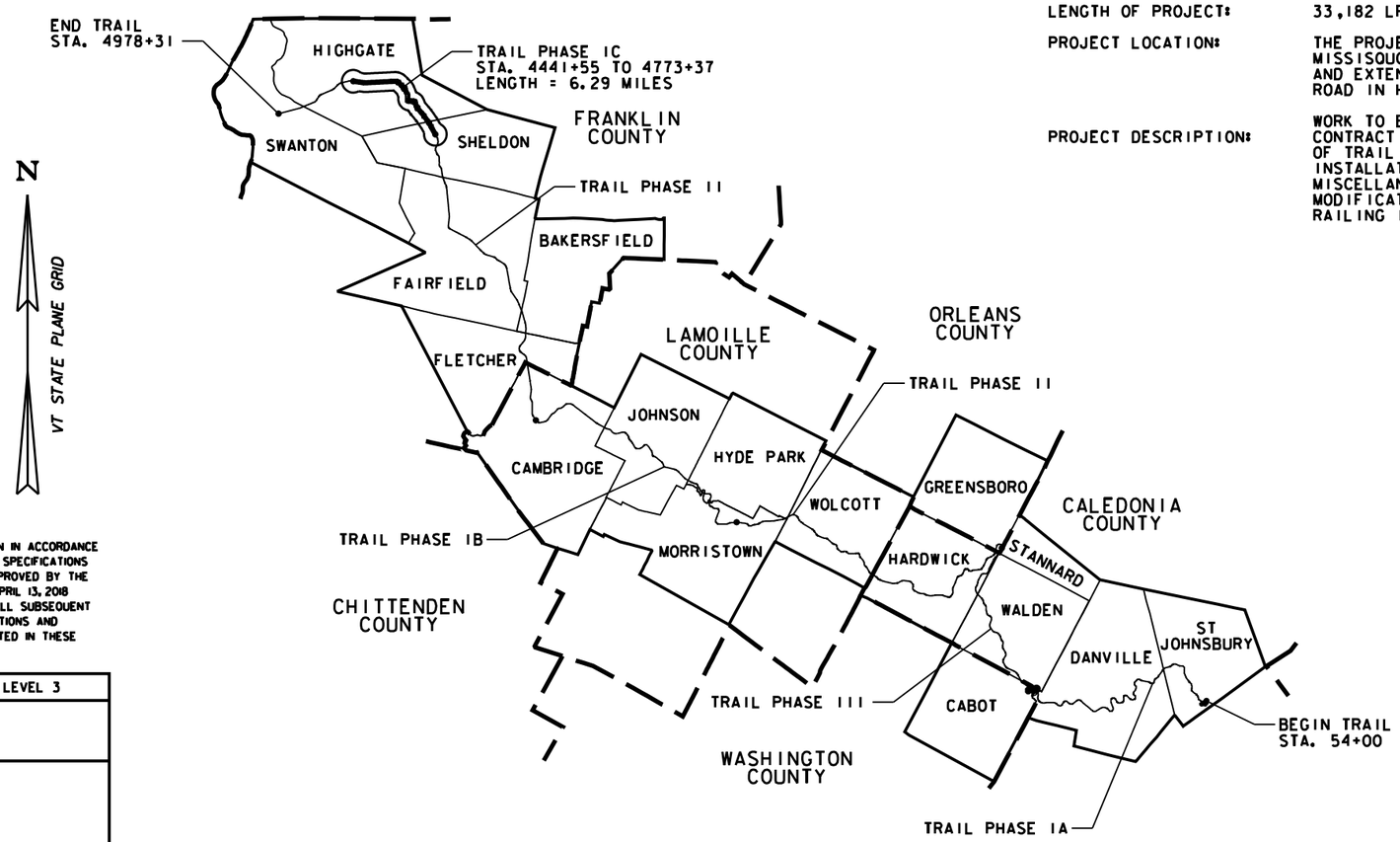
STATE OF VERMONT
AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT
LAMOILLE VALLEY RAIL TRAIL PROJECT

SWANTON - ST. JOHNSBURY
FRANKLIN COUNTY
LAMOILLE VALLEY RAIL TRAIL - PHASE IC



LENGTH OF PROJECT:	33,182 LF (6.29 MILES)
PROJECT LOCATION:	THE PROJECT BEGINS AT THE INTERSECTION OF MISSISQUOI VALLEY RAIL TRAIL IN SHELDON AND EXTENDS WESTERLY 6.29 MILES TO GORE ROAD IN HIGHGATE CENTER.
PROJECT DESCRIPTION:	WORK TO BE PERFORMED UNDER THIS CONTRACT INCLUDES CONSTRUCTION OF TRAIL SURFACE, CLEARING, DITCHING, INSTALLATION OF CULVERTS, SIGNING, MISCELLANEOUS STRUCTURE REPAIRS AND BRIDGE MODIFICATIONS INCLUDING DECKING AND RAILING INSTALLATION.

CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2018, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON APRIL 13, 2018 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

QUALITY ASSURANCE PROGRAM : LEVEL 3

SURVEYED BY : N/A
SURVEYED DATE : N/A

DATUM
VERTICAL: ASSUMED
HORIZONTAL: ASSUMED

DIRECTOR OF PROJECT DELIVERY
APPROVED _____ DATE _____

PROJECT MANAGER : JOEL PERRIGO

PROJECT NAME : ST JOHNSBURY - SWANTON
PROJECT NUMBER : STP LVRT (9)

SHEET 1 OF 50 SHEETS

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VAOT STANDARDS

A-79	3-31-2004	RAIL TRAIL TYPICAL
E-121	8-8-1995	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD
E-131B	5-30-2003	BICYCLE GUIDE SIGN DETAILS
F-20	3-22-2017	PLANK RAIL FENCE
T-1	4-25-2016	TRAFFIC CONTROL GENERAL NOTES
T-2	4-25-2016	TRAFFIC SIGN GENERAL NOTES
T-10	8-6-2012	CONVENTIONAL ROADS CONSTRUCTION APPROACH SIGNING
T-17	8-6-2012	TRAFFIC CONTROL MISCELLANEOUS DETAILS
T-28	8-6-2012	CONSTRUCTION SIGN DETAILS
T-30	8-6-2012	CONSTRUCTION SIGN DETAILS
T-45	1-2-2013	SQUARE TUBE SIGN POST AND ANCHOR
T-94	2-12-2016	TOWN & COUNTY LINE SIGNS

GENERAL INFORMATION

SYMBOLOGY LEGEND NOTE

THE SYMBOLOGY ON THIS SHEET IS INTENDED TO COVER STANDARD CONVENTIONAL SYMBOLOGY. THE SYMBOLOGY IS USED FOR EXISTING & PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROJECT ANNOTATION, AS NOTED ON PROJECT PLAN SHEETS. THIS LEGEND SHEET COVERS THE BASICS. SYMBOLOGY ON PLANS MAY VARY, PLAN ANNOTATIONS AND NOTES SHOULD BE USED TO CLARIFY AS NEEDED.

R.O.W. ABBREVIATIONS (CODES) & SYMBOLS

POINT	CODE	DESCRIPTION
	CH	CHANNEL EASEMENT
	CONST	CONSTRUCTION EASEMENT
	CUL	CULVERT EASEMENT
	D&C	DISCONNECT & CONNECT
	DIT	DITCH EASEMENT
	DR	DRAINAGE EASEMENT
	DRIVE	DRIVEWAY EASEMENT
	EC	EROSION CONTROL
	HWY	HIGHWAY EASEMENT
	I&M	INSTALL & MAINTAIN EASEMENT
	LAND	LANDSCAPE EASEMENT
	R&RES	REMOVE & RESET
	R&REP	REMOVE & REPLACE
	SR	SLOPE RIGHT
	UE	UTILITY EASEMENT
	(P)	PERMANENT EASEMENT
	(T)	TEMPORARY EASEMENT
■	BNDNS	BOUND SET
⊡	BNDNS	BOUND TO BE SET
◎	IPNF	IRON PIN FOUND
●	IPNS	IRON PIN TO BE SET
⊠	CALC	EXISTING ROW POINT
○	PROW	PROPOSED ROW POINT
[LENGTH]		LENGTH CARRIED ON NEXT SHEET

COMMON TOPOGRAPHIC POINT SYMBOLS

POINT	CODE	DESCRIPTION
	APL	BOUND APPARENT LOCATION
	BM	BENCHMARK
	BND	BOUND
	CB	CATCH BASIN
	COMB	COMBINATION POLE
	DITHR	DROP INLET THROATED DNC
	EL	ELECTRIC POWER POLE
	FPOLE	FLAGPOLE
	GASFIL	GAS FILLER
	GP	GUIDE POST
	GSO	GAS SHUT OFF
	GUY	GUY POLE
	GUYW	GUY WIRE
	GV	GATE VALVE
	H	TREE HARDWOOD
	HCTRL	CONTROL HORIZONTAL
	HVCTRL	CONTROL HORIZ. & VERTICAL
	HYD	HYDRANT
	IP	IRON PIN
	IPIPE	IRON PIPE
	LI	LIGHT - STREET OR YARD
	MB	MAILBOX
	MH	MANHOLE (MH)
	MM	MILE MARKER
	PM	PARKING METER
	PMK	PROJECT MARKER
	POST	POST STONE/WOOD
	RRSIG	RAILROAD SIGNAL
	RRSL	RAILROAD SWITCH LEVER
	S	TREE SOFTWOOD
	SAT	SATELLITE DISH
	SHRUB	SHRUB
	SIGN	SIGN
	STUMP	STUMP
	TEL	TELEPHONE POLE
	TIE	TIE
	TSIGN	SIGN W/DOUBLE POST
	VCTRL	CONTROL VERTICAL
	WELL	WELL
	WSO	WATER SHUT OFF

THESE ARE COMMON VAOT SURVEY POINT SYMBOLS FOR EXISTING FEATURES, ALSO USED FOR PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROPOSED ANNOTATION.

PROPOSED GEOMETRY CODES

CODE	DESCRIPTION
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
CC	CENTER OF CURVE
PT	POINT OF TANGENCY
PCC	POINT OF COMPOUND CURVE
PRC	POINT OF REVERSE CURVE
POB	POINT OF BEGINNING
POE	POINT OF ENDING
STA	STATION PREFIX
AH	AHEAD STATION SUFFIX
BK	BACK STATION SUFFIX
D	CURVE DEGREE OF (100FT)
R	CURVE RADUIS OF
T	CURVE TANGENT LENGTH
L	CURVE LENGTH OF
E	CURVE EXTERNAL DISTANCE

UTILITY SYMBOLOGY

UNDERGROUND UTILITIES

	UTILITY (GENERIC-UNKNOWN)
UT	TELEPHONE
UE	ELECTRIC
UC	CABLE (TV)
UEC	ELECTRIC+CABLE
UET	ELECTRIC+TELEPHONE
UCT	CABLE+TELEPHONE
UECT	ELECTRIC+CABLE+TELEP.
G	GAS LINE
W	WATER LINE
S	SANITARY SEWER (SEPTIC)

ABOVE GROUND UTILITIES (AERIAL)

	UTILITY (GENERIC-UNKNOWN)
T	TELEPHONE
E	ELECTRIC
C	CABLE (TV)
EC	ELECTRIC+CABLE
ET	ELECTRIC+TELEPHONE
AER E&T	ELECTRIC+TELEPHONE
CT	CABLE+TELEPHONE
ECT	ELECTRIC+CABLE+TELEP.
	UTILITY POLE GUY WIRE

PROJECT CONSTRUCTION SYMBOLOGY

PROJECT DESIGN & LAYOUT SYMBOLOGY

CZ	CLEAR ZONE
	PLAN LAYOUT MATCHLINE

PROJECT CONSTRUCTION FEATURES

	TOP OF CUT SLOPE
	TOE OF FILL SLOPE
	STONE FILL
	BOTTOM OF DITCH ℄
	CULVERT PROPOSED
	STRUCTURE SUBSURFACE
PDF PDF	PROJECT DEMARCATION FENCE
BF BF	BARRIER FENCE
	TREE PROTECTION ZONE (TPZ)
	STRIPING LINE REMOVAL
	SHEET PILES

CONVENTIONAL BOUNDARY SYMBOLOGY

BOUNDARY LINES

TOWN LINE	TOWN BOUNDARY LINE
COUNTY LINE	COUNTY BOUNDARY LINE
STATE LINE	STATE BOUNDARY LINE
	PROPOSED STATE R.O.W. (LIMITED ACCESS)
	PROPOSED STATE R.O.W.
	STATE ROW (LIMITED ACCESS)
	STATE ROW
	TOWN ROW
	PERMANENT EASEMENT LINE (P)
	TEMPORARY EASEMENT LINE (T)
	SURVEY LINE
P/L	PROPERTY LINE (P/L)
SR	SLOPE RIGHTS
6F	6F PROPERTY BOUNDARY
4F	4F PROPERTY BOUNDARY
HAZ	HAZARDOUS WASTE

EPSC LAYOUT PLAN SYMBOLOGY

EPSC MEASURES

	FILTER CURTAIN
	SILT FENCE
	SILT FENCE WOVEN WIRE
	CHECK DAM
	DISTURBED AREAS REQUIRING RE-VEGETATION
	EROSION MATTING

SEE EPSC DETAIL SHEETS FOR ADDITIONAL SYMBOLOGY

ENVIRONMENTAL RESOURCES

	WETLAND BOUNDARY
	RIPARIAN BUFFER ZONE
	WETLAND BUFFER ZONE
	SOIL TYPE BOUNDARY
T&E	THREATENED & ENDANGERED SPECIES
HAZ HAZ	HAZARDOUS WASTE AREA
AG	AGRICULTURAL LAND
HABITAT	FISH & WILDLIFE HABITAT
FLOOD PLAIN	FLOOD PLAIN
OHW	ORDINARY HIGH WATER (OHW)
	STORM WATER
	USDA FOREST SERVICE LANDS
	WILDLIFE HABITAT SUIT/CONN

ARCHEOLOGICAL & HISTORIC

ARCH	ARCHEOLOGICAL BOUNDARY
HISTORIC DIST	HISTORIC DISTRICT BOUNDARY
HISTORIC	HISTORIC AREA
H	HISTORIC STRUCTURE

CONVENTIONAL TOPOGRAPHIC SYMBOLOGY

EXISTING FEATURES

	ROAD EDGE PAVEMENT
	ROAD EDGE GRAVEL
	DRIVEWAY EDGE
	DITCH
	FOUNDATION
	FENCE (EXISTING)
	FENCE WOOD POST
	FENCE STEEL POST
	GARDEN
	ROAD GUARDRAIL
	RAILROAD TRACKS
	CULVERT (EXISTING)
	STONE WALL
	WALL
	WOOD LINE
	BRUSH LINE
	HEDGE
	BODY OF WATER EDGE
	LEDGE EXPOSED

vhb

PROJECT NAME: ST. JOHNSBURY - SWANTON
PROJECT NUMBER: STP LVRT(9)

FILE NAME: z16F146 LegendSheet.dgn
PROJECT LEADER: E.P. DETRICK
DESIGNED BY: VTRANS
CONVENTIONAL SYMBOLOGY LEGEND SHEET

PLOT DATE: 7/23/2020
DRAWN BY: VTRANS
CHECKED BY: VTRANS
SHEET 3 OF 50

PROJECT NOTES

GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2018, AND ITS LATEST REVISIONS, THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION, AND ITS LATEST REVISIONS, THE AASHTO LRFD GUIDE SPECIFICATIONS FOR DESIGN OF PEDESTRIAN BRIDGES 2ND EDITION, AND MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES 2009 EDITION AND ITS LATEST REVISIONS.

2. PER AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG), PATH CROSS SLOPES SHALL NOT EXCEED 2%.

3. ALL SHARED USE PATH LONGITUDINAL RAMPS AT ROADWAY AND DRIVEWAY CROSSINGS SHALL NOT EXCEED 5%.

4. THE STRUCTURES ON THIS PROJECT ARE DESIGNED FOR H-10 LOADING UNLESS OTHERWISE NOTED.

5. THE PROPOSED TRAIL CENTERLINE SHOWN IN THE EPSC SITE PLAN SHEETS SHALL BE CENTERED WITHIN THE EXISTING RAILROAD BED. THE STATIONED BASELINE PROVIDED IN THE PLANS IS PROVIDED FOR INFORMATIONAL PURPOSES AND IS NOT INTENDED TO REPRESENT A DESIGNED CONSTRUCTION CENTERLINE.

6. ALL WORK AND ANY ASSOCIATED ACTIVITY ON THIS PROJECT SHALL BE PERFORMED WITHIN THE EXISTING RIGHT-OF-WAY LIMITS UNLESS OTHERWISE NOTED.

7. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT SILTATION OR POLLUTION, ESPECIALLY THE DISCHARGE OF RAW CONCRETE, INTO ANY BROOK, STREAM, OR RIVER. THE CONTRACTOR SHALL FOLLOW ALL EROSION AND SEDIMENT CONTROL MEASURES AS SPECIFIED IN THE EPSC SHEETS SHOWN IN THIS PLANSET. THE EPSC SHEETS SHOW THE PERMITTED EROSION AND SEDIMENT CONTROL MEASURED PER THE INDC PERMIT FOR THIS PROJECT.

8. FEATURES SHOWN ON THE EPSC SITE PLANS HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING FEATURES AND LIMITED FIELD INVESTIGATION AND MAY NOT ACCURATELY REFLECT ACTUAL FIELD CONDITIONS. THE CONTRACTOR WILL BE RESPONSIBLE FOR MAKING FIELD MEASUREMENTS OF ALL EXISTING STRUCTURE COMPONENTS IMPACTED BY THE NEW WORK TO ASSURE CONSISTENCY WITH THE PROPOSED MODIFICATIONS. ANY DISCREPANCIES IN DIMENSIONS, CHARACTER, OR EXTENT OF THE EXISTING FEATURES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE ADVANCING THE WORK. ALL COSTS ASSOCIATED WITH THE VERIFICATION OF PROPOSED WORK SHALL BE INCLUDED IN ITEM 635.11, "MOBILIZATION/DEMOBILIZATION".

9. ALL SOIL DEPOSITS WHICH ARE FOUND ON THE TRAIL SHALL BE REMOVED DOWN TO THE EXISTING BALLAST ELEVATION. COST SHALL BE COVERED UNDER ITEM 203.17, "UNCLASSIFIED EXCAVATION". BALLAST SHALL THEN BE CLEANED IN ACCORDANCE WITH ITEM 900.640, "SPECIAL PROVISION (WINDROWING BALLAST)" AND CHOKED IN ACCORDANCE WITH ITEM 900.640, "SPECIAL PROVISION (CHOKING BALLAST)". SEE TRAIL CONSTRUCTION NOTES ON TYPICAL TRAIL SECTIONS SHEET FOR ADDITIONAL DETAILS.

10. THE EXISTING STRUCTURAL STEEL MAY BE PAINTED WITH A MATERIAL THAT CONTAINS LEAD. THE CONTRACTOR SHALL FOLLOW ALL APPLICABLE REGULATIONS WHEN HANDLING AND WORKING WITH THIS STEEL. ANY REMOVED STRUCTURAL STEEL, IF APPLICABLE, IS THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE STATE AND ITS OFFICERS AND EMPLOYEES HARMLESS CONCERNING THE CONTRACTOR'S USE OR DISPOSITION OF THE REMOVED EXISTING STRUCTURAL STEEL.

TRAIL ACCESS

11. ACCESS TO THE TRAIL SHALL BE FROM PUBLIC CROSSINGS. ACCESS FROM TOWN HIGHWAYS SHALL BE PERMITTED IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:
    a. WORK HOURS ARE 7AM TO 6PM MONDAY THRU FRIDAY. WORK HOURS ON SATURDAY, AND TO WORK LATER THAN 6PM ALLOWED ONLY WITH PERMISSION FROM THE ENGINEER.
    b. THE CONTRACTOR SHALL HAVE CONSTRUCTION SIGNAGE AND TRAFFIC CONTROL AT ACCESS POINTS WHICH MEET THE REQUIREMENTS OF THE 2009 MUTCD AND ITS LATEST REVISIONS.
    c. ROAD CLOSURES OR STOPPING TRAFFIC SHALL NOT BE PERMITTED WITHOUT PRIOR APPROVAL BY THE TOWN OR STATE.
    d. THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO ROADS, DITCHES, SHOULDERS, ETC. AND RESTORE THEM TO PRE-CONSTRUCTION CONDITIONS AT THE CONTRACTOR'S EXPENSE. ENGINEER TO VERIFY PRE-CONSTRUCTION CONDITIONS

TRAIL CONSTRUCTION

12. SEE TRAIL TYPICAL SECTIONS SHEETS FOR TRAIL CONSTRUCTION NOTES.

TIMBER

13. ALL TREATED TIMBER SHALL BE TREATED IN ACCORDANCE WITH SUBSECTION 726.01.

ITEM DETAIL SHEET

CULVERTS

NUMBER	STATION	TYPE	SIZE FT	REMARKS
* 94A	4456+32	Stone Box	2 x 2	REPAIR OUTLET HEADWALL AND SLOPE
94A-2	4474+23	CMP	4' DIA	CLEAN INLET AND OUTLET
94A-4	4480+28	CMP	2' DIA	CLEAN INLET AND OUTLET
** 95B	4488+51	Stone Box	3 x 3	REPLACE CULVERT
95C	4497+97	CMP	2.5' DIA	REPLACE CULVERT
** 95D	4502+62	Stone Box	1 x 1	REPLACE CULVERT
95E	4519+83	Stone Box	3 x 3	TOWN CULVERT, NO ACTION
** 96A	4532+25	Stone Box	2 x 2	REGRADE OUTLET SLOPE, CLEAN INLET
* 96B	4544+48	Stone Box	2 x 2	REPAIR OUTLET HEADWALL, CLEAN INLET AND OUTLET
N/A	4550+50	HDPE	0.5' DIA	NO WORK ANTICIPATED
96C	4553+04	Stone Box	2 x 2	REPLACE CULVERT
* 96D	4559+50	Stone Box	4 x 5	CLEAN INLET AND OUTLET
* 96F	4571+91	Stone Box	3 x 3	REPAIR OUTLET HEADWALL AND INLET SLOPE
96G	4578+03	Stone Box	3 x 3	REPLACE CULVERT
N/A	4584+70	CMP	1.5' DIA	INSTALL NEW CULVERT AT LOW POINT
* 96H	4598+24	Stone Box	2 x 2	REGRADE AND CLEAN INLET, CLEAN OUTLET
96I	4605+29	Stone Box	2 x 2	REPLACE CULVERT
** * 96J	4608+62	Stone Box	3 x 4	REPAIR OUTLET HEADWALL AND OUTLET SLOPE
96K	4618+50	Stone Box	2 x 2	REPLACE CULVERT
** 96L	4630+41	Stone Box	2 x 2	REPLACE CULVERT
96M	4635+99	CMP	1' DIA	REPLACE WITH 24" CULVERT
96O	4675+37	Cast Iron	1.67' DIA	REGRADE AND CLEAN INLET, CLEAN OUTLET
96P	4682+69	Cast Iron	1.67' DIA	CLEAN INLET AND OUTLET
96Q	4698+41	CMP	1.5' DIA	CLEAN INLET AND OUTLET
* 96R	4704+57	Stone Box	2 x 2	RECONSTRUCT 10' OF OUTLET AND HEADWALL, CLEAN INLET
96S	4760+93	Stone Box	2 x 2	ABANDON IN PLACE

** THESE CULVERTS WERE IMPACTED BY THE HALLOWEEN STORM IN 2019, AND ARE SCHEDULED TO BE REPAIRED UNDER A FEMA PROJECT. ACTUAL CONDITIONS MAY VARY FROM WHAT IS INDICATED ON THESE PLANS. CERTAIN ELEMENTS OF WORK ON THESE CULVERTS MAY BE DELETED OR ADDED AS DIRECTED BY THE ENGINEER

* NATIONAL HISTORIC REGISTER ELIGIBLE

CATTLEPASSES

NUMBER	STATION	TYPE	SIZE FT	REMARKS
96	4520+39	STONE CATLEPASS	6 x 4	RAILING REQUIRED, 9' LONG SECTION OVER CULVERT
96(7)N	4652+39	STONE CATLEPASS	6 x 4	RAILING REQUIRED, 12' LONG SECTION OVER CULVERT

BRIDGES

NUMBER	BEGIN STATION	END STATION	TYPE	LENGTH FT	REMARKS
96	4465+53	4465+89	STEEL I-BEAM, PILE BENT	35	REPLACE DECK, INSTALL CURB AND GUARDRAILS, WIDEN APPROACHES

PROJECT NAME: ST. JOHNSBURY - SWANTON
PROJECT NUMBER: STP LVRT(9)

FILE NAME: z16F146 IDS.dgn
PROJECT LEADER: E.P. DETRICK
DESIGNED BY: B.M. ROBERTS
ITEM DETAIL SHEET (1 OF 2)

PLOT DATE: 7/23/2020
DRAWN BY: B.M. ROBERTS
CHECKED BY: E.P. DETRICK
SHEET 7 OF 50

ITEM DETAIL SHEET

RAILING

BEGIN STATION	END STATION	LENGTH FT	TYPE	REMARKS
4441+75	4444+50	275	6' CHAIN-LINK	6' CHAIN-LINK BOTH SIDES
4444+70	4449+60	490	6' CHAIN-LINK	6' CHAIN-LINK BOTH SIDES
4465+38	4465+50	12	APPROACH	NEEDED ON BOTH SIDES OF BRIDGE
4465+50	4465+90	40	BRIDGE	NEEDED ON BOTH SIDES OF BRIDGE
4465+90	4466+02	12	APPROACH	NEEDED ON BOTH SIDES OF BRIDGE
4520+24	4520+54	30	GUARDRAIL	NEEDED ON BOTH SIDES OF CATTLEPASS
4652+24	4652+54	30	GUARDRAIL	NEEDED ON BOTH SIDES OF CATTLEPASS

WASHOUTS

BEGIN STATION	END STATION	LENGTH FT	TYPE	REMARKS
4488+45	4488+55	10	WASHOUT OVER CULVERT	AFTER CULVERT WORK COMPLETED, RE-ESTABLISH SLOPE AND ADD SLOPE PROTECTION
4504+75	4517+75	1300	PONDING AND DITCH FAILURE	REGRADE AND ESTABLISH DITCHING THROUGH CORRIDOR
4538+90	4540+90	200	PONDING	ESTABLISH DITCHING TO DRAIN NORTH TO CULVERT 96B
4560+10	4565+80	570	PONDING	RAISE PROFILE 1 FOOT WITH GRANULAR BORROW TO ESTABLISH DITCH THROUGH LEDGE SECTION
4586+20	4586+30	10	WASHOUT OVER CULVERT	AFTER CULVERT WORK COMPLETED, REPAIR SINK HOLE OVER OUTLET IN TRAIL

CROSSINGS

NUMBER	STATION	TYPE	MATERIAL	CURRENTLY PERMITTED	REMARKS
N/A	4444+60	PRIVATE	GRAVEL	YES	CONSTRUCT CROSSING AS DIRECTED BY THE ENGINEER
226	4449+79	STATE ROAD	PAVED	YES	CONSTRUCT ACCESSIBLE ROAD CROSSING
N/A	4459+68	FARM	GRAVEL	NO	RESTORE DITCH THROUGH CROSSING
227	4461+43	FARM DRIVE	GRAVEL	YES	RESTORE GRADE THROUGH CROSSING, DITCH TRAIL TO PREVENT WATER SHEETING ALONG TRAIL
N/A	4478+20	ATV ACCESS	EARTH	NO	BLOCK ACCESS AS DIRECTED BY THE ENGINEER
228	4496+76	ATV ACCESS	GRAVEL	NO	BLOCK ACCESS AS DIRECTED BY THE ENGINEER
229	4519+84	TOWN ROAD	PAVED	YES	CONSTRUCT ACCESSIBLE ROAD CROSSING
N/A	4520+05	ATV ACCESS	EARTH	NO	BLOCK ACCESS AS DIRECTED BY THE ENGINEER
230	4527+95	PRIVATE	GRAVEL	YES	RESTORE GRADE THROUGH CROSSING, DITCH TRAIL TO PREVENT WATER SHEETING ALONG TRAIL
N/A	4529+85	ATV ACCESS	EARTH	NO	BLOCK ACCESS AS DIRECTED BY THE ENGINEER
N/A	4537+44	DRIVE	GRAVEL	NO	RESTORE DITCH THROUGH CROSSING
231	4542+14	FARM DRIVE	GRAVEL	YES	RESTORE GRADE THROUGH CROSSING, DITCH TRAIL TO PREVENT WATER SHEETING ALONG TRAIL
232	4545+76	FARM	EARTH	NO	BLOCK ACCESS AS DIRECTED BY THE ENGINEER
233	4557+35	FARM	EARTH	NO	BLOCK ACCESS AS DIRECTED BY THE ENGINEER
234	4559+85	FARM DRIVE	EARTH	YES	RESTRICT FOR PEDESTRAIN ACCESS ONLY
235	4567+33	STATE ROAD	PAVED	YES	RE-ALIGN AND CONSTRUCT ACCESSIBLE ROAD CROSSING
N/A	4575+25	FARM	GRAVEL	NO	BLOCK ACCESS AS DIRECTED BY THE ENGINEER
N/A	4576+30	FARM	EARTH	NO	BLOCK ACCESS AS DIRECTED BY THE ENGINEER
236	4589+43	FARM	EARTH	NO	BLOCK ACCESS AS DIRECTED BY THE ENGINEER
N/A	4594+50	FARM	EARTH	NO	BLOCK ACCESS AS DIRECTED BY THE ENGINEER
237	4599+31	TOWN ROAD	PAVED	YES	CONSTRUCT ACCESSIBLE ROAD CROSSING
238	4620+11	TOWN ROAD	GRAVEL	YES	RESTORE GRADE THROUGH CROSSING, CONSTRUCT ACCESSIBLE ROAD CROSSING
239	4668+10	FARM	GRAVEL	NO	BLOCK ACCESS AS DIRECTED BY THE ENGINEER
240	4679+34	STATE ROAD	PAVED	YES	RE-ALIGN AND CONSTRUCT ACCESSIBLE ROAD CROSSING
N/A	4741+55	ATV ACCESS	EARTH	NO	BLOCK ACCESS AS DIRECTED BY THE ENGINEER
246	4742+40	PRIVATE	GRAVEL	NO	BLOCK ACCESS AS DIRECTED BY THE ENGINEER
N/A	4744+15	ATV ACCESS	EARTH	NO	BLOCK ACCESS AS DIRECTED BY THE ENGINEER
N/A	4747+75	ATV ACCESS	GRAVEL	NO	BLOCK ACCESS AS DIRECTED BY THE ENGINEER
247	4755+10	STATE ROAD	PAVED	YES	RE-ALIGN AND CONSTRUCT ACCESSIBLE ROAD CROSSING
N/A	4763+20	ATV ACCESS	EARTH	NO	BLOCK ACCESS AS DIRECTED BY THE ENGINEER
248	4766+85	ATV ACCESS	EARTH	NO	BLOCK ACCESS AS DIRECTED BY THE ENGINEER
249	4773+37	TOWN ROAD	PAVED	YES	CONSTRUCT ACCESSIBLE ROAD CROSSING

PROJECT NAME: ST. JOHNSBURY - SWANTON
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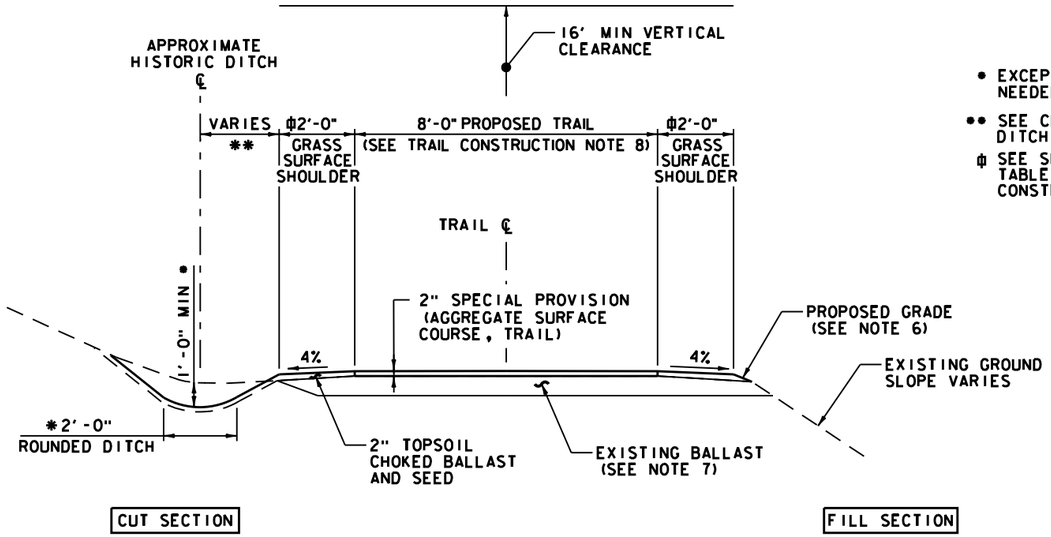
DESIGNED BY: B.M. ROBERTS
ITEM DETAIL SHEET (2 OF 2)

PLOT DATE: 7/23/2020
DRAWN BY: B.M. ROBERTS
CHECKED BY: E.P. DETRICK
SHEET 8 OF 50



• EXCEPT WHERE DITCHES NOT NEEDED AS PER ENGINEER

•• SEE CLEARING AND DITCHING NOTE 2

Φ SEE SHOULDER WIDTH TABLE BELOW AND TRAIL CONSTRUCTION NOTE 7

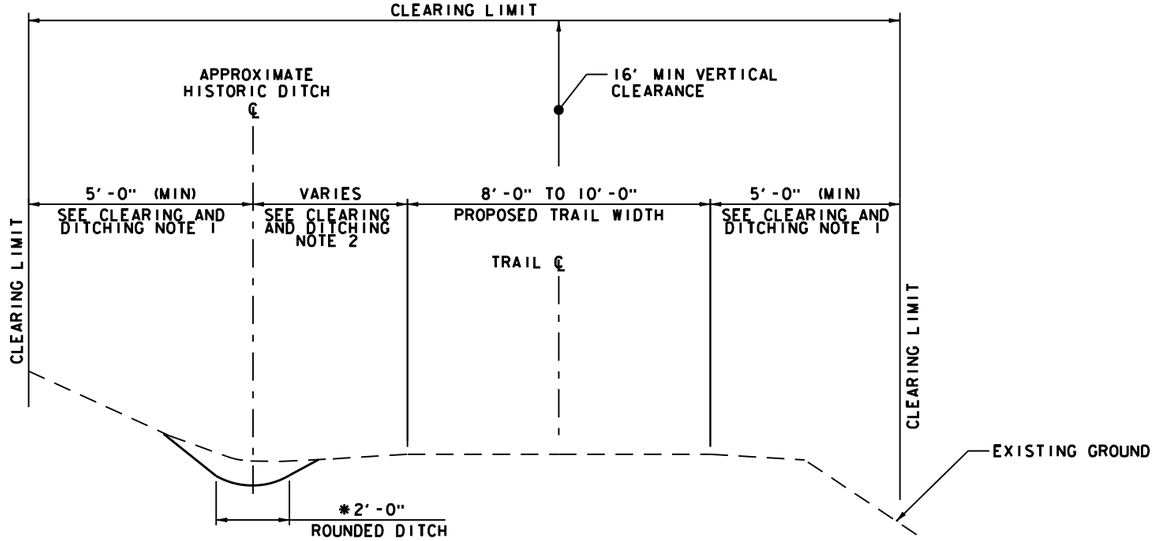
RURAL TRAIL TYPICAL SECTION

NOT TO SCALE

SHOULDER WIDTH TABLE

SIDE SLOPE	SHOULDER WIDTH	
	MIN.	PREFERRED
< 1:4	1'-0"	2'-0"
1:3	1'-0"	3'-0"
1:2	1'-0"	5'-0"
> 1:2	1'-0"	5'-0"

SEE TRAIL CONSTRUCTION NOTE 7



NOTE: SEE RURAL TRAIL TYPICAL AND BOURDEAU BROTHERS TRAIL TYPICAL SECTIONS FOR INFORMATION NOT SHOWN

CLEARING AND DITCHING TYPICAL SECTION

NOT TO SCALE

TRAIL CONSTRUCTION NOTES:

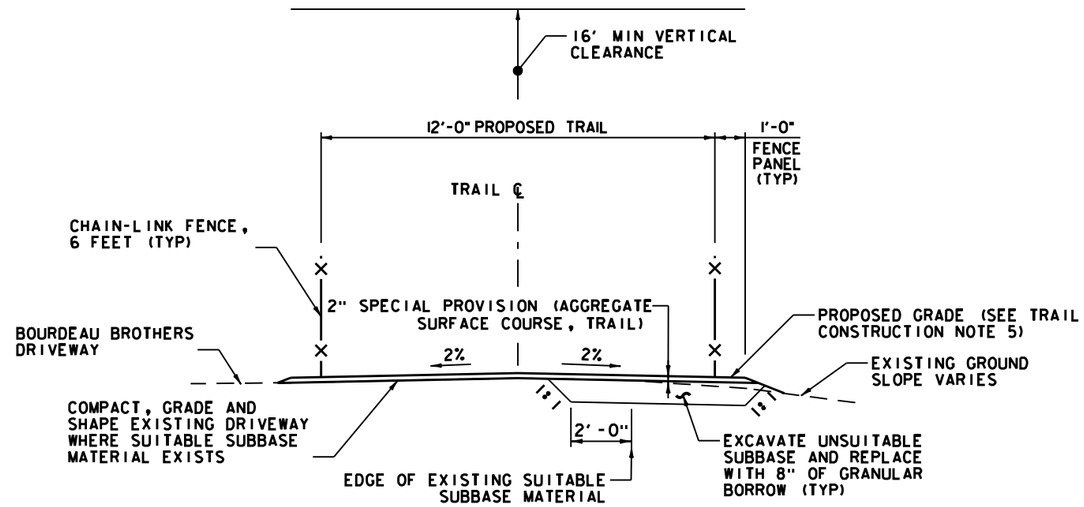
1. IF THE EXISTING RAIL BED HAS ANY WASHOUTS OR HOLES, THEY SHALL BE FILLED WITH GRANULAR BORROW TO THE REQUIRED ELEVATION FOR THE INSTALLATION OF 2" OF ITEM 900.608, "SPECIAL PROVISION (AGGREGATE SURFACE COURSE, TRAIL)".
2. ENTIRE TRAIL SURFACE SHALL BE BANKED 2% TO THE INSIDE OF CURVES. TRAIL SHALL OTHERWISE BE GRADED TO DRAIN OR SLOPED TO ONE SIDE IN FLAT AREAS WITH 2% CROSS SLOPE MAXIMUM.
3. THE CONTRACTOR SHALL REMOVE RAILROAD TIES AND RAIL FROM BALLAST AND DISPOSE OF BY METHODS APPROVED BY THE VT AGENCY OF NATURAL RESOURCES. REMOVAL OF TIES AND RAIL SHALL BE PAID INCIDENTAL TO ITEM 201.10, "CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS".
4. 1V:4H IS THE PREFERRED FILL SIDE SLOPE UNLESS THE FILL WOULD EXTEND BEYOND THE CLEARING LIMITS, IN WHICH CASE STEEPER SLOPES SHALL BE USED.
5. SIDE SLOPES DISTURBED DURING CONSTRUCTION STEEPER THAN 1V:3H SHALL BE PROTECTED WITH ITEM 653.21, "ROLLED EROSION CONTROL PRODUCT, TYPE II" UNLESS STEEPER THAN 1V:2H , THEN ITEM 613.10, "STONE FILL, TYPE I" SHALL BE USED AND PAID FOR RESPECTIVELY.
6. IF THE EXISTING RAIL BED LACKS 8" OF SALVAGEABLE BALLAST OR WELL DRAINED GRANULAR MATERIAL, GRANULAR BORROW SHALL BE ADDED TO ACHIEVE THE REQUIRED 8" BASE.
7. THE PREFERRED SHOULDER DIMENSIONS SHALL BE USED UNLESS CONSTRAINED BY THE WIDTH OF THE EXISTING RAIL BED AND STEEP SIDE SLOPES. SHOULDER WIDTHS BELOW THE PREFERRED WIDTH SHALL BE USED WHEN DIRECTED BY THE ENGINEER. CERTAIN EXISTING RAIL BED WIDTHS AND SIDE SLOPE CONDITIONS MAY WARRANT SHOULDER WIDTHS BELOW THE MINIMUM WIDTHS SHOWN. TO AVOID THE USE OF GUARDRAIL TO PROTECT STEEP SLOPES WITHOUT AN ADEQUATE BARRIER OF VEGETATION OR OTHER IMPASSABLE OBJECTS, THE ENGINEER MAY DIRECT THE CONTRACTOR TO LOWER THE PROFILE OF THE EXISTING TRAIL TO ACHIEVE THE PREFERRED SHOULDER WIDTH.
8. THE PROPOSED TRAIL WIDTH SHALL BE 12'-0" IN THE APPROXIMATELY 0.16 MILES OF "BOURDEAU BROTHERS" TRAIL SETTINGS, AS SHOWN ON TRAIL TYICAL SECTIONS SHEETS. THE CONTRACTOR SHALL SMOOTHLY TRANSITION BETWEEN TRAIL WIDTHS.
9. BALLAST GRADING AND COMPACTION SHALL BE PAID FOR UNDER ITEM 900.645, "SPECIAL PROVISION (BALLAST GRADING AND SHAPING)".
10. GRASS SHOULDERS MAY BE OMITTED IF GRASSED BERMS EXIST AT THE EDGES OF THE PROPOSED TRAIL. OMISSION OF SHOULDERS MUST BE APPROVED BY THE ENGINEER.

CLEARING AND DITCHING NOTES:

1. CLEARING LIMIT ON EMBANKMENT SLOPES STEEPER THAN 1V:2H SHALL NOT BE MORE THAN 1'-0" BEYOND THE TOP OF SLOPE. ACTUAL CLEARING LIMITS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER. IN ROCK CUT AREAS, CLEAR THE WIDTH OF THE BALLAST AND DITCHES ALONG WITH ANY OVERHANGING VEGETATION. DO NOT CLEAR OR DAMAGE HEALTHY TREES GREATER THAN 5" IN DIAMETER ON STEEP EMBANKMENTS OFF THE EDGE OF THE BALLAST UNLESS WITHIN 1'-0" OF THE BALLAST. DO NOT REMOVE ROOTS OR STUMPS ON SLOPES. PRUNE BRANCHES WITHIN CLEARING LIMITS AND REMOVE DEAD TREES 3'-0" BEYOND THE TOP OF SLOPE. CLEARING TO BE PAID UNDER ITEM 201.10, "CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS".
2. RE-ESTABLISH APPROXIMATE HISTORIC DITCHES. ACTUAL DITCH OFFSET AND BOTTOM ELEVATION SHALL BE SET IN THE FIELD BY THE ENGINEER. SALVAGE CLEAN BALLAST FROM DITCHES TO RAIL BED. DITCH EXCAVATION DEPTH VARIES TO ACCOMMODATE HISTORIC LOCATIONS, BACK SLOPES, DITCH PROFILE, AND CROSS CULVERT INVERT ELEVATIONS. DITCHING WORK SHALL BE PAID UNDER ITEM 900.640, "SPECIAL PROVISION (DITCHING)".
3. WASTE SILT AND EXCAVATED MATERIALS ONTO DESIGNATED SHOULDERS AND EMBANKMENT SLOPES THAT HAVE BEEN MARKED BY THE ENGINEER. SEE WASTE AREA DETAILS SHEET FOR WASTING DETAILS. CLEAR WASTE AREAS PRIOR TO WASTING MATERIAL. RAKE SEED AND MULCH THE DRESSED SLOPES WITHIN 72 HOURS, OR IMMEDIATELY IF EXPECTING RAIN WITHIN 24 HOURS. COSTS FOR WASTING MATERIAL SHALL BE INCIDENTAL TO ALL CONTRACT ITEMS.
4. IN WETLANDS OR ON BANKS OF WATER BODIES DO NOT CLEAR PAST THE EDGE OF BALLAST OR TOP OF BANK, OR OTHER LIMITS SET BY PERMIT CONDITIONS.
5. ON BALLAST TRAIL SHOULDERS AND DITCHES, REMOVE ALL TREES, BRUSH, WEEDS, LEAVES, BRANCHES, TRASH, ROOTS, STUMPS; TOPSOIL MAY BE SALVAGED FOR THE USE ON TRAIL GRASS SURFACE.
6. ON LATERAL DITCHES OR SHOULDERS, CLEAR CUT AND REMOVE ALL TREES, BRUSH, WEEDS, LEAVES, BRANCHES TO WITHIN 4" OF SOIL SURFACE.
7. ORGANIC MATERIAL THAT HAS BEEN CHIPPED, GROUND, OR MULCHED MAY REMAIN. IF IT IS TO REMAIN THEN SPREAD EVENLY ON SHOULDERS AND ADJACENT R.O.W. LAND. REMOVE AND LEGALLY DISPOSE OF ANY TRASH AND DEBRIS OFF SITE. THE COST OF DISPOSAL OF TRASH AND DEBRIS SHALL BE INCIDENTAL TO ALL CONTRACT ITEMS.

vhb

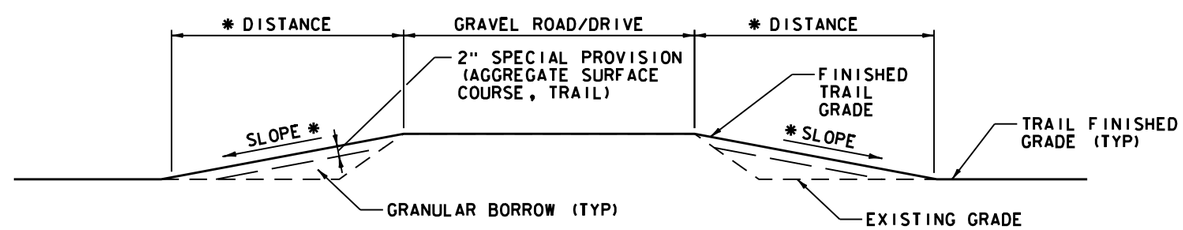
PROJECT NAME: ST. JOHNSBURY - SWANTON	
PROJECT NUMBER: STP LVRT(9)	
FILE NAME: z16F146 typ trailsections.dgn	PLOT DATE: 7/23/2020
PROJECT LEADER: E.P. DETRICK	DRAWN BY: B.O. CRONIN
DESIGNED BY: B.O. CRONIN	CHECKED BY: E.P. DETRICK
TYPICAL TRAIL SECTIONS SHEET (1 OF 2)	SHEET 9 OF 50



BOURDEAU BROTHERS TRAIL TYPICAL SECTION

NOT TO SCALE
STA 4441+75 - STA 4449+60

NOTE:
ALL TRAIL SECTIONS NOT SPECIFIED WITHIN THE BOURDEAU BROTHERS TRAIL TYPICAL SECTION STATION RANGE SHALL BE CONSTRUCTED PER THE RURAL TYPICAL SECTION.



* - SEE NOTE 1 BELOW

TYPICAL GRAVEL ROAD/DRIVE CROSSING SECTION

NOT TO SCALE

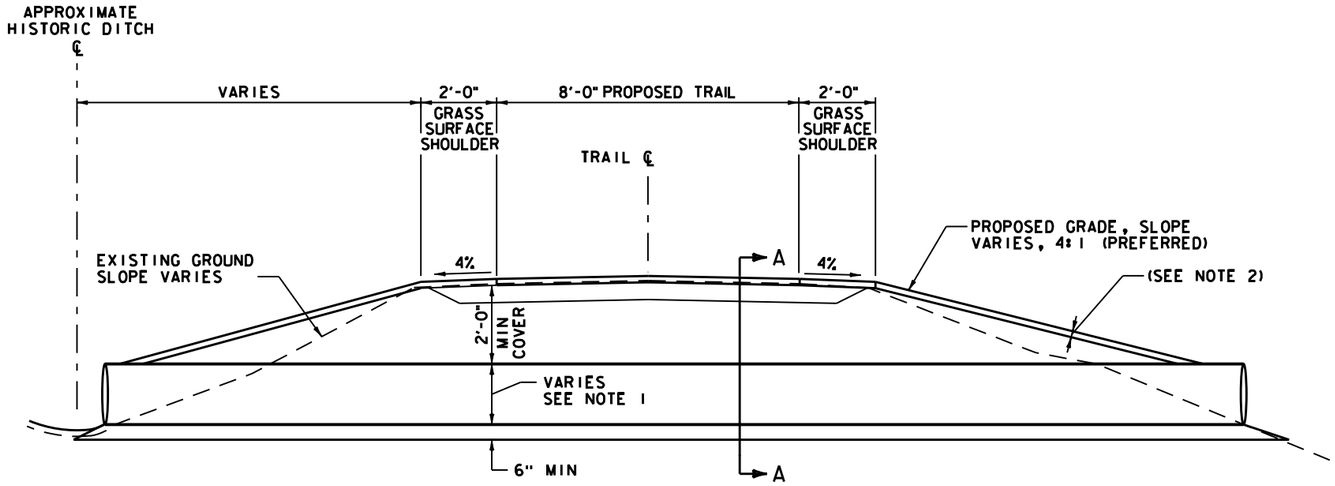
NOTES:

1. GRANULAR BORROW SHALL BE ADDED TO FEATHER TRAIL GRADE SUCH THAT FINAL GRADE ALONG TRAIL IS 5% OR LESS.
2. GRANULAR BORROW SHALL BE TOPPED WITH 2" ITEM 900.608 "SPECIAL PROVISION (AGGREGATE SURFACE COURSE, TRAIL)" TO ACHIEVE FINAL GRADE ELEVATIONS AS SHOWN IN TYPICAL TRAIL CROSS SECTIONS .

NOTES:

1. SEE TRAIL TYPICAL SECTIONS (SHEET 1 OF 2) FOR TRAIL CONSTRUCTION NOTES.

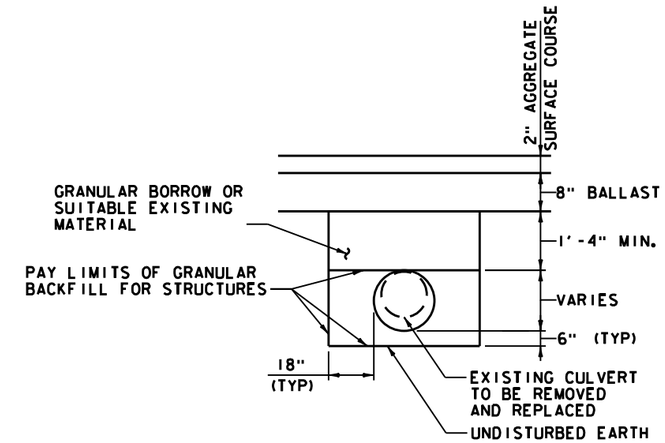
PROJECT NAME: ST. JOHNSBURY - SWANTON	
PROJECT NUMBER: STP LVRT(9)	
FILE NAME: z16F146 typ trailsections.dgn	PLOT DATE: 7/23/2020
PROJECT LEADER: E.P. DETRICK	DRAWN BY: B.O. CRONIN
DESIGNED BY: B.O. CRONIN	CHECKED BY: E.P. DETRICK
TYPICAL TRAIL SECTIONS SHEET (2 OF 2)	SHEET 10 OF 50



NOTE: SEE RURAL TRAIL TYPICAL SECTION ON TYPICAL TRAIL SECTIONS (1 OF 2) FOR INFORMATION NOT SHOWN

TYPICAL CULVERT REPLACEMENT/INSTALLATION DETAIL

NOT TO SCALE



SECTION A-A

NOT TO SCALE

Culvert ID	Station	Existing Size (in)	Existing Material	Proposed pipe size (in)	Est. Culvert Length (ft)
95B	4488+51	36	Stone Box	24	52
95C	4497+97	30	CMP	30	52
95D	4502+62	12	Stone Box	24	52
96C	4553+04	24	Stone Box	30	52
96G	4578+03	36	Stone Box	30	72
96H-2	4584+70	-	-	30	32
96I	4605+29	24	Stone Box	24	60
96K	4618+50	24	Stone Box	24	52
96L	4630+41	24	Stone Box	30	60
96M	4635+99	12	CMP	24	16

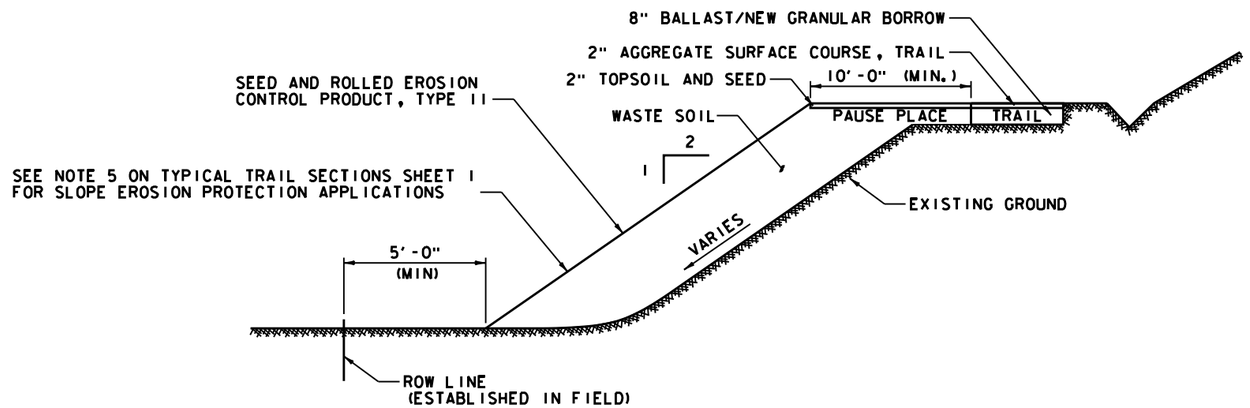
NOTES:

1. SEE TABLE AND ITEM DETAIL SHEET FOR SIZE, TYPE, AND LOCATION OF CULVERTS.
2. DISTURBED SLOPES SHALL HAVE 2" OF TOPSOIL, SEED AND MULCH. SEE NOTE 6 ON TYPICAL TRAIL SECTIONS (SHEET 1 OF 2) FOR ADDITIONAL SLOPE CONDITIONS STEEPER THAN 1V:3H.
3. EXCAVATION, REMOVAL AND DISPOSAL OF EXISTING CULVERTS AND DISPOSAL OF SURROUNDING MATERIAL NOT TO BE REUSED SHALL BE PAID UNDER ITEM 204.25, "STRUCTURE EXCAVATION".
4. IF THE EXISTING CULVERT IS A STONE BOX CULVERT THE CONTRACTOR SHALL SALVAGE STONES REMOVED FOR THE INSTALLATION OF THE NEW CULVERT AND STOCKPILE THEM IN A LOCATION WITHIN THE PROJECT LIMITS AS DESIGNATED BY THE ENGINEER. ALL COSTS ASSOCIATED WITH SALVAGING AND STOCKPILING THE STONES SHALL BE INCIDENTAL TO STRUCTURE EXCAVATION.
5. IF THE EXISTING CULVERT TO BE REMOVED IS AT A LOWER DEPTH THAN THE NEW ONE TO BE PLACED, ITEM 203.32 GRANULAR BORROW SHALL BE USED TO FILL THE VOID UP TO THE ELEVATION 6" BELOW THE BOTTOM OF THE NEW CULVERT.
6. CULVERT SHALL BE CONSTRUCTED ON A SLOPE WHICH MATCHES UPSTREAM AND DOWNSTREAM OF CHANNEL.

PROJECT NAME: ST. JOHNSBURY - SWANTON
PROJECT NUMBER: STP LVRT(9)

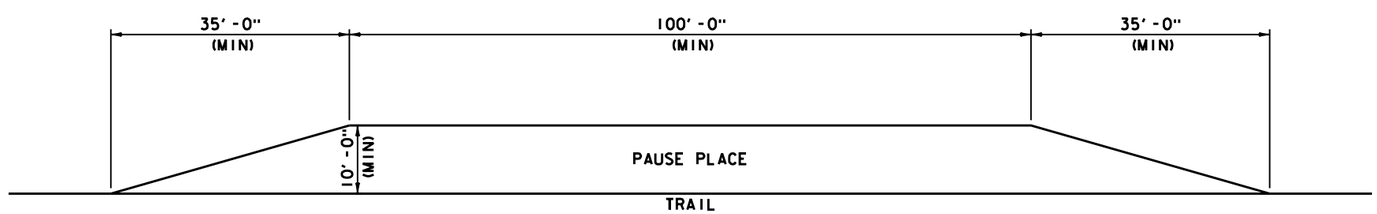
FILE NAME: z16F146 typ culvert.dgn
PROJECT LEADER: E.P. DETRICK
DESIGNED BY: B.O. CRONIN
TYPICAL CULVERT SECTION SHEET

PLOT DATE: 7/23/2020
DRAWN BY: B.O. CRONIN
CHECKED BY: E.P. DETRICK
SHEET 11 OF 50



WASTE AREA ON EMBANKMENT SHOULDERS

NOT TO SCALE



PLAN VIEW

NOT TO SCALE

NOTES:

1. PAUSE PLACES ARE CONSTRUCTED TRAIL PULL-OFF AREAS WHERE EXCESS MATERIAL FROM DITCHING CAN BE WASTED.
2. PAUSE PLACES SHALL NOT ENTIRELY BLOCK DRAINAGE SWALES.
3. PAUSE PLACES SHALL NOT INTERSECT ROAD CROSSINGS AT FULL WIDTH TO AVOID PROVIDING UNWANTED PARKING AREAS FOR PATH USERS.
4. PAUSE PLACES SHALL NOT INTERSECT DELINEATED WETLANDS, WETLAND BUFFERS, STREAMS AND FEMA FLOOD HAZARD AREAS.

PAUSE PLACE LOCATIONS

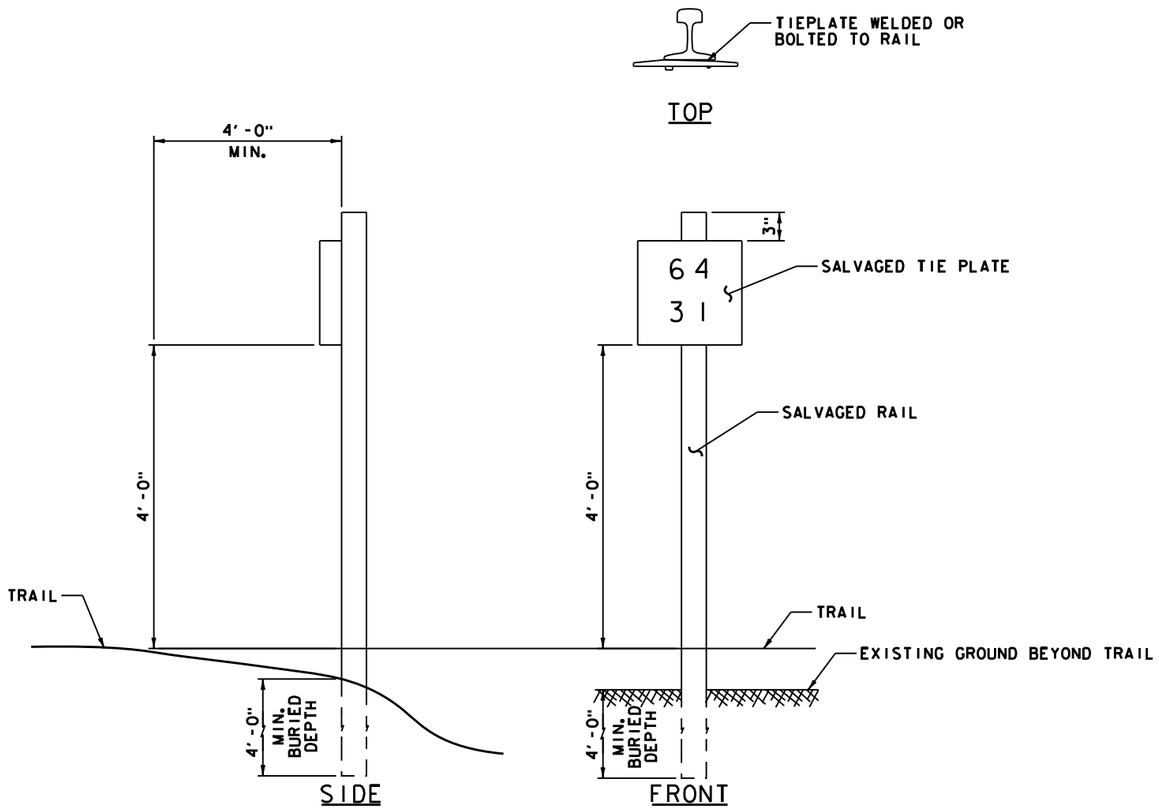
(STATIONING DOES NOT INCLUDE TAPERS)

4518+55 - 4519+55, LT
4556+35 - 4557+35, LT
4569+30 - 4570+30, RT
4595+00 - 4598+50, LT
4730+75 - 4731+75, LT
4730+75 - 4733+00, RT
4769+00 - 4770+00, LT

NOTES:

1. SLOPE SHALL BE CLEARED, NOT GRUBBED PRIOR TO PLACEMENT.
2. MAX DEPTH LIMITED BY LENGTH OF EXCAVATOR REACH FOR SHAPING AND BY AVAILABLE SPACE WITHIN R.O.W.
3. PLACEMENT OF WASTING MATERIAL SHALL BE INCIDENTAL TO ALL CONTRACT ITEMS.

PROJECT NAME: ST. JOHNSBURY - SWANTON	
PROJECT NUMBER: STP LVRT(9)	
FILE NAME: z16F146 typ waste area.dgn	PLOT DATE: 7/23/2020
PROJECT LEADER: E.P. DETRICK	DRAWN BY: B.M. ROBERTS
DESIGNED BY: B.M. ROBERTS	CHECKED BY: B.O. CRONIN
WASTE AREA DETAILS SHEET	SHEET 12 OF 50



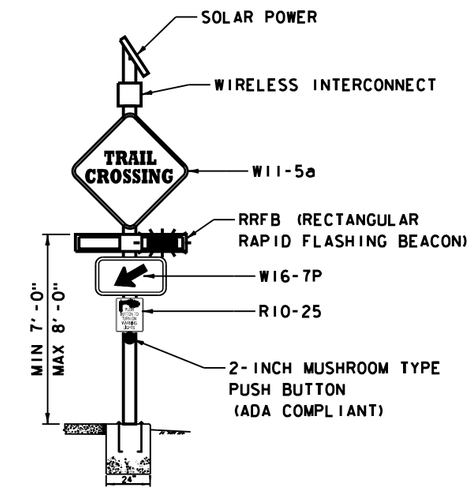
MILE	STATION
85/10	4494+27
86/9	4547+07
87/8	4599+87
88/7	4652+67
89/6	4705+47
90/5	4758+27

MILE POST
NOT TO SCALE

• MILE POSTS FACE PLATES AND POSTS HAVE BEEN FABRICATED AND WILL BE PROVIDED BY VAST FOR USE. IF LONGER POST LENGTHS ARE REQUIRED FOR FIELD CONDITIONS RAIL SHALL BE USED FROM THE REMOVAL OF BRIDGE 93 TO FABRICATE POSTS.

NOTES:

1. MILEPOSTS ARE TO BE LOCATED 4'-0" (MIN) FROM THE NORTH/EAST EDGE OF TRAIL.
2. MILE NUMBERS FACE TRAIL
   TOP - DISTANCE FROM ST. JOHNSBURY
   BOTTOM - DISTANCE FROM SWANTON



SPECIAL PROVISION (FLASHING BEACON, RAPID, RECTANGULAR) DETAIL

1. RECTANGULAR RAPID FLASHING BEACONS (RRFB), SHALL BE INSTALLED BELOW THE NEW W11-2 SIGNS AND ABOVE NEW W16-7 P SIGNS WHERE INDICATED ON PLANS. RRFB SHALL INCLUDE PEDESTRIAN ACTIVATED PUSH BUTTONS TO ACTIVATE THE FLASHING BEACONS. NO AUDIO MESSAGE SHALL BE PROVIDED. RRFB'S SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
2. ALL NEW PEDESTRIAN SIGNS (W11-2, W16-7P) SHALL BE FLUORESCENT YELLOW GREEN.
3. WHEN ACTIVATED, THE RRFB SHALL BEGIN FLASHING IMMEDIATELY.
4. ALL ELEMENTS OF THE SIGN ASSEMBLIES SHALL CONFORM TO THE GUIDANCE AND STANDARDS AS OUTLINED IN THE LATEST EDITION OF THE MUTCD AND RELEVANT INTERIM APPROVALS TO THE MUTCD.
5. THE CONTRACTOR SHALL SUPPLY INFORMATION THAT DOCUMENTS THAT THE RRFB AND SIGN SUPPORT ASSEMBLY AND INSTALLATION MEET THE REQUIREMENTS FOR THE CRASH WORTHINESS AS DEFINED IN THE NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP) REPORT 350.
6. THE CONTRACTOR SHALL SUBMIT FABRICATION DRAWINGS FOR RRFB SIGN ASSEMBLY FOUNDATIONS AND POSTS. FOUNDATION AND POST DESIGNS SHALL BE COMPLETED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF VERMONT. FOUNDATION AND POST DESIGNS SHALL BE IN ACCORDANCE WITH THE MOST RECENT EDITION OF AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS. NO GEOTECHNICAL INFORMATION IS AVAILABLE. PAYMENT FOR THIS WORK WILL BE INCLUDED IN THE UNIT PRICE BID FOR 900.645 SPECIAL PROVISION (FLASHING BEACON, RAPID, RECTANGULAR)
7. SIGNS SHALL NOT BE MOUNTED USING BAND CLAMPS.
8. CONTRACTOR SHALL RETRIEVE IDENTIFICATION AND CONTACT INFORMATION FOR VTRANS AND IT SHALL BE DISPLAYED ON THE CASE OF THE RRFB.
9. RRFB SHALL INCLUDE ALL NECESSARY HARDWARE AND SOFTWARE THAT ALLOWS THE BEACON'S FLASHING FUNCTION TO BE ADJUSTED MANUALLY. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING INSTALLATION WITH THE RESIDENT ENGINEER.
10. THE MANUFACTURER'S REPRESENTATIVE SHALL PROVIDE TRAINING ON THE OPERATION AND MAINTENANCE OF THE RRFB TO THE RESIDENT ENGINEER. THE CONTRACTOR OR MANUFACTURER'S REPRESENTATIVE SHALL SUPPLY OPERATIONS AND MAINTENANCE MANUALS TO VTRANS.
11. ALL SIGN ASSEMBLIES TO BE SOLAR POWERED WITH BATTERY BACKUP SYSTEM. CONTRACTOR SHALL PROVIDE ALL INFORMATION REQUIRED FOR SOLAR PANEL DESIGN TO THE SIGN MANUFACTURER, AND PROVIDE PANEL SIZING CALCULATIONS FROM THE MANUFACTURER TO THE ENGINEER FOR REVIEW AND APPROVAL. RRFB WILL NOT BE ORDERED UNTIL FABRICATION DRAWINGS AND SIZING CALCULATIONS ARE REVIEWED AND APPROVED BY THE ENGINEER.
12. SEE VTRANS GUIDELINES FOR PEDESTRIAN CROSSING TREATMENTS, APPENDIX A, FOR ADDITIONAL INFORMATION.

PROJECT NAME: ST. JOHNSBURY - SWANTON	
PROJECT NUMBER: STP LVRT(9)	
FILE NAME: z16F146 Sign Details.dgn	PLOT DATE: 7/23/2020
PROJECT LEADER: E.P. DETRICK	DRAWN BY: B.M. ROBERTS
DESIGNED BY: VAST	CHECKED BY: E.P. DETRICK
SIGN DETAILS SHEET	SHEET 15 OF 50

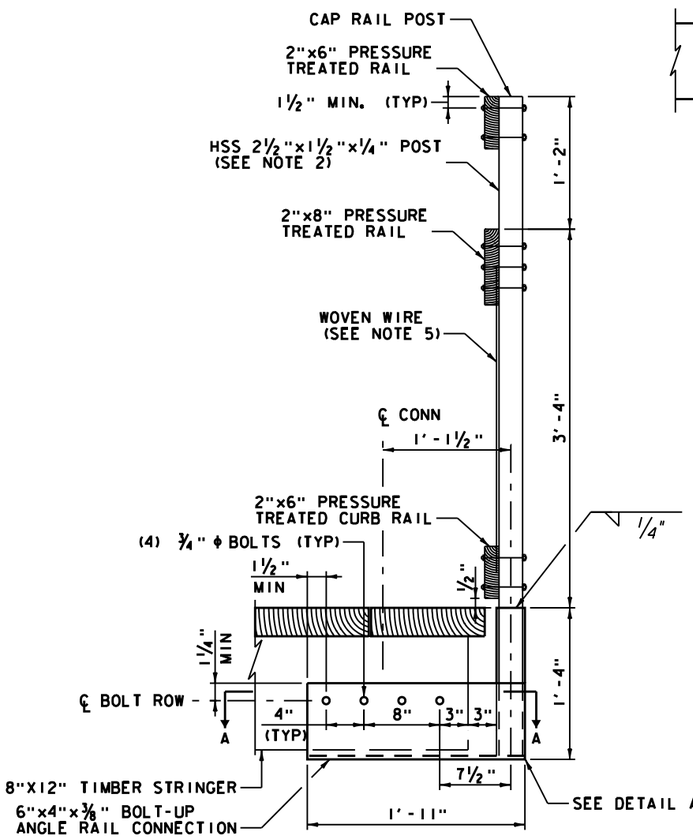
ETIQUETTE SIGN #1
NOT TO SCALE

TRAIL COURTESY SIGN
NOT TO SCALE

NOTES:

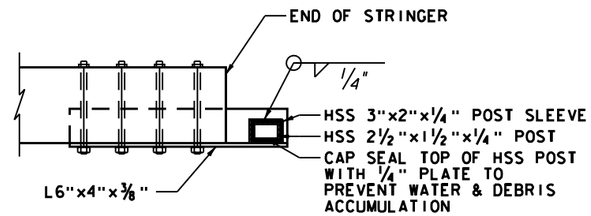
1. TRAIL ETIQUETTE SIGNS SHALL BE LOCATED AT ALL PUBLIC TRAIL ACCESS POINTS, NOT INCLUDING ROAD CROSSINGS.
2. SIGNS SHALL BE 0.080" THICK FLAT SHEET ALUMINUM IN ACCORDANCE WITH SUBSECTION 750.03
3. SIGNS SHALL BE PAID UNDER ITEM 675.20, "TRAFFIC SIGNS, TYPE A".
4. "TRAIL ETIQUETTE" SIGN TO BE COLORED AS FOLLOWS:
   - BACKGROUND - WHITE, NON-RETROREFLECTIVE
   - "VERMONT", "LAMOILLE VALLEY RAIL TRAIL" AND CONTACT TEXT - FEDERAL COLOR CHIP 24115
   - MOUNTAIN BACKGROUND - FEDERAL COLOR CHIP 24115
   - ALLOWABLE USES BACKGROUND - FEDERAL COLOR CHIP 24115
   - ACTION SIGNS - FEDERAL COLOR CHIP 20055
5. "TRAIL COURTESY" SIGN TO BE COLORED AS FOLLOWS:
   - BACKGROUND - WHITE, NON-RETROREFLECTIVE
   - TEXT - FEDERAL COLOR CHIP 24115
   - MOUNTAIN BACKGROUND - FEDERAL COLOR CHIP 24115
   - ACTION SIGNS - FEDERAL COLOR CHIP 24115
6. DETAILS PROVIDED ON THIS SHEET WERE DESIGNED AND DETAILED BY VAST AND THEN DRAFTED BY VHB WITH VAST REVIEW AND APPROVAL.

PROJECT NAME: ST. JOHNSBURY - SWANTON	
PROJECT NUMBER: STP LVRT(9)	
FILE NAME: z16F146 etiquette signs.dgn	PLOT DATE: 7/23/2020
PROJECT LEADER: E.P. DETRICK	DRAWN BY: K.C. BARRY
DESIGNED BY: VAST	CHECKED BY: E.P. DETRICK
ETIQUETTE SIGNS SHEET	SHEET 16 OF 50



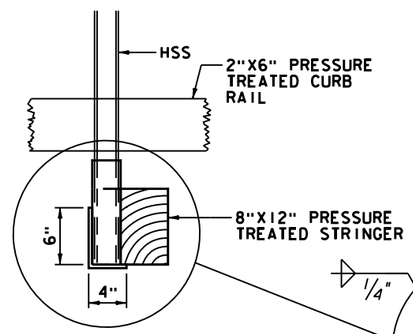
BRIDGE RAIL SECTION

SCALE 1½" = 1'-0"

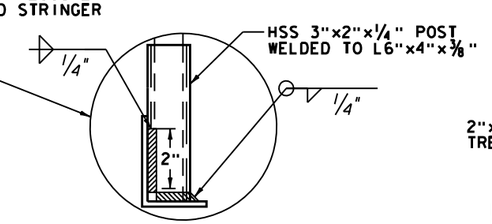


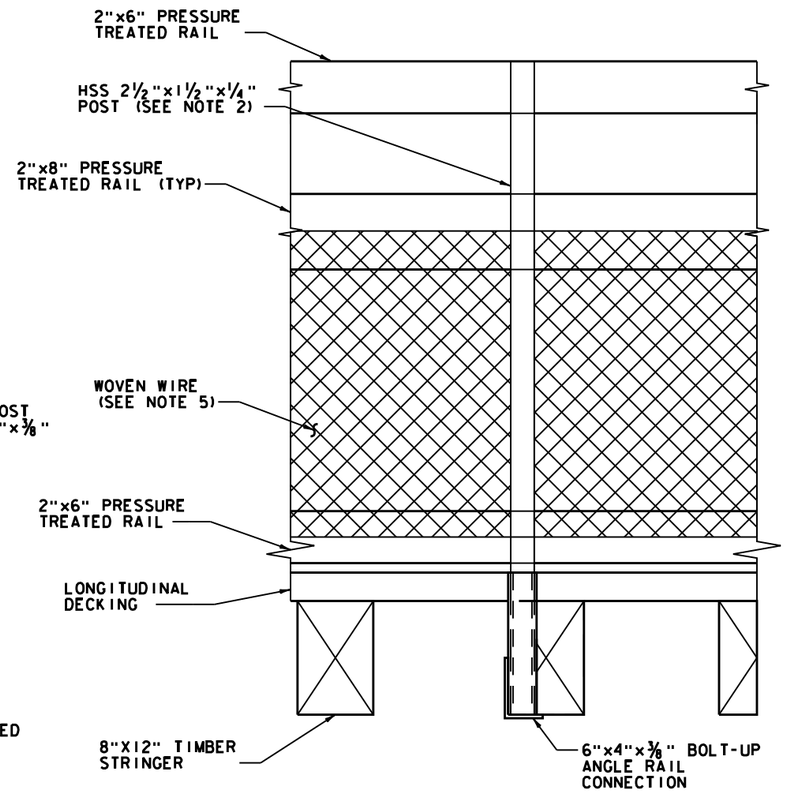
SECTION A-A

SCALE 1½" = 1'-0"



DETAIL A



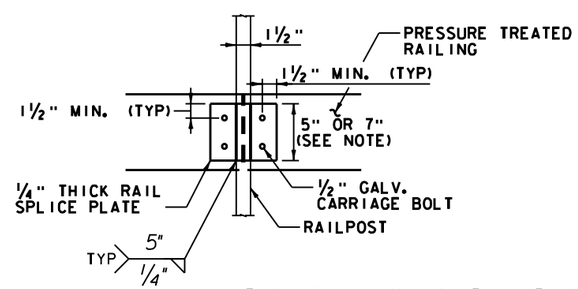


BRIDGE RAIL ELEVATION

SCALE 1½" = 1'-0"

BRIDGE RAILING NOTES:

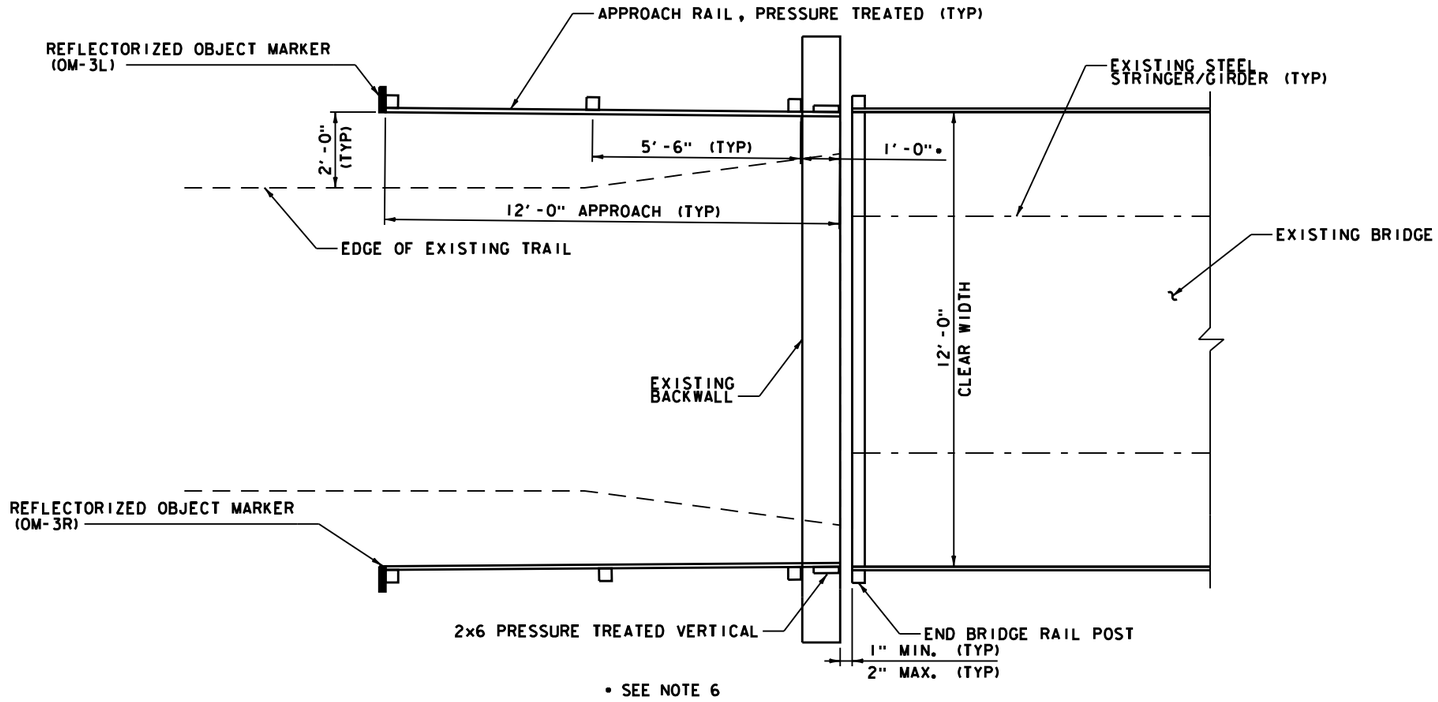
1. THIS CONCEPT ALLOWS THE USE OF 12' TIMBER STRINGERS TO PRODUCE A 12' CLEAR TRAVELED WAY. EXISTING 12' TIE POSTS SHALL BE TIGHT AGAINST THE END OF THE TIE.
2. POST SPACING IS 6'-0".
3. TIMBER STRINGER SPACING IS 2'-0" O.C.
4. ALL WELD LOCATIONS SHOULD BE FILLET WELDS OF ¼" THROAT THICKNESS AND 2" MINIMUM IN LENGTH.
5. THE WOVEN WIRE SHALL BE VINYL COATED, 2"x4" 11 GAUGE BLACK.
6. THE TOP AND BOTTOM RAILS ARE TO BE ATTACHED TO THE POSTS WITH TWO ½" DIA. GALVANIZED CARRIAGE BOLTS WITH A ¾" WASHER UNDER THE NUT. THREE ½" DIA. CARRIAGE BOLTS WITH A ¾" WASHER UNDER THE NUT SHALL BE USED FOR CONNECTING THE MIDDLE RAIL TO POSTS. ALL CARRIAGE BOLTS SHALL BE ASTM A307. EXPOSED BOLT THREADS AND NUT SHOULD NOT BE ON INSIDE OF BRIDGE, SMOOTH SIDE FACING TRAIL USERS.
7. ALL COSTS ASSOCIATED WITH FABRICATING AND INSTALLING THE RAILING SHALL BE INCLUDED IN ITEM 900.640, "SPECIAL PROVISION (BRIDGE RAIL, PRESSURE TREATED)".



NOTE: FOR 2x6, RAIL SPLICE PLATE SHALL BE 5"x5" AND TWO BOLTS PER RAIL. FOR 2x8, RAIL SPLICE PLATE SHALL BE 7"x5" WITH THREE BOLTS PER RAIL.

BRIDGE RAIL SPLICE DETAIL

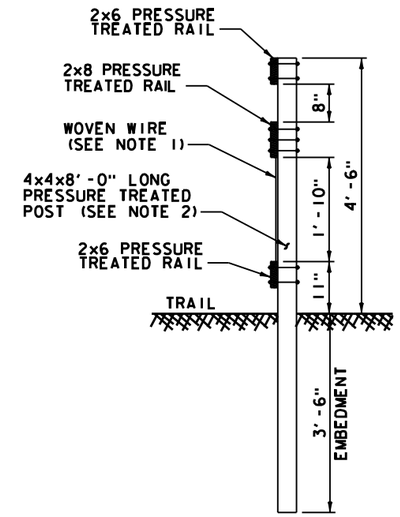
PROJECT NAME: ST. JOHNSBURY - SWANTON	
PROJECT NUMBER: STP LVRT(9)	
FILE NAME: z16F146 railingdetails.dgn	PLOT DATE: 7/23/2020
PROJECT LEADER: E.P. DETRICK	DRAWN BY: K.C. BARRY
DESIGNED BY: VAST	CHECKED BY: M.E. OOMS
RAILING DETAILS SHEET	SHEET 17 OF 50



• SEE NOTE 6

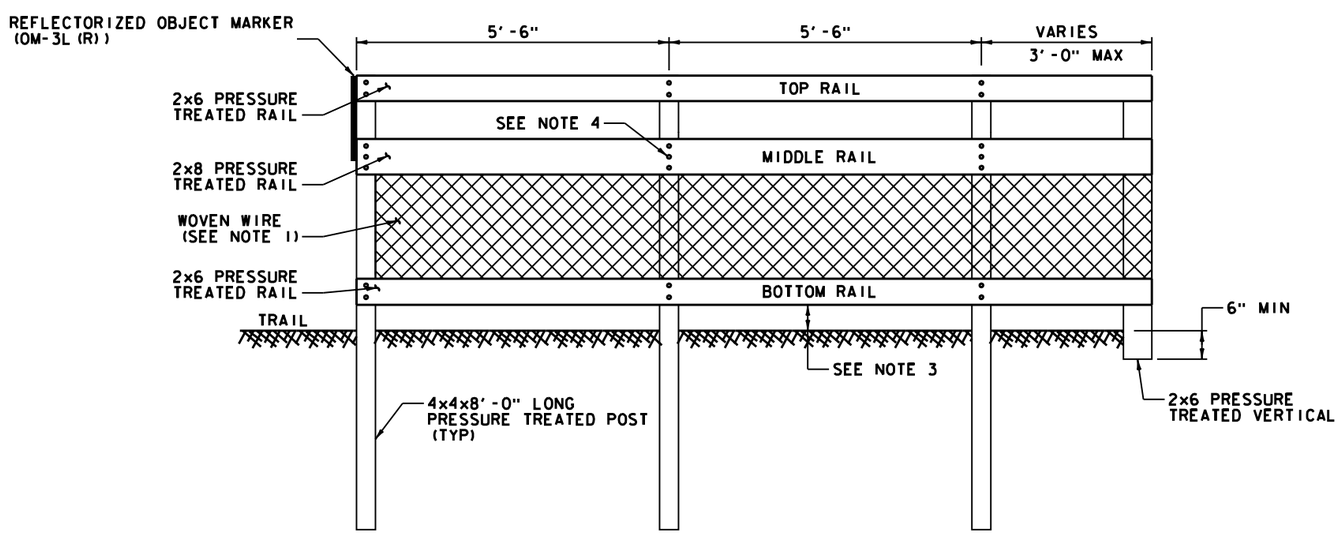
TYPICAL APPROACH RAIL LAYOUT

SCALE ½" = 1'-0"



APPROACH RAIL SECTION

SCALE ¾" = 1'-0"



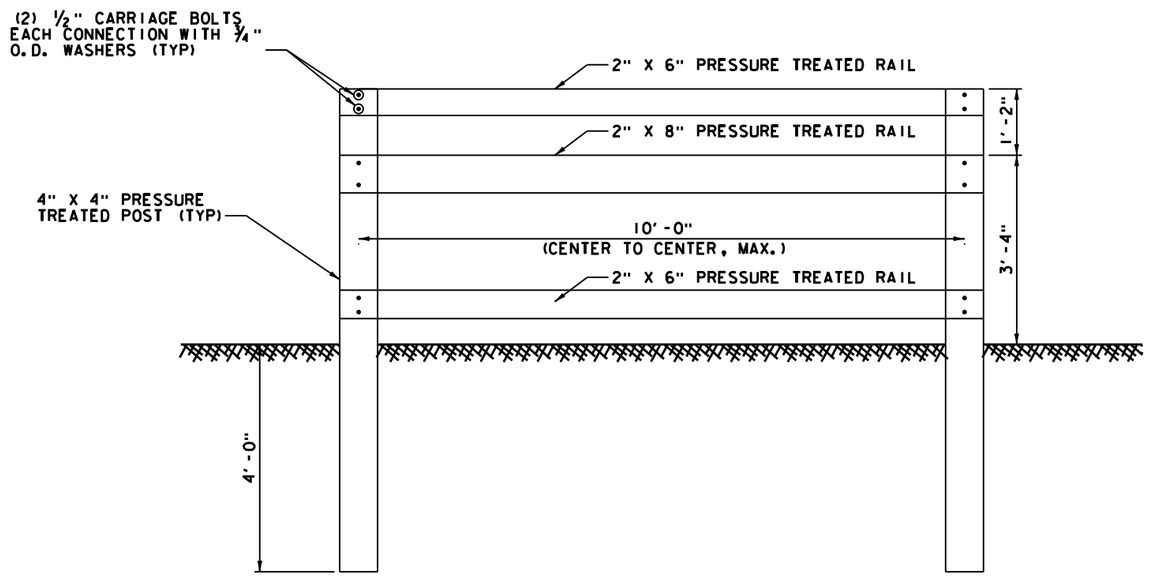
APPROACH RAIL ELEVATION

SCALE ¾" = 1'-0"

NOTES:

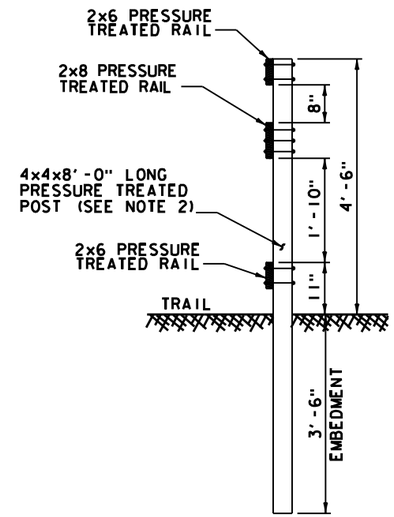
1. THE WOVEN WIRE SHALL BE VINYL COATED, 2"x4" 11 GAUGE, BLACK.
2. WOODEN POSTS AND PRESSURE TREATED RAILS SHALL MEET THE REQUIREMENTS OF ITEM 522.25, "STRUCTURAL LUMBER AND TIMBER, TREATED".
3. THE TOP, MIDDLE, AND BOTTOM RAIL ARE TO BE SET AT THE SAME SLOPE AS THE TRAIL PROFILE GRADE AT THE EDGE OF THE TRAIL. IF THE OPENING BELOW THE BOTTOM RAIL EXCEEDS SIX (6) INCHES, THEN A FOURTH RAIL, 2x6 PRESSURE TREATED RAIL, SHALL BE INSTALLED UNDER THE BOTTOM RAIL.
4. THE TOP AND BOTTOM RAILS ARE TO BE ATTACHED TO THE POSTS WITH TWO ½" DIA. GALVANIZED CARRIAGE BOLTS WITH A ¾" WASHER UNDER THE NUT. THREE ½" DIA. GALVANIZED CARRIAGE BOLTS WITH A ¾" WASHER UNDER THE NUT SHALL BE USED FOR CONNECTING THE MIDDLE RAIL TO POST. ALL CARRIAGE BOLTS SHALL BE ASTM A307.
5. ALL COSTS ASSOCIATED WITH FABRICATING AND INSTALLING THE APPROACH RAIL SHALL BE CONSIDERED INCIDENTAL TO ITEM 900.640, "SPECIAL PROVISION (APPROACH RAIL, PRESSURE TREATED)".
6. PRESSURE TREATED RAIL CAN BE CANTILEVERED A MAX. OF 3'-0" BEYOND THE END POST CLOSEST TO THE BRIDGE FOR APPROACH RAIL.

PROJECT NAME: ST. JOHNSBURY - SWANTON	
PROJECT NUMBER: STP LVRT(9)	
FILE NAME: z16F146 approachrail.dgn	PLOT DATE: 7/23/2020
PROJECT LEADER: E.P. DETRICK	DRAWN BY: K.C. BARRY
DESIGNED BY: G.L. BAKOS	CHECKED BY: M.E. OOMS
TYPICAL APPROACH RAIL SHEET	SHEET 18 OF 50



TYPICAL GUARDRAIL ELEVATION

SCALE 3/4" = 1'-0"



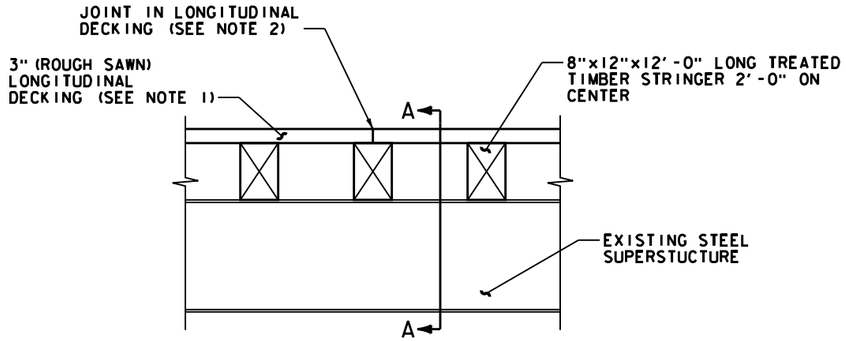
GUARDRAIL SECTION

SCALE 3/4" = 1'-0"

NOTES:

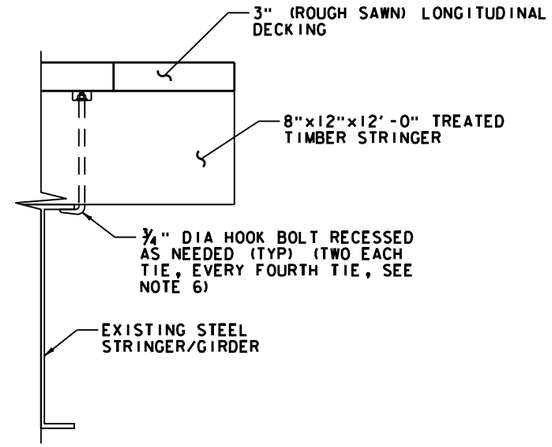
1. WOODEN POSTS AND BOARDS SHALL MEET THE REQUIREMENTS OF SUBSECTION 709.11.
2. THE TOP, MIDDLE, AND BOTTOM RAIL ARE TO BE SET AT THE SAME SLOPE AS THE TRAIL PROFILE GRADE AT THE EDGE OF THE TRAIL. IF THE OPENING BELOW THE BOTTOM RAIL EXCEEDS SIX (6) INCHES, THEN A FOURTH RAIL, 2x6 PRESSURE TREATED RAIL, SHALL BE INSTALLED UNDER THE BOTTOM RAIL.
3. ALL RAILS ARE TO BE ATTACHED TO THE POSTS WITH TWO 1/2" DIA. GALVANIZED CARRIAGE BOLTS WITH A 3/4" WASHER UNDER THE NUT. ALL CARRIAGE BOLTS SHALL BE ASTM A307.
4. ALL COSTS ASSOCIATED WITH FABRICATING AND INSTALLING THE GUARD RAIL SHALL BE CONSIDERED INCIDENTAL TO ITEM 900.640, "SPECIAL PROVISION (GUARD RAIL, PRESSURE TREATED)".

PROJECT NAME: ST. JOHNSBURY - SWANTON	
PROJECT NUMBER: STP LVRT(9)	
FILE NAME: z16F146 approachrail.dgn	PLOT DATE: 7/23/2020
PROJECT LEADER: E.P. DETRICK	DRAWN BY: K.C. BARRY
DESIGNED BY: G.L. BAKOS	CHECKED BY: M.E. OOMS
TYPICAL GUARD RAIL SHEET	SHEET 19 OF 50



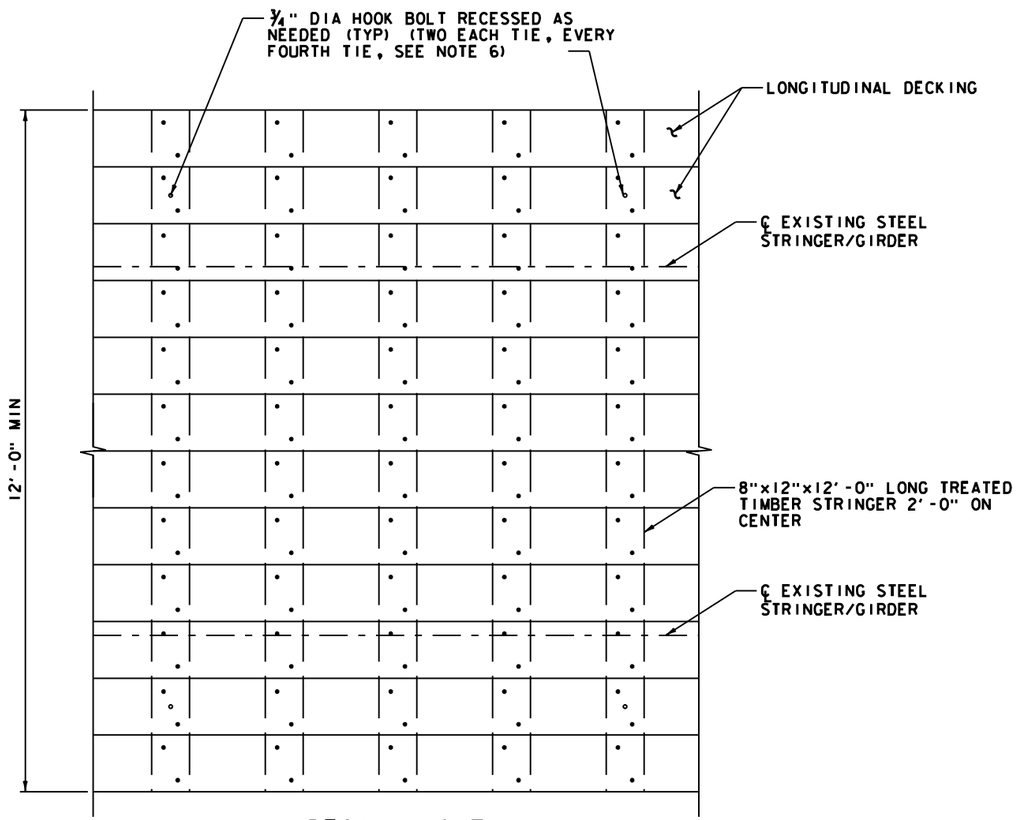
TYPICAL DECKING SECTION

SCALE 3/4" = 1'-0"



SECTION A-A

SCALE 1 1/2" = 1'-0"



DECK LAYOUT

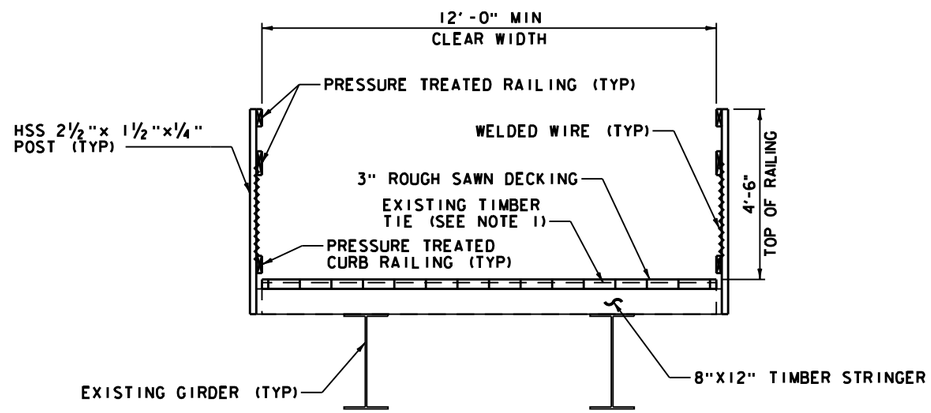
SCALE 3/4" = 1'-0"

NOTES:

1. 3" LONGITUDINAL DECKING SHALL BE TAMARACK ROUGH SAWN PLANKS WITH 3/8" MAX GAP BETWEEN DRY TIMBER PLANKS. ALL COSTS ASSOCIATED WITH THE CONSTRUCTION AND INSTALLATION OF THE LONGITUDINAL DECKING SHALL BE CONSIDERED INCIDENTAL TO ITEM 900.670, "SPECIAL PROVISION (DECKING)".
2. TIMBER DECKING JOINTS SHALL OCCUR AT TREATED TIMBER STRINGER LOCATIONS. JOINTS SHALL BE STAGGERED SUCH THAT NO TWO JOINTS ARE ADJACENT.
3. CONNECTIONS TO BE MADE WITH 1/4" x 5" LONG SCREWS WITH A 5/16" HEX WITH OVERSIZED WASHER HEAD MADE OF TREATED STEEL AND COATED WITH A MULTI-COATED CORROSION PROTECTOR COMPATIBLE WITH ACQ. THE MIN. THREADED LENGTH SHALL BE 2 3/4". THESE SCREWS SHALL BE COUNTERSUNK A MIN. OF 3/8" AND LOCATED AT END OF EACH PLANK AND TWO AT EACH TIMBER STRINGER. ALL COSTS ASSOCIATED WITH CONNECTIONS SHALL BE CONSIDERED INCIDENTAL TO ITEM 900.670, "SPECIAL PROVISION (DECKING)".
4. DIVOTS CAUSED BY COUNTER SINKING SCREWS IN DECK PLANKS SHALL BE FILLED WITH CAULKING. CAULKING AND METHOD OF INSTALLATION SHALL BE IN ACCORDANCE WITH ITEM 900.670, "SPECIAL PROVISION (DECKING)".
5. COST FOR TREATED TIMBER STRINGERS SHALL BE PAID FOR UNDER ITEM 522.25, "STRUCTURAL LUMBER AND TIMBER, TREATED".
6. PRE-BORE HOLES FOR ALL HOOK BOLTS. HOOK BOLTS SHALL BE RECESSED SUCH THAT TOP OF BOLT IS FLUSH WITH TOP OF TIE. RECESSED HOLES SHALL BE FILLED WITH EPOXY AFTER BOLT INSTALLATION. HOOK BOLTS ARE TO BE INSTALLED ON NEW TIES, NOT EXISTING TIES. INSTALLATION AND MATERIALS FOR HOOK BOLTS SHALL BE CONSIDERED INCIDENTAL TO ITEM 522.25, "STRUCTURAL LUMBER AND TIMBER, TREATED".
7. REMOVAL AND PROPER DISPOSAL OF EXISTING TIES SHALL BE PAID UNDER ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE".

vhb

PROJECT NAME: ST. JOHNSBURY - SWANTON	
PROJECT NUMBER: STP LVRT(9)	
FILE NAME: z16F146 typ deck sect.dgn	PLOT DATE: 7/23/2020
PROJECT LEADER: E.P. DETRICK	DRAWN BY: K.C. BARRY
DESIGNED BY: VAST	CHECKED BY: M.E. OOMS
TYPICAL DECKING DETAILS SHEET	SHEET 20 OF 50



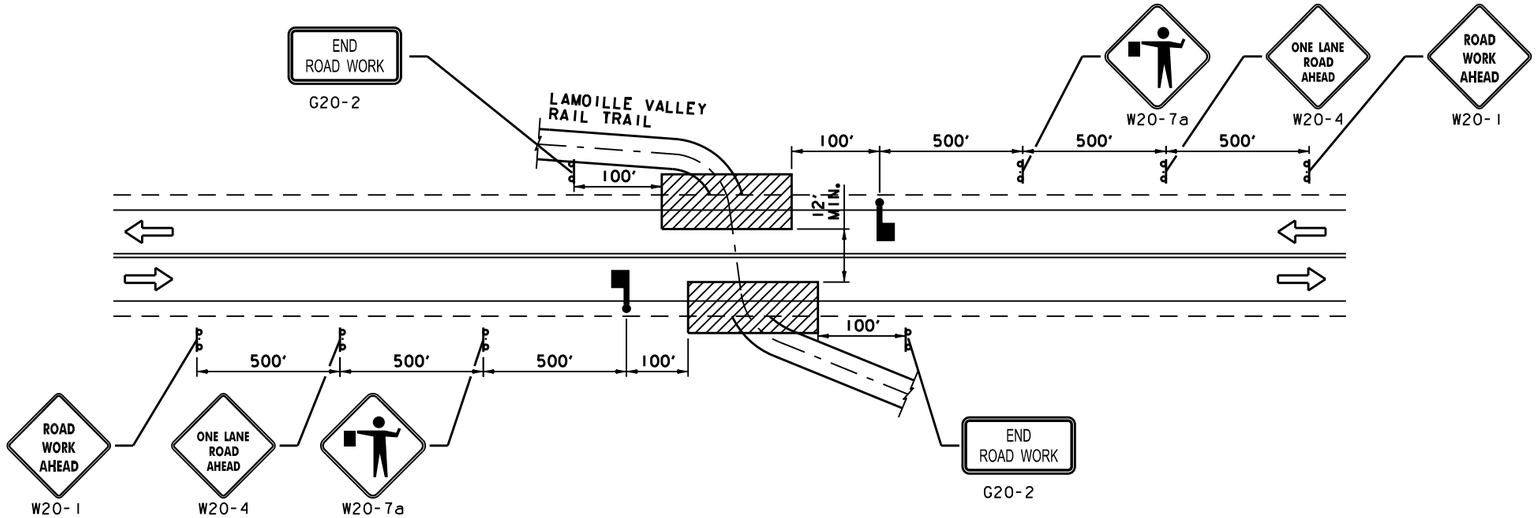
DECK PLATE GIRDER TYPICAL SECTION (BRIDGE 95)

SCALE: ½"=1'-0"

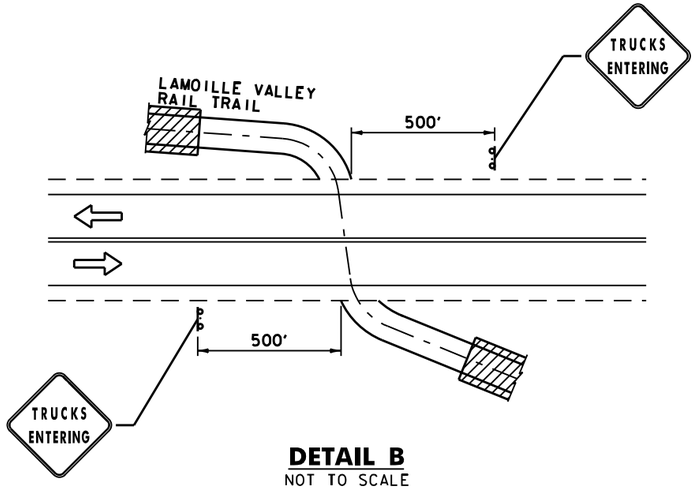
NOTES:

1. EXISTING TIES TO BE REPLACED AS SHOWN ON TYPICAL DECKING DETAILS SHEET.
2. DESIGN LOADS (UNLESS OTHERWISE NOTED):
   H-10 (MAINTENANCE VEHICLE)
   85 PSF PEDESTRIAN LOADING

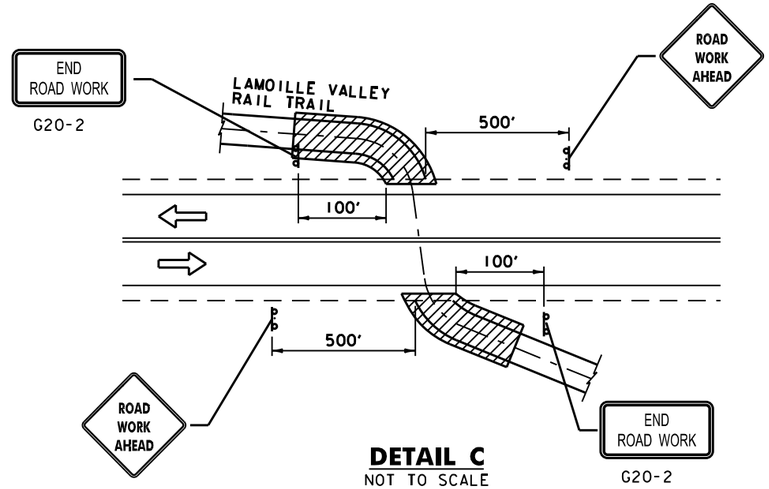
PROJECT NAME: ST. JOHNSBURY - SWANTON	
PROJECT NUMBER: STP LVRT(9)	
FILE NAME: z16F146 typ bridge sect.dgn	PLOT DATE: 7/23/2020
PROJECT LEADER: E.P. DETRICK	DRAWN BY: K.C. BARRY
DESIGNED BY: B.O. CRONIN	CHECKED BY: M.E. OOMS
TYPICAL BRIDGE SECTIONS SHEET	SHEET 21 OF 50



DETAIL A
NOT TO SCALE



DETAIL B
NOT TO SCALE



DETAIL C
NOT TO SCALE

TRAFFIC CONTROL PLANS FOR STATE AND TOWN ROADWAYS

NOT TO SCALE

LEGEND

- FLOW OF TRAFFIC
- WORK AREA
- FLAGGER

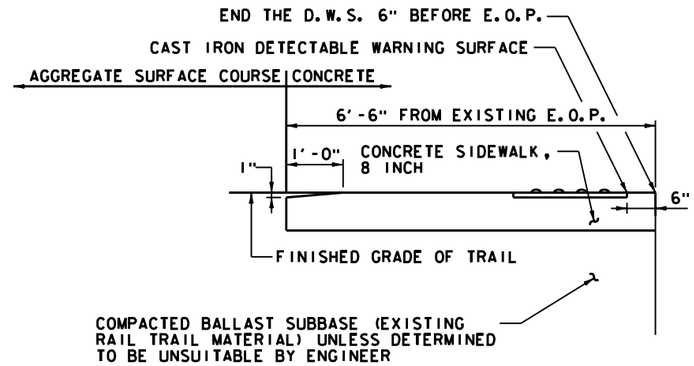
TRAFFIC CONTROL NOTES:

1. THE TRAFFIC CONTROL PLAN SHALL BE DEVELOPED IN ACCORDANCE WITH THE 2018 EDITION OF VTRANS STANDARD SPECIFICATIONS SECTION 641 - TRAFFIC CONTROL AND IN SUBSTANTIAL CONFORMANCE WITH THE 2009 EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND ITS LATEST REVISIONS. THE TRAFFIC CONTROL PLAN SHALL INCLUDE ALL TEMPORARY SIGNS, PAVEMENT MARKINGS, BARRICADES, FLAGGERS, AND OTHER DEVICES REQUIRED TO PROVIDE COMPLETE MANAGEMENT OF TRAFFIC. ANY SIGNS NOT INCLUDED IN THE FHWA STANDARD HIGHWAY SIGNS BOOK (SHSM) SHALL INCLUDE SIGN FACE DIMENSIONS AND LAYOUT.
2. ANY PUBLIC HIGHWAYS, OR DRIVES WITH HIGH TRAFFIC VOLUMES, BETWEEN THE FLAGGER AND THE WORK ZONE WILL REQUIRE AN ADDITIONAL FLAGGER TO MAINTAIN TRAFFIC CONTROL FOR THE PUBLIC HIGHWAY.
3. TRAFFIC CONTROL PLANS SHALL BE ESTABLISHED TO MAINTAIN CONTINUITY OF TRAFFIC THROUGH THE CORRIDOR. INSTALLING, MAINTAINING, ADJUSTING, MODIFYING AND REMOVING THE TRAFFIC CONTROL DEVICES SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 641.10, "TRAFFIC CONTROL".
4. SIGNS SHALL BE INSTALLED SO AS NOT TO OBSTRUCT EXISTING SIGNS OR CORNER SIGHT DISTANCE FROM STATE OR TOWN HIGHWAYS OR DRIVES.
5. ALL SIGNS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE MUTCD AND ITS LATEST REVISIONS AND THE STANDARD SHSM PUBLISHED BY THE FHWA.
6. SOLID SUBSTRATE CONSTRUCTION SIGNS SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING 'AMERICAN SOCIETY FOR TESTING AND MATERIALS' (ASTM) TYPE VII, VIII OR IX REQUIREMENTS, UNLESS OTHERWISE NOTED.
7. ROLL UP SIGNS SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING ASTM TYPE VI.
8. SIGNS SHALL BE ERECTED BEFORE THE START OF ANY WORK AND SHALL BE COVERED UNTIL WORK COMMENCES, DURING PERIODS OF INACTIVITY OR UPON COMPLETION OF THE WORK. EACH SIGN SHALL BE ERECTED IN A NEAT AND WORKMANLIKE MANNER. SIGNS SHALL BE REMOVED UPON COMPLETION OF THE WORK AT THE DISCRETION OF THE ENGINEER.
9. FIXED SIGNS SHALL BE SET SECURELY IN THE GROUND. THE BOTTOM OF A SIGN SHALL BE AT LEAST SEVEN FEET ABOVE THE EDGE OF PAVEMENT. THE NEAREST EDGE OF A SIGN SHALL BE AT LEAST SIX FEET OUTSIDE THE SHOULDER POINT OR FOUR FEET OUTSIDE GUARDRAIL.
10. PORTABLE SIGNS SHALL BE PLACED ON THE EDGE OF ROADWAY AND AT ONE FOOT MINIMUM ABOVE TRAVELED WAY. ALL VEGETATION THAT INTERFERES WITH VISIBILITY OF THE SIGNS SHALL BE REMOVED. WHEN PLACED BEHIND GUARDRAIL, THE BOTTOM OF THE SIGN FACE SHALL BE ABOVE THE TOP OF THE GUARDRAIL.
11. WHERE SIGN INSTALLATIONS ARE NOT PROTECTED BY GUARDRAIL OR OTHER APPROVED TRAFFIC BARRIERS, ALL SIGN STANDS AND POST INSTALLATIONS SHALL BE "NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM" (NCHRP) REPORT 350 AND/OR AASHTO MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) COMPLIANT. NO SIGN POSTS SHALL EXTEND OVER THE TOP OF THE SIGN INSTALLED ON SAID POST(S). WHEN ANCHORS ARE INSTALLED STUB SHALL NOT BE GREATER THAN FOUR INCHES ABOVE EXISTING GROUND.
12. AS WORK PROGRESSES ON THE TRAIL THE COMPLETED PORTION OF THE TRAIL SHOULD BE CLOSED OFF SO PEDESTRIANS, BICYCLIST, ETC. DO NOT HAVE ACCESS UNTIL SUCH TIME AS THE WORK AREA IS OPEN FOR PUBLIC USE. THEREFORE TYPE 3 BARRICADES SHOULD BE PLACED ACROSS THE FULL WIDTH OF THE ENTRANCES TO EACH LOCATION OF THE TRAIL AREA BEING WORKED ON ACCOMPANIED BY A TRAIL CLOSED SIGN
13. WORK THAT TRAVERSES ACROSS TOWN OR STATE HIGHWAYS SHOULD PROVIDE BICYCLE ACCOMODATIONS TO ENSURE THAT OBSTACLES, EQUIPMENT, CONSTRUCTION MATERIALS, TRAFFIC CONTROL DEVICES, ETC. DO NOT ENCROACH INTO THE BICYCLE PATH OF TRAVEL. IT IS IMPORTANT THAT CYCLIST'S ROUTES ARE FREE OF RUTS, SAND AND MUD TO PREVENT CYCLIST'S CRASHES.
14. THE CONTRACTOR SHALL PROVIDE ACCESS THROUGH AND INTO THE WORK ZONE FOR EMERGENCY VEHICLES OR COORDINATE EMERGENCY ROUTES PRIOR TO THE START OF CONSTRUCTION.
15. NO CONSTRUCTION SIGNS SHALL BE INSTALLED AS TO INTERFERE OR OBSTRUCT THE VIEW OF EXISTING TRAFFIC CONTROL DEVICES, STOPPING SIGHT DISTANCE, AND CORNER SIGHT DISTANCE FROM DRIVES AND TOWN HIGHWAYS. EXISTING SIGNS WHICH CONFLICT WITH TEMPORARY TRAFFIC CONTROL SHALL BE COMPLETELY COVERED OR REMOVED.
16. IF USED, SIGN COVERING SHALL NOT DAMAGE THE RETRO-REFLECTIVITY OF THE SIGN FACE. ALSO, THE SIGN COVER SHALL NOT DETERIORATE FOR THE DURATION THAT THE SIGN IS COVERED

PROJECT NAME: ST. JOHNSBURY - SWANTON	
PROJECT NUMBER: STP LVRT(9)	
FILE NAME: z16F146 tcp.dgn	PLOT DATE: 7/23/2020
PROJECT LEADER: E.P. DETRICK	DRAWN BY: K.C. BARRY
DESIGNED BY: K.C. BARRY	CHECKED BY: E.P. DETRICK
TRAFFIC CONTROL PLAN SHEET	SHEET 22 OF 50

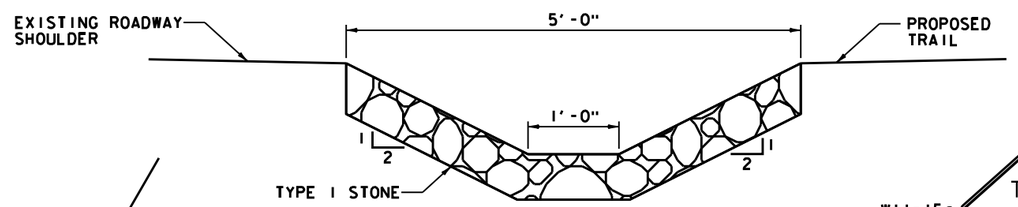
NOTES:

1. ∅ SHALL BE 75° TO 90°, CROSSINGS WHICH CANNOT MEET THE MINIMUM 75° ANGLE SHALL BE RECONFIGURED TO IMPROVE THE CROSSING ANGLE TO THE EXTENT SITE CONDITIONS AND ROW ALLOW.
2. CONCRETE RAMP WIDTH TO MATCH APPROACHING TRAIL WIDTH AT INTERSECTION WITH ROADWAY.
3. SEE TRAFFIC SIGN SUMMARY SHEETS AND ETIQUETTE SIGN SHEET FOR ADDITIONAL INFORMATION.
4. SIGNS SHALL BE PLACED SUCH THAT THE EDGE OF THE SIGN IS NO CLOSER THAN 3' AND NO FURTHER THAN 5' FROM THE EDGE OF TRAIL AND 5' FROM THE TRAIL SURFACE TO THE BOTTOM OF THE SIGN.
5. ALL COSTS ASSOCIATED WITH THE INSTALLATION OF THE ACCESSIBLE ROAD CROSSINGS INCLUDING EXCAVATION, CONCRETE, DETECTABLE WARNING SURFACE AND REFLECTIVE PAINT STOP BAR SHALL BE PAID UNDER THEIR APPROPRIATE PAY ITEMS.
6. SIGNS SHALL BE MOUNTED ON 2" SQUARE STEEL POSTS. THE POSTS WILL BE PAID UNDER ITEM 675.341 "SQUARE TUBE SIGN POST AND ANCHOR".
7. W11-5 SIGN TO BE LOCATED AT ALL FARM AND FARM ROAD CROSSINGS.
8. THE W11-15a AND W16-2p SIGN ASSEMBLILIES ARE NOT REQUIRED ON ROADWAYS WITH SPEEDS OF 35 MPH OR LOWER.
9. SEE VTRANS TEI 18-200 AND STANDARD DRAWING E-121 FOR SIGN LOCATIONS AND SPACING REQUIRMENTS.

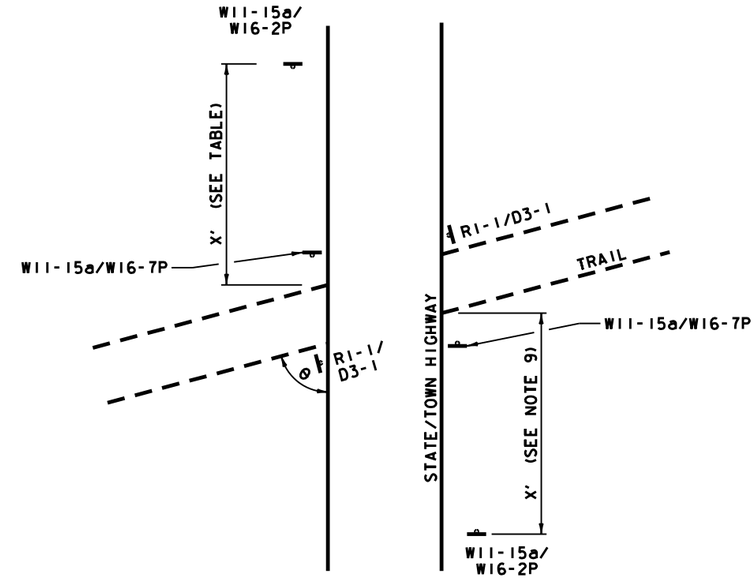


SECTION A-A
NOT TO SCALE

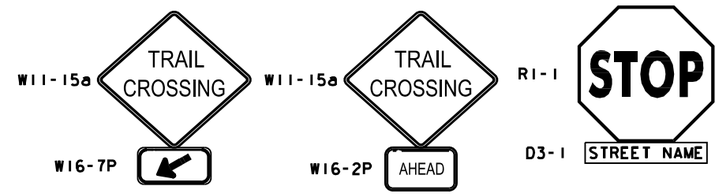
ACCESSIBLE ROAD CROSSING APPROACH



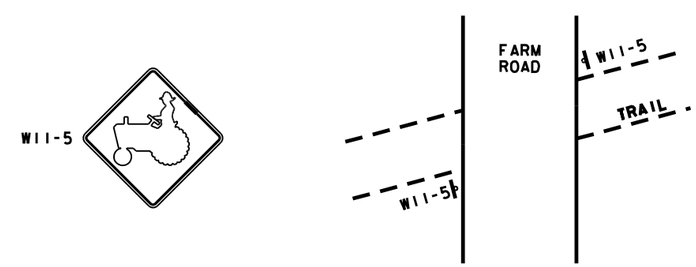
STONE SWALE
NOT TO SCALE



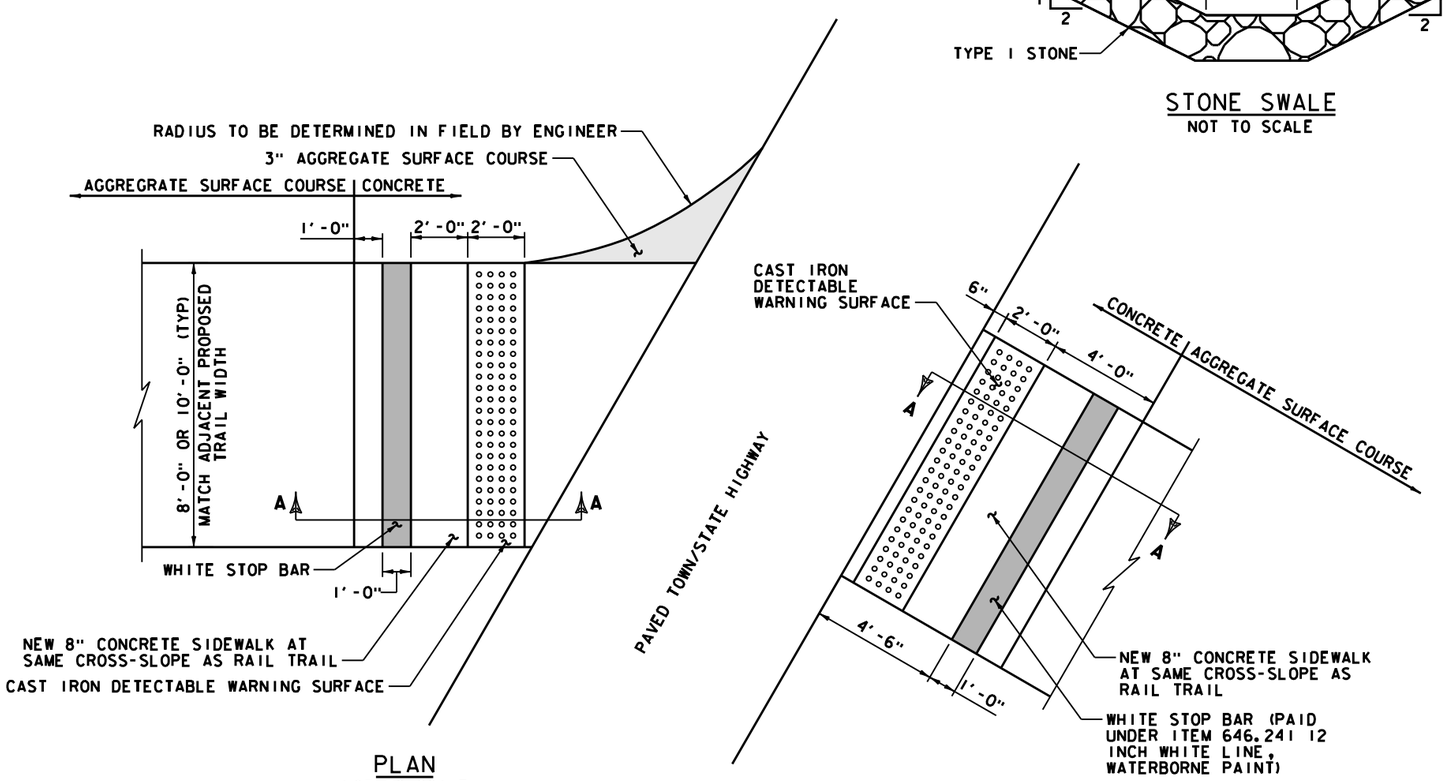
TYPICAL STATE AND TOWN HIGHWAY CROSSING SIGN LAYOUT



STANDARD ROAD CROSSING SIGNS



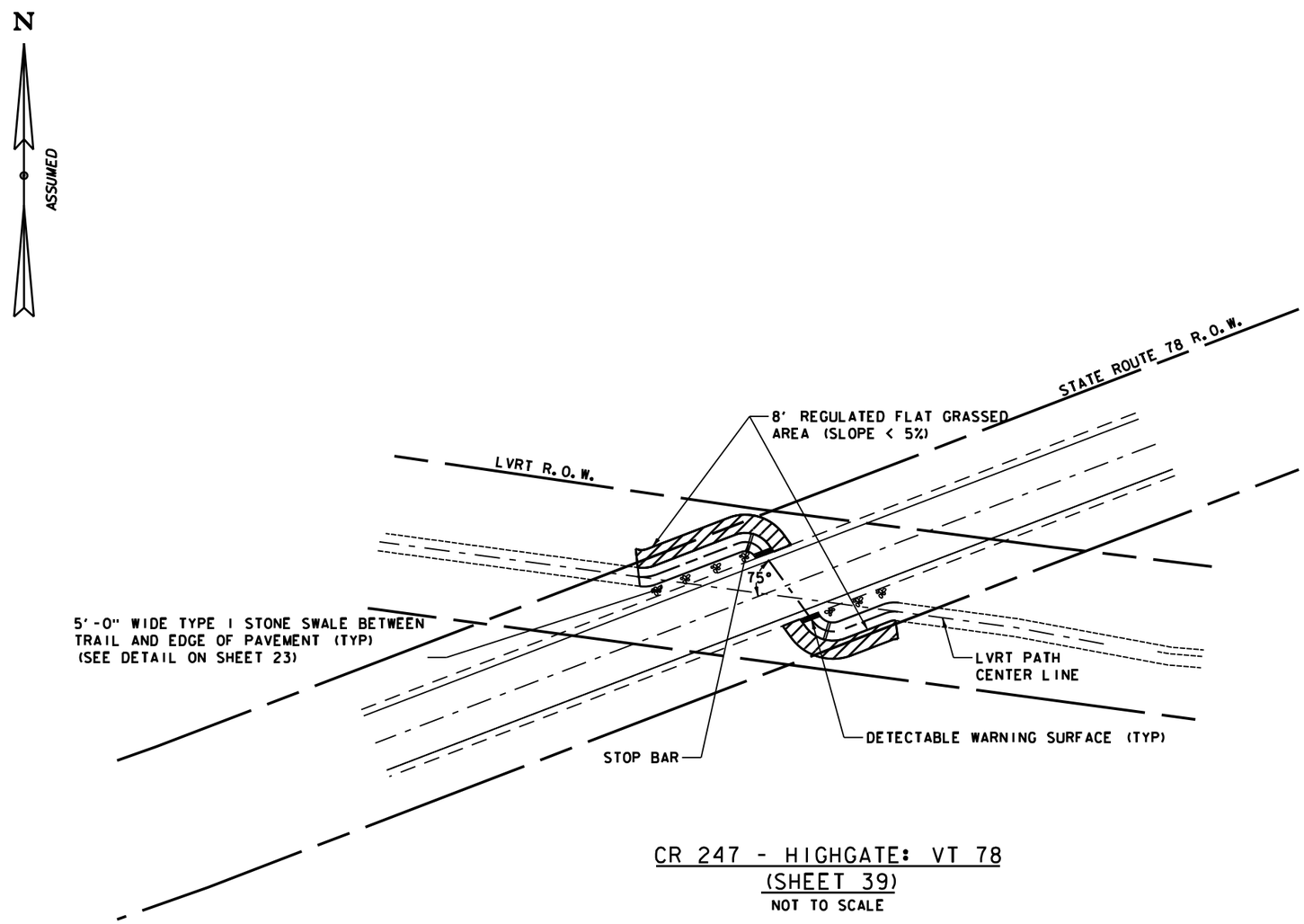
STANDARD FARM CROSSING SIGNS



PLAN
NOT TO SCALE

vhb

PROJECT NAME: ST JOHNSBURY - SWANTON	
PROJECT NUMBER: STP LVRT(9)	
FILE NAME: z16F146 crossings.dgn	PLOT DATE: 7/23/2020
PROJECT LEADER: E.P. DETRICK	DRAWN BY: K.C. BARRY
DESIGNED BY: K.C. BARRY	CHECKED BY: B.O. CRONIN
CROSSING DETAILS SHEET (1 OF 4)	SHEET 23 OF 50

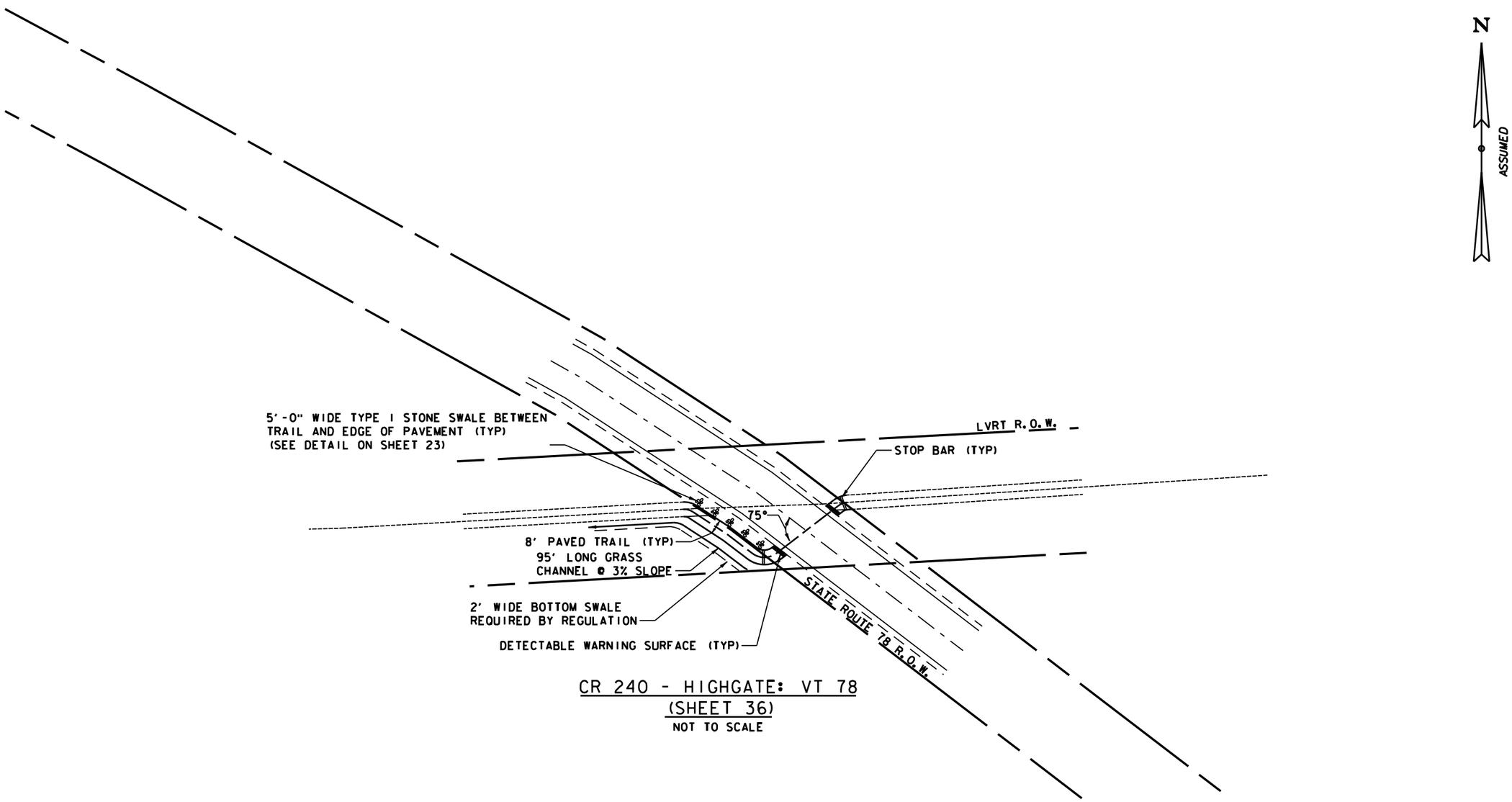


CR 247 - HIGHGATE: VT 78
(SHEET 39)
NOT TO SCALE

NOTE:

1. SEE CROSSING DETAILS SHEET (1 OF 4) FOR INFORMATION NOT SHOWN.

PROJECT NAME: ST JOHNSBURY - SWANTON	
PROJECT NUMBER: STP LVRT(9)	
FILE NAME: z16F146 crossings.dgn	PLOT DATE: 7/23/2020
PROJECT LEADER: E.P. DETRICK	DRAWN BY: VHB
DESIGNED BY: VHB	CHECKED BY: B.O. CRONIN
CROSSING DETAILS SHEET (2 OF 4)	SHEET 24 OF 50

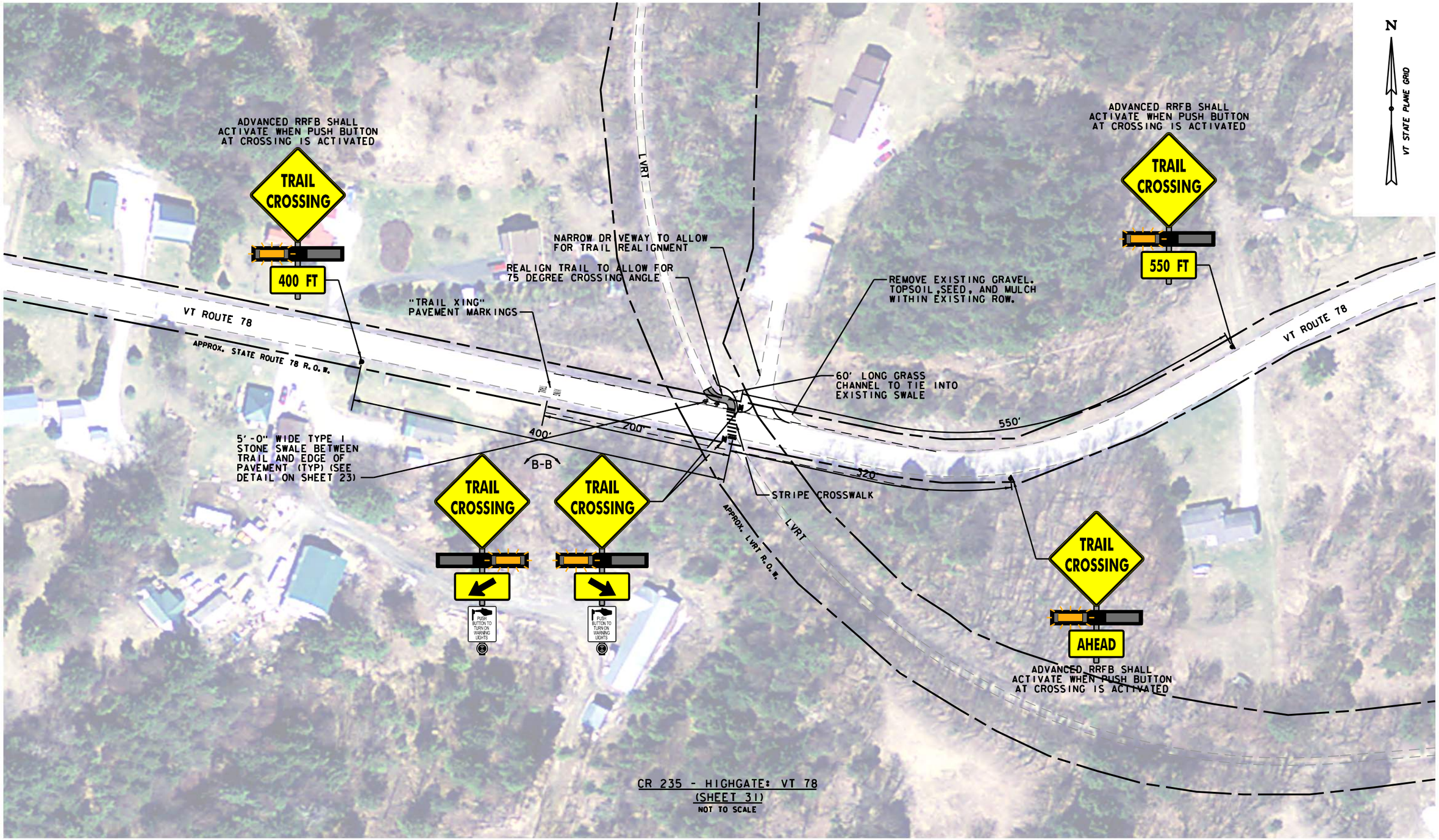


CR 240 - HIGHGATE: VT 78
(SHEET 36)
NOT TO SCALE

NOTE:

1. SEE CROSSING DETAILS SHEET (1 OF 4) FOR INFORMATION NOT SHOWN.

PROJECT NAME: ST JOHNSBURY - SWANTON	
PROJECT NUMBER: STP LVRT(9)	
FILE NAME: z16F146 crossings.dgn	PLOT DATE: 7/23/2020
PROJECT LEADER: E.P. DETRICK	DRAWN BY: VHB
DESIGNED BY: VHB	CHECKED BY: B.O. CRONIN
CROSSING DETAILS SHEET (3 OF 4)	SHEET 25 OF 50



CR 235 - HIGHGATE: VT 78
(SHEET 31)
NOT TO SCALE

SCALE 1" = 50'-0"
50 0 50

PROJECT NAME: ST JOHNSBURY - SWANTON	
PROJECT NUMBER: STP LVRT(9)	
FILE NAME: z16F146 CR 235.dgn	PLOT DATE: 7/23/2020
PROJECT LEADER: E.P. DETRICK	DRAWN BY: D.A. GINGRAS
DESIGNED BY: D.A. GINGRAS	CHECKED BY: E.P. DETRICK
CROSSING DETAILS SHEET (4 OF 4)	SHEET 26 OF 50

GENERAL EPSC NOTES:

1. EPSC MEASURES SHALL BE INSTALLED WITHIN A GIVEN DRAINAGE AREA 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.
2. EPSC MEASURES SHALL BE INSTALLED PURSUANT TO THE CONSTRUCTION PHASE STORMWATER DISCHARGE PERMIT FOR THE PROJECT, THIS EPSC PLAN, THE MOST RECENT EDITIONS OF THE VERMONT STANDARDS AND SPECIFICATIONS FOR EROSION PREVENTION AND SEDIMENT CONTROL, VERMONT EROSION PREVENTION AND SEDIMENT CONTROL FIELD GUIDE, AND ANY OTHER RELEVANT PROJECT PERMITS AND RESOURCES.
3. PROPOSED CHANGES TO THE EPSC PLAN SHALL BE APPROVED BY THE ON-SITE PLAN COORDINATOR (OSPC) OR HIS/HER DESIGNEE PRIOR TO IMPLEMENTATION. OPSC SHALL COORDINATE WITH ANR AS APPROPRIATE.
4. LOGGING ACTIVITIES SHALL BE CONDUCTED IN ACCORDANCE WITH ACCEPTABLE MANAGEMENT PRACTICES FOR MAINTAINING WATER QUALITY ON LOGGING JOBS IN VERMONT (AMPS, 2006).
5. PERMISSION MUST BE GRANTED BY VT DEC PRIOR TO USE OF ANY SUPPORT ACTIVITIES OCCURRING OUTSIDE OF THE APPROVED PROJECT BOUNDARIES.
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 ORE NECESSARY TO ENSURE COMPLIANCE WITH ON EPSC PLAN FOR THE SITE OR OTHER PERMIT CONDITIONS (E.G., THEY ORE AUTHOR/ZED TO DIRECT WORKERS AT A SITE TO CARRY OUT ACTIVITIES REQUIRED BY THE EPSC PLAN OR COMPLY WITH OTHER PERMIT CONDITIONS).

CONSTRUCTION EPSC NOTES:

1. EXISTING VEGETATION SHALL BE PROTECTED AND MAINTAINED TO THE EXTENT PRACTICABLE.
2. A VEGETATED BUFFER SHALL BE MAINTAINED FOR WATER BODIES (E.G., WETLANDS AND STREAMS), WHERE FEASIBLE
3. TO THE EXTENT PRACTICABLE, SURFACE FLOW SHALL BE DIVERTED AWAY FROM EXPOSED SOILS.
4. DITCHES THAT ARE LINED BY BEDROCK DO NOT REQUIRE ADDITIONAL LINING (E.G., STONE).
5. RESOURCE AREAS (E.G., WETLANDS, STREAMS, RTE PLANT SPECIES) WITHIN THE PROJECT AREA SHALL BE FLAGGED PRIOR TO ANY CONSTRUCTION RELATED ACTIVITIES OCCURRING WITHIN CLOSE PROXIMITY TO THOSE AREAS.
6. 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.
7. 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.
   c. TEMPORARY STREAM TRENCHING SHOULD BE RESTORED TO PRE-CONSTRUCTION CONTOUR AND CONDITION.
10. SEDIMENT REMOVED FROM SEDIMENT CONTROL PRACTICES SHALL BE DISPOSED OF IN AN UPLAND AREA WITH STABILIZATION FOLLOWING DISPOSAL OF MATERIAL.
11. 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.
12. DUST CONTROL SHALL BE HANDLED VIA WATER OR CALCIUM CHLORIDE APPLICATION TO ROADWAYS AND OTHER AREAS WHERE DUST MAY BE GENERATED.
13. CONSTRUCTION DEMARCATION AND PERIMETER CONTROLS LOCATED WITHIN 50 FT OF WATER RESOURCE AREAS SHALL COMPLY WITH RELEVANT EPSC DETAILS.
14. IF SUSPECTED OR KNOWN CONTAMINANTS ARE ENCOUNTERED, CONTRACTOR SHALL NOTIFY THE ENGINEER WHO SHALL NOTIFY VTRANS' ANDY SHIVELY FOR FURTHER GUIDANCE.

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, AS NEEDED.
   i. DRAINAGE STRUCTURES ARE TO BE KEPT OPEN AND FREE OF SNOW AND ICE DAMS WHERE FEASIBLE AS DETERMINED BY THE ON SITE PROGRAM 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, TO EXTENT FEASIBLE.
   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).
   n. 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.

TEMPORARY AND FINAL STABILIZATION NOTES:

1. 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.
2. PERMANENT STABILIZATION SHALL BE ACHIEVED BY 70% VEGETATION COVER, STONE, ASPHALT, BEDROCK, OR OTHER PERMANENT MATERIAL THAT PROVIDES COMPLETE COVER OF EXPOSED SOILS.
3. AREAS THAT HAVE REACHED TEMPORARY OR FINAL STABILIZATION SHALL NOT BE CONSIDERED PART OF TOTAL AREA OF EARTH DISTURBANCE.
4. APPROPRIATE SEED MIX SHALL BE APPLIED TO DESIGNATED AREAS PER THIS EPSC PLAN AND SEED SPECIFICATIONS. FOR AN AREA TO BE STABILIZED FOR WINTER BY VEGETATED COVER, SEEDING MUST BE COMPLETED BY SEPTEMBER 15.
5. ALL TEMPORARY EPSC MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY EPSC MEASURES ARE NO LONGER NEEDED.

PERIMETER CONTROL NOTES:

1. PERIMETER CONTROLS ARE TO BE INSTALLED ON DOWNSLOPE SIDE OF AREAS OF DISTURBANCE WHERE THERE IS POTENTIAL FOR SEDIMENT RUNOFF AND/OR SOIL EROSION.
2. PERIMETER CONTROLS ARE NOT TO CROSS ACTIVE ACCESS ROUTES OR PERENNIAL FLOW PATHS (E.G., A STREAM).
3. PARTICULAR CARE IS TO BE TAKEN WHEN INSTALLING PERIMETER CONTROLS IN A WETLAND.
4. SUBJECT TO DRY/FROZEN GROUND EVALUATION PROCEDURE (SEE EPSC DETAILS SHEET 002/DETAIL D2), WITHIN 100 FEET OF WATER RESOURCES, PERIMETER CONTROLS MUST INCLUDE:
   a. REINFORCED SILT FENCE - TO BE REINFORCED WITH WIRE MESH, STAKED FIBER ROLLS, EROSION CONTROL MIX BERMS, OR WOOD CHIP BERMS.
   b. STONE BERMS
   c. OTHER INTERCHANGEABLE AND/OR DEC APPROVED MEASURES.
5. GREATER THAN 100 FEET FROM WATER RESOURCES , PERIMETER CONTROLS MAY INCLUDE:
   a. SILT FENCE (NON-REINFORCED)
   b. STAKED FIBER ROLLS
   c. EROSION CONTROL MIX BERMS

MULCH MATERIAL AND APPLICATION

MULCH MATERIAL	QUALITY STANDARDS	PER 1,000 SQ-FT	PER ACRE	DEPTH OF APPLICATION
WOOD CHIPS OR SHAVINGS	AIR DRIED, FREE OF OBJECTIONABLE MATERIAL	500 - 900 LBS	10 - 20 TONS	2d0'7"
WOOD FIBER CELLULOSE (PARTIALLY DIGESTED WOOD FIBERS)	MADE FROM NATURAL WOOD USUALLY WITH GREEN DYE AND DISPERSING AGENT	50 LBS	2,000 LBS	N/A
GRAVEL, CRUSHED STONE OR SLAG	WASHED; SIZE 2B OR 3A - 1 1/2"	9 CY	405 CY	3"
HAY OR STRAW	AIR-DRIED; FREE OF UNDESIRABLE SEEDS AND COURSE MATERIALS	90 - 100 LBS, 2-3 BALES	2 TONS (100-120 BALES)	COVER ABOUT 90% SURFACE
COMPOST	UP TO 3" PIECES, MODERATELY TO HIGHLY STABLE	3 - 9 CY	3 - 9 CY	1-3"

Notes:

1. APPLY TACKIFIER AS NEEDED TO MINIMIZE POTENTIAL FOR MULCH TO BLOW AWAY.
2. MULCH MUST NOT CONTAIN INVASIVE PLANT SPECIES. (SEEDS OR SEEDLINGS)
3. TACKIFIER MAY BE WATER, NETTING, OR SIMILAR.

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D1

MULCH TABLE

TEMPORARY SEED MIX SHALL BE USED BETWEEN 9/16 AND 5/16 AND SHALL MEET THE FOLLOWING CRITERIA:

SEED	% WEIGHT	% GERMINATION
WINTER RYE	80% MIN.	85 MIN.
RED FESCUE (CREEPING)	4 MIN.	80 MIN.
PERENNIAL RYE GROSS	3 MIN.	90 MIN.
RED CLOVER	3 MIN.	90 MIN.
OTHER CROP GROSS	0.5 MIN.	
NOXIOUS WEED SEED	0.0 MAX.	
INERT MATTER	1.0 MIN.	

PERMANENT SEED MIX SHALL BE USED AS EARLY AS PRACTICABLE BETWEEN 5/15 AND 9/15 AND SHALL MEET THE FOLLOWING CRITERA

SEED	% WEIGHT
RED FESCUE	50%
SHEEP FESCUE	25%
RED TOP	5%
WHITE CLOVER	10%
ANNUAL RYE	10%

WETLAND SEED MIX SHALL MEET THE FOLLOWING CRITERIA:

SEED	% WEIGHT
NODDING BUR MARIGOLD	80% MIN.
FOX SEDGE	4 MIN.
CREEPING BENTGRASS	3 MIN.
RIVERBANK WILD RYE	3 MIN.
VIRGINIA WILD RYE	0.5 MIN.
SOFT RUSH	0.5 MIN.
SENSITIVE FERN	1.0 MIN.
BLUE VERGAIN	
BLOCKWELL SWITCH GRASS	
GREY DOGWOOD	
CREEPING RED FESCUE	

GRASSED WATERWAY SEED MIX SHALL MEET THE FOLLOWING CRITERIA:

SEED	% WEIGHT
VIRGINIA WILD RYE GRASS	20
FOX SEDGE	10
AMERICAN MANNAGRASS	20
GIANT BUR-REED	10
COMMON THREE-SQUARE	20
SOFT-STEM BULRUSH	10
CANADA RUSH	10

SEEDING SPECIFICATIONS

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D2

VERMONT AGENCY OF TRANSPORTATION

PHASE IC - LAMOILLE VALLEY RAIL TRAIL
EROSION PREVENTION AND SEDIMENT CONTROL PLAN

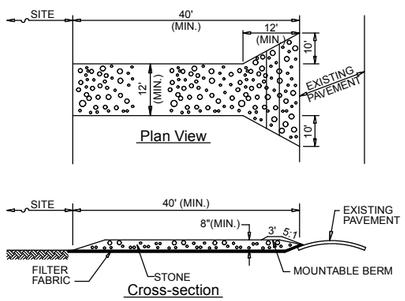
APPLICATION BY:
VAST and VTrans

PURPOSE:
PROPOSED TRAIL IMPROVEMENTS FOR YEAR-ROUND RECREATIONAL USE

DATE:
MAY 17, 2012
Revised: July 22, 2020

EPSC DETAILS SHEET 40

41
D1



NOTES:

1. TO BE INSTALLED AT ALL AREAS WHERE ACCESS IS FROM PAVED PUBLIC ROAD WHERE THERE IS POTENTIAL TRACKING OF SEDIMENT.
2. STONE SIZE: USE 1 TO 4 INCH DIAMETER STONE, OR RECLAIMED OR RECYCLIED CONCRETE EQUIVALENT.
3. LENGTH: NOT LESS THAN 40 FEET.
4. THICKNESS: NOT LESS THAN 8 INCHES.
5. WIDTH: ENTRANCE WIDTH SHALL BE A 12 FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
6. GEOTEXTILE: MUST BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE.
7. SURFACE WATER: ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION EXITS SHALL BE PIPED BENEATH THE EXIT. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
8. MAINTENANCE: THE EXIT 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.
9. WHEN WASHING IS REQUIRED IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
10. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED ACCORDING TO PERMIT REQUIREMENTS.
11. STABILIZED CONSTRUCTION ENTRANCE SHALL BE REMOVED PRIOR TO FINAL FINISH MATERIALS BEING INSTALLED.

STABLIZIED CONSTRUCTION ENTRANCE

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D2

DRY AND FROZEN GROUND EVALUATION
SEDIMENT CONTROL MEASURE INSTALLATION

Step 1: The OSPC and/or EPSC Specialist will evaluate the project area within 100 feet of the mapped water resource area for presence of one or more of the following characteristics: (a) frozen ground; (b) dry ground, with: (i) low to no surface flow, and/or (ii) unsaturated surface soil conditions; and/or (c) soils that are not susceptible to excessive rutting, mixing of surface and subsurface soil layers, and/or movement and re-deposition of soils within the wetland to an extent that would require restoration of contours and/or hydrology of the wetland.

Step 2: The OSPC and/or EPSC Specialist will evaluate the proposed work activities to determine the potential for impact to the mapped water resource. In consultation with the contractor, the evaluation will consider: (a) nature of proposed activities, (b) type of equipment to be used (e.g., tracked vehicles vs. rubber-tired vehicles), (c) duration of activities, and (d) forecasted weather conditions.

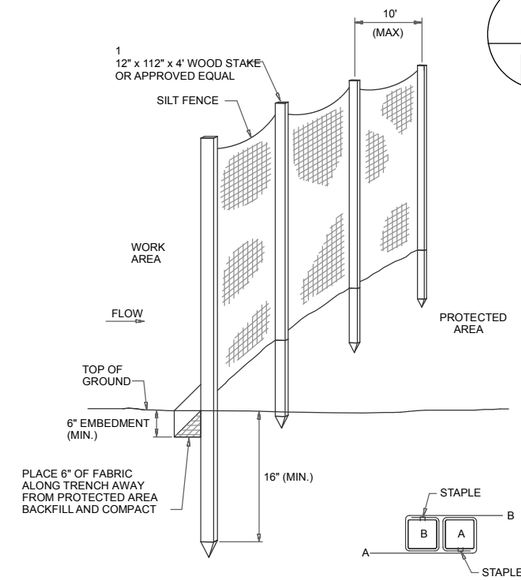
Step 3: Based on the outcome of Steps 1 and 2, the OSPC and/or EPSC Specialist may authorize the contractor to modify the EPSC Plan by either: (1) implementing interchangeable EPSC measures per the *Vermont Standards and Specifications for Erosion Prevention and Sediment Control*, (2) implementing non-interchangeable EPSC measures approved by VT DEC,

Step 4: The OSPC and/or EPSC Specialist must be present at the start of construction activities in this area to confirm approval, monitor activities, and stop work if it is determined that sediment discharge to the mapped water resource area may occur (or is occurring).

Step 5: Immediately following completion of construction activities, seed and mulch are to be applied to all areas of soil disturbance within 100 feet of the mapped water resource area. This area is to be monitored for additional stabilization needs until final stabilization has been achieved.

DRY/FROZEN GROUND EVALUATION

41
D3



Wood Stake Joint Detail

SILT FENCE

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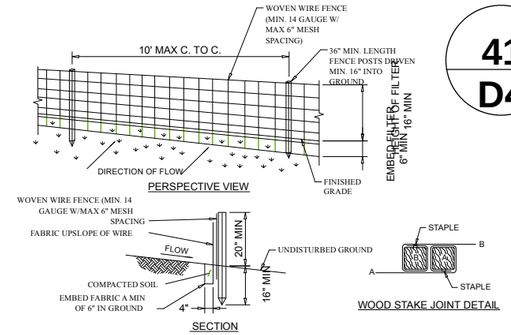
D4



Notes:

1. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
2. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY.
3. DO NOT PLACE SILT FENCE IN STREAMS OR CONCENTRATED FLOW CONDITIONS.
4. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES.
5. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 6" MAXIMUM MESH OPENING.
6. WHEN TWO SECTION OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
7. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUIVALENT.
8. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF THE FABRIC HEIGHT.
9. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN UPLAND AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
10. SILT FENCE SHALL NOT BE USED TO DEMARCATE LIMITS OF DISTURBANCE.
11. FEDERAL, STATE, AND/OR LOCAL REQUIREMENTS MAY OVERRIDE THESE SPECIFICATIONS AND/OR THE USE OF THIS MEASURE.

REINFORCED SILT FENCE

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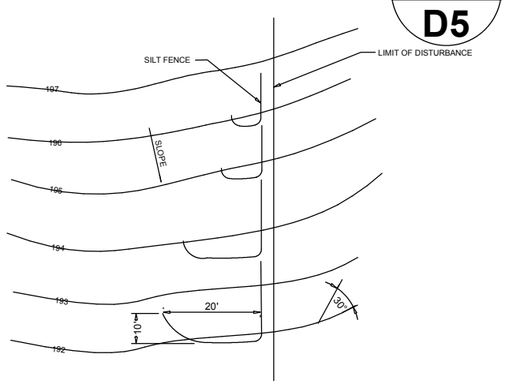
D5

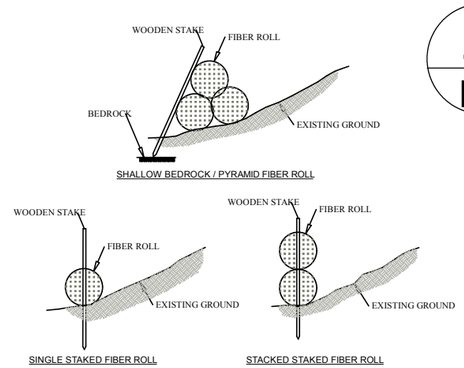


NOTES:

1. SILT FENCE SHALL BE INSTALLED IN SHORTER RUNS WITH "J-HOOKS" TO AVOID CONCENTRATION OF FLOWS AT ONE LOCATION BY TRAPPING RUNOFF AT MULTIPLE POINTS ALONG A SLOPE
2. MINIMUM WIDTH OF J-HOOK RECOMMENDED AT 20 FT WITH A DEPTH OF 10 FT. WHERE SPACE IS LIMITED (E.G. ALONG NARROW RIGHTS OF WAY), NARROWER HOOKS CAN BE USED WITHA HIGHER SPACING FREQUENCY
3. START DOWN-GRADIENT SILT FENCE LINE AS CLOSE AS POSSIBLE TO UP-GRADIENT J-HOOK

SILT FENCE / J-HOOKS

41
D6



NOTES:

1. FIBER ROLLS SHALL BE PLACED IN SHALLOW TRENCH UP TO 4", WHERE FEASIBLE
2. FIBER ROLLS SHALL BE ANCHORED WITH 2" BY 2" WOODEN STAKES (36" LONG), OR SIMILIAR, WHERE FEASIBLE
3. STAKES TO BE PLACED 4 FT APART, MINIMUM
4. SINGLE OR DOUBLE STACKED FIBER ROLLS TO BE INSTALLED WHERE SOIL DEPTH ALLOWS. WHERE SHALLOW TO BEDROCK, PYRAMID FIBER ROLLS TO BE UTILIZED WITH STAKES, AS FEASIBLE.
5. FIBER ROLLS TO BE REPLACED OR REPLENISHED AS NEEDED DURING ACTIVE EARTH WORK
6. FEDERAL, STATE, AND/OR LOCAL REQUIREMENTS MAY OVERRIDE THESE SPECIFICATIONS AND/OR USE OF THIS MEASURE

STAKED FIBER ROLL

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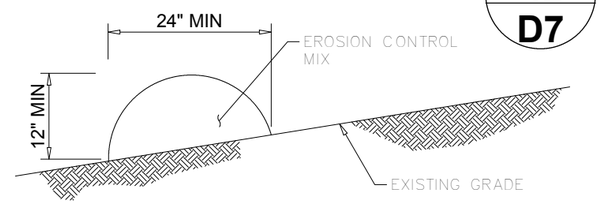
D7



NOTES:

COMPOSITION
EROSION CONTROL MIX BERM SHALL CONSIST PRIMARILY OF ORGANIC MATERIAL, SEPARATED AT THE POINT OF GENERATION, AND MAY INCLUDE: SHREDDED BARK, STUMP GRINDINGS, COMPOSTED BARK AND/OR ACCEPTABLE MANUFACTURED PRODUCTS. WOOD AND BARK CHIPS, GROUND CONSTRUCTION DEBRIS, OR REPROCESSED WOOD PRODUCTS WILL NOT BE ACCEPTABLE AS THE ORGANIC COMPONENT OF THE MIX.

INSTALLATION

1.THE BARRIER MUST BE PLACED ALONG A RELATIVELY LEVEL CONTOUR.

2.EXISTING GROUND SHALL BE PREPARED AS NEEDED SUCH THAT THE BARRIER LIES NEARLY FLAT ALONG THE GROUND TO AVOID THE CREATION OF VOIDS AND BRIDGES IN ORDER TO MINIMIZE THE POTENTIAL OF WASH OUTS UNDER THE BARRIER.

3.ON SLOPES < 5% OR AT THE BOTTOM OF STEEPER SLOPES (<2:1) UP TO 20' LONG, THE BARRIER MUST BE A MINIMUM OF 12" HIGH, AS MEASURED ON THE UPHILL SIDE OF THE BARRIER, AND A MINIMUM OF 2 FT. WIDE. ON LONGER OR STEEPER SLOPES, THE BARRIER SHALL BE WIDER TO ACCOMMODATE ADDITIONAL FLOW.

4.EROSION CONTROL MIX MAY BE INSTALLED WHERE SILT FENCE IS ILLUSTRATED AND SCHEDULED ON THE DESIGN PLANS EXCEPT IN, BUT NOT LIMITED TO, THE FOLLOWING AREAS: WETLAND AREAS, AT POINTS OF CONCENTRATED FLOW, BELOW STORMWATER OUTFALLS, AROUND CATCH BASINS AND CLOSED STORM SYSTEMS AND AT THE BOTTOM OF STEEP SLOPES THAT ARE MORE THAN 50 FEET FROM TOP TO BOTTOM. EROSION CONTROL MIX MAY BE USED IN WETLAND BUFFER AREAS BUT MAY NOT BE USED IN WETLANDS AREA.

5.FEDERAL, STATE, AND/OR LOCAL REQUIREMENTS MAY OVERRIDE THESE SPECIFICATIONS AND/OR THE USE OF THIS MEASURE.

EROSION CONTROL MIX BERM

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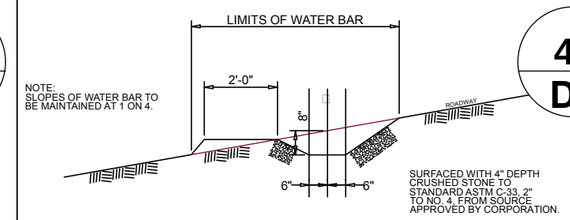
D8



NOTE:
SLOPES OF WATER BAR TO BE MAINTAINED AT 1 ON 4.

SECTION 'A-A'

NOTE:

ROAD SLOPE PERCENT	WATER BAR SPACING - FT
5	150
10	100
15 AND OVER	50

NOTES:

1. INSTALL THE WATER BAR AS SOON AS THE RIGHT OF WAY IS CLEARED AND GRADED.
2. STRIP EXISTING SOD FROM BASE OF DIVERSION RIDGE PRIOR TO PLACING FILL.
3. TRACK THE RIDGE TO COMPACT IT TO THE DESIGN CROSS SECTION.
4. VEHICLE CROSSING SHALL BE STABILIZED WITH GRAVEL. EXPOSED AREAS SHALL BE IMMEDIATELY SEEDED AND MULCHED.
5. THE OUTLET SHALL BE LOCATED ON AN UNDISTURBED AREA. FIELD SPACING WILL BE ADJUSTED TO USE THE MOST STABLE OUTLET AREAS. OUTLET PROTECTION WILL BE PROVIDED WHEN NATURAL CONDITIONS ARE NOT ADEQUATE.
6. INSPECT WATER BARS FOR EROSION DAMAGE AND SEDIMENT. CHECK OUTLET AREAS AND MAKE REPAIRS AS NEEDED TO RESTORE OPERATION.
7. WATERBAR SLOPE SHALL NOT EXCEED 2% AS SHOWN.
8. FEDERAL, STATE, AND/OR LOCAL REQUIREMENTS MAY OVERRIDE THESE SPECIFICATIONS AND/OR THE USE OF THIS MEASURE.

WATER BAR

vhb VAST VERMONT AGENCY OF TRANSPORTATION

PHASE IC - LAMOILLE VALLEY RAIL TRAIL
EROSION PREVENTION AND SEDIMENT CONTROL PLAN

APPLICATION BY:
VAST and VTrans

PURPOSE:
PROPOSED TRAIL IMPROVEMENTS FOR YEAR-ROUND RECREATIONAL USE

DATE:
MAY 17, 2012
Revised: October 20, 2017

EPSC DETAILS
SHEET 41

42
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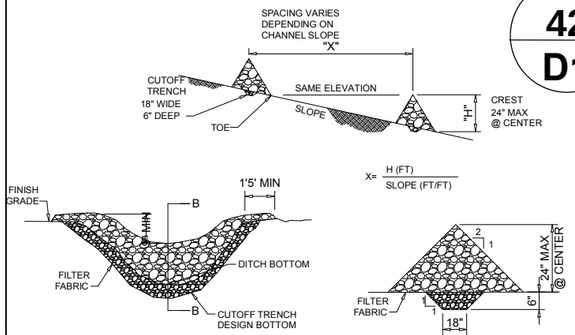

NOTES:
1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION TO THE LINES, GRADES AND LOCATIONS SHOWN IN THE PLAN

2. SET SPACING OF CHECK DAMS TO ASSUME THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION OF THE TOE OF THE UPSTREAM DAM.

3. EXTENDING THE STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.

4. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.

5. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.

6. FEDERAL, STATE, AND/OR LOCAL REQUIREMENTS MAY OVERRIDE THESE SPECIFICATIONS AND/OR THE USE OF THIS MEASURE.

STONE CHECK DAM

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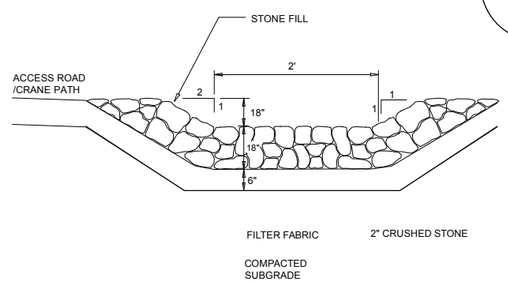
D2



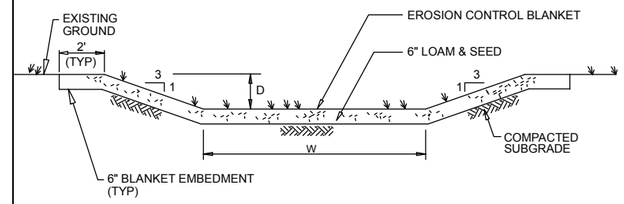
NOTES:
1. MINIMUM CAPACITY OF STONE-LINED SWALE SHALL BE ADEQUATE TO CONVEY THE 10-YR, 24-HR STORM PEAK RUNOFF RATE.
2. STONE-LINED SWALES TO BE USED ON SLOPE > = 5%.
3. SWALES WITH VELOCITIES THAT EXCEED THE FOLLOWING SHALL DISCHARGE INTO AN ENERGY DISSIPATER.
4. MINIMUM FREEBOARD SHALL BE 0.25 FT. ABOVE DESIGN HIGH WATER.
5. FOUNDATION AREA SHALL BE CLEARED OF TREES, STUMPS, ROOTS, AND OTHER OBJECTIONABLE MATERIAL.
6. CROSS-SECTION SHALL BE EXCAVATED WITH NEAT LINES AND GRADES.
7. FOUNDATIONS LINED WITH BEDROCK DO NOT NECESSARILY REQUIRE ADDITIONAL RIP-RAP UNLESS NEEDED TO ACHIEVE SUITABLE SIDE-SLOPES.

DESIGN FLOW DEPTH (FT)	MAXIMUM VELOCITY (FT/SEC)
0.0-0.5	25
0.5-1.0	15
GREATHER THAN 1.0	10

STONE-LINED SWALE

42
D3

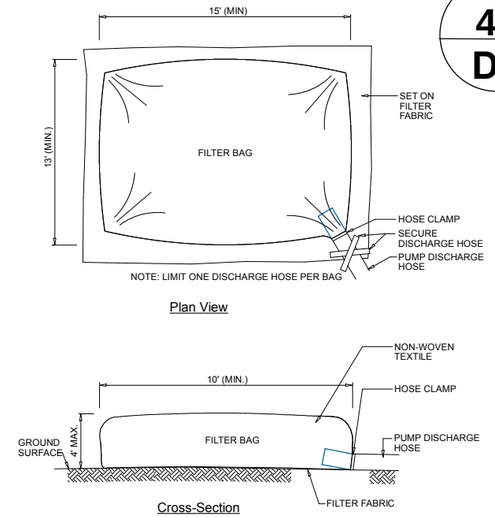
SWALE DESIGNATION	W	D



NOTES:
1. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, + OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED.
2. WATERWAYS OR OUTLETS SHALL BE PROTECTED AGAINST EROSION BY VEGETATIVE MEANS AS SOON AFTER CONSTRUCTION AS PRACTICAL.
3. VEGETATION MUST BE WELL ESTABLISHED BEFORE DIVERSIONS OR OTHER CHANNELS ARE OUTLETTED INTO THEM.
4. SEED MIX SHALL COMPLY WITH VT EPSC STANDARDS + SPECS, OR SIMILAR.
5. ALL SEEDED AREAS SHALL BE MULCHED IF NECESSARY.
6. STABILIZATION SHALL BE DONE ACCORDING TO THE APPROPRIATE STANDARD AND SPECIFICATIONS FOR VEGETATIVE PRACTICES.
a. FOR DESIGN VELOCITIES OF LESS THAN 3.5 FT. PER. SEC., SEEDING AND MULCHING MAY BE USED FOR THE ESTABLISHMENT OF THE VEGETATION. IT IS RECOMMENDED THAT, WHEN CONDITIONS PERMIT, TEMPORARY WATERWAYS OR OTHER MEANS SHOULD BE USED TO PREVENT WATER FROM ENTERING THE WATERWAY DURING THE ESTABLISHMENT OF THE VEGETATION.
b. FOR DESIGN VELOCITIES OF MORE THAN 3.5 FT. PER. SEC., THE WATERWAY SHALL BE STABILIZED WITH SOD, WITH SEEDING PROTECTED BY JUTE OR OTHER MATTING OR WITH SEEDING AND MULCHING INCLUDING TEMPORARY DIVERSION OF THE WATER UNTIL THE VEGETATION IS ESTABLISHED.
c. STRUCTURAL - VEGETATIVE PROTECTION
SUBSURFACE DRAIN FOR BASE FLOW SHALL BE CONSTRUCTED AS SHOWN ON THE STANDARD DRAWING AND AS SPECIFIED IN THE STANDARD AND SPECIFICATIONS FOR SUBSURFACE DRAIN.

GRASS-LINED SWALE

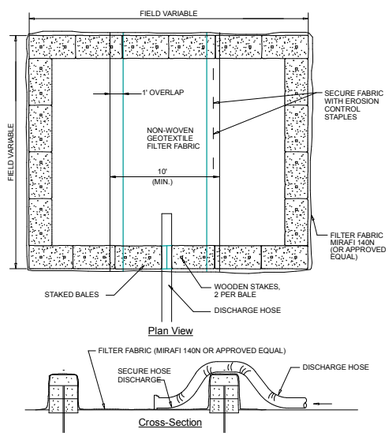
42
D4



NOTES:
1. BAG TO BE USED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS

DEWATERING - FILTER BAG

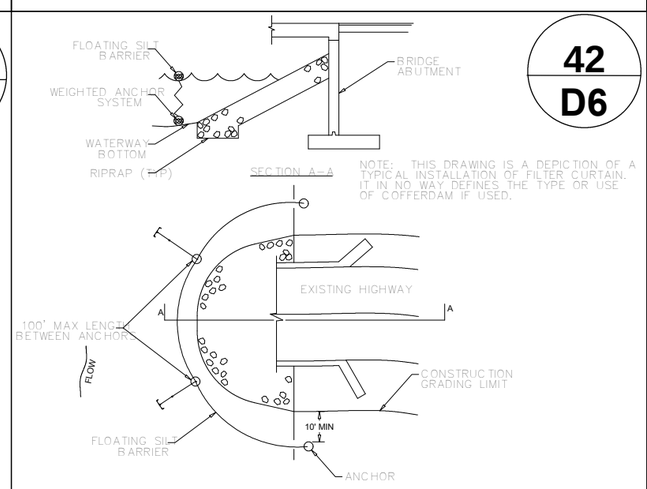
42
D5



NOTES:
1. NUMBER OF BALES MAY VARY DEPENDING ON SITE CONDITIONS
2. THE BASIN TO BE SIZED TO PREVENT DISCHARGE WATER FROM OVERTOPPING BASIN

DEWATERING - STAKED HAYBALES AND FABRIC

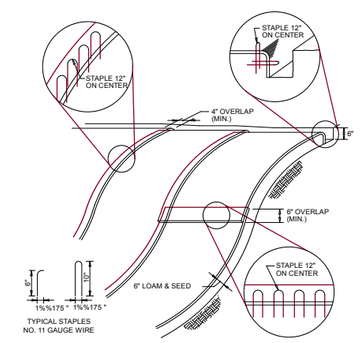
42
D6



NOTES:
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

42
D7



NOTES:
1. BEGIN AT THE TOP OF BLANKET INSTALLATION AREA BY ANCHORING BLANKET IN A 6" DEEP TRENCH BACKFILL AND COMPACT TRENCH AFTER STAPLING.
2. ROLL THE BLANKET DOWN THE SWALE IN THE DIRECTION OF THE WATER FLOW.
3. THE EDGES OF BLANKETS MUST BE STAPLED WITH APPROX. 4 INCH OVERLAP WHERE 2 OR MORE STRIP WIDTHS ARE REQUIRED.
4. WHEN BLANKETS MUST BE SPLICED DOWN THE SWALE, PLACE UPPER BLANKET END OVER LOWER END WITH 6 INCH (MIN.) OVERLAP AND STAPLE BOTH TOGETHER.
5. METHOD OF INSTALLATION SHALL BE AS PER MANUFACTURER'S RECOMMENDATIONS.
6. EROSION CONTROL BLANKETS SHALL BE USED IN ALL AREAS WHERE SLOPES EXCEED 3:1.

ROLLED EROSION CONTROL PROJECT (RECP) - SLOPE INSTALLATION

42
D8

* INSTALLATION SHALL BE AS PER MANUFACTURER'S RECOMMENDATIONS

RECP - SWALE INSTALLATION

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PHASE IC - LAMOILLE VALLEY RAIL TRAIL
EROSION PREVENTION AND SEDIMENT CONTROL PLAN

APPLICATION BY:
VAST and VTrans

PURPOSE:
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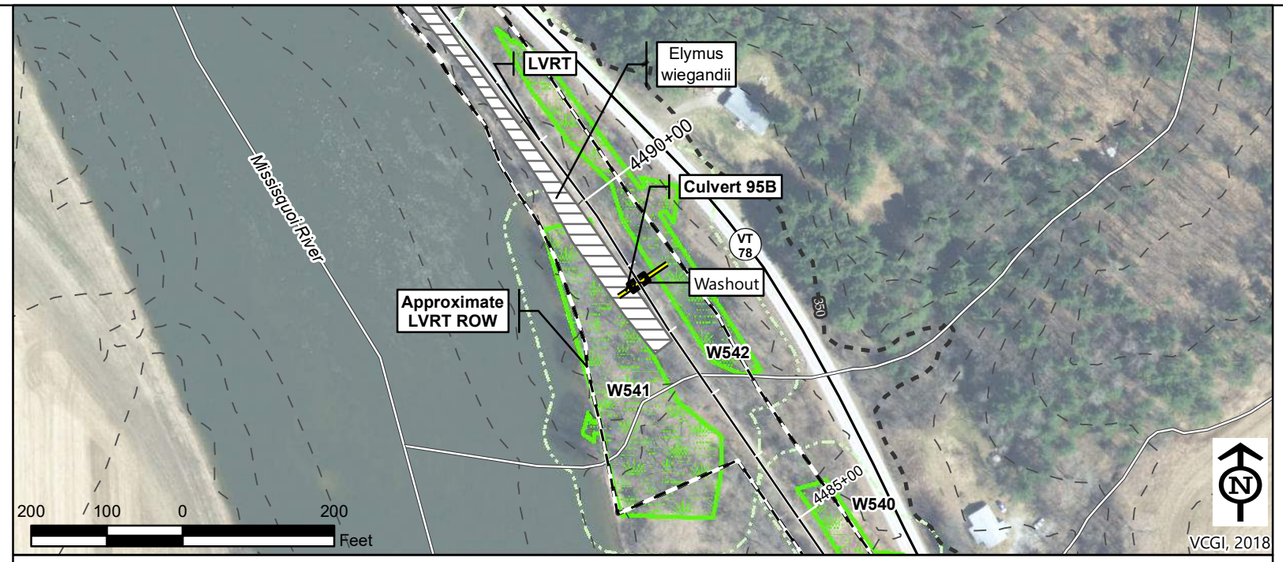

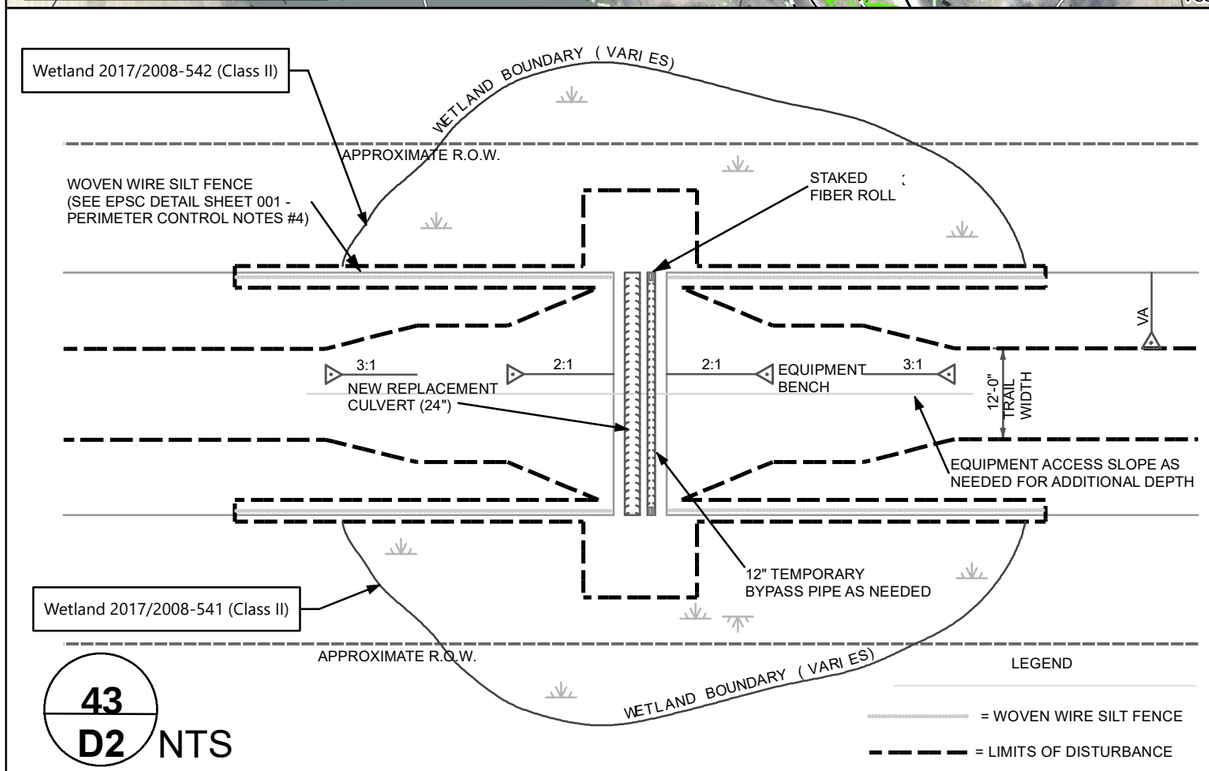

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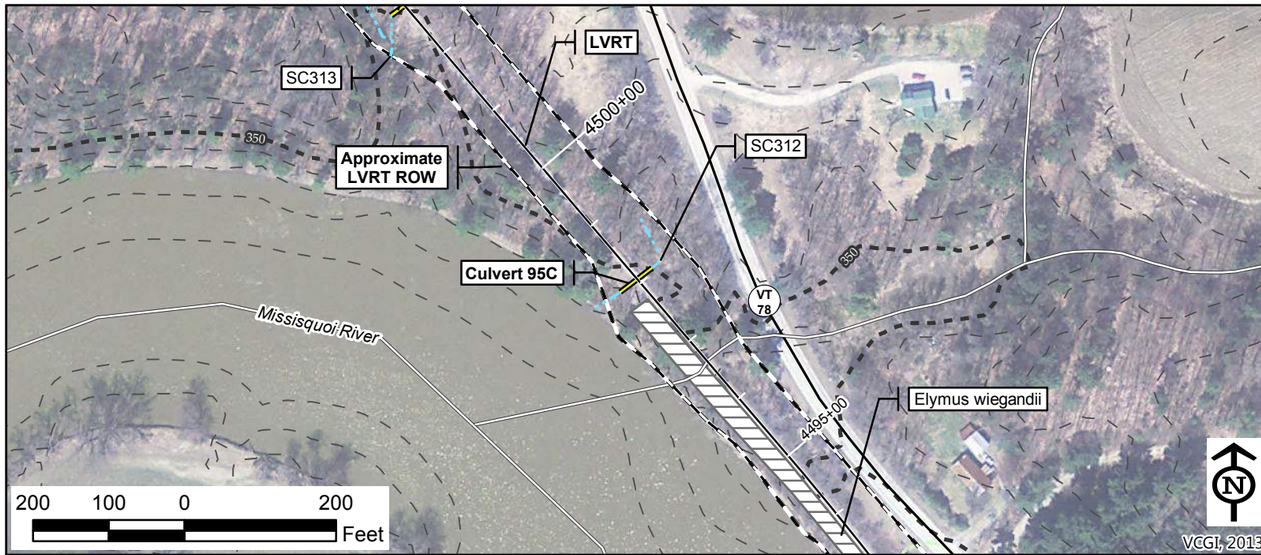

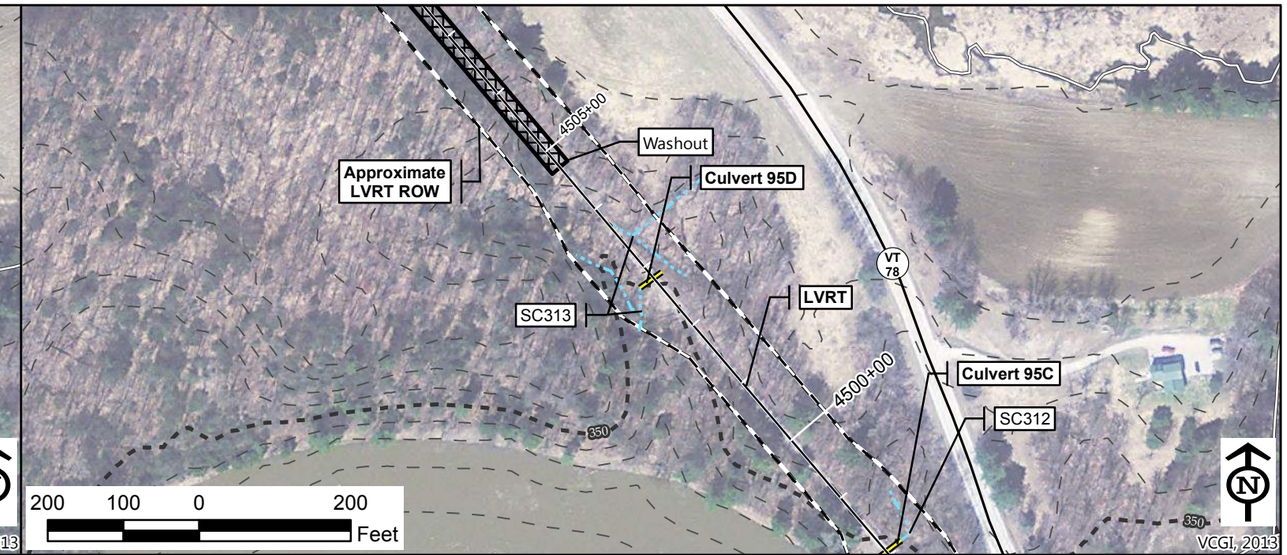

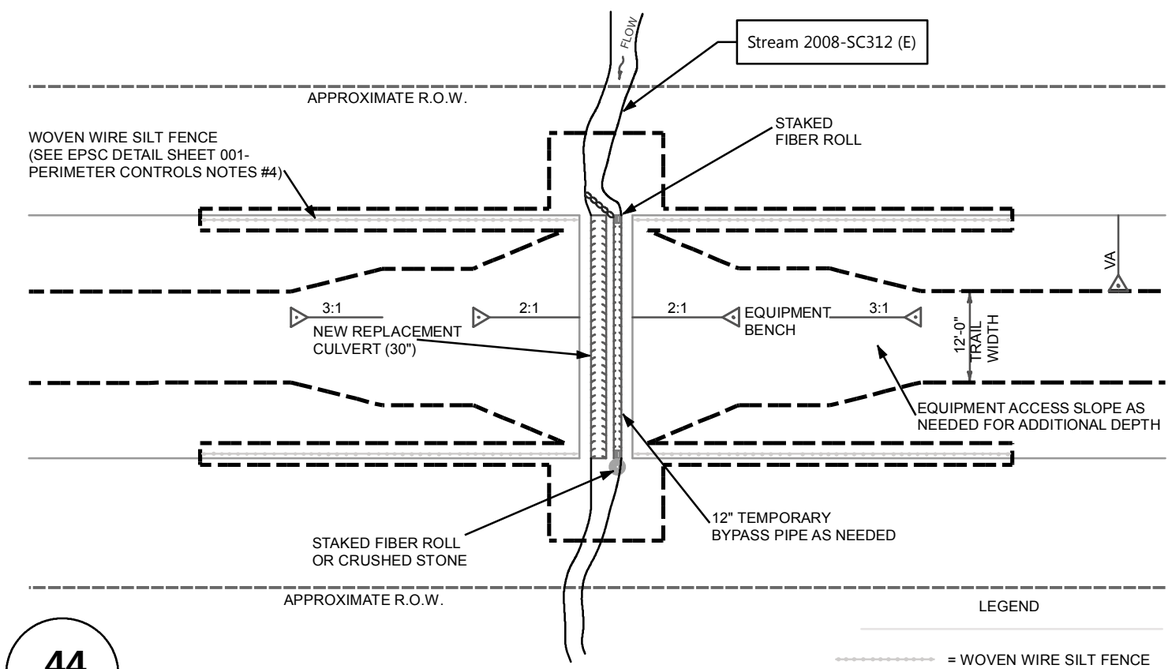

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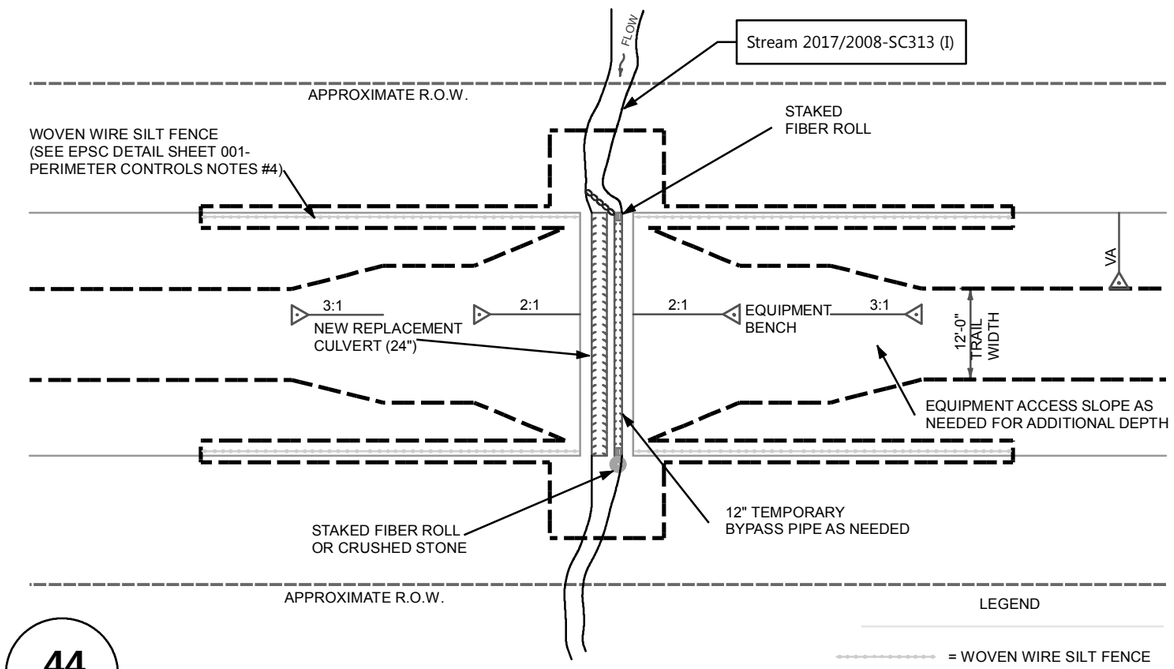

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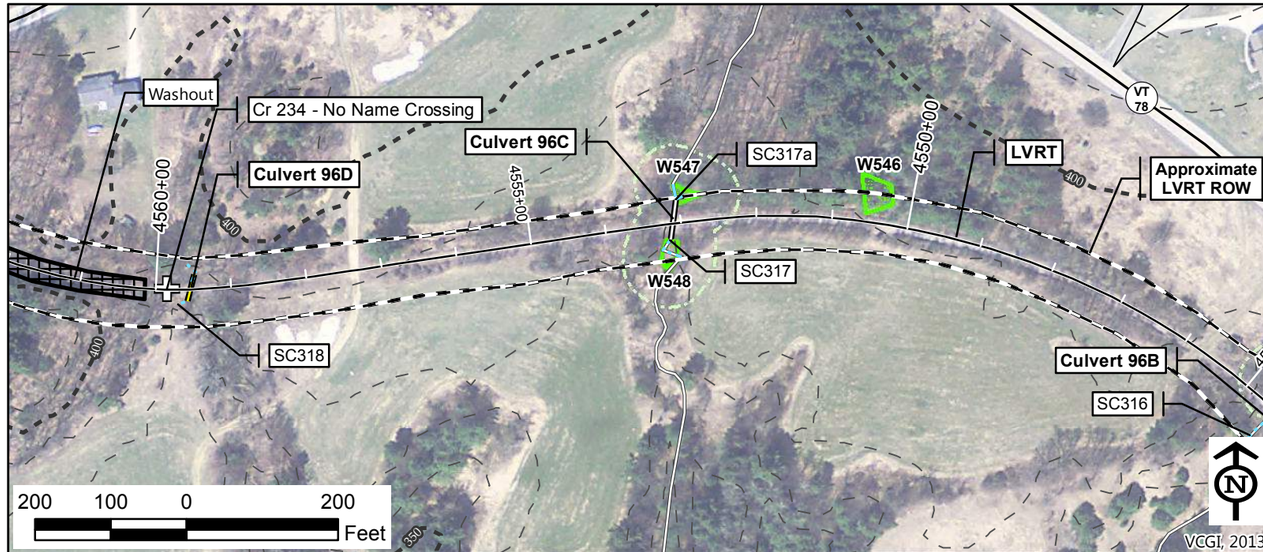

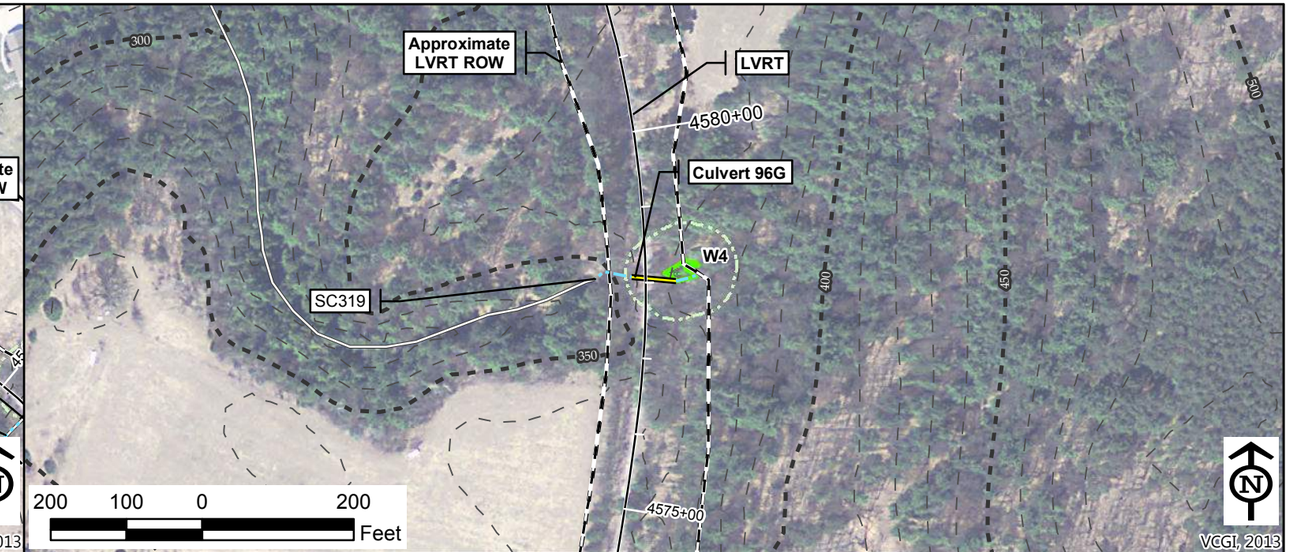

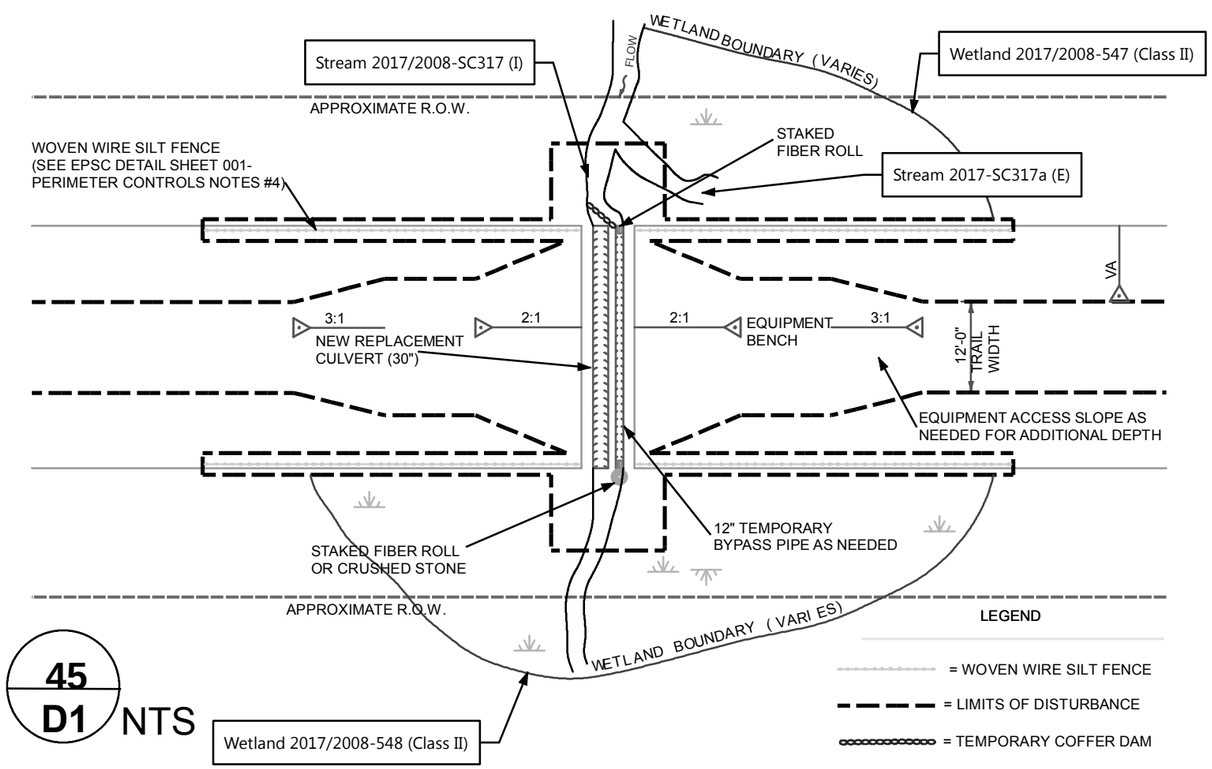

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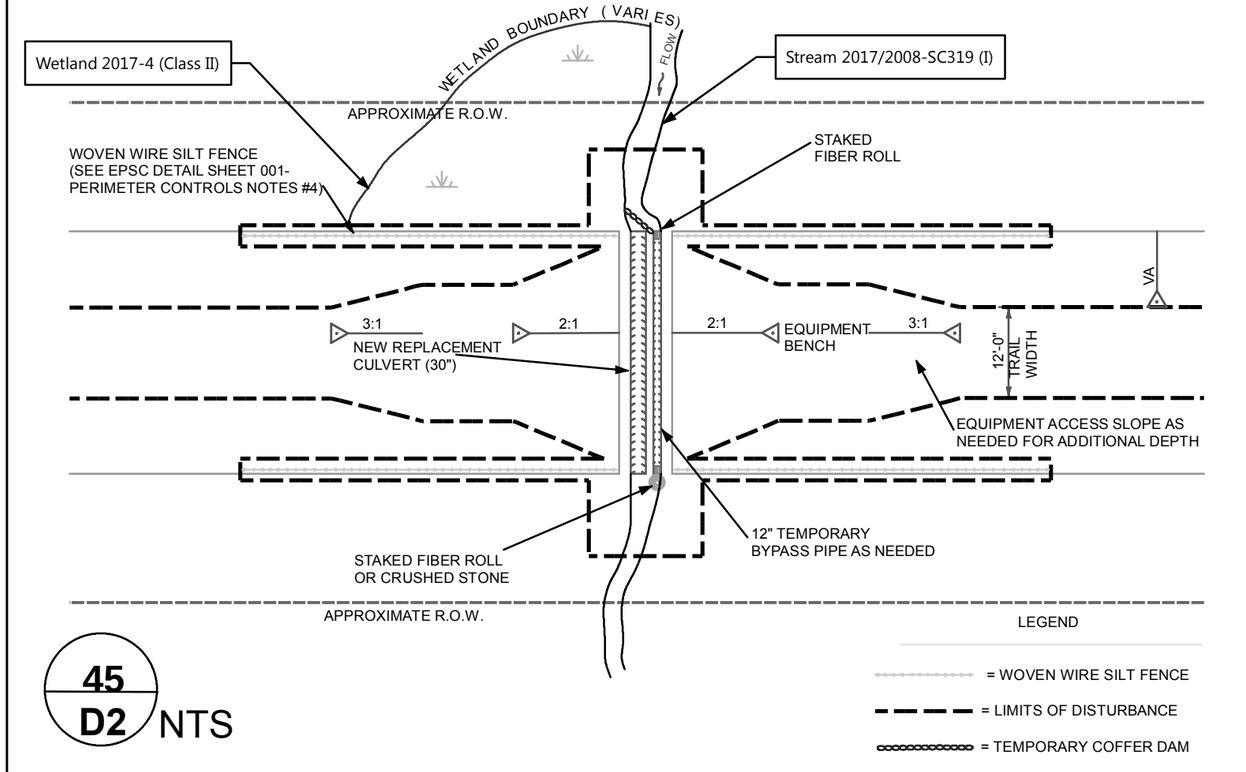

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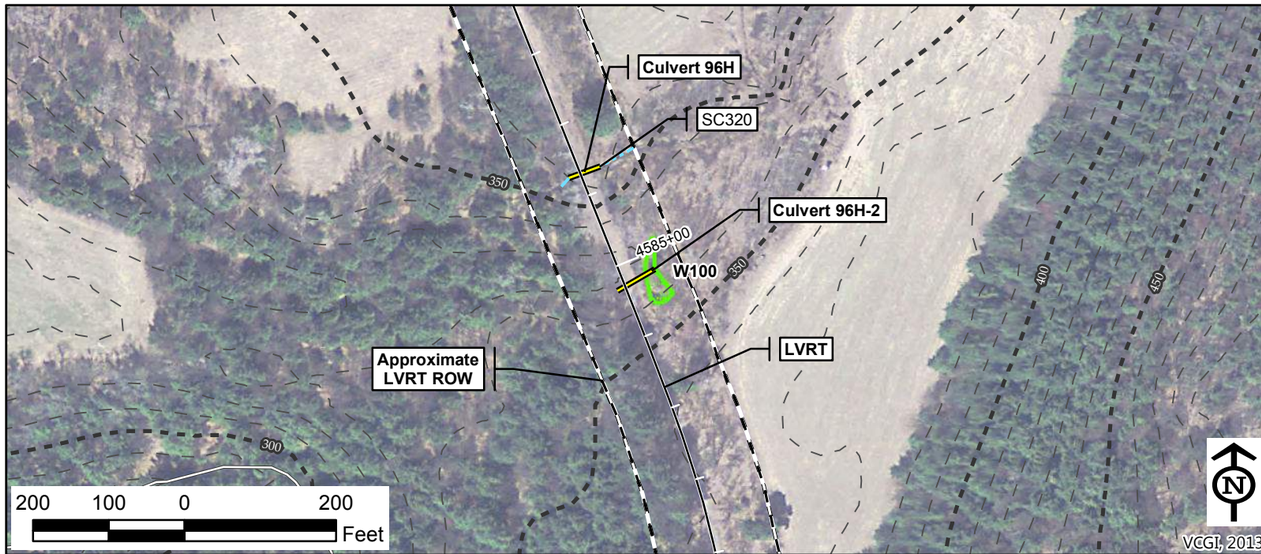

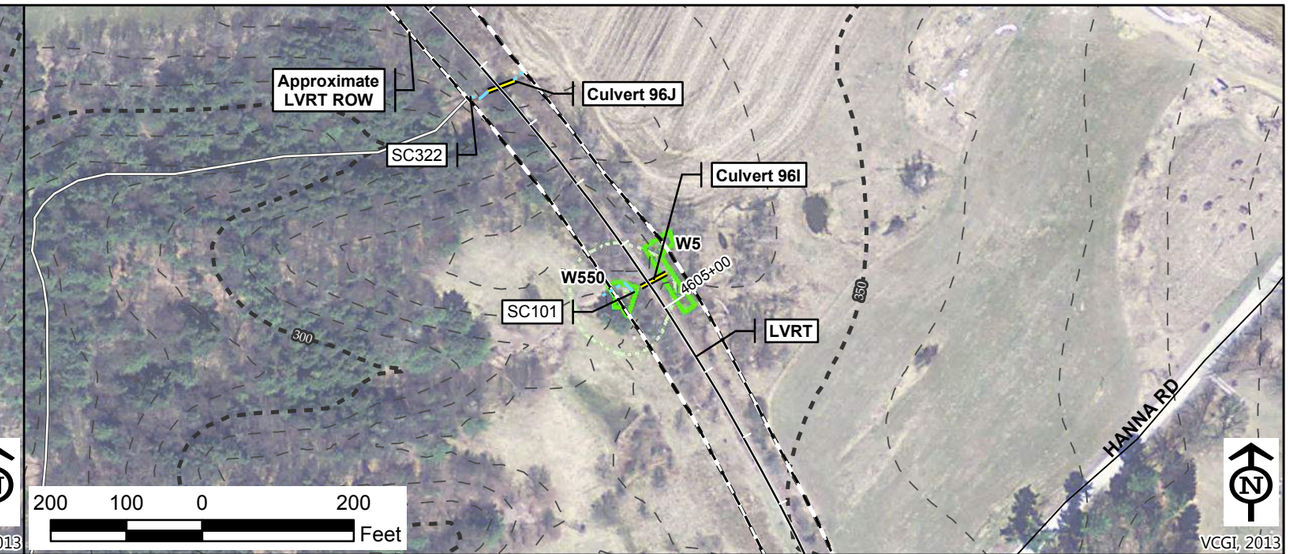

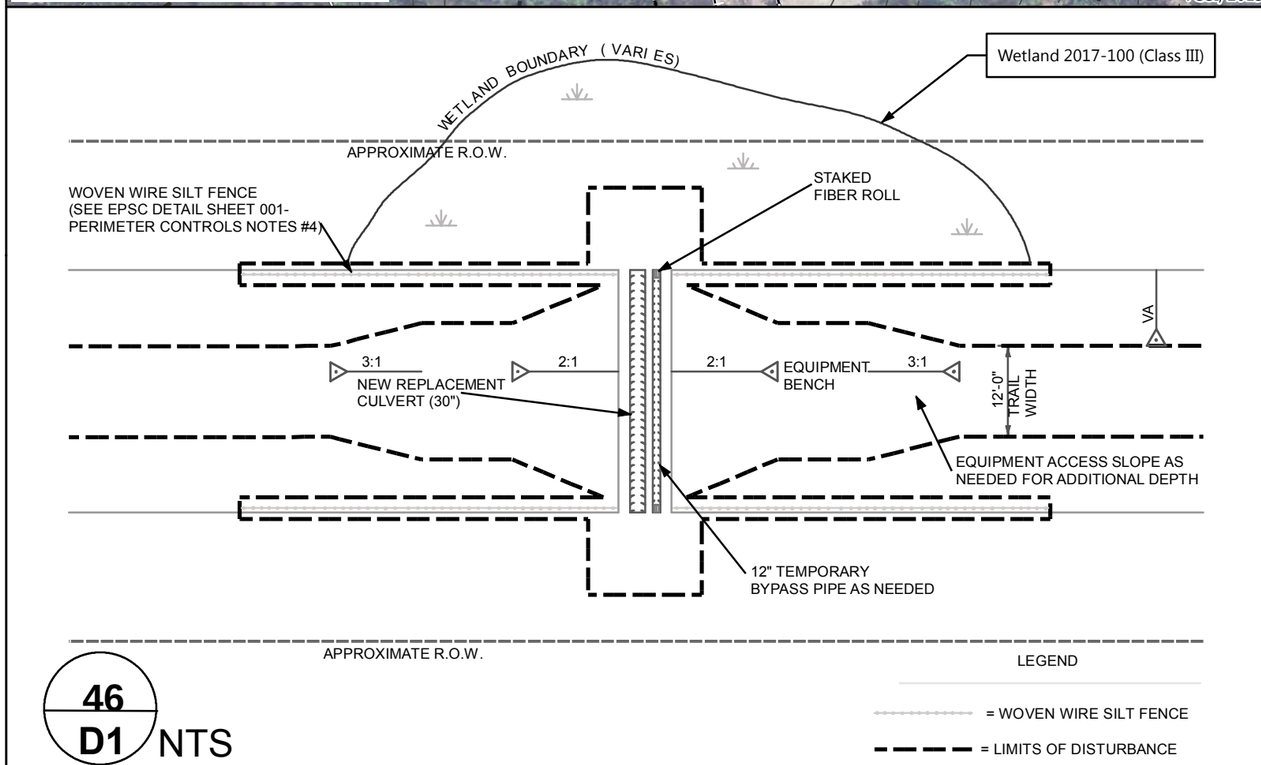

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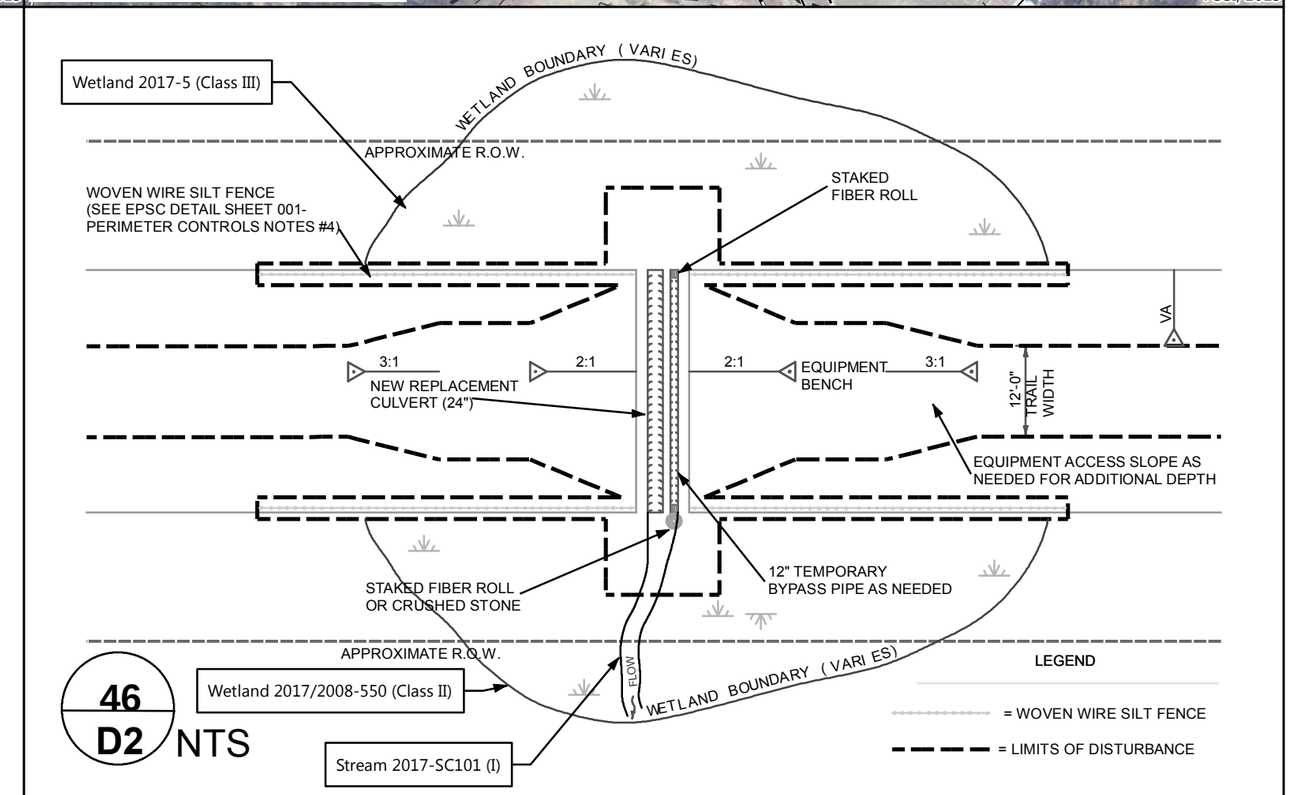

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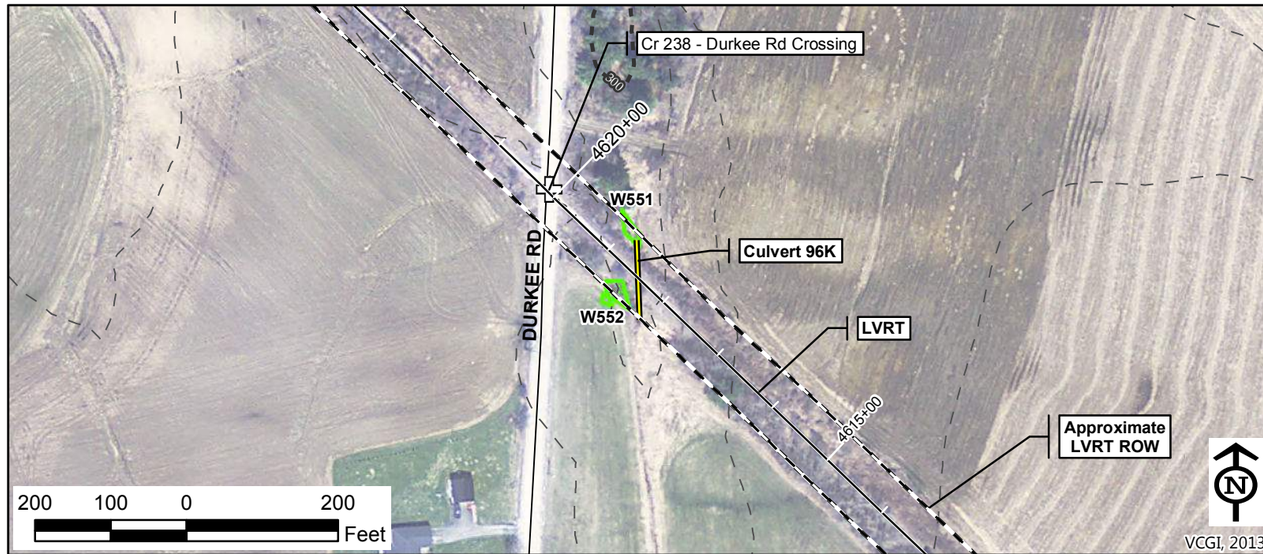

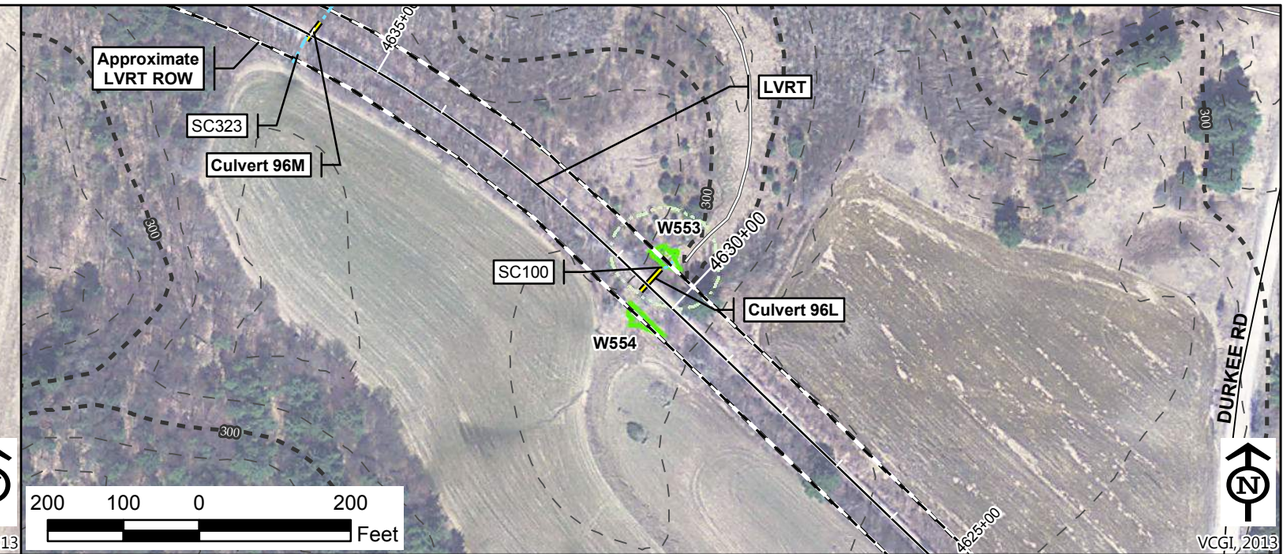

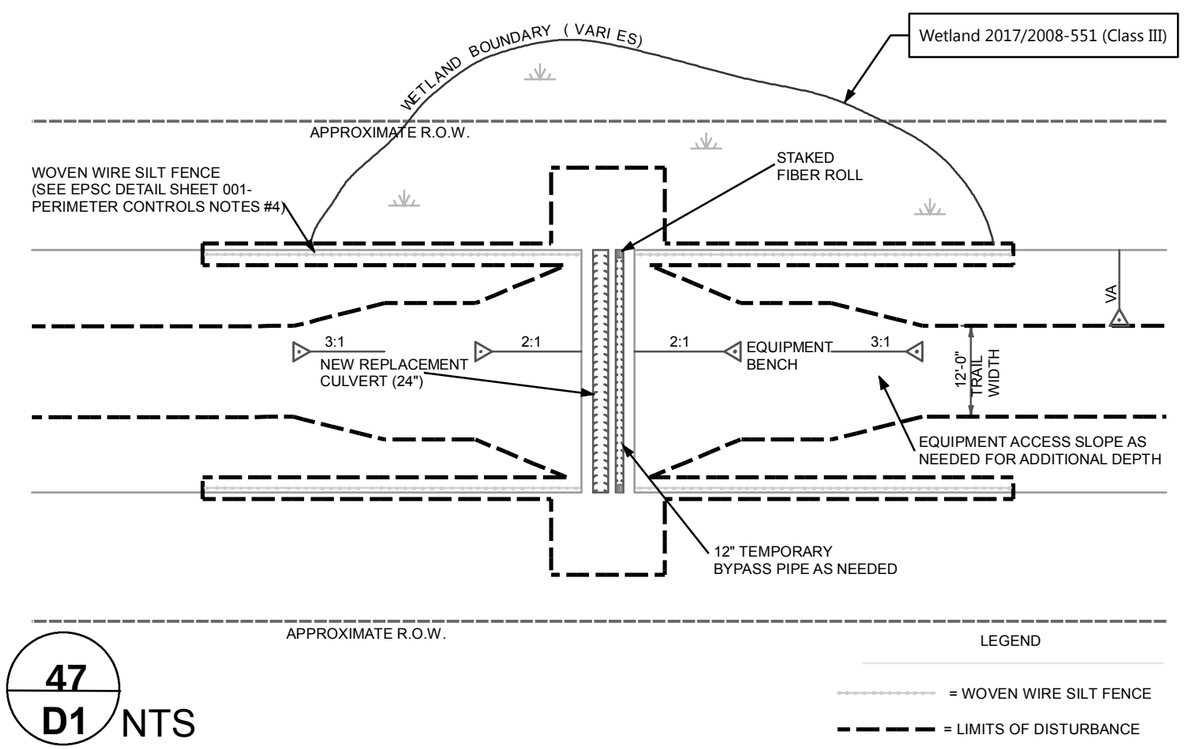

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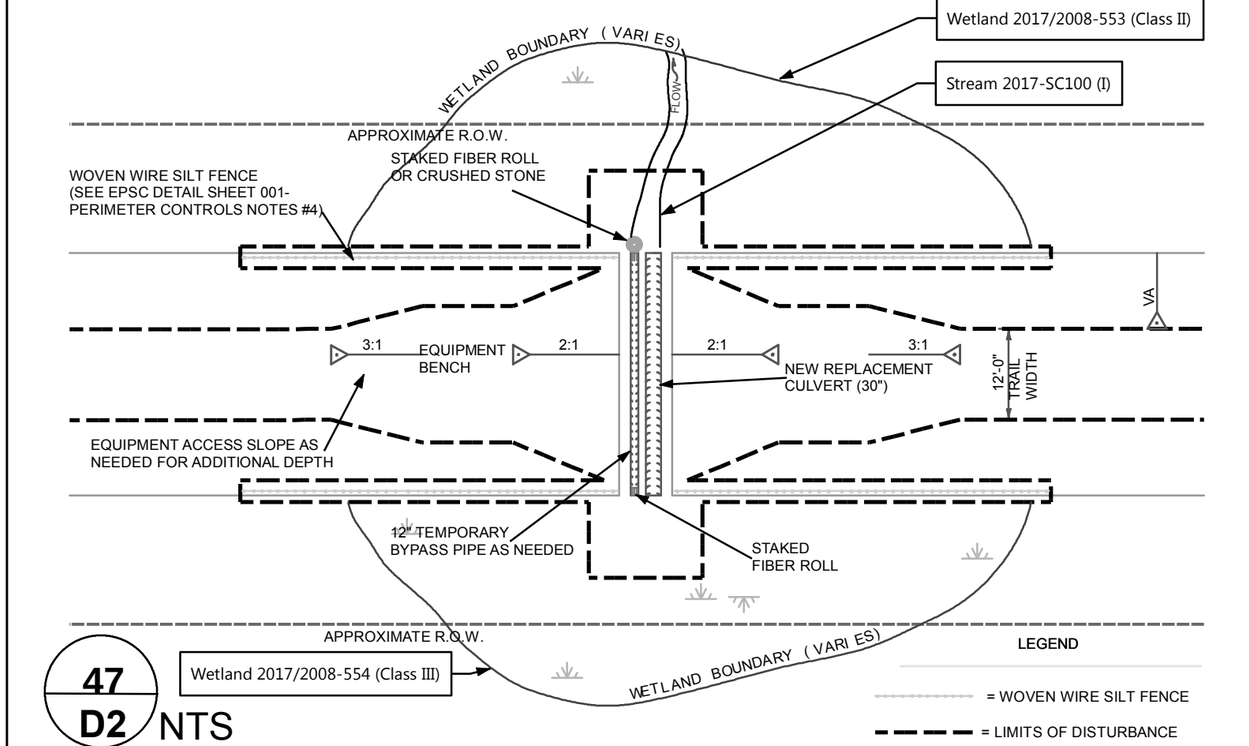

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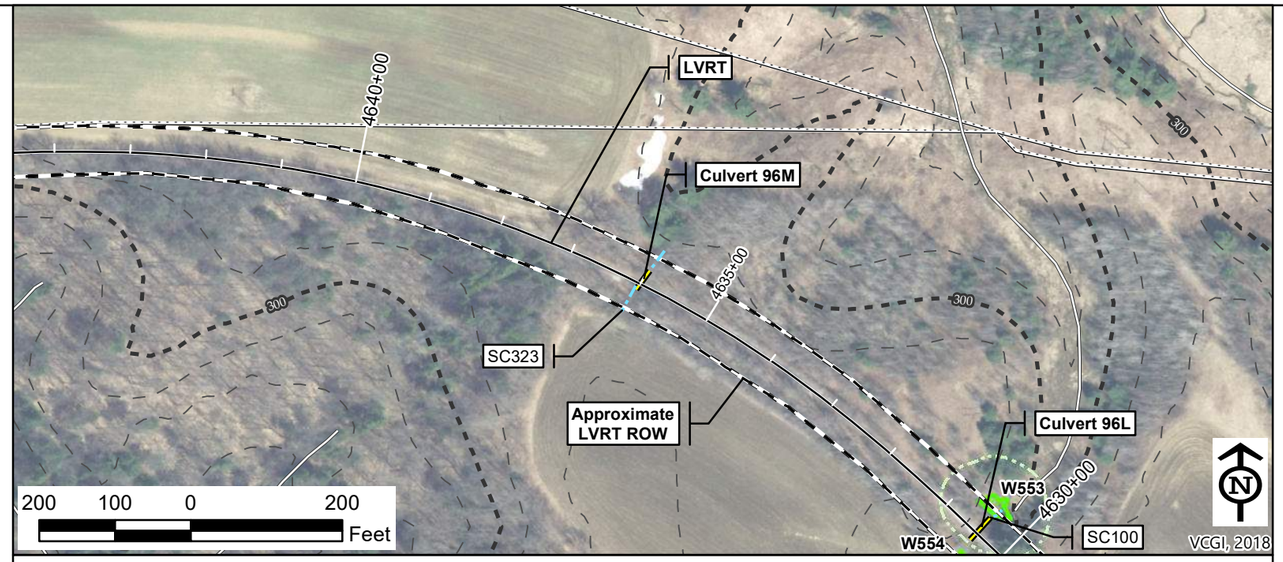

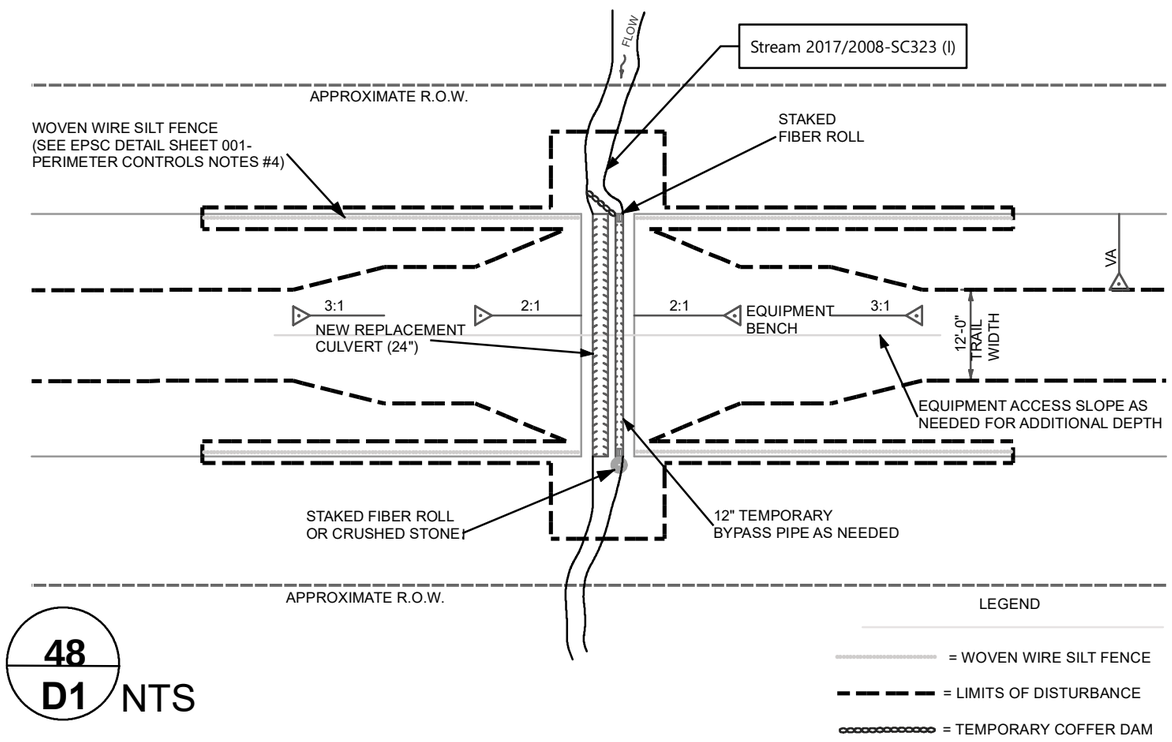

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EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION

THE CO-APPLICANTS FOR THIS PROJECT ARE THE VERMONT ASSOCIATION OF SNOW TRAVELERS, INC. (VAST) AND THE VERMONT AGENCY OF TRANSPORTATION (VTRANS). THIS PROJECT INVOLVES "PHASE I" OF PLANNED UPGRADES AND REHABILITATION OF THE EXISTING LAMOILLE VALLEY RAILROAD (LVRR) TO A CONTINUOUS 93-MILE FOUR-SEASON RECREATION TRAIL FROM ST. JOHNSBURY TO SWANTON, VERMONT; KNOWN AS THE LAMOILLE VALLEY RAIL TRAIL (LVRT). PHASE I, WHICH IS REPRESENTED BY THIS NARRATIVE AND ASSOCIATED EPSC PLAN, CONSISTS OF THREE SEGMENTS THAT TOTAL 44.3 MILES IN LENGTH. THE FOLLOWING REPRESENTS THE THREE SEGMENTS (OR SUB-PHASES) OF PHASE I:

- PHASE IA: 15.25 MILES FROM ST. JOHNSBURY TO DANVILLE
- PHASE IB: 17.42 MILES FROM MORRISTOWN TO CAMBRIDGE
- PHASE IC: 11.63 MILES FROM SHELDON TO SWANTON

UNDER EXISTING CONDITIONS, THE RAILROAD CORRIDOR EMBANKMENT IS COMPOSED OF FILL MATERIAL OF VARIOUS TYPES THAT HAS BEEN TOPPED WITH A LAYER OF CRUSHED ROCK, KNOWN AS THE "BALLAST". THE OVERALL HEIGHT OF THE EMBANKMENT VARIES FROM LESS THAN A FOOT TO MORE THAN 1OO FEET ABOVE THE ADJACENT EXISTING GROUND SURFACE. THE BALLAST IS GENERALLY 10 TO 12 FEET WIDE AT THE TOP AND VARIES GREATLY IN CONDITION. IN SOME AREAS, THE BALLAST IS IN VERY GOOD CONDITION WITH NO NEED FOR IMPROVEMENT, WHILE OTHER AREAS HAVE BEEN WASHED-OUT, WITH NO REMAINING BALLAST MATERIAL. BASED ON AN INVENTORY OF THESE EXISTING CONDITIONS, IT HAS BEEN DETERMINED THAT A VARYING DEGREE OF UPGRADES AND REHABILITATION ARE NEEDED IN ORDER TO ESTABLISH (OR RE-ESTABLISH) A SURFACE THAT IS CONDUCIVE TO TRAIL USE. ENGINEERING SITE PLANS HAVE BEEN PREPARED TO PROVIDE SPECIFIC DESIGN AND CONSTRUCTION SPECIFICATIONS FOR EACH OF THESE AREAS (SEE REFERENCE BELOW). OVERALL, PLANNED UPGRADES AND REHABILITATION OF CERTAIN SECTIONS OF THE TRAIL WILL INVOLVE THE FOLLOWING ACTIVITIES:

- REMOVAL OF VEGETATION AND DEBRIS FROM THE TRAIL AND EXISTING DITCHES
- REFURBISHING THE TRAIL SURFACE
- REPAIRING LOCALIZED EROSION ("WASHOUTS") OF THE RAIL BED
- CLEANING OR REPLACING EXISTING CULVERTS AND/OR INSTALLING NEW CULVERTS
- MINOR REGRADING AND RE-ALIGNMENT OF THE TRAIL IN SELECT LOCATIONS
- CONSTRUCTING NEW APPROACHES TO/FROM MAJOR ROAD CROSSINGS WITH ASSOCIATED OPERATIONAL PHASE STORMWATER TREATMENT PRACTICES
- REPAIRING AND/OR REPLACING EXISTING BRIDGES
- REPAIRING CATTLE PASSES

FOR PHASE I CONSTRUCTION ACTIVITIES, ACCESS TO THE LVRT CORRIDOR WILL GENERALLY OCCUR BY WAY OF EXISTING ROADWAY CROSSINGS AND VTRANS PROPERTIES. STAGING/STOCKPILING AREAS WILL BE LOCATED WITHIN OR ADJACENT TO THE LVRT CORRIDOR, ACCESS CORRIDORS, VTRANS PROPERTIES, AND, WHERE AVAILABLE, EXISTING RAIL YARDS. THESE ACCESS POINTS AND STAGING/STOCKPILING AREAS ARE SHOWN ON THE EPSC PLAN. ANY ADDITIONAL OFF-CORRIDOR ACCESS ROUTES AND/OR STAGING/STOCKPILING AREAS THAT ARE NOT SHOWN ON THE EPSC PLAN ARE TO BE APPROVED BY THE ON-SITE PLAN COORDINATOR (OSPC) AND, AS NEEDED, VT DEC PRIOR TO THEIR USE.

THE AFOREMENTIONED PROJECT AREA, WHICH INCLUDES THE LVRT CORRIDOR, ACCESS ROUTES, AND STAGING/STOCKPILING AREAS COMPRISES THE "LVRT RIGHT-OF-WAY (ROW)". TOTAL PHASE I AREA OF DISTURBANCE IS APPROXIMATELY **110.71 ACRES**.

NOTE: THE TOTAL AREA OF DISTURBANCE INCLUDES LIMITS OF EARTH DISTURBANCE WITHIN THE IMMEDIATE PROJECT AREA (E.G., WITHIN THE LVRT CORRIDOR AND ADJACENT TO CULVERT AND BRIDGE REPLACEMENTS/INSTALLATIONS), AS WELL AS ACCESS CORRIDORS AND STAGING/STOCKPILING AREAS (UNLESS LOCATED ON PAVED SURFACES).

THE ANTICIPATED CONSTRUCTION PERIOD FOR THIS PROJECT IS APPROXIMATELY ONE YEAR FROM FALL 2012 THROUGH FALL 2013, WITH LIMITED TO NO CONSTRUCTION ACTIVITIES TO OCCUR DURING PERIODS WHEN THERE IS SNOWCOVER SUITABLE FOR USE BY SNOWMOBILERS.

THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE EPSC PLAN, AS WELL AS:

VAST LVRT PROPOSED IMPROVEMENT TRAIL PROJECT, ST. JOHNSBURY TO SWANTON, COUNTIES OF CALEDONIA, LAMOILLE, ORLEANS, AND FRANKLIN, LVRT - PHASE IA, IB, & IC, PRELIMINARY PLAN SET, DATED FEBRUARY 9, 2012 (OR REVISED)

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY AND LAND COVER

AS A LINEAR PROJECT THAT COMPRISESTHREE INDIVIDUAL SEGMENTS, THE TOPOGRAPHY OF THE PHASE I PROJECT AREA (PHASE IA, PHASE IB, AND PHASE IC) VARIES FROM FLAT TO STEEPLY SLOPING TERRAIN ALTHOUGH THE TRAIL/FORMER RAILROAD BED IS A GENERALLY FLAT SURFACE. AS AN EXISTING TRAIL, LAND COVER IS OPEN. ALTHOUGH PRIMARILY SURROUNDED BY FORESTED AREAS AND OPEN SPACES SUCH AS PASTURES AND MEADOWS, THERE ARE ALSO SCATTERED RESIDENTIAL AREAS AND TOWN/VILLAGE CENTERS THAT ARE LOCATED WITHIN CLOSE PROXIMITY TO THE LVRT CORRIDOR.

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

PHASE I OF THE LVRT PROJECT AREA EXTENDS THROUGH THREE MAJOR WATERSHEDS, WHICH ARE THE PASSUMPSIC RIVER, LAMOILLE RIVER, AND MISSISQUOI RIVER, AS WELL AS A SMALL PORTION OF THE LAKE CHAMPLAIN BASIN. THE PROJECT CORRIDOR CROSSES LAMOILLE RIVER, WILD BRANCH (A TRIBUTARY TO LAMOILLE RIVER), MISSISQUOI RIVER, AND BLACK CREEK (A TRIBUTARY TO MISSISQUOI RIVER), AS WELL AS SMALLER TRIBUTARIES AND WETLANDS ASSOCIATED WITH THESE MAJOR WATERSHEDS. IN ADDITION, PORTIONS OF THE LVRT CORRIDOR CONTAIN DITCHES THAT RUN ALONGSIDE THE TRAIL FOR DRAINAGE PURPOSES. THERE ARE NO NEW CROSSINGS OF STREAMS OR WETLANDS PROPOSED AS PART OF THIS PROJECT.

1.2.3 VEGETATION

AS NOTED IN SECTION 1.2.1, LAND COVER ALONG THIS LINEAR PROJECT VARIES, INCLUDING FORESTED, OPEN, AND DEVELOPED AREAS. FOR CONSTRUCTION OF THIS PROJECT, TREE CLEARING WILL CONSIST OF REMOVAL OF VEGETATION WHICH HAS ENCROACHED INTO EXISTING DITCHES AND TRAIL SHOULDERS, AND WILL BE CONDUCTED PURSUANT TO THE ACCEPTABLE MANAGEMENT PRACTICES FOR MAINTAINING WATER QUALITY ON LOGGING JOBS IN VERMONT (AMPs).

1.2.4 SOILS

SOILS DATA WERE OBTAINED FROM THE U.S. DEPARTMENT OF AGRICULTURE (USDA) NATURAL RESOURCES CONSERVATION SERVICE (NRCS) FOR THE COUNTIES OF CALEDONIA, LAMOILLE, AND FRANKLIN, VERMONT. SOIL TYPES THAT UNDERLIE THE PROJECT SITE ARE PRESENTED IN TABLE 1 ON EPSC NARRATIVE SHEET N-002. SOIL K-VALUES RANGE FROM LOW EROSION POTENTIAL (0.0-0.23), WITH 26.7 AC OF DISTURBANCE, TO MEDIUM EROSION POTENTIAL (0.24-0.36), WITH 45.26 AC OF DISTURBANCE, TO HIGH EROSION POTENTIAL (0.37 AND HIGHER), WITH 38.75 AC OF DISTURBANCE (TOTALLING 110.71 ACRES).

NOTE: USDA NRCS SOILS DATA, INCLUDING K-VALUES AND SLOPES, WERE USED IN PREPARING THE SOIL DISTURBANCE SUMMARY TABLE (TABLE 1 ON EPSC NARRATIVE SHEET N-002) AND IN CONDUCTING THE RISK EVALUATION. THESE DATA TAKE INTO CONSERATION UNDERLYING NATURAL/PRE-EXISTING SOILS AND TOPOGRAPHY, AS OPPOSED TO EXISTING CONDITIONS WHICH ARE REPRESENTED BY A BUILT EMBANKMENT THAT IS RELATIVELY FLAT THROUGHOUT THE LINEAR CORRIDOR AND COMPRISED OF BALLAST (CRUSHED STONE) MATERIAL. THE RESULTS ARE THEREFORE LIKELY TO BE CONSERVATIVE AS MOST CONSTRUCTION ACTIVITIES WILL BE OCCURRING ON FLAT TERRAIN AS OPPOSED TO STEEPLY SLOPING TERRAIN, AND WITHIN BALLAST MATERIAL AS OPPOSED TO HIGHLY ERODIBLE SOILS.

1.2.5 SENSITIVE RESOURCE AREAS

CRITICAL HABITATS:
THERE ARE NO ACTIVE NECESSARY WILDLIFE HABITAT AREAS WITHIN THE LVRT ROW. THERE ARE NO RARE OR IRREPLACEABLE NATURAL AREAS (RINA) WITHIN THE LVRT ROW.

HISTORICAL OR ARCHEOLOGICAL AREAS:
DUE TO PRESENCE OF HISTORICALLY AND ARCHEOLOGICALLY SENSITIVE AREAS WITHIN THE LVRT ROW, THE FEDERAL HIGHWAY ADMINISTRATION (FHWA), VTRANS, AND VAST HAVE ENTERED INTO A PROGRAMMATIC AGREEMENT WHICH GOVERNS THE TREATMENT AND PROTECTION OF HISTORIC RESOURCES THROUGH THE CONSTRUCTION OF THE LVRT.

PRIME AGRICULTURAL LAND:
ALTHOUGH SOILS WITH AGRICULTURAL POTENTIAL WERE FOUND WITHIN PORTIONS OF THE LVRT ROW, THE VERMONT AGENCY OF AGRICULTURE HAS CONFIRMED THAT THERE WOULD BE NO REDUCTION IN AGRICULTURAL POTENTIAL OF SUCH SOILS AS A RESULT OF PROJECT CONSTRUCTION.

THREATENED AND ENDANGERED SPECIES:
THERE ARE NO THREATENED OR ENDANGERED WILDLIFE SPECIES HABITATS WITHIN THE LVRT ROW. THERE ARE STATE-THREATENED AND ENDANGERED PLANTS LOCATED WITHIN THE LVRT CORRIDOR THAT WILL BE RELOCATED PRIOR TO CONSTRUCTION IN THOSE AREAS. A TAKINGS PERMIT FOR THOSE PLANTS WILL BE OBTAINED PRIOR TO CONSTRUCTION IN THOSE AREAS. A MUSSEL SURVEY WILL BE CONDUCTED IN ADVANCE OF THE BRIDGE ABUTMENT WORK AT BRIDGE 68, WHICH SPANS THE LAMOILLE RIVER. IF LISTED SPECIES ARE PRESENT, THEY WILL BE RELOCATED IN A MANNER AND TO A LOCATION APPROVED BY A TAKINGS PERMIT.

WATER RESOURCES / WETLANDS:
SEE SECTION 1.2.2. ALTHOUGH THE PROJECT INVOLVES THE RE-ESTABLISHMENT OF SELECT EXISTING CROSSINGS, THERE ARE NO NEW CROSSING LOCATIONS OF RIVERS, STREAMS, OR WETLANDS ASSOCIATED WITH THIS PROJECT. CONSTRUCTION WILL BE LIMITED TO REPAIR OR REPLACEMENT OF EXISTING CROSSINGS, INCLUDING THAT AT BRIDGE 68, WHICH CROSSES THE LAMOILLE RIVER, AND BRIDGE 17D, WHICH CROSSES WHITEMAN BROOK (A TRIBUTARY TO PASSUMPSIC RIVER). ASSOCIATED STATE AND FEDERAL PERMITS WILL BE ISSUED PRIOR TO CONDUCTING WORK IN THESE AREAS.

1.3 RISK EVALUATION

SEE SECTION 1.2.4. FOR A NOTE RELATED TO COMPLETION OF THE RISK EVALUATION. BASED ON THE OUTCOME OF THE RISK EVALUTION, THIS PROJECT FALLS UNDER THE JURISDICTION OF AN INDIVIDUAL PERMIT (INDC) FOR STORMWATER RUNOFF FROM CONSTRUCTION SITES.

1.4 EROSION PREVENTION AND SEDIMENT CONTROL (EPSC)

THE EPSC PLAN IS 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 MAPPED RECEIVING WATERS. THE MEASURES INCLUDE STABILIZATION AND STRUCTURAL PRACTICES, STORM WATER CONTROLS AND OTHER POLLLUTION PREVENTION PRACTICES. THEY HAVE BEEN PROVIDED AS A BASIS FOR PROTECTING RESOURCES AND WILL NEED TO BE BUILT UPON BASED ON THE SPECIFC MEANS AND METHODS OF THE CONTRACTOR. REFER TO *THE VERMONT STANDARDS AND SPECIFICATIONS FOR EROSION PREVENTION AND SEDIMENT CONTROL* AND APPROPRIATE DETAIL SHEETS FOR GUIDANCE AND EPSC MEASURE SPECIFICATIONS.

1.4.1 MARK SITE BOUNDARIES

1. CONSTRUCTION DEMARCATION TO BE INSTALLED ALONG PERIMETER OF LIMITS OF DISTURBANCE PER THE EPSC PLAN.
2. DEMARCATION IS NOT TO CROSS ACTIVE ACCESS ROUTES.
3. WITHIN 50 FEET OF A WATER RESOURCE, DEMARCATION MUST INCLUDE:
   a. 2 TO 3 ROWS OF STAKED (OR STAPLED) ORANGE BARRIER MESH TAPE,
   b. ORANGE CONSTRUCTION FENCE, OR
   c. ORANGE SNOW FENCE.
4. GREATER THAN 50 FEET FROM WATER RESOURCE, DEMARCATION MAY INCLUDE:
   a. ONE ROW OF STAKED (OR STAPLED) ORANGE BARRIER MESH TAPE, OR
   b. ORANGE FLAGGING.

1.4.2 LIMIT DISTURBANCE AREAS

IN GENERAL, THE APPROACH TO CONSTRUCTION ACTIVITIES WILL BE FOR EACH CONTRACTOR TO LIMIT THE AREA OF DISTURBANCE TO A MAXIMUM OF FIVE ACRES AT ANY ONE TIME, WITH THE POTENTIAL FOR THREE CREWS TO BE WORKING AT ONE TIME. THIS EQUATES TO A **MAXIMUM OF 15 ACRES** OF CONCURRENT EARTH DISTURBANCE. PER THE EPSC PLAN, THE CONTRACTOR WILL BE RESPONSIBLE FOR AT LEAST TEMPORARILY STABILIZING AREAS OF DISTURBANCE WITH SEED AND MULCH (OR MATTING) AS SOON AS POSSIBLE (TYPICALLY **WITHIN FIVE DAYS** MAXIMUM) AND PRIOR TO ANY RAINFALL EVENT.

IN ADDITION TO LIMITING THE AMOUNT OF DISTURBANCE AT ANY ONE TIME AND REQUIRING STABILIZATION WITHIN A GIVEN TIMEFRAME, CONTRACTORS ARE ALSO TO MAINTAIN EXISTING VEGETATATION IN BUFFER AREAS ALONG MAPPED RESOURCE AREAS TO FURTHER MINIMIZE THE POTENTIAL FOR SEDIMENT TRANSPORT TO THESE RESOURCE AREAS.

1.4.3 SITE ENTRANCE/EXIT STABILIZATION

TRACKING OF SEDIMENT ONTO PUBLIC ROADWAYS WILL BE MNIMIZED TO REDUCE THE POTENTIAL FOR RUNOFF ENTERING RECEIVING WATERS. STABILIZED CONSTRUCTION ENTRANCES WILL BE INSTALLED PER THE ENGINEER AND ANYWHERE EQUIPMENT WILL BE GOING FROM AREAS OF EXPOSED SOILS TO PAVED SURFACES. INSTALLATION WILL COINCIDE WITH THE CONTRACTORS PROGRESS SCHEDULE. STABILIZED CONSTRUCTION ENTRANCES SHALL BE MAINTAINED BY THE CONTRACTOR TO MINIMIZE SEDIMENT LEAVING THE SITE.

1.4.4 INSTALL SEDIMENT BARRIERS

SEDIMENT BARRIERS (E.G., SILT FENCE) WILL BE UTILIZED TO INTERCEPT RUNOFF AND ALLOW SUSPENDED SEDIMENT TO SETTLE OUT. THESE MEASURES WILL BE INSTALLED PER THE EPSC PLAN AND, WHERE/WHEN RELEVANT, THE "DRY AND FROZEN GROUND EVALUATION" (SEE EPSC DETAILS SHEET D-002, DETAIL D2).

THE PURPOSE OF THE "DRY AND FROZEN GROUND EVALUATION" IS LIMITED TO DETERMINING WHETHER OR NOT A SEDIMENT CONTROL MEASURE (E.G., REINFORCED SILT FENCE) IS TO BE INSTALLED WITHIN 100 FEET OF A MAPPED RESOURCE AREA PRIOR TO CONSTRUCTION IN THAT AREA. THE PURPOSE OF CONDUCTING THE EVALUATION IS TO POTENTIALLY MINIMIZE THE AMOUNT OF DISTURBANCE THAT COULD OCCUR WTIHIN AND/OR IMMEDIATELY ADJACENT TO WATER RESOURCE AREAS AS A RESULT OF INSTALLATION OF THESE SEDIMENT CONTROL MEASURES. THIS EVALUATION IS TO BE CONDUCTED BY THE PROJECT'S ON-SITE PLAN COORDINATOR (OSPC) AND/OR EPSC SPECIALIST. NOTE THAT REGARDLESS OF THE DETERMINATION, INSTALLATION OF EPSC MEASURES IS REQUIRED PER THE EPSC PLAN AND ASSOCIATED ENVIRONMENTAL PERMITS (AS APPLICABLE) IN AREAS WHERE THE PROPOSED ACTIVITY AND/OR PROJECT SETTING (E.G., SLOPE, SOIL ERODIBILITY RATING, WEATHER CONDITIONS) COULD INCREASE THE POTENTIAL FOR SEDIMENT DISCHARGE TO A MAPPED WATER RESOURCE. IN OTHER WORDS, THE APPLICABILITY OF THIS EVALUATION IS LIMITED TO ONLY THOSE CIRCUMSTANCES WHERE THERE IS LIMITED TO NO POTENTIAL FOR SEDIMENT TO BE TRANSPORTE TO THE MAPPED WATER RESOURCE AREA AS A RESULT OF PROPOSED ACTIVITY PRIOR TO FINAL STABILIZATION. ALSO NOTE THAT THIS PROCEDURE DOES NOT APPLY TO OTHER MAPPED RESOURCE AREAS (E.G., ARCHEOLOGICAL, RTE, ETC).

1.4.5 DIVERT UPLAND RUNOFF

DIVERSIONARY MEASURES WILL 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.

1.4.6 SLOW DOWN CHANNELIZED RUNOFF

CHECK STRUCTURES (E.G., STONE CHECK DAMS) WILL BE UTILIZED TO REDUCE THE VELOCITY, AND THUS THE EROSIVE POTENTIAL, OF CONCENTRATED FLOW IN DITCHES AND SWALES.

1.4.7 CONSTRUCT PERMANENT CONTROLS

PERMANENT (OPERATIONAL PHASE) STORMWATER MANAGEMENT SYSTEMS WILL INCLUDE THOSE NECESSARY FOR CONTROLLING STORMWATER RUNOFF ASSOCIATED WITH EIGHT LOCATIONS WHERE THE TRAIL IS BEING RE-ALIGNED AS IT APPROACHES AND CONNECTS TO A MAJOR ROAD CROSSING.

1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION

ALL AREAS OF DISTURBANCE MUST HAVE TEMPORARY STABILIZATION IN PLACE WITHIN FIVE DAYS OF INTIAL DISTURBANCE, WITH THE FOLLOWING EXCEPTIONS:

- STABILIZATION IS NOT REQUIRED IF WORK IS TO CONTINUE IN THE AREA WITHIN THE NEXT 24 HOURS AND THERE IS NO PRECIPITATION IN THE FORECAST.
- STABILIZATION IS NOT REQUIRED IF THE WORK IS OCCURRING IN A SELF-CONTAINED EXCAVATION (I.E., NO OUTLET) WITH A DEPTH OF 2 FEET OR GREATER (E.G., UTILITY TRENCH).

IN ANTICIPATION OF RAINFALL, AREAS OF DISTURBED SOIL ARE TO BE STABILIZED AS SOON AS POSSIBLE.

1.4.9 WINTER STABILIZATION

FOR SAFETY REASONS, THERE WILL BE MINIMAL TO NO CONSTRUCTION DURING THE WINTER SEASON (OCT 15 TO APR 15) WHEN THERE IS SNOWCOVER SUITABLE FOR USE BY SNOWMOBILERS. WINTER CONSTRUCTION NOTES ARE INCLUDED ON EPSC DETAILS SHEET D-001 FOR ANY CONSTRUCTION ACTIVITIES THAT DO TAKE PLACE BETWEEN OCT 15 AND APR 15.

1.4.10 STABILIZE SOIL AT FINAL GRADE

EXPOSED SOIL MUST BE STABILIZED WITHIN 48 HOURS OF REACHING FINAL GRADE OR PER REQUIREMENTS OF THE VT DEC STORMWATER DISCHARGE PERMIT AND EPSC PLAN. SEED AND MULCH (AT A MINIMUM) WILL BE USED TO ESTABLISH PERMANENT VEGETATION. FOR SLOPES STEEPER THAN 1:3, BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT WILL 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 (VWQS). DETAILS AND SPECIFICATIONS FOR DEWATERING ARE PROVIDED ON THE EPSC PLAN.

1.4.12 INSPECT YOUR SITE

INSPECT THE PROJECT SITE BASED ON REQUIREMENTS OF THE VT DEC STORMWATER DISCHARGE PERMIT ISSUED FOR THE PROJECT.

1.5 SEQUENCE AND STAGING

1.5.1 CONSTRUCTION SEQUENCE

THE SEQUENCE OF PHASE I CONSTRUCTION WILL OCCUR IN THREE SUBPHASES (PHASE IA, PHASE IB, AND PHASE IC), AS PRESENTED IN SECTION 1.1 OF THIS NARRATIVE. SEPARATE CONTRACTING CREWS MAY WORK CONCURRENTLY WITHIN THESE THREE SUBPHASES, EACH WITH A MAXIMUM OF FIVE ACRES OF ALLOWABLE SOIL DISTURBANCE AT ONE TIME, THEREBY TOTALLING A MAXIMUM OF 15 ACRES OF SOIL DISTURBANCE AT ONE TIME FOR THE ENTIRE PROJECT AREA. TEMPORARY AND/OR PERMANENT STABILIZATION WILL OCCUR WITHIN FIVE DAYS OF INITIAL DISTURBANCE WITH EXCEPTIONS, AS PRESENTED IN SECTION 1.4.8 OF THIS NARRATIVE. OVERSIGHT AND ASSOCIATED REPORTING OF THESE ACTIVITIES WILL BE THE RESPONSIBILITY OF THE ON-SITE PLAN COORDINATOR (OSPC).

1.5.2 OFF-SITE ACTIVITIES

ANY ACTIVITIES OUTSIDE THE CONSTRUCTION LIMITS REQUIRE PRE-APPROVAL BY THE OSPC AND/OR DEC.

1.5.3 UPDATES

[LEAVE BLANK]

Major Watershed (HUCS)	Disturbance Type	Natural Resources Conservation Service (NRCS) Soil Types	Soil Slope (%)	Soil K factor	Area of Disturbance (acres)
Passumpsic River	1a 20' Corridor	Buckland fine sandy loam, 15 to 35 percent slopes, very stony	35	0.43	0.606
		Buckland fine sandy loam, 3 to 8 percent slopes	8	0.32	0.372
		Buckland fine sandy loam, 8 to 15 percent slopes, very stony	15	0.43	0.636
		Bucksport muck, 0 to 2 percent slopes	2	0.36	0.000
		Cabot silt loam, 0 to 8 percent slopes, very stony	8	0.32	4.695
		Cabot silt loam, 3 to 8 percent slopes	8	0.32	1.032
		Cabot silt loam, 8 to 15 percent slopes	15	0.32	0.891
		Cabot silt loam, 8 to 15 percent slopes, very stony	15	0.32	3.643
		Charles silt loam, 0 to 2 percent slopes, frequently flooded	2	0.32	0.093
		Dummerston very fine sandy loam, 15 to 35 percent slopes, very stony	35	0.32	1.917
		Dummerston very fine sandy loam, 3 to 8 percent slopes	8	0.32	1.237
		Dummerston very fine sandy loam, 35 to 60 percent slopes, very stony	60	0.32	1.294
		Dummerston very fine sandy loam, 8 to 15 percent slopes	15	0.32	1.652
		Dummerston very fine sandy loam, 8 to 15 percent slopes, very stony	15	0.32	0.527
		Lamoine silt loam, 15 to 25 percent slopes	25	0.32	0.783
		Lamoine silt loam, 25 to 50 percent slopes	50	0.32	0.096
		Lamoine silt loam, 8 to 15 percent slopes	15	0.32	0.424
		Moosilauke very fine sandy loam, 0 to 3 percent slopes	3	0.24	0.173
		Peacham muck, 0 to 3 percent slopes, very stony	3	0.32	0.657
		Salmon very fine sandy loam, 15 to 25 percent slopes	25	0.49	0.183
		Salmon very fine sandy loam, 25 to 50 percent slopes	50	0.49	0.211
		Salmon-Adamant complex, 15 to 25 percent slopes, very rocky	25	0.49	0.184
		Salmon-Adamant complex, 25 to 50 percent slopes, very rocky	50	0.49	0.452
		Urban land-Adams-Nicholville complex, 0 to 8 percent slopes	8	0.33	1.354
		Urban land-Adams-Nicholville complex, 15 to 25 percent slopes	25	0.33	0.692
		Vershire-Glover complex, 15 to 35 percent slopes, very rocky	35	0.37	0.498
		Vershire-Glover complex, 35 to 60 percent slopes, very rocky	60	0.37	1.007
		Vershire-Lombard complex, 15 to 25 percent slopes, rocky	25	0.37	0.946
		Vershire-Lombard complex, 15 to 35 percent slopes, very stony	35	0.37	2.525
		Vershire-Lombard complex, 25 to 35 percent slopes, rocky	35	0.37	0.278
		Vershire-Lombard complex, 3 to 8 percent slopes, rocky	8	0.37	0.871
		Vershire-Lombard complex, 35 to 60 percent slopes, very stony	60	0.37	1.725
		Vershire-Lombard complex, 8 to 15 percent slopes, rocky	15	0.37	4.931
		Vershire-Lombard complex, 8 to 15 percent slopes, very stony	15	0.37	1.341
		Water	999	water	0.038
		Wonsqueak and Pondicherry mucks, 0 to 2 percent slopes	2	0.32	1.185
	Culverts	Buckland fine sandy loam, 15 to 35 percent slopes, very stony	35	0.43	0.008
		Bucksport muck, 0 to 2 percent slopes	2	0.36	0.027
		Cabot silt loam, 0 to 8 percent slopes, very stony	8	0.32	0.018
		Cabot silt loam, 3 to 8 percent slopes	8	0.32	0.012
		Dummerston very fine sandy loam, 15 to 35 percent slopes, very stony	35	0.32	0.007
		Peacham muck, 0 to 3 percent slopes, very stony	3	0.32	0.018
		Vershire-Glover complex, 35 to 60 percent slopes, very rocky	60	0.37	0.012
		Vershire-Lombard complex, 15 to 35 percent slopes, very stony	35	0.37	0.007
		Vershire-Lombard complex, 35 to 60 percent slopes, very stony	60	0.37	0.007
		Vershire-Lombard complex, 8 to 15 percent slopes, rocky	15	0.37	0.014
	Staging Areas	Vershire-Lombard complex, 8 to 15 percent slopes, rocky	15	0.37	0.310
		Urban land-Adams-Nicholville complex, 0 to 8 percent slopes	8	0.33	0.168
Lamoille River	1b 20' Corridor	Adams loamy fine sand, 15 to 25 percent slopes	25	0.17	1.773
		Adams loamy fine sand, 2 to 8 percent slopes	8	0.17	7.501
		Adams loamy fine sand, 25 to 50 percent slopes	50	0.17	1.288
		Adams loamy fine sand, 8 to 15 percent slopes	15	0.17	1.783
		Adams-Adams variant loamy fine sands, rocky, 25 to 50 percent slopes	50	0.17	0.228
		Boothbay silt loam, 15 to 25 percent slopes	25	0.32	0.157
		Boothbay silt loam, 8 to 15 percent slopes	15	0.32	0.227
		Borohemists, moderately deep over loamy substratum	3	0.49	0.243
		Colton-Duxbury complex, 2 to 8 percent slopes	8	0.245	0.974
		Colton-Duxbury complex, 25 to 50 percent slopes	50	0.245	3.017
		Colton-Duxbury complex, 8 to 15 percent slopes	15	0.245	0.058
		Croghan loamy fine sand, 2 to 8 percent slopes	8	0.17	0.465
		Hamlin silt loam	3	0.49	2.754
		Histic Fluvaquents, frequently flooded	3	0.37	0.004
		Limerick variant silt loam	3	0.49	1.668
		Lyman-Tunbridge fine sandy loams, very rocky, 25 to 60 percent slopes	60	0.26	0.125
		Ondawa fine sandy loam	3	0.24	3.652
		Podunk fine sandy loam	3	0.24	2.307
		Potsdam silt loam, 8 to 15 percent slopes	15	0.49	0.455
		Rumney fine sandy loam	3	0.24	1.836
		Salmon very fine sandy loam, 15 to 25 percent slopes, eroded	25	0.49	0.617
		Salmon very fine sandy loam, 25 to 50 percent slopes, eroded	50	0.49	0.420
		Salmon very fine sandy loam, 3 to 8 percent slopes, eroded	8	0.49	0.966
		Salmon very fine sandy loam, 8 to 15 percent slopes, eroded	15	0.49	3.096
		Swanville silt loam, 0 to 6 percent slopes	6	0.28	0.164
		Teel silt loam	3	0.49	3.427
		Tunbridge-Lyman fine sandy loams, rocky, 15 to 25 percent slopes	25	0.26	0.331
		Tunbridge-Lyman fine sandy loams, rocky, 8 to 15 percent slopes	15	0.26	0.193
		Water	999	water	0.488
Lamoille River	Culverts	Boothbay silt loam, 8 to 15 percent slopes	15	0.32	0.012
		Hamlin silt loam	3	0.49	0.014
		Rumney fine sandy loam	3	0.24	0.010
		Salmon very fine sandy loam, 15 to 25 percent slopes, eroded	25	0.49	0.005
		Teel silt loam	3	0.49	0.020
	Staging Areas	Adams loamy fine sand, 2 to 8 percent slopes	8	0.17	0.300
		Colton-Duxbury complex, 2 to 8 percent slopes	8	0.245	0.775
		Ondawa fine sandy loam	3	0.24	0.059
		Rumney fine sandy loam	3	0.24	0.001
		Salmon very fine sandy loam, 8 to 15 percent slopes, eroded	15	0.49	0.170
		Adams loamy fine sand, 2 to 8 percent slopes	8	0.17	1.234
Lake Champlain Basin	1c 20'Corridor	Buxton silt loam, 8 to 15 percent slopes	15	0.32	0.321
		Deerfield loamy fine sand, 0 to 8 percent slopes	8	0.17	0.604
		Eldridge loamy fine sand, 0 to 3 percent slopes	3	0.24	0.210
		Eldridge loamy fine sand, 3 to 8 percent slopes	8	0.24	0.182
		Eldridge loamy fine sand, 8 to 15 percent slopes	15	0.24	0.036
		Enosburg loamy fine sand, 0 to 3 percent slopes	3	0.24	0.685
		Enosburg loamy fine sand, 3 to 8 percent slopes	8	0.24	0.500
		Farmington loam, very rocky, 8 to 15 percent slopes	15	0.32	0.220
		Hinesburg loamy fine sand, 0 to 3 percent slopes	3	0.24	0.083
		Hinesburg loamy fine sand, 3 to 8 percent slopes	8	0.24	0.323
		Lordstown loam, rocky, 8 to 15 percent slopes	15	0.28	0.133
		Missisquoi loamy sand, 0 to 3 percent slopes	3	0.17	0.599
		Munson silt loam, 3 to 8 percent slopes	8	0.49	0.539
		Raynham silt loam, 3 to 8 percent slopes	8	0.49	0.448
		Windsor loamy fine sand, 0 to 3 percent slopes	3	0.17	1.030
		Windsor loamy fine sand, 15 to 25 percent slopes	25	0.17	0.000
		Windsor loamy fine sand, 3 to 8 percent slopes	8	0.17	1.234
	Culverts	Buxton silt loam, 8 to 15 percent slopes	15	0.32	0.020
		Deerfield loamy fine sand, 0 to 8 percent slopes	8	0.17	0.005
		Munson silt loam, 3 to 8 percent slopes	8	0.49	0.021
Missisquoi River	1c 20' Corridor	Au Gres loamy fine sand, 0 to 6 percent slopes	6	0.17	0.675
		Belgrade silt loam, 2 to 8 percent slopes	8	0.49	0.710
		Belgrade silt loam, 8 to 15 percent slopes	15	0.49	0.621
		Buxton silt loam, 15 to 25 percent slopes	25	0.32	0.433
		Buxton silt loam, 25 to 45 percent slopes	45	0.32	0.529
		Buxton silt loam, 8 to 15 percent slopes	15	0.32	0.081
		Deerfield loamy fine sand, 0 to 8 percent slopes	8	0.17	1.080
		Eldridge loamy fine sand, 0 to 3 percent slopes	3	0.24	1.263
		Eldridge loamy fine sand, 3 to 8 percent slopes	8	0.24	0.191
		Eldridge loamy fine sand, 8 to 15 percent slopes	15	0.24	1.271
		Enosburg loamy fine sand, 0 to 3 percent slopes	3	0.24	0.045
		Enosburg loamy fine sand, 3 to 8 percent slopes	8	0.24	0.061
		Farmington loam, very rocky, 8 to 15 percent slopes	15	0.32	0.073
		Hadley silt loam	3	0.49	0.127
		Hinesburg loamy fine sand, 0 to 3 percent slopes	3	0.24	0.103
		Hinesburg loamy fine sand, 3 to 8 percent slopes	8	0.24	0.660
		Hinesburg loamy fine sand, 8 to 15 percent slopes	15	0.24	0.078
		Limerick silt loam	2	0.49	0.721
		Lordstown-Rock outcrop complex, 15 to 25 percent slopes	25	0.28	0.093
		Missisquoi loamy sand, 0 to 3 percent slopes	3	0.17	0.437
		Missisquoi loamy sand, 3 to 8 percent slopes	8	0.17	0.412
		Munson silt loam, 3 to 8 percent slopes	8	0.49	0.131
		Munson silt loam, 8 to 15 percent slopes	15	0.49	0.412
		Ondawa variant silt loam	2	0.37	0.515
		Raynham silt loam, 3 to 8 percent slopes	8	0.49	1.499
		St. Albans slaty loam, 0 to 3 percent slopes	3	0.24	0.728
		Tunbridge-Woodstock fine sandy loams, very rocky, 3 to 8 percent slopes	8	0.24	0.092
		Water	999	water	0.179
		Windsor loamy fine sand, 0 to 3 percent slopes	3	0.17	0.893
		Windsor loamy fine sand, 15 to 25 percent slopes	25	0.17	1.179
		Windsor loamy fine sand, 25 to 60 percent slopes	60	0.17	0.851
		Windsor loamy fine sand, 3 to 8 percent slopes	8	0.17	1.441
		Windsor loamy fine sand, 8 to 15 percent slopes	15	0.17	1.691
		Winooski silt loam	3	0.49	1.667
	Culverts	Belgrade silt loam, 8 to 15 percent slopes	15	0.49	0.034
		Buxton silt loam, 15 to 25 percent slopes	25	0.32	0.014
		Buxton silt loam, 25 to 45 percent slopes	45	0.32	0.034
		Buxton silt loam, 8 to 15 percent slopes	15	0.32	0.022
		Eldridge loamy fine sand, 8 to 15 percent slopes	15	0.24	0.022
		Lordstown-Rock outcrop complex, 15 to 25 percent slopes	25	0.28	0.019
		Lordstown-Rock outcrop complex, 5 to 15 percent slopes	15	0.28	0.000
		Munson silt loam, 3 to 8 percent slopes	8	0.49	0.001
		Ondawa variant silt loam	2	0.37	0.027
		Windsor loamy fine sand, 15 to 25 percent slopes	25	0.17	0.033
		Windsor loamy fine sand, 25 to 60 percent slopes	60	0.17	0.052
		Windsor loamy fine sand, 8 to 15 percent slopes	15	0.17	0.082
				Total Area of Disturbance (acres):	111.1

TABLE 1 - SOIL DISTURBANCE SUMMARY

VERMONT AGENCY OF TRANSPORTATION

PHASE IC - LAMOILLE VALLEY RAIL TRAIL
EROSION PREVENTION AND SEDIMENT CONTROL PLAN

APPLICATION BY:
VAST and VTrans

PURPOSE:
PROPOSED TRAIL IMPROVEMENTS FOR YEAR-ROUND RECREATIONAL USE

DATE:
MAY 17, 2012
Revised: July 22, 2020

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