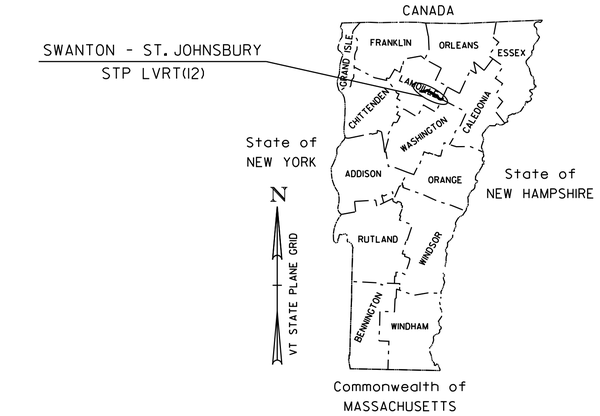
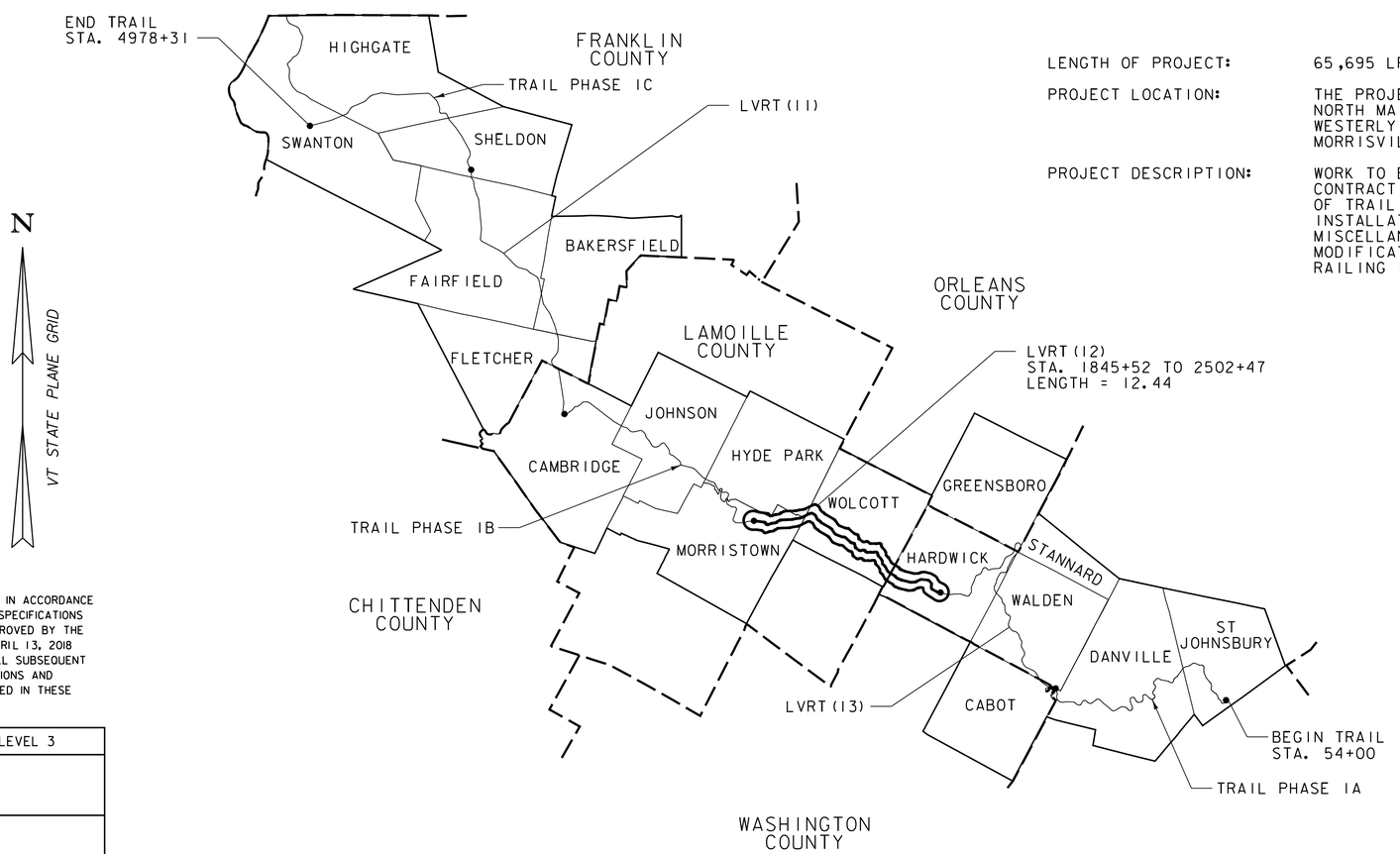
STATE OF VERMONT
AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT
LAMOILLE VALLEY RAIL TRAIL
SWANTON - ST. JOHNSBURY STP LVRT(12)



LENGTH OF PROJECT:	65,695 LF (12.44 MILES)
PROJECT LOCATION:	THE PROJECT BEGINS AT THE INTERSECTION OF NORTH MAIN STREET IN HARDWICK AND EXTENDS WESTERLY 12.44 MILES TO VT ROUTE 15A IN MORRISVILLE.
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

HIGHWAY DIVISION, CHIEF ENGINEER
APPROVED _____ DATE _____

PROJECT MANAGER : JOEL PERRIGO

PROJECT NAME : SWANTON - ST. JOHNSBURY
PROJECT NUMBER : STP LVRT (12)

SHEET 1 OF 134 SHEETS

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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

UGU	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)

AGU	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	PROJECT DEMARCATION FENCE
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	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

PROJECT NAME: SWANTON - ST. JOHNSBURY
PROJECT NUMBER: STP LVRT(12)

FILE NAME: z20f238_legend_sheet.dgn
PROJECT LEADER: E.P. DETRICK
DESIGNED BY: VTRANS
CONVENTIONAL SYMBOLOGY LEGEND SHEET

PLOT DATE: 8/17/2021
DRAWN BY: VTRANS
CHECKED BY: VTRANS
SHEET 3 OF 134

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. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL, AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.

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

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

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

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

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 INDIVIDUAL CONSTRUCTION STORMWATER DISCHARGE PERMIT (INDC) 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. ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE" SHALL INCLUDE THE COMPLETE REMOVAL AND DISPOSAL OF EXISTING BRIDGE SUBSTRUCTURE AND SUPERSTRUCTURE ELEMENTS AS NOTED IN THESE PLANS. THIS SHALL INCLUDE BUT IS NOT LIMITED TO ALL BRIDGE RAILINGS, RAILROAD TRACKS, TIMBER PILE PIERS, BEARINGS, ANCHOR BOLTS, STEEL GIRDERS, TIMBER RAIL TIES, AND SUBSTRUCTURE ELEMENTS TO THE LIMITS SHOWN ON THE PLANS OR TO THE SATISFACTION OF THE ENGINEER. SEE PLAN SHEETS FOR ADDITIONAL INFORMATION PERTAINING TO EACH STRUCTURE.

10. 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.

11. 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.

12. CONSTRUCTION LOAD SURCHARGE FROM HEAVY EQUIPMENT OR STOCKPILED MATERIALS ARE NOT PERMITTED AGAINST SUBSTRUCTURES OR RETAINING WALLS. ALL CONSTRUCTION LOADS, WITH THE EXCEPTION OF A PLATE COMPACTOR, SHALL MAINTAIN AN ADEQUATE DISTANCE, BASED ON THE DEPTH OF THE BOTTOM OF THE STRUCTURE, FROM THE BACK OF THE ABUTMENT OR WINGWALL SO THAT NO CONSTRUCTION SURCHARGE LOAD IS EXERTED ON THE SUBSTRUCTURE ELEMENT. IF CONSTRUCTION LOADS RESULTING IN A SURCHARGE ON THE ABUTMENTS OR WINGWALLS ARE REQUIRED, THE CONTRACTOR MAY CONTACT THE ENGINEER AND PROVIDE ANTICIPATED LOADS TO DETERMINE THE DISTANCE THAT IS REQUIRED TO BE MAINTAINED FROM THE BACK OF THE ABUTMENT OR WINGWALL. FOR THE ABUTMENTS TO BE DESIGNED BY THE CONTRACTOR (SEE ABUTMENTS ON PILES NOTES) IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR'S ENGINEER TO DETERMINE THE DISTANCE THAT IS REQUIRED FROM THE BACK OF THE ABUTMENT OR WINGWALL TO THE CONSTRUCTION SURCHARGE LOAD.

13. CLEARING OF VEGETATION TO IMPROVE SIGHT DISTANCE AT CROSSINGS SHALL BE PAID FOR UNDER ITEM 201.30, "THINNING AND TRIMMING."

TRAIL ACCESS

14. 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 THROUGH FRIDAY.
    b. 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 ENGINEER.
    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

TIMBER

15. LUMBER AND TIMBER SHALL MEET THE REQUIREMENTS OF SECTION 522. TIMBER AND LUMBER PRESERVATIVES SHALL BE IN ACCORDANCE WITH SECTION 726 AND BE PENTACHLOROPHENOL: SOLVENT FOR PENTACHLOROPHENOL - HEAVY OIL HYDROCARBON SOLVENT, TYPE A.

STRUCTURE REPAIR NOTES

16. PROPOSED WORK HAS BEEN ESTIMATED BASED ON LIMITED FIELD INVESTIGATION PERFORMED BY VHB. ACTUAL WORK SHALL BE DETERMINED BY THE CONTRACTOR AND APPROVED BY ENGINEER.

17. THE REMOVAL AND DISPOSAL OF CATTLEPASS 41E AND 48D SHALL BE PAID FOR UNDER ITEM 529.15, "REMOVAL OF STRUCTURE (CATTLEPASS 41E)" AND ITEM 529.15, "REMOVAL OF STRUCTURE (CATTLEPASS 48D)", RESPECTIVELY. THE REMOVAL OF STRUCTURE SHALL INCLUDE THE COMPLETE REMOVAL OF THE CATTLEPASS INCLUDING BUT NOT LIMITED TO, TIMBERS, TIES, CONRETE, STEEL BEAMS, AND CRACKED OR DAMAGED STONE MASONRY. INTACT INDIVIDUAL STONES SHALL BE SALVAGED FOR REUSE AT OTHER LOCATIONS WITHIN THE PROJECT AS NOTED IN THESE PLANS. ALL SALVAGED STONES SHALL BE INSPECTED BY THE CONTRACTOR AND THE ENGINEER AFTER THEIR REMOVAL TO DETERMINE IF THEY CAN BE RE-USED AS PART OF THIS PROJECT. ALL STONES THAT ARE NOT REUSED AS PART OF THIS PROJECT SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH SECTION 529. THE INSPECTION OF THE STONES AND ALL COSTS ASSOCIATED WITH MOVING THE STONES TO THE APPROPRIATE LOCATION ON-SITE FOR REUSE WILL BE INCIDENTAL TO THE APPROPRIATE 529.15 ITEM. THE CONTRACTOR SHALL BACKFILL THE VOID FROM THE REMOVED CATTLEPASS 48D WITH ON-SITE STRUCTURALLY SUITABLE EXCAVATED MATERIAL. ALL WORK ASSOCIATED WITH PLACING THIS BACKFILL MATERIAL WILL BE CONSIDERED INCIDENTAL TO REMOVAL OF "REMOVAL OF STRUCTURE (CATTLEPASS 48D)".

18. REPAIR AND REPOINTING OF STONE MASONRY AS SPECIFIED THROUGHOUT THESE PLANS SHALL BE DONE USING A MORTAR MEETING THE REQUIREMENTS OF MORTAR, TYPE IV PER SECTION 707.03 OF THE SPECIFICATIONS.

19. DESIGN REQUIREMENTS:
    a. TWELVE (12) FOOT CLEAR WIDTH BETWEEN BRIDGE HAND RAILING
    b. UNLESS OTHERWISE NOTED, ALL BRIDGE ELEMENTS AND COMPONENTS THAT ARE TO BE DESIGNED BY THE CONTRACTOR OR FABRICATOR SHALL BE DESIGNED FOR A LIVE LOAD OF 60 PSF SNOW LOAD, OR 90 PSF PEDESTRIAN LOAD, OR AN AASHTO H10 DESIGN LOAD, WHICHEVER IS GREATEST.

CONCRETE

20. ALL CAST-IN-PLACE CONCRETE SHALL CONFORM TO SPECIAL PROVISION (CONCRETE, HIGH PERFORMANCE, CLASS B).

21. ALL REINFORCING STEEL SHALL BE LEVEL I, EPOXY COATED AND MEET THE REQUIREMENTS OF SECTION 507. ALL REINFORCING STEEL SHALL BE PAID FOR UNDER ITEM 507.11, "REINFORCING STEEL, LEVEL I". ALL LIFTING AND FASTENING HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH SUBSECTION 726.08 OF THE STANDARD SPECIFICATIONS.

22. MINIMUM COVER FOR REINFORCING STEEL SHALL BE 3", UNLESS OTHERWISE NOTED.

23. REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE

SPACING	+/-	1"
CLEARANCE	+/-	¼"

24. THE CONTRACTOR AND PREFABRICATED BRIDGE MANUFACTURER AFTER FINAL APPROVAL OF THE PREFABRICATED BRIDGE BEARINGS SHALL PROVIDE THE LOADS ON THE ANCHOR BOLTS TO THE ENGINEER. THE ENGINEER WILL VERIFY THAT THE MINIMUM ANCHOR BOLT SIZE SPECIFIED BELOW IS ADEQUATE TO SUPPORT THOSE LOADS. IF NOT, THEN THE ENGINEER WILL DESIGN THE ANCHOR BOLTS BASED ON THE LOADINGS PROVIDED BY THE CONTRACTOR AND PROVIDE THE ANCHOR BOLT DESIGN TO THE CONTRACTOR FOR THEIR USE. THE COST FOR THE ANCHOR BOLTS AND COORDINATION WITH THE ENGINEER WILL BE INCIDENTAL TO ITEM 900.645, SPECIAL PROVISION (ABUTMENT ON PILES) OR 900.608 SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, CLASS B), AS APPROPRIATE. THE CONTRACTOR CAN USE THE FOLLOWING INFORMATION FOR BEARING ANCHOR BOLT ESTIMATION, SUBJECT TO FINAL DESIGN:

    - MIN. ANCHOR BOLT SIZE: 24" LONG x 1-1/2" DIAMETER STRAIGHT, FULLY THREADED, WITH 2 HEAVY HEX NUTS AND A WASHER.
    - MATERIAL: ASTM F1554 GR. 105, GALVANIZED
    - BEARING ANCHOR BOLT QUANTITY: 8 PER BRIDGE

25. THE BEARING ANCHOR BOLTS SHALL BE CAST INTO THE ABUTMENT STEMS.

26. SURFACES OF BRIDGE SEATS UNDER BEARING DEVICES SHALL BE LEVEL. OTHER BRIDGE SEAT AREAS SHALL BE SLOPED ¼" PER FOOT TOWARDS MID-SPAN. THE ENTIRE BRIDGE SEAT SURFACE SHALL BE SMOOTH STEEL TROWEL FINISHED.

27. WATER REPELLENT, SILANE SHALL BE APPLIED TO ALL EXISTING AND NEW EXPOSED CONCRETE SURFACES.

28. ALL EXPOSED EDGES SHALL BE CHAMFERED 1"x1".

PREFABRICATED MULTI-MODAL BRIDGE

29. THE COST OF THE DESIGN, FABRICATION, SHIPPING, AND INSTALLATION OF THE BRIDGE, SACRIFICIAL LONGITUDINAL DECKING, AND BEARINGS SHALL BE INCIDENTAL TO ITEM 900.645 "SPECIAL PROVISION (PREFABRICATED MULTI-MODAL BRIDGE)".

30. DESIGN REQUIREMENTS:
    a. MINIMUM PEDESTRIAN RAILING HEIGHT IS 4'-6"
    b. TWELVE (12) FOOT CLEAR WIDTH BETWEEN BRIDGE HAND RAILING
    c. 4" TREATED TIMBER DECK
    d. 3" TREATED SACRIFICIAL LONGITUDINAL DECKING
    e. THE TABLE BELOW LISTS THE PREFABRICATED MULTI-MODAL BRIDGE STRUCTURES, THEIR LOCATIONS, AND DESIGN PARAMETERS. THE BRIDGE AND ITS COMPONENTS SHALL BE DESIGNED FOR A LIVE LOAD OF 60 PSF SNOW LOAD, 90 PSF PEDESTRIAN LOAD OR THE DESIGN LIVE LOAD LISTED IN THE TABLE BELOW, WHICHEVER IS GREATER.

BRIDGE #	CROSSING	TOWN	SPAN LENGTH (FT)	DESIGN LL	DECK TYPE	STEEL COATING
49	WILD BRANCH	WOLCOTT	178	H10/PED	TIMBER	GALVANIZED

31. THE 3" TREATED SACRIFICIAL WEARING SURFACE SHALL BE FASTENED TO THE WOOD DECKING WITH WOOD SCREWS AS IT WILL NEED TO BE REPLACED AS PART OF NORMAL MAINTENANCE ACTIVITIES.

32. FABRICATION DRAWINGS SHALL BE SUBMITTED IN ACCORDANCE WITH SECTION 105.03 AND SHALL INCLUDE AN ASSEMBLY PLAN WITH TEMPORARY BRACING REQUIREMENTS AS REQUIRED FOR ERECTION AND INSTALLATION. ALL COSTS SHALL BE INCIDENTAL TO THE PREFABRICATED MULTI-MODAL BRIDGE ITEM. SEE ADDITIONAL REQUIREMENTS IN THE PROJECT SPECIAL PROVISION FOR ITEM 900.645 "SPECIAL PROVISION (PREFABRICATED MULTI-MODAL BRIDGE)".

ABUTMENTS ON PILES

33. ABUTMENT NO. 2 ON BRIDGE 49 SHALL BE SUPPORTED ON STEEL H-PILES.

34. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DESIGN THE STEEL H-PILES AND THE CAST-IN-PLACE CONCRETE ABUTMENTS SUPPORTED ON THOSE PILES. THIS WORK SHALL INCLUDE ADDITIONAL GEOTECHNICAL INVESTIGATIONS AS REQUIRED AND DESIGN CALCULATIONS AND WORKING DRAWINGS FOR REVIEW BY THE ENGINEER AND FOR USE BY THE CONTRACTOR FOR THE INSTALLATION AND CONSTRUCTION OF THESE SUBSTRUCTURES. SEE THE "CONCRETE ABUTMENT ON PILES" SPECIAL PROVISION FOR ADDITIONAL INFORMATION.

ITEM DETAIL SHEET

CULVERTS

NUMBER	STATION	TYPE	SIZE FT	REMARKS
40H	1861+92	CAST IRON	2.0	EXCAVATE AND REPLACE, RESTORE DITCH LINES
40I	1868+51	STONE BOX	3 x 3	NO ACTION NEEDED
40J	1870+56	CPEP	4.0	RESTORE GRADE AT INLET & OUTLET, RESET EXIST. CULVERT
40J-2	1872+52	CMP	2.0	REPLACE CULVERT, RECONST. BANK, RESTORE GRADE AT INLET
41B	1897+20	CMP	1.5	EXCAVATE AND REPLACE
41C **	1903+30	STONE BOX	3 x 3	CLEAN OUTLET
41C(2)	1913+22	CMP	1.0	NO ACTION NEEDED
41D	1914+00	CAST IRON	1.7	EXCAVATE AND REPLACE
41D(2)	1917+20	N/A	N/A	INSTALL NEW CULVERT, DITCH FROM 1919+50 LEFT TO CULVERT
41E(2)	1925+38	N/A	N/A	INSTALL NEW CULVERT
* 41F	1925+95	STONE BOX	3 x 4	RESET HEADWALL, REPAIR BANKING AT OUTLET
* 41G	1928+69	STONE BOX	4 x 4	CLEAN INLET AND OUTLET
41G(2)	1935+26	N/A	N/A	INSTALL NEW CULVERT
* 41H	1937+58	STONE BOX	3 x 3	EXCAVATE AND REPAIR
* 41J	1942+88	STONE BOX	4 x 5	EXCAVATE AND REPAIR
41J-2	1946+15	CMP	1.5	EXCAVATE AND REPLACE
41K	1950+40	PVC/METAL	0.5	EXCAVATE AND REPLACE
42A	1973+28	STONE BOX	2 x 3	EXCAVATE AND REPLACE
42A(2)	1977+39	N/A	N/A	INSTALL NEW CULVERT
42B	1981+09	CAST IRON	2.0	CLEAN OUTLET
42D	1998+36	CAST IRON	2.0	CLEAN INLET AND OUTLET
* 43A	2014+57	STONE BOX	2 x 2	CLEAN INLET AND OUTLET
* 44A	2027+66	STONE BOX	2 x 2	REPAIR INLET AND BANKING
44B	2038+89	CMP	2.0	EXCAVATE AND REPLACE
44C-1	2042+75	CAST IRON	1.0	EXCAVATE AND REPLACE
44D **	2049+68	STONE BOX	3 x 3	NO ACTION NEEDED
44E	2053+43	STONE BOX	4 x 3	CLEAN AND REPAIR BANKING AT OUTLET
44F	2058+97	N/A	N/A	INSTALL NEW CULVERT
* 45A	2083+84	STONE BOX	3 x 3	CLEAN INLET, REPAIR OUTLET
* 46A	2103+29	STONE BOX	2 x 2	CLEAN INLET AND OUTLET
46A(2)	2107+48	N/A	N/A	EXCAVATE AND REPLACE, INSTALL BEAVER FENCE AT INLET
46C	2115+84	HDPE	1.3	RESTORE GRADE AT INLET
* 46D	2122+35	STONE BOX	4 x 6	CLEAN INLET
46D(2)	2123+82	CONCRETE	2.5	EXCAVATE AND REPLACE
* 46E	2130+65	STONE BOX	2 x 2	CLEAN INLET AND OUTLET
* 46F	2134+62	STONE BOX	2 x 2	NO ACTION NEEDED
* 46G	2136+98	STONE BOX	3 x 4	RESTORE GRADE AT INLET
* 46H	2143+76	STONE BOX	2 x 2	CLEAN INLET AND OUTLET
46H-2	2145+47	CONCRETE	2.0	CLEAN INLET AND OUTLET
46H-3	2148+01	CONCRETE	2.0	CLEAN INLET AND OUTLET
47A	2166+63	STONE BOX	3 x 3	EXCAVATE AND REPLACE
47B	2179+39	STONE BOX	1 x 1	EXCAVATE AND REPLACE
47C	2180+88	N/A	N/A	INSTALL NEW CULVERT
47E	2192+90	CAST IRON	1.5	CLEAN OUTLET
* 47F	2208+26	STONE BOX	3 x 3	CLEAN INLET, REPAIR OUTLET
* 48A	2218+03	STONE BOX	3 x 3	EXCAVATE AND REPAIR
48A-2	2224+77	CMP	2.5	EXCAVATE AND REPLACE
48C	2226+75	CMP	2 x 3	EXCAVATE AND REPLACE
48C-1	2228+05	CAST IRON	1.5	EXCAVATE AND REPLACE
48C-2	2236+52	CMP	1.3	EXCAVATE AND REPLACE, STABILIZE EMBANKMENT AT OUTLET
48C-3	2253+16	CAST IRON	2.0	CLEAN INLET AND OUTLET
48C-4	2283+64	CMP	3.0	CLEAN INLET AND OUTLET
50A	2296+26	STONE BOX	2 x 2	CLEAN INLET AND OUTLET
50A-2	2304+83	WOOD-RAIL	2 x 2	EXCAVATE AND REPLACE
51A	2312+93	CAST IRON	2.0	CLEAN INLET AND OUTLET
51A(2)	2324+05	N/A	N/A	INSTALL NEW CULVERT
51B	2329+97	STONE BOX	3 x 3	EXCAVATE AND REPLACE
52A	2351+00	CAST IRON	0.5	EXCAVATE AND REPLACE
52B	2354+51	CAST IRON	1.0	EXCAVATE AND REPLACE
52C	2361+79	STONE BOX	2 x 1	CLEAN OUTLET, REPAIR INLET AND BANKING
52D	2366+17	N/A	N/A	INSTALL NEW CULVERT
52E	2373+30	CMP	2.0	EXCAVATE AND REPLACE, INSTALL BEAVER FENCE AT INLET
52F	2380+57	CAST IRON	1.0	EXCAVATE AND REPLACE, STABILIZE OUTLET
** 52F(2)	2382+99	N/A	N/A	INSTALL NEW CULVERT
* 52G	2386+40	STONE BOX	2.0	CLEAN AND REPAIR INLET AND OUTLET
52G-2	2390+58	CONCRETE	3.0	CLEAN INLET AND OUTLET
* 53A	2399+15	STONE BOX	3 x 3	REPAIR OUTLET
53B	2401+73	CAST IRON	1.3	CLEAN OUTLET
* 53C	2406+40	STONE BOX	3 x 3	CLEAN INLET AND OUTLET
53E	2412+33	CMP	2.0	CLEAN INLET AND OUTLET
53F	2413+84	CMP	2.5	CLEAN OUTLET
53G	2418+34	CONCRETE	4.5	REPLACE CULVERT WITH 8'X12' CONCRETE BOX CULVERT
* 53H	2423+68	STONE BOX	1 x 3	CLEAN INLET AND OUTLET, REPAIR OUTLET
53I	2426+81	CAST IRON	1.0	EXCAVATE AND REPLACE
53J	2429+37	CAST IRON	2.0	CLEAN INLET AND OUTLET, RESTORE GRADE AT OUTLET
53K	2431+37	CAST IRON	2.0	EXCAVATE AND REPLACE, STABILIZE INLET AND OUTLET
* 53L	2432+83	STONE BOX	4 x 3	CLEAN INLET AND OUTLET, RESTORE GRADE AT OUTLET

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* NATIONAL HISTORIC REGISTER ELIGIBLE

CATTLEPASSES

NUMBER	STATION	TYPE	SIZE FT	REMARKS
41E	1921+41	STONE	N/A	REPLACE WITH CULVERT, DITCH FROM 1919+50 LEFT TO CULVERT
* 41I	1941+96	STONE	5 x 5	CLEAR INLET AND OUTLET, INSTALL GUARDRAIL
48D	2254+47	STEEL I-BEAM, WOOD	3 x 12	REMOVE AND FILL HOLE WITH ON-SITE STRUCTURALLY SUITABLE EXCAVATED MATERIAL

* NATIONAL HISTORIC REGISTER ELIGIBLE

BRIDGES

NUMBER	BEGIN STATION	END STATION	TYPE	LENGTH FT	REMARKS
41	1878+58	1879+60	STEEL THROUGH-PLATE	102	REPAIR EAST ABUTMENT, REPLACE/RAISE DECK, INSTALL GUARDRAILS
42	1966+93	1967+07	CONCRETE	14	INSTALL GUARDRAILS, REPAIR FASCIA, REPAIR ABUTMENTS
43	2011+69	2011+79	CONCRETE	10	REPLACE DECK, REMOVE AND RESET ABUTMENT STONES, CONSTRUCT NEW BRIDGE SEATS AND BACKWALLS, INSTALL GUARDRAILS
44 **	2019+23	2019+43	CONCRETE	20	INSTALL GUARDRAILS AND APPROACH RAILS
* 45 **	2065+63	2066+66	STEEL I-BEAM, COVERED	103	REPAIR SIDING, REPLACE DECK, REPAIR ABUTMENTS, CONSTRUCT NEW BRIDGE SEATS AND BACKWALLS, WIDEN APPROACH
46	2094+56	2094+76	STEEL I-BEAM	20	REPLACE DECK, REMOVE AND RESET GIRDERS, REPAIR ABUTMENTS, CONSTRUCT NEW BRIDGE SEATS AND BACKWALLS, INSTALL GUARDRAILS
* 47	2162+58	2163+72	STEEL THROUGH-TRUSS	114	REPLACE DECK, CONSTRUCT NEW CONCRETE ABUTMENTS, INSTALL GUARDRAILS
48	2211+89	2213+42	PREFABRICATED MULTI-MODAL	153	N.I.C. BRIDGE WORK COMPLETED DURING LVRT(10) CONSTRUCTION
49	2276+65	2278+57	N/A	192	ERECT PREFABRICATED MULTI-MODAL BRIDGE, CONSTRUCT NEW CONCRETE ABUTMENTS, INSTALL APPROACH RAILS
51	2306+28	2306+35	STEEL I-BEAM	7	REMOVE STRUCTURE, INSTALL 4x4 BOX CULVERT
* 52	2339+44	2340+81	STEEL THROUGH-TRUSS	137	REPAIR ABUTMENTS, INSTALL NEW BRIDGE SEATS AND BACKWALLS, REPLACE DECK, INSTALL GUARDRAILS
53	2391+93	2392+38	STEEL I-BEAM	45	REPLACE DECK, REPOINT ABUTMENTS
* 54	2494+37	2494+67	STONE ARCH	30	INSTALL GUARDRAILS, REPOINT ABUTMENTS

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* NATIONAL HISTORIC REGISTER ELIGIBLE

PROJECT NAME: SWANTON - ST. JOHNSBURY
PROJECT NUMBER: STP LVRT(12)

FILE NAME: z20f238_ids.dgn
PROJECT LEADER: E.P. DETRICK
DESIGNED BY: B.M. ROBERTS
ITEM DETAIL SHEET (1 OF 3)

PLOT DATE: 8/17/2021
DRAWN BY: B.M. ROBERTS
CHECKED BY: E.P. DETRICK
SHEET 9 OF 134

ITEM DETAIL SHEET

CULVERTS

NUMBER	STATION	TYPE	SIZE FT	REMARKS
53M	2440+00	STONE BOX	1.5 x 1.5	CLEAN INLET AND OUTLET, REPAIR OUTLET
* 53N	2445+80	STONE BOX	3 x 3	EXCAVATE AND REPAIR
53P	2454+34	CMP	3.0	EXCAVATE AND REPLACE, RESTORE GRADE AT INLET AND OUTLET
* 53Q	2458+26	STONE BOX	3 x 6	EXCAVATE AND REPAIR, RESTORE GRADE AT INLET AND OUTLET
53R	2462+07	CAST IRON	2.0	CLEAN INLET AND OUTLET
53S	2463+61	CAST IRON	2.0	EXCAVATE AND REPLACE
* 53T	2466+73	STONE BOX	3 x 3	REPAIR OUTLET
53U	2469+08	CAST IRON	1.2	EXCAVATE AND REPLACE, REPAIR BANKING AT OUTLET
53V	2472+36	STONE BOX	2.0	CLEAN INLET
* 53W	2474+22	STONE BOX	2 x 3	EXCAVATE AND REPLACE
53X	2479+13	STONE BOX	2 x 3	EXCAVATE AND REPLACE
* 53Y	2481+89	STONE BOX	3 x 3	NO ACTION NEEDED
53Z	2483+69	CAST IRON	1.0	EXCAVATE AND REPLACE
* 53AA	2487+92	STONE BOX	3 x 5	CLEAN INLET AND OUTLET, REPAIR BANKING AT INLET
53BB	2489+93	CMP	3.0	CLEAN INLET, REPAIR OUTLET
54A	2498+64	CAST IRON	1.0	NO ACTION NEEDED
54B	2500+58	HDPE	2.5	NO ACTION NEEDED

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* NATIONAL HISTORIC REGISTER ELIGIBLE

CATTLEPASSES

NUMBER	STATION	TYPE	SIZE FT	REMARKS

BRIDGES

NUMBER	BEGIN STATION	END STATION	TYPE	LENGTH FT	REMARKS

PROJECT NAME: SWANTON - ST. JOHNSBURY
PROJECT NUMBER: STP LVRT(12)

FILE NAME: z20f238_ids.dgn
PROJECT LEADER: E.P. DETRICK
DESIGNED BY: B.M. ROBERTS
ITEM DETAIL SHEET (2 OF 3)

PLOT DATE: 8/17/2021
DRAWN BY: B.M. ROBERTS
CHECKED BY: E.P. DETRICK
SHEET 10 OF 134

ITEM DETAIL SHEET

RAILING

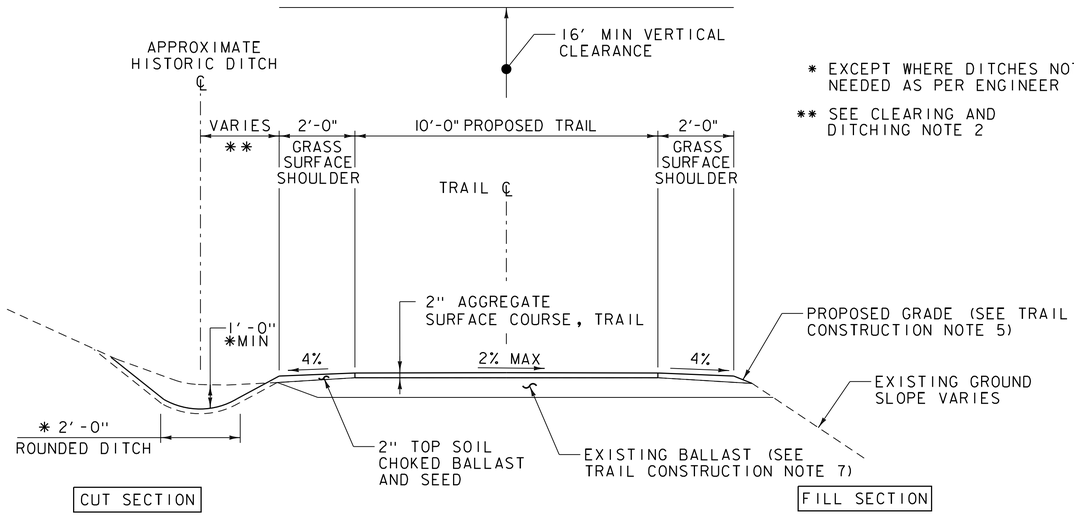
BEGIN STATION	END STATION	LENGTH FT	TYPE	REMARKS
1865+50	1866+50	100	GUARDRAIL	SLOPE PROTECTION, LT
1874+10	1877+50	340	GUARDRAIL	SLOPE PROTECTION, LT
1875+00	1877+50	250	GUARDRAIL	SLOPE PROTECTION, RT
1878+43	1878+58	15	APPROACH	BRIDGE APPROACH RAIL, BOTH SIDES
1878+58	1879+60	102	BRIDGE	BRIDGE RAIL, BOTH SIDES
1879+60	1879+75	15	APPROACH	BRIDGE APPROACH RAIL, BOTH SIDES
1941+91	1942+01	10	GUARDRAIL	CATTLEPASS, BOTH SIDES
1966+78	1966+93	15	APPROACH	BRIDGE APPROACH RAIL, BOTH SIDES
1966+93	1967+07	14	BRIDGE	BRIDGE RAIL, BOTH SIDES
1967+07	1967+22	15	APPROACH	BRIDGE APPROACH RAIL, BOTH SIDES
2011+54	2011+69	15	APPROACH	BRIDGE APPROACH RAIL, BOTH SIDES
2011+69	2011+79	10	BRIDGE	BRIDGE RAIL, BOTH SIDES
2011+79	2011+94	15	APPROACH	BRIDGE APPROACH RAIL, BOTH SIDES
2019+08	2019+23	15	APPROACH	BRIDGE APPROACH RAIL, BOTH SIDES
2019+23	2019+43	20	BRIDGE	BRIDGE RAIL, BOTH SIDES
2019+43	2019+58	15	APPROACH	BRIDGE APPROACH RAIL, BOTH SIDES
2065+43	2065+63	20	APPROACH	BRIDGE APPROACH RAIL, BOTH SIDES
2065+63	2066+66	103	BRIDGE	BRIDGE RAIL, BOTH SIDES
2066+66	2066+86	20	APPROACH	BRIDGE APPROACH RAIL, BOTH SIDES
2094+41	2094+56	15	APPROACH	BRIDGE APPROACH RAIL, BOTH SIDES
2094+56	2094+76	20	BRIDGE	BRIDGE RAIL, BOTH SIDES
2094+76	2094+91	15	APPROACH	BRIDGE APPROACH RAIL, BOTH SIDES
2137+10	2138+70	160	GUARDRAIL	STEEP SLOPE, LT
2188+50	2191+00	250	GUARDRAIL	STEEP SLOPE, ALONG RIVER, RT
2162+43	2162+58	15	APPROACH	BRIDGE APPROACH RAIL, BOTH SIDES
2162+58	2163+72	114	BRIDGE	BRIDGE RAIL, BOTH SIDES
2163+72	2163+87	15	APPROACH	BRIDGE APPROACH RAIL, BOTH SIDES
2211+74	2211+89	30	APPROACH	BRIDGE APPROACH RAIL, BOTH SIDES - CONSTRUCTED DURING LVRT 10
2211+89	2213+42	160	BRIDGE	BRIDGE RAIL, BOTH SIDES - CONSTRUCTED DURING LVRT 10
2213+42	2213+57	30	APPROACH	BRIDGE APPROACH RAIL, BOTH SIDES - CONSTRUCTED DURING LVRT 10
2236+15	2236+95	80	GUARDRAIL	STEEP SLOPE, ALONG RIVER, LT
2241+56	2242+56	100	GUARDRAIL	BLOCK ACCESS, RT
2276+50	2276+65	15	APPROACH	BRIDGE APPROACH RAIL, BOTH SIDES
2276+65	2278+57	192	BRIDGE	BRIDGE RAIL, BOTH SIDES - BRDIGERAIL INCLUDED WITH PREFABRICATED BRIDGE UNDER PAY ITEM 900.645 S.P. (PREFABRICATED MULTI-MODAL BRIDGE)
2278+57	2278+72	15	APPROACH	BRIDGE APPROACH RAIL, LT
2278+57	2279+28		APPROACH	BRIDGE APPROACH RAIL, RT
2306+13	2306+28	15	APPROACH	BRIDGE APPROACH RAIL, BOTH SIDES
2306+28	2306+35	7	BRIDGE	BRIDGE RAIL, BOTH SIDES
2306+35	2306+50	15	APPROACH	BRIDGE APPROACH RAIL, BOTH SIDES
2339+29	2339+44	15	APPROACH	BRIDGE APPROACH RAIL, BOTH SIDES
2339+44	2340+81	137	BRIDGE	BRIDGE RAIL, BOTH SIDES
2340+81	2340+96	15	APPROACH	BRIDGE APPROACH RAIL, BOTH SIDES
2391+78	2391+93	15	APPROACH	BRIDGE APPROACH RAIL, BOTH SIDES
2391+93	2392+38	45	BRIDGE	BRIDGE RAIL, BOTH SIDES
2392+38	2392+53	15	APPROACH	BRIDGE APPROACH RAIL, BOTH SIDES
2418+09	2418+59	50	GUARDRAIL	CULVERT, BOTH SIDES
2494+22	2494+37	15	APPROACH	BRIDGE APPROACH RAIL, BOTH SIDES
2494+37	2494+67	30	BRIDGE	BRIDGE RAIL, BOTH SIDES
2494+67	2494+82	15	APPROACH	BRIDGE APPROACH RAIL, BOTH SIDES

WASHOUTS

BEGIN STATION	END STATION	LENGTH FT	TYPE	REMARKS
1870+32	1871+32	100	WASHOUT OVER CULVERT	AFTER CULVERT 40J WORK COMPLETED, RE-ESTABLISH SLOPE AND ADD SLOPE PROTECTION
1872+02	1873+02	100	WASHOUT OVER CULVERT	AFTER CULVERT 40J-2 WORK COMPLETED, RE-ESTABLISH SLOPE AND ADD SLOPE PROTECTION
1902+52	1903+52	100	SAG IN TRAIL	FILL SAG WITH ON-SITE STRUCTURALLY SUITABLE EXCAVATED MATERIAL AND REGRADE TRAIL
1916+80	1922+10	530	SLOPE FAILURE / TRAIL EROSION	RE-PROFILE TRAIL, INSTALL NEW CULVERT, DITCH ON LEFT SIDE
1924+82	1925+32	50	PONDING	RAISE GRADE 6 INCHES AND RE-ESTABLISH DITCHING ON RIGHT SIDE
1973+28	1973+33	5	SINKHOLE	REPAIR CULVERT THEN FILL SINK HOLE WITH GRANULAR BORROW
1978+78	1979+78	100	SINKHOLES	FILL SINKHOLES, REPAIR BANKING
2109+00	2111+50	250	LEDGE SECTION	RAISE GRADE 12 INCHES AND RE-ESTABLISH DITCHING ON BOTH SIDES
2137+47	2139+47	200	SLOPE FAILURE / TRAIL EROSION	RE-PROFILE TRAIL, RESTORE GRADE AT CULVERT INLET
2150+17	2151+42	125	PONDING	RAISE GRADE 12 INCHES AND RE-ESTABLISH DITCHING ON BOTH SIDES
2163+52	2164+02	50	DEPRESSION	RAISE GRADE 2 FEET
2182+55	2184+55	200	LEDGE SECTION	RAISE GRADE 6 INCHES AND RE-ESTABLISH DITCHING ON BOTH SIDES
2185+92	2186+92	100	SLOPE FAILURE / TRAIL EROSION	REPAIR BANKING, STABILIZE SLOPE WITH STONE FILL, TYPE III
2187+47	2187+77	30	SLOPE FAILURE / TRAIL EROSION	REPAIR BANKING, STABILIZE SLOPE WITH STONE FILL, TYPE III
2188+52	2189+02	50	SLOPE FAILURE / TRAIL EROSION	REPAIR BANKING, STABILIZE SLOPE WITH STONE FILL, TYPE III
2193+27	2193+77	50	SLOPE FAILURE / TRAIL EROSION	REPAIR BANKING, STABILIZE SLOPE WITH STONE FILL, TYPE III
2356+65	2358+65	200	PONDING	RAISE GRADE 6 INCHES AND RE-ESTABLISH DITCHING ON BOTH SIDES
2365+17	2368+67	350	PONDING	RAISE GRADE 6 INCHES AND RE-ESTABLISH DITCHING ON LEFT SIDE
2382+00	2385+00	300	PONDING	DITCH ALONG TRAIL, INSTALL NEW CULVERT

CROSSINGS

NUMBER	STATION	TYPE	MATERIAL	CURRENTLY PERMITTED	REMARKS
91	1845+42	TOWN ROAD	PAVED	YES	CONSTRUCT ACCESSIBLE PAVED ROAD CROSSING ON WESTERN SIDE ONLY
92	1873+02	TOWN TRAIL	EARTH	YES	CONSTRUCT ACCESSIBLE GRAVEL ROAD CROSSING
N/A	1875+02	ATV ACCESS	EARTH	NO	BLOCK ACCESS AS DIRECTED BY THE ENGINEER
93	1893+52	STATE ROAD	PAVED	YES	CONSTRUCT ACCESSIBLE PAVED ROAD CROSSING
95	1913+22	TOWN ROAD	GRAVEL	YES	CONSTRUCT ACCESSIBLE GRAVEL ROAD CROSSING
N/A	1929+59	LOGGING	GRAVEL	NO	BLOCK ACCESS AS DIRECTED BY ENGINEER
N/A	1934+82	LOGGING	GRASS	NO	BLOCK ACCESS AS DIRECTED BY ENGINEER
96	1948+97	TOWN ROAD	GRAVEL	YES	CONSTRUCT ACCESSIBLE GRAVEL ROAD CROSSING
97	1967+27	FARM	GRAVEL	YES	SIGN CROSSING
N/A	1974+44	FARM	GRAVEL	NO	DITCH THROUGH CROSSING
N/A	2009+67	FARM	GRAVEL/STAIRS	NO	NO ACTION NEEDED
99	2013+34	TOWN ROAD	GRAVEL	YES	CONSTRUCT ACCESSIBLE GRAVEL ROAD CROSSING
N/A	2020+09	FARM	GRAVEL	NO	BLOCK ACCESS AS DIRECTED BY ENGINEER
N/A	2034+52	HIKING	EARTH	NO	DITCH THROUGH CROSSING
101	2043+28	DRIVEWAY	GRAVEL	NO	BLOCK ACCESS AS DIRECTED BY ENGINEER
102	2071+22	STATE ROAD	PAVED	YES	CONSTRUCT ACCESSIBLE PAVED ROAD CROSSING
N/A	2132+99	ATV ACCESS	GRASS	NO	BLOCK ACCESS AS DIRECTED BY ENGINEER
N/A	2144+19	FARM	GRAVEL	NO	BLOCK ACCESS AS DIRECTED BY ENGINEER
104	2146+55	STATE ROAD	TUNNEL	YES	INSTALL OM3 SIGNS ON ALL FOUR CORNERS OF TUNNEL
105	2156+72	DRIVEWAY	PAVED	YES	SIGN CROSSING, CLEAR VEGETATION TO IMPROVE SIGHT DISTANCE, CONSTRUCT ACCESSIBLE PAVED ROAD CROSSING
106	2164+40	TOWN ROAD	PAVED	YES	CONSTRUCT ACCESSIBLE PAVED ROAD CROSSING
107	2172+23	FARM	GRASS	NO	DITCH THROUGH CROSSING, BLOCK ACCESS AS DIRECTED BY ENGINEER
N/A	2176+47	ATV ACCESS	GRASS	NO	BLOCK ACCESS AS DIRECTED BY ENGINEER
N/A	2213+02	PRIVATE TRAIL	GRASS	NO	RESTRICT FOR PEDESTRIAN ACCESS ONLY
N/A	2213+47	PRIVATE TRAIL	GRASS	NO	RESTRICT FOR PEDESTRIAN ACCESS ONLY
109	2220+09	FARM	GRASS	YES	SIGN CROSSING
N/A	2226+92	ATV ACCESS	GRASS	NO	BLOCK ACCESS AS DIRECTED BY ENGINEER
110	2227+93	TOWN ROAD	PAVED	YES	CONSTRUCT ACCESSIBLE PAVED ROAD CROSSING, ADD ADDITIONAL WARNING SIGNS ON ROUTE 15
111	2241+56	FARM	GRASS	YES	SIGN CROSSING
112	2253+84	FARM	GRASS	NO	BLOCK ACCESS AS DIRECTED BY ENGINEER
N/A	2281+57	FARM	GRASS	NO	BLOCK ACCESS AS DIRECTED BY ENGINEER
113	2286+07	FARM	GRASS	NO	BLOCK ACCESS AS DIRECTED BY ENGINEER
114	2292+66	TOWN ROAD	GRAVEL	YES	CLEAR VEGETATION TO IMPROVE SIGHT DISTANCE, CONSTRUCT ACCESSIBLE GRAVEL ROAD CROSSING
N/A	2308+67	CONSTRUCTION	GRASS	NO	BLOCK ACCESS AS DIRECTED BY ENGINEER
115	2324+43	FARM	GRASS	YES	DITCH THROUGH CROSSING TO PREVENT EROSION ON TRAIL FROM CROSSING
116	2335+40	XC-SKI TRAIL	GRASS	NO	RESTRICT FOR PEDESTRIAN ACCESS ONLY
N/A	2497+07	SNOWMOBILE	GRASS	NO	NO ACTION NEEDED
117	2502+47	STATE ROAD	PAVED	YES	NO ACTION NEEDED

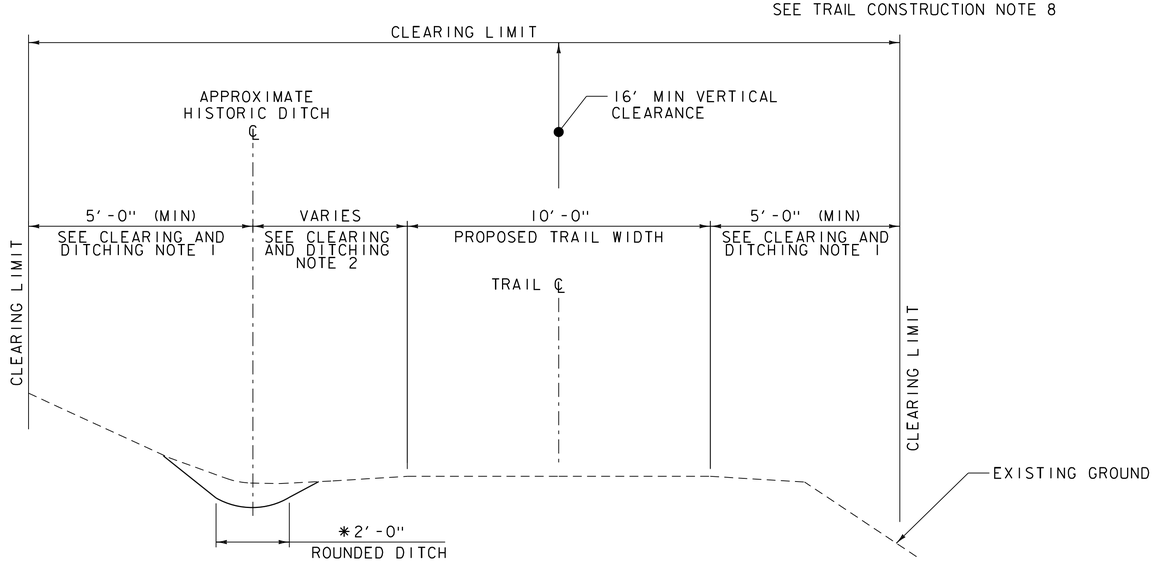


TRAIL TYPICAL SECTION

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 8



CLEARING AND DITCHING TYPICAL SECTION

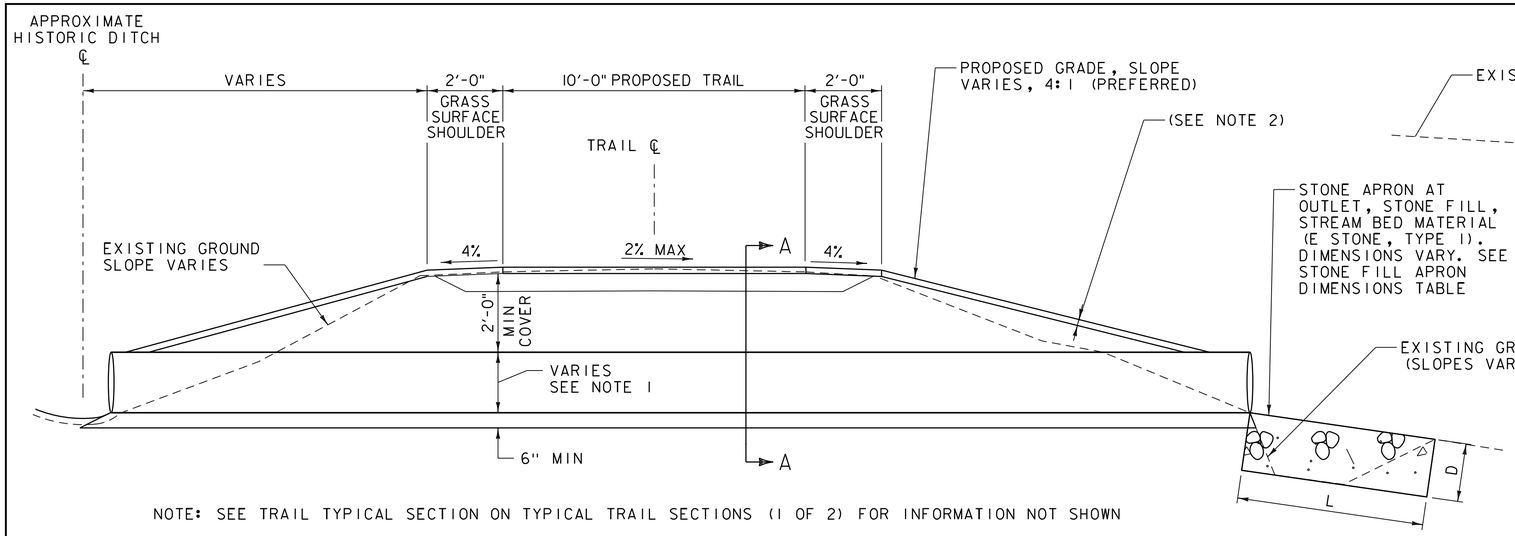
NOT TO SCALE

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 SEEDED AND PROTECTED WITH ITEM 653.20, "ROLLED EROSION CONTROL PRODUCT, TYPE 1" UNLESS STEEPER THAN 1V:2H , THEN ITEM 613.10, "STONE FILL, TYPE 1" SHALL BE USED. SIDE SLOPES STEEPER THAN 1V:1.5H SHALL BE PROTECTED WITH ITEM 613.11 "STONE FILL, TYPE 11" OR AS SPECIFIED IN THE PLANS OR BY THE ENGINEER. PAYMENT FOR ALL SIDE SLOPE PROTECTION MEASURES SHALL BE PAID FOR UNDER THEIR RESPECTIVE ITEMS.
6. STONE FILL SLOPES ABOVE THE ORDINARY HIGH WATER LINE SHALL BE GRUBBED WITH 12" OF GRUBBING MATERIAL. GRUBBING MATERIAL SHALL BE PAID FOR UNDER ITEM 651.40 "GRUBBING MATERIAL".
7. WHEN EXCAVATING FOR REPAIRS, CULVERT REPLACEMENTS OR ANY OTHER EARTHWORK ALONG THE TRAIL CORRIDOR, THE CONTRACTOR SHALL STOCKPILE ALL STRUCTURALLY SUITABLE MATERIAL EXCAVATED INCLUDING THE EXISTING RAIL BALLAST. AS THE REPAIR OR REPLACEMENT WORK IS BEING COMPLETED, BACKFILLING SHOULD UTILIZE THE EXISTING MATERIAL TO THE EXTENT POSSIBLE INCLUDING 8" OF THE EXISITNG BALLAST REMOVED FROM THE TRAIL BASE. IF THE LOCATION LACKS 8" OF SALVAGEABLE BALLAST OR WELL DRAINED GRANULAR MATERIAL, GRANULAR BORROW SHALL BE ADDED TO ACHIEVE THE REQUIRED 8" TRAIL BASE. NO NEW BALLAST WILL BE REQUIRED FOR THIS PROJECT.
8. 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.
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.
11. FOR LOCATIONS NOTED AS A WASHOUT, ON ITEM DETAIL SHEET 3, WHERE THE PROPOSED ACTION IS TO RAISE GRADE, THE LONGITUDINAL SLOPE OF THE TRAIL SHALL NOT EXCEED 5%.

CLEARING AND DITCHING NOTES:

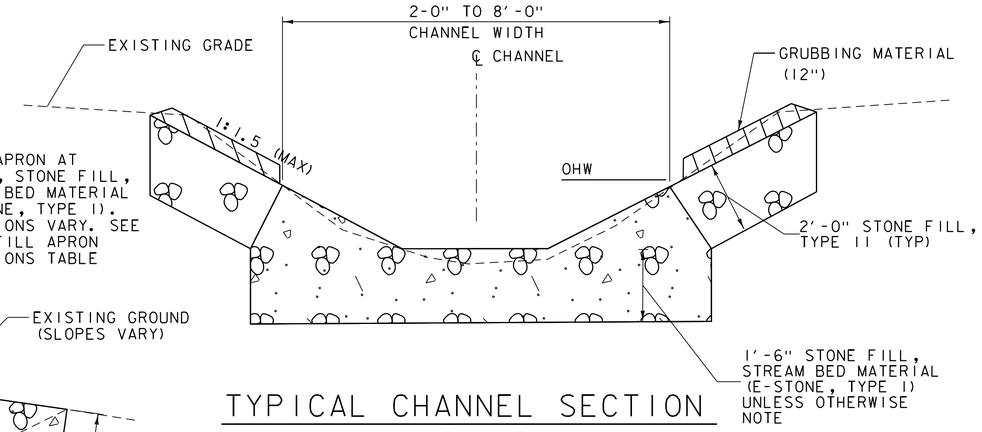
1. CLEARING LIMIT ON EMBANKMENT SLOPES STEEPER THAN 1V:2H SHALL NOT BE MORE THAN 1'-0" BEYOND THE TOP OF SLOPE. ACTUAL CLEARING LIMITS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER. IN ROCK CUT AREAS, CLEAR THE WIDTH OF THE BALLAST AND DITCHES ALONG WITH ANY OVERHANGING VEGETATION. DO NOT CLEAR OR 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 UNMAINTAINED 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, MATERIAL SHALL BE SPREAD EVENLY ON SIDE SLOPES AND ADJACENT R.O.W. LAND AT A THICKNESS THAT WILL NOT IMPEDE VEGETATION GROWTH. LOCATIONS TO BE APPROVED BY ENGINEER AND SHALL NOT BE IN WETLANDS OR WETLAND BUFFERS. 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.



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

TYPICAL CULVERT REPLACEMENT/INSTALLATION DETAIL (ROUND PIPE)

NOT TO SCALE



TYPICAL CHANNEL SECTION

NOT TO SCALE

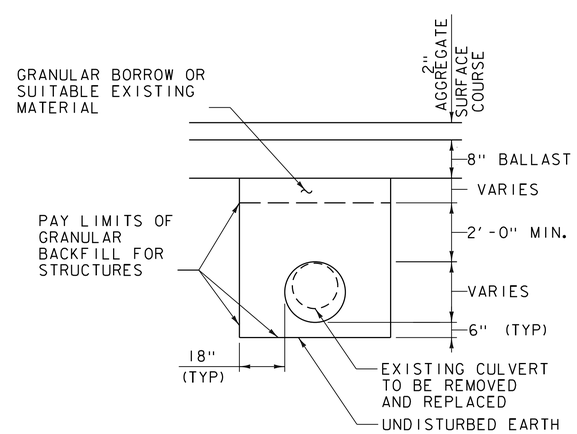
NOTES:

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 5 ON TYPICAL TRAIL SECTIONS (SHEET 1 OF 2) FOR ADDITIONAL SLOPE CONDITIONS STEEPER THAN 1V:3H.
3. EXCAVATION, REMOVAL AND DISPOSAL OF EXISTING ROUND CULVERTS, 4 FEET IN DIAMETER OR LESS, SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2018, SECTION 204. EXCAVATION FOR ALL OTHER CULVERTS, UNLESS OTHERWISE NOTED WITHIN THE PLANS, 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 UNLESS OTHERWISE NOTED WITHIN THE PLANS.
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.
7. ITEM 613.06, "STONE FILL, STREAM BED MATERIAL" (E-STONE TYPE I) SHALL BE USED AT THE INLET AND OUTLET OF CULVERTS BEING REPAIRED, REPLACED OR LABELED AS "STABILIZE OUTLET", TO FILL VOIDS OR REPLACE UNSUITABLE MATERIALS IN THE STREAM CHANNEL AS NEEDED. SEE TYPICAL BOX CULVERT SECTIONS FOR MORE INFORMATION.
8. CLEANING AT THE INLET AND OUTLET OF EXISTING CULVERTS TO BE REPLACED SHALL BE INCIDENTAL TO THE REPLACEMENT OF THE CULVERT
9. STONE BOX CULVERTS PROPOSED FOR REPAIR SHALL ENTAIL EXCAVATING AND EXPOSING THE EXISTING STONES AND RESETTING THE STONES AS NECESSARY TO ENSURE THE WATERWAY OPENING IS UNIMPEDED AND THE STONES ARE STRUCTURALLY SOUND.
10. IF ADDITIONAL STONES ARE REQUIRED TO REPAIR A STONE BOX CULVERT, SALVAGED STONES FROM DECONSTRUCTED STONE BOX CULVERTS SHALL BE USED.
11. EXCAVATION TO REPAIR STONE BOX CULVERTS SHALL BE PAID UNDER ITEM 204.25, "STRUCTURE EXCAVATION". REBUILDING OF THE STONE BOX CULVERTS SHALL BE PAID FOR UNDER ITEM 602.35, "REBUILT STONE MASONRY" UNLESS OTHERWISE NOTED WITHIN THE PLANS.
12. GRANULAR BACKFILL FOR STRUCTURES SHALL BE INSTALLED AROUND REPAIRED STONE BOX CULVERTS TO THE LIMITS AS SHOWN IN THE PRECAST BOX CULVERT DETAILS. ALL OTHER BACKFILL SHALL BE MADE WITH ONSITE STRUCTURALLY SUITABLE MATERIALS OR GRANULAR BORROW AS NEEDED.
13. WATER SHALL CONTINUE TO FLOW THROUGH STRUCTURES DURING REPAIR. CONTRACTOR SHALL TAKE CARE TO MINIMIZE SEDIMENT AND DEBRIS FROM ENTERING THE WATERWAY WHILE WORK IS OCCURING.
14. THE REPAIR OF STONE BOX CULVERTS SHALL BE CONDUCTED IN ACCORDANCE WITH THE SECRETARY OF THE INTERIOR'S STANDARDS FOR TREATMENT OF HISTORIC PROPERTIES TO MINIMIZE EFFECTS TO THE HISTORIC RESOURCE'S INTEGRITY. THE PROJECT PLANS SHALL BE REVIEWED AND APPROVED BY INDIVIDUAL(S) WHO MEET THE SECRETARY OF THE INTERIOR'S PROFESSIONAL QUALIFICATIONS STANDARDS FOR ARCHITECTURAL HISTORY. WORK SHALL BE COMPLETED IN ACCORDANCE WITH ANY PLANS AND SPECIFICATIONS DEVELOPED FOR THE PROJECT.
15. THE FUNCTIONAL INTEGRITY OF STRUCTURES DESIGNATED TO BE REPAIRED SHALL BE REPAIRED WHILE RETAINING ITS VISUAL INTEGRITY AS A HISTORICALLY SIGNIFICANT DRY-LAID STONE CULVERT.

	L		D
Pipe Size (in)	Apron Length (ft)	Apron Width (ft)	Apron Depth (ft)
18	9	4.5	1.5
24	11	6	1.5
30	13	7.5	1.5
36	15	9	1.5

*All Dimensions based on E-Stone Type I

STONE FILL APRON DIMENSIONS



SECTION A-A

NOT TO SCALE

Culvert ID	Station	Existing Size (ft)	Existing Material	Proposed CPEP (SL) Pipe Size (in)	Est. Culvert Length (ft)
40H	1861+92	2.0	CAST IRON	24.0	22
40J-2	1872+52	2.0	CMP	24.0	54
41B	1897+20	1.5	CMP	24.0	34
41D	1914+00	1.7	CAST IRON	24.0	22
41E(2)	1925+38	N/A	N/A	18.0	18
41G(2)	1935+26	N/A	N/A	18.0	18
41J-2	1946+15	1.5	CMP	18.0	26
41K	1950+40	0.5	PVC/METAL	18.0	18
42A	1973+28	2 x 3	STONE BOX	24.0	22
42A(2)	1977+39	N/A	N/A	18.0	22
44B	2038+89	2.0	CMP	24.0	34
44C-1	2042+75	1.0	CAST IRON	18.0	18
44F	2058+97	N/A	N/A	18.0	18
46A(2)	2107+48	N/A	N/A	30.0	22
46D(2)	2123+82	N/A	CONCRETE	30.0	18
47A	2166+63	3 x 3	STONE BOX	36.0	26
47B	2179+39	1 x 1	STONE BOX	24.0	26
47C	2180+88	N/A	N/A	18.0	18
48A-2	2224+77	2.5	STONE BOX	18.0	18
48C-1	2228+05	N/A	CAST IRON	18.0	18
48C-2	2236+52	1.33	CMP	18.0	54
51A(2)	2324+05	N/A	N/A	18.0	18
51B	2329+97	3 x 3	STONE BOX	36.0	34
52A	2351+00	0.5	CAST IRON	18.0	22
52B	2354+51	1.0	CAST IRON	18.0	30
52D	2366+17	N/A	N/A	18.0	18
52E	2373+30	2.0	CMP	24.0	26
52F	2380+57	1.0	CAST IRON	18.0	34
52F(2)	2382+99	N/A	N/A	18.0	18
53I	2426+81	1.0	CAST IRON	18.0	22
53K	2431+37	2.0	CAST IRON	24.0	18
53S	2463+61	2.0	CAST IRON	24.0	34
53U	2469+08	1.2	CAST IRON	18.0	22
53W	2474+22	2 x 3	STONE BOX	30.0	26
53X	2479+13	2 x 3	STONE BOX	30.0	34
53Z	2483+69	1.0	CAST IRON	18.0	18

CULVET SUMMARY TABLE (ROUND PIPE)

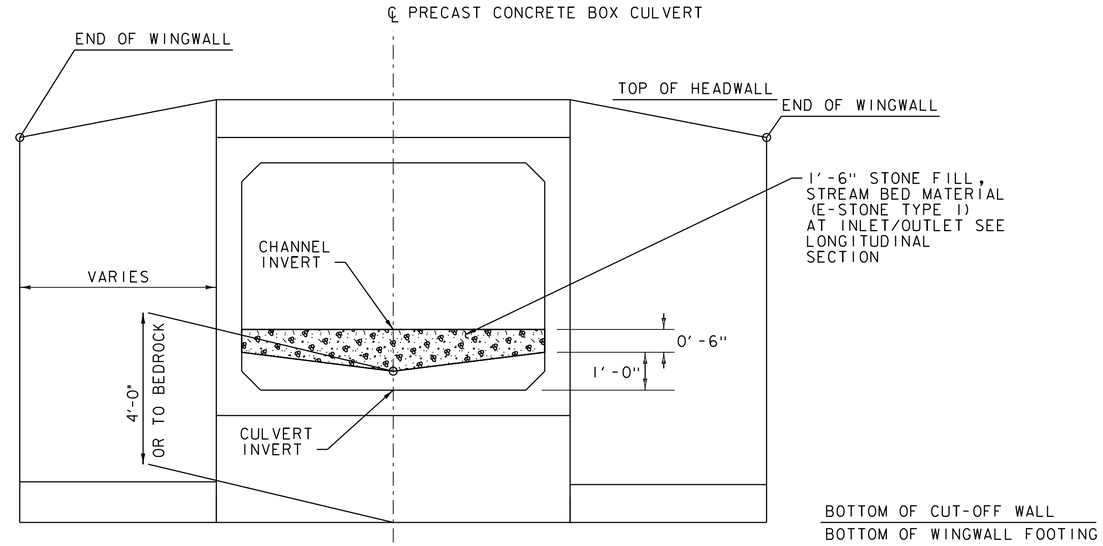
PROJECT NAME: SWANTON - ST. JOHNSBURY
PROJECT NUMBER: STP LVRT(12)

FILE NAME: z20f238_typ_culvert.dgn
PROJECT LEADER: E.P. DETRICK
DESIGNED BY: J.M. DUFFY
TYPICAL CULVERT SECTION SHEET

PLOT DATE: 8/17/2021
DRAWN BY: J.M. DUFFY
CHECKED BY: E.P. DETRICK
SHEET 15 OF 134

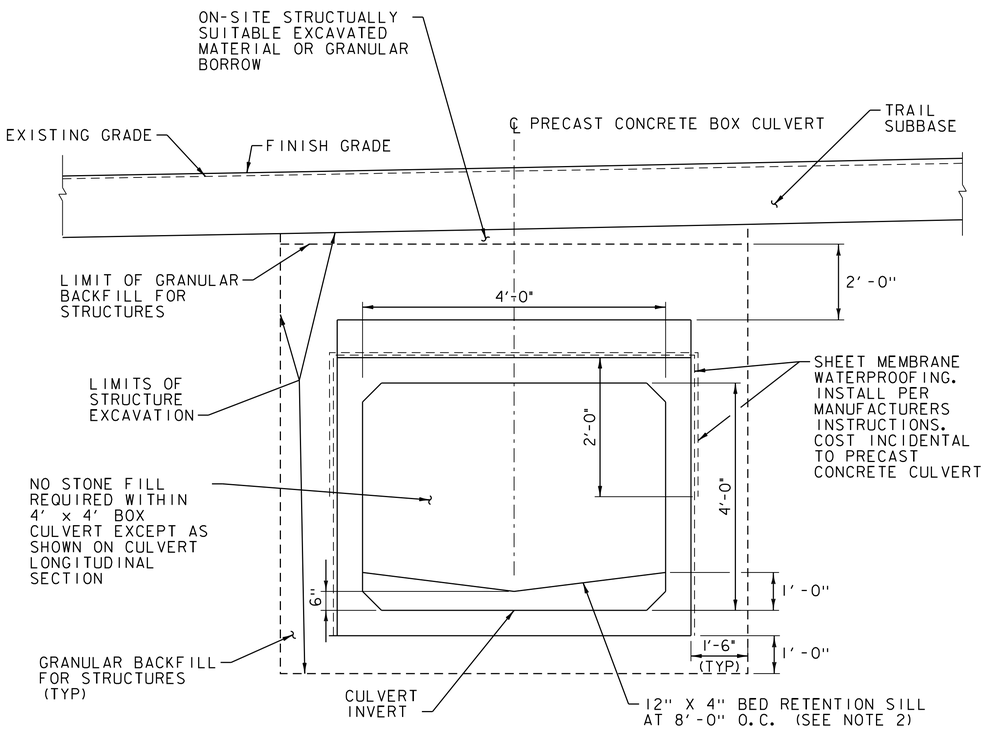
Culvert ID	Station	Existing Size (ft)	Existing Material	Proposed Concrete Box Size (ft)	Est. Culvert Length (ft)
41D(2)	1917+20	N/A	N/A	4 x 4	22
41E	1921+41	N/A	STONE CATTLEPASS	4 x 4	22
48C	2226+75	2- 3	CMP	6 x 6	34
50A-2	2304+83	2 x 2	WOOD-RAIL	4 x 4	18
51	2306+23	BRIDGE	STEEL I-BEAM	4 x 4	18
53P	2454+34	3.0	CMP	4 x 4	34

BOX CULVERT SUMMARY TABLE



TYPICAL INLET/OUTLET ELEVATION VIEW

NOT TO SCALE



TYPICAL 4 X 4 PRECAST BOX CULVERT SECTION

NOT TO SCALE

NOTES:

1. BURY BOX CULVERT INVERT MINIMUM 1'-6" BELOW PROPOSED CHANNEL INVERT TO ALLOW RETENTION OF BED MATERIALS WITHIN THE STRUCTURE.
2. BED RETENTION SILLS SHALL BE 12" HIGH AT THE EDGES OF THE BOX AND 6" HIGH IN THE CENTER. SILLS SHALL BE 4" THICK AND SHALL HAVE A POSITIVE CONNECTION TO PRECAST BOX. SILLS SHALL BE PLACED NO MORE THAN 8 FEET APART THROUGHTOUT THE STRUCTURE WITH ONE SILL PLACED AT BOTH THE INLET AND OUTLET.
3. TYPICAL CHANNEL SECTION TO BE CONSTRUCTED TO TIE PROPOSED STRUCTURE INTO EXISTING CHANNEL (SEE TYPICAL CULVERT SECTION SHEET).
4. SEE NOTES ON "TYPICAL CULVERT SECTION SHEET" FOR ADDITIONAL CULVERT REPLACEMENT / INSTALLATION NOTES.
5. PROPOSED CULVERT LENGTHS TO BE FIELD VERIFIED BY CONTRACTOR PRIOR TO ORDERING MATERIALS.
6. BOX CULVERTS ON ANY PERENNIAL STREAM SHALL BE REVIEWED IN THE FIELD WITH PATRICK ROSS, VT DEC RIVER MANAGEMENT ENGINEER. CONSTRUCTION SURVEY WILL BE REQUIRED TO APPROPRIATELY SET THE STRUCTURE GRADIENT AND INVERT ELEVATIONS. COSTS ASSOCIATED WITH THIS WORK SHALL BE INCIDENTAL TO THE COST OF THE BOX CULVERT.
7. SHEET MEMBRANE WATERPROOFING SHALL MEET THE REQUIREMENTS OF SPECIFICATION SECTION 726.11(C), WATERPROOFING MEMBRANE SYSTEM, TYPE III.

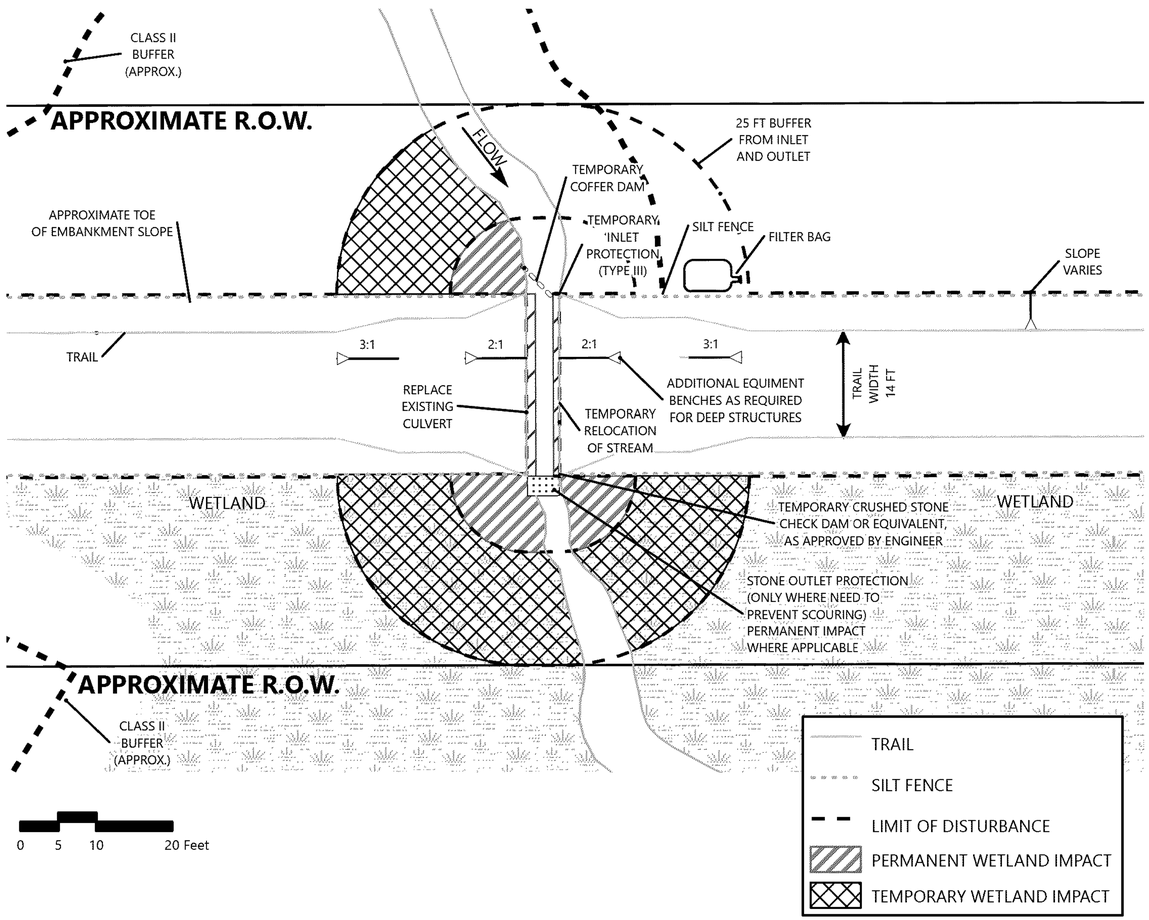
E-STONE NOTES:

1. E-STONE TYPE I SHALL BE USED BELOW OHW AND AS AN EMBEDMENT MATERIAL IN BOX STRUCTURE WITH A VERTICAL CLEARANCE OF 6' OR GREATER.
2. STONE PLACED INSIDE OF A CLOSED STRUCTURE SHALL BE PLACED SUCH THAT THE STRUCTURE IS NOT DAMAGED.
3. CARE SHALL BE TAKEN TO LIMIT SEGREGATION OF THE MATERIALS
4. ADD NATIVE STREAMBED MATERIAL OR SAND BORROW AS NEEDED TO SEAL THE BED AND PREVENT SUBSURFACE FLOW. COST OF NATIVE MATERIAL AND SAND BORROW IS INCIDENTAL TO STONE FILL, STREAM BED MATERIAL.
5. THERE SHALL BE NO SUBSURFACE FLOW UPON FINAL INSPECTION.

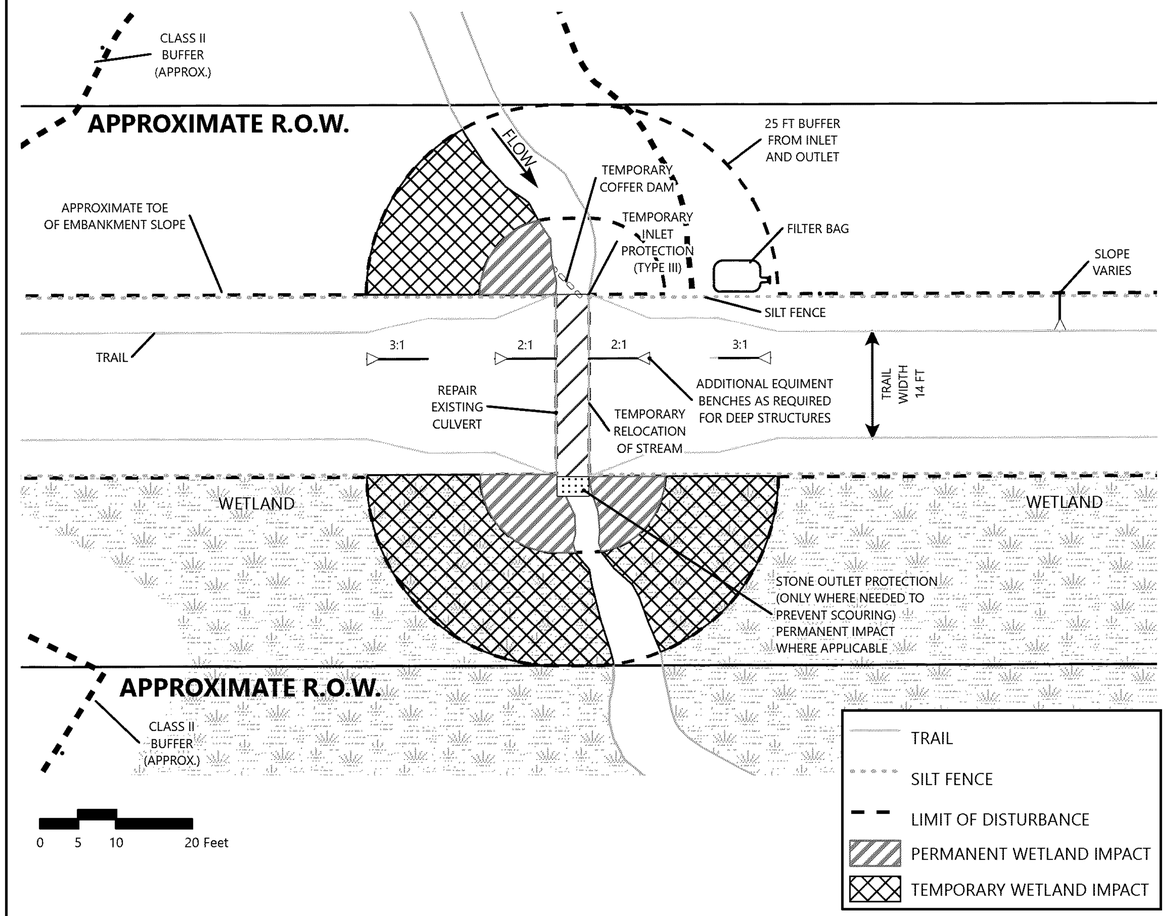
PROJECT NAME: SWANTON - ST. JOHNSBURY
PROJECT NUMBER: STP LVRT(12)

FILE NAME: z20f238_typ_box_culvert.dgn
PROJECT LEADER: E.P.DETRICK
DESIGNED BY: J.M. DUFFY
BOX CULVERT TYP. SECTION (SHEET 1 OF 2)
PLOT DATE: 8/17/2021
DRAWN BY: J.M. DUFFY
CHECKED BY: B.M. ROBERTS
SHEET 16 OF 134

CULVERT REPLACEMENT TYPICAL



CULVERT REPAIR TYPICAL



NOTES:

1. ALL WORK TO BE PERFORMED FROM TRAIL EMBANKMENT WHERE FEASIBLE.
2. APPROXIMATE IMPACT AREAS AT CULVERT INLET/OUTLET HAVE BEEN ASSUMED TO ACCOUNT FOR EQUIPMENT ACCESS AND ANY WORK REQUIRED TO COMPLETE THE IMPROVEMENTS. THESE IMPACTS SHALL BE MINIMIZED TO THE EXTENT PRACTICABLE IN THE FIELD.
3. REPAIR OR REPLACEMENT OF EXISTING CULVERTS SHALL BE PERFORMED IN DRY CONDITIONS TO THE EXTENT PRACTICABLE.
4. INSTALL TEMPORARY STREAM DIVERSION AND OTHER WATER CONTROL MEASURES AS NEEDED PRIOR TO EXCAVATION OF IN-STREAM MATERIALS OR REMOVAL OF EXISTING STRUCTURES.
5. LOCATION AND TYPE OF SEDIMENT CONTROL PRACTICES SHOWN ABOVE ARE FOR REFERENCE ONLY. ADDITIONAL MEASURES MAY BE REQUIRED TO MINIMIZE POTENTIAL SEDIMENT RELEASE.
6. SEE ITEM DETAIL SHEETS AND LAYOUT PLANS FOR LOCATIONS WHERE THESE DETAILS ARE TO BE APPLIED.
7. WETLAND AREA DISTURBED DURING CONSTRUCTION SHALL BE SEEDED WITH WET AREA SEED MIX AND MULCHED WITH WEED FREE STRAW.

PROJECT NAME: SWANTON - ST. JOHNSBURY	
PROJECT NUMBER: STP LVRT(12)	
FILE NAME: z20f238_culvert_repair.dgn	PLOT DATE: 8/17/2021
PROJECT LEADER: E.P. DETRICK	DRAWN BY: J. GROSSMAN
DESIGNED BY: J.M. DUFFY	CHECKED BY: J.M. DUFFY
CULVERT REPLACEMENT/REPAIR TYP. DETAIL	SHEET 18 OF 134

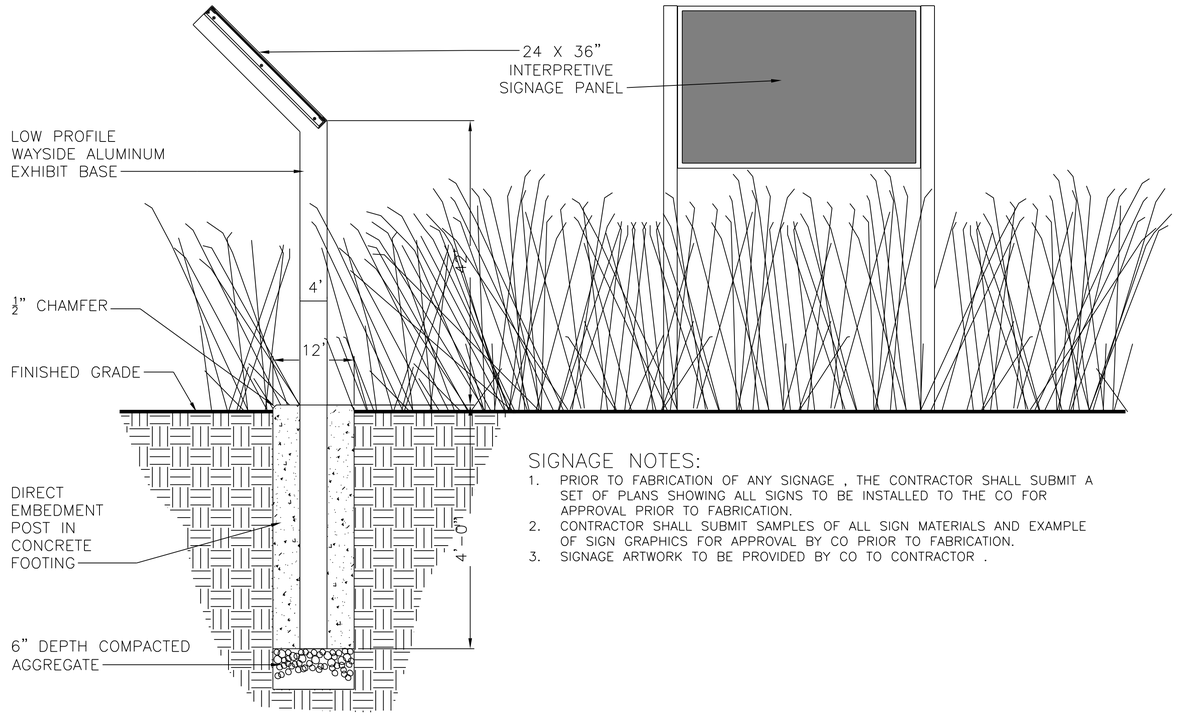
ETIQUETTE SIGN #1
NOT TO SCALE

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

PROJECT NAME: SWANTON - ST. JOHNSBURY	
PROJECT NUMBER: STP LVRT(12)	
FILE NAME: z20f238_etiquette_signs.dgn	PLOT DATE: 8/17/2021
PROJECT LEADER: E.P. DETRICK	DRAWN BY: K.C. BARRY
DESIGNED BY: VAST	CHECKED BY: E.P. DETRICK
ETIQUETTE SIGNS SHEET	SHEET 34 OF 134

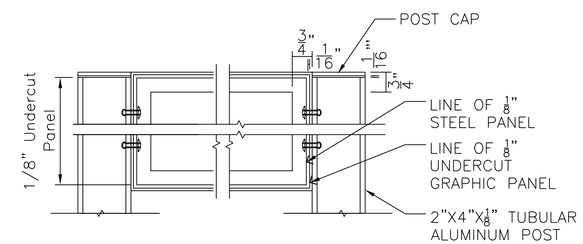


SIGNAGE NOTES:

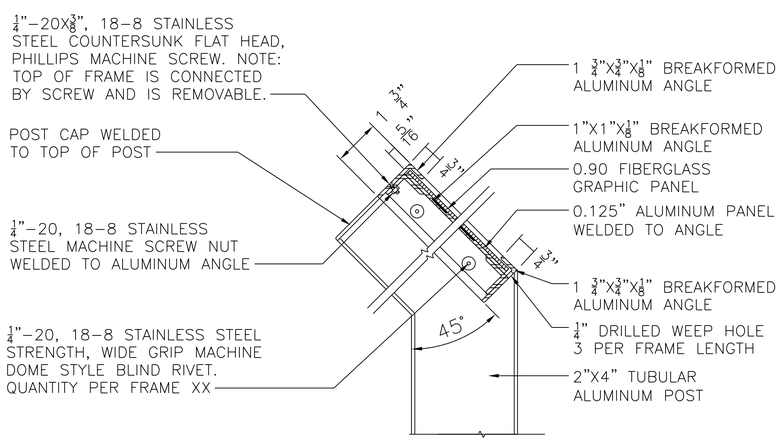
1. PRIOR TO FABRICATION OF ANY SIGNAGE , THE CONTRACTOR SHALL SUBMIT A SET OF PLANS SHOWING ALL SIGNS TO BE INSTALLED TO THE CO FOR APPROVAL PRIOR TO FABRICATION.
2. CONTRACTOR SHALL SUBMIT SAMPLES OF ALL SIGN MATERIALS AND EXAMPLE OF SIGN GRAPHICS FOR APPROVAL BY CO PRIOR TO FABRICATION.
3. SIGNAGE ARTWORK TO BE PROVIDED BY CO TO CONTRACTOR .

INTERPRETIVE SIGN & FRAME DETAILS

NOT TO SCALE

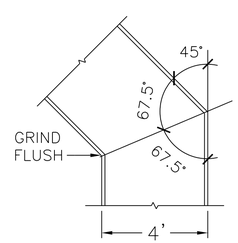


Frame Front Elevation

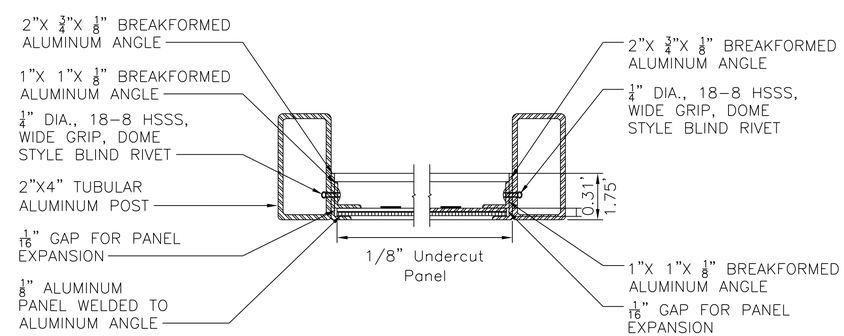


INTERPRETIVE SIGN FRAME DETAILS

NOT TO SCALE

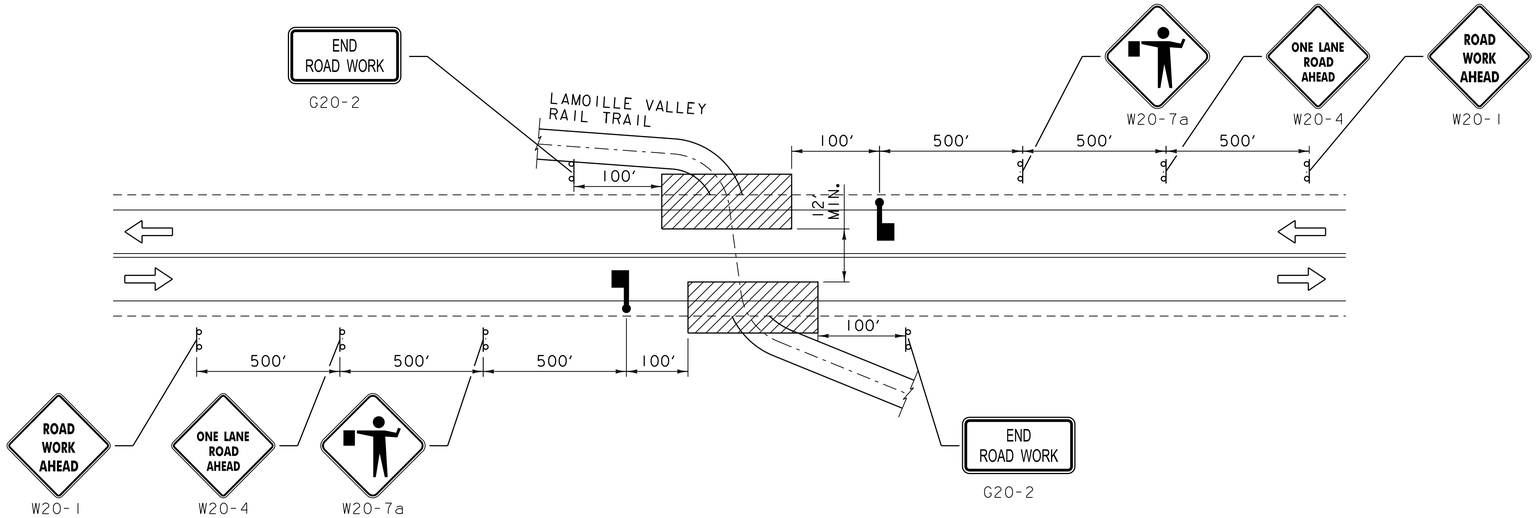


Post Detail



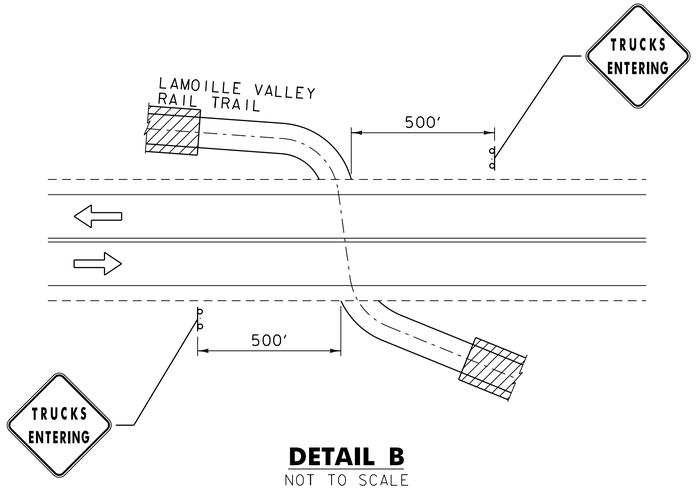
Frame Top Section

PROJECT NAME: SWANTON - ST. JOHNSBURY	
PROJECT NUMBER: STP LVRT(12)	
FILE NAME: Interpretive PanelDetails.dgn	PLOT DATE: 8/17/2021
PROJECT LEADER: E.P. DETRICK	DRAWN BY: B.M. ROBERTS
DESIGNED BY: B.M. ROBERTS	CHECKED BY: E.P. DETRICK
INTERPRETIVE SIGN DETAILS SHEET	SHEET 35 OF 134



DETAIL A

NOT TO SCALE



DETAIL B

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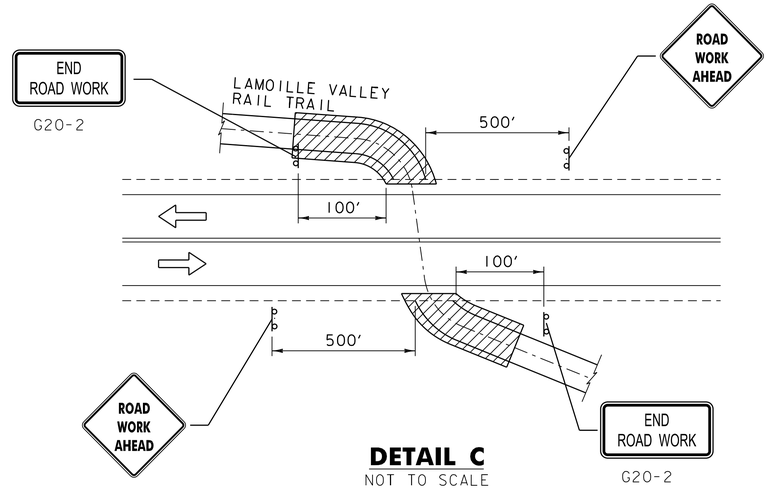


DETAIL C

NOT TO SCALE

TRAFFIC CONTROL PLANS FOR STATE AND TOWN ROADWAYS

NOT TO SCALE

LEGEND

- FLOW OF TRAFFIC
- WORK AREA
- FLAGGER

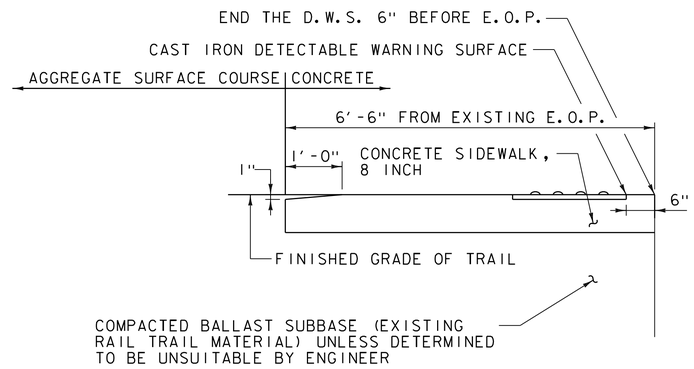
TRAFFIC CONTROL NOTES:

1. THE TRAFFIC CONTROL PLAN SHALL BE DEVELOPED IN ACCORDANCE WITH THE 2018 EDITION OF VTRANS STANDARD SPECIFICATIONS SECTION 641 - TRAFFIC CONTROL AND IN 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 641.11, "TRAFFIC CONTROL, ALL INCLUSIVE".
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: SWANTON - ST. JOHNSBURY	
PROJECT NUMBER: STP LVRT(12)	
FILE NAME: z20f238_tcp.dgn	PLOT DATE: 8/17/2021
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 87 OF 134

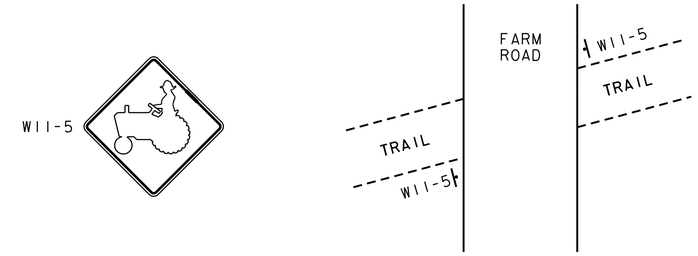
NOTES:

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 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, AS INDICATED IN THE TRAFFIC SIGN SUMMARY SHEET, 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. SIGNS SHALL BE MOUNTED ON 2" SQUARE STEEL POSTS. THE POSTS WILL BE PAID UNDER ITEM 675.341 "SQUARE TUBE SIGN POST AND ANCHOR".
6. W11-5 SIGN TO LOCATED AT ALL FARM AND FARM ROAD CROSSINGS.
7. SEE VTRANS TEI 18-200 AND STANDARD DRAWING E-121 FOR SIGN LOCATIONS AND SPACING REQUIRMENTS.

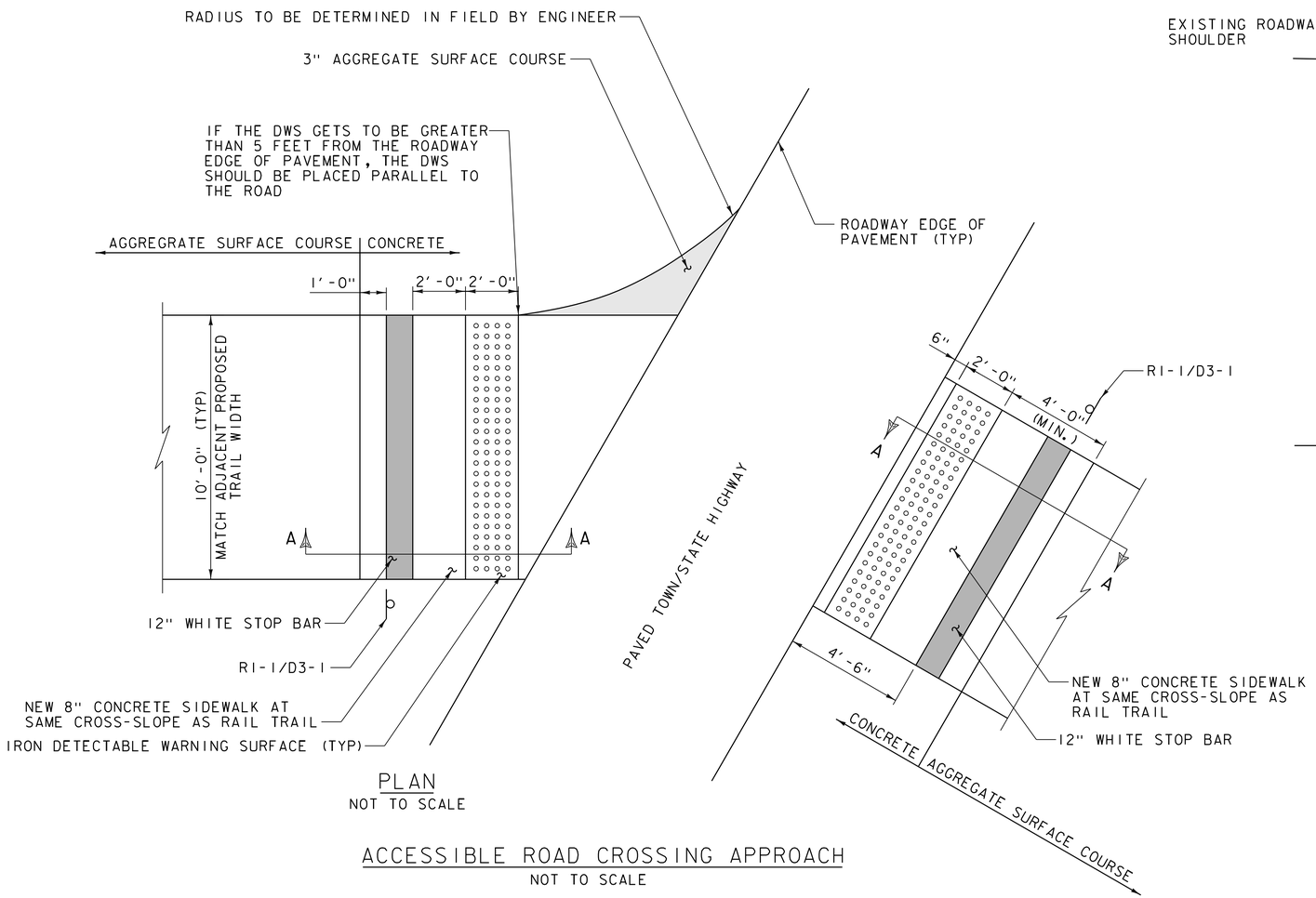


SECTION A-A
NOT TO SCALE

ACCESSIBLE ROAD CROSSING APPROACH

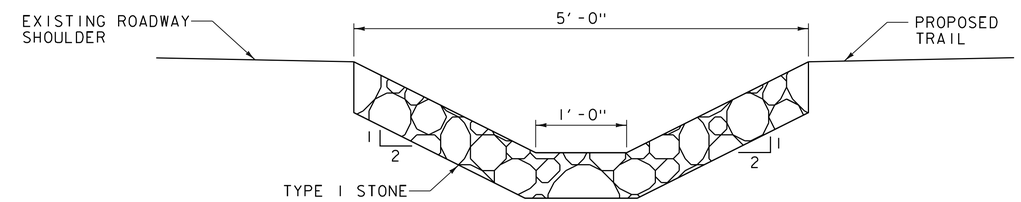


STANDARD FARM CROSSING SIGNS

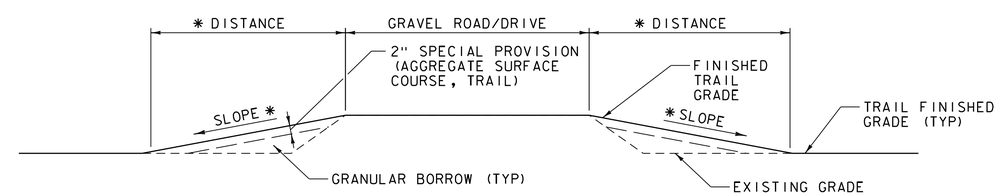


PLAN
NOT TO SCALE

ACCESSIBLE ROAD CROSSING APPROACH
NOT TO SCALE



STONE SWALE
NOT TO SCALE



* - SEE NOTE 1 BELOW

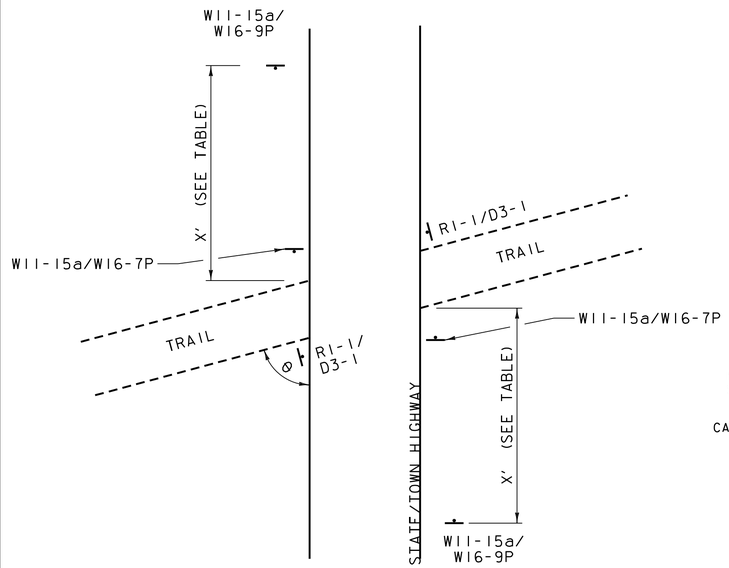
TYPICAL GRAVEL ROAD/DRIVE CROSSING SECTION
NOT TO SCALE

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.
3. GRAVEL ROADWAY CROSSINGS SHALL HAVE CONCRETE RAMPS AS DEPICTED IN THE ACCESSIBLE GRAVEL ROAD CROSSING DETAIL ON CROSSING DETAILS SHEET 2.

PROJECT NAME: SWANTON - ST. JOHNSBURY	
PROJECT NUMBER: STP LVRT(12)	
FILE NAME: z20f238_crossings.dgn	PLOT DATE: 8/17/2021
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 6)	SHEET 88 OF 134

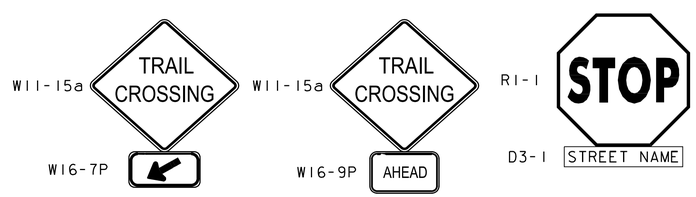
LOCATION	ROADWAY	SIGN	FROM TRAIL
91	NORTH MAIN STREET TH 300	W11-15a	250'
		W16-9P	
		W11-15a	5'
		W16-7P	
95	WRIGHT FARM ROAD PRIVATE	W11-15a	250'
		W16-9P	
		W11-15a	5'
		W16-7P	
96	MCALLISTER FARM ROAD TH 42	W11-15a	250'
		W16-9P	
		W11-15a	5'
		W16-7P	
97	PRIVATE DRIVEWAY	R1-1	5'
99	KATE BROOK ROAD TH 39	W11-15a	250'
		W16-9P	
		W11-15a	5'
		W16-7P	
105	DEAD END ROAD PRIVATE	W11-15a	250'
		W16-9P	
		W11-15a	5'
		W16-7P	
106	SCHOOL STREET TH 3	W11-15a	200'
		W16-9P	
		W11-15a	5'
		W16-7P	
110	ELMORE POND ROAD TH 4	W11-15a	125'
		W16-9P	
		W11-15a	5'
		W16-7P	
114	CORLEY ROAD TH 38	W11-15a	250'
		W16-9P	
		W11-15a	5'
		W16-7P	



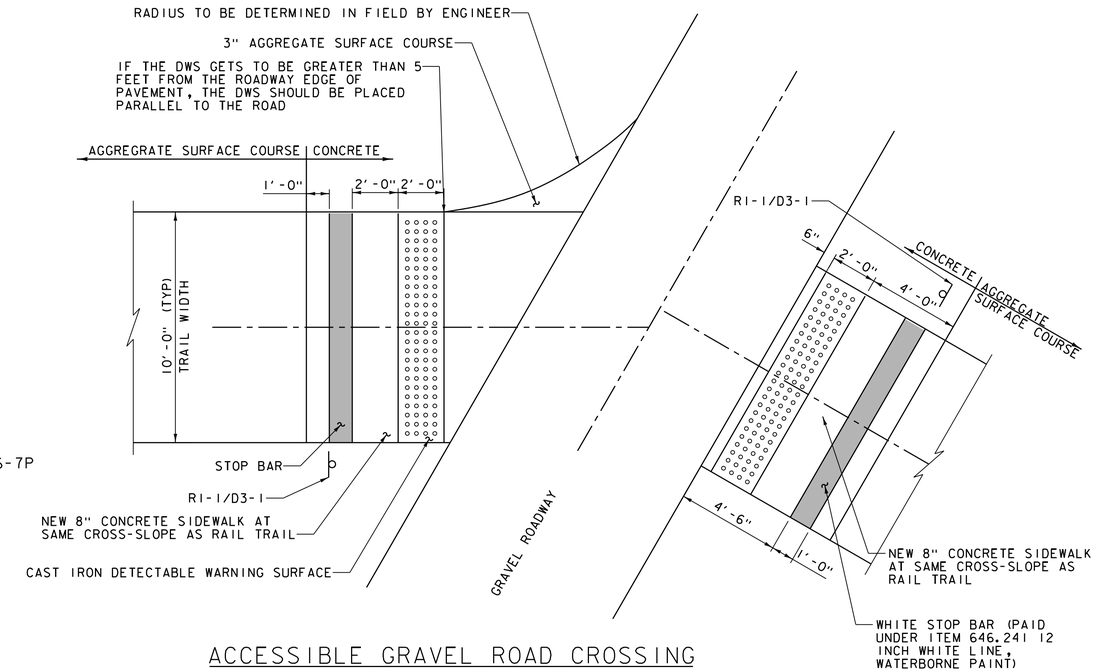
TYPICAL STATE AND TOWN HIGHWAY CROSSING SIGN LAYOUT

DIST. (FT)	ROAD SPEED LIMIT
X'	MPH
*	<35
125'	40
175'	45
250'	50

* SEE NOTE 1

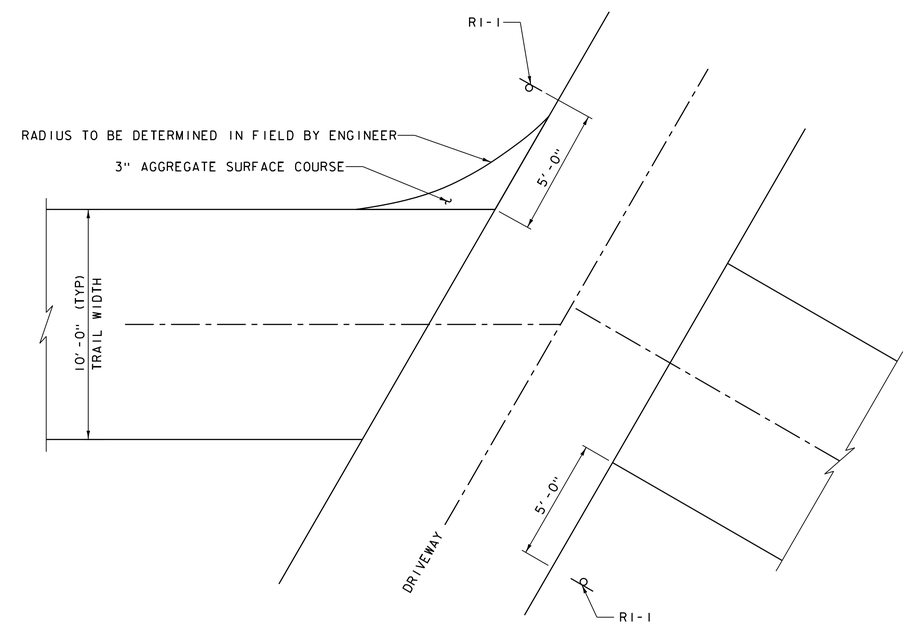


STANDARD ROAD CROSSING SIGNS



ACCESSIBLE GRAVEL ROAD CROSSING

NOT TO SCALE



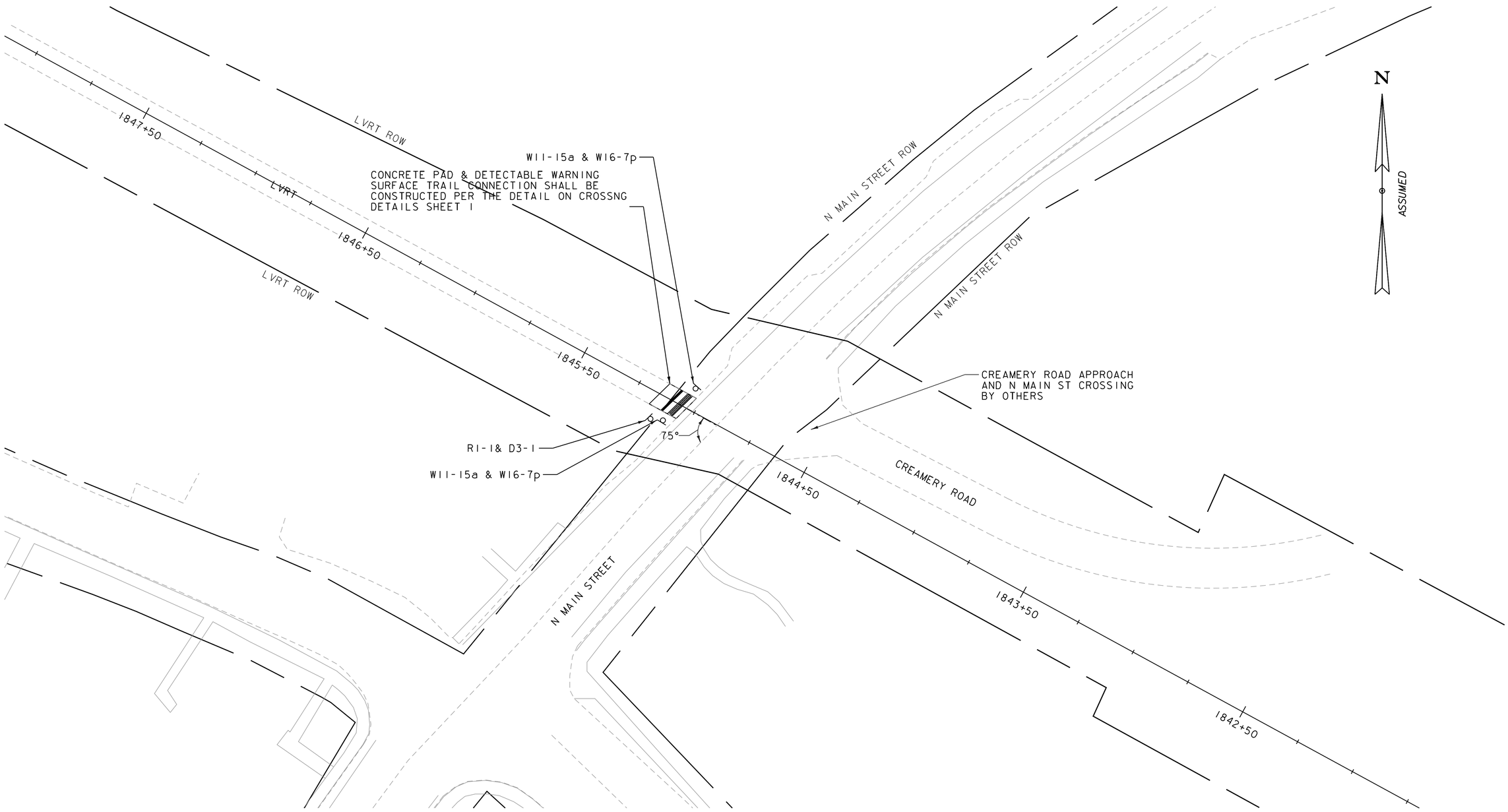
PRIVATE DRIVE CROSSING

NOT TO SCALE

NOTES:

1. THE W11-15a AND W16-9p SIGN ASSEMBLILIES ARE NOT REQUIRED ON ROADWAYS WITH SPEEDS OF 35 MPH OR LOWER.

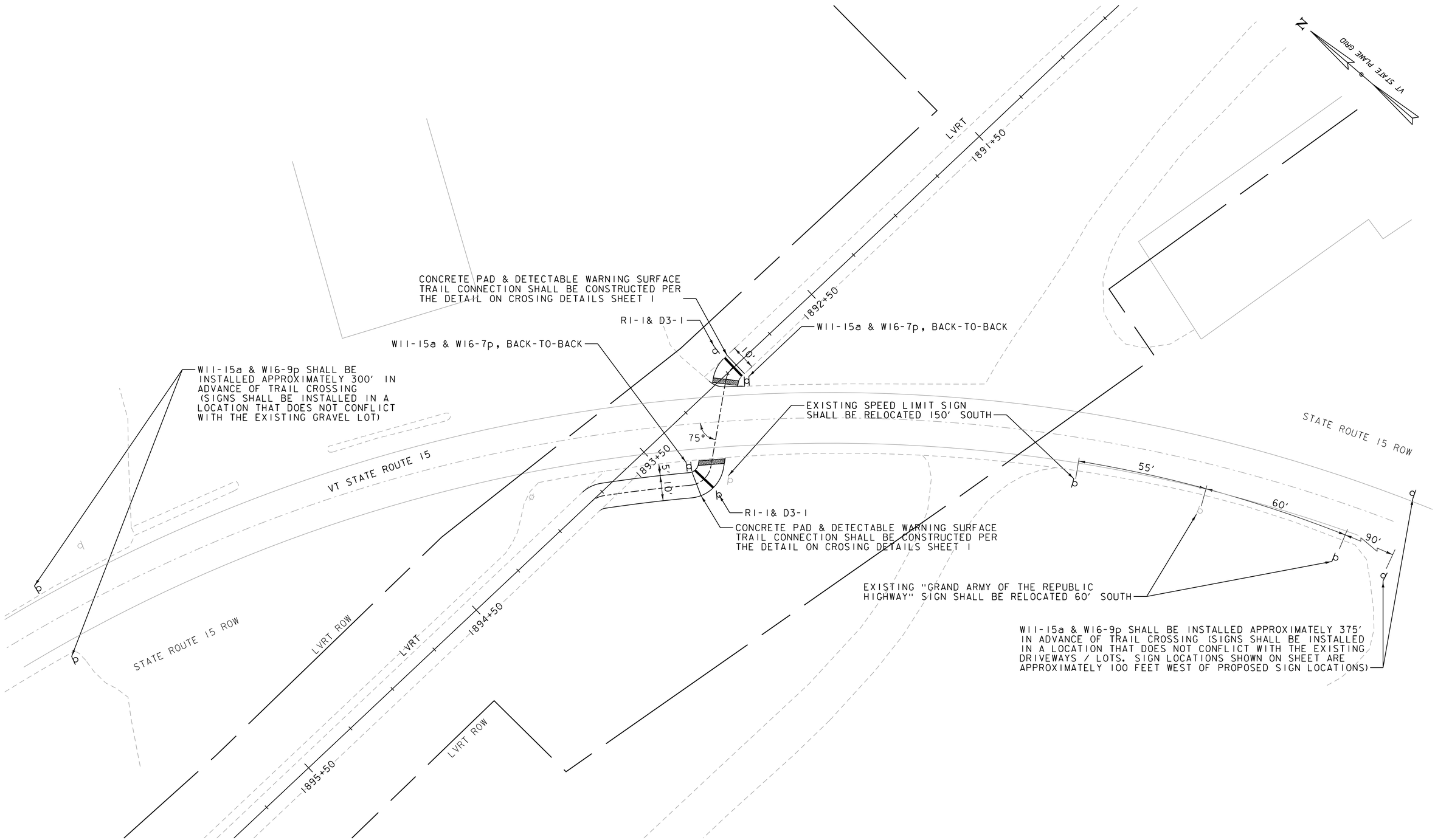
PROJECT NAME: SWANTON - ST. JOHNSBURY	
PROJECT NUMBER: STP LVRT(12)	
FILE NAME: z20f238_crossings.dgn	PLOT DATE: 8/17/2021
PROJECT LEADER: E.P. DETRICK	DRAWN BY: R.M. OBRIEN
DESIGNED BY: R.M. OBRIEN	CHECKED BY: E.P. DETRICK
CROSSING DETAILS SHEET (2 OF 6)	SHEET 89 OF 134



CR 91 - HARDWICK: N MAIN ST

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

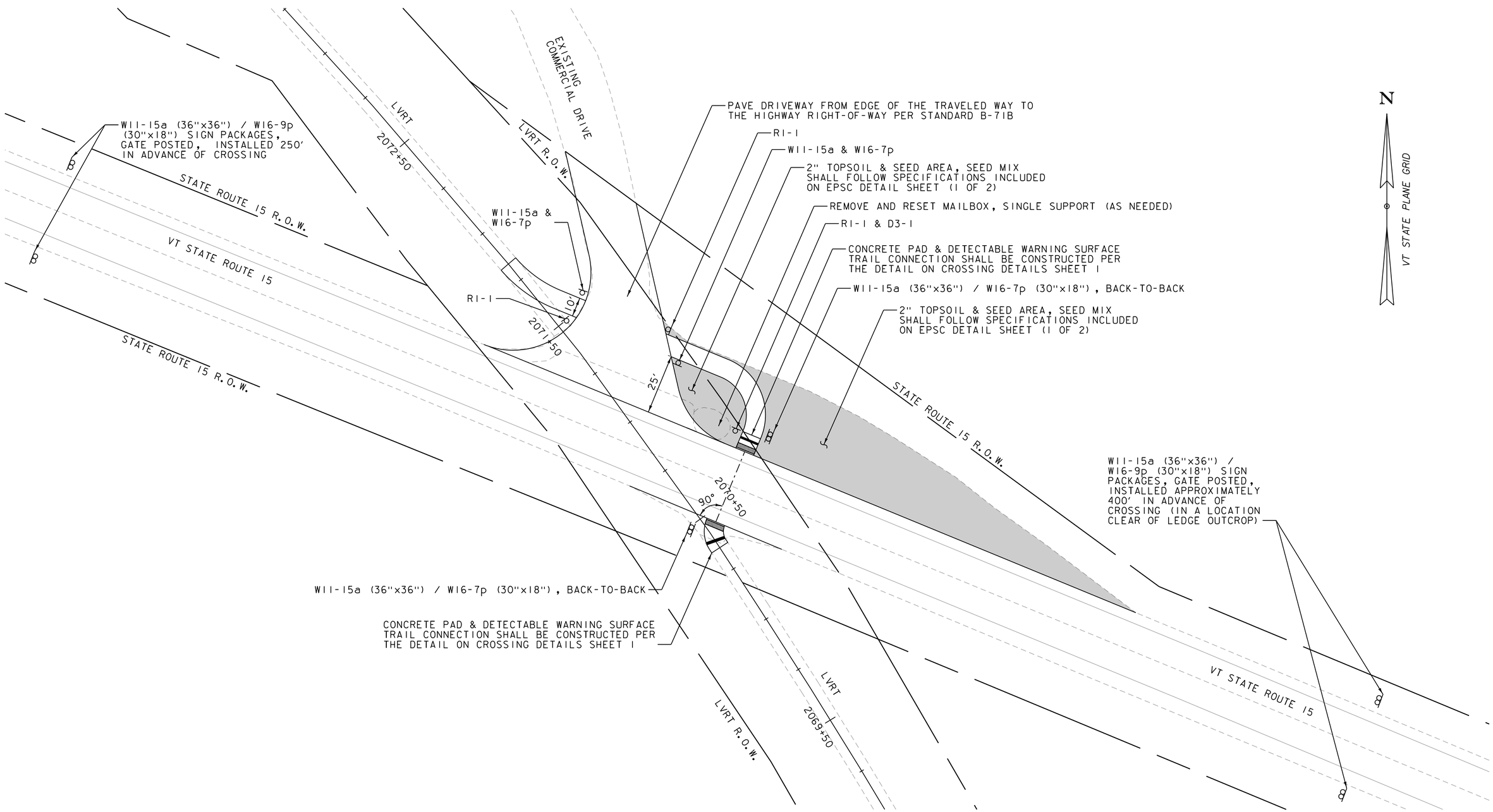
PROJECT NAME: SWANTON - ST. JOHNSBURY	
PROJECT NUMBER: STP LVRT(12)	
FILE NAME: z20f238_bdr_CR91.dgn	PLOT DATE: 8/17/2021
PROJECT LEADER: E.P. DETRICK	DRAWN BY: D.A. GINGRAS
DESIGNED BY: D.A. GINGRAS	CHECKED BY: B.M. ROBERTS
CROSSING DETAILS SHEET (3 OF 6)	SHEET 90 OF 134



CR 93 - HARDWICK: VT 15

NOT TO SCALE

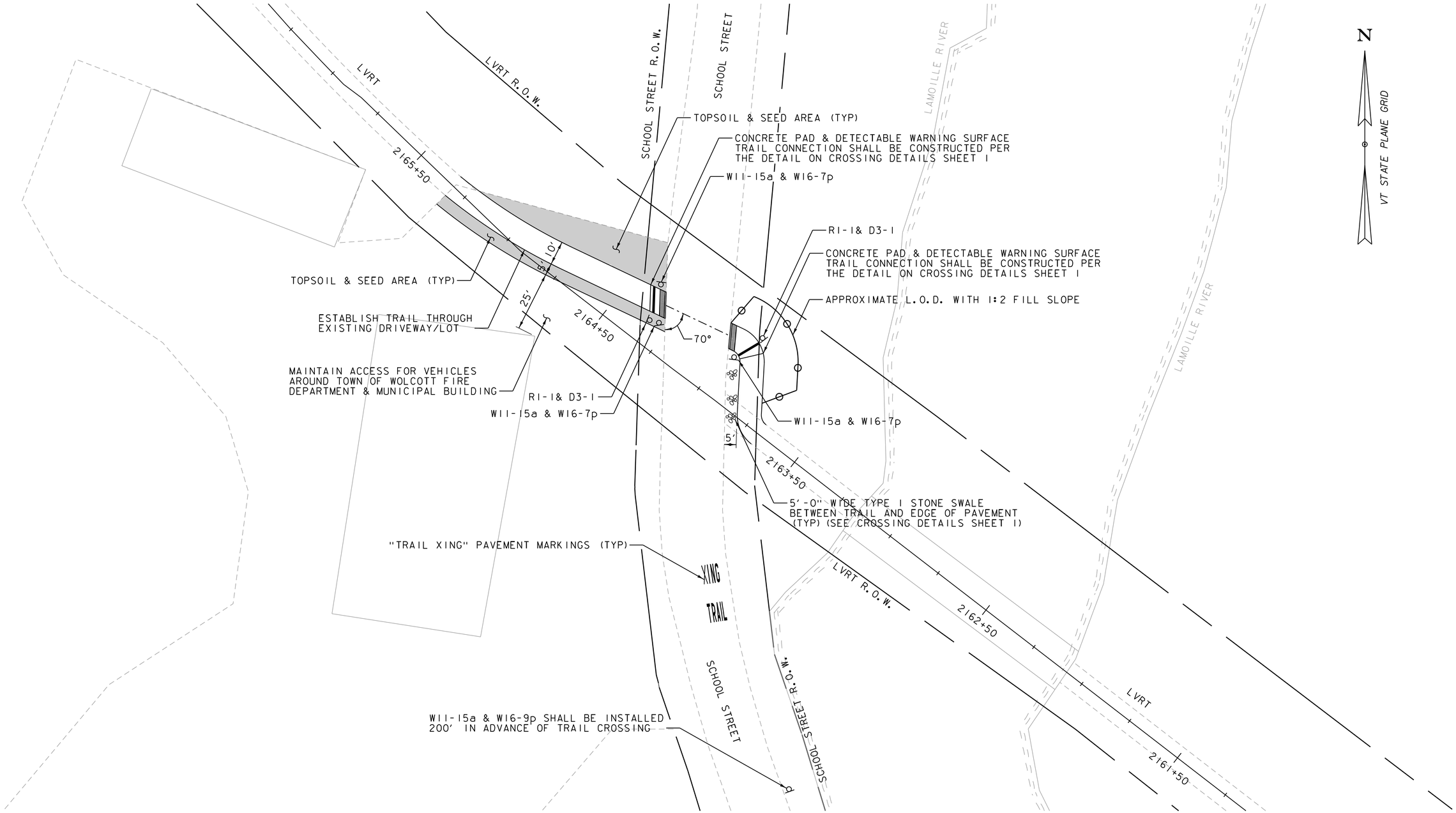
PROJECT NAME: SWANTON - ST. JOHNSBURY	
PROJECT NUMBER: STP LVRT(12)	
FILE NAME: z20f238_bdr_CR93.dgn	PLOT DATE: 8/17/2021
PROJECT LEADER: E.P. DETRICK	DRAWN BY: D.A. GINGRAS
DESIGNED BY: D.A. GINGRAS	CHECKED BY: B.M. ROBERTS
CROSSING DETAILS SHEET (4 OF 6)	SHEET 91 OF 134



CR 102 - WOLCOTT: VT 15

NOT TO SCALE

PROJECT NAME: SWANTON - ST. JOHNSBURY	
PROJECT NUMBER: STP LVRT(12)	
FILE NAME: z05f238_bdr_CR102.dgn	PLOT DATE: 8/17/2021
PROJECT LEADER: E.P. DETRICK	DRAWN BY: D.A. GINGRAS
DESIGNED BY: D.A. GINGRAS	CHECKED BY: B.M. ROBERTS
CROSSING DETAILS (SHEET 5 OF 6)	SHEET 92 OF 134



CR 106 - WOLCOTT: SCHOOL STREET

NOT TO SCALE

PROJECT NAME:	SWANTON - ST. JOHNSBURY
PROJECT NUMBER:	STP LVRT(12)

FILE NAME: z05f238_bdr_CR106.dgn	PLOT DATE: 8/17/2021
PROJECT LEADER: E.P. DETRICK	DRAWN BY: D.A. GINGRAS
DESIGNED BY: D.A. GINGRAS	CHECKED BY: B.M. ROBERTS
CROSSING DETAILS (SHEET 6 OF 6)	SHEET 93 OF 134

vhb

EPSC PLAN NARRATIVE

1. PROJECT DESCRIPTION

THE OVERALL PROJECT INVOLVES REHABILITATION OF THE LAMOILLE VALLEY RAIL TRAIL. THE SPECIFIC WORK INCLUDED IN CONTRACT STP LVRT(12) BEGINS AT THE INTERSECTION OF NORTH MAIN STREET IN HARDWICK AND EXTENDS WESTERLY 12.5 MILES TO VT ROUTE 15A IN MORRISVILLE. WORK TO BE PERFORMED UNDER THIS CONTRACT INCLUDES CONSTRUCTION OF TRAIL SURFACES, CLEARING, DITCHING, INSTALLATION OF CULVERTS, SIGNING, MISCELLANEOUS STRUCTURE REPAIRS AND BRIDGE MODIFICATIONS INCLUDING DECKING AND RAILING INSTALLATION.

IT IS ANTICIPATED THAT CONSTRUCTION WILL LAST TWO CONSTRUCTION SEASONS.

2. AMOUNT OF DISTURBANCE & RISK EVALUATION

TOTAL AREA OF DISTURBANCE AS SHOWN ON THE ATTACHED EPSC PLAN FOR CONTRACT STP LVRT(12) IS APPROXIMATELY **42.9 ACRES**.

IN CONJUNCTION WITH OTHER LVRT CONTRACTS, STP LVRT(12) HAS RECEIVED COVERAGE UNDER AN INDIVIDUAL PERMIT FOR STORMWATER RUNOFF FROM CONSTRUCTION SITES. COMPONENTS OF THE PROJECT MAY BE CONSTRUCTED CONCURRENTLY WITH OTHER LVRT PROJECTS, INCLUDING STP LVRT(10), STP LVRT(11), AND STP LVRT(13).

THE MAXIMUM CONCURRENT EARTH DISTURBANCE FOR THE COMBINED LVRT PROJECTS PERMITTED UNDER THE INDC IS **16.3 ACRES**. THE MAXIMUM CONCURRENT EARTH DISTURBANCE ASSOCIATED WITH STP LVRT(12) IS **4 ACRES**. THE CONTRACTOR MUST COORDINATE WITH THE VTRANS RESIDENT ENGINEER AND DESIGNATED ENVIRONMENTAL SPECIALIST TO ENSURE THAT THIS LIMIT IS NOT EXCEEDED DURING THE COURSE OF THE PROJECT.

ANY MODIFICATIONS TO THE PROJECT THAT INCREASE THE RISK TO ENVIRONMENTAL RESOURCES SHALL BE EVALUATED IN ACCORDANCE WITH THE PERMIT REQUIREMENTS. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY ADDITIONAL PERMITTING.

3. MAJOR COMPONENTS & SEQUENCING

THE CONTRACTOR SHALL SEQUENCE CONSTRUCTION ACTIVITIES TO MINIMIZE THE EXTENT OF DISTURBED SOILS LEFT OPEN TO EROSION AT ANY GIVEN TIME.

DUE TO THE LINEAR NATURE OF THIS PROJECT, IT IS POSSIBLE THAT MULTIPLE PORTIONS OF TRAIL WILL BE UNDER CONSTRUCTION SIMULTANEOUSLY. EACH SITE VARIES IN NECESSARY ACTIVITIES, ALTHOUGH THE GENERAL MAJOR COMPONENTS AND SEQUENCE IS LISTED BELOW, AS NEEDED. THE CONTRACTOR SHALL DETERMINE THE FINAL SEQUENCING USED.

- ESTABLISH PERIMETER CONTROLS AND MARK PROJECT BOUNDARIES AT LOCATIONS WHERE NEEDED OR AS DIRECTED BY THE RESIDENT ENGINEER
- INSTALL SEDIMENT CONTROL MEASURES
- TREE / VEGETATION CLEARING
- CONSTRUCT TEMPORARY ACCESS ROADS AS NEEDED
- DEMOLISH AND REMOVE EXISTING INFRASTRUCTURE AS NEEDED
- CONSTRUCT PROPOSED INFRASTRUCTURE AS NEEDED
- REGRADE / BUILD FINAL TRAIL SURFACE TRAIL
- FINAL STABILIZATION WITH TRAIL MATERIAL, SEED AND RECP OR STONE FILL
- REMOVE SEDIMENT CONTROLS AND PERIMETER CONTROLS UPON ESTABLISHMENT OF FINAL STABILIZATION

4. SITE DESCRIPTION
4.1 VEGETATED BUFFERS

MAINTAINING VEGETATED BUFFERS ALONG STREAM BANKS, WETLANDS OR OTHER SENSITIVE AREAS IS A CRUCIAL EROSION AND SEDIMENT CONTROL MEASURE THAT SHOULD BE IMPLEMENTED WHEREVER POSSIBLE.

THIS PROJECT DOES NOT RELY ON VEGETATED BUFFERS AS A MITIGATING RISK FACTOR.
CULVERT AND BRIDGE REPAIR WORK WILL OCCUR WITHIN OR IMMEDIATELY ADJACENT TO STREAM BANKS. AT SOME LOCATIONS, IN-STREAM WORK IS REQUIRED TO REPLACEMENT THE EXISTING STRUCTURES. WORK WITHIN WETLANDS AND OTHER RESOURCE AREAS HAS BEEN AVOIDED AND MINIMIZED TO THE EXTENT PRACTICABLE.

4.2 STREAM CROSSINGS

THIS PROJECT INCLUDES 42 STREAM CROSSINGS, AS DESCRIBED IN SECTION 5.1 BELOW. WORK WITHIN THE WATER IS BEING AUTHORIZED THROUGH THE VT ANR DEC RIVER MANAGEMENT PROGRAM AND THE US ARMY CORPS OF ENGINEERS.

4.3 WETLANDS

THE LVRT(12) PROJECT INVOLVES 36,000 SF OF WETLAND AND 64,000 SF OF WETLAND BUFFER IMPACTS. THE WORK WITHIN THESE AREAS IS BEING AUTHORIZED THROUGH THE VT ANR WETLANDS OFFICE AND/OR THE US ARMY CORPS OF ENGINEERS.

4.4 TOPOGRAPHY

THE TOPOGRAPHY OF THE OVERALL PROJECT AREA IS GENERALLY SLOPED FROM THE TOP OF THE RAILWAY EMBANKMENT TO THE TOE OF THE SLOPE. IN SOME CASES, THE TOE OF SLOPE IS NEAR THE EDGE OF A STREAM CHANNELS OR ROADWAY CROSSINGS. THE PROJECT IS GENERALLY LOCATED IN RURAL AREAS WITH MINIMAL SURROUNDING DEVELOPMENT.

4.5 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF A MIXTURE OF GRASSES, SHRUBS, AND TREES. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY AFFECTED BY THE PROJECT. UPON COMPLETION, THE DISTURBED VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES AS DESCRIBED IN THE TURF ESTABLISHMENT DETAIL, UNLESS NOTED OTHERWISE. CERTAIN EMBANKMENTS WILL BE REGRADED SUCH THAT FINAL STABILIZATION REQUIRES THE PLACEMENT OF STONE FILL.

4.6 SOILS

ALL SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE. SOILS ON THE PROJECT SITE INCLUDE:

ADAMS LOAMY FINE SAND, 3 TO 8 PERCENT SLOPES, "K FACTOR" = **0.15**
ADAMS LOAMY FINE SAND, 8 TO 15 PERCENT SLOPES, "K FACTOR" = **0.15**
ADAMS LOAMY FINE SAND, 15 TO 25 PERCENT SLOPES, "K FACTOR" = **0.15**
ALLAGASH VERY FINE SANDY LOAM, 2 TO 8 PERCENT SLOPES, "K FACTOR" = **0.32**
BOOTHBAY SILT LOAM, 8 TO 15 PERCENT SLOPES, "K FACTOR" = **0.43**
CABOT SILT LOAM, 0 TO 8 PERCENT SLOPES, VERY STONY, "K FACTOR" = **0.49**
CHARLES SILT LOAM, 0 TO 2 PERCENT SLOPES, FREQUENTLY FLOODED, "K FACTOR" = **0.43**
COLTON-DUXBURY COMPLEX, 15 TO 25 PERCENT SLOPES, "K FACTOR" = **0.16**
COLTON-DUXBURY COMPLEX, 2 TO 8 PERCENT SLOPES, "K FACTOR" = **0.16**
COLTON-DUXBURY COMPLEX, 25 TO 50 PERCENT SLOPES, "K FACTOR" = **0.14**
COLTON-DUXBURY COMPLEX, 3 TO 8 PERCENT SLOPES, "K FACTOR" = **0.28**
COLTON-DUXBURY COMPLEX, 8 TO 15 PERCENT SLOPES, "K FACTOR" = **0.28**
LIMERICK VARIANT SILT LOAM, "K FACTOR" = **0.43**
LYMAN-TUNBRIDGE FINE SANDY LOAMS, VERY ROCKY, 25 TO 60 PERCENT SLOPES, "K FACTOR" = **0.34**
MEDOMAK MUCKY SILT LOAM, 0 TO 2 PERCENT SLOPES, FREQUENTLY FLOODED, "K FACTOR" = **0.43**
MONADNOCK FINE SANDY LOAM, 35 TO 60 PERCENT SLOPES, VERY STONY, "K FACTOR" = **0.37**
ONDAWA FINE SANDY LOAM, "K FACTOR" = **0.32**
PERU FINE SANDY LOAM, 8 TO 15 PERCENT SLOPES, VERY STONY, "K FACTOR" = **0.32**
PERU FINE SANDY LOAM, 35 TO 60 PERCENT SLOPES, VERY STONY, "K FACTOR" = **0.32**
PODUNK FINE SANDY LOAM, "K FACTOR" = **0.24**
PODUNK FINE SANDY LOAM, 0 TO 2 PERCENT SLOPES, OCCASIONALLY FLOODED, "K FACTOR" = **0.24**
RUMNEY FINE SANDY LOAM, "K FACTOR" = **0.32**
SALMON-ADAMANT COMPLEX, 8 TO 15 PERCENT SLOPES, VERY ROCKY, "K FACTOR" = **0.40**
SALMON-ADAMANT COMPLEX, 25 TO 50 PERCENT SLOPES, VERY ROCKY, "K FACTOR" = **0.40**
SCANTIC VARIANT BOULDERY SILT LOAM, 25 TO 50 PERCENT SLOPES, "K FACTOR" = **0.32**
SCANTIC VARIANT BOULDERY SILT LOAM, 8 TO 25 PERCENT SLOPES, "K FACTOR" = **0.32**
TEEL SILT LOAM, "K FACTOR" = **0.37**
TUNBRIDGE-LYMAN COMPLEX, 35 TO 60 PERCENT SLOPES, VERY ROCKY, "K FACTOR" = **0.35**
TUNBRIDGE-LYMAN COMPLEX, 3 TO 8 PERCENT SLOPES, ROCKY, "K FACTOR" = **0.35**
TUNBRIDGE-LYMAN COMPLEX, 8 TO 15 PERCENT SLOPES, ROCKY, "K FACTOR" = **0.35**
TUNBRIDGE-LYMAN COMPLEX, 15 TO 25 PERCENT SLOPES, ROCKY, "K FACTOR" = **0.35**
TUNBRIDGE-MONADNOCK COMPLEX, 35 TO 60 PERCENT SLOPES, VERY STONY, "K FACTOR" = **0.26**
URBAN LAND-ADAMS-NICHOLVILLE COMPLEX, 0 TO 8 PERCENT SLOPES, "K FACTOR" = **0.00**
URBAN LAND-ADAMS-NICHOLVILLE COMPLEX, 8 TO 15 PERCENT SLOPES, "K FACTOR" = **0.00**
WALPOLE FINE SANDY LOAM, 0 TO 6 PERCENT SLOPES, "K FACTOR" = **0.24**

NOTE: K-VALUES GENERALLY INDICATE THE FOLLOWING:
0.0-0.23 = LOW EROSION POTENTIAL
0.24-0.36 = MODERATE EROSION POTENTIAL
0.37 AND HIGHER = HIGH EROSION POTENTIAL

4.7 OTHER SENSITIVE RESOURCES

NO ADDITIONAL SENSITIVE RESOURCE AREAS ARE ANTICIPATED TO BE IMPACTED BY THE PROJECT.

5. DRAINAGE
5.1 RECEIVING WATERS

THIS PROJECT INVOLVES IMPROVEMENTS AT EXISTING OR REPLACEMENT STRUCTURES (CULVERT OR BRIDGE) AT 42 EPHEMERAL, INTERMITTENT, AND PERENNIAL STREAM CROSSINGS. IMPROVEMENTS AT BRIDGE 48 (LAMOILLE RIVER) HAS BEEN PREVIOUSLY AUTHORIZED AS PART OF PROJECT STP LVRT(10).

MAJOR RECEIVING WATERS FOR THE PROJECT INCLUDE KATE BROOK, CURRIER BROOK, WILD BRANCH, ELMORE POND BROOK, AND THE LAMOILLE RIVER (AND VARIOUS TRIBUTARIES TO IT).

5.2 DISCHARGE POINTS

DUE TO THE NATURE OF THE PROJECT AREA, THERE ARE NO DISCRETE DISCHARGE POINTS ASSOCIATED WITH THE TRAIL WORK ON THIS PROJECT. RUNOFF FROM THE PROJECT AREA WILL DRAIN OFF THE TRAIL EMBANKMENT TOWARD THE CLOSEST RECEIVING WATER, MAY ENTER THE RECEIVING WATERS IN MULTIPLE LOCATIONS.

5.3 CONVEYANCE/FLOW PATH FROM PROJECT TO WATERS

THE MAJORITY OF THE PROJECT IS NOT CURBED AND RUNOFF DRAINS OVERLAND ACROSS ADJACENT VEGETATED SIDE SLOPES BEFORE REACHING THE RECEIVING WATER. DUE TO THE NATURE OF THE PROJECT, IN-STREAM WORK WILL BE REQUIRED AT SOME SITES, THEREFORE WILL HAVE A LIMITED VEGETATED DISCONNECTION AREA. EROSION PREVENTION AND SEDIMENT CONTROL MEASURES WILL LIMIT SEDIMENT DISCHARGE AT THESE LOCATIONS.

6. EROSION PREVENTION AND SEDIMENT CONTROL MEASURES

THE MEASURES INCLUDED IN THIS PLAN ARE PROVIDED AS A GUIDELINE FOR PREVENTING EROSION AND CONTROLLING SEDIMENT TRANSPORT. IT IS EXPECTED THAT THE CONTRACTOR MAY USE THIS PLAN, WITH ADJUSTMENTS AS NECESSARY, BASED ON THEIR SPECIFIC MEANS AND METHODS OF CONSTRUCTION.

APPLYING THESE MEASURES THROUGHOUT CONSTRUCTION IS CRITICAL TO THEIR SUCCESS IN MINIMIZING SEDIMENT TRANSPORT TO THE RECEIVING WATERS. REFER TO THE DETAILS INCLUDED IN THESE PLANS AND THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION'S VERMONT STANDARDS AND SPECIFICATIONS FOR EROSION PREVENTION AND SEDIMENT CONTROL FOR SPECIFIC GUIDANCE.

6.1 IDENTIFY LIMITS OF DISTURBANCE

SITE BOUNDARIES AND AREAS CONSTRUCTION EQUIPMENT CAN ACCESS SHALL BE DELINEATED.

PROJECT DEMARCATION FENCING (PDF) SHALL BE USED TO PHYSICALLY MARK SITE BOUNDARIES. BARRIER FENCE SHALL BE USED INSTEAD OF PROJECT DEMARCATION FENCE WITHIN 100 FEET OF A WATER RESOURCE (STREAM, BROOK, LAKE, POND, WETLAND, ETC.).

DUE TO THE LINEAR NATURE OF THE PROJECT, PDF IS NOT REQUIRED ALONG THE ENTIRE LENGTH OF THE PROJECT. AREAS WHERE PDF IS REQUIRED INCLUDES SITES WHERE BRIDGE AND CULVERT REPLACEMENT OR REPAIRS ARE BEING MADE, PAUSE PLACES ARE BEING CONSTRUCTED, OR OTHER ACTIVITIES ARE OCCURRING BEYOND THE EXISTING TRAIL BED TOE OF SLOPE.

6.2 LIMIT CONCURRENT DISTURBANCE

LIMITING THE AMOUNT OF SOIL EXPOSED AT ONE TIME REDUCES THE POTENTIAL EROSION ON SITE. CONCURRENT EARTH DISTURBANCE CAN BE MINIMIZED THROUGH CONSTRUCTION PHASING BY ONLY OPENING UP EARTH AS NECESSARY AND EMPLOYING STABILIZATION PRACTICES IN INCREMENTAL STAGES AS PHASES CHANGE.

6.3 STABILIZE DISTURBED AREAS
6.3.1 ACCESS POINTS/ENTRANCE/EXITS

TRACKING OF SEDIMENT ONTO PUBLIC HIGHWAYS SHALL BE MINIMIZED TO REDUCE THE POTENTIAL FOR RUNOFF ENTERING RECEIVING WATERS. INSTALLATION SHALL COINCIDE WITH THE CONTRACTORS PROGRESS SCHEDULE.

6.3.2 TEMPORARY MEASURES FOR EXPOSED AREAS DURING CONSTRUCTION

ALL AREAS OF EARTH DISTURBANCE MUST HAVE STABILIZATION IN PLACE WITHIN 14 DAYS OF INITIAL DISTURBANCE. AFTER THIS TIME, DISTURBED AREAS MUST BE STABILIZED IN ADVANCE OF ANY RUNOFF PRODUCING EVENT.

6.3.3 PERMANENT STABILIZATION AT FINAL GRADE

EXPOSED SOIL MUST BE STABILIZED WITHIN 48 HOURS OF REACHING FINAL GRADE.

SEED, MULCH, FERTILIZER AND LIME SHALL BE USED TO ESTABLISH PERMANENT VEGETATION. FOR SLOPES STEEPER THAN 1:3, ROLLED EROSION CONTROL PRODUCT, TYPE I SHALL BE USED INSTEAD OF MULCH. FOR SLOPES STEEPER THAN 1:2, FINAL STABILIZATION WITH STONE RIPRAP IS PROPOSED.
STONE ARMORING OF STREAM EMBANKMENTS ARE PROPOSED TO BE STABILIZED WITH THE APPROPRIATELY SIZED STONE BASED ON HYDRAULIC MODELING, AS SHOWN IN THE PLANS.

6.4 DIVERT UPLAND RUNOFF

DIVERSIONARY MEASURES SHALL BE USED TO INTERCEPT RUNOFF FROM ABOVE THE CONSTRUCTION AND DIRECT IT AROUND THE DISTURBED AREA SO THAT CLEAN WATER DOES NOT BECOME MUDDIED WHILE TRAVELING OVER EXPOSED SOILS ON THE CONSTRUCTION SITE.

RUNOFF FROM UPGRADIENT AREAS MAY NEED TO BE DIVERTED AWAY FROM THE PROJECT AREA. THE CONTRACTOR SHALL REFER TO THE LOW RISK HANDBOOK FOR GUIDANCE.

6.5 INSTALL SEDIMENT BARRIERS

SEDIMENT BARRIERS (E.G. SILT FENCE AND EROSION LOGS) SHALL BE UTILIZED TO INTERCEPT RUNOFF AND ALLOW SUSPENDED SEDIMENT TO SETTLE OUT. THEY SHALL BE INSTALLED ON THE DOWNHILL SIDE OF CONSTRUCTION ACTIVITIES, PRIOR TO ANY UP-SLOPE WORK.

DUE TO THE LINEAR NATURE OF THE PROJECT AND THE VEGETATED CONDITION OF THE EXISTING EMBANKMENT, SEDIMENT BARRIERS ARE NOT REQUIRED ALONG THE ENTIRE LENGTH OF THE PROJECT. AREAS WHERE SEDIMENT BARRIERS ARE REQUIRED INCLUDE SITES WHERE BRIDGE AND CULVERT REPLACEMENT OR REPAIRS ARE BEING MADE, PAUSE PLACES ARE BEING CONSTRUCTED, OR OTHER ACTIVITIES ARE OCCURRING THAT DISTURB EMBANKMENT SIDE SLOPES AND COULD POTENTIALLY RESULT IN SEDIMENT BEING DISCHARGED.

WHERE REQUIRED, SEDIMENT BARRIERS WILL BE INSTALLED ALONG THE CONTOUR AND AS PROPOSED ON THE EPSC PLAN. WOVEN WIRE REINFORCED SILT FENCE SHALL BE USED INSTEAD OF SILT FENCE WITHIN 100 FEET UPSLOPE OF WETLANDS AND RECEIVING WATERS. ADDITIONAL SEDIMENT BARRIERS ARE TO BE DEPLOYED AS NECESSARY DURING CONSTRUCTION TO MINIMIZE SEDIMENT DISCHARGE OR AS DIRECTED BY THE RESIDENT ENGINEER.

6.6 SLOW DOWN CHANNELIZED RUNOFF

CHECK STRUCTURES SHALL BE UTILIZED TO REDUCE THE VELOCITY, AND THUS THE EROSIVE POTENTIAL, OF CONCENTRATED FLOW IN CHANNELS.

TEMPORARY STONE CHECK DAMS MAY BE REQUIRED IN CONJUNCTION WITH WATER CONTROL AT CULVERT REPAIR AND REPLACEMENT SITES.

7. CONSTRUCT PERMANENT CONTROLS

PERMANENT STORMWATER TREATMENT DEVICES SHALL BE INSTALLED AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH PERMIT CONDITIONS.

PERMANENT STORMWATER TREATMENT DEVICES ARE NOT ANTICIPATED TO BE NEEDED OR DESIGNED.

8. DEWATERING

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. DEWATERED STORMWATER OR GROUNDWATER MUST BE FILTERED AND ROUTED IN A MANNER THAT DOES NOT RESULT IN VISIBLY TURBID DISCHARGES TO WATERS.

DEWATERING OF SURFACE WATER WITHIN A COFFERDAM IS ANTICIPATED DURING THE REPAIR OR REPLACEMENT OF STRUCTURES ADJACENT TO WETLANDS AND WATERWAYS. THE FILTER BAG DETAIL AND PAY ITEM HAVE BEEN INCLUDED AS A POTENTIAL TREATMENT MEASURE FOR THIS PURPOSE, HOWEVER THE SPECIFIC MEANS FOR TREATMENT OF DISCHARGE SHALL BE PROVIDED BY THE CONTRACTOR. ALL COSTS FOR TREATMENT OF DISCHARGE SHALL BE PAID FOR UNDER CONTRACT ITEM 900.645, “SPECIAL PROVISION (EROSION CONTROL, ALL INCLUSIVE)”.

9. OFF-SITE AREAS

OFF-SITE WASTE AND BORROW AREAS HAVE NOT BEEN IDENTIFIED FOR THIS PROJECT. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PERMIT, AS NECESSARY, ANY OFF-SITE AREAS THAT ARE NEEDED IN ACCORDANCE WITH STANDARD SPECIFICATIONS 105.25 – 105.28. ALL EROSION PREVENTION AND SEDIMENT CONTROL MEASURES NECESSARY FOR WASTE, BORROW, AND STAGING AREAS OUTSIDE THE PROJECT LIMITS SHALL BE PAID FOR PER 105.29 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.

VEHICLE AND EQUIPMENT STORAGE AREAS OR AREAS ADJACENT TO CONSTRUCTION TRAILERS OR OTHER HIGH TRAFFIC AREAS SHALL BE COVERED WITH GEOTEXTILE FABRIC AND 12” OF GRAVEL. FOLLOWING COMPLETION OF CONSTRUCTION, ALL NON-NATIVE MATERIALS SHALL BE REMOVED FROM THE STAGING AREA. COMPACTED, RUTTED, OR OTHERWISE DISTURBED SOILS SHALL BE TILLED, RAKED, SEEDED AND MULCHED.

ERODIBLE MATERIALS STOCKPILED WITHIN THE MATERIAL STORAGE AREAS SHALL BE ISOLATED WITH SILT FENCE OR OTHER ACCEPTABLE SEDIMENT BARRIER. SOIL STOCKPILED ON THE SITE SHALL BE SEEDED AND MULCHED.

10. WINTER CONSTRUCTION

CONSTRUCTION ACTIVITIES MAY CONTINUE INTO THE WINTER CONSTRUCTION SEASON, DEPENDING ON ACTUAL FIELD AND WEATHER CONDITIONS. IF ACTIVITIES ARE ON-GOING BETWEEN OCTOBER 15 AND APRIL 15, THE CONTRACTOR SHALL FOLLOW REQUIREMENTS FOR WINTER CONSTRUCTION, AS DEFINED IN SPECIFIC PERMIT CONDITIONS AND AS FOLLOWS:

- ENLARGED ACCESS POINTS, STABILIZED TO PROVIDE FOR SNOW STOCKPILING.
- LIMITS OF DISTURBANCE MOVED OR REPLACED TO REFLECT BOUNDARY OF WINTER WORK.
- DEVELOPMENT OF A SNOW MANAGEMENT PLAN THAT INCLUDES:
  - ADEQUATE STORAGE AND CONTROL OF MELT-WATER
  - STORAGE OF CLEARED SNOW TO BE PLACED DOWN SLOPE OF DISTURBED AREAS AND OUT OF STORMWATER TREATMENT STRUCTURES
- AREAS OF DISTURBANCE WITHIN 100 FT OF A WATERBODY MUST HAVE REINFORCED (WOVEN WIRE) SILT FENCE INSTALLED ACROSS THE SLOPE, DOWNGRADIENT OF THE EARTH DISTURBANCE. ALTERNATIVELY, REGULAR, NON-WOVEN WIRE SILT FENCE MAY BE USED IF COMBINED WITH EROSION CONTROL BERM, EROSION LOG, OR STRAW WATTLE.
- DRAINAGE STRUCTURES MUST BE KEPT OPEN AND FREE OF SNOW AND ICE DAMS.
- SILT FENCE AND OTHER PRACTICES REQUIRING EARTH DISTURBANCE MUST BE INSTALLED AHEAD OF FROZEN GROUND.
- MULCH TO BE APPLIED AT A MINIMUM OF 2 INCHES DEPTH WITH 80-90% COVERAGE.
- AREAS OF DISTURBED SOILS MUST BE STABILIZED PRIOR TO ANY RUNOFF-PRODUCING EVENT, WITH THE FOLLOWING EXCEPTION:
  - STABILIZATION IS NOT REQUIRED IF THE WORK IS OCCURRING IN A SELF-CONTAINED EXCAVATION WITH NO OUTLET AND A DEPTH OF 2 FT OR GREATER (OPEN UTILITY TRENCHES), PROVIDED THAT ANY DEWATERING, IF NECESSARY, IS CONDUCTED AS REQUIRED.
- PRIOR TO STABILIZATION, SNOW OR ICE MUST BE REMOVED TO LESS THAN 1" THICKNESS.
- USE STONE TO STABILIZE AREAS WHERE CONSTRUCTION VEHICLE TRAFFIC IS ANTICIPATED.

11. INSPECTION & MAINTENANCE

INSPECTION AND MONITORING OF THE PROJECT’S EPSC MEASURES SHALL BE CONDUCTED IN ACCORDANCE WITH STANDARD SPECIFICATION 653.04 MONITORING EROSION PREVENTION AND SEDIMENT CONTROL PLAN, ALONG WITH PERMIT SPECIFIC INSPECTION REQUIREMENTS.

THE CONTRACTOR SHALL PROVIDE A COPY OF THEIR INSPECTION FORM AS PART OF THEIR EPSC PLAN.

ALL EPSC MEASURES SHALL BE REGULARLY MAINTAINED AND SHALL BE CHECKED FOR SEDIMENT BUILD-UP. SEDIMENT SHALL BE DISPOSED OF AT AN APPROVED SITE WHERE IT WILL NOT BE SUBJECT TO EROSION.