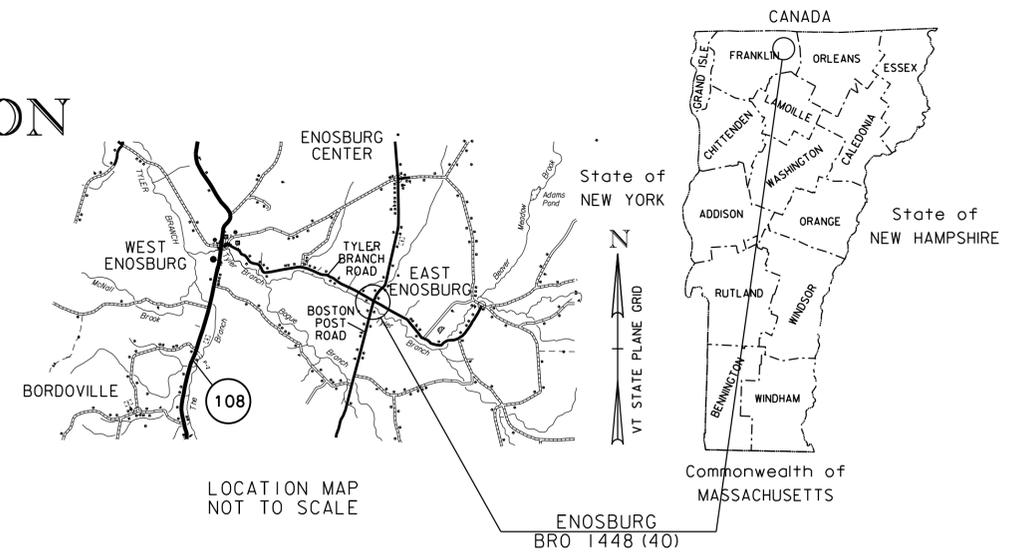


STATE OF VERMONT AGENCY OF TRANSPORTATION



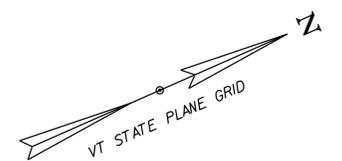
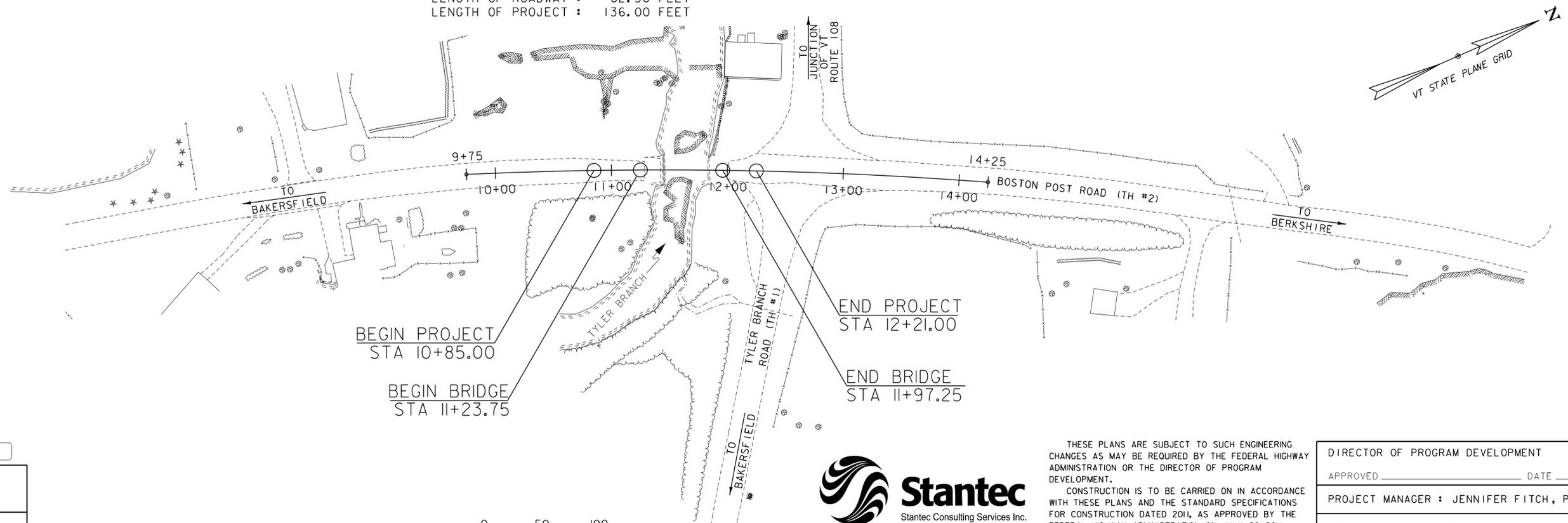
PROPOSED IMPROVEMENT BRIDGE PROJECT TOWN OF ENOSBURG COUNTY OF FRANKLIN BOSTON POST ROAD T.H.2 CLASS 2 BRIDGE NO: 48



PROJECT LOCATION : ON BOSTON POST ROAD (CLASS II TOWN HIGHWAY (TH #2) , LOCAL ROAD)
APPROXIMATELY 100' SOUTH OF THE INTERSECTION WITH TYLER BRANCH ROAD (TH #1)

PROJECT DESCRIPTION : THE PROJECT SHALL CONSIST OF THE REPLACEMENT OF
THE EXISTING BRIDGE ALONG WITH RELATED CHANNEL
AND APPROACH WORK.

LENGTH OF STRUCTURE : 73.50 FEET
LENGTH OF ROADWAY : 62.50 FEET
LENGTH OF PROJECT : 136.00 FEET



QUALITY ASSURANCE PROGRAM: LEVEL 2

SURVEYED BY : VTrans
SURVEYED DATE : 04/12/2012

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 1983 (2007)



THESE PLANS ARE SUBJECT TO SUCH ENGINEERING CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY ADMINISTRATION OR THE DIRECTOR OF PROGRAM DEVELOPMENT.
CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JULY 20, 2011 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

DIRECTOR OF PROGRAM DEVELOPMENT	
APPROVED _____	DATE _____
PROJECT MANAGER : JENNIFER FITCH, PE	
PROJECT NAME : ENOSBURG	
PROJECT NUMBER : BRO 1448 (40)	
SHEET 1 OF 46 SHEETS	

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8	CONVENTIONAL SYMBOLOLOGY LEGEND
9	TIE SHEET - TIE 1
10	PLAN LAYOUT - LP1
11	INTERSECTION GRADING PLAN - IGP 1
12	PROFILE SHEET - RP 1
13	TRAFFIC CONTROL SHEET - TCP 1
14	TRAFFIC SIGNS AND LINES LAYOUT - TSL 1
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STANDARDS LIST

E-121	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD	08-08-1995
E-134	BRIDGE NUMBER PLAQUE	08-08-1995
E-143	REGULATORY SIGN DETAILS	06-15-2004
E-155	WARNING SIGN DETAILS	05-01-2004
E-193	PAVEMENT MARKING DETAILS	08-18-1995
G-1B	BOX BEAM GUARD RAIL	06-01-1994
F-1	WOVEN WIRE FENCE WITH WOOD POSTS	06-01-1994
S-364A	BRIDGE RAILING, GALVANIZED 3 RAIL BOX BEAM	04-23-2012
S-364B	GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM	04-23-2012
S-364C	GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM	04-23-2012
S-364D	GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM	04-23-2012
T-10	CONVENTIONAL ROADS CONSTRUCTION APPROACH SIGNING	08-06-2012
T-35	CONSTRUCTION ZONE LONGITUDINAL DROP-OFFS	08-06-2012
T-36	CONSTRUCTION ZONE LONGITUDINAL DROP-OFFS FOR PAVING	08-06-2012
T-45	SQUARE TUBE SIGN POST AND ANCHOR	08-06-2012

STRUCTURE DETAIL SHEETS

SD-516.10	BRIDGE JOINT ASPHALTIC PLUG	08-29-2011
SD-502.00	CONCRETE DETAILS AND NOTES	10-10-2012

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA Date: September 2013
 DRAINAGE AREA : 17.9 sq. mi.
 CHARACTER OF TERRAIN : Hilly, mixture of meadow and woods, rural
 STREAM CHARACTERISTICS : Sinuous and incised
 NATURE OF STREAMBED : Alluvial, sand and gravel

PEAK FLOW DATA

Q 2.33 =	1000 cfs	Q 50 =	2700 cfs
Q 10 =	1600 cfs	Q 100 =	3200 cfs
Q 25 =	2200 cfs	Q 500 =	4100 cfs

DATE OF FLOOD OF RECORD : Unknown
 ESTIMATED DISCHARGE : Unknown
 WATER SURFACE ELEV. : Unknown
 NATURAL STREAM VELOCITY : @ Q25= 10.4 fps
 ICE CONDITIONS : Moderate
 DEBRIS : Moderate
 DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? No
 IS ORDINARY RISE RAPID? No
 IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? No
 IF YES, DESCRIBE:

WATERSHED STORAGE: <1% HEADWATERS:
 UNIFORM: X
 IMMEDIATELY ABOVE SITE:

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Bailey Bridge
 YEAR BUILT: 1924, Bailey bridge installed between 2004 and 2006
 CLEAR SPAN(NORMAL TO STREAM): 41'
 VERTICAL CLEARANCE ABOVE STREAMBED: ~12.5'
 WATERWAY OF FULL OPENING: 425 sq. ft.
 DISPOSITION OF STRUCTURE: Replace
 TYPE OF MATERIAL UNDER SUBSTRUCTURE: See borings

WATER SURFACE ELEVATIONS AT:

Q2.33 =	549.1'	VELOCITY =	5.5 fps
Q10 =	550.8'	"	6.9 fps
Q25 =	552.3'	"	7.8 fps
Q50 =	553.4'	"	8.6 fps
Q100 =	553.7'	"	10.6 fps

LONG TERM STREAMBED CHANGES: None noted

IS THE ROADWAY OVERTOPPED BELOW Q100: No
 FREQUENCY: N/A
 RELIEF ELEVATION: 557.0'
 DISCHARGE OVER ROAD @Q100: N/A

UPSTREAM STRUCTURE

TOWN: Enosburg DISTANCE: 19,000'
 HIGHWAY #: TH 4 STRUCTURE #: 50
 CLEAR SPAN: 72' CLEAR HEIGHT:
 YEAR BUILT: 1918, reconstructed 1975 FULL WATERWAY:
 STRUCTURE TYPE: Rolled Beam

DOWNSTREAM STRUCTURE

TOWN: Enosburg DISTANCE: 18,900'
 HIGHWAY #: VT 108 STRUCTURE #: 48
 CLEAR SPAN: 74' CLEAR HEIGHT:
 YEAR BUILT: 1998 FULL WATERWAY:
 STRUCTURE TYPE: Welded Plate Girder

LRFR LOAD RATING FACTORS

LOADING LEVELS	TRUCK						
	H-20	HL-93	3S2	6 AXLE	3A, STR.	4A, STR.	5A, SEM
TONNAGE	20	36	36	66	30	34.5	38
INVENTORY	1.78	1.09					
POSTING							
OPERATING	2.81	1.41	1.48	0.98	1.25	1.13	1.24
COMMENTS:							

* REFER TO MICROPILE FOUNDATION NOTES ON SHEET 5

AS BUILT "REBAR" DETAIL

LEVEL I	LEVEL II	LEVEL III
TYPE:	TYPE:	TYPE:
GRADE:	GRADE:	GRADE:

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT	ESAL
2015	690	100	56	5.8	45	20 year ESAL for flexible pavement from 2015 to 2035 : 200000
2035	740	110	56	6.9	55	40 year ESAL for flexible pavement from 2015 to 2055 : 433000
Design Speed : 50 mph						

PROPOSED STRUCTURE

STRUCTURE TYPE: NEXT Beam Bridge
 CLEAR SPAN(NORMAL TO STREAM): 65'
 VERTICAL CLEARANCE ABOVE STREAMBED: ~12'
 WATERWAY OF FULL OPENING: 590 sq. ft.

WATER SURFACE ELEVATIONS AT:

Q2.33 =	549.0'	VELOCITY=	5.4 fps
Q10 =	550.6'	"	6.7 fps
Q25 =	552.1'	"	7.5 fps
Q50 =	553.0'	"	8.2 fps
Q100 =	553.2'	"	10.9 fps

IS THE ROADWAY OVERTOPPED BELOW Q100: No
 FREQUENCY: N/A
 RELIEF ELEVATION: 557.0'
 DISCHARGE OVER ROAD @Q100: N/A

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 555.9'
 VERTICAL CLEARANCE: @ Q25 = 3.8'

SCOUR: 4' up to Q500

REQUIRED CHANNEL PROTECTION: Stone Fill, Type III

PERMIT INFORMATION

AVERAGE DAILY FLOW: 35 cfs DEPTH OR ELEVATION:
 ORDINARY LOW WATER: 20 cfs ~545.0'
 ORDINARY HIGH WATER: 430 cfs ~547.3'

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: None required
 CLEAR SPAN (NORMAL TO STREAM):
 VERTICAL CLEARANCE ABOVE STREAMBED:
 WATERWAY AREA OF FULL OPENING:

ADDITIONAL INFORMATION

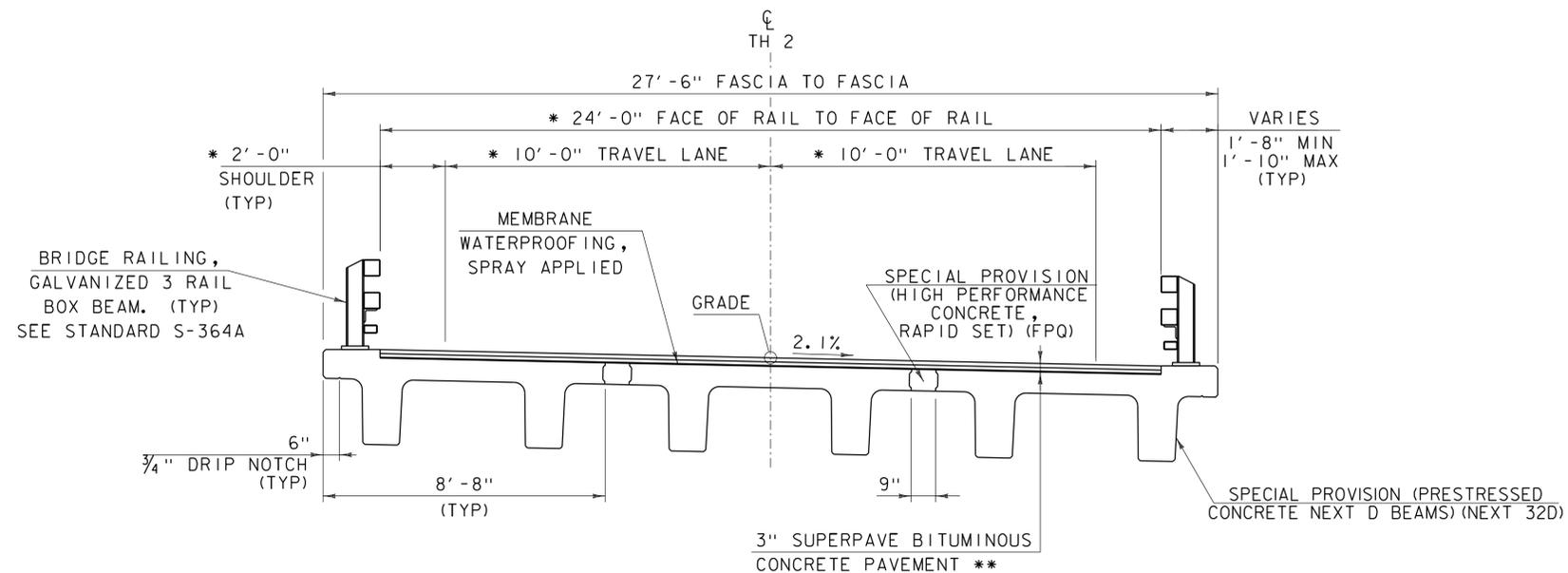
TRAFFIC MAINTENANCE NOTES

1. MAINTAIN TRAFFIC ON AN OFF SITE DETOUR.
2. TRAFFIC SIGNALS ARE NOT NECESSARY.
3. SIDEWALKS ARE NOT NECESSARY

DESIGN VALUES

1. DESIGN LIVE LOAD	HL-93
2. FUTURE PAVEMENT	---
3. DESIGN SPAN	L: 69.00 FT F
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ: ---
5. PRESTRESSING STRAND (0.60 INCH DIAMETER - LOW RELAX)	f _y : 270 KSI
6. PRESTRESSED CONCRETE STRENGTH	f' _c : 8.0 KSI
7. PRESTRESSED CONCRETE RELEASE STRENGTH	f' _{ci} : 6.0 KSI
8. CONCRETE, HIGH PERFORMANCE CLASS AA	f' _c :
9. CONCRETE, HIGH PERFORMANCE CLASS A	f' _c :
10. CONCRETE, HIGH PERFORMANCE CLASS B	f' _c :
11. CONCRETE, CLASS C	f' _c :
12. REINFORCING STEEL	f _y :
13. STRUCTURAL STEEL AASHTO M270	f _y : ---
14. SOIL UNIT WEIGHT	γ: 0.140 KCF
15. NOMINAL BEARING RESISTANCE OF SOIL	q _n : 4.0 KSF
16. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	φ: ---
17. NOMINAL BEARING RESISTANCE OF ROCK	q _n : 10.0 KSF
18. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	φ:
19. NOMINAL AXIAL PILE RESISTANCE	q _p :
20. PILE YIELD STRENGTH ASTM A572	f _y :
21. PILE SIZE	
22. EST. PILE LENGTH	L _p : *
23. PILE RESISTANCE FACTOR	φ:
24. LATERAL PILE DEFLECTION	Δ:
25. BASIC WIND SPEED	V _{3s} :
26. MINIMUM GROUND SNOW LOAD	pg:
27. SEISMIC DATA	PGA: --- S _s : S ₁ :

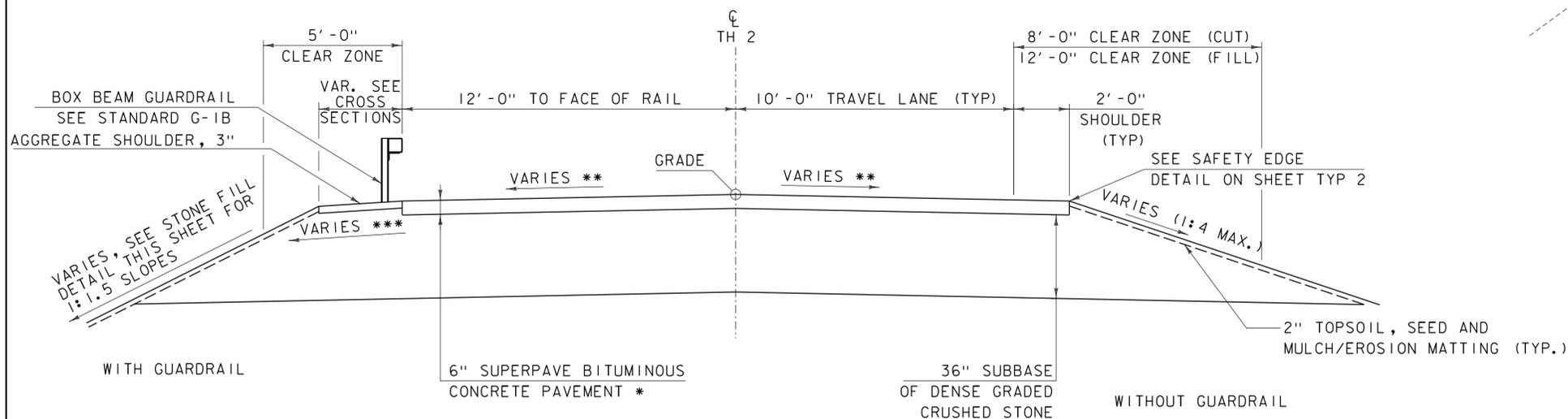
PROJECT NAME:
 PROJECT NUMBER: z12j168_pi.xls
 FILE NAME: z12j168_pi.xls PLOT DATE: 10/1/2013
 PROJECT LEADER: G. BOGUE DRAWN BY: L. BUXTON
 DESIGNED BY: G. BOGUE CHECKED BY: T. KNIGHT
 PRELIMINARY INFORMATION SHEET 1 SHEET 2 OF 46



* RADIAL DIMENSIONS
 ** 3" TYPE IVS (TWO 1 1/2" LIFTS)

BRIDGE TYPICAL SECTION

SCALE 3/8" = 1'-0"



* 3" TYPE IVS (TWO 1 1/2" LIFTS) OVER
 3" TYPE IIS (ONE LIFT)

** SEE BANKING DIAGRAM ON SHEET RP 1 AND CROSS-SECTIONS FOR ROADWAY CROSS SLOPES

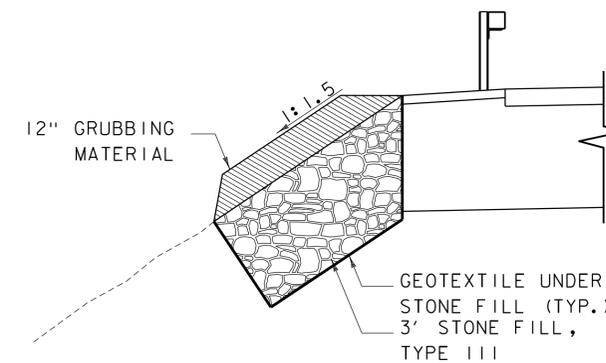
*** MAX. DIFFERENTIAL BETWEEN ROADWAY AND SHOULDER CROSS-SLOPE = 0.070

ROADWAY APPROACH SECTION

SCALE 3/8" = 1'-0"

TYPICAL SECTION GENERAL NOTES:

1. EMULSIFIED ASPHALT SHALL BE APPLIED ON EXISTING PAVEMENT SURFACES, BETWEEN ALL COURSES OF PAVEMENT AND ON COLD PLANED SURFACES, AT THE RATE OF 0.025 GAL/SY OR AS DIRECTED BY THE ENGINEER. PAYMENT WILL BE MADE UNDER CONTRACT ITEM 900.683 SPECIAL PROVISION (EMULSIFIED ASPHALT) (RS-1H OR CRS 1-H).
2. TEMPORARY EROSION MATTING SHALL BE INSTALLED ON ALL SLOPES BETWEEN 1:3 AND 1:1.6, TO STABILIZE THE SLOPE. SLOPES 1:1.5 SHALL USE TYPE III STONE SLOPE STABILIZATION PER DETAIL ON THIS SHEET.
3. GRASS GROWING ADJACENT TO PAVEMENT OR THROUGH CRACKS IN THE PAVEMENT WHICH MAY HAMPER THE PLACEMENT OF NEW BITUMINOUS CONCRETE SHALL BE REMOVED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER. PAYMENT FOR THIS WORK WILL NOT BE MADE DIRECTLY, BUT WILL BE CONSIDERED INCIDENTAL TO ITEM 900.680 SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)
4. EXISTING SHOULDER MATERIAL DEEMED UNSUITABLE BY THE ENGINEER SHALL BE EXCAVATED TO A DEPTH OF 3" OR AS DIRECTED BY THE ENGINEER AND PAID FOR AS ITEM 203.15 COMMON EXCAVATION. EXCAVATED SHOULDER MATERIAL SHALL BE REPLACED WITH ITEM 402.10 AGGREGATE SHOULDERS, IN PLACE.
5. FOR PG BINDER REQUIREMENTS, SEE SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY).



STONE FILL DETAIL

SCALE 3/8" = 1'-0"

MATERIAL TOLERANCES

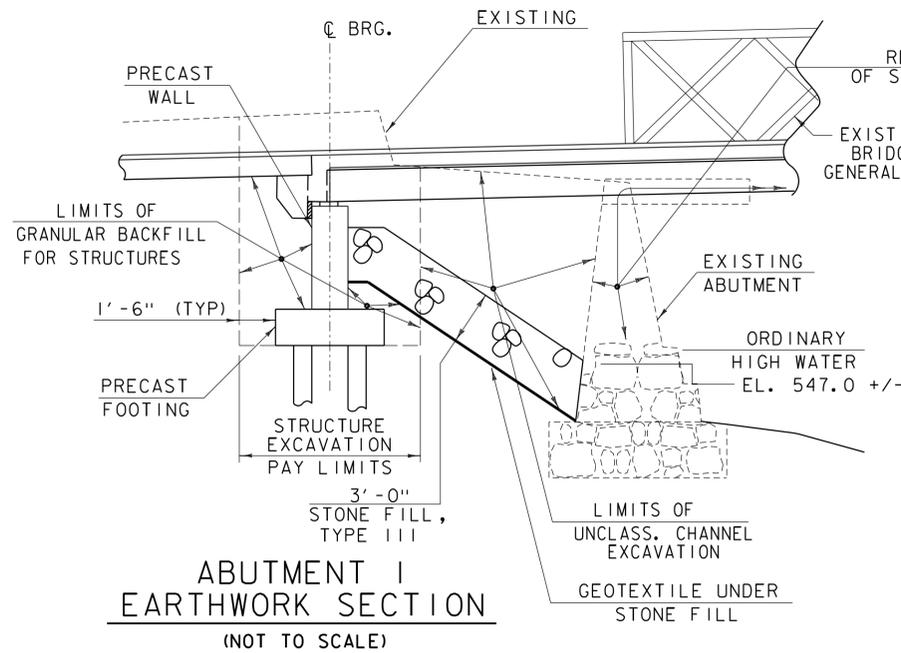
(IF USED ON PROJECT)

SURFACE	
- PAVEMENT (TOTAL THICKNESS)	+/- 1/4"
- AGGREGATE SURFACE COURSE	+/- 1/2"
SUBBASE	+/- 1"
SAND BORROW	+/- 1"

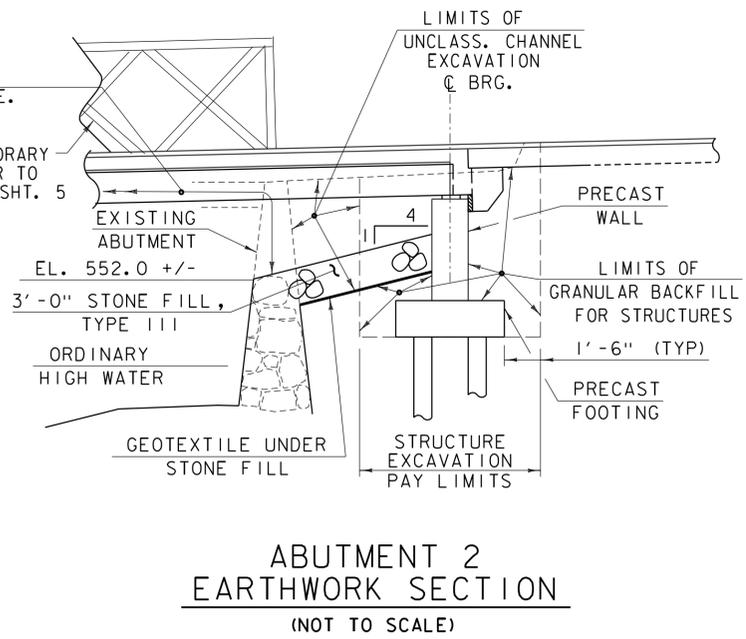
PROJECT NAME: ENOSBURG
 PROJECT NUMBER: BRO 1448(40)

FILE NAME: ...03 Typical Sections.dgn PLOT DATE: 10/4/2013
 PROJECT LEADER: G. BOGUE DRAWN BY: E. ALLING
 DESIGNED BY: G. GOYETTE CHECKED BY: G. GOYETTE
TYPICAL SECTIONS - TYP 1 SHEET 3 OF 46

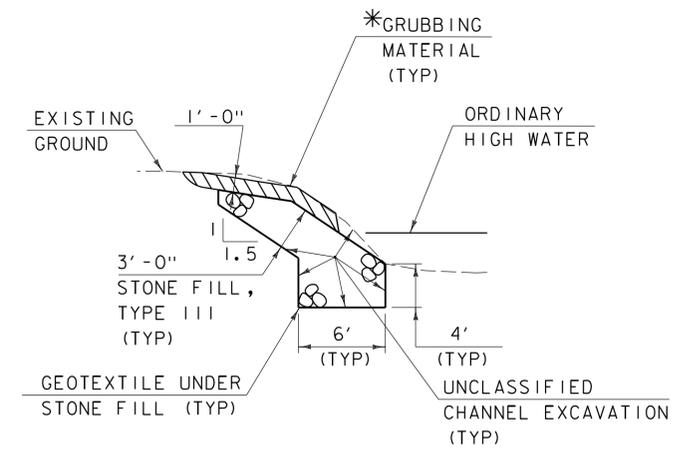




**ABUTMENT 1
EARTHWORK SECTION**
(NOT TO SCALE)

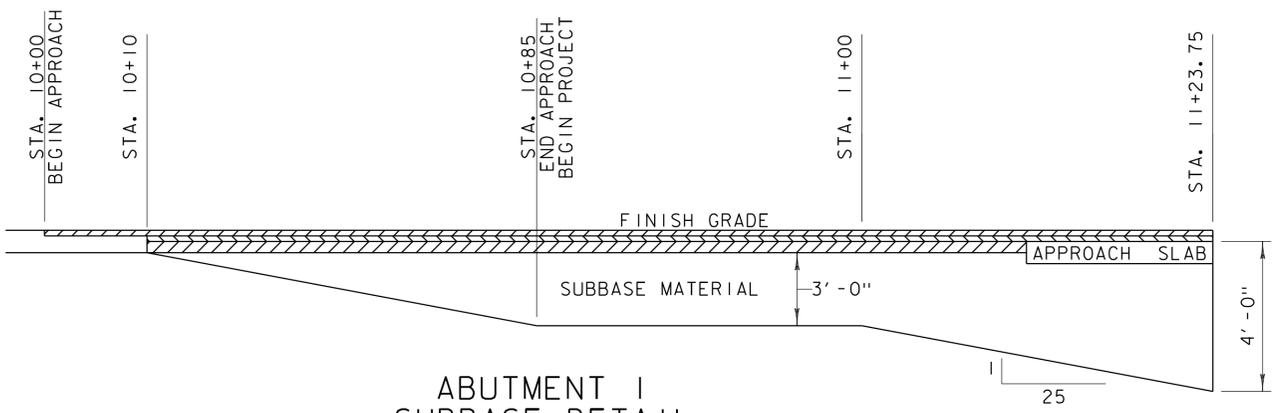


**ABUTMENT 2
EARTHWORK SECTION**
(NOT TO SCALE)

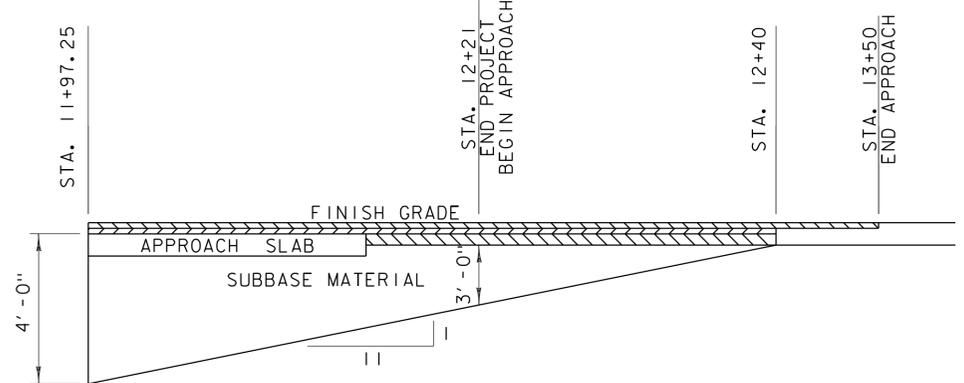


SOUTHBANK REVETMENT
(NOT TO SCALE)

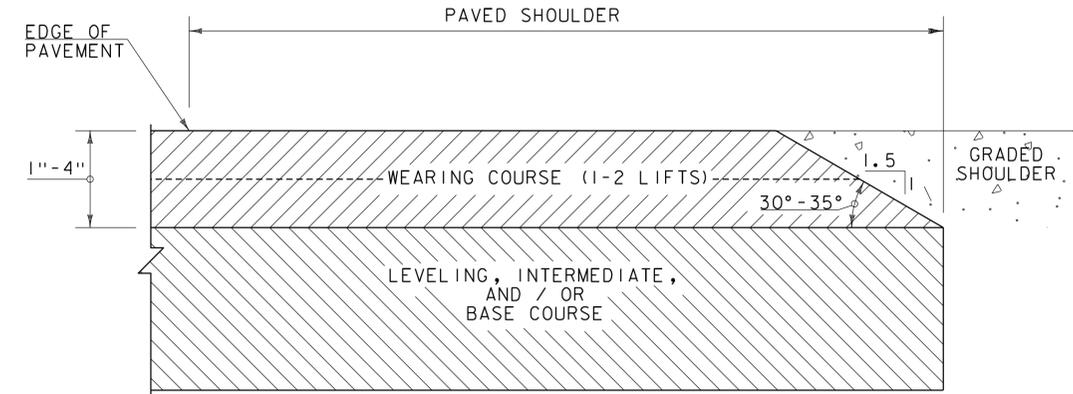
*GRUBBING MATERIAL SHALL NOT BE PLACED ON THE STONE FILL IN THE AREA UNDER THE BRIDGE. WHENEVER CHANNEL SLOPE INTERSECTS ROADWAY SUBBASE, GRUBBING MATERIAL SHALL BEGIN AT THE BOTTOM OF SUBBASE.



**ABUTMENT 1
SUBBASE DETAIL**
(ELEVATION IN CUT AND FILL)
(NOT TO SCALE)

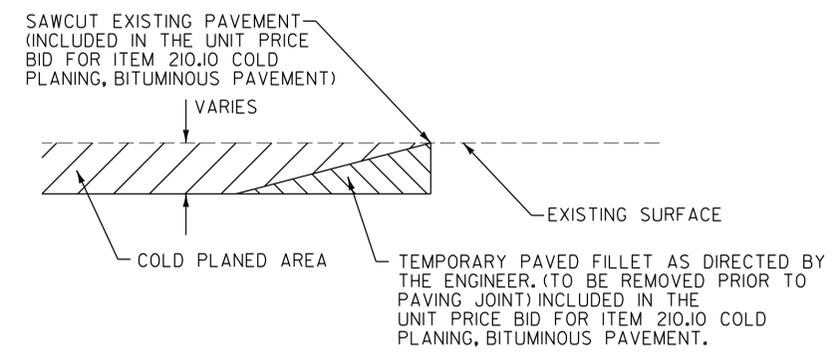


**ABUTMENT 2
SUBBASE DETAIL**
(ELEVATION IN CUT AND FILL)
(NOT TO SCALE)



SAFETY EDGE DETAIL
NOT TO SCALE

NOTE: LEVELING COURSE MAY INCLUDE THE "SAFETY EDGE" AT THE CONTRACTOR'S CHOICE.



DETAIL AT VERTICAL COLD PLANE JOINTS

NOTE: THIS DETAIL SHALL BE USED AT THE LOCATIONS SHOWN ABOVE AS DIRECTED BY THE ENGINEER.

PROJECT NAME:	ENOSBURG
PROJECT NUMBER:	BRO 1448(40)
FILE NAME: ...N04 Earthwork Sections.dgn	PLOT DATE: 10/4/2013
PROJECT LEADER: G. BOGUE	DRAWN BY: E. ALLING
DESIGNED BY: G. GOYETTE	CHECKED BY: G. GOYETTE
EARTHWORK SECTIONS - TYP 2	SHEET 4 OF 46



GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011, AND ITS LATEST REVISIONS, THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, DATED 2012, AND ITS LATEST REVISIONS.
2. THE BRIDGE IS DESIGNED FOR HL-93 LIVE LOAD.
3. THE TEMPORARY BRIDGE IS IN PLACE OVER THE EXISTING, FAILED STRUCTURE. REMOVAL OF THIS TEMPORARY BRIDGE SHALL BE PAID FOR UNDER ITEM 900.645, "SPECIAL PROVISION (REMOVAL OF TEMPORARY BRIDGE). THE TEMPORARY BRIDGE IS THE PROPERTY OF VTRANS AND SHALL BE RETURNED TO THE VTRANS MAINTENANCE FACILITY IN MIDDLESEX, VT. CONTACT HOBERT GATES AT (802) 595-0910 TO MAKE NECESSARY ARRANGEMENTS AS PER THE SPECIAL PROVISIONS.
4. ITEM 529.15 "PARTIAL REMOVAL OF STRUCTURE" SHALL BE USED FOR REMOVAL OF THE EXISTING STEEL BEAM AND CONCRETE DECK BRIDGE UNDER TEMPORARY BRIDGE INCLUDING THE SUPERSTRUCTURE, AND ANY PORTION OF THE ABUTMENTS TO THE DEPTH SHOWN ON SHEET 20.
5. ALL DIMENSIONS SHOWN IN THE PLANS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.
6. THE "STONE FILL, TYPE III" UNDER THE BRIDGE AS SHOWN IN THE PLANS SHALL BE PLACED BEFORE THE NEW BEAMS ARE SET.
7. NO SUBSTITUTION FOR PRECAST CONCRETE WILL BE PERMITTED.
8. ITEM 520.10, "MEMBRANE WATERPROOFING, SPRAY APPLIED" SHALL BE APPLIED TO THE BRIDGE DECK AS PER THE MANUFACTURER'S INSTRUCTIONS AND EXTEND ONTO THE APPROACH SLABS TWO FEET BEYOND THE BEGIN BRIDGE/END OF BRIDGE.
9. THE CONTRACTOR IS RESPONSIBLE FOR DEVELOPING AND SUBMITTING EPSC PLAN IN ACCORDANCE WITH SECTION 105 OF THE STANDARD SPECIFICATIONS. THE PLAN SHALL INCLUDE ALL PROPOSED LIMITS OF DISTURBANCE ASSOCIATED WITH THE CONTRACTOR'S MEANS AND METHODS FOR COMPLETING THE WORK INCLUDING CONTRACTOR DESIGNED COMPONENTS SUCH AS THE ACCESS, WASTE, BORROW, STAGING AREAS AND DEWATERING. ANY WASTE, BORROW, STAGING AREAS AND HAUL ROADS MAY REQUIRE ADDITIONAL PERMITTING UNDER CONSTRUCTION GENERAL PERMIT 3-9020 (2006-AMENDED 2008), SECTION 1.6 AS "OFF-SITE SUPPORTING ACTIVITIES". IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE THESE SITES REVIEWED BY THE VTRANS ENVIRONMENTAL SECTION AND VTRANS RESIDENT ENGINEER AND TO OBTAIN ANY NECESSARY PERMITS FOR THE AREAS PRIOR TO THEIR USE.
10. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" x 1".
11. WATER REPELLENT, SILANE SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES, EXCEPT THE UNDERSIDE OF THE BRIDGE DECK BETWEEN THE DRIP NOTCHES.
12. THE EXISTING STRUCTURAL STEEL ON THIS PROJECT WAS PAINTED WITH A MATERIAL WHICH MAY CONTAIN LEAD. THE REMOVED STRUCTURAL STEEL IS THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE STATE, IT'S OFFICERS AND EMPLOYEES HARMLESS CONCERNING THE CONTRACTOR'S USE OR DISPOSITION OF THE STRUCTURAL STEEL.

MICROPILE FOUNDATIONS

13. THE ABUTMENT 1 MICROPILES ARE DESIGNED TO SUPPORT A MAXIMUM STRENGTH LIMIT STATE AXIAL LOAD OF 230 KIPS PER PILE IN COMPRESSION AND 168 KIPS PER PILE IN TENSION.
14. THE ABUTMENT 2 MICROPILES ARE DESIGNED TO SUPPORT A MAXIMUM STRENGTH LIMIT STATE AXIAL LOAD OF 225 KIPS PER PILE IN COMPRESSION AND 168 KIPS PER PILE IN TENSION.
15. MINIMUM MICROPILE STEEL CASING THICKNESS = 0.408 INCHES
MINIMUM OUTSIDE DIAMETER OF MICROPILE CASING = 7 INCHES
MINIMUM UNCASSED DIAMETER = 6.184 INCHES
16. EXTEND CASING A MINIMUM OF 2 FEET BELOW TOP OF LEDGE; EXTEND UNCASSED PORTION OF MICROPILE A MINIMUM OF 12' AT ABUTMENT 1 AND 10' AT ABUTMENT 2 BELOW THE BOTTOM OF CASING.
17. ESTIMATED PILE LENGTH:
ABUTMENT 1: 26 FEET
ABUTMENT 2: VARIES 17 FEET TO 27 FEET
18. THE CONTRACTOR IS ADVISED THAT DIFFICULT DRILLING CONDITIONS ARE ANTICIPATED. THE CONTRACTOR SHALL MAKE PROVISIONS TO MAINTAIN THE TOLERANCES FOR LOCATION AND BATTER OF THE MICROPILES ESTABLISHED IN THE SPECIAL PROVISIONS AND AS NECESSARY TO ASSURE COMPATIBILITY WITH THE LOCATION OF THE PRECAST FOOTINGS.

PRECAST ABUTMENTS AND APPROACH SLAB

19. IF VERTICAL CONSTRUCTION JOINTS ARE REQUIRED BY THE CONTRACTOR FOR SHIPMENT OF THE ABUTMENTS, THEN THE SECTIONS SHALL BE KEYED. A JOINT DETAIL SHALL BE SHOWN ON THE FABRICATION DRAWINGS.
20. DESIGN VALUES:
CONCRETE COMPRESSIVE STRENGTH: F'c=5000 PSI
21. THE CONCRETE FOR THE ABUTMENT 1 AND ABUTMENT 2 PILE CAVITIES SHALL MEET THE REQUIREMENTS OF ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)".
22. THE CORRUGATED STEEL PIPE SHALL MEET THE REQUIREMENTS OF SUBSECTION 711.01. ALL COSTS ASSOCIATED WITH PLACING THE CORRUGATED STEEL PIPE WILL BE INCLUDED FOR PAYMENT UNDER THE APPROPRIATE 540.10 CONTRACT ITEM.
23. REINFORCING STEEL IN THE PRECAST SUBSTRUCTURES SHALL MEET THE REQUIREMENTS OF SECTION 507 FOR UNCOATED LEVEL 1 REINFORCING STEEL AND WILL BE PAID FOR UNDER THE APPROPRIATE 540.10 CONTRACT ITEM.
24. REINFORCING STEEL IN THE APPROACH SLABS SHALL MEET THE REQUIREMENTS OF SECTION 507 FOR LEVEL 11 REINFORCING STEEL AND WILL BE PAID FOR UNDER THE APPROPRIATE 540.10 CONTRACT ITEM.
25. ALL CLEAR COVER SHALL BE 2 INCHES UNLESS NOTED OTHERWISE.
26. MECHANICAL SPLICE CONNECTORS SHALL MEET THE REQUIREMENTS OF SUBSECTION 713.02 AND WILL BE INCLUDED FOR PAYMENT UNDER THE APPROPRIATE 540.10 CONTRACT ITEM.

NEXT D BEAMS

27. NEXT D BEAMS ARE A NON-PROPRIETARY SHAPE DEVELOPED BY PCI NORTHEAST (PCINE). STANDARDIZED SECTION PROPERTIES AND DETAILS MAY BE FOUND AT [HTTP://WWW.PCINE.ORG](http://www.pcine.org).

DESIGN VALUES:
 CONCRETE COMPRESSIVE STRENGTH: F'c = 8,000 PSI.
 CONCRETE COMPRESSIVE STRENGTH AT RELEASE: F'c1 = 6,000 PSI.
 PRESTRESSING STRANDS: 0.6 INCH DIAMETER, 270 KSI, LOW-RELAXATION 7-WIRE STRANDS.
 ASSUMED MODULUS OF ELASTICITY = 29,000 KSI
 THE JACKING FORCE PER STRAND = 44 KIPS.
 SERVICE LOADS PER UNIT

MEMBER DEAD LOAD MOMENT	902 K-FT
SUPERIMPOSED DEAD LOAD MOMENT	246 K-FT
LIVE LOAD AND IMPACT MOMENT	1,498 K-FT
DEAD LOAD REACTION	67 KIPS
LIVE LOAD AND IMPACT REACTION	95 KIPS
TOTAL REACTION	162 KIPS
FINAL CAMBER	3 INCHES

28. ENDS OF FLANGES IN CONTACT WITH GROUT SHALL BE SANDBLASTED PRIOR TO DELIVERY AND POWER WASHED WITH WATER PRIOR TO ERECTION OF THE BEAMS. PAYMENT WILL BE CONSIDERED INCIDENTAL TO CONTRACT ITEM 900.640 SPECIAL PROVISION (PRESTRESSED CONCRETE NEXT D BEAMS) (NEXT 32D).
29. FILL FLANGE CONNECTION WITH SPECIAL PROVISION (HIGH PERFORMANCE, CONCRETE RAPID SET).
30. METHOD OF FORMING FLANGE CONNECTION SHALL BE DETERMINED BY THE CONTRACTOR. THE FORMS SHALL BE REMOVABLE AND ABLE TO ACCOMMODATE DIFFERENTIAL CAMBER. FORM SUPPORTS SHALL NOT PENETRATE THROUGH THE TOP OF POUR UNLESS APPROVED BY THE ENGINEER.
31. THE FABRICATOR MAY ALTER THE DESIGN AS DETAILED IN THESE PLANS TO ACCOMMODATE THEIR SPECIFIC OPERATION. THIS ALTERATION MUST BE DESIGNED BY A PROFESSIONAL ENGINEER, LICENSED IN THE STATE OF VERMONT TO MEET THE ABOVE CRITERIA AND SHALL BE APPROVED BY THE PROJECT MANAGER.
32. ALL SUPERSTRUCTURE REINFORCING STEEL SHALL BE IN ACCORDANCE WITH ITEM 507.12, "REINFORCING STEEL, LEVEL 11"; COST SHALL BE INCLUDED IN ITEM 900.640 SPECIAL PROVISION (PRESTRESSED CONCRETE NEXT D BEAMS, NEXT 32D)

PROJECT NAME: ENOSBURG
 PROJECT NUMBER: BRO 1448(40)

FILE NAME: ...XX GeneralNotes.dgn PLOT DATE: 10/4/2013
 PROJECT LEADER: G. BOGUE DRAWN BY: L. BUXTON
 DESIGNED BY: T. KNIGHT CHECKED BY: G. BOGUE
GENERAL NOTES SHEET 5 OF 46



QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES			
							ROADWAY	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
							1				1		LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.10				EARTHWORK SUMMARY
							665				665		CY	COMMON EXCAVATION	203.15		665	CY	COMMON EXCAVATION (665*1.0)
							35				35		CY	SOLID ROCK EXCAVATION	203.16		150	CY	UNCLASSIFIED CHANNEL EXCAVATION (200*0.75)
									200		200		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27		210	CY	STRUCTURE EXCAVATION (280*0.75)
							1				1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22		1025	CY	SUB TOTAL
									280		280		CY	STRUCTURE EXCAVATION	204.25		5	CY	ROUNDING
									130		130		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30		1030	CY	TOTAL FILL AVAILABLE
							1015				1015		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10		40	CY	TOTAL FACTORED FILL REQUIRED
							505				505		CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35		990	CY	TOTAL WASTE
							25				25		CY	AGGREGATE SHOULDERS, IN PLACE	402.10				
							1				1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50				
									11		11		GAL	WATER REPELLENT, SILANE	514.10				
									55		55		LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10				
									210		210		SY	MEMBRANE WATERPROOFING, SPRAY APPLIED	520.10				
									52		52		LF	JOINT SEALER, HOT POURED	524.11				
									152		152		LF	BRIDGE RAILING, GALVANIZED 3 RAIL BOX BEAM	525.335				
									1		1		EACH	REMOVAL OF STRUCTURE (REMOVAL OF BRIDGE #48)	529.15				
									12		12		EACH	BEARING DEVICE ASSEMBLY, STEEL REINFORCED ELASTOMERIC PAD	531.17				
									1		1		LS	PRECAST CONCRETE STRUCTURE (ABUTMENT #1)	540.10				
									1		1		LS	PRECAST CONCRETE STRUCTURE (ABUTMENT #2)	540.10				
									1		1		LS	PRECAST CONCRETE STRUCTURE (APPROACH SLAB #1)	540.10				
									1		1		LS	PRECAST CONCRETE STRUCTURE (APPROACH SLAB #2)	540.10				
							0.5				0.5		MGAL	DUST CONTROL WITH WATER	609.10				
							0.5				0.5		TON	DUST AND ICE CONTROL WITH CALCIUM CHLORIDE	609.15				
								200	330		530		CY	STONE FILL, TYPE III	613.12				
							16				16		LF	WOVEN WIRE FENCE WITH WOOD POSTS	620.26				
							2				2		EACH	WOOD BRACE FOR WOVEN WIRE FENCE	620.41				
							16				16		LF	REMOVAL OF EXISTING FENCE	620.55				
							212				212		LF	BOX BEAM GUARDRAIL	621.30				
							4				4		EACH	GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM	621.725				
							135				135		LF	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80				
										1	1		LS	FIELD OFFICE, ENGINEERS	631.10				
										1	1		LS	TESTING EQUIPMENT, CONCRETE	631.16				
										1	1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17				
										3000	3000		DL	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.26				
							1				1		LS	MOBILIZATION/DEMobilIZATION	635.11				
							1				1		LS	TRAFFIC CONTROL	641.10				
							2				2		EACH	PORTABLE CHANGEABLE MESSAGE SIGN	641.15				
							550				550		LF	4 INCH YELLOW LINE	646.21				
							40				40		LF	24 INCH STOP BAR	646.26				

PROJECT NAME: ENOSBURG
PROJECT NUMBER: BRO 1448(40)

FILE NAME: ...\\xx Bridge Quantities.dgn PLOT DATE: 10/4/2013
PROJECT LEADER: G. BOGUE DRAWN BY: E. ALLING
DESIGNED BY: G. GOYETTE CHECKED BY: G. GOYETTE
BRIDGE AND ROADWAY QUANTITY SHEET - QS 1 SHEET 6 OF 46



GENERAL INFORMATION

SYMBOLGY LEGEND NOTE

THE SYMBOLGY ON THIS SHEET IS INTENDED TO COVER STANDARD CONVENTIONAL SYMBOLGY. THE SYMBOLGY 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. SYMBOLGY ON PLANS MAY VARY, PLAN ANNOTATIONS AND NOTES SHOULD BE USED TO CLARIFY AS NEEDED.

COMMON TOPOGRAPHIC POINT SYMBOLS

POINT	CODE	DESCRIPTION
⊕	APL	BOUND APPARENT LOCATION
□	BM	BENCH MARK
□	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 VALUE
⊕	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	POST STONE/WOOD
RRSIG	RRSIG	RAILROAD SIGNAL
RRSL	RRSL	RAILROAD SWITCH LEVER
S	S	TREE SOFTWOOD
SAT	SAT	SATELLITE DISH
SHRUB	SHRUB	SHRUB
SIGN	SIGN	SIGN
STUMP	STUMP	STUMP
TEL	TEL	TELEPHONE POLE
TIE	TIE	TIE
TSIGN	TSIGN	SIGN W/DOUBLE POST
VCTRL	VCTRL	CONTROL VERTICAL
WELL	WELL	WELL
WSO	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 SYMBOLGY

UNDERGROUND UTILITIES

— 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)

— 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 SYMBOLGY

PROJECT DESIGN & LAYOUT SYMBOLGY

— 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
XXXXXX	TREE PROTECTION ZONE (TPZ)
////	STRIPING LINE REMOVAL
~~~~	SHEET PILES

**CONVENTIONAL BOUNDARY SYMBOLGY**

**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	PROPERTY LINE (P/L)
L	
SR	SLOPE RIGHTS
6f	6F PROPERTY BOUNDARY
4f	4F PROPERTY BOUNDARY
HAZ	HAZARDOUS WASTE

**EPSC LAYOUT PLAN SYMBOLGY**

**EPSC MEASURES**

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

**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
Ⓜ	HISTORIC STRUCTURE

**CONVENTIONAL TOPOGRAPHIC SYMBOLGY**

**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

**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	
I&M	INSTALL & MAINTAIN EASEMENT	
LAND	LANDSCAPE EASEMENT	
SR	SLOPE RIGHT	
UE	UTILITY EASEMENT	
(P)	PERMANENT EASEMENT	
(T)	TEMPORARY EASEMENT	
■	BNDNS BOUND SET	
□	BNDNS BOUND TO BE SET	
●	IPNS IRON PIN SET	
⊕	IPNS IRON PIN TO BE SET	
⊗	CALC CALCULATED ROW POINT	
[DISTANCE]	DISTANCE CARRIED ON NEXT SHEET	

PROJECT NAME: ENOSBURG  
PROJECT NUMBER: BRO 1448(40)

FILE NAME: ...\\03 A Conv Symb Leg Sht.dgrPLOT DATE: 10/4/2013  
PROJECT LEADER: G. BOGUE DRAWN BY: E. ALLING  
DESIGNED BY: G. GOYETTE CHECKED BY: G. GOYETTE  
**CONVENTIONAL SYMBOLGY LEGEND** SHEET 8 OF 46

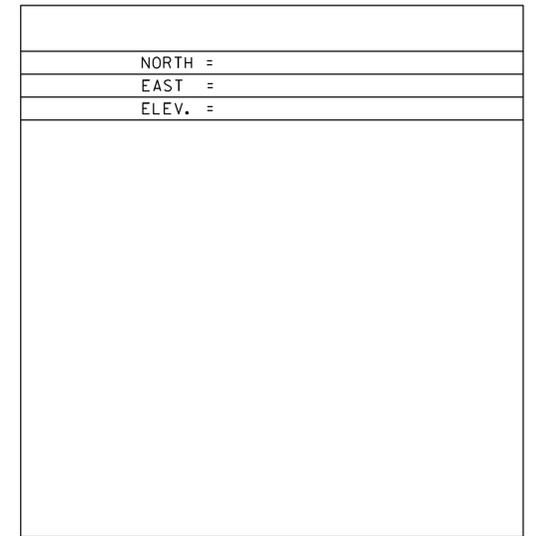
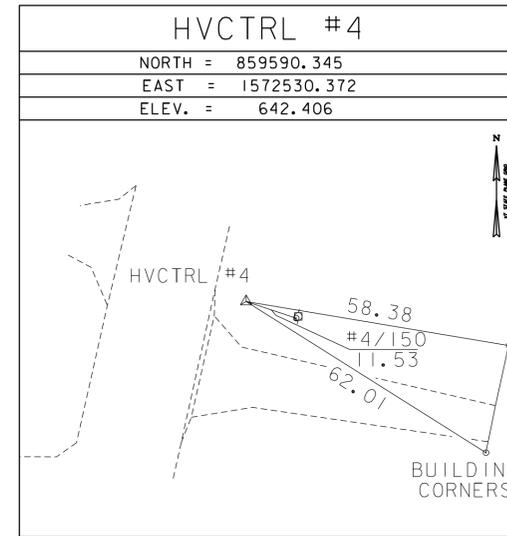
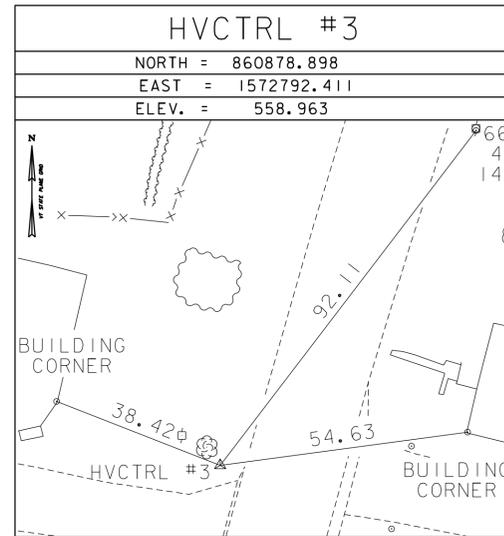
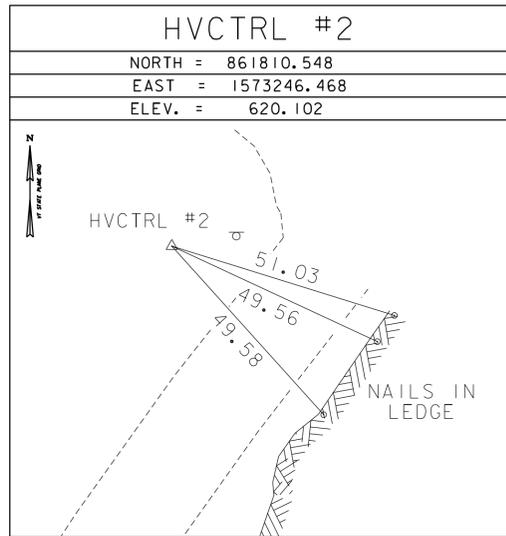
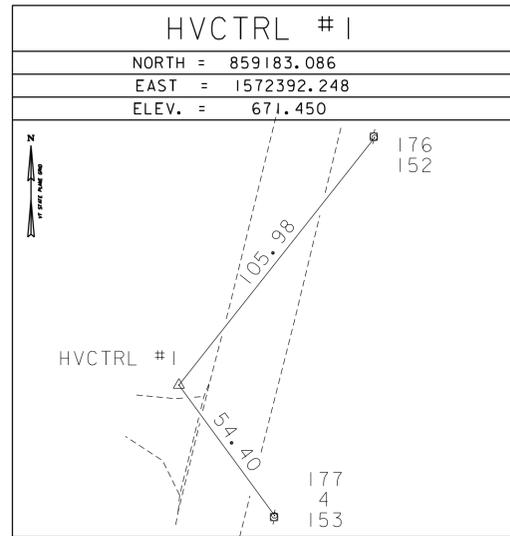


GPS CONTROL POINTS

GENERAL DESCRIPTION: TEMP1  
 TO REACH FROM JUNCTION OF VT108 AND TH1 (TYLER BRANCH RD.) IN ENOSBURG PROCEED EAST ALONG TH1 FOR 2.1 MILES TO JUNCTION WITH TH2 (BOSTON POST RD.) AND TURN RIGHT ON TO TH2 PROCEED SOUTH FOR 0.4 MILE TO MARK (REBAR WITH PLASTIC CAP [VTAOT TRAV. PT] ON THE RIGHT ON THE NORTH EDGE OF GRAVEL DRIVE, 21' WEST OF CENTERLINE TH2, 15' NORTH FROM CENTERLINE GRAVEL DRIVE AND 54.7' NORTHWEST POLE #171/4/153. SEE HVCTRL #1 FOR COORDINATES

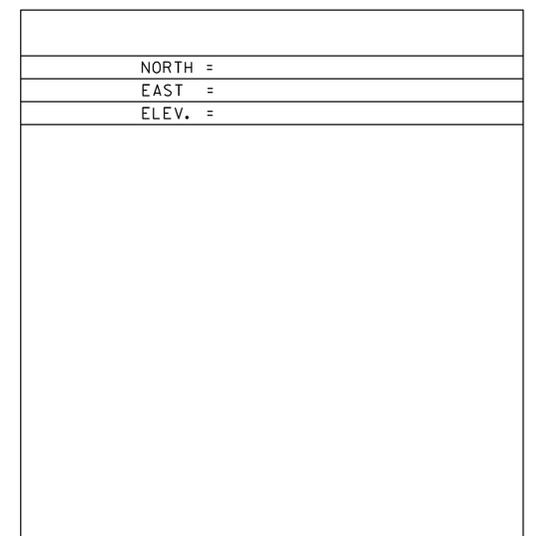
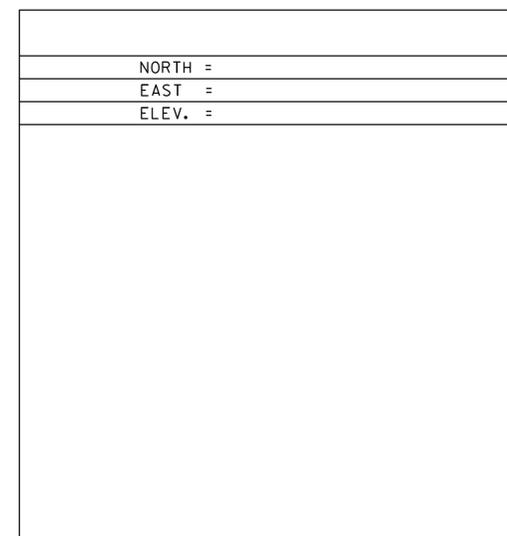
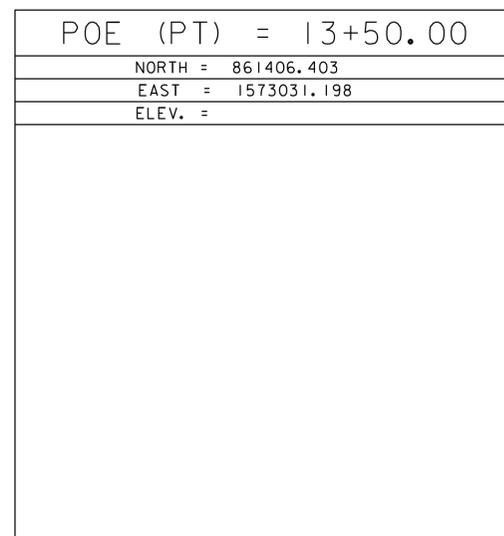
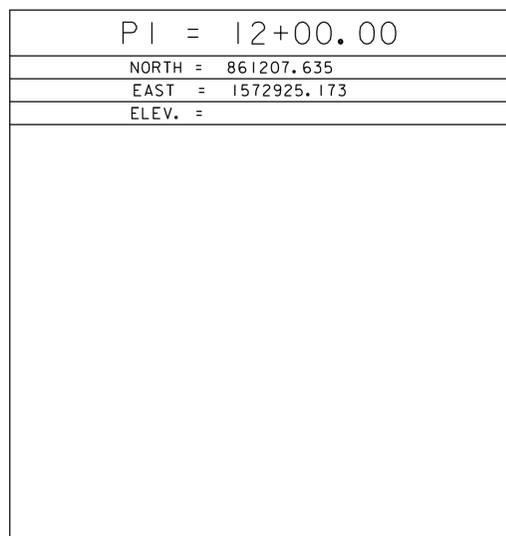
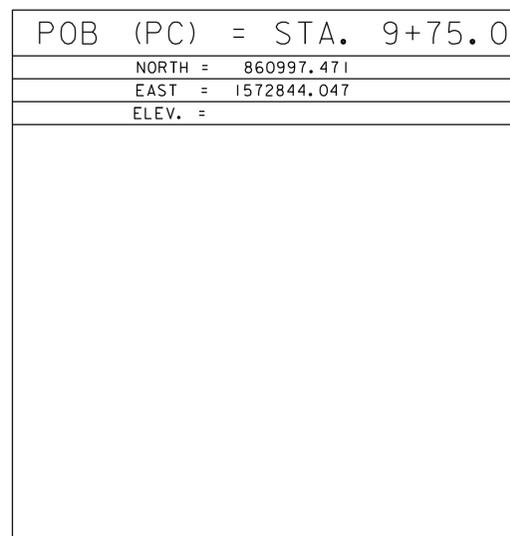
GENERAL DESCRIPTION: TEMP2  
 TO REACH FROM JUNCTION OF VT108 AND TH1 (TYLER BRANCH RD.) IN ENOSBURG PROCEED EAST ALONG TH1 FOR 2.1 MILES TO JUNCTION WITH TH2 (BOSTON POST RD.) AND TURN LEFT AND PROCEED NORTH ALONG TH2 FOR 0.1 MILE TO MARK (REBAR WITH PLASTIC CAP [VTAOT TRAV. PT] ON THE LEFT IN A LAWN, 28' WEST OF CENTERLINE TH2, 32' SOUTH OF CENTERLINE GRAVEL DRIVE, 102' SOUTH OF POLE #5/4A AND 106' NORTHWEST POLE #3. SEE HVCTRL #2 FOR COORDINATES

TRAVERSE TIES



*MAIN TRAVERSE COMPLETED 4/11/2012 BY L. ORVIS P.C. & G. HITCHCOCK

ALIGNMENT TIES



COORDINATE SYSTEM  
 NAME: US STATE PLANE 1983  
 DATUM: NAD 1983(2007)  
 ZONE: VERMONT 4400  
 GEOID: GEOID09 (CONUS)  
 VERTICAL: NAVD 88  
 ADJUSTMENT: COMPASS

PROJECT NAME: ENOSBURG  
 PROJECT NUMBER: BRO 1448(40)  
 FILE NAME: ...Plot Files\... tie sheet.dgn PLOT DATE: 10/4/2013  
 PROJECT LEADER: C. WILLIAMS DRAWN BY: R. BULLOCK  
 DESIGNED BY: CHECKED BY:  
**TIE SHEET - TIE 1** SHEET 9 OF 46

**ITEM 621.30 - BOX BEAM GUARDRAIL**

STA. 9+60.5 - 10+90.3, RT.  
 STA. 10+15.5 - 10+90.8, LT.  
 STA. 12+28.5 - 12+31.4, LT.  
 STA. 12+24.2 - 12+25.3, RT.

**ITEM 621.80 - REMOVAL AND DISPOSAL OF GUARDRAIL**

STA. 10+75.8 - 11+29.3, RT.  
 STA. 11+01.5 - 11+29.7, LT.  
 STA. 12+01.8 - 12+24.1, LT.  
 STA. 12+02.2 - 12+21.3, RT.

**ITEM 621.725 - GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM**

STA. 10+90.8 - 11+22.7, LT.  
 STA. 10+90.3 - 11+22.5, RT.  
 STA. 11+98.3 - 12+28.5, LT.  
 STA. 11+98.6 - 12+24.2, RT.

**ITEM 613.12 - STONE FILL, TYPE III**

STA. 11+07.1 - 11+46.7, LT.  
 STA. 10+25.0 - 11+46.9, RT.  
 STA. 11+82.0 - 12+28.4, RT.  
 STA. 11+83.9 - 12+07.1, LT.

**ITEM 649.31 - GEOTEXTILE UNDER STONE FILL**

STA. 11+07.1 - 11+46.7, LT.  
 STA. 10+25.0 - 11+46.9, RT.  
 STA. 11+82.0 - 12+28.4, RT.  
 STA. 11+83.9 - 12+07.1, LT.

**ITEM 402.10 - ONE AGGREGATE SHOULDERS, IN PLACE**

STA. 9+36.0 - 11+24.0, RT.  
 STA. 10+21.0 - 11+24.0, LT.  
 STA. 11+97.0 - 12+54.3, LT.  
 STA. 11+97+0 - 12+30.0, RT.  
 STA. 12+53.4 - 13+50.0, LT.  
 STA. 12+76.0 - 13+50.0, RT.

**ITEM 210.10 - COLD PLANING, BITUMINOUS PAVEMENT**

STA. 10+00.0 - 10+10.0  
 STA. 12+40.0 - 13+50.0

**ITEM 620.55 - REMOVAL OF EXISTING FENCE**

STA. 11+90.0 LT.

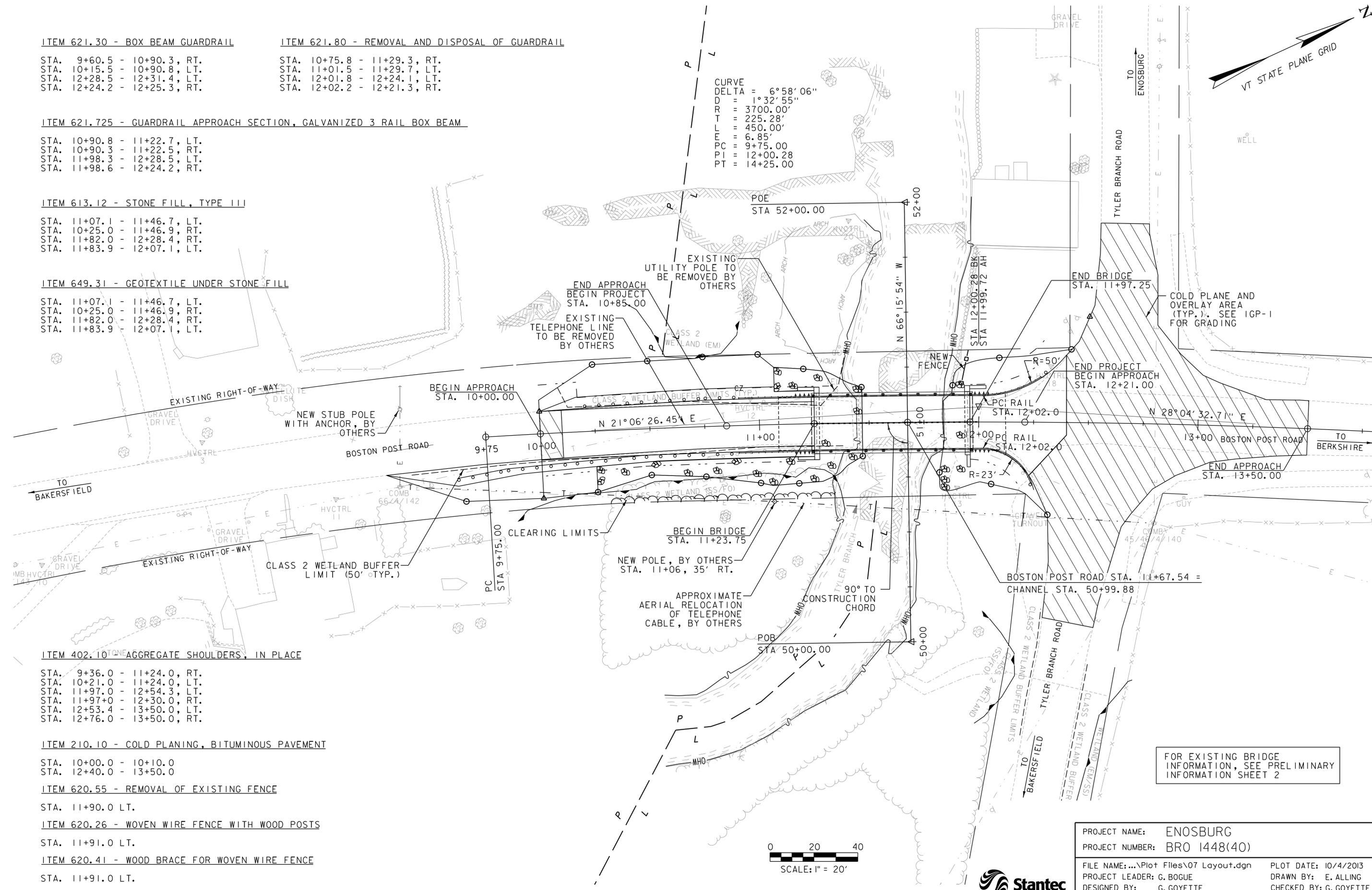
**ITEM 620.26 - WOVEN WIRE FENCE WITH WOOD POSTS**

STA. 11+91.0 LT.

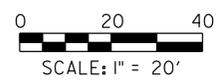
**ITEM 620.41 - WOOD BRACE FOR WOVEN WIRE FENCE**

STA. 11+91.0 LT.

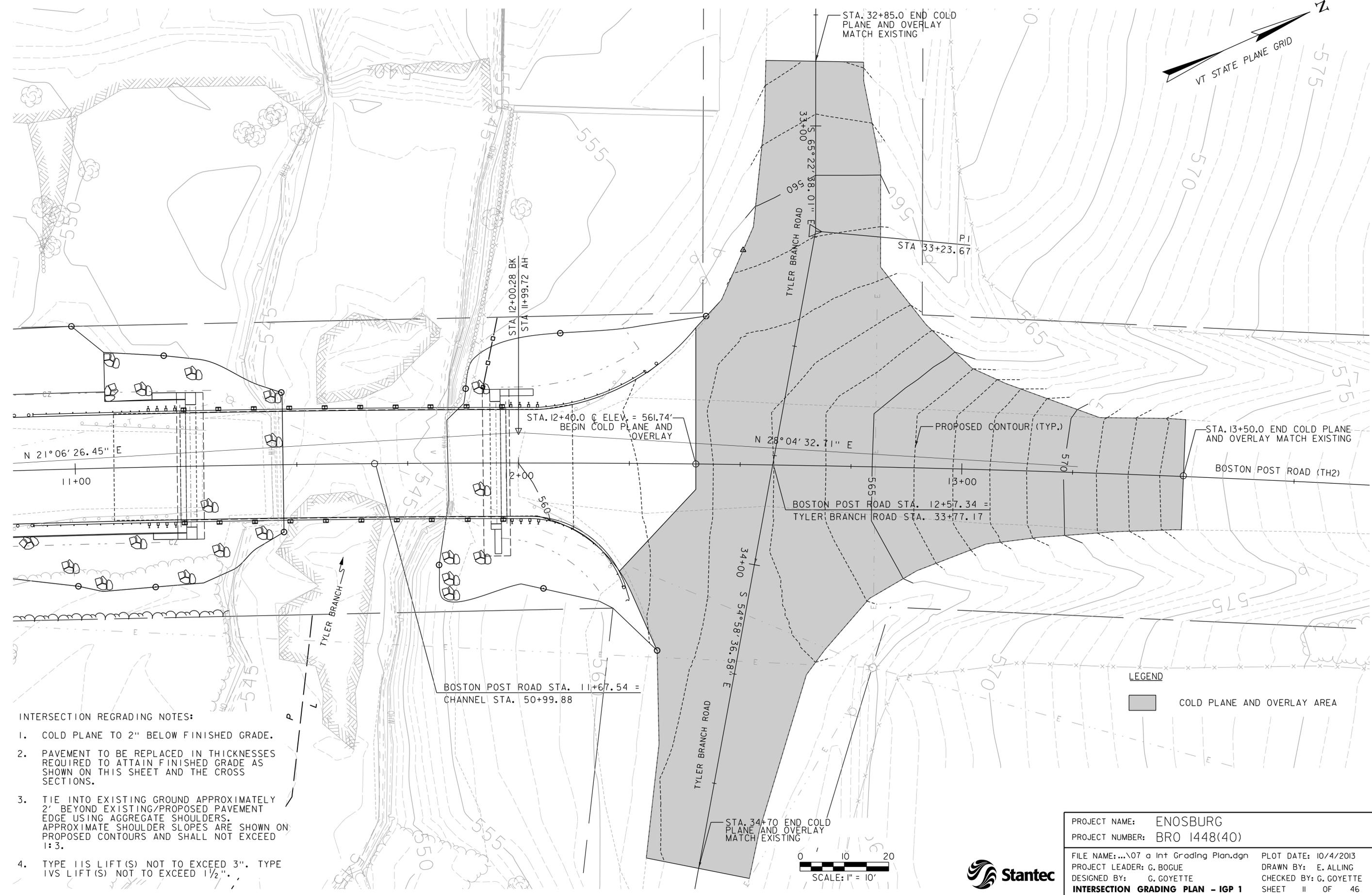
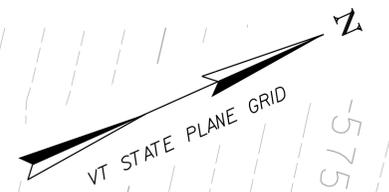
CURVE  
 DELTA = 6°58'06"  
 D = 1°32'55"  
 R = 3700.00'  
 T = 225.28'  
 L = 450.00'  
 E = 6.85'  
 PC = 9+75.00  
 PI = 12+00.28  
 PT = 14+25.00



FOR EXISTING BRIDGE INFORMATION, SEE PRELIMINARY INFORMATION SHEET 2



PROJECT NAME:	ENOSBURG	FILE NAME:	...Plot Files\07 Layout.dgn	PLOT DATE:	10/4/2013
PROJECT NUMBER:	BRO 1448(40)	PROJECT LEADER:	G. BOGUE	DRAWN BY:	E. ALLING
		DESIGNED BY:	G. GOYETTE	CHECKED BY:	G. GOYETTE
		<b>LAYOUT PLAN - LP 1</b>		SHEET	10 OF 46



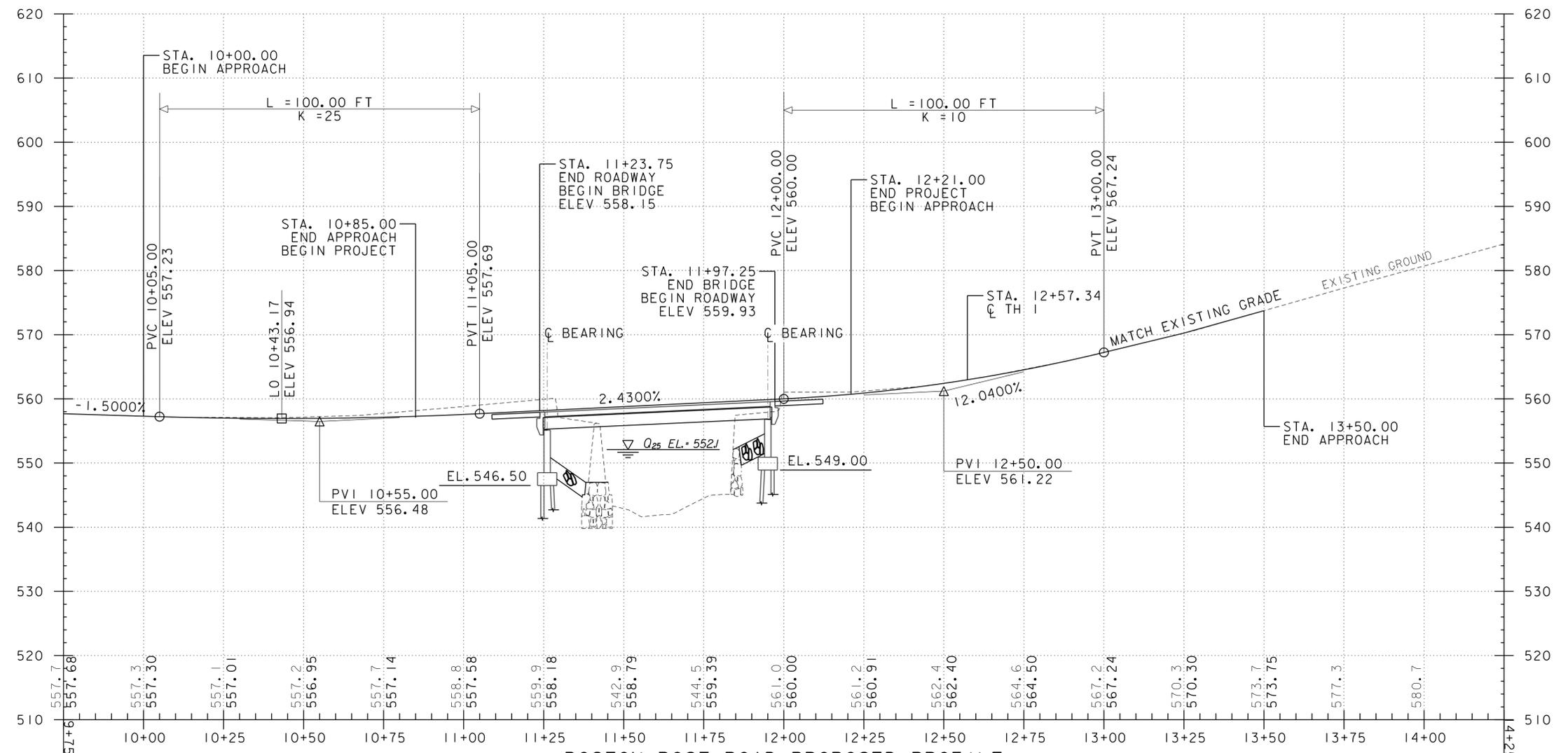
- INTERSECTION REGRADING NOTES:**
1. COLD PLANE TO 2" BELOW FINISHED GRADE.
  2. PAVEMENT TO BE REPLACED IN THICKNESSES REQUIRED TO ATTAIN FINISHED GRADE AS SHOWN ON THIS SHEET AND THE CROSS SECTIONS.
  3. TIE INTO EXISTING GROUND APPROXIMATELY 2' BEYOND EXISTING/PROPOSED PAVEMENT EDGE USING AGGREGATE SHOULDERS. APPROXIMATE SHOULDER SLOPES ARE SHOWN ON PROPOSED CONTOURS AND SHALL NOT EXCEED 1:3.
  4. TYPE IIS LIFT(S) NOT TO EXCEED 3". TYPE IVS LIFT(S) NOT TO EXCEED 1 1/2".

**LEGEND**  
 COLD PLANE AND OVERLAY AREA



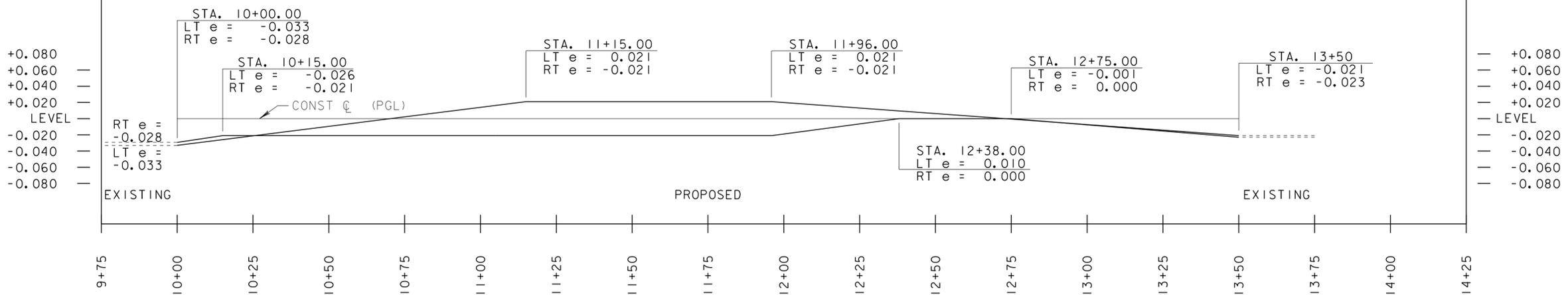
PROJECT NAME:	ENOSBURG	PLOT DATE:	10/4/2013
PROJECT NUMBER:	BRO 1448(40)	DRAWN BY:	E. ALLING
FILE NAME:	...N07 a Int Grading Plan.dgn	CHECKED BY:	G. GOYETTE
PROJECT LEADER:	G. BOGUE	INTERSECTION GRADING PLAN - IGP 1	SHEET II OF 46
DESIGNED BY:	G. GOYETTE		





**BOSTON POST ROAD PROPOSED PROFILE**

HORIZONTAL SCALE: 1' = 20'      VERTICAL SCALE: 1" = 10'



**BOSTON POST ROAD SUPERELEVATION DIAGRAM**

HORIZONTAL SCALE: 1' = 20'      VERTICAL SCALE: N. T. S.

**PROFILE NOTES:**

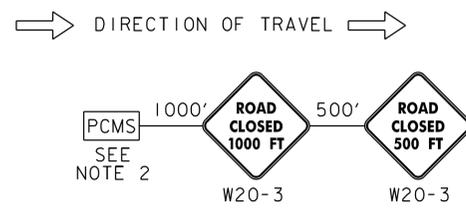
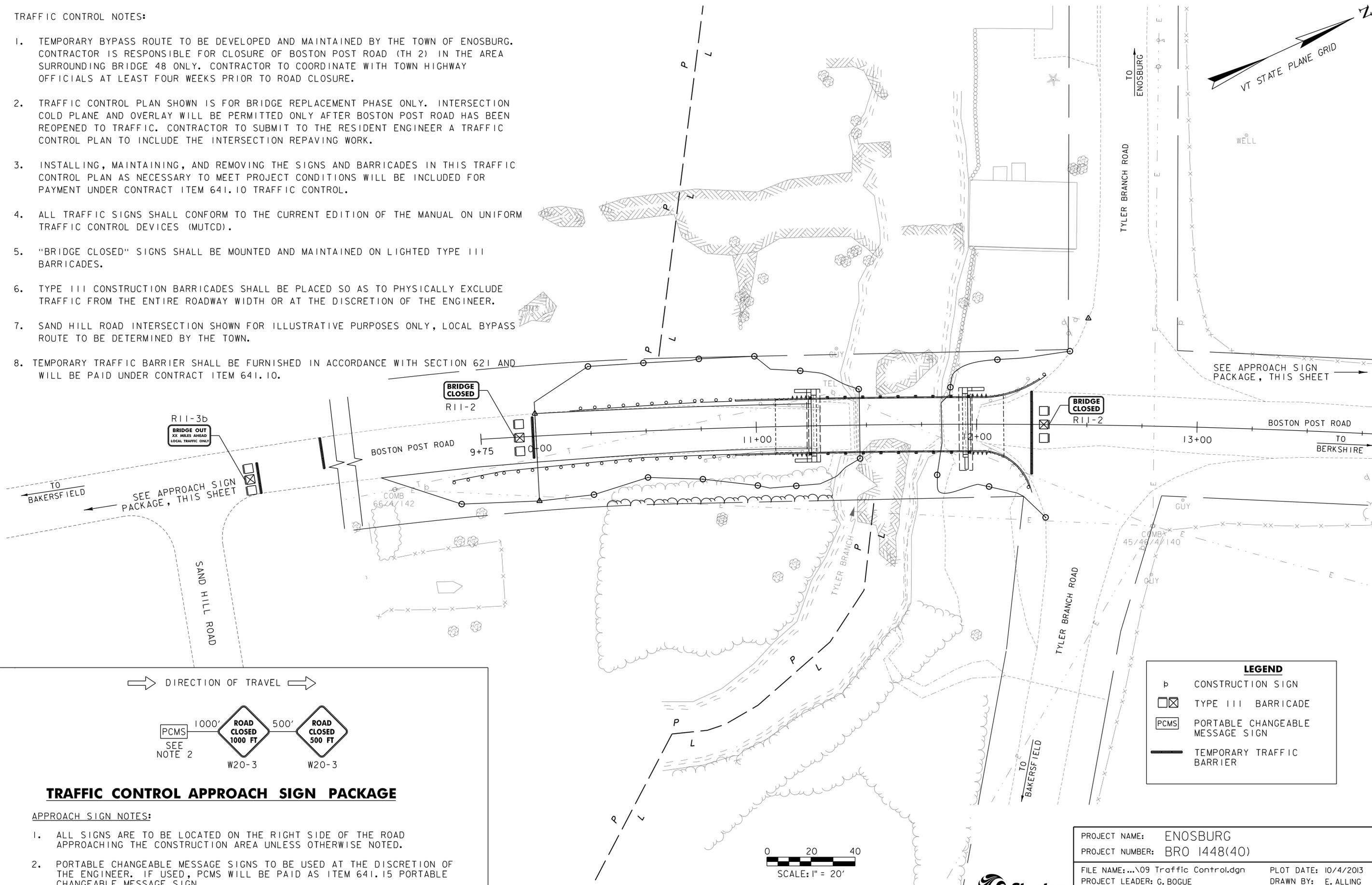
- EXISTING SURVEY INFORMATION SHOWN ON THE PLANS INCLUDES THE TEMPORARY BRIDGE
- GRADES SHOWN TO THE NEAREST TENTH ARE EXISTING GROUND ALONG C
- GRADES SHOWN TO THE NEAREST HUNDREDTH ARE FINISH GRADE ALONG C

PROJECT NAME:	ENOSBURG	PLOT DATE:	10/4/2013
PROJECT NUMBER:	BRO 1448(40)	DRAWN BY:	E. ALLING
FILE NAME:	...Plot Files\08 Profile.dgn	DESIGNED BY:	G. GOYETTE
PROJECT LEADER:	G. BOGUE	CHECKED BY:	G. GOYETTE
<b>PROFILE SHEET - RP 1</b>		SHEET 12 OF 46	



**TRAFFIC CONTROL NOTES:**

1. TEMPORARY BYPASS ROUTE TO BE DEVELOPED AND MAINTAINED BY THE TOWN OF ENOSBURG. CONTRACTOR IS RESPONSIBLE FOR CLOSURE OF BOSTON POST ROAD (TH 2) IN THE AREA SURROUNDING BRIDGE 48 ONLY. CONTRACTOR TO COORDINATE WITH TOWN HIGHWAY OFFICIALS AT LEAST FOUR WEEKS PRIOR TO ROAD CLOSURE.
2. TRAFFIC CONTROL PLAN SHOWN IS FOR BRIDGE REPLACEMENT PHASE ONLY. INTERSECTION COLD PLANE AND OVERLAY WILL BE PERMITTED ONLY AFTER BOSTON POST ROAD HAS BEEN REOPENED TO TRAFFIC. CONTRACTOR TO SUBMIT TO THE RESIDENT ENGINEER A TRAFFIC CONTROL PLAN TO INCLUDE THE INTERSECTION REPAVING WORK.
3. INSTALLING, MAINTAINING, AND REMOVING THE SIGNS AND BARRICADES IN THIS TRAFFIC CONTROL PLAN AS NECESSARY TO MEET PROJECT CONDITIONS WILL BE INCLUDED FOR PAYMENT UNDER CONTRACT ITEM 641.10 TRAFFIC CONTROL.
4. ALL TRAFFIC SIGNS SHALL CONFORM TO THE CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
5. "BRIDGE CLOSED" SIGNS SHALL BE MOUNTED AND MAINTAINED ON LIGHTED TYPE III BARRICADES.
6. TYPE III CONSTRUCTION BARRICADES SHALL BE PLACED SO AS TO PHYSICALLY EXCLUDE TRAFFIC FROM THE ENTIRE ROADWAY WIDTH OR AT THE DISCRETION OF THE ENGINEER.
7. SAND HILL ROAD INTERSECTION SHOWN FOR ILLUSTRATIVE PURPOSES ONLY, LOCAL BYPASS ROUTE TO BE DETERMINED BY THE TOWN.
8. TEMPORARY TRAFFIC BARRIER SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 621 AND WILL BE PAID UNDER CONTRACT ITEM 641.10.



LEGEND	
	CONSTRUCTION SIGN
	TYPE III BARRICADE
	PORTABLE CHANGEABLE MESSAGE SIGN
	TEMPORARY TRAFFIC BARRIER

**TRAFFIC CONTROL APPROACH SIGN PACKAGE**

**APPROACH SIGN NOTES:**

1. ALL SIGNS ARE TO BE LOCATED ON THE RIGHT SIDE OF THE ROAD APPROACHING THE CONSTRUCTION AREA UNLESS OTHERWISE NOTED.
2. PORTABLE CHANGEABLE MESSAGE SIGNS TO BE USED AT THE DISCRETION OF THE ENGINEER. IF USED, PCMS WILL BE PAID AS ITEM 641.15 PORTABLE CHANGEABLE MESSAGE SIGN.

PROJECT NAME: ENOSBURG	PLOT DATE: 10/4/2013
PROJECT NUMBER: BRO 1448(40)	DRAWN BY: E. ALLING
FILE NAME: ...09 Traffic Control.dgn	CHECKED BY: G. GOYETTE
PROJECT LEADER: G. BOGUE	SHEET 13 OF 46
DESIGNED BY: G. GOYETTE	
<b>TRAFFIC CONTROL SHEET- TCP 1</b>	



ITEM 646.21 - 4 INCH YELLOW LINE (DOUBLE CENTERLINE)

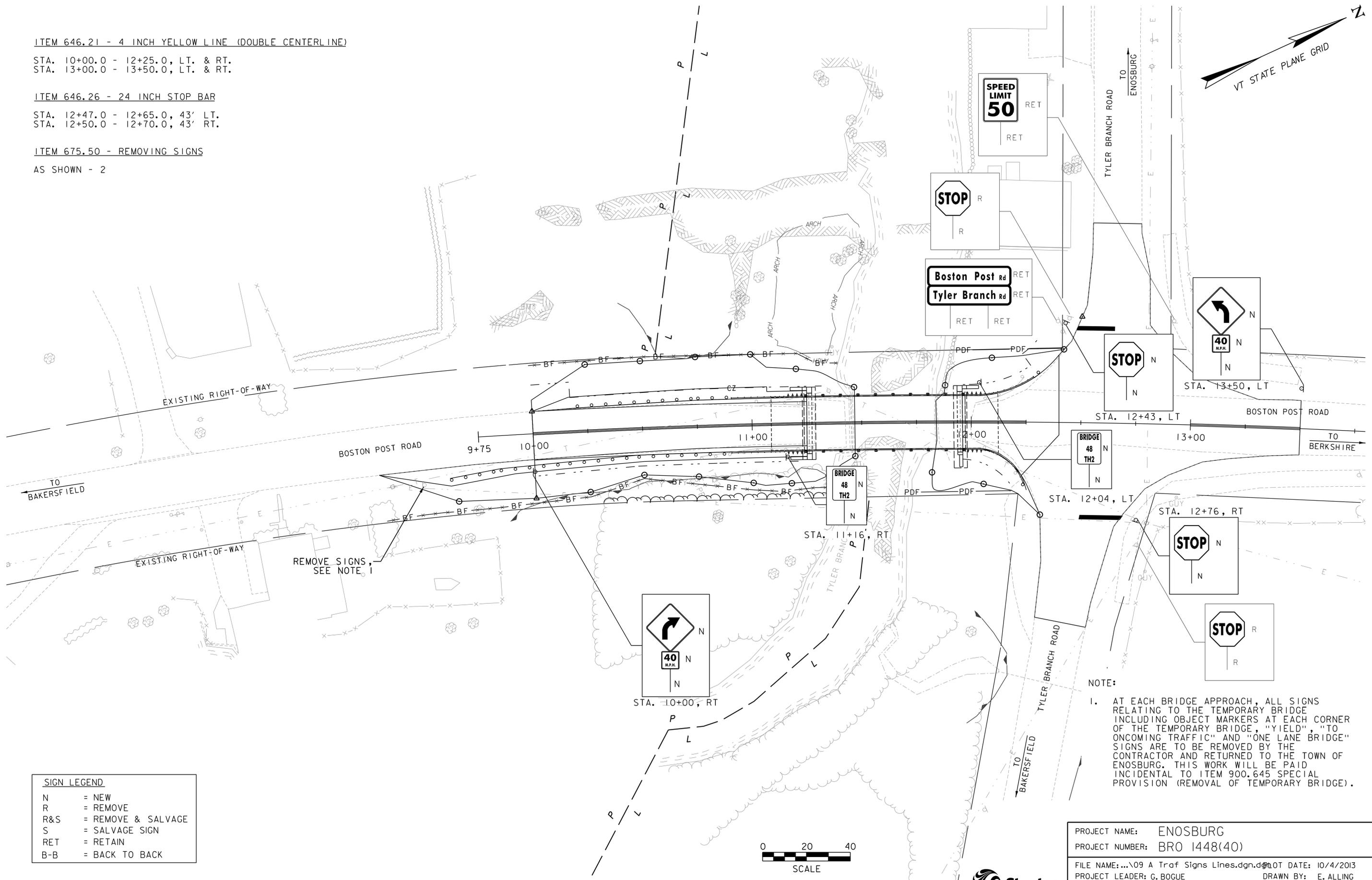
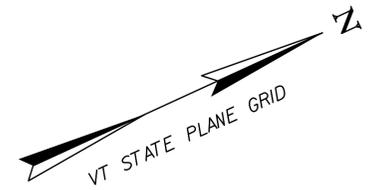
STA. 10+00.0 - 12+25.0, LT. & RT.  
 STA. 13+00.0 - 13+50.0, LT. & RT.

ITEM 646.26 - 24 INCH STOP BAR

STA. 12+47.0 - 12+65.0, 43' LT.  
 STA. 12+50.0 - 12+70.0, 43' RT.

ITEM 675.50 - REMOVING SIGNS

AS SHOWN - 2

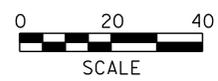


REMOVE SIGNS,  
SEE NOTE 1

NOTE:

1. AT EACH BRIDGE APPROACH, ALL SIGNS RELATING TO THE TEMPORARY BRIDGE INCLUDING OBJECT MARKERS AT EACH CORNER OF THE TEMPORARY BRIDGE, "YIELD", "TO ONCOMING TRAFFIC" AND "ONE LANE BRIDGE" SIGNS ARE TO BE REMOVED BY THE CONTRACTOR AND RETURNED TO THE TOWN OF ENOSBURG. THIS WORK WILL BE PAID INCIDENTAL TO ITEM 900.645 SPECIAL PROVISION (REMOVAL OF TEMPORARY BRIDGE).

SIGN LEGEND	
N	= NEW
R	= REMOVE
R&S	= REMOVE & SALVAGE
S	= SALVAGE SIGN
RET	= RETAIN
B-B	= BACK TO BACK



PROJECT NAME: ENOSBURG  
 PROJECT NUMBER: BRO 1448(40)  
 FILE NAME: ...09 A Traf Signs Lines.dgn.d\10T DATE: 10/4/2013  
 PROJECT LEADER: G. BOGUE DRAWN BY: E. ALLING  
 DESIGNED BY: G. GOYETTE CHECKED BY: G. GOYETTE  
**TRAFFIC SIGNS AND LINES LAYOUT - TSL 1 SHEET 14 OF 46**





**SOIL CLASSIFICATION**

AASHTO

A1	Gravel and Sand
A3	Fine Sand
A2	Silty or Clayey Gravel and Sand
A4	Silty Soil - Low Compressibility
A5	Silty Soil - Highly Compressible
A6	Clayey Soil - Low Compressibility
A7	Clayey Soil - Highly Compressible

**ROCK QUALITY DESIGNATION**

R.O.D. (%)	ROCK DESCRIPTION
<25	Very Poor
25 to 50	Poor
51 to 75	Fair
76 to 90	Good
>90	Excellent

**SHEAR STRENGTH**

UNDRAINED SHEAR STRENGTH IN P.S.F.	CONSISTENCY
<250	Very Soft
250-500	Soft
500-1000	Med. Stiff
1000-2000	Stiff
2000-4000	Very Stiff
>4000	Hard

**CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY**

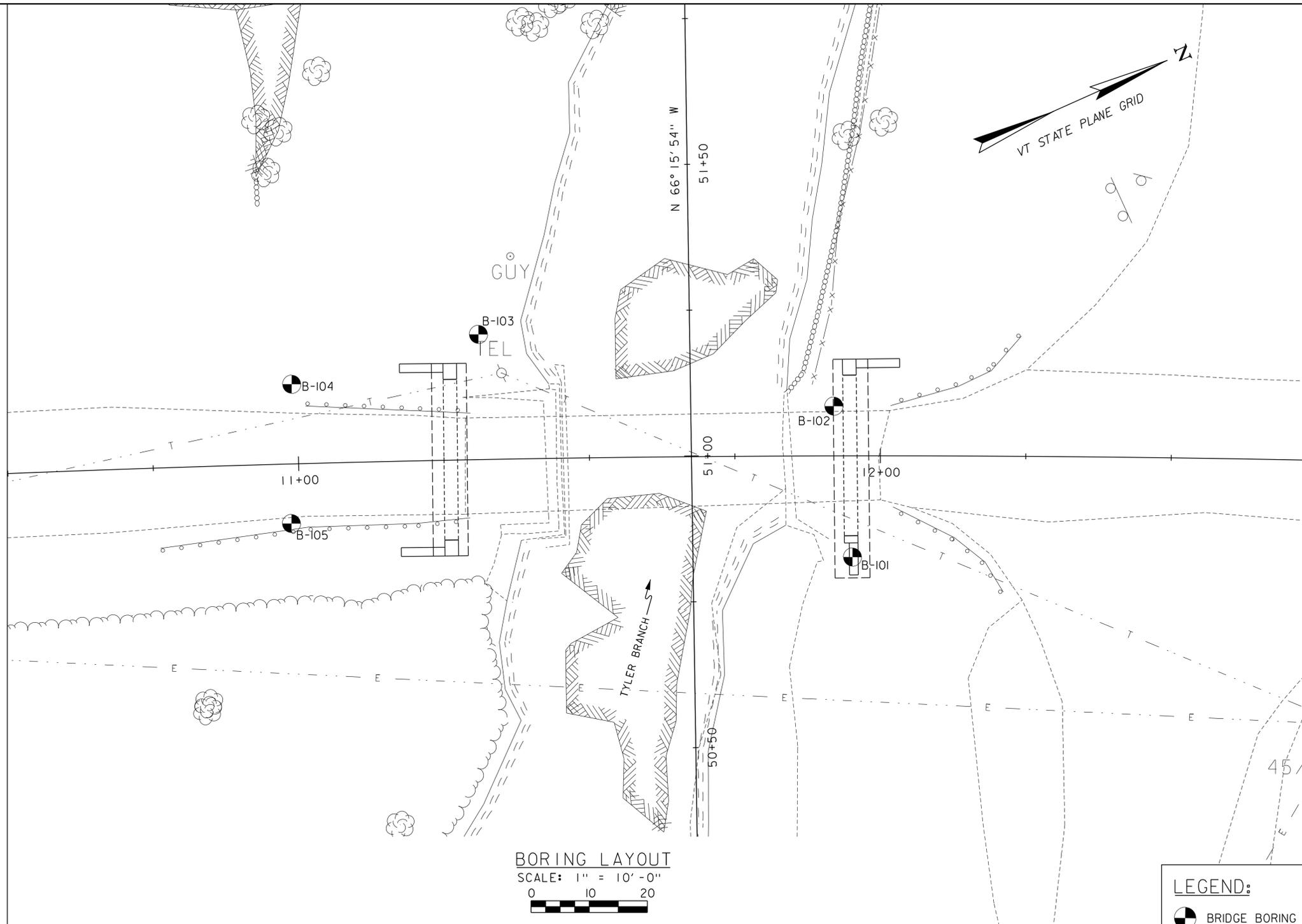
DENSITY (GRANULAR SOILS)		CONSISTENCY (COHESIVE SOILS)	
N	DESCRIPTIVE TERM	N	DESCRIPTIVE TERM
<5	Very Loose	<2	Very Soft
5-10	Loose	2-4	Soft
11-24	Med. Dense	5-8	Med. Stiff
25-50	Dense	9-15	Stiff
>50	Very Dense	16-30	Very Stiff
		31-60	Hard
		>60	Very Hard

**COMMONLY USED SYMBOLS**

- ▼ Water Elevation
  - ⊕ Standard Penetration Boring
  - ⊗ Auger Boring
  - ⊙ Rod Sounding
  - S Sample
  - N Standard Penetration Test
    - Blow Count Per Foot For:
    - 2" O.D. Sampler
    - 1 3/8" I.D. Sampler
    - Hammer Weight Of 140 Lbs.
    - Hammer Fall Of 30"
  - VS Field Vane Shear Test
  - US Undisturbed Soil Sample
  - B Blast
  - DC Diamond Core
  - MD Mud Drill
  - WA Wash Ahead
  - HSA Hollow Stem Auger
    - AX Core Size 1 1/8"
    - BX Core Size 1 5/8"
    - NX Core Size 2 1/8"
  - M Double Tube Core Barrel Used
  - LL Liquid Limit
  - PL Plastic Limit
  - PI Plasticity Index
  - NP Non Plastic
  - w Moisture Content (Dry Wgt. Basis)
  - D Dry
  - M Moist
  - MTW Moist To Wet
  - W Wet
  - Sat Saturated
  - Bo Boulder
  - Gr Gravel
  - Sa Sand
  - Sl Silt
  - Cl Clay
  - HP Hardpan
  - Le Ledge
  - NLTD No Ledge To Depth
  - CNPF Can Not Penetrate Further
  - TLOB Top of Ledge Or Boulder
  - NR No Recovery
  - Rec. Recovery
  - %Rec. Percent Recovery
  - RQD Rock Quality Designation
  - CBR California Bearing Ratio
  - < Less Than
  - > Greater Than
  - R Refusal (N > 100)
  - VTSPG NAD83 - See Note 7
- 
- | COLOR |        |      |              |
|-------|--------|------|--------------|
| blk   | Black  | pnk  | Pink         |
| bl    | Blue   | pu   | Purple       |
| brn   | Brown  | rd   | Red          |
| dk    | Dark   | tn   | Tan          |
| gry   | Gray   | wh   | White        |
| gn    | Green  | yel  | Yellow       |
| lt    | Light  | mltc | Multicolored |
| or    | Orange |      |              |

**DEFINITIONS (AASHTO)**

- BEDROCK (LEDGE)** - Rock in its native location of indefinite thickness.
- BOULDER** - A rock fragment with an average dimension > 12 inches.
- COBBLE** - Rock fragments with an average dimension between 3 and 12 inches.
- GRAVEL** - Rounded particles of rock < 3" and > 0.075" (#10 sieve).
- SAND** - Particles of rock < 0.075" (#10 sieve) and > 0.0025" (#200 sieve).
- SILT** - Soil < 0.0025" (#200 sieve), non or slightly plastic and exhibits no strength when air-dried.
- CLAY** - Fine grained soil, exhibits plasticity when moist and considerable strength when air-dried.
- VARVED** - Alternate layers of silt and clay.
- HARDPAN** - Extremely dense soil, cemented layer, not softened when wet.
- MUCK** - Soft organic soil (containing > 10% organic material).
- MOISTURE CONTENT** - Weight of water divided by dry weight of soil.
- FLOWING SAND** - Granular soil so saturated (loose) that it flows into drill casing during extraction of wash rod.
- STRIKE** - Angle from magnetic north to line of intersection of bed with a horizontal plane.
- DIP** - Inclination of bed with a horizontal plane.



**LEGEND:**  
 BRIDGE BORING

**BORING CHART**

BORING NUMBER	SURVEY STATION	OFFSET	BEDROCK ELEVATION
B-101	11+95	17.3' RT	545.11
B-102	11+92	8.6' LT	535.50
B-103	11+31	21.7' LT	535.88
B-104	10+99	13.7' LT	540.90
B-105	10+98.5	10.2' RT	537.89

**GENERAL NOTES**

- The subsurface explorations shown herein were made between October and November 2012 by the Agency.
- Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.
- Observed water levels and/or conditions indicated are as recorded at the time of exploration and may vary according to the prevailing rainfall, methods of exploration and other factors.
- Engineering judgment was exercised in preparing the subsurface information presented herein. Analysis and interpretation of subsurface data was performed and interpreted for Agency design and estimating purposes. Presentation of the information in the Contract is intended to provide the Contractor access to the same data available to the Agency. The subsurface information is presented in good faith and is not intended as a substitute for personal investigation, independent interpretation, independent analysis or judgment by the Contractor.
- Pictorial structure details shown on the boring plan layout or soils profile are for illustrative purposes only and may not accurately portray final contract details.
- Terminology used on boring logs to describe the hardness, degree of weathering, and spacing of fractures, joints and other discontinuities in the bedrock is defined in the AASHTO Manual on Subsurface Investigations, 1988.
- Northing and Easting coordinates are shown in Vermont State Plane Grid North American Datum 1983 in meters and survey feet.



PROJECT NAME: ENOSBURG  
 PROJECT NUMBER: BRO 1448(40)  
 FILE NAME: ...Plot Files\xxx Bor_Plan.dgn PLOT DATE: 10/4/2013  
 PROJECT LEADER: G. BOGUE DRAWN BY: E. ALLING  
 DESIGNED BY: G. GOYETTE CHECKED BY: G. GOYETTE  
**BORING INFORMATION SHEET** SHEET 16 OF 46

Boring Crew: GARROW, JUDKINS, WHITLOCK  
 Date Started: 10/23/12 Date Finished: 10/23/12  
 VTSPG NAD83: N 861193.20 ft E 1572945.10 ft  
 Station: 11+95 Offset: 17.30  
 Ground Elevation: 557.11 ft

Type: WB Casing SS Sampler  
 I.D.: 4 in 1.5 in  
 Hammer Wt: N.A. 140 lb.  
 Hammer Fall: N.A. 30 in.  
 Hammer/Rod Type: Auto/AWJ  
 Rig: CME 55 TRACK  $C_p = 1.46$

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (ROD %)	Drill Rate minutes/ft	Groundwater Observations																		
						Date	Depth (ft)	Notes	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %											
5		A-2-4, GrSiSa, brn, Moist, Rec. = 0.8 ft				10/24/12	10.9																	
		A-2-4, SiGrSa, brn, Moist, Rec. = 1.2 ft																						
10		A-1-a, SaGr, gry-brn, Moist, Rec. = 1.6 ft, Lab Note: Rounded & Fractured Rocks were within sample.																						
		Lab Note, Multiple types of large pieces of fractured rock (Cobbles), gry-yel, Moist																						
15		12.0 ft - 17.0 ft, Silvery-green, Quartz-muscovite-chlorite Schist, Moderately hard, Unweathered, NXMDC, RMR = 79; Good rock.	1	100	5																			
			(80)	(90)																				
20		Hole stopped @ 17.0 ft																						
25		Remarks: 1. Lost water at 7.0 ft.																						

ABUT. 2  
B.O.F =  
EL. 549.00

APPROX.  
BOTTOM OF  
CASING

APPROX.  
BOTTOM OF  
PILE

Notes:  
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.  
2. N Values have not been corrected for hammer energy.  $C_p$  is the hammer energy correction factor.  
3. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring Crew: GARROW, JUDKINS, WHITLOCK  
 Date Started: 10/26/12 Date Finished: 10/26/12  
 VTSPG NAD83: N 861201.10 ft E 1572920.30 ft  
 Station: 11+92 Offset: -8.60  
 Ground Elevation: 558.0 ft

Type: WB Casing SS Sampler  
 I.D.: 4 in 1.5 in  
 Hammer Wt: N.A. 140 lb.  
 Hammer Fall: N.A. 30 in.  
 Hammer/Rod Type: Auto/AWJ  
 Rig: CME 55 TRACK  $C_p = 1.46$

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (ROD %)	Drill Rate minutes/ft	Groundwater Observations																		
						Date	Depth (ft)	Notes	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %											
5		A-1-a, SaGr, brn-gry, Moist, Rec. = 1.1 ft, Lab Note: Broken Rock was within sample.																						
		A-1-a, SaGr, gry, Dry, Rec. = 0.6 ft, Lab Note: Broken Rock was within sample.																						
10		Field Note:, NXDC, Cobbles																						
		Visual Description:, Broken Rock with silty sand, gry, Moist, Rec. = 0.2 ft, Material similar to 3-4.9 ft., Insufficient sample for testing. Field Note:, NXDC, Boulder																						
15		A-1-b, SaGr, Dk/gry, Moist, Rec. = 0.8 ft, Lab Note: Broken Rock was within sample.																						
		Field Note:, NXDC, Cobbles																						
20		A-2-4, SaSiGr, gry, Moist, Rec. = 0.2 ft, Lab Note: Some Broken Rock was within sample.																						
		Field Note:, NXDC																						
25		22.5 ft - 27.5 ft, Silvery-green, Quartz-muscovite-chlorite Schist, Moderately hard, NXMDC, Unweathered from 22.5-25.3 ft., Moderately Weathered from 25.3-25.9 ft., RMR = 72; Good rock.	1	82	7																			
			(80-90)	(72)																				
25		Hole stopped @ 27.5 ft																						

ABUT. 2  
B.O.F =  
EL. 549.00

APPROX.  
BOTTOM OF  
CASING

APPROX.  
BOTTOM OF  
PILE

Notes:  
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.  
2. N Values have not been corrected for hammer energy.  $C_p$  is the hammer energy correction factor.  
3. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.





STATE OF VERMONT  
AGENCY OF TRANSPORTATION  
MATERIALS & RESEARCH SECTION  
SUBSURFACE INFORMATION

**BORING LOG**

Boring No.: **B-103**  
Page No.: 1 of 1  
Pin No.: 12J168  
Checked By: CAA

**ENOSBURG  
BRO 1448(40)  
TH-2 BR-48**

Boring Crew: GARROW, JUDKINS, WHITLOCK	Type: Casing WB, Sampler SS	Groundwater Observations			
Date Started: 10/23/12 Date Finished: 10/23/12	I.D.: 4 in	Date	Depth (ft)	Notes	
VTSPG NAD83: N 861150.60 ft E 1572883.70 ft	Hammer Wt: N.A. 140 lb.				
Station: 11+31 Offset: -21.70	Hammer Fall: N.A. 30 in.				
Ground Elevation: 549.88 ft	Hammer/Rod Type: Auto/AWJ				
	Rig: CME 55 TRACK C _e = 1.46				

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/ft (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		A-1-b, Sa, brn, Moist, Rec. = 0.8 ft				WH-1-1-1 (2)	17.3	18.2	64.0	17.8
		A-1-b, SaGr, brn, Moist, Rec. = 0.6 ft				5-1-3-5 (4)	15.1	53.7	32.4	13.9
		Field Note: No Recovery				(R)				
		A-1-b, Gr, gry, Moist, Rec. = 0.1 ft, Lab Note: Broken Rock was within sample.				R@2.5"	7.8	71.1	10.8	18.1
		Field Note: Soft Broken Rock 13.2-14 ft., Possible top of bedrock. 14.0 ft - 19.0 ft, Silvery-green, Quartz-muscovite-chlorite Schist, Moderately hard, Unweathered, NXMDC, RMR = 76; Good rock.	1 (80)	96 (80)	5	Top of Bedrock @ 14.0 ft				
			6		6					
			7		6					
			6							

Hole stopped @ 19.0 ft

Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual.  
2. N Values have not been corrected for hammer energy. C_e is the hammer energy correction factor.  
3. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

ABUT. 1  
B.O.F =  
EL. 546.50

APPROX.  
BOTTOM OF  
CASING

APPROX.  
BOTTOM OF  
PILE



STATE OF VERMONT  
AGENCY OF TRANSPORTATION  
MATERIALS & RESEARCH SECTION  
SUBSURFACE INFORMATION

**BORING LOG**

Boring No.: **B-104**  
Page No.: 1 of 1  
Pin No.: 12J168  
Checked By: CAA

**ENOSBURG  
BRO 1448(40)  
TH-2 BR-48**

Boring Crew: GARROW, JUDKINS, WHITLOCK	Type: Casing WB, Sampler SS	Groundwater Observations			
Date Started: 10/24/12 Date Finished: 10/24/12	I.D.: 4 in	Date	Depth (ft)	Notes	
VTSPG NAD83: N 861117.90 ft E 1572878.10 ft	Hammer Wt: N.A. 140 lb.				
Station: 10+99 Offset: -13.70	Hammer Fall: N.A. 30 in.				
Ground Elevation: 557.4 ft	Hammer/Rod Type: Auto/AWJ				
	Rig: CME 55 TRACK C _e = 1.46				

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/ft (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		A-1-b, GrSa, Dk/brn, Moist, Rec. = 0.9 ft				1-2-3-4 (5)	12.3	37.8	45.8	16.4
		A-1-a, Gr, gry, Moist, Rec. = 0.8 ft, Lab Note: Sample was mostly Broken Rock.				8-9-R@0.0" (R)	7.8	70.3	19.5	10.2
		A-1-a, SaGr, gry, Moist, Rec. = 0.3 ft, Lab Note: Sample was mostly Broken Rock.				11-6-4-2 (10)	7.7	72.2	20.2	7.6
		A-2-4, SiSa, gry, Moist, Rec. = 0.2 ft, Lab Note: Broken Rock was within sample.				R@2.5"	18.3	15.5	53.1	31.4
		Field Note: 16.5 ft - 21.5 ft, Silvery-green, Quartz-muscovite-chlorite Schist, with quartz rich zones. Moderately hard, Unweathered, NXMDC, RMR = 62; Good rock.	1 (80-90)	90 (0)	1	Top of Bedrock @ 16.5 ft				
			2		2					
			2		2					
			3		3					
			3							
			2		2					
			7		7					
			6		6					
			4		4					
			3		3					

Hole stopped @ 26.5 ft

Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual.  
2. N Values have not been corrected for hammer energy. C_e is the hammer energy correction factor.  
3. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

PROJECT NAME: ENOSBURG  
PROJECT NUMBER: BRO 1448(40)  
FILE NAME: ... \Plot Files\..._A Bor_Log2.dgn PLOT DATE: 10/4/2013  
PROJECT LEADER: G. BOGUE DRAWN BY: E. ALLING  
DESIGNED BY: G. GOYETTE CHECKED BY: G. GOYETTE  
**BORING LOG 2** SHEET 18 OF 46



Boring Crew: <u>GARROW, JUDKINS, WHITLOCK</u> Date Started: <u>11/02/12</u> Date Finished: <u>11/02/12</u> VTSPG NAD83: <u>N 861107.90 ft E 1572899.80 ft</u> Station: <u>10+98.5</u> Offset: <u>10.20</u> Ground Elevation: <u>558.19 ft</u>	Type: <u>WB</u> I.D.: <u>4 in</u> Hammer Wt: <u>N.A.</u> Hammer Fall: <u>N.A.</u> Hammer/Rod Type: <u>Auto/AWJ</u> Rig: <u>CME 55 TRACK</u>	Casing: <u>WB</u> Sampler: <u>SS</u> 140 lb. 30 in. C _c = 1.46	Groundwater Observations <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Date</th> <th>Depth (ft)</th> <th>Notes</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	Date	Depth (ft)	Notes									
Date	Depth (ft)	Notes													

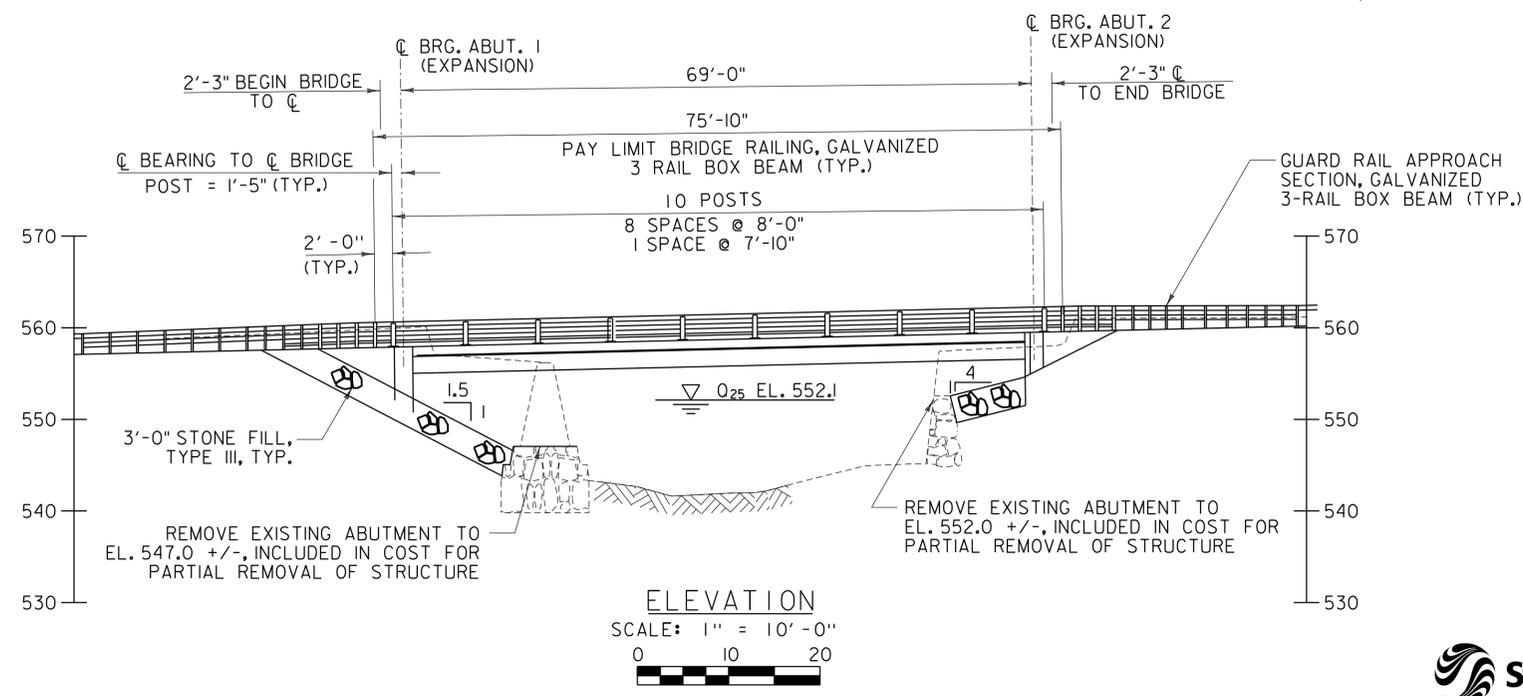
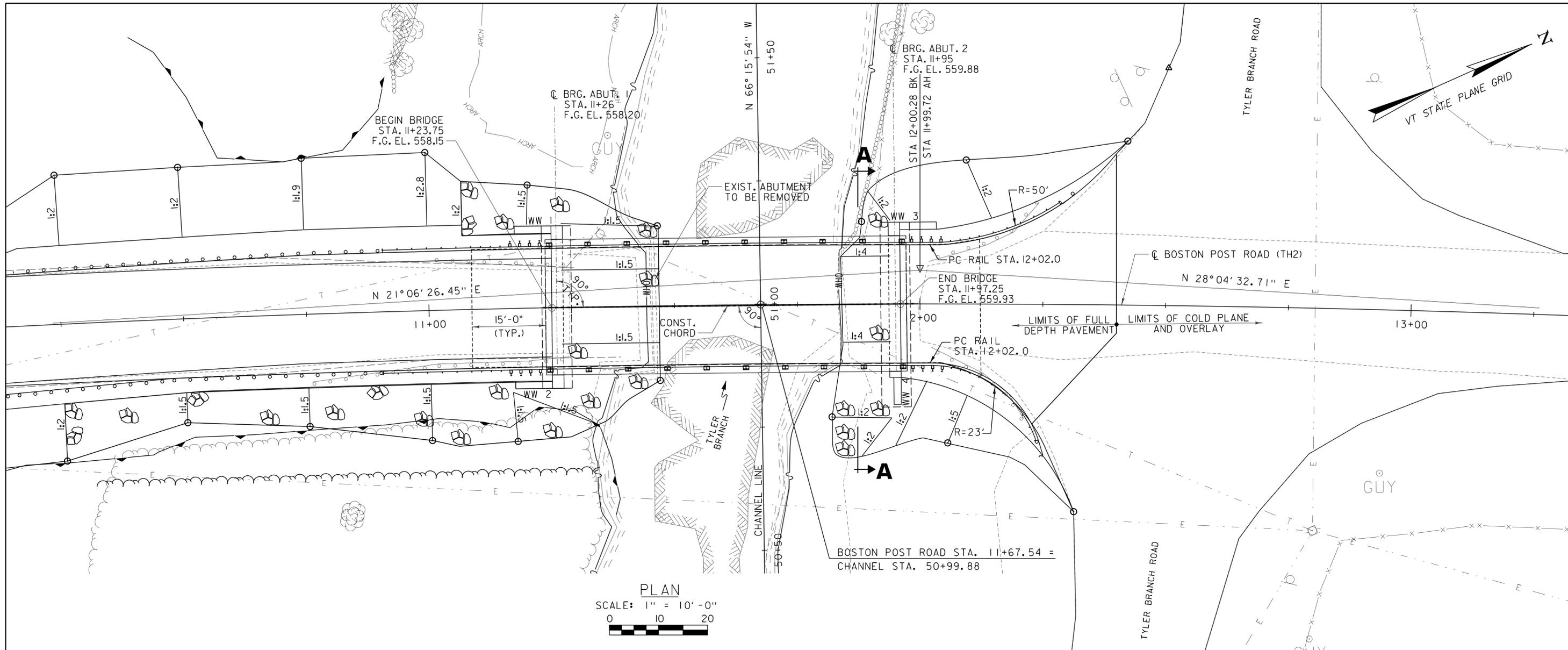
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/ft (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Field Note: Asphalt Pavement								
		A-1-a, SaGr, brn, Moist, Rec. = 0.3 ft, Asphalt Pavement was within sample.				4-R (R)	7.2	56.5	29.7	13.8
		A-4, GrSaSi, brn, Moist, Rec. = 1.1 ft				6-5-4-5 (9)	15.9	27.1	31.1	41.8
5		Field Note: NXDC, Gravel								
		Visual Description: GrSaSi, brn, Moist, Rec. = 0.1 ft, Material similar to 2-4 ft., Insufficient sample for testing.				3-2-1-1 (3)	13.8			
10		Field Note: NXDC, Gravel								
		A-1-b, SaGr, brn, Moist, Rec. = 0.8 ft				14-13-24-19 (37)	11.1	53.1	32.1	14.8
15		Lab Note, NXDC, Gravel								
		A-1-b, SaGr, brn, Moist, Rec. = 0.5 ft, Lab Note: Broken Rock was within sample.				10-12-7-4 (19)	9.5	49.8	33.2	17.0
20		20.3 ft - 25.3 ft, Silvery-green, Quartz-muscovite-chlorite Schist, Moderately hard, Unweathered, NXMDC, RMR = 76; Good rock.	1 (80-90)	92 (76)	3					
					3					
					2					
					3					
					3					
25		Hole stopped @ 25.3 ft								

Notes:

1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_c is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING LOG 2 ENOSBURG BRO 1448(40).GPJ VERMONT AOT.GDT 11/27/12

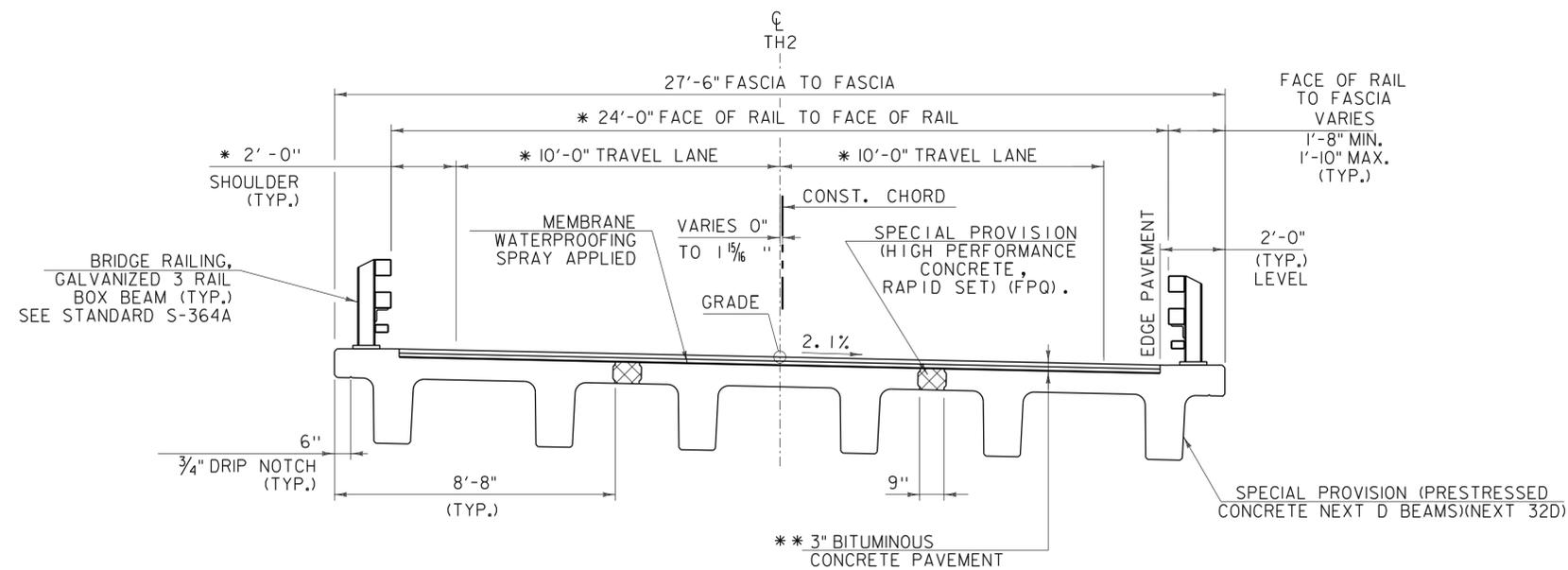




**NOTE:**  
 FOR APPROXIMATE LIMITS OF REMOVAL OF EXISTING WALL AT ABUTMENT 2, REFER TO VIEW A-A ON SHEET 29.

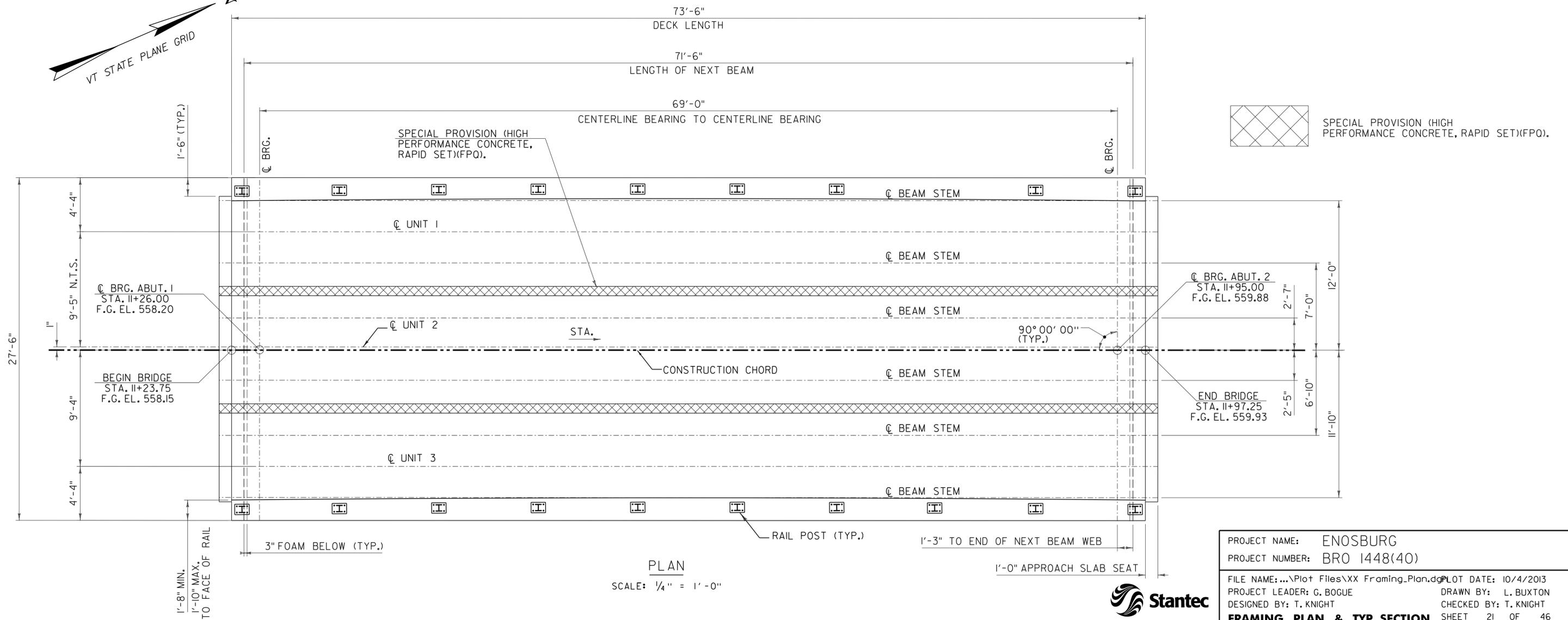
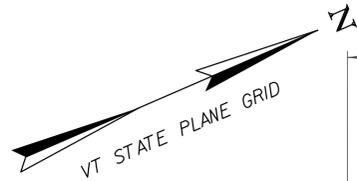
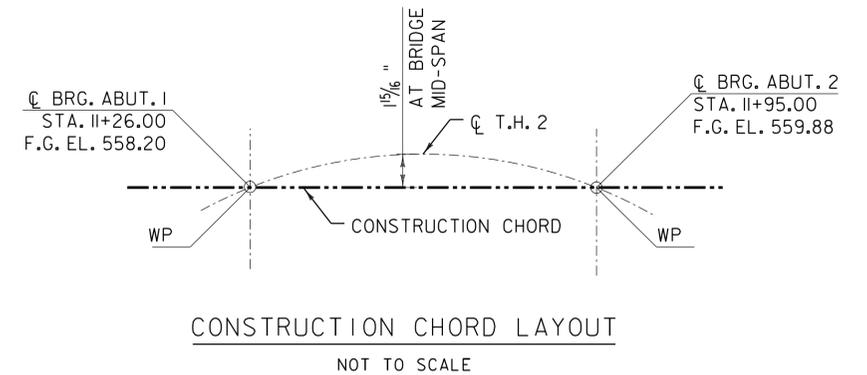
PROJECT NAME:	ENOSBURG
PROJECT NUMBER:	BRO 1448(40)
FILE NAME: ...Plot Files\... Plan_Elev.dgn	PLOT DATE: 10/4/2013
PROJECT LEADER: G. BOGUE	DRAWN BY: E. ALLING
DESIGNED BY: G. GOYETTE	CHECKED BY: G. GOYETTE
<b>PLAN AND ELEVATION SHEET</b>	SHEET 20 OF 46





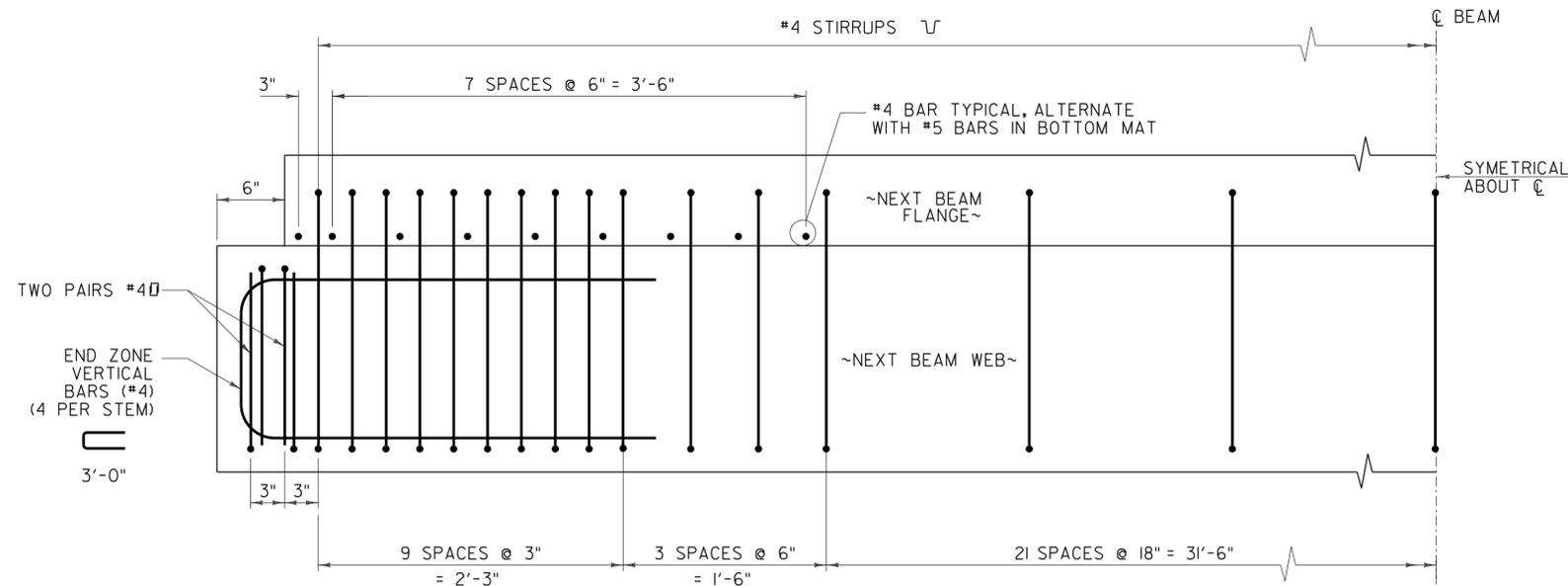
* RADIAL DIMENSIONS  
 ** 3" TYPE IVS (TWO 1/2" LIFTS)

BRIDGE TYPICAL SECTION  
 SCALE 3/8" = 1'-0"



PROJECT NAME:	ENOSBURG
PROJECT NUMBER:	BRO 1448(40)
FILE NAME:	...Plot Files\XXX Framing_Plan.dgn
PROJECT LEADER:	G. BOGUE
DESIGNED BY:	T. KNIGHT
FRAMING PLAN & TYP. SECTION	
PLOT DATE:	10/4/2013
DRAWN BY:	L. BUXTON
CHECKED BY:	T. KNIGHT
SHEET	21 OF 46

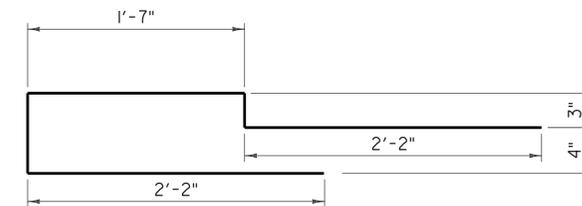




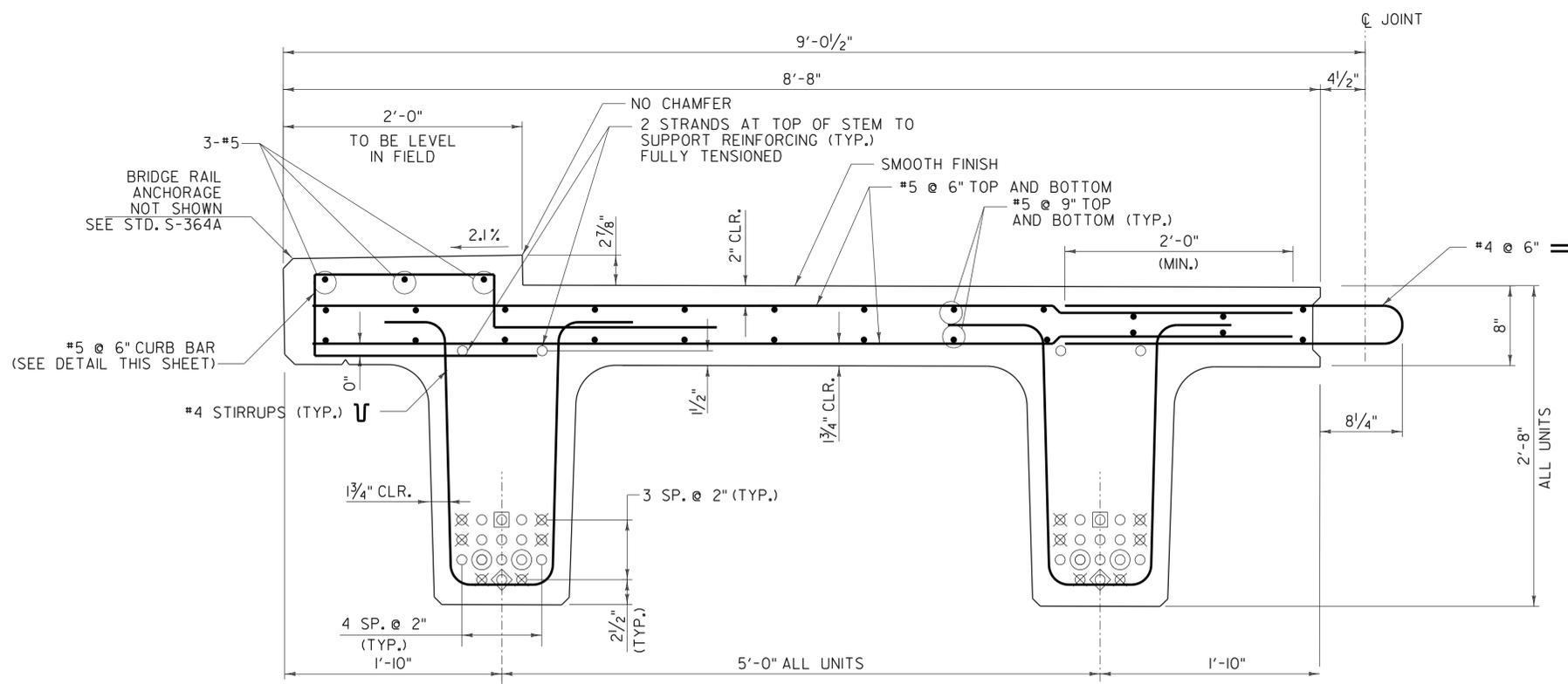
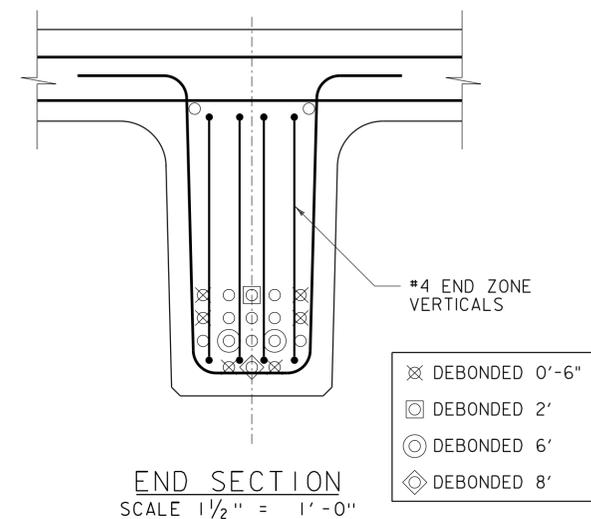
**ADDITIONAL END BEAM REINFORCEMENT**

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

NOTE:  
TYPICAL DECK REINFORCING AND NEXT BEAM  
PRESTRESSING TENDONS NOT SHOWN FOR CLARITY



**CURB BAR**  
SCALE 1 1/2" = 1'-0"



**UNIT 1**

**TYPICAL BEAM REINFORCING**

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

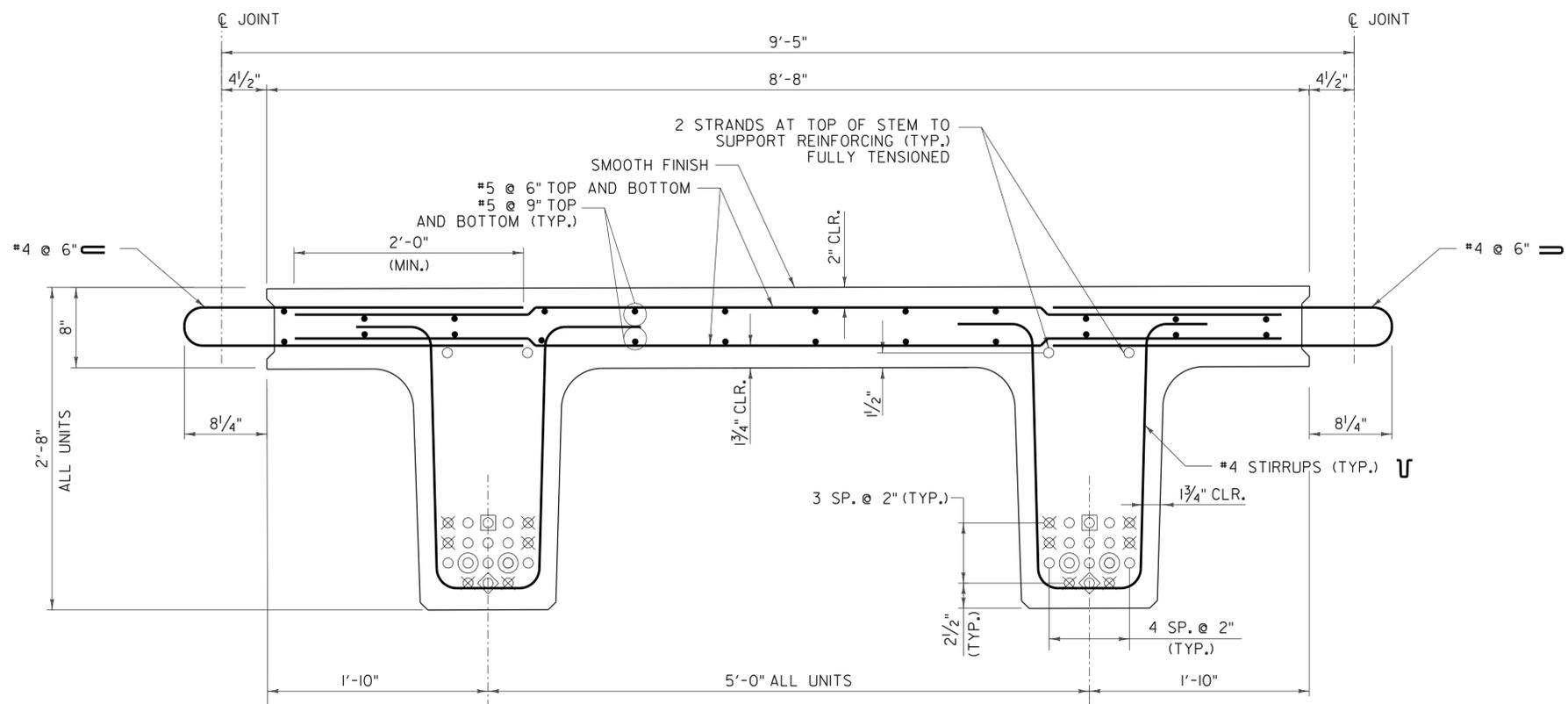
**NOTES:**

1. LEAVE SIX STRANDS 1'-6" LONG.
2. REINFORCING STEEL SHALL MEET THE REQUIREMENTS OF SECTION 507 FOR LEVEL II REINFORCING STEEL.



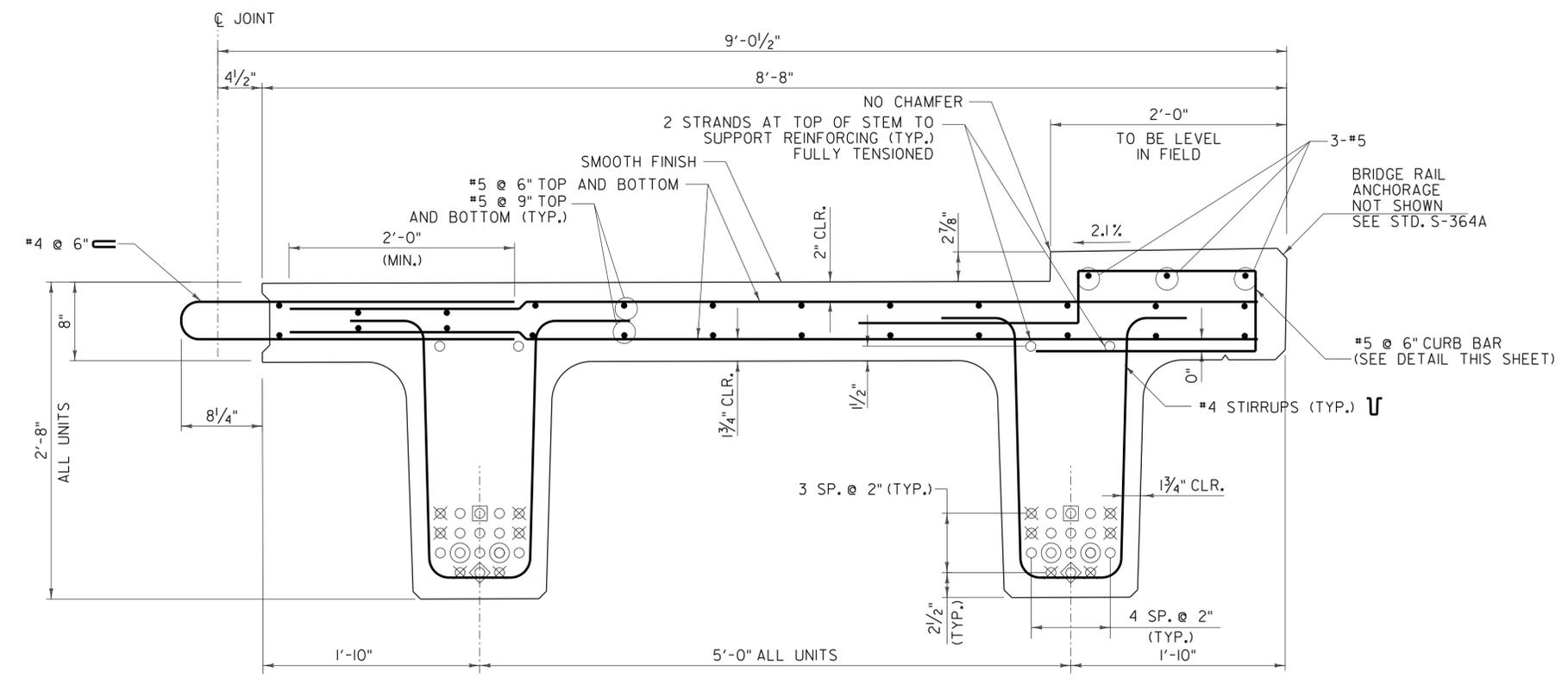
PROJECT NAME: ENOSBURG  
PROJECT NUMBER: BRO 1448(40)

FILE NAME: ...XX Next_Beam_Det_1.dgn PLOT DATE: 10/4/2013  
PROJECT LEADER: G. BOGUE DRAWN BY: L. BUXTON  
DESIGNED BY: T. KNIGHT CHECKED BY: T. KNIGHT  
**NEXT BEAM DETAILS - 1** SHEET 22 OF 46



UNIT 2  
 TYPICAL BEAM REINFORCING  
 SCALE 1/2" = 1'-0"

- NOTES:
1. LEAVE SIX STRANDS 1'-6" LONG.
  2. REINFORCING STEEL SHALL MEET THE REQUIREMENTS OF SECTION 507 FOR LEVEL II REINFORCING STEEL.

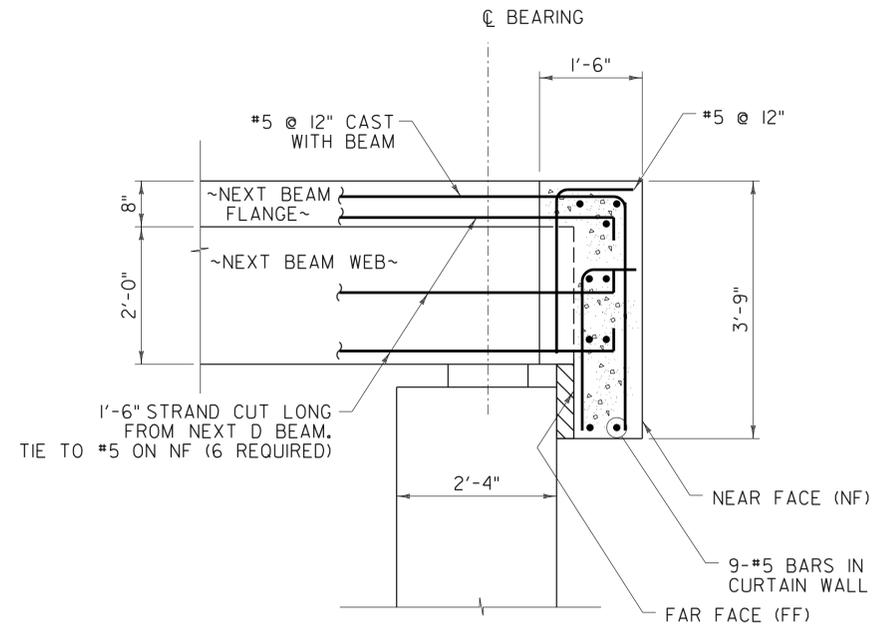


UNIT 3  
 TYPICAL BEAM REINFORCING  
 SCALE 1/2" = 1'-0"

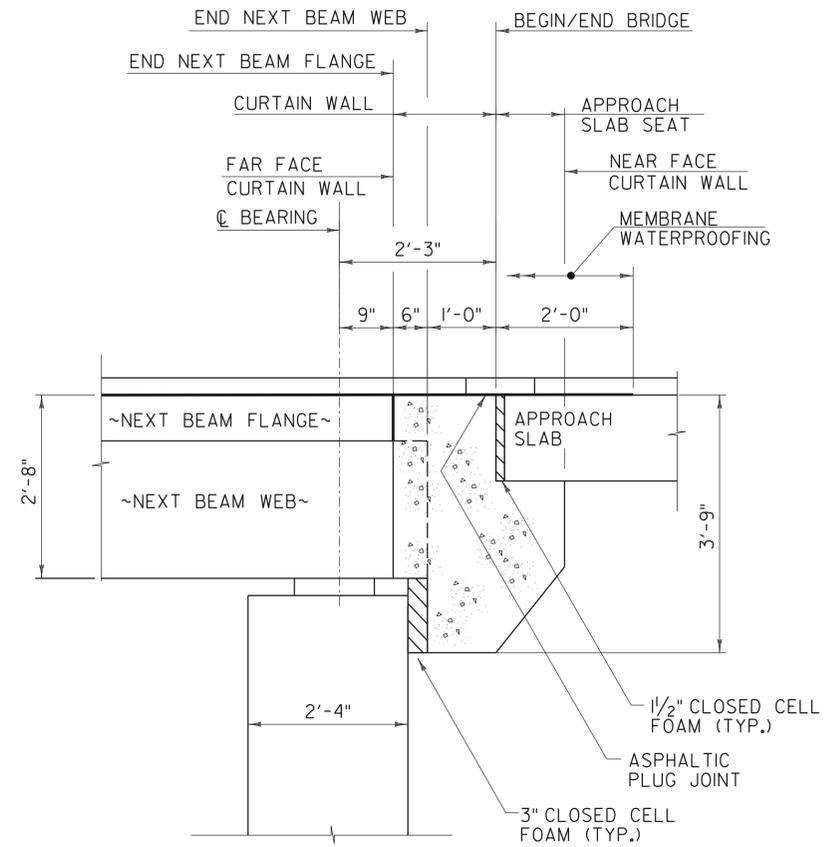
- NOTES:
1. LEAVE SIX STRANDS 1'-6" LONG.
  2. REINFORCING STEEL SHALL MEET THE REQUIREMENTS OF SECTION 507 FOR LEVEL II REINFORCING STEEL.

PROJECT NAME:	ENOSBURG	PLOT DATE:	10/4/2013
PROJECT NUMBER:	BRO 1448(40)	DRAWN BY:	L. BUXTON
FILE NAME:	...XXX Next_Beam_Det_2.dgn	DESIGNED BY:	T. KNIGHT
PROJECT LEADER:	G. BOGUE	CHECKED BY:	T. KNIGHT
<b>NEXT BEAM DETAILS - 2</b>		SHEET 23 OF 46	

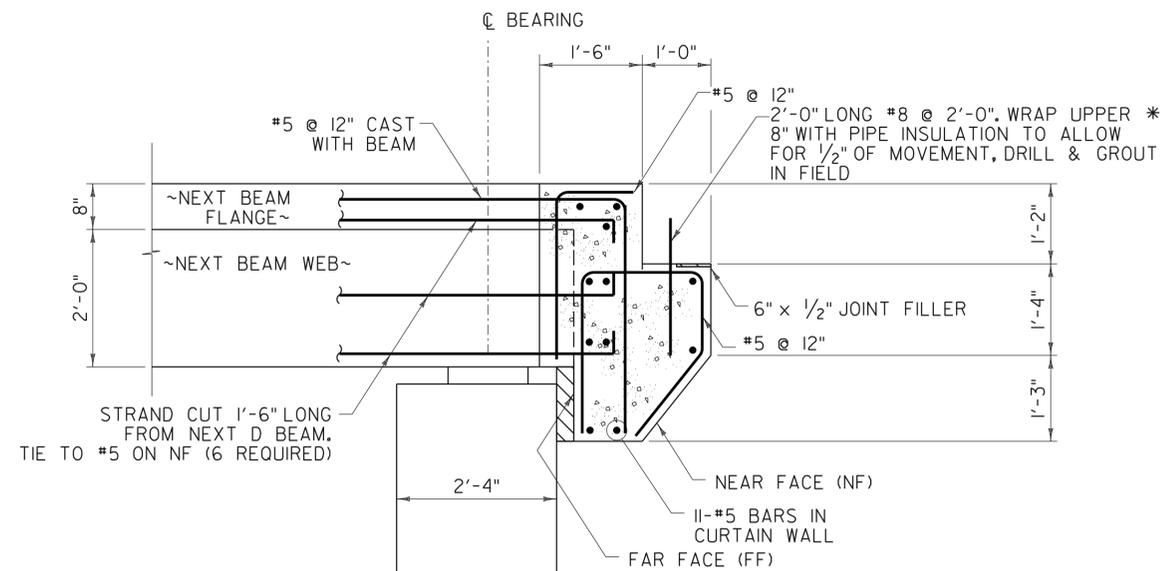




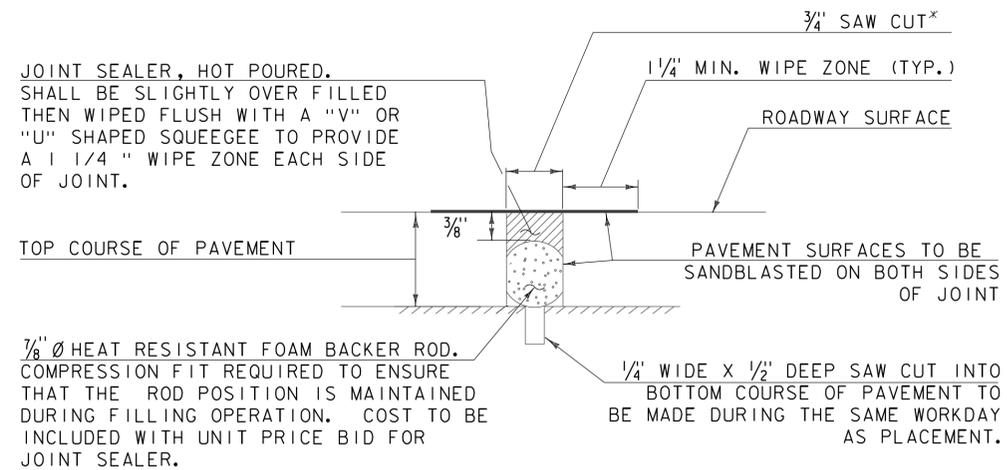
PRECAST CURTAIN WALL REINFORCING SECTION A-A  
SCALE 3/4" = 1'-0"



BRIDGE END DETAIL  
SCALE 3/4" = 1'-0"



PRECAST CURTAIN WALL REINFORCING SECTION B-B  
SCALE 3/4" = 1'-0"



NOTE: PLACE JOINT SEALER, HOT Poured AT THE BEGINNING OF APPROACH SLABS.

SAWED PAVEMENT JOINT DETAIL  
N. T. S.

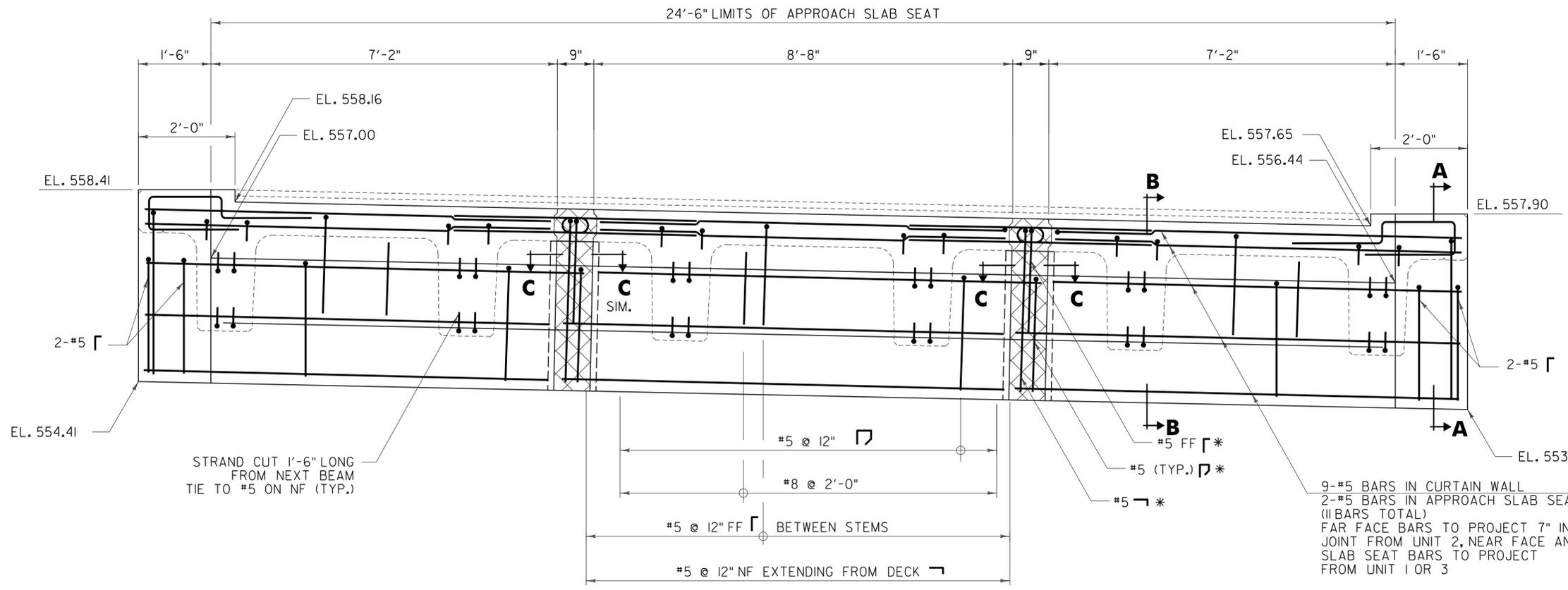
* JOINT IS TO BE LOCATED ACCURATELY BY STRING LINING, OR OTHER MEANS, PRIOR TO PAVING, SO THAT THE SAW CUTS WILL BE MADE DIRECTLY OVER THE END OF CONCRETE DECK. JOINT SHALL BE CUT DRY IN A SINGLE PASS AND BE SEALED WITHIN 24 HOURS OR PRIOR TO EXPOSURE TO TRAFFIC. JOINT SHALL BE CLEANED PRIOR TO APPLYING THE JOINT SEALER. FOR LOCATION REQUIRED, REFER TO SHEET 26.

NOTE:  
FOR LOCATIONS OF SECTIONS A-A AND B-B,  
REFER TO SHEET 25.

PROJECT NAME: ENOSBURG  
PROJECT NUMBER: BRO 1448(40)

FILE NAME: ...XXX Curtain.Wall.Det.Ldgn PLOT DATE: 10/4/2013  
PROJECT LEADER: G. BOGUE DRAWN BY: L. BUXTON  
DESIGNED BY: T. KNIGHT CHECKED BY: T. KNIGHT  
CURTAIN WALL DETAILS - 1 SHEET 24 OF 46

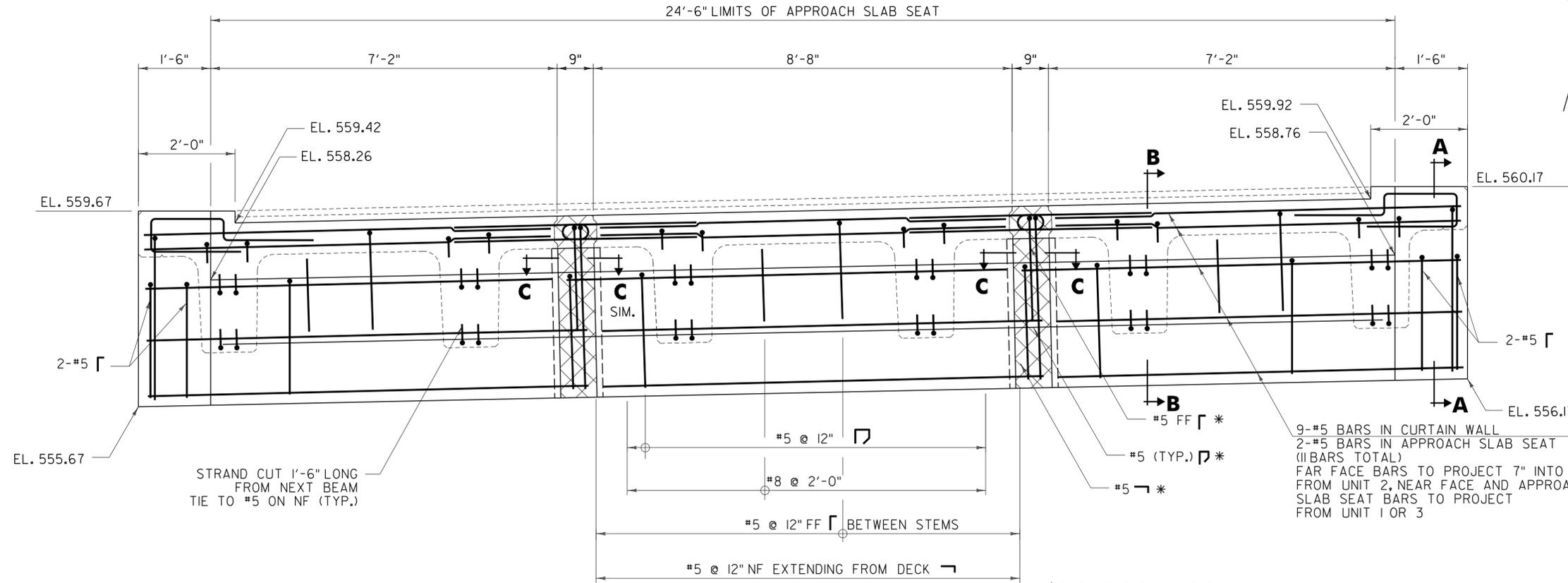




ABUTMENT 1 CURTAIN WALL ELEVATION

SCALE 3/4" = 1'-0"

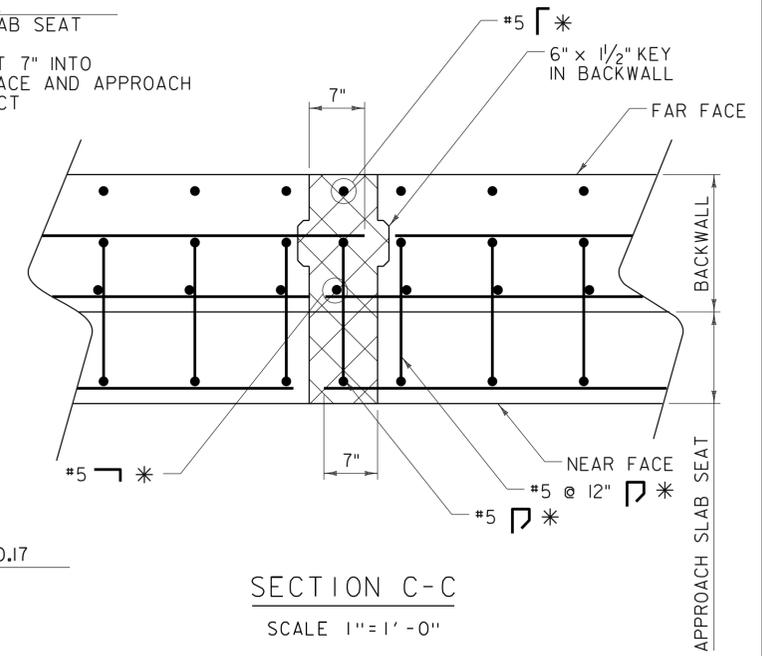
* BARS FOR CLOSURE POUR INDICENTAL TO PRECAST ITEM (TYP.)



ABUTMENT 2 CURTAIN WALL ELEVATION

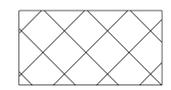
SCALE 3/4" = 1'-0"

* BARS FOR CLOSURE POUR INDICENTAL TO PRECAST ITEM (TYP.)



SECTION C-C

SCALE 1" = 1'-0"

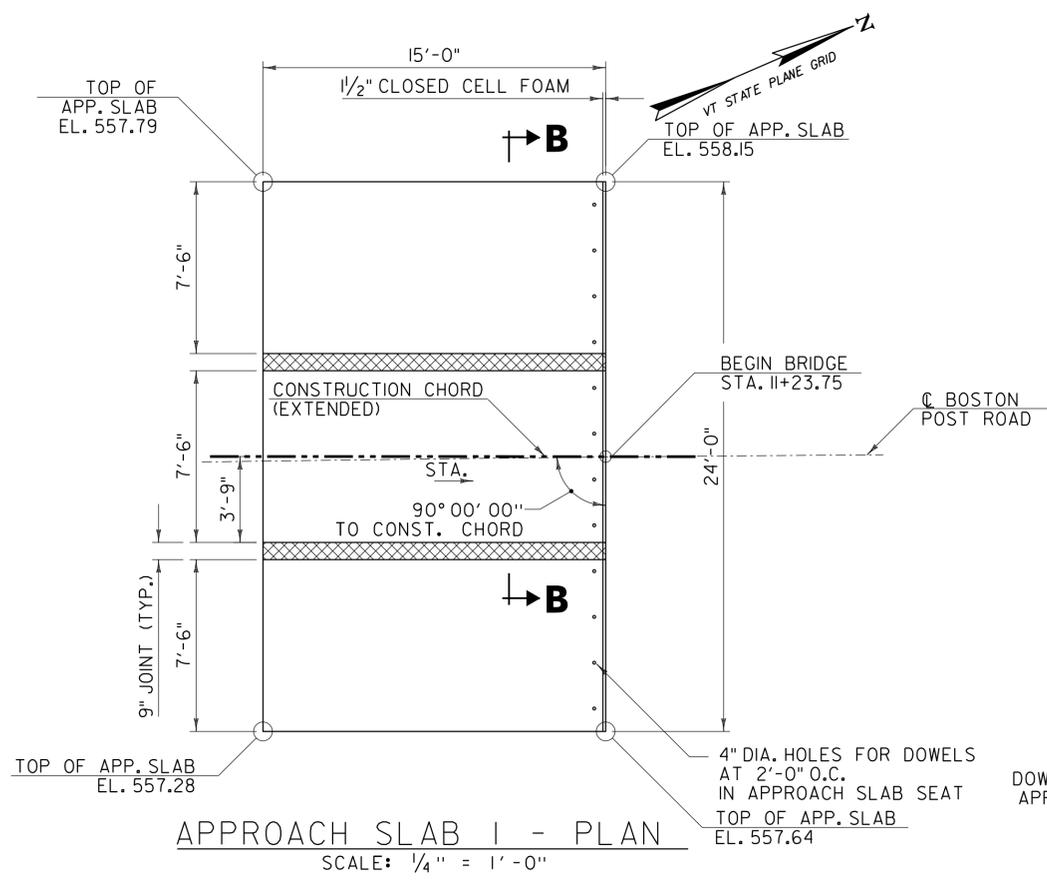


SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)(FPO).

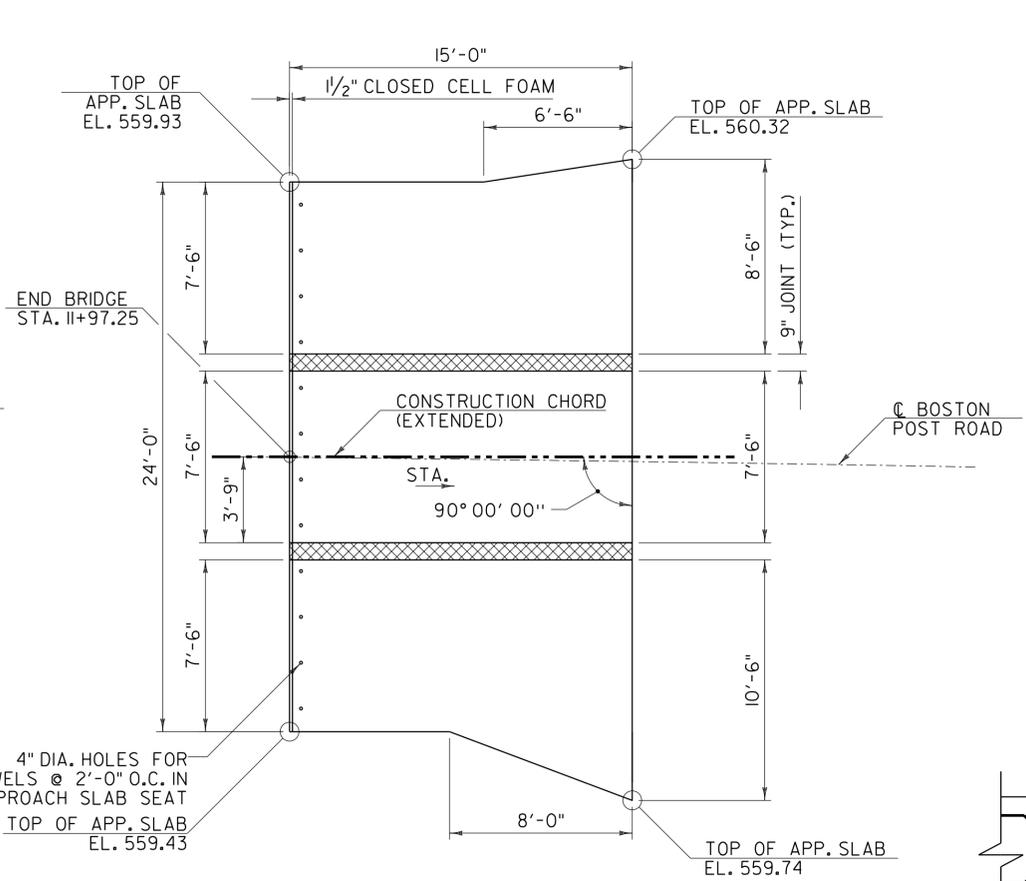
NOTE: FOR SECTIONS A-A AND B-B, REFER TO SHEET 24.

PROJECT NAME:	ENOSBURG	FILE NAME: ...XX Curtain_Wall_Det_2.dgn	PLOT DATE:	10/4/2013	
PROJECT NUMBER:	BRO 1448(40)	PROJECT LEADER:	G. BOGUE	DRAWN BY:	L. BUXTON
		DESIGNED BY:	T. KNIGHT	CHECKED BY:	T. KNIGHT
<b>CURTAIN WALL DETAILS - 2</b>			SHEET 25 OF 46		

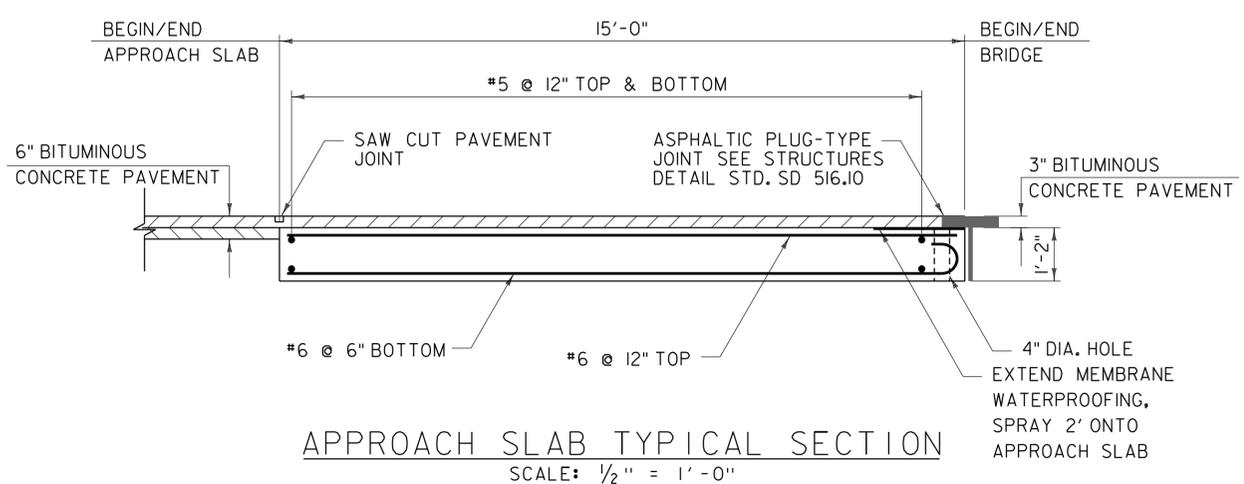
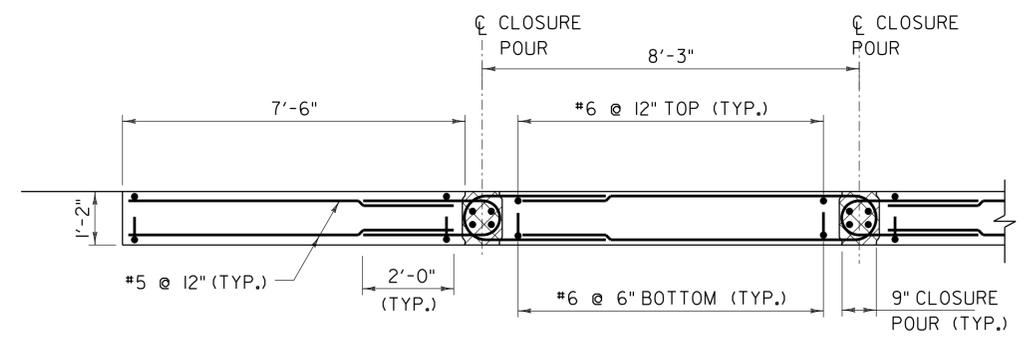
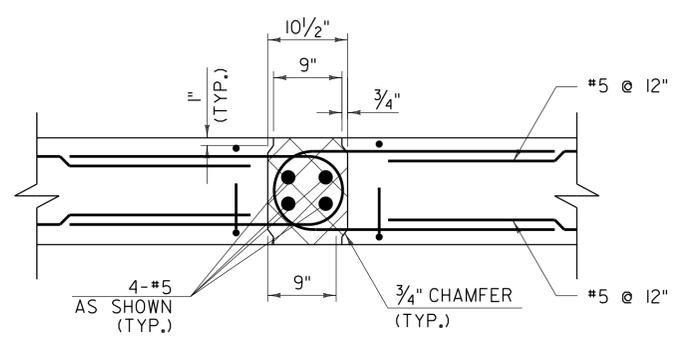
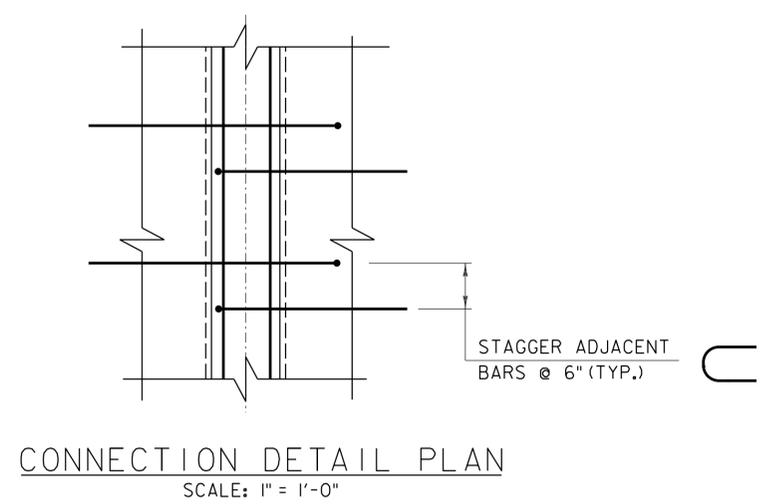




**APPROACH SLAB 1 - PLAN**  
SCALE: 1/4" = 1'-0"



**APPROACH SLAB 2 - PLAN**  
SCALE: 1/4" = 1'-0"

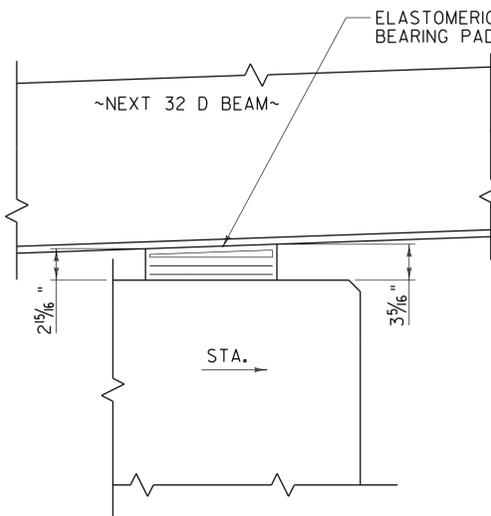
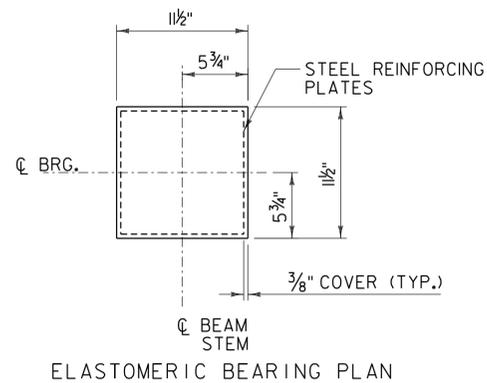


**LEGEND:**  
[Cross-hatched box] SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)(FPO).

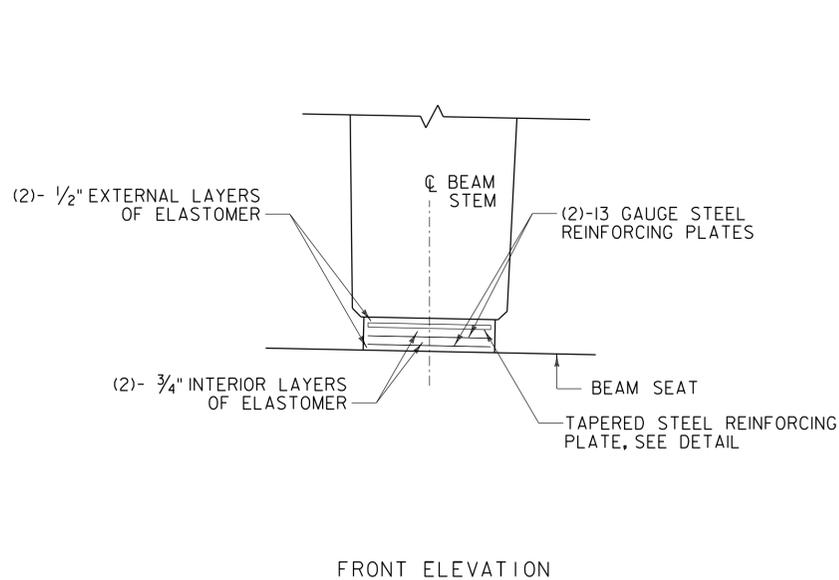
**NOTE:**  
FOR SAWCUT PAVEMENT JOINT DETAIL REFER TO SHEET 24.

PROJECT NAME:	ENOSBURG
PROJECT NUMBER:	BRO 1448(40)
FILE NAME: ...Plot Files\XXX App slabs.dgn	PLOT DATE: 10/4/2013
PROJECT LEADER: G. BOGUE	DRAWN BY: L. BUXTON
DESIGNED BY: J. HUNGERFORD	CHECKED BY: T. KNIGHT
<b>APPROACH SLABS &amp; DETAILS</b>	
SHEET 26 OF 46	

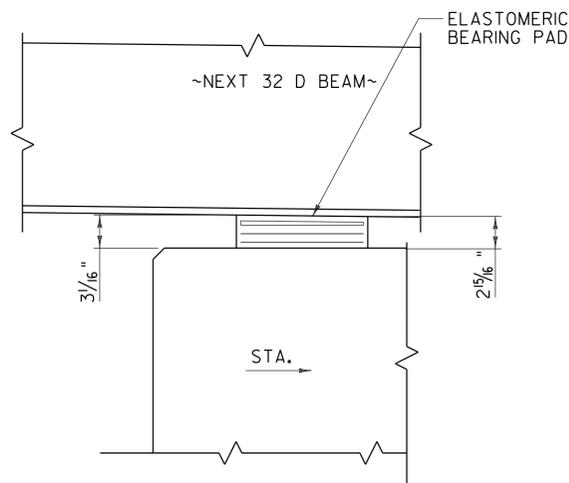




SIDE ELEVATION - ABUTMENT 1



FRONT ELEVATION



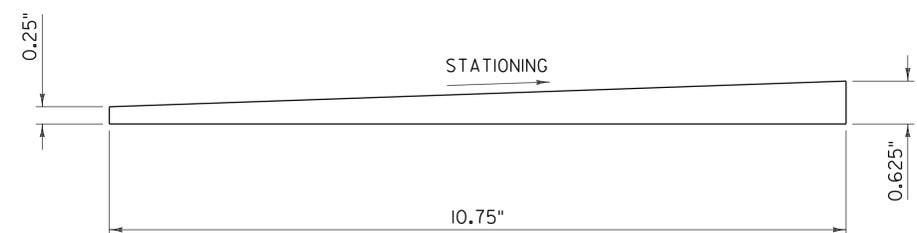
SIDE ELEVATION - ABUTMENT 2

ELASTOMERIC BEARING ASSEMBLY

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

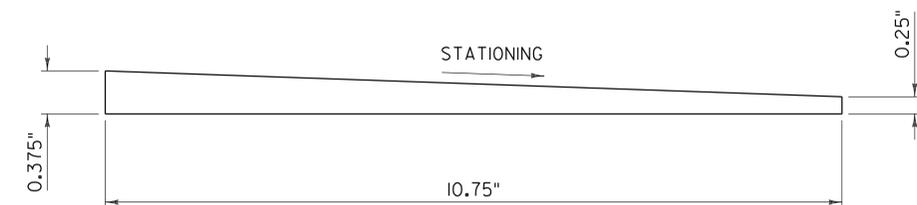
BEARING NOTES:

1. BEARINGS SHALL CONFORM TO THE APPLICABLE SUBSECTIONS OF STANDARD SPECIFICATIONS SECTIONS 531 AND 731.
2. ALL REINFORCEMENT BETWEEN LAYERS OF ELASTOMER SHALL BE STEEL MEETING THE REQUIREMENTS OF SUBSECTION 714.02. ALL INTERNAL STEEL PLATES SHALL BE SAND BLASTED AND FREE OF COATING, RUST AND MILL SCALE. THE PLATES SHALL BE FREE OF SHARP EDGES AND BURRS.
3. THE BEARINGS ARE DESIGNED SO THAT THE SUPERSTRUCTURE MAY BE ERECTED WHEN THE BEAM TEMPERATURE IS WITHIN THE RANGE OF 20 DEGREES F AND 70 DEGREES F WITHOUT ADJUSTING THE BEARINGS FOR TEMPERATURE. IF THE BEAM TEMPERATURE IS OUTSIDE THIS RANGE, THE BEARINGS SHALL BE RESET AS DIRECTED BY THE RESIDENT.
4. STEEL REINFORCED ELASTOMERIC BEARINGS WERE DESIGNED PER METHOD = A.
5. THE ELASTOMER WAS DESIGNED WITH A SHEAR MODULUS OF 152 PSI +/- 15%.
6. ABUTMENT 1 AND 2 BEARINGS
  - A. DESIGN DEAD LOAD REACTION = 35.80 KIPS/BEARING
  - B. DESIGN LIVE LOAD REACTION = 38.80 KIPS/BEARING (NO IMPACT)
  - C. ROTATION CAPACITY = 0.015 RADIANS
  - D. LONGITUDINAL DESIGN TRANSLATION = 0.5"
7. ALL BEARINGS SHALL BE MARKED PRIOR TO SHIPPING. THE MARKS SHALL INCLUDE THE BEARING LOCATION ON THE BRIDGE, AND A DIRECTION ARROW THAT POINTS UP-STATION. ALL MARKS SHALL BE PERMANENT AND SHALL BE VISIBLE AFTER THE BEARING IS INSTALLED.
8. THE ELASTOMER SHALL BE NEOPRENE MEETING THE REQUIREMENTS OF SUBSECTION 731.03.
9. BEARING DESIGN SHALL BE PER THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS 5TH EDITION AND ITS LATEST REVISIONS.
10. ALTERNATE CONFIGURATIONS FOR BEARINGS MAY BE SUBMITTED FOR APPROVAL. ANY ALTERNATE SUBMITTED SHALL BE DESIGNED AND CERTIFIED TO MEET THE DESIGN LOADS AND CRITERIA SHOWN ON THE PLANS.
11. THE CONTRACTOR IS ADVISED TO HAVE A MINIMUM OF 12- 1/4" x 12 1/2" x 12 1/2" GALVANIZED STEEL SHIMS AVAILABLE FOR USE FOR ELEVATION ADJUSTMENTS UPON THE SETTING OF THE SUPERSTRUCTURE UNITS. THE SHIMS SHALL BE FABRICATED ACCORDING TO SECTION 531 AND SHALL BE INCLUDED UNDER ITEM 531.17, "BEARING DEVICE ASSEMBLY, STEEL REINFORCED ELASTOMERIC PAD".



ABUTMENT 1 STEEL REINFORCING PLATE DETAIL

NOT TO SCALE



ABUTMENT 2 STEEL REINFORCING PLATE DETAIL

NOT TO SCALE

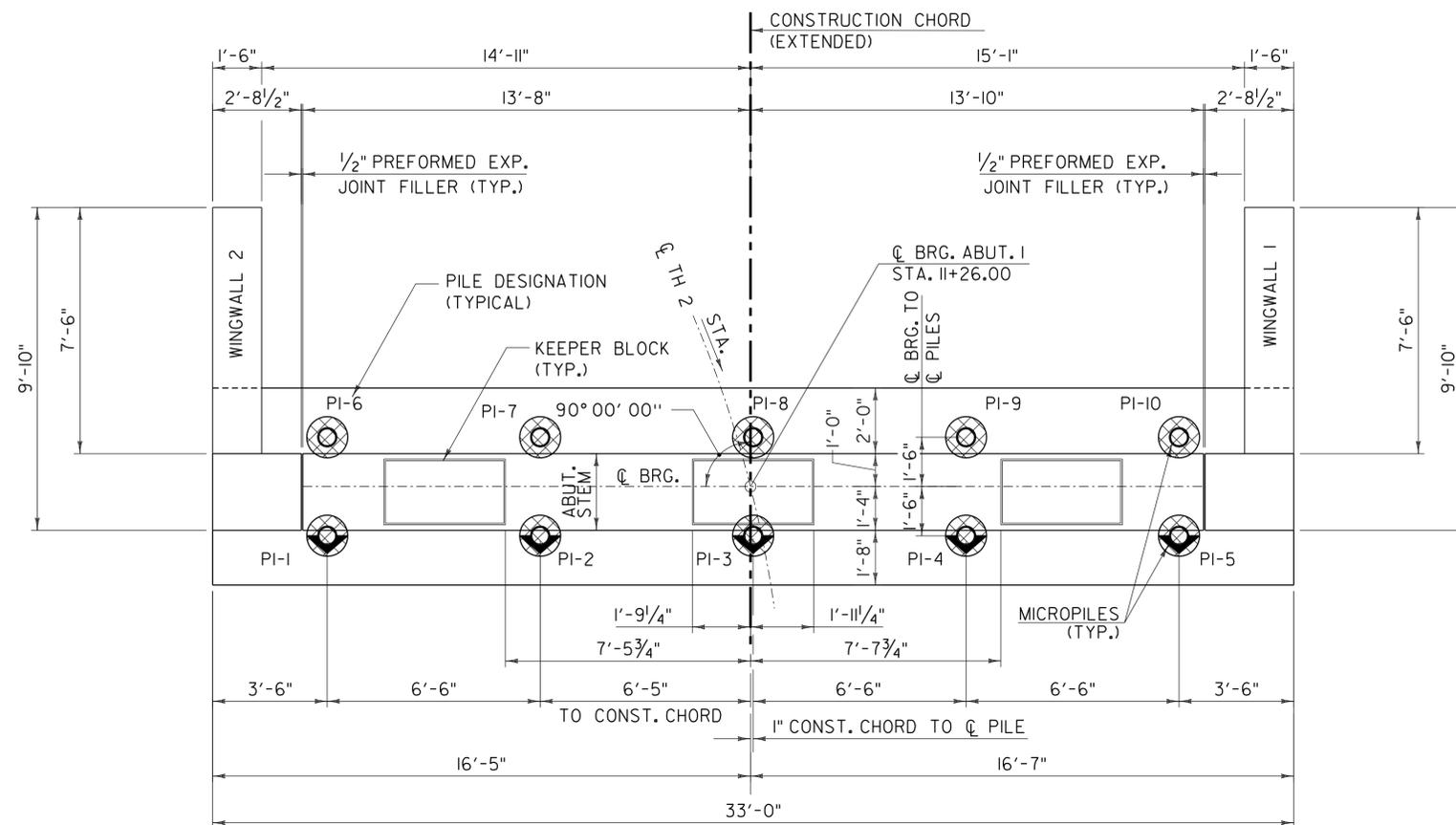
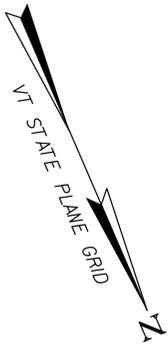


PROJECT NAME: ENOSBURG  
PROJECT NUMBER: BRO 1448(40)

FILE NAME: ...XX Bearing_Details.dgn  
PROJECT LEADER: G. BOGUE  
DESIGNED BY: T. KNIGHT

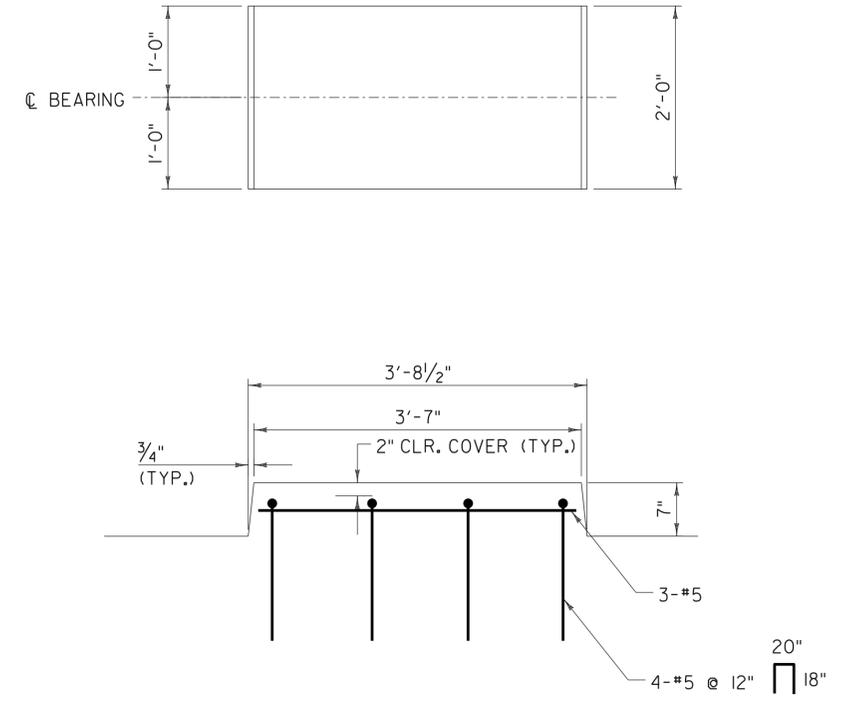
PLOT DATE: 10/4/2013  
DRAWN BY: L. BUXTON  
CHECKED BY: T. KNIGHT  
SHEET 27 OF 46

**BEARING DETAILS**

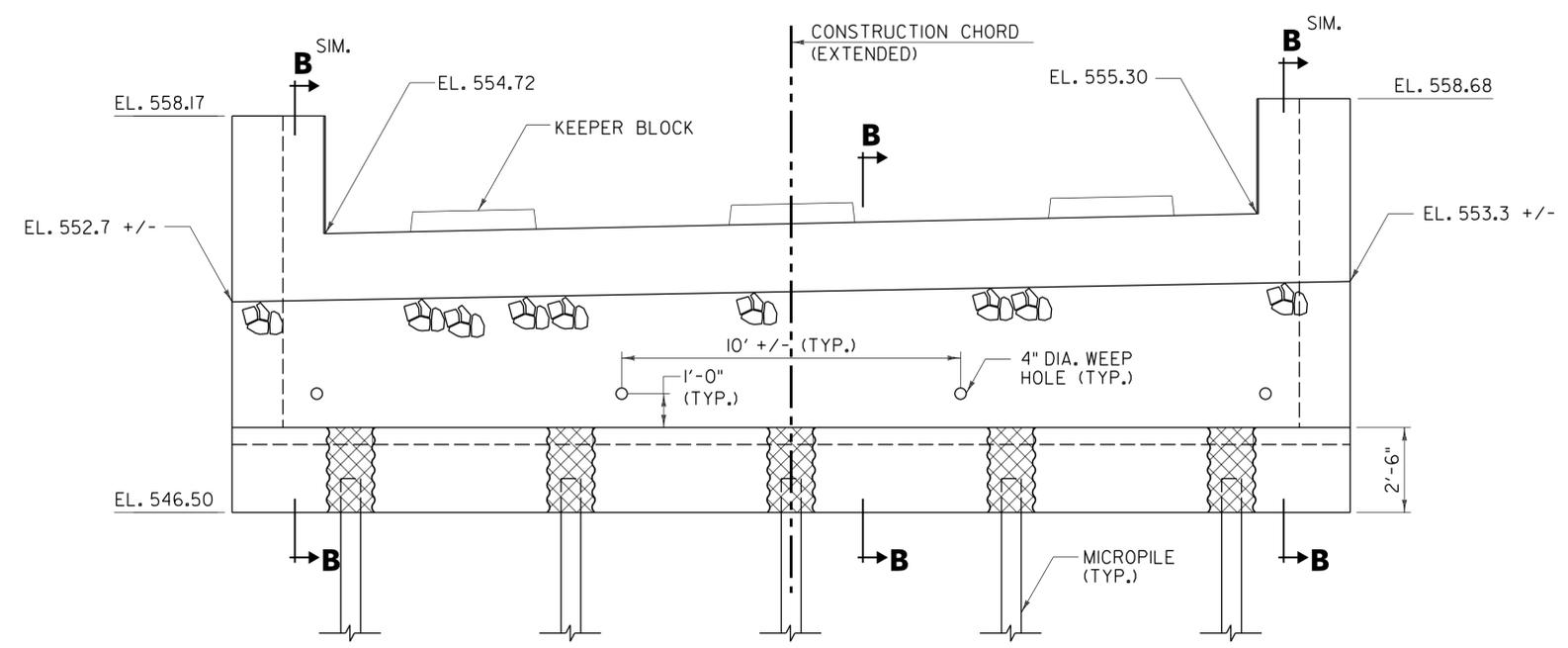


**ABUTMENT I PLAN**  
SCALE 3/8" = 1'-0"

**NOTE**  
 ○ INDICATES VERTICAL MICROPILE  
 ⊙ INDICATES MICROPILE BATTERED 1 HORIZ. TO 10 VERT.



**KEEPER BLOCK DETAIL**  
SCALE 1" = 1'-0"



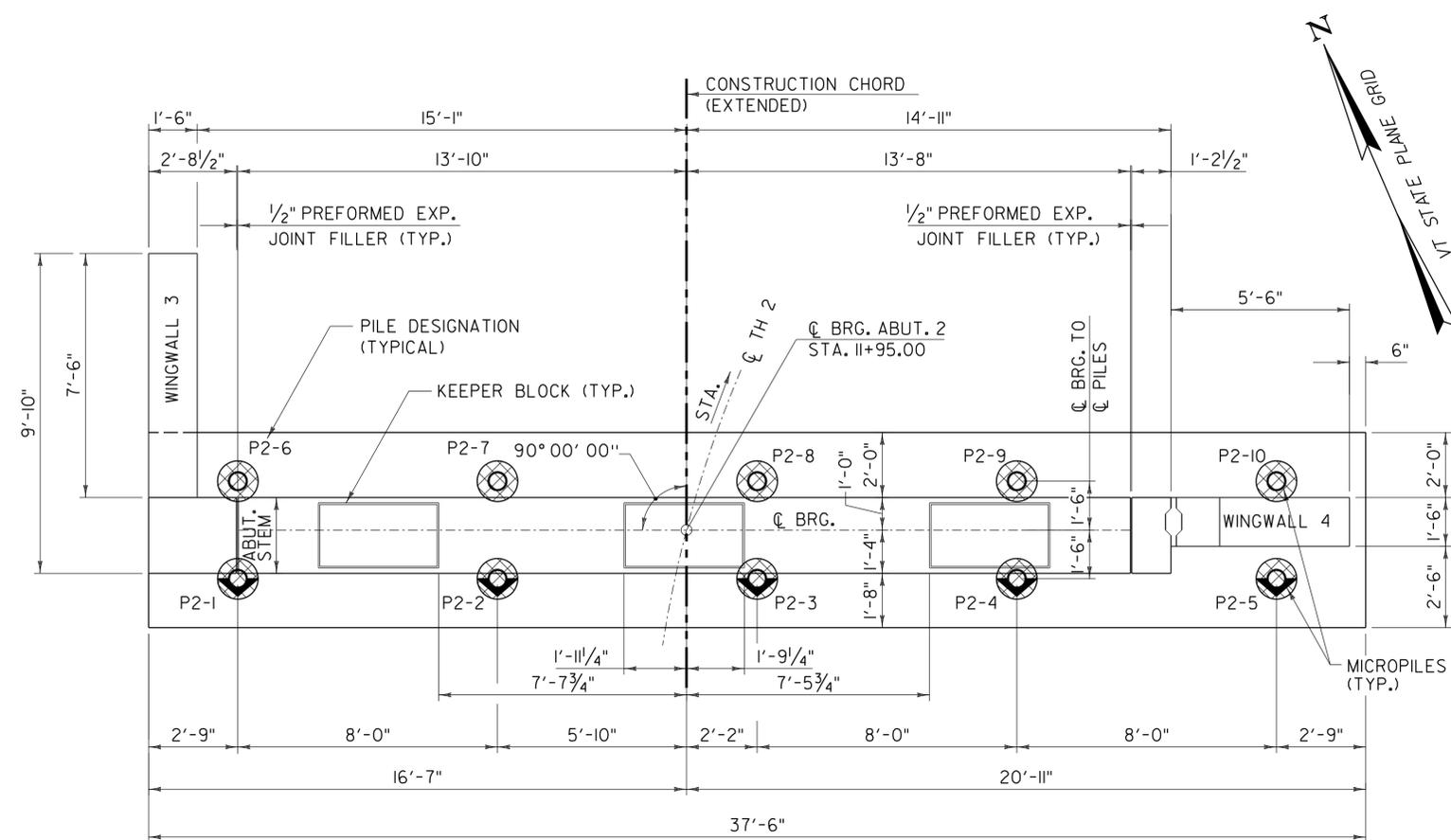
**ABUTMENT I ELEVATION**  
SCALE 3/8" = 1'-0"

 SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)(FPO).

NOTE: FOR SECTION B-B, REFER TO SHEET 30.

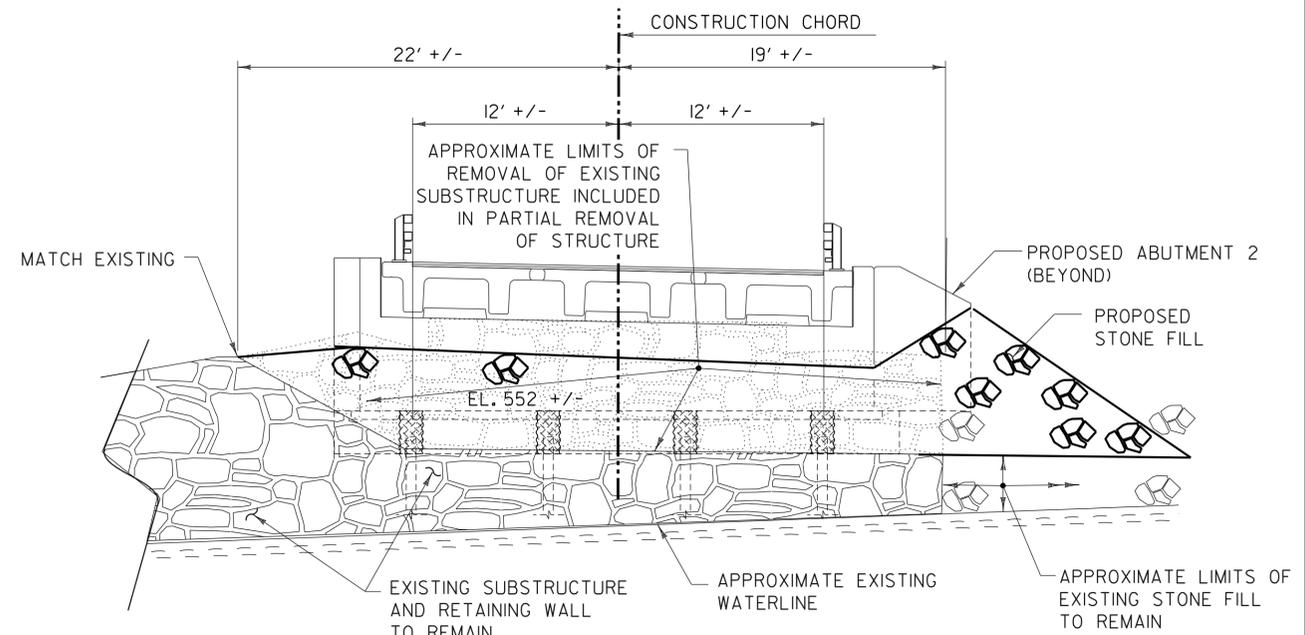
PROJECT NAME:	ENOSBURG
PROJECT NUMBER:	BRO 1448(40)
FILE NAME: ...XX Abut 1Plan.Elev.dgn	PLOT DATE: 10/4/2013
PROJECT LEADER: G. BOGUE	DRAWN BY: L. BUXTON
DESIGNED BY: T. KNIGHT	CHECKED BY: T. KNIGHT
<b>ABUTMENT 1 PLAN &amp; ELEVATION</b>	
SHEET 28 OF 46	



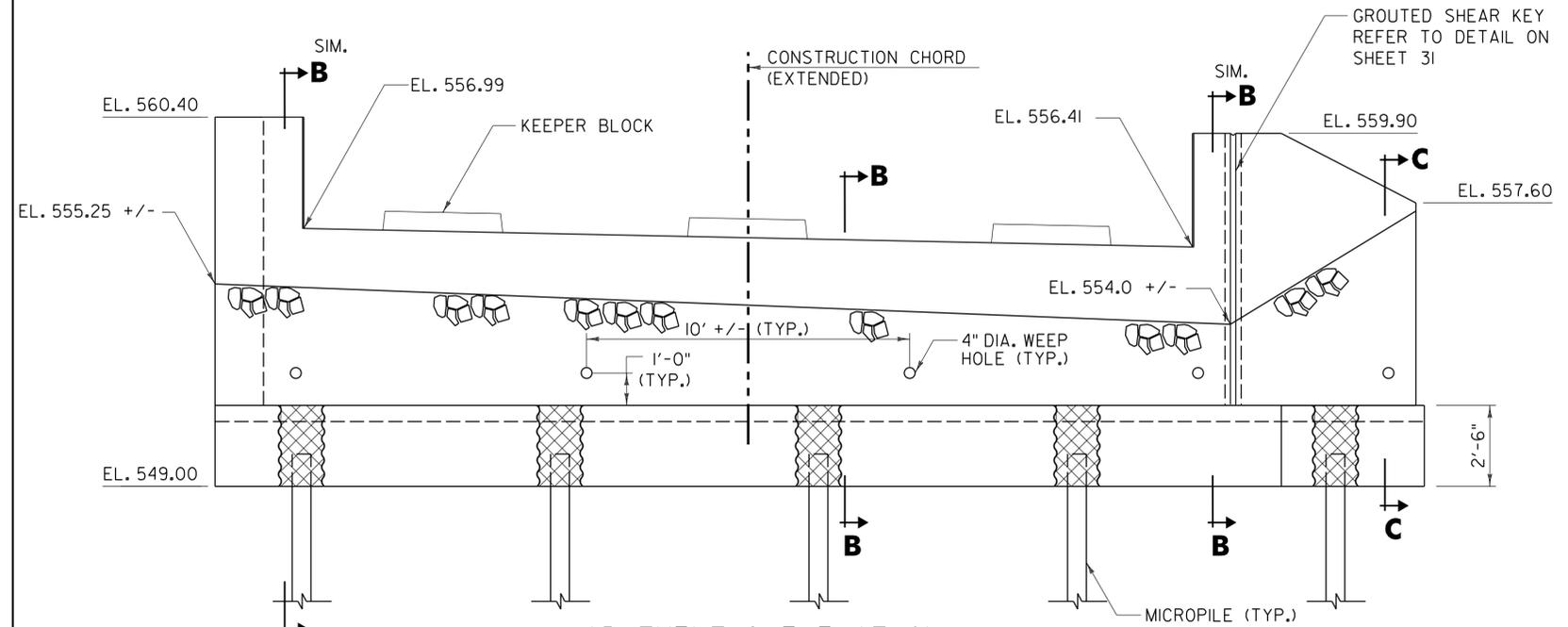


**ABUTMENT 2 PLAN**  
SCALE 3/8" = 1' - 0"

**NOTE**  
 ○ INDICATES VERTICAL MICROPILE  
 ⊙ INDICATES MICROPILE BATTERED 1 HORIZ. TO 10 VERT.



**VIEW A-A**  
SCALE 3/16" = 1' - 0"



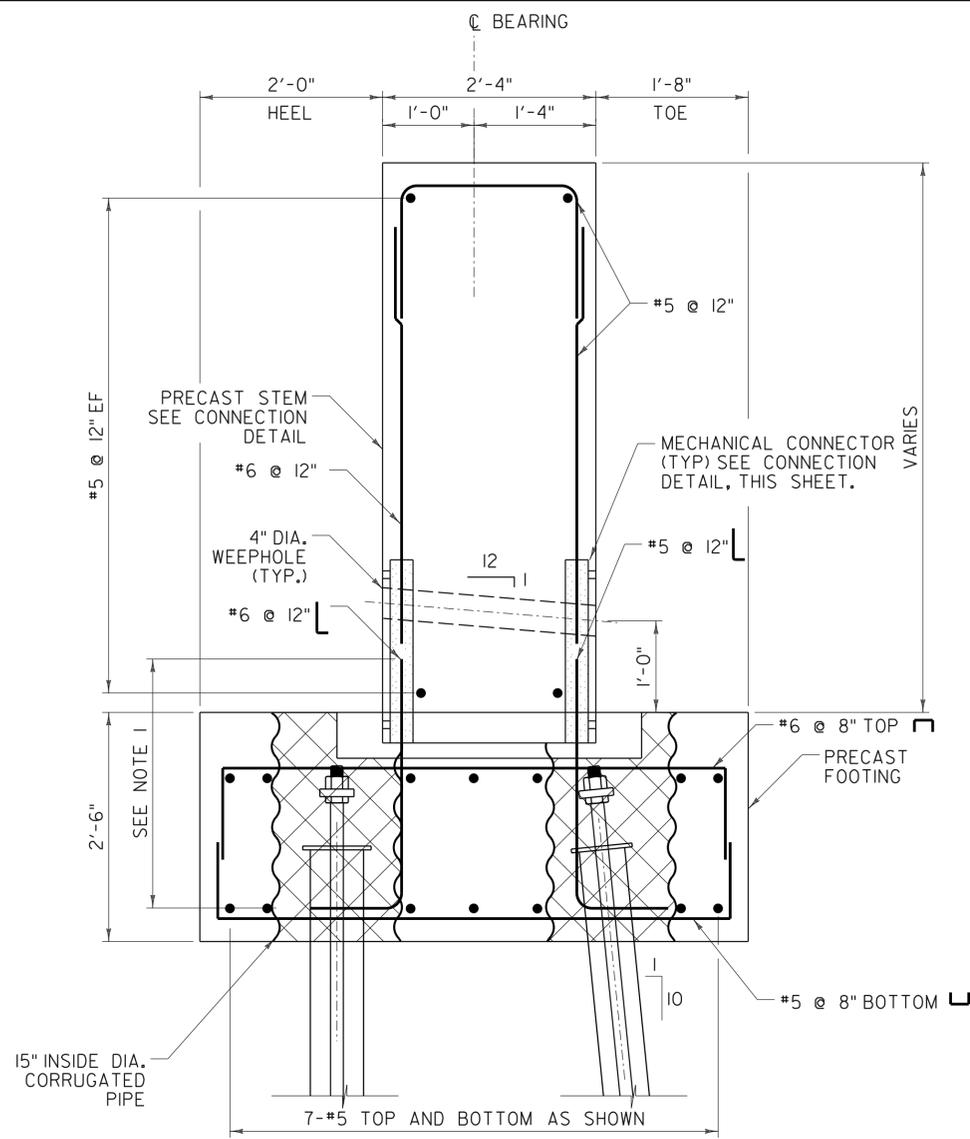
**ABUTMENT 2 ELEVATION**  
SCALE 3/8" = 1' - 0"

 SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)(FPO).

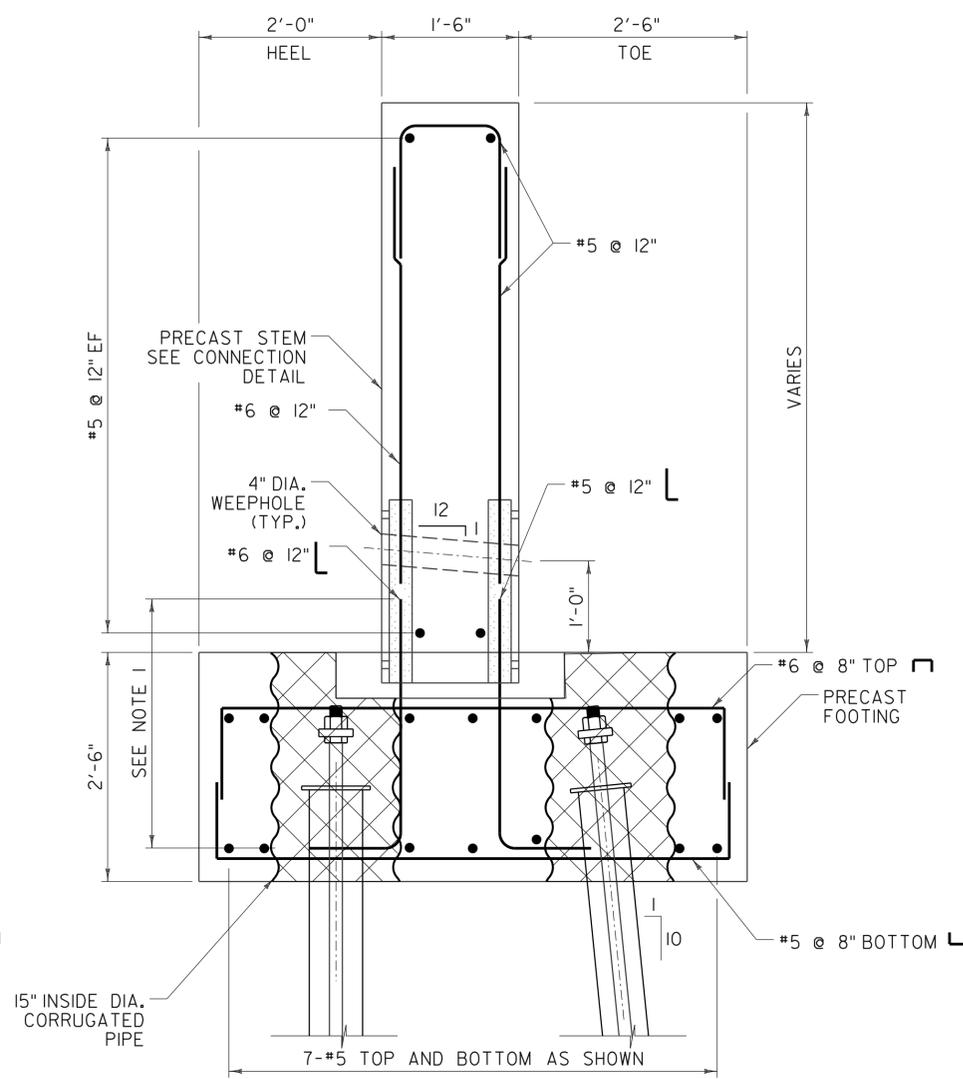
- NOTES:**
1. FOR KEEPER BLOCK DETAIL, REFER TO SHEET 28.
  2. FOR LOCATION OF VIEW A-A, REFER TO SHEET 20.
  3. FOR SECTION B-B, REFER TO SHEET 30.
  4. FOR SECTION C-C, REFER TO SHEET 30.

PROJECT NAME:	ENOSBURG
PROJECT NUMBER:	BRO 1448(40)
FILE NAME: ...XX Abut 2 Plan_Elev.dgn	PLOT DATE: 10/4/2013
PROJECT LEADER: G. BOGUE	DRAWN BY: L. BUXTON
DESIGNED BY: T. KNIGHT	CHECKED BY: T. KNIGHT
<b>ABUTMENT 2 PLAN &amp; ELEVATION</b> SHEET 29 OF 46	

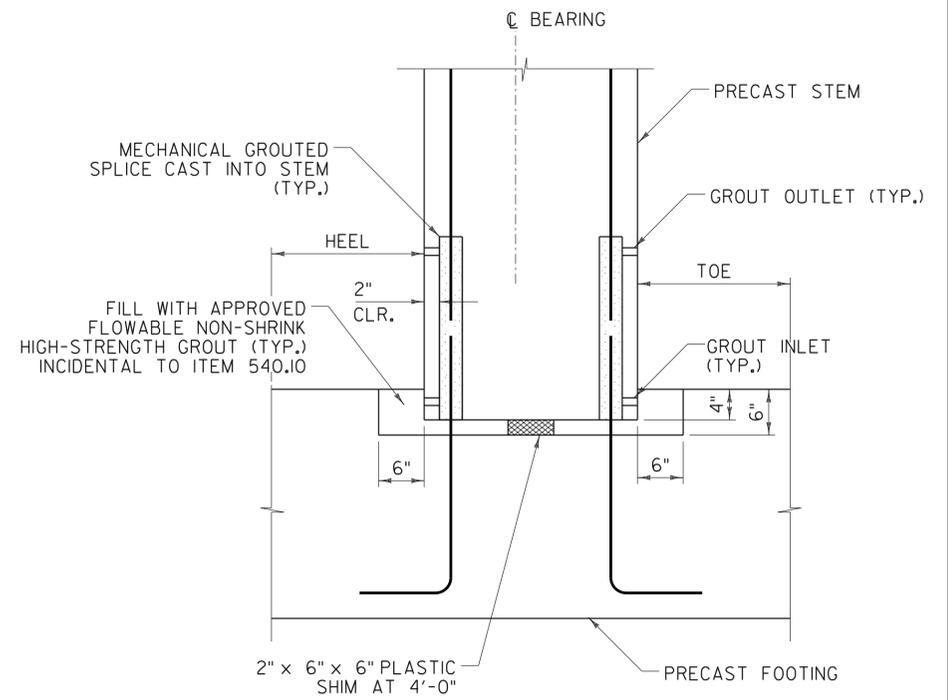




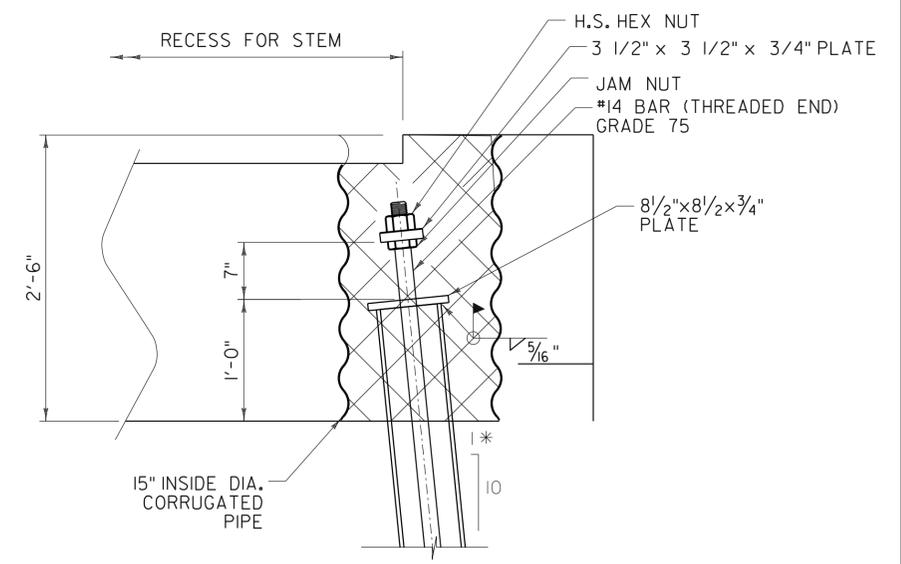
**SECTION B-B**  
SCALE 1" = 1' - 0"



**SECTION C-C**  
SCALE 1" = 1' - 0"

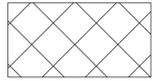


**CONNECTION DETAIL**  
SCALE 1" = 1' - 0"



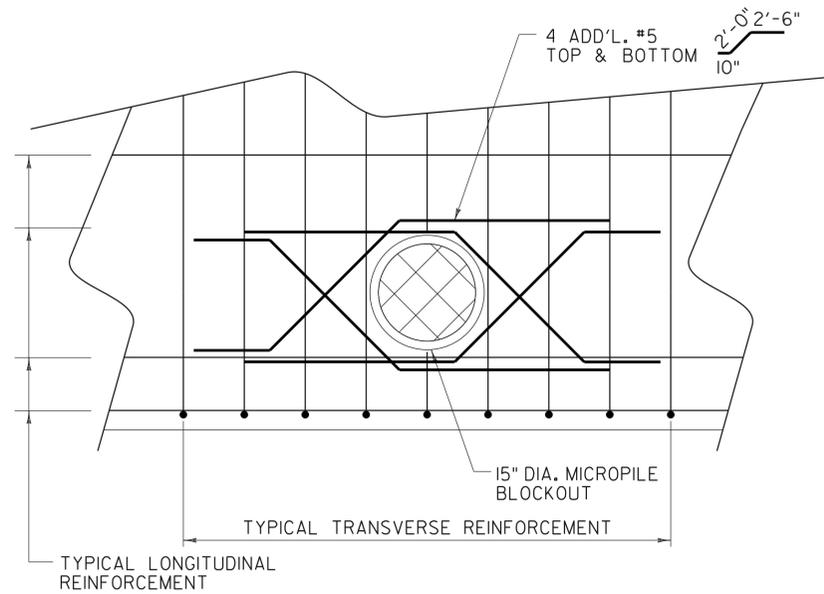
**PILE CAP DETAIL**  
NOT TO SCALE

* FRONT PILES ONLY; REAR PILES ARE VERTICAL

 SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)(FPO).

NOTE:  
FOR LOCATION OF SECTIONS B-B AND C-C  
REFER TO SHEETS 28 & 29.

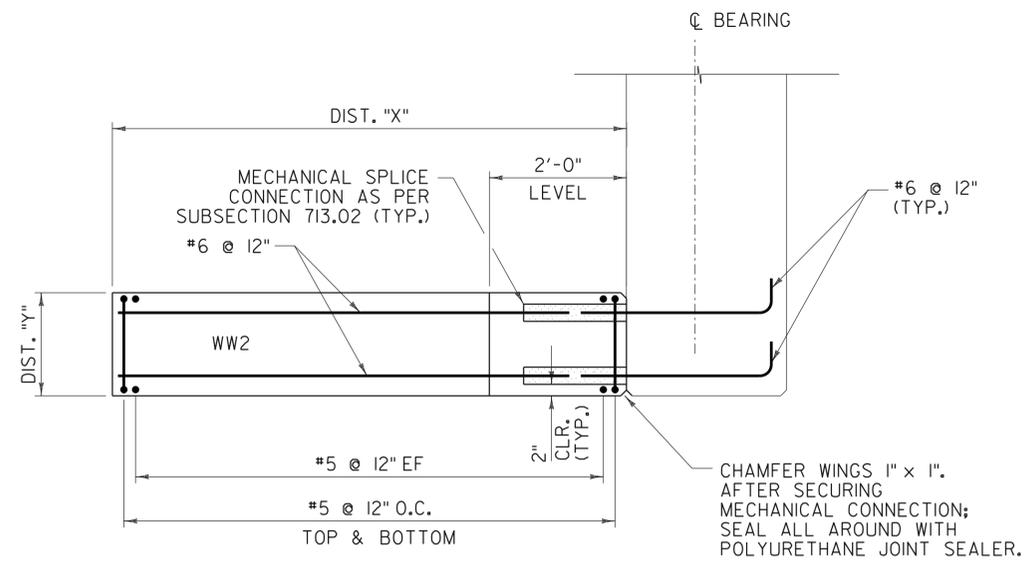
- NOTES:
1. LEG LENGTH SHALL MEET THE REQUIREMENTS OF THE MECHANICAL CONNECTOR.
  2. THE CONNECTION FROM THE PRECAST STEM TO THE FOOTING SHALL BE INCLUDED IN THE FABRICATION DRAWINGS. THE MECHANICAL GROUDED CONNECTION SHALL MEET THE REQUIREMENTS OF ASTM 1034 AND SHALL HAVE A YIELD STRENGTH OF 125% OF THE REINFORCING STEEL YIELD STRENGTH.



**ADDITIONAL REINFORCEMENT AT MICROPILE BLOCKOUT**  
NOT TO SCALE

PROJECT NAME:	ENOSBURG	FILE NAME: ...XX Abut.sect.det.dgn	PLOT DATE: 10/4/2013
PROJECT NUMBER:	BRO 1448(40)	PROJECT LEADER: G. BOGUE	DRAWN BY: L. BUXTON
		DESIGNED BY: T. KNIGHT	CHECKED BY: T. KNIGHT
<b>ABUTMENT SECTIONS &amp; DETAILS</b>			SHEET 30 OF 46



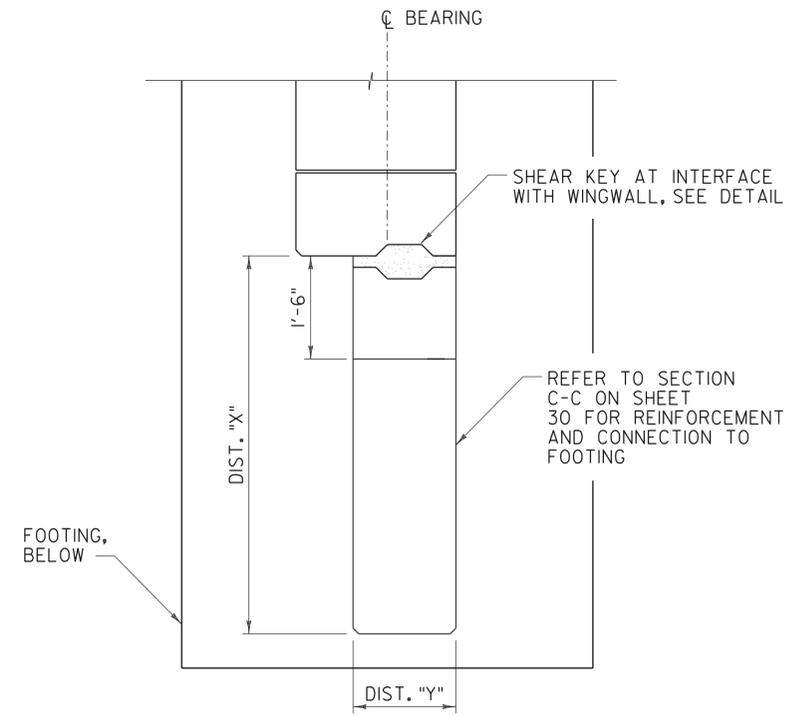


WINGWALLS NO. 1, 2 AND 3 PLAN

NOT TO SCALE

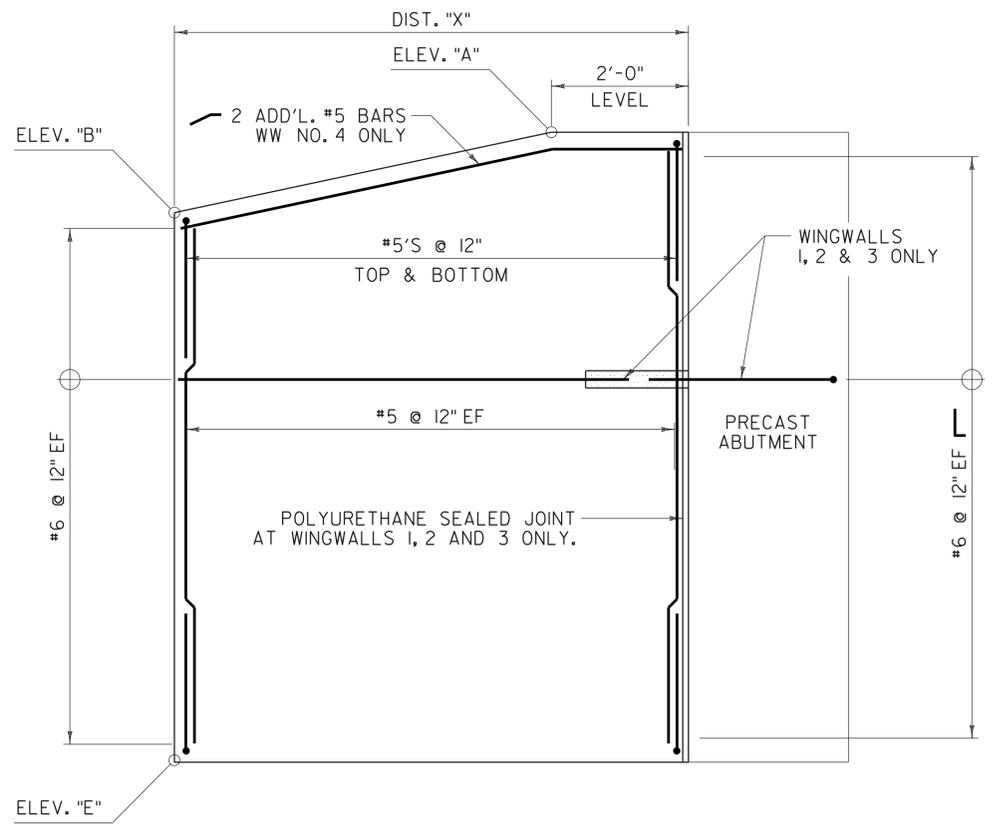
WINGWALL 2 SHOWN, OTHERS SIMILAR  
FOOTING NOT SHOWN

	WW1	WW2	WW3	WW4
ELEV. "A"	558.68	558.17	560.40	559.90
ELEV. "B"	558.35	557.81	560.43	557.60
ELEV. "E"	549.00	549.00	551.50	551.50
DIST. "X"	7'-6"	7'-6"	7'-6"	5'-6"
DIST. "Y"	1-6"	1-6"	1-6"	1-6"



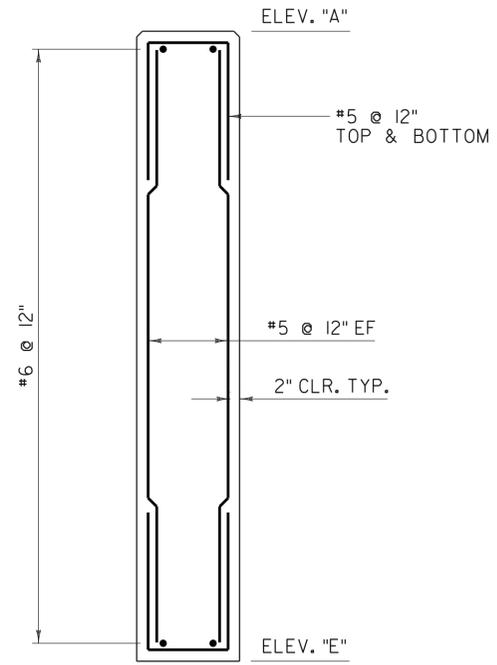
WINGWALLS NO. 4 PLAN

NOT TO SCALE



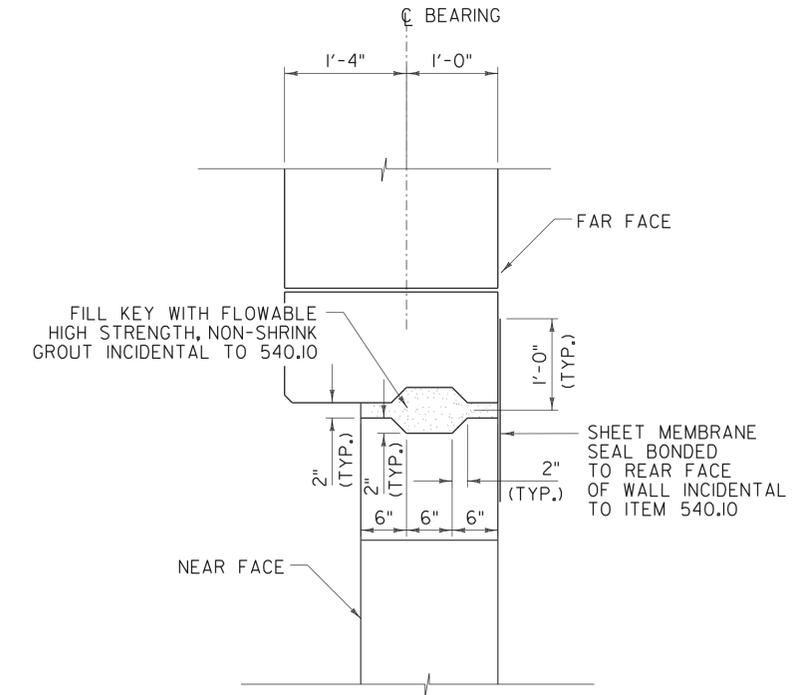
WINGWALL ELEVATION

NOT TO SCALE



WINGWALLS 1, 2 AND 3 TYPICAL

NOT TO SCALE



ABUTMENT/WINGWALL  
SHEAR KEY DETAIL

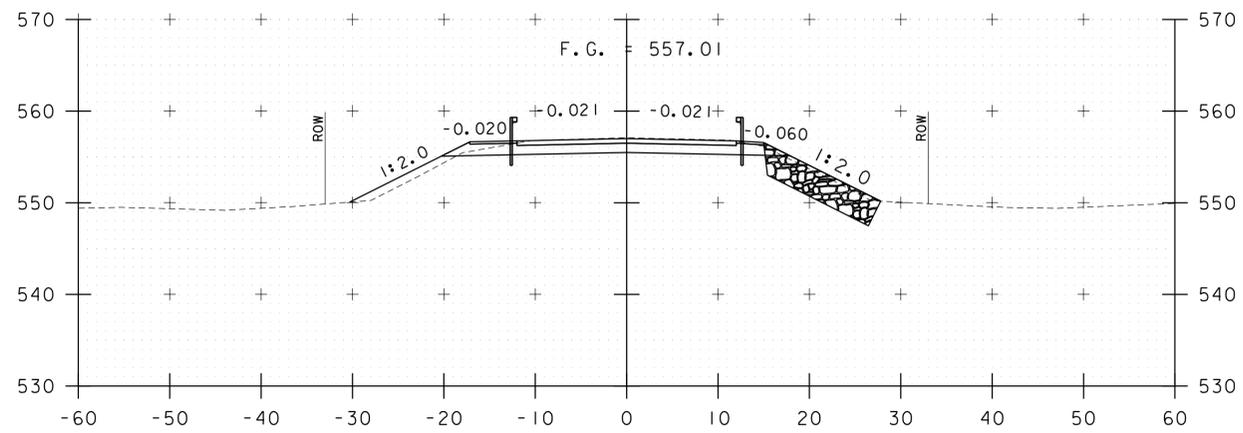
SCALE 1" = 1'-0"

NOTE:  
NF = NEAR FACE  
FF = FAR FACE  
EF = EACH FACE

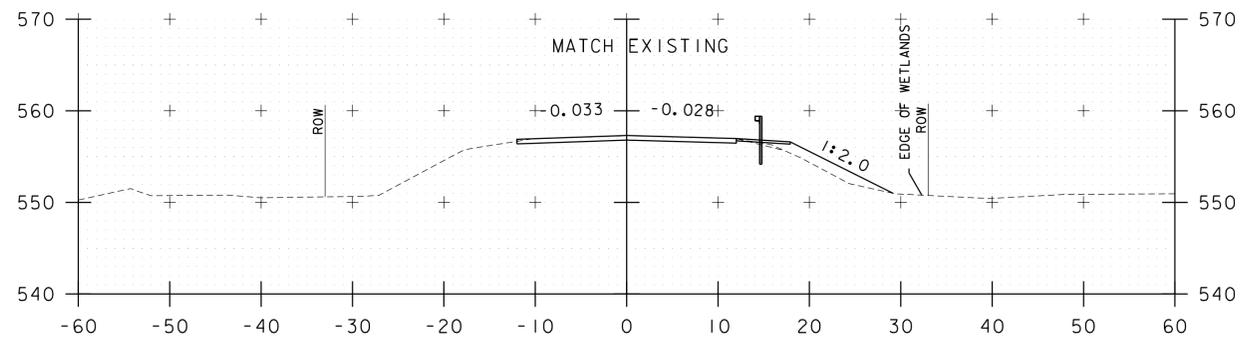
NOTES:  
1. EPOXY SHALL BE INCIDENTAL TO THE  
PRECAST CONCRETE STRUCTURE.



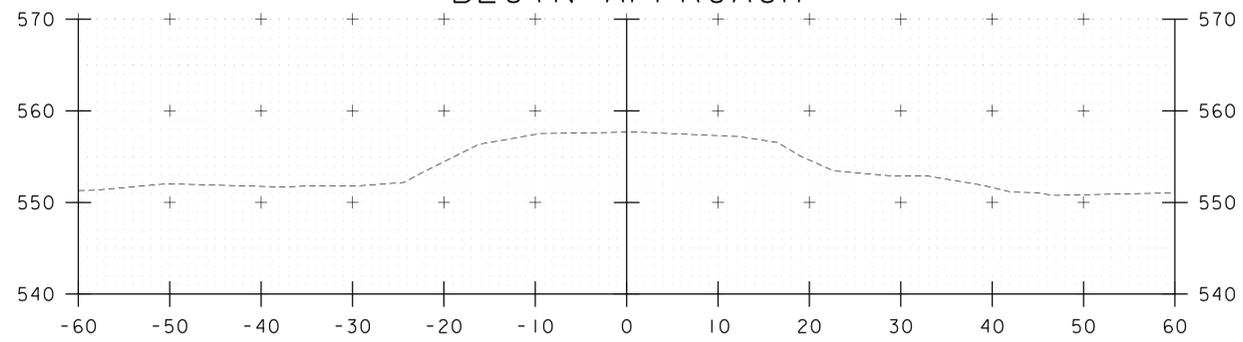
PROJECT NAME:	ENOSBURG	PLOT DATE:	10/4/2013
PROJECT NUMBER:	BRO 1448(40)	DRAWN BY:	L. BUXTON
FILE NAME:	...XX Wingwall_Det.dgn	DESIGNED BY:	T. KNIGHT
PROJECT LEADER:	G. BOGUE	CHECKED BY:	T. KNIGHT
<b>WINGWALL DETAILS</b>		SHEET 31 OF 46	



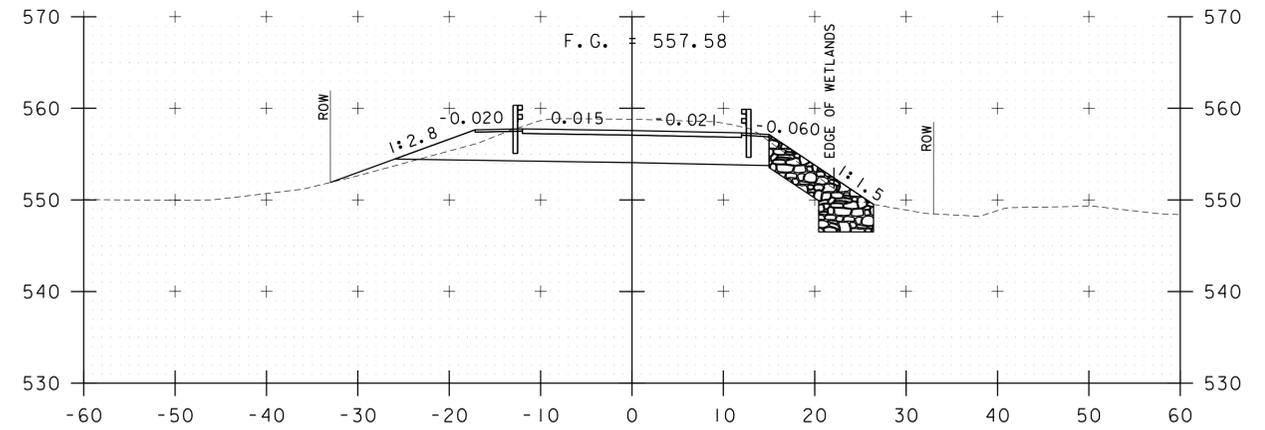
10+25



10+00  
BEGIN APPROACH

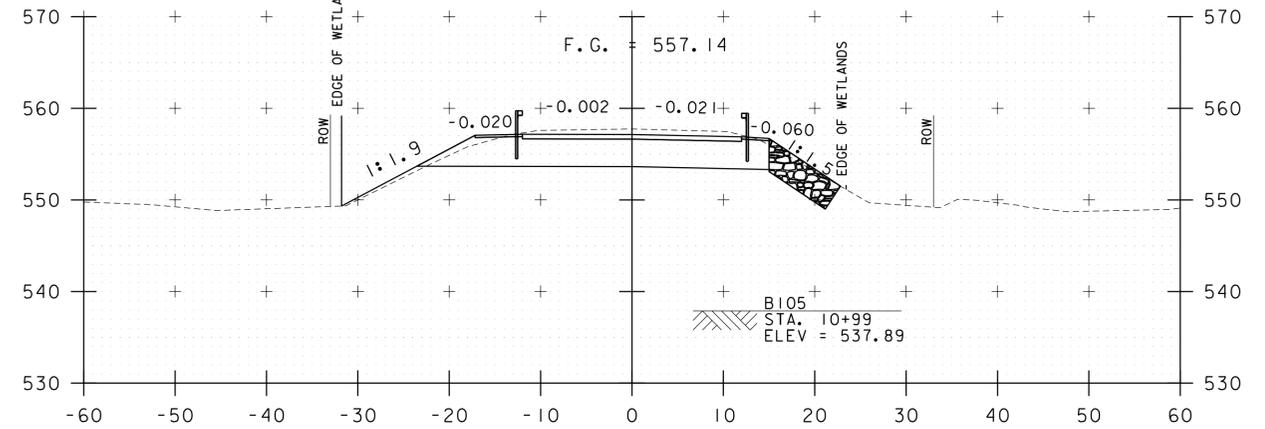


9+75

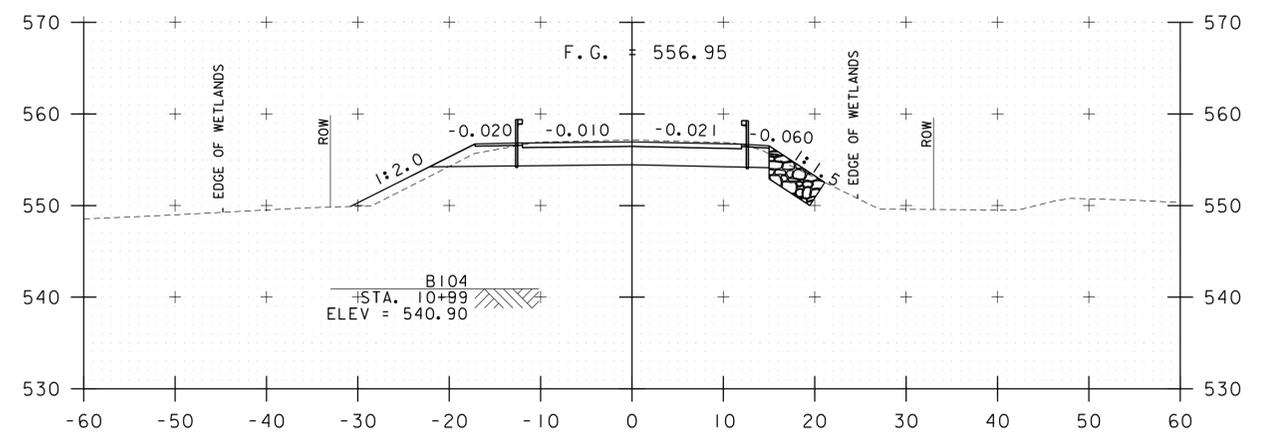


11+00

10+85  
END APPROACH  
BEGIN PROJECT

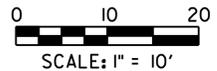


10+75



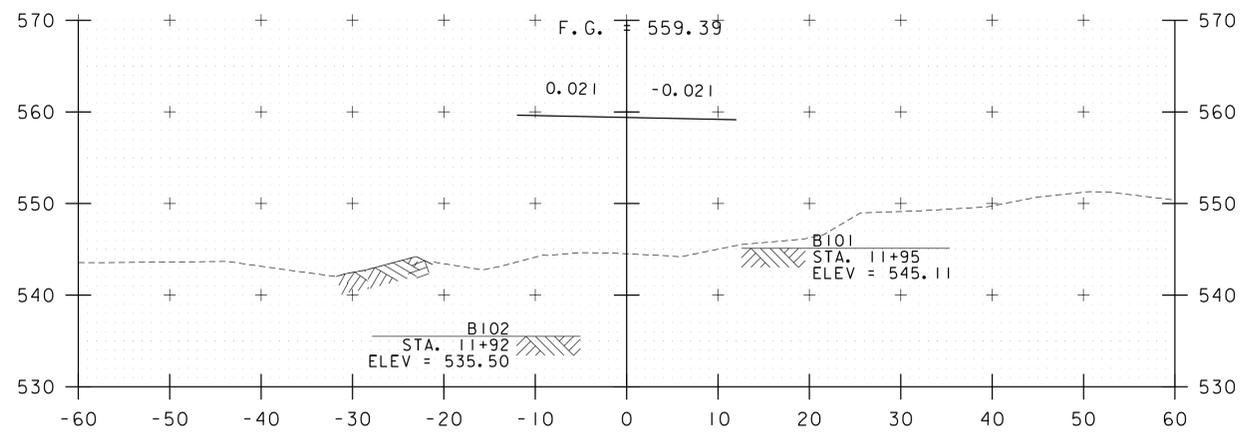
10+50

STA. 9+75 TO STA. 11+00

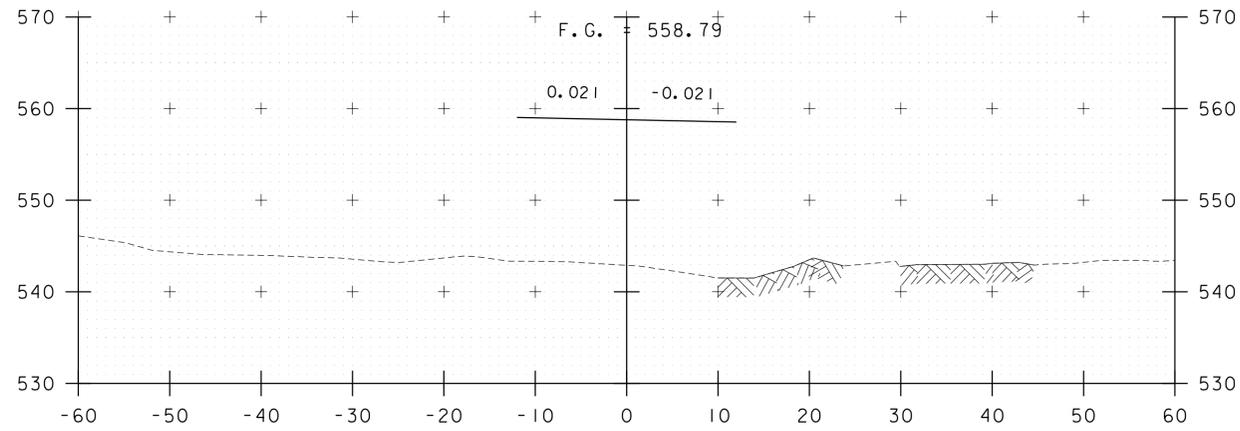


PROJECT NAME:	ENOSBURG	FILE NAME: ...N2 Cross Sections.dgn	PLOT DATE:	10/4/2013	
PROJECT NUMBER:	BRO 1448(40)	PROJECT LEADER:	G. BOGUE	DRAWN BY:	E. ALLING
		DESIGNED BY:	G. GOYETTE	CHECKED BY:	G. GOYETTE
<b>ROADWAY CROSS SECTIONS - RXS 1</b>			SHEET	32 OF 46	

11+96  
END BRIDGE

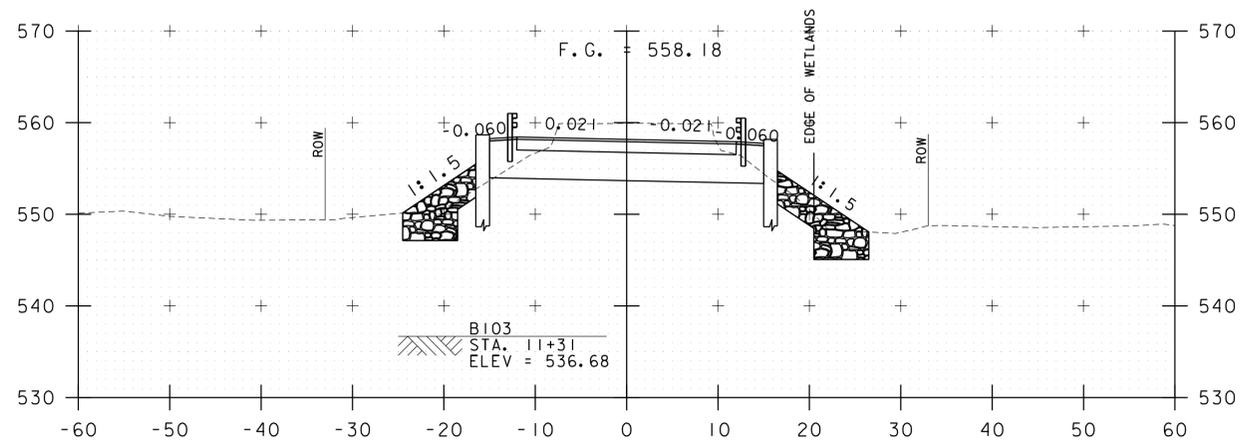


11+75

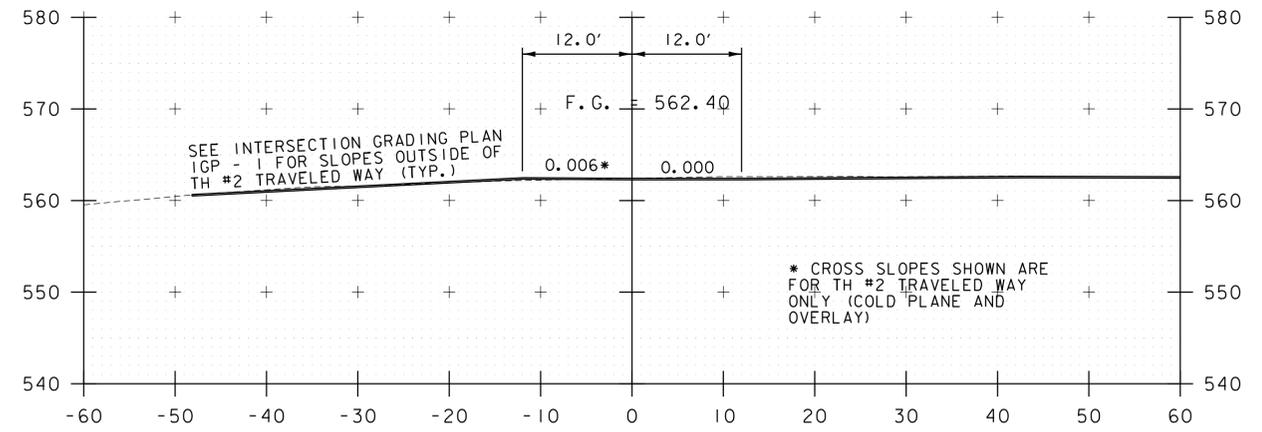


11+50

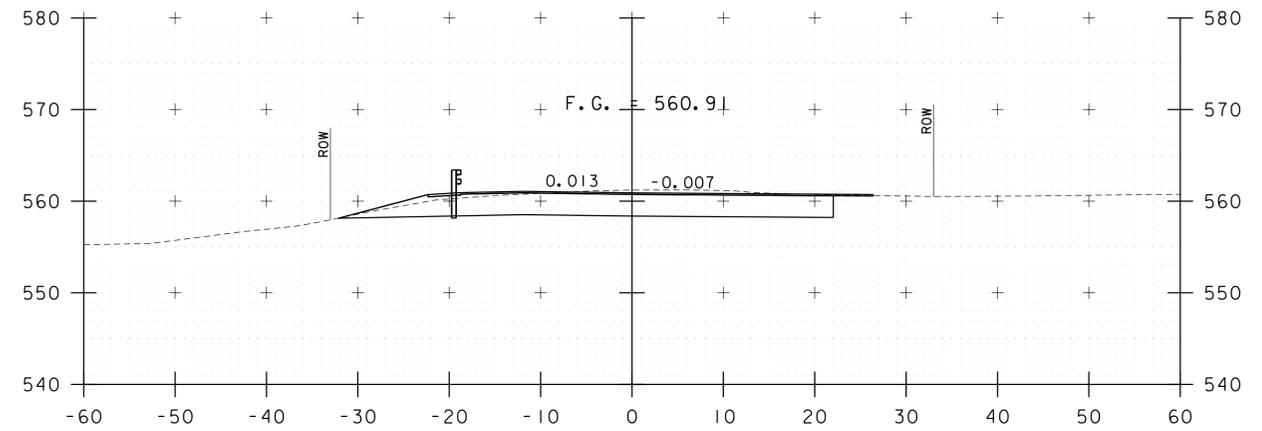
11+25  
BEGIN BRIDGE



11+25

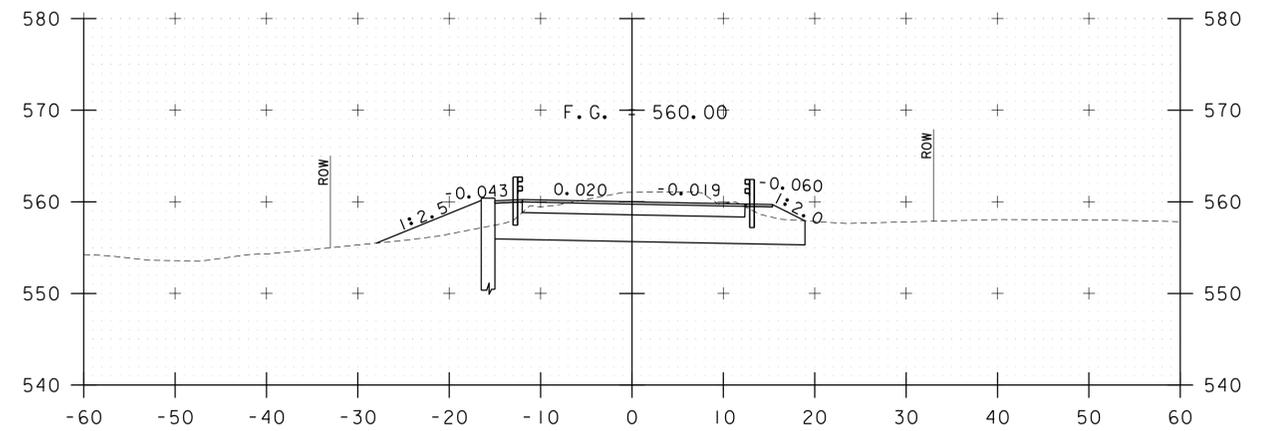


12+50



12+25

12+21  
END PROJECT  
BEGIN APPROACH



12+00

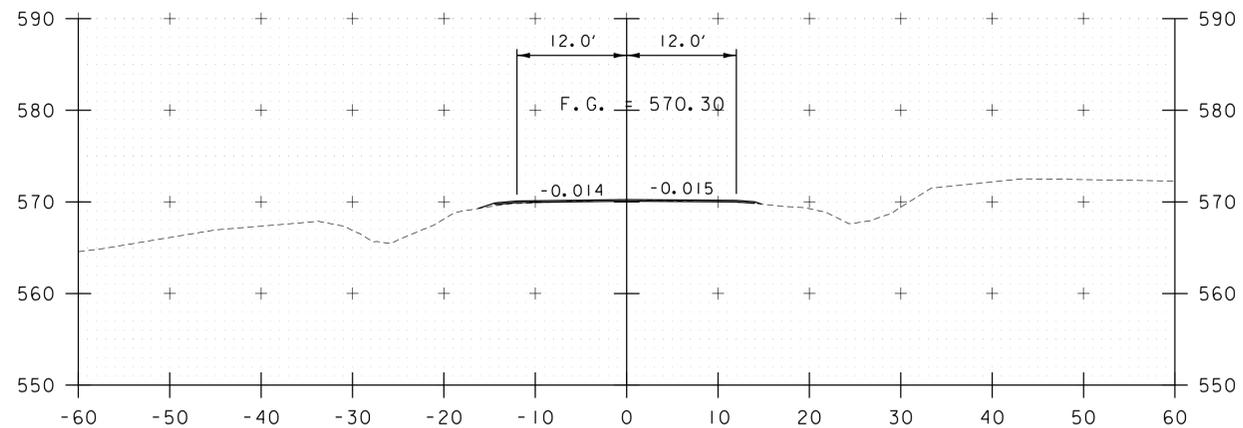
STA. 11+25 TO STA. 12+50



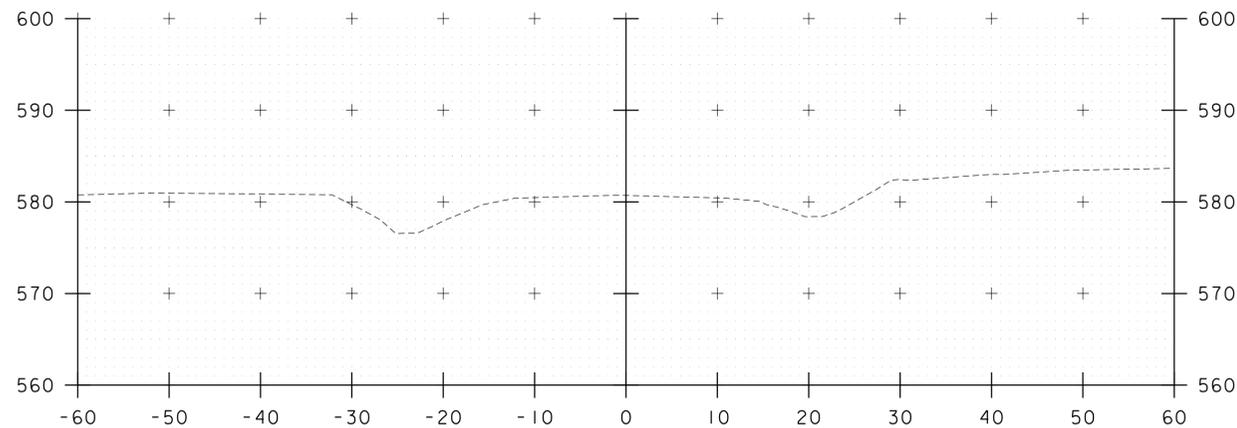
PROJECT NAME: ENOSBURG  
PROJECT NUMBER: BRO 1448(40)

FILE NAME: ...N2 Cross Sections.dgn  
PROJECT LEADER: G. BOGUE  
DESIGNED BY: G. GOYETTE  
**ROADWAY CROSS SECTIONS - RXS 2**

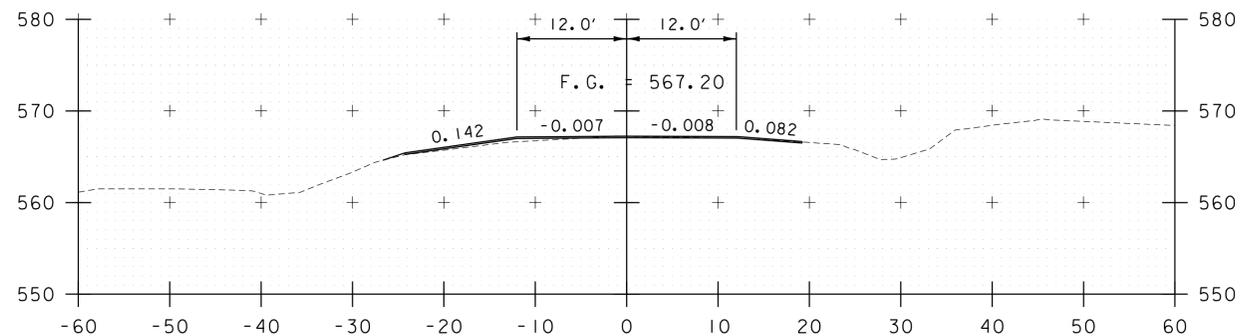
PLOT DATE: 10/4/2013  
DRAWN BY: E. ALLING  
CHECKED BY: G. GOYETTE  
SHEET 33 OF 46



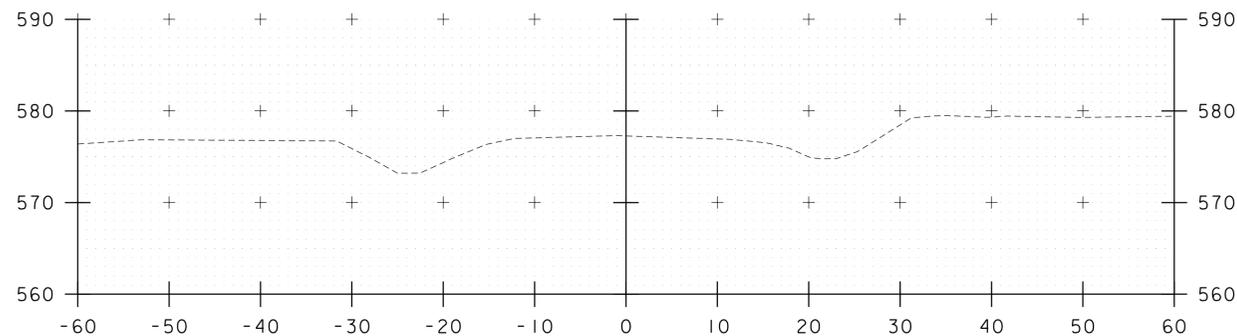
13+25



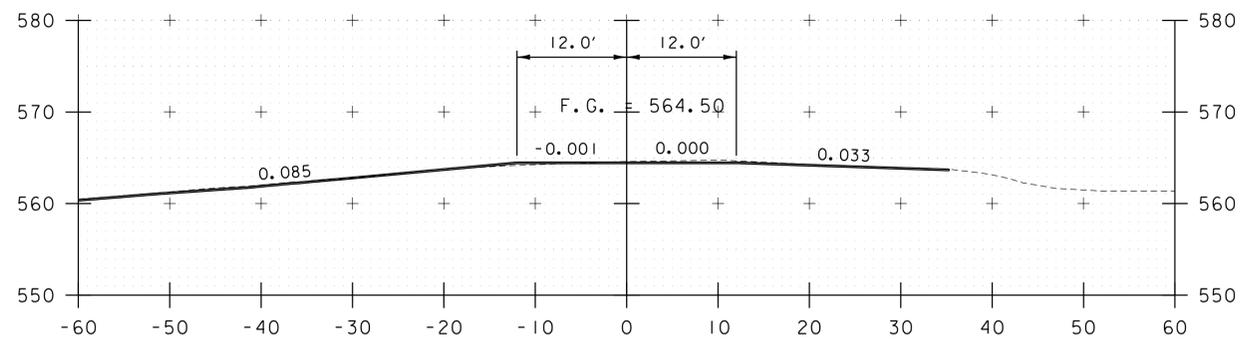
14+00



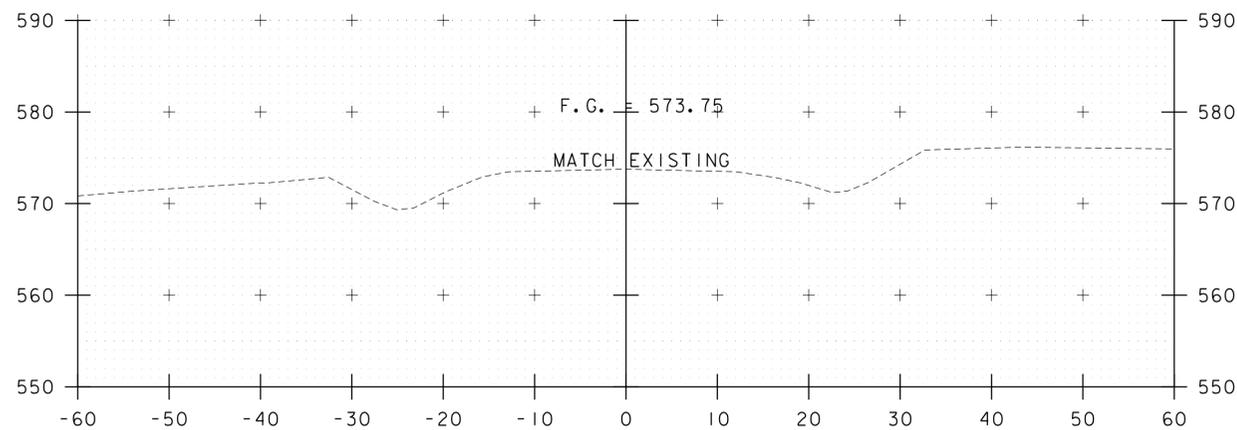
13+00



13+75



12+75



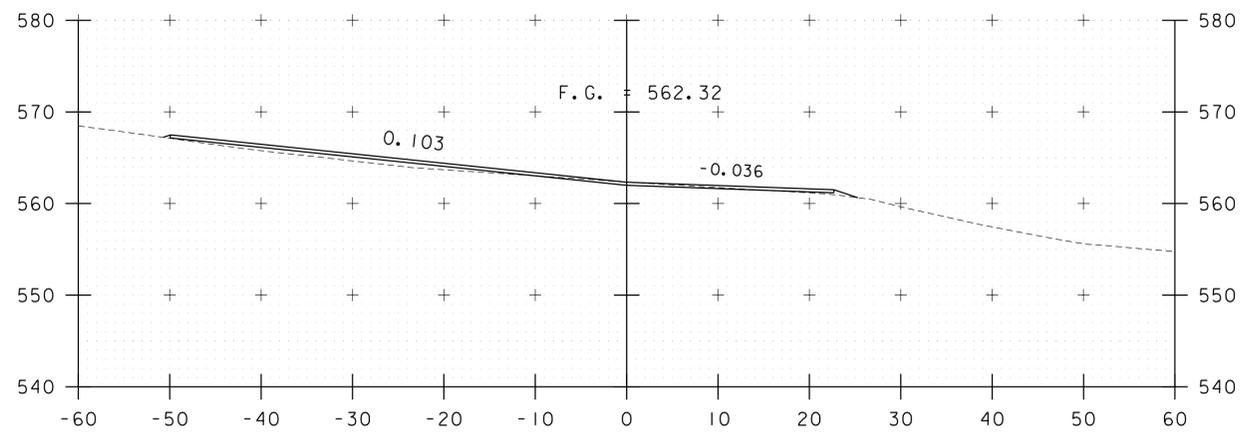
13+50  
END APPROACH

STA. 12+75 TO STA. 14+00

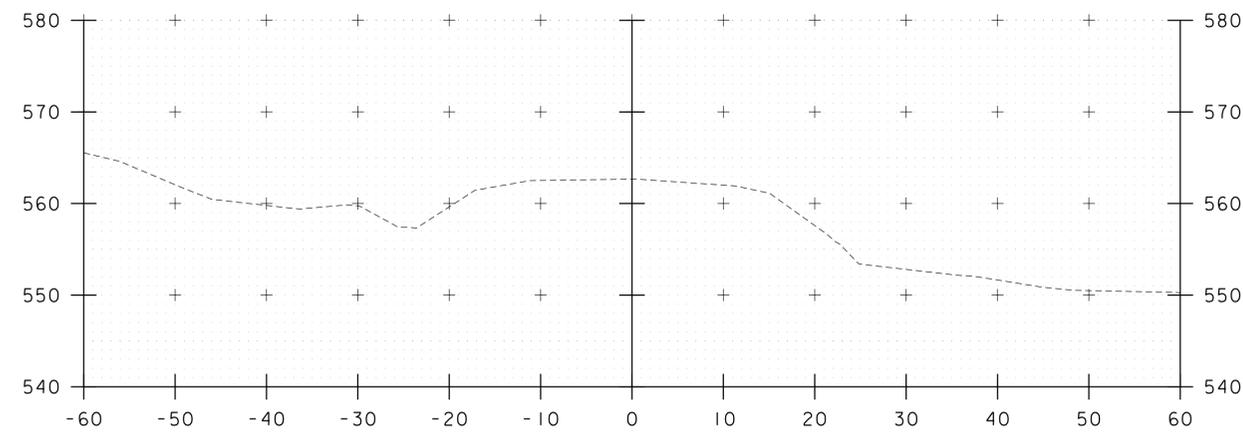


PROJECT NAME: ENOSBURG  
 PROJECT NUMBER: BRO 1448(40)  
 FILE NAME: ...N2 Cross Sections.dgn  
 PROJECT LEADER: G. BOGUE  
 DESIGNED BY: G. GOYETTE  
**ROADWAY CROSS SECTIONS - RXS 3**

PLOT DATE: 10/4/2013  
 DRAWN BY: E. ALLING  
 CHECKED BY: G. GOYETTE  
 SHEET 34 OF 46

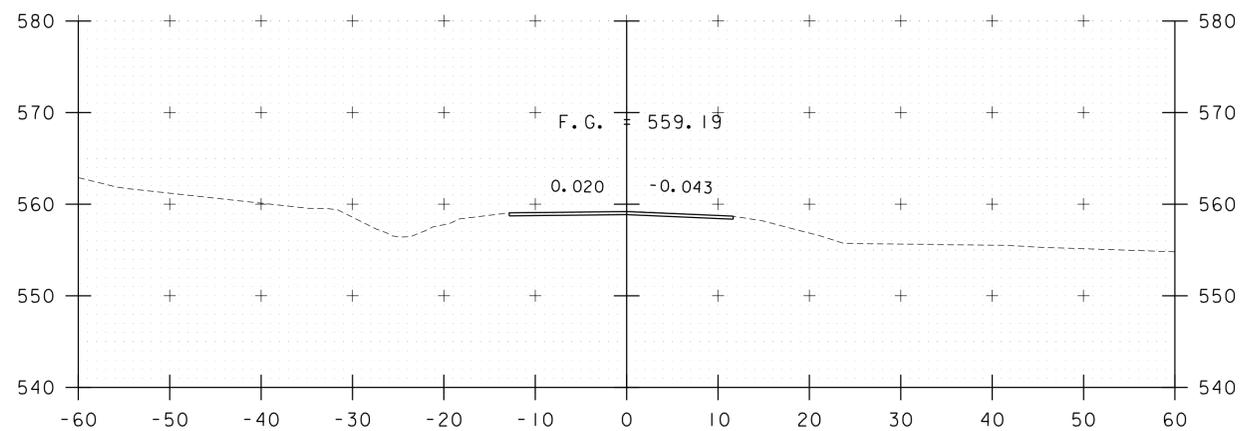


33+50



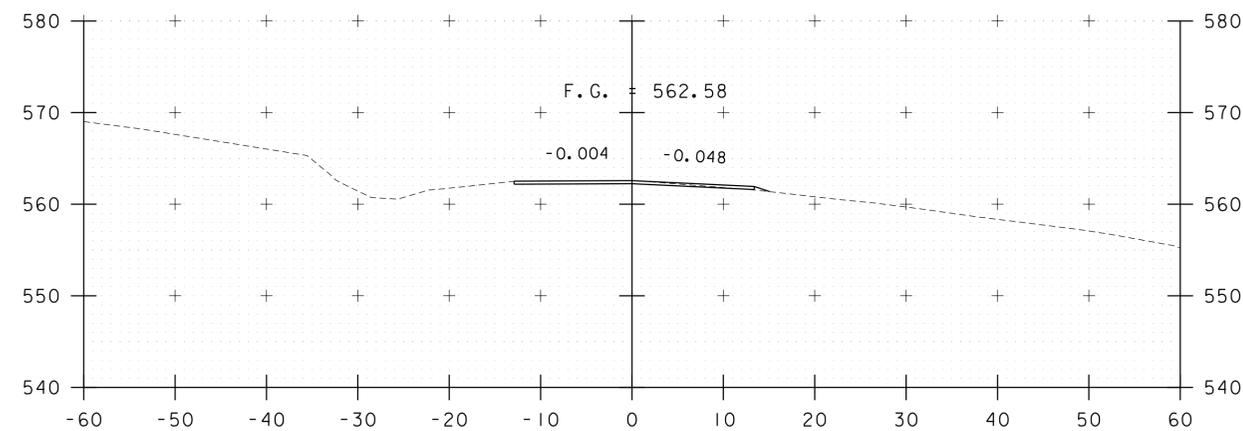
35+00

STA. 34+70  
MATCH EXISTING

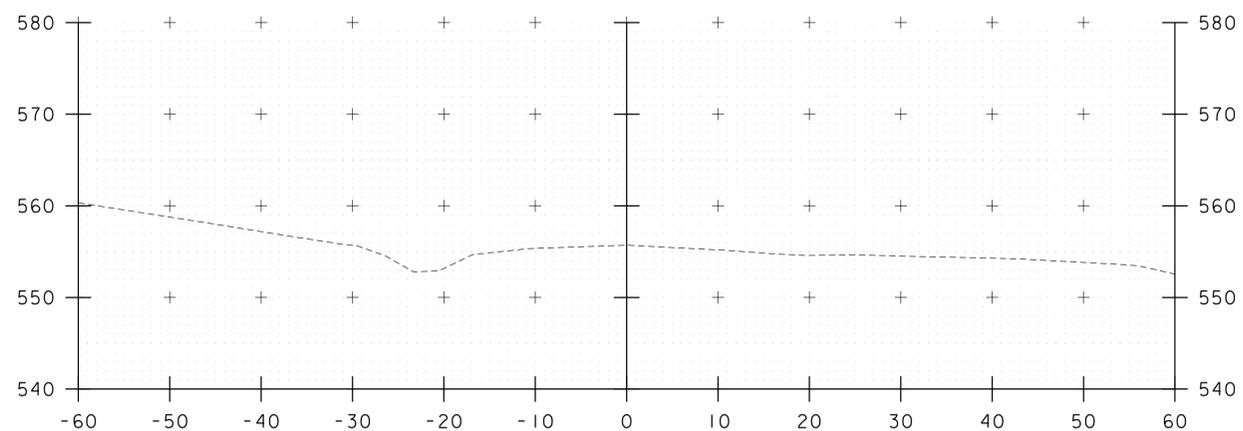


33+00

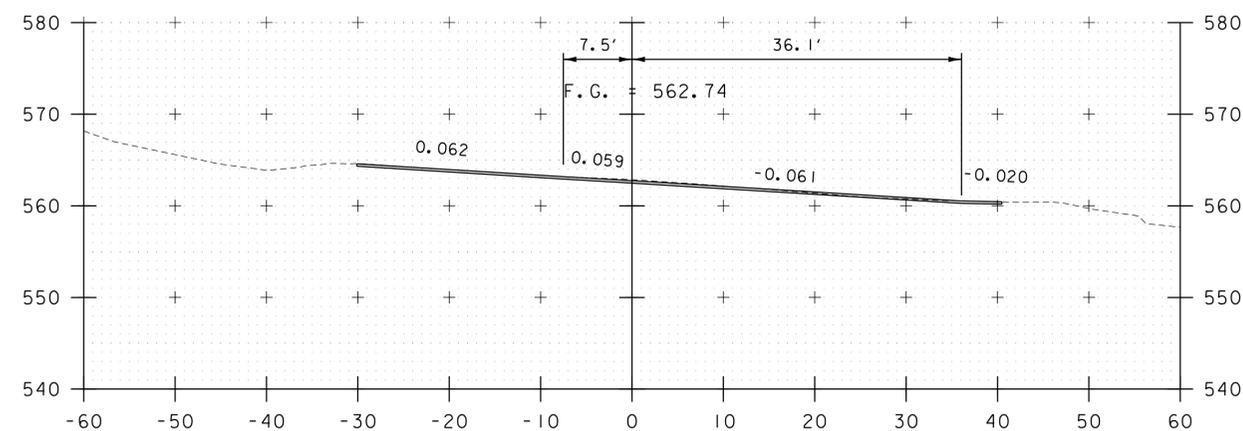
STA. 32+85  
MATCH EXISTING



34+50



32+50



34+00

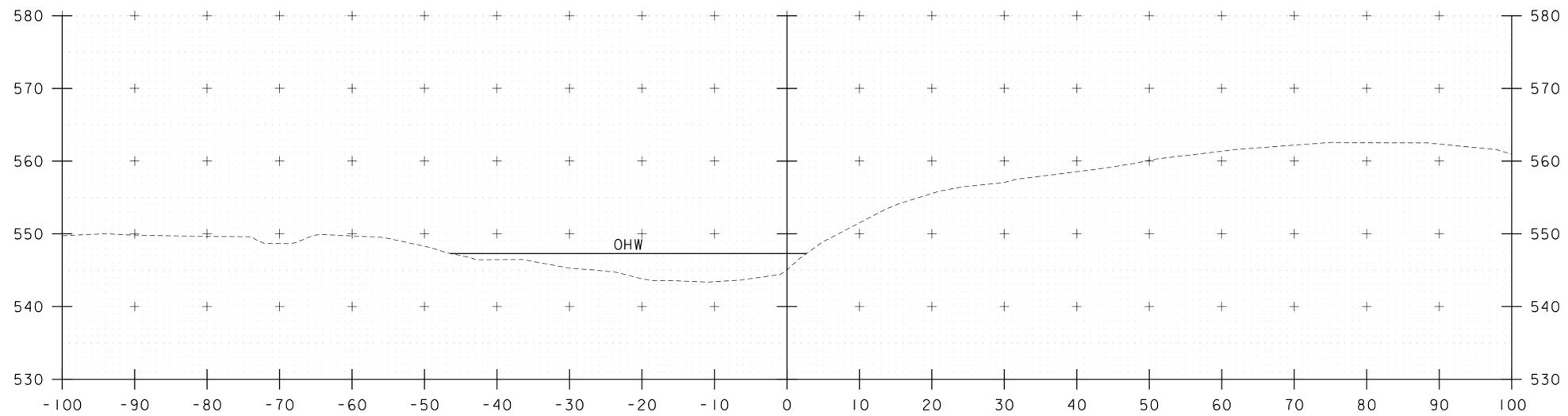
STA. 32+50 TO STA. 35+00



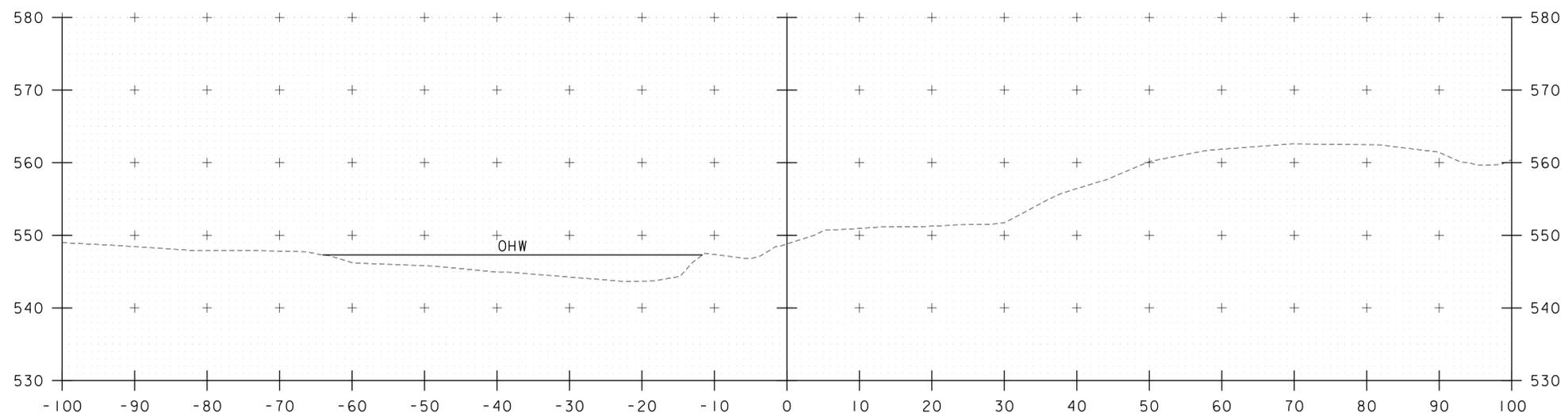
PROJECT NAME: ENOSBURG  
PROJECT NUMBER: BRO 1448(40)

FILE NAME: ...N2 Cross Sections.dgn  
PROJECT LEADER: G. BOGUE  
DESIGNED BY: G. GOYETTE  
**T.H. 1 CROSS SECTIONS - TXS 1**

PLOT DATE: 10/4/2013  
DRAWN BY: E. ALLING  
CHECKED BY: G. GOYETTE  
SHEET 35 OF 46

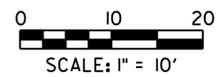


50+25

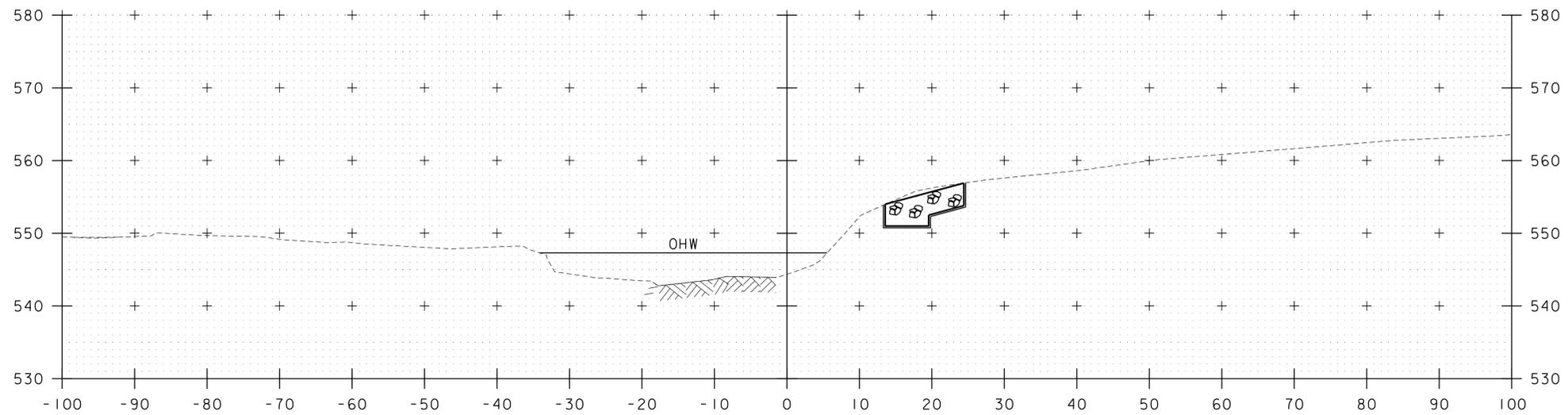


50+00

STA. 50+00 TO STA. 50+25

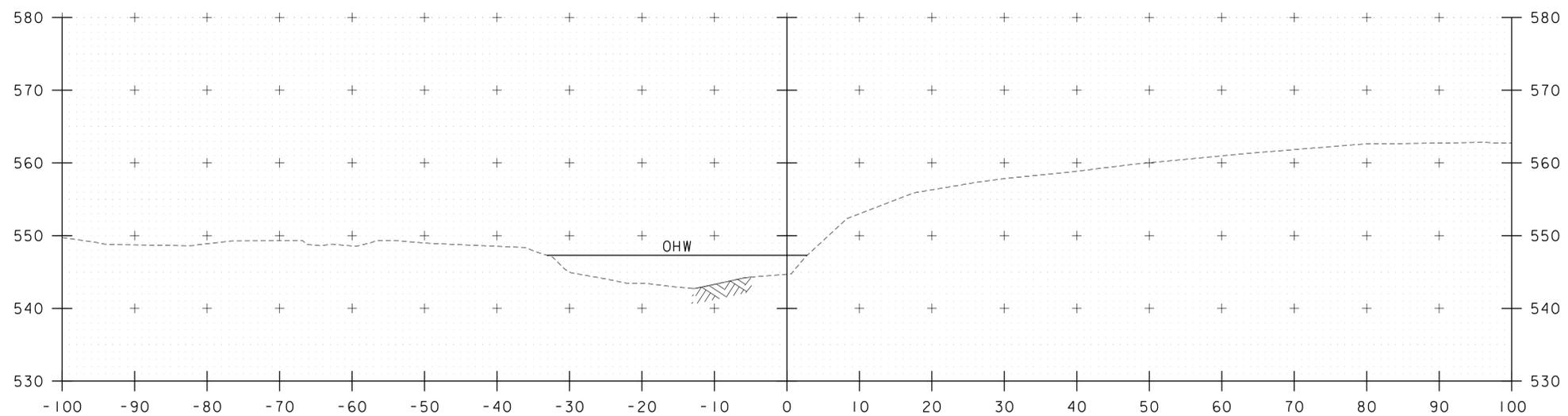


PROJECT NAME:	ENOSBURG
PROJECT NUMBER:	BRO 1448(40)
FILE NAME: ...N3 ChannelCross Sections.dgn	DATE: 10/4/2013
PROJECT LEADER: G. BOGUE	DRAWN BY: E. ALLING
DESIGNED BY: G. GOYETTE	CHECKED BY: G. GOYETTE
<b>CHANNEL CROSS SECTIONS - CXS 1</b>	SHEET 36 OF 46



50+70

STA. 50+68 RT  
 BEGIN UNCLASSIFIED CHANNEL EXCAVATION  
 GEOTEXTILE UNDER STONE FILL  
 STONE FILL, TYPE III  
 GRUBBING MATERIAL

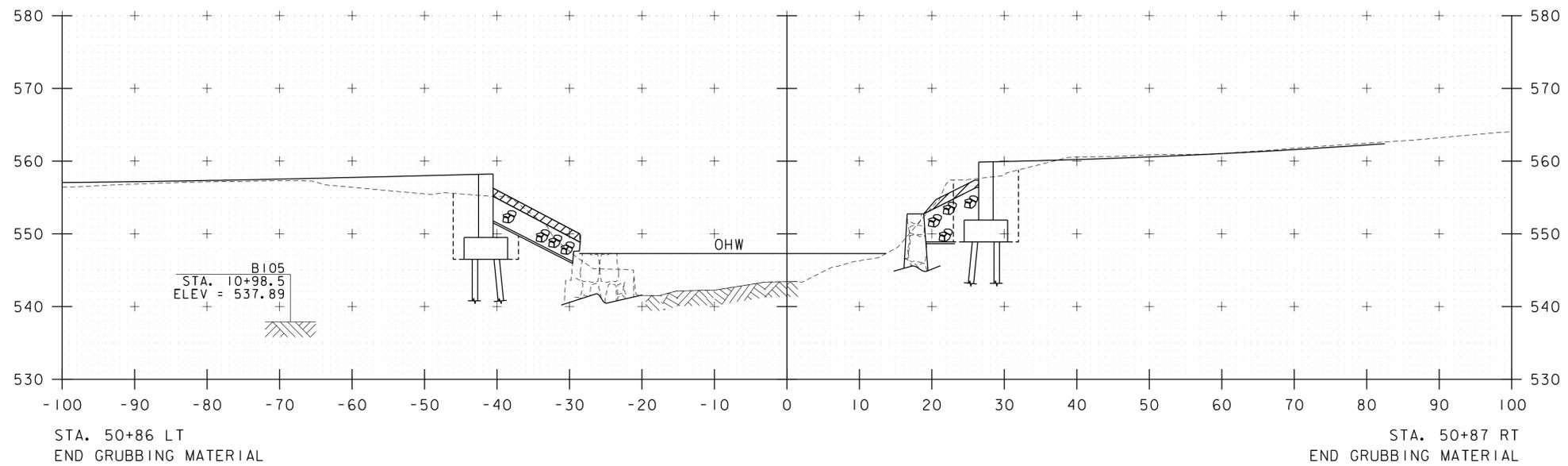


50+50

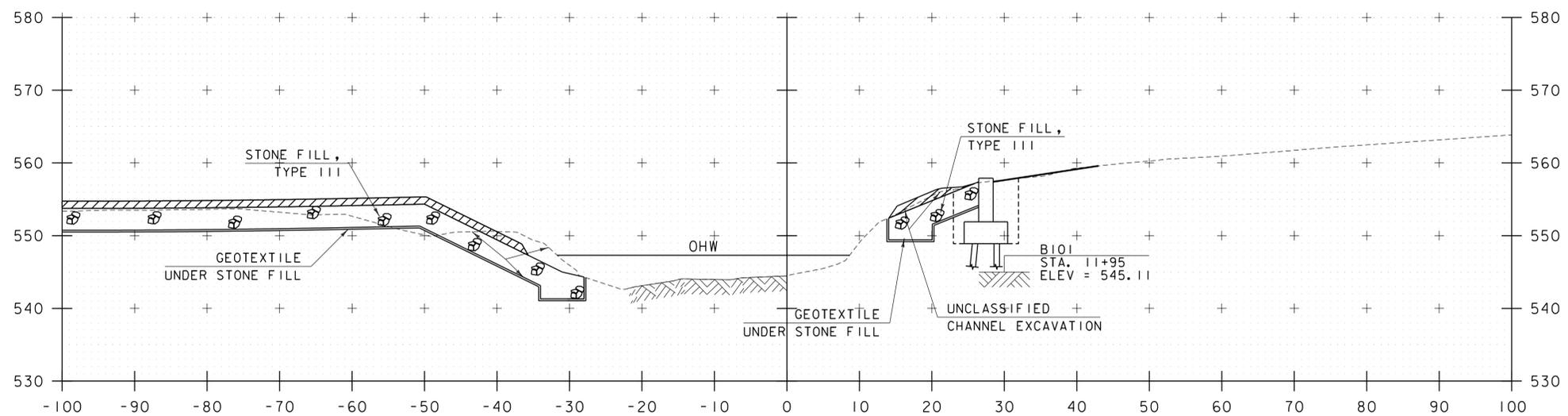
STA. 50+50 TO STA. 50+70



PROJECT NAME: ENOSBURG	
PROJECT NUMBER: BRO 1448(40)	
FILE NAME: ...N3 ChannelCross Sections.dgn	LOT DATE: 10/4/2013
PROJECT LEADER: G. BOGUE	DRAWN BY: E. ALLING
DESIGNED BY: G. GOYETTE	CHECKED BY: G. GOYETTE
<b>CHANNEL CROSS SECTIONS - CXS 2</b>	SHEET 37 OF 46



50+86

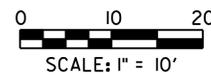


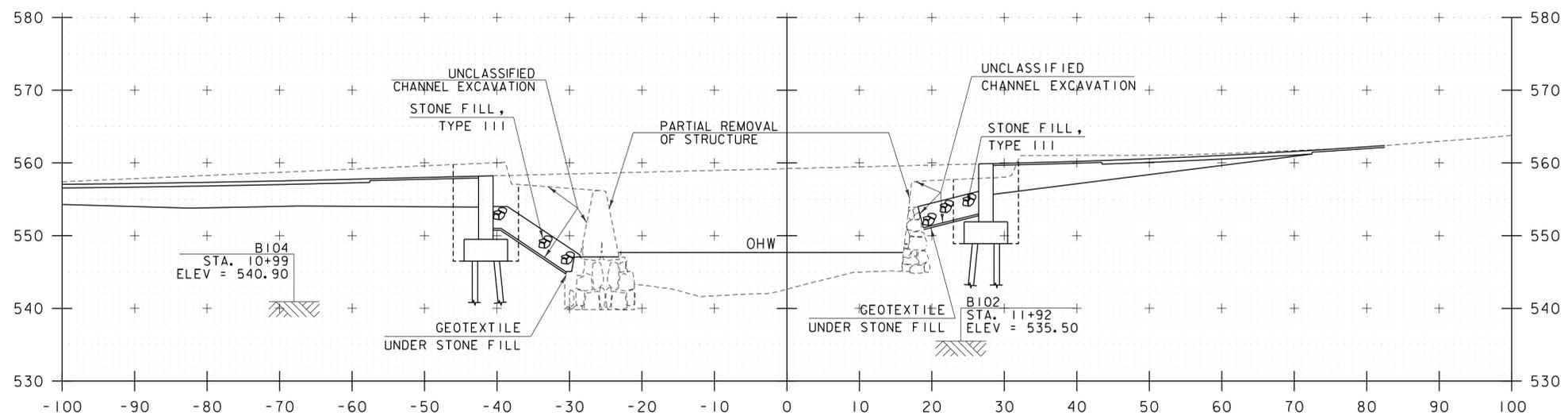
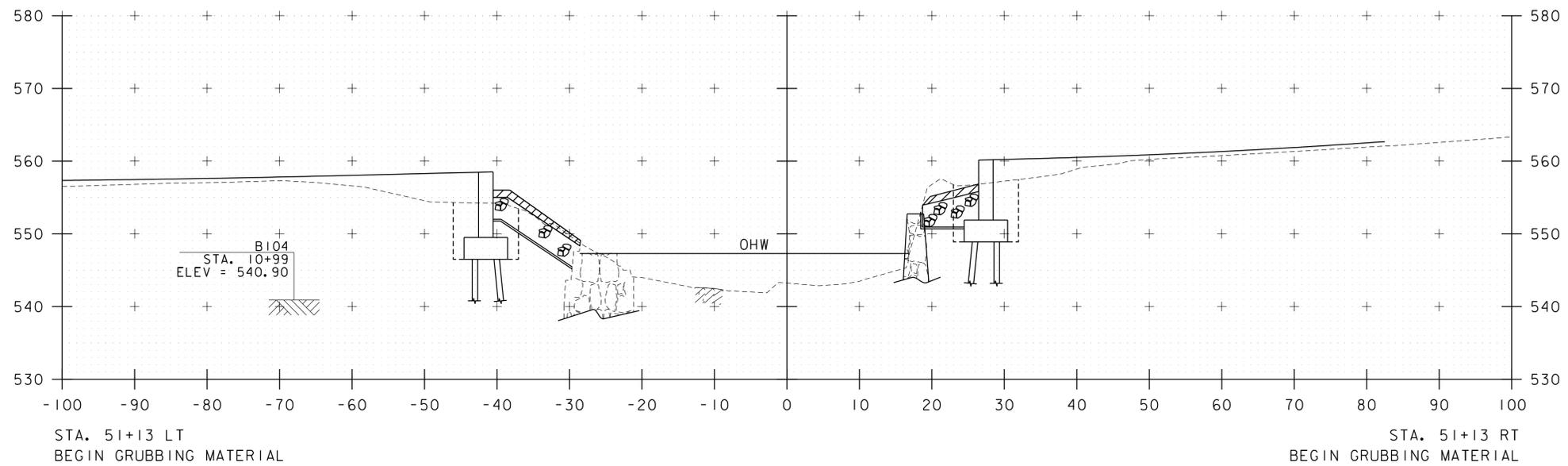
50+80

STA. 50+80 TO STA. 50+86

PROJECT NAME: ENOSBURG  
PROJECT NUMBER: BRO 1448(40)

FILE NAME: ...N3 ChannelCross Sections.dg@LOT DATE: 10/4/2013  
PROJECT LEADER: G. BOGUE DRAWN BY: E. ALLING  
DESIGNED BY: G. GOYETTE CHECKED BY: G. GOYETTE  
**CHANNEL CROSS SECTIONS - CXS 3** SHEET 38 OF 46



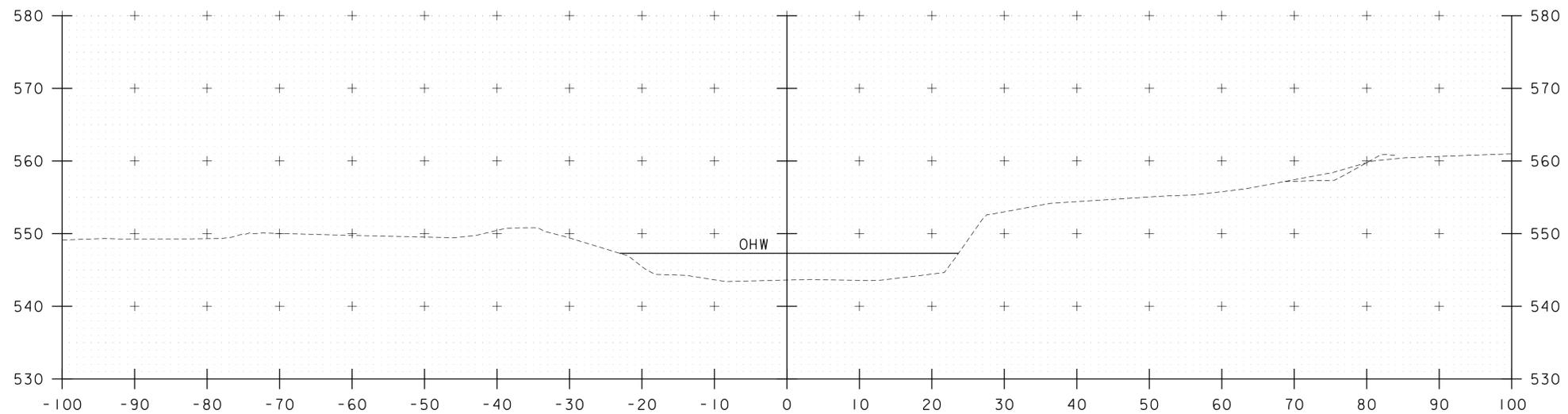


STA. 51+00 TO STA. 51+14

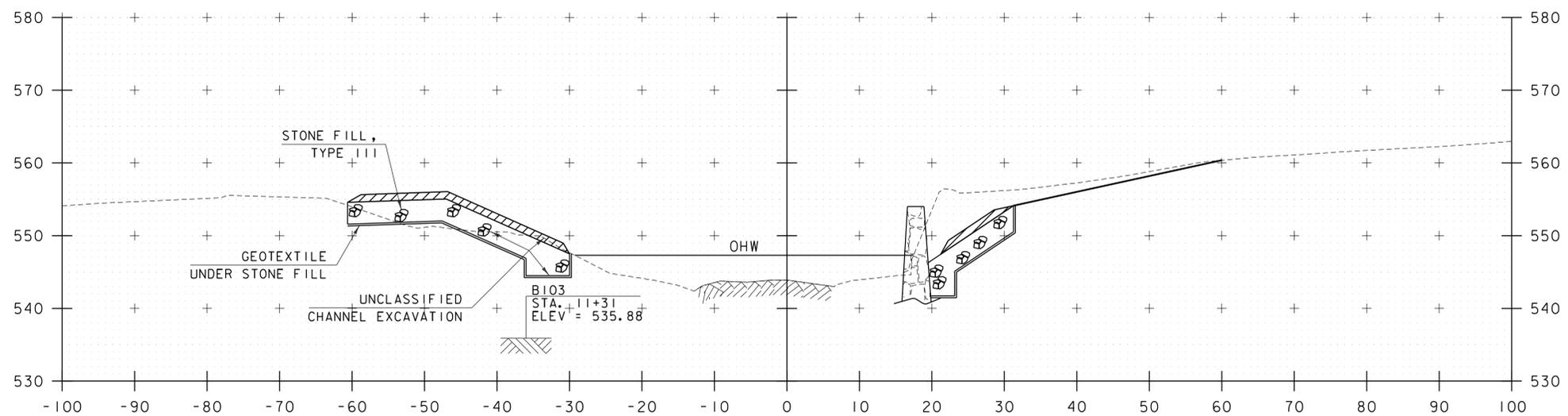
PROJECT NAME: ENOSBURG  
 PROJECT NUMBER: BRO 1448(40)

FILE NAME: ...N3 ChannelCross Sections.dg@LOT DATE: 10/4/2013  
 PROJECT LEADER: G. BOGUE DRAWN BY: E. ALLING  
 DESIGNED BY: G. GOYETTE CHECKED BY: G. GOYETTE  
**CHANNEL CROSS SECTIONS - CXS 4** SHEET 39 OF 46





51+50

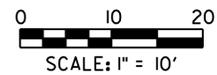


51+20

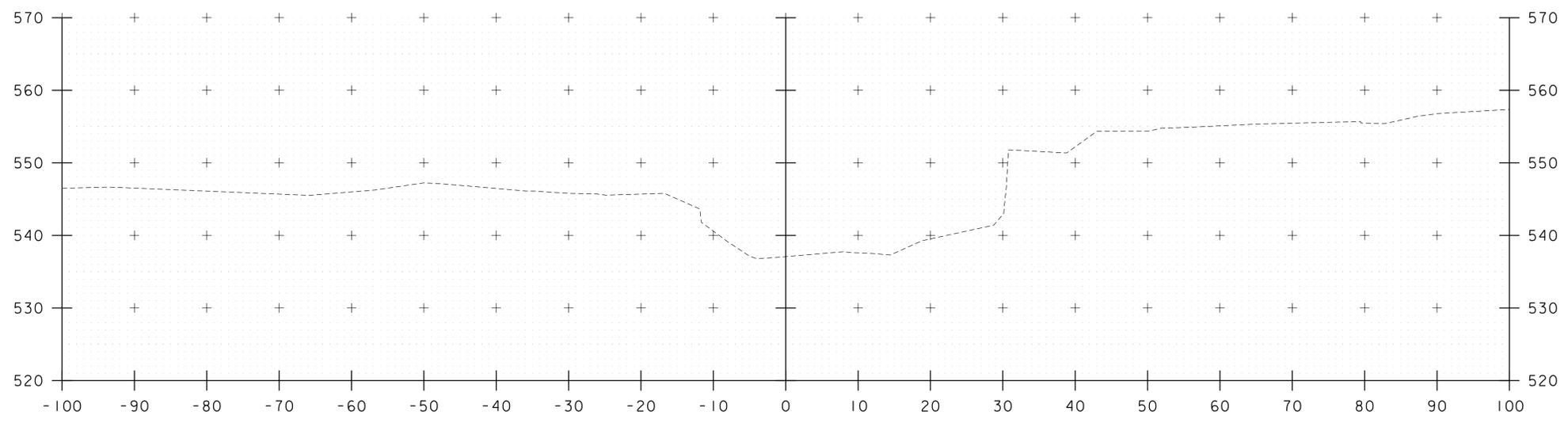
STA. 51+25 LT  
 END UNCLASSIFIED CHANNEL EXCAVATION  
 END STONE FILL, TYPE III  
 END GEOTEXTILE UNDER STONE FILL  
 END GRUBBING MATERIAL

STA. 51+25 RT  
 END UNCLASSIFIED CHANNEL EXCAVATION  
 END STONE FILL, TYPE III  
 END GEOTEXTILE UNDER STONE FILL  
 END GRUBBING MATERIAL

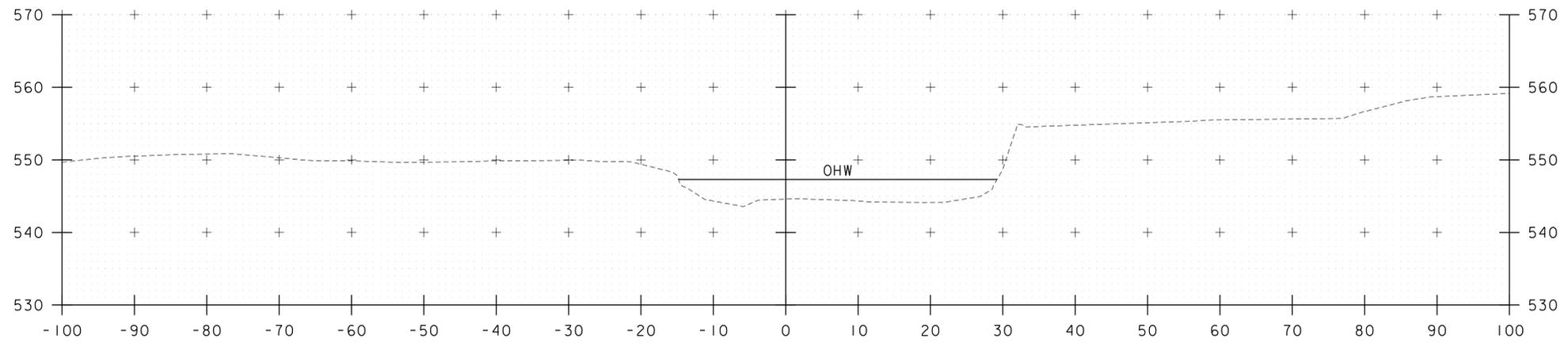
STA. 51+20 TO STA. 51+50



PROJECT NAME: ENOSBURG	
PROJECT NUMBER: BRO 1448(40)	
FILE NAME: ...N3 ChannelCross Sections.dg@LOT DATE: 10/4/2013	DRAWN BY: E. ALLING
PROJECT LEADER: G. BOGUE	CHECKED BY: G. GOYETTE
DESIGNED BY: G. GOYETTE	SHEET 40 OF 46
<b>CHANNEL CROSS SECTIONS - CXS 5</b>	

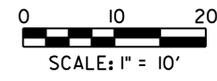


52+00



51+75

STA. 51+75 TO STA. 52+00



PROJECT NAME: ENOSBURG	
PROJECT NUMBER: BRO 1448(40)	
FILE NAME: ...N3 ChannelCross Sections.dgn	LOT DATE: 10/4/2013
PROJECT LEADER: G. BOGUE	DRAWN BY: E. ALLING
DESIGNED BY: G. GOYETTE	CHECKED BY: G. GOYETTE
<b>CHANNEL CROSS SECTIONS - CXS 6</b>	SHEET 41 OF 46

## EPSC PLAN NARRATIVE

### 1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REPLACEMENT OF BRIDGE #48, RELATED CHANNEL WORK AND INCIDENTALS. BRIDGE #48 WILL BE REPLACED WITH A PRECAST CONCRETE BRIDGE OVER TYLER BRANCH, ON NEW FOOTINGS ALONG THE SAME ALIGNMENT. BRIDGE #48 IS LOCATED IN THE TOWN OF ENOSBURG, BOSTON POST ROAD, AT THE INTERSECTION WITH TYLER BRANCH ROAD. THE LENGTH OF THE BRIDGE WILL BE INCREASED TO 73.5 FEET.

NOTE: AREA OF DISTURBANCE INCLUDES LIMITS OF EARTH DISTURBANCE WITHIN THE PROJECT AREA, AS WELL AS WASTE, BORROW AND STAGING AREAS, AND OTHER EARTH DISTURBING ACTIVITIES WITHIN OR DIRECTLY ADJACENT TO THE PROJECT LIMITS AS SHOWN ON THE ATTACHED EPSC PLAN.

TOTAL AREA OF DISTURBANCE AS SHOWN ON THE ATTACHED EPSC PLAN IS APPROXIMATELY 0.25 ACRES.

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

### 1.2 SITE INVENTORY

#### 1.2.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE AREA IS A SADDLE THAT IS MOSTLY OPEN GRASSED AREAS WITH SOME MEDIUM-SIZED TREES. BOSTON POST ROAD AND TYLER BRANCH ROAD ARE WITHIN THE PROJECT SITE. THERE ARE THREE ADJACENT HOUSES TO THE SITE, AND A FEW HOUSES UP SLOPE TO THE SOUTHWEST WITH GRASS AND TREE BUFFERS.

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

THE TYLER BRANCH IS THE ONLY WATER SOURCE ON THE PROJECT SITE. THE TYLER BRANCH IS CLASSIFIED AS STRAIGHT AND NARROW, WITH A CONFINED AND PARTIALLY ARMORED CHANNEL AT THE SITE. THE STREAM BED CONSISTS OF FINES, GRAVEL, COBBLES AND BOULDERS. DUE TO THE NATURE OF THE SURROUNDING TERRAIN THE PROJECT SITE COULD RECEIVE RUNOFF WATER FROM A FEW NEARBY SLOPES.

#### 1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF OPEN GRASSED AREAS, HARDWOOD TREES AND UNDERGROWTH. THE IMPACT TO VEGETATION WILL BE LIMITED TO THE PROPOSED TOE OF SLOPE SHOWN ON THE PLANS. UPON PROJECT COMPLETION, THE CHANNEL WILL BE ARMORED WITH STONE FILL TYPE III AS SPECIFIED ON THE PLANS. DISTURBED VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES.

#### 1.2.4 SOILS

ALL SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE FOR THE COUNTY OF FRANKLIN, VERMONT. SOILS ON THE PROJECT SITE ARE PODUNK VARIANT SILT LOAM, "K FACTOR" = 0.32. THE SOIL IS CONSIDERED MODERATELY ERODIBLE DUE TO K-VALUE.

NOTE: K-VALUES GENERALLY INDICATE THE FOLLOWING:

0.0-0.23 = LOW EROSION POTENTIAL  
0.24-0.36 = MODERATE EROSION POTENTIAL  
0.37 AND HIGHER = HIGH EROSION POTENTIAL

#### 1.2.5 SENSITIVE RESOURCE AREAS

CRITICAL HABITATS: NO  
HISTORICAL OR ARCHEOLOGICAL AREAS: ARCHEOLOGICALLY SENSITIVE AREA IN SOUTHWEST QUADRANT AS SHOWN ON THE PLANS  
PRIME AGRICULTURAL LAND: NO  
THREATENED AND ENDANGERED SPECIES: NO  
WATER RESOURCE: TYLER BRANCH  
WETLANDS: YES

### 1.3 RISK EVALUATION

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

### 1.4 EROSION PREVENTION AND SEDIMENT CONTROL

THE EROSION CONTROL PLANS ARE MEANT AS A GUIDELINE FOR PREVENTING EROSION AND CONTROLLING SEDIMENT TRANSPORT. THE PRINCIPLES OUTLINED IN THIS NARRATIVE CONSIST OF APPLYING MEASURES THROUGHOUT CONSTRUCTION OF THE PROJECT IN ORDER TO MINIMIZE SEDIMENT TRANSPORT TO THE RECEIVING WATERS. THE MEASURES INCLUDE STABILIZATION AND STRUCTURAL PRACTICES, STORM WATER CONTROLS AND OTHER POLLUTION PREVENTION PRACTICES. THEY HAVE BEEN PROPOSED BY THE DESIGNER AS A BASIS FOR PROTECTING RESOURCES AND WILL NEED TO BE BUILT UPON BASED ON THE SPECIFIC MEANS AND METHODS OF THE CONTRACTOR. REFER TO THE LOW RISK SITE HANDBOOK AND APPROPRIATE DETAIL SHEETS FOR SPECIFIC GUIDANCE AND CONSTRUCTION DETAILING.

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

#### 1.4.1 MARK SITE BOUNDARIES

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

PROJECT DEMARCATION FENCING (PDF) SHALL BE USED TO PHYSICALLY MARK SITE BOUNDARIES. BARRIER FENCE SHALL BE USED IN THE LOCATIONS SHOWN ON THE EPSC PLAN.

#### 1.4.2 LIMIT DISTURBANCE AREA

PREVENTING INITIAL SOIL EROSION BY MINIMIZING THE EXPOSED AREA IS MUCH MORE EFFECTIVE THAN TREATING ERODED SEDIMENT. EARTH DISTURBANCE CAN BE MINIMIZED THROUGH CONSTRUCTION PHASING BY ONLY OPENING UP EARTH AS NECESSARY. THIS CAN LIMIT THE AREA THAT WILL BE DISTURBED AND EXPOSED TO EROSION. EMPLOY TEMPORARY CONSTRUCTION STABILIZATION PRACTICES IN INCREMENTAL STAGES AS PHASES CHANGE. FOR PROJECTS WHICH FALL UNDER THE CONSTRUCTION GENERAL PERMIT, ONLY THE ACREAGE LISTED ON THE PERMIT AUTHORIZATION MAY BE EXPOSED AT ANY GIVEN TIME.

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

#### 1.4.3 SITE ENTRANCE/EXIT STABILIZATION

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

STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AS PROPOSED ON THE EPSC PLAN AND ANYWHERE EQUIPMENT WILL BE GOING FROM AREAS OF EXPOSED SOILS TO PAVED SURFACES.

#### 1.4.4 INSTALL SEDIMENT BARRIERS

SEDIMENT BARRIERS SHALL BE UTILIZED TO INTERCEPT RUNOFF AND ALLOW SUSPENDED SEDIMENT TO SETTLE OUT. THEY SHALL BE INSTALLED PRIOR TO ANY UP SLOPE WORK.

WOVEN WIRE REINFORCED SILT FENCE AND FILTER CURTAINS OR OTHER APPROVED IN-STREAM SEDIMENT BARRIER SHALL BE USED IN THE LOCATIONS SHOWN ON THE EPSC PLAN.

#### 1.4.5 DIVERT UPLAND RUNOFF

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

THE PROJECT AREA IS RELATIVELY FLAT WITH MINIMAL OFF-SITE RUNOFF FLOWING THROUGH THE SITE. THEREFORE DIVERSION MEASURES WILL NOT BE NECESSARY.

#### 1.4.6 SLOW DOWN CHANNELIZED RUNOFF

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

THERE ARE NO DITCHES WITHIN THE PROJECT LIMITS SO IT IS NOT ANTICIPATED THAT CHECK DAMS WILL BE USED.

#### 1.4.7 CONSTRUCT PERMANENT CONTROLS

THERE ARE NO PERMANENT STORMWATER TREATMENT DEVICES TO BE INSTALLED FOR THIS PROJECT.

#### 1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION

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

SURFACE ROUGHENING OF ALL EXPOSED SLOPES, COMBINED WITH TEMPORARY MULCHING, SHALL BE UTILIZED ON A REGULAR BASIS. BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED TO STABILIZE ALL SLOPES STEEPER THAN 1:3.

THE FORECAST OF RAINFALL EVENTS SHALL TRIGGER IMMEDIATE PROTECTION OF EXPOSED SOILS.

#### 1.4.9 WINTER STABILIZATION

VARIOUS MEASURES SPECIFIC TO WINTER MAY BE NECESSARY SHOULD THE PROJECT EXTEND INTO WINTER (OCTOBER 15 THROUGH APRIL 15). REFER TO THE LOW RISK SITE HANDBOOK FOR GUIDANCE.

#### 1.4.10 STABILIZE SOIL AT FINAL GRADE

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

SEED, MULCH, FERTILIZER AND LIME SHALL BE USED TO ESTABLISH PERMANENT VEGETATION. FOR SLOPES STEEPER THAN 1:3, BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED INSTEAD OF MULCH.

#### 1.4.11 DE-WATERING ACTIVITIES

DISCHARGE FROM DEWATERING ACTIVITIES THAT FLOWS OFF OF THE CONSTRUCTION SITE MUST NOT CAUSE OR CONTRIBUTE TO A VIOLATION OF THE VERMONT WATER QUALITY STANDARDS. DEWATERING SITE TO BE REVIEWED AND APPROVED BY THE RESIDENT ENGINEER.

#### 1.4.12 INSPECT YOUR SITE

INSPECT THE PROJECT SITE BASED ON SPECIAL PROVISION REQUIREMENTS.

### 1.5 SEQUENCE AND STAGING

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

#### 1.5.1 CONSTRUCTION SEQUENCE

#### 1.5.2 OFF-SITE ACTIVITIES

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

#### 1.5.3 UPDATES

PROJECT NAME: ENOSBURG  
PROJECT NUMBER: BRO 1448(40)

FILE NAME: ...\\08.A EPSC NARRATIVE.dgn PLOT DATE: 10/4/2013  
PROJECT LEADER: G. BOGUE DRAWN BY: E. ALLING  
DESIGNED BY: G. GOYETTE CHECKED BY: G. GOYETTE  
EPSC NARRATIVE - ECN 1 SHEET 42 OF 46



**ITEM 653.55 PROJECT DEMARCATION FENCE**

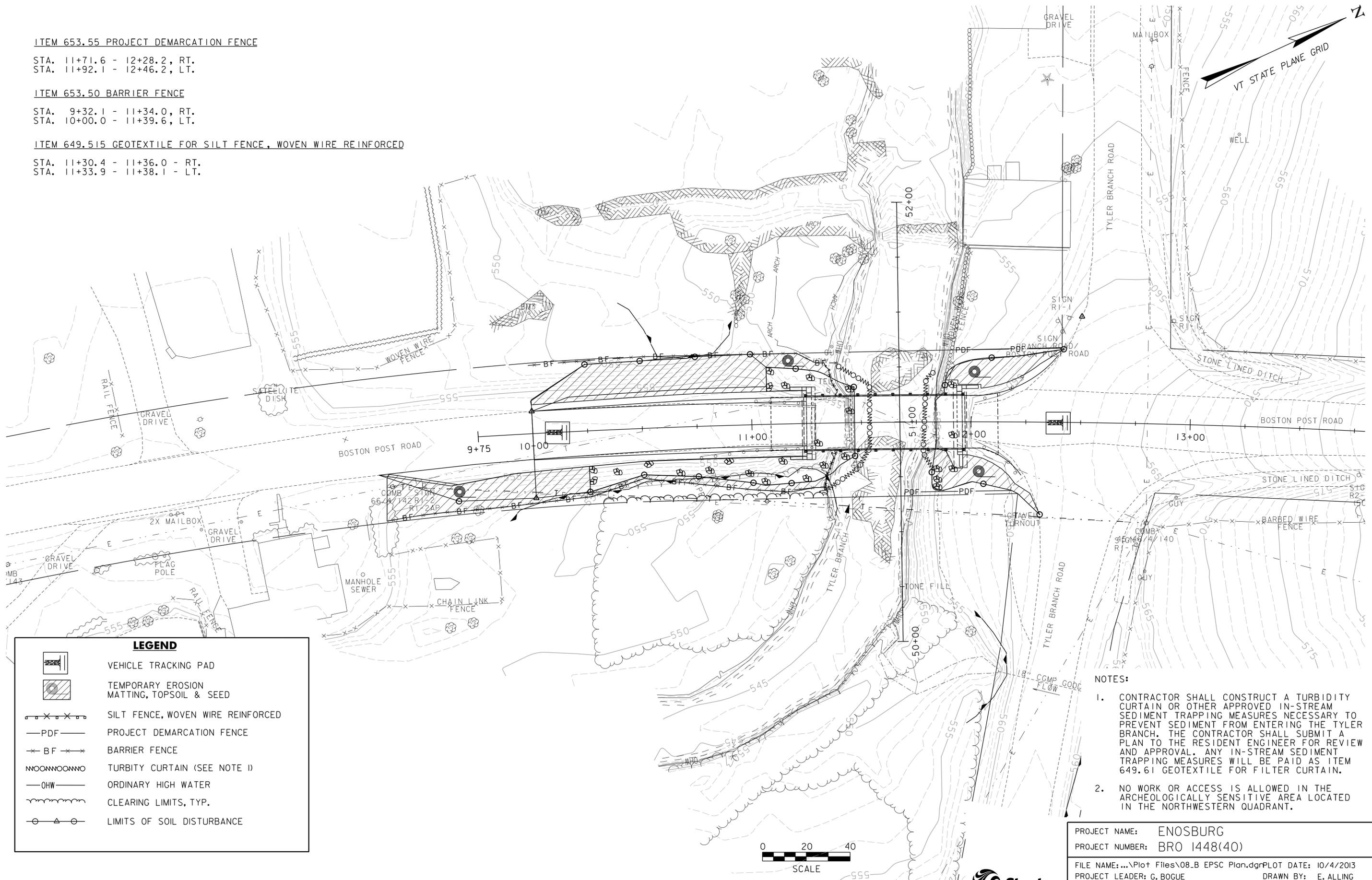
STA. 11+71.6 - 12+28.2, RT.  
STA. 11+92.1 - 12+46.2, LT.

**ITEM 653.50 BARRIER FENCE**

STA. 9+32.1 - 11+34.0, RT.  
STA. 10+00.0 - 11+39.6, LT.

**ITEM 649.515 GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED**

STA. 11+30.4 - 11+36.0 - RT.  
STA. 11+33.9 - 11+38.1 - LT.

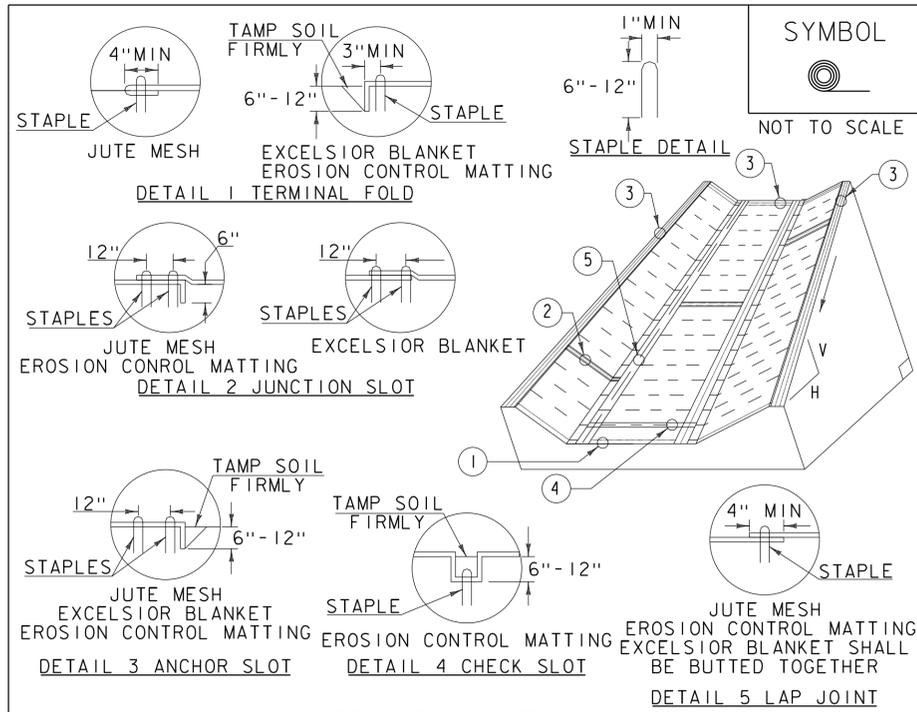


LEGEND	
	VEHICLE TRACKING PAD
	TEMPORARY EROSION MATTING, TOPSOIL & SEED
	SILT FENCE, WOVEN WIRE REINFORCED
	PROJECT DEMARCATION FENCE
	BARRIER FENCE
	TURBIDITY CURTAIN (SEE NOTE 1)
	ORDINARY HIGH WATER
	CLEARING LIMITS, TYP.
	LIMITS OF SOIL DISTURBANCE

- NOTES:**
- CONTRACTOR SHALL CONSTRUCT A TURBIDITY CURTAIN OR OTHER APPROVED IN-STREAM SEDIMENT TRAPPING MEASURES NECESSARY TO PREVENT SEDIMENT FROM ENTERING THE TYLER BRANCH. THE CONTRACTOR SHALL SUBMIT A PLAN TO THE RESIDENT ENGINEER FOR REVIEW AND APPROVAL. ANY IN-STREAM SEDIMENT TRAPPING MEASURES WILL BE PAID AS ITEM 649.61 GEOTEXTILE FOR FILTER CURTAIN.
  - NO WORK OR ACCESS IS ALLOWED IN THE ARCHEOLOGICALLY SENSITIVE AREA LOCATED IN THE NORTHWESTERN QUADRANT.

PROJECT NAME: ENOSBURG  
 PROJECT NUMBER: BRO 1448(40)  
 FILE NAME: ...Plot Files\08.B EPSC Plan.dgr PLOT DATE: 10/4/2013  
 PROJECT LEADER: G. BOGUE DRAWN BY: E. ALLING  
 DESIGNED BY: G. GOYETTE CHECKED BY: G. GOYETTE  
**EPSC CONST. SITE PLAN - ECP 1** SHEET 43 OF 46





**CONSTRUCTION SPECIFICATIONS**

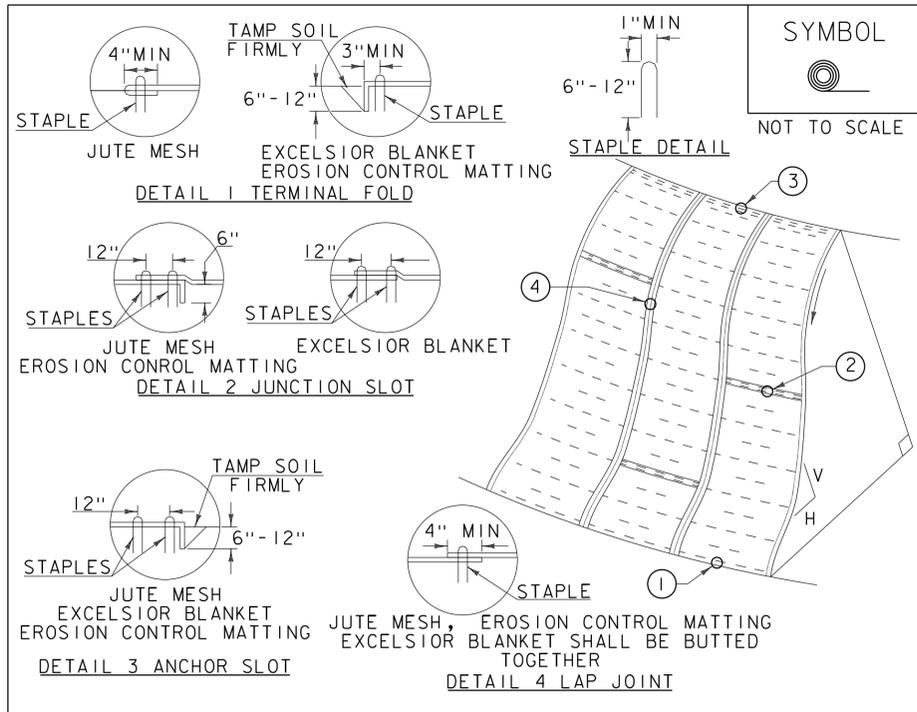
1. EROSION MATTING, CHECK SLOTS, SHALL BE SPACED IN DITCH CHANNEL SO THAT ONE OCCURS WITHIN EACH 50' ON SLOPES OF MORE THAN 4% AND LESS THAN 6%. ON SLOPES OF 6% OR MORE, THEY SHALL BE SPACED SO THAT ONE OCCURS WITHIN EACH 25'.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4'X225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4'X150' ROLL OF MATERIAL.
4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

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

**ROLLED EROSION CONTROL PRODUCT (RECP) DITCH**

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

REVISIONS		
MARCH 8, 2007	JMF	
APRIL 16, 2007	WHF	
JANUARY 13, 2009	WHF	



**CONSTRUCTION SPECIFICATIONS**

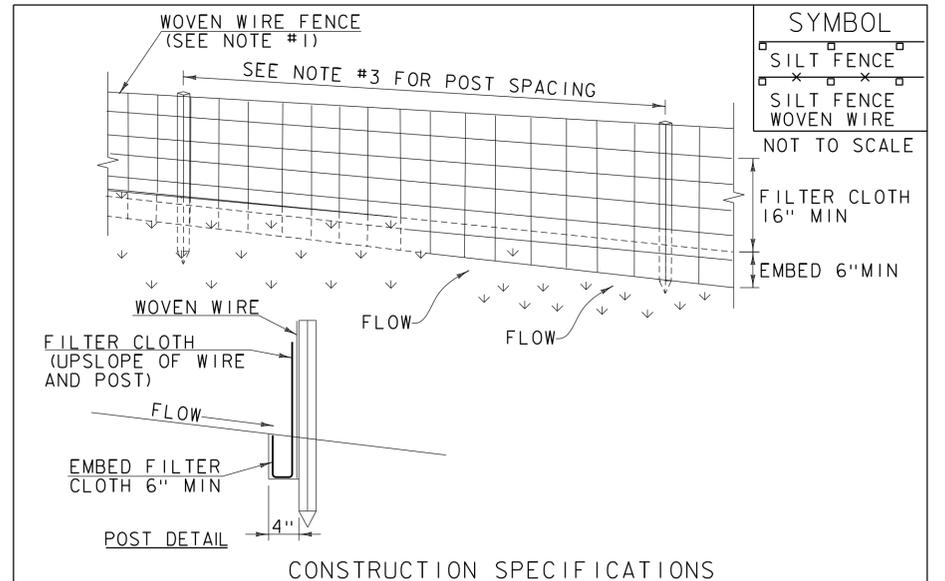
1. APPLY TO SLOPES GREATER THAN 3H:1V OR WHERE NECESSARY TO AID IN ESTABLISHING VEGETATION.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER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

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

**ROLLED EROSION CONTROL PRODUCT (RECP) SIDE SLOPE**

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

REVISIONS		
APRIL 16, 2007	JMF	
JANUARY 13, 2009	WHF	



**CONSTRUCTION SPECIFICATIONS**

1. WOVEN WIRE REINFORCED FENCE IS REQUIRED WITHIN 100' UPSLOPE OF RECEIVING WATERS WHEN THE PROJECT FALLS UNDER A CONSTRUCTION STORMWATER PERMIT. WOVEN WIRE SHALL BE A MIN. 14 GAUGE WITH A 6" MAX. MESH OPENING.
2. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAF1100X, STABILINKA T140N OR APPROVED EQUIVALENT.
3. POST SPACING FOR WIRE-BACKED FENCE SHALL BE 10' MAXIMUM. FOR FILTER-CLOTH FENCE, WHEN ELONGATION IS >50%, POST SPACING SHALL NOT EXCEED 4' AND WHEN ELONGATION IS <50%, POST SPACING SHALL NOT EXCEED 6'.
4. WOVEN WIRE FENCE IS TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES. FILTER CLOTH IS TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY 6" AND FOLDED.
6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF OF FABRIC HEIGHT.

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

**SILT FENCE**

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

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

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

PROJECT NAME: ENOSBURG  
PROJECT NUMBER: BRO 1448(40)

FILE NAME: ...N08.C EPSC Details.dgn PLOT DATE: 10/4/2013  
PROJECT LEADER: G. BOGUE DRAWN BY: E. ALLING  
DESIGNED BY: G. GOYETTE CHECKED BY: G. GOYETTE  
**EROSION CONTROL DETAILS - ECD 1** SHEET 44 OF 46



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

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

SOIL AMENDMENT GUIDANCE			
FERTILIZER		LIME	
BROADCAST	HYDROSEED	BROADCAST	HYDROSEED
10-20-10	FOLLOW	PELLETIZED	FOLLOW
500 LBS/AC	MANUFACTURER	2 TONS/AC	MANUFACTURER

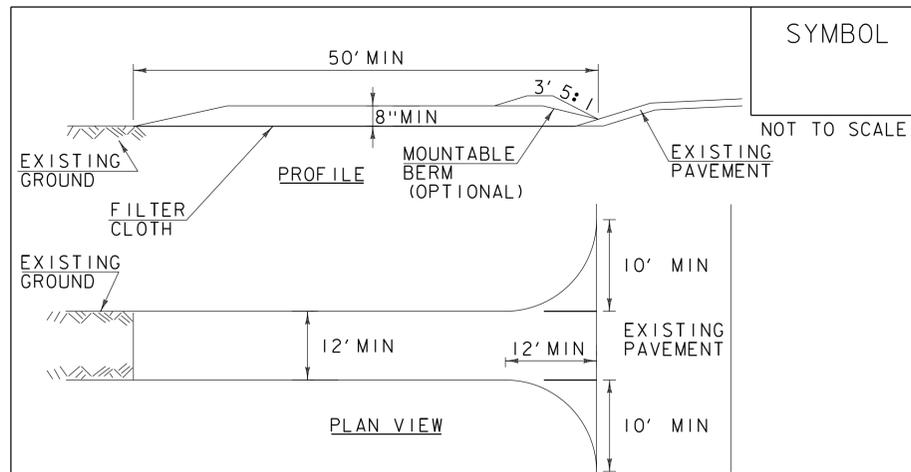
**CONSTRUCTION GUIDANCE**

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

ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MANUAL FOR ROADWAYS AND TRANSPORTATION FACILITIES

**TURF ESTABLISHMENT**

REVISIONS	
JUNE 23, 2009	WHF
JANUARY 15, 2010	WHF
FEBRUARY 16, 2011	WHF



**CONSTRUCTION SPECIFICATIONS**

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

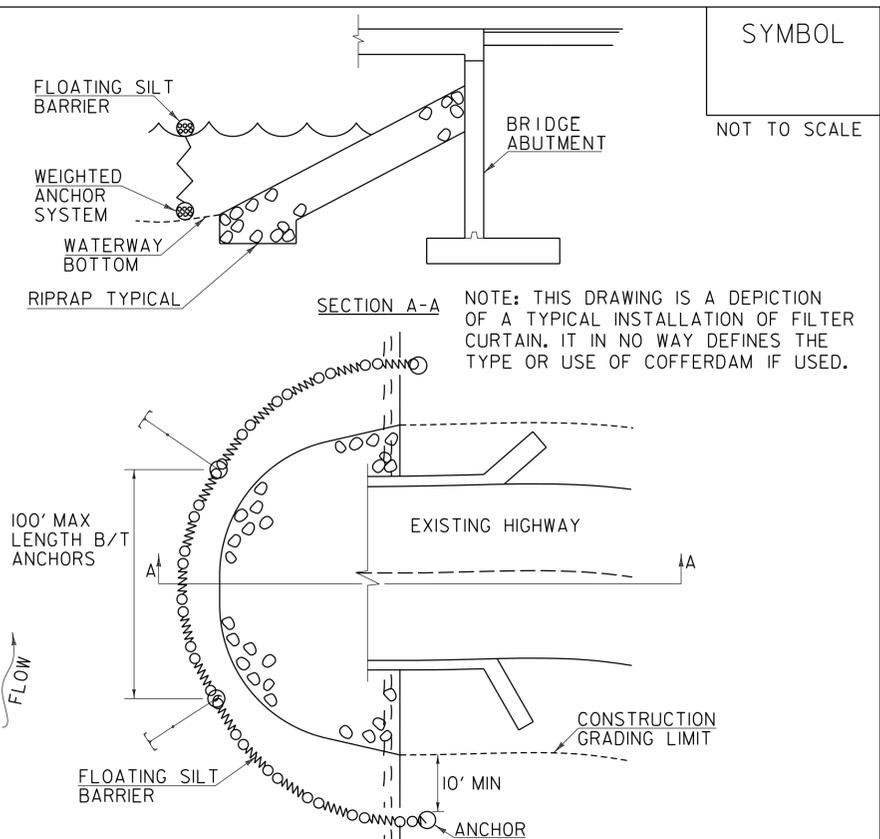
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC  
ORIGINALLY DEVELOPED BY USDA-NRCS  
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

**STABILIZED CONSTRUCTION ENTRANCE**

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

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

REVISIONS	
MARCH 24, 2008	WHF
JANUARY 13, 2009	WHF



**CONSTRUCTION SPECIFICATIONS**

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

**FILTER CURTAIN**

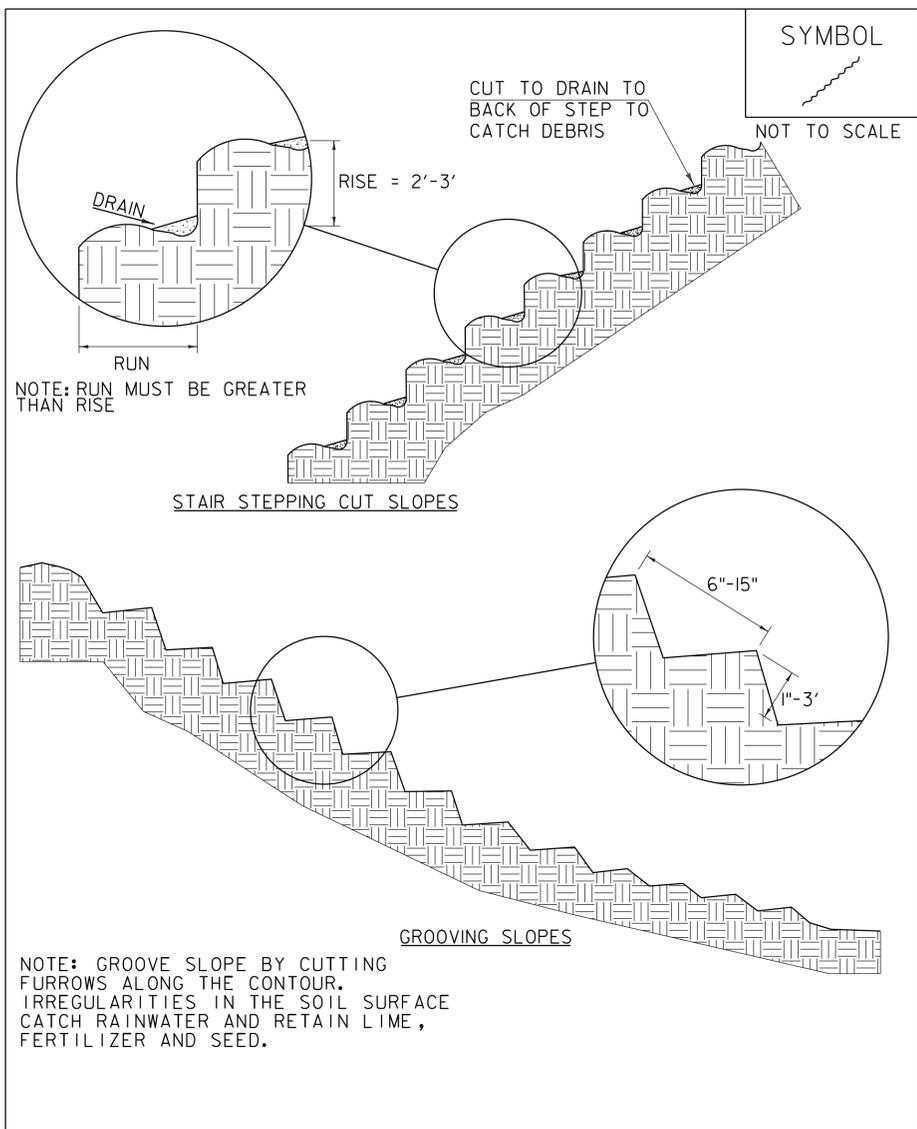
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 FOR GEOTEXTILE FOR FILTER CURTAIN (PAY ITEM 649.6I).

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

PROJECT NAME: ENOSBURG  
PROJECT NUMBER: BRO 1448(40)

FILE NAME: ...N08.C EPSC Details.dgn PLOT DATE: 10/4/2013  
PROJECT LEADER: G. BOGUE DRAWN BY: E. ALLING  
DESIGNED BY: G. GOYETTE CHECKED BY: G. GOYETTE  
**EROSION CONTROL DETAILS - ECD 2** SHEET 45 OF 46





SYMBOL  


NOT TO SCALE

NOTE: RUN MUST BE GREATER THAN RISE

STAIR STEPPING CUT SLOPES

GROOVING SLOPES

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

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

SURFACE ROUGHENING

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

REVISIONS	
APRIL 1, 2008	WHF
JANUARY 13, 2009	WHF

THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT



PROJECT NAME: ENOSBURG	PLOT DATE: 10/4/2013
PROJECT NUMBER: BRO 1448(40)	DRAWN BY: E. ALLING
FILE NAME: ...\\08.C EPSC Details.dgn	CHECKED BY: G. GOYETTE
PROJECT LEADER: G. BOGUE	DESIGNED BY: G. GOYETTE
<b>EROSION CONTROL DETAILS - ECD 3</b>	
SHEET 46 OF 46	

ASPHALTIC PLUG JOINT NOTES

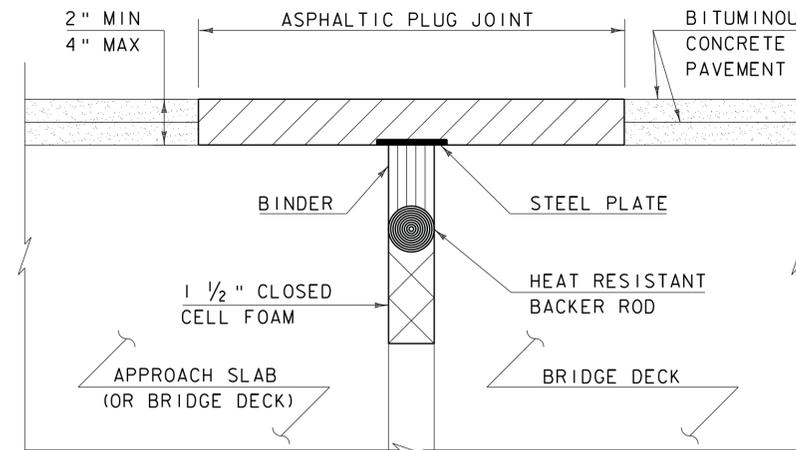
INSTALLATION:

1. LOCATE THE JOINT CENTRALLY OVER THE DECK OVERLAY EXPANSION GAP OR FIXED JOINT, MARKED OUT TO THE MANUFACTURER'S RECOMMENDED WIDTH.
2. REMOVE THE BITUMINOUS CONCRETE PAVEMENT FULL DEPTH AS SHOWN ON THE PLANS. THE PAVEMENT SHALL BE DRY AND SAW CUT TO THE LIMITS REQUIRED TO PLACE THE JOINT. A PNEUMATIC HAMMER AND CHISEL MAY BE USED ADJACENT TO THE CURB ONLY WHEN SAW CUTTING IS NOT POSSIBLE.
3. BLAST CLEAN THE JOINT AREA OF DEBRIS, ASPHALT AND SHEET MEMBRANE. THOROUGHLY DRY THE JOINT AREA WITH COMPRESSED AIR PRIOR TO APPLYING BINDER MATERIAL.
4. REPAIR MATERIAL GREATER THAN 4 INCHES FROM FINISHED GRADE WITH RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE MEETING THE REQUIREMENTS OF SUBSECTION 780.04.
5. PLACE PROPERLY SIZED HEAT RESISTANT BACKER ROD IN THE MOVEMENT GAP ALLOWING FOR 1" +/- OF BINDER ABOVE THE ROD.
6. HEAT AND PLACE THE BINDER MATERIAL AS RECOMMENDED BY THE MANUFACTURER.
7. PLACE 1/4" THICK BY 8" WIDE SECTIONS OF STEEL PLATE OVER THE CENTER OF THE MOVEMENT GAP. SECURE THE PLATES FROM MOVING BY INSERTING LOCATING PINS THROUGH THE PRE-STAMPED HOLES INTO BACKER ROD AND COVER WITH HOT BINDER. THE STEEL PLATES MAY BE OMITTED WHERE THE ENGINEER DETERMINES THAT THE APPROACH SLAB OR BRIDGE DECK WILL PROVIDE INADEQUATE SUPPORT AND WHERE VERTICAL MOVEMENT OF THE PLATES MIGHT OCCUR.
8. HEAT AND MIX THE BINDER MATERIAL AND AGGREGATE AS RECOMMENDED BY THE MANUFACTURER.
9. INSTALLATION OF MATERIAL, COMPACTION, AND TOP COATING SHALL BE AS RECOMMENDED BY THE MANUFACTURER.
10. IMMEDIATELY AFTER TOP COATING, CAST AN ANTI-SKID MATERIAL OVER THE JOINT TO REDUCE THE RISK OF TRACKING.
11. ONCE THE JOINT REACHES 82 DEG C (180 DEG F) +/-, WATER MAY BE USED TO EXPEDITE THE COOLING PROCESS.
12. PROTECT JOINT FROM TRAFFIC UNTIL THE MATERIAL HAS COOLED TO 51 DEG C (125 DEG F) +/-.

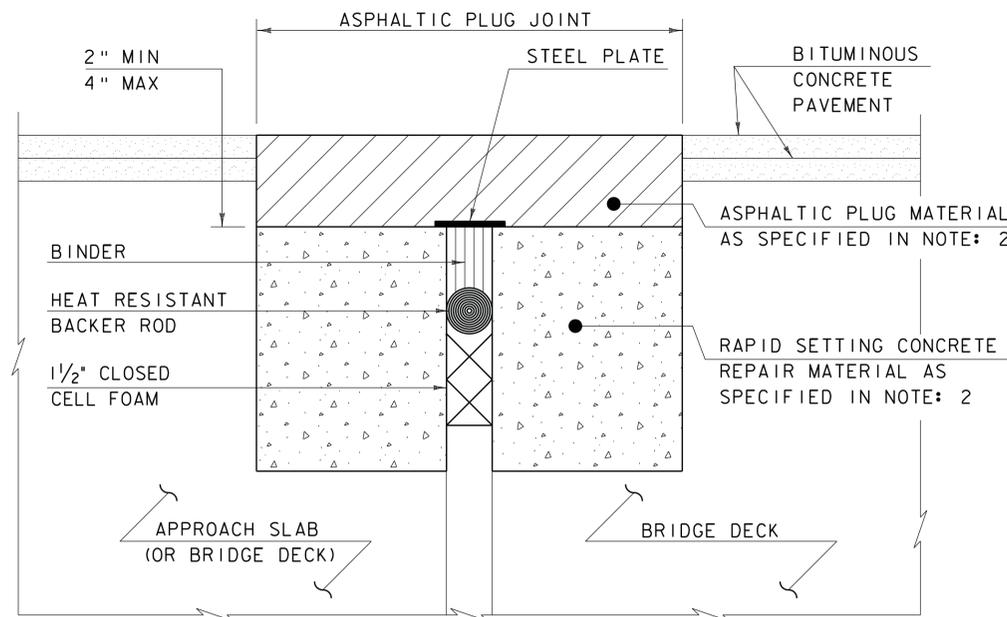
WEATHER LIMITATIONS

APPLY BINDER MATERIAL ONLY WHEN THE FOLLOWING CONDITIONS PREVAIL OR AS RECOMMENDED BY THE MANUFACTURER:

1. THE AMBIENT AIR TEMPERATURE IS AT LEAST 10 DEG C (50 DEG F) AND RISING.
2. THE ROAD SURFACE IS DRY.
3. WEATHER CONDITIONS OR OTHER CONDITIONS ARE FAVORABLE AND ARE EXPECTED TO REMAIN SO FOR THE PERFORMANCE OF SATISFACTORY WORK.



ASPHALTIC PLUG-TYPE JOINT DETAIL - NEW  
(NOT TO SCALE)



ASPHALTIC PLUG-TYPE JOINT DETAIL - REHAB

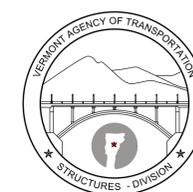
NOTES: (NOT TO SCALE)

1. THE CONTRACTOR SHALL REMOVE ALL ASPHALTIC PLUG JOINT MATERIAL AND DETERIORATED CONCRETE AS DIRECTED BY THE ENGINEER. REMOVAL OF THE FIRST 4 INCHES OF MATERIAL SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 516.10 BRIDGE EXPANSION JOINT, ASPHALTIC PLUG. ANY REMOVAL OF MATERIAL GREATER THAN 4 INCHES SHALL BE INCLUDED IN THE BID PRICE OF ITEM 580.20 RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE.
2. THE CONTRACTOR SHALL REPLACE REMOVED MATERIAL THAT IS LESS THAN 4" FROM FINISHED GRADE WITH ASPHALTIC PLUG JOINT MATERIAL MEETING THE REQUIREMENTS OF SUBSECTION 707.15. ALL REMOVED MATERIAL THAT IS GREATER THAN 4 INCHES FROM FINISHED GRADE SHALL BE REPLACED WITH RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE MEETING THE REQUIREMENTS OF SUBSECTION 780.04.
3. REINFORCING STEEL NOT SHOWN FOR CLARITY.

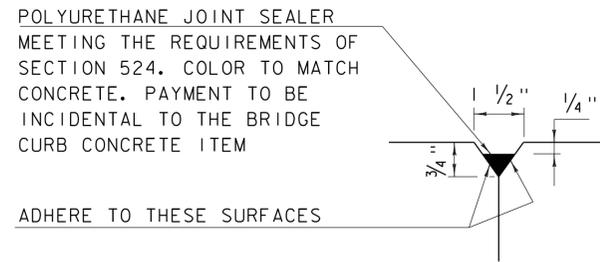
REVISIONS

MAY 7, 2010	APPROVED FOR USE BY VAOT STRUCTURES SECTION

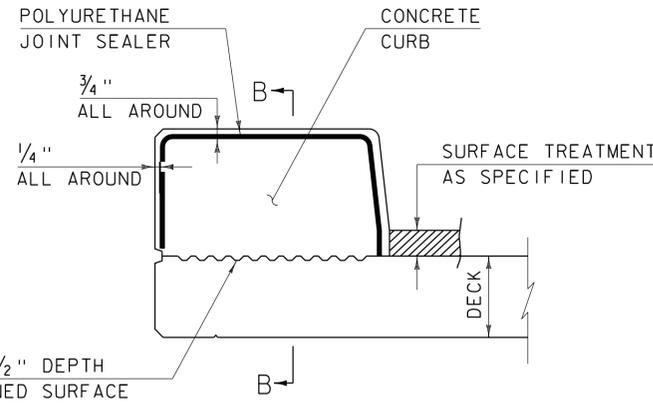
BRIDGE JOINT  
ASPHALTIC PLUG



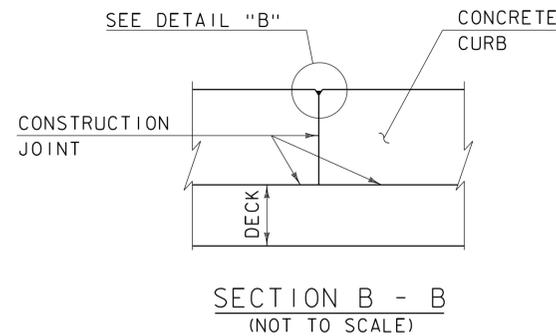
STRUCTURES  
DETAIL  
SD-516.10



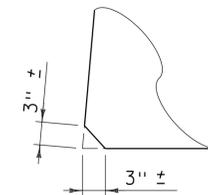
DETAIL "B"  
(NOT TO SCALE)



CONCRETE CURB JOINT SECTION  
(NOT TO SCALE)



SECTION B - B  
(NOT TO SCALE)

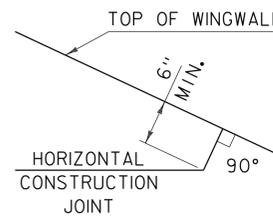


ACUTE ANGLE  
CLIP DETAIL  
(NOT TO SCALE)

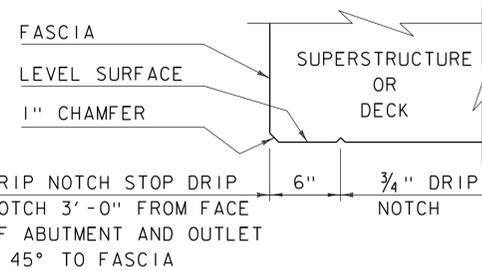
1. SEE TYPICAL HORIZONTAL CONSTRUCTION JOINT DETAIL FOR ADDITIONAL INFORMATION

CONCRETE CURB JOINT NOTES

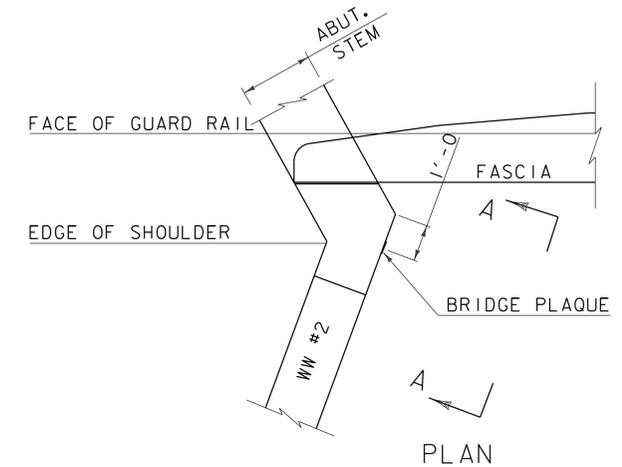
1. CONCRETE CURBS MAY BE PLACED IN ONE CONTINUOUS OPERATION IF AN APPROVED SHRINKAGE REDUCING ADMIXTURE LISTED IN THE SPECIAL PROVISIONS IS USED WITH THE CONCRETE MIX DESIGN. PAYMENT FOR THE SHRINKAGE REDUCING ADMIXTURE WILL BE INCIDENTAL TO THE BRIDGE CURB CONCRETE ITEM.
2. IF THE CONTRACTOR CHOOSES NOT TO USE AN APPROVED SHRINKAGE REDUCING ADMIXTURE, THE CURBS SHALL BE CONSTRUCTED WITH CONSTRUCTION JOINTS SPACED AT A MAXIMUM OF 15'-0" CENTER TO CENTER AND 2'-0" MINIMUM FROM THE CENTER OF NEAREST BRIDGE RAILING POST.
3. ON MULTI-SPAN CONTINUOUS SUPERSTRUCTURES, REGARDLESS OF WHETHER APPROVED SHRINKAGE REDUCING ADMIXTURE IS USED, CURB JOINTS SHALL BE LOCATED OVER THE CENTERLINE OF PIERS AND 7'-0" EACH SIDE OF THE CENTERLINE OF EACH PIER.
4. WHEN CURB JOINTS ARE USED THE CURBS SHALL BE PLACED IN ALTERNATE SECTIONS WITH A MINIMUM OF 48 HOUR DELAY BETWEEN ADJACENT PLACEMENTS.
5. LONGITUDINAL REINFORCING SHALL BE CONTINUOUS THROUGH CURB CONSTRUCTION JOINTS. CURB STIRRUP BARS SHALL BE TURNED AS NECESSARY TO MAINTAIN COVER IN THE FLARED CURB ENDS.
6. THE JOINT SPACING AND DETAILS SHOWN SHALL APPLY TO SIDEWALKS WHEN SHOWN IN THE PLANS.



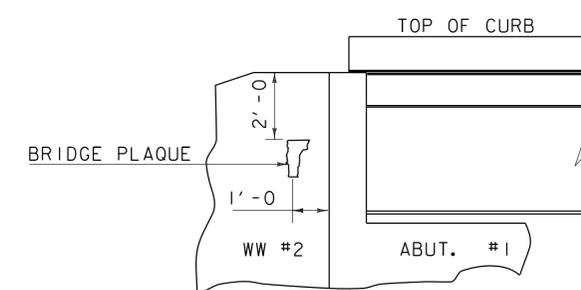
HORIZONTAL WINGWALL  
CONSTRUCTION JOINT  
(NOT TO SCALE)



DRIP NOTCH DETAIL  
(NOT TO SCALE)



PLAN



VIEW "A - A"

BRIDGE PLAQUE  
(NOT TO SCALE)

THE BRIDGE PLAQUE WILL BE SUPPLIED BY THE AGENCY OF TRANSPORTATION AND SHALL BE INSTALLED BY THE CONTRACTOR AT ABUTMENT #1 ON THE RIGHT SIDE AS SHOWN OR AS DIRECTED BY THE ENGINEER.

PAYMENT FOR INSTALLATION OF THE BRIDGE PLAQUE SHALL BE INCIDENTAL TO THE ADJACENT CONCRETE.

REVISIONS	
MAY 7, 2010	APPROVED FOR USE BY VAOT STRUCTURES SECTION
JUNE 4, 2010	MODIFIED AND ADDED TWO DETAILS
OCTOBER 10, 2012	MODIFIED HORZ. JOINT WINGWALL ADD 6" MIN. DIMENSION

CONCRETE  
DETAILS AND NOTES



STRUCTURES  
DETAIL  
SD-502.00