

STATE OF VERMONT AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT BRIDGE PROJECT

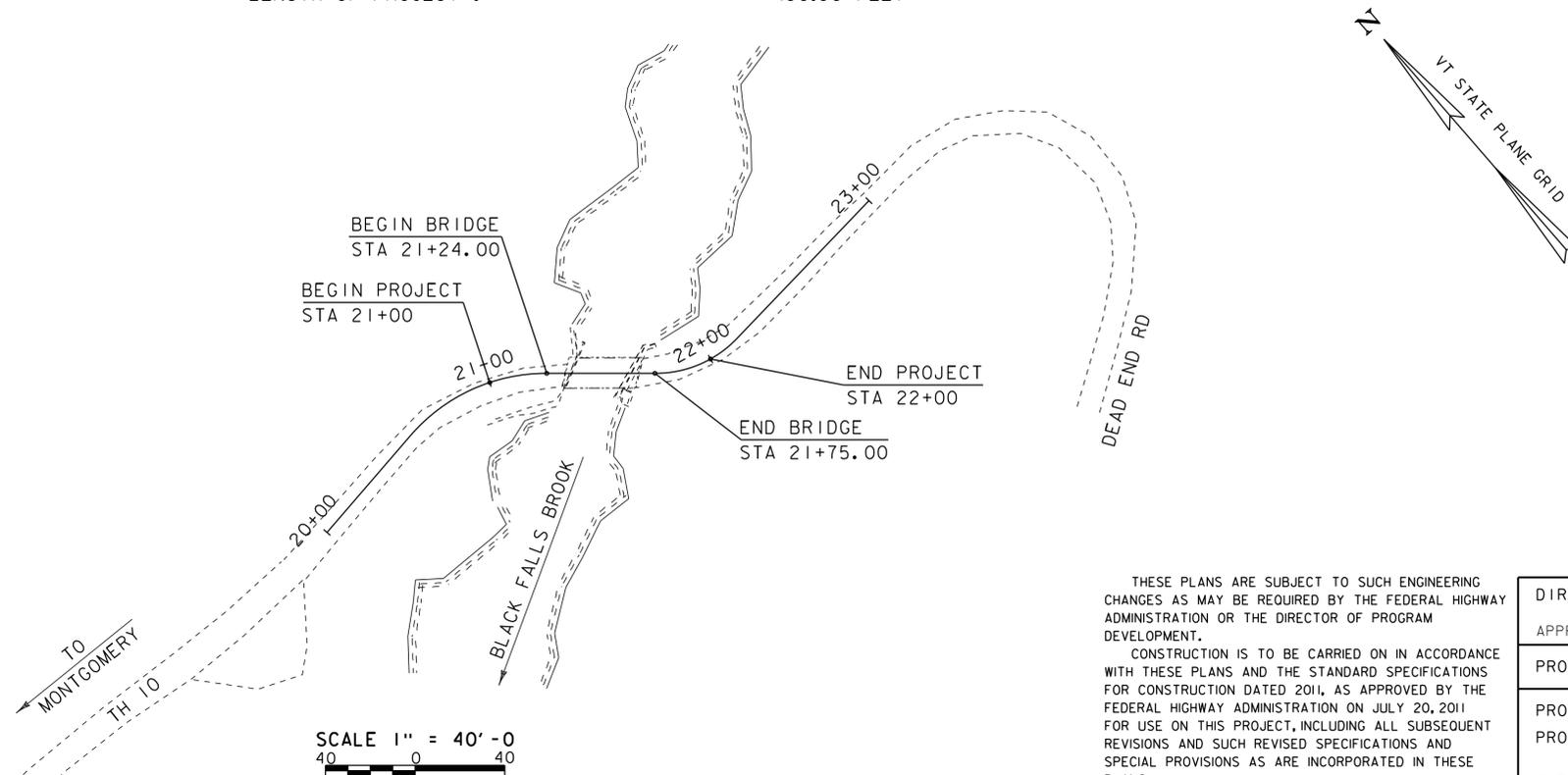
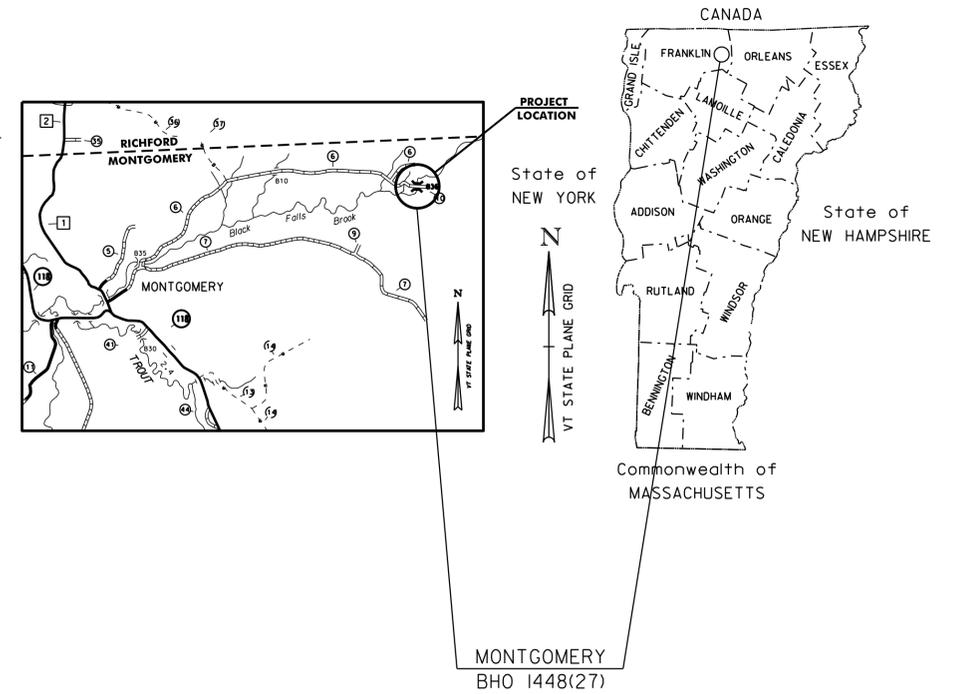
TOWN OF MONTGOMERY
COUNTY OF FRANKLIN

ROUTE NO : TH 10 CLASS 3 BRIDGE NO : 36

PROJECT LOCATION : LOCATED APPROXIMATELY 0.30 MILES FROM THE INTERSECTION OF TH 10 AND TH 6.

PROJECT DESCRIPTION : REPLACEMENT OF THE EXISTING SUPERSTRUCTURE WITH MINIMAL APPROACH, SUBSTRUCTURE, ROADWAY AND CHANNEL WORK.

LENGTH OF STRUCTURE : 51.00 FEET
LENGTH OF ROADWAY : 49.00 FEET
LENGTH OF PROJECT : 100.00 FEET



QUALITY ASSURANCE PROGRAM: LEVEL 2

CONVENTIONAL SYMBOLS

COUNTY LINE		COUNTY LINE
TOWN LINE		TOWN LINE
LIMITS OF ACCESS		
POINT OF ACCESS		
FENCE LINE		
STONE WALL		
TRAVELED WAY		
GUARD RAIL		
RAILROAD		
SURVEY LINE		
CULVERT		
POWER POLE		
TELEPHONE POLE		
TREES		
CONTROL OF ACCESS		
PROPERTY LINE		
R.O.W. TAKING LINE		
SLOPE RIGHTS		
TOP OF CUT		
TOE OF SLOPE		

SURVEYED BY : R. D. GILMAN
SURVEYED DATE : 10-20-1998

DATUM
VERTICAL : NAVD 88
HORIZONTAL : NAD 83 (96)

SCALE 1" = 40'-0"
40 0 40

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 : CAROLYN CARLSON, P. E.	
PROJECT NAME :	MONTGOMERY
PROJECT NUMBER :	BHO 1448 (27)
SHEET 1 OF 30 SHEETS	

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STANDARDS LIST

E-134	BRIDGE NUMBER PLAQUE	08-08-1995
E-141	REGULATORY SIGN DETAILS	09-20-1995
G-1	STEEL BEAM GUARDRAIL DETAILS (POST, DELINEATOR, TYPICALS)	01-03-2000
G-1D	STEEL BEAM GUARDRAIL DETAILS (END TERMINAL, ANCHOR, MEDIAN)	01-03-2000
G-19	GENERIC GRADING PLANS FOR GUARDRAIL END TERMINALS	11-15-2002
T-1	TRAFFIC CONTROL GENERAL NOTES	08-06-2012
T-10	CONVENTIONAL ROADS CONSTRUCTION APPROACH SIGNING	08-06-2012
T-30	CONSTRUCTION SIGN DETAILS	08-06-2012
T-45	SQUARE TUBE SIGN POST AND ANCHOR	08-06-2012
S-367A	BRIDGE RAILING, GALVANIZED HDSB/FASCIA MOUNTED/STEEL TUBING	05-24-2012
S-367B	GUARDRAIL APPROACH SECTION, GALVANIZED HD STEEL BEAM	05-24-2012

STRUCTURAL DETAIL SHEETS

SD-501.00	CONCRETE DETAILS AND NOTES	5/7/2010
SD-502.00	CONCRETE DETAILS AND NOTES	5/7/2010

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: January 2013

DRAINAGE AREA : 3.5 sq. mi.
 CHARACTER OF TERRAIN : Mountainous, steep and forested
 STREAM CHARACTERISTICS : Sinuous, semi-alluvial
 NATURE OF STREAMBED : Gravel, cobbles, ledge

PEAK FLOW DATA

Q 2.33 =	325 cfs	Q 50 =	1400 cfs
Q 10 =	825 cfs	Q 100 =	1650 cfs
Q 25 =	1150 cfs	Q 500 =	2150 cfs

DATE OF FLOOD OF RECORD : Unknown
 ESTIMATED DISCHARGE : Unknown
 WATER SURFACE ELEV. : Unknown
 NATURAL STREAM VELOCITY : @ Q25 = 14.9 fps
 ICE CONDITIONS : Moderate
 DEBRIS : Moderate
 DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? : Yes
 IS ORDINARY RISE RAPID? : Yes
 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 : Rolled beam with timber deck
 YEAR BUILT : 1919
 CLEAR SPAN(NORMAL TO STREAM): 25'
 VERTICAL CLEARANCE ABOVE STREAMBED: 11'
 WATERWAY OF FULL OPENING: 270 sq. ft.
 DISPOSITION OF STRUCTURE: Replace superstructure
 TYPE OF MATERIAL UNDER SUBSTRUCTURE: See borings

WATER SURFACE ELEVATIONS AT:

Q2.33 =	1136.1'	VELOCITY =	14.6 fps
Q10 =	1137.2'	"	16.6 fps
Q25 =	1138.4'	"	17.4 fps
Q50 =	1139.3'	"	12.3 fps
Q100 =	1140.1'	"	13.0 fps

LONG TERM STREAMBED CHANGES: None noted

IS THE ROADWAY OVERTOPPED BELOW Q100: No
 FREQUENCY: N/A
 RELIEF ELEVATION: 1145.0'
 DISCHARGE OVER ROAD @Q100: N/A

UPSTREAM STRUCTURE

TOWN: None DISTANCE:
 HIGHWAY #: STRUCTURE #:
 CLEAR SPAN: CLEAR HEIGHT:
 YEAR BUILT: FULL WATERWAY:
 STRUCTURE TYPE:

DOWNSTREAM STRUCTURE

TOWN: Montgomery DISTANCE: 15,800'
 HIGHWAY #: TH 6 STRUCTURE #: 35
 CLEAR SPAN: 65' (45' normal to the stream) CLEAR HEIGHT: 8'
 YEAR BUILT: 1970 FULL WATERWAY:
 STRUCTURE TYPE: Rolled beam with concrete deck

LRFR LOAD RATING FACTORS

LOADING LEVELS	TRUCK						
	H-20	HL-93	3S2	6 AXLE	3A STR	4A STR	5A SEMI
TONNAGE	20	36	36	66	30	34.5	38
INVENTORY	2.23	1.29					
POSTING							
OPERATING	2.89	1.67	2.69	1.58	2.1	1.91	2.18
COMMENTS:							

AS BUILT "REBAR" DETAIL

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

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT	
2008	<40	<10	NA	NA	NA	20 year ESAL for flexible pavement from 2008 to 2028 : <50,000
2028	NA	NA	NA	NA	NA	40 year ESAL for flexible pavement from 2008 to 2048 : NA
						Design Speed : 25 mph

PROPOSED STRUCTURE

STRUCTURE TYPE: Precast prestressed voided slab with sleeper slab
 CLEAR SPAN(NORMAL TO STREAM): 25'
 VERTICAL CLEARANCE ABOVE STREAMBED: 11'
 WATERWAY OF FULL OPENING: 275 sq. ft.

WATER SURFACE ELEVATIONS AT:

Q2.33 =	1136.1'	VELOCITY=	14.6 fps
Q10 =	1137.2'	"	16.6 fps
Q25 =	1138.4'	"	17.4 fps
Q50 =	1139.3'	"	12.3 fps
Q100 =	1140.1'	"	13.0 fps

IS THE ROADWAY OVERTOPPED BELOW Q100: No
 FREQUENCY: N/A
 RELIEF ELEVATION: 1145.0'
 DISCHARGE OVER ROAD @Q100: N/A

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 1143.2'
 VERTICAL CLEARANCE: @ Q25 = 4.8'

SCOUR: Contraction scour at Q100 = 1' and at Q500 = 2'

REQUIRED CHANNEL PROTECTION: Stone Fill, Type IV

PERMIT INFORMATION

AVERAGE DAILY FLOW: 10 cfs DEPTH OR ELEVATION:
 ORDINARY LOW WATER: 5 cfs 0.5'
 ORDINARY HIGH WATER: 140 cfs 2.0'

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

- ROAD CLOSED
- TRAFFIC SIGNALS ARE NOT NECESSARY.
- SIDEWALKS ARE NOT NECESSARY

DESIGN VALUES

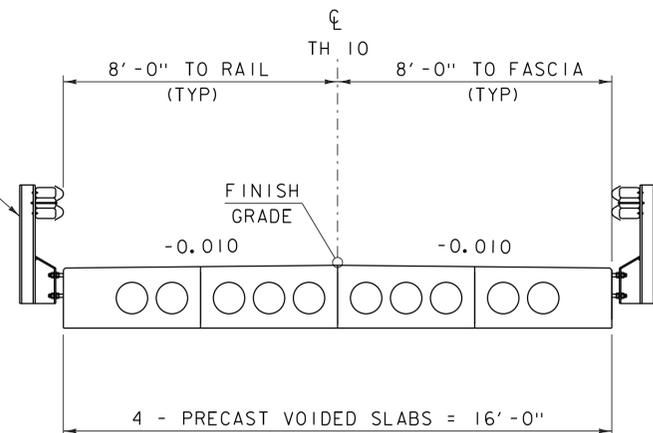
1. DESIGN LIVE LOAD	HL-93
2. FUTURE PAVEMENT	d _p : 2.5 INCH
3. DESIGN SPAN	L: 49.33 FT
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ: 0.85 INCH
5. PRESTRESSING STRAND (0.60 INCH DIAMETER - LOW RELAX)	f _y : 270 KSI
6. PRESTRESSED CONCRETE STRENGTH	f' _c : 7.0 KSI
7. PRESTRESSED CONCRETE RELEASE STRENGTH	f' _{cr} : 5.5 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 : 3.5 KSI
11. CONCRETE, CLASS C	f' _c : ---
12. REINFORCING STEEL	f _y : 60 KSI
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 : ---
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	p _g : ---
27. SEISMIC DATA	PGA: --- S: --- S1: ---

PROJECT NAME: MONTGOMERY

PROJECT NUMBER: BHO 1448(27)

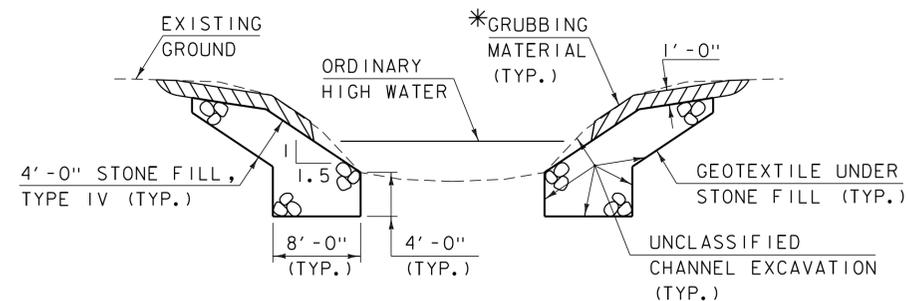
FILE NAME: s96j306pi.xls PLOT DATE: 11/21/2013
 PROJECT LEADER: C. CARLSON DRAWN BY: R. PELLETT
 DESIGNED BY: H. SALLS CHECKED BY: H. SALLS
PRELIMINARY INFORMATION SHEET 2 OF 30

BRIDGE RAILING, GALVANIZED HDSB/
FASCIA MOUNTED/STEEL TUBING
(STANDARD S-367A)



BRIDGE TYPICAL SECTION

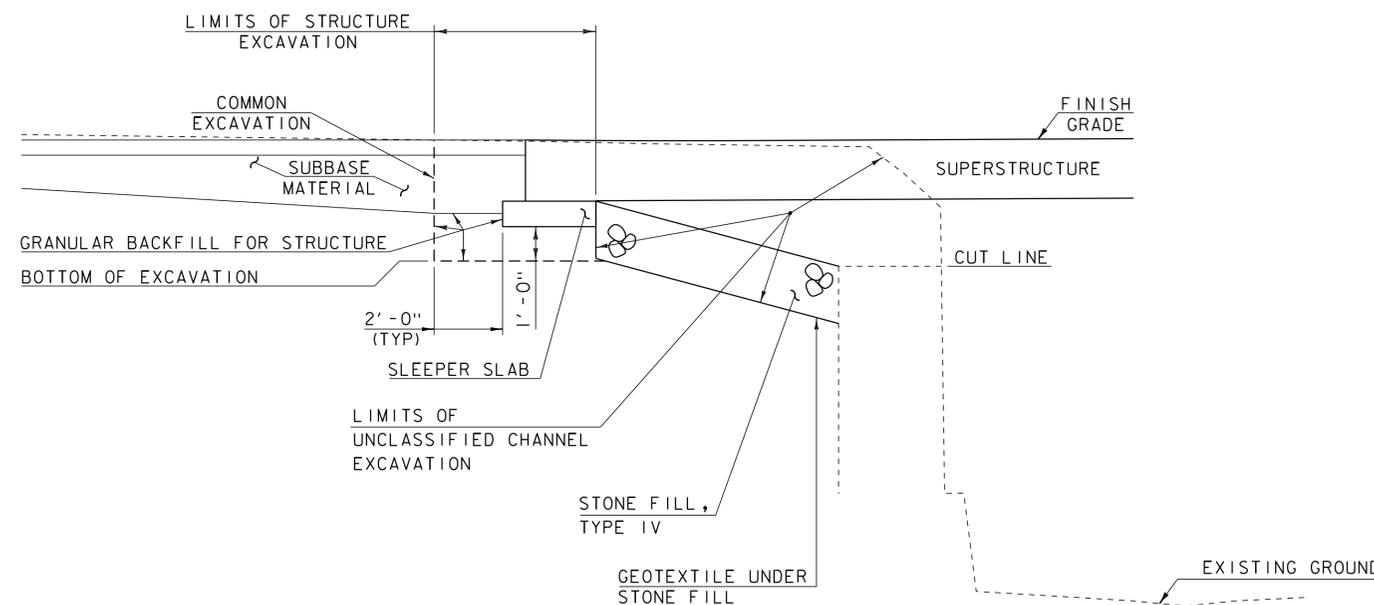
SCALE: $\frac{3}{8}$ " = 1'-0"



TYPICAL CHANNEL SECTION

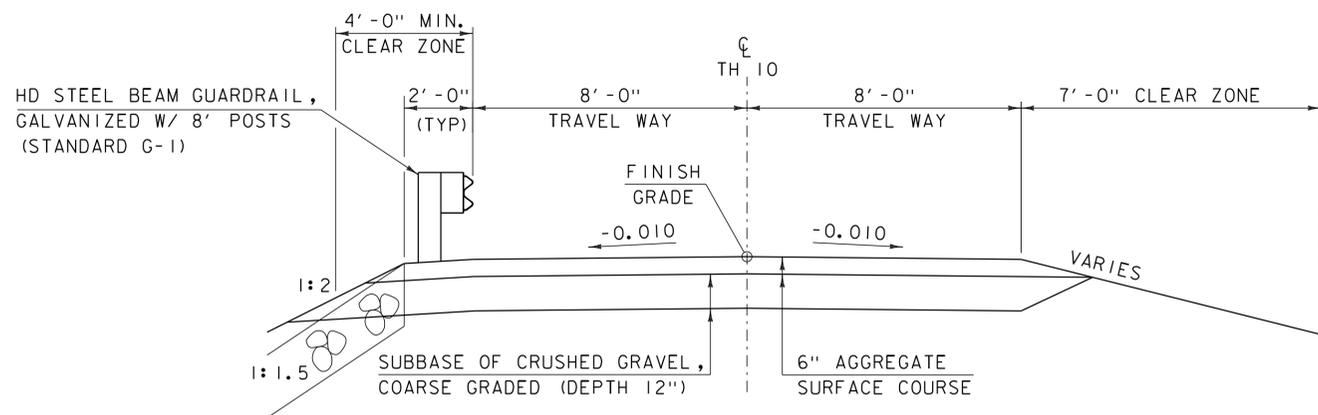
(NOT TO SCALE)

*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.



SLEEPER SLAB EARTHWORK TYPICAL SECTION

NOT TO SCALE



ROADWAY TYPICAL SECTION

SCALE: $\frac{3}{8}$ " = 1'-0"

MATERIAL TOLERANCES

(IF USED ON PROJECT)

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

PROJECT NAME: MONTGOMERY

PROJECT NUMBER: BHO 1448(27)

FILE NAME: s96j306+yp.dgn

PROJECT LEADER: C. CARLSON

DESIGNED BY: H. SALLS

TYPICAL SECTIONS

PLOT DATE: 21-NOV-2013

DRAWN BY: R. PELLETT

CHECKED BY: J. LACROIX

SHEET 3 OF 30

GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION 2011 STANDARD SPECIFICATIONS FOR CONSTRUCTION, THE 2012 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, AND THEIR LATEST REVISIONS.
2. DURING THIS PROJECT, THE CONTRACTOR WILL BE ALLOWED TO CLOSE THE BRIDGE FOR 60 CONSECUTIVE HOURS. SEE SPECIAL PROVISIONS FOR INCENTIVE/DISINCENTIVE PAY ITEMS IN EFFECT DURING THIS CLOSURE PERIOD.
3. **EXISTING DIMENSIONS:** THESE PLANS WERE PREPARED BASED ON INFORMATION OBTAINED FROM REFERENCE PLAN SHEETS. DIMENSIONS AND ANGLES OF THE EXISTING STRUCTURE SHOWN ON THESE PLANS ARE FOR GENERAL REFERENCE ONLY. THE CONTRACTOR SHALL TAKE ALL FIELD MEASUREMENTS NECESSARY TO ENSURE PROPER FIT OF THE FINISHED WORK AND SHALL ASSUME FULL RESPONSIBILITY FOR THEIR ACCURACY. WHEN WORKING DRAWINGS BASED ON FIELD MEASUREMENTS ARE SUBMITTED FOR APPROVAL, THE FIELD MEASUREMENTS SHALL ALSO BE SUBMITTED FOR REFERENCE BY THE REVIEWER. NO EXTRA PAYMENT WILL BE MADE FOR OBTAINING THE NECESSARY MEASUREMENTS.
4. ALL DIMENSIONS SHOWN IN THE PLANS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.

EARTHWORK AND RELATED ITEMS

5. ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE" SHALL INCLUDE: EXISTING WOOD DECK, STEEL BEAMS, BRIDGE RAILING AND THE ABUTMENTS TO THE ELEVATION SHOWN IN THE PLANS.

CONCRETE

6. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1 INCH X 1 INCH.
7. ITEM 514.10 "WATER REPELLENT, SILANE" SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES, EXCEPT THE UNDERSIDE OF THE PRESTRESS UNITS BETWEEN DRIP NOTCHES. SEE SUPPLEMENTAL SPECIFICATION 514.
8. ALL SUPERSTRUCTURE REINFORCING STEEL SHALL MEET THE REQUIREMENTS OF SECTION 507 FOR LEVEL I REINFORCING, EPOXY COATED. PAYMENT WILL BE INCLUDED IN THE UNIT PRICE BID FOR CONTRACT ITEM 510.22.
9. CUTTING AND REPAIRING DAMAGED AREAS OF COATED REINFORCING STEEL SHALL BE PERFORMED IN ACCORDANCE WITH SUBSECTION 507.04. ALL OTHER REINFORCING STEEL SHALL MEET THE REQUIREMENTS OF SECTION 507 FOR LEVEL I REINFORCING AND WILL BE PAID FOR UNDER CONTRACT ITEM 507.11.
10. MINIMUM COVER FOR REINFORCING STEEL SHALL BE AS INDICATED IN THE PLANS.

TRAFFIC CONTROL

11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF A SITE SPECIFIC TRAFFIC CONTROL PLAN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING THE LOCAL TRAFFIC CONTROL PACKAGE IDENTIFYING THE PROJECT BEFORE, DURING AND AFTER THE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL A DETAILED TRAFFIC CONTROL PLAN TO THE ENGINEER FOR ALL STAGES OF CONSTRUCTION. NO WORK SHALL BEGIN UNTIL THE TRAFFIC CONTROL PLAN HAS BEEN APPROVED. SEE SPECIAL PROVISIONS FOR DETAILS. ALL COST SHALL BE INCLUDED IN ITEM 900.645 "SPECIAL PROVISION, (TRAFFIC CONTROL, ALL-INCLUSIVE)".
12. THE COST FOR ALL ITEMS REQUIRED TO IMPLEMENT THE CONTRACTOR'S TRAFFIC CONTROL PLAN; INCLUDING BUT NOT LIMITED TO TEMPORARY TRAFFIC BARRIER AND CONSTRUCTION SIGNS WILL BE INCLUDED UNDER ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)".
13. ALL SIGNS, BARRICADE AND OTHER TRAFFIC CONTROL DEVICES SHALL BE CLEANED WEEKLY OR AS DIRECTED BY THE ENGINEER. EXISTING PERMANENT SIGNS THAT CONFLICT WITH TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE REMOVED AND REPLACED OR COVERED FOR THE PERIOD OF TIME THAT THE TRAFFIC CONTROL PLAN IS IMPLEMENTED. COST FOR THIS WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM 900.645 "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)".

14. THE CONTRACTOR SHALL ADD SIGN G20-5AP TO THE TOP OF ALL TEMPORARY SPEED LIMIT SIGNS AS DETAILED IN THE MUTCD.
15. PRIOR TO AND AFTER THE MAXIMUM 72 HOUR BRIDGE CLOSURE, THE CONTRACTOR SHALL MAINTAIN TWO WAY TRAFFIC WHEN THE CONTRACTOR IS NOT WORKING. DURING THE CONTRACTOR'S WORKING HOURS, THE CONTRACTOR MAY REDUCE TRAFFIC TO ONE-LANE WITH THE USE OF FLAGGERS, DRUMS, BARRICADES, TEMPORARY TRAFFIC BARRIER AND/OR OTHER TRAFFIC CONTROL DEVICES. THIS WORK WILL BE PAID FOR UNDER ITEM 900.645 "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE) EXCEPT THAT FLAGGERS HOURS WILL BE PAID SEPARATELY UNDER ITEM 630.15, "FLAGGERS".

PRESTRESSED CONCRETE

16. ITEM 510.22 "PRESTRESSED CONCRETE VOIDED SLABS" PRESTRESSED PRECAST MEMBERS SHALL:
 - A. CONFORM TO SECTION 510 "PRESTRESSED CONCRETE."
 - B. BE 4 FOOT WIDE VOIDED SLABS (DEPTH VARIES).
 - C. USE CONCRETE WITH $f'c = 7$ KSI AND $f'ci = 5.5$ KSI.
 - D. BE DESIGNED FOR AN AASHTO HL 93 LIVE LOAD.
 - E. CONTAIN CONTINUOUS VOIDS EXCEPT AS SHOWN IN THE PLAN DETAIL.
 - F. HAVE VOID DRAINS AT THE ENDS OF EACH VOID. THE VOID DRAINS SHALL BE $\frac{3}{4}$ " DIAMETER, NON-FERROUS, AND CLEANED AFTER ERECTION.
 - G. CONTAIN PRESTRESSING STRANDS WHICH ARE 0.6 IN. DIAMETER, 270 KSI, LOW-RELAXATION STRANDS PULLED TO 75% OF THEIR YIELD.
 - H. HAVE THE ENDS OF THE STRANDS RECESSED AND GROUTED ACCORDING TO STANDARD PRACTICE.
 - I. INCLUDE COLD POURED JOINT FILLER, AND TRANSVERSE TENDONS.
 - J. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED $\frac{3}{4}$ " X $\frac{3}{4}$ " UNLESS OTHERWISE NOTED.
17. THE FABRICATOR MAY, WITH THE APPROVAL OF THE STRUCTURES ENGINEER, ALTER THE DESIGN AS DETAILED TO MEET THE PLANT'S PRESTRESSING OPERATION AND MATERIAL REQUIREMENTS. AN ALTERNATE STRAND CONFIGURATION MAY BE SUBMITTED FOR APPROVAL, PROVIDED THE DESIGN IS STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF VERMONT, AND THAT THE DESIGN MEETS ALL OF THE APPLICABLE DESIGN CRITERIA, LOADINGS AND CODES.
18. THE CONTRACTOR SHALL NOTIFY THE VTRANS MATERIALS & RESEARCH STRUCTURAL CONCRETE ENGINEER TWO WEEKS BEFORE THE PRESTRESS FABRICATOR CONSTRUCTS THE UNITS.
19. ITEM 510.22 "PRESTRESSED CONCRETE VOIDED SLABS" TRANSVERSE TENDONS:
 - A. POST-TENSIONING STRANDS: 0.6" DIAMETER, 270 KSI, LOW-RELAXATION 7-WIRE STRANDS. THE ASSUMED MODULUS OF ELASTICITY FOR THE STRAND IS 28,500 KSI.
 - B. COVER TENDONS WITH A SEAMLESS POLYPROPYLENE SHEATH WITH CORROSION INHIBITOR GREASE BETWEEN SHEATH AND TENDON.
 - C. THE $\frac{3}{4}$ " TENDON PLATES SHALL CONFORM TO AASHTO M270M/M270 GR50.
 - D. GALVANIZE PLATES AND CHUCKS AFTER FABRICATION ACCORDING TO AASHTO M232M/M232.
 - E. THERE SHALL BE TWO (2) STRANDS PER POST-TENSION DUCT.
 - F. TIES SHALL BE TENSIONED TO 33 KIPS FOR EACH 0.5" DIAMETER STRAND AND 47 KIPS FOR EACH 0.6" DIAMETER STRAND.
20. ITEM 510.24 "GROUTING SHEAR KEYS": FILL THE JOINTS BETWEEN THE VOIDED SLABS WITH MORTAR, TYPE IV, AS DESCRIBED IN SUBSECTION 510.13.
21. SERVICE LOADS

MEMBER MOMENT	264.6 K-FT
SUPERIMPOSED DEAD LOAD MOMENT	48.0 K-FT
LIVE LOAD & IMPACT MOMENT	504.3 K-FT
DEAD LOAD REACTION	25.9 K
LIVE LOAD & IMPACT REACTION	46.8 K
TOTAL REACTION	72.7 K
FINAL CAMBER	1.751 IN

CONSTRUCTION SEQUENCE FOR PRESTRESSED VOIDED SLABS

1. **LAY OUT WORKING LINES:**
 - A. LAY OUT WORKING LINES FOR THE ENTIRE BRIDGE WIDTH ON THE BEAM SEAT.
 - B. MEASURE ALL WORKING LINES FROM A COMMON WORKING POINT
 - C. BASE THE WORKING LINES ON THE NOMINAL BEAM WIDTHS.
2. **VERIFY BEAM SEAT ELEVATIONS:**
 - A. MEASURE ELEVATIONS AT BEAM SEATS.
3. **ERECT BEAMS:**
 - A. PLACE BEAMS TO FIT WITHIN THE WORKING LINES.
 - B. AS WORK PROGRESSES, INSTALL HARDWOOD WEDGES BETWEEN ADJACENT BEAMS TO MAINTAIN PROPER JOINT OPENING (A MINIMUM OF ONE WEDGE AT EACH TRANSVERSE TENDON).
 - C. DRILL ANCHOR BOLT HOLES.
 - D. PLACE ANCHOR BOLTS.
 - E. GROUT ANCHOR BOLTS IN SLEEPER SLAB.
4. **INSTALL BACKER ROD:**
 - A. PLACE FILLER BELOW THE KEYWAY BOTTOM, AS SHOWN ON THE PLANS.
5. **INSTALL TRANSVERSE TENDONS:**
 - A. FEED TENDONS THROUGH DUCTS.
 - B. VERIFY THAT HARDWOOD WEDGES ARE IN PLACE AS REQUIRED TO PREVENT SLIPPAGE OF BEAMS.
 - C. POST-TENSION TENDONS USING A CALIBRATED JACK TO APPROXIMATELY 3.0 KIPS TO REMOVE SAG IN THE TENDON AND TO SEAT THE CHUCK.
 - D. CURE AS PER SUBSECTION 510.13.
6. **GROUT SHEAR KEYS:**
 - A. CLEAN JOINTS WITH AN OIL FREE AIR-BLAST IMMEDIATELY BEFORE GROUT PLACEMENT. VERIFY THAT THE BACKER ROD IS STILL IN PLACE.
 - B. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR ADDITIONAL JOINT PREPARATION AND GROUT PLACEMENT.
 - C. CAREFULLY ROD JOINTS TO ELIMINATE ANY POSSIBILITY OF VOIDS.
 - D. THE REQUIREMENTS OF SUBSECTION 510.13 (d) SHALL BE WAVED. THE CONTRACTOR SHALL NOT LOAD THE BRIDGE UNTIL THE GROUT HAS REACHED A COMPRESSIVE STRENGTH OF 1,000PSI.
7. **POST-TENSION TRANSVERSE TENDONS:**
 - A. GROUT SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 1.5 KSI, BASED ON THE MANUFACTURER'S RECOMMENDATIONS, PRIOR TO STRESSING.
 - B. PROVIDE APPROPRIATE CUBE MOLDS AS DESCRIBED IN AASHTO T106M/T106 FOR 3 SETS OF 3 DAY CUBES, 3 SETS OF 28 DAY CUBES AND AT A MINIMUM OF 3 MORE CUBES TO TEST FOR THE 1.5 KSI MINIMUM COMPRESSIVE STRENGTH.

MISCELLANEOUS

22. ALL WORK TO PLACE CONCRETE IN THE BASE OF WINGWALL 2 IN THE DRY SHALL BE INCIDENTAL TO THE ITEM 501.34, "HIGH PERFORMANCE CONCRETE, CLASS B". THE CONCRETE SHALL NOT BE DEPOSITED DIRECTLY INTO THE WATER.

PROJECT NAME: MONTGOMERY

PROJECT NUMBER: BHO 1448(27)

FILE NAME: s96j306gennotes.dgn

PROJECT LEADER: C. CARLSON

DESIGNED BY: H. SALLS

PROJECT NOTES

PLOT DATE: 21-NOV-2013

DRAWN BY: R. PELLETT

CHECKED BY: J. LACROIX

SHEET 4 OF 30

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				
							290				290		CY	COMMON EXCAVATION	203.15				
							150				150		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27				
							1				1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22				
									30		30		CY	STRUCTURE EXCAVATION	204.25				
									30		30		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30				
									1		1		LS	COFFERDAM (SLEEPER SLAB #1)	208.40				
							200				200		CY	SUBBASE OF CRUSHED GRAVEL, COARSE GRADED	301.25				
							70				70		CY	AGGREGATE SURFACE COURSE	401.10				
									4		4		CY	CONCRETE, HIGH PERFORMANCE CLASS B	501.34				
									400		400		LB	REINFORCING STEEL, LEVEL I	507.11				
									102		102		LF	PRESTRESSED CONCRETE VOIDED SLABS (21 1/2" - 22" X 48")	510.22				
									102		102		LF	PRESTRESSED CONCRETE VOIDED SLABS (21" - 21 1/2" X 48")	510.22				
									153		153		LF	GROUTING SHEAR KEYS	510.24				
									25		25		GAL	WATER REPELLENT, SILANE	514.10				
									119		119		LF	BRIDGE RAILING, GALVANIZED HDSB/FASCIA MOUNTED/STEEL TUBING	525.44				
							1				1		EACH	PARTIAL REMOVAL OF STRUCTURE	529.20				
									16		16		EACH	BEARING DEVICE ASSEMBLY, STEEL REINFORCED ELASTOMERIC PAD	531.17				
									1		1		LS	PRECAST CONCRETE STRUCTURE (SLEEPER SLAB #1)	540.10				
									1		1		LS	PRECAST CONCRETE STRUCTURE (SLEEPER SLAB #2)	540.10				
								10			10		CY	STONE FILL, TYPE I	613.10				
							20				20		CY	STONE FILL, TYPE II	613.11				
									420		420		CY	STONE FILL, TYPE IV	613.13				
							120				120		LF	HD STEEL BEAM GUARDRAIL, GALVANIZED W/8 FEET POSTS	621.215				
							4				4		EACH	ANCHOR FOR STEEL BEAM RAIL	621.60				
							2				2		EACH	GUARDRAIL APPROACH SECTION, GALV HD STEEL BEAM W/ 8FT POSTS	621.738				
							100				100		HR	FLAGGERS	630.15				
										1	1		LS	FIELD OFFICE, ENGINEERS	631.10				
										1500	1500		DL	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.26				
							1				1		LS	MOBILIZATION/DEMOBILIZATION	635.11				
							190				190		SY	GEOTEXTILE UNDER STONE FILL	649.31				
								40			40		SY	GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED	649.515				
								90			90		SY	GEOTEXTILE FOR FILTER CURTAIN	649.61				
								10			10		LB	SEED	651.15				
								20			20		LB	FERTILIZER	651.18				
								0.5			0.5		TON	AGRICULTURAL LIMESTONE	651.20				
								0.5			0.5		TON	HAY MULCH	651.25				
							90				90		SY	GRUBBING MATERIAL	651.40				
											1		LS	EPSC PLAN	652.10				
											10		HR	MONITORING EPSC PLAN	652.20				

PROJECT NAME:	MONTGOMERY
PROJECT NUMBER:	BHO 1448(27)
FILE NAME:	s96j306qs.dgn
PROJECT LEADER:	C. CARLSON
DESIGNED BY:	H. SALLS
QUANTITY SHEET I	
PLOT DATE:	21-NOV-2013
DRAWN BY:	R. PELLETT
CHECKED BY:	H. SALLS
SHEET	5 OF 30

BRIDGE QUANTITY SHEET 1

SUMMARY OF BRIDGE QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
				SUPER-STRUCTURE	WINGWALL 1	WINGWALL 2	WINGWALL 3	WINGWALL 4	SLEEPER SLAB 1	SLEEPER SLAB 2	BRIDGE TOTAL	UNIT	ITEMS	ITEM NUMBER	QUANTITIES	UNIT	ITEMS	
									15	15	30	CY	STRUCTURE EXCAVATION	204.25				
									15	15	30	CY	GRANULAR BACKFILL FOR STRUCTURES	204.30				
									1		1	LS	COFFERDAM (SLEEPER SLAB #1)	208.40				
					4						4	CY	CONCRETE, HIGH PERFORMANCE CLASS B	501.34				
					100	100	100	100			400	LB	REINFORCING STEEL, LEVEL I	507.11				
				102							102	LF	PRESTRESSED CONCRETE VOIDED SLABS (21 1/2" - 22" X 48")	510.22				
				102							102	LF	PRESTRESSED CONCRETE VOIDED SLABS (21" - 21 1/2" X 48")	510.22				
				153							153	LF	GROUTING SHEAR KEYS	510.24				
				7	3	3	3	3	3	3	25	GAL	WATER REPELLENT, SILANE	514.10				
				119							119	LF	BRIDGE RAILING, GALVANIZED HDSB/FASCIA MOUNTED/STEEL TUBING	525.44				
				16							16	EACH	BEARING DEVICE ASSEMBLY, STEEL REINFORCED ELASTOMERIC PAD	531.17				
									1		1	LS	PRECAST CONCRETE STRUCTURE (SLEEPER SLAB #1)	540.10				
										1	1	LS	PRECAST CONCRETE STRUCTURE (SLEEPER SLAB #2)	540.10				
									345	75	420	CY	STONE FILL, TYPE IV	613.13				

PROJECT NAME: MONTGOMERY	PLOT DATE: 21-NOV-2013
PROJECT NUMBER: BHO 1448(27)	DRAWN BY: R. PELLETT
FILE NAME: s96j306qs.dgn	CHECKED BY: H. SALLS
PROJECT LEADER: C. CARLSON	SHEET 7 OF 30
DESIGNED BY: H. SALLS	
QUANTITY SHEET 3	

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.

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

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

COMMON TOPOGRAPHIC POINT SYMBOLS

POINT CODE	DESCRIPTION
⊕	APL BOUND APPARENT LOCATION
◻	BM 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 STONE/WOOD
⊞	RRSIG RAILROAD SIGNAL
⊞	RRSL RAILROAD SWITCH LEVER
⊞	S TREE SOFTWOOD
⊞	SAT SATELLITE DISH
⊞	SHRUB SHRUB
⊞	SIGN SIGN
⊞	STUMP STUMP
⊞	TEL TELEPHONE POLE
◊	TIE TIE
⊞	TSIGN SIGN W/DOUBLE POST
⊞	VCTRL CONTROL VERTICAL
◊	WELL WELL
×	WSO WATER SHUT OFF

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

PROPOSED GEOMETRY CODES

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

UTILITY 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)
— SR —	SLOPE RIGHTS
6f	6F PROPERTY BOUNDARY
4f	4F PROPERTY BOUNDARY
HAZ	HAZARDOUS WASTE

**EPSC LAYOUT PLAN SYMBOLGY**

EPSC MEASURES	
—	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

PROJECT NAME: MONTGOMERY  
PROJECT NUMBER: BHO 1448(27)

FILE NAME: s96j306legend.dgn PLOT DATE: 21-NOV-2013  
PROJECT LEADER: C. CARLSON DRAWN BY: R. PELLETT  
DESIGNED BY: H. SALLS CHECKED BY: H. SALLS  
CONVENTIONAL SYMBOLGY-LEGEND SHEET 8 OF 30

GPS CONTROL POINTS

HVCTRL #1

MONTGOMERY TEMP 1  
 NORTH = 878062.21  
 EAST = 1616599.34  
 ELEV. = 1225.29

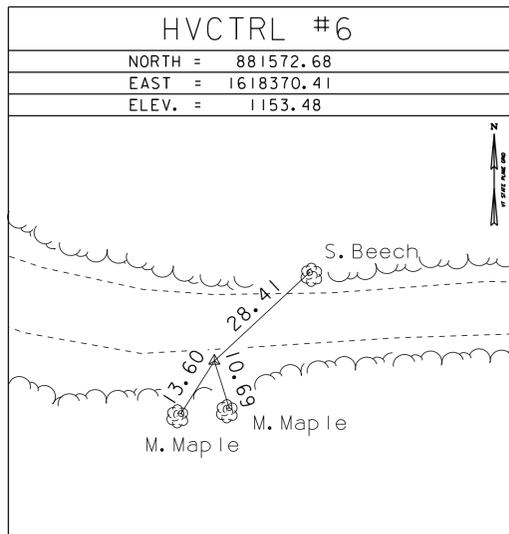
GENERAL LOCATION, MONTGOMERY, VT. TO REACH FROM THE INTERSECTION OF VT ROUTES 118 AND 242 IN MONTGOMERY CENTER GO NORTHWEST ALONG VT ROUTE 118 FOR 2.4 MI (3.9 KM) TO THE INTERSECTION OF SOUTH RICHFORD ROAD RIGHT, AT A TRIANGULAR SHAPED PARK IN MONTGOMERY VILLAGE. BEAR RIGHT AND GO NORTH ALONG SOUTH RICHFORD ROAD FOR 0.1 MI (0.2 KM) TO THE INTERSECTION OF NORTH HILL AND BLACK FALLS ROAD RIGHT. TURN RIGHT AND GO EAST ALONG NORTH HILL AND BLACK FALLS ROAD FOR 0.5 MI (0.8 KM) TO THE Y-INTERSECTION OF BLACK FALLS ROAD LEFT AND NORTH HILL ROAD RIGHT. BEAR LEFT AND GO NORTHEAST ALONG BLACK FALLS ROAD FOR 2.7 MI (4.3 KM) TO THE INTERSECTION OF A GRAVEL ROAD LEFT. BEAR LEFT AND GO NORTHEAST ALONG THE GRAVEL ROAD FOR 0.05 MI (0.08 KM) TO THE SITE OF THE MARK ON THE RIGHT. THE MARK IS A CENTERPUNCHED REBAR SET FLUSH WITH GROUND SURFACE. IT IS 4.2 M (13.8 FT) SOUTHWEST OF AND ABOUT 0.2 M (0.7 FT) HIGHER THAN THE CENTERLINE OF THE GRAVEL ROAD, 6.7 M (22.0 FT) NORTHEAST OF THE CENTERLINE OF A FIELD DRIVE LEADING TO A SHED, 8.4 M (27.6 FT) SOUTHWEST OF A 30 CM YELLOW BIRCH, 13.1 M (43.0 FT) SOUTHWEST OF TWIN 20 CM MAPLES, AND 0.3 M (1.0 FT) NORTHWEST OF A WOODEN WITNESS POST.

HVCTRL #2

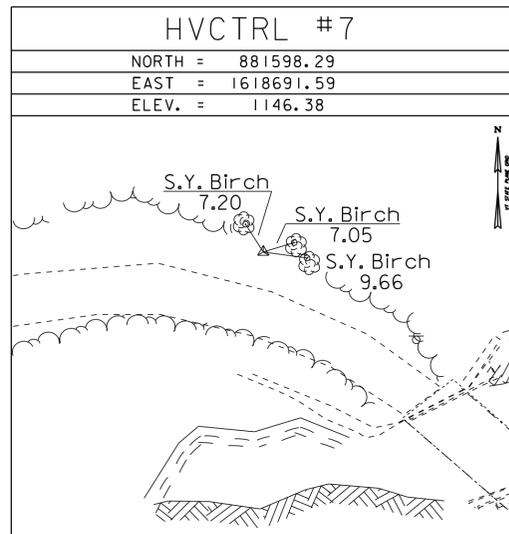
MONTGOMERY TEMP 2  
 NORTH = 882130.57  
 EAST = 1617866.62  
 ELEV. = 1187.89

GENERAL LOCATION, MONTGOMERY, VT. TO REACH FROM THE INTERSECTION OF VT ROUTES 118 AND 242 IN MONTGOMERY CENTER GO NORTHWEST ALONG VT ROUTE 118 FOR 2.4 MI (3.9 KM) TO THE INTERSECTION OF SOUTH RICHFORD ROAD RIGHT, AT A TRIANGULAR SHAPED PARK IN MONTGOMERY VILLAGE. BEAR RIGHT AND GO NORTH ALONG SOUTH RICHFORD ROAD FOR 0.1 MI (0.2 KM) TO THE INTERSECTION OF NORTH HILL AND BLACK FALLS ROAD RIGHT. TURN RIGHT AND GO EAST ALONG NORTH HILL AND BLACK FALLS ROAD FOR 0.5 MI (0.8 KM) TO THE Y-INTERSECTION OF BLACK FALLS ROAD LEFT AND NORTH HILL ROAD RIGHT. BEAR RIGHT AND GO EAST AND SOUTH ALONG NORTH HILL ROAD FOR 2.2 MI (3.5 KM) TO THE SITE OF THE MARK ON THE LEFT. IT IS ABOUT 40 M (131.2 FT) SOUTH OF A 90 CM DIAMETER METAL CULVERT WHICH PASSES UNDER THE ROAD. THE MARK IS A CENTERPUNCHED REBAR SET 3 CM BELOW GROUND SURFACE. IT IS 4.5 M (14.8 FT) EAST OF AND ABOUT 0.2 M (0.7 FT) LOWER THAN THE CENTERLINE OF NORTH HILL ROAD, 26.3 M (86.3 FT) SOUTH OF POLE NO.21D/28X, 39.7 M (130.2 FT) NORTHWEST OF POLE NO.21D/29, 11.4 M (37.4 FT) SOUTH OF THE CENTERLINE OF A FIELD DRIVE, AND 0.3 M (1.0 FT) NORTH OF A WOODEN WITNESS POST.

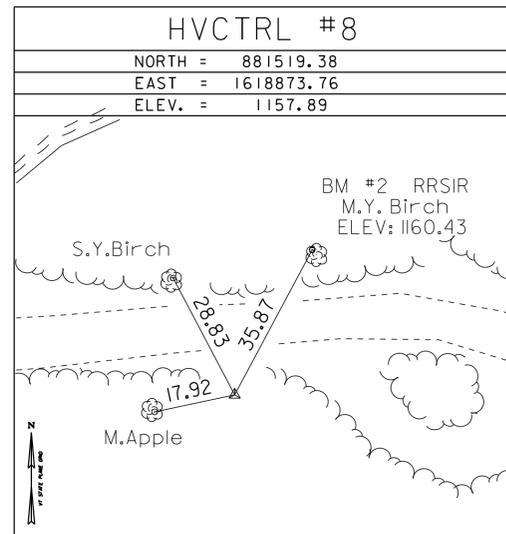
TRAVERSE TIES



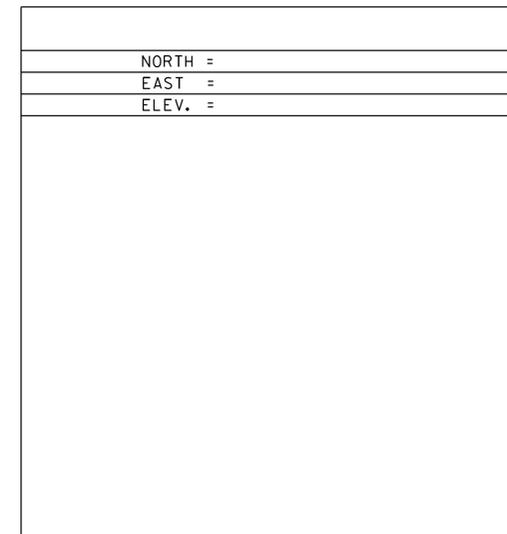
HVCTRL #6  
 NORTH = 881572.68  
 EAST = 1618370.41  
 ELEV. = 1153.48



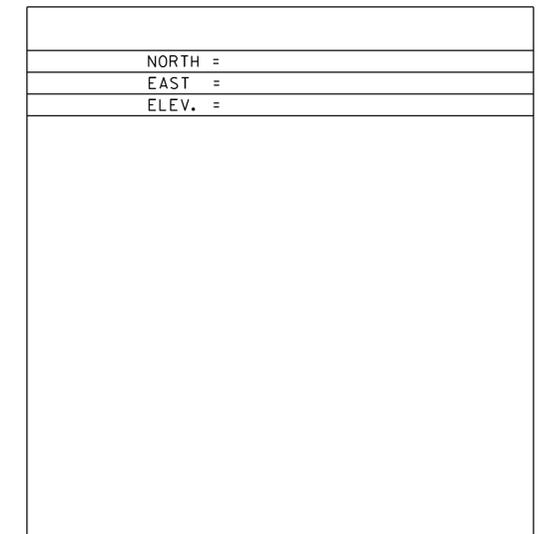
HVCTRL #7  
 NORTH = 881598.29  
 EAST = 1618691.59  
 ELEV. = 1146.38



HVCTRL #8  
 NORTH = 881519.38  
 EAST = 1618873.76  
 ELEV. = 1157.89



NORTH =  
 EAST =  
 ELEV. =



NORTH =  
 EAST =  
 ELEV. =

* Main traverse Completed 10/20/98 by R.Gilman P.C. & T. Companion

ALIGNMENT TIES

CONTROL LINE DATA - TH10

POINT ID	BEARING	DISTANCE (FEET)	NORTHING (Y)	EASTING (X)								
					PC	PI	PT	DELTA	R	L	T	
100	N 81°47'35.79" E	56.98'	881582.41	1618600.55		20+00.00						
	S 49°01'31.07" E	85.48'	881595.77	1618693.18	20+56.98		21+25.65	49°10'53.13"	80.00'	68.67'	36.61'	
	N 84°48'21.45" E	106.51'	881525.75	1618773.8	21+74.51		22+14.80	46°10'07.48"	-50.00'	40.29'	21.31'	
107			881535.39	1618879.88		23+00.00						

DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83 (96)
ADJUSTMENT	Compass

PROJECT NAME:	MONTGOMERY	PLOT DATE:	21-NOV-2013
PROJECT NUMBER:	BHO 1448(27)	DRAWN BY:	R. PELLETT
FILE NAME:	s96j306+tie.dgn	CHECKED BY:	J. LACROIX
PROJECT LEADER:	C. CARLSON	TIE SHEET	SHEET 9 OF 30
DESIGNED BY:	H. SALLS		

BRIDGE RAILING, GALVANIZED  
 HDSB/FASCIA MOUNTED/STEEL TUBING  
 STA 21+23.70 RT - 21+73.90 RT  
 STA 21+25.16 LT - 21+81.36 LT

GUARDRAIL APPROACH SECTION,  
 GALVANIZED HD STEEL BEAM  
 W/ 8FT POST  
 STA 21+02.43 LT - 21+25.16 LT  
 STA 21+73.90 RT - 21+95.54 RT

SPECIAL PROVISION (GUARDRAIL  
 APPROACH SECTION, GALVANIZED  
 HD STEEL BEAM W/ 8FT POST)  
 STA 21+02.86 RT - 21+23.70 RT  
 STA 21+81.36 LT - 22+12.43 LT

HD STEEL BEAM GUARDRAIL,  
 GALVANIZED W/ 8 FEET POSTS  
 STA 20+53.71 RT - 21+02.86 RT  
 STA 20+91.59 LT - 21+02.43 LT  
 STA 21+95.54 RT - 22+07.24 RT  
 STA 22+12.43 LT - 22+35.52 LT

ANCHOR FOR STEEL BEAM RAIL  
 STA 20+58.71 RT  
 STA 20+96.54 LT  
 STA 22+02.24 RT  
 STA 22+30.52 LT

REMOVING SIGNS  
 STA 21+24.20 LT

STONE FILL, TYPE I W/  
 GEOTEXTILE UNDER STONE FILL &  
 GRUBBING MATERIAL  
 STA 21+12.00 RT - 21+19.00 RT

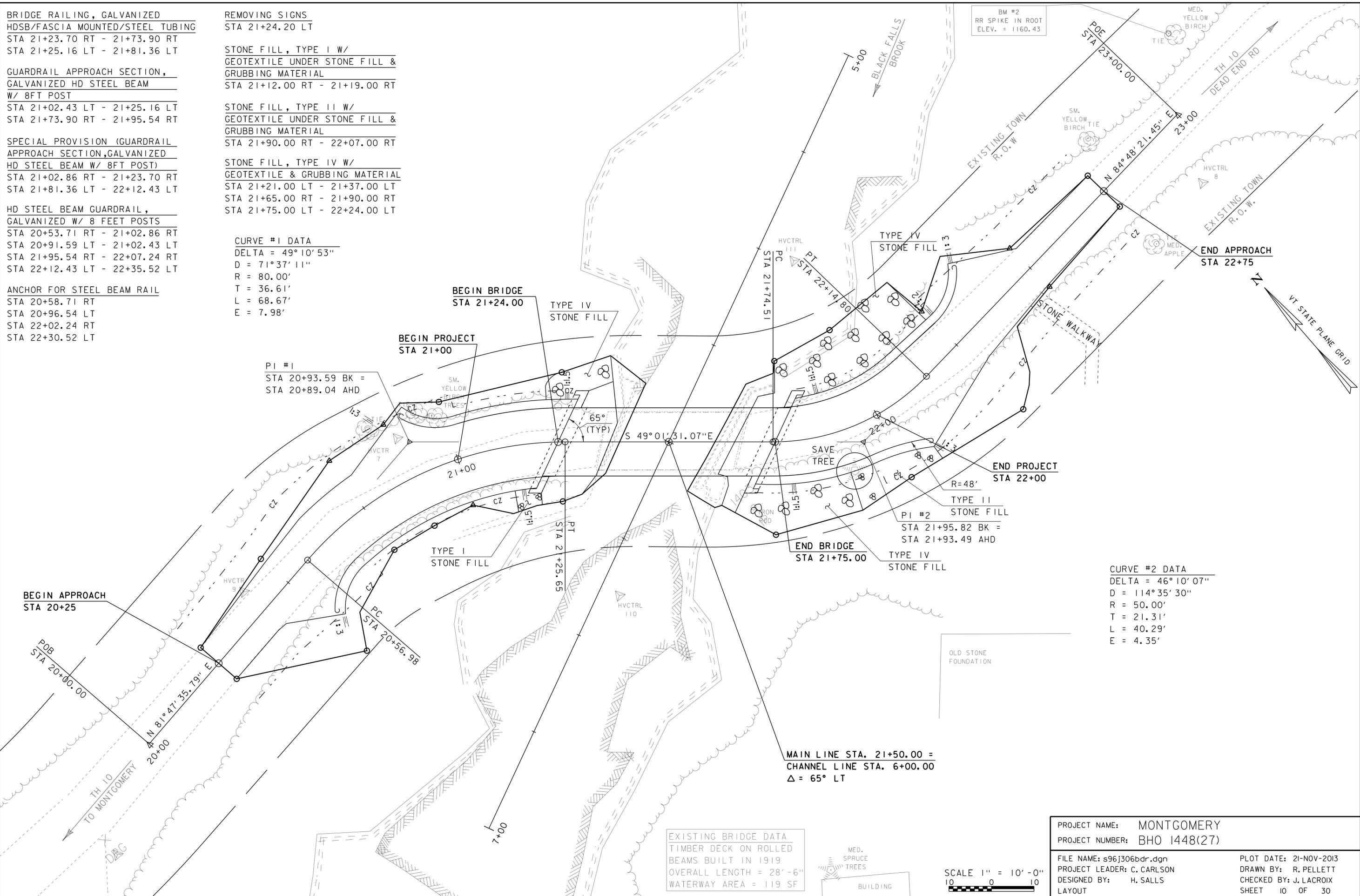
STONE FILL, TYPE II W/  
 GEOTEXTILE UNDER STONE FILL &  
 GRUBBING MATERIAL  
 STA 21+90.00 RT - 22+07.00 RT

STONE FILL, TYPE IV W/  
 GEOTEXTILE & GRUBBING MATERIAL  
 STA 21+21.00 LT - 21+37.00 LT  
 STA 21+65.00 RT - 21+90.00 RT  
 STA 21+75.00 LT - 22+24.00 LT

CURVE #1 DATA  
 DELTA = 49° 10' 53"  
 D = 71° 37' 11"  
 R = 80.00'  
 T = 36.61'  
 L = 68.67'  
 E = 7.98'

PI #1  
 STA 20+93.59 BK =  
 STA 20+89.04 AHD

BM #2  
 RR SPIKE IN ROOT  
 ELEV. = 1160.43



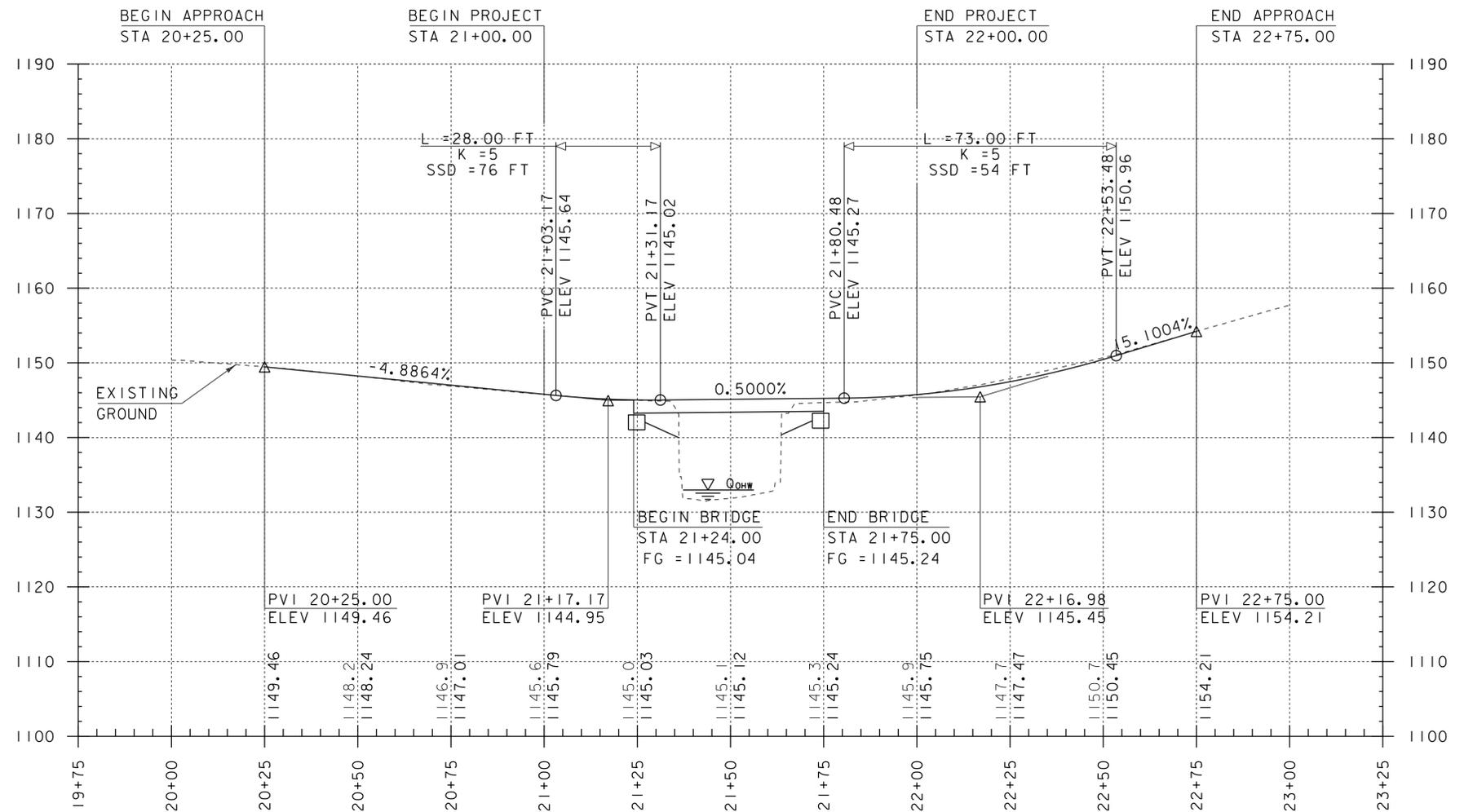
CURVE #2 DATA  
 DELTA = 46° 10' 07"  
 D = 114° 35' 30"  
 R = 50.00'  
 T = 21.31'  
 L = 40.29'  
 E = 4.35'

EXISTING BRIDGE DATA  
 TIMBER DECK ON ROLLED  
 BEAMS BUILT IN 1919  
 OVERALL LENGTH = 28'-6"  
 WATERWAY AREA = 119 SF

SCALE 1" = 10'-0"  
 10 0 10

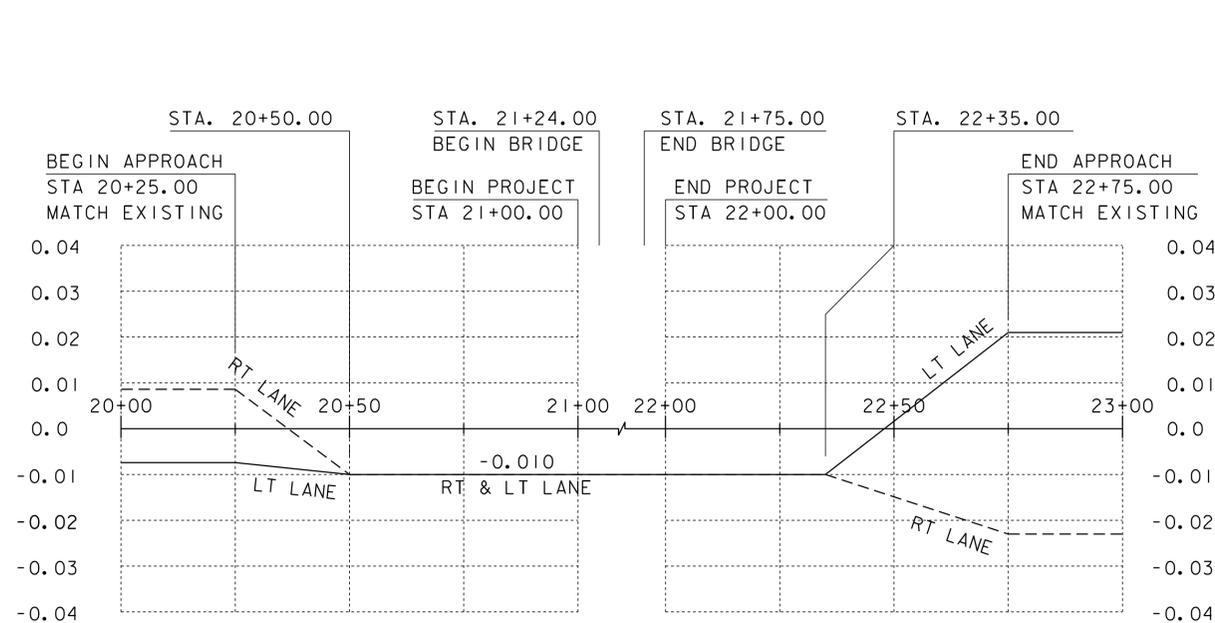
PROJECT NAME: MONTGOMERY	PLOT DATE: 21-NOV-2013
PROJECT NUMBER: BHO 1448(27)	DRAWN BY: R. PELLETT
FILE NAME: s96j306bdr.dgn	CHECKED BY: J. LACROIX
PROJECT LEADER: C. CARLSON	SHEET 10 OF 30
DESIGNED BY: H. SALLS	
LAYOUT	

THE GRADES SHOWN TO THE NEAREST TENTH ARE THE ORIGINAL GROUND ELEVATIONS ALONG THE PROPOSED ALIGNMENT.  
 THE GRADES SHOWN TO THE NEAREST HUNDREDTH ARE THE FINISH GRADES ALONG THE PROPOSED ALIGNMENT.



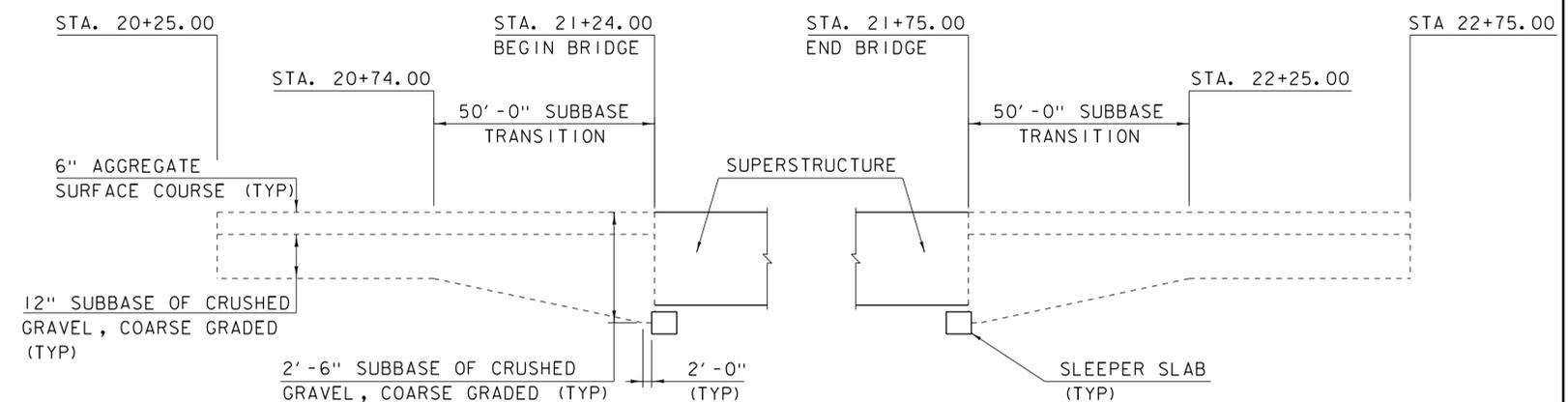
**TH 10 PROFILE**

SCALE: HORIZONTAL 1" = 20'-0"  
 SCALE: VERTICAL 1" = 10'-0"



**BANKING DIAGRAM**

HOR. SCALE 1" = 20'-0"  
 NO VERT. SCALE



**SUBBASE TRANSITION DETAIL**

N. T. S.

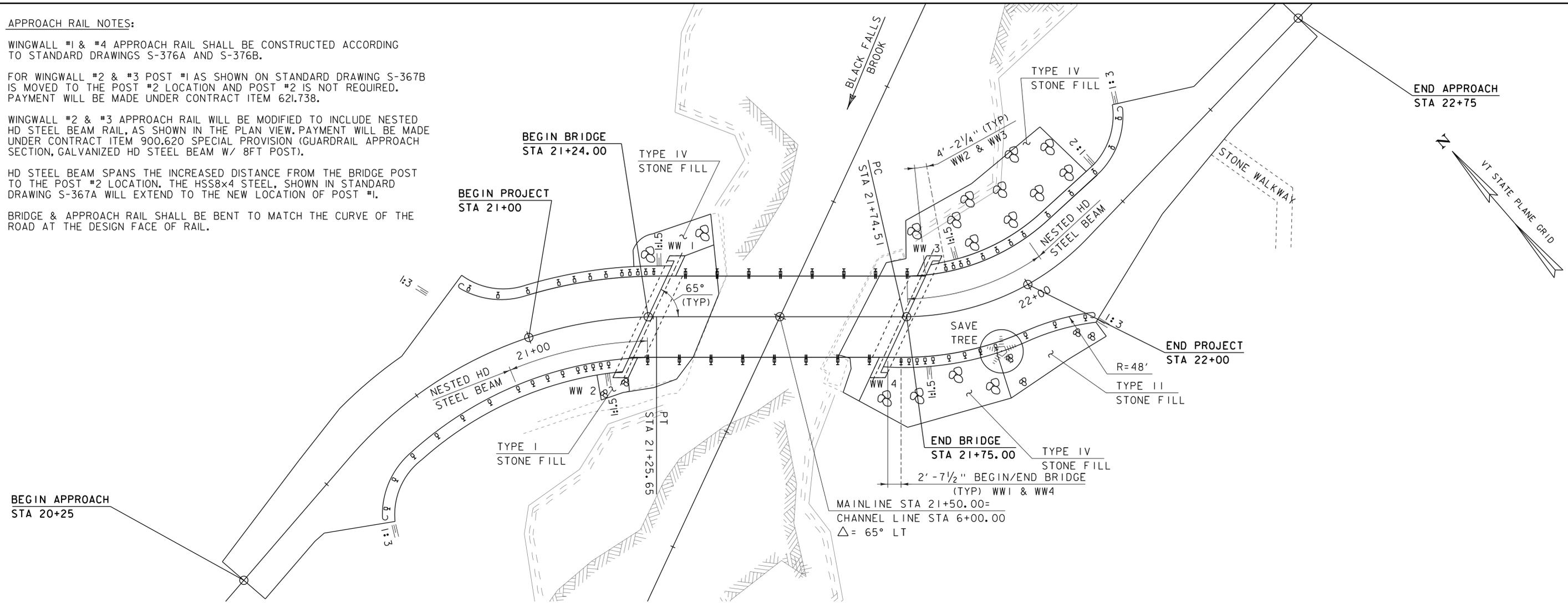
PROJECT NAME: MONTGOMERY  
 PROJECT NUMBER: BHO 1448(27)

FILE NAME: s96j306pro.dgn  
 PROJECT LEADER: C. CARLSON  
 DESIGNED BY: H. SALLS  
 PROFILE & DETAILS

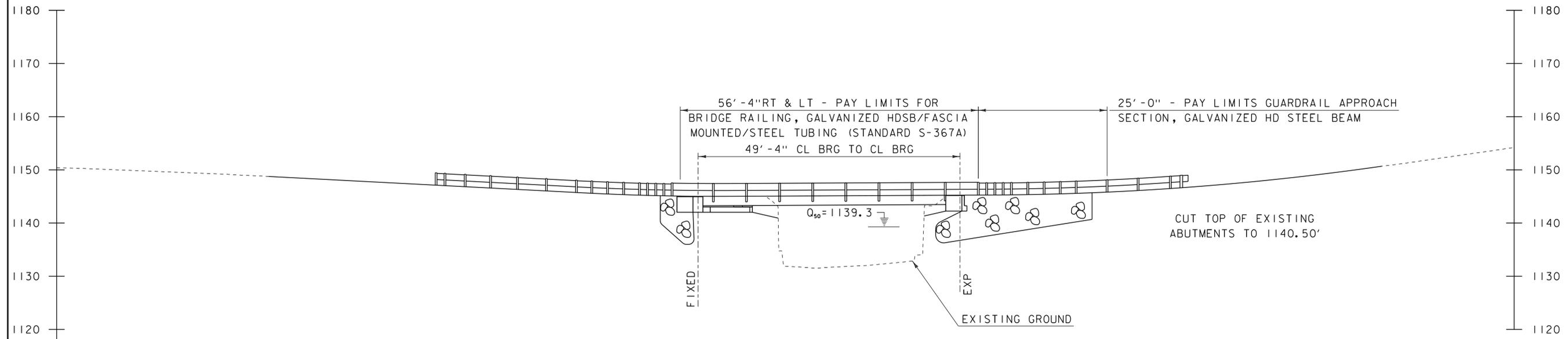
PLOT DATE: 21-NOV-2013  
 DRAWN BY: R. PELLETT  
 CHECKED BY: J. LACROIX  
 SHEET 11 OF 30

**APPROACH RAIL NOTES:**

- 1.) WINGWALL #1 & #4 APPROACH RAIL SHALL BE CONSTRUCTED ACCORDING TO STANDARD DRAWINGS S-376A AND S-376B.
- 2.) FOR WINGWALL #2 & #3 POST #1 AS SHOWN ON STANDARD DRAWING S-367B IS MOVED TO THE POST #2 LOCATION AND POST #2 IS NOT REQUIRED. PAYMENT WILL BE MADE UNDER CONTRACT ITEM 621.738.
- 3.) WINGWALL #2 & #3 APPROACH RAIL WILL BE MODIFIED TO INCLUDE NESTED HD STEEL BEAM RAIL, AS SHOWN IN THE PLAN VIEW. PAYMENT WILL BE MADE UNDER CONTRACT ITEM 900.620 SPECIAL PROVISION (GUARDRAIL APPROACH SECTION, GALVANIZED HD STEEL BEAM W/ 8FT POST).
- 4.) HD STEEL BEAM SPANS THE INCREASED DISTANCE FROM THE BRIDGE POST TO THE POST #2 LOCATION. THE HSS8x4 STEEL, SHOWN IN STANDARD DRAWING S-367A WILL EXTEND TO THE NEW LOCATION OF POST #1.
- 5.) BRIDGE & APPROACH RAIL SHALL BE BENT TO MATCH THE CURVE OF THE ROAD AT THE DESIGN FACE OF RAIL.



**PLAN**



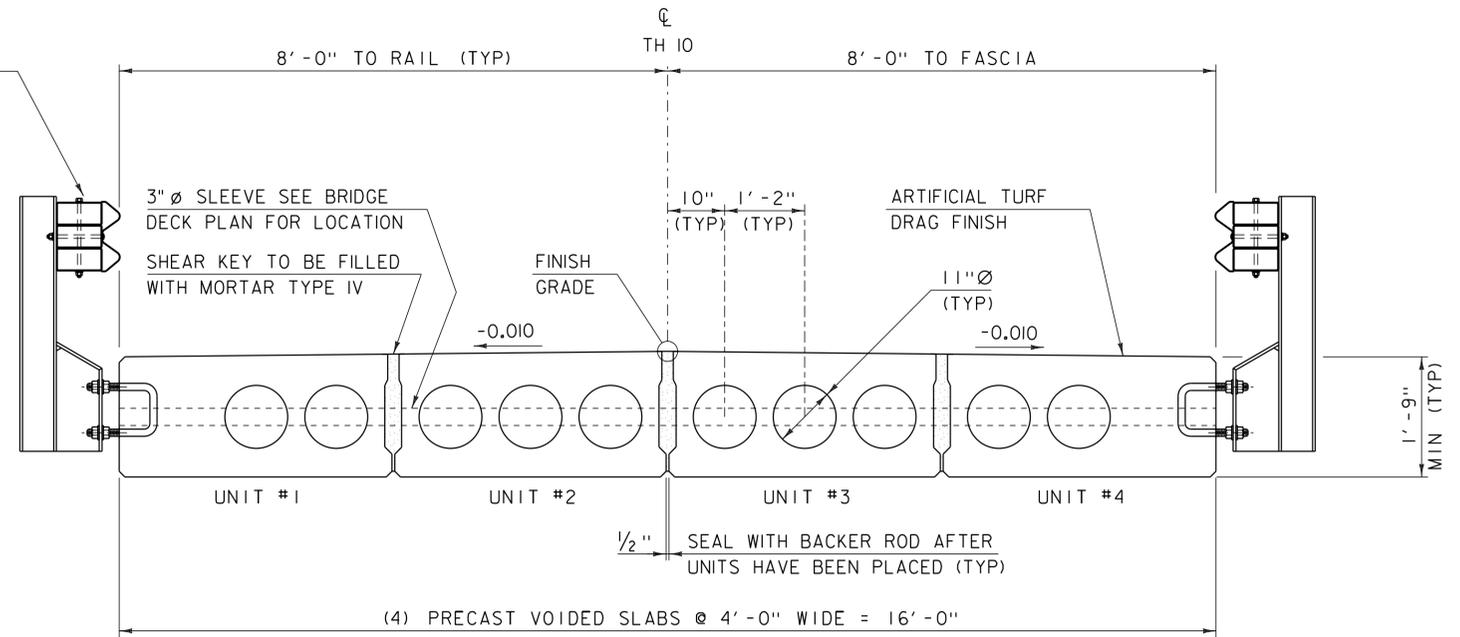
**ELEVATION**

PROJECT NAME: MONTGOMERY	
PROJECT NUMBER: BHO 1448(27)	
FILE NAME: s96j306pe.dgn	PLOT DATE: 21-NOV-2013
PROJECT LEADER: C. CARLSON	DRAWN BY: R. PELLETT
DESIGNED BY: H. SALLS	CHECKED BY: J. LACROIX
PLAN AND ELEVATION	SHEET 12 OF 30

**BRIDGE DECK NOTES:**

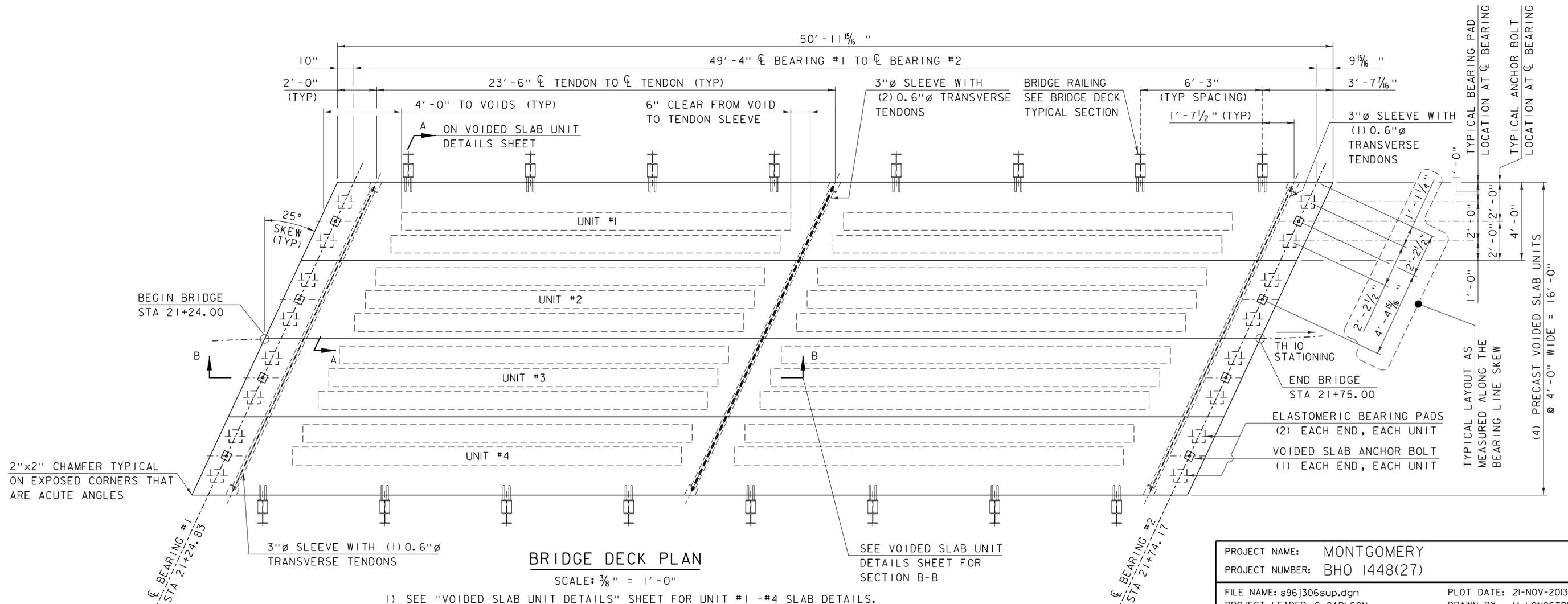
1. THE FABRICATOR SHALL DESIGN AND LOCATE LIFTING ANCHORS FOR EACH VOIDED SLAB UNIT. THE LIFTING ANCHORS SHALL BE REMOVED AFTER ERECTION. THE ANCHORS SHALL BE COVERED WITH A MINIMUM OF 2" OF MORTAR TYPE IV. THE ANCHORS SHALL BE GALVANIZED OF STAINLESS STEEL; ANY DAMAGE TO ANY COATINGS SHALL BE REPAIRED AS PER MANUFACTURES SPECIFICATION PRIOR TO COVERING.

BRIDGE RAILING, GALVANIZED  
HDSB/ FASCIA MOUNTED/STEEL  
TUBING (STD S-367A)



**BRIDGE DECK TYPICAL SECTION**

SCALE: 3/4" = 1'-0"



**BRIDGE DECK PLAN**

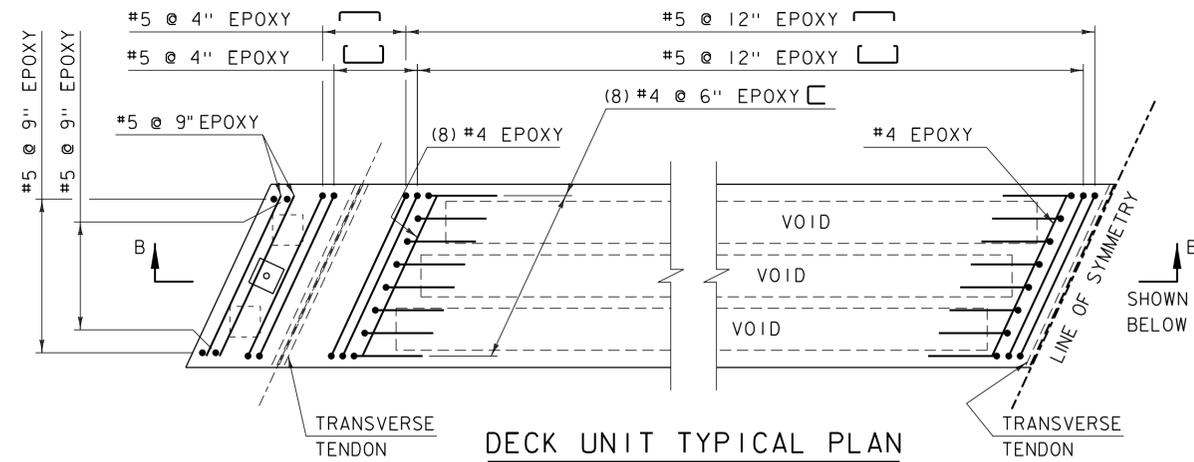
SCALE: 3/8" = 1'-0"

- 1) SEE "VOIDED SLAB UNIT DETAILS" SHEET FOR UNIT #1 -#4 SLAB DETAILS.
- 2) ALL SUPERSTRUCTURE REINFORCING STEEL SHALL BE LEVEL I EPOXY COATED.

PROJECT NAME: MONTGOMERY  
PROJECT NUMBER: BHO 1448(27)

FILE NAME: s96j306sup.dgn  
PROJECT LEADER: C. CARLSON  
DESIGNED BY: C. BURRALL  
DECK TYPICAL & PLAN

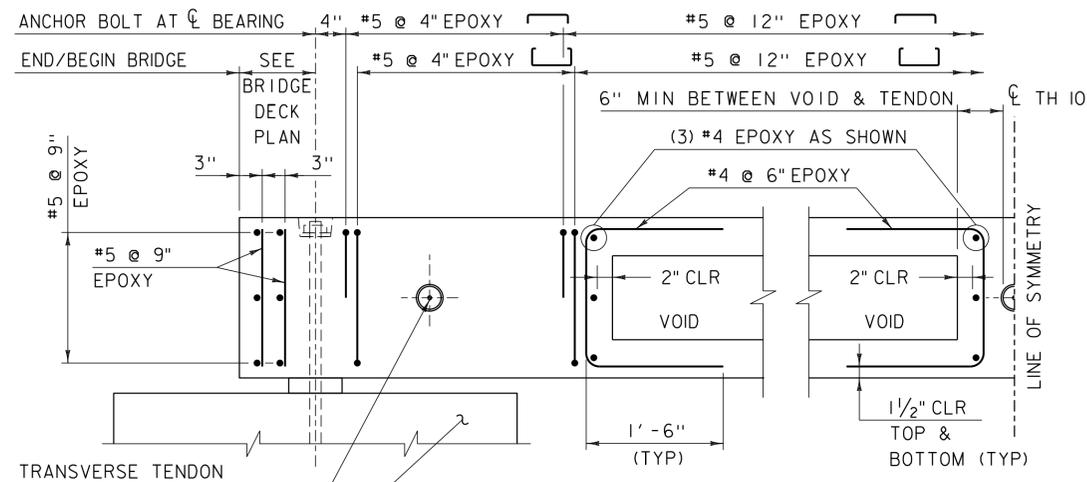
PLOT DATE: 21-NOV-2013  
DRAWN BY: M. LONGSTREET  
CHECKED BY: H. SALLS  
SHEET 13 OF 30



**DECK UNIT TYPICAL PLAN**

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

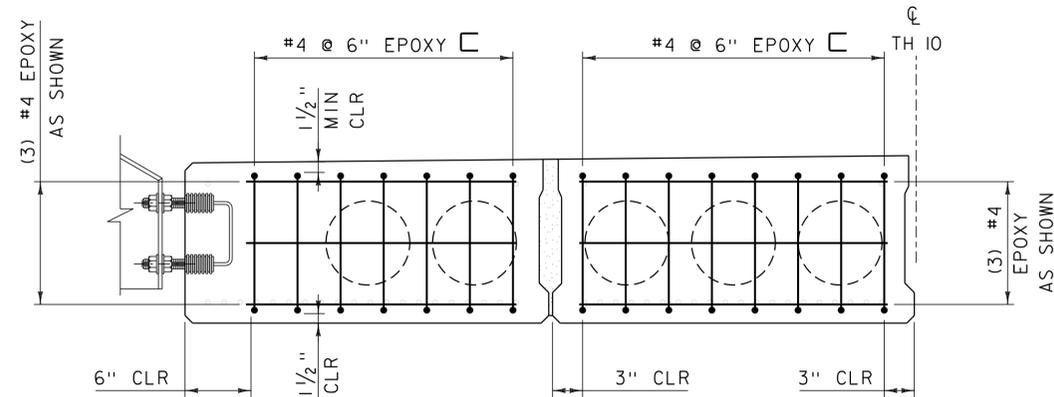
1. ALL SUPERSTRUCTURE REINFORCING STEEL SHALL BE LEVEL I EPOXY COATED.
2. REINFORCING STEEL SHOWN IN THIS PLAN IS TYPICAL FOR UNITS 1-4.



**DECK SECTION B-B**

SCALE: 1" = 1'-0"

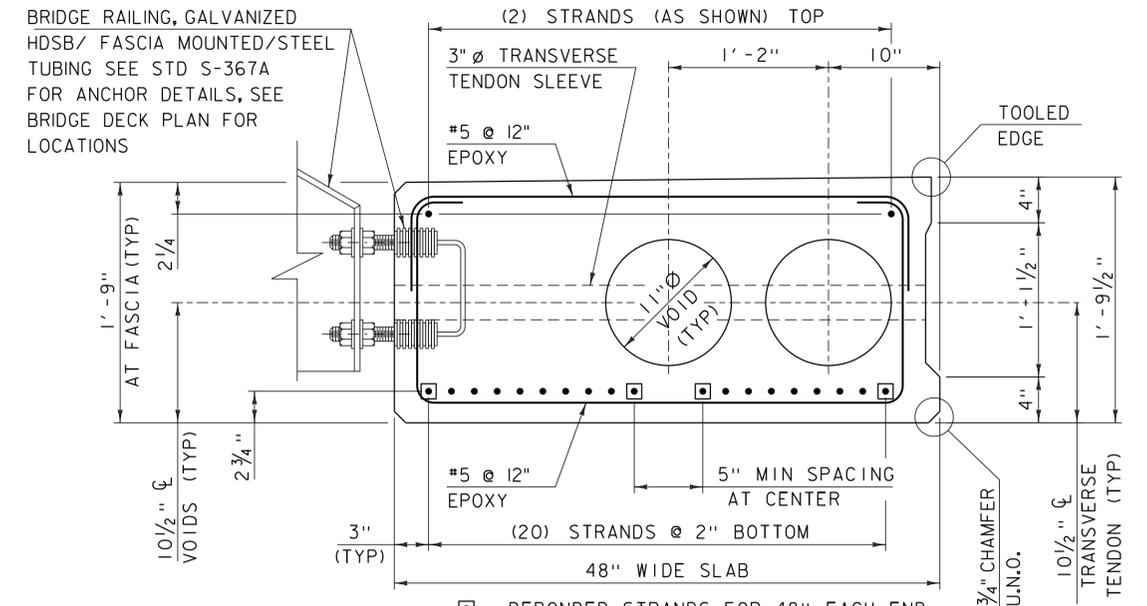
SLEEPER SLAB, SEE SLEEPER SLAB PLAN & ELEVATION SHEETS FOR DETAIL



**DECK SECTION A-A**

SCALE: 1" = 1'-0"

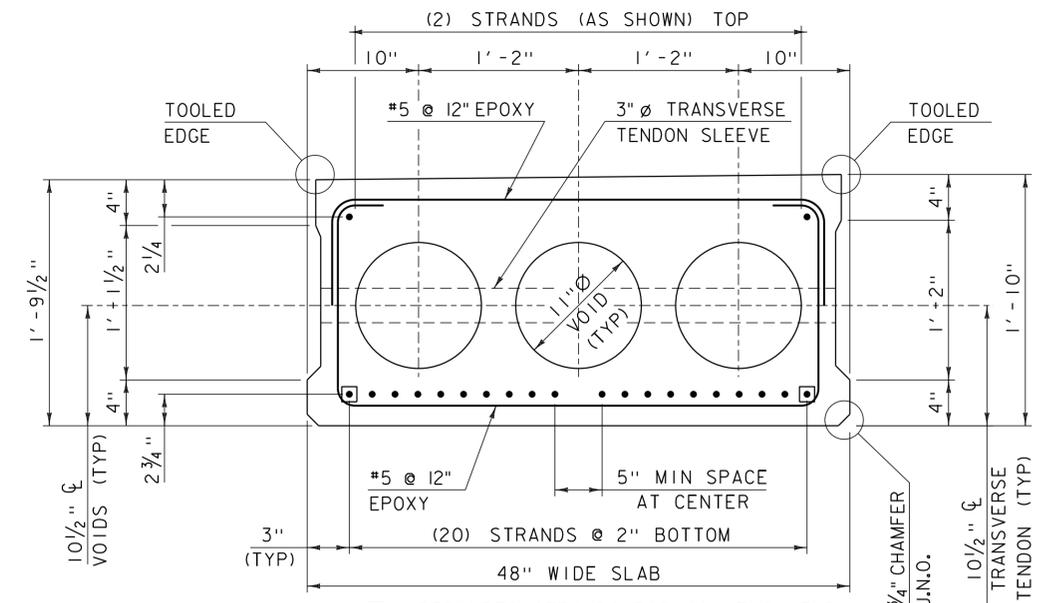
1. UNIT #1 & #2 DRAWN ABOVE, UNIT #3 & #4 ARE A MIRROR IMAGE.
2. SECTION DRAWN NORMAL TO DECK, NOT AT SKEW, FOR CLARITY.
- 3.) REINFORCING STEEL SHOWN IN THIS SECTION IS REQUIRED AT EACH OF THE (4) LOCATIONS WHERE END OF VOIDS ARE LOCATED, IN EACH SLAB UNIT,



**UNIT #1 & #4 SLAB DETAIL**

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

☐ = DEBONDED STRANDS FOR 48" EACH END U.N.O. = UNLESS NOTED OTHERWISE



**UNIT #2 & #3 SLAB DETAIL**

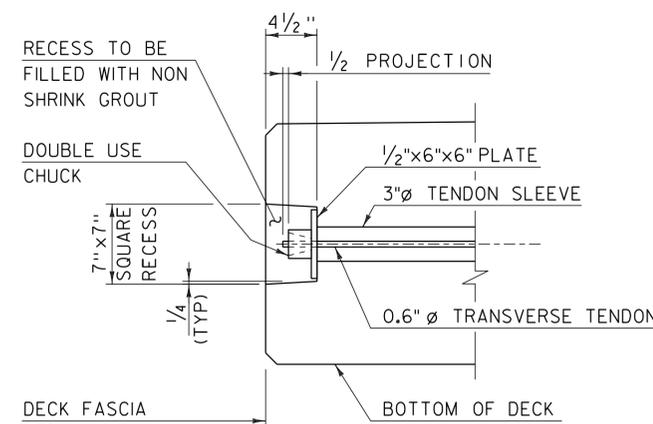
SCALE: 1 1/2" = 1'-0"

☐ = DEBONDED STRANDS FOR 48" EACH END U.N.O. = UNLESS NOTED OTHERWISE

PROJECT NAME: MONTGOMERY  
PROJECT NUMBER: BHO 1448(27)

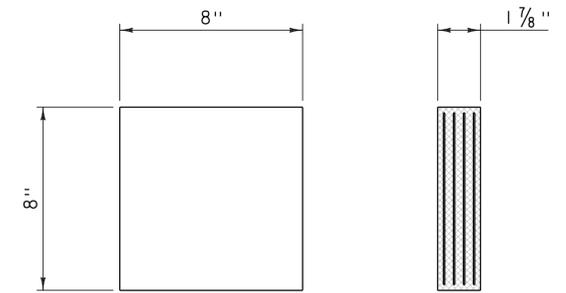
FILE NAME: s96j306sup.dgn  
PROJECT LEADER: C. CARLSON  
DESIGNED BY: C. BURRALL  
VOIDED SLAB UNIT DETAILS

PLOT DATE: 21-NOV-2013  
DRAWN BY: M. LONGSTREET  
CHECKED BY: H. SALLS  
SHEET 14 OF 30



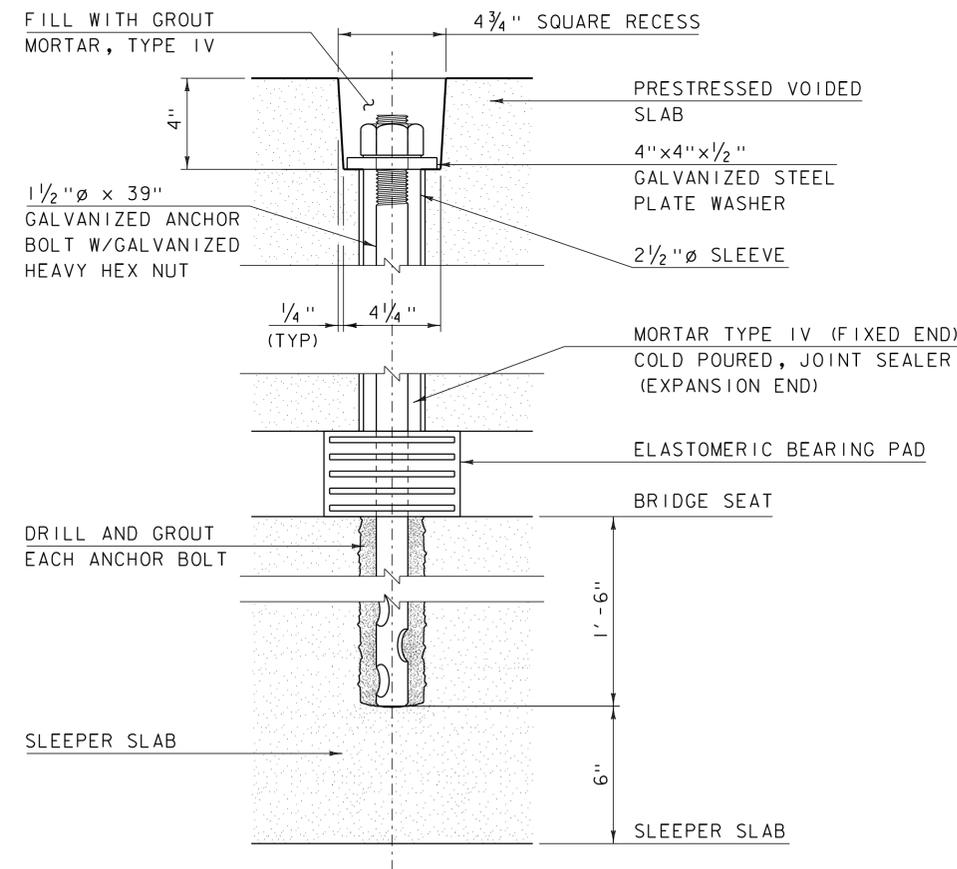
**TRANSVERSE TENDON CHUCK DETAIL**

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



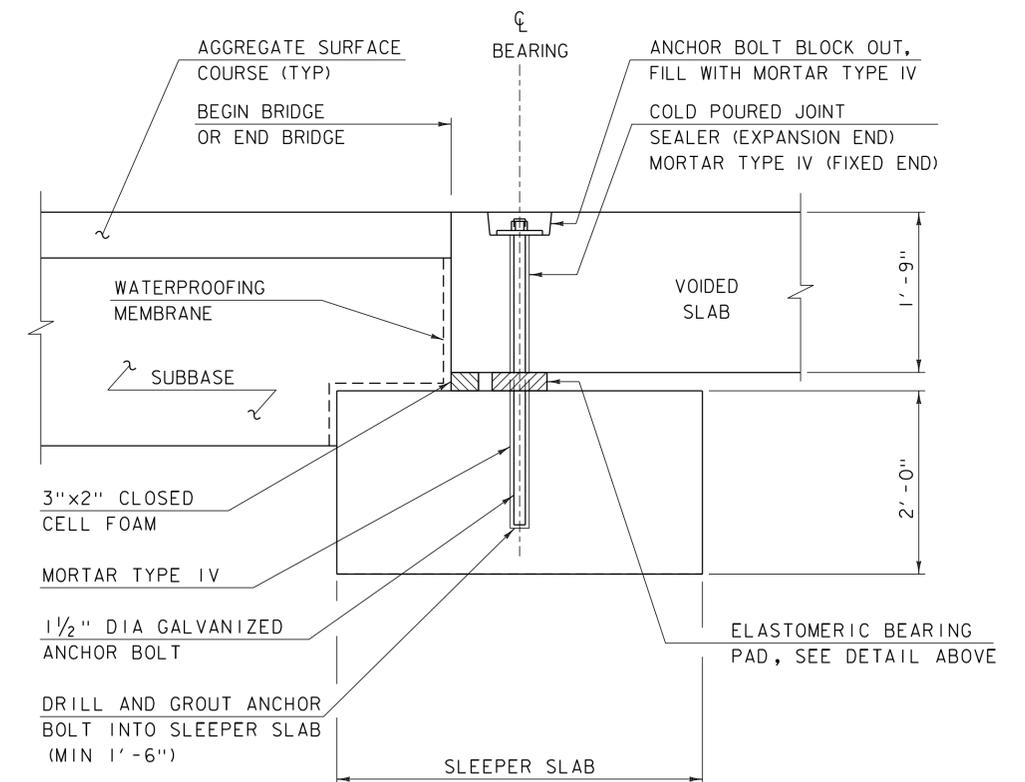
**ELASTOMERIC BEARING DETAIL**

SCALE: 3" = 1' - 0"  
 1/4" ELASTOMERIC OUTER LAYER (TOP, BOTTOM, AND SIDES)  
 (3) 3/8" LAYERS OF INTERIOR ELASTOMERIC ALTERNATING W/  
 (4) 1/16" STEEL REINFORCING PLATES



**ANCHOR BOLT DETAIL**

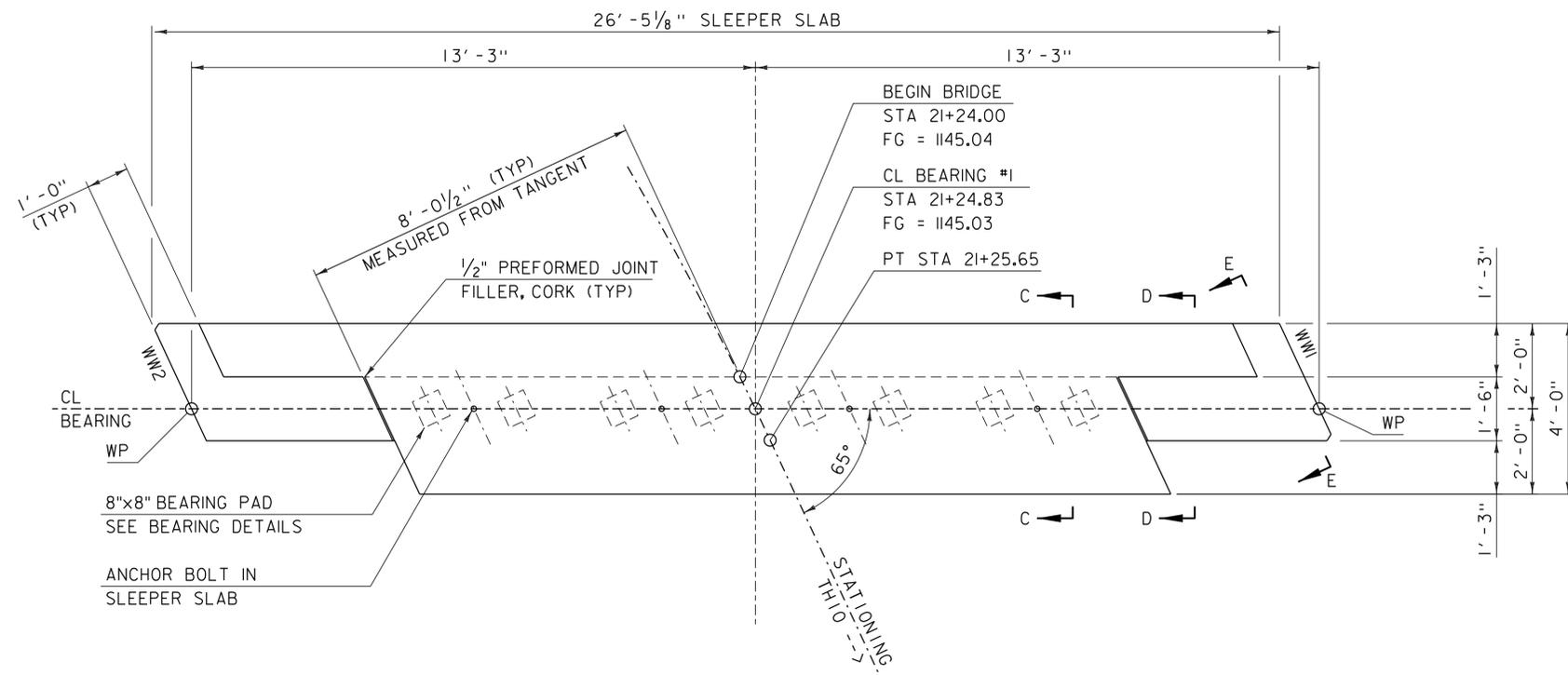
SCALE: 3" = 1' - 0"



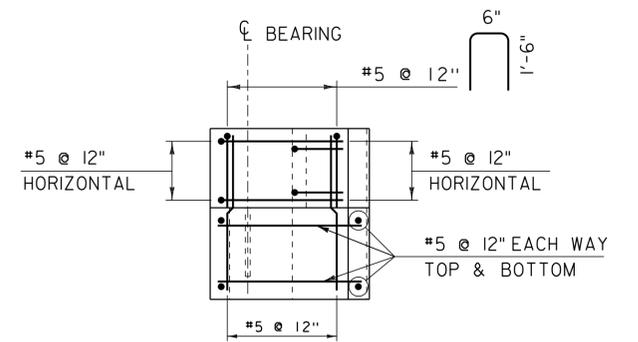
**BEGIN / END BRIDGE DETAIL**

SCALE: 1" = 1' - 0"

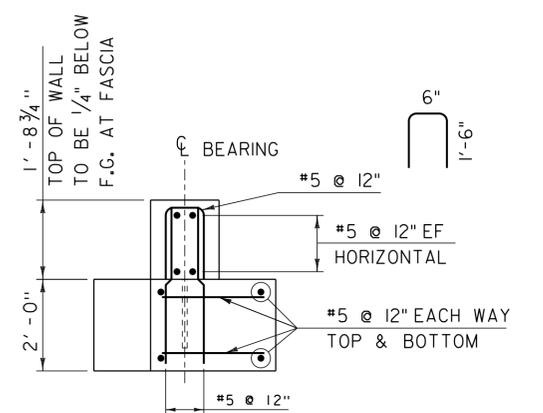
PROJECT NAME: MONTGOMERY	PLOT DATE: 21-NOV-2013
PROJECT NUMBER: BHO 1448(27)	DRAWN BY: M. LONGSTREET
FILE NAME: s96j306sup.dgn	DESIGNED BY: C. BURRALL
PROJECT LEADER: C. CARLSON	CHECKED BY: H. SALLS
BEARING & MISCELLANEOUS DETAILS	SHEET 15 OF 30



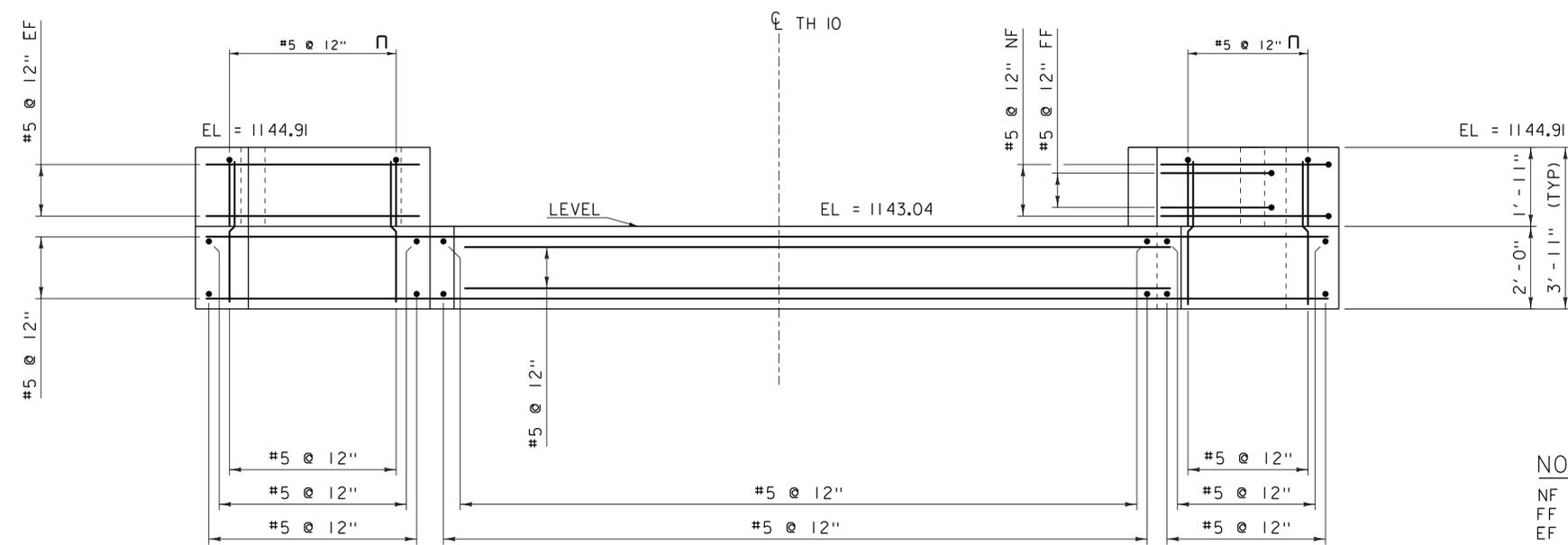
**SLEEPER SLAB I PLAN**  
SCALE: 1/2" = 1'-0"



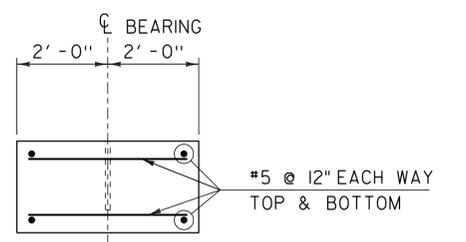
**TYPICAL SECTION E-E**  
SCALE: 1/2" = 1'-0"  
THIS SECTION TYPICAL FOR SLEEPER SLAB 1 & 2 THROUGH WING WALLS 1,2,3,4



**TYPICAL SECTION D-D**  
SCALE: 1/2" = 1'-0"  
THIS SECTION TYPICAL FOR SLEEPER SLAB 1 & 2 THROUGH WING WALL EARS 1,2,3,4



**SLEEPER SLAB I ELEVATION**  
SCALE: 1/2" = 1'-0"

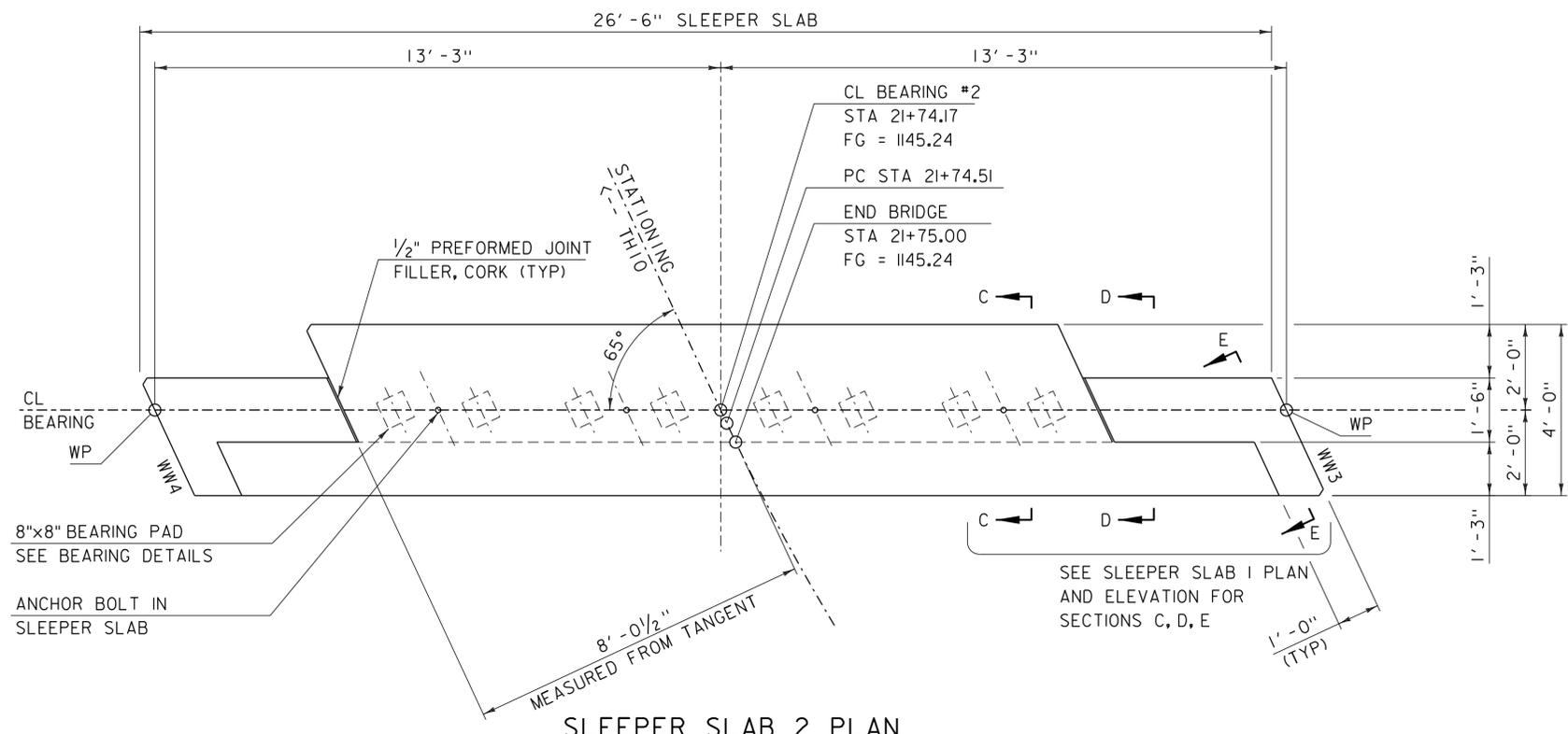


**TYPICAL SECTION C-C**  
SCALE: 1/2" = 1'-0"  
THIS SECTION TYPICAL FOR SLEEPER SLAB 1 & 2 THROUGH THE SLEEPER SLAB.

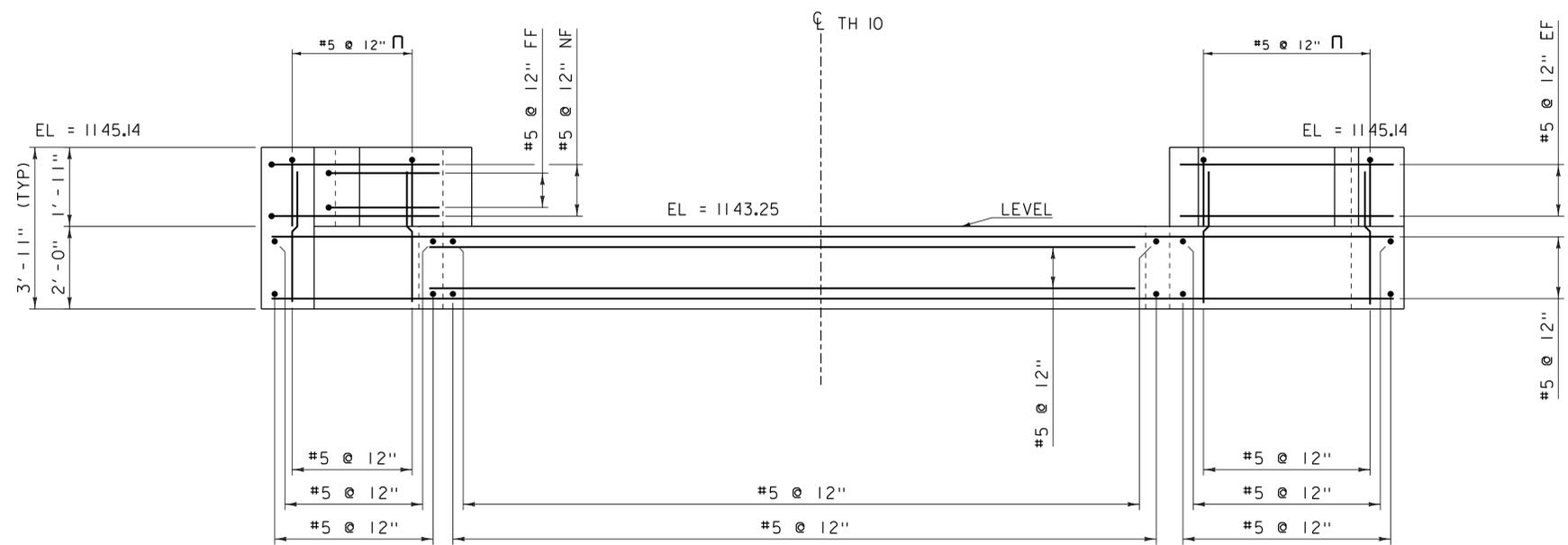
**NOTE:**  
NF = NEAR FACE  
FF = FAR FACE  
EF = EACH FACE  
▲ = CUT TO FIT IN FIELD  
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.  
2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

SEE SHEET 17 FOR SLEEPER SLAB AND WINGWALL NOTES.

PROJECT NAME:	MONTGOMERY	PLOT DATE:	21-NOV-2013	
PROJECT NUMBER:	BHO 1448(27)	DRAWN BY:	M. LONGSTREET	
FILE NAME:	s96j306sub.dgn	DESIGNED BY:	H. SALLS	
PROJECT LEADER:	C. CARLSON	SLEEPER SLAB I PLAN & ELEVATION	CHECKED BY:	J. LACROIX
				SHEET 16 OF 30



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



**SLEEPER SLAB 2 ELEVATION**  
SCALE: 1/4" = 1'-0"

**SLEEPER SLAB AND WINGWALL NOTES:**

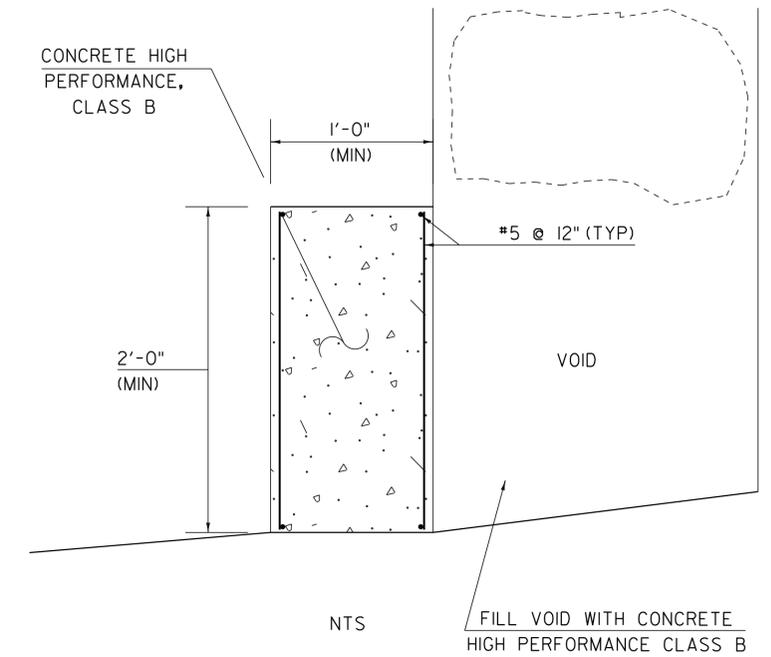
1. THE SLEEPER SLAB IS TO BE PRECAST CONCRETE UNITS. THE FABRICATOR SHALL DESIGN AND LOCATE LIFTING ANCHOR AS NEEDED.
2. THE WINGWALL (EAR WALLS) SHALL BE PRECAST OR CAST IN PLACE. LIFTING ANCHORS SHALL BE DESIGNED AND LOCATED BY THE FABRICATOR IF REQUIRED. PAYMENT FOR THE WINGWALL (EAR WALLS) SHALL BE INCIDENTAL TO ITEM 540.10 PRECAST CONCRETE STRUCTURE (SLEEPER SLAB).

**NOTE:**  
 NF = NEAR FACE  
 FF = FAR FACE  
 EF = EACH FACE  
 ▲ = CUT TO FIT IN FIELD  
 3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.  
 2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

PROJECT NAME: MONTGOMERY	
PROJECT NUMBER: BHO 1448(27)	
FILE NAME: s96j306sub.dgn	PLOT DATE: 21-NOV-2013
PROJECT LEADER: C. CARLSON	DRAWN BY: M. LONGSTREET
DESIGNED BY: H. SALLS	CHECKED BY: J. LACROIX
SLEEPER SLAB 2 PLAN & ELEVATION	SHEET 17 OF 30



EXISTING WINGWALL #2



SUBSTRUCTURE NOTES

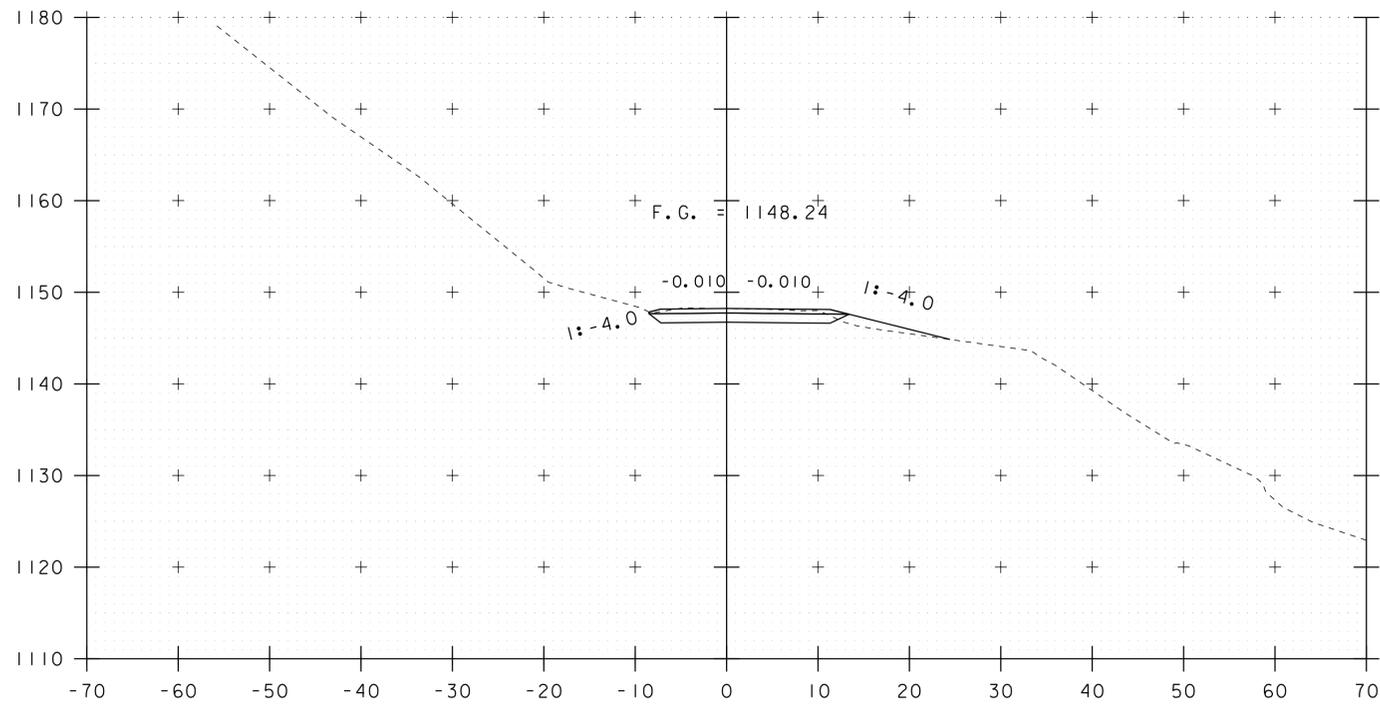
THE PICTURES REPRESENT THE EXISTING CONDITION OF THE WINGWALL #2 SUBSTRUCTURE BUT DOES NOT SHOW ALL THE AFFECTED AREAS.

THE INTENTION IS TO FILL THE VOIDS IN WINGWALL #2 WITH CONCRETE. PAYMENT FOR THIS WORK WILL BE MADE FOR UNDER ITEM 501.34 CONCRETE, HIGH PERFORMANCE CLASS B AND ITEM 507.11 REINFORCING STEEL, LEVEL 1.

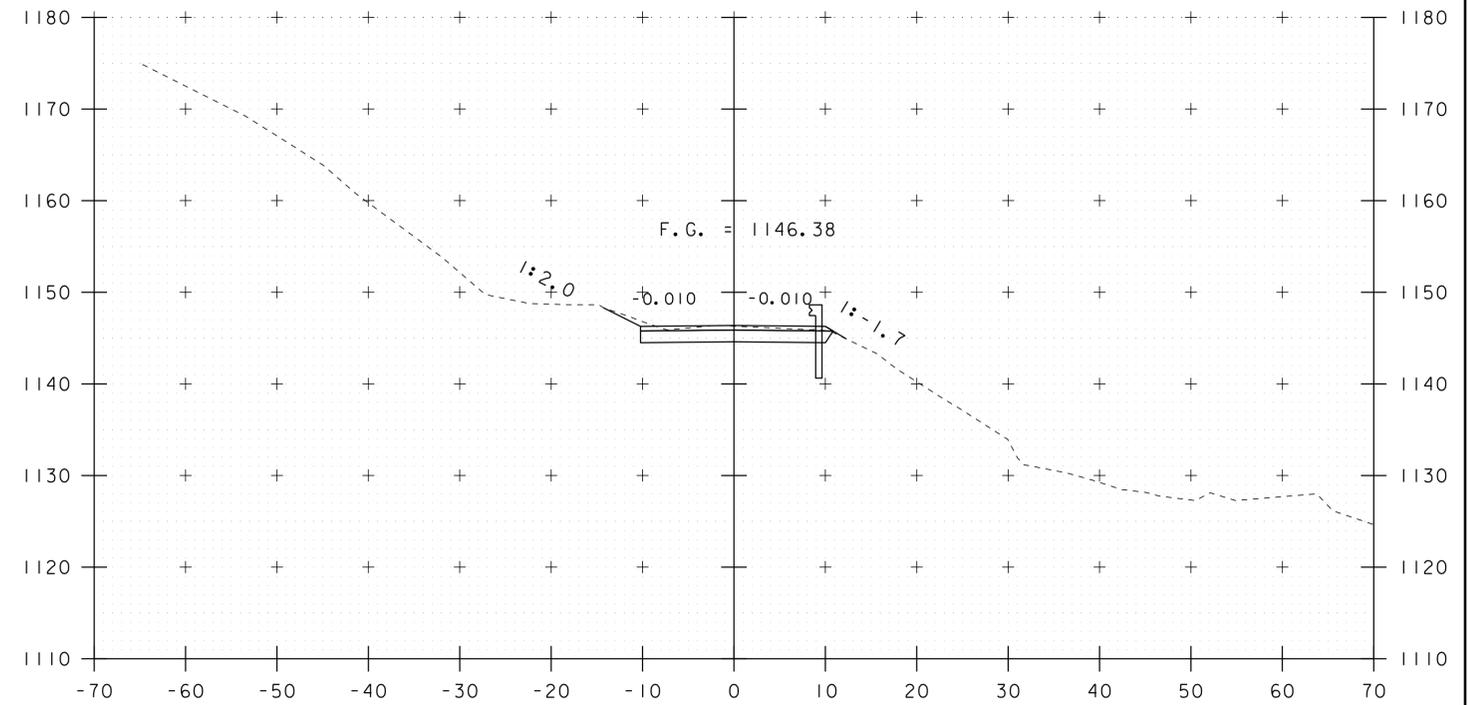
THE DEAD TREE IS TO BE REMOVED BEFORE FORMING AND POURING OF CONCRETE.

THE ENGINEER WILL DETERMINE THE LEVEL OF REPAIR NEEDED.

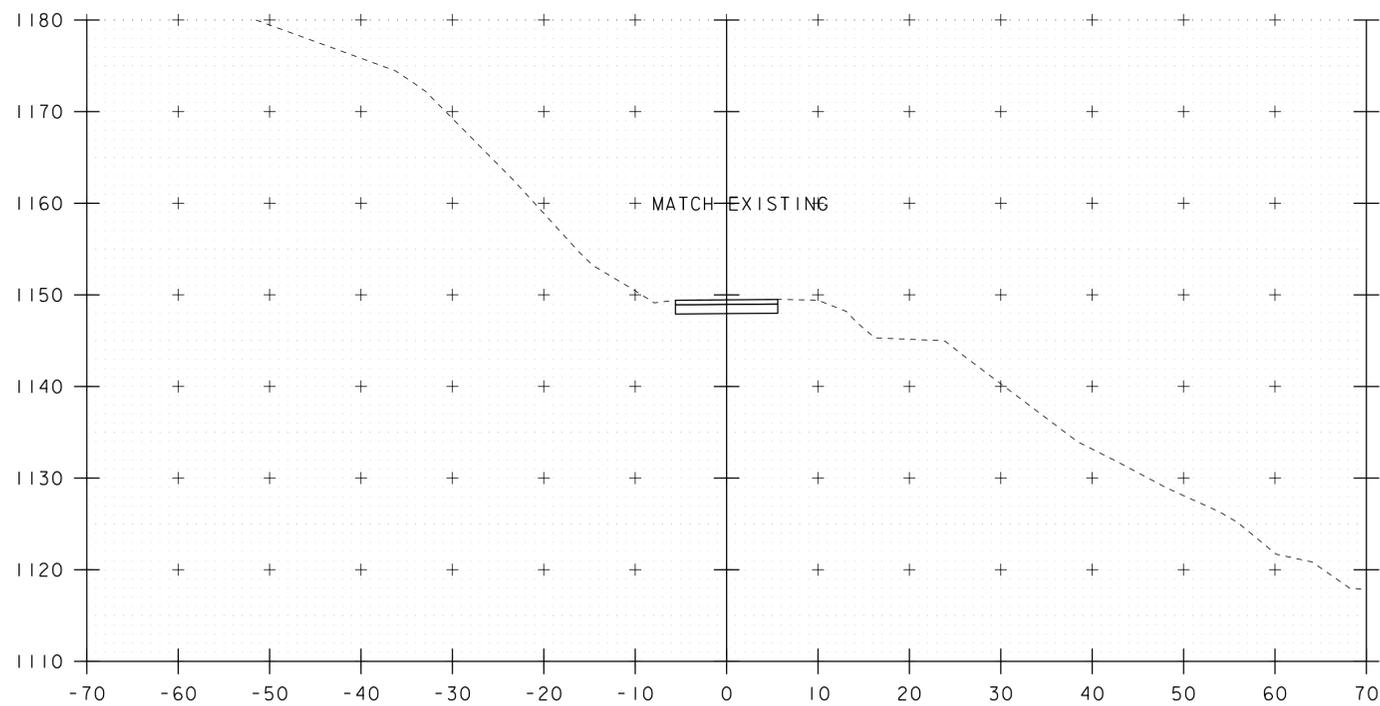
PROJECT NAME:	MONTGOMERY
PROJECT NUMBER:	BHO 1448(27)
FILE NAME:	s96j306sub.dgn
PROJECT LEADER:	C. CARLSON
DESIGNED BY:	H. SALLS
EXISTING WINGWALL #2 REPAIR	
PLOT DATE:	21-NOV-2013
DRAWN BY:	DZENAN K.
CHECKED BY:	J. LACROIX
SHEET	18 OF 30



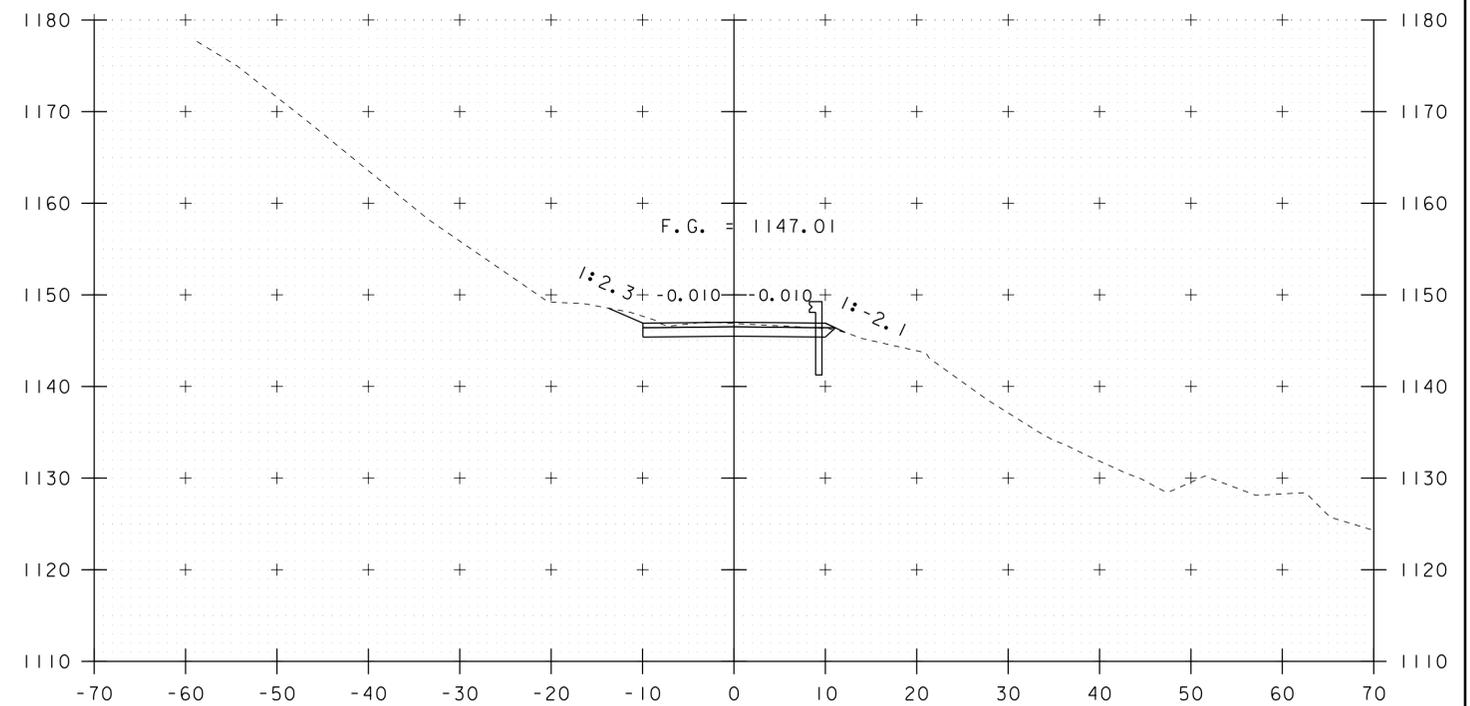
20+50



20+88



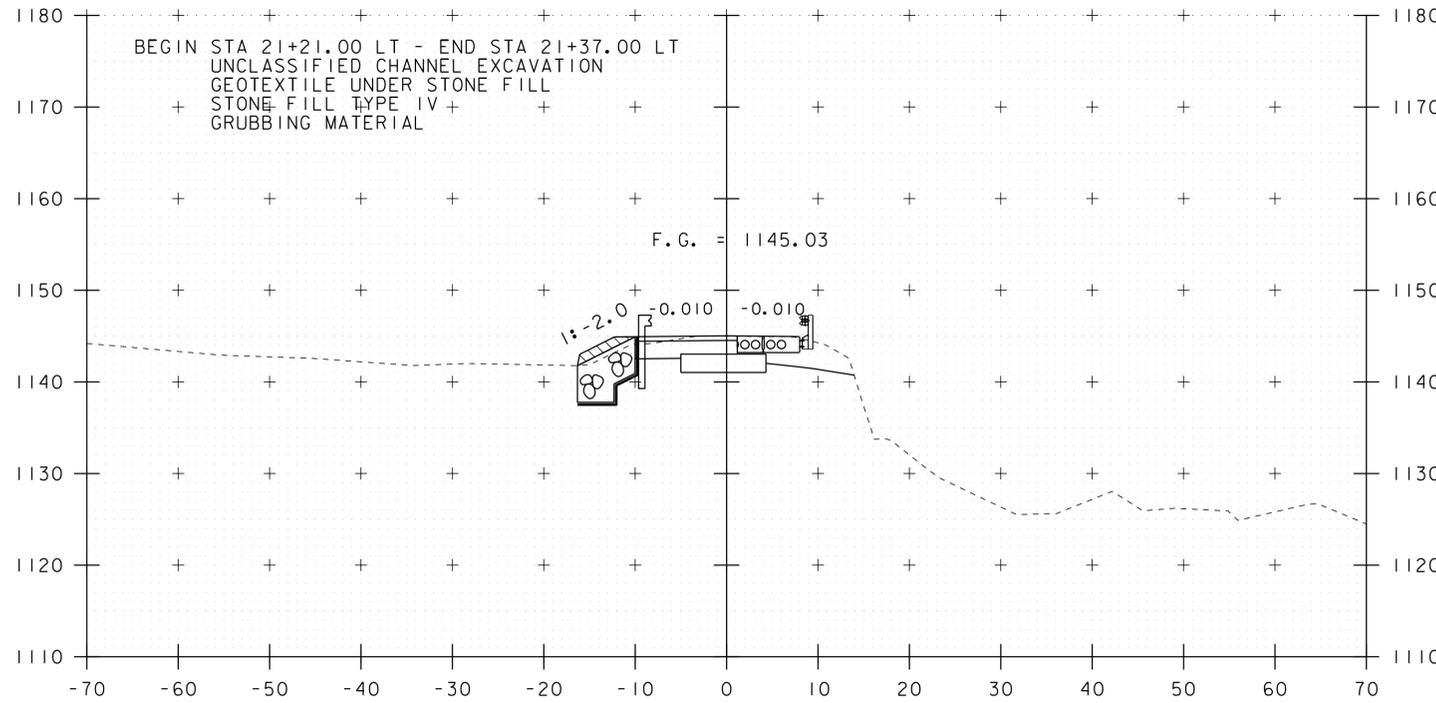
20+25 BEGIN APPROACH



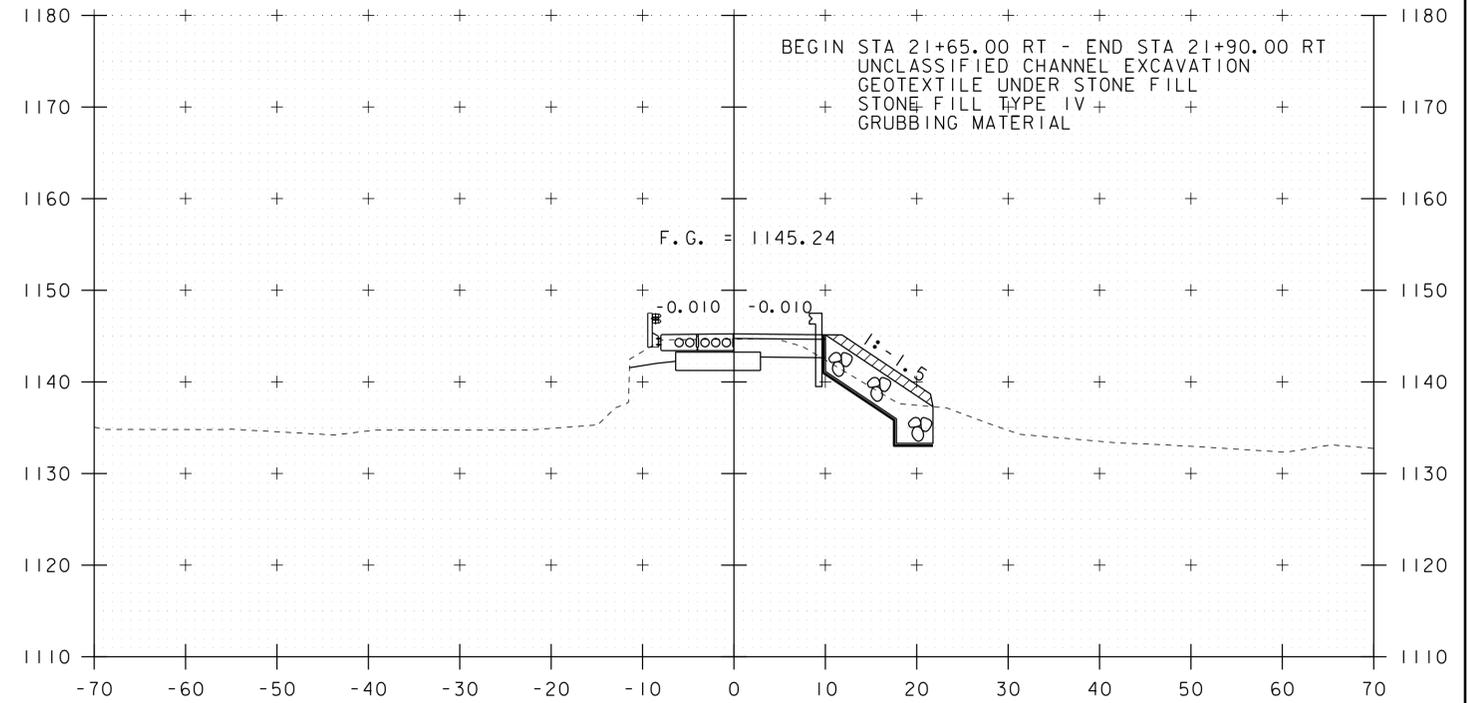
20+75

STA. 20+25 TO STA. 20+88

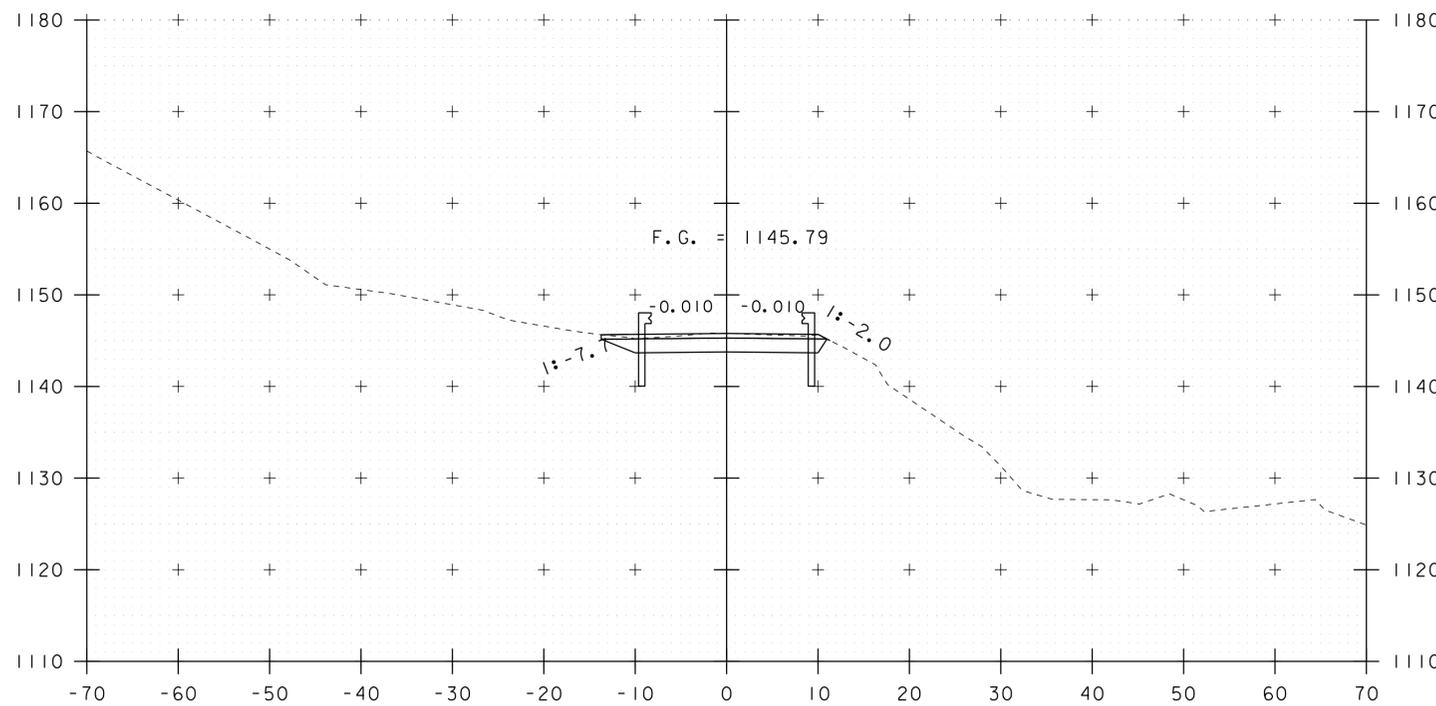
PROJECT NAME: MONTGOMERY	
PROJECT NUMBER: BHO 1448(27)	
FILE NAME: s96j306xs2.dgn	PLOT DATE: 21-NOV-2013
PROJECT LEADER: C. CARLSON	DRAWN BY: R. PELLETT
DESIGNED BY: H. SALLS	CHECKED BY: J. LACROIX
MAINLINE CROSS SECTIONS 1	SHEET 19 OF 30



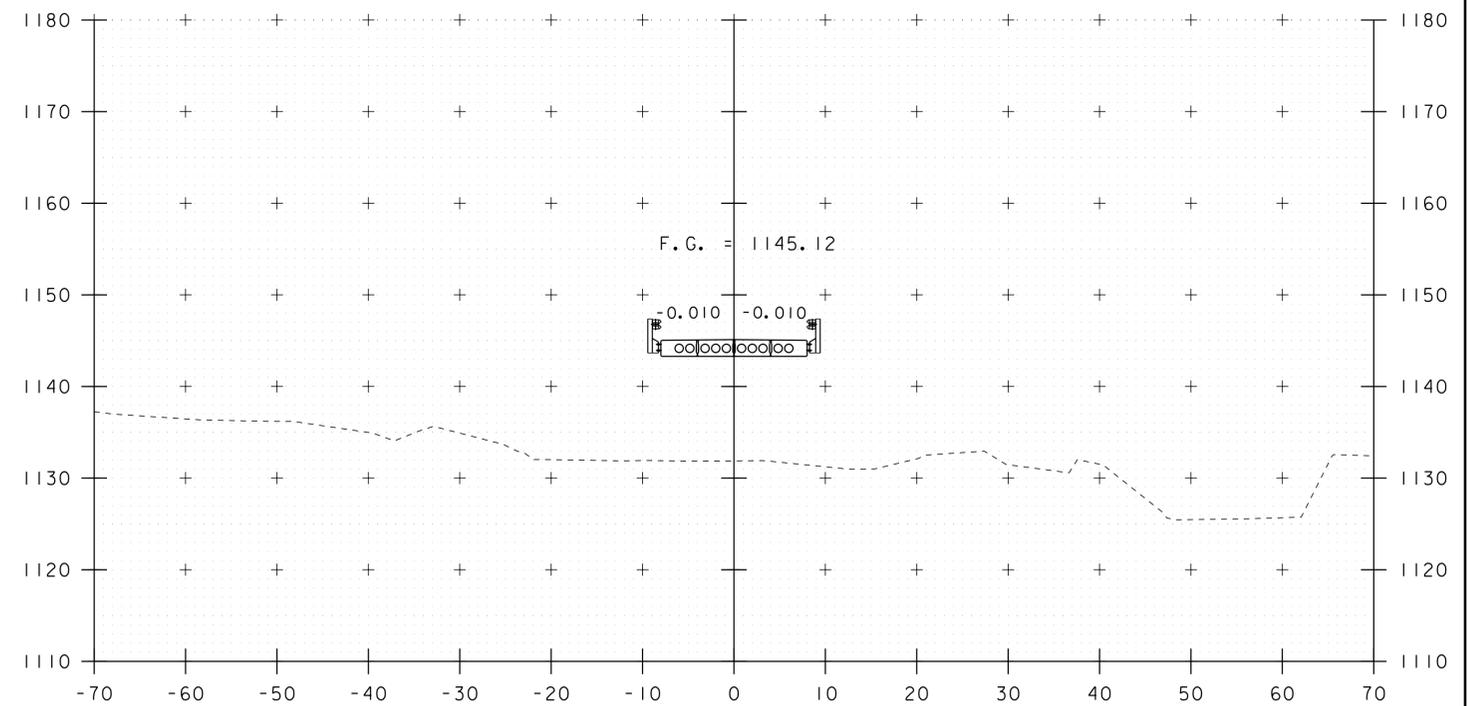
21+25 (BEGIN BRIDGE STA 21+24.00)



21+75 END BRIDGE



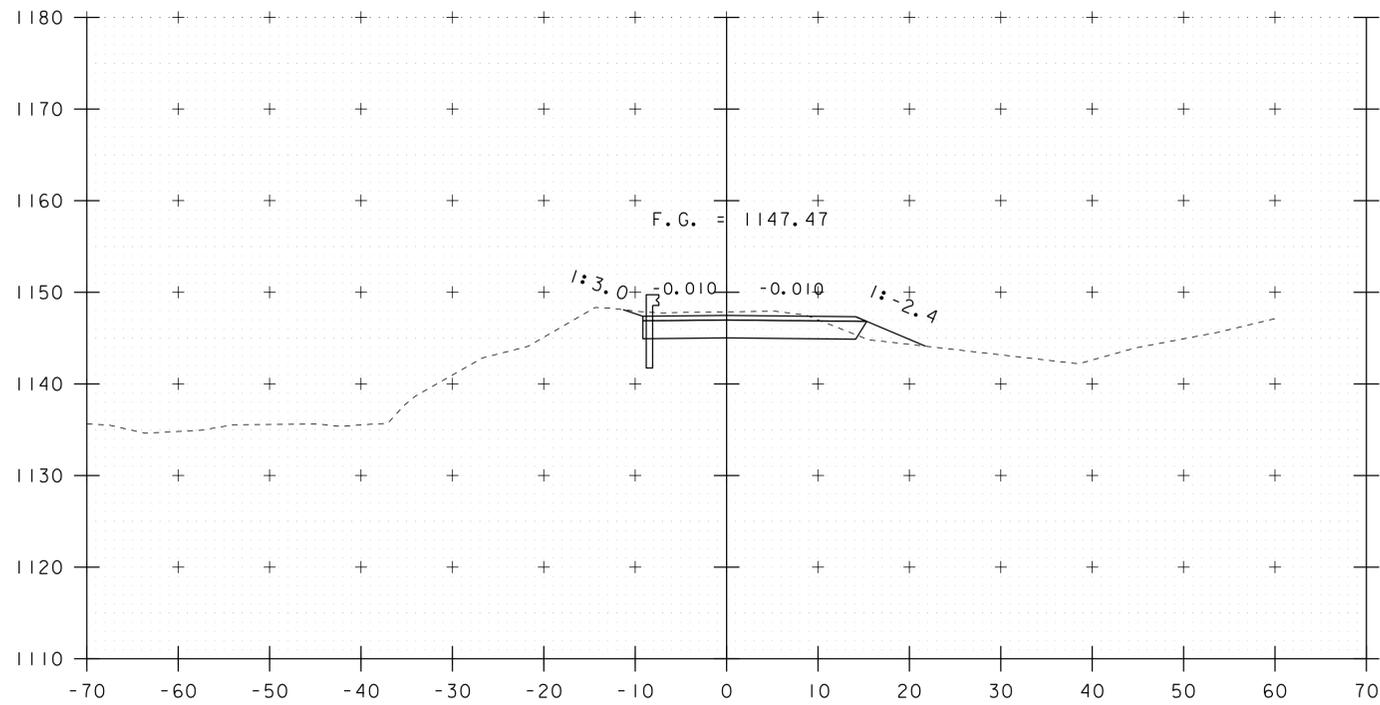
21+00 BEGIN PROJECT



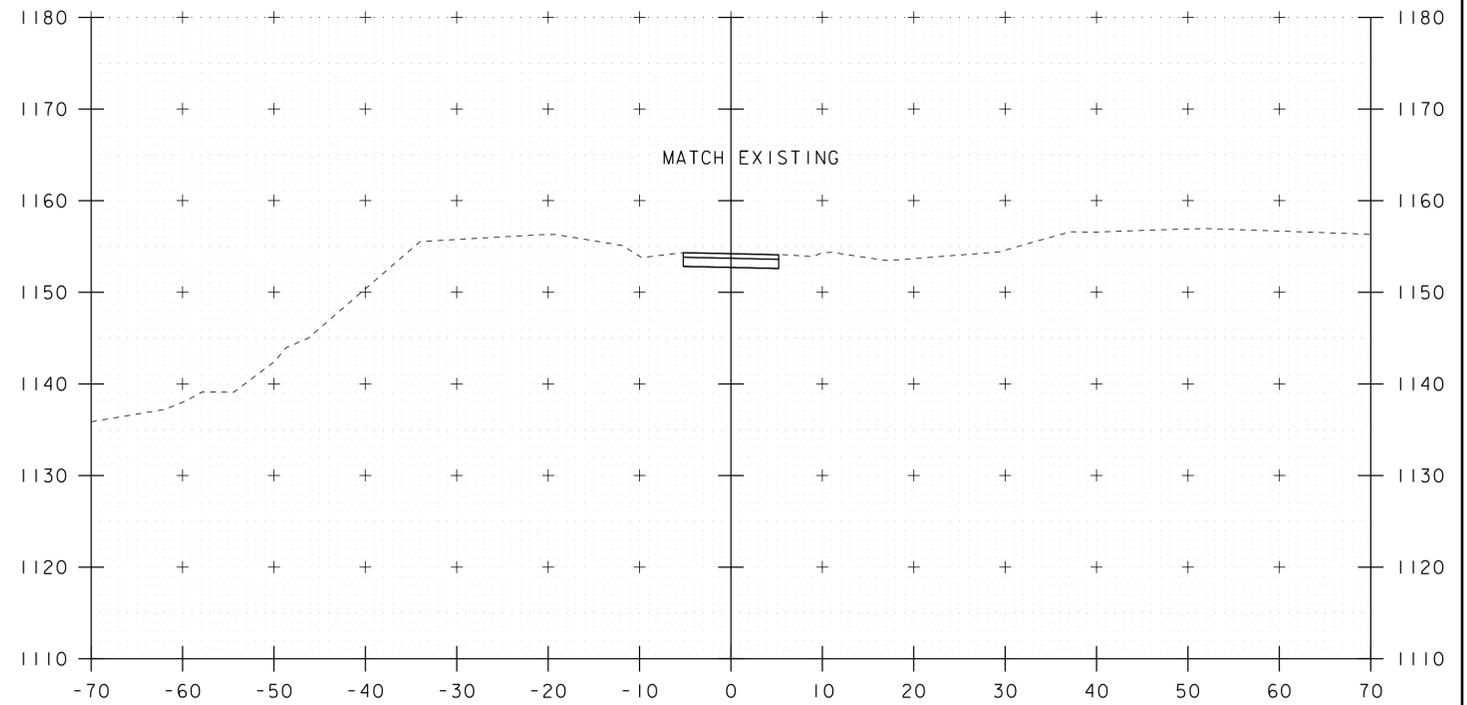
21+50

STA. 21+00 TO STA. 21+75

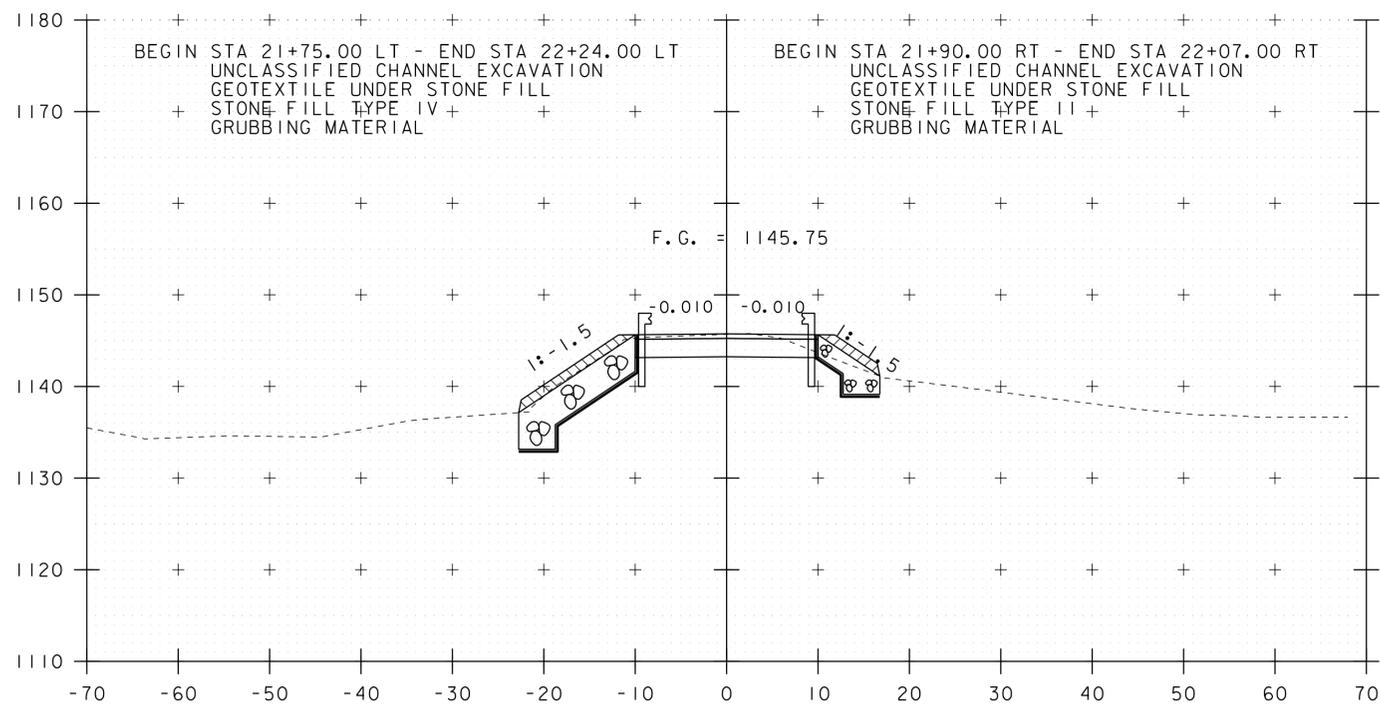
PROJECT NAME: MONTGOMERY	
PROJECT NUMBER: BHO 1448(27)	
FILE NAME: s96j306xs2.dgn	PLOT DATE: 21-NOV-2013
PROJECT LEADER: C. CARLSON	DRAWN BY: R. PELLETT
DESIGNED BY: H. SALLS	CHECKED BY: J. LACROIX
MAINLINE CROSS SECTIONS 2	SHEET 20 OF 30



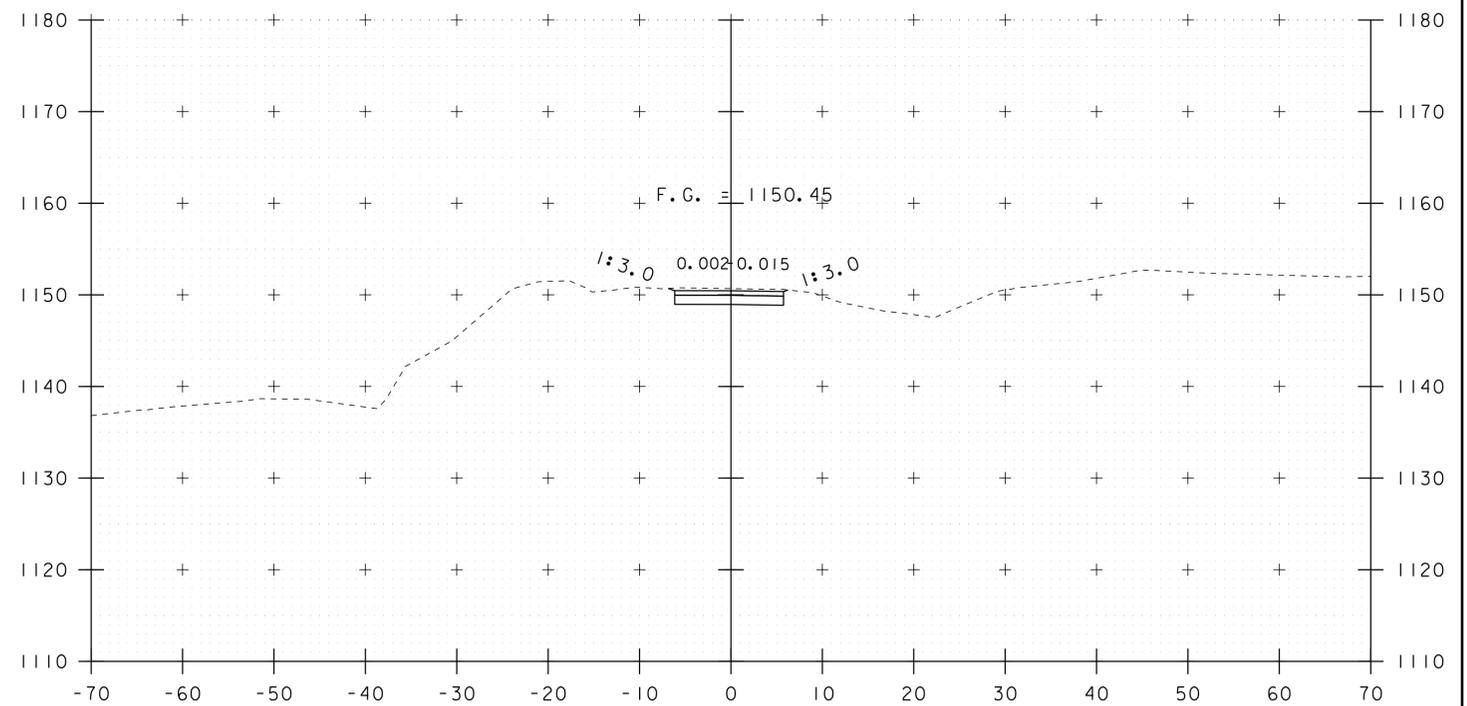
22+25



22+75 END APPROACH



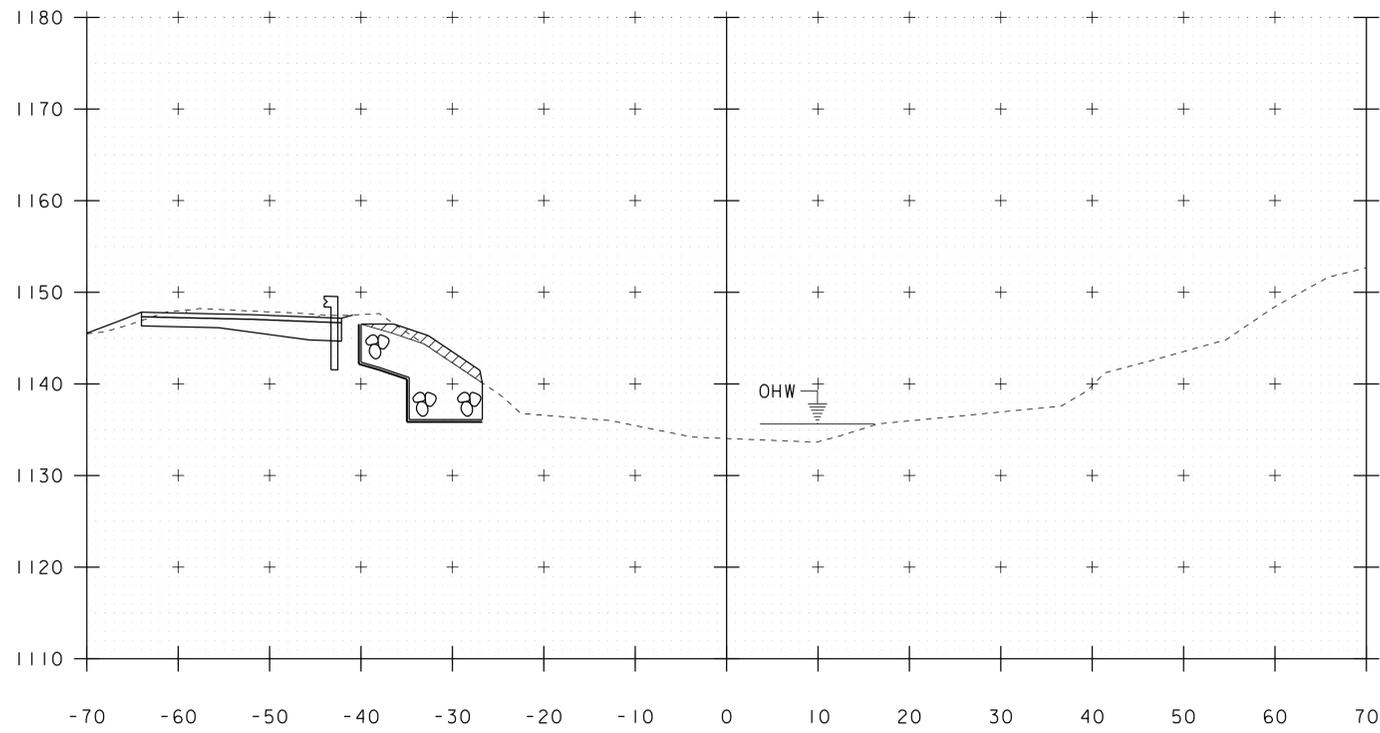
22+00 END PROJECT



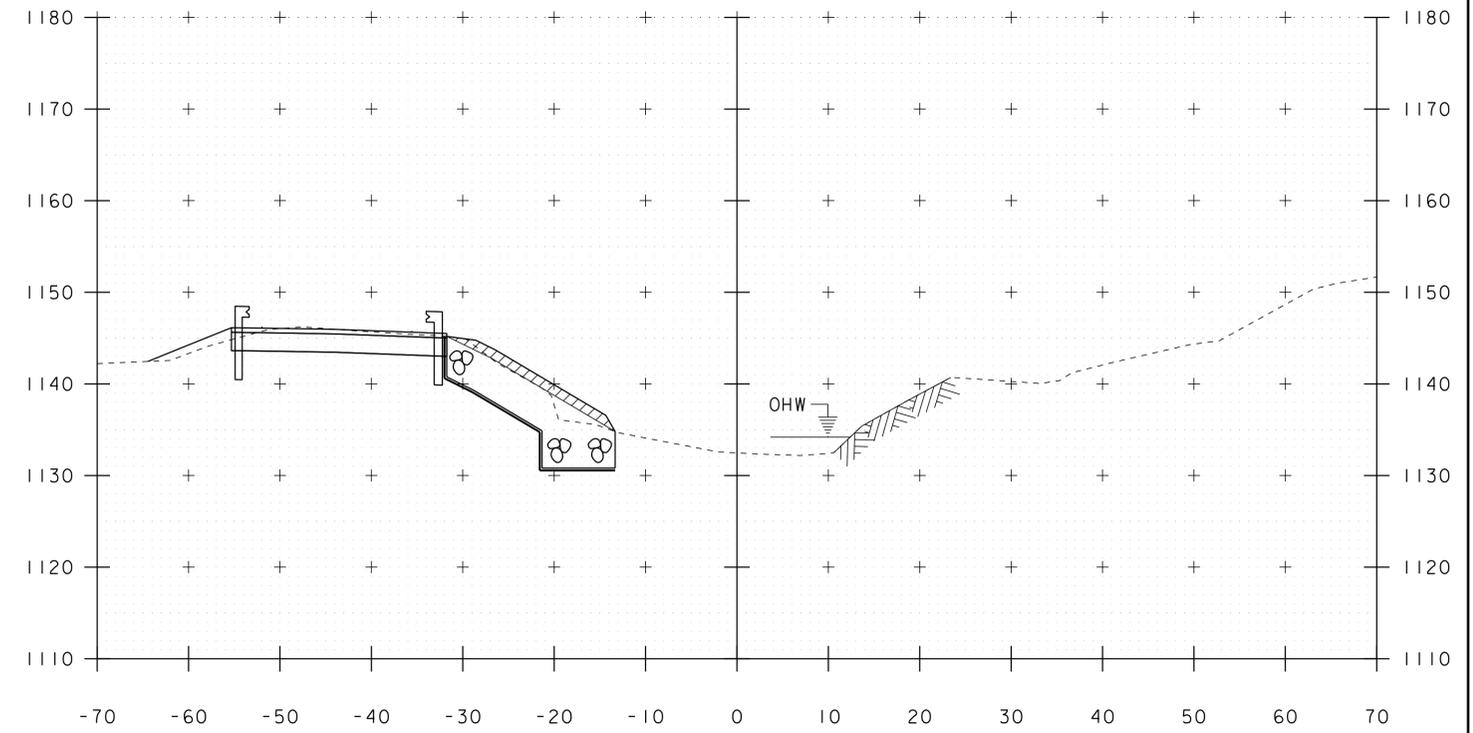
22+50

STA. 22+00 TO STA. 22+75

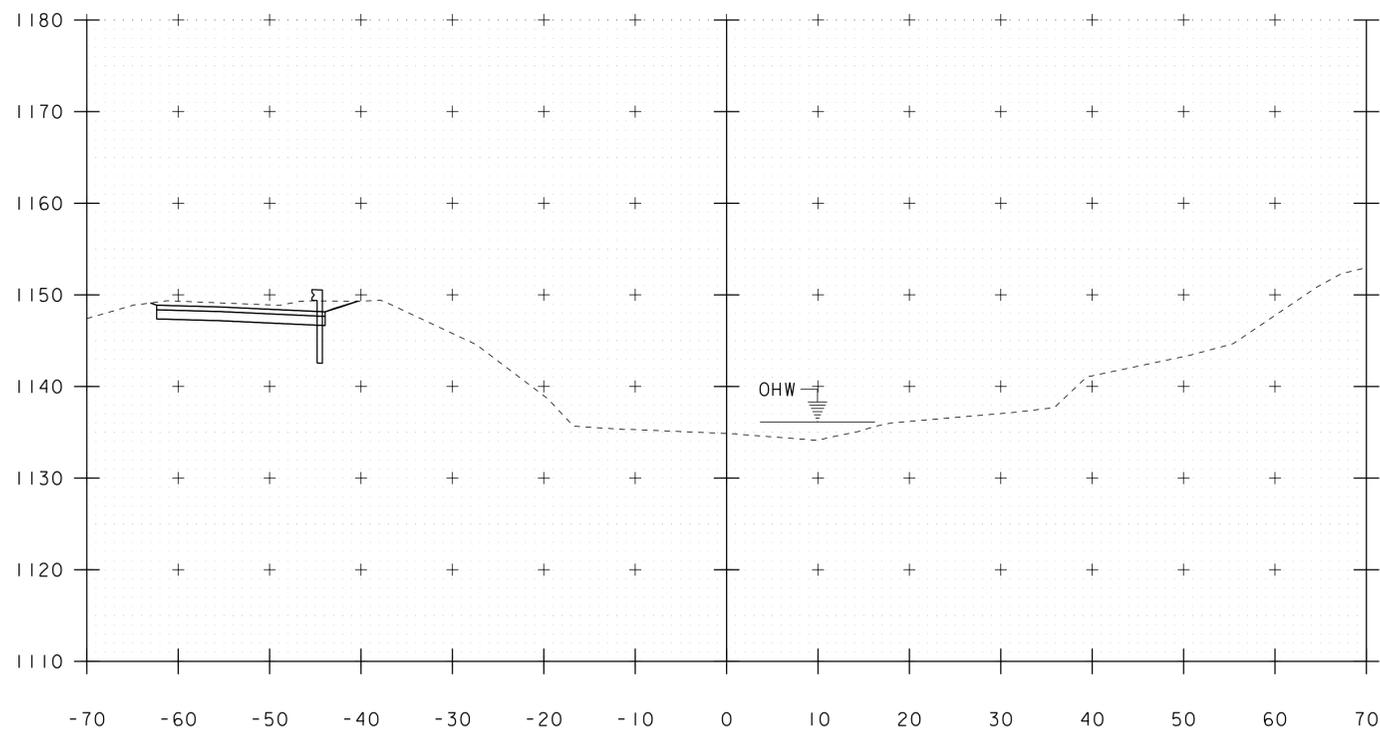
PROJECT NAME: MONTGOMERY	
PROJECT NUMBER: BHO 1448(27)	
FILE NAME: s96j306xs2.dgn	PLOT DATE: 21-NOV-2013
PROJECT LEADER: C. CARLSON	DRAWN BY: R. PELLETT
DESIGNED BY: H. SALLS	CHECKED BY: J. LACROIX
MAINLINE CROSS SECTIONS 3	SHEET 21 OF 30



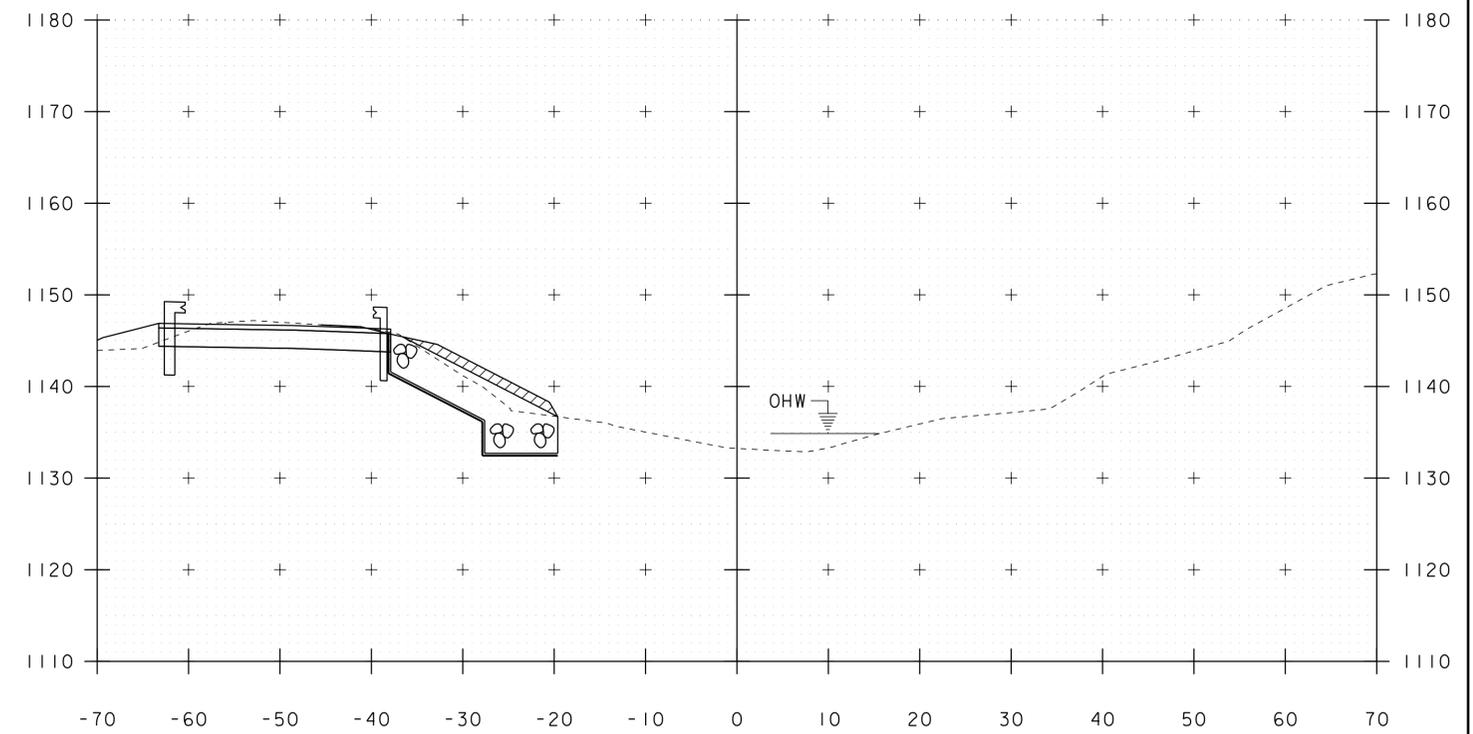
5+50



5+70



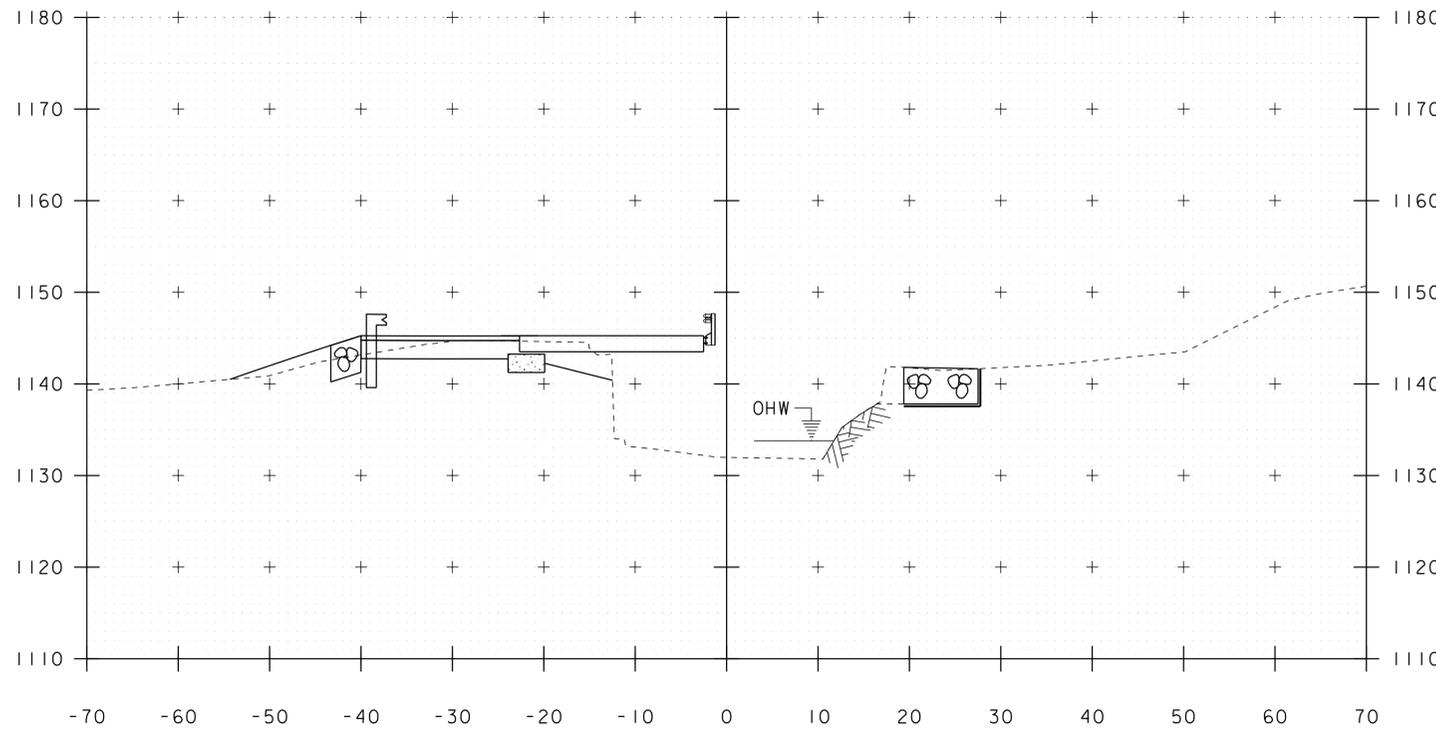
5+40



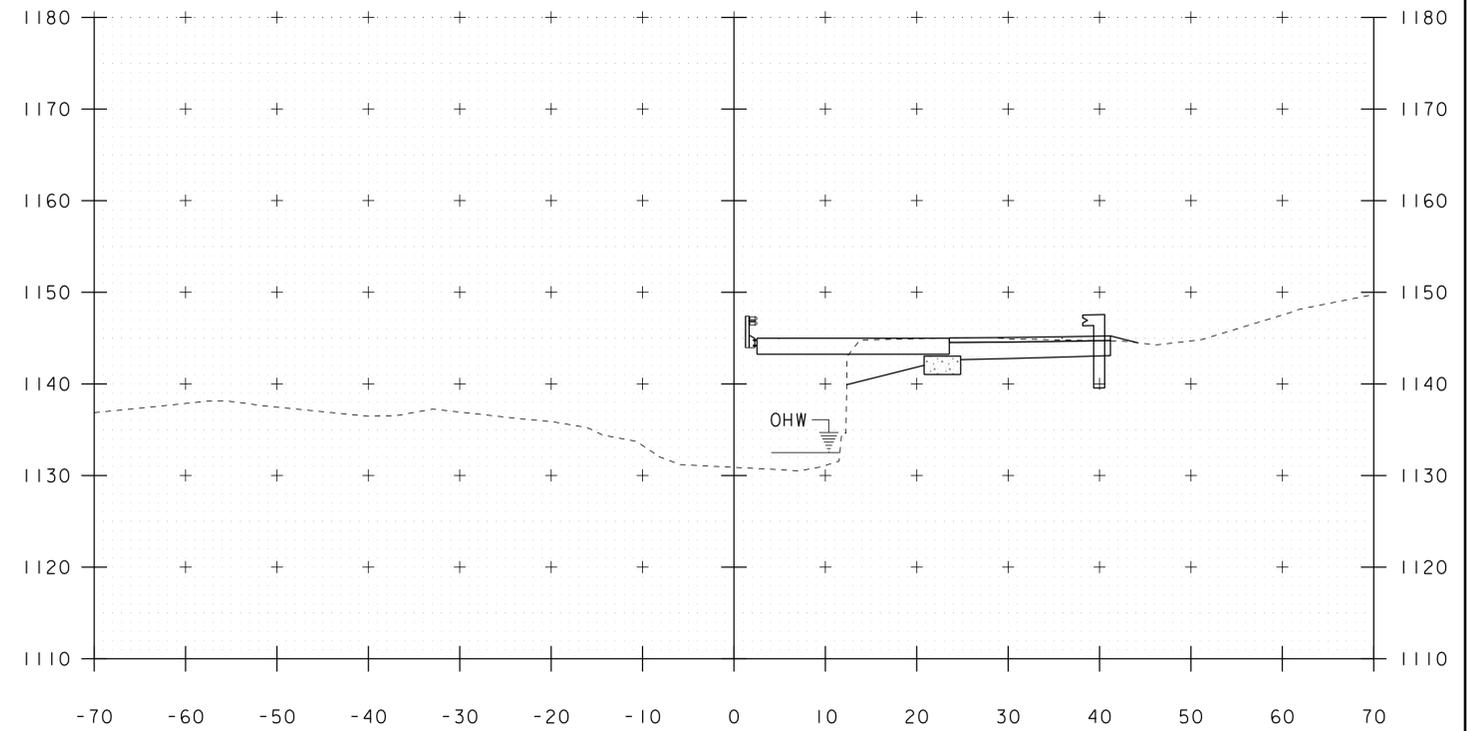
5+60

PROJECT NAME: MONTGOMERY	
PROJECT NUMBER: BHO 1448(27)	
FILE NAME: s96j306xs2.dgn	PLOT DATE: 21-NOV-2013
PROJECT LEADER: C. CARLSON	DRAWN BY: R. PELLETT
DESIGNED BY: H. SALLS	CHECKED BY: J. LACROIX
CHANNEL LINE CROSS SECTIONS I	SHEET 22 OF 30

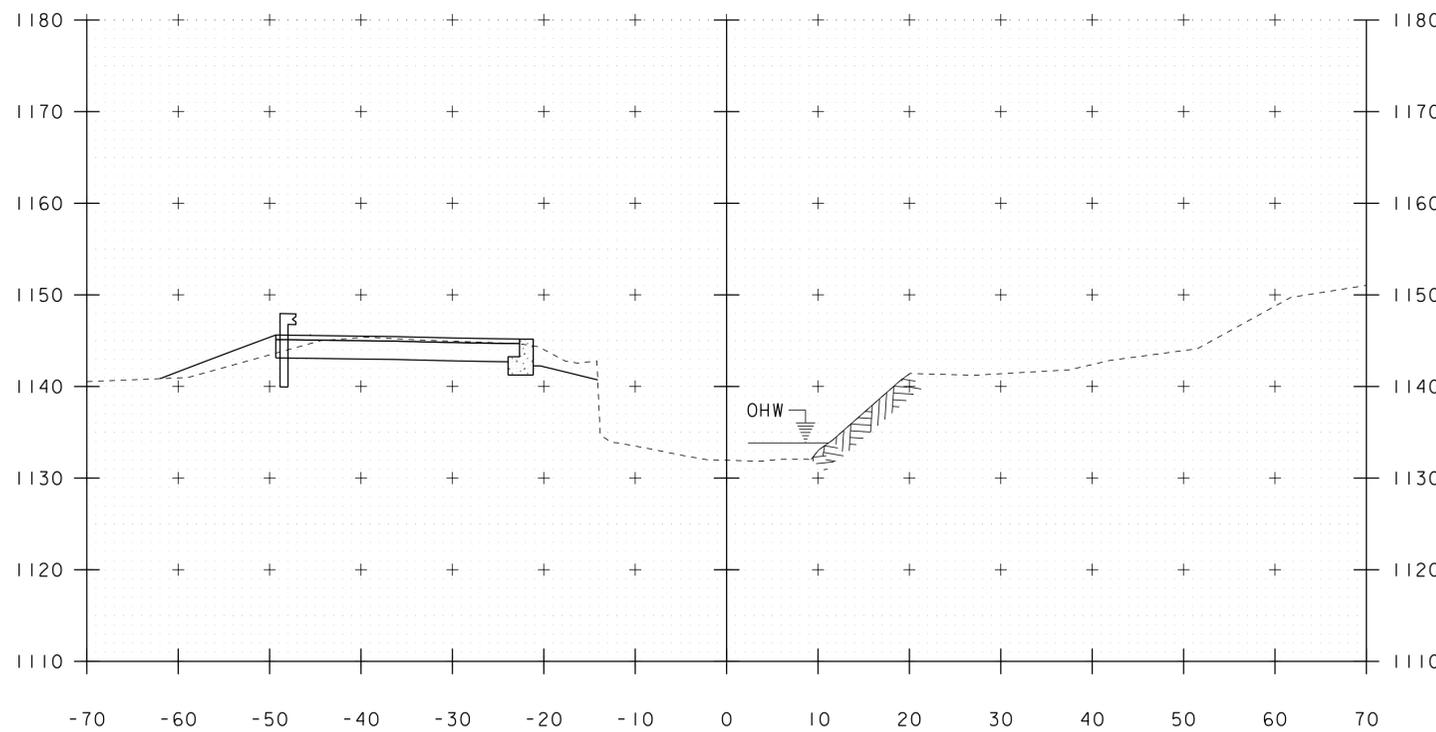
STA. 5+40 TO STA. 5+70



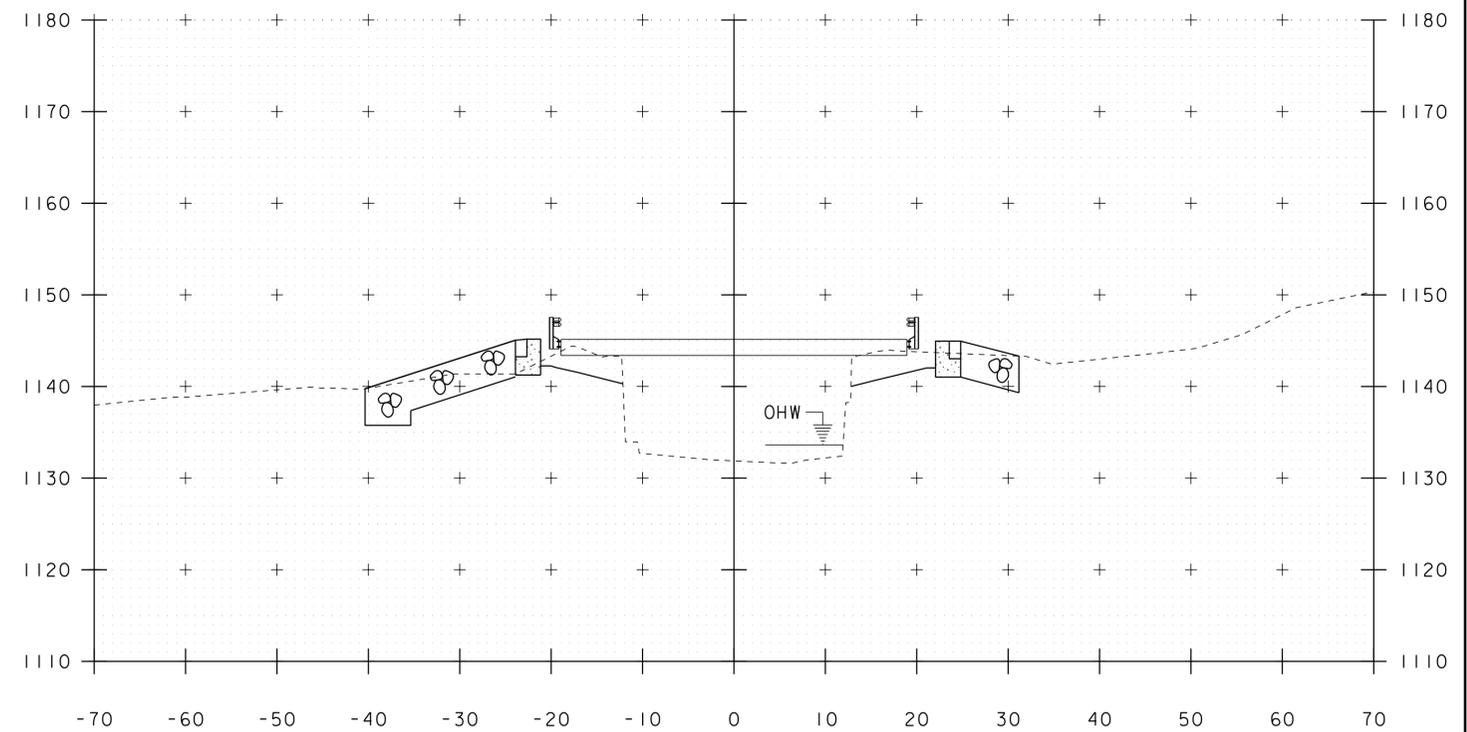
5+90



6+10



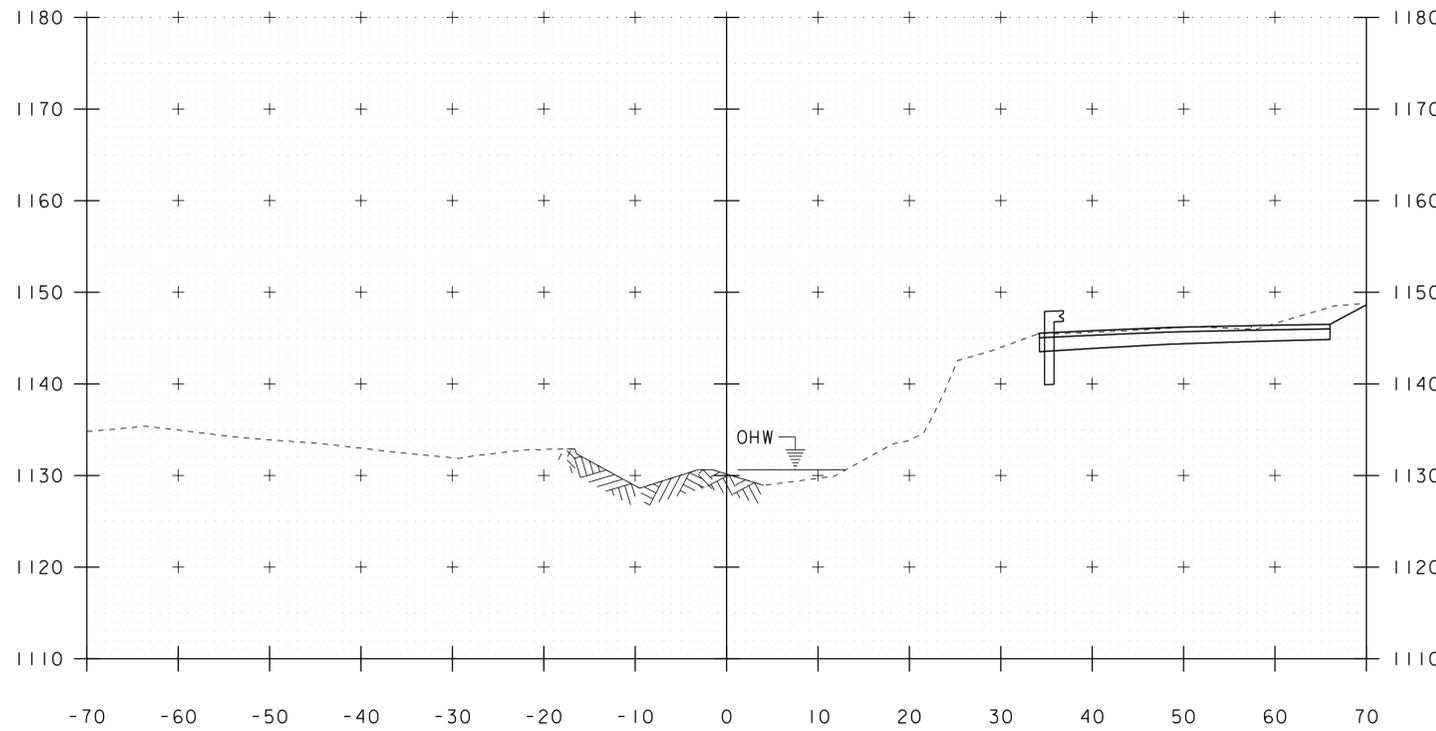
5+80



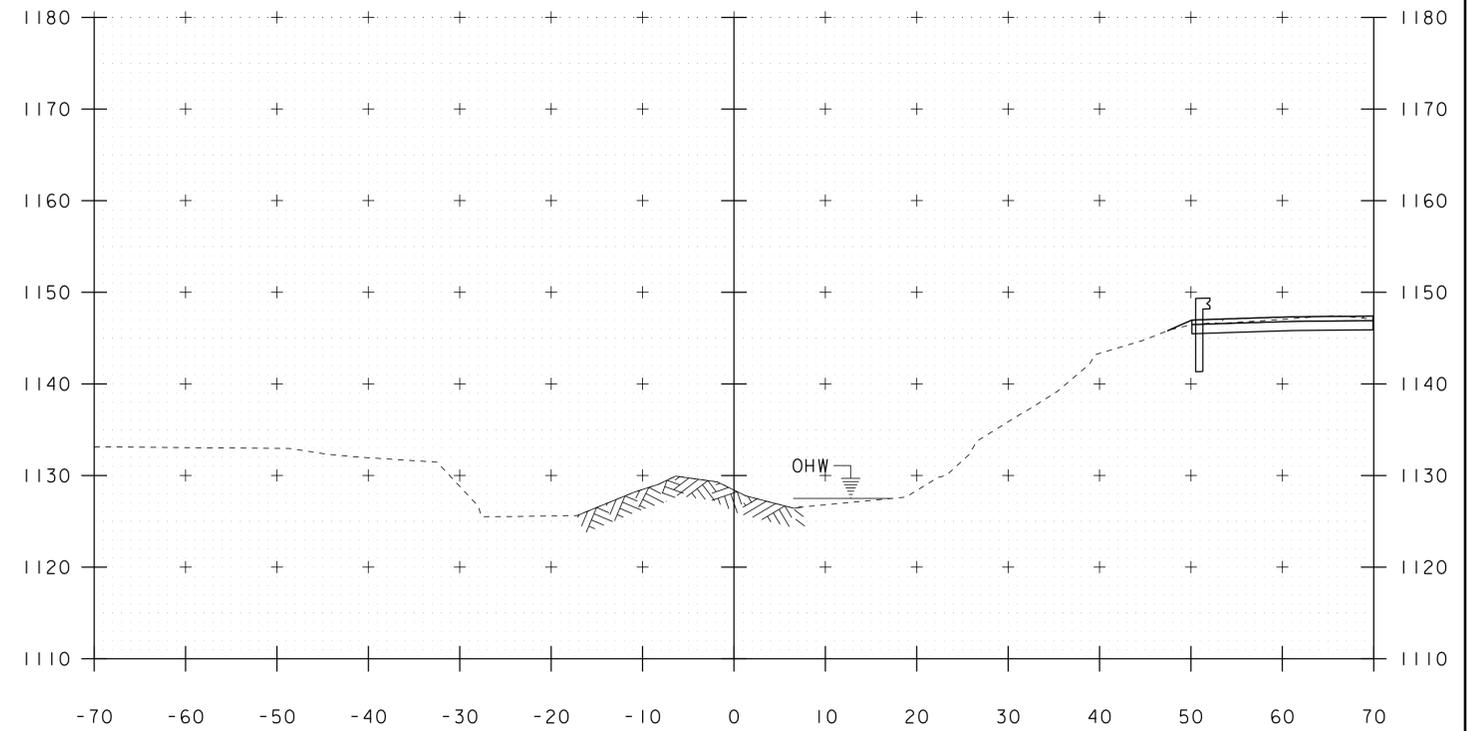
6+00

PROJECT NAME: MONTGOMERY	
PROJECT NUMBER: BHO 1448(27)	
FILE NAME: s96j306xs2.dgn	PLOT DATE: 21-NOV-2013
PROJECT LEADER: C. CARLSON	DRAWN BY: R. PELLETT
DESIGNED BY: H. SALLS	CHECKED BY: J. LACROIX
CHANNEL LINE CROSS SECTIONS 2	SHEET 23 OF 30

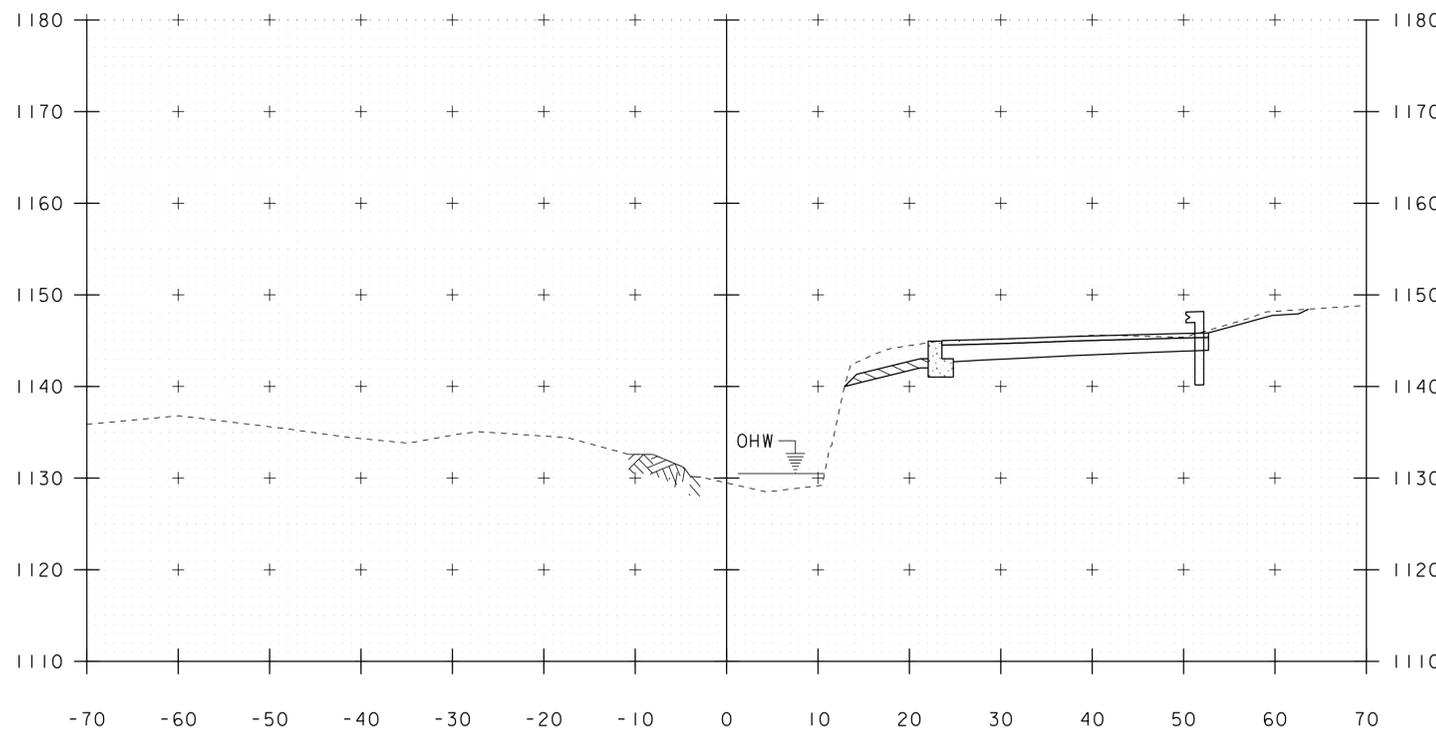
STA. 5+80 TO STA. 6+10



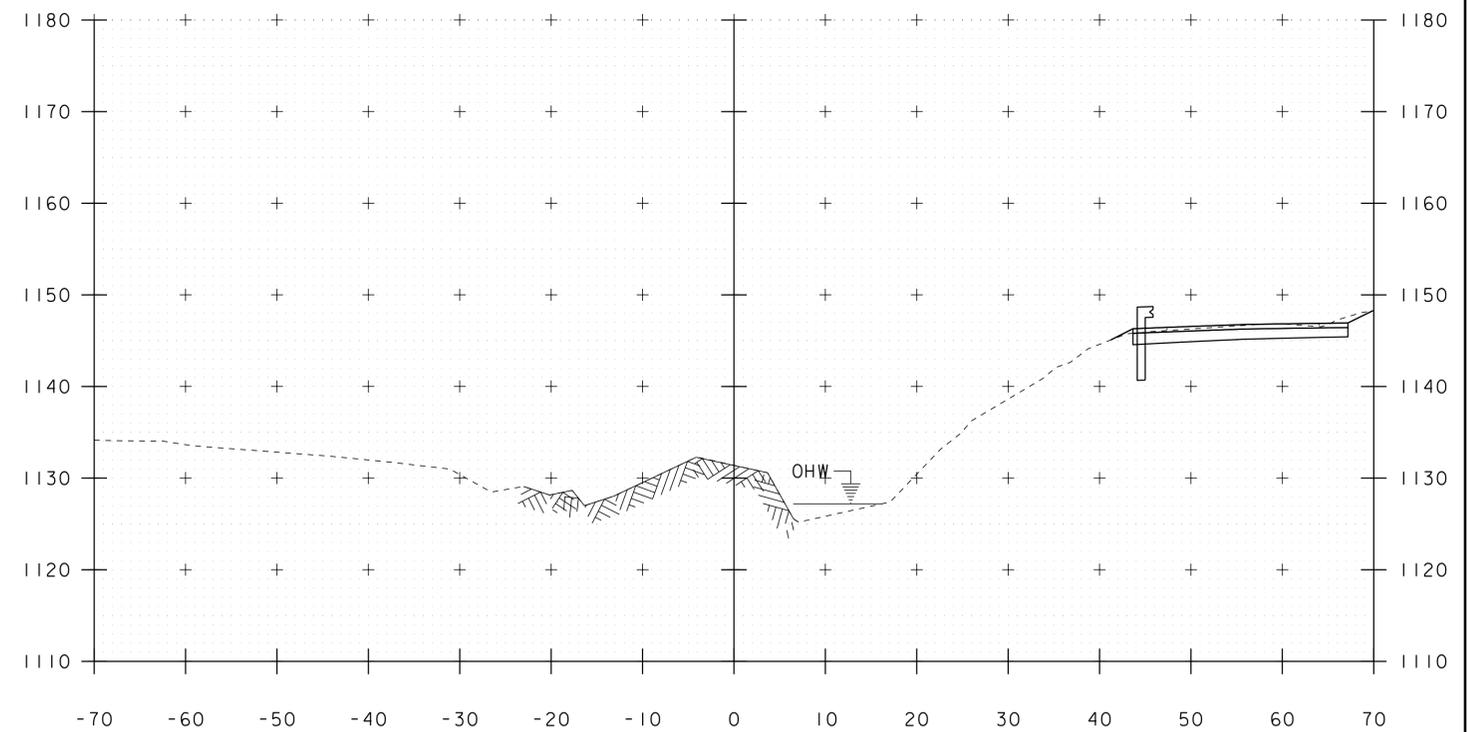
6+30



6+50



6+20



6+40

STA. 6+20 TO STA. 6+50

PROJECT NAME: MONTGOMERY	
PROJECT NUMBER: BHO 1448(27)	
FILE NAME: s96j306xs2.dgn	PLOT DATE: 21-NOV-2013
PROJECT LEADER: C. CARLSON	DRAWN BY: R. PELLETT
DESIGNED BY: H. SALLS	CHECKED BY: J. LACROIX
CHANNEL LINE CROSS SECTIONS 3	SHEET 24 OF 30

## **EPSC PLAN NARRATIVE**

### **1.1 PROJECT DESCRIPTION**

THIS PROJECT IS LOCATED ON BLACK FALLS ROAD EXTENSION (TH 10), APPROXIMATELY 0.3 MILES FROM THE INTERSECTION OF BLACK FALLS ROAD EXTENSION (TH 10) AND BLACK FALLS ROAD (TH 6) OVER THE BLACK FALLS BROOK. IT INVOLVES THE REPLACEMENT OF THE EXISTING SUPERSTRUCTURE WITH MINIMAL APPROACH ROADWAY AND CHANNEL WORK. THE BRIDGE IS BEING REPLACED WITH A 51 FOOT PRECAST VOIDED SLAB BRIDGE. ROAD WILL BE CLOSED TO TRAFFIC. THE TOTAL LENGTH OF PROJECT IS 100 FEET.

NOTE: AREA OF DISTURBANCE INCLUDES LIMITS OF EARTH DISTURBANCE WITHIN THE PROJECT AREA.

TOTAL AREA OF DISTURBANCE AS SHOWN ON THE ATTACHED EPSC PLAN IS APPROXIMATELY 0.15 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 WOODED AREA AND SOME RESIDENTIAL AREAS. BLACK FALLS ROAD EXTENSION (TH 10) IS WITHIN THE PROJECT SITE.

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

BLACK FALLS BROOK IS THE ONLY WATER SOURCE ON THE PROJECT SITE. THE BROOK IS CLASSIFIED AS SHALLOW. THE STREAM BED CONSISTS OF COBBLES, GRAVEL AND LEDGE.

#### **1.2.3 VEGETATION**

THE VEGETATION IN THE PROJECT AREA CONSISTS OF HARDWOOD TREES AND UNDERGROWTH. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY AFFECTED BY REPLACEMENT OF THE BRIDGE. UPON PROJECT COMPLETION, THE CHANNEL WILL BE ARMORED WITH STONE FILL TYPE IV 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:  
STOWE STONY, 25% TO 60% SLOPES, "K FACTOR" = 0.17  
PERU EXTREMELY STONY SANDY LOAM, 3% TO 15% SLOPES, "K FACTOR" = 0.20.

**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 ARCHAEOLOGICAL AREAS: YES, ARCHAEOLOGICAL ON SOUTH WEST AND EAST SIDES OF PROJECT.

PRIME AGRICULTURAL LAND: NO

THREATENED AND ENDANGERED SPECIES: NO

WATER RESOURCE: BLACK FALLS BROOK

WETLANDS: NO

### **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.

#### **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.

SILT FENCE AND TURBIDITY CURTAIN SHALL BE INSTALLED AS PROPOSED ON THE EPSC PLAN.

#### **1.4.5 DIVERT UPLAND RUNOFF**

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

THE PROJECT AREA IS AT THE HIGH POINT. THEREFORE IT IS ANTICIPATED THAT 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.

#### **1.4.7 CONSTRUCT PERMANENT CONTROLS**

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

NO PERMANENT STORMWATER CONTROLS ANTICIPATED FOR THIS PROJECT.

#### **1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION**

ALL AREAS OF DISTURBANCE MUST HAVE TEMPORARY STABILIZATION IN PLACE WITHIN 48 HOURS OF DISTURBANCE 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.

NO EROSION CONTROL MATTING ANTICIPATED FOR THIS PROJECT.

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.

#### **1.4.12 INSPECT YOUR SITE**

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

### **1.5 SEQUENCE AND STAGING**

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

#### **1.5.1 CONSTRUCTION SEQUENCE**

#### **1.5.2 OFF-SITE ACTIVITIES**

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

PROJECT NAME: MONTGOMERY

PROJECT NUMBER: BHO 1448(27)

FILE NAME: s96j306erodet.dgn

PROJECT LEADER: C. CARLSON

DESIGNED BY: H. SALLS

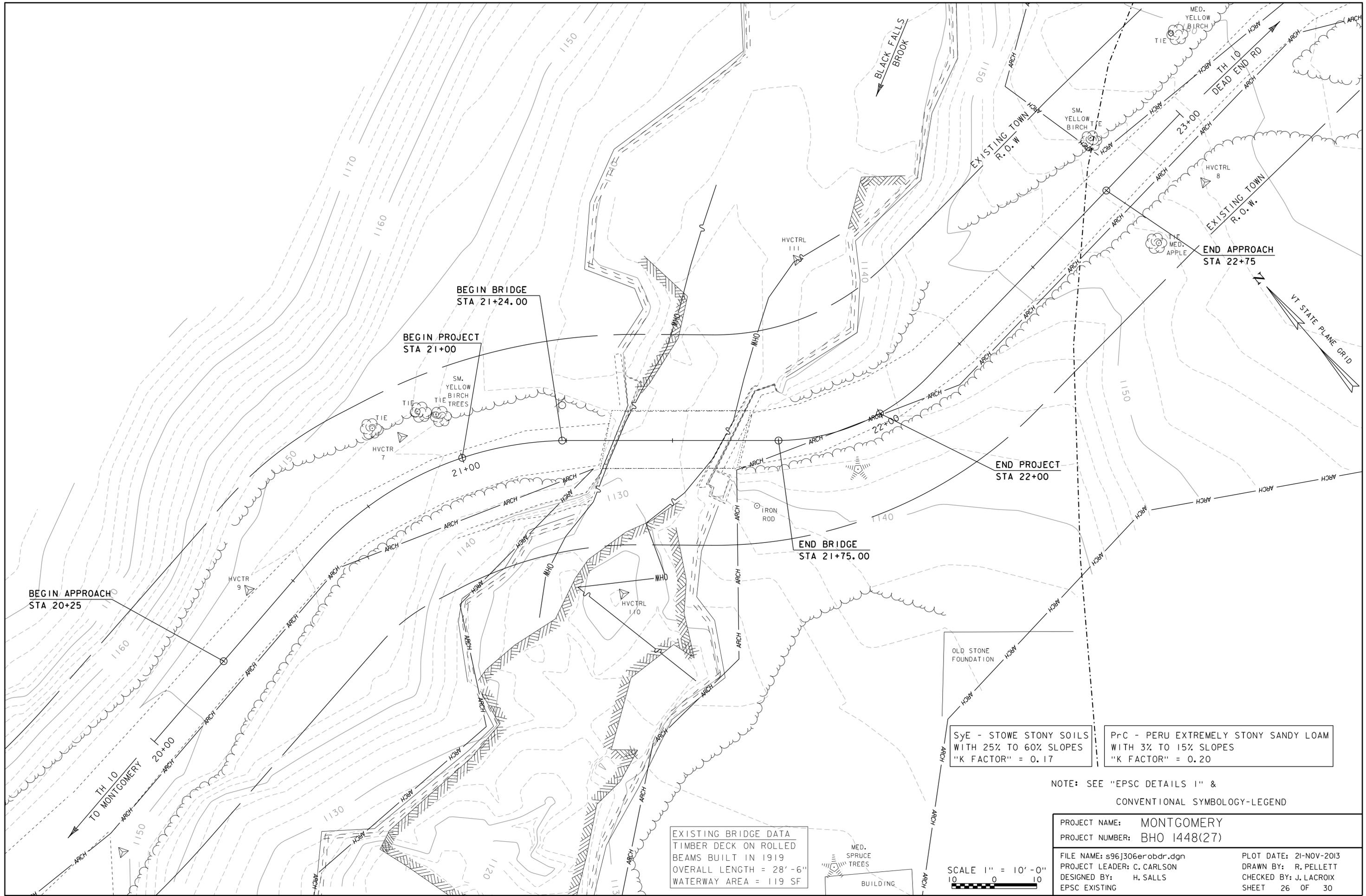
EPSC NARRATIVE

PLOT DATE: 21-NOV-2013

DRAWN BY: R. PELLETT

CHECKED BY: J. LACROIX

SHEET 25 OF 30



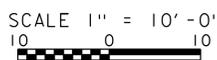
EXISTING BRIDGE DATA  
 TIMBER DECK ON ROLLED  
 BEAMS BUILT IN 1919  
 OVERALL LENGTH = 28'-6"  
 WATERWAY AREA = 119 SF

SyE - STOVE STONY SOILS  
 WITH 25% TO 60% SLOPES  
 "K FACTOR" = 0.17

PrC - PERU EXTREMELY STONY SANDY LOAM  
 WITH 3% TO 15% SLOPES  
 "K FACTOR" = 0.20

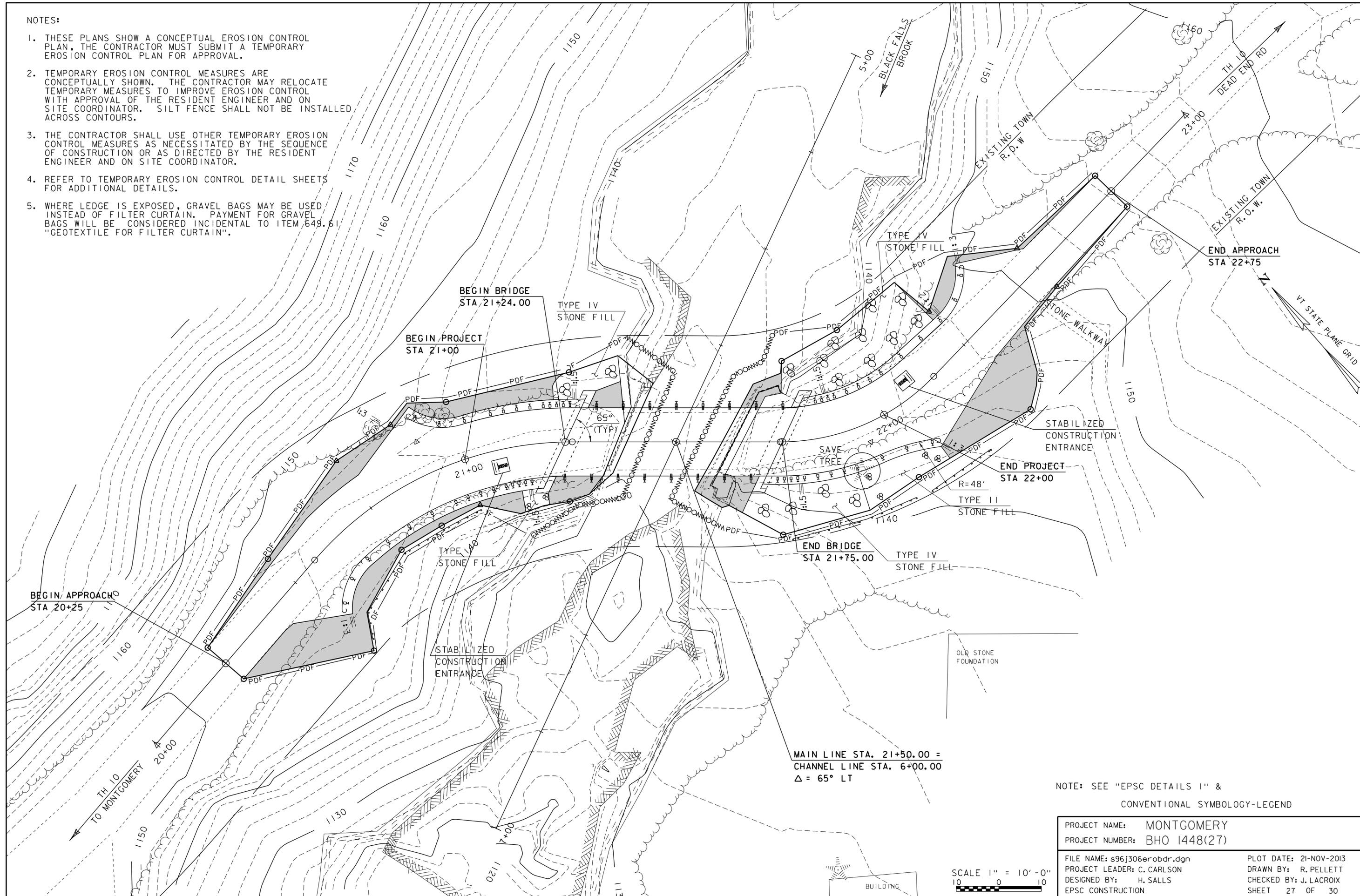
NOTE: SEE "EPSC DETAILS I" &  
 CONVENTIONAL SYMBOLY-LEGEND

PROJECT NAME:	MONTGOMERY	PLOT DATE:	21-NOV-2013
PROJECT NUMBER:	BHO 1448(27)	DRAWN BY:	R. PELLETT
FILE NAME:	s96j306erobdr.dgn	CHECKED BY:	J. LACROIX
PROJECT LEADER:	C. CARLSON	DESIGNED BY:	H. SALLS
EPSC EXISTING			SHEET 26 OF 30



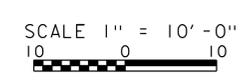
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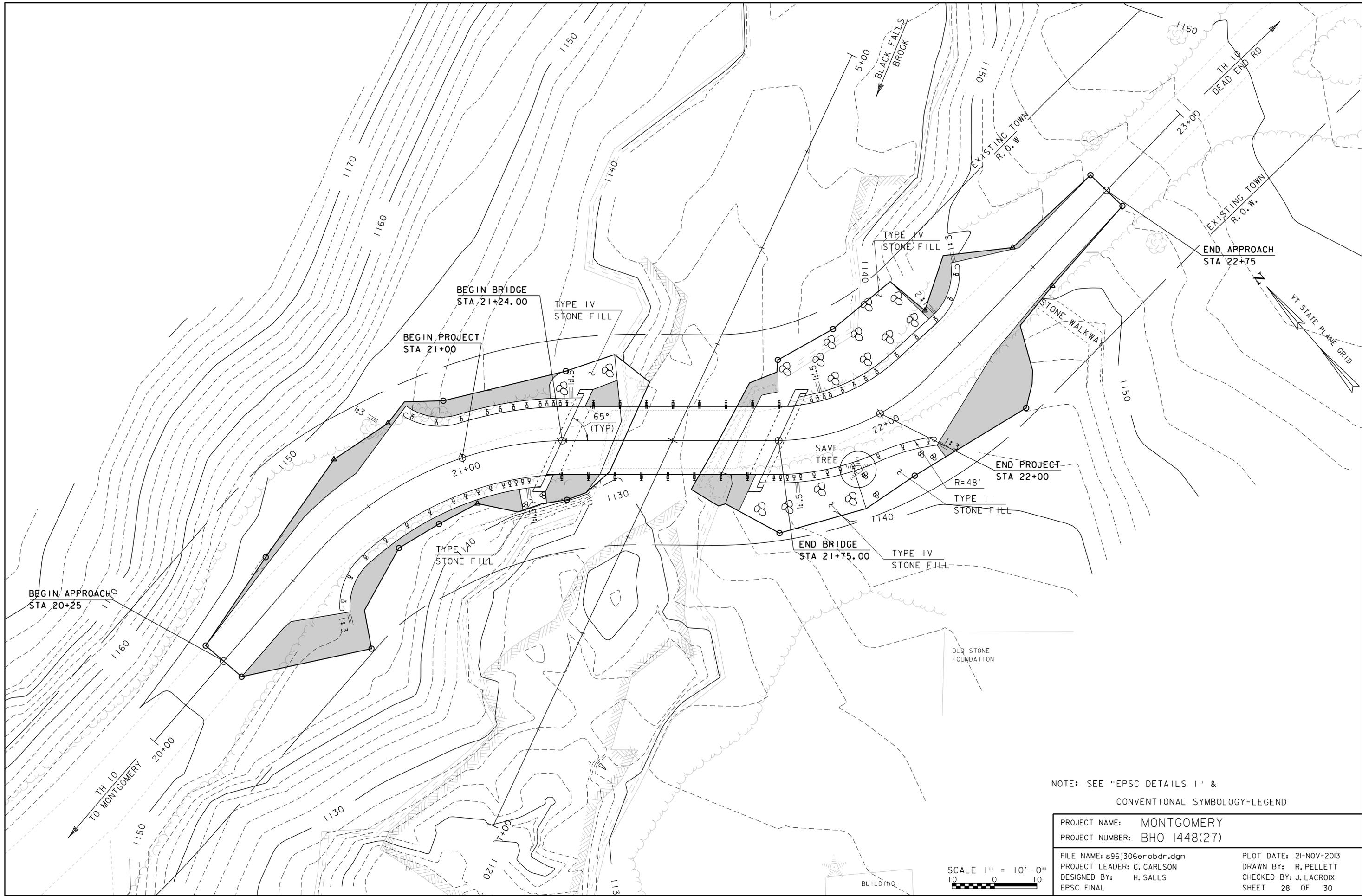
1. THESE PLANS SHOW A CONCEPTUAL EROSION CONTROL PLAN, THE CONTRACTOR MUST SUBMIT A TEMPORARY EROSION CONTROL PLAN FOR APPROVAL.
2. TEMPORARY EROSION CONTROL MEASURES ARE CONCEPTUALLY SHOWN. THE CONTRACTOR MAY RELOCATE TEMPORARY MEASURES TO IMPROVE EROSION CONTROL WITH APPROVAL OF THE RESIDENT ENGINEER AND ON SITE COORDINATOR. SILT FENCE SHALL NOT BE INSTALLED ACROSS CONTOURS.
3. THE CONTRACTOR SHALL USE OTHER TEMPORARY EROSION CONTROL MEASURES AS NECESSITATED BY THE SEQUENCE OF CONSTRUCTION OR AS DIRECTED BY THE RESIDENT ENGINEER AND ON SITE COORDINATOR.
4. REFER TO TEMPORARY EROSION CONTROL DETAIL SHEETS FOR ADDITIONAL DETAILS.
5. WHERE LEDGE IS EXPOSED, GRAVEL BAGS MAY BE USED INSTEAD OF FILTER CURTAIN. PAYMENT FOR GRAVEL BAGS WILL BE CONSIDERED INCIDENTAL TO ITEM 649.61 "GEOTEXTILE FOR FILTER CURTAIN".



NOTE: SEE "EPSC DETAILS I" &  
CONVENTIONAL SYMBOLLOGY-LEGEND

PROJECT NAME:	MONTGOMERY	PLOT DATE:	21-NOV-2013
PROJECT NUMBER:	BHO 1448(27)	DRAWN BY:	R. PELLETT
FILE NAME:	s96j306erobdr.dgn	CHECKED BY:	J. LACROIX
PROJECT LEADER:	C. CARLSON	EPSC CONSTRUCTION	SHEET 27 OF 30
DESIGNED BY:	H. SALLS		



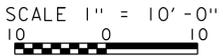


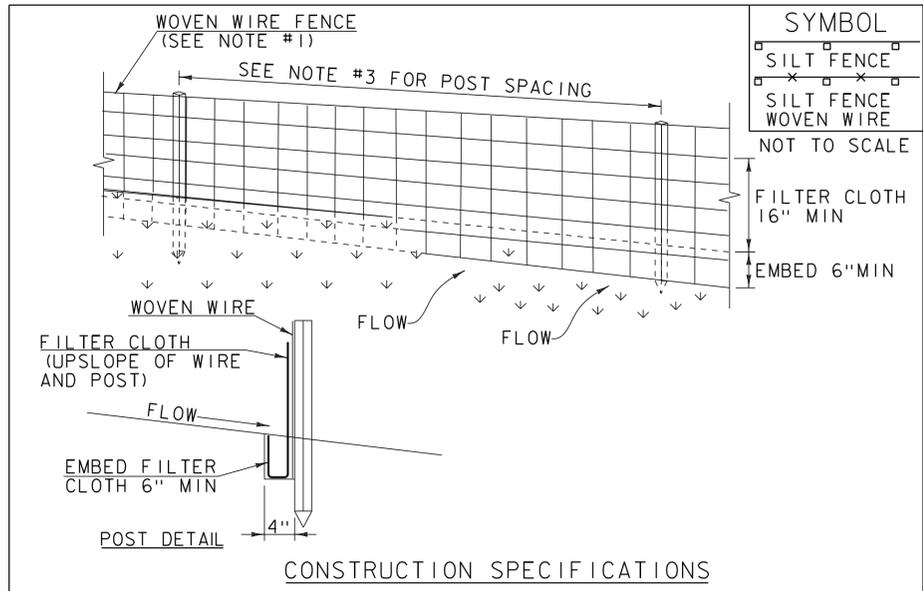
NOTE: SEE "EPSC DETAILS I" &  
CONVENTIONAL SYMBOLY-LEGEND

PROJECT NAME: MONTGOMERY  
PROJECT NUMBER: BHO 1448(27)

FILE NAME: s96j306erobdr.dgn  
PROJECT LEADER: C. CARLSON  
DESIGNED BY: H. SALLS  
EPSC FINAL

PLOT DATE: 21-NOV-2013  
DRAWN BY: R. PELLETT  
CHECKED BY: J. LACROIX  
SHEET 28 OF 30





- 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.

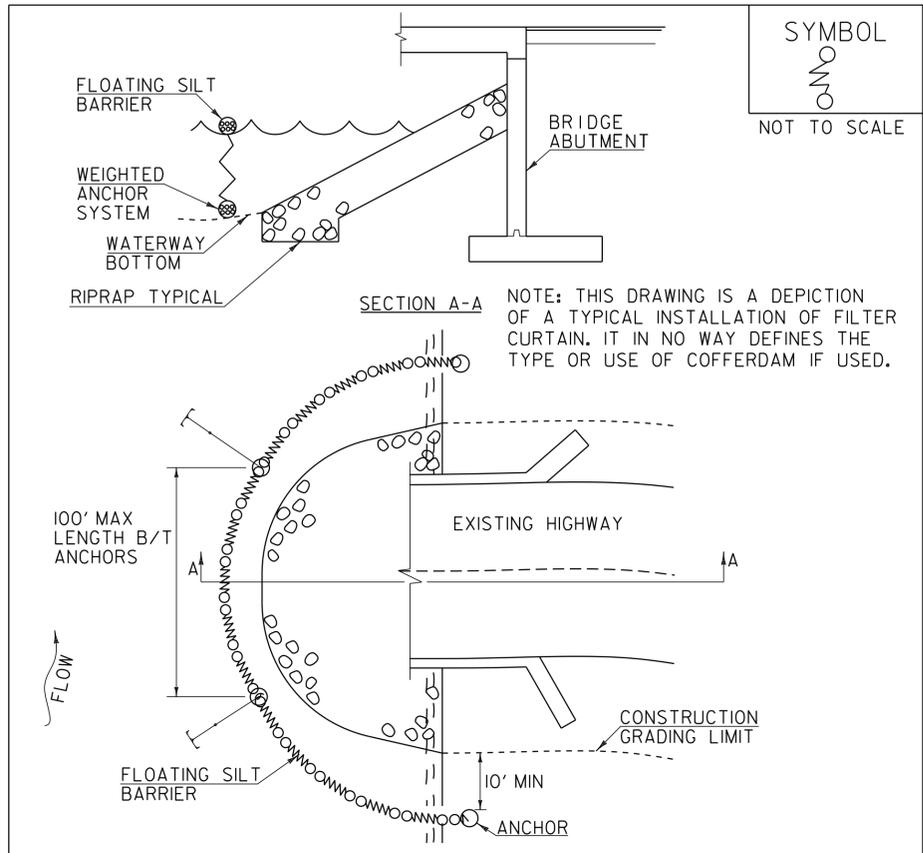
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC  
ORIGINALLY DEVELOPED BY USDA-NRCS  
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

**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	



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

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

**FILTER CURTAIN**

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 FOR GEOTEXTILE FOR FILTER CURTAIN (PAY ITEM 649.61).

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

**EPSC LAYOUT PLAN SYMBOLOGY LEGEND**

- PROJECT BOUNDARY FENCE**
- PDF — PDF PROJECT DEMARCATION FENCE
  - BF — BF BARRIER FENCE

- EPSC MEASURES**
- ONNOONNOONNO FILTER CURTAIN
  - X — X — X SILT FENCE
  - X — X — X SILT FENCE WOVEN WIRE
  - — — — — CHECK DAM
  - ▭ DISTURBED AREAS REQUIRING RE-VEGETATION
  - ▨ EROSION MATTING

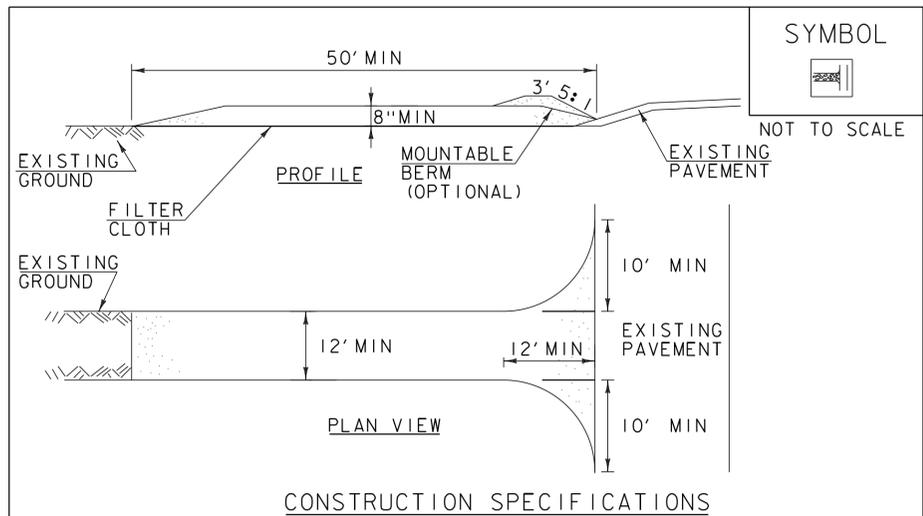
- ENVIRONMENTAL RESOURCES**
- WETLAND BOUNDARY
  - RIPARIAN BUFFER ZONE
  - WETLAND BUFFER ZONE
  - SOIL TYPE BOUNDARY
  - T&E THREATENED & ENDANGERED SPECIES
  - HAZ HAZARDOUS WASTE AREA
  - AG AGRICULTURAL LAND
  - HABITAT FISH & WILDLIFE HABITAT
  - FLOOD PLAIN FLOOD PLAIN
  - OHW ORDINARY HIGH WATER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

- ARCHEOLOGICAL & HISTORIC**
- ARCH ARCHEOLOGICAL BOUNDARY
  - HISTORIC DIST HISTORIC DISTRICT BOUNDARY
  - HISTORIC HISTORIC AREA
  - (H) HISTORIC STRUCTURE

- UTILITY SYMBOLOGY**
- AER E&T AREAL ELECTRIC & TELEPHONE
  - E AREAL ELECTRIC
  - UE UNDERGROUND ELECTRIC
  - UT UNDERGROUND TELEPHONE
  - UC UNDER GROUND TV
  - G GAS LINE
  - W WATER LINE

- CONSTRUCTION FEATURES**
- — △ — ○ TOE OF SLOPE CUT OR FILL
  - ⊗ ⊗ ⊗ ⊗ STONE FILL, TYPE III
  - ⊗ ⊗ ⊗ ⊗ STONE FILL, TYPE II
  - ⊗ ⊗ ⊗ ⊗ STONE FILL, TYPE I

PROJECT NAME: MONTGOMERY  
PROJECT NUMBER: BHO 1448(27)  
FILE NAME: s96j306erodet.dgn PLOT DATE: 21-NOV-2013  
PROJECT LEADER: C. CARLSON DRAWN BY: R. PELLETT  
DESIGNED BY: H. SALLS CHECKED BY: J. LACROIX  
EPSC DETAILS I SHEET 29 OF 30



**CONSTRUCTION SPECIFICATIONS**

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

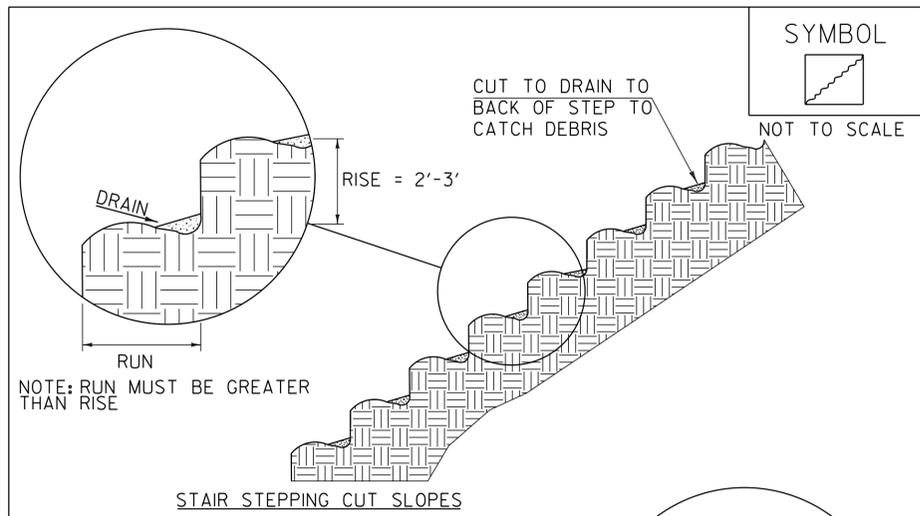
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ORIGINALLY DEVELOPED BY USDA-NRCS  
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

**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



**STAIR STEPPING CUT SLOPES**

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

**GROOVING SLOPES**

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

**SURFACE ROUGHENING**

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

THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE  
CONTRACT

REVISIONS	
APRIL 1, 2008	WHF
JANUARY 13, 2009	WHF

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**

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

ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MANUAL FOR  
ROADWAYS AND TRANSPORTATION FACILITIES

**TURF ESTABLISHMENT**

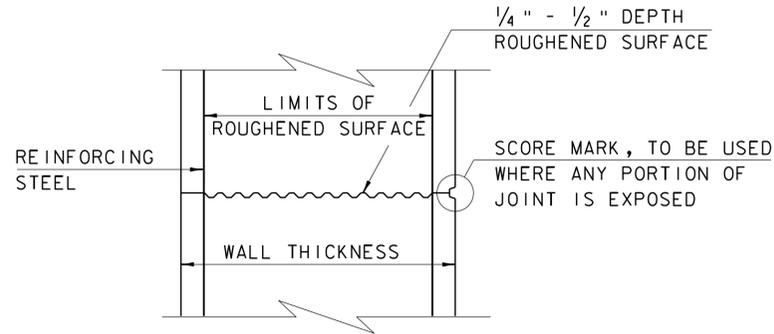
REVISIONS	
JUNE 23, 2009	WHF
JANUARY 15, 2010	WHF
FEBRUARY 16, 2011	WHF

PROJECT NAME: MONTGOMERY  
PROJECT NUMBER: BHO 1448(27)

FILE NAME: s96j306erodet.dgn PLOT DATE: 21-NOV-2013  
PROJECT LEADER: C. CARLSON DRAWN BY: R. PELLETT  
DESIGNED BY: H. SALLS CHECKED BY: J. LACROIX  
EPSC DETAILS 2 SHEET 30 OF 30

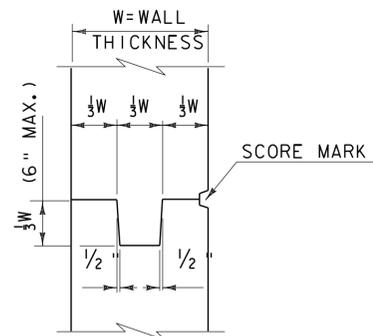
**CONCRETE GENERAL NOTES**

- ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" x 1"

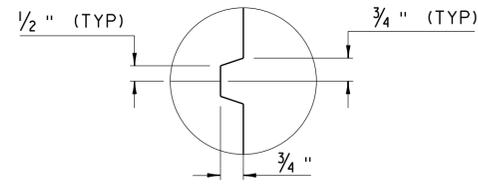


**TYPICAL HORIZONTAL CONSTRUCTION JOINT**  
(NOT TO SCALE)

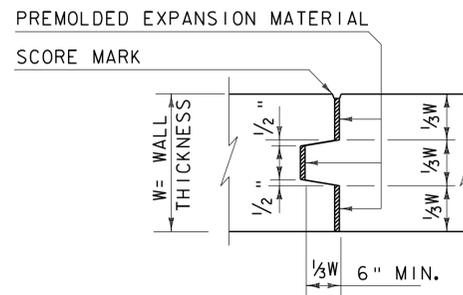
- THE SURFACE OF THE CONCRETE CONSTRUCTION JOINTS SHALL BE CLEANED AND FREE OF LAITANCE.
- IMMEDIATELY BEFORE NEW CONCRETE IS PLACED, ALL CONSTRUCTION JOINTS SHALL BE WETTED AND STANDING WATER REMOVED.



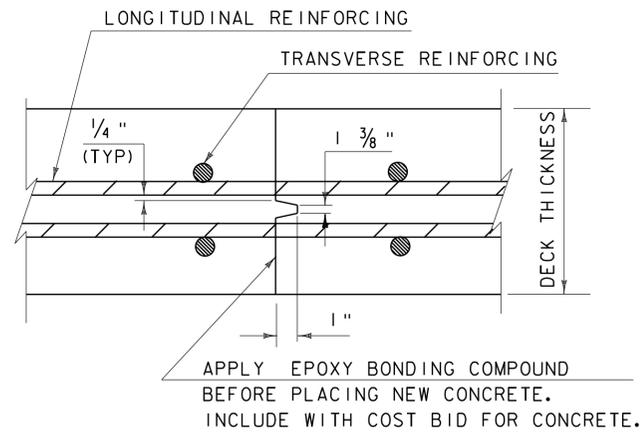
**TYPICAL CONCRETE CONSTRUCTION JOINT**  
(NOT TO SCALE)



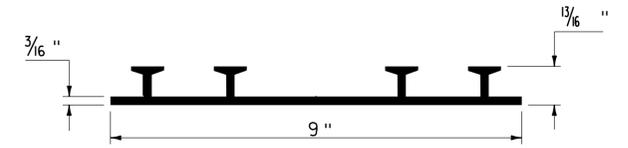
**SCORE MARK DETAIL**  
(NOT TO SCALE)



**TYPICAL CONCRETE EXPANSION JOINT**  
(NOT TO SCALE)



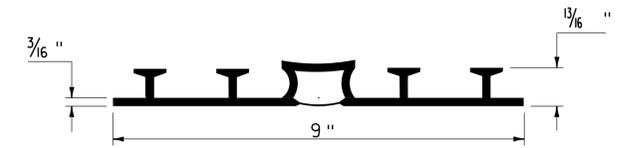
**TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINT DETAILS**  
(NOT TO SCALE)



**P.V.C. WATERSTOP FOR CONSTRUCTION JOINTS**  
(NOT TO SCALE)

PAYMENT FOR THE P.V.C. WATERSTOP SHALL BE INCIDENTAL TO THE UNIT BID PRICE FOR THE ADJACENT CONCRETE.

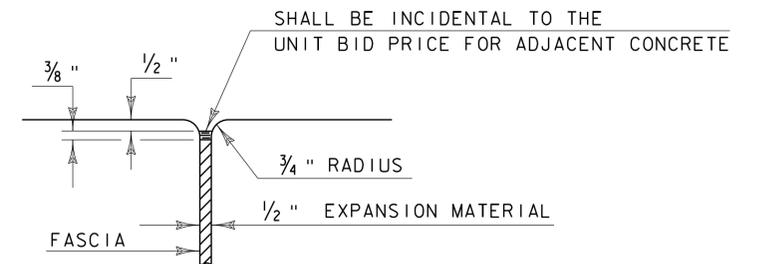
OTHER CONFIGURATIONS OF WATERSTOP MAY BE USED UPON APPROVAL OF THE ENGINEER.



**P.V.C. WATERSTOP FOR EXPANSION JOINTS**  
(NOT TO SCALE)

PAYMENT FOR THE P.V.C. WATERSTOP SHALL BE INCIDENTAL TO THE UNIT BID PRICE FOR THE ADJACENT CONCRETE.

OTHER CONFIGURATIONS OF WATERSTOP MAY BE USED UPON APPROVAL OF THE ENGINEER.



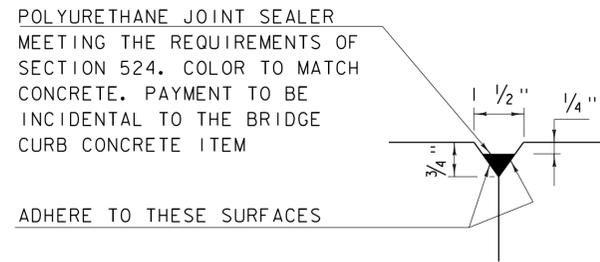
**JOINT BETWEEN FASCIA AND WINGWALL**  
(NOT TO SCALE)

REVISIONS	
MAY 7, 2010	APPROVED FOR USE BY VAOT STRUCTURES SECTION

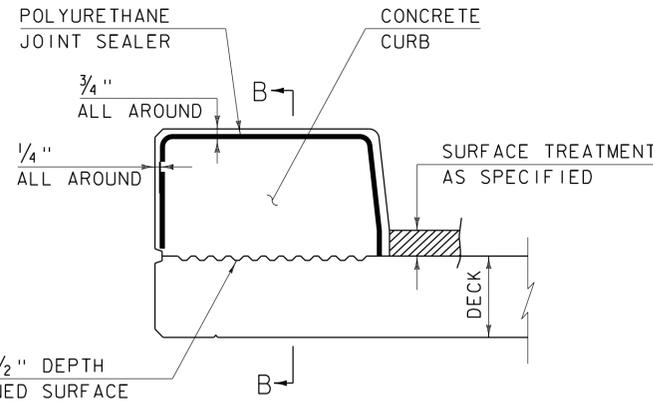
**CONCRETE  
DETAILS AND NOTES**



**STRUCTURES  
DETAIL  
SD-5 01.00**

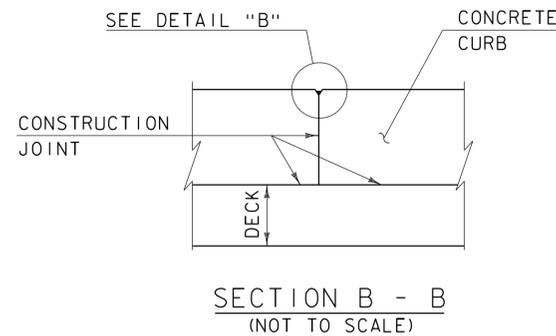


DETAIL "B"  
(NOT TO SCALE)

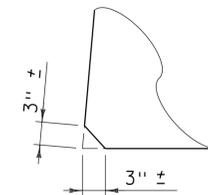


CONCRETE CURB JOINT SECTION  
(NOT TO SCALE)

1. SEE TYPICAL HORIZONTAL CONSTRUCTION JOINT DETAIL FOR ADDITIONAL INFORMATION



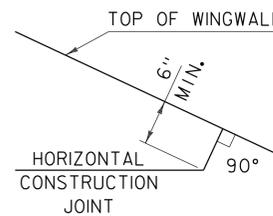
SECTION B - B  
(NOT TO SCALE)



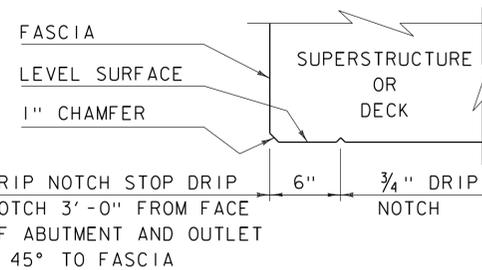
ACUTE ANGLE  
CLIP DETAIL  
(NOT TO SCALE)

CONCRETE CURB JOINT NOTES

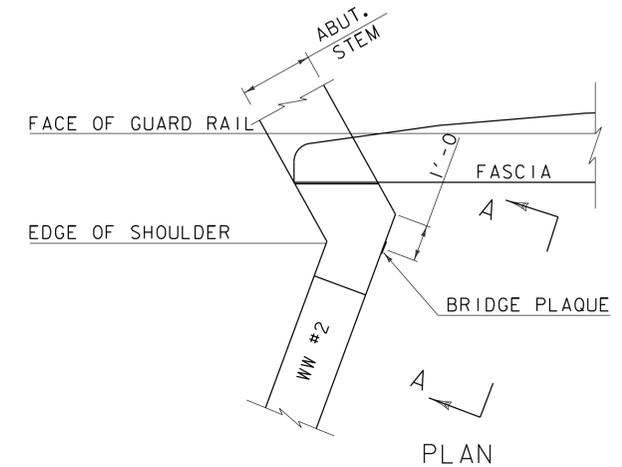
1. CONCRETE CURBS MAY BE PLACED IN ONE CONTINUOUS OPERATION IF AN APPROVED SHRINKAGE REDUCING ADMIXTURE LISTED IN THE SPECIAL PROVISIONS IS USED WITH THE CONCRETE MIX DESIGN. PAYMENT FOR THE SHRINKAGE REDUCING ADMIXTURE WILL BE INCIDENTAL TO THE BRIDGE CURB CONCRETE ITEM.
2. IF THE CONTRACTOR CHOOSES 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.



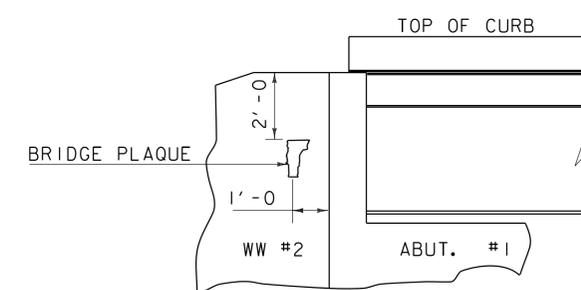
HORIZONTAL WINGWALL  
CONSTRUCTION JOINT  
(NOT TO SCALE)



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