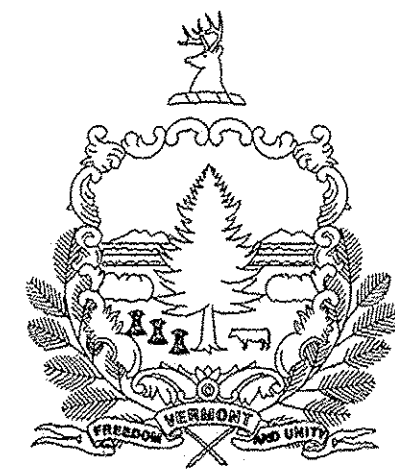
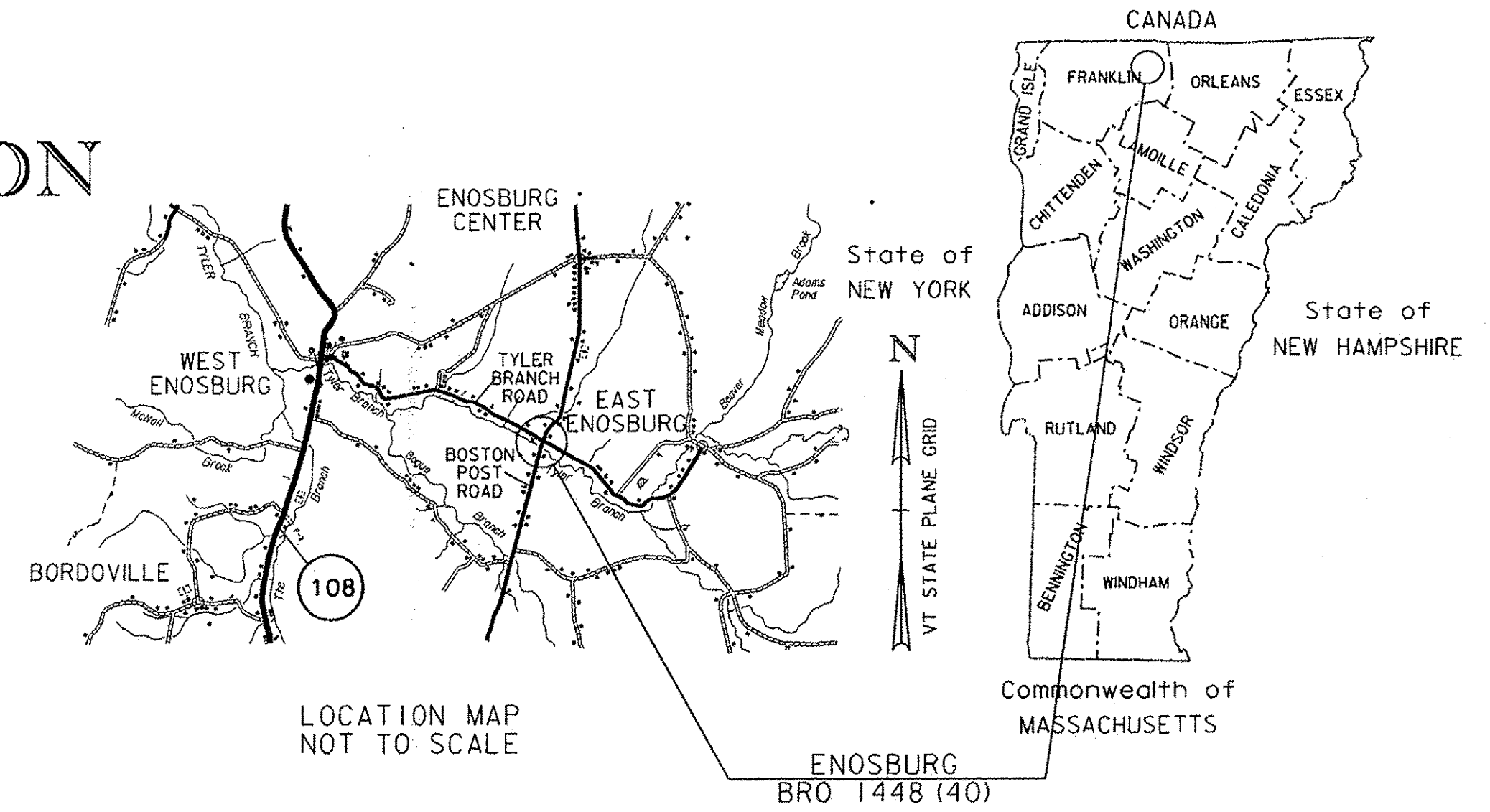


STATE OF VERMONT  
AGENCY OF TRANSPORTATION



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



**RECORD PLANS**

CONTRACTOR: A.L. ST. ONGE CONTRACTOR, INC. - MONTGOMERY, VT

RESIDENT ENGINEER: SCOTT WHEATLEY

CONSTRUCTION BEGAN: JUNE 12, 2014

CONSTRUCTION COMPLETE: SEPTEMBER 24, 2014

RECORD PLANS BY: SCOTT WHEATLEY & JENNA HYDE

I HEREBY CERTIFY THAT ALL THE CONSTRUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.

BY Scott Wheatley RESIDENT ENGINEER

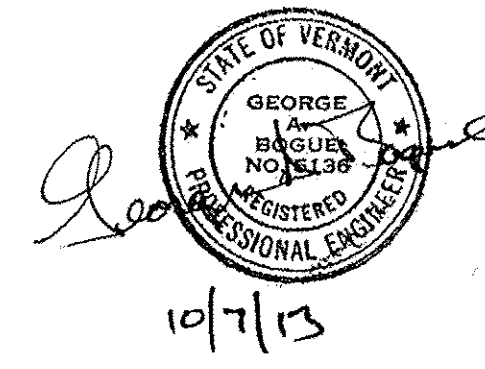
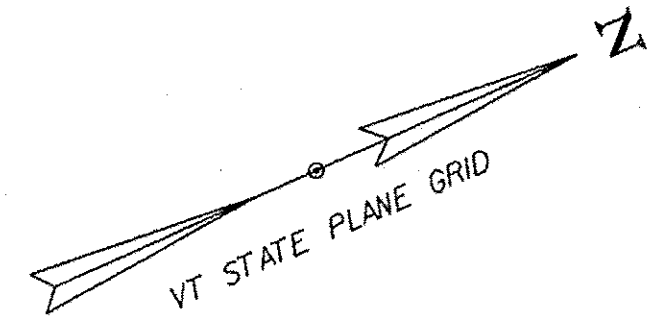
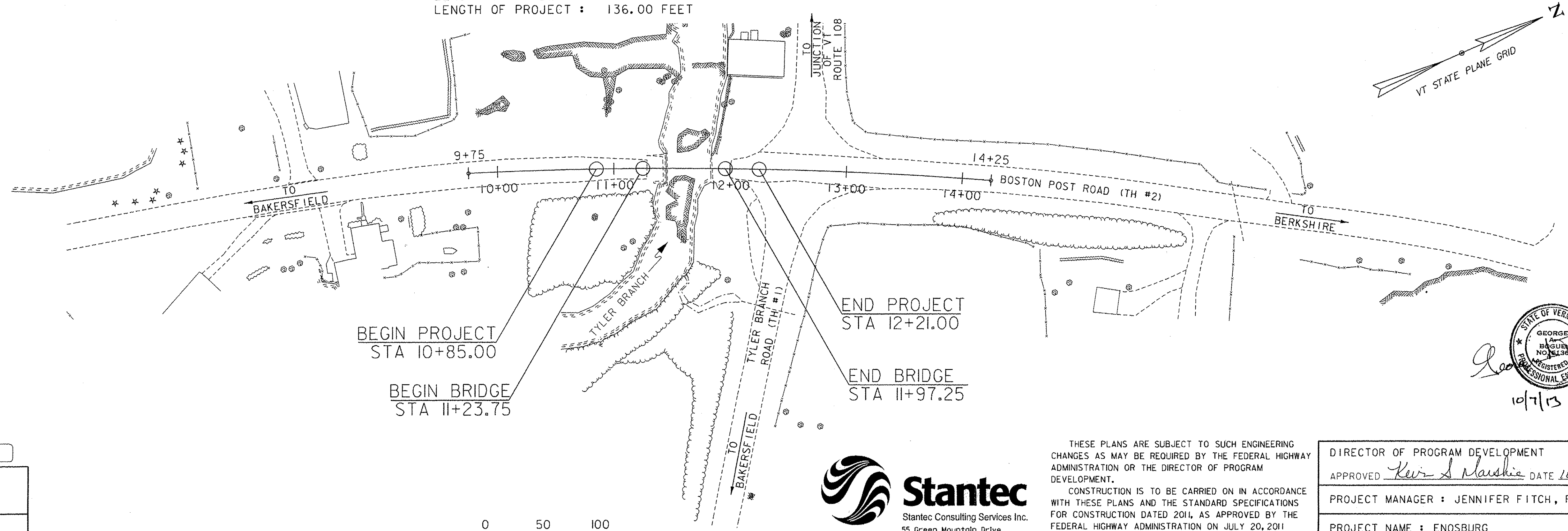
DATE 1-6-2016

NOTE: Any further information concerning final quantities, amounts or other details relative to this project may be found at Central Files in the electronic archives.

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 <u>Kevin S. Marquis</u> DATE <u>10/8/13</u>
PROJECT MANAGER :	JENNIFER FITCH, PE
PROJECT NAME :	ENOSBURG
PROJECT NUMBER :	BRO 1448 (40)
SHEET 1 OF 46 SHEETS	

# PRELIMINARY INFORMATION SHEET (BRIDGE)

**LRFD**

**INDEX OF SHEETS**

**PLAN SHEETS**

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2	PRELIMINARY INFORMATION SHEET
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5	GENERAL NOTES
6-7	BRIDGE AND ROADWAY QUANTITY SHEETS - QS 1-2
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
15	TRAFFIC SIGN SUMMARY SHEET - TSS 1
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17-19	BORING LOG SHEETS
20	PLAN AND ELEVATION SHEET
21	FRAMING PLAN & TYPICAL SECTION
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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	04-23-2012
S-3644A	BRIDGE RAILING, GALVANIZED 3 RAIL BOX BEAM	04-23-2012
S-3648	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

**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 FT
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ: ---
5. PRESTRESSING STRAND (0.60 INCH DIAMETER - LOW RELAX)	f <sub>y</sub> : 270 KSI
6. PRESTRESSED CONCRETE STRENGTH	f' <sub>c</sub> : 8.0 KSI
7. PRESTRESSED CONCRETE RELEASE STRENGTH	f' <sub>cr</sub> : 6.0 KSI
8. CONCRETE, HIGH PERFORMANCE CLASS AA	f' <sub>c</sub> : ---
9. CONCRETE, HIGH PERFORMANCE CLASS A	f' <sub>c</sub> : ---
10. CONCRETE, HIGH PERFORMANCE CLASS B	f' <sub>c</sub> : ---
11. CONCRETE, CLASS C	f' <sub>c</sub> : ---
12. REINFORCING STEEL	f <sub>y</sub> : ---
13. STRUCTURAL STEEL AASHTO M270	f <sub>y</sub> : ---
14. SOIL UNIT WEIGHT	γ: 0.140 KCF
15. NOMINAL BEARING RESISTANCE OF SOIL	q <sub>n</sub> : 4.0 KSF
16. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	φ: ---
17. NOMINAL BEARING RESISTANCE OF ROCK	q <sub>n</sub> : ---
18. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	φ: ---
19. NOMINAL AXIAL PILE RESISTANCE	q <sub>p</sub> : ---
20. PILE YIELD STRENGTH ASTM A572	f <sub>y</sub> : ---
21. PILE SIZE	*
22. EST. PILE LENGTH	L <sub>p</sub> : ---
23. PILE RESISTANCE FACTOR	φ: ---
24. LATERAL PILE DEFLECTION	Δ: ---
25. BASIC WIND SPEED	V <sub>3s</sub> : ---
26. MINIMUM GROUND SNOW LOAD	p <sub>g</sub> : ---
27. SEISMIC DATA	PGA: --- S: ---

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

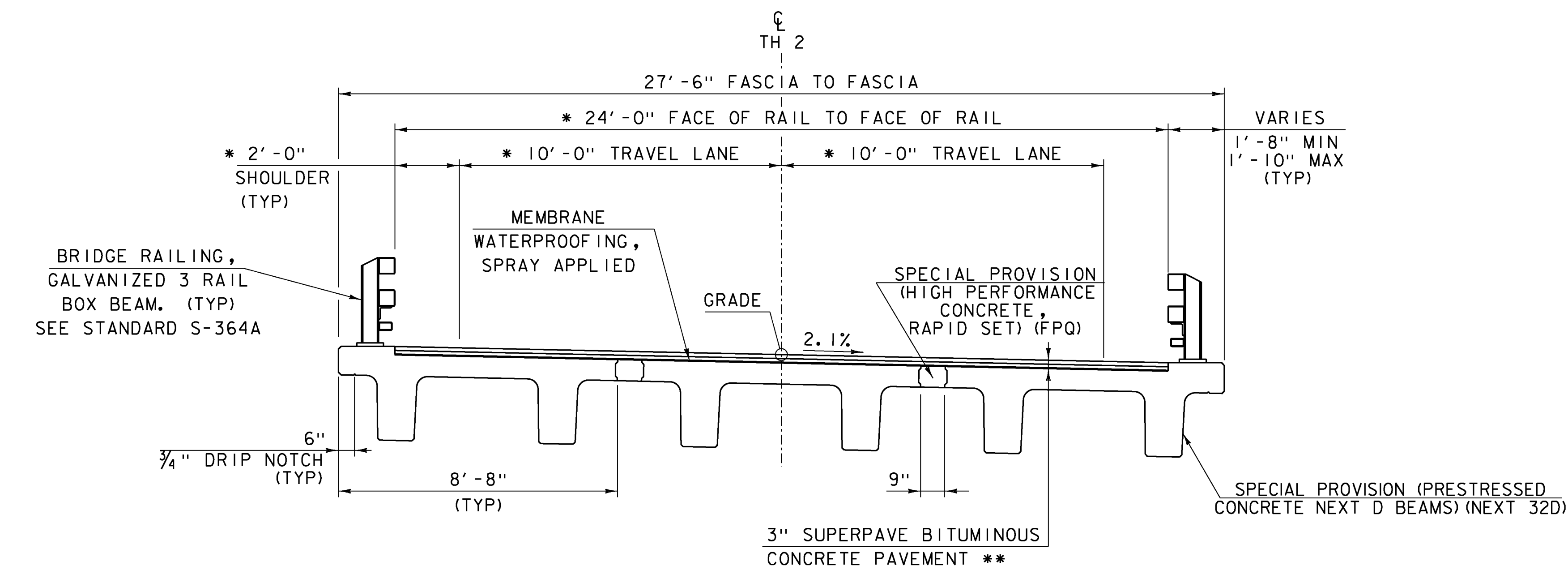
FILE NAME: z12j168\_pi.xls PLOT DATE: 10/17/2013  
 PROJECT LEADER: G. BOGUE DRAWN BY: L. BUXTON  
 DESIGNED BY: G. BOGUE CHECKED BY: T. KNIGHT  
 PRELIMINARY INFORMATION SHEET 1 SHEET 2 OF 46

**TRAFFIC DATA**

YEAR	ADT	DHV	% D	% T	ADTT	
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

**AS BUILT "REBAR" DETAIL**

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

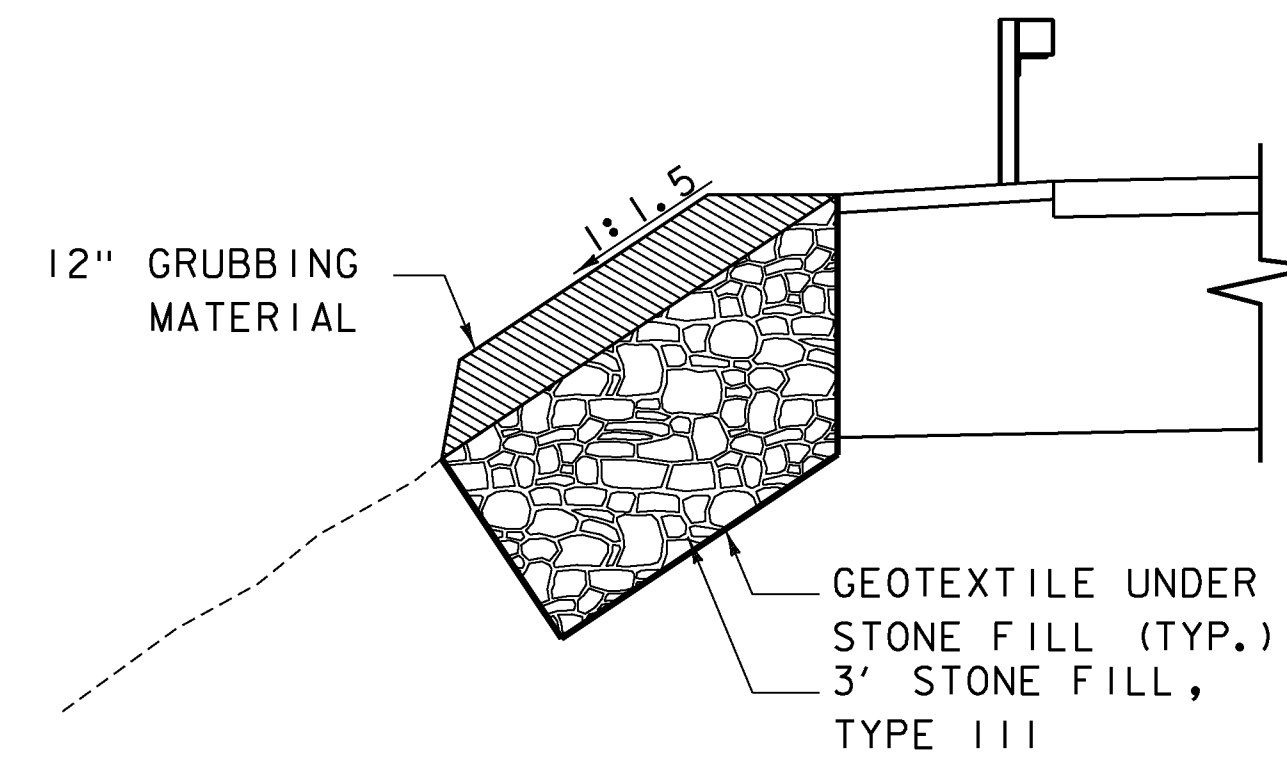


\* RADIAL DIMENSIONS  
 \*\* 3" TYPE IVS (TWO 1 1/2" LIFTS)

**BRIDGE TYPICAL SECTION**

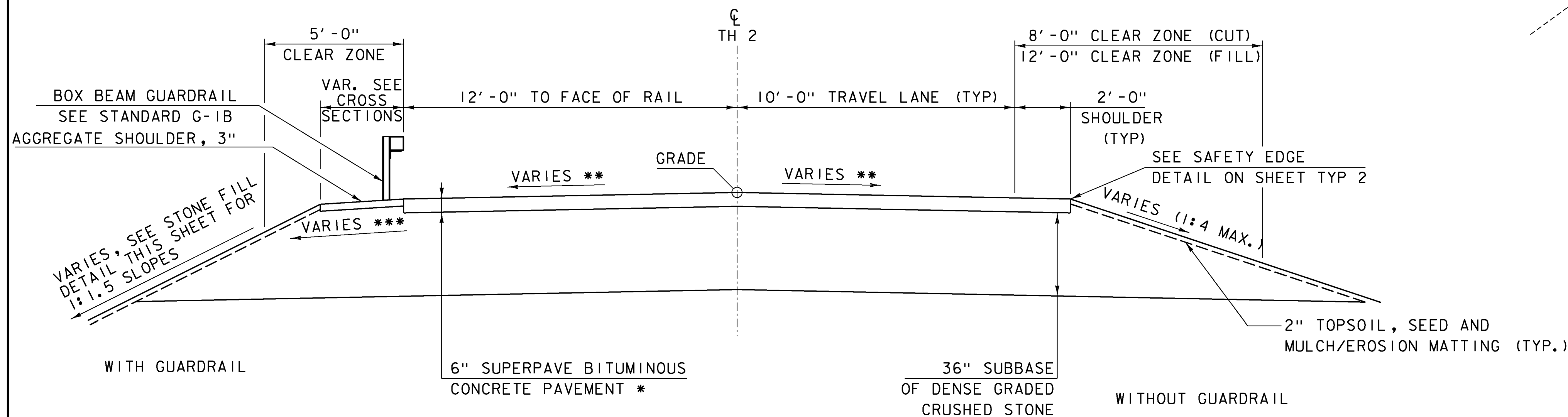
SCALE 3/8" = 1'-0"

FLOW



**STONE FILL DETAIL**

SCALE 3/8" = 1'-0"



**ROADWAY APPROACH 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

**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).

**MATERIAL TOLERANCES**

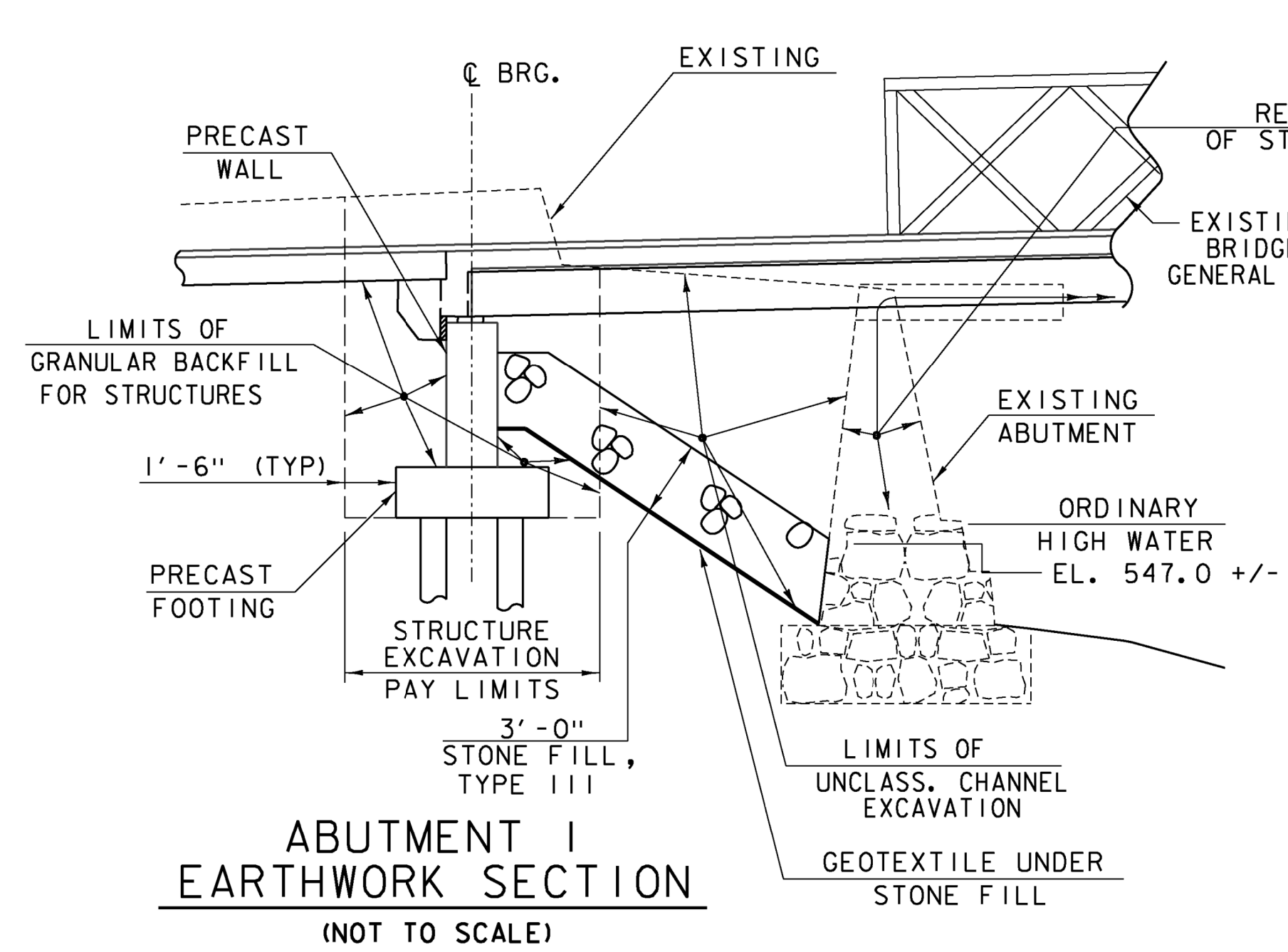
(IF USED ON PROJECT)

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

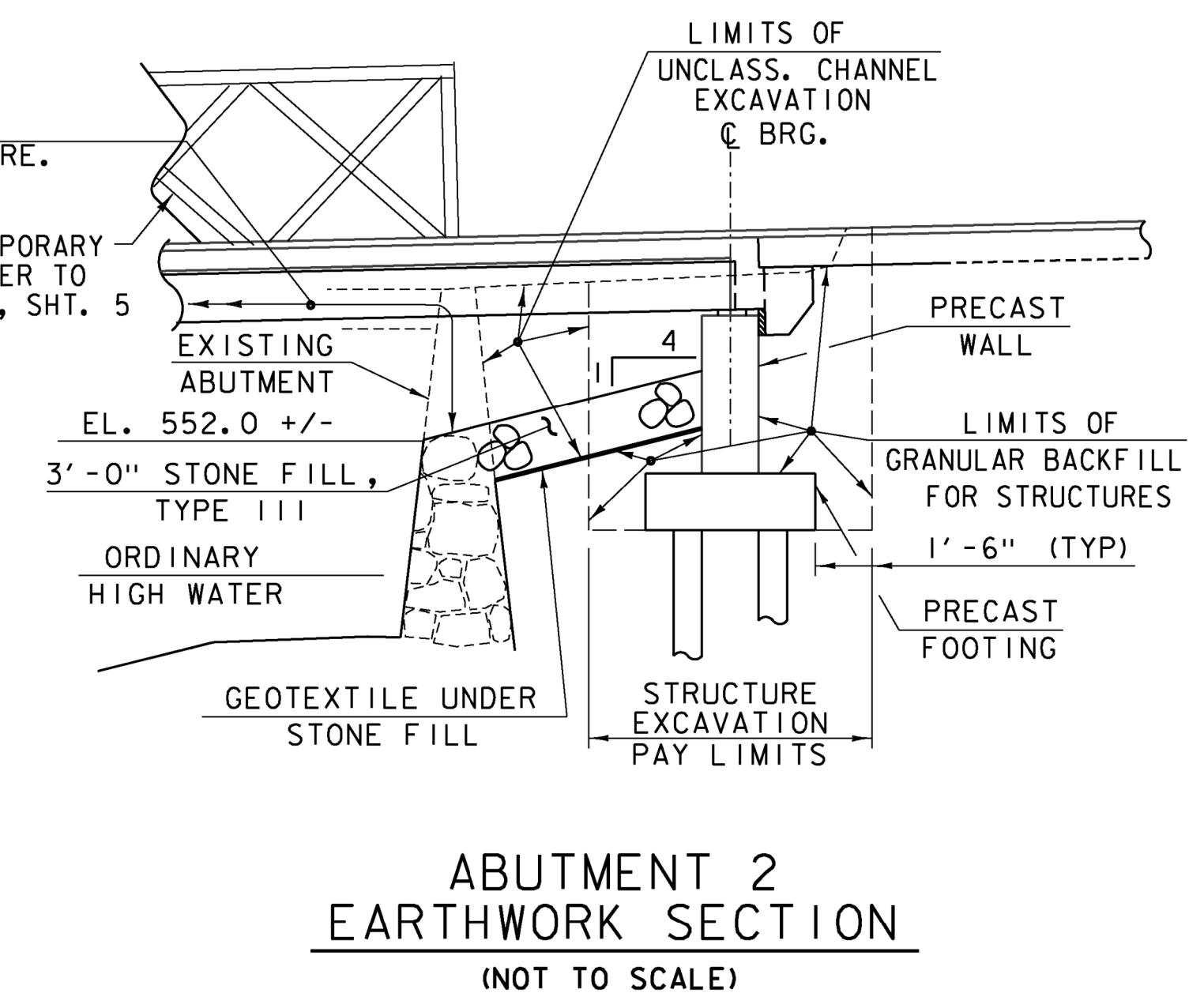
PROJECT NAME: ENOSBURG  
 PROJECT NUMBER: BRO 1448(40)

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

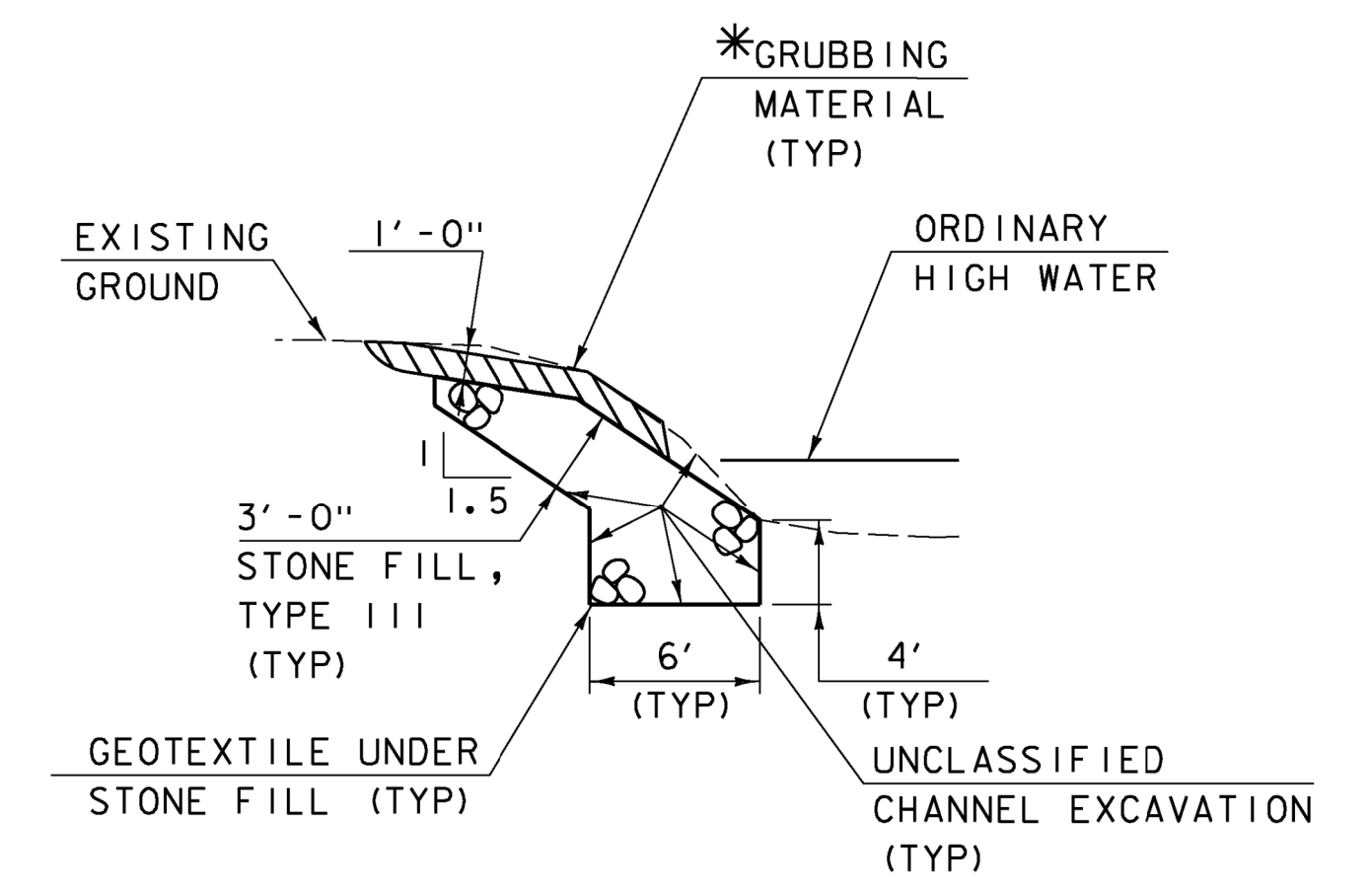




**ABUTMENT 1  
EARTHWORK SECTION**  
(NOT TO SCALE)

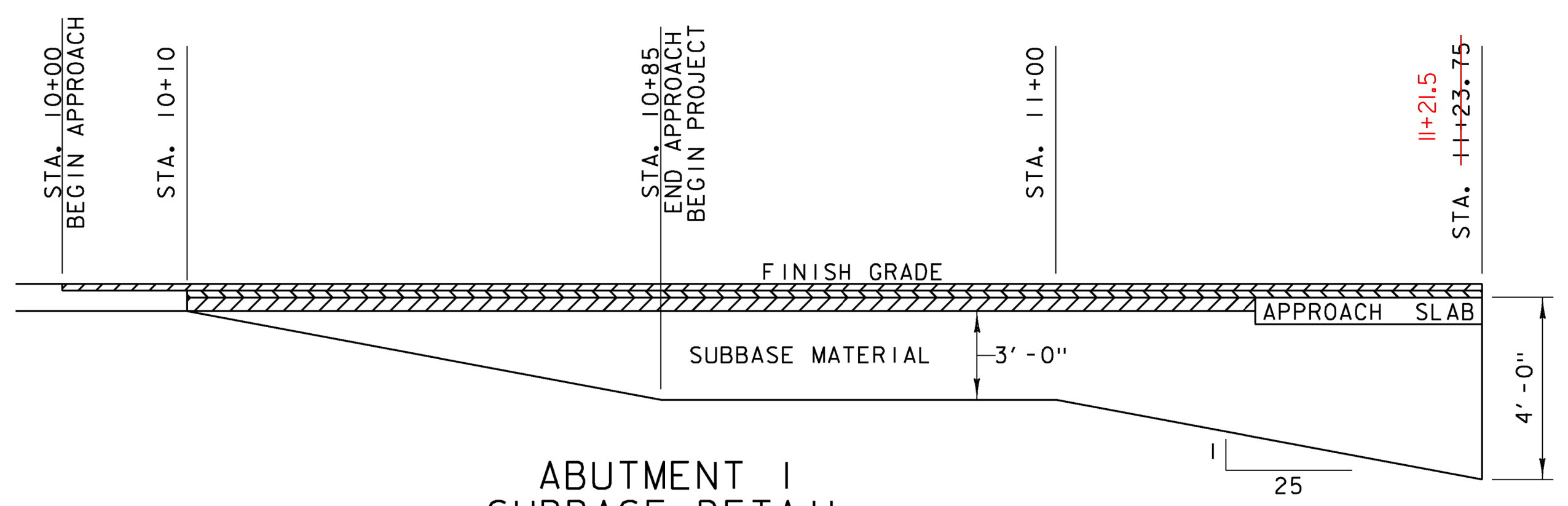


**ABUTMENT 2  
EARTHWORK SECTION**  
(NOT TO SCALE)

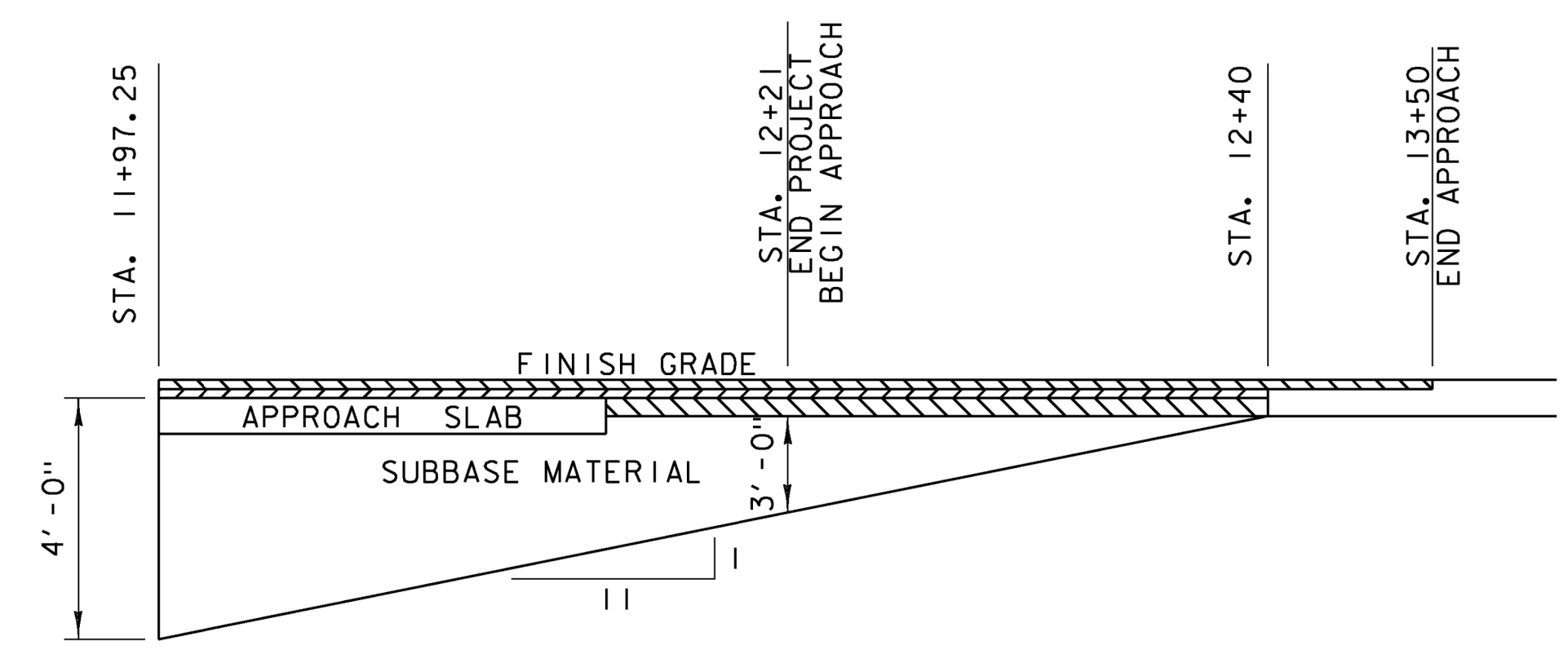


**SOUTHBANK REVETMENT**  
(NOT TO SCALE)

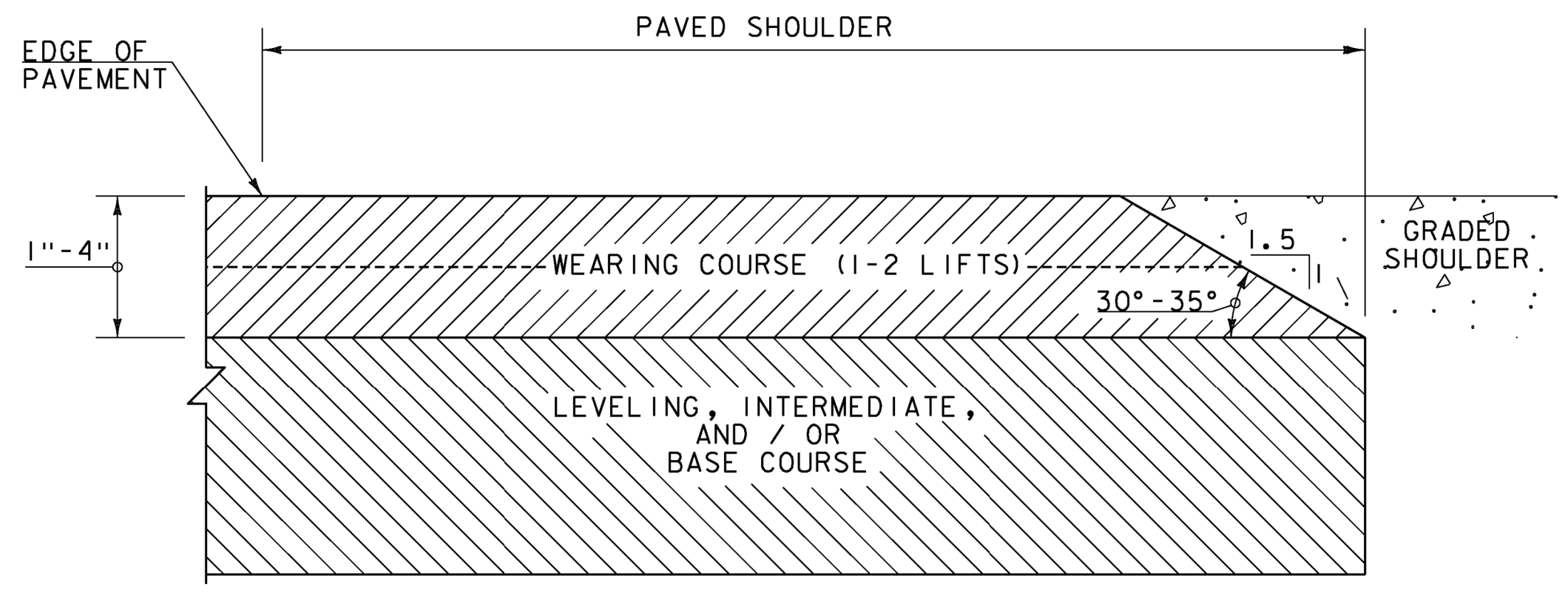
\*GRUBBING MATERIAL SHALL NOT BE PLACED ON THE STONE FILL IN THE AREA UNDER THE BRIDGE. WHENEVER CHANNEL SLOPE INTERSECTS ROADWAY SUBBASE, GRUBBING MATERIAL SHALL BEGIN AT THE BOTTOM OF SUBBASE.



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

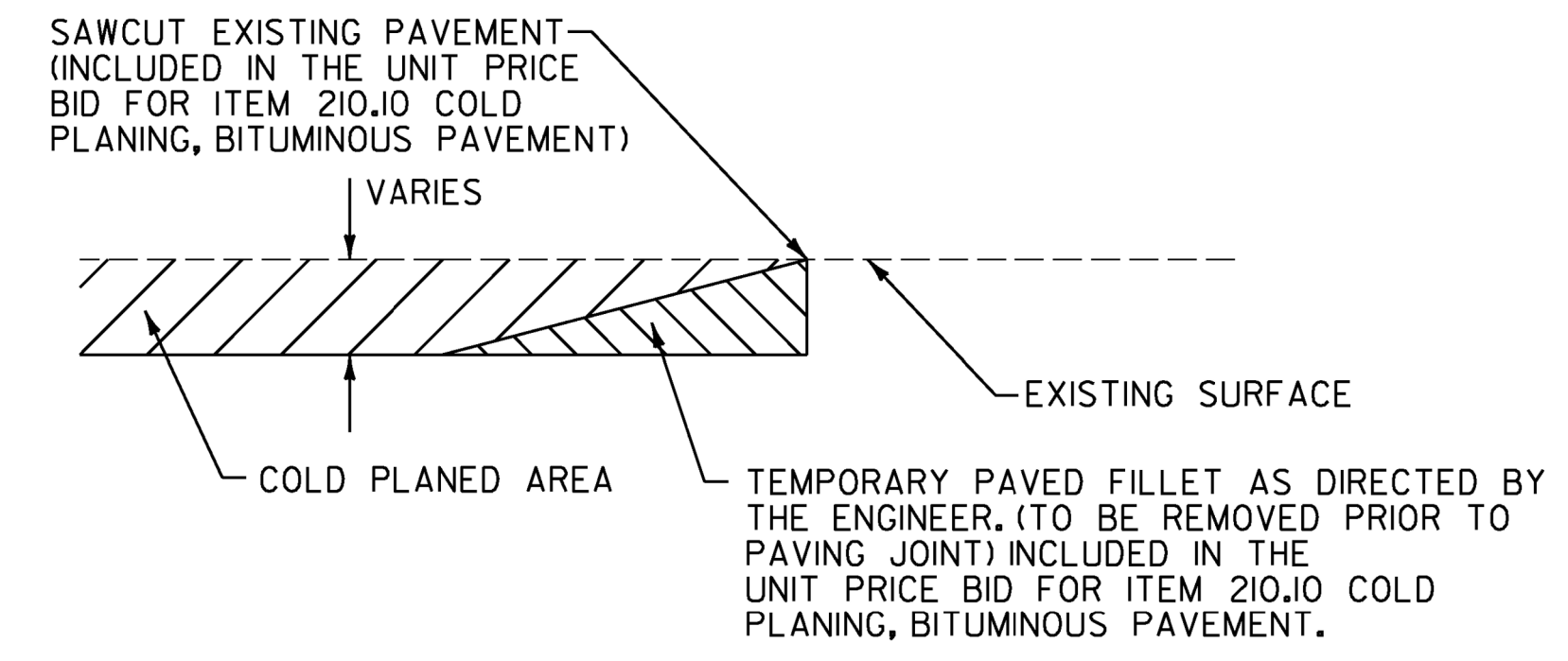


**ABUTMENT 2  
SUBBASE DETAIL**  
(ELEVATION IN CUT AND FILL)  
(NOT TO SCALE)



**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: ...04 Earthwork Sections.dgn	PLOT DATE: 10/4/2013
PROJECT LEADER: G. BOGUE	DRAWN BY: E. ALLING
DESIGNED BY: G. GOYETTE	CHECKED BY: G. GOYETTE
<b>EARTHWORK SECTIONS - TYP 2</b>	
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 "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, ITS 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 ~~+2'~~ AT ABUTMENT 1 AND ~~+0'~~ AT ABUTMENT 2 BELOW THE BOTTOM OF CASING. 12.5 10.5
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 I 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 II 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.

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 MEET THE REQUIREMENTS OF SECTION 507 FOR LEVEL II REINFORCING STEEL AND WILL BE PAID FOR UNDER CONTRACT ITEM 900.640 SPECIAL PROVISION (PRESTRESSED CONCRETE NEXT D BEAMS) (NEXT 32 D).

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

FILE NAME: ...XX General_Notes.dgn	PLOT DATE: 10/22/2013
PROJECT LEADER: G. BOGUE	DRAWN BY: L. BUXTON
DESIGNED BY: T. KNIGHT	CHECKED BY: G. BOGUE
<b>GENERAL NOTES</b>	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				<b>EARTHWORK SUMMARY</b>
						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**



# QUANTITY SHEET 2

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
								300	330		630		SY	GEOTEXTILE UNDER STONE FILL	649.31				
								15			15		SY	GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED	649.515				
								120			120		SY	GEOTEXTILE FOR FILTER CURTAIN	649.61				
								10			10		LB	SEED	651.15				
								10			10		LB	SEED, WINTER RYE	651.17				
								50			50		LB	FERTILIZER	651.18				
								0.5			0.5		TON	AGRICULTURAL LIMESTONE	651.20				
								0.5			0.5		TON	HAY MULCH	651.25				
							65				65		CY	TOPSOIL	651.35				
									230		230		SY	GRUBBING MATERIAL	651.40				
								1			1		LS	EPSC PLAN	652.10				
								40			40		HR	MONITORING EPSC PLAN	652.20				
								1			1		LU	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	652.30				
								530			530		SY	TEMPORARY EROSION MATTING	653.20				
								40			40		CY	VEHICLE TRACKING PAD	653.35				
								360			360		LF	BARRIER FENCE	653.50				
								120			120		LF	PROJECT DEMARCATION FENCE	653.55				
							31				31		SF	TRAFFIC SIGNS, TYPE A	675.20				
							72				72		LF	SQUARE TUBE SIGN POST AND ANCHOR	675.341				
							2				2		EACH	REMOVING SIGNS	675.50				
									10		10		CY	SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)(FPQ)	900.608				
									10		10		HR	SPECIAL PROVISION (UNEXPECTED OBSTRUCTION DRILLING)	900.630				
									270		270		LF	SPECIAL PROVISION (MICROPILE, CASED)(7 INCHES)	900.640				
									220		220		LF	SPECIAL PROVISION (MICROPILE, UNCASD)(6.18 INCHES)	900.640				
									215		215		LF	SPECIAL PROVISION (PRESTRESSED CONCRETE NEXT D BEAMS)(NEXT 32 D)	900.640				
							1				1		LS	SPECIAL PROVISION (CPM SCHEDULE)	900.645				
									1		1		LS	SPECIAL PROVISION (FURNISHING EQUIPMENT FOR INSTALLING MICROPILES)	900.645				
									1		1		LS	SPECIAL PROVISION (REMOVAL OF TEMPORARY BRIDGE)	900.645				
							1				1		LU	SPECIAL PROVISION (INCENTIVE/DISINCENTIVE)(N.A.B.I.)	900.650				
							1				1		LU	SPECIAL PROVISION (MAT DENSITY PAY ADJUSTMENT, SMALL QUANTITY)(N.A.B.I.)	900.650				
							1				1		LU	SPECIAL PROVISION (MIXTURE PAY ADJUSTMENT)(N.A.B.I.)	900.650				
							375		50		425		TON	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	900.680				
							6				6		CWT	SPECIAL PROVISION (EMULSIFIED ASPHALT)(RS-1H OR CRS-1H)	900.683				

**ITEM 900.680 SPECIAL PROVISION  
(BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)**

235 TONS COLD PLANE AREAS (EST.)  
64 TONS TYPE IIS (ROADWAY)  
64 TONS TYPE IVS (ROADWAY)  
14 TONS OVER APPROACH SLABS  
33 TONS ON BRIDGE  
15 TONS ROUND

425 TONS TOTAL

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

FILE NAME: ...\\xx BrIdge Quantities.dgn PLOT DATE: 10/22/2013  
PROJECT LEADER: G. BOGUE DRAWN BY: E. ALLING  
DESIGNED BY: G. GOYETTE CHECKED BY: G. GOYETTE  
BRIDGE AND ROADWAY QUANTITY SHEET - QS 2 SHEET 7 OF 46



**GENERAL INFORMATION**

**SYMBOLY LEGEND NOTE**

THE SYMBOLY ON THIS SHEET IS INTENDED TO COVER STANDARD CONVENTIONAL SYMBOLY. THE SYMBOLY 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. SYMBOLY 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 VALVE
⊗	H TREE HARDWOOD
△	HCTRL CONTROL HORIZONTAL
△	HVCTRL CONTROL HORIZ. & VERTICAL
◇	HYD HYDRANT
●	IP IRON PIN
●	IPIPE IRON PIPE
⊕	LI LIGHT - STREET OR YARD
⊕	MB MAILBOX
○	MH MANHOLE (MH)
□	MM MILE MARKER
●	PM PARKING METER
□	PMK PROJECT MARKER
○	POST POST STONE/WOOD
⊕	RRSIG RAILROAD SIGNAL
⊕	RRSL RAILROAD SWITCH LEVER
⊕	S TREE SOFTWOOD
⊕	SAT SATELLITE DISH
⊕	SHRUB SHRUB
⊕	SIGN SIGN
⊕	STUMP STUMP
⊕	TEL TELEPHONE POLE
○	TIE TIE
⊕	TSIGN SIGN W/DOUBLE POST
⊕	VCTRL CONTROL VERTICAL
○	WELL WELL
×	WSO WATER SHUT OFF

**UTILITY SYMBOLY**

**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 SYMBOLY**

— — — CZ — — —	CLEAR ZONE
— — — — —	PLAN LAYOUT MATCHLINE

**PROJECT CONSTRUCTION FEATURES**

△ — △ — △ — △ —	TOP OF CUT SLOPE
○ — ○ — ○ — ○ —	TOE OF FILL SLOPE
⊗ — ⊗ — ⊗ — ⊗ —	STONE FILL
— — — — —	BOTTOM OF DITCH
— — — — —	CULVERT PROPOSED
— — — — —	STRUCTURE SUBSURFACE
PDF — PDF —	PROJECT DEMARCATION FENCE
BF — BF —	BARRIER FENCE
XXXXXXXXXXXXXXXXXXXX	TREE PROTECTION ZONE (TPZ)
//// //// //// ////	STRIPING LINE REMOVAL
~~~~ ~~~~ ~~~~ ~~~~	SHEET PILES

**CONVENTIONAL BOUNDARY SYMBOLY**

**BOUNDARY LINES**

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

**EPSC LAYOUT PLAN SYMBOLY**

**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 — HAZ	HAZARDOUS WASTE AREA
— AG —	AGRICULTURAL LAND
— HABITAT —	FISH & WILDLIFE HABITAT
— FLOOD PLAIN —	FLOOD PLAIN
— OHW —	ORDINARY HIGH WATER (OHW)
— — — — —	STORM WATER
— — — — —	USDA FOREST SERVICE LANDS
— — — — —	WILDLIFE HABITAT SUIT/CONN

**ARCHEOLOGICAL & HISTORIC**

— ARCH —	ARCHEOLOGICAL BOUNDARY
— HISTORIC DIST —	HISTORIC DISTRICT BOUNDARY
— HISTORIC —	HISTORIC AREA
(H)	HISTORIC STRUCTURE

**CONVENTIONAL TOPOGRAPHIC SYMBOLY**

**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

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 RADIUS OF
T	CURVE TANGENT LENGTH
L	CURVE LENGTH OF
E	CURVE EXTERNAL DISTANCE



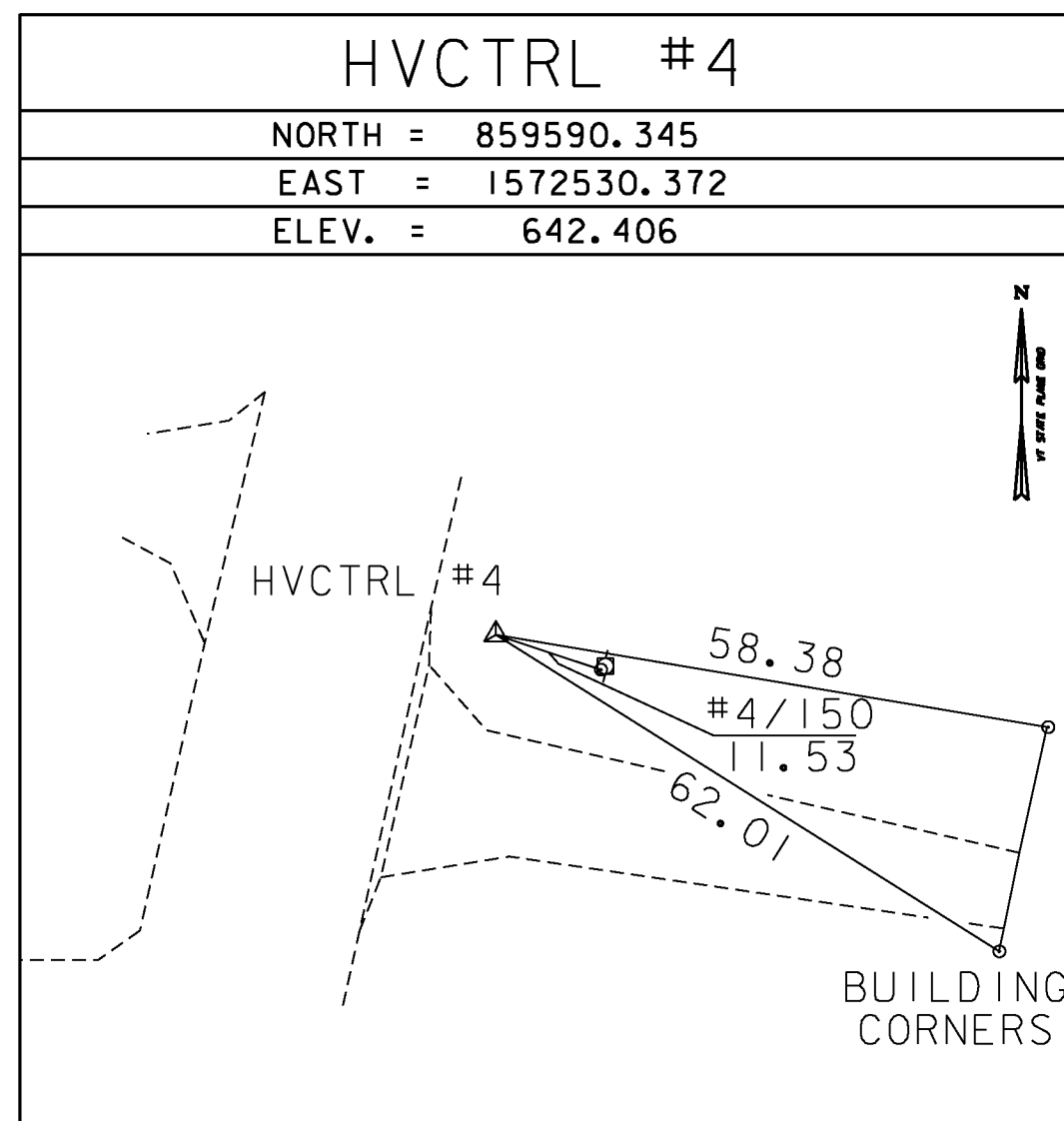
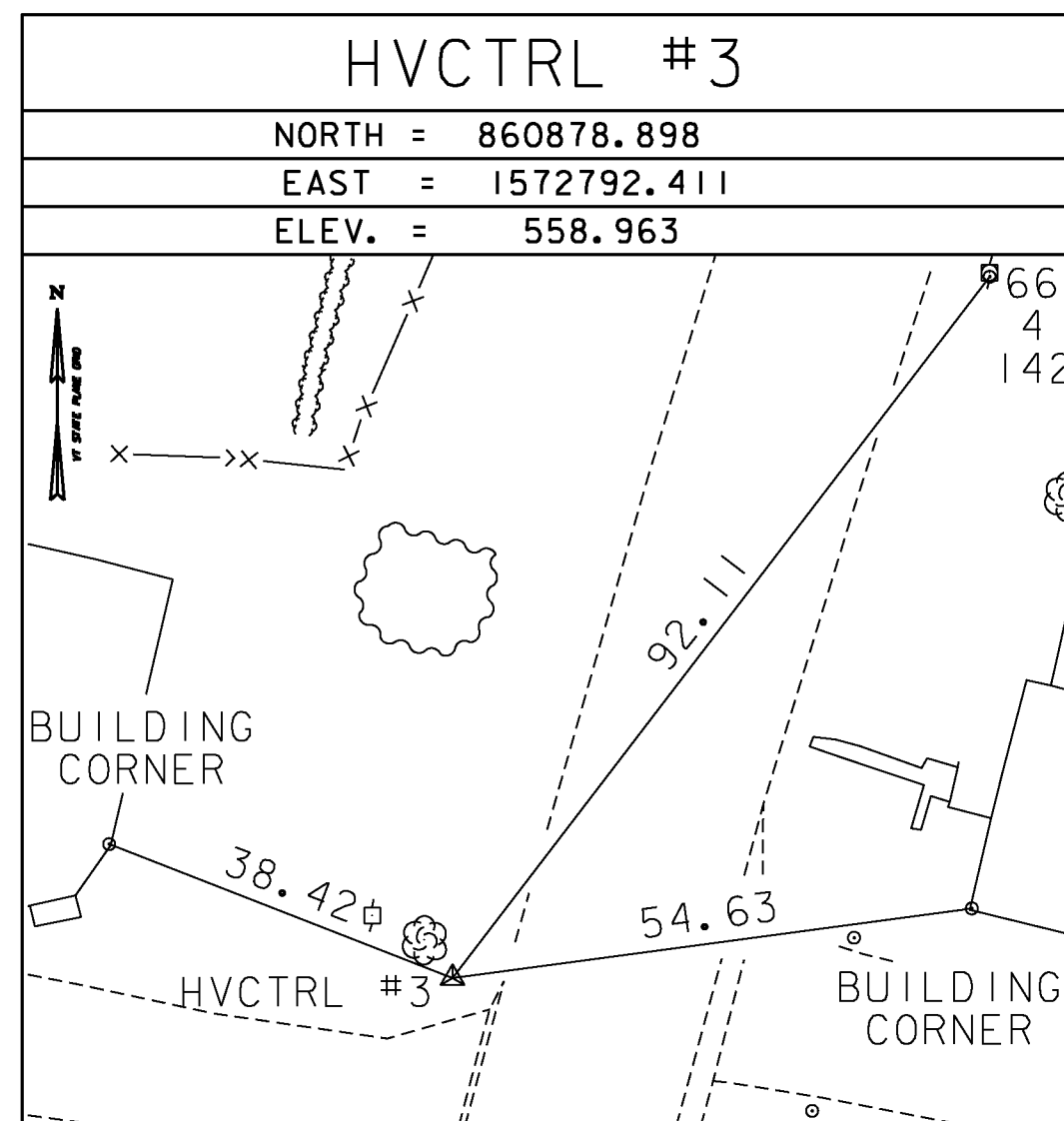
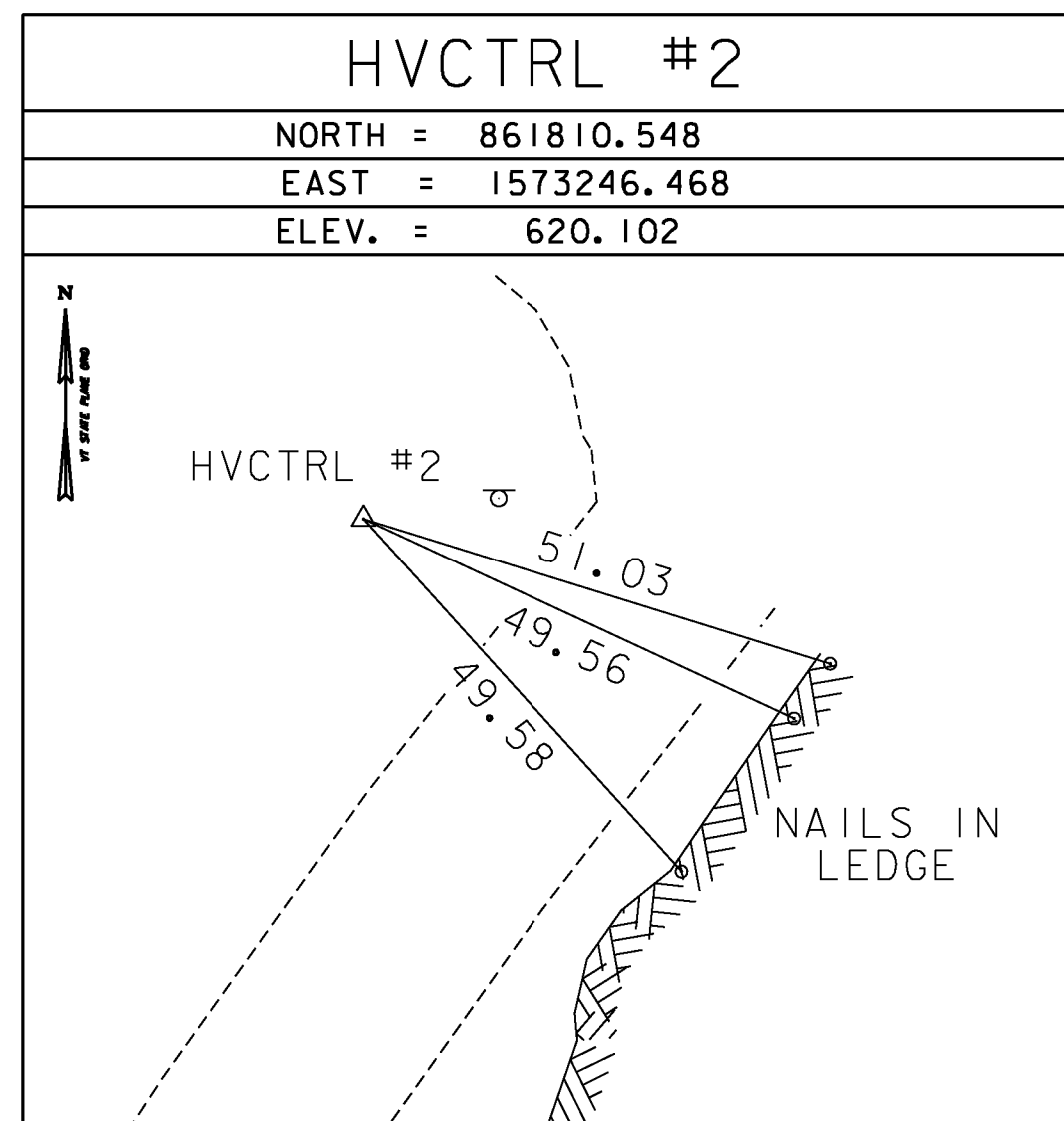
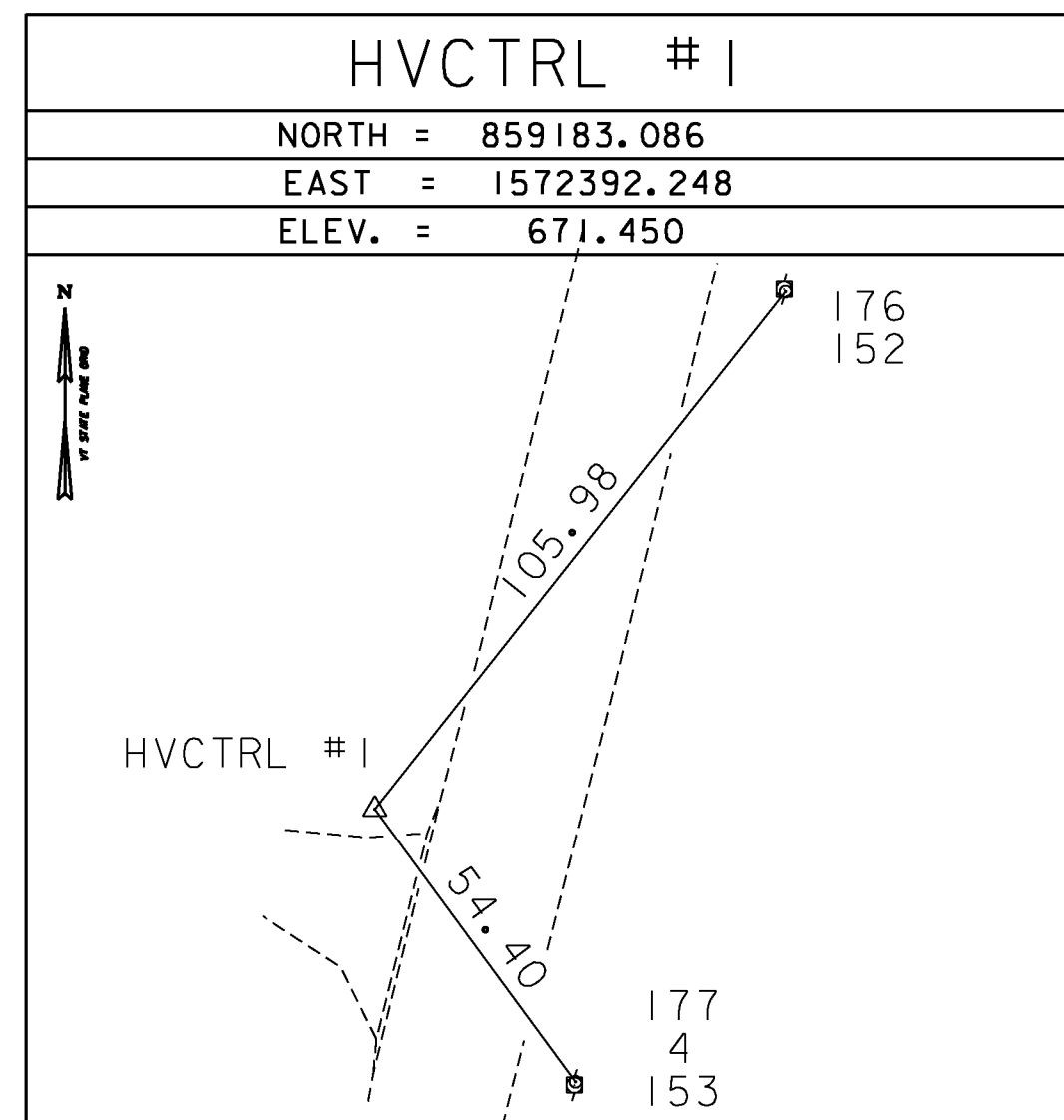
PROJECT NAME: ENOSBURG  
 PROJECT NUMBER: BRO 1448(40)  
 FILE NAME: ...03 A Conv Symb Leg Sht.dgn PLOT DATE: 10/4/2013  
 PROJECT LEADER: G. BOGUE DRAWN BY: E. ALLING  
 DESIGNED BY: G. GOYETTE CHECKED BY: G. GOYETTE  
**CONVENTIONAL SYMBOLY LEGEND** SHEET 8 OF 46

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



NORTH =
EAST =
ELEV. =

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

ALIGNMENT TIES

**POB (PC) = STA. 9+75.0**

NORTH = 860997.471
EAST = 1572844.047
ELEV. =

**PI = 12+00.00**

NORTH = 861207.635
EAST = 1572925.173
ELEV. =

**POE (PT) = 13+50.00**

NORTH = 861406.403
EAST = 1573031.198
ELEV. =

NORTH =
EAST =
ELEV. =

NORTH =
EAST =
ELEV. =

**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
PLLOT DATE:	10/4/2013
PROJECT LEADER:	C. WILLIAMS
DRAWN BY:	R. BULLOCK
DESIGNED BY:	
CHECKED BY:	
<b>TIE SHEET - TIE 1</b>	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.  
10+79.3 AS PER COD #2

**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 - 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**

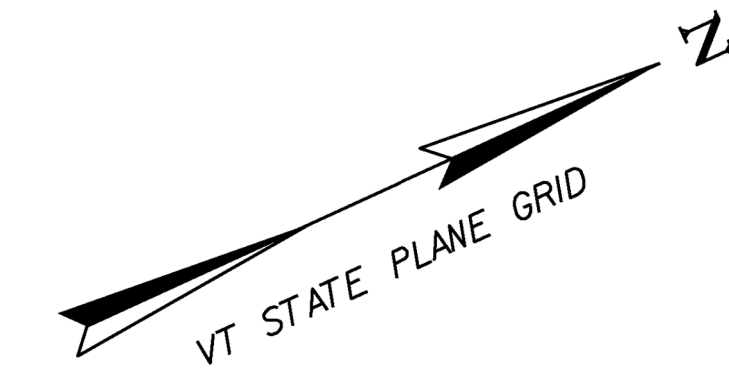
STA. 11+90.0 LT.

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

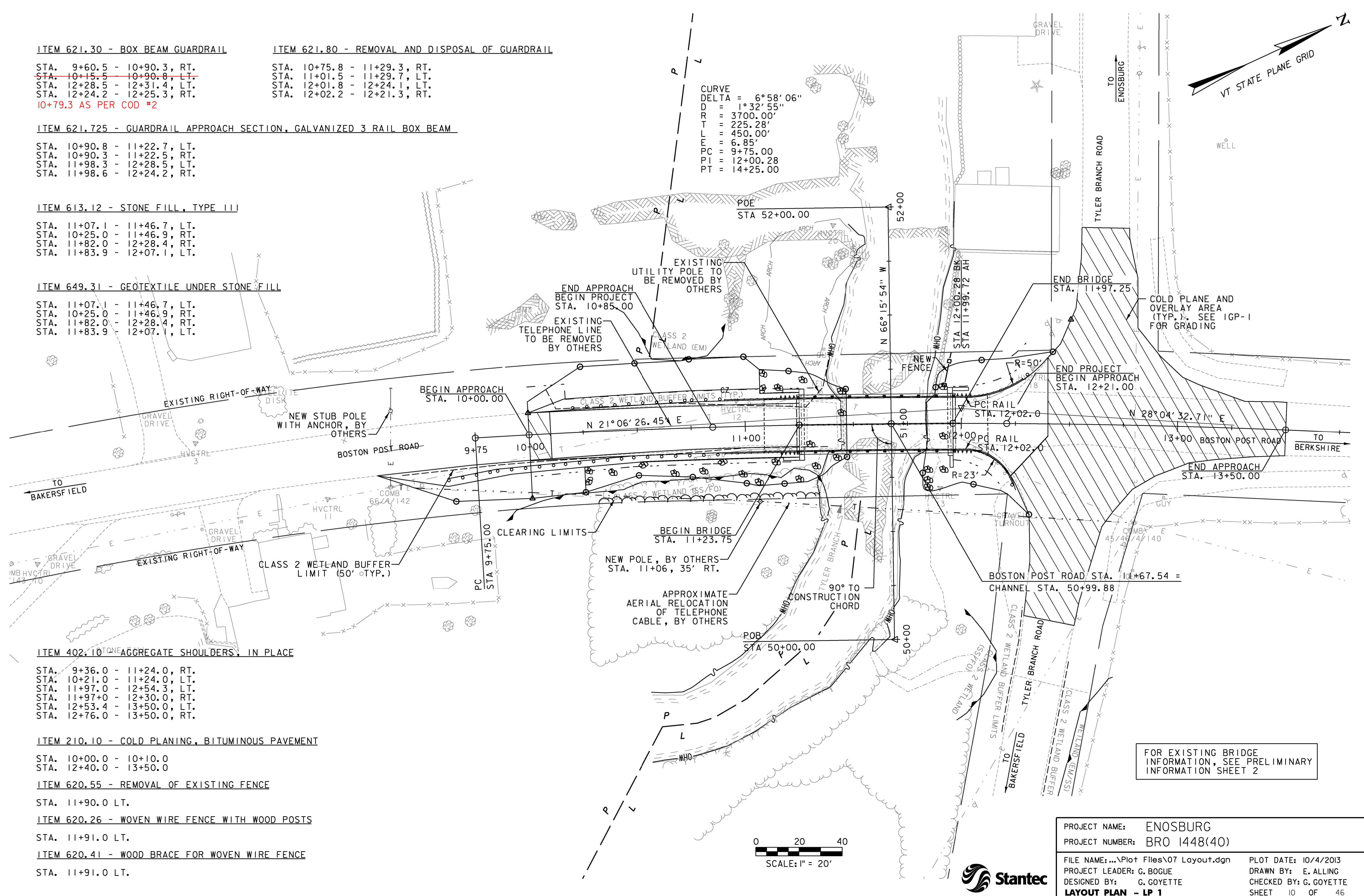
STA. 11+91.0 LT.

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

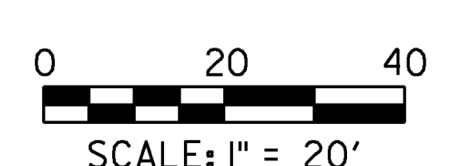
STA. 11+91.0 LT.



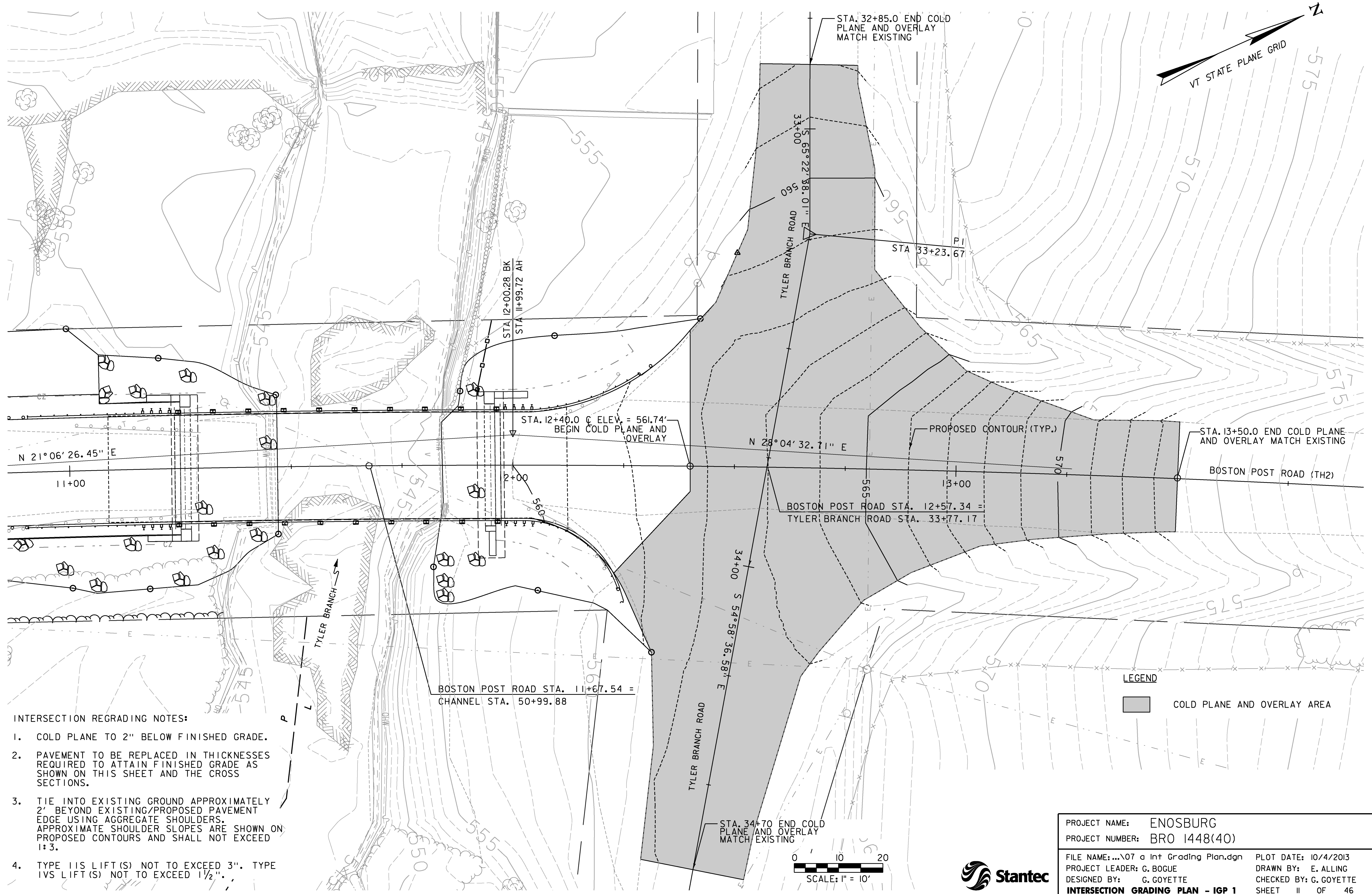
CURVE  
DELTA = 6°58'06"  
D = 1°32'55"  
R = 3700.00'  
T = 225.28'  
L = 450.00'  
E = 6.85'  
PC = 9+75.00  
PI = 12+00.28  
PT = 14+25.00



FOR EXISTING BRIDGE INFORMATION, SEE PRELIMINARY INFORMATION SHEET 2



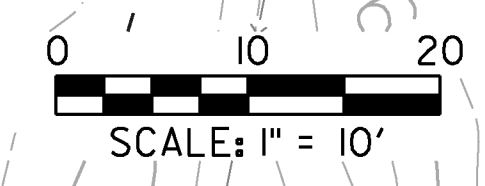
PROJECT NAME:	ENOSBURG
PROJECT NUMBER:	BRO 1448(40)
FILE NAME:	...Plot Files\07 Layout.dgn
PROJECT LEADER:	G. BOGUE
DESIGNED BY:	G. GOYETTE
<b>LAYOUT PLAN - LP 1</b>	
PLOT DATE:	10/4/2013
DRAWN BY:	E. ALLING
CHECKED BY:	G. GOYETTE
SHEET	10 OF 46

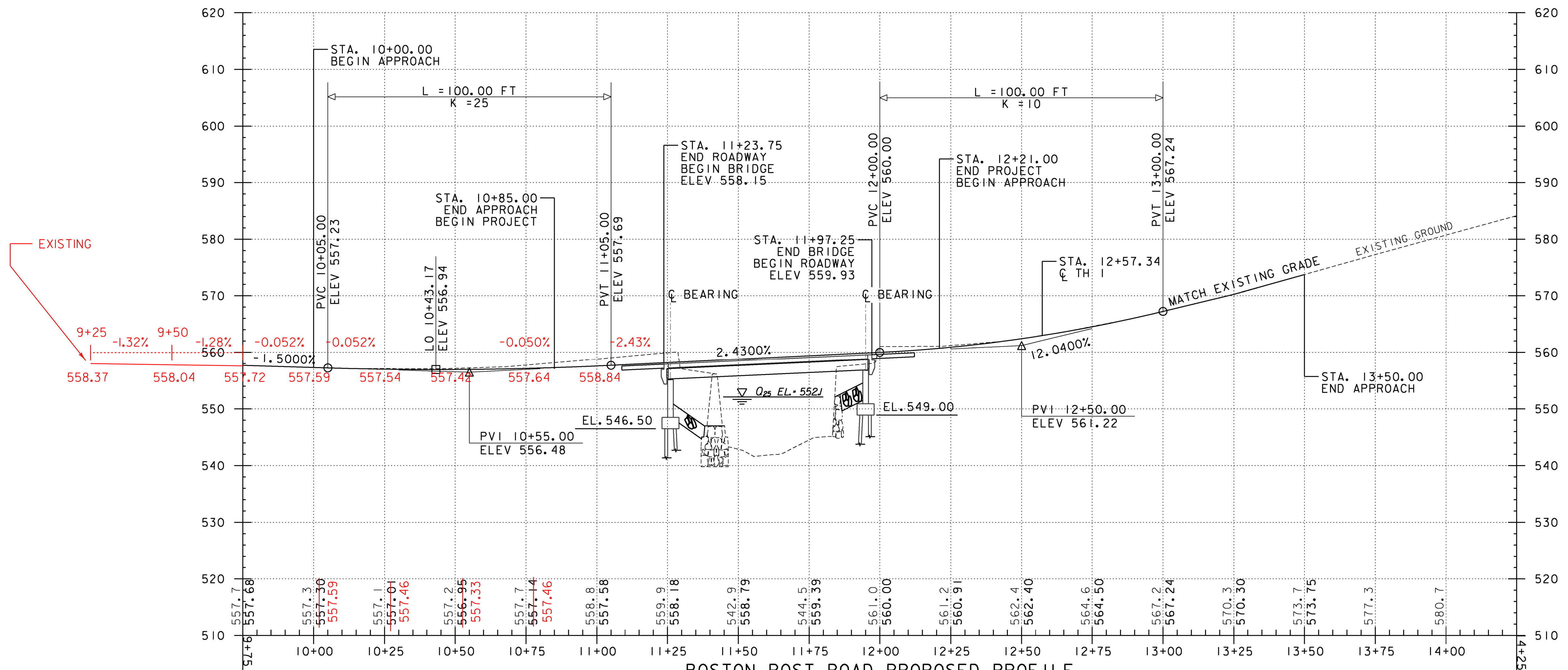


- INTERSECTION REGRADING NOTES:
1. COLD PLANE TO 2" BELOW FINISHED GRADE.
  2. PAVEMENT TO BE REPLACED IN THICKNESSES REQUIRED TO ATTAIN FINISHED GRADE AS SHOWN ON THIS SHEET AND THE CROSS SECTIONS.
  3. TIE INTO EXISTING GROUND APPROXIMATELY 2' BEYOND EXISTING/PROPOSED PAVEMENT EDGE USING AGGREGATE 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

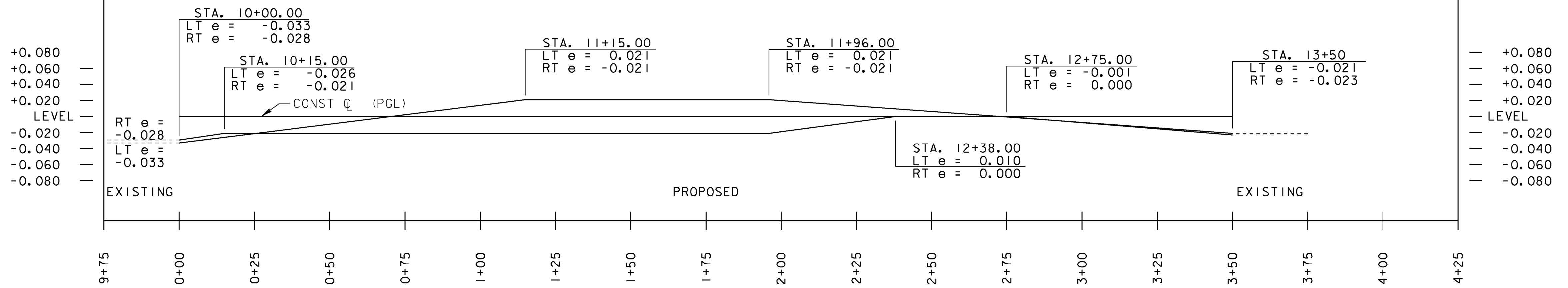
PROJECT NAME: ENOSBURG	PROJECT NUMBER: BRO 1448(40)
FILE NAME: ...07 a Int Grading Plan.dgn	DESIGNED BY: G. GOYETTE
PROJECT LEADER: G. BOGUE	CHECKED BY: G. GOYETTE
PLOT DATE: 10/4/2013	DRAWN BY: E. ALLING
<b>INTERSECTION GRADING PLAN - IGP 1</b>	
SHEET II OF 46	





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

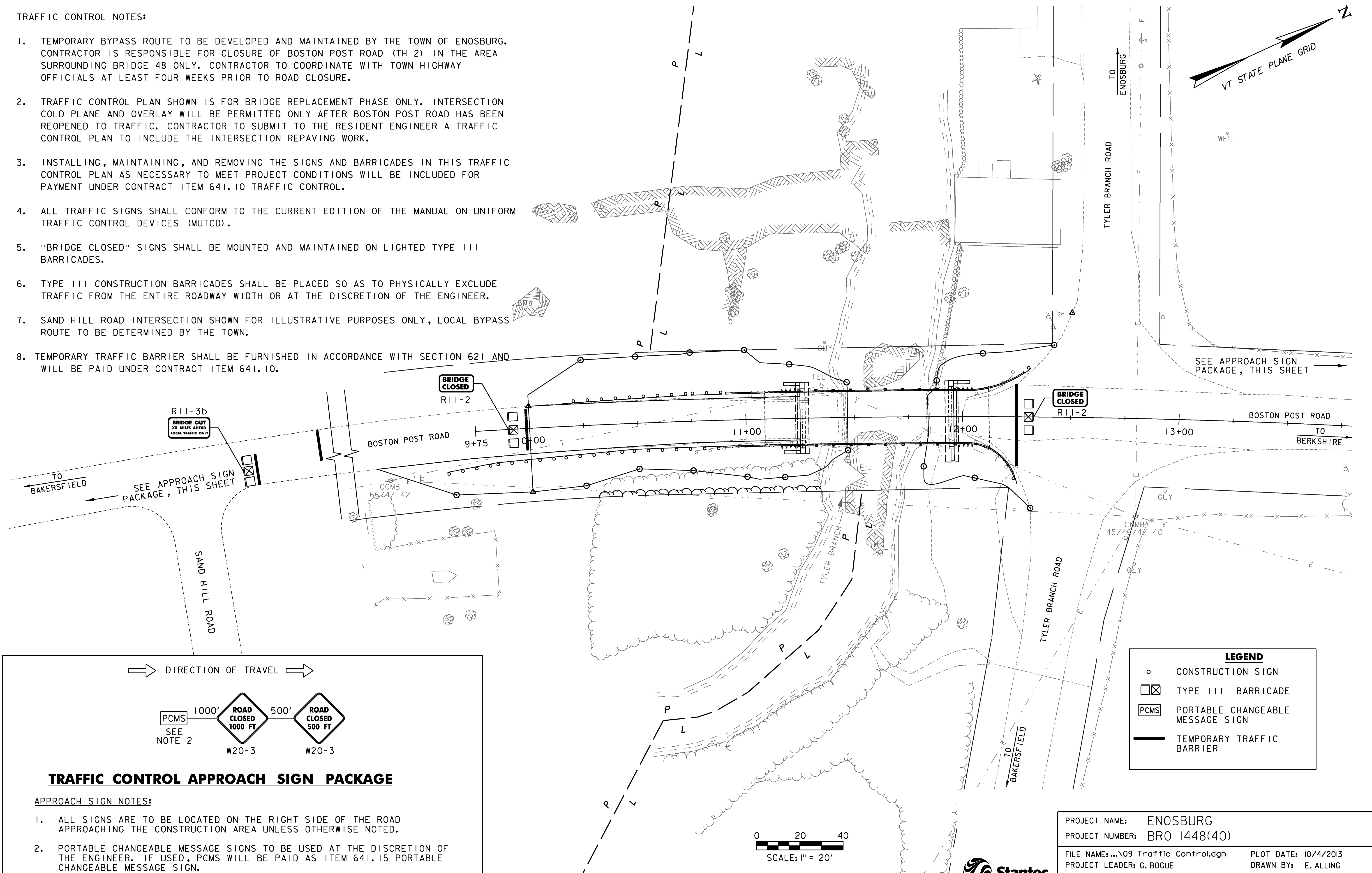
GRADES SHOWN TO THE NEAREST HUNDREDTH ARE FINISH GRADE ALONG C

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
PROFILE SHEET - RP 1		SHEET	12 OF 46

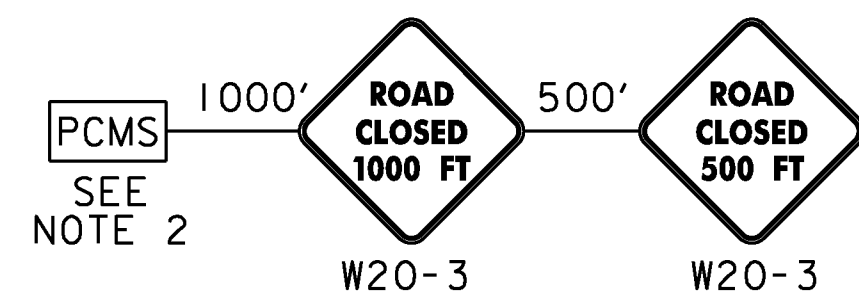


**TRAFFIC CONTROL NOTES:**

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.



➔ DIRECTION OF TRAVEL ➔



**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.

LEGEND	
b	CONSTRUCTION SIGN
☒	TYPE III BARRICADE
PCMS	PORTABLE CHANGEABLE MESSAGE SIGN
—	TEMPORARY TRAFFIC BARRIER



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

FILE NAME: ...09 Traffic Control.dgn  
PROJECT LEADER: G. BOGUE  
DESIGNED BY: G. GOYETTE  
TRAFFIC CONTROL SHEET- TCP 1

PLOT DATE: 10/4/2013  
DRAWN BY: E. ALLING  
CHECKED BY: G. GOYETTE  
SHEET 13 OF 46



**ITEM 646.21 - 4 INCH YELLOW LINE (DOUBLE CENTERLINE)**

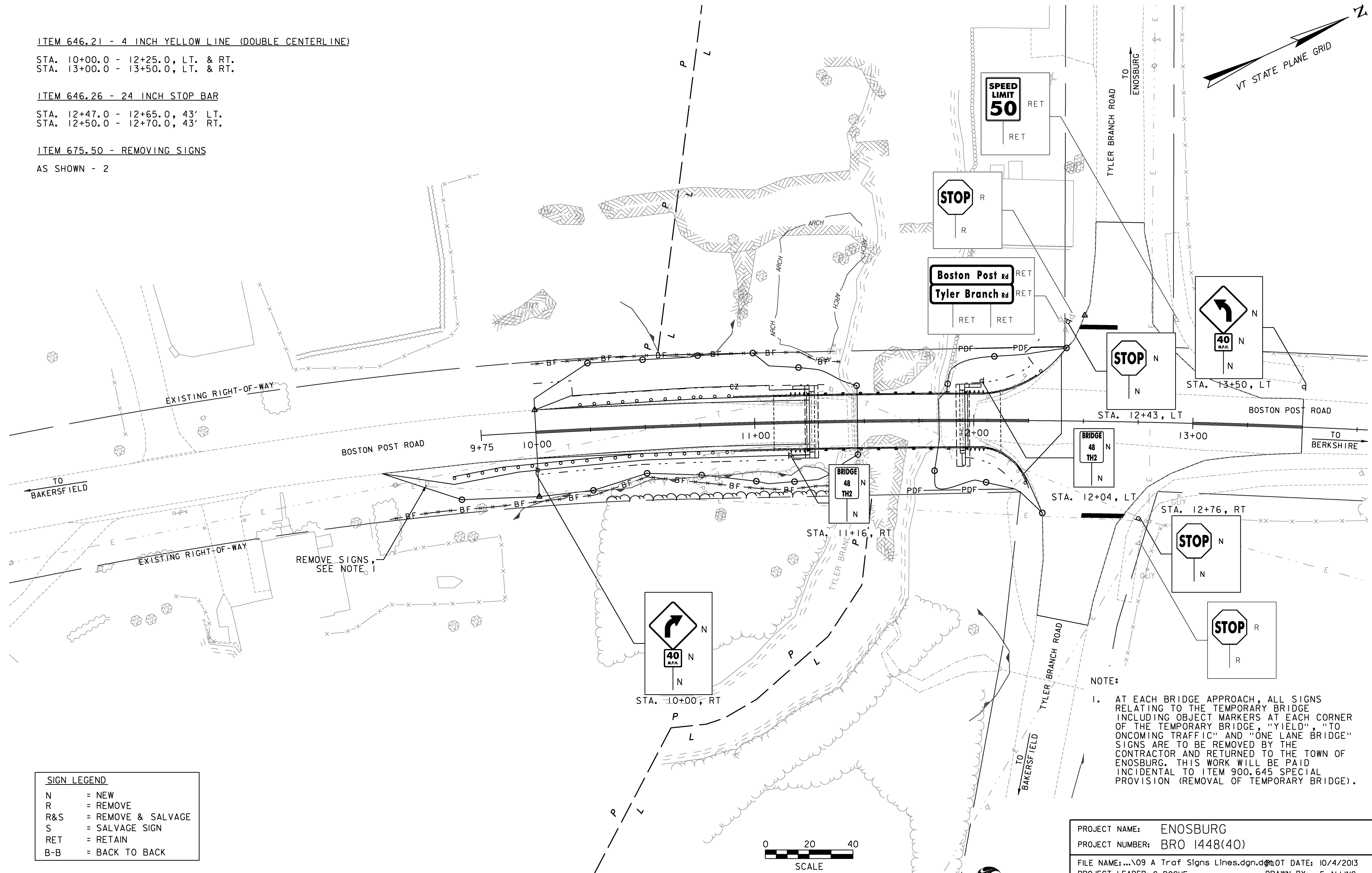
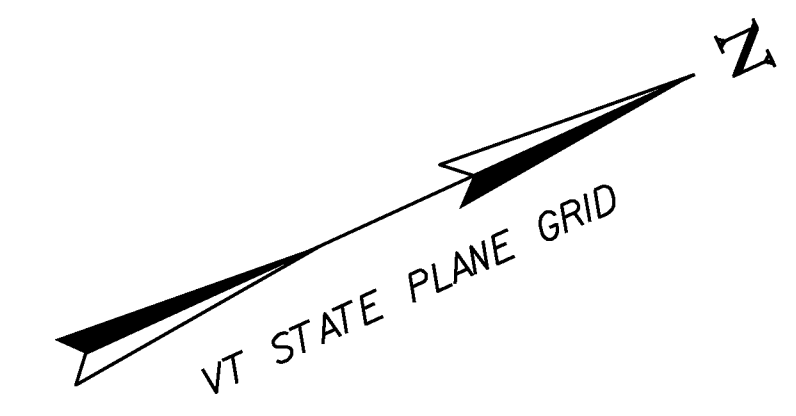
STA. 10+00.0 - 12+25.0, LT. & RT.  
 STA. 13+00.0 - 13+50.0, LT. & RT.

**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



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

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).

PROJECT NAME: ENOSBURG  
 PROJECT NUMBER: BRO 1448(40)  
 FILE NAME: ...09 A Traf Signs Lines.dgn.d\DOT 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**

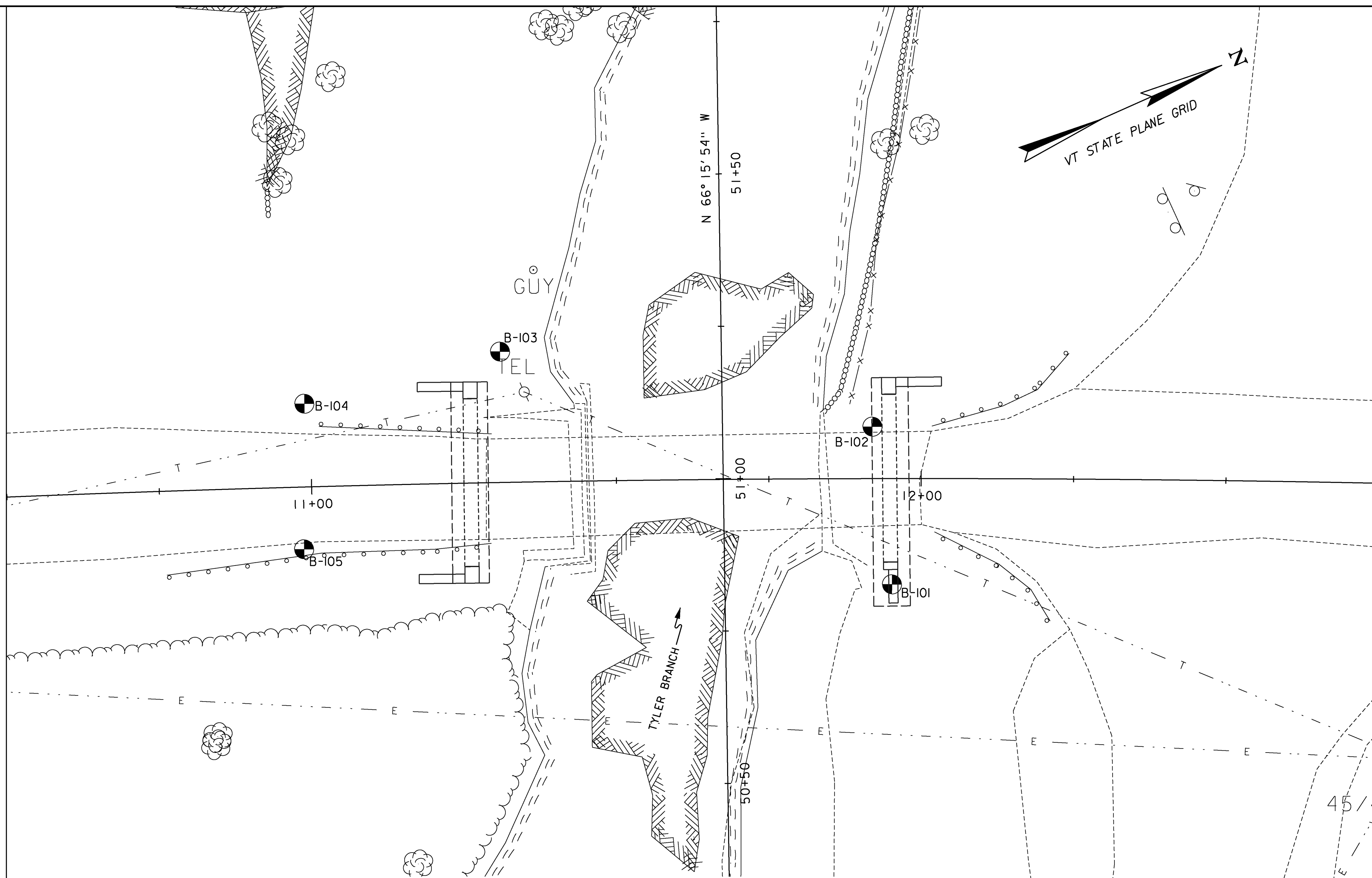
- ▼ Water Elevation
- ⊕ Standard Penetration Boring
- ⊕ Auger Boring
- ⊙ Rod Sounding
- S Sample
- N Standard Penetration Test
- Blow Count Per Foot For:
- 2" O.D. Sampler
- 1 1/8" I.D. Sampler
- Hammer Weight Of 140 Lbs.
- Hammer Fall Of 30"
- YS Field Vane Shear Test
- US Undisturbed Soil Sample
- 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
- Si 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
- ROD 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	mitc	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.



**BORING LAYOUT**

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

**LEGEND:**  
⊕ BRIDGE BORING

**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.

**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

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



VTTrans Working to Get You There		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG		Boring No.: <b>B-101</b>				
		ENOSBURG BRO 1448(40) TH-2 BR-48		Page No.: 1 of 1		Pin No.: 12J168				
				Checked By: CAA						
Boring Crew: GARROW, JUDKINS, WHITLOCK		Casing: WB		Sampler: SS		Groundwater Observations				
Date Started: 10/23/12 Date Finished: 10/23/12		I.D.: 4 in 1.5 in		Date: 10/24/12		Depth (ft): 10.9				
VTSPG NAD83: N 861193.20 ft E 1572945.10 ft		Hammer Wt: N.A. 140 lb.		Moisture Content %		Notes				
Station: 11+95 Offset: 17.30		Hammer Fall: N.A. 30 in.		Gravel %						
Ground Elevation: 557.11 ft		Hammer/Rod Type: Auto/AWJ		Sand %						
		Rig: CME 55 TRACK		C <sub>e</sub> = 1.46		Fines %				
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg)	Core Rec. % (ROD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
5		A-2-4, GrSiSa, brn, Moist, Rec. = 0.8 ft				WH-1-1-WH (2)	21.5	23.8	47.0	29.2
		A-2-4, SiGrSa, brn, Moist, Rec. = 1.2 ft				1-2-3-2 (5)	19.9	31.6	43.8	24.6
10		A-1-a, SaGr, gry-brn, Moist, Rec. = 1.6 ft, Lab Note: Rounded & Fractured Rocks were within sample.				22-11-21-23 (32)	13.0	57.6	32.4	10.0
		Lab Note, Multiple types of large pieces of fractured rock (Cobbles), gry-yel, Moist					0.8	99.5	0.2	0.3
15		12.0 ft - 17.0 ft, Silvery-green, Quartz-muscovite-chlorite Schist, Moderately hard, Unweathered, NXMDC, RMR = 79; Good rock.	1 (80)	100 (90)	5	Top of Bedrock @ 12.0 ft				
			4							
			4							
			5							
			5							
20		Hole stopped @ 17.0 ft	Remarks: 1. Lost water at 7.0 ft.							
25										

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

APPROX.  
BOTTOM OF  
CASING

APPROX.  
BOTTOM OF  
PILE

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

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<sub>e</sub> 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.

VTTrans Working to Get You There		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG		Boring No.: <b>B-102</b>				
		ENOSBURG BRO 1448(40) TH-2 BR-48		Page No.: 1 of 1		Pin No.: 12J168				
				Checked By: CAA						
Boring Crew: GARROW, JUDKINS, WHITLOCK		Casing: WB		Sampler: SS		Groundwater Observations				
Date Started: 10/26/12 Date Finished: 10/26/12		I.D.: 4 in 1.5 in		Date:		Depth (ft):				
VTSPG NAD83: N 861201.10 ft E 1572920.30 ft		Hammer Wt: N.A. 140 lb.		Moisture Content %		Notes				
Station: 11+92 Offset: -8.60		Hammer Fall: N.A. 30 in.		Gravel %						
Ground Elevation: 558.0 ft		Hammer/Rod Type: Auto/AWJ		Sand %						
		Rig: CME 55 TRACK		C <sub>e</sub> = 1.46		Fines %				
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg)	Core Rec. % (ROD %)	Drill Rate minutes/ft	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.				2-2-5-40 (7)	5.4	56.2	28.9	14.9
		A-1-a, SaGr, gry, Dry, Rec. = 0.6 ft, Lab Note: Broken Rock was within sample.				1-1-16-R (17)	4.6	61.6	26.4	12.0
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					(R)	8.4		
15		A-1-b, SaGr, Dk/gry, Moist, Rec. = 0.8 ft, Lab Note: Broken Rock was within sample.				11-28-16-16 (44)	9.9	60.2	20.4	19.4
		Field Note: NXDC, Cobbles								
20		A-2-4, SaSiGr, gry, Moist, Rec. = 0.2 ft, Lab Note: Some Broken Rock was within sample.				11-11-30-R (41)	10.4	36.7	29.6	33.7
		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 (80-90)	82 (72)	7	Top of Bedrock @ 22.5 ft				
			5							
			6							
			7							
			7							
		Hole stopped @ 27.5 ft								

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

APPROX.  
BOTTOM OF  
CASING

APPROX.  
BOTTOM OF  
PILE

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

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<sub>e</sub> 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\\xx Bor\_Log.dgn PLOT DATE: 10/4/2013  
PROJECT LEADER: G. BOGUE DRAWN BY: E. ALLING  
DESIGNED BY: G. GOYETTE CHECKED BY: G. GOYETTE  
**BORING LOG 1** SHEET 17 OF 46



Boring Crew: GARROW, JUDKINS, WHITLOCK  
 Date Started: 10/23/12 Date Finished: 10/23/12  
 VTSPG NAD83: N 861150.60 ft E 1572883.70 ft  
 Station: 11+31 Offset: -21.70  
 Ground Elevation: 549.88 ft

Type: WB SS  
 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<sub>e</sub> = 1.46

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Cone Rec. % (RCD %)	Drill Rate minutes/ft	Blows/ft (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	Groundwater Observations		
											Date	Depth (ft)	Notes
		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							
		Hole stopped @ 19.0 ft											

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

APPROX. BOTTOM OF CASING

APPROX. BOTTOM OF PILE

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

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<sub>e</sub> 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: 10/24/12 Date Finished: 10/24/12  
 VTSPG NAD83: N 861117.90 ft E 1572878.10 ft  
 Station: 10+99 Offset: -13.70  
 Ground Elevation: 557.4 ft

Type: WB SS  
 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<sub>e</sub> = 1.46

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Cone Rec. % (RCD %)	Drill Rate minutes/ft	Blows/ft (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	Groundwater Observations		
											Date	Depth (ft)	Notes
		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. 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	R@2.5" 18.3 15.5 53.1 31.4 Top of Bedrock @ 16.5 ft							
		21.5 ft - 26.5 ft, Silvery-green, Quartz-muscovite-chlorite Schist, with quartz rich zones. Moderately hard, Unweathered, NXMDC, RMR = 72; Good rock.	2 (80-90)	90 (50)	2								
		Hole stopped @ 26.5 ft											

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

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<sub>e</sub> 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: <b>GARROW, JUDKINS, WHITLOCK</b>	Casing Type: <b>WB</b>	Sampler Type: <b>SS</b>	Groundwater Observations		
Date Started: <b>11/02/12</b> Date Finished: <b>11/02/12</b>	I.D.: <b>4 in</b>	I.D.: <b>1.5 in</b>	Date	Depth (ft)	Notes
VTSPG NAD83: <b>N 861107.90 ft E 1572899.80 ft</b>	Hammer Wt: <b>N.A.</b>	Hammer Wt: <b>140 lb.</b>			
Station: <b>10+98.5</b> Offset: <b>10.20</b>	Hammer Fall: <b>N.A.</b>	Hammer Fall: <b>30 in.</b>			
Ground Elevation: <b>558.19 ft</b>	Hammer/Rod Type: <b>Auto/AWJ</b>	Rig: <b>CME 55 TRACK</b>			
		$C_e = 1.46$			

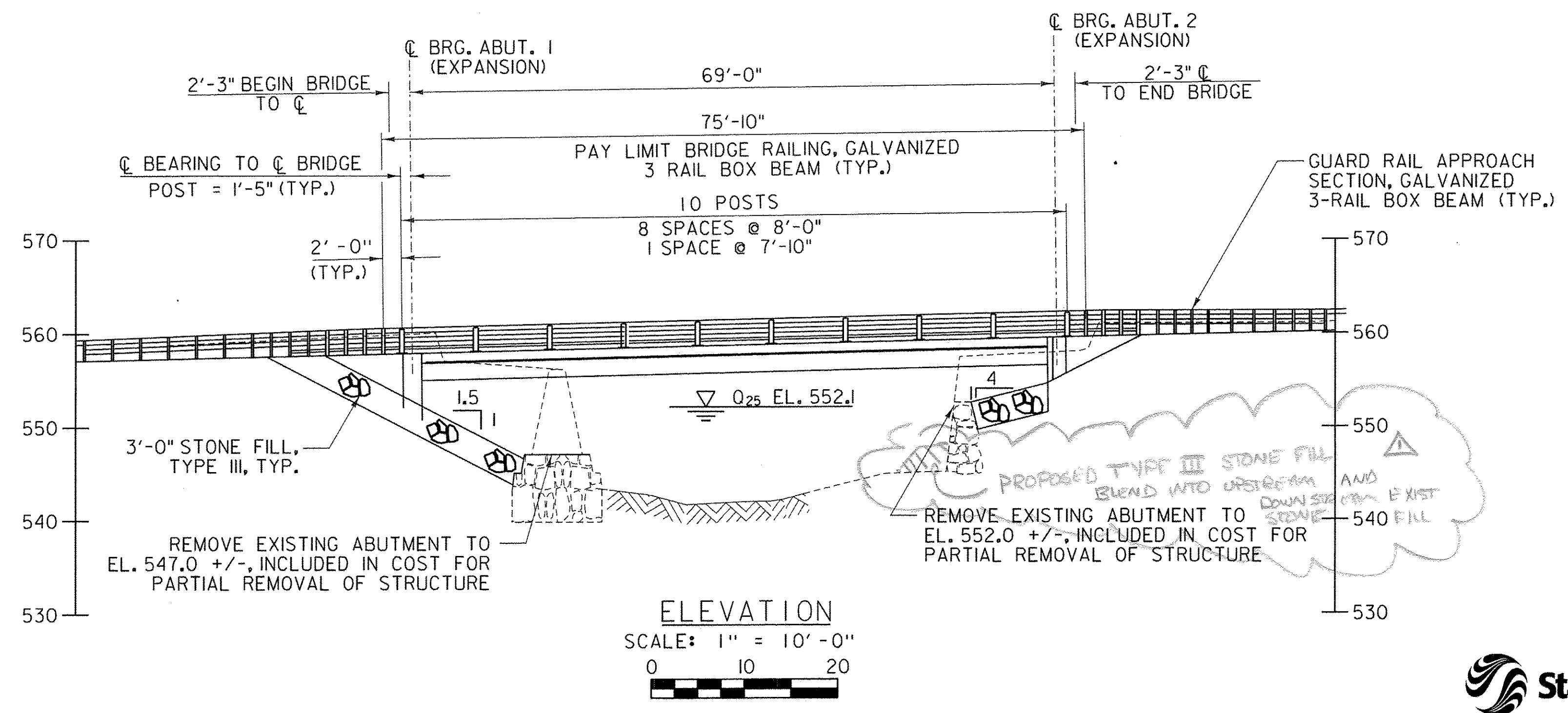
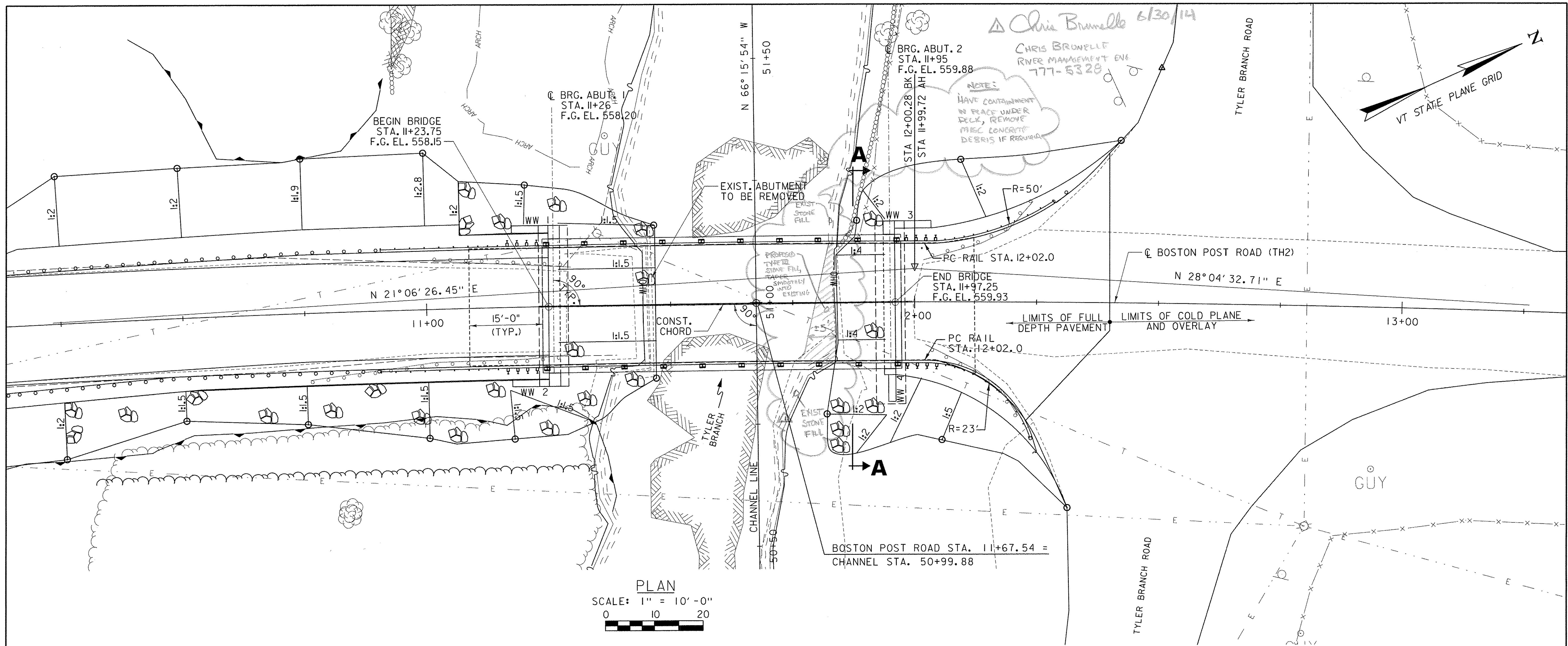
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RCP %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Field Note: Asphalt Pavement								
		A-1-a, SaGr, brn, Moist, Rec. = 0.3 ft, Asphalt Pavement was within sample.				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.  $C_e$  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.

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

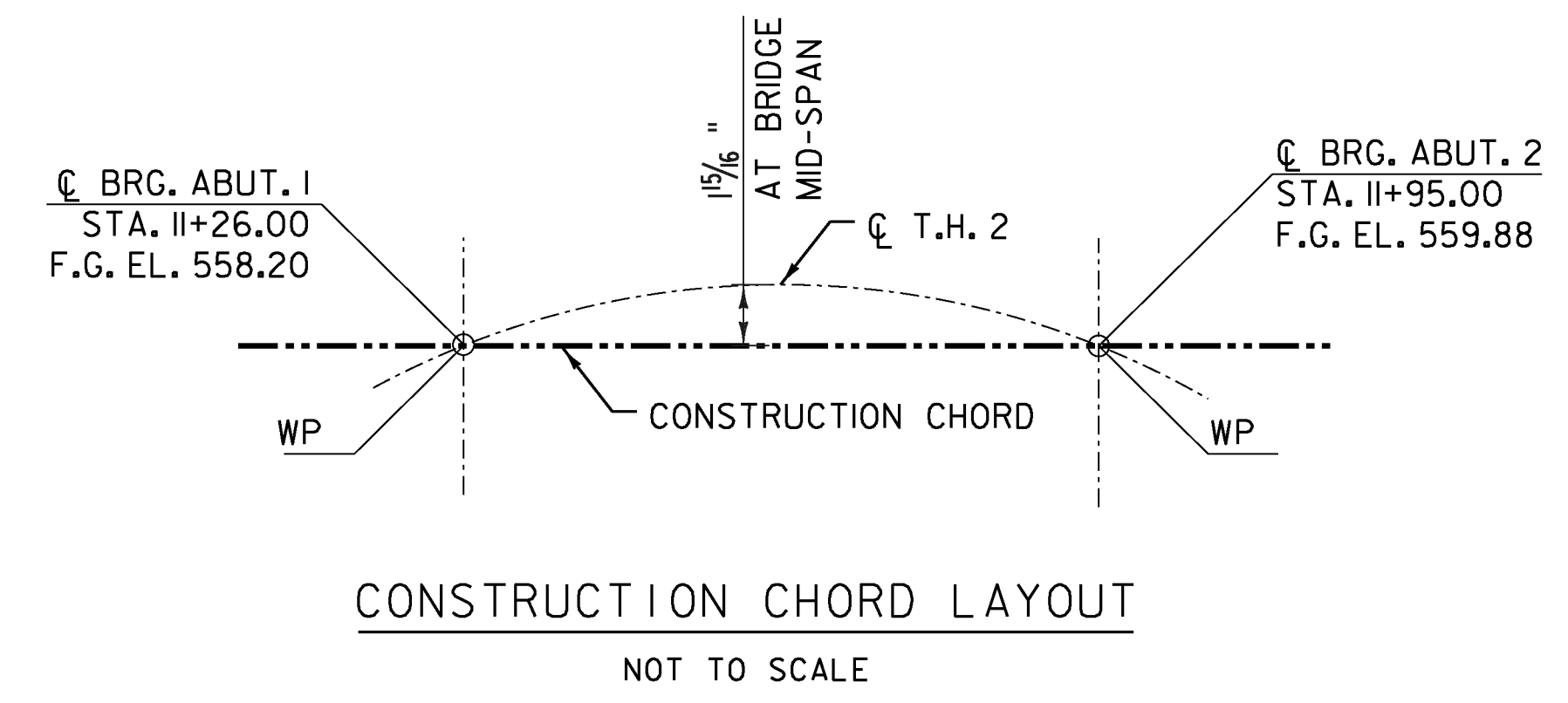
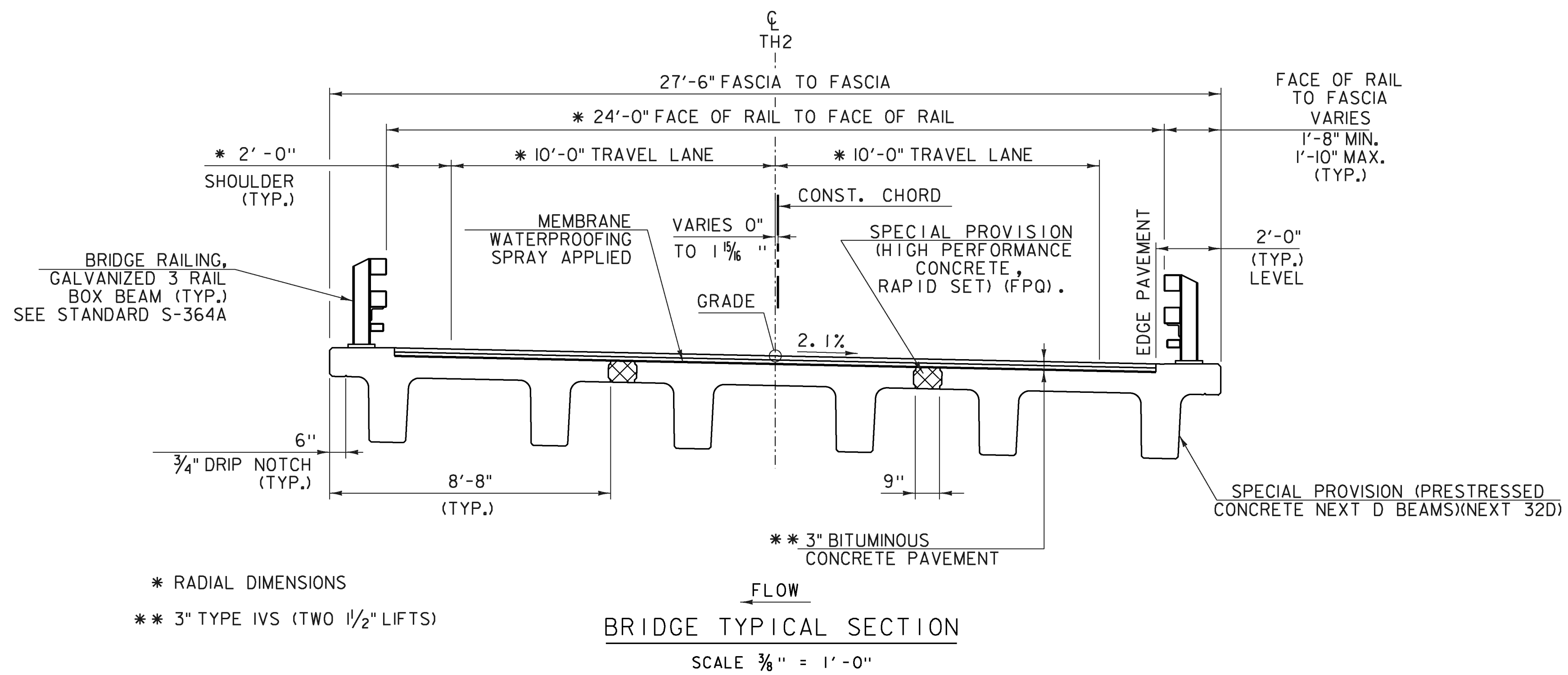




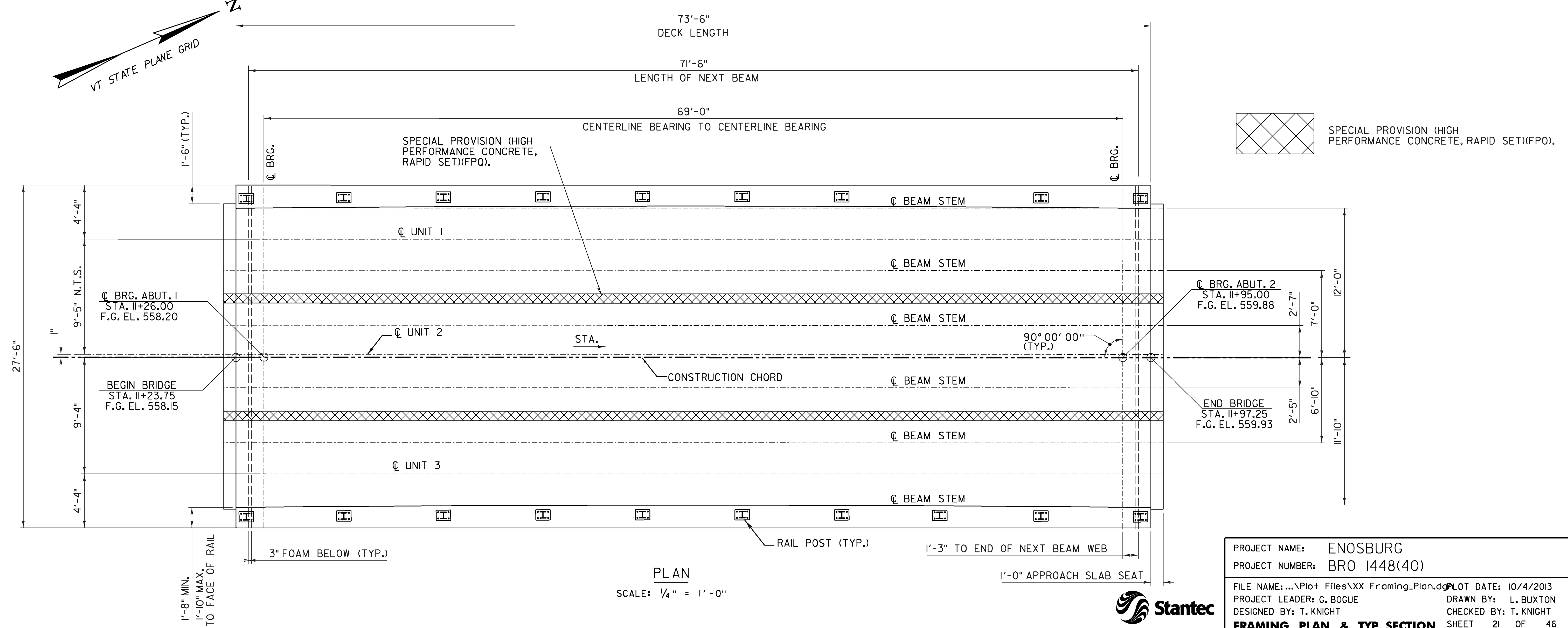
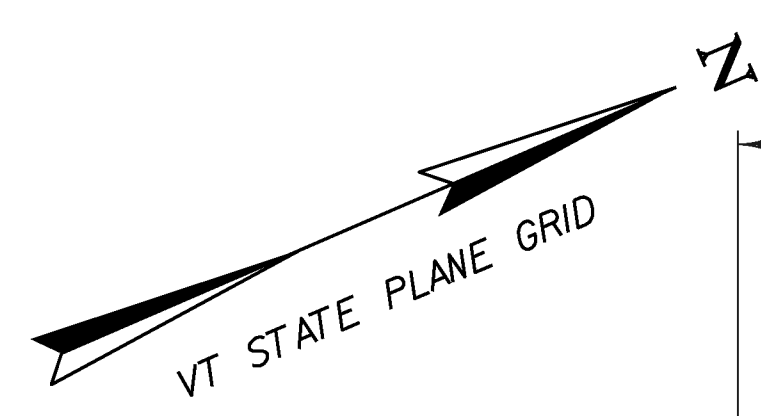
NOTE:  
FOR APPROXIMATE LIMITS OF REMOVAL OF EXISTING WALL AT ABUTMENT 2, REFER TO VIEW A-A ON SHEET 29.

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





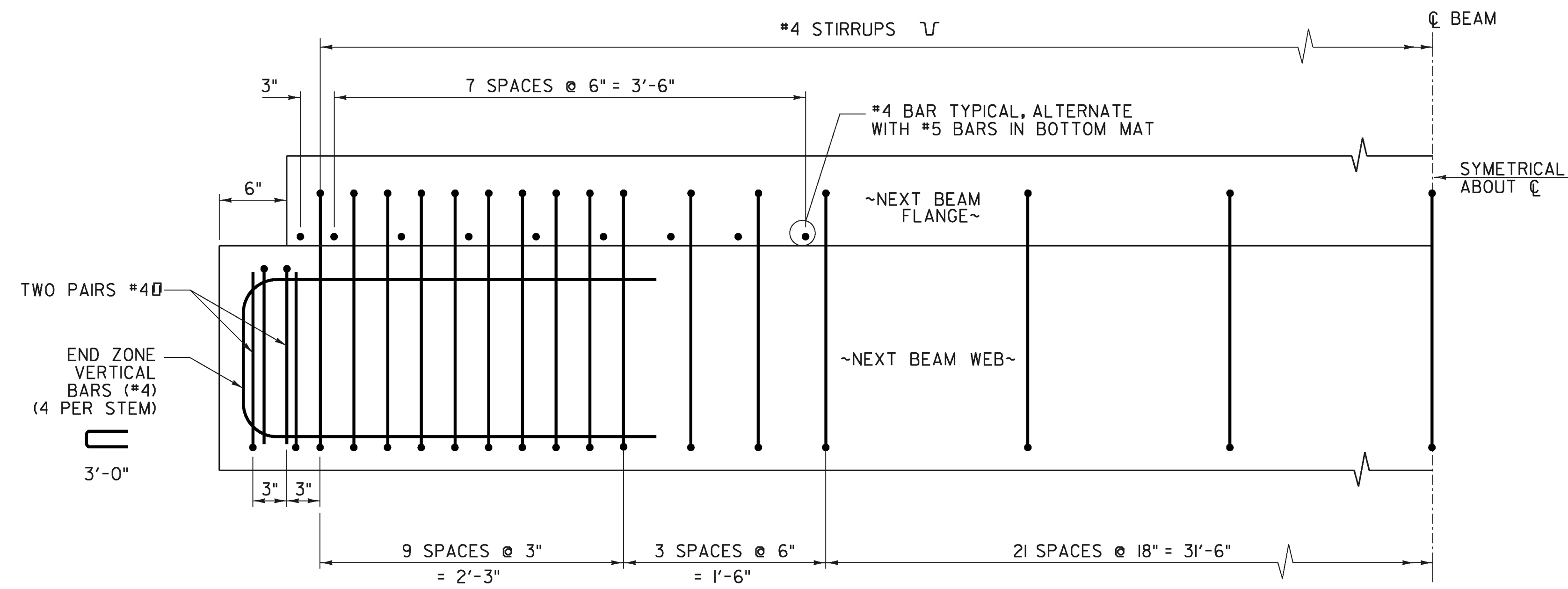
\* RADIAL DIMENSIONS  
 \*\* 3" TYPE IVS (TWO 1/2" LIFTS)



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

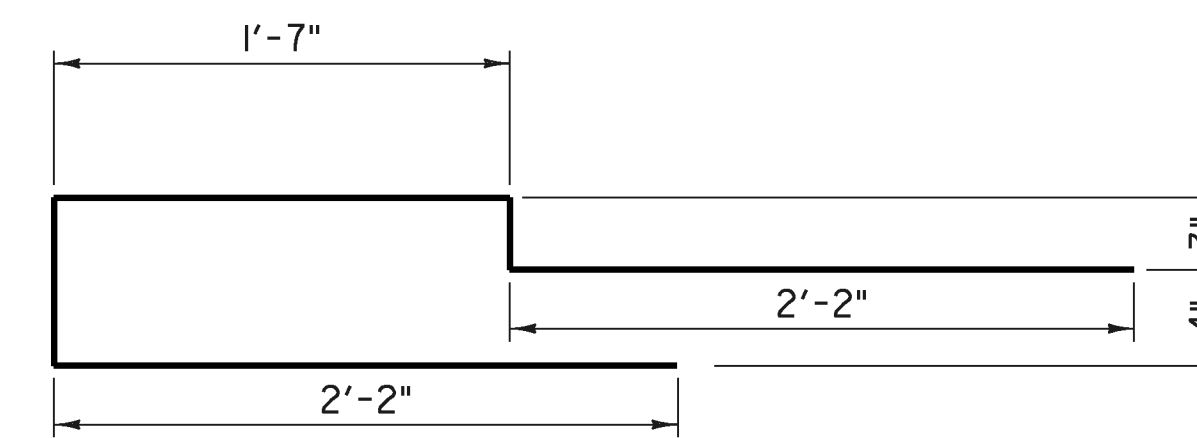
PROJECT NAME:	ENOSBURG
PROJECT NUMBER:	BRO 1448(40)
FILE NAME:	... \Plot Files\XX Framing_Plan.dwg
PROJECT LEADER:	G. BOGUE
DESIGNED BY:	T. KNIGHT
DRAWN BY:	L. BUXTON
CHECKED BY:	T. KNIGHT
DATE:	10/4/2013



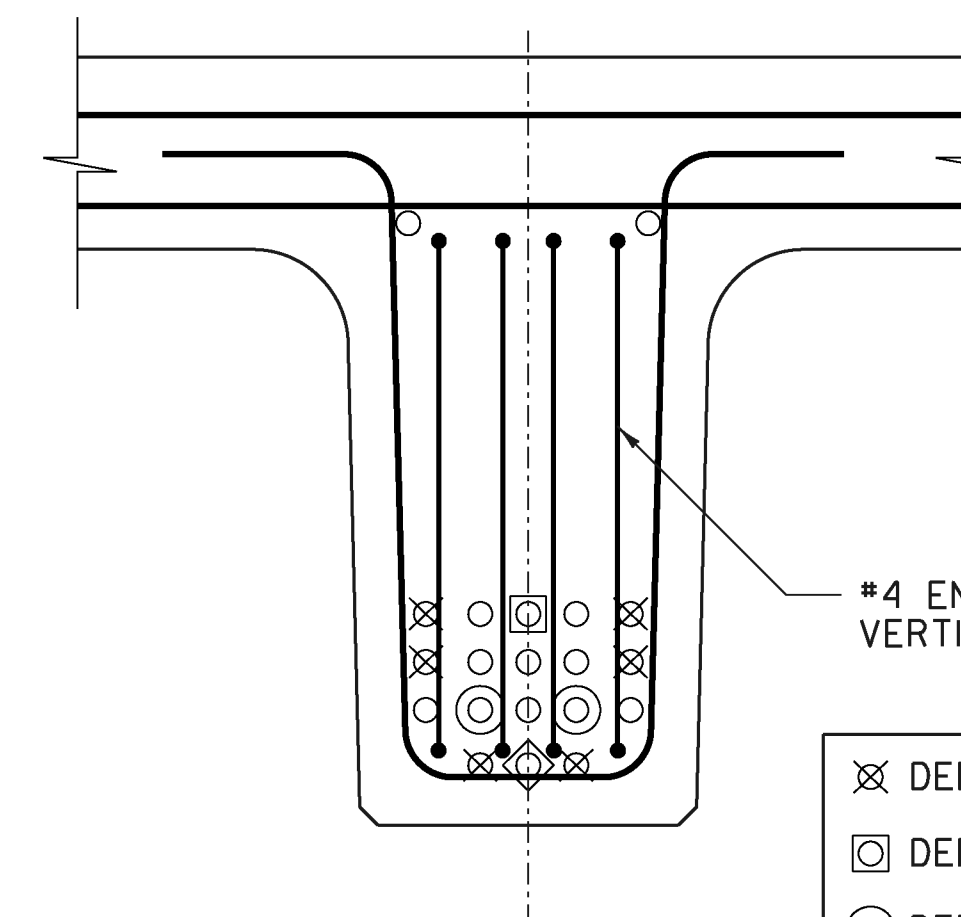


ADDITIONAL END BEAM REINFORCEMENT  
SCALE 1 1/2" = 1'-0"

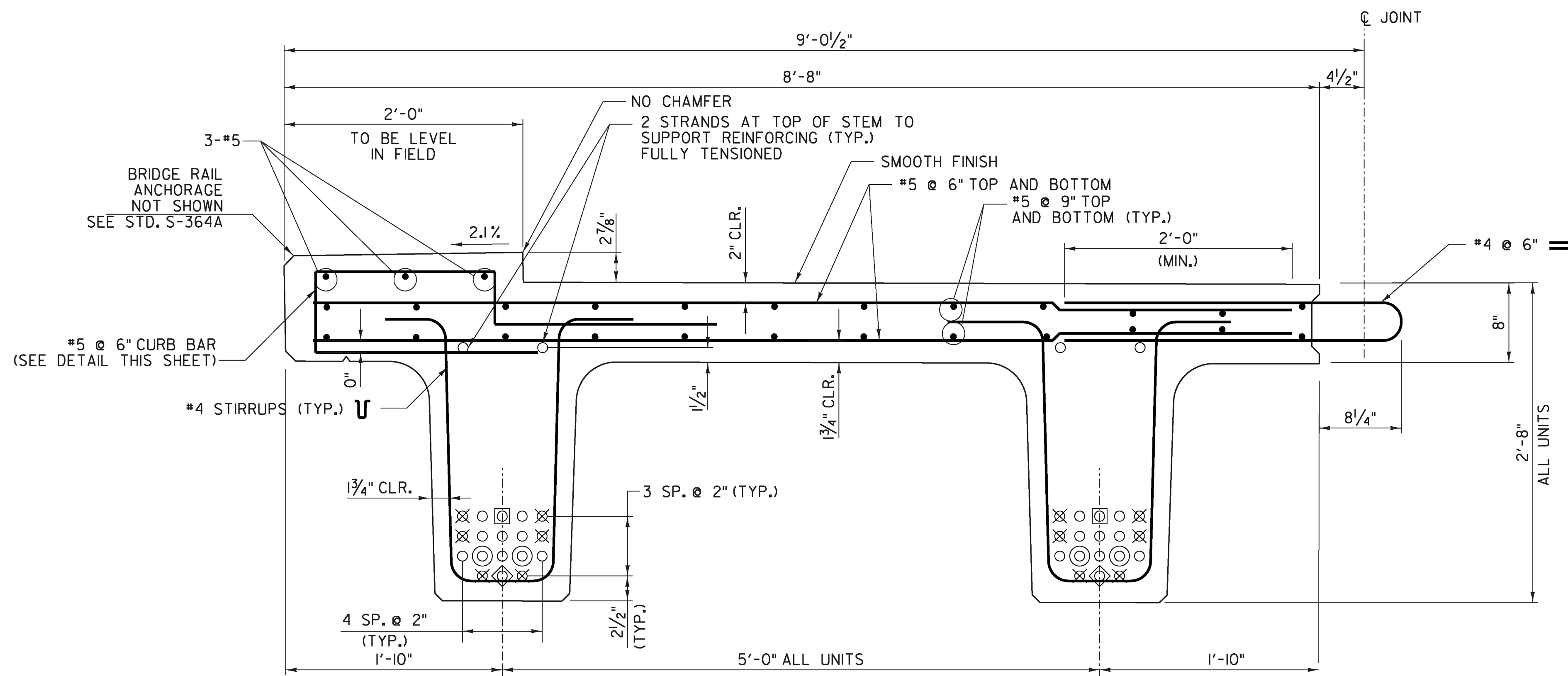
NOTE:  
TYPICAL DECK REINFORCING AND NEXT BEAM  
PRESTRESSING TENDONS NOT SHOWN FOR CLARITY



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



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



UNIT 1

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

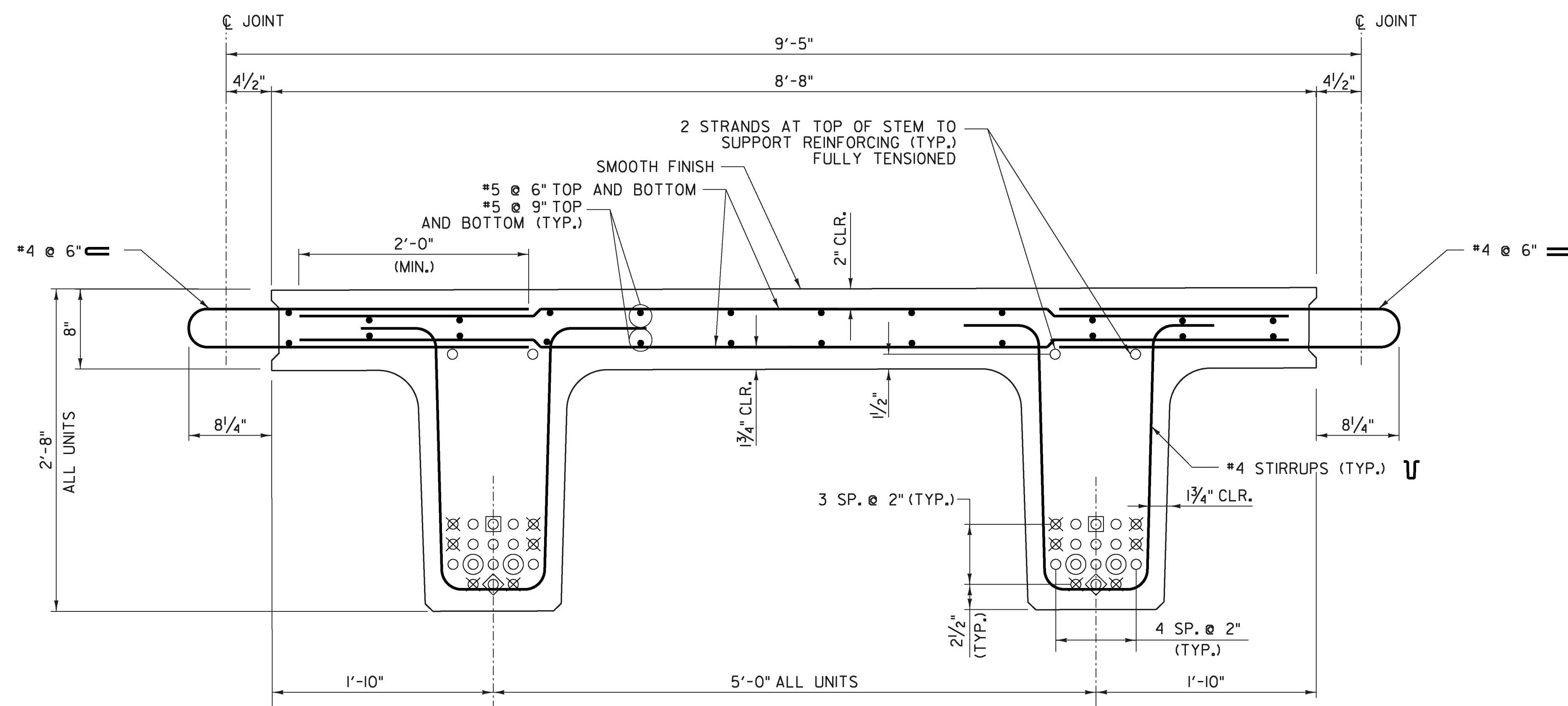
NOTES:

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



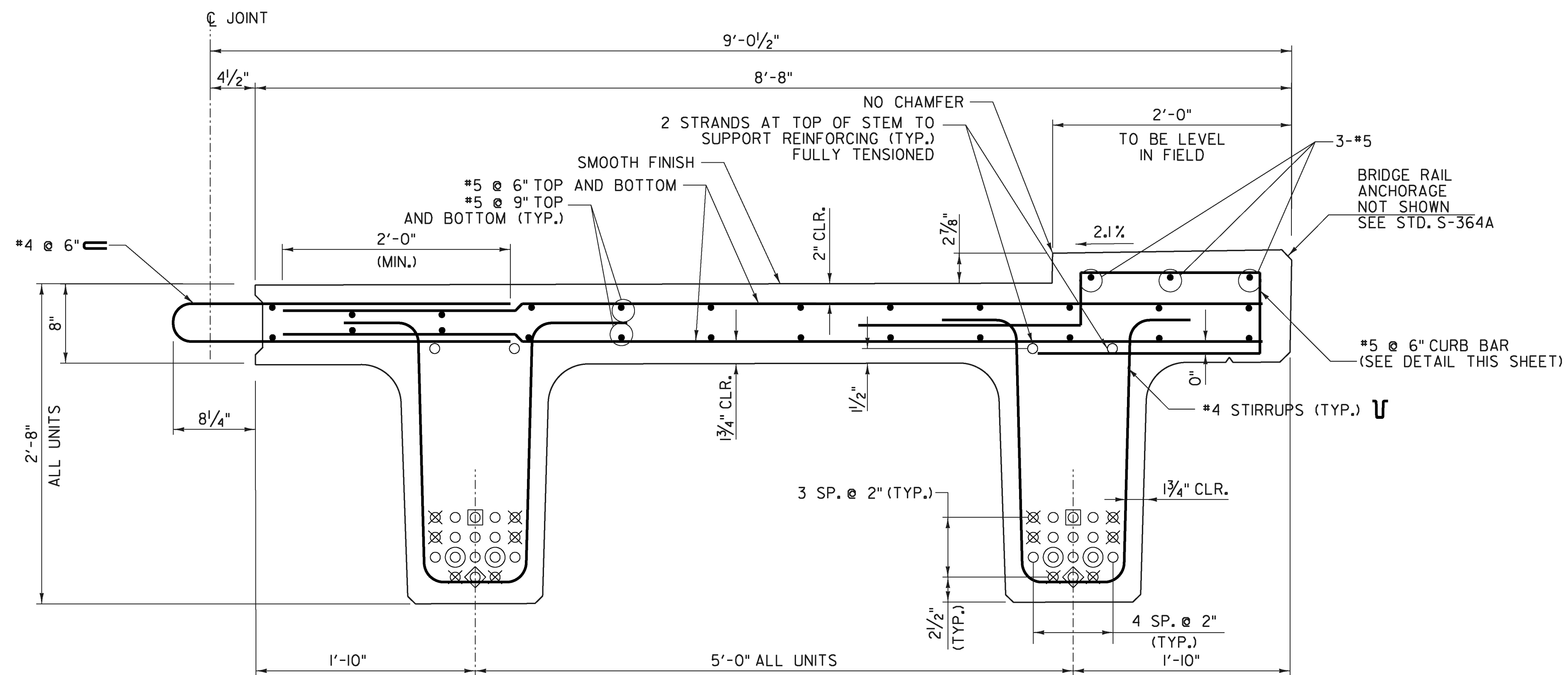
PROJECT NAME: ENOSBURG  
PROJECT NUMBER: BRO 1448(40)

FILE NAME: ...XXX Next\_Beam\_Det.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.



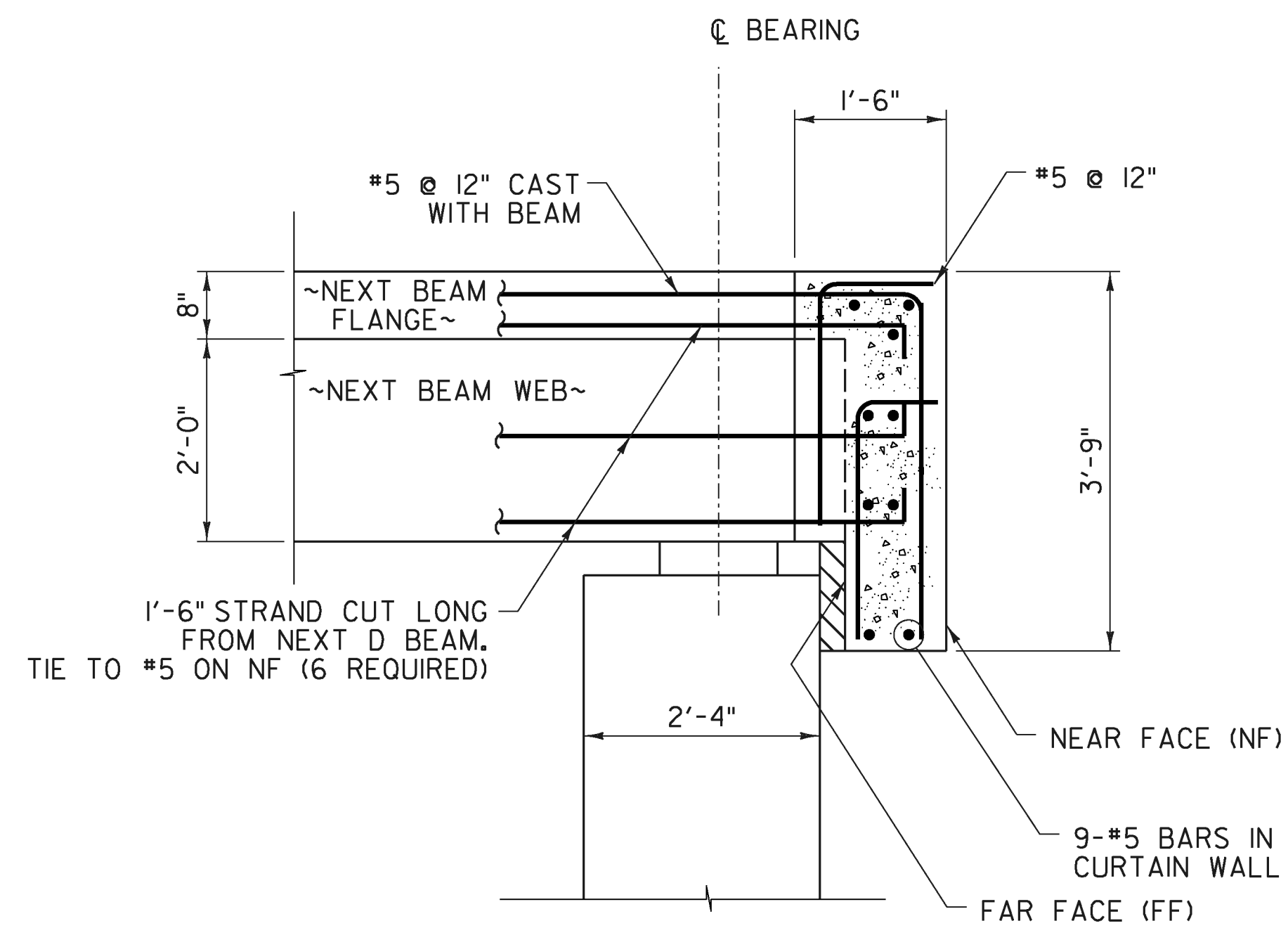
**UNIT 3**  
**TYPICAL BEAM REINFORCING**  
 SCALE 1/2" = 1'-0"

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

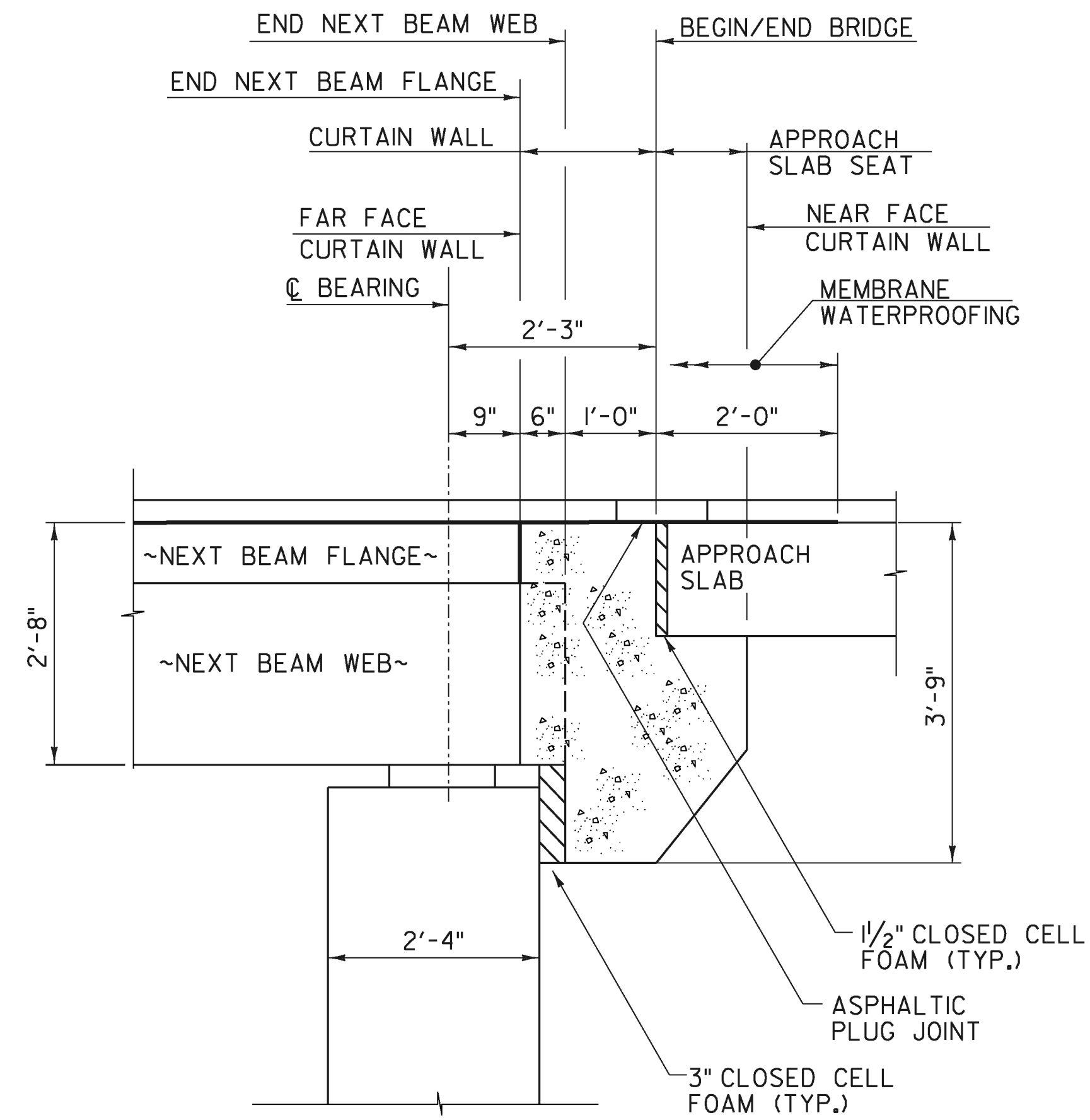
PROJECT NAME: ENOSBURG  
 PROJECT NUMBER: BRO 1448(40)

FILE NAME: ...\\XX Next\_Beam\_Det\_2.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 - 2** SHEET 23 OF 46

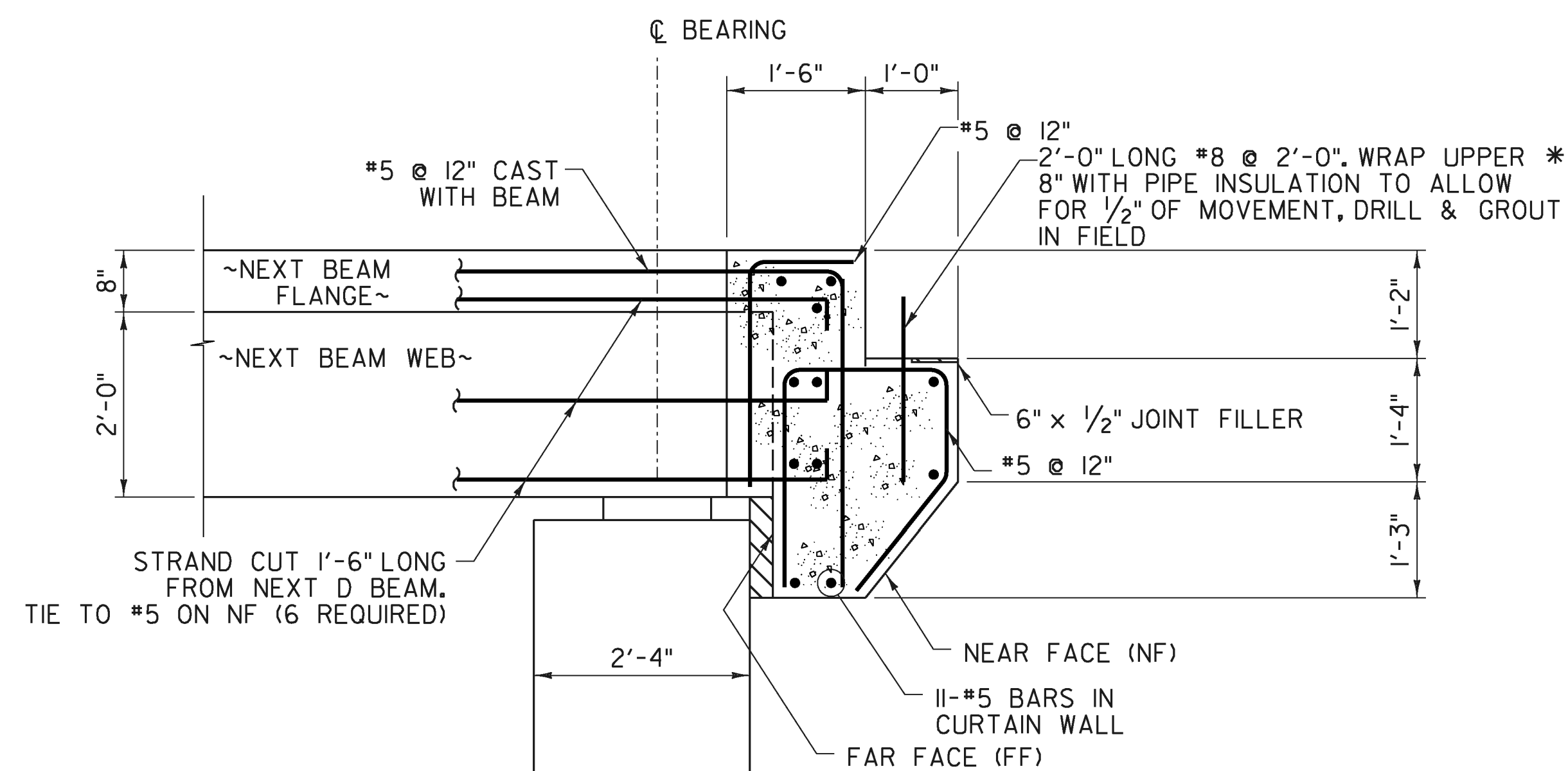




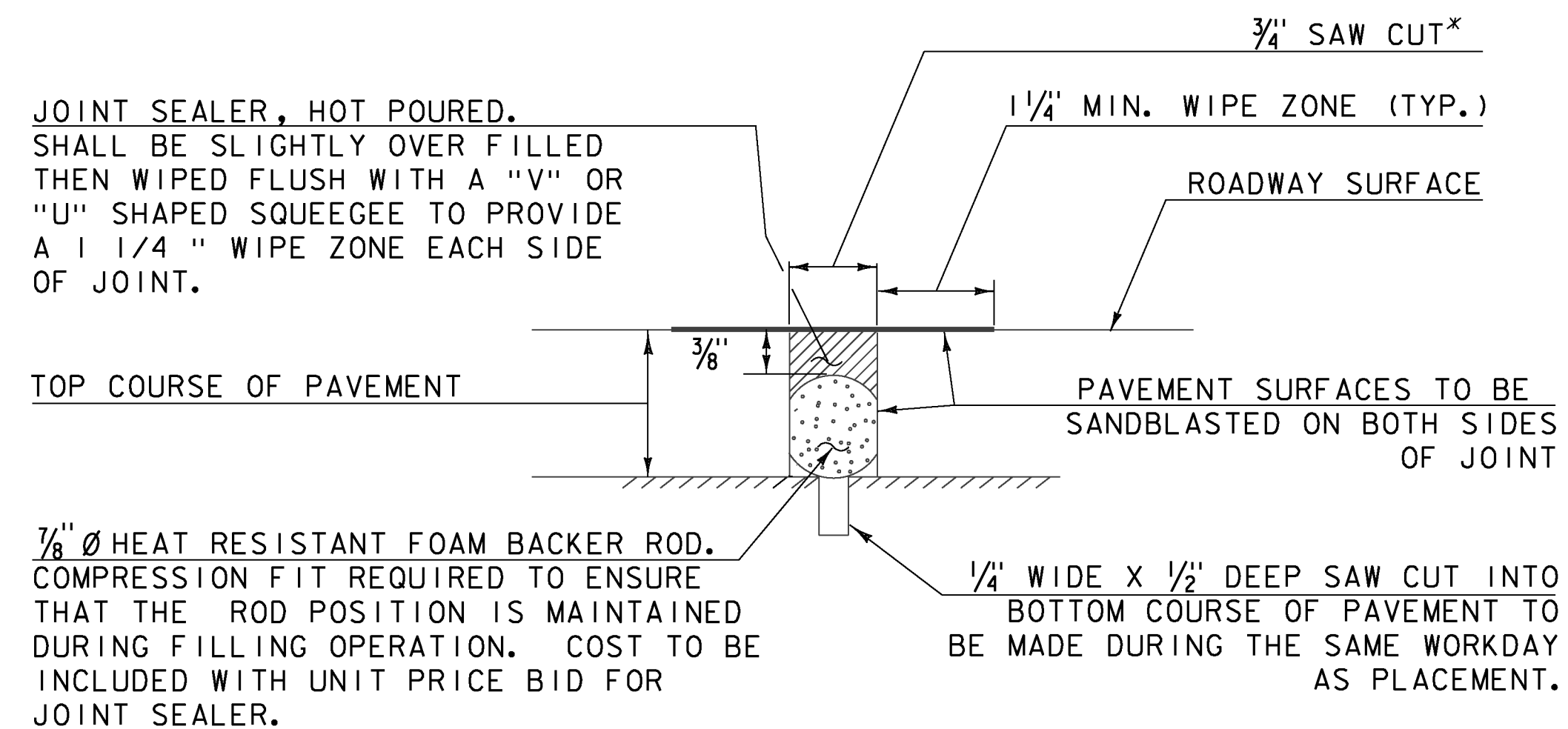
PRECAST CURTAIN WALL REINFORCING SECTION A-A  
SCALE 3/4" = 1'-0"



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



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



SAWED PAVEMENT JOINT DETAIL  
N. T. S.

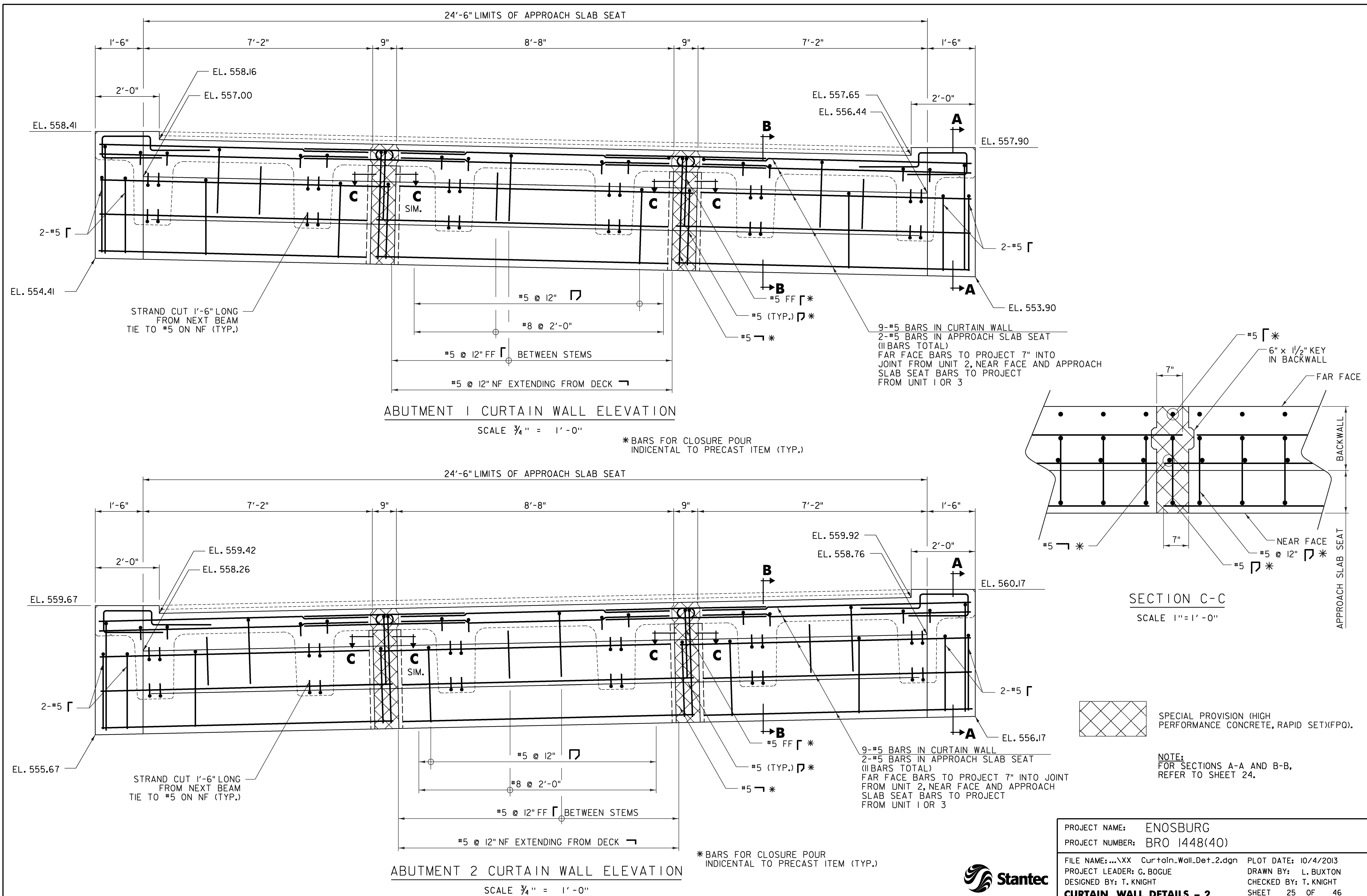
NOTE: PLACE JOINT SEALER, HOT Poured AT THE BEGINNING OF APPROACH SLABS.

\* 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.

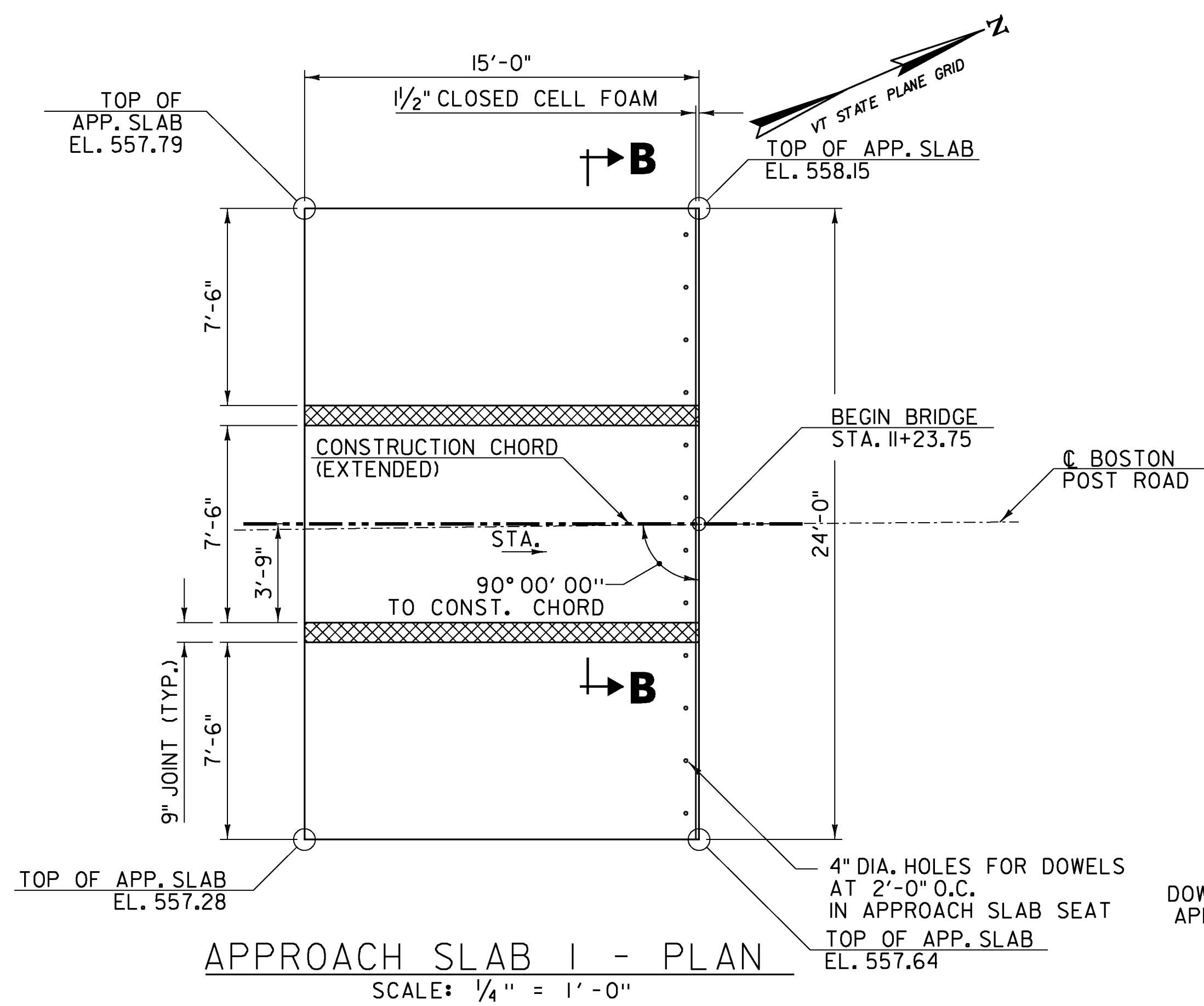
PROJECT NAME:	ENOSBURG	FILE NAME: ...XX Curtain_Wall_Det_1.dgn	PLOT DATE:	10/4/2013	
PROJECT NUMBER:	BRO 1448(40)	PROJECT LEADER:	G. BOGUE	DRAWN BY:	L. BUXTON
		DESIGNED BY:	T. KNIGHT	CHECKED BY:	T. KNIGHT
			SHEET 24 OF 46		



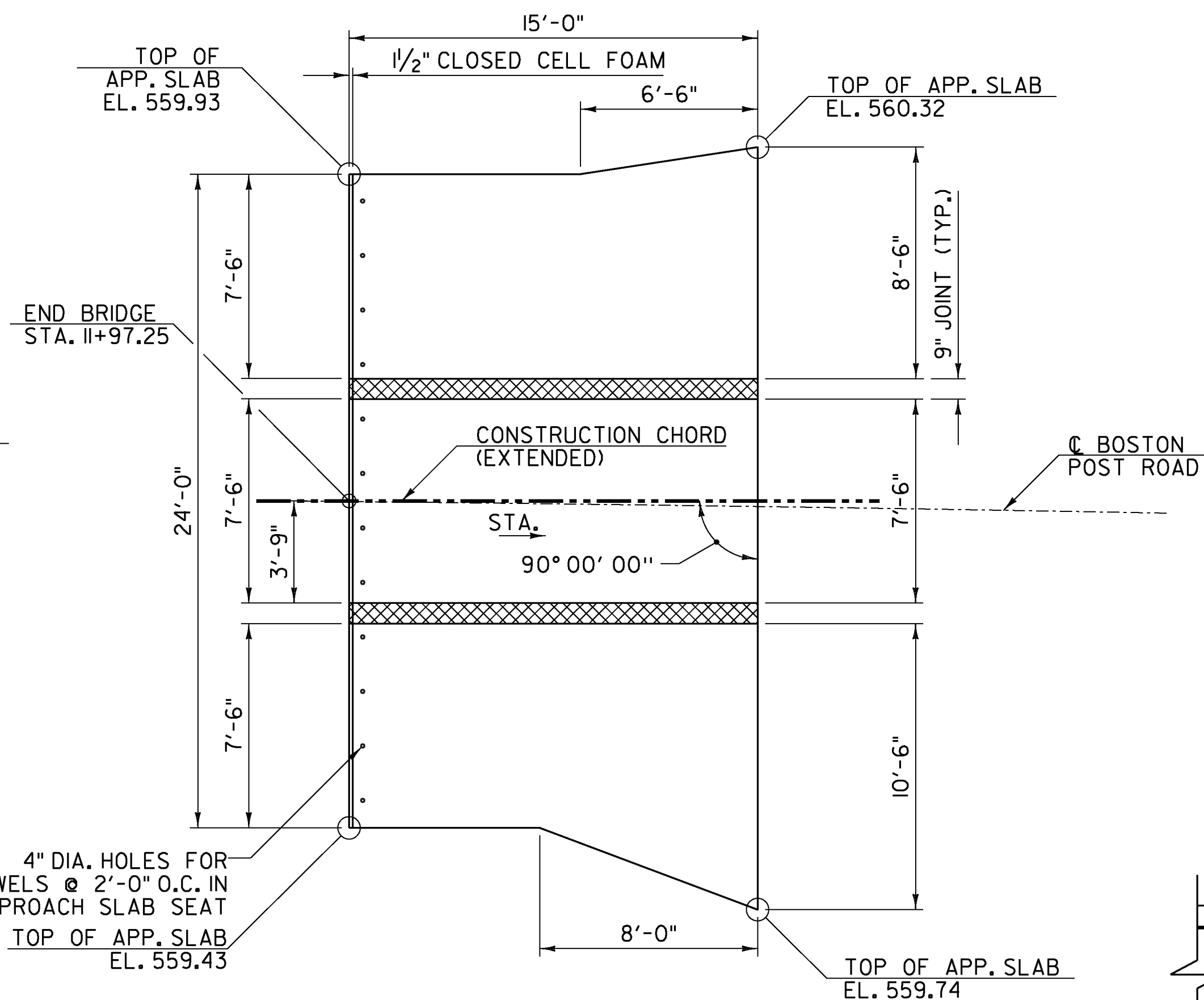


PROJECT NAME:	ENOSBURG	FILE NAME:	...XX Curtain_Wall_Det_2.dgn	PROJECT LEADER:	G. BOGUE	DESIGNED BY:	T. KNIGHT	PLLOT DATE:	10/4/2013	DRAWN BY:	L. BUXTON	CHECKED BY:	T. KNIGHT
PROJECT NUMBER:	BRO 1448(40)												
<b>CURTAIN WALL DETAILS - 2</b>													
											SHEET 25 OF 46		

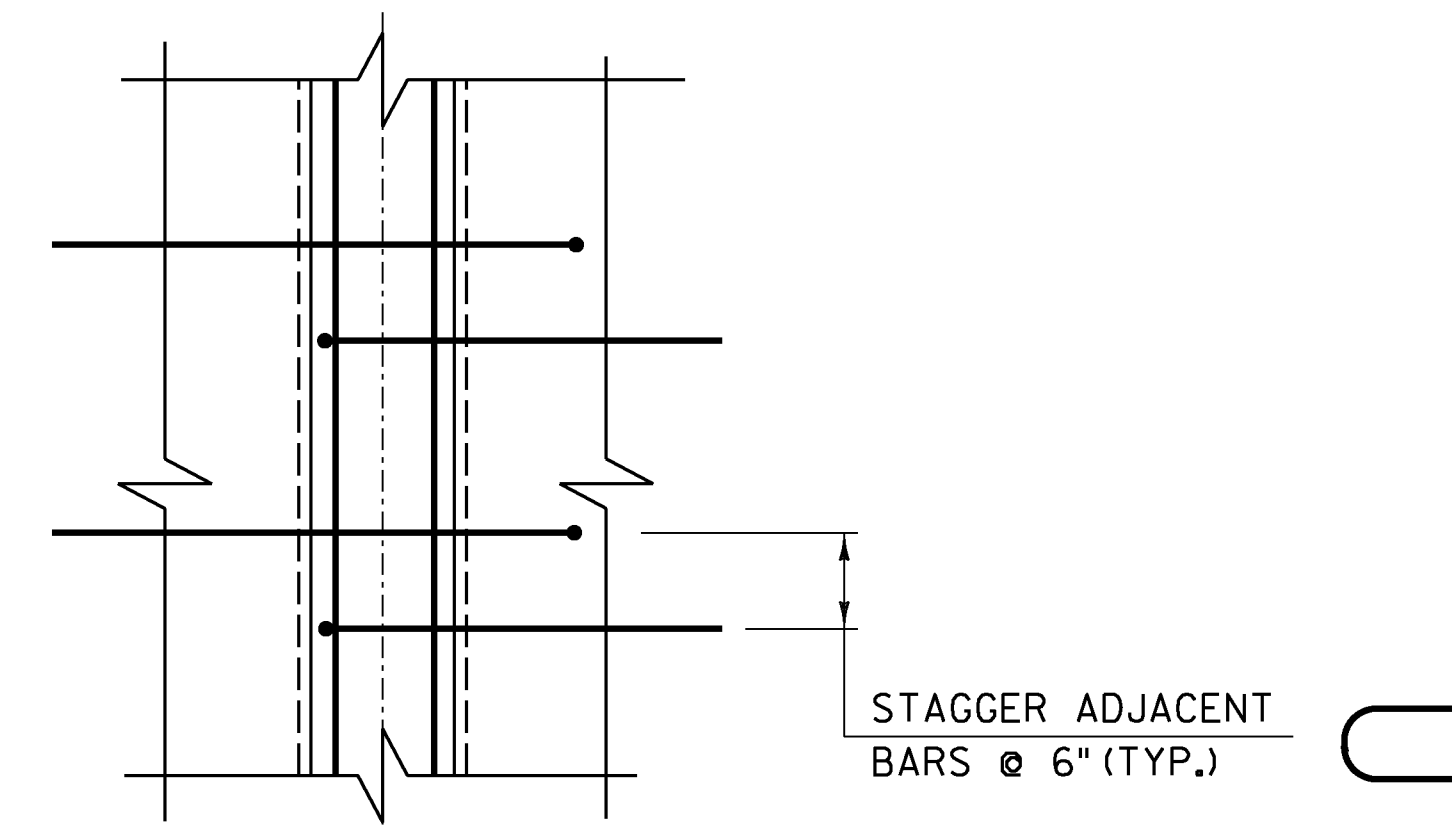




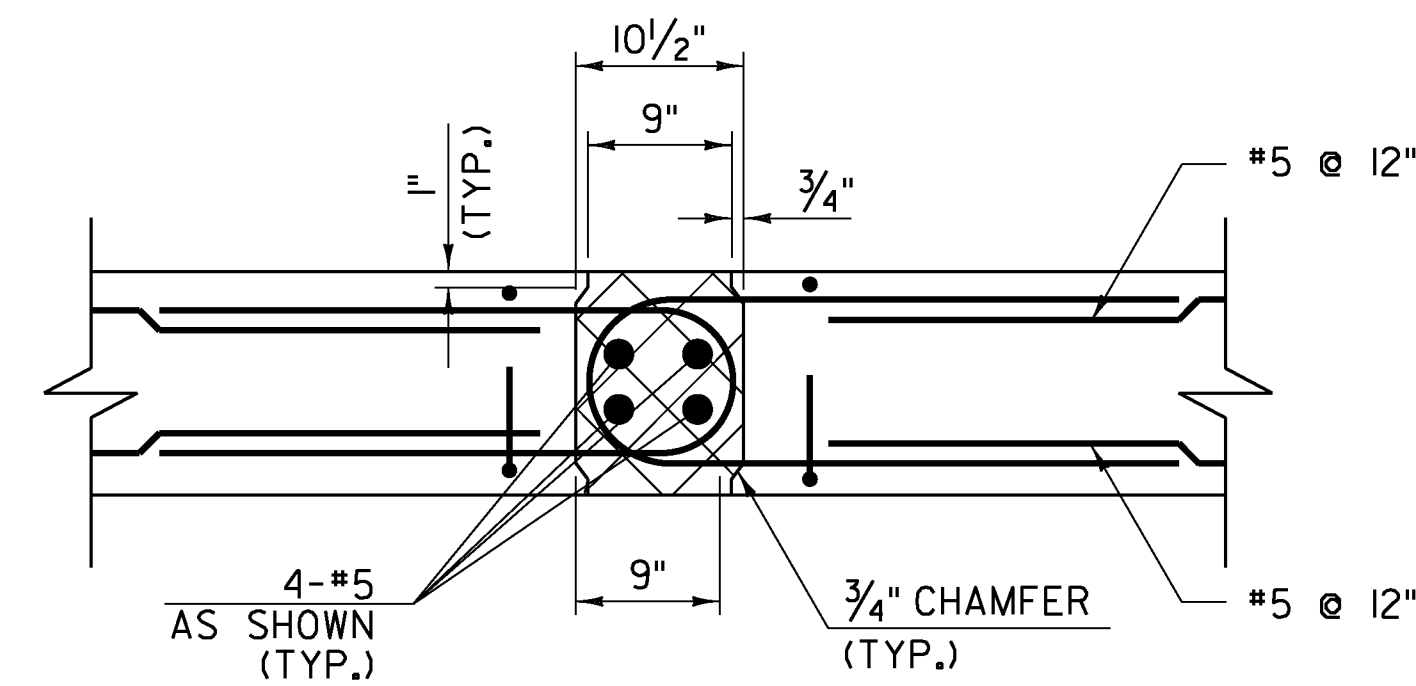
**APPROACH SLAB 1 - PLAN**  
 SCALE: 1/4" = 1'-0"



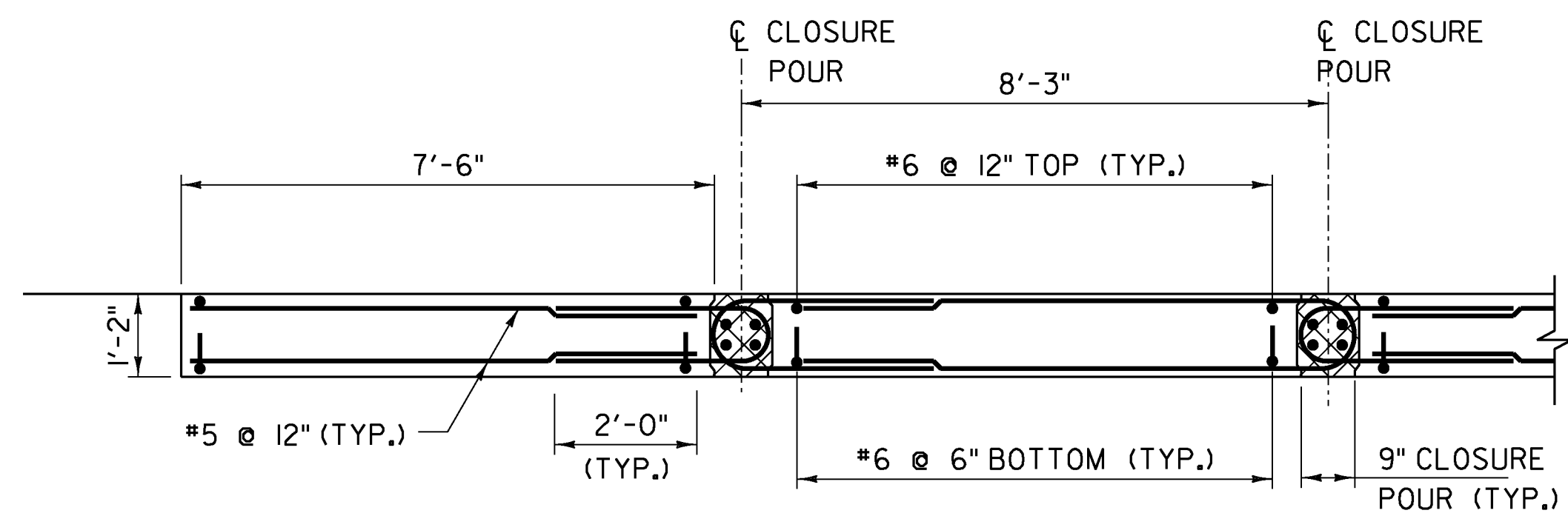
**APPROACH SLAB 2 - PLAN**  
 SCALE: 1/4" = 1'-0"



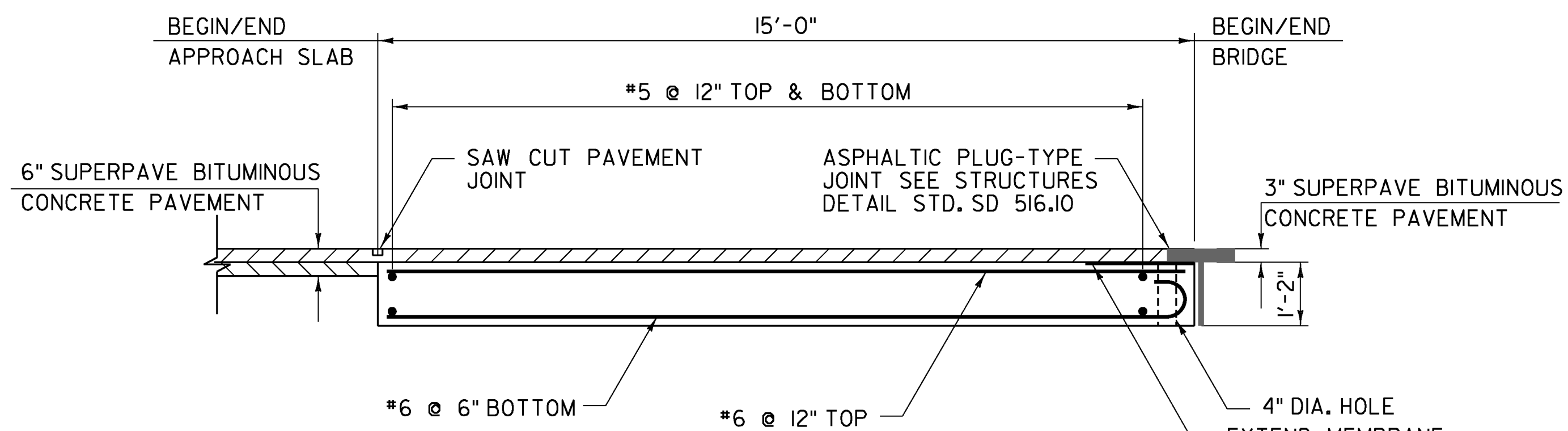
**CONNECTION DETAIL PLAN**  
 SCALE: 1" = 1'-0"



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

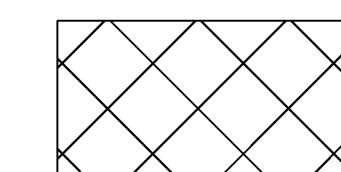


**SECTION B-B**  
 SCALE: 1/2" = 1'-0"



**APPROACH SLAB TYPICAL SECTION**  
 SCALE: 1/2" = 1'-0"

**LEGEND:**



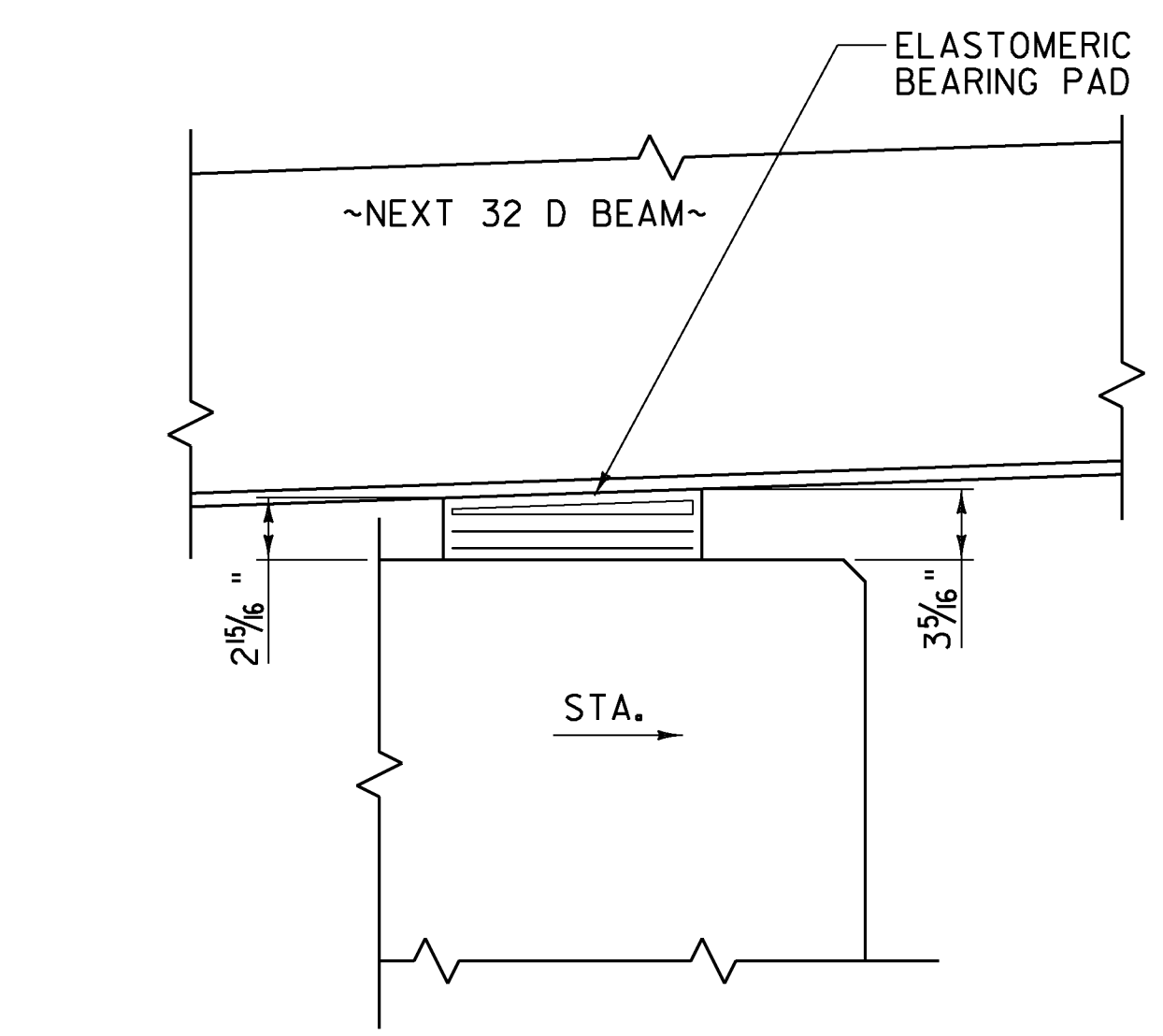
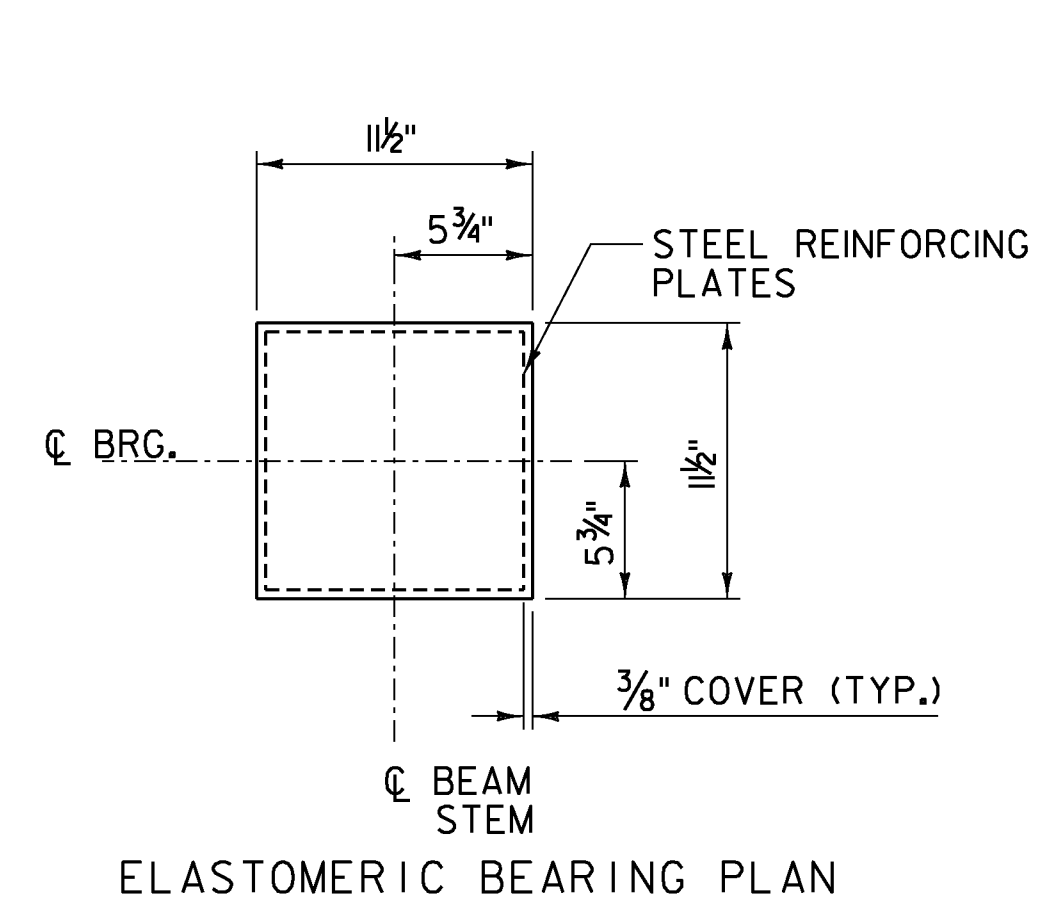
SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)(FPO).

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

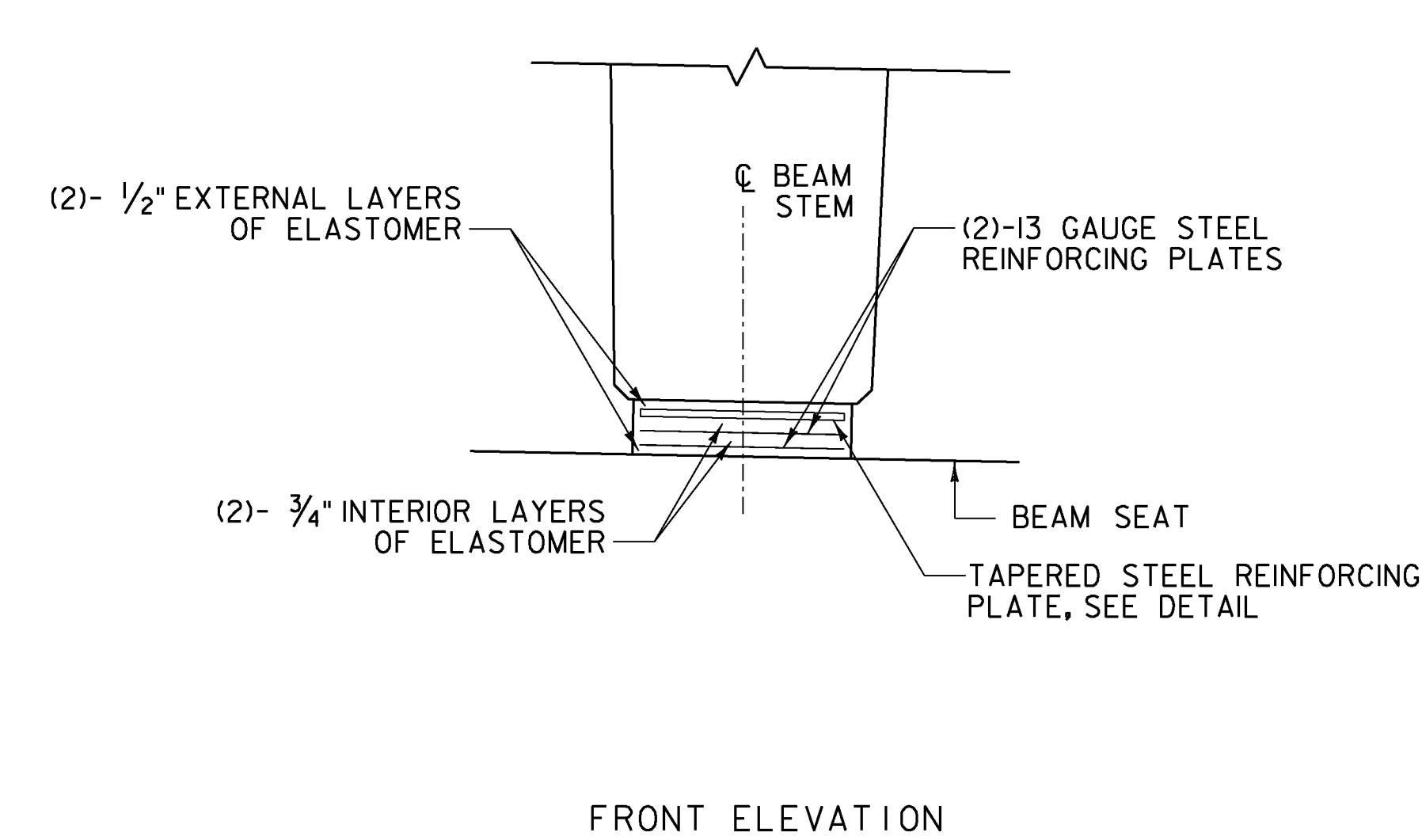
PROJECT NAME: ENOSBURG  
 PROJECT NUMBER: BRO 1448(40)

FILE NAME: ...Plot Files\XX App slabs.dgn PLOT DATE: 10/17/2013  
 PROJECT LEADER: G. BOGUE DRAWN BY: L. BUXTON  
 DESIGNED BY: J. HUNGERFORD CHECKED BY: T. KNIGHT  
**APPROACH SLABS & DETAILS** SHEET 26 OF 46

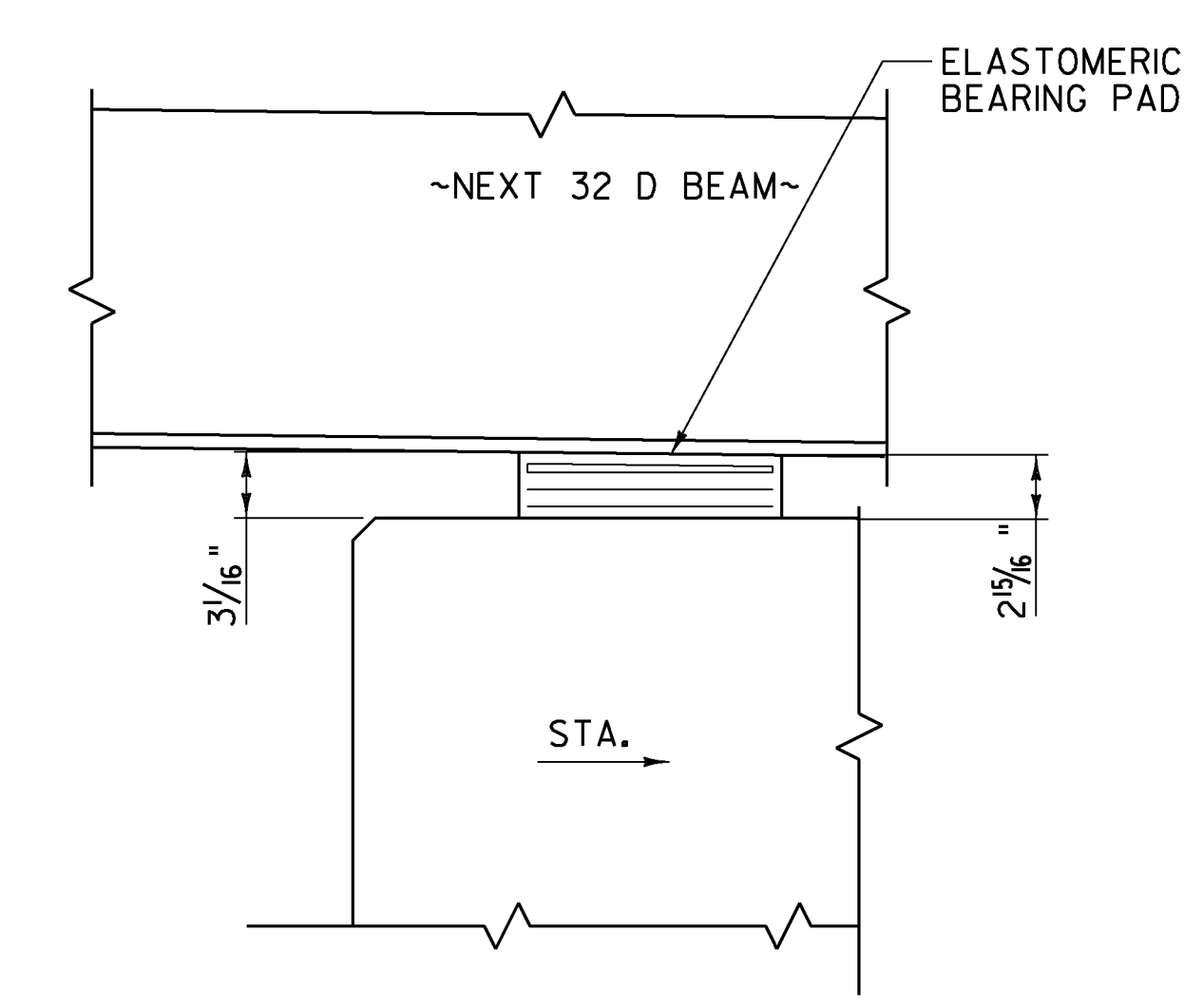




SIDE ELEVATION - ABUTMENT 1



FRONT ELEVATION

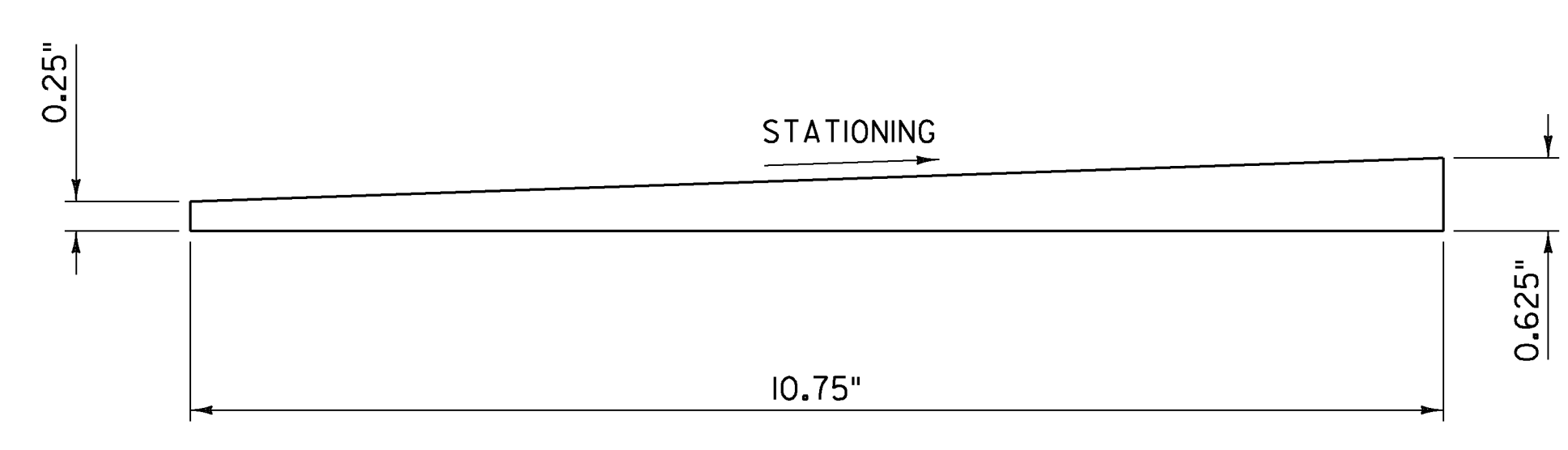


SIDE ELEVATION - ABUTMENT 2

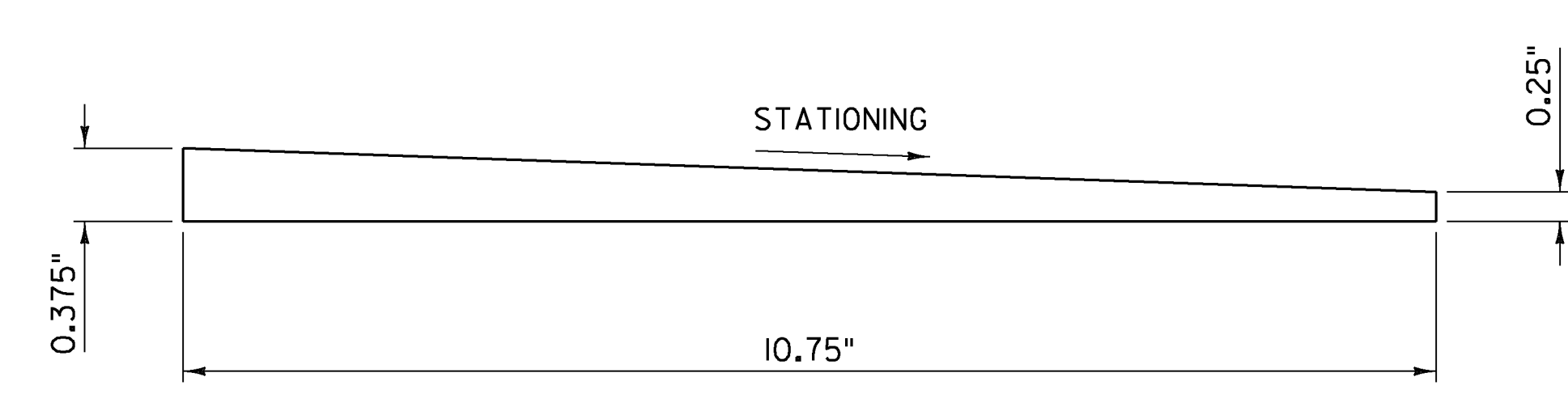
ELASTOMERIC BEARING ASSEMBLY  
SCALE 1 1/2" = 1'-0"

**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 RADIAN
  - 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".



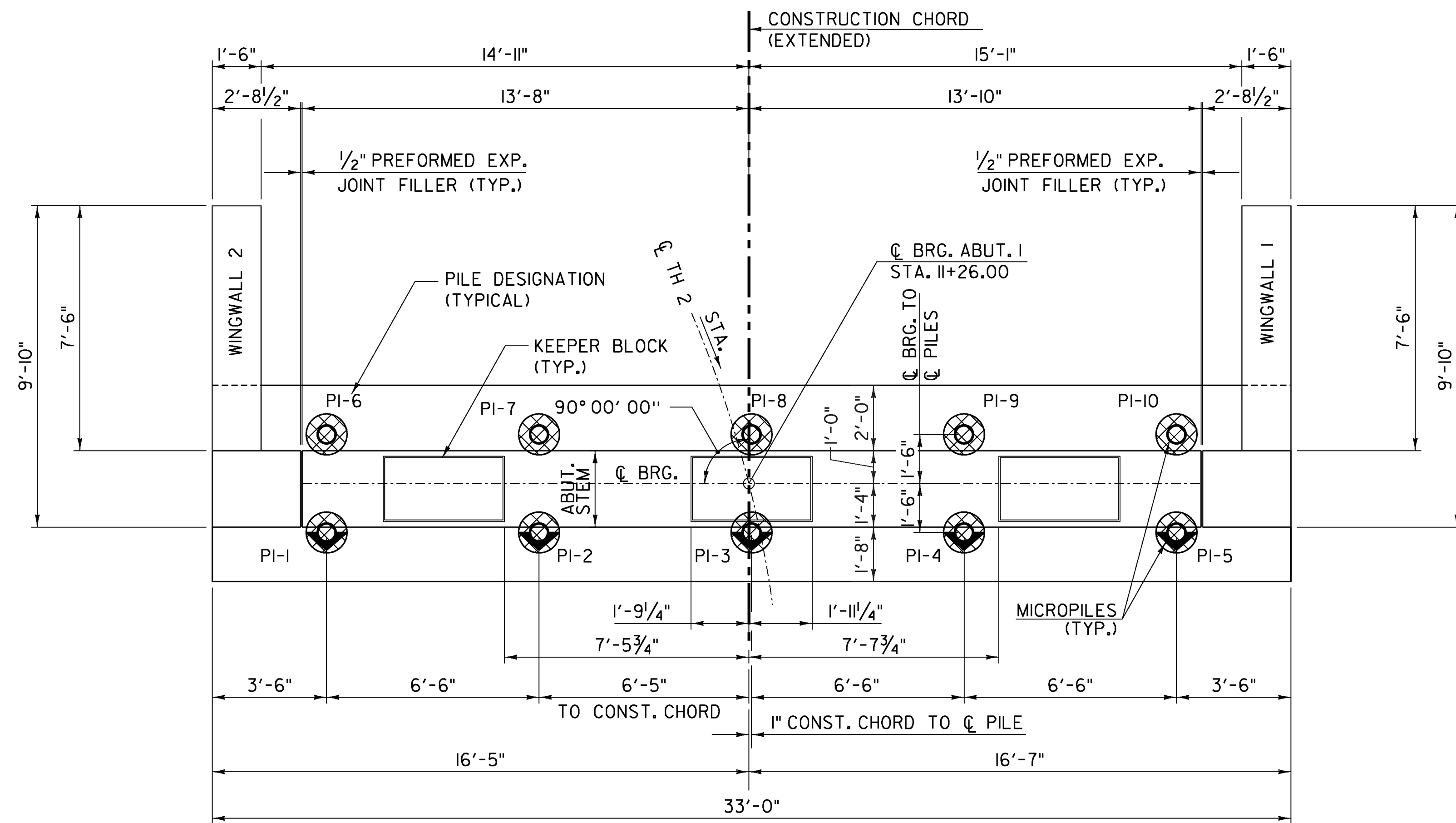
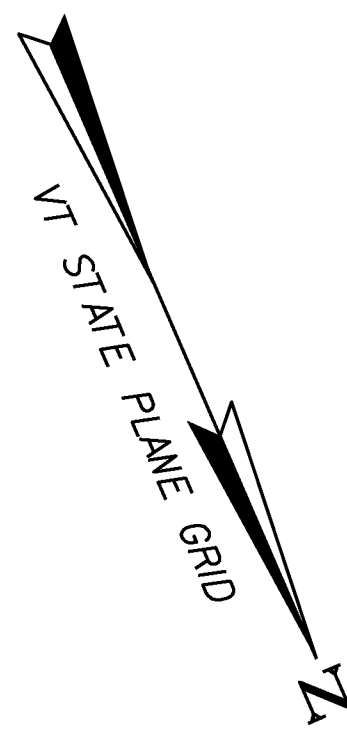
ABUTMENT 1 STEEL REINFORCING PLATE DETAIL  
NOT TO SCALE



ABUTMENT 2 STEEL REINFORCING PLATE DETAIL  
NOT TO SCALE

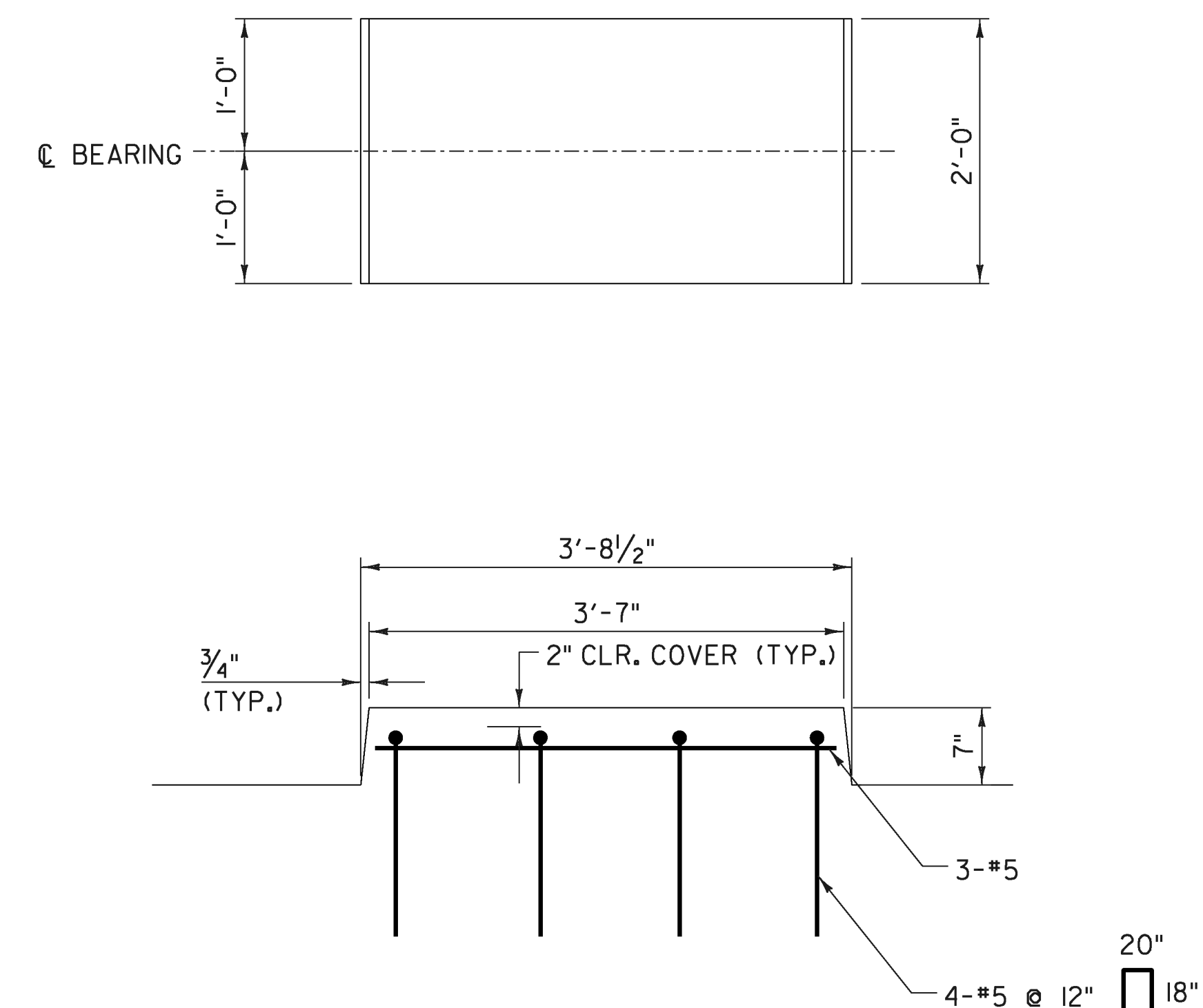


PROJECT NAME: ENOSBURG	PLOT DATE: 10/4/2013
PROJECT NUMBER: BRO 1448(40)	DRAWN BY: L. BUXTON
FILE NAME: ...XXX Bearing_Dets.dgn	CHECKED BY: T. KNIGHT
PROJECT LEADER: G. BOGUE	SHEET 27 OF 46
DESIGNED BY: T. KNIGHT	
<b>BEARING DETAILS</b>	

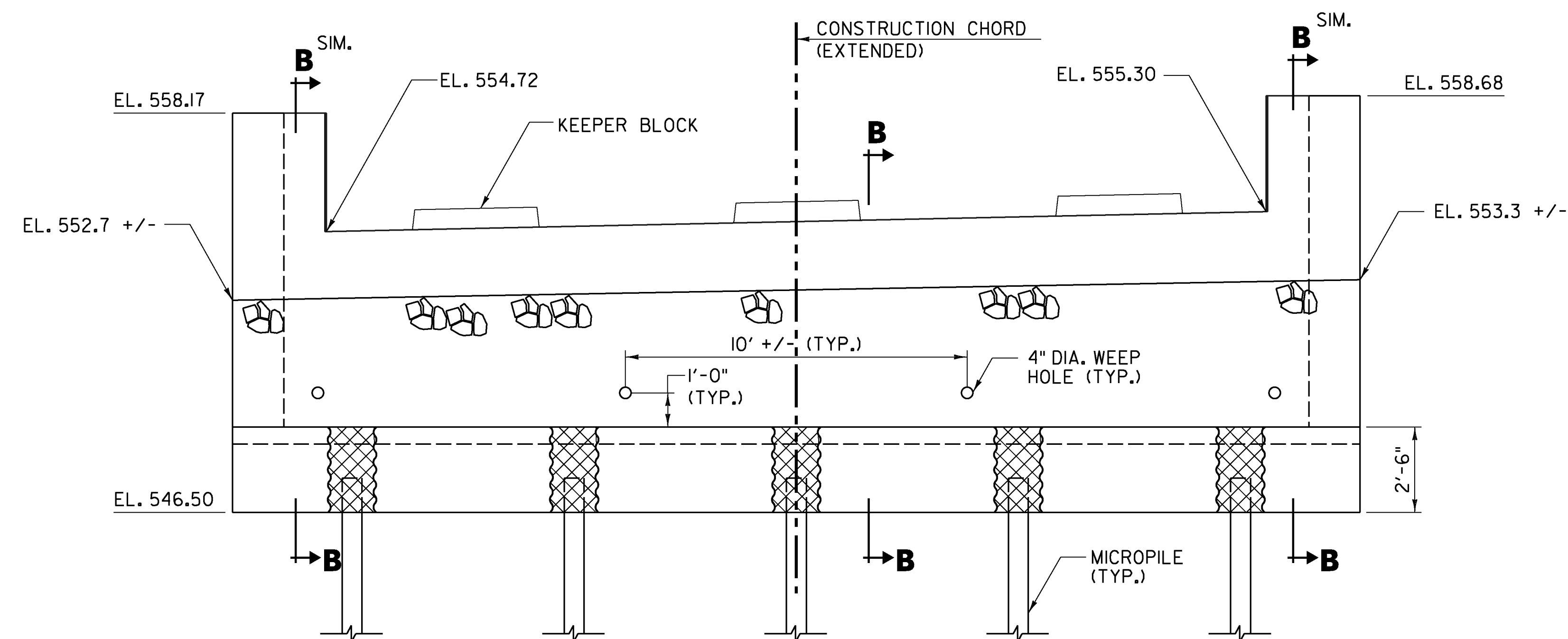


**ABUTMENT I PLAN**  
SCALE 3/8" = 1'-0"

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



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



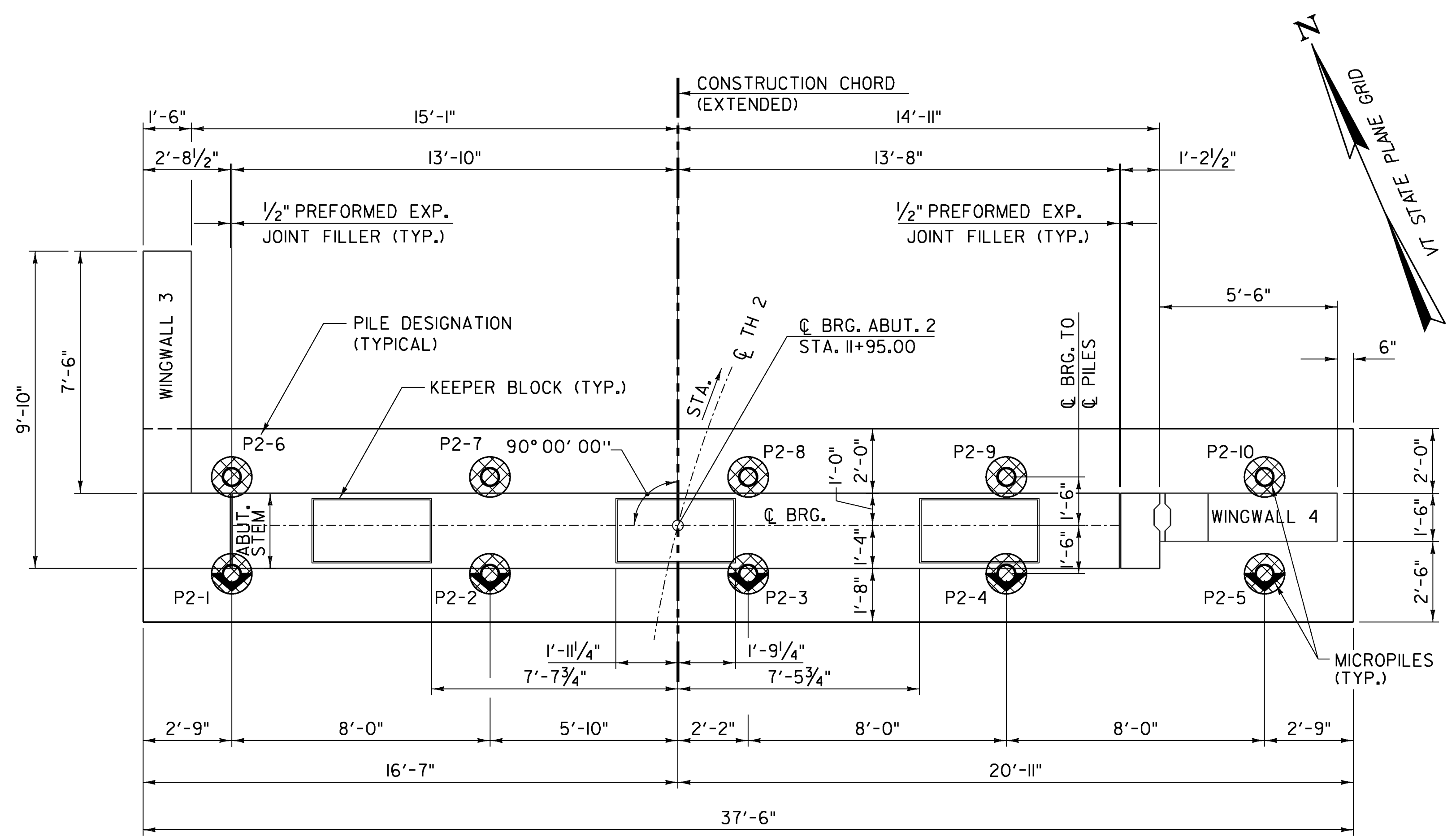
**ABUTMENT I ELEVATION**  
SCALE 3/8" = 1'-0"

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

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

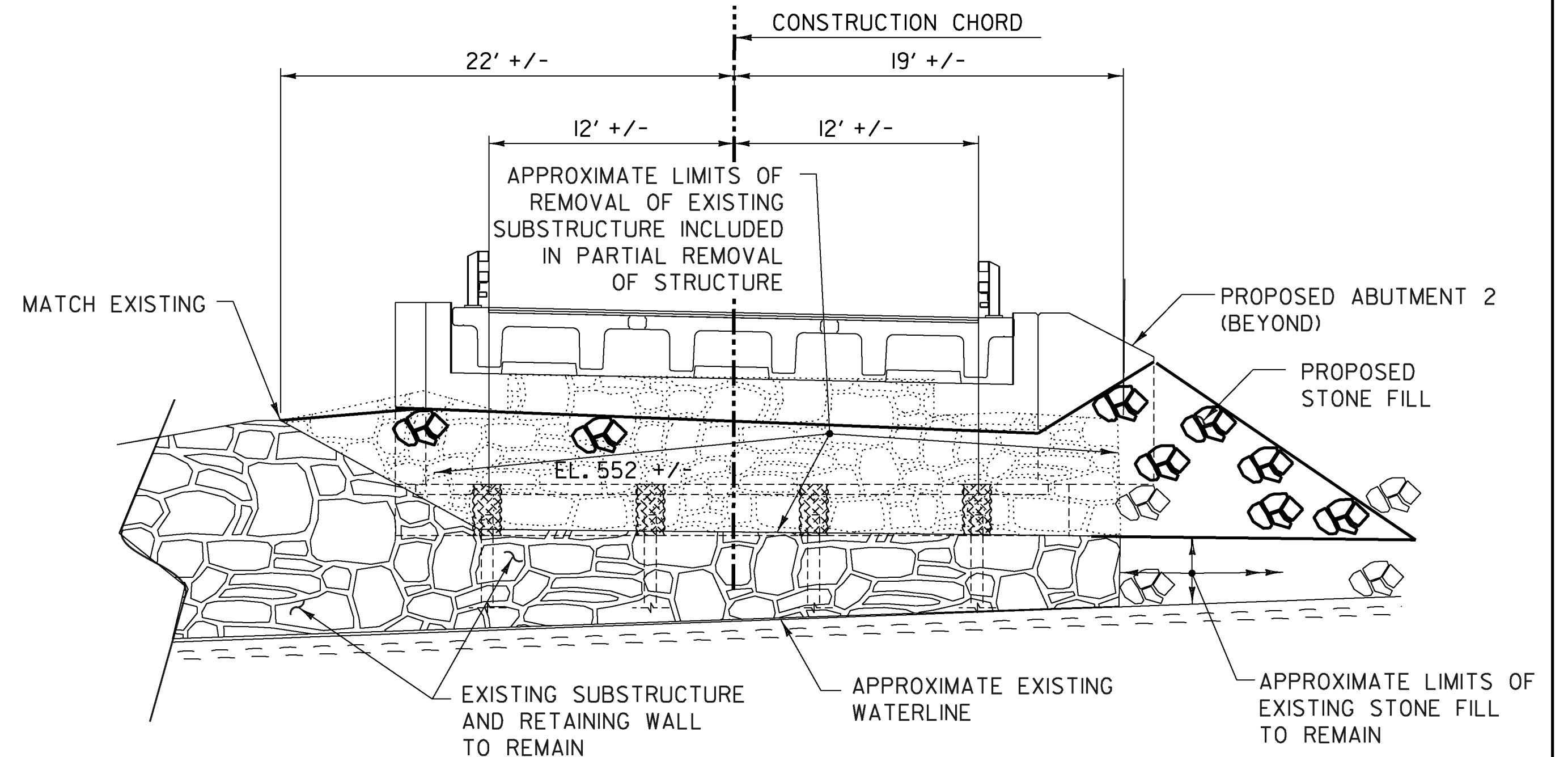
PROJECT NAME: ENOSBURG	PROJECT NUMBER: BRO 1448(40)
FILE NAME: ...\\XX Abut 1Plan_Elev.dgn	PLOT DATE: 10/4/2013
PROJECT LEADER: G. BOGUE	DRAWN BY: L. BUXTON
DESIGNED BY: T. KNIGHT	CHECKED BY: T. KNIGHT
<b>ABUTMENT 1 PLAN &amp; ELEVATION</b>	
SHEET 28 OF 46	



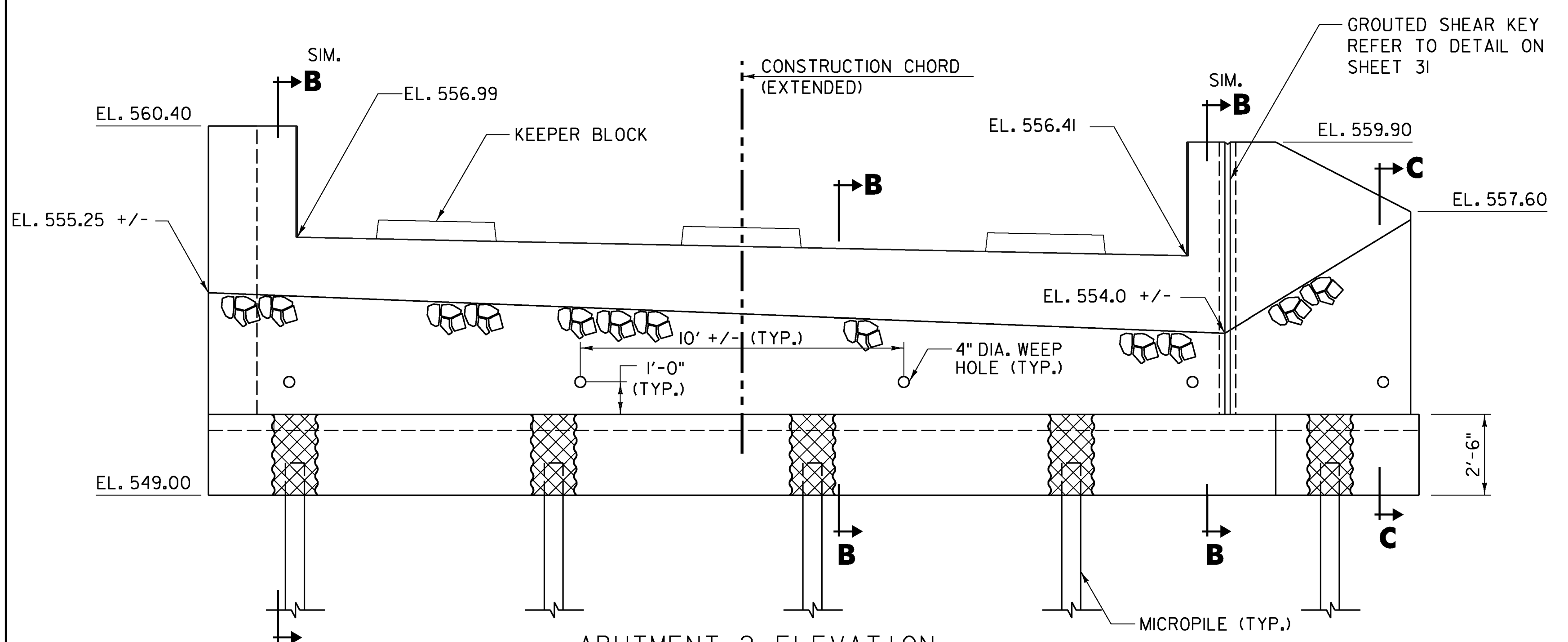


**ABUTMENT 2 PLAN**  
SCALE 3/8" = 1' - 0"

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



**VIEW A-A**  
SCALE 3/8" = 1' - 0"



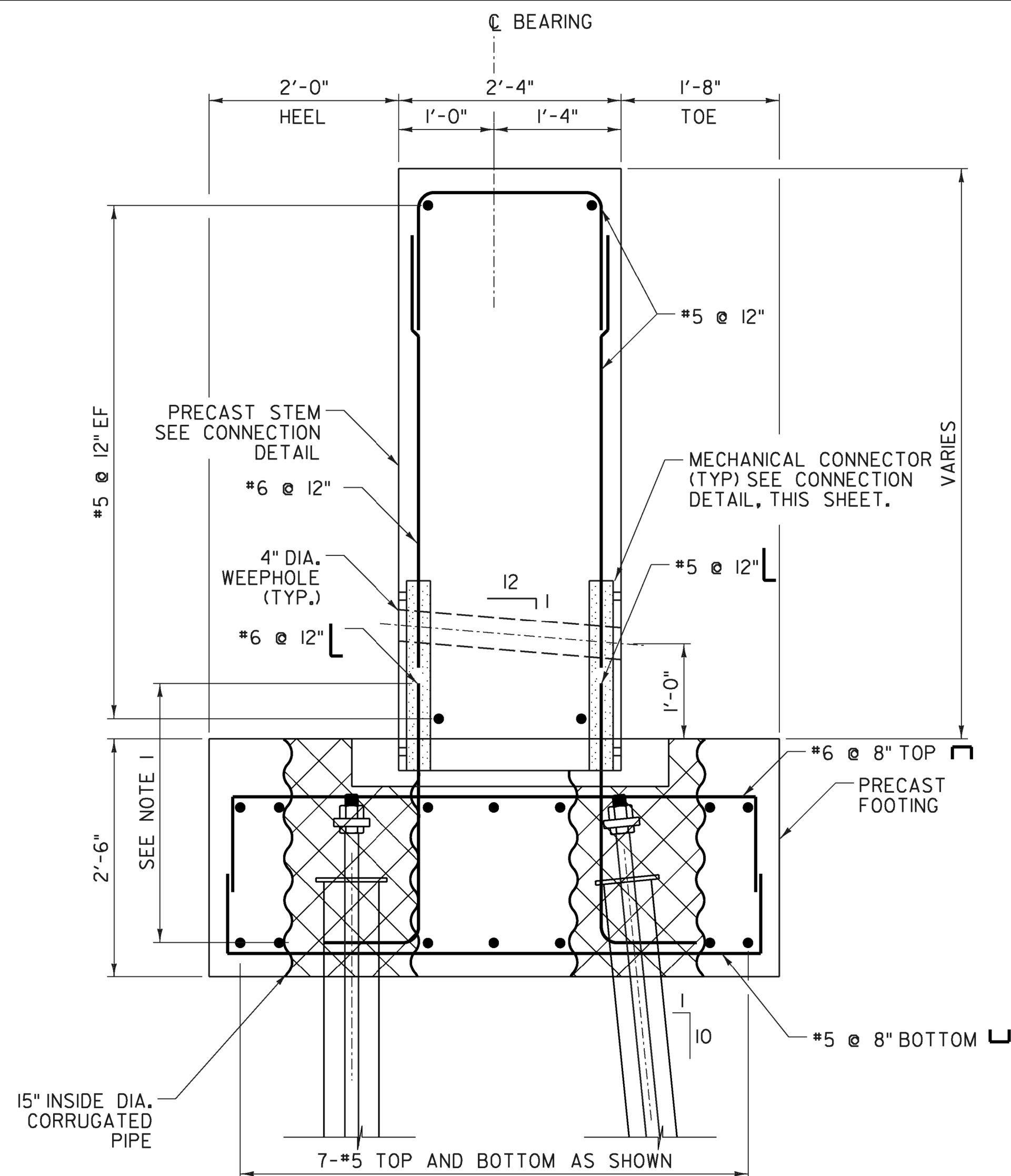
**ABUTMENT 2 ELEVATION**  
SCALE 3/8" = 1' - 0"

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

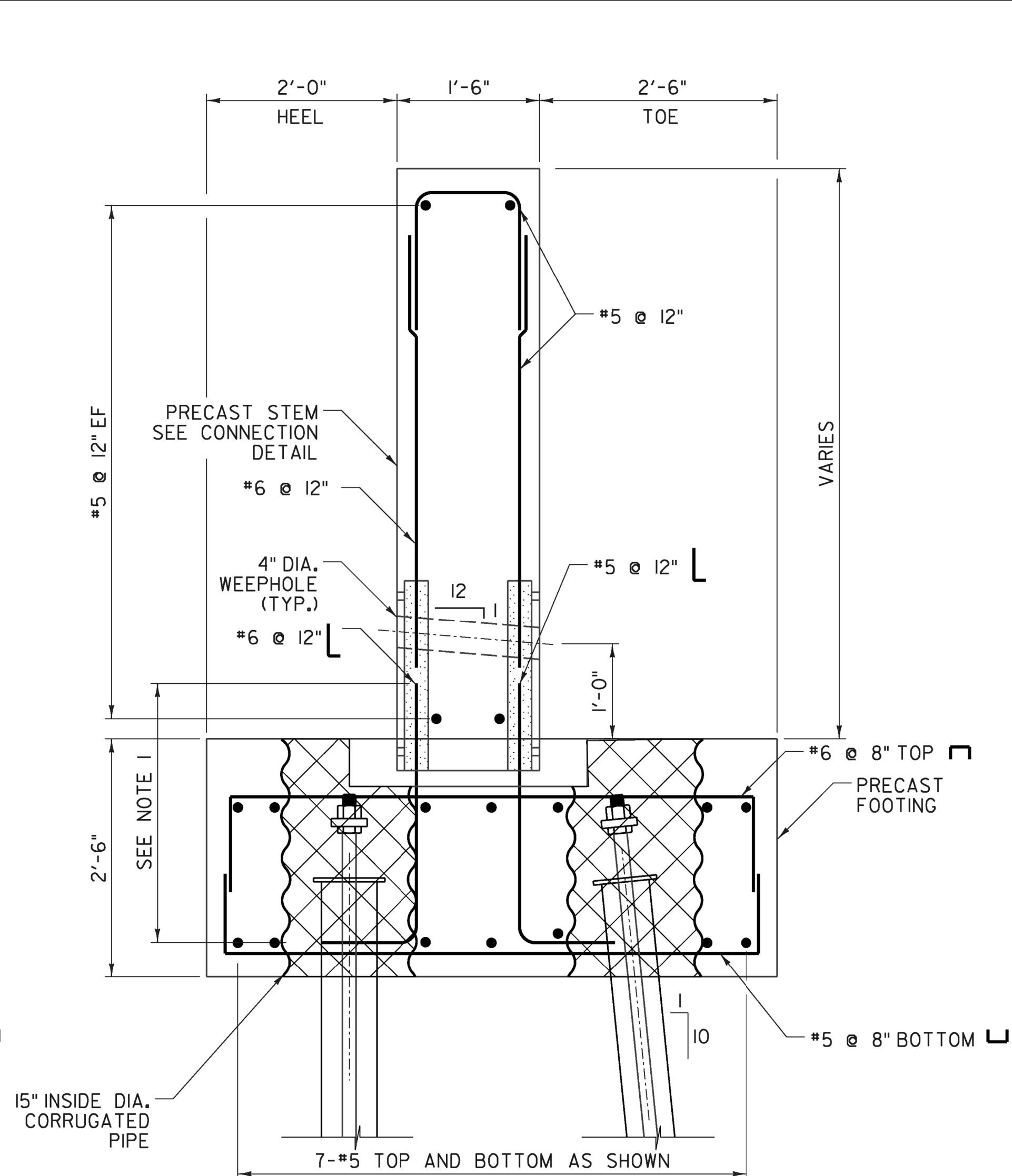
- NOTES:**
1. FOR KEEPER BLOCK DETAIL, REFER TO SHEET 28.
  2. FOR LOCATION OF VIEW A-A, REFER TO SHEET 20.
  3. FOR SECTION B-B, REFER TO SHEET 30.
  4. FOR SECTION C-C, REFER TO SHEET 30.

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	

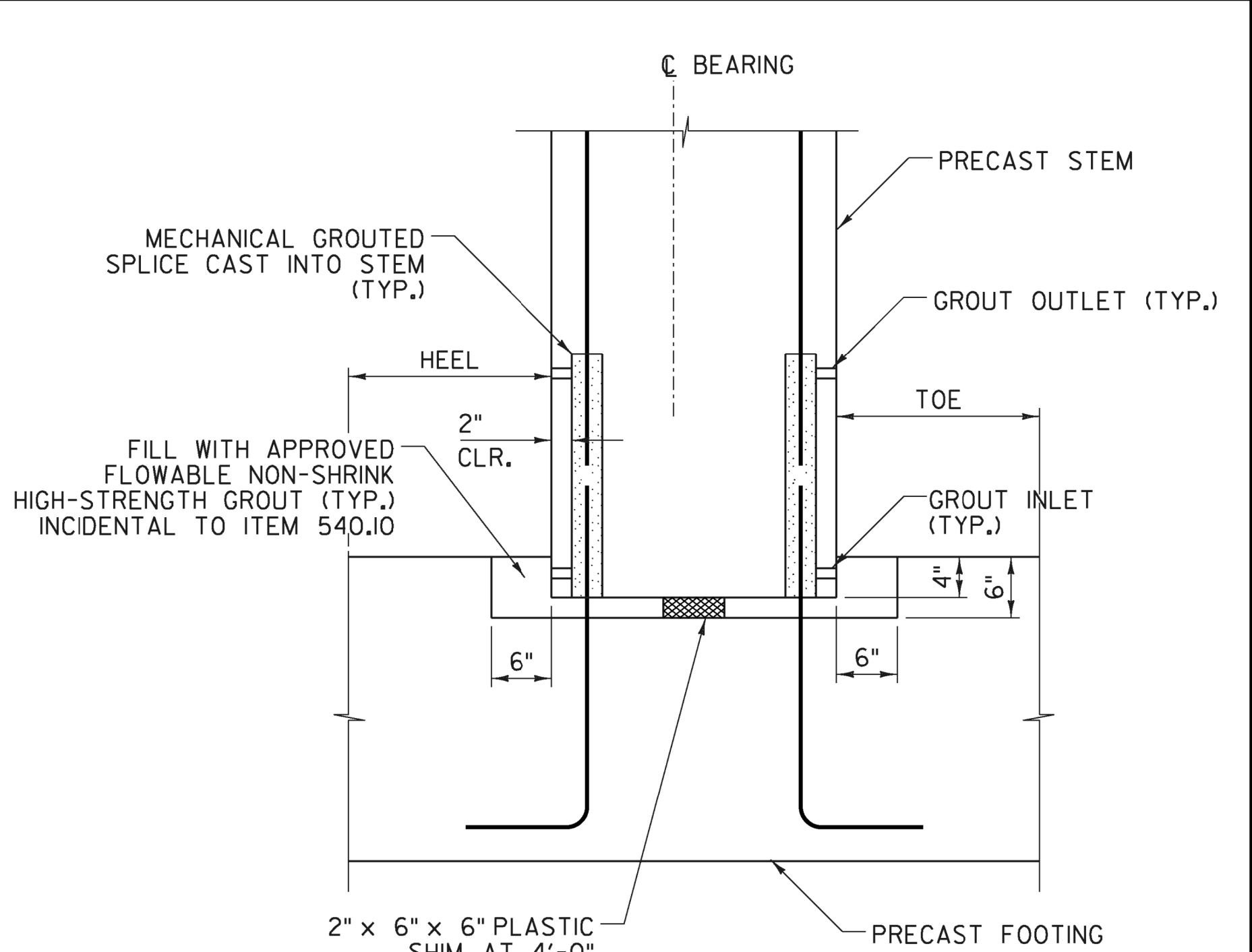




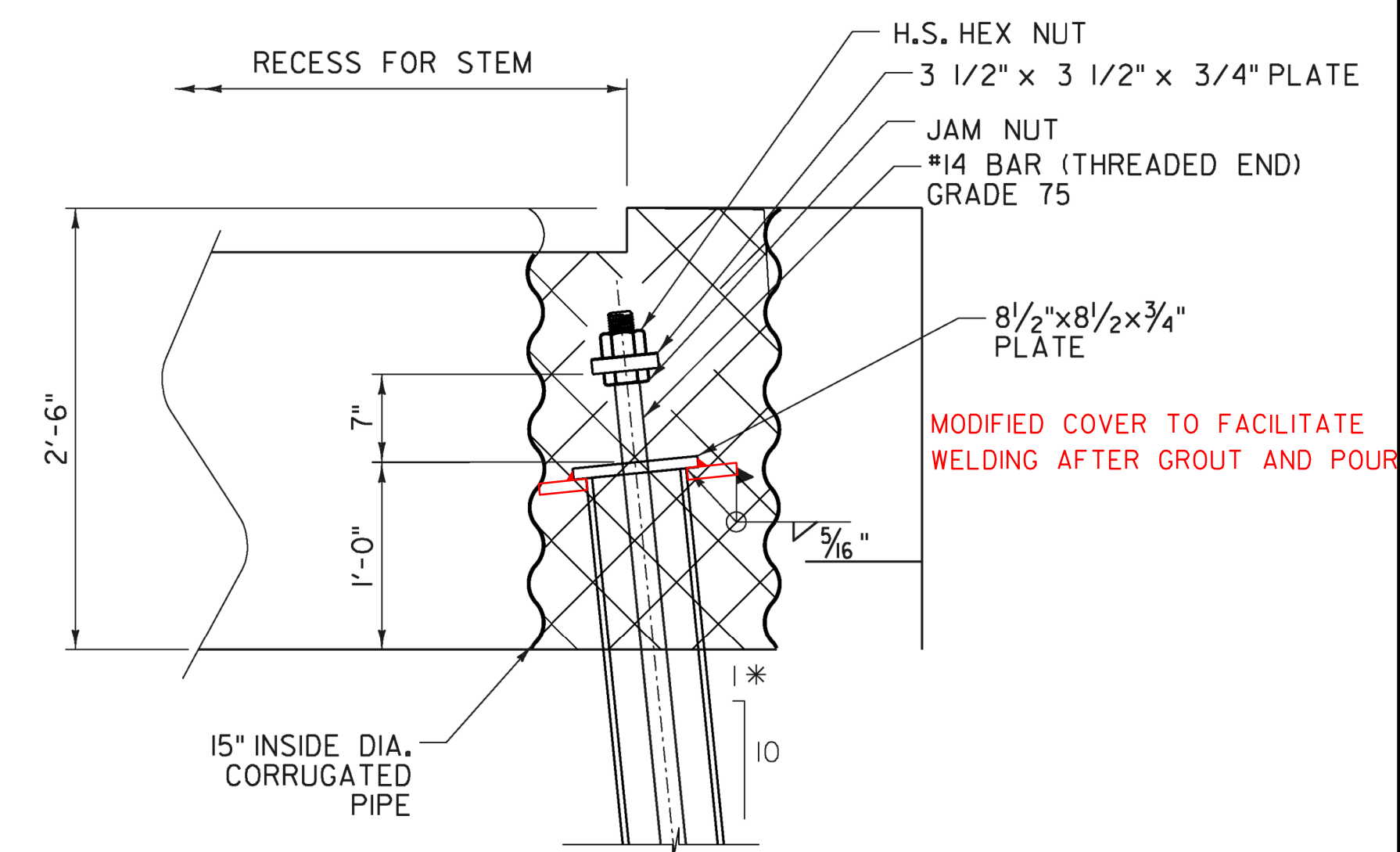
SECTION B-B  
SCALE 1" = 1' - 0"



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

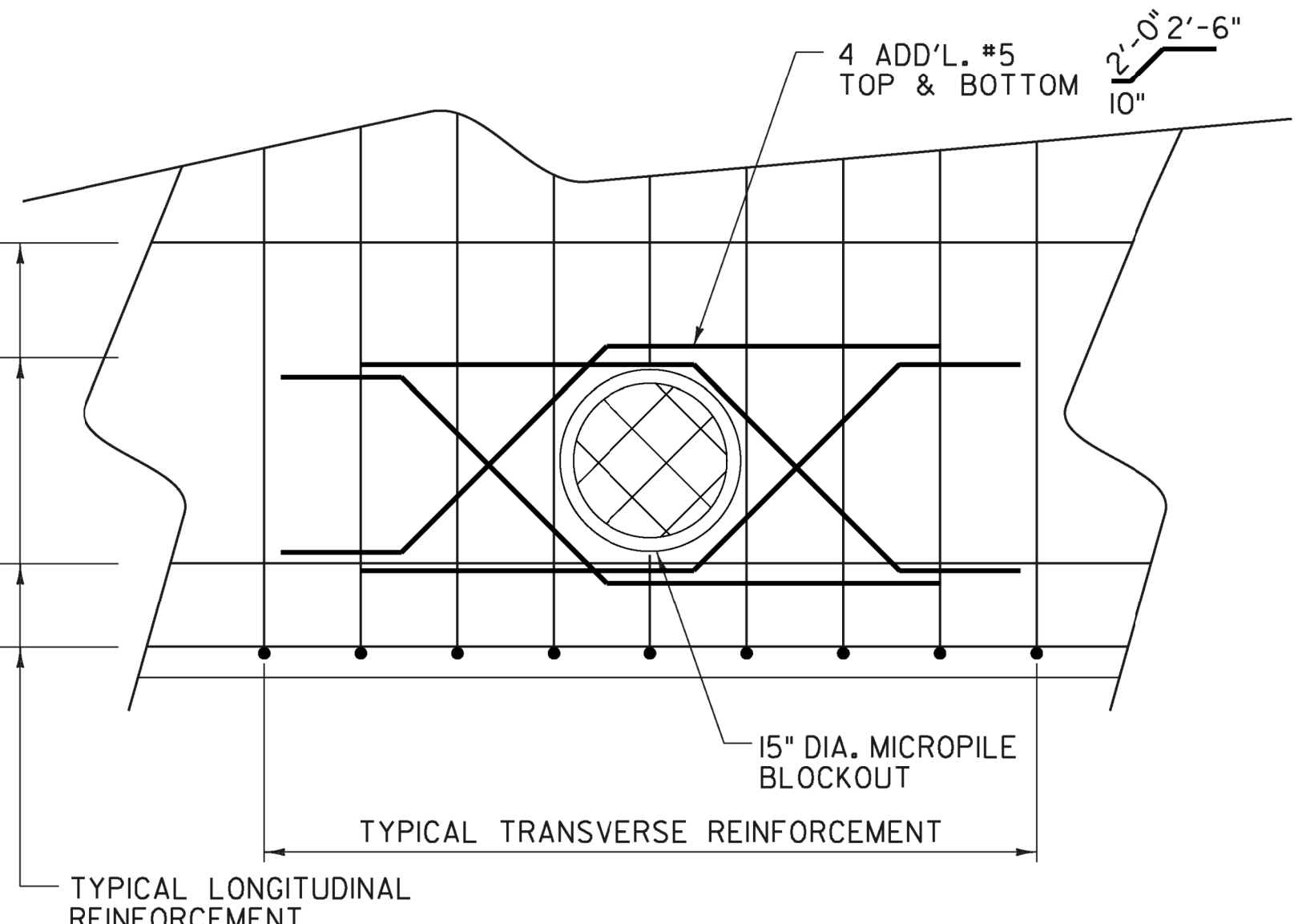


CONNECTION DETAIL  
SCALE 1" = 1' - 0"



PILE CAP DETAIL  
NOT TO SCALE

- NOTES:
- LEG LENGTH SHALL MEET THE REQUIREMENTS OF THE MECHANICAL CONNECTOR.
  - 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

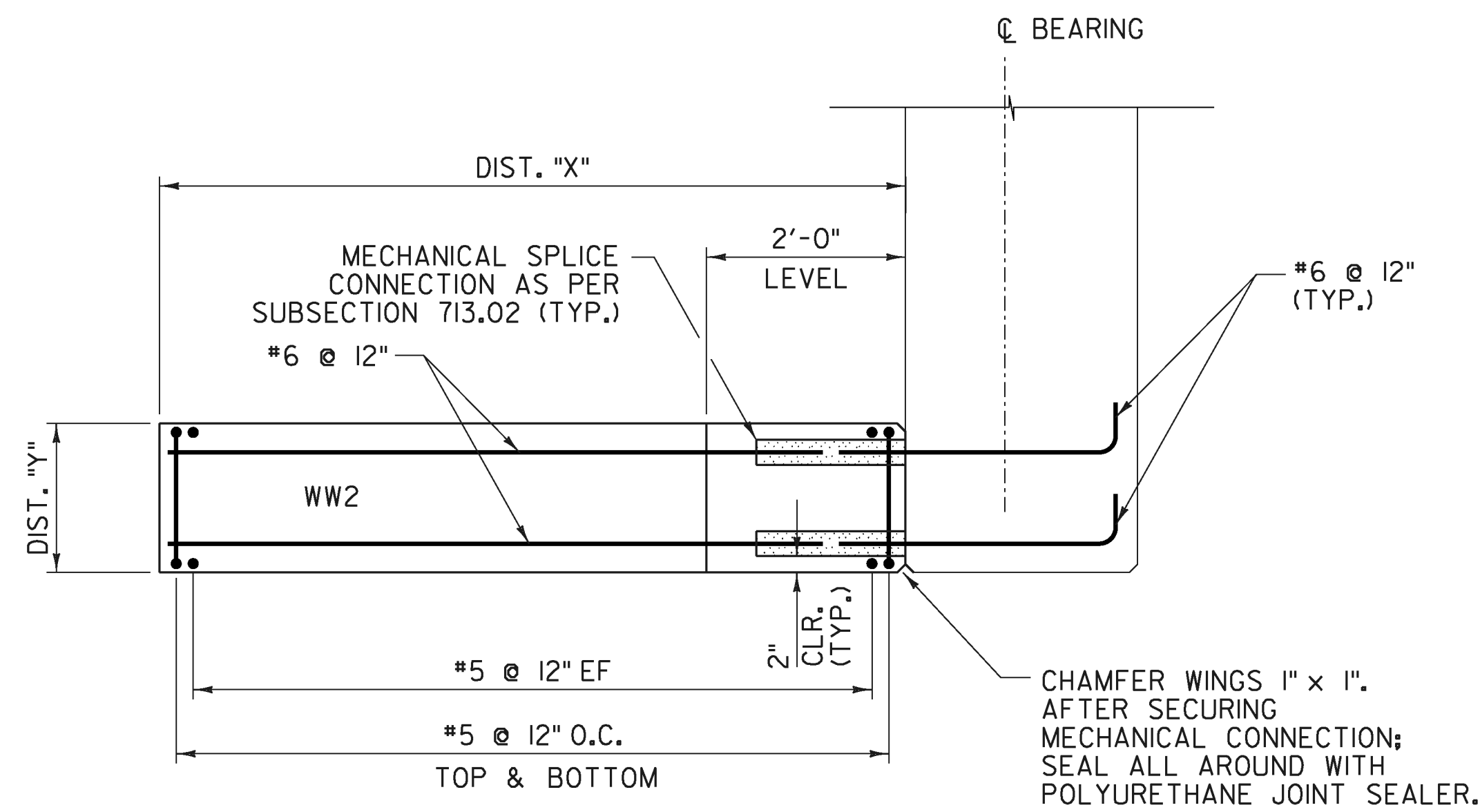
\* FRONT PILES ONLY; REAR PILES ARE VERTICAL

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

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

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



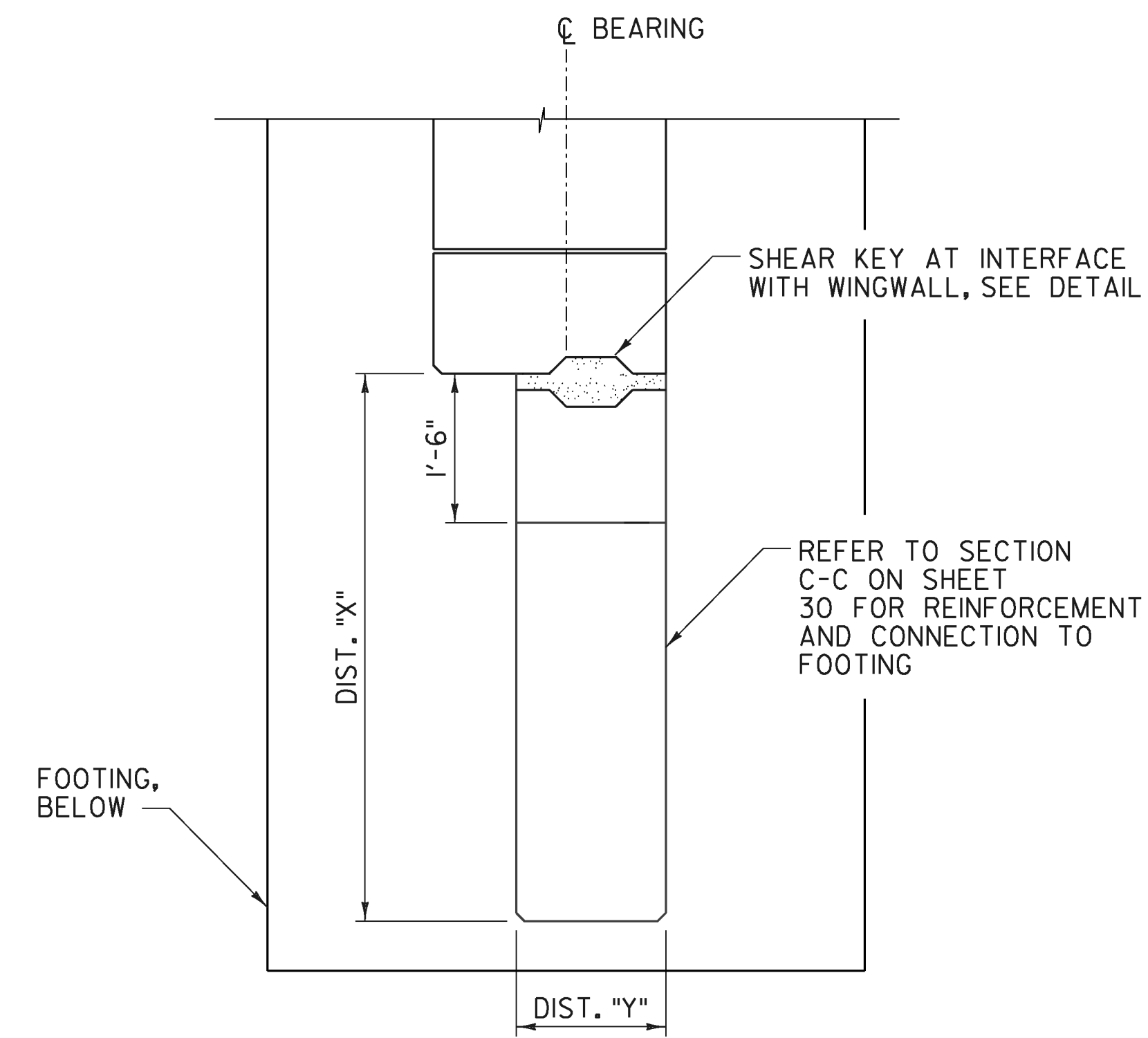


WINGWALLS NO. 1, 2 AND 3 PLAN

NOT TO SCALE

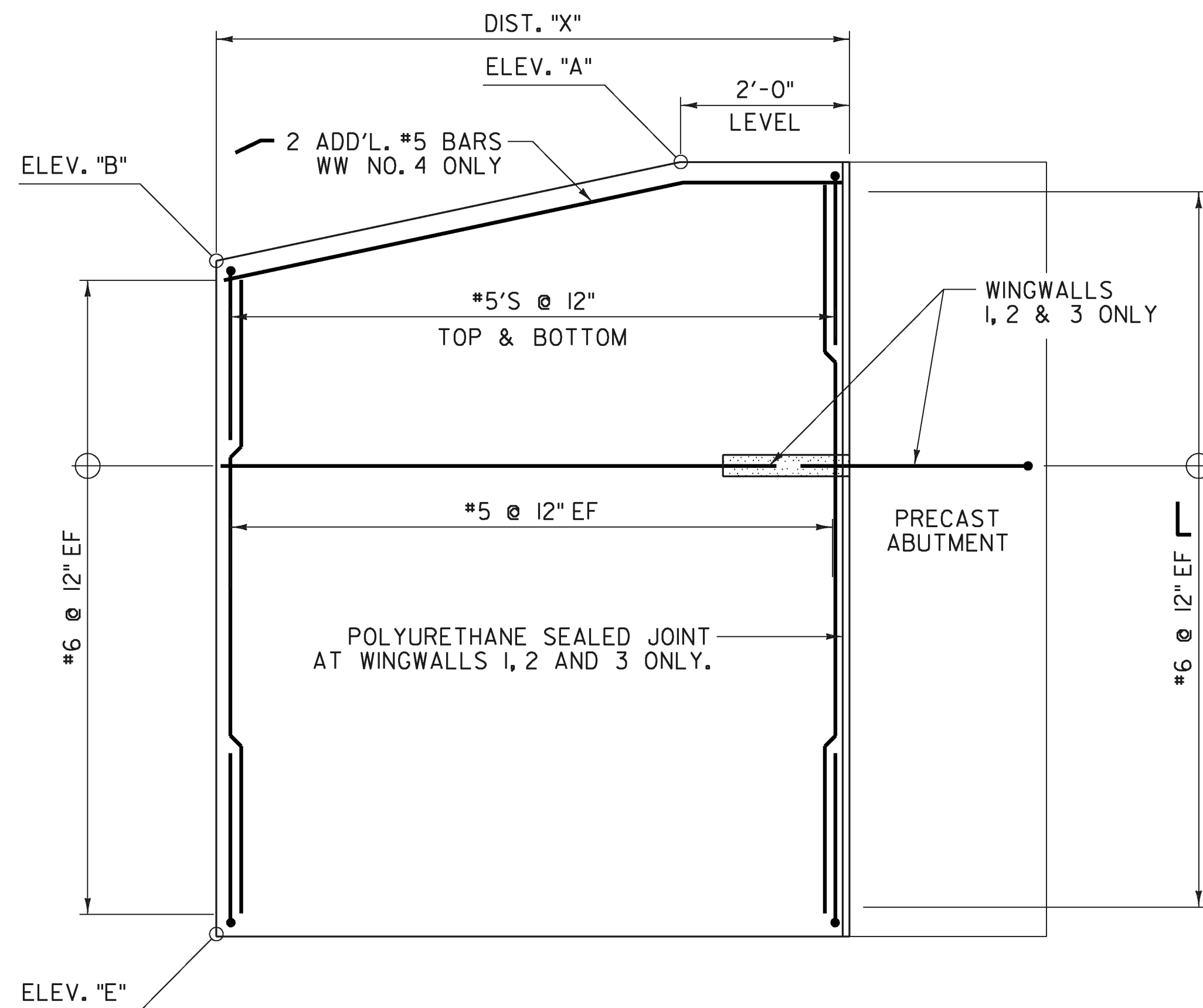
WINGWALL 2 SHOWN, OTHERS SIMILAR  
FOOTING NOT SHOWN

	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"



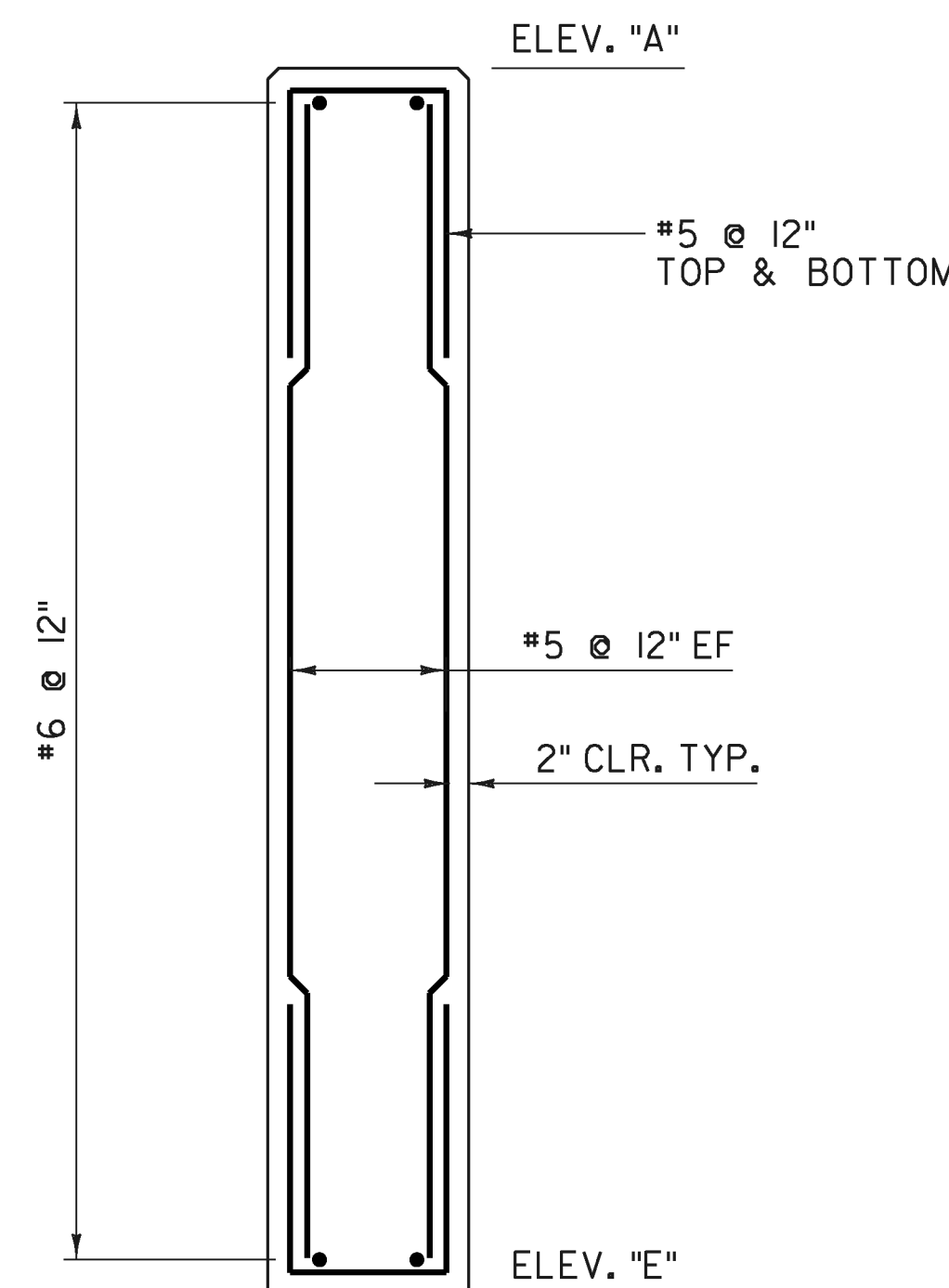
WINGWALLS NO. 4 PLAN

NOT TO SCALE



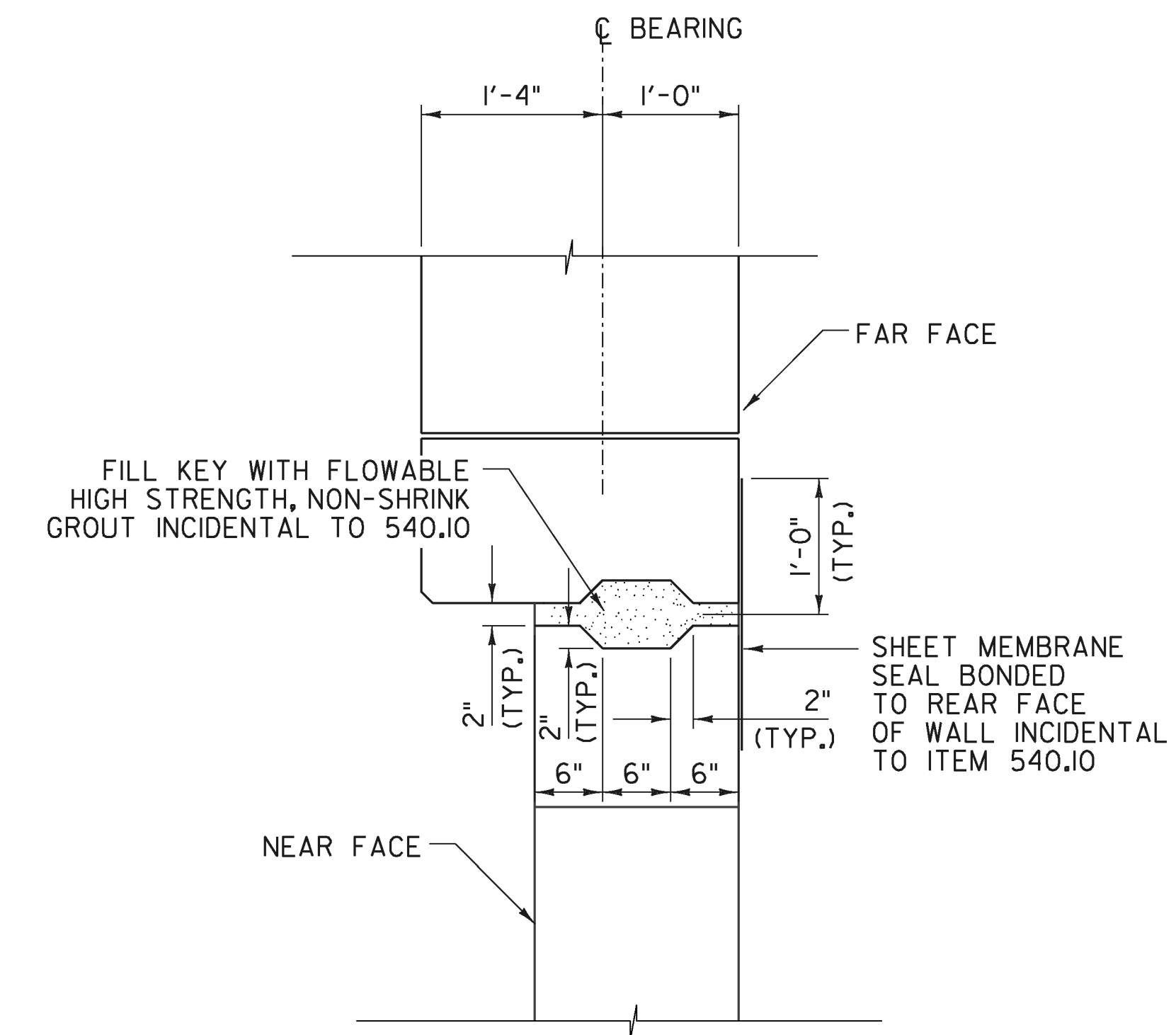
WINGWALL ELEVATION

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

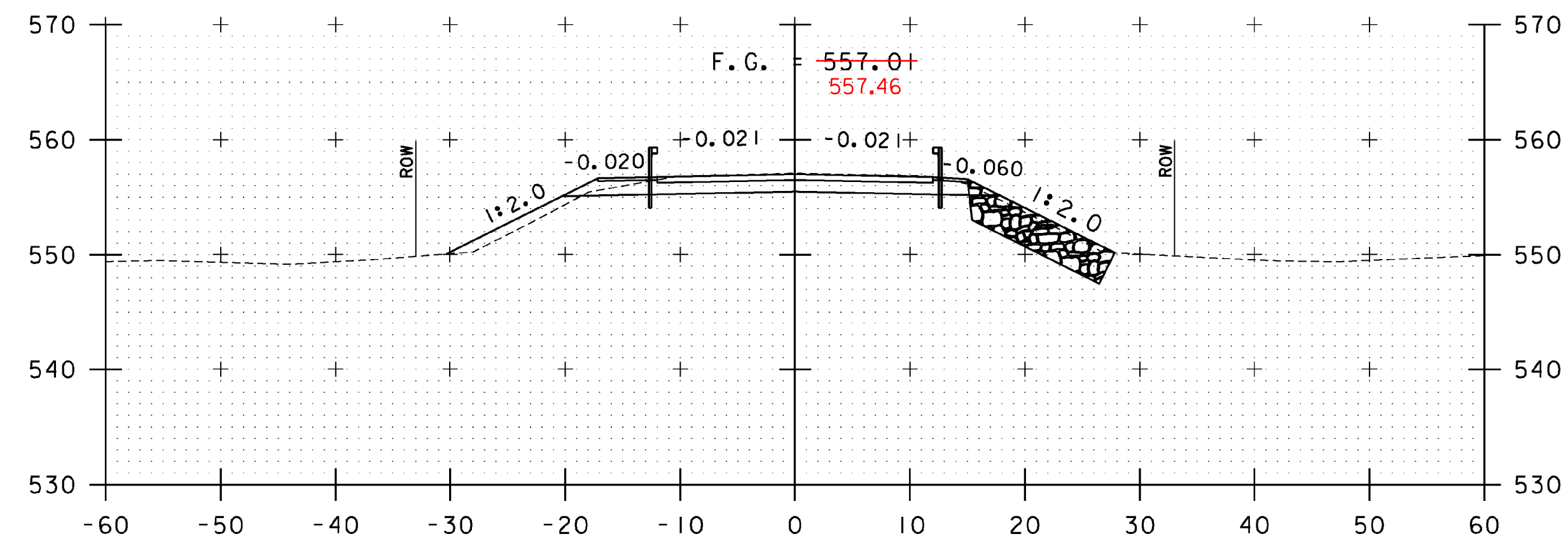
NOTES:  
1. EPOXY SHALL BE INCIDENTAL TO THE  
PRECAST CONCRETE STRUCTURE.



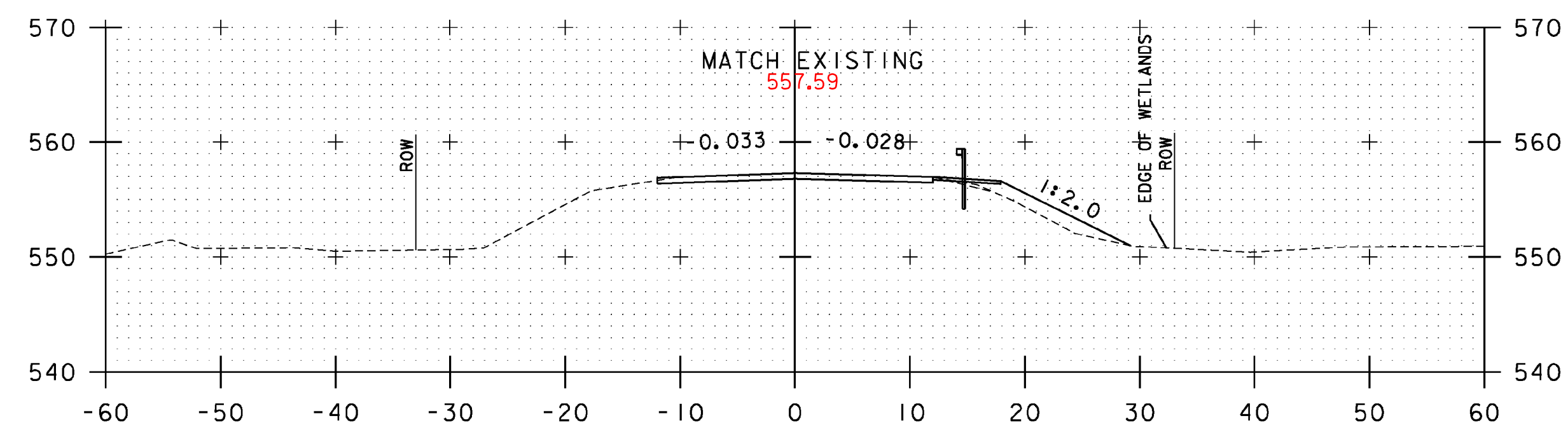
PROJECT NAME: ENOSBURG  
PROJECT NUMBER: BRO 1448(40)

FILE NAME: ...XX Wingwall\_Det.dgn  
PROJECT LEADER: G. BOGUE  
DESIGNED BY: T. KNIGHT  
PLOT DATE: 10/4/2013  
DRAWN BY: L. BUXTON  
CHECKED BY: T. KNIGHT  
SHEET 31 OF 46

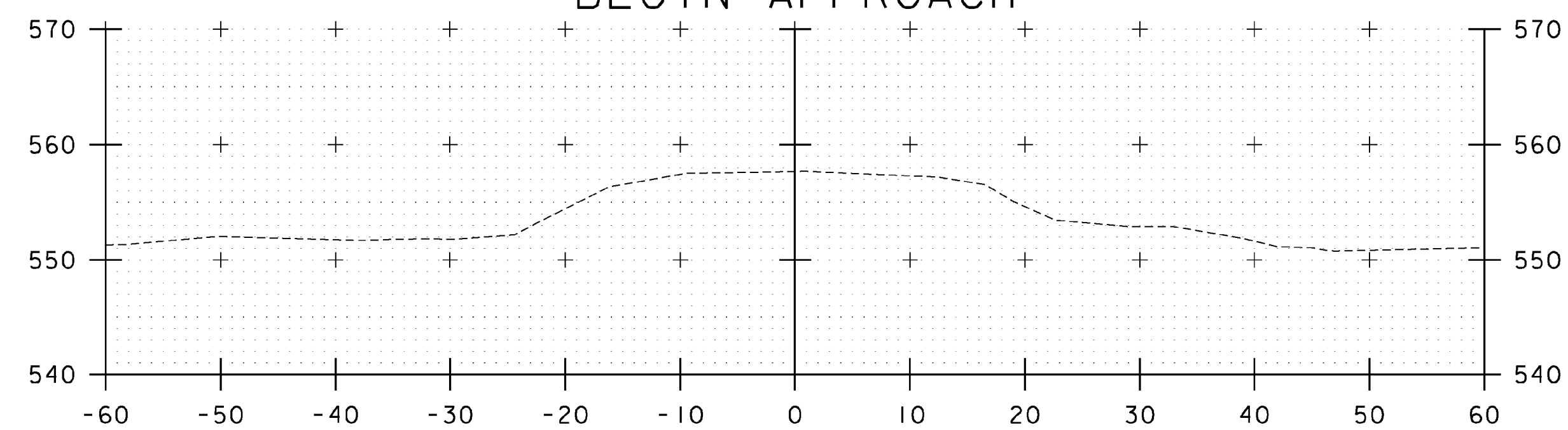
WINGWALL DETAILS



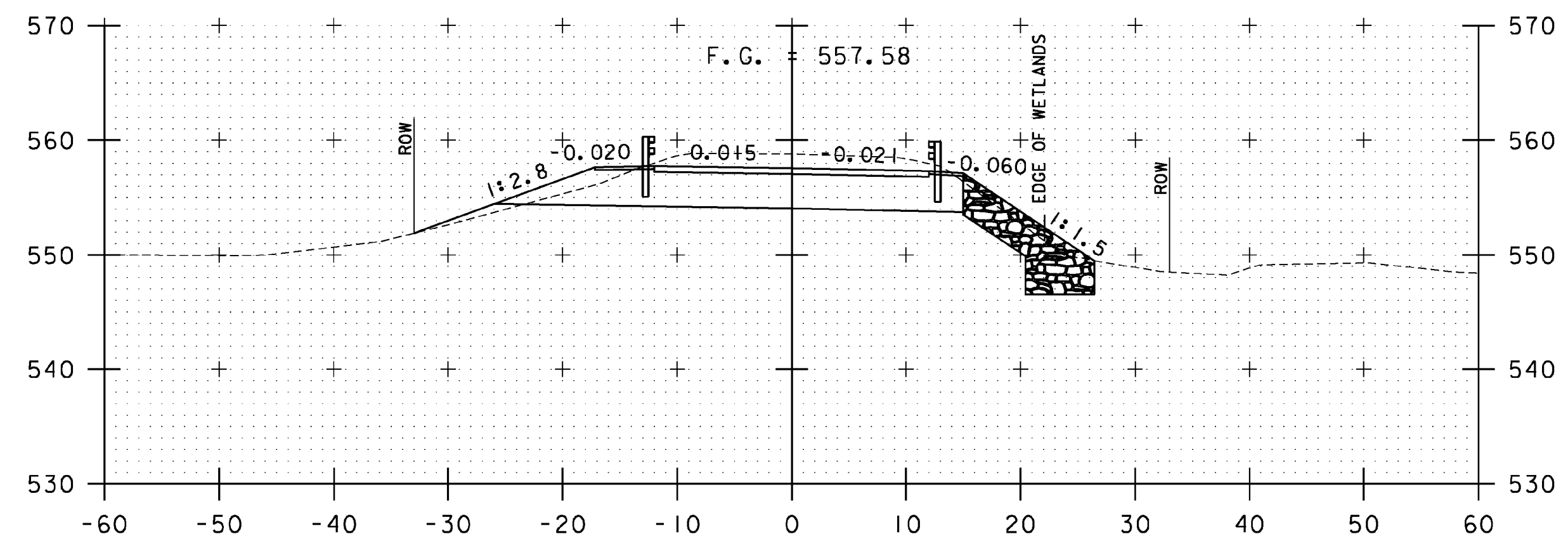
10+25



10+00  
BEGIN APPROACH

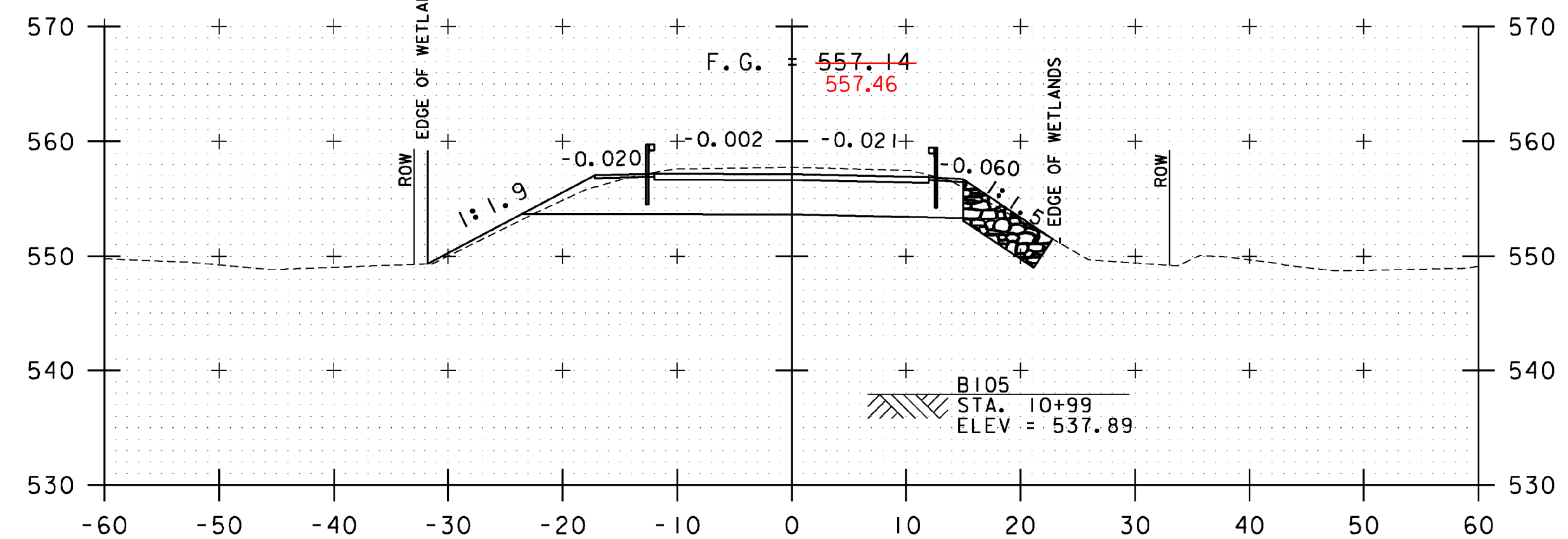


9+75

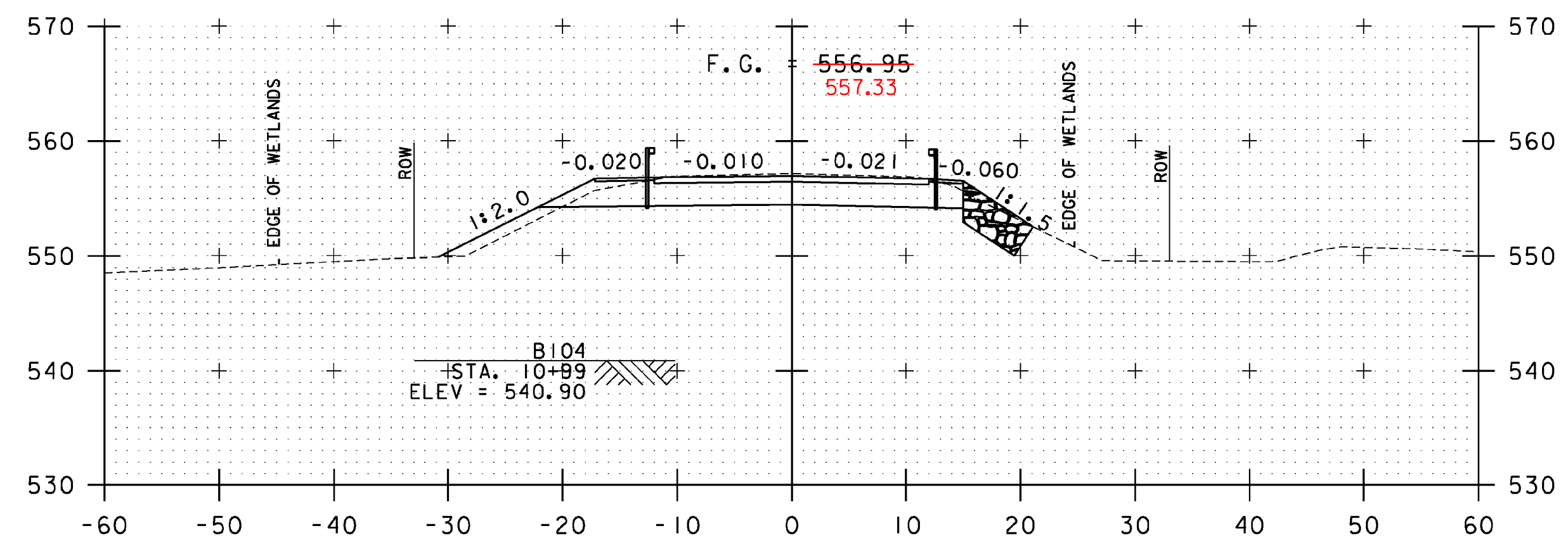


11+00

10+85  
END APPROACH  
BEGIN PROJECT

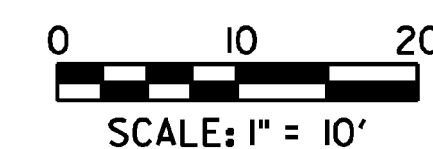


10+75



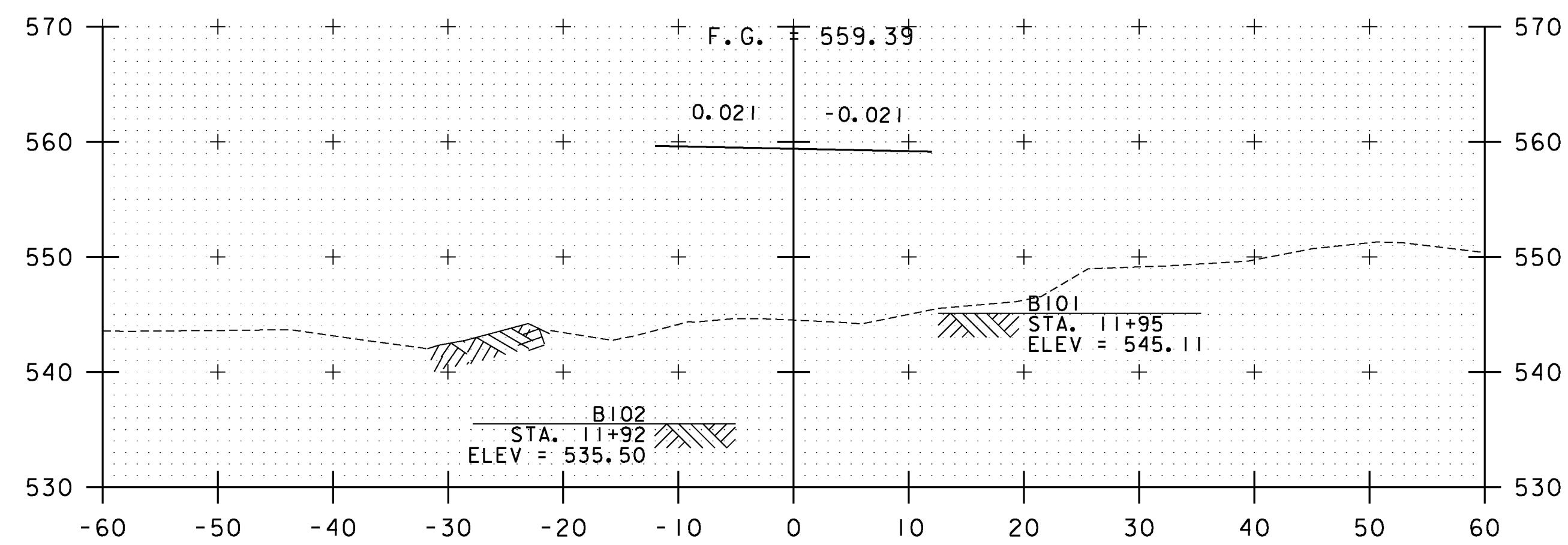
10+50

STA. 9+75 TO STA. 11+00

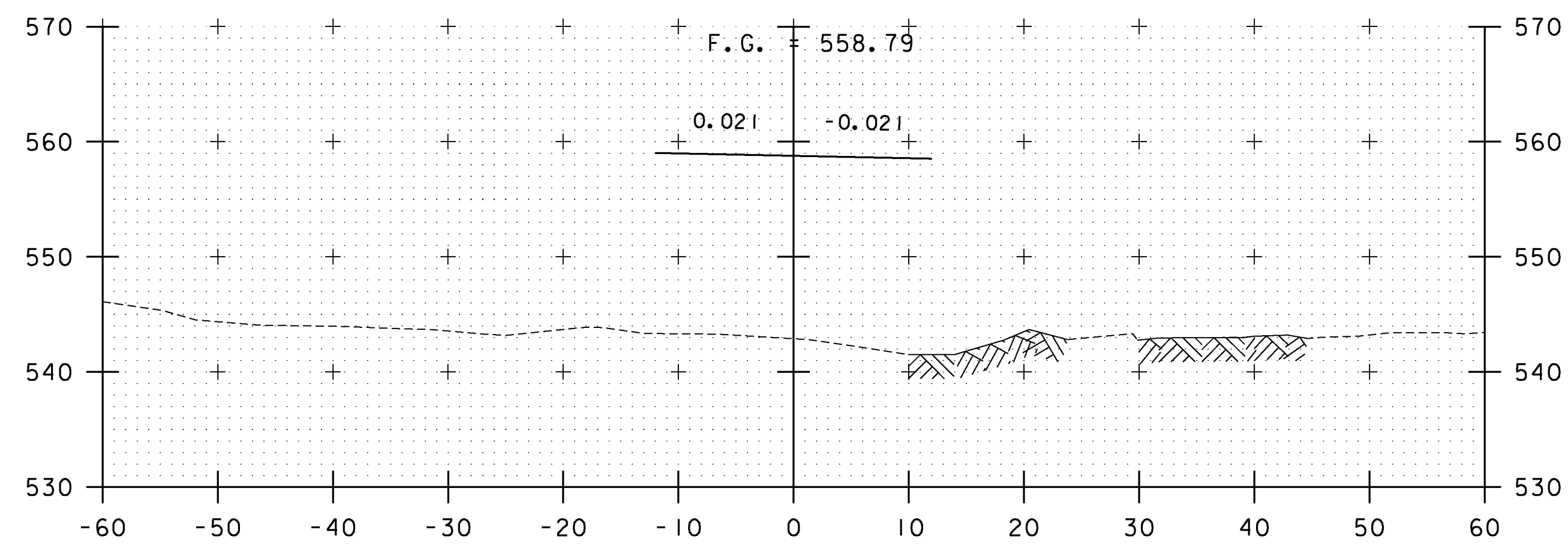


PROJECT NAME:	ENOSBURG	PLOT DATE:	10/4/2013
PROJECT NUMBER:	BRO 1448(40)	DRAWN BY:	E. ALLING
FILE NAME:	...\\12 Cross Sections.dgn	DESIGNED BY:	G. GOYETTE
PROJECT LEADER:	G. BOGUE	CHECKED BY:	G. GOYETTE
ROADWAY CROSS SECTIONS - RXS 1		SHEET 32 OF 46	

11+96  
END BRIDGE

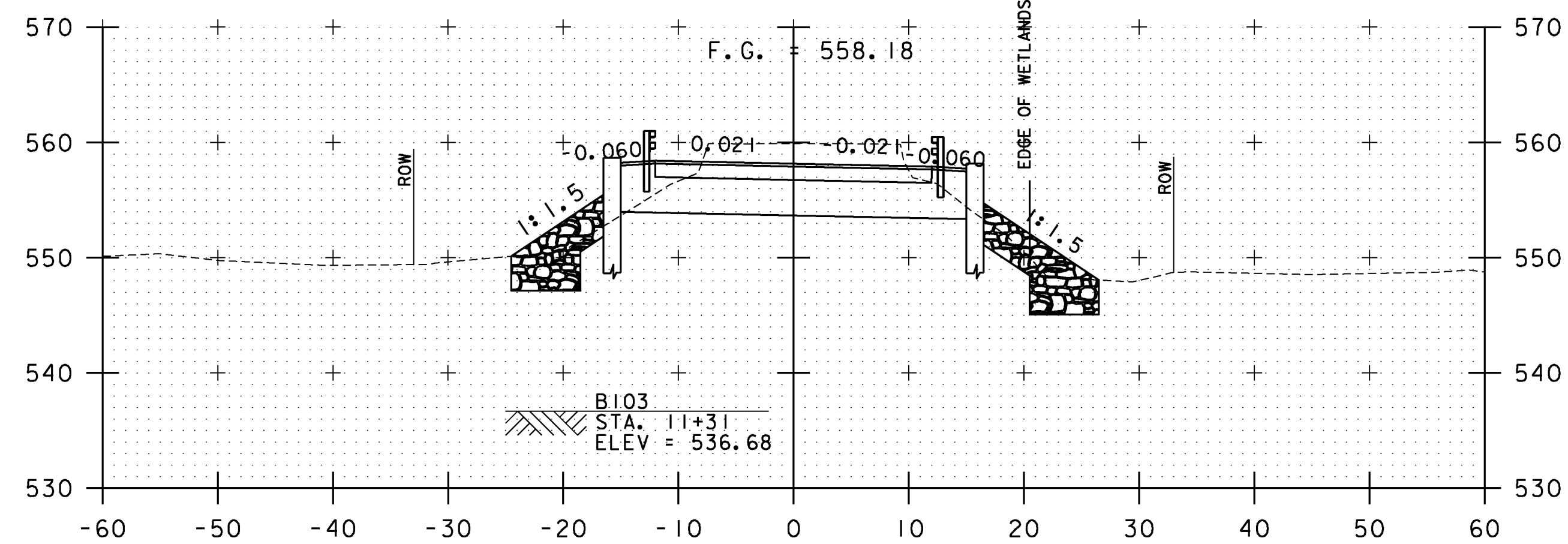


11+75

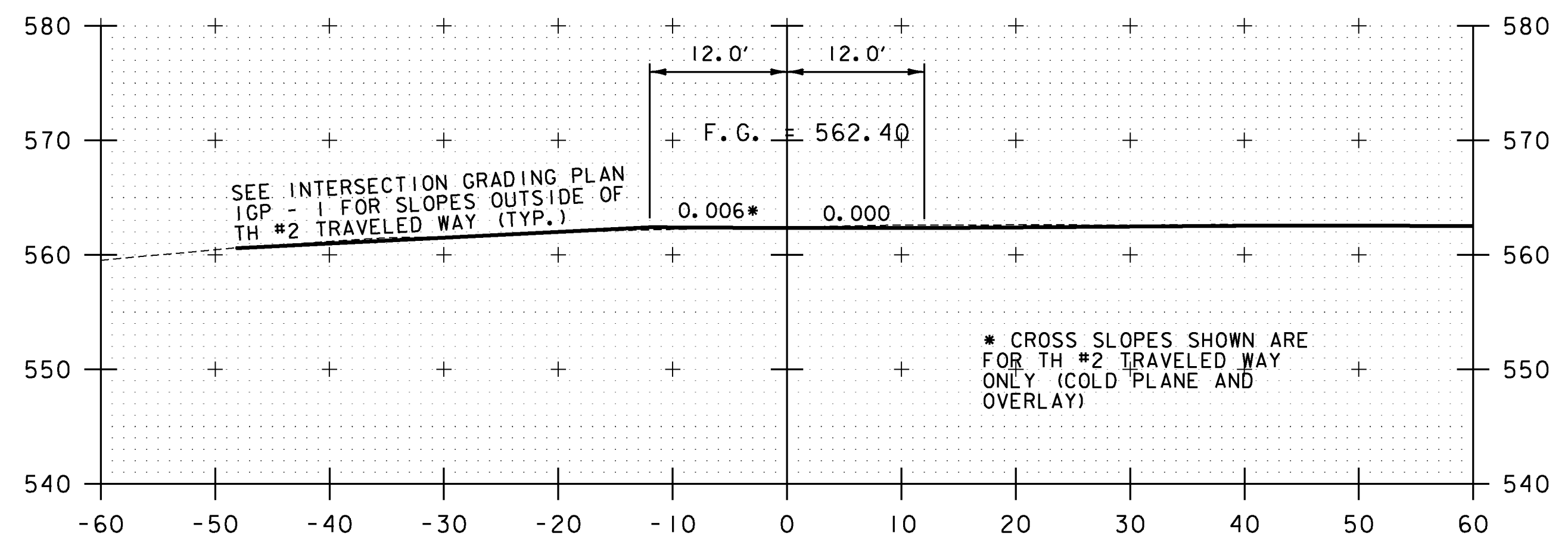


11+50

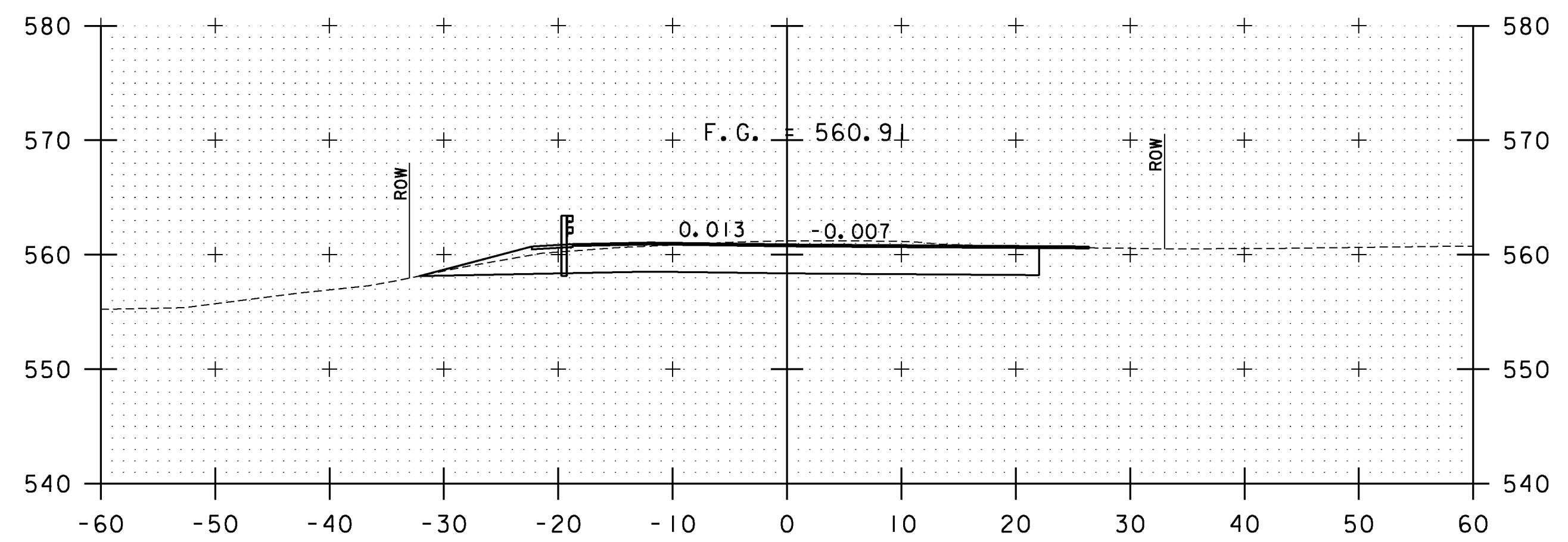
11+25  
BEGIN BRIDGE



11+25

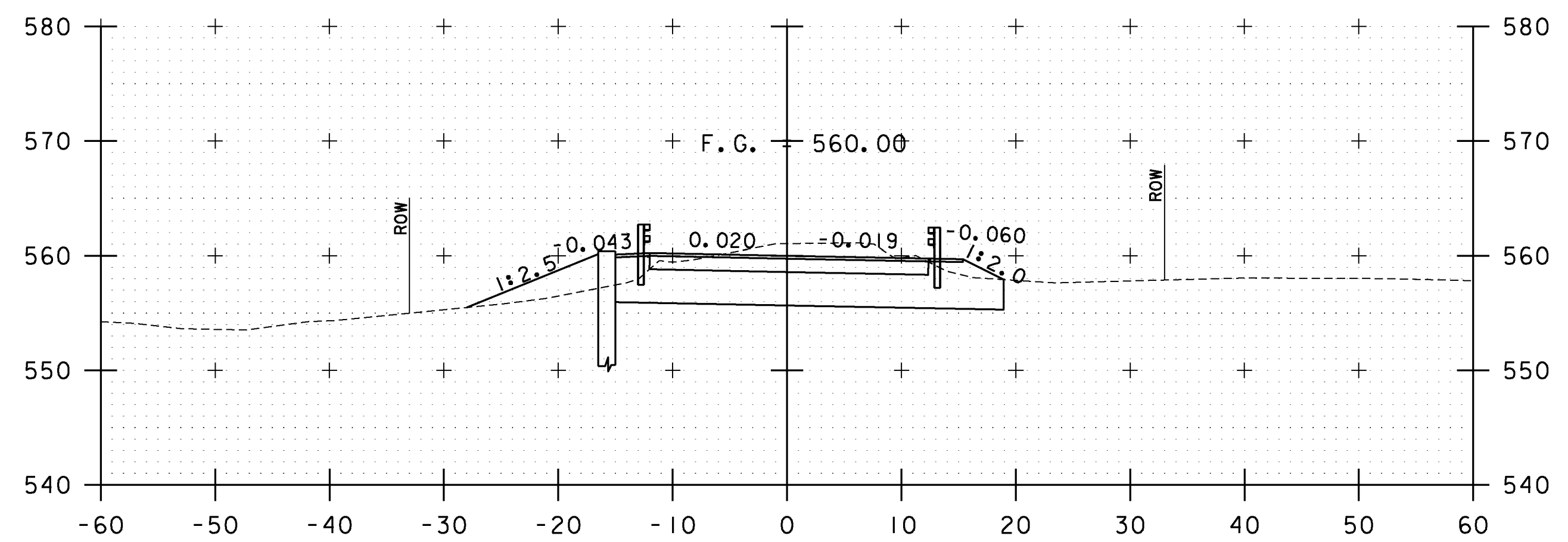


12+50



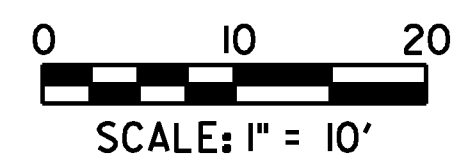
12+25

12+21  
END PROJECT  
BEGIN APPROACH



12+00

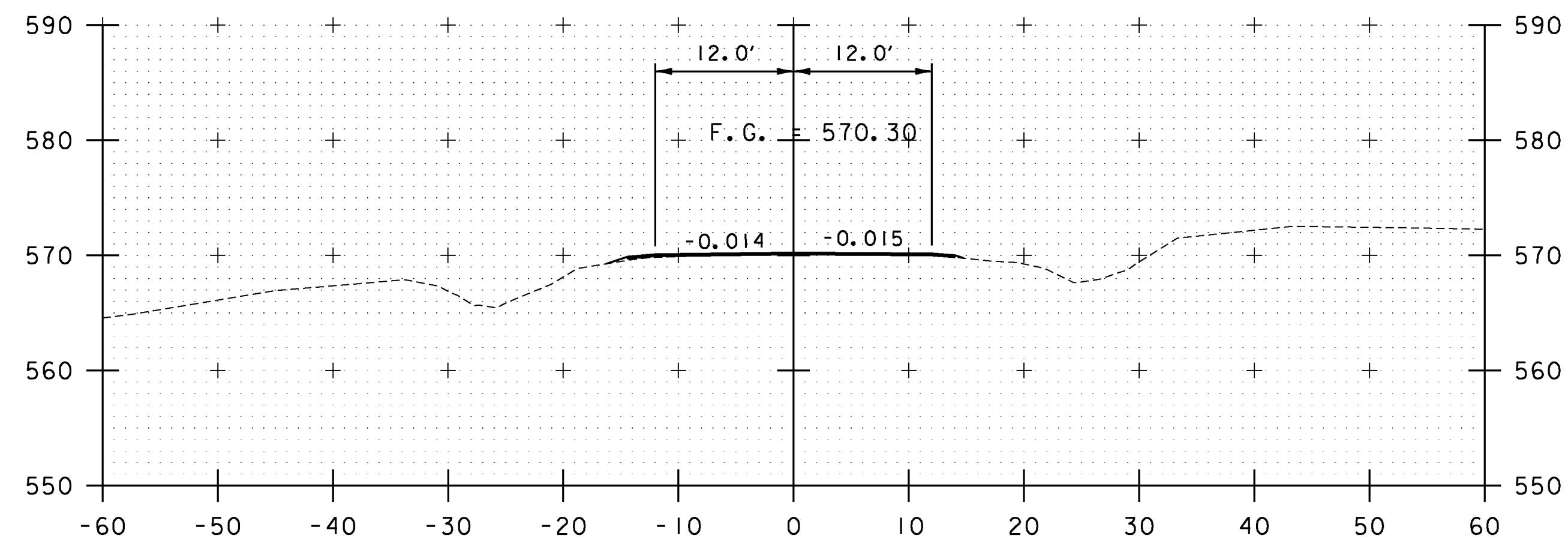
STA. 11+25 TO STA. 12+50



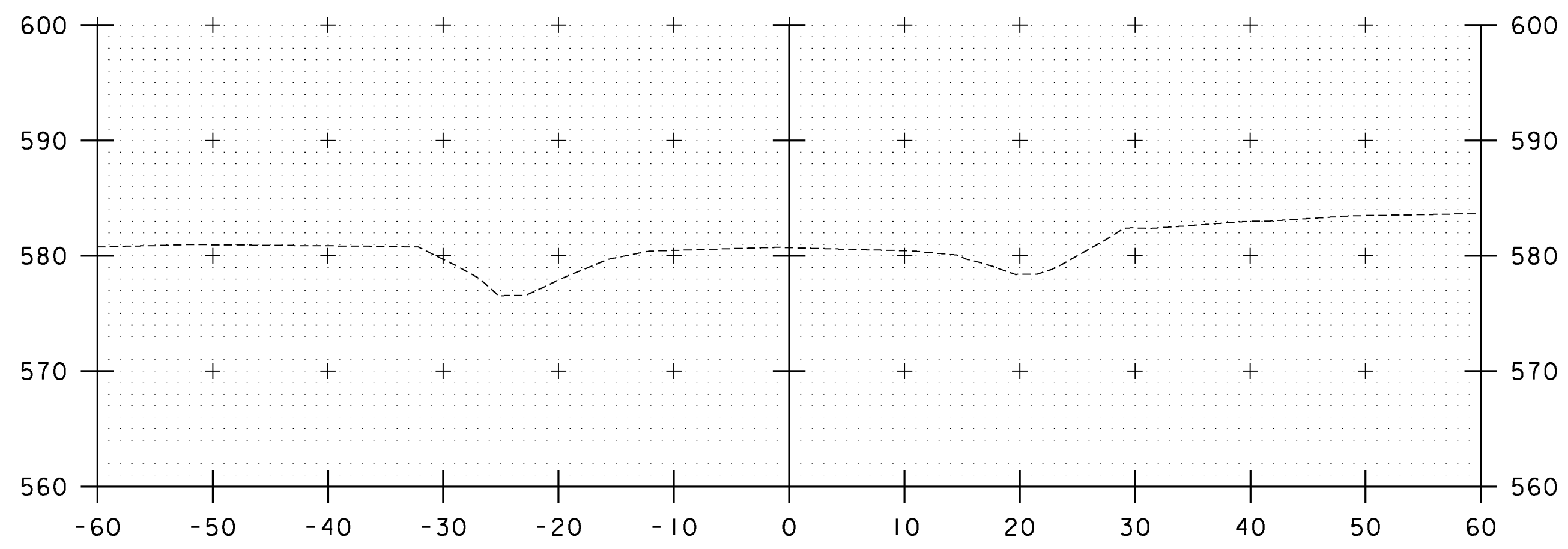
PROJECT NAME: ENOSBURG  
PROJECT NUMBER: BRO 1448(40)

FILE NAME: ...\\12 Cross Sections.dgn  
PROJECT LEADER: G. BOGUE  
DESIGNED BY: G. GOYETTE  
**ROADWAY CROSS SECTIONS - RXS 2**

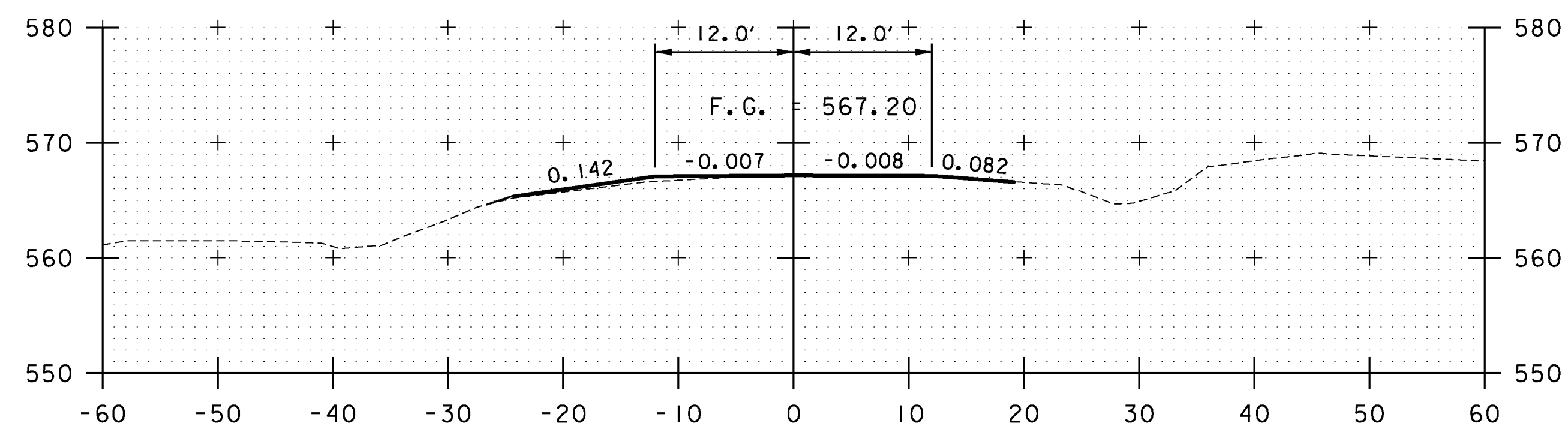
PLOT DATE: 10/4/2013  
DRAWN BY: E. ALLING  
CHECKED BY: G. GOYETTE  
SHEET 33 OF 46



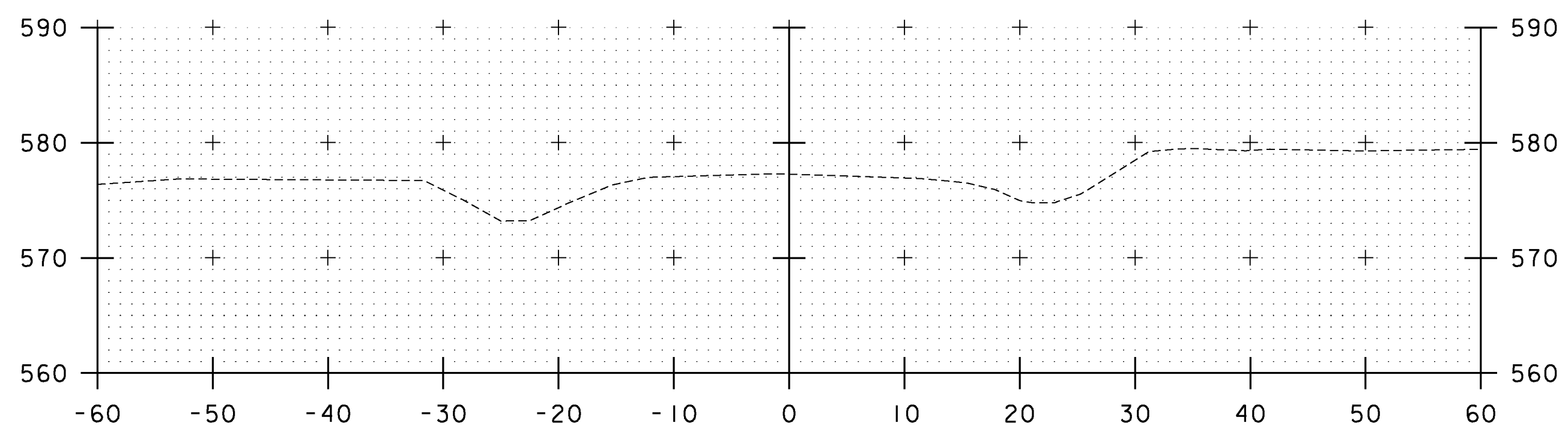
13+25



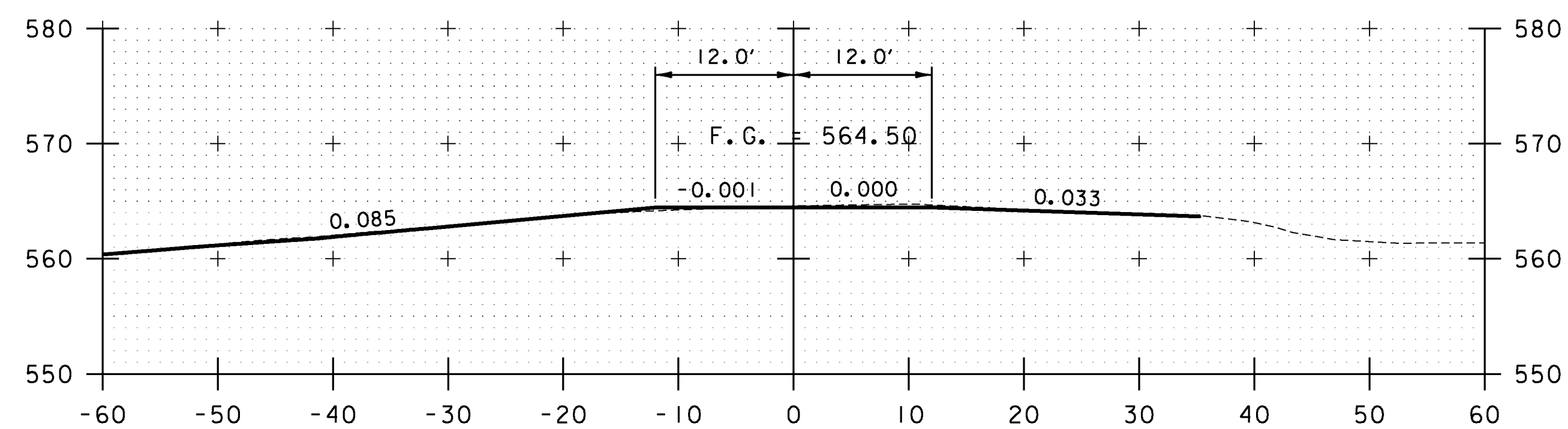
14+00



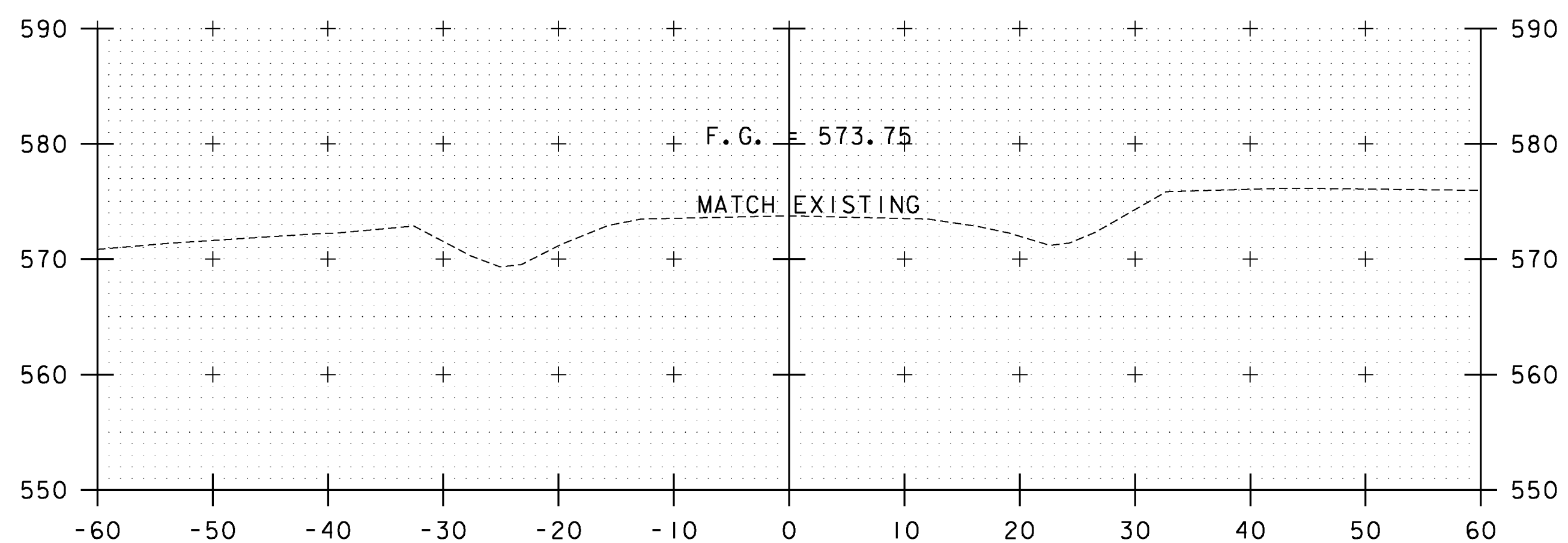
13+00



13+75

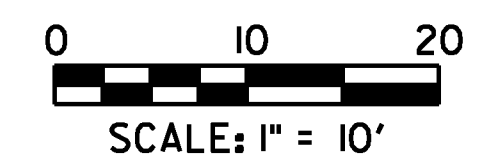


12+75

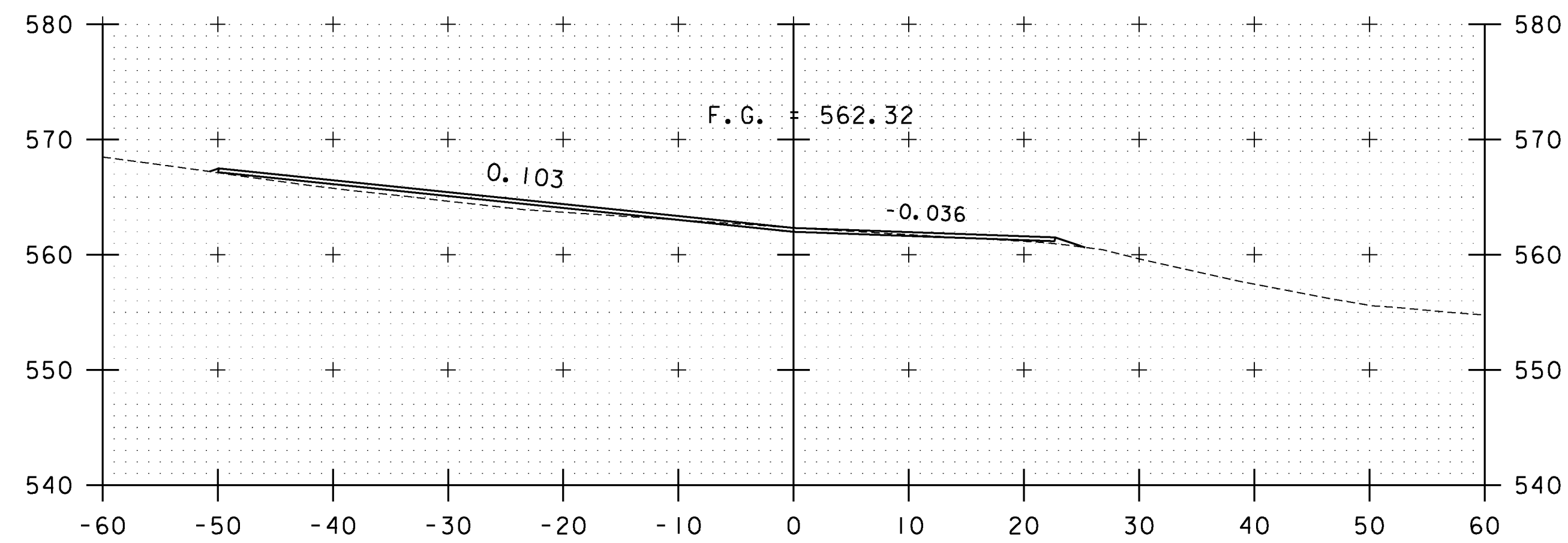


13+50  
END APPROACH

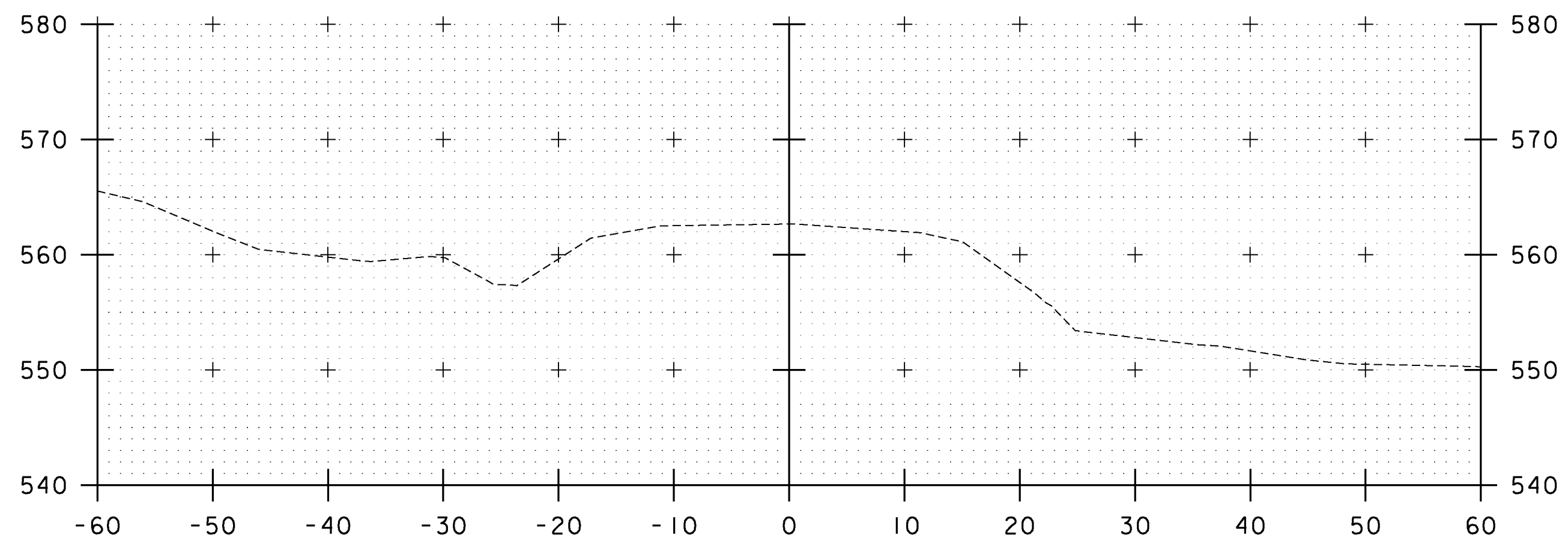
STA. 12+75 TO STA. 14+00



PROJECT NAME: ENOSBURG	FILE NAME: ... \12 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 3</b>	SHEET 34 OF 46

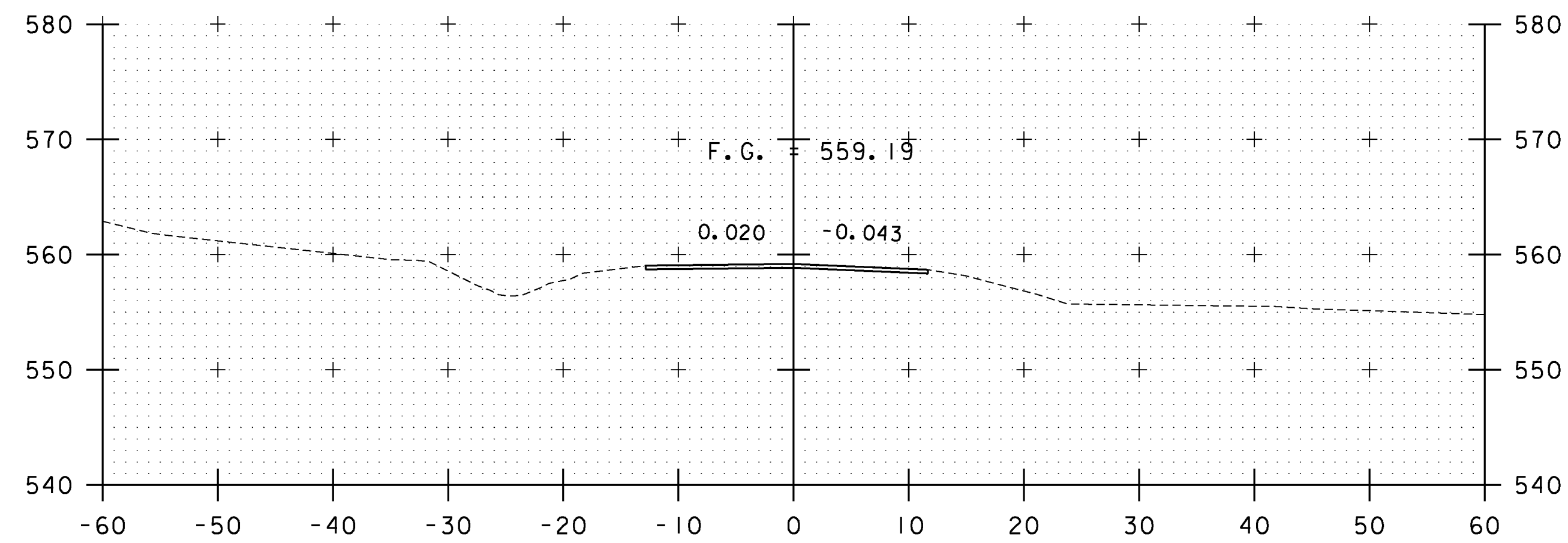


33+50



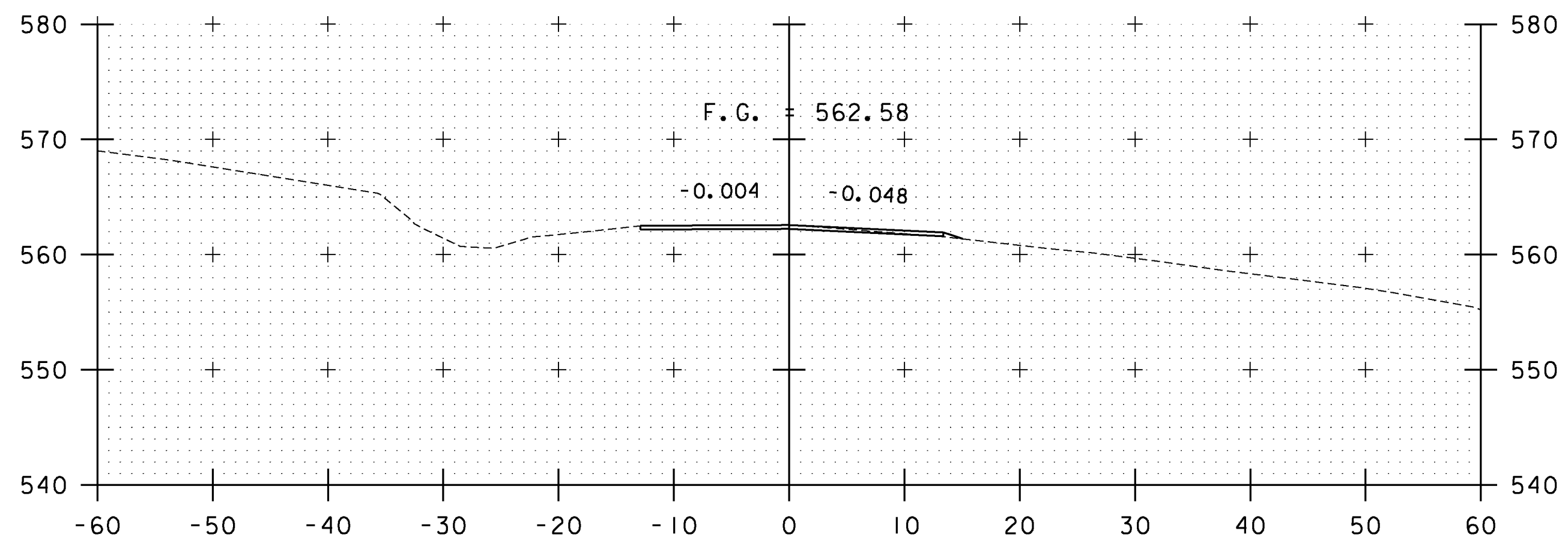
35+00

STA. 34+70  
MATCH EXISTING

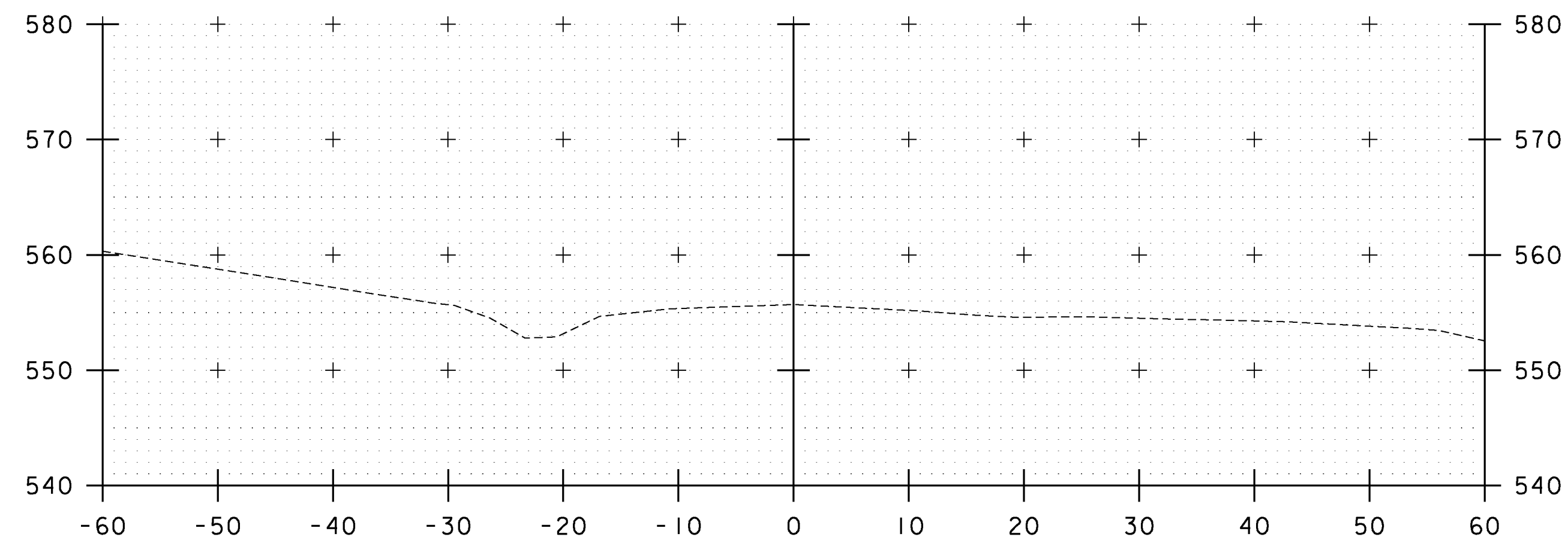


33+00

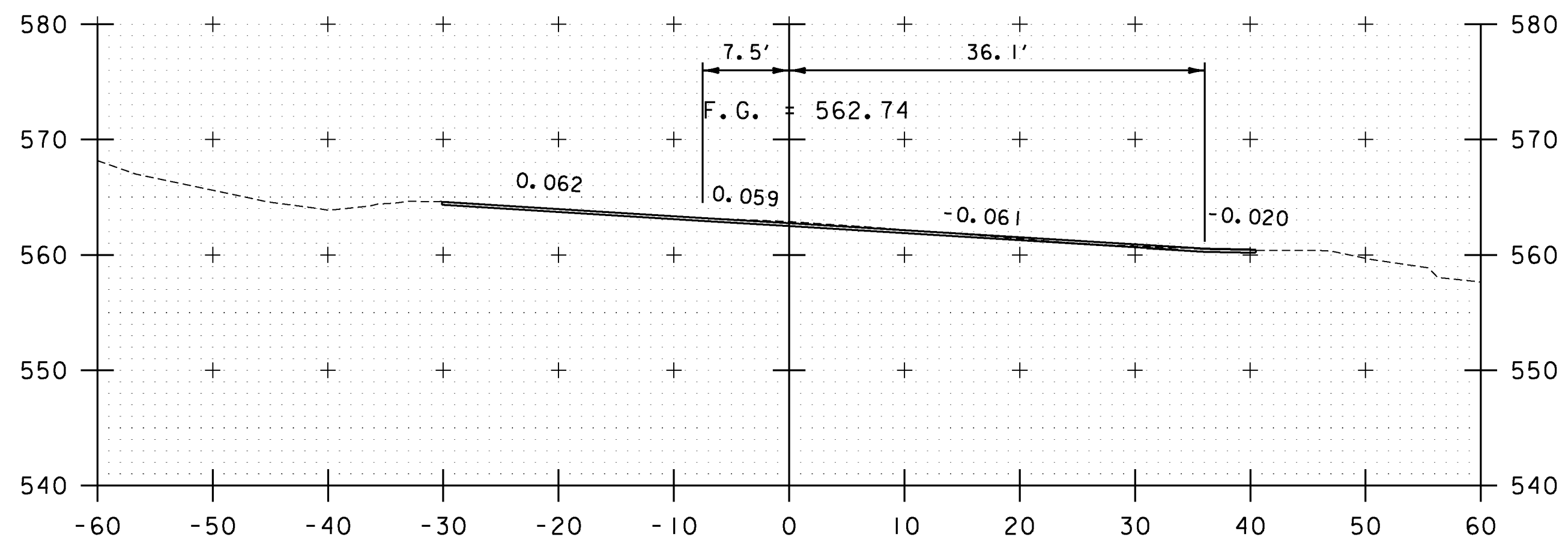
STA. 32+85  
MATCH EXISTING



34+50

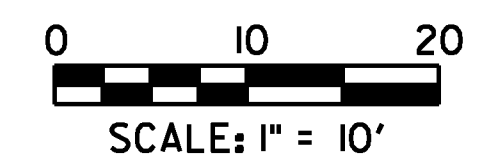


32+50

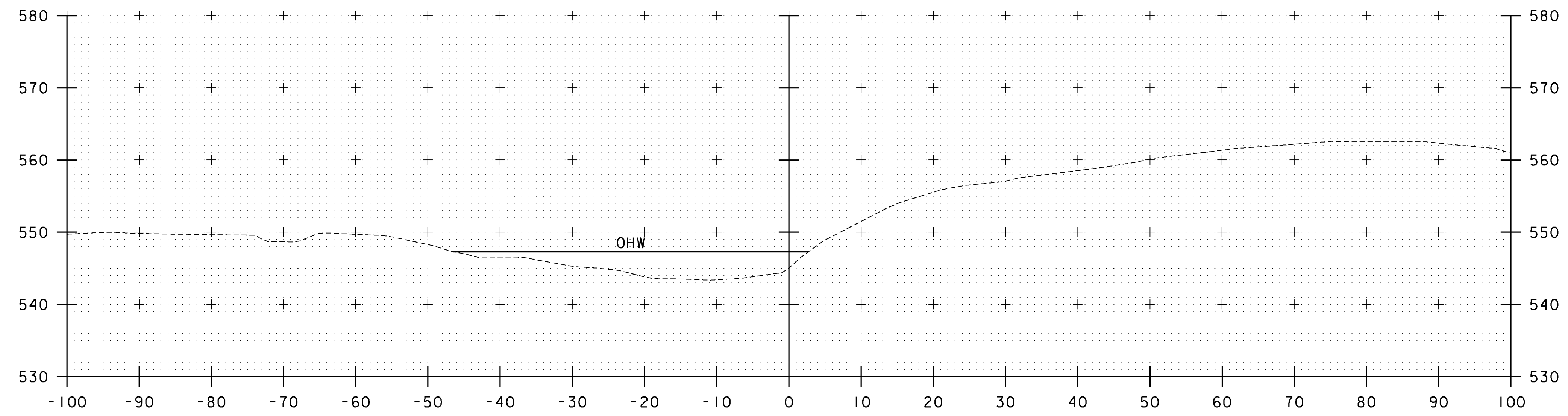


34+00

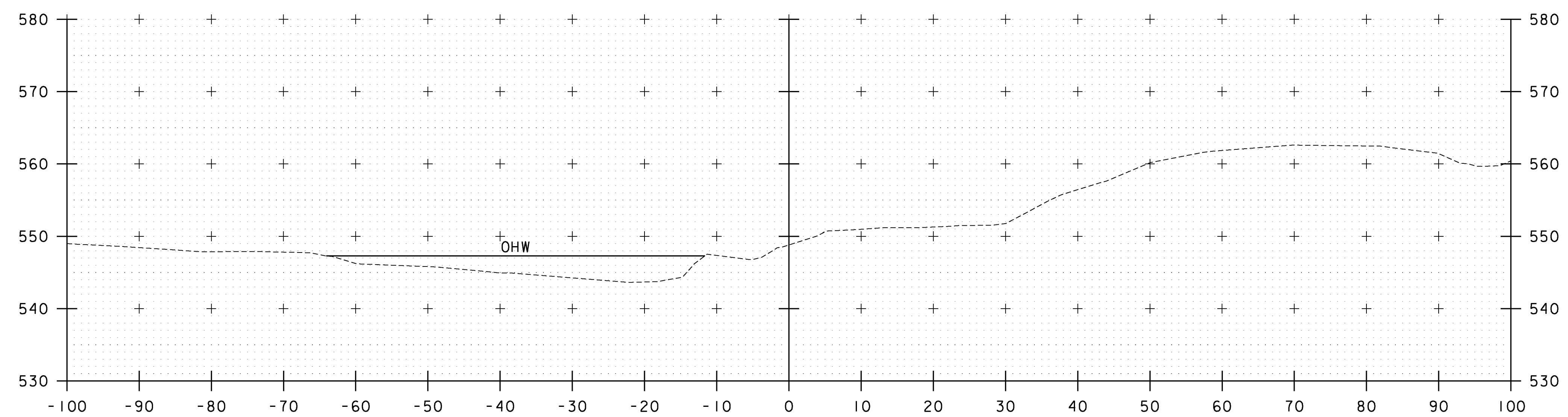
STA. 32+50 TO STA. 35+00



PROJECT NAME: ENOSBURG	PLOT DATE: 10/4/2013
PROJECT NUMBER: BRO 1448(40)	DRAWN BY: E. ALLING
FILE NAME: ...\\12 Cross Sections.dgn	CHECKED BY: G. GOYETTE
PROJECT LEADER: G. BOGUE	SHEET 35 OF 46
DESIGNED BY: G. GOYETTE	
<b>T.H. 1 CROSS SECTIONS - TXS 1</b>	

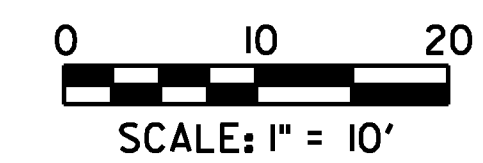


50+25

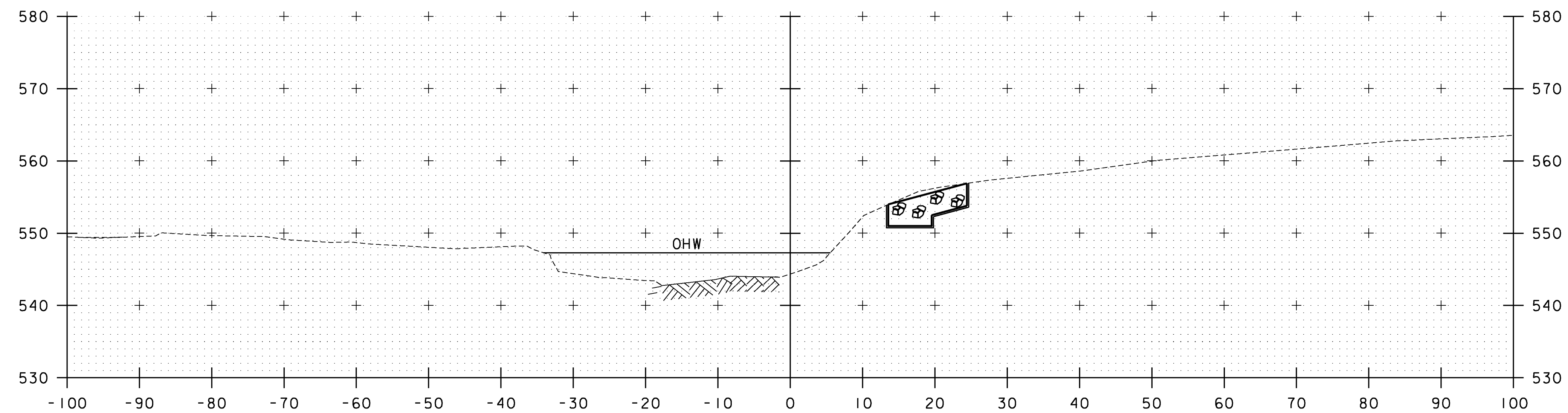


50+00

STA. 50+00 TO STA. 50+25

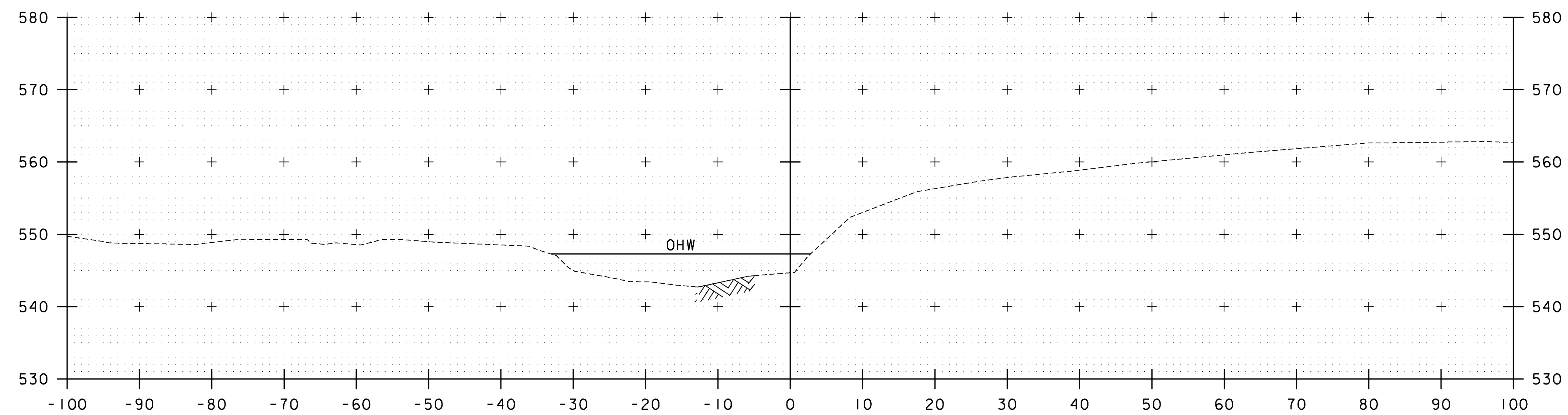


PROJECT NAME:	ENOSBURG
PROJECT NUMBER:	BRO 1448(40)
FILE NAME: ...13 ChannelCross Sections.dwg	LOT DATE: 10/4/2013
PROJECT LEADER: G. BOGUE	DRAWN BY: E. ALLING
DESIGNED BY: G. GOYETTE	CHECKED BY: G. GOYETTE
<b>CHANNEL CROSS SECTIONS - CXS 1</b>	SHEET 36 OF 46



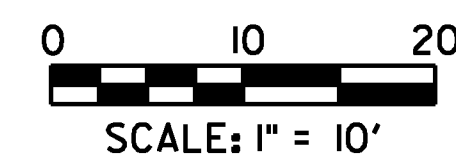
50+70

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

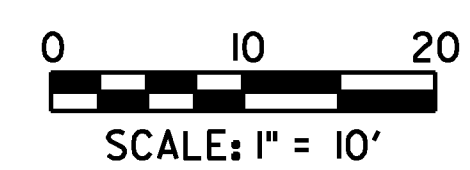
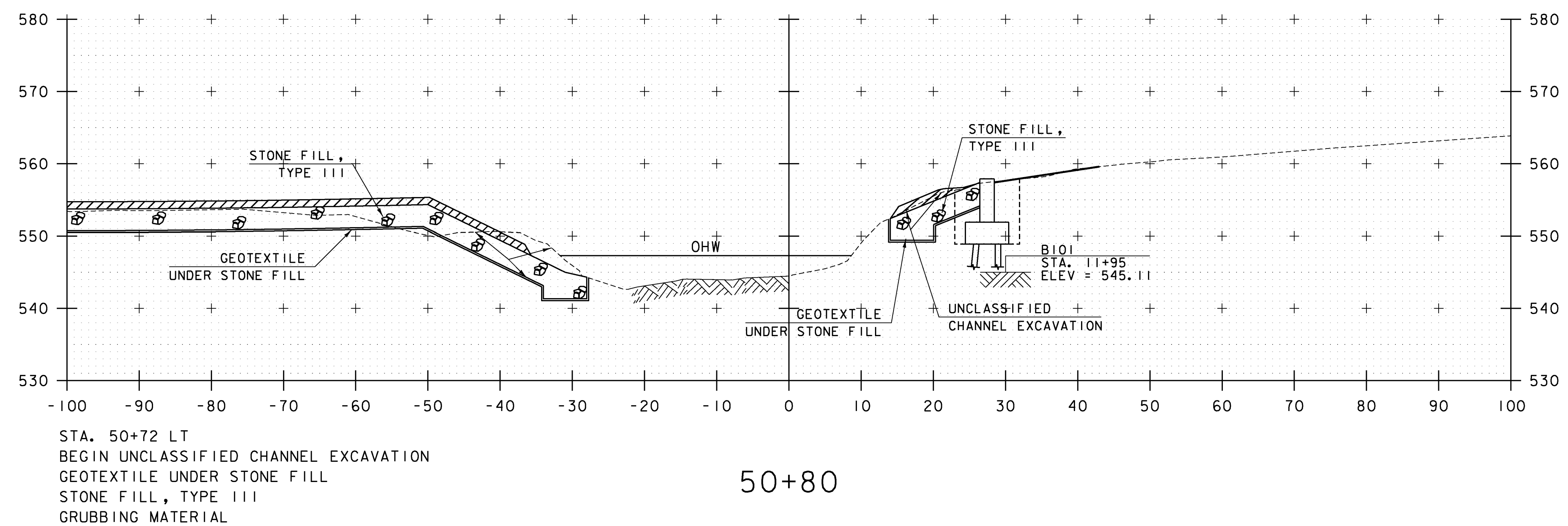
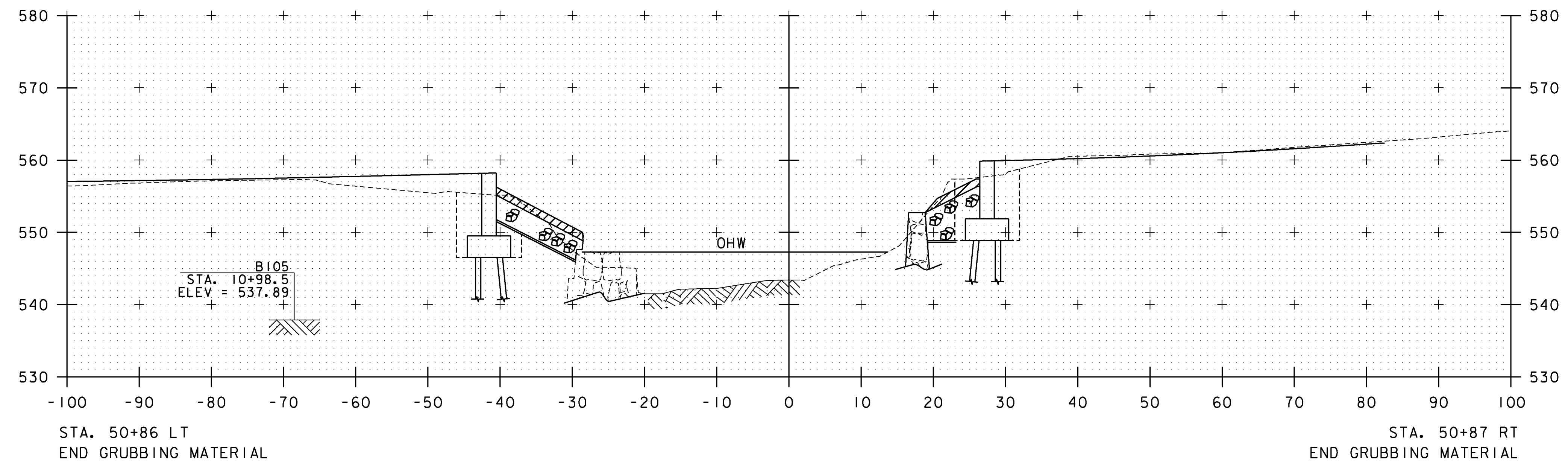


50+50

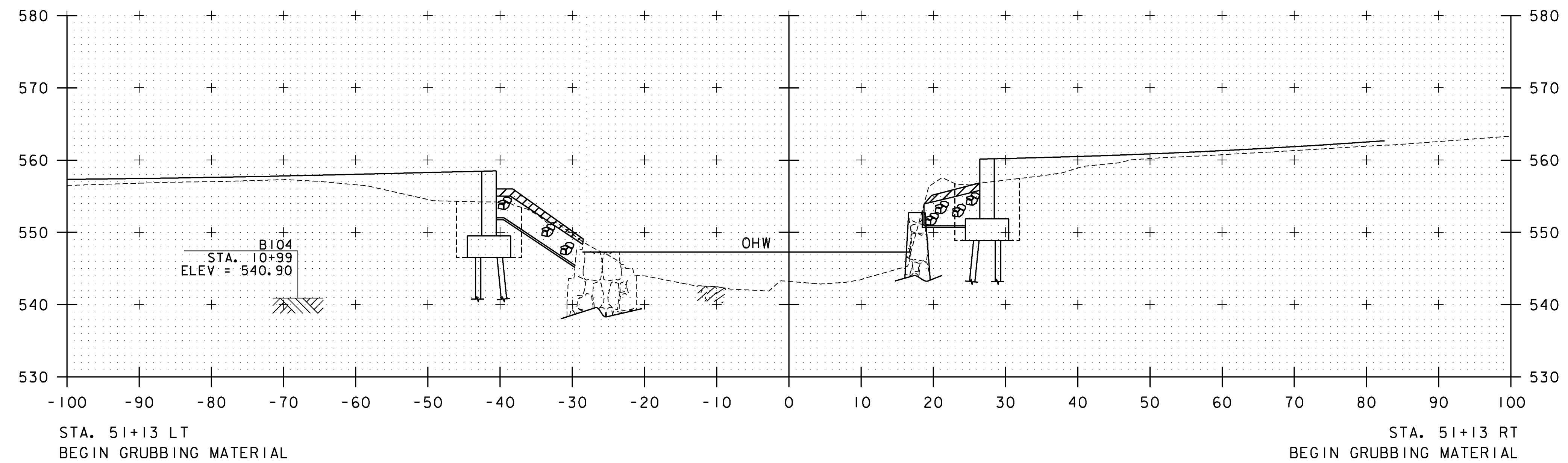
STA. 50+50 TO STA. 50+70



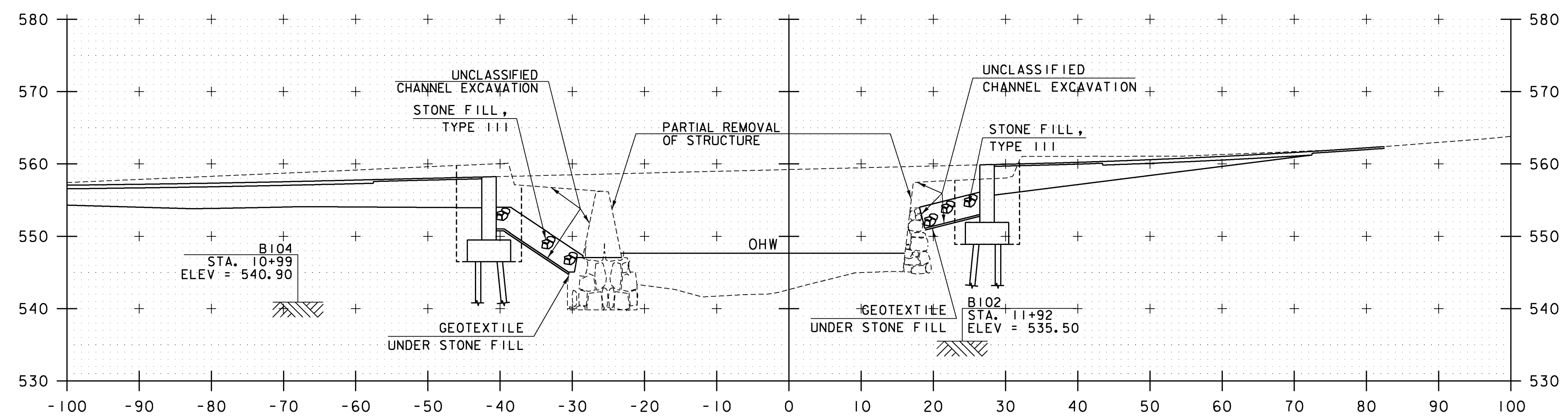
PROJECT NAME:	ENOSBURG
PROJECT NUMBER:	BRO 1448(40)
FILE NAME: ...13 ChannelCross Sections.dwg	LOT DATE: 10/4/2013
PROJECT LEADER: G. BOGUE	DRAWN BY: E. ALLING
DESIGNED BY: G. GOYETTE	CHECKED BY: G. GOYETTE
<b>CHANNEL CROSS SECTIONS - CXS 2</b>	SHEET 37 OF 46



PROJECT NAME:	ENOSBURG
PROJECT NUMBER:	BRO 1448(40)
FILE NAME:	...\\13 ChannelCross Sections.dwg
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 3</b>	SHEET 38 OF 46

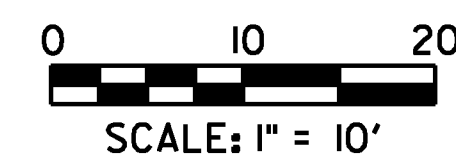


51+14

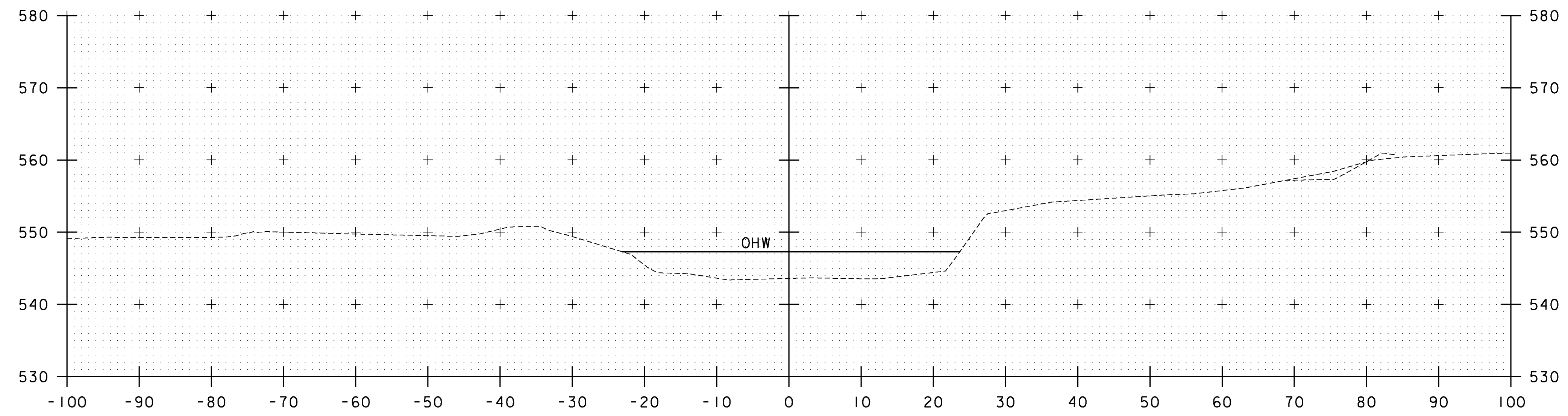


51+00

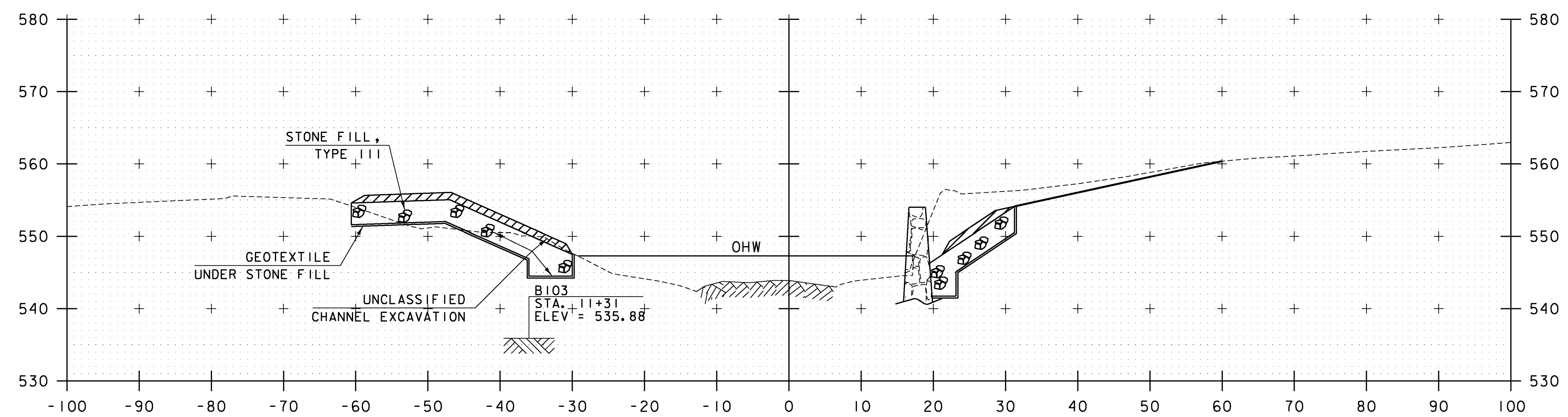
STA. 51+00 TO STA. 51+14



PROJECT NAME:	ENOSBURG
PROJECT NUMBER:	BRO 1448(40)
FILE NAME:	...\\13 ChannelCross Sections.dwg
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 4</b>	SHEET 39 OF 46



51+50

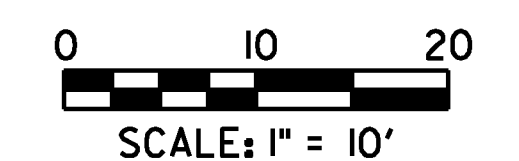


51+20

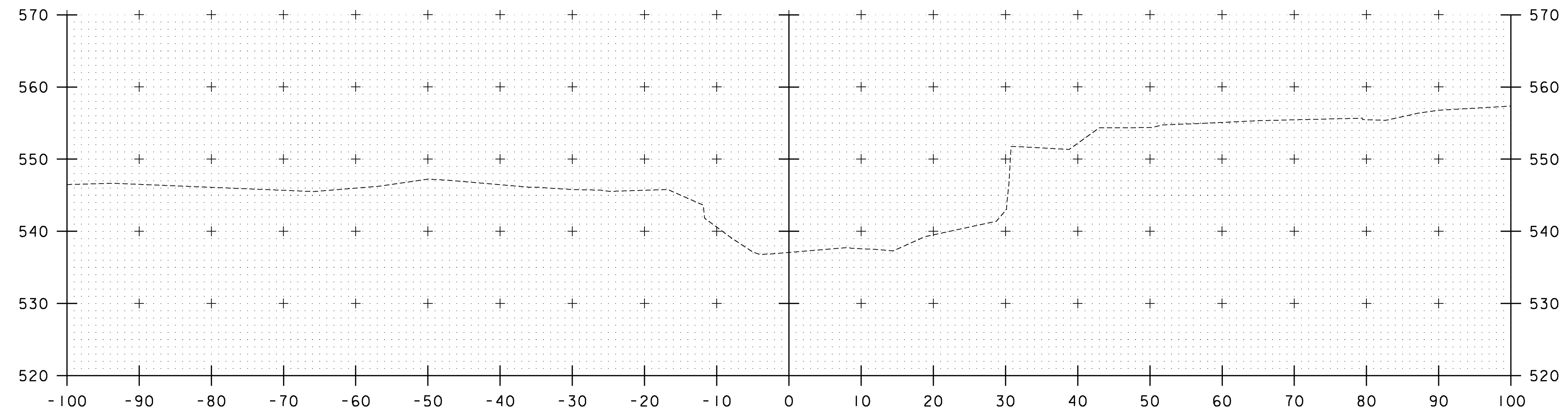
STA. 51+25 LT  
 END UNCLASSIFIED CHANNEL EXCAVATION  
 END STONE FILL, TYPE III  
 END GEOTEXTILE UNDER STONE FILL  
 END GRUBBING MATERIAL

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

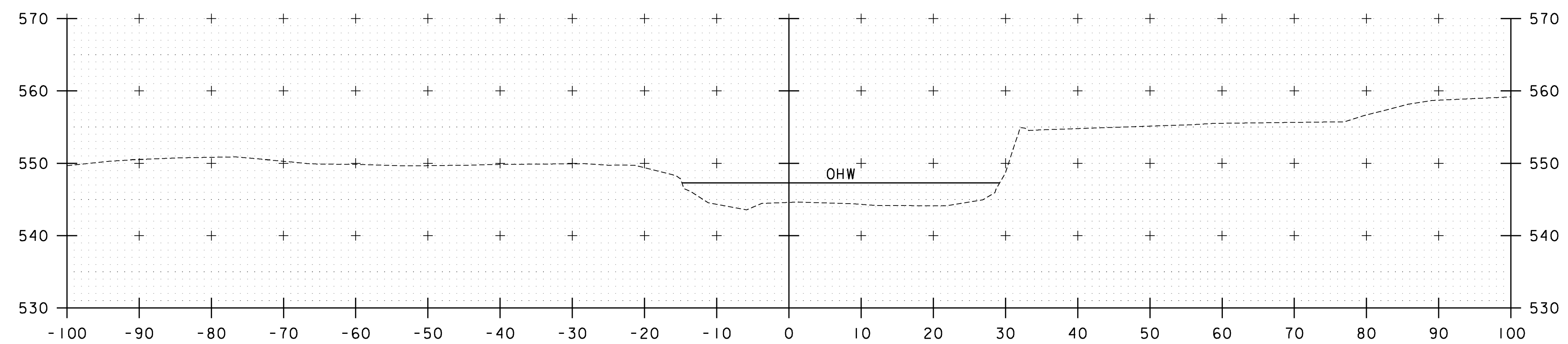
STA. 51+20 TO STA. 51+50



PROJECT NAME:	ENOSBURG
PROJECT NUMBER:	BRO 1448(40)
FILE NAME: ... \13 ChannelCross Sections.dwg	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 5</b>	
SHEET 40 OF 46	



52+00



51+75

STA. 51+75 TO STA. 52+00



PROJECT NAME:	ENOSBURG
PROJECT NUMBER:	BRO 1448(40)
FILE NAME:	...\\13 ChannelCross Sections.dwg@LOT DATE: 10/4/2013
PROJECT LEADER:	G. BOGUE
DESIGNED BY:	G. GOYETTE
DRAWN BY:	E. ALLING
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**

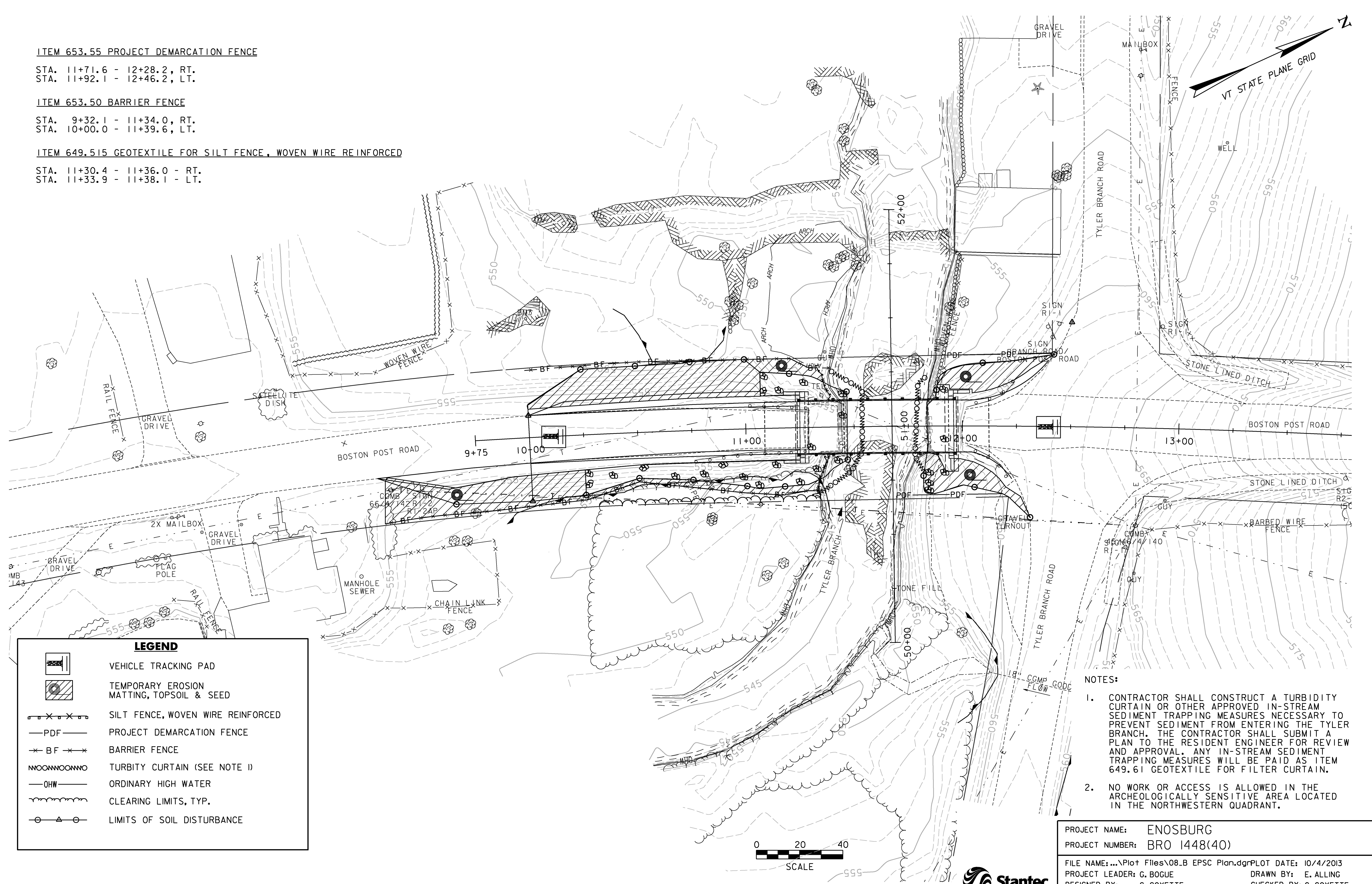
STA. 11+71.6 - 12+28.2, RT.  
 STA. 11+92.1 - 12+46.2, LT.

**ITEM 653.50 BARRIER FENCE**

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

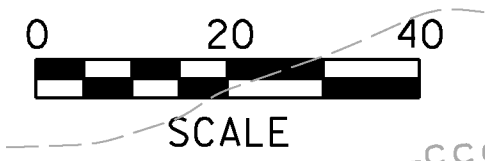
**ITEM 649.515 GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED**

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



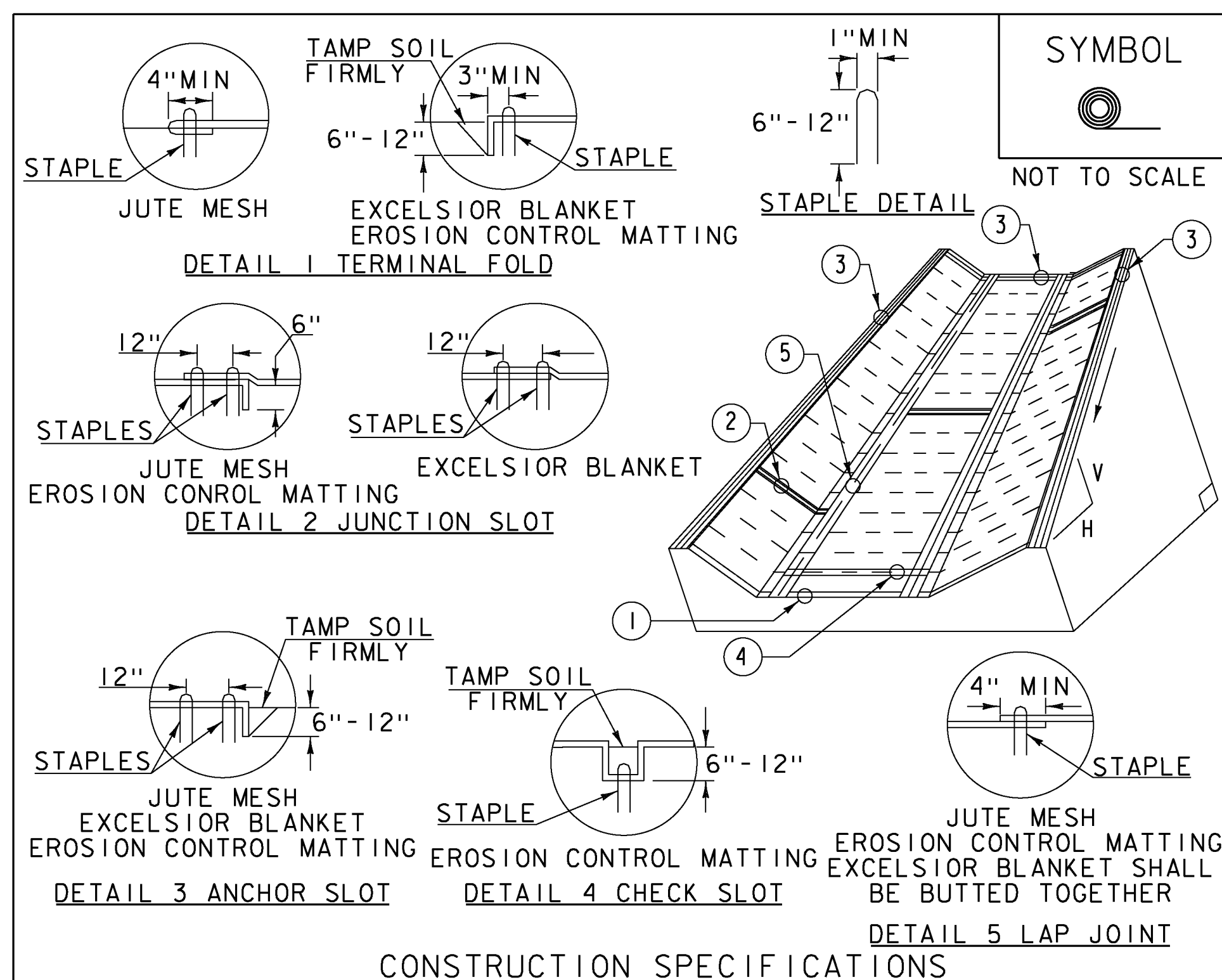
LEGEND	
	VEHICLE TRACKING PAD
	TEMPORARY EROSION MATTING, TOPSOIL & SEED
	SILT FENCE, WOVEN WIRE REINFORCED
	PROJECT DEMARCATION FENCE
	BARRIER FENCE
	TURBIDITY CURTAIN (SEE NOTE 1)
	ORDINARY HIGH WATER
	CLEARING LIMITS, TYP.
	LIMITS OF SOIL DISTURBANCE

- 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.dgn  
 PROJECT LEADER: G. BOGUE  
 DESIGNED BY: G. GOYETTE  
 EPSC CONST. SITE PLAN - ECP 1

DATE: 10/4/2013  
 DRAWN BY: E. ALLING  
 CHECKED BY: G. GOYETTE  
 SHEET 43 OF 46



**CONSTRUCTION SPECIFICATIONS**

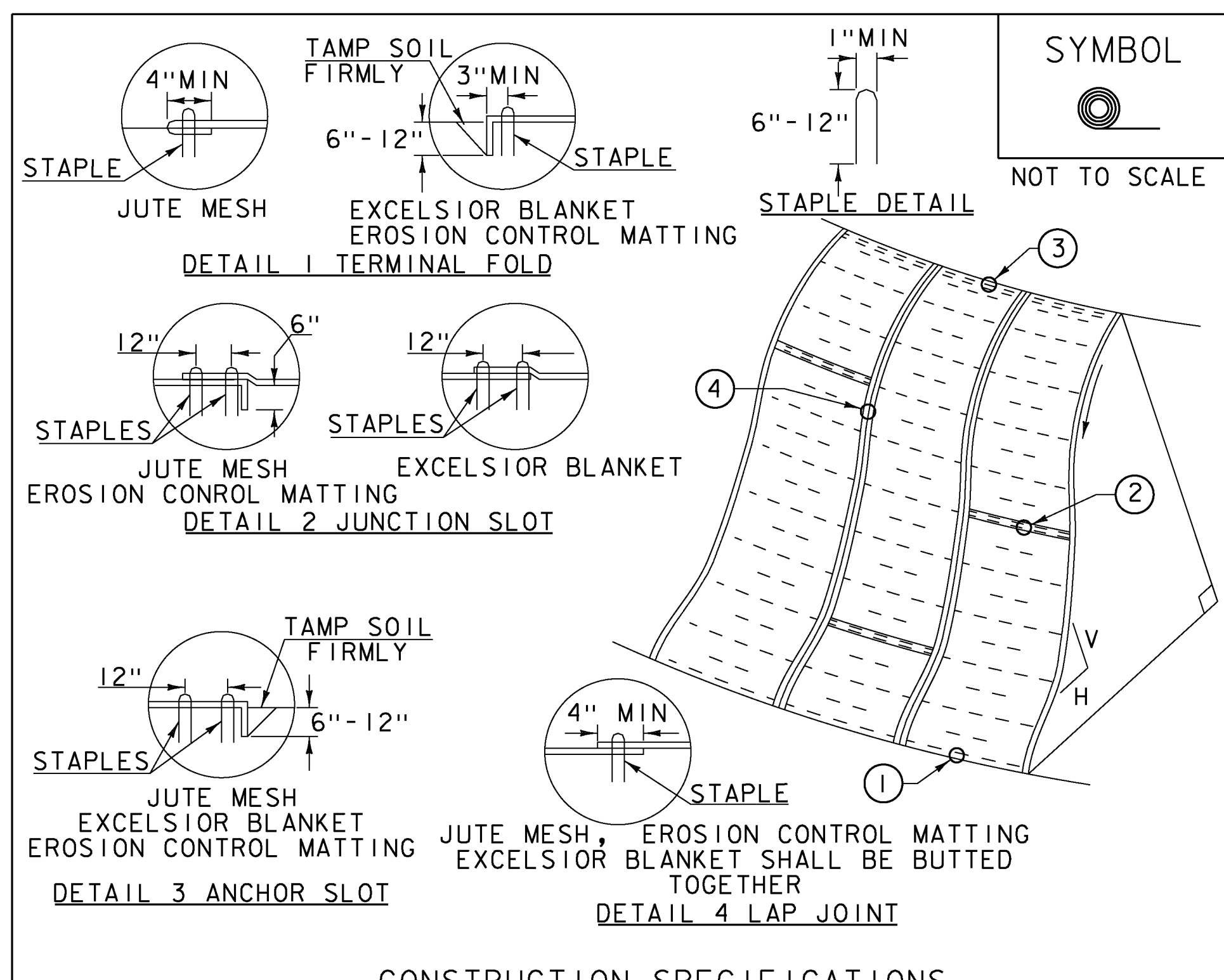
1. EROSION MATTING, CHECK SLOTS, SHALL BE SPACED IN DITCH CHANNEL SO THAT ONE OCCURS WITHIN EACH 50' ON SLOPES OF MORE THAN 4% AND LESS THAN 6%. ON SLOPES OF 6% OR MORE, THEY SHALL BE SPACED SO THAT ONE OCCURS WITHIN EACH 25'.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4' X 225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4' X 150' 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**

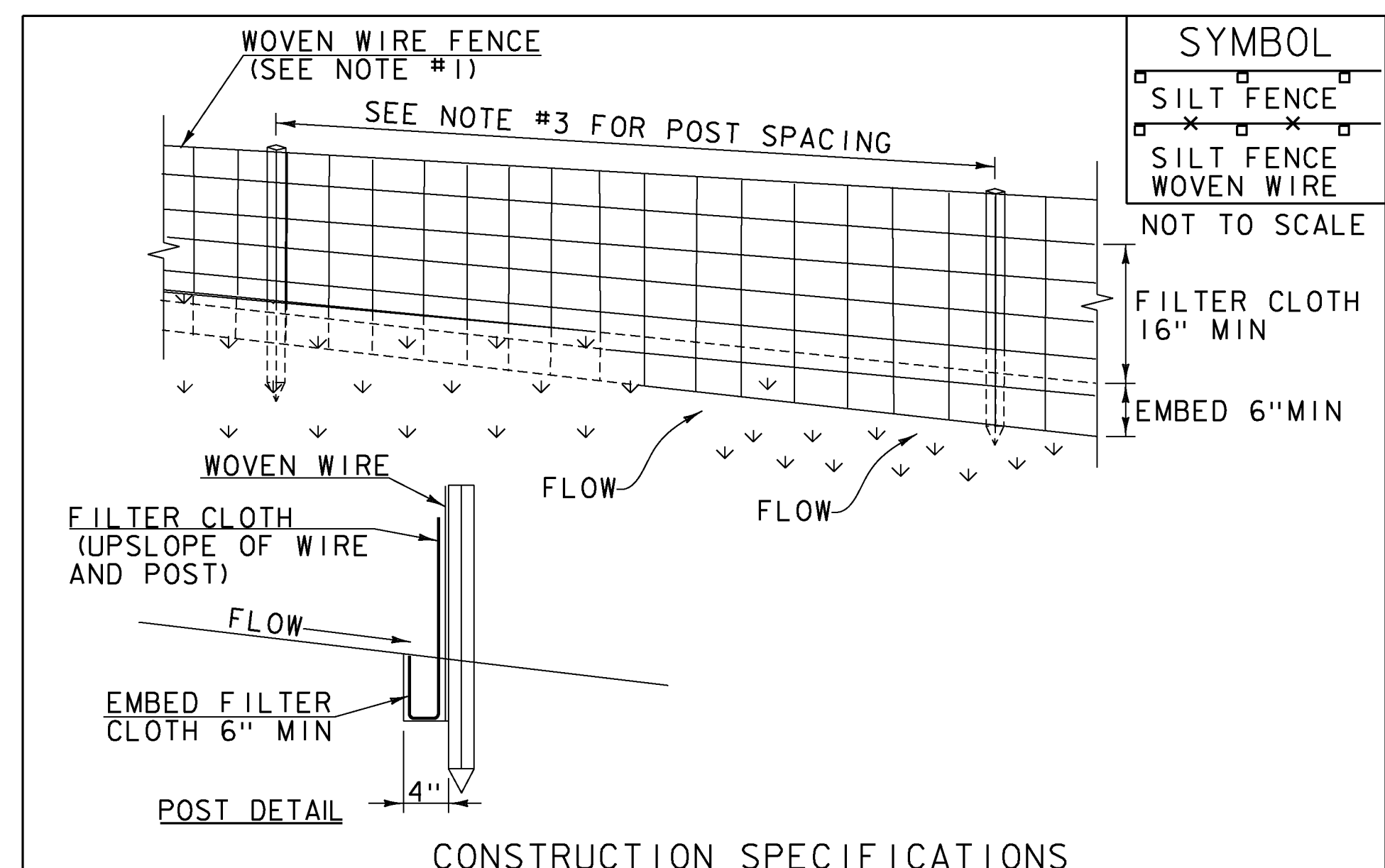
1. APPLY TO SLOPES GREATER THAN 3H:1V OR WHERE NECESSARY TO AID IN ESTABLISHING VEGETATION.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4' X 225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4' X 150' 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, MIRAFIBROX, 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: ...08.C EPSC Details.dgn  
PROJECT LEADER: G. BOGUE  
DESIGNED BY: G. GOYETTE  
PLOT DATE: 10/4/2013  
DRAWN BY: E. ALLING  
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

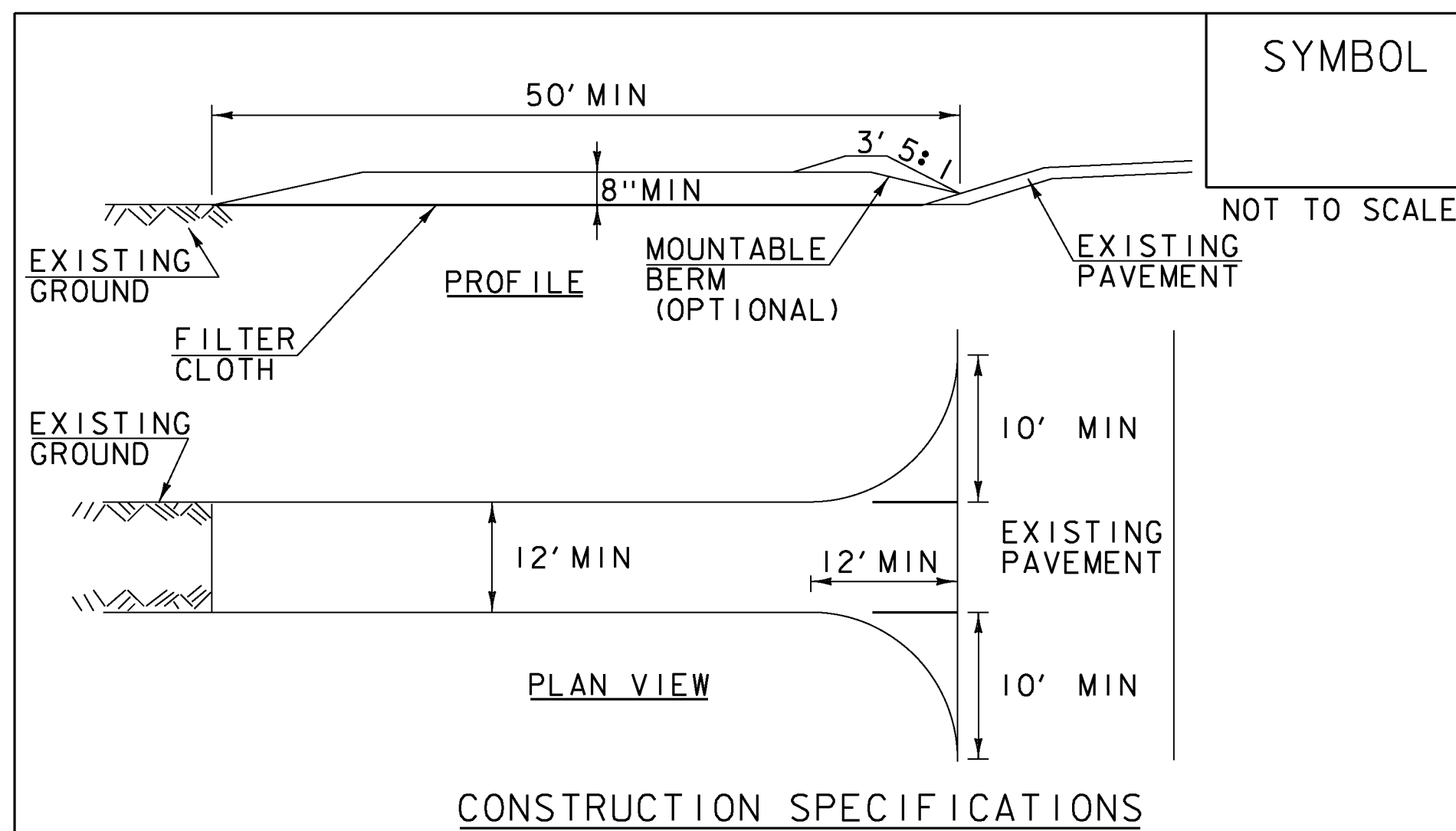
**CONSTRUCTION GUIDANCE**

- 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	



- 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.

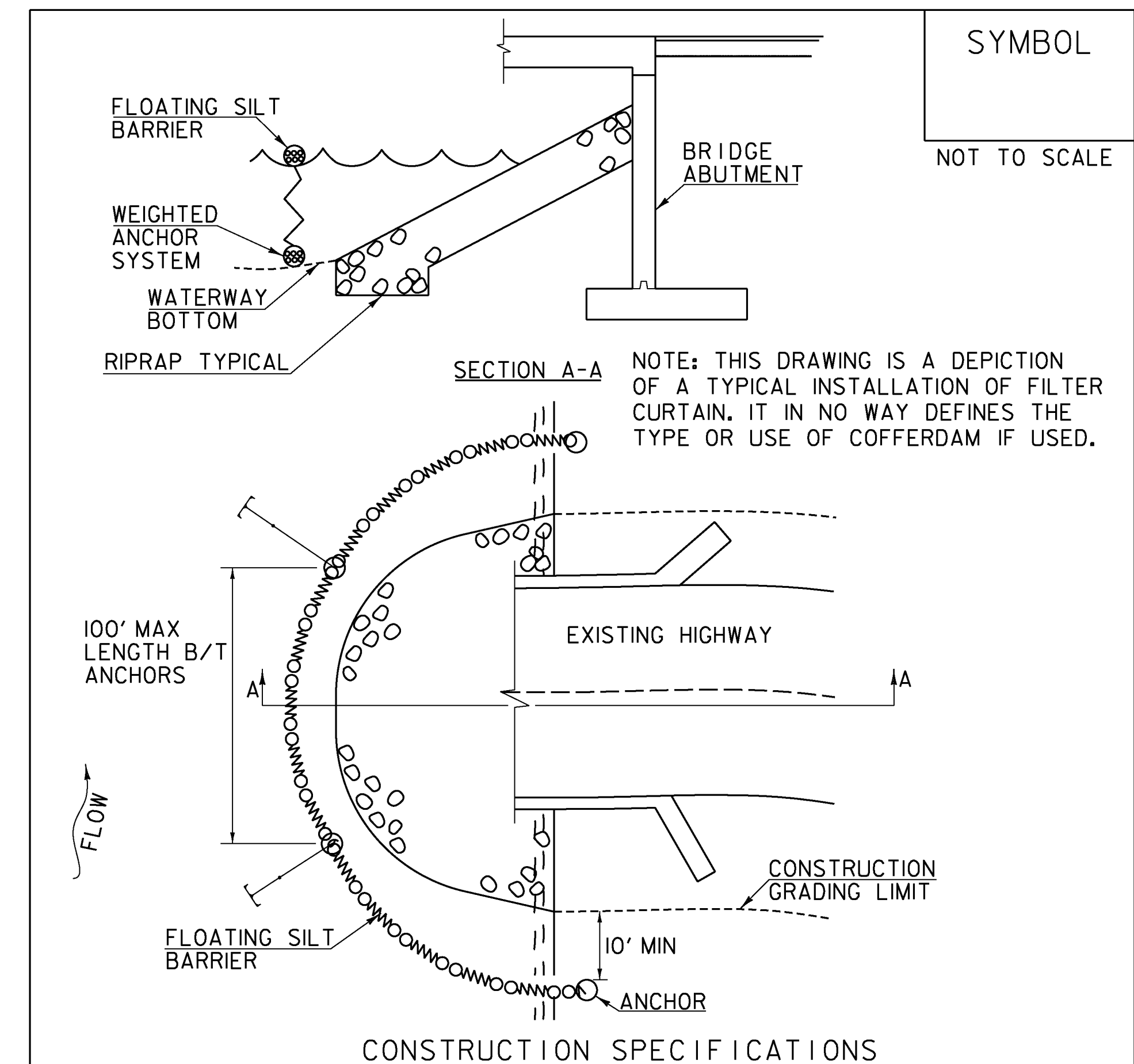
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC  
ORIGINALLY DEVELOPED BY USDA-NRCS  
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

**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	



- 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**

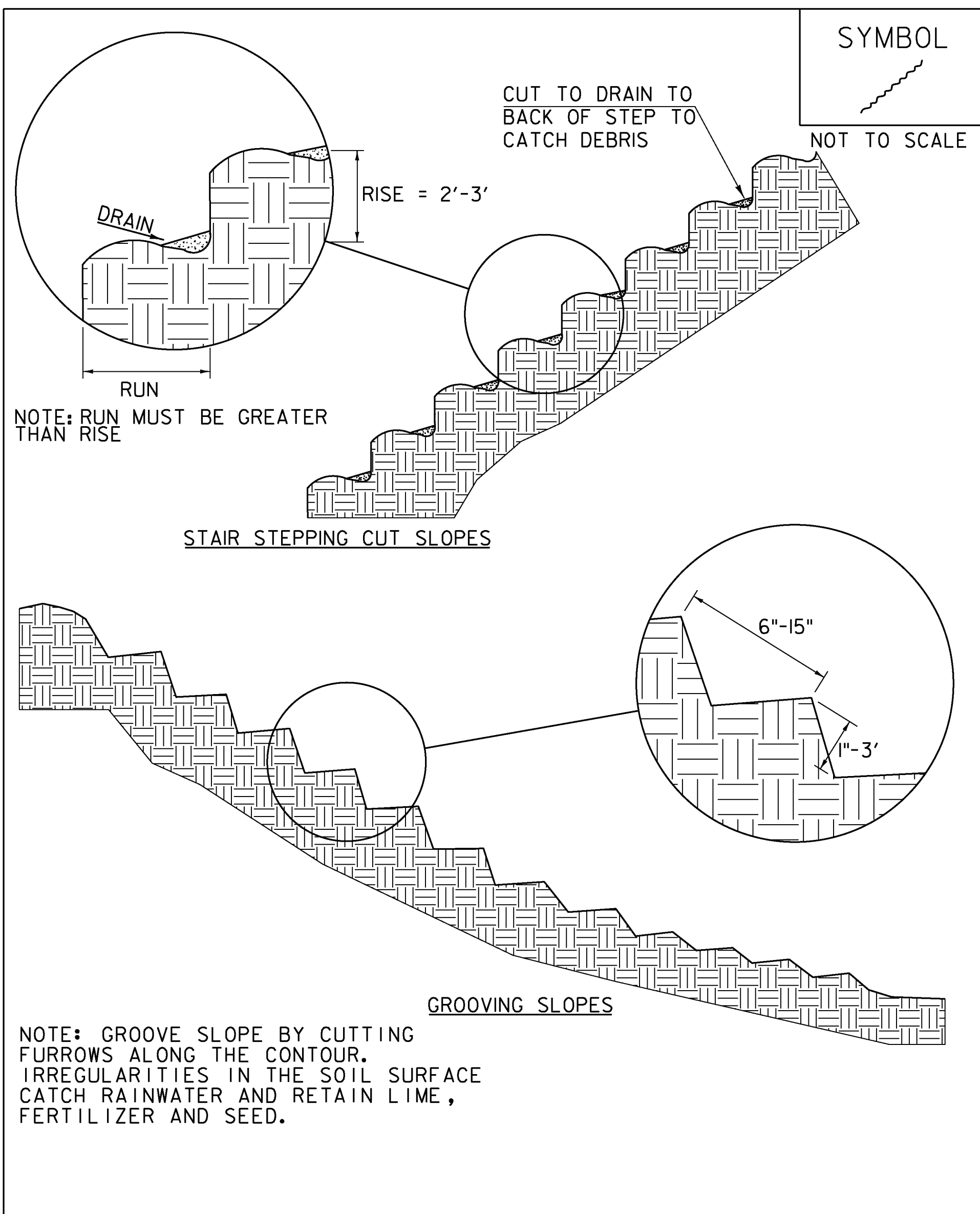
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 FOR GEOTEXTILE FOR FILTER CURTAIN (PAY ITEM 649.61).

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

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

FILE NAME: ...08.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





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  
 PROJECT NUMBER: BRO 1448(40)

FILE NAME: ...08\_C EPSC Details.dgn  
 PROJECT LEADER: G. BOGUE  
 DESIGNED BY: G. GOYETTE  
 PLOT DATE: 10/4/2013  
 DRAWN BY: E. ALLING  
 CHECKED BY: G. GOYETTE  
**EROSION CONTROL DETAILS - ECD 3** SHEET 46 OF 46



FINAL SURVEY PLANNED  
 SURVEY PLANNED  
 NOTE BOOK NO. 1000  
 DATE 10/15/15

ORIGINAL SURVEY PLANNED  
 SURVEY PLANNED  
 NOTE BOOK NO. 1000  
 DATE 10/15/15

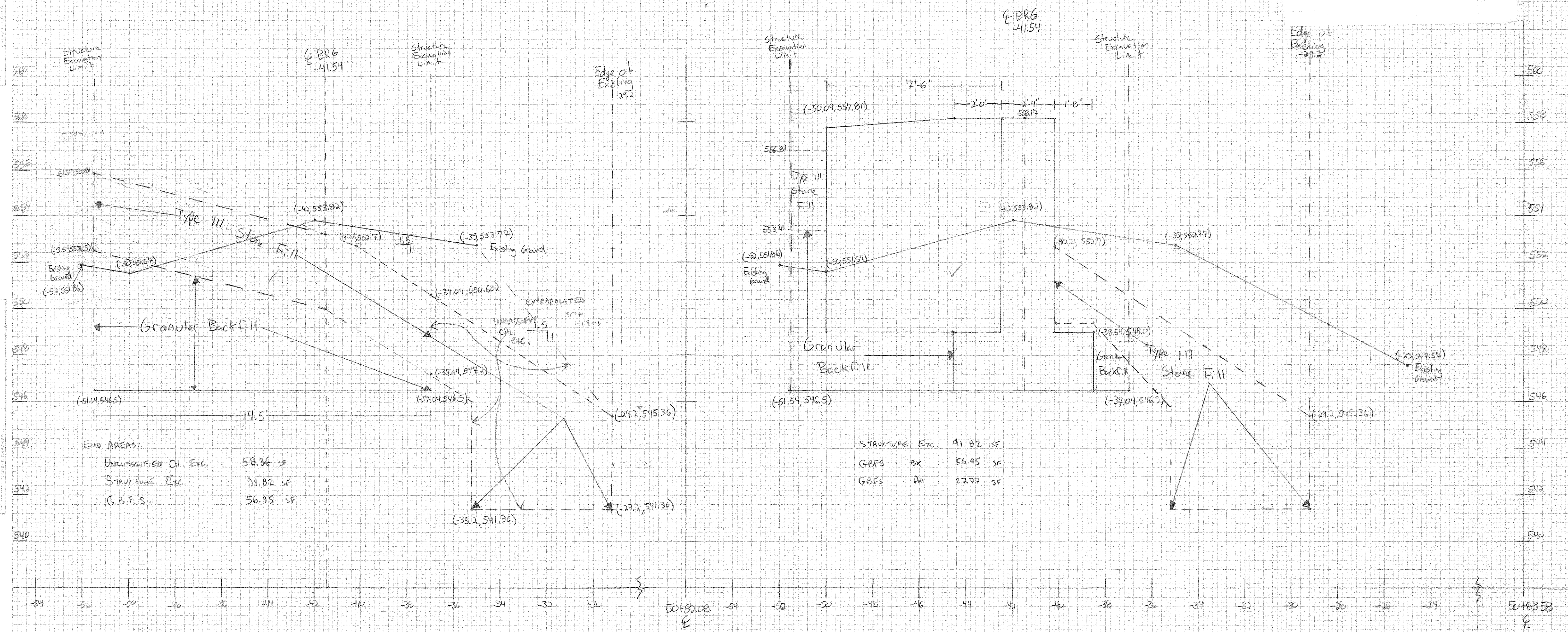
Endsberg BRO 1448 (40)  
 Structure Excavation, Granular Backfill  
 Abutment #1  
 Drawn By: Alan Therrien  
 checked By: Jon Day

Endsberg BRO 1448(40)

ABUT. #1  
 STRUCTURE EXC.  
 GRANULAR BACKFILL

ABUT. #1

ABUT. #1



END AREAS:

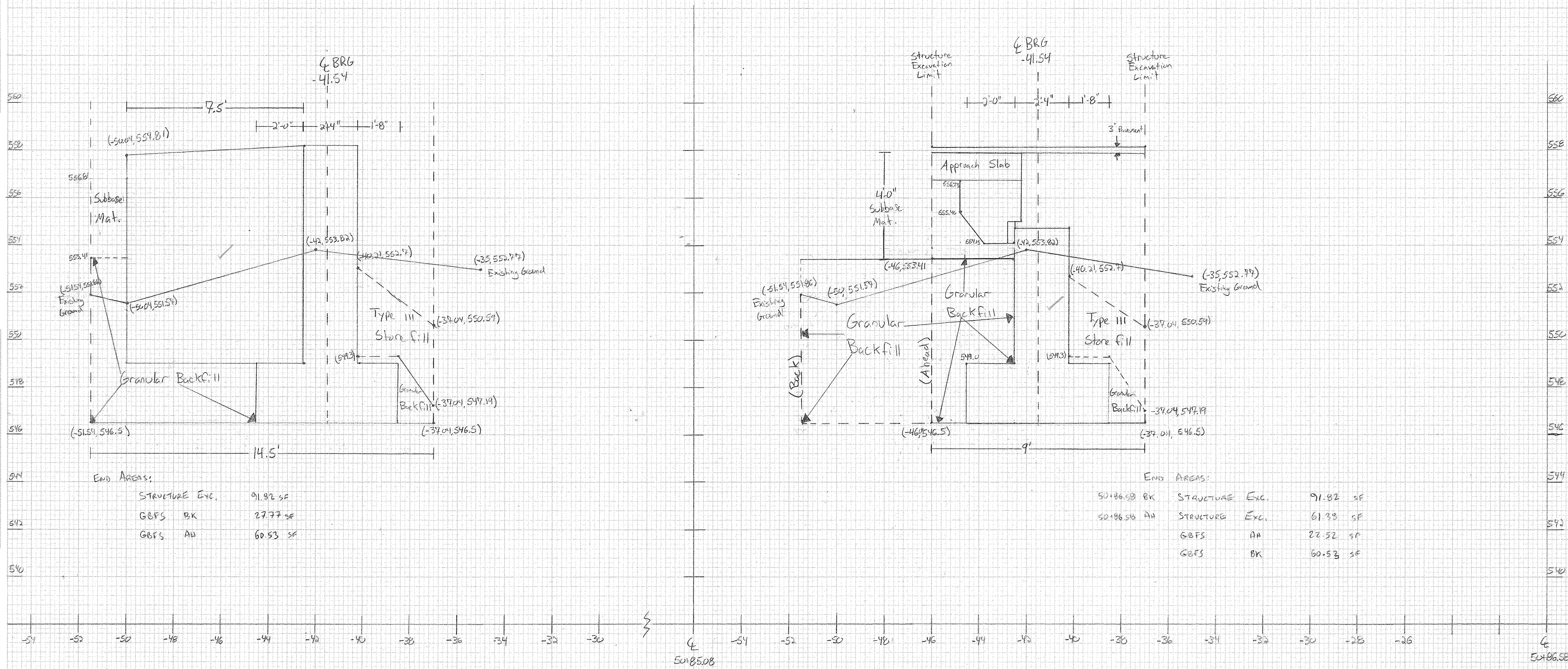
UNCLASSIFIED CH. EXC.	58.36 SF
STRUCTURE EXC.	91.82 SF
G.B.F.S.	56.95 SF

STRUCTURE EXC.	91.82 SF
G.B.F.S. BX	56.95 SF
G.B.F.S. AX	27.77 SF

Enosburg BRG 1448 (40)  
 Structure Excavation, Granular Backfill  
 Abutment 1  
 Drawn By: Alan Therrien  
 Checked By: Jon Day

FINAL SURVEY  
 DATE: 08-17-14  
 BY: JPD  
 CHECKED BY: JPD  
 PROJECT NO.: 1448  
 SHEET NO.: 40

ORIGINAL SURVEY  
 DATE: 08-17-14  
 BY: JPD  
 CHECKED BY: JPD  
 PROJECT NO.: 1448  
 SHEET NO.: 40



END AREAS:

STRUCTURE Exc.	91.82 SF
GBFS BK	27.77 SF
GBFS AH	60.53 SF

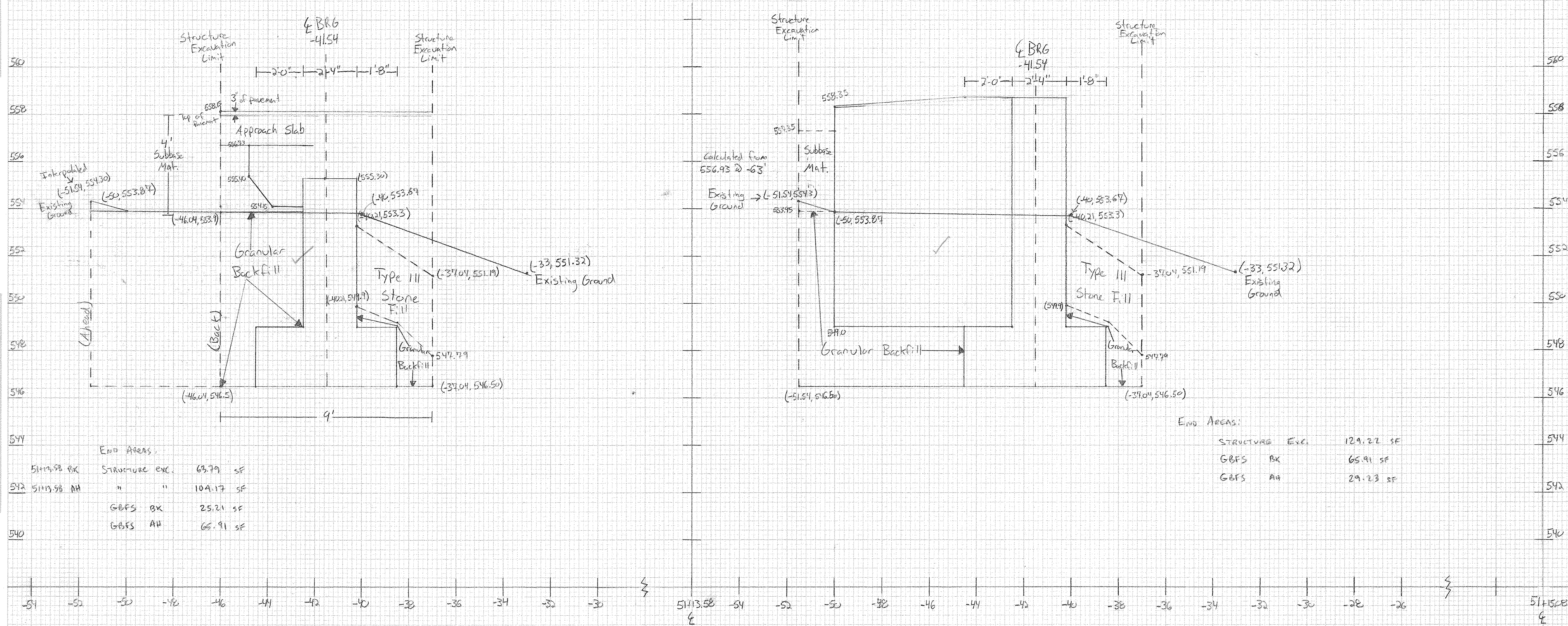
END AREAS:

STRUCTURE Exc.	91.82 SF
GBFS AH	27.77 SF
GBFS BK	60.53 SF

Enosburg BRO 144B (40)  
 Structure Excavation, Granular Backfill  
 Abutment 1  
 Drawn By: Alan Therrien  
 Checked By: Jon Day

DATE: \_\_\_\_\_  
 BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 PROJECT: \_\_\_\_\_  
 SHEET NO.: \_\_\_\_\_

DATE: \_\_\_\_\_  
 BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 PROJECT: \_\_\_\_\_  
 SHEET NO.: \_\_\_\_\_



END AREAS:

Station	Area Type	Area (SF)
542	STRUCTURE EXC.	63.79
542	GBFS BK	25.21
542	GBFS AH	104.17
540	STRUCTURE EXC.	65.91
540	GBFS BK	25.21
540	GBFS AH	65.91

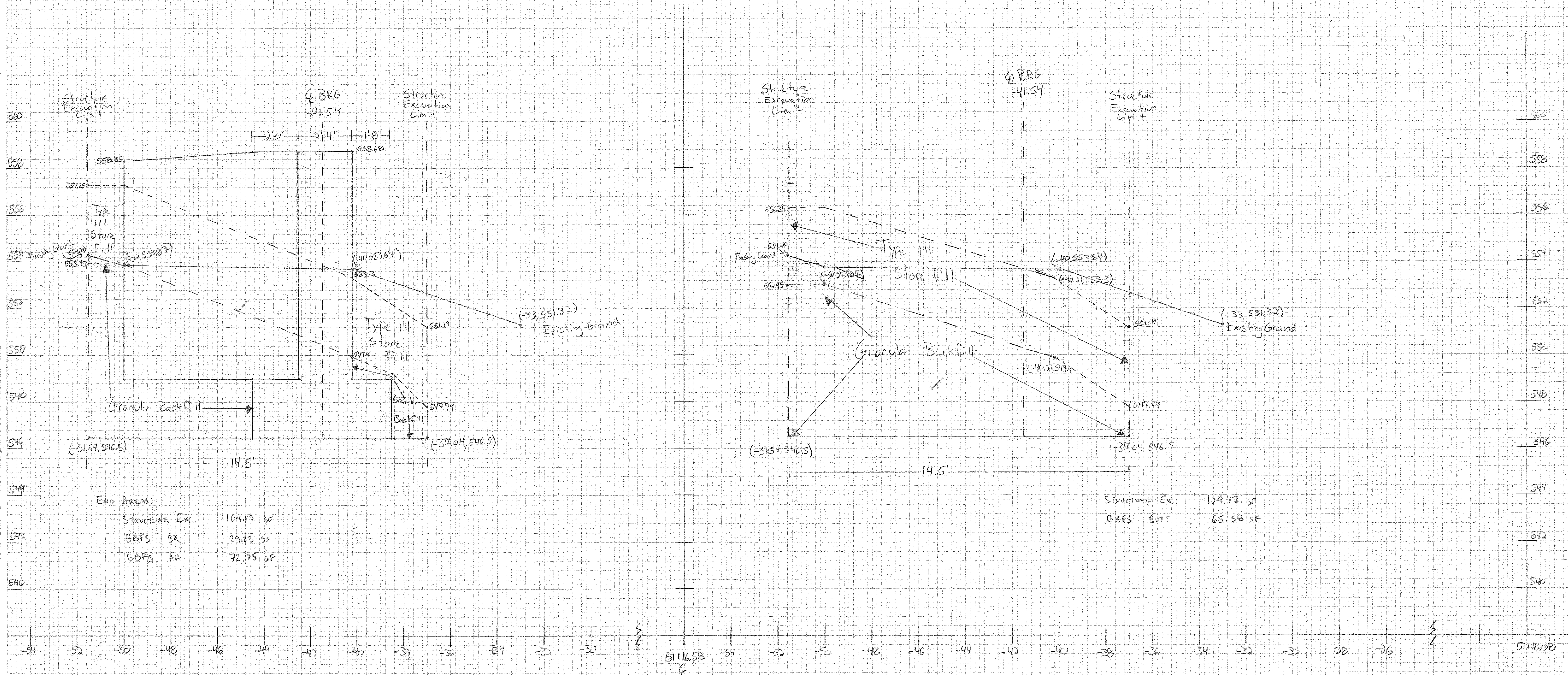
END AREAS:

Area Type	Area (SF)
STRUCTURE EXC.	129.22
GBFS BK	65.91
GBFS AH	29.23

Endsburg BR0 1448 (40)  
 Structure Excavation, Granular Backfill  
 Abutment I  
 Drawn By: Alan Thuerien  
 Checked By: Jon Day

FINAL SURVEY  
 DATE: 08/14/14  
 BY: JPD  
 PROJECT: ENDSBURG BR0 1448 (40)  
 SHEET: 37

ORIGINAL SURVEY  
 DATE: 08/14/14  
 BY: JPD  
 PROJECT: ENDSBURG BR0 1448 (40)  
 SHEET: 37

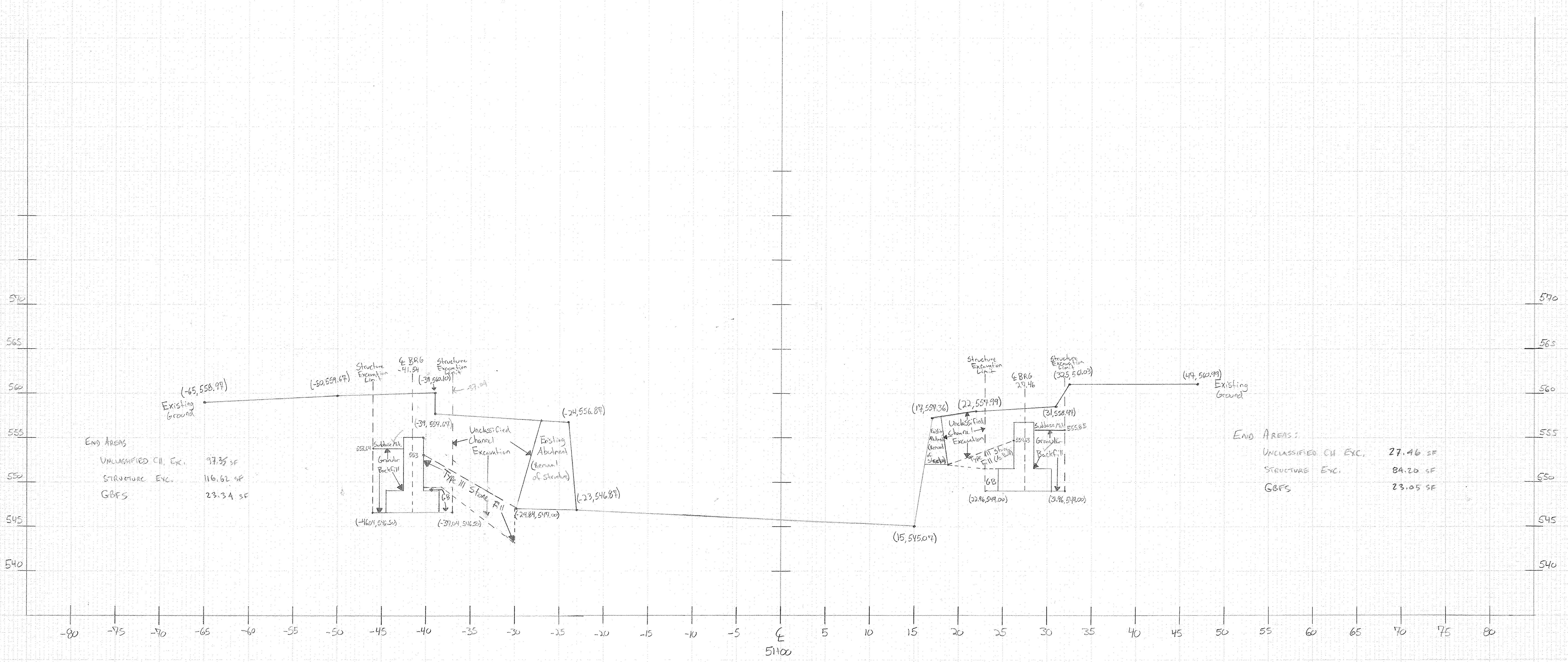


END AREAS

STRUCTURE Exc.	104.17 SF
GBFS BK	29.23 SF
GBFS AH	72.75 SF

STRUCTURE Exc.	104.17 SF
GBFS BUT	65.58 SF

Enosburg BR 1448 (40)  
 Structure Excavation, Granular Backfill,  
 Unclassified Channel Excavation  
 Abutment 1 & 2  
 Drawn By: Alan Therrien  
 Checked By: Jon Day



END AREAS

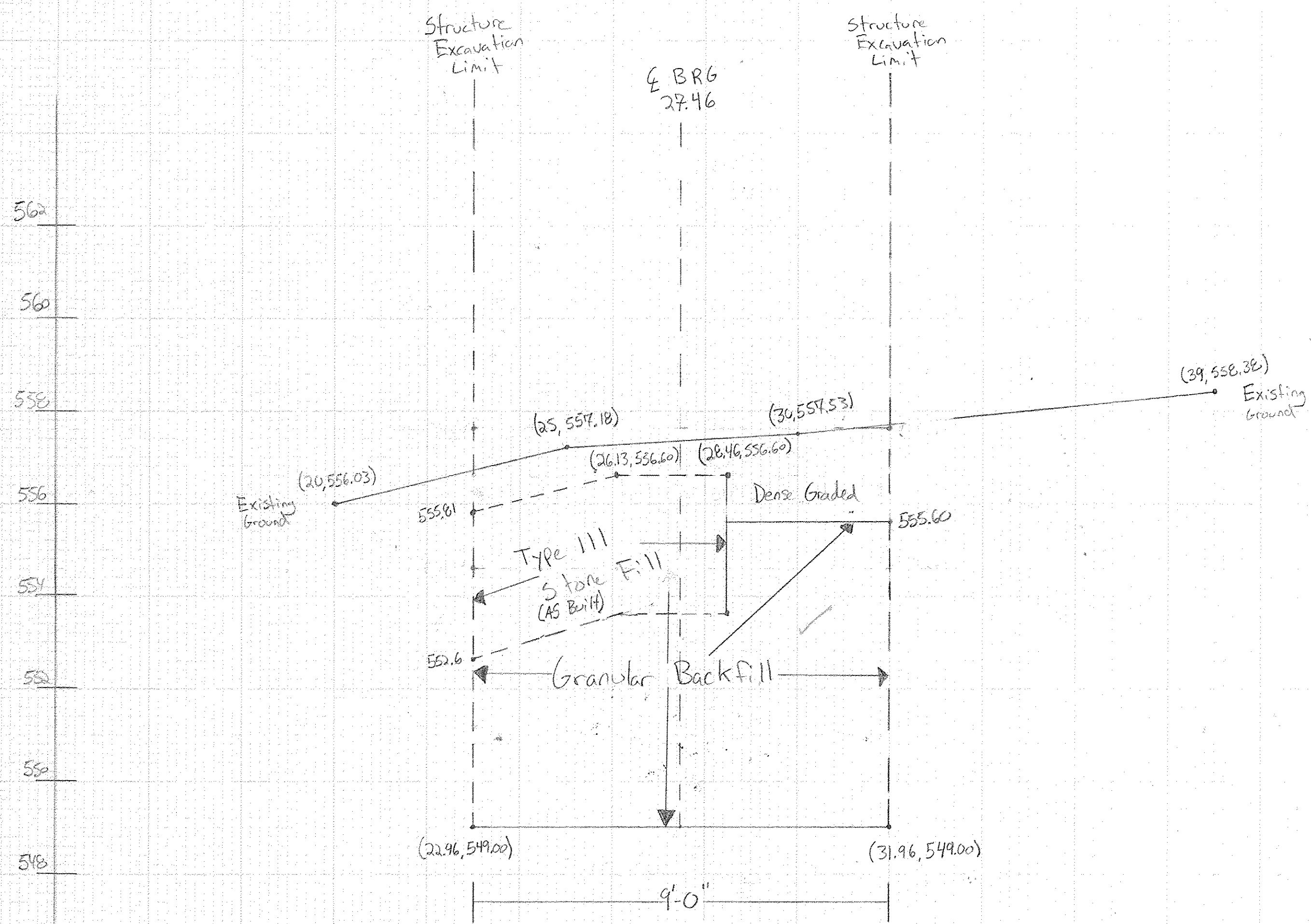
UNCLASSIFIED CH. EXC.	97.85 SF
STRUCTURE EXC.	116.62 SF
GBFS	23.34 SF

END AREAS:

UNCLASSIFIED CH. EXC.	27.46 SF
STRUCTURE EXC.	84.20 SF
GBFS	23.05 SF

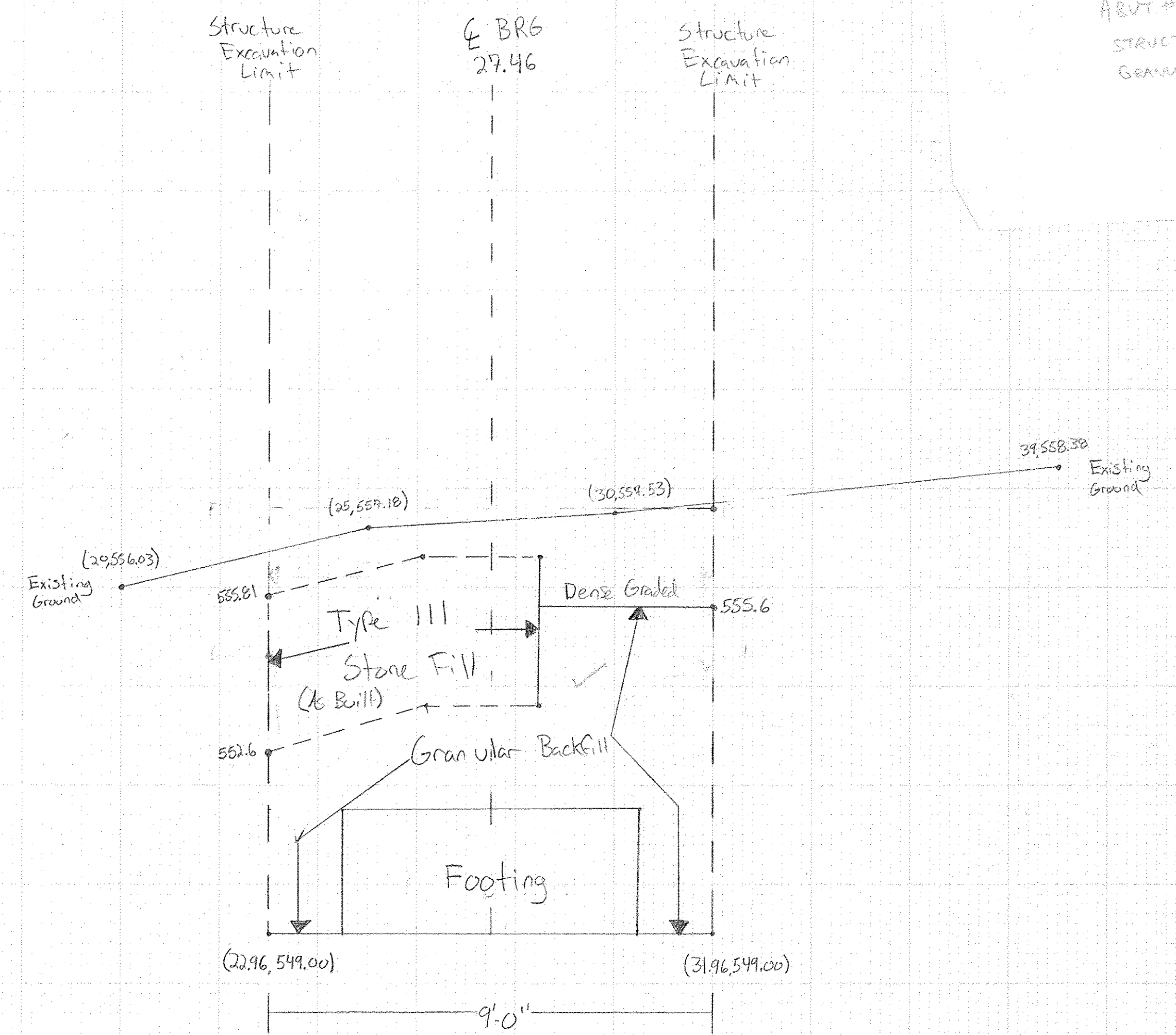
Enosburg BRD 1448 (40)  
 Structure Excavation, Granular Backfill  
 Abutmen 2 ✓  
 Drawn By: Alan Therrien  
 Checked By: Jon Day

Enosburg BRD 1448 (40)  
 ABUT #2  
 STRUCTURE EXC.  
 GRANULAR BACKFILL



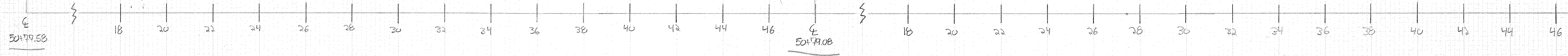
END AREAS:

STRUCTURE EXC.	74.86 SF
GBFS	46.70 SF

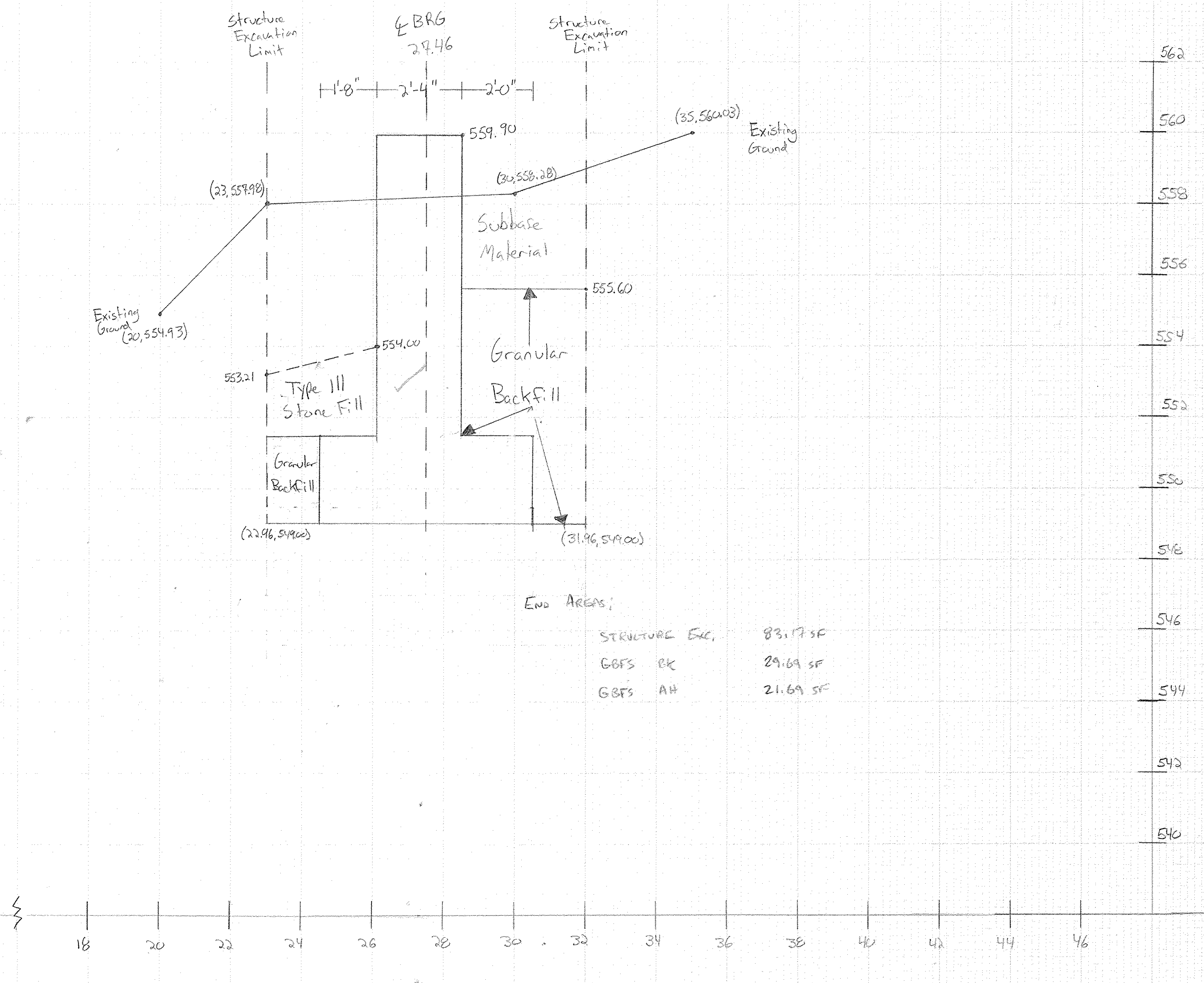
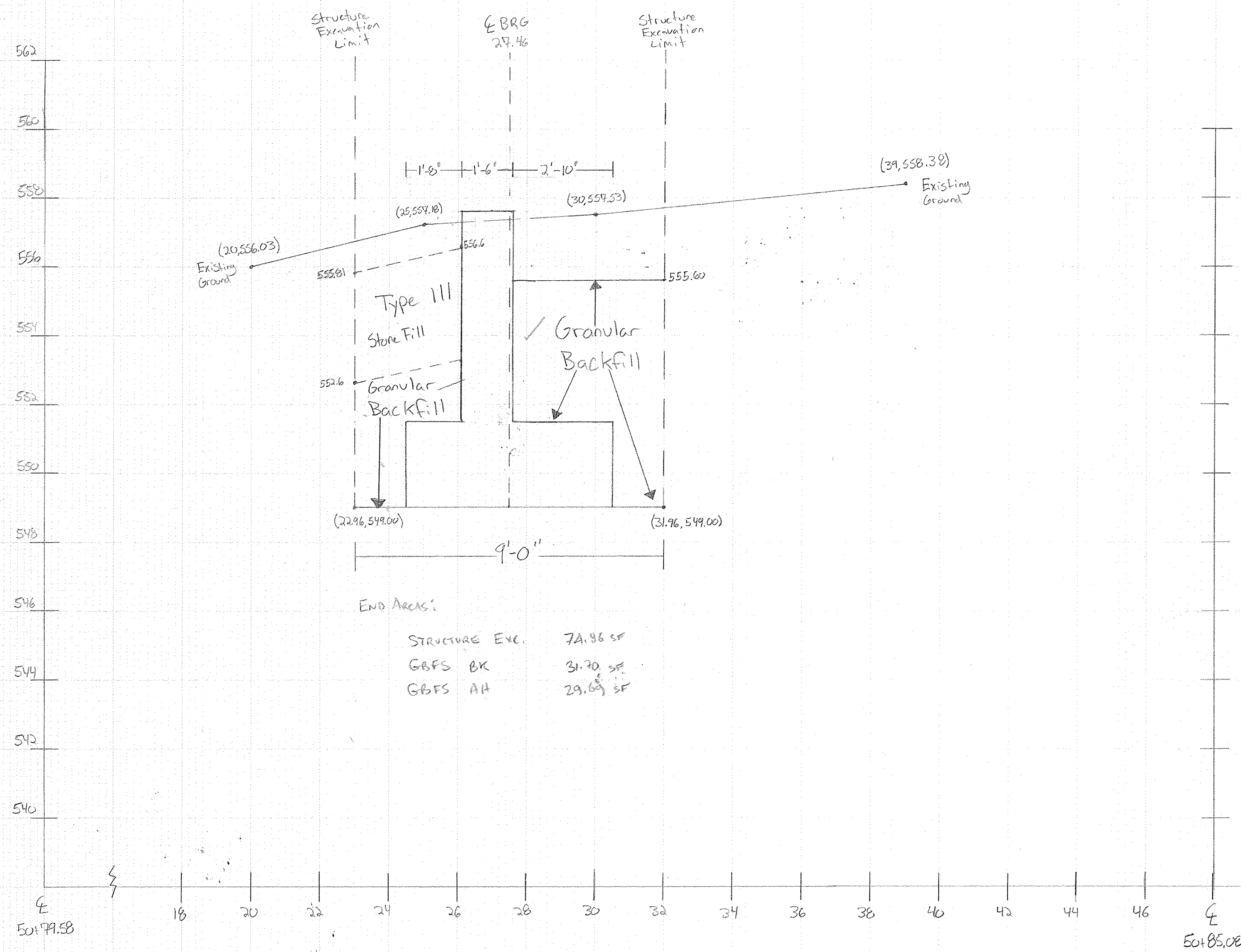


END AREAS:

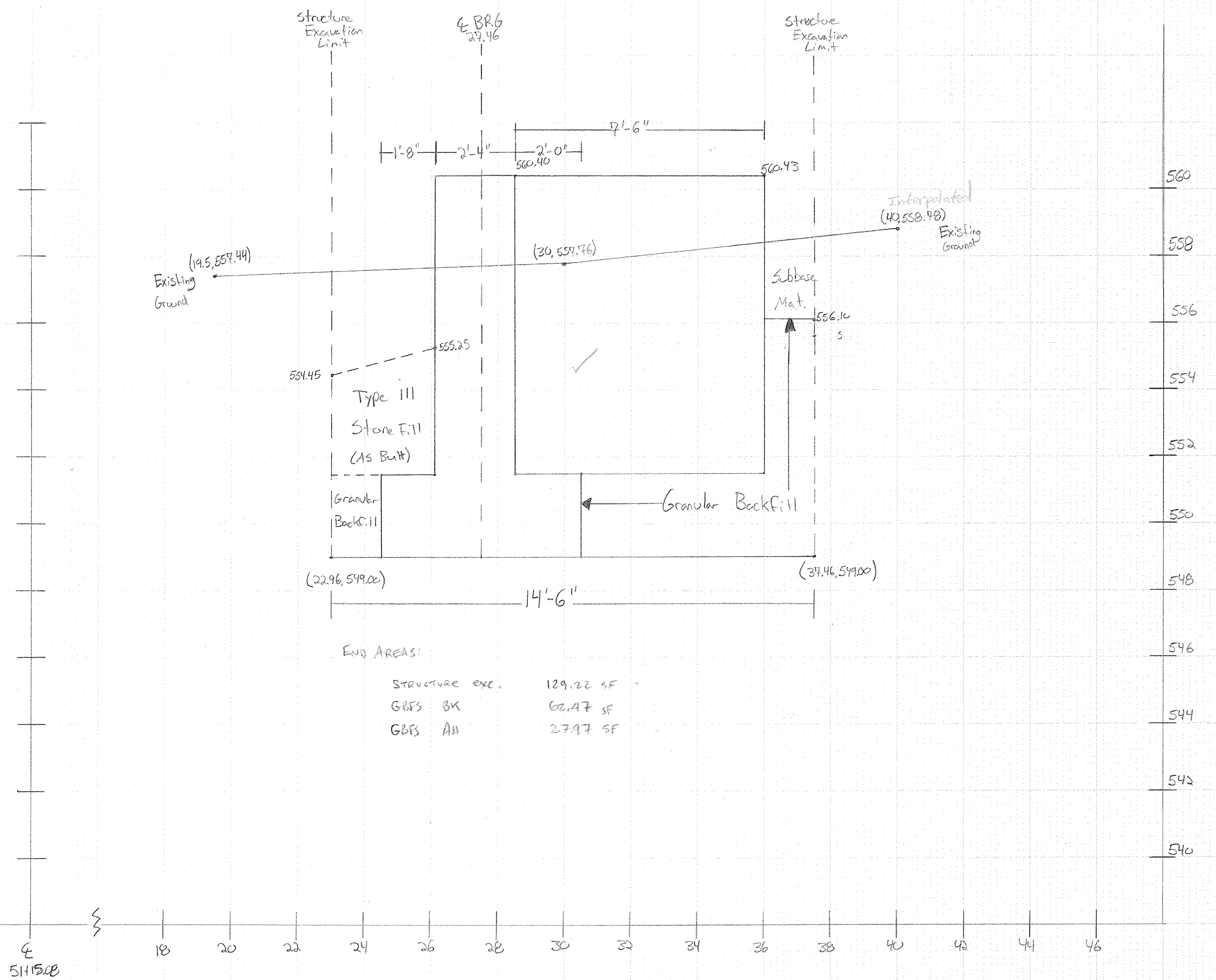
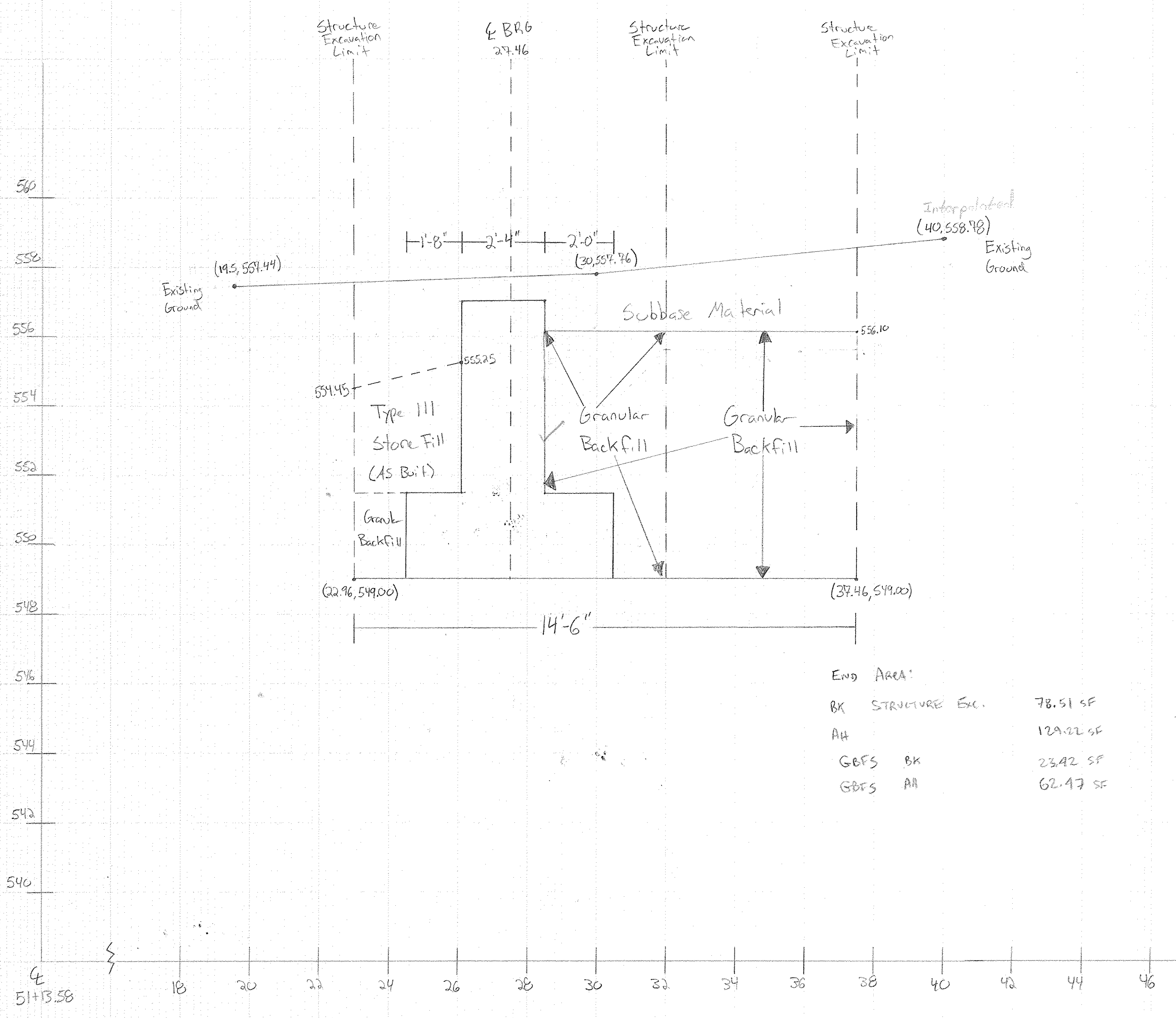
STRUCTURE EXC.	74.86 SF
GBFS BK	46.70 SF
GBFS AH	31.70 SF



Ensbury BRO 1448 (40)  
 Structure Excavation, Granular Backfill  
 Abutment 2  
 Drawn By: Alan Therrien  
 Checked By: Jon Day

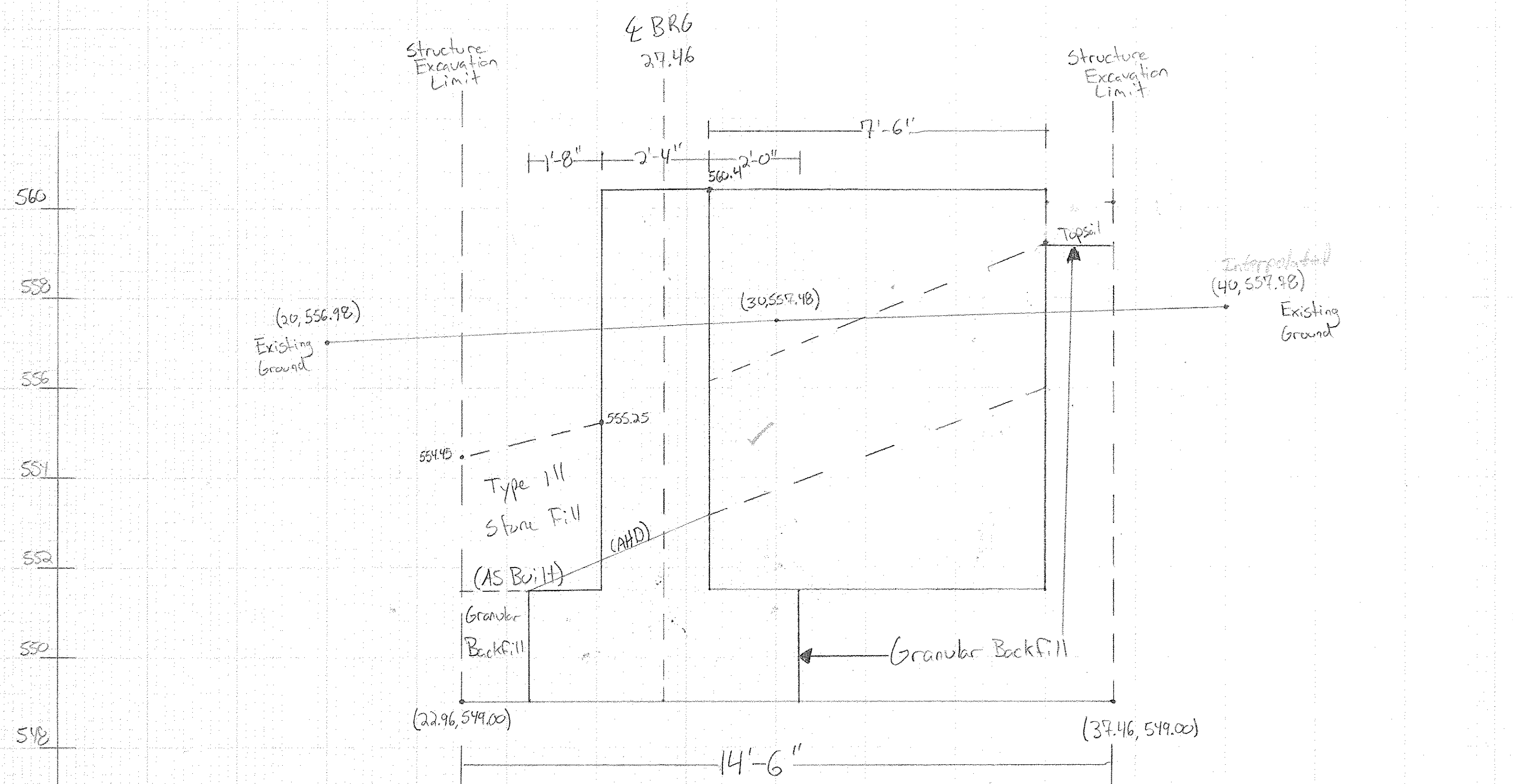


Enosburg BRO 1448 (4c)  
 Structure Excavation, Granular Backfill  
 Abutment 2  
 Drawn By: Alan Therrien  
 Checked By: Jon Day



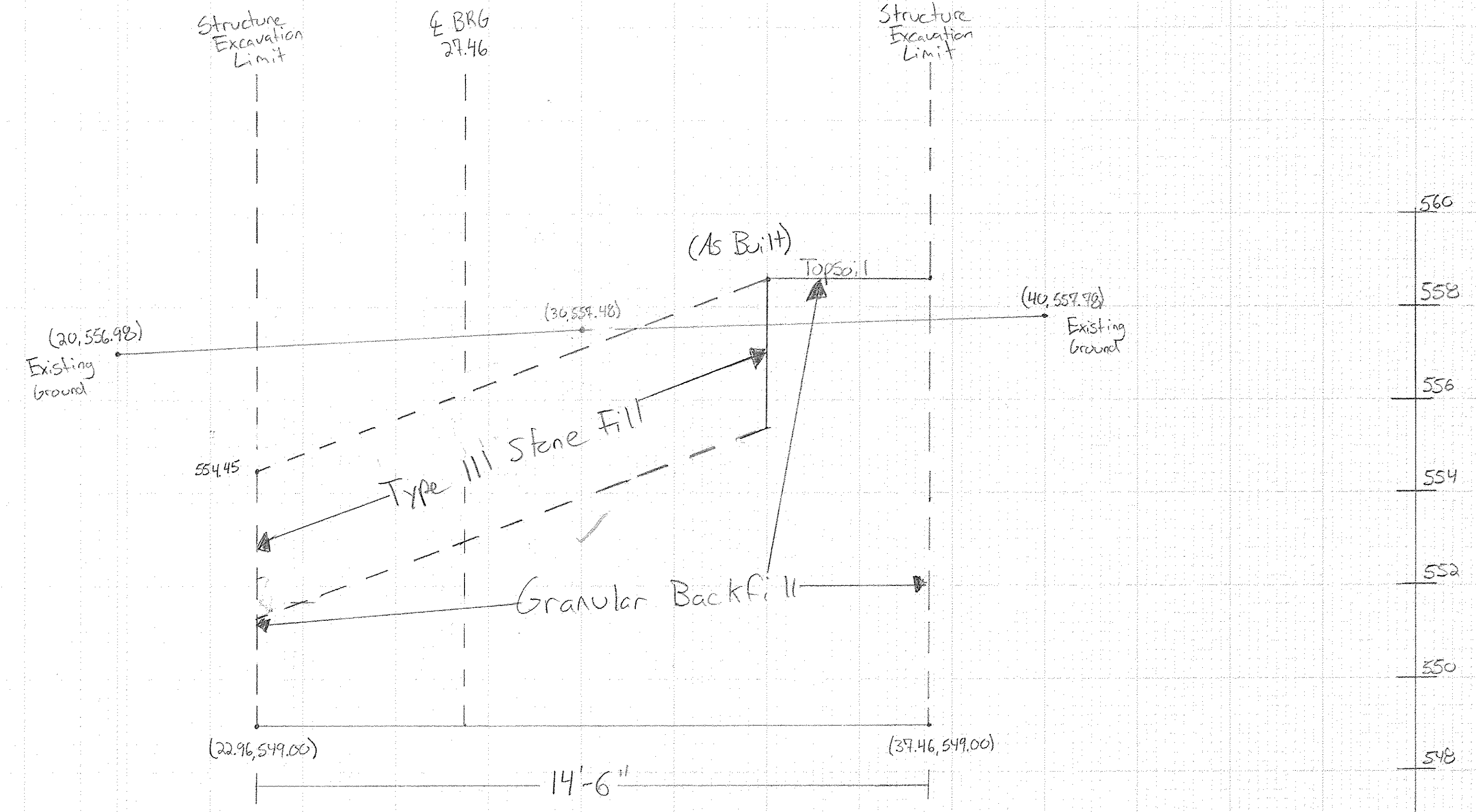
✓ JPD 08-15-14

Enosburg BRO 1448 (40)  
 Structure Excavation, Granular Backfill  
 Abutment 2  
 Drawn By: Alan Therrien  
 Checked By: Jon Day



END AREAS:

STRUCTURE EXC.		122.80 SF
GBFS BK		27.97 SF
GBFS AH		73.37 SF

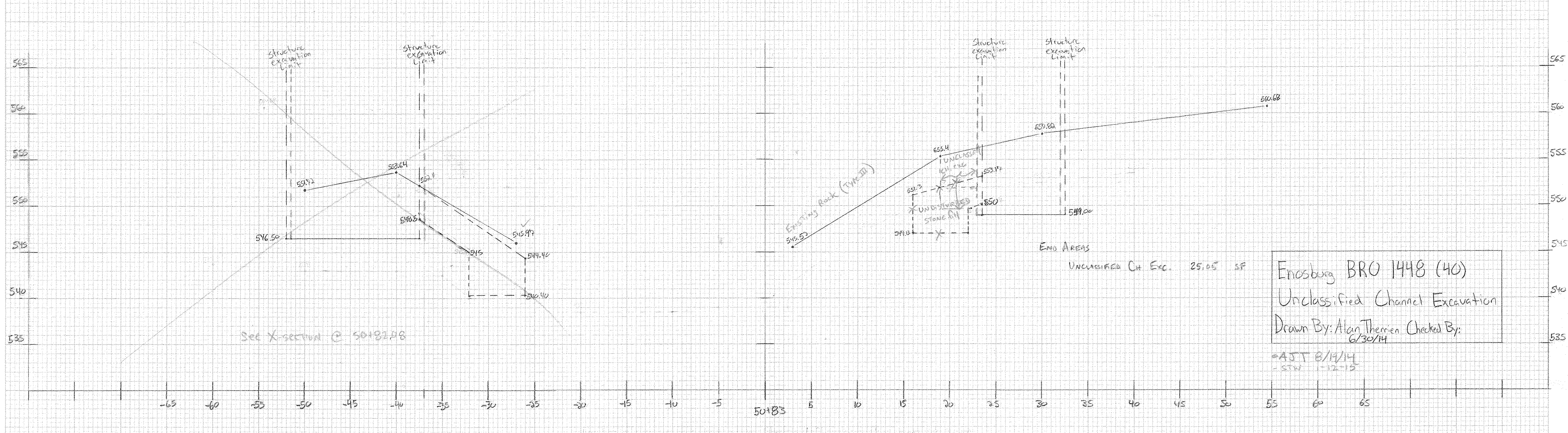
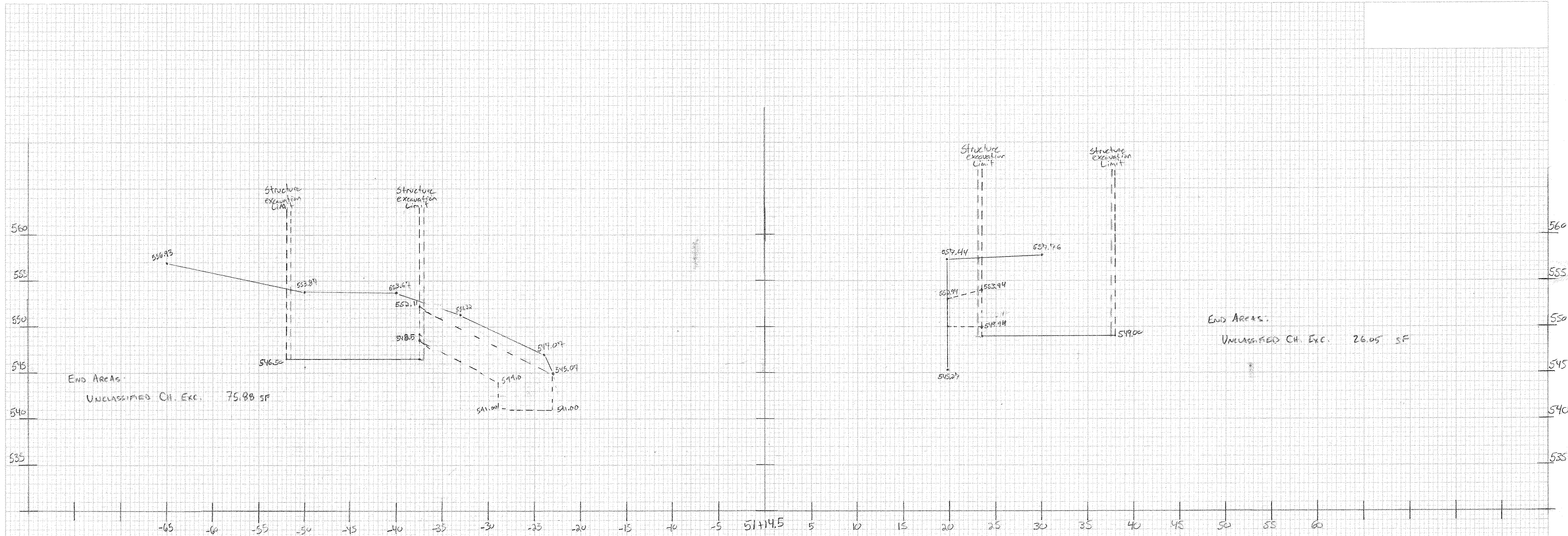


STRUCTURE EXC.		122.80 SF
GBFS BK		27.97 SF
GBFS AH		73.37 SF

JFD 08-13-14

FINAL SURVEY DATE  
 SURVEYED BY  
 CHECKED BY  
 NOTE BOOK NO. / AREA  
 NO. / ACRES

ORIGINAL SURVEY DATE  
 SURVEYED BY  
 CHECKED BY  
 NOTE BOOK NO. / AREA  
 NO. / ACRES



Enosburg BRO 1448 (40)  
 Unclassified Channel Excavation  
 Drawn By: Alan Therrien Checked By:  
 6/30/14

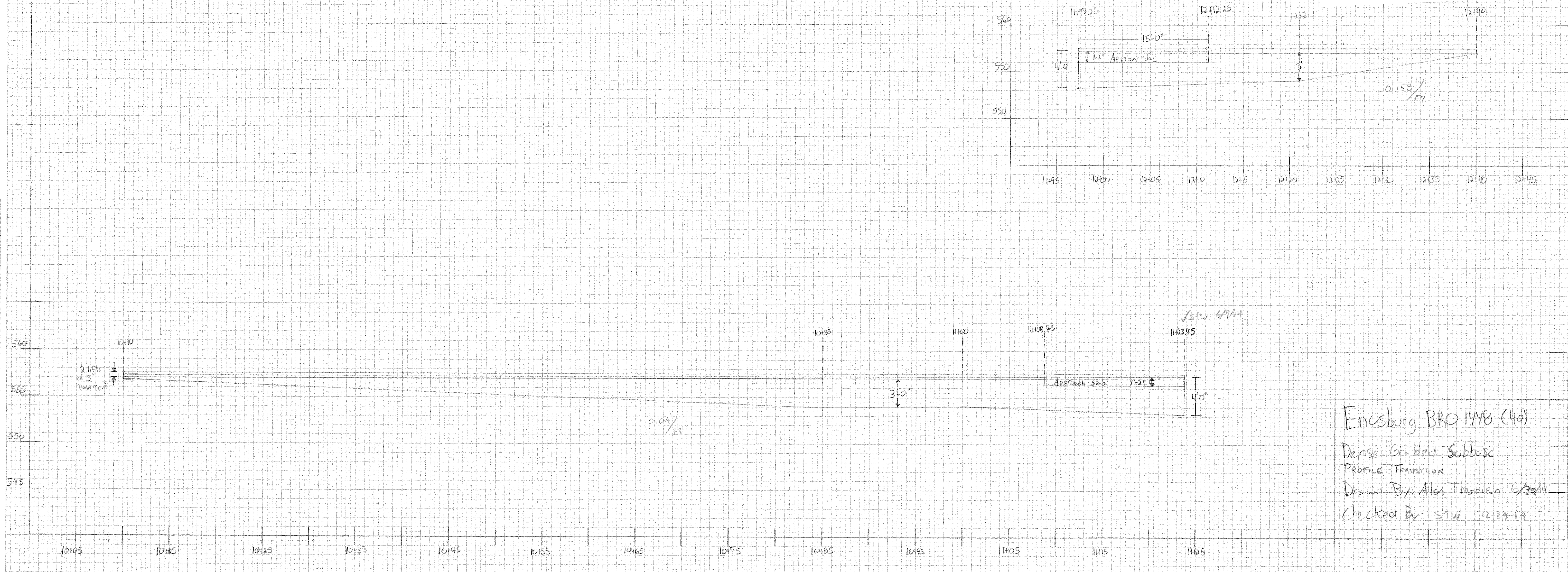
AST 8/19/14  
 STW 12-15

FINAL SURVEY NO. DATE  
 REVISIONS  
 NO. DATE  
 NO. DATE

ORIGINAL SURVEY NO. DATE  
 REVISIONS  
 NO. DATE  
 NO. DATE

ENOSBURG  
 BRO 1448 (40)  
 ROADWAY EARTHWORKS  
 Revised cross sections

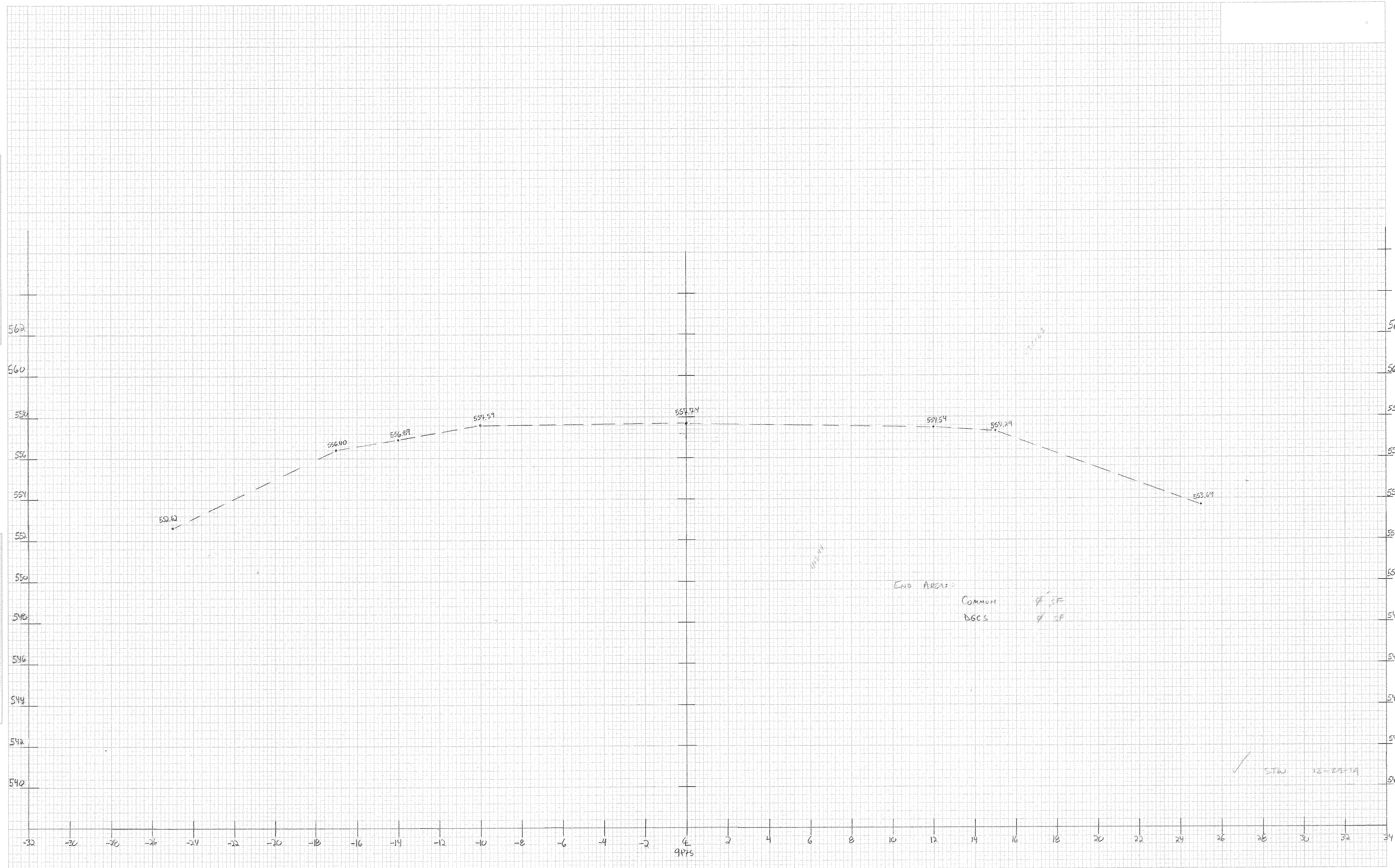
ENOSBURG BRO 1448 (40)  
 13111501  
 Dense graded & PROFILE  
 TRANSITION



Enosburg BRO 1448 (40)  
 Dense Graded Subbase  
 PROFILE TRANSITION  
 Drawn By: Alan Thierien 6/30/14  
 Checked By: SW 12-29-14

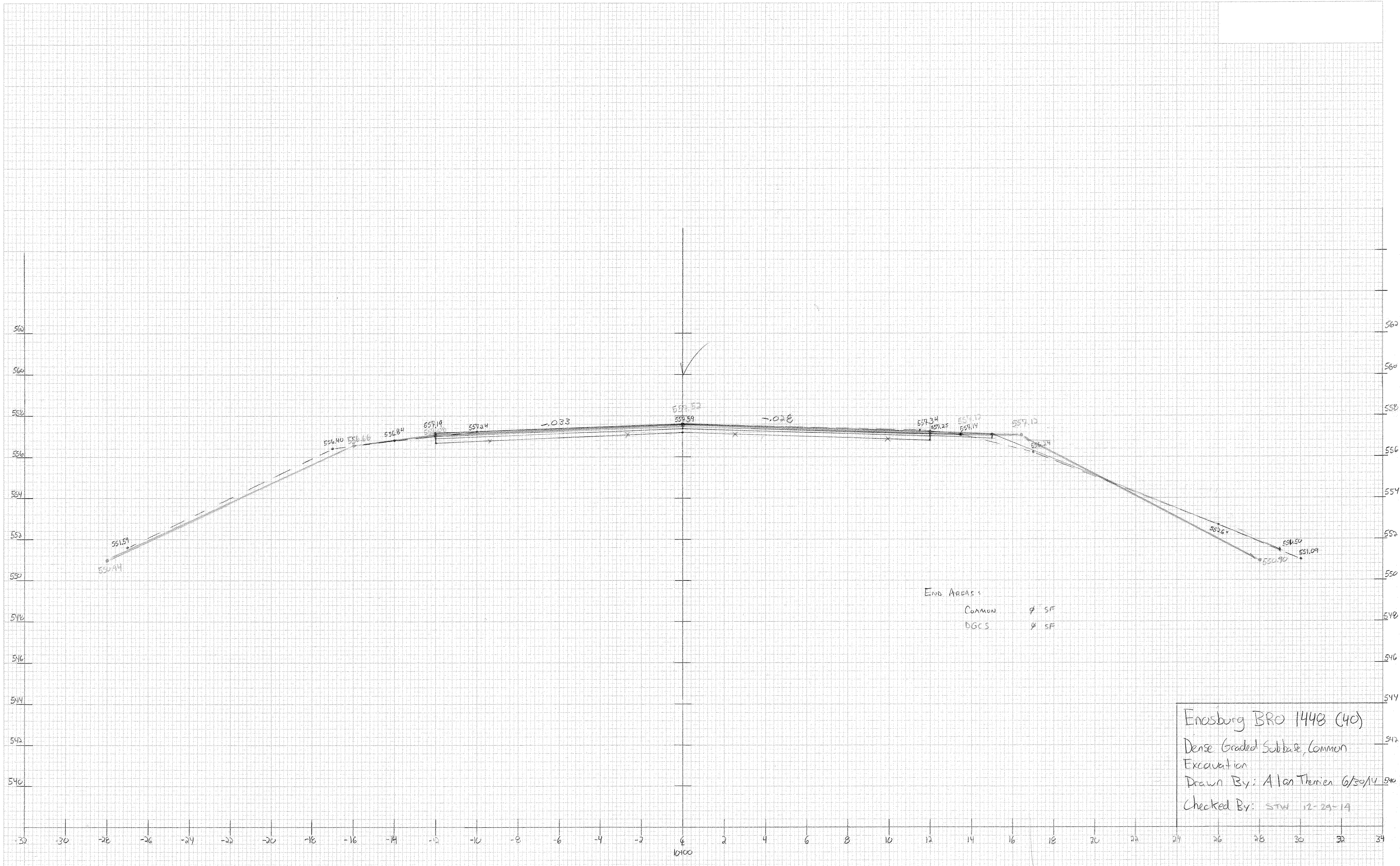
FINAL SURVEY  
 SURVEYED: \_\_\_\_\_  
 PLOTTED: \_\_\_\_\_  
 NOTE BOOK: \_\_\_\_\_  
 NO. \_\_\_\_\_  
 AREA: \_\_\_\_\_

ORIGINAL SURVEY  
 SURVEYED: \_\_\_\_\_  
 PLOTTED: \_\_\_\_\_  
 NOTE BOOK: \_\_\_\_\_  
 NO. \_\_\_\_\_  
 AREA: \_\_\_\_\_



FINAL SURVEY DATE  
 BY: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 NO. \_\_\_\_\_

ORIGINAL SURVEY DATE  
 BY: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 NO. \_\_\_\_\_

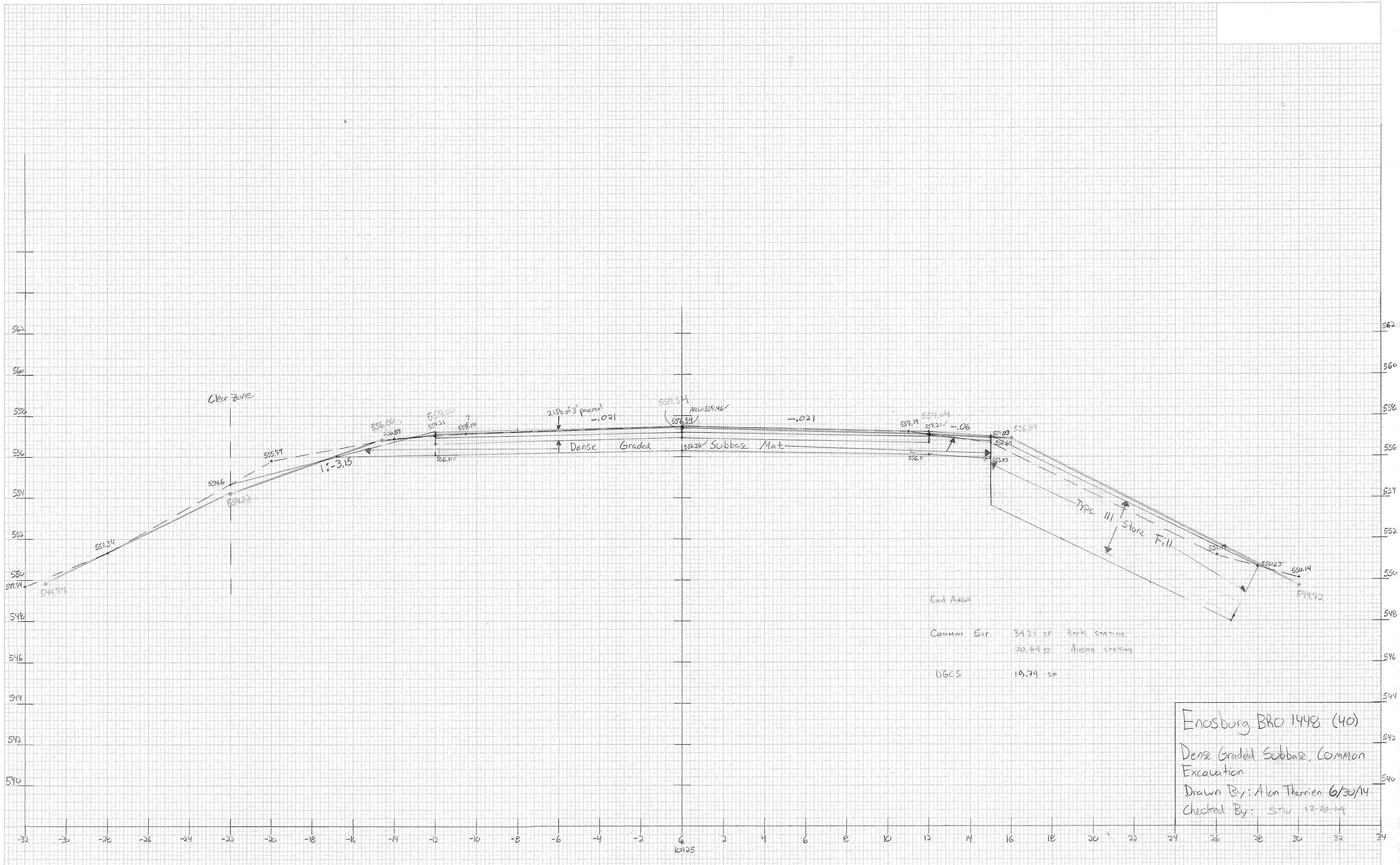


END AREAS:  
 Common      8' SF  
 DGCS        8' SF

Enesburg BRO 1448 (40)  
 Dense Graded Subbase, Common  
 Excavation  
 Drawn By: Alan Thomen 6/30/14  
 Checked By: STW 12-29-14

FINAL SURVEY  
 SURVEY NO. 1448  
 DATE 6/30/14  
 DRAWN BY ALON THERRIEN  
 CHECKED BY STW 12-28-14

ORIGINAL SURVEY  
 SURVEY NO. 1448  
 DATE 6/30/14  
 DRAWN BY ALON THERRIEN  
 CHECKED BY STW 12-28-14

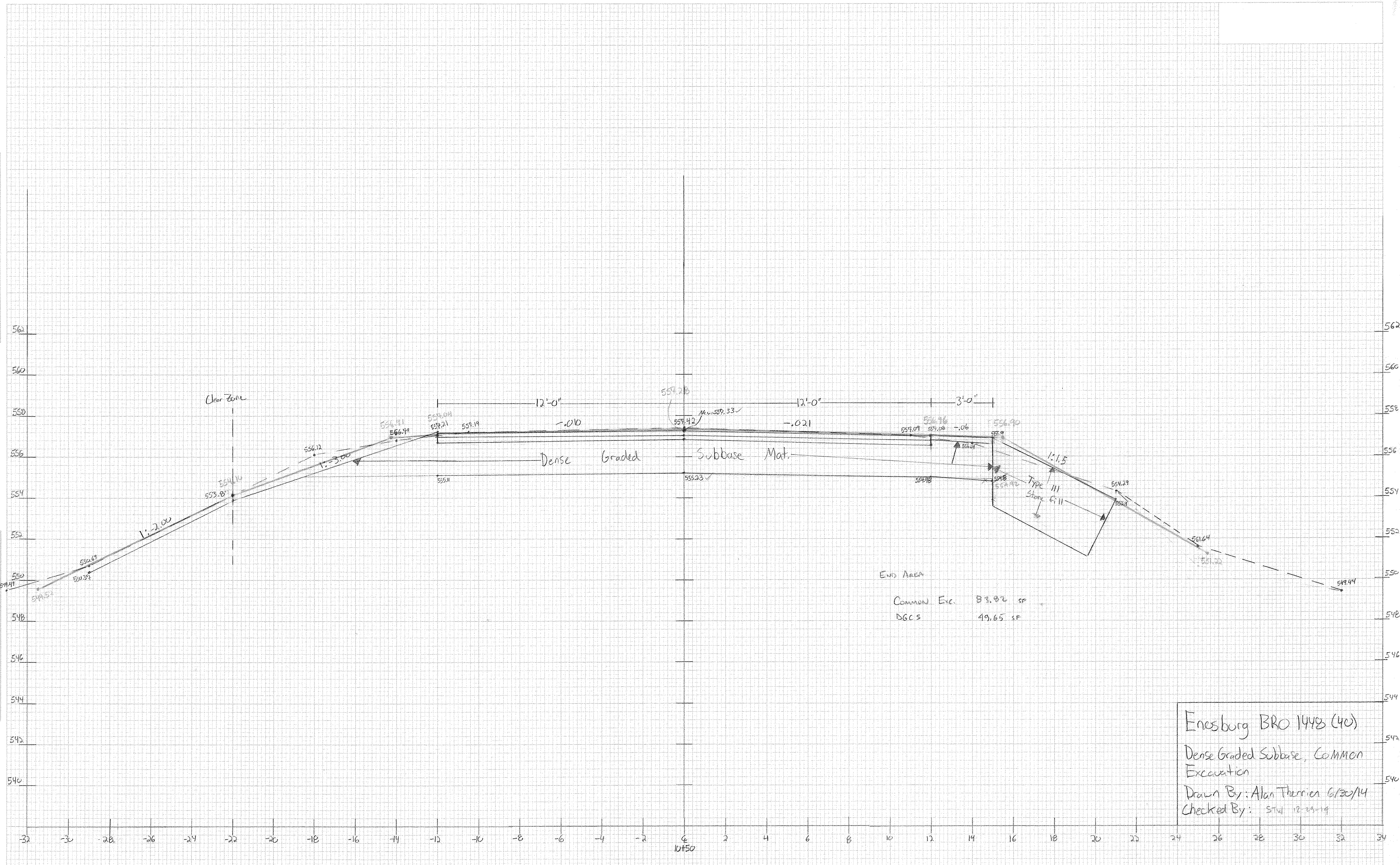


End Area  
 Common Exc. 34.21 SF Back station  
 30.64 SF Ahead station  
 DGCS 19.79 SF

Enosburg BR0 1448 (40)  
 Dense Graded Subbase, Common  
 Excavation  
 Drawn By: Alon Therrien 6/30/14  
 Checked By: STW 12-28-14

FINAL SURVEY  
 DATE: 12/23/14  
 PROJECT: ENESBURG BRO 1448 (40)  
 SHEET: 1 OF 1  
 DRAWN BY: ALAN THERRIER  
 CHECKED BY: STW

ORIGINAL SURVEY  
 DATE: 12/23/14  
 PROJECT: ENESBURG BRO 1448 (40)  
 SHEET: 1 OF 1  
 DRAWN BY: ALAN THERRIER  
 CHECKED BY: STW

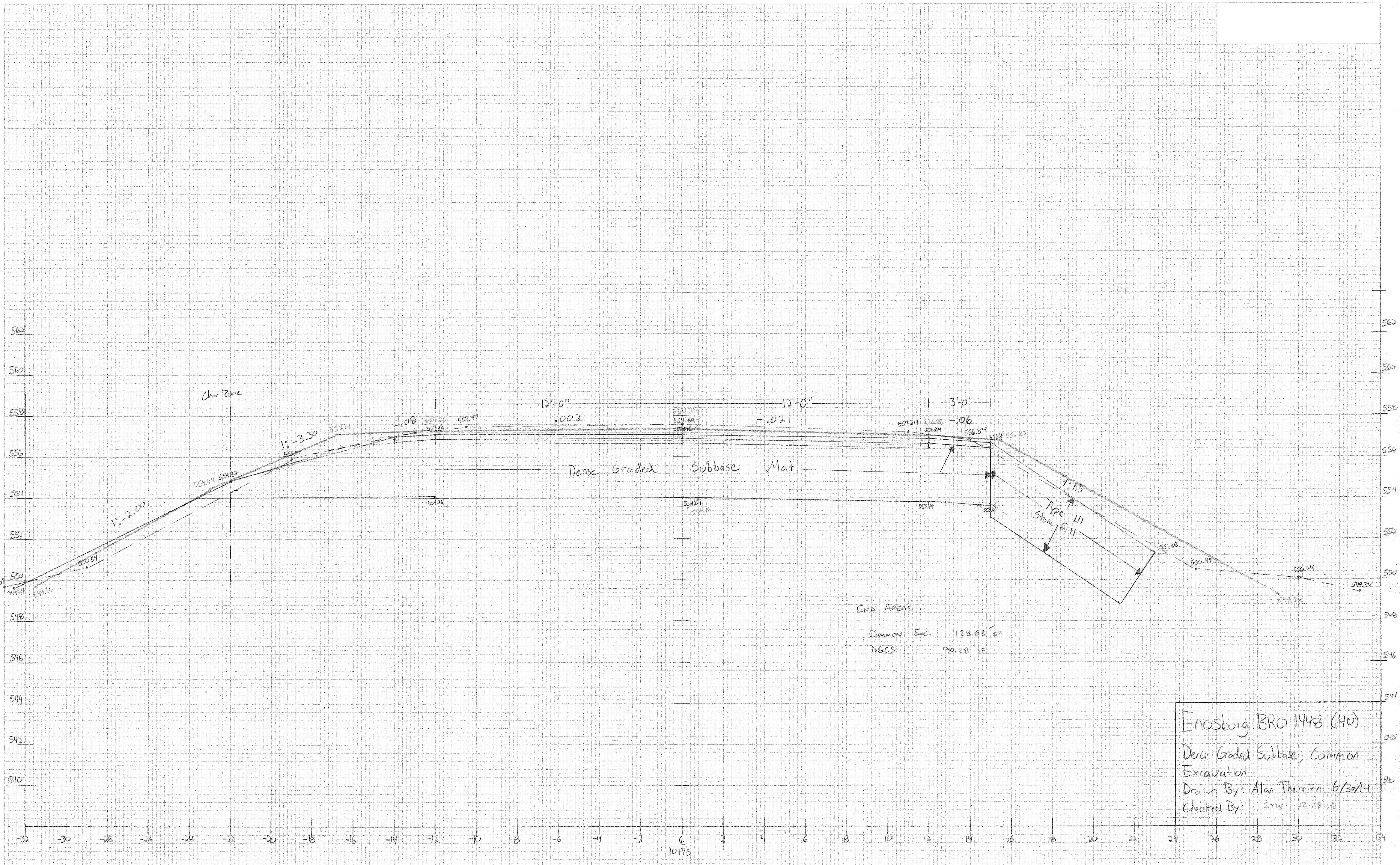


END AREA  
 COMMON Exc. 83.82 SF  
 DGS 49.65 SF

Enesburg BRO 1448 (40)  
 Dense Graded Subbase, Common  
 Excavation  
 Drawn By: Alan Therrier 6/30/14  
 Checked By: STW 12-23-14

FINAL SURVEY  
 DATE: 07/14/14  
 PROJECT: ENOSBURG BRIDGE  
 DRAWN BY: ALAN THERRIEN  
 CHECKED BY: STW  
 NO. 10175

ORIGINAL SURVEY  
 DATE: 07/14/14  
 PROJECT: ENOSBURG BRIDGE  
 DRAWN BY: ALAN THERRIEN  
 CHECKED BY: STW  
 NO. 10175

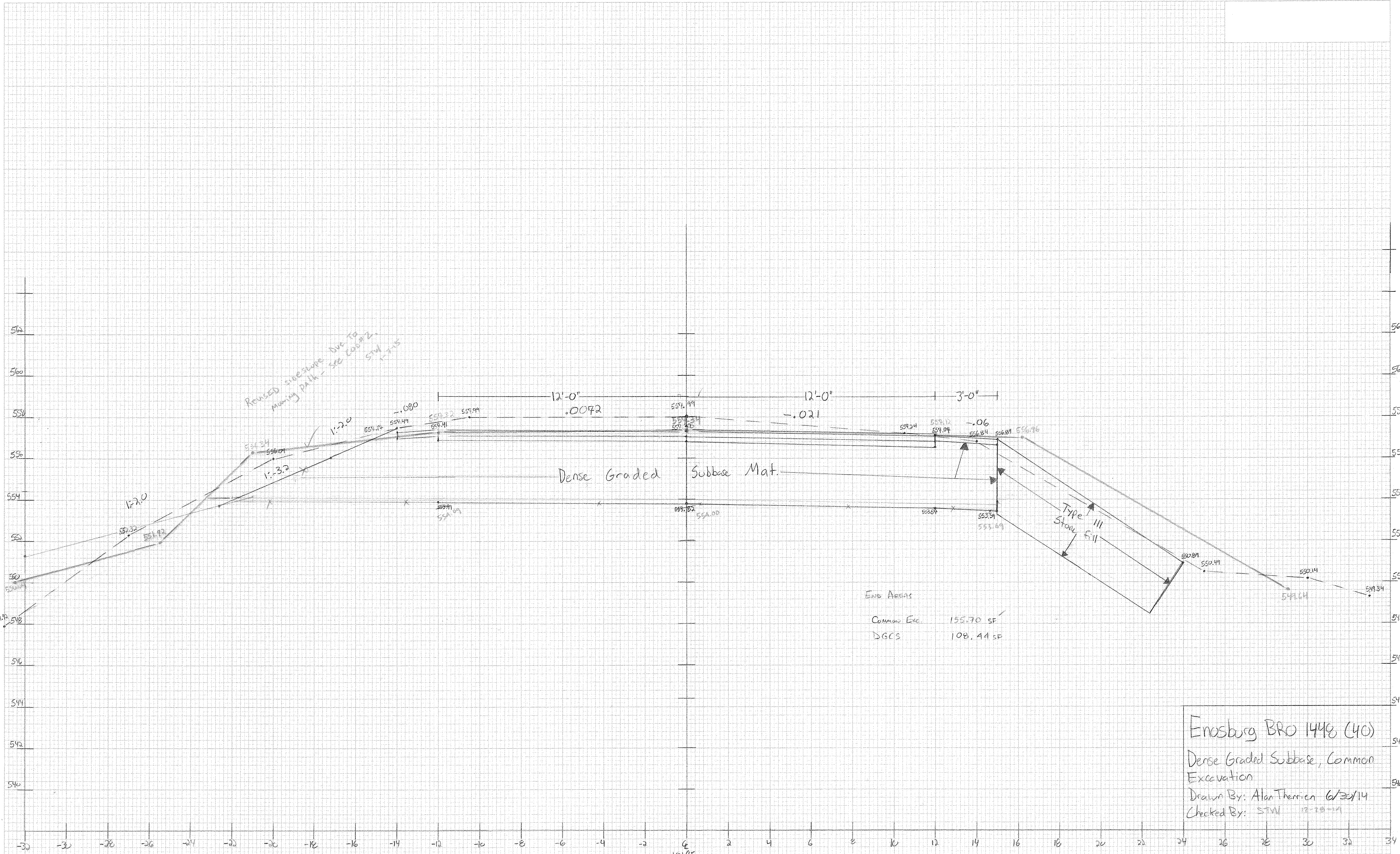


END AREAS  
 Common Exc. 128.63 SF  
 DGCS 90.28 SF

Enosburg BR0 1448 (40)  
 Dense Graded Subbase, Common  
 Excavation  
 Drawn By: Alan Therrien 6/30/14  
 Checked By: STW 12-28-14

FINAL SURVEY BY DATE

ORIGINAL SURVEY BY DATE



Reused slope from Ave. to Mainly Park - see layout 2

Dense Graded Subbase Mat

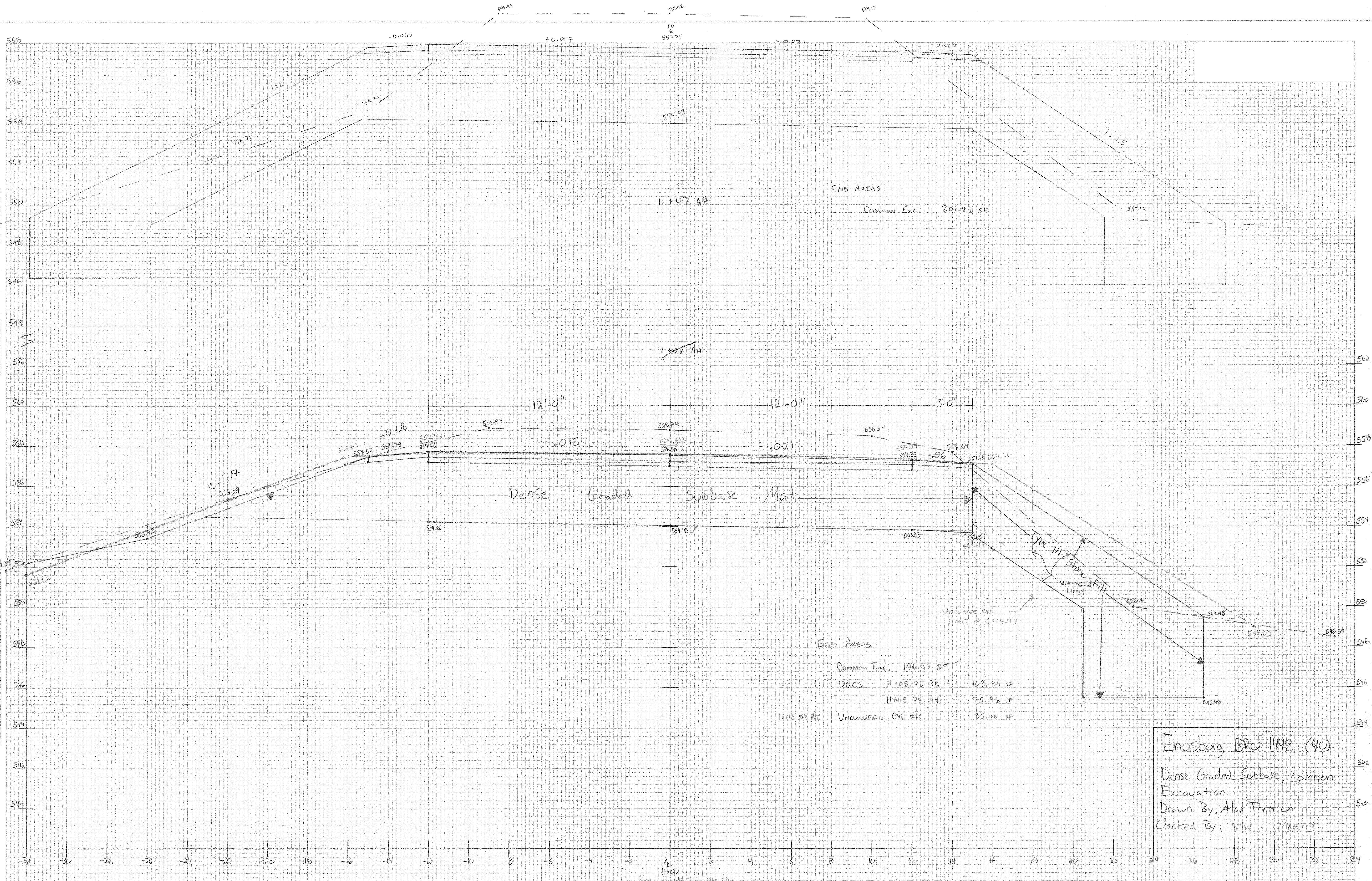
Type III Stock Fill

END AREAS  
Common Exc. 155.70 SF  
DGCS 108.44 SF

Enosburg BRO 1448 (40)  
Dense Graded Subbase, Common Excavation  
Drawn By: Alan Therrien 6/30/14  
Checked By: STM 12-28-14

FINAL SURVEY  
 BY: [Signature]  
 DATE: [Date]  
 PROJECT: [Project Name]  
 SHEET: [Sheet Number]

ORIGINAL SURVEY  
 BY: [Signature]  
 DATE: [Date]  
 PROJECT: [Project Name]  
 SHEET: [Sheet Number]



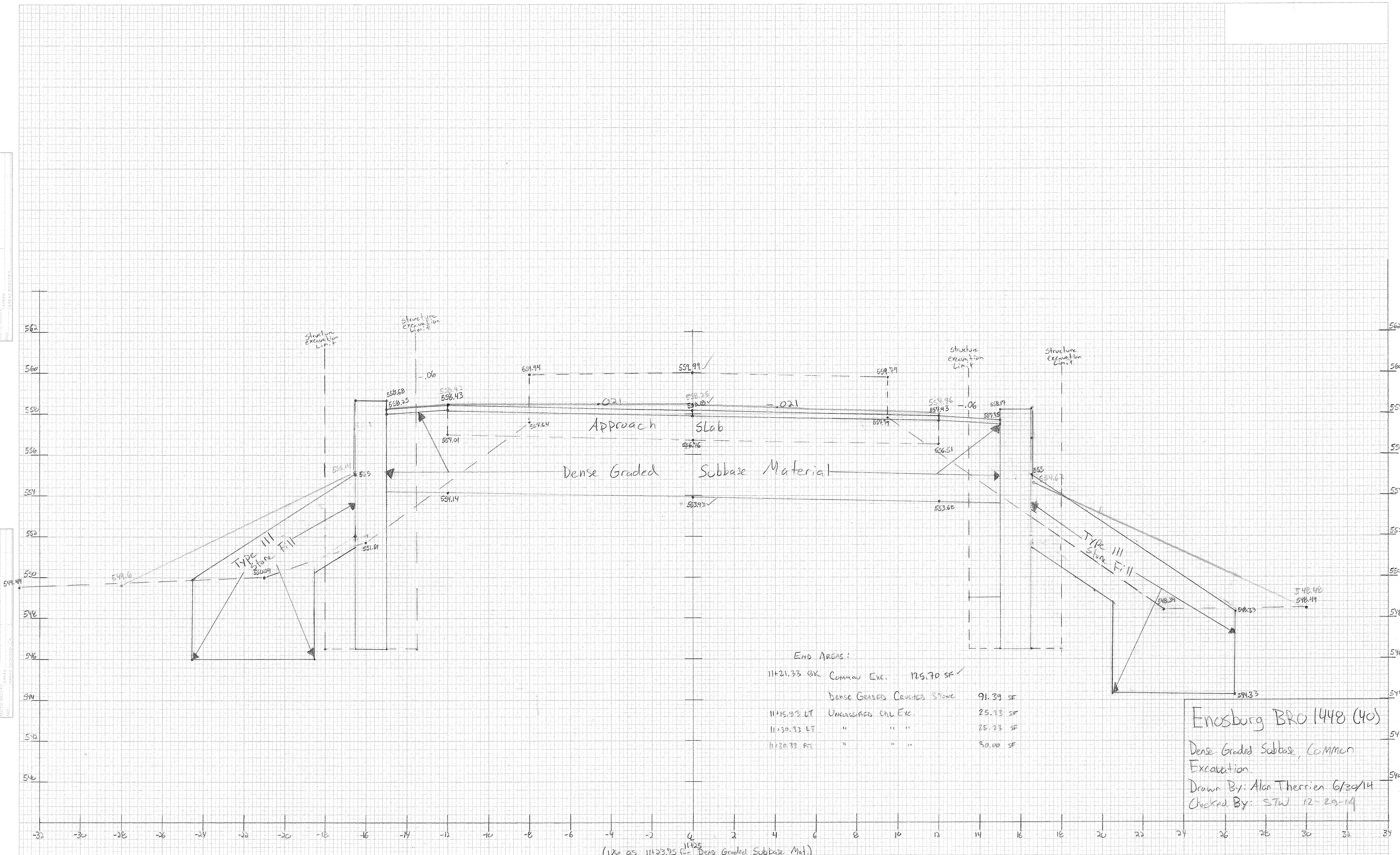
END AREAS

Common Exc.	196.88 SF
DGCS 11+08.75 BK	103.96 SF
11+08.75 AH	75.96 SF
11+15.43 BK	UNCLASSIFIED CHL Exc. 35.06 SF

Enosburg BRO 1448 (40)  
 Dense Graded Subbase, Common  
 Excavation  
 Drawn By: Alan Therrien  
 Checked By: STW 12-28-11

FINAL SURVEY  
 DATE: 12/29/14  
 BY: STW  
 PROJECT: ENOSBURG BRIDGE  
 SHEET: 1448 (40)  
 DRAWN BY: ALAN THERRIEN  
 CHECKED BY: STW

ORIGINAL SURVEY  
 DATE: 12/29/14  
 BY: STW  
 PROJECT: ENOSBURG BRIDGE  
 SHEET: 1448 (40)  
 DRAWN BY: ALAN THERRIEN  
 CHECKED BY: STW



END AREAS:

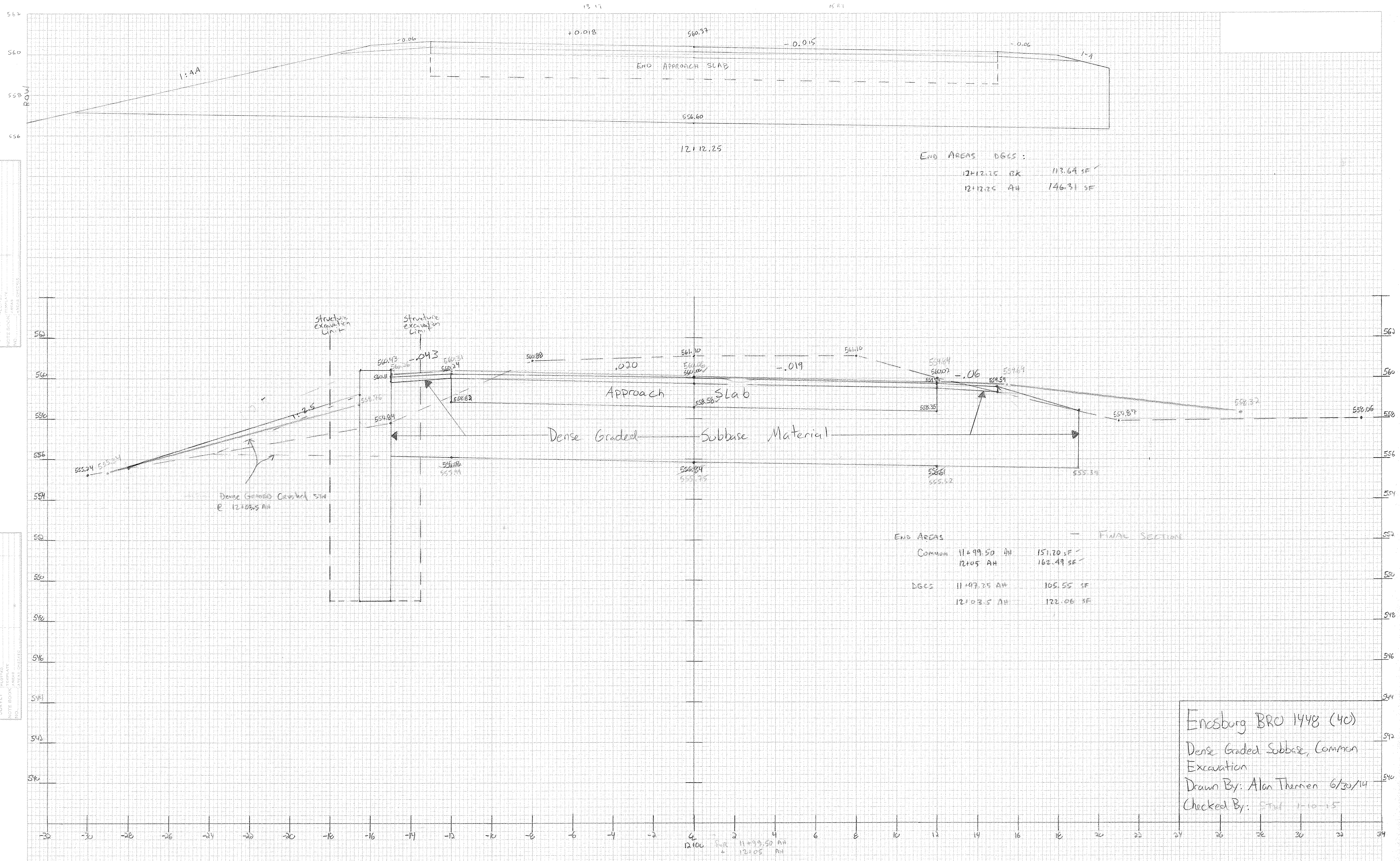
11+21.33 GR	COMMON EXC.	125.70 SF
11+15.03 LT	UNGRADED C&G EXC.	25.33 SF
11+30.33 LT	" " "	25.33 SF
11+20.33 RT	" " "	30.00 SF

Enosburg BR 1448 (40)  
 Dense Graded Subbase, Common  
 Excavation  
 Drawn By: Alan Therrien 6/30/14  
 Checked By: STW 12-29-14

(Use as 11+23.75 for Dense Graded Subbase Mat.)

FINAL SURVEY  
 SURVEYED BY: [blank]  
 DATE: [blank]  
 PROJECT: [blank]  
 SHEET NO.: [blank]

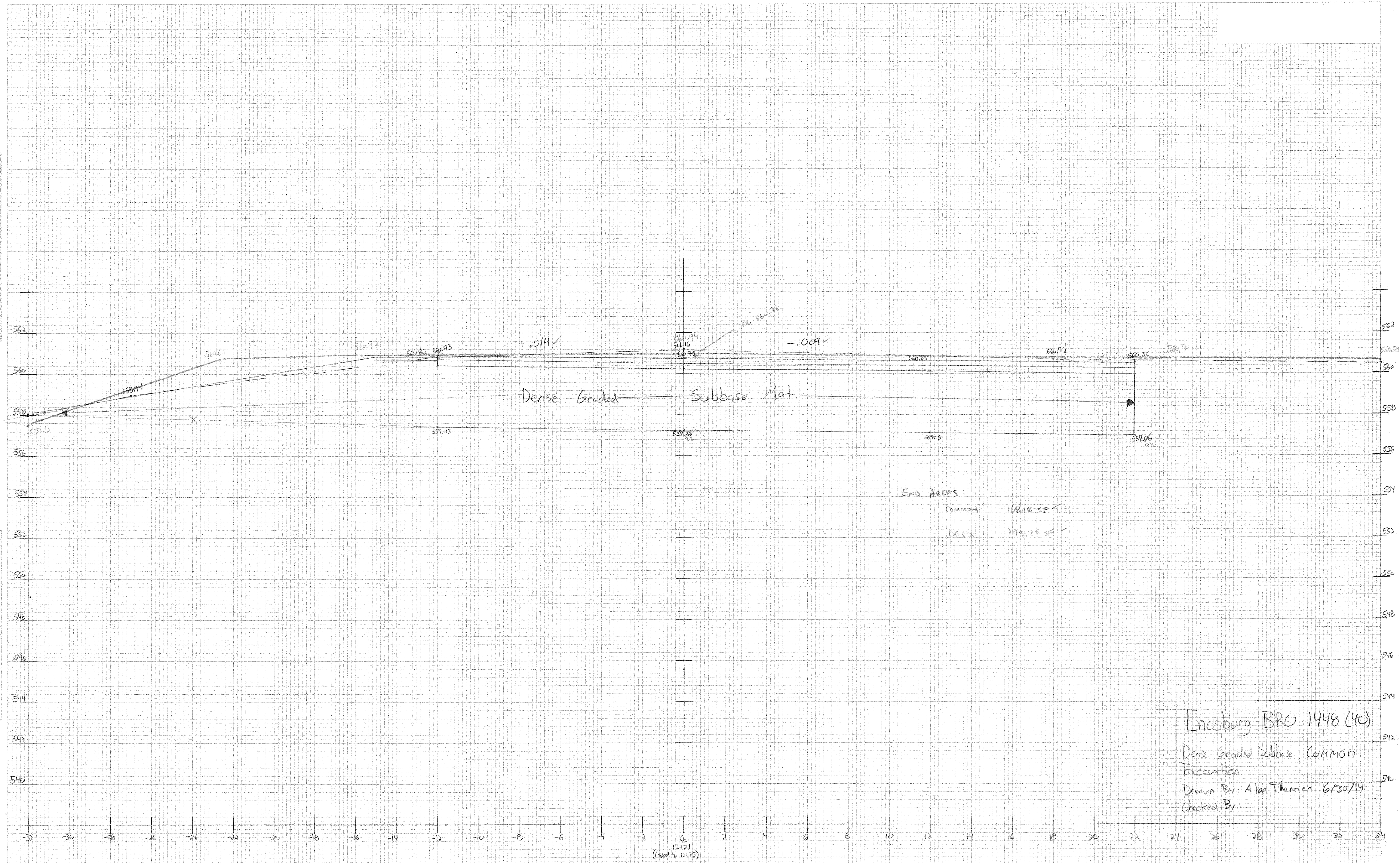
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 SURVEYED BY: [blank]  
 DATE: [blank]  
 PROJECT: [blank]  
 SHEET NO.: [blank]



Encosburg BRO 1448 (40)  
 Dense Graded Subbase, Common  
 Excavation  
 Drawn By: Alan Thermen 6/30/14  
 Checked By: [signature] 1-10-15

FINAL SURVEY PLOTTED  
 DATE: 6/30/14  
 NO. 1448

ORIGINAL SURVEY PLOTTED  
 DATE: 6/30/14  
 NO. 1448

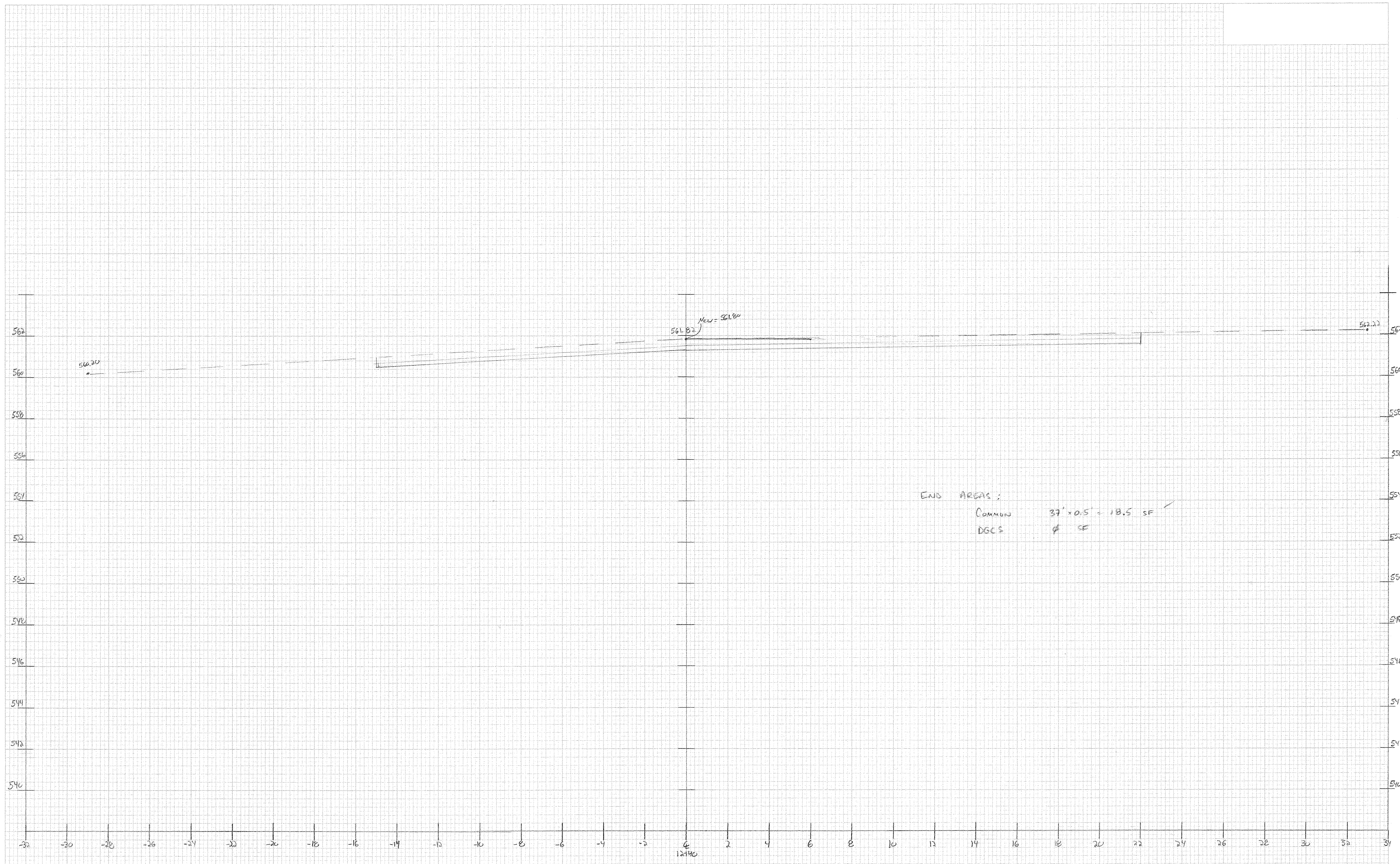


END AREAS:  
 Common 168.18 SF ✓  
 DGCS 143.28 SF ✓

Enosburg BRO 1448 (40)  
 Dense Graded Subbase, Common  
 Excavation  
 Drawn By: Alan Therrien 6/30/14  
 Checked By:

FINAL SURVEY PLATE  
 SURVEY PLATE  
 NOTE BOOK NO. 100  
 DATE

ORIGINAL SURVEY PLATE  
 SURVEY PLATE  
 NOTE BOOK NO. 100  
 DATE



END AREAS:  
 Common 37' x 0.5' = 18.5 SF  
 DGCS 0 SF

# GENERAL NOTES

**GENERAL NOTES:**

1. ALL BEARINGS SHALL CONFORM TO APPLICABLE SUBSECTIONS OF SECTIONS 531, 714, AND 731 OF THE 2011 VTAOT STANDARD SPECIFICATIONS.
2. ALL BEARINGS SHALL BE MARKED PRIOR TO SHIPPING. THE MARKS SHALL INCLUDE THE BEARING LOCATION ON THE BRIDGE, AND AN ARROW THAT POINTS UPSTATION. MARKS SHALL BE PERMANENT AND SHALL BE VISIBLE AFTER THE BEARING IS INSTALLED.
3. SHOP TO MARK ⊗ HIGH SIDE OF THE PAD.
4. VTAOT WILL BE NOTIFIED (7) DAYS BEFORE THE START OF FABRICATION.
5. ALL DIMENSIONS ARE IN INCHES.
6. COSMEC REPRESENTATIVE KERRY MARCHAND:  
(508) 455-3290

**MATERIAL NOTES:**

1. ELASTOMER: 60 DUROMETER GR. 4 NATURAL RUBBER WITH A SHEAR MODULUS OF 152 PSI +/- 15%
2. INTERNAL STEEL SHIMS: ASTM A36, A1011 GR. 36 OR EQUAL
3. EXTERNAL SHIM PLATE: AASHTO M270M/M270 GRADE 36 (GALVANIZED)

**FINISH NOTES:**

1. GALVANIZED IN ACCORDANCE WITH SUBSECTION 726.08.

**CONTRACTOR NOTES:**

1. NONE

APPROVED: Approval of drawings and/or procedures indicates concurrence with the information presented and does not relieve the Contractor or Fabricator of compliance with all specifications and code requirements	✓	
APPROVED AS NOTED		
REVISE AND RESUBMIT		
NOT REVIEWED		
Date: <i>5/29/2014</i>		
By: <i>James Hays</i>		
This review by Stantec Consulting Services Inc. is for the sole purpose of ascertaining conformance with the general design concept. This review shall not mean that Stantec Consulting Services Inc approves the detail design inherent in the shop drawings, responsibility for which shall remain with the Contractor. Submitting same, and such review shall not relieve the Contractor of his responsibility for errors or omissions in the shop drawing or of his responsibility for meeting all requirements of the Contract Documents. The contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to the fabrication processes or to techniques of construction and installation and for coordination of the work of all subtrades.		

Vermont Agency of Transportation  
Creating. Enduring. Better. Every. Year. 2009-2014.

## RECEIVED

ON: **May 28, 2014**

and Checked for

## CONFORMANCE

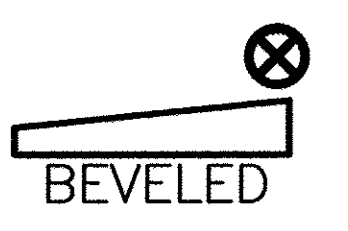
BY: Rob Young DATE: 05/29/2014

STATE OF VERMONT AGENCY OF TRANSPORTATION TOWN OF ENOSBURG BOSTON POST ROAD T.H. 2 CLASS 2, BRIDGE NO: 48		
STATE	COUNTY	CONTROL NO.
VT	FRANKLIN	N/A
PROJ. NO.: BRO 1448 (40)		
<b>DYNAMIC RUBBER: LAMINATED BEARING PADS</b>		
1501 ROCKY RIDGE ROAD P.O. BOX 2159 ATHENS, TEXAS 75751		

	REVISED ELASTOMER TYPE FROM NEOPRENE TO NATURAL RUBBER PER RFI	JG	5/27/14	SL	5/27/14
REV.	DESCRIPTION	BY	DATE	CK'D	DATE
SCALE: NONE		DRAWN BY: CV	DATE: 3/7/14	CHECKED BY: ELS	DATE: 3/11/14
SHEET 01 OF 1		JOB NO.: 12341			
CUSTOMER: A.L. ST. ONGE CONTRACTOR INC.				DRAWING NUMBER	REV.
				12341-GN1	1

BEARING AT ABUTMENT 1

BEARING AT ABUTMENT 2



AHEAD STATION

APPROVED: Approval of drawings and/or procedures indicates concurrence with the information presented and does not relieve the Contractor or Fabricator of compliance with all specifications and code requirements	✓	
APPROVED AS NOTED		
REVISE AND RESUBMIT		
NOT REVIEWED		
Date:	5/29/2014	
By:	<i>James H. [Signature]</i>	
<small>This review by Stantec Consulting Services Inc. is for the sole purpose of ascertaining conformance with the general design concept. This review shall not mean that Stantec Consulting Services Inc approves the detail design inherent in the shop drawings, responsibility for which shall remain with the Contractor. Submitting same, and such review shall not relieve the Contractor of his responsibility for errors or omissions in the shop drawing or of his responsibility for meeting all requirements of the Contract Documents. The contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to the fabrication processes or to techniques of construction and installation and for coordination of the work of all subtrades.</small>		

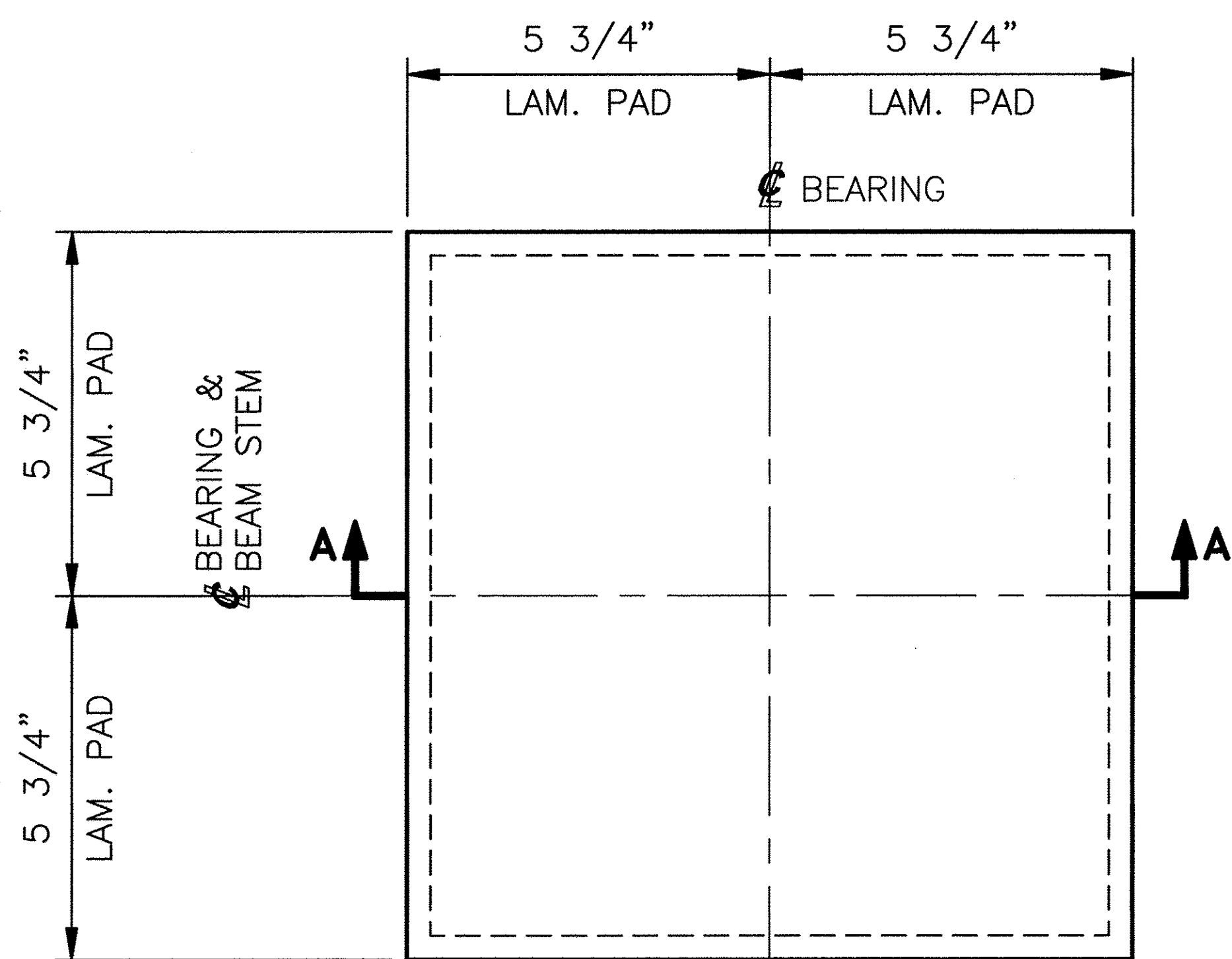
SEE SHEET GN1 FOR SHOP NOTES

STATE OF VERMONT AGENCY OF TRANSPORTATION TOWN OF ENOSBURG BOSTON POST ROAD T.H. 2 CLASS 2, BRIDGE NO: 48		
STATE	COUNTY	CONTROL NO.
VT	FRANKLIN	N/A
PROJ. NO.: BRO 1448 (40)		
<b>DYNAMIC RUBBER:          LAMINATED BEARING PADS</b>		
<small>1501 ROCKY RIDGE ROAD          P.O. BOX 2159          ATHENS, TEXAS 75751</small>		
SCALE: NONE	DRAWN BY: CV DATE: 3/7/14	CHECKED BY: ELS DATE: 3/11/14
SHEET E1 OF 1		JOB NO.: 12341
CUSTOMER:	DRAWING NUMBER	REV.
A.L. ST. ONGE CONTRACTOR INC.	12341-E1	0

Vermont Agency of Transportation  
**RECEIVED**  
 ON: May 28, 2014  
 and Checked for  
**CONFORMANCE**  
 BY: Rob Young DATE: 05/29/2014

ERECTION DIAGRAM

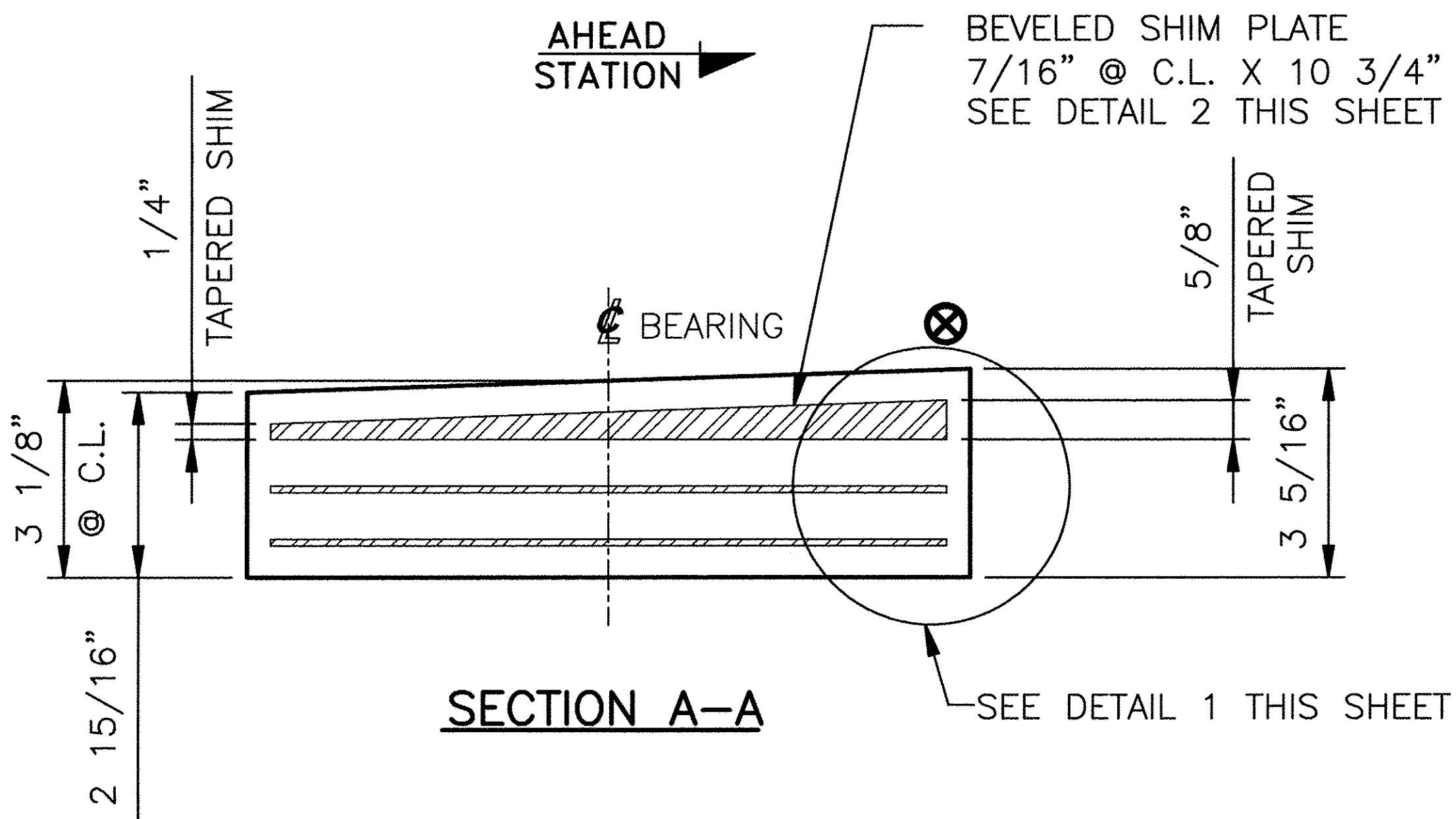
REV.	DESCRIPTION	BY	DATE	CK'D	DATE



**PLAN VIEW**

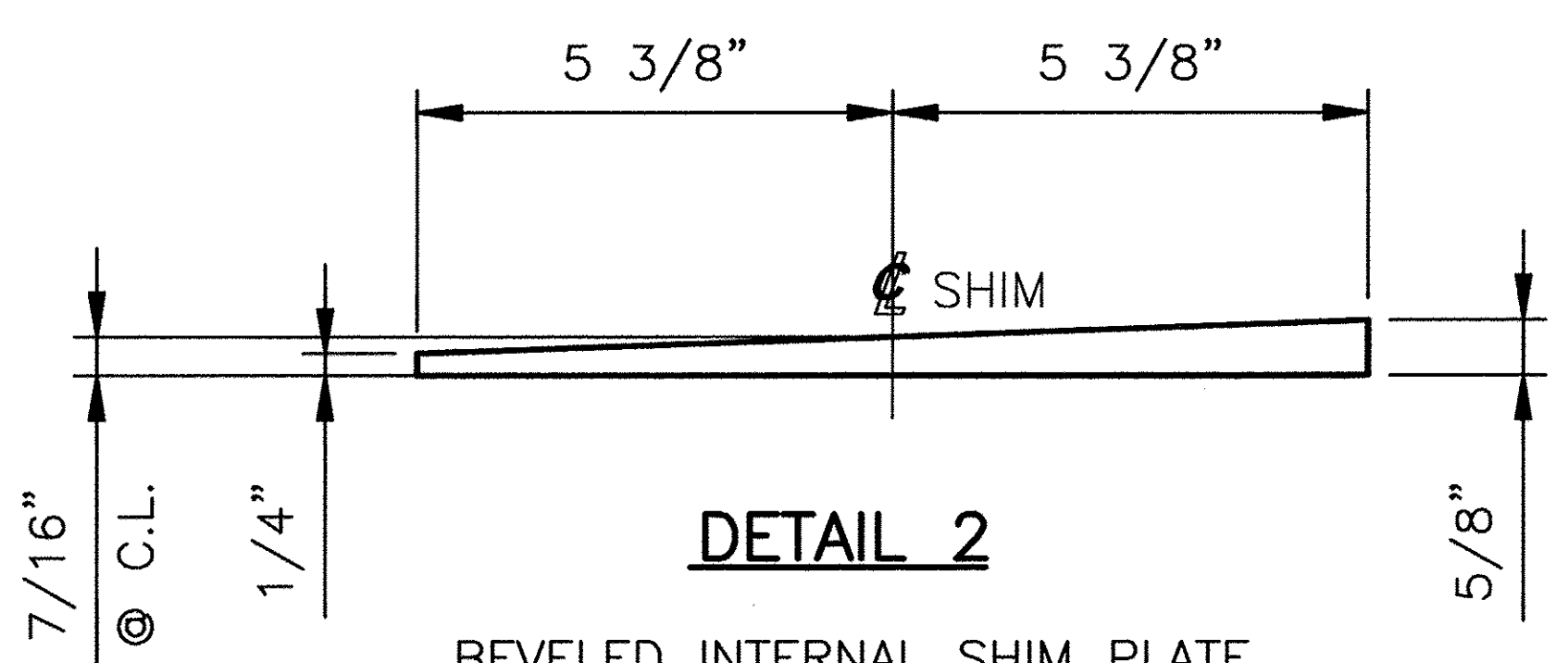
APPROVED: Approval of drawings and/or procedures indicates concurrence with the information presented and does not relieve the Contractor or Fabricator of compliance with all specifications and code requirements	✓	
APPROVED AS NOTED		
REVISE AND RESUBMIT		
NOT REVIEWED		
Date:	5/29/2014	
By:		
<small>This review by Stantec Consulting Services Inc. is for the sole purpose of ascertaining conformance with the general design concept. This review shall not mean that Stantec Consulting Services Inc approves the detail design inherent in the shop drawings, responsibility for which shall remain with the Contractor. Submitting same, and such review shall not relieve the Contractor of his responsibility for errors or omissions in the shop drawing or of his responsibility for meeting all requirements of the Contract Documents. The contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to the fabrication processes or to techniques of construction and installation and for coordination of the work of all subtrades.</small>		

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**SECTION A-A**

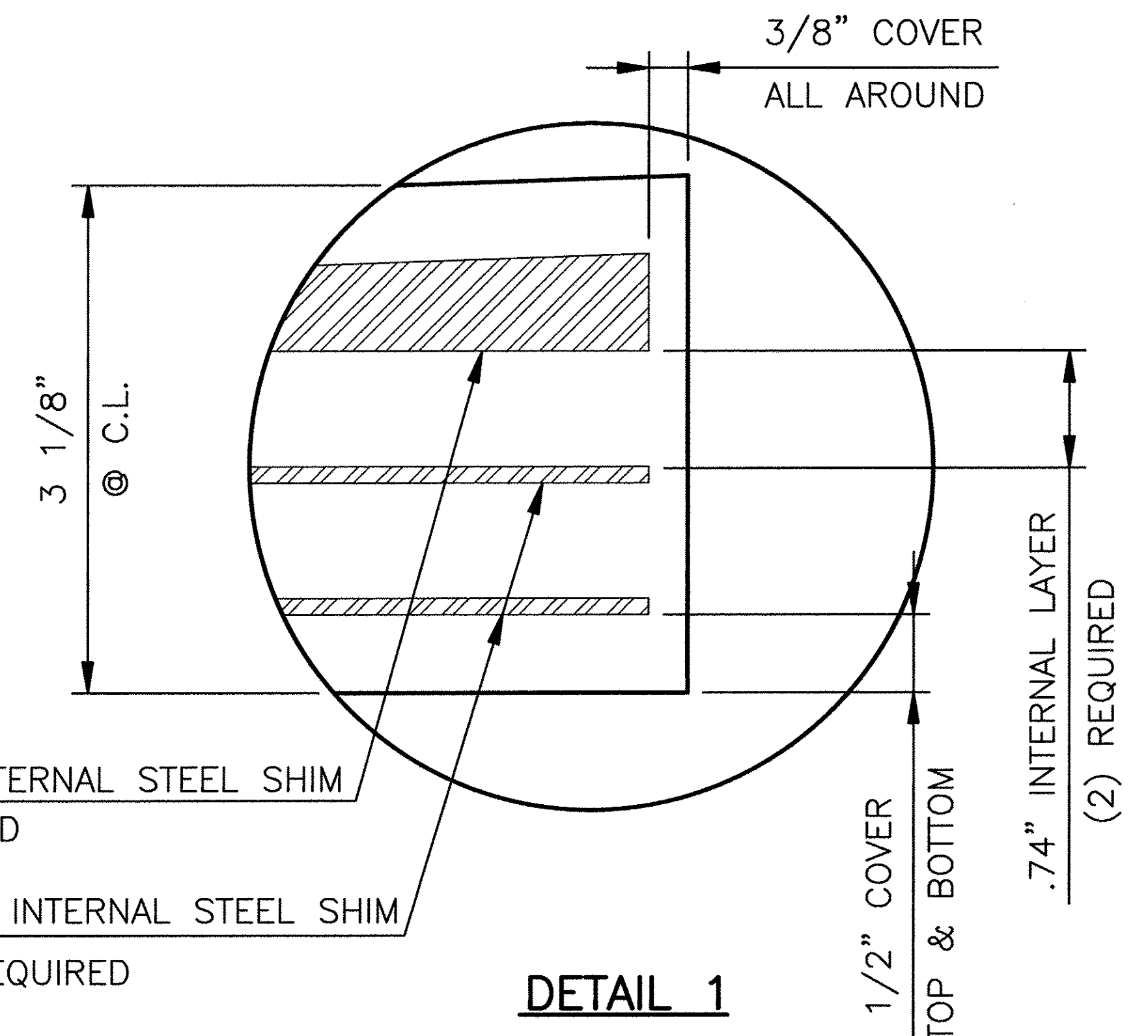
**LAMINATED ELASTOMERIC BEARING PAD**  
**LEP1**  
 (6) REQUIRED ABUTMENT 1



**DETAIL 2**

BEVELED INTERNAL SHIM PLATE  
 7/16" @ C.L. X 10 3/4" X 10 3/4"  
 AASHTO M270M/M270 GR. 36  
 (6) REQUIRED AT ABUTMENT 1

MAX. DESIGN LOAD	
DEAD LOAD =	35.8 kips
LIVE LOAD =	38.8 kips



**DETAIL 1**  
**LEP1**

BEVELED LAMINATED BEARING PAD  
 3 1/8" @ C.L. X 11 1/2" X 11 1/2" LAMINATED PAD  
 WITH A SHEAR MODULUS OF 152 PSI +/-15%  
 60 DUROMETER GR. 4 NATURAL RUBBER  
 (6) REQUIRED AT ABUTMENT 1

**TEST1**

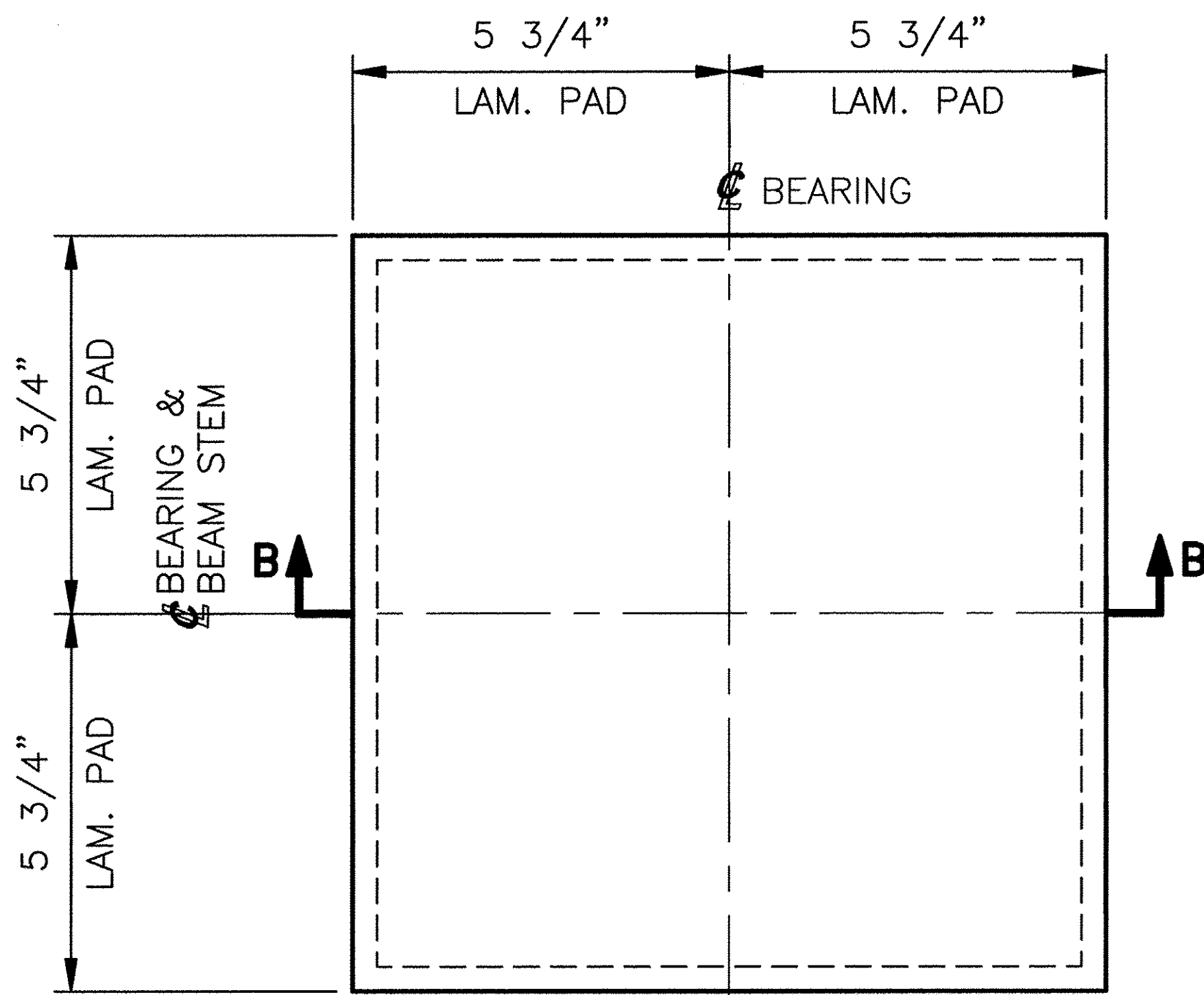
BEVELED LAMINATED BEARING PAD  
 3 1/8" @ C.L. X 11 1/2" X 11 1/2" LAMINATED PAD  
 WITH A SHEAR MODULUS OF 152 PSI +/-15%  
 60 DUROMETER GR. 4 NATURAL RUBBER  
 (2) REQUIRED FOR TESTING

SEE SHEET GN1 FOR SHOP NOTES

STATE OF VERMONT AGENCY OF TRANSPORTATION TOWN OF ENOSBURG BOSTON POST ROAD T.H. 2 CLASS 2, BRIDGE NO: 48		
STATE	COUNTY	CONTROL NO.
VT	FRANKLIN	N/A
PROJ. NO.: BRO 1448 (40)		
<b>DYNAMIC RUBBER: LAMINATED BEARING PADS</b>		
		1501 ROCKY RIDGE ROAD P.O. BOX 2159 ATHENS, TEXAS 75751

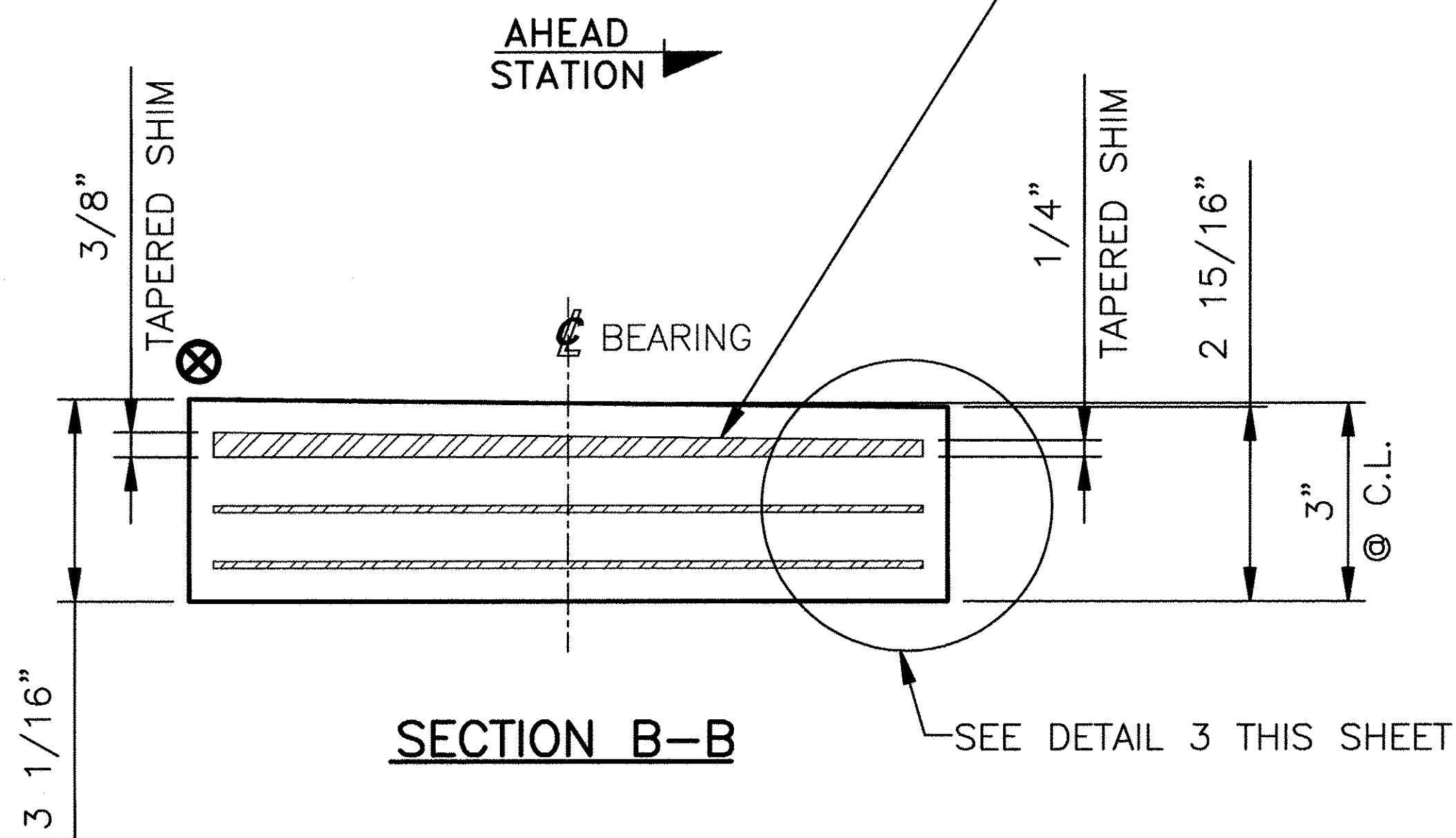
REVISOR	DESCRIPTION	BY	DATE	CK'D	DATE	SCALE: NONE	DRAWN BY: CV	CHECKED BY: ELS
							DATE: 3/7/14	DATE: 3/11/14
SHEET 1 OF 3						JOB NO.: 12341		
CUSTOMER: A.L. ST. ONGE CONTRACTOR INC.						DRAWING NUMBER REV. 12341-D1 1		

APPROVED: Approval of drawings and/or procedures indicates concurrence with the information presented and does not relieve the Contractor or Fabricator of compliance with all specifications and code requirements	✓	
APPROVED AS NOTED		
REVISE AND RESUBMIT		
NOT REVIEWED		
Date:	5/29/2014	
By:		
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**PLAN VIEW**

BEVELED SHIM PLATE  
5/16" @ C.L. X 10 3/4" X 10 3/4"  
SEE DETAIL 4 THIS SHEET



**SECTION B-B**

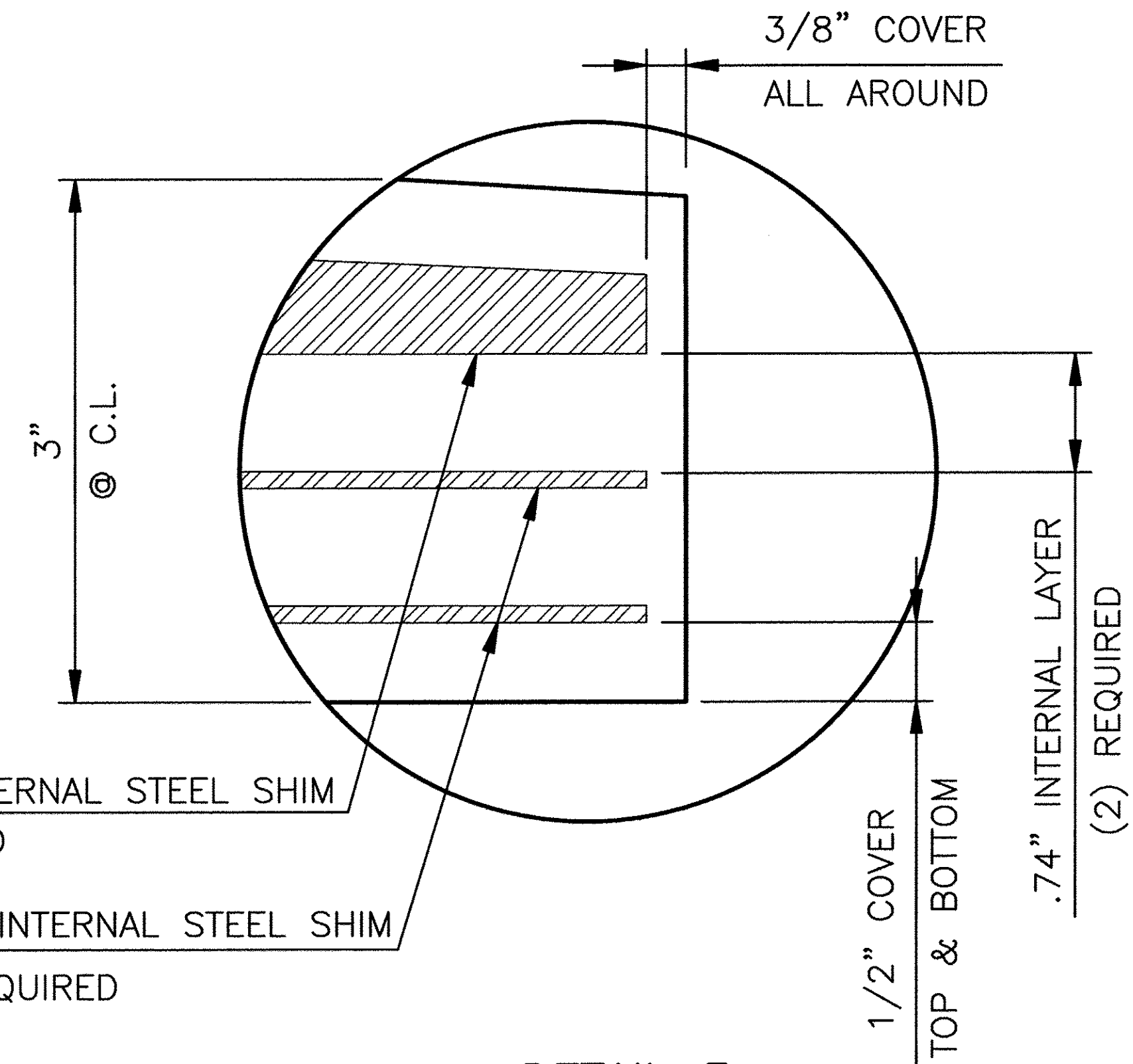
**LAMINATED ELASTOMERIC BEARING PAD**

**LEP2**

(6) REQUIRED ABUTMENT 2

Vermont Agency of Transportation  
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BY: Rob Young DATE: 05/29/2014

1/4" - 5/8" TAPERED INTERNAL STEEL SHIM  
(1) REQUIRED  
12 GA. (.1046" NOM.) INTERNAL STEEL SHIM  
(2) REQUIRED



**DETAIL 3**  
**LEP2**

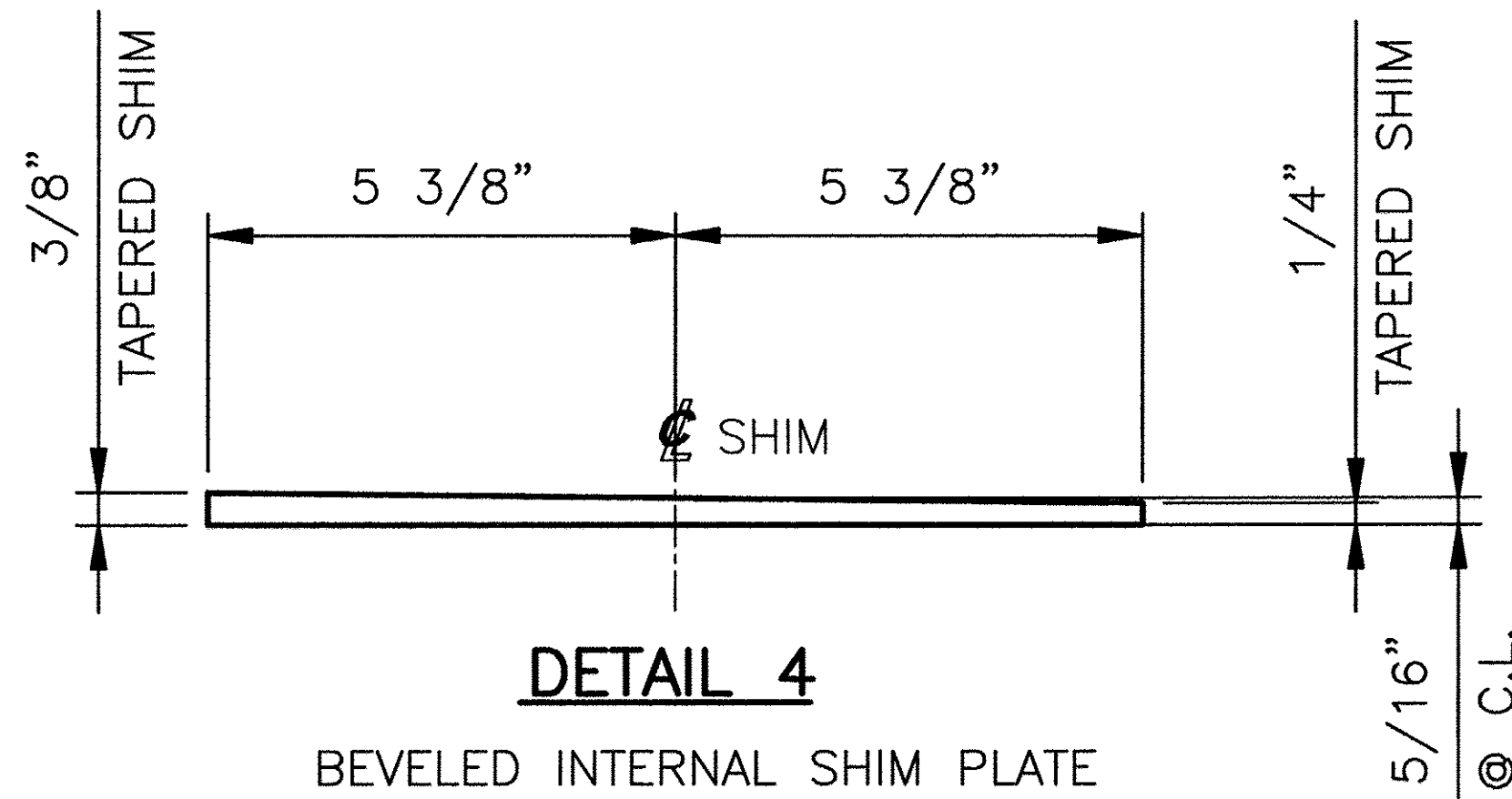
BEVELED LAMINATED BEARING PAD  
3" @ C.L. X 11 1/2" X 11 1/2" LAMINATED PAD  
WITH A SHEAR MODULUS OF 152 PSI +/-15%  
60 DUROMETER GR. 4 NATURAL RUBBER   
(6) REQUIRED AT ABUTMENT 2

**TEST2**

BEVELED LAMINATED BEARING PAD  
3" @ C.L. X 11 1/2" X 11 1/2" LAMINATED PAD  
WITH A SHEAR MODULUS OF 152 PSI +/-15%  
60 DUROMETER GR. 4 NATURAL RUBBER   
(2) REQUIRED FOR TESTING

**MAX. DESIGN LOAD**

DEAD LOAD = 35.8 kips  
LIVE LOAD = 38.8 kips

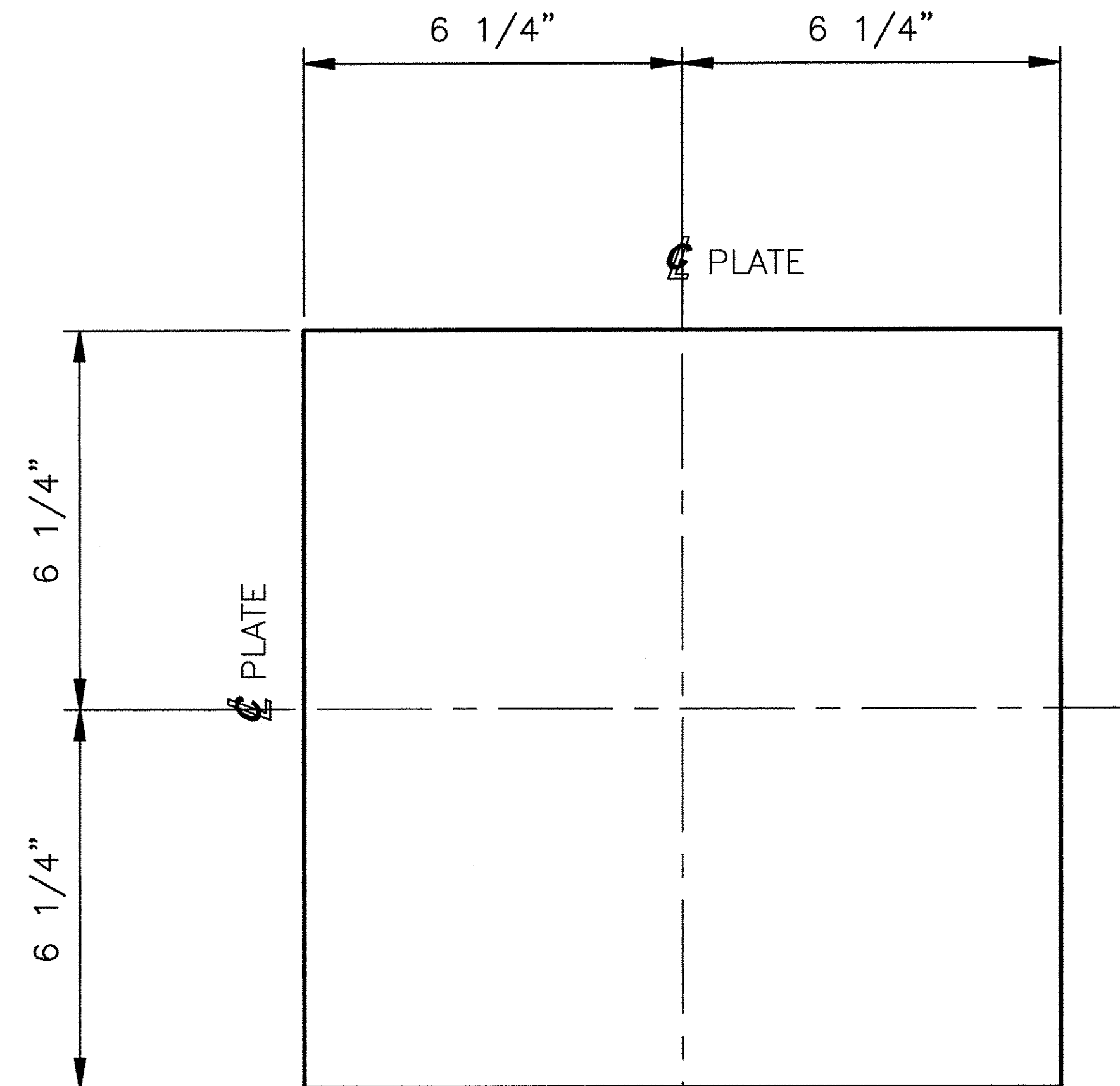


**DETAIL 4**

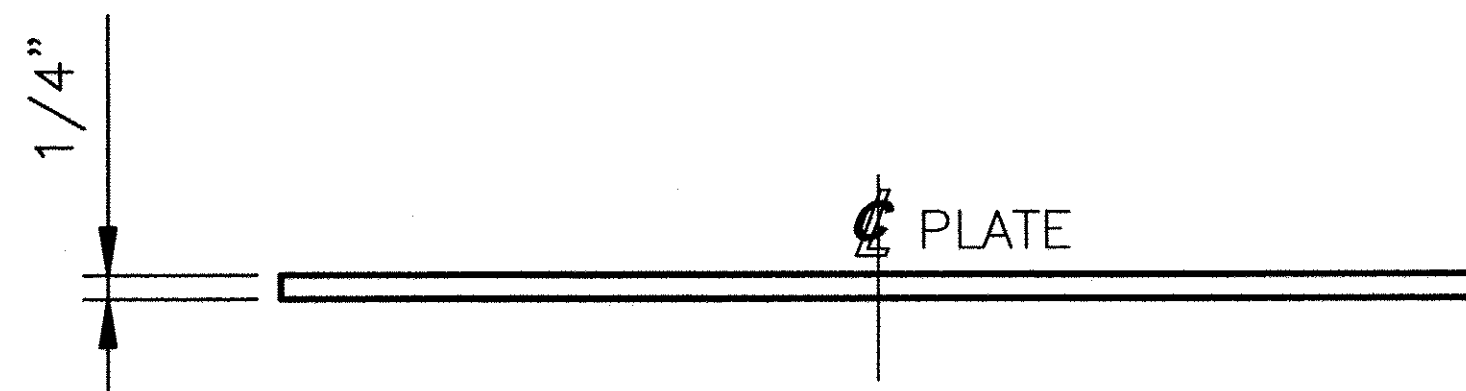
BEVELED INTERNAL SHIM PLATE  
5/16" @ C.L. X 10 3/4" X 10 3/4"  
AASHTO M270M/M270 GR. 36  
(6) REQUIRED AT ABUTMENT 2

**SEE SHEET GN1 FOR SHOP NOTES**

STATE OF VERMONT AGENCY OF TRANSPORTATION TOWN OF ENOSBURG BOSTON POST ROAD T.H. 2 CLASS 2, BRIDGE NO: 48		
STATE	COUNTY	CONTROL NO.
VT	FRANKLIN	N/A
PROJ. NO.: BRO 1448 (40)		
<b>DYNAMIC RUBBER: LAMINATED BEARING PADS</b>		
		1501 ROCKY RIDGE ROAD P.O. BOX 2159 ATHENS, TEXAS 75751
SCALE: NONE	DRAWN BY: CV DATE: 3/7/14	CHECKED BY: ELS DATE: 3/11/14
SHEET 2 OF 3	JOB NO.: 12341	
REV.	DESCRIPTION	BY DATE CK'D DATE
	REVISD ELASTOMER FROM NEOPRENE TO NATURAL RUBBER PER RFI	JG 5/27/14 SL 5/27/14
	CUSTOMER: A.L. ST. ONGE CONTRACTOR INC.	DRAWING NUMBER REV. 12341-D2 1



PLAN VIEW



ELEVATION VIEW

EXTERNAL SHIM PLATE  
SHM1

1/4" X 12 1/2" X 12 1/2" SHIM PLATE  
AASHTO M270M/M270 GRADE 36 (GALVANIZED)  
(12) REQUIRED FOR STRUCTURE

Vermont Agency of Transportation

**RECEIVED**

ON: **May 28, 2014**

and Checked for

**CONFORMANCE**

BY: Rob Young DATE: 05/29/2014

APPROVED: Approval of drawings and/or procedures indicates concurrence with the information presented and does not relieve the Contractor or Fabricator of compliance with all specifications and code requirements	<input checked="" type="checkbox"/>	
APPROVED AS NOTED	<input type="checkbox"/>	
REVISE AND RESUBMIT	<input type="checkbox"/>	
NOT REVIEWED	<input type="checkbox"/>	
Date:	5/29/2014	
By:		
<p>This review by Stantec Consulting Services Inc. is for the sole purpose of ascertaining conformance with the general design concept. This review shall not mean that Stantec Consulting Services Inc approves the detail design inherent in the shop drawings, responsibility for which shall remain with the Contractor. Submitting same, and such review shall not relieve the Contractor of his responsibility for errors or omissions in the shop drawing or of his responsibility for meeting all requirements of the Contract Documents. The contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to the fabrication processes or to techniques of construction and installation and for coordination of the work of all subtrades.</p>		

**SEE SHEET GN1 FOR SHOP NOTES**

STATE OF VERMONT AGENCY OF TRANSPORTATION TOWN OF ENOSBURG BOSTON POST ROAD T.H. 2 CLASS 2, BRIDGE NO: 48		
STATE	COUNTY	CONTROL NO.
VT	FRANKLIN	N/A
PROJ. NO.: BRO 1448 (40)		
<b>DYNAMIC RUBBER:</b> <b>LAMINATED BEARING PADS</b>		
		1501 ROCKY RIDGE ROAD P.O. BOX 2159 ATHENS, TEXAS 75751
SCALE: NONE	DRAWN BY: CV DATE: 3/7/14	CHECKED BY: ELS DATE: 3/11/14
SHEET 3 OF 3		<b>JOB NO.: 12341</b>
REV.	DESCRIPTION	BY DATE CK'D DATE
	CUSTOMER: A.L. ST. ONGE CONTRACTOR INC.	DRAWING NUMBER: 12341-D3 REV: 0

△					
REV.	DESCRIPTION	BY	DATE	CK'D	DATE

**ABUTMENT & WING WALL GENERAL NOTES**

- MIN. CONCRETE STRENGTH AT 28 DAYS SHALL BE 5,000 PSI.
- MIN. CONCRETE STRENGTH AT STRESS TRANSFER SHALL BE 3,500 PSI (UNLESS NOTED OTHERWISE).
- REINFORCING STEEL SHALL BE GR-60, ASTM A-615 (AASHTO M31) LEVEL II (DUAL COATED) OR UNCOATED, LEVEL I (BLACK STEEL) (AS NOTED ON SHOP DRAWINGS).
- THE TOP OF ABUTMENTS SHALL RECEIVE A SMOOTH FLOAT FINISH (UNLESS NOTED OTHERWISE).
- THE TOP OF WING WALLS SHALL RECEIVE A SMOOTH FLOAT FINISH (UNLESS NOTED OTHERWISE).
- SHEAR KEY SURFACES SHALL BE SAND BLASTED CLEAN.
- PRECAST CONCRETE UNITS SHALL BE HANDLED AND ERECTED USING THE LIFTING INSERTS ONLY. THE MINIMUM SLING ANGLE FROM THE HORIZONTAL SHALL BE 60°. NON-PRESTRESSED UNITS SHALL BE STORED & TRANSPORTED WITH TIMBER SUPPORTS AT 5ft POINTS, UNLESS APPROVED BY J.P. CARRARA & SONS, INC.
- MATERIAL SPECIFICATION AND MIX DESIGN SHALL CONFORM TO VERMONT SPEC. PS10.02 AND PS10.05 RESPECTIVELY.
 

DESIGN MIX:  
 WING WALLS: J.P.C. BRIDGE MIX #44MSCC  
 APPROACH SLABS: J.P.C. BRIDGE MIX #44MSCC  
 ABUTMENTS: J.P.C. BRIDGE MIX #44MSCC  
 PILE CAPS: J.P.C. BRIDGE MIX #44MSCC
- QUALITY CONTROL PROCEDURES ARE IN ACCORDANCE WITH PCI REQUIREMENTS. J.P. CARRARA & SONS, INC. IS A PCI CERTIFIED PLANT.
- CURING METHOD: AS SOON AS THE TOP OF PRECAST CONCRETE UNITS ARE FINISHED, A COVER OF RIGID INSULATION AND POLY WILL BE PLACED OVER THE UNIT. NATURAL CURE WITH NO EXTERNAL HEAT APPLIED.

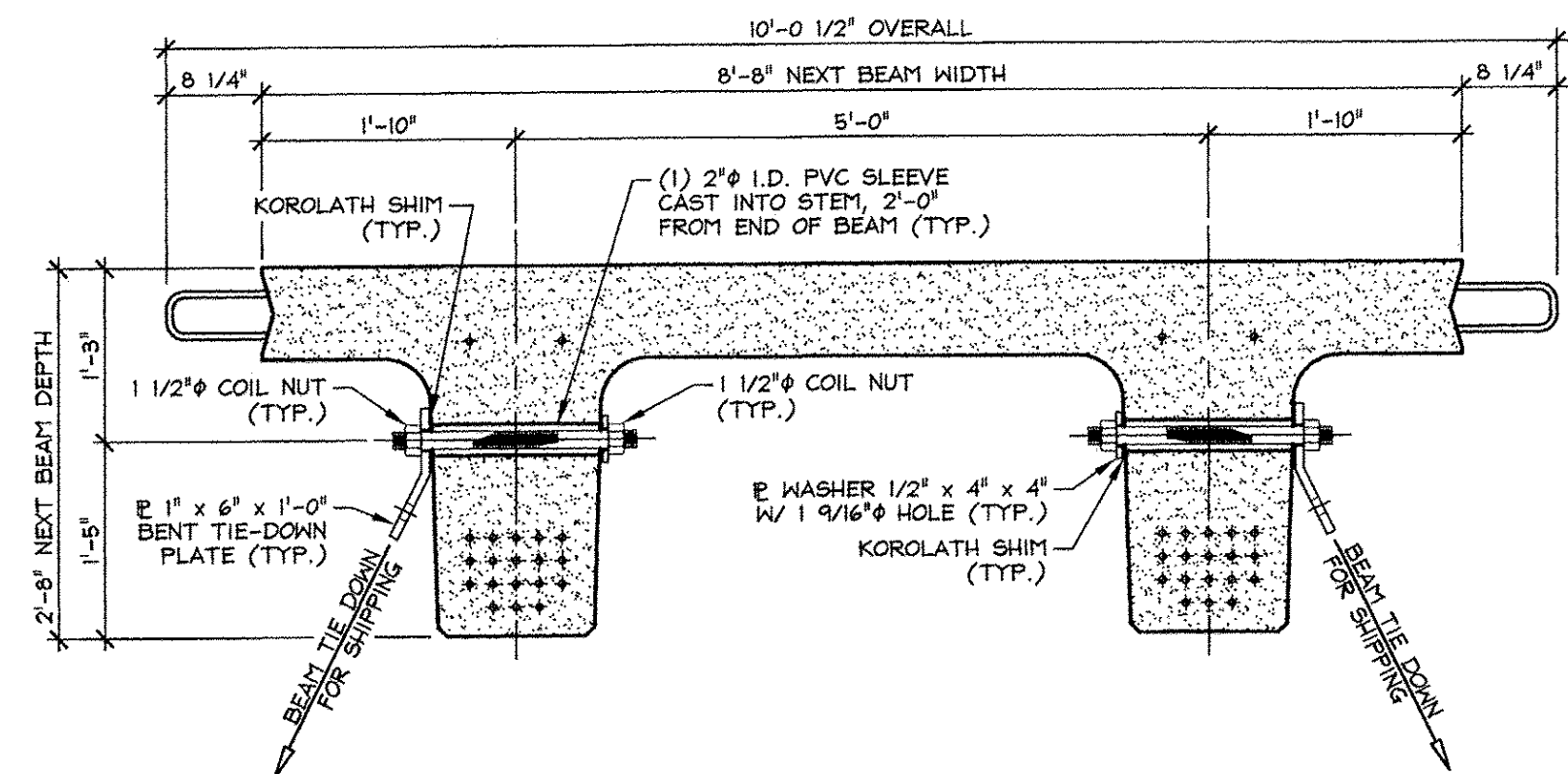
**NEXT BEAM GENERAL NOTES**

- MIN. CONCRETE STRENGTH AT 28 DAYS SHALL BE 5,000 PSI.
- MIN. CONCRETE STRENGTH AT STRESS TRANSFER SHALL BE 6,000 PSI.
- REINFORCING STEEL SHALL BE GR-60, ASTM A-615 (AASHTO M31) LEVEL II (DUAL COATED).
- PRESTRESSING STRANDS SHALL CONFORM TO ASTM A-416 (AASHTO M209) AND SHALL CONSIST OF 0.60" x 270 KSI 7-WIRE LOW RELAXATION STRANDS.
- PRESTRESSING STRANDS SHALL EACH BE PULLED TO HAVE A NET TENSION OF 44.0 K AFTER ACCOUNTING FOR CHUCK SLIPPAGE. TENSION SHALL BE VERIFIED BY MEASURING STRAND ELONGATION. (SEE EXAMPLE ELONGATION CALCULATION AND TENSIONING PROCEDURE, THIS SHEET.)
- ENDS OF PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH END OF NEXT BEAM STEPS (UNLESS NOTED OTHERWISE) AND EPOXY PAINTED.
- ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4".
- THE TOP OF BEAMS SHALL RECEIVE A SMOOTH FLOAT FINISH (UNLESS NOTED OTHERWISE).
- SHEAR KEY SURFACES SHALL BE SAND BLASTED CLEAN.
- BEAMS SHALL BE HANDLED AND ERECTED USING THE LIFTING LOOPS ONLY. RIGGING SHALL BE CONFIGURED SUCH THAT EQUAL AND VERTICAL FORCES ARE APPLIED TO EACH OF THE TWO LIFTING LOOPS AT EACH END OF THE BEAM. THE PINS OF THE SHACKLES SHALL BE PLACED THROUGH THE LIFTING LOOPS. SEE DETAIL, THIS SHEET. BEAMS SHALL BE STORED AND TRANSPORTED WITH TIMBER SUPPORTS WITHIN 2'-0" OF THE BEAM ENDS, UNLESS APPROVED BY J.P. CARRARA & SONS, INC.
- MATERIAL SPECIFICATION AND MIX DESIGN SHALL CONFORM TO VERMONT SPEC. PS10.02 AND PS10.05 RESPECTIVELY.
 

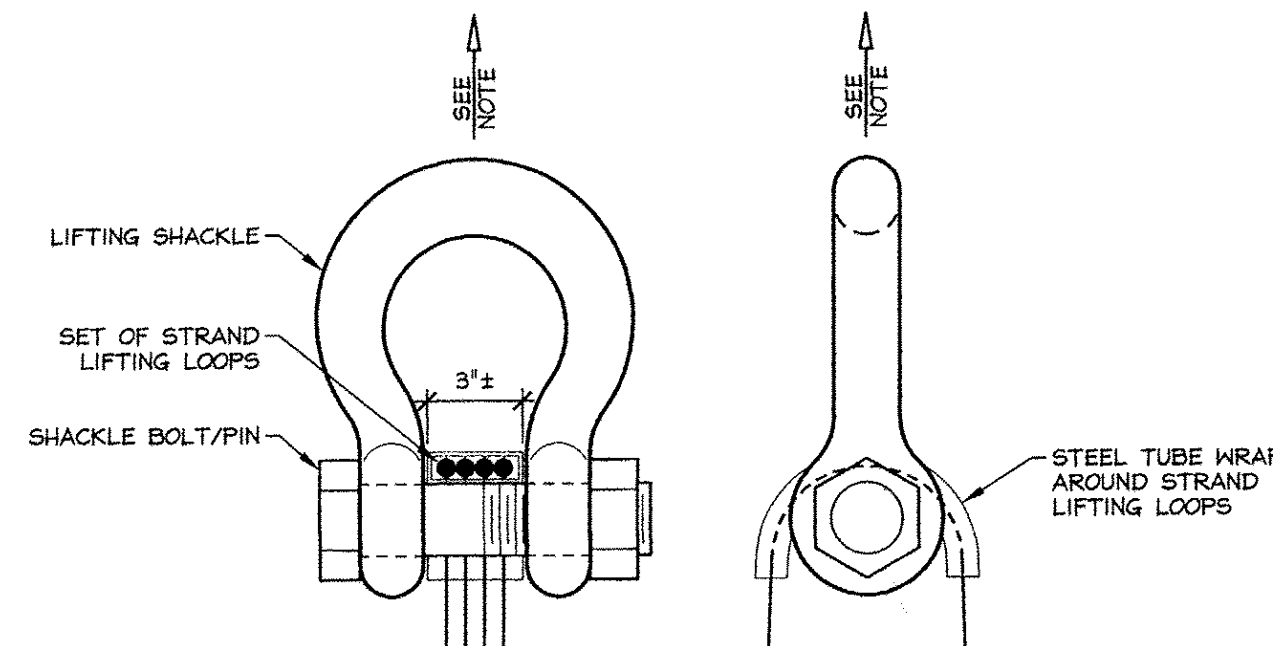
DESIGN MIX: J.P.C. BRIDGE MIX #426M
- QUALITY CONTROL PROCEDURES ARE IN ACCORDANCE WITH PCI REQUIREMENTS. J.P. CARRARA & SONS, INC. IS A PCI CERTIFIED PLANT.
- CURING METHOD: AS SOON AS THE TOP OF BEAM IS FINISHED, A COVER OF INSULATED POLY. THE DESIRED CURING TEMPERATURE RANGE SHALL NOT DROP BELOW 70°. THE TEMPERATURE SHALL BE RECORDED BY AUTOMATIC SENSOR INSTRUMENTS ON GRAPH CHARTS, SPACED NOT MORE THAN 100' APART AND WILL CONTINUE UNTIL RELEASE STRENGTH IS ACHIEVED. EACH CHART SHALL BE MARKED WITH THE CASTING DATED AND LOCATION OF THE RECORDER. IF NECESSARY TO MAINTAIN CASTING BED TEMPERATURE PRIOR TO CONCRETE PLACEMENT OR TO ACCELERATE EARLY AGE STRENGTH GAIN, EXTERNAL RADIANT HEAT MAY BE EMPLOYED VIA HOT WATER DUCTS BENEATH AND WITHIN THE PERIPHERY OF THE CASTING BED. MAXIMUM CURING TEMPERATURE SHALL NOT EXCEED PCI SPECIFIED LIMITS.
- OWNER SHALL PROVIDE APPROPRIATE WATERPROOFING TO GROUTED AND/OR EPOXIED SHEAR KEYS. J.P. CARRARA & SONS, INC. SHALL NOT BE HELD LIABLE FOR PROBLEMS ASSOCIATED WITH MOISTURE INFILTRATING GROUTED AND/OR EPOXIED SHEAR KEYS.

**DRAWING INDEX**

SHT. #	DRAWING TITLE	REV. #	REV. DATE
C1	COVER SHEET	1	4-7-14
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F2	ABUTMENT #1 ELEVATIONS	1	4-7-14
F3	ABUTMENT #2 ELEVATIONS	1	4-7-14
F4	PRESTRESSED NEXT BEAM & APPROACH SLAB LAYOUT	1	4-7-14
F5	NEXT BEAM SECTION & CURTAIN WALL ELEVATIONS	1	4-7-14
F6	APPROACH SLAB SECTION & BEARING DETAILS	1	4-7-14
NB1	PRESTRESSED NEXT BEAM DETAILS		
NB1.1	PRECAST CURTAIN WALL DETAILS		
NB2	PRESTRESSED NEXT BEAM DETAILS "EN-NB1"		
NB2.1	PRECAST CURTAIN WALL DETAILS "EN-NB1"		
NB3	PRESTRESSED NEXT BEAM DETAILS "EN-NB2"		
NB3.1	PRECAST CURTAIN WALL DETAILS "EN-NB2"		
NB4	PRESTRESSED NEXT BEAM DETAILS "EN-NB3"		
NB4.1	PRECAST CURTAIN WALL DETAILS "EN-NB3"	1	4-7-14
AS1	PRECAST APPROACH SLAB DETAILS "EN-AS1" & "EN-AS3"	1	4-7-14
AS2	PRECAST APPROACH SLAB DETAILS "EN-AS2"	1	4-7-14
AS3	PRECAST APPROACH SLAB DETAILS "EN-AS5" & "EN-AS4"	1	4-7-14
AB1	PRECAST ABUTMENT DETAILS "EN-AB1"	1	4-7-14
AB2	PRECAST ABUTMENT DETAILS "EN-AB2"	1	4-7-14
PC1	PRECAST PILE CAP DETAILS "EN-PC1" & "EN-PC2"	1	4-7-14
WW1	PRECAST WINGWALL DETAILS "EN-WW1"	1	4-7-14
WW2	PRECAST WINGWALL DETAILS "EN-WW2" & "EN-WW3"		
M1	MATERIALS LIST (NEXT BEAMS & APPROACH SLABS)	1	4-7-14
M2	MATERIALS LIST (ABUTMENTS, PILE CAPS & WINGWALLS)	1	4-7-14



**NEXT BEAM 32D HOLD-DOWN DETAIL FOR SHIPPING**  
3/4" = 1'-0"



**LIFTING SHACKLE DETAILS**  
N.T.S.

**EXAMPLE PRESTRESSING STRAND ELONGATION CALC. AND TENSIONING**

(NOT TO BE USED FOR CONSTRUCTION)

SIZE & GRADE: 0.60" x 270 KSI  
 AREA: 0.217 IN<sup>2</sup>  
 TENSION: 44,000 LB. EACH STRAND  
 GRIP-TO-GRIP: 252'-0" = 252.00'  
 $E_s = 28,600,000$  PSI (ASSUMED FOR THESE CALCULATIONS; VALUE TO BE OBTAINED FOR STRAND SPOOL ACTUALLY USED)

EXAMPLE:  

$$\Delta = \frac{PL}{AE} = \frac{(44,000 - 3,000) \times 252.00 \times 12}{0.217 \times 28,600,000} = 19.977'$$

THEREFORE (TOLERANCES  $\pm 5\%$ )  
 $\Delta$  UPPER LIMIT =  $1.05 \times 19.977' = 20.98' = 21'$   
 $\Delta$  LOWER LIMIT =  $0.95 \times 19.977' = 18.98' = 19'$

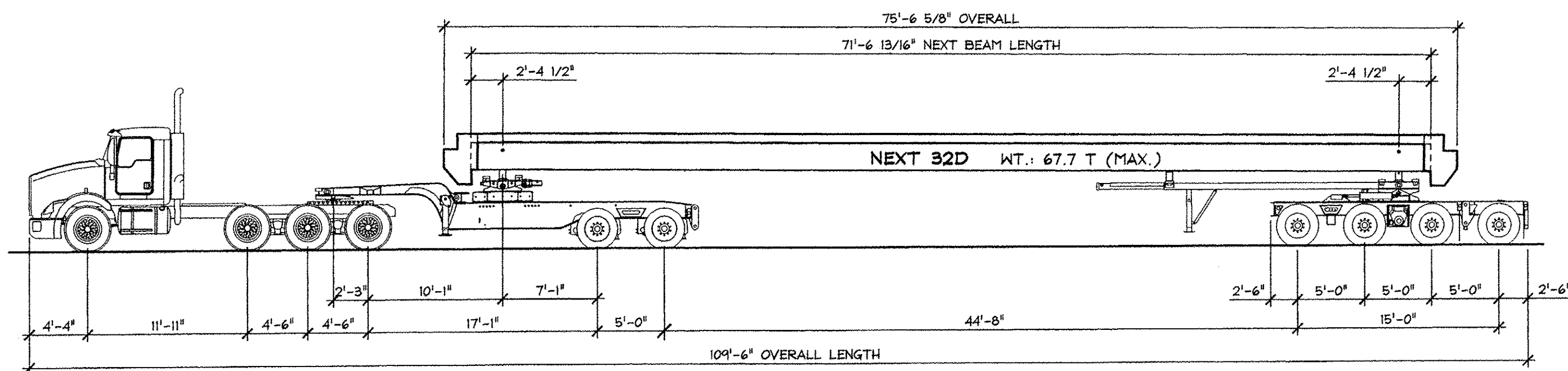
EXTRA FORCE REQUIRED TO COMPENSATE FOR 1/2" CHUCK SLIPPAGE:  
 $\Delta P = 0.5 \times \frac{41,000}{19.977} = 1,026$  LBS.

TOTAL TENSIONING FORCE =  $44,000 + 1,026 = 45,026$  LBS.

**STRAND TENSIONING PROCEDURE:**

- PULL EACH STRAND INITIALLY TO 3,000\* LBS. AND MARK STRAND.
  - THEN PULL EACH STRAND TO A TOTAL TENSION OF 45,026\* LBS. AND MEASURE ELONGATION AFTER SEATING. IT MUST BE BETWEEN 19\* AND 21\*.
- \* NOTE: FORCES READ ON STRESSING JACK GAUGES MUST BE MADE TO CORRESPOND TO ABOVE VALUES BASED ON CALIBRATION DATA FOR SPECIFIC JACK USED.

DESIGN LIVE LOAD: HL-93



**SHIPPING ELEVATION**  
N.T.S.

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APPROVED AS NOTED

REVISE AND RESUBMIT

NOT REVIEWED

Date: 4-11-2014

By: James H. [Signature]

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Stantec

Vermont Agency of Transportation

RECEIVED

ON: April 9, 2014

and Checked for

CONFORMANCE

BY: Rob Young DATE: 04/14/2014

ISSUED FOR PRODUCTION  
 APR 09 2014  
 J.P. CARRARA & SONS, INC.  
 MONTGOMERY CENTER, VT 05753

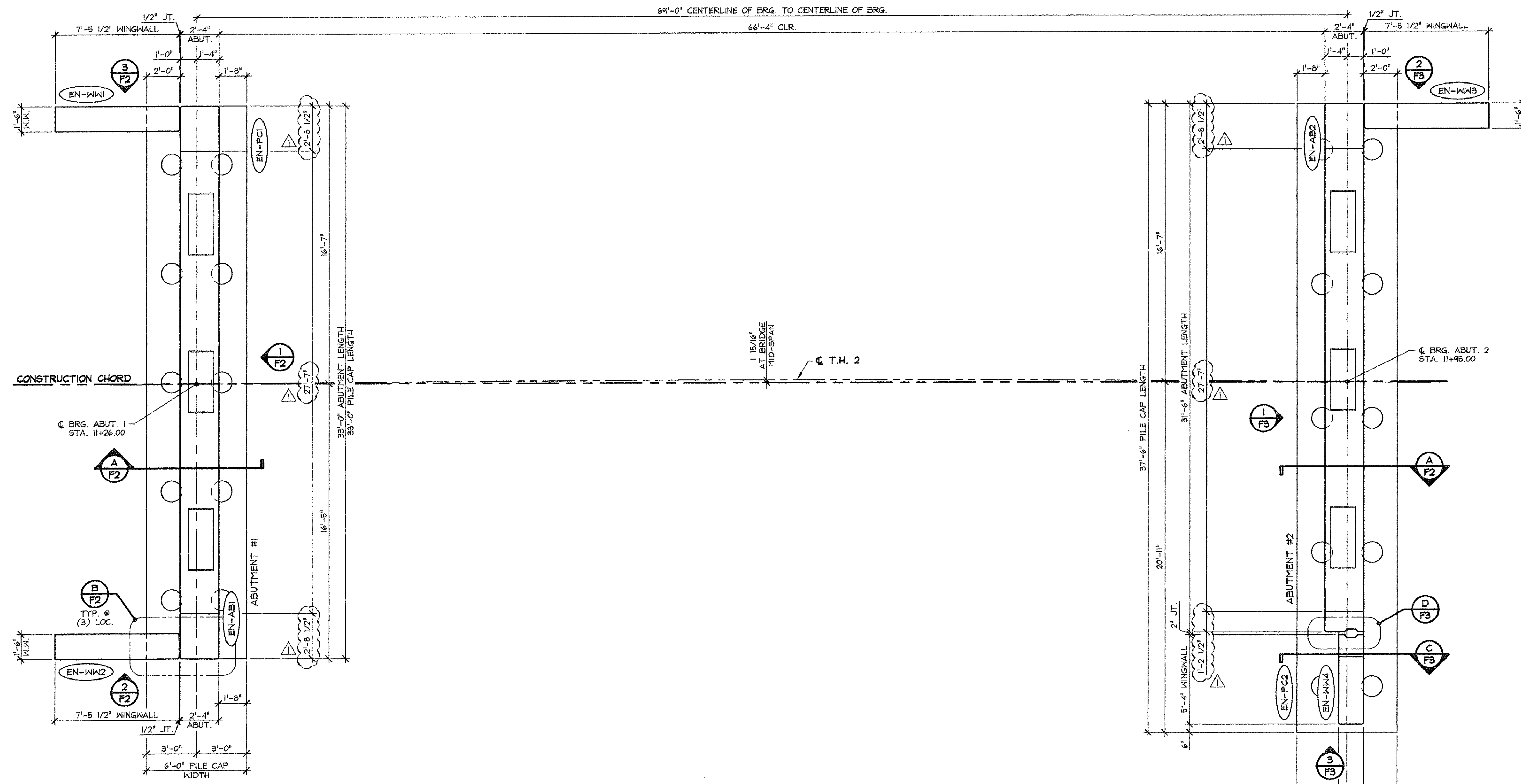
**J.P. CARRARA & SONS INC.** A.L. St. ONGE CONTRACTOR, INC.  
 Precast & Prestress Manufacturer CONTRACTOR  
 2464 OISE ST., MONTGOMERY, VERMONT 05753 Phone: (802)388-6361 Fax: (802)388-9010 MONTGOMERY CENTER, VERMONT

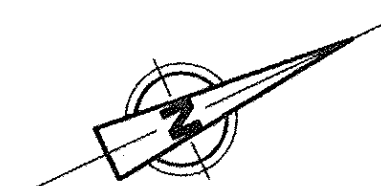
STATE OF VERMONT AGENCY OF TRANSPORTATION COUNTY OF FRANKLIN

TOWN OF ENOSBURG  
 BOSTON POST ROAD T.H.2 CLASS 2  
 BRIDGE NO.: 48 PROJECT NO.: BRO 1448(40)


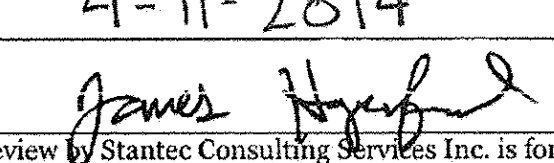
COVER SHEET

DATE: JAN. 27, 2014  
 SCALE: NOTED  
 CHKD: M.J. DFTM: B.L.  
 JOB NO: 23418-013  
 DWG. NO: C1

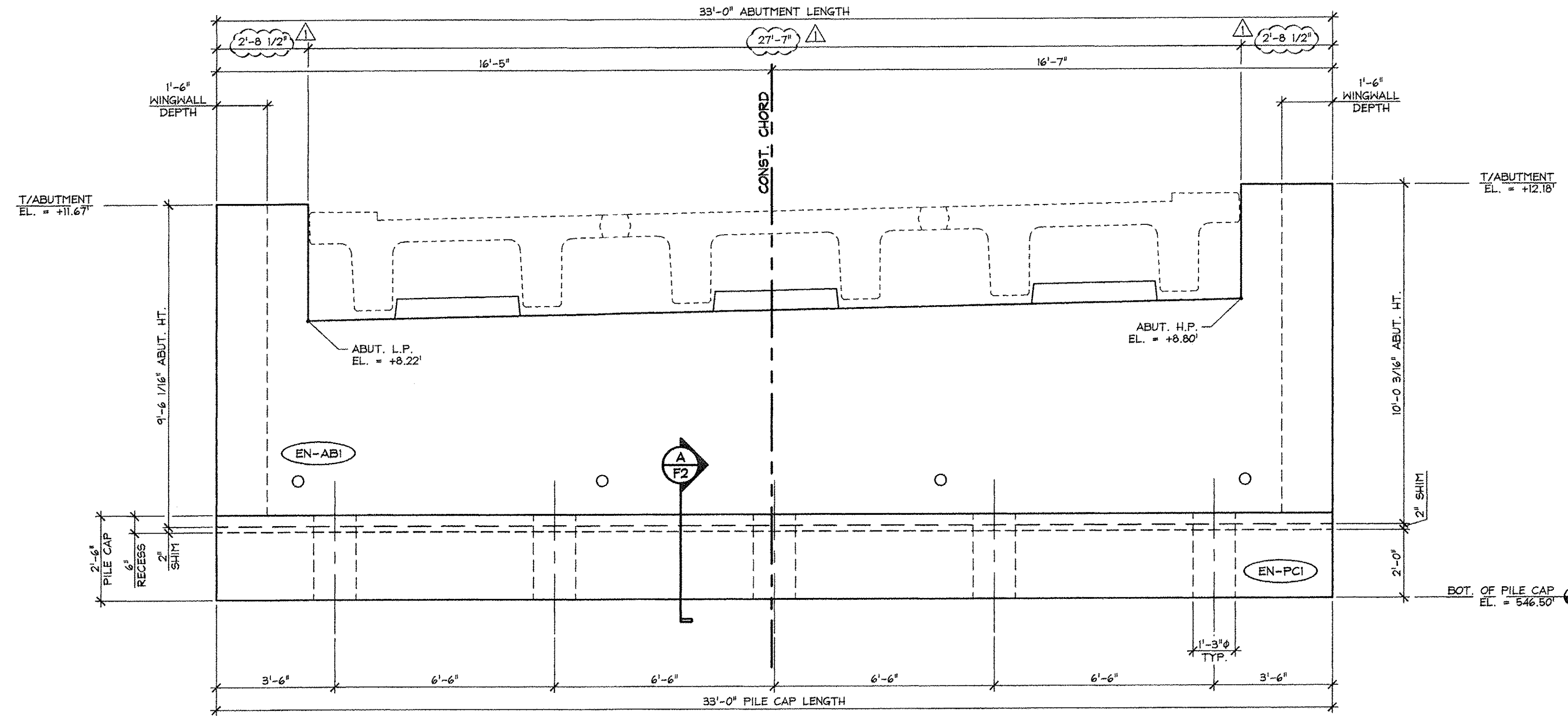



1 PRECAST ABUTMENT LAYOUT  
F1

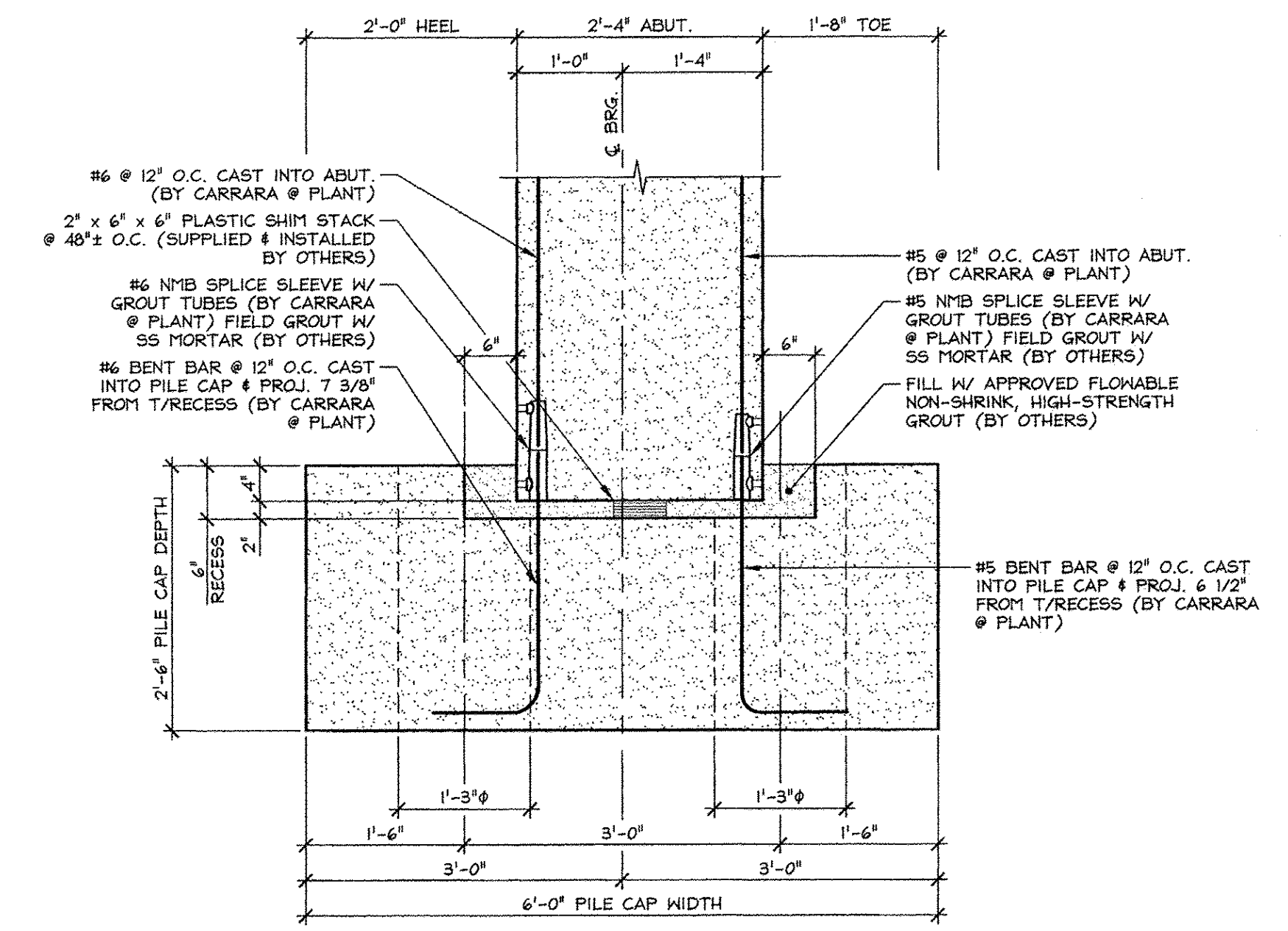
1/4" = 1'-0"

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APPROVED AS NOTED REVISE AND RESUBMIT NOT REVIEWED	
Date: <b>4-11-2014</b>	
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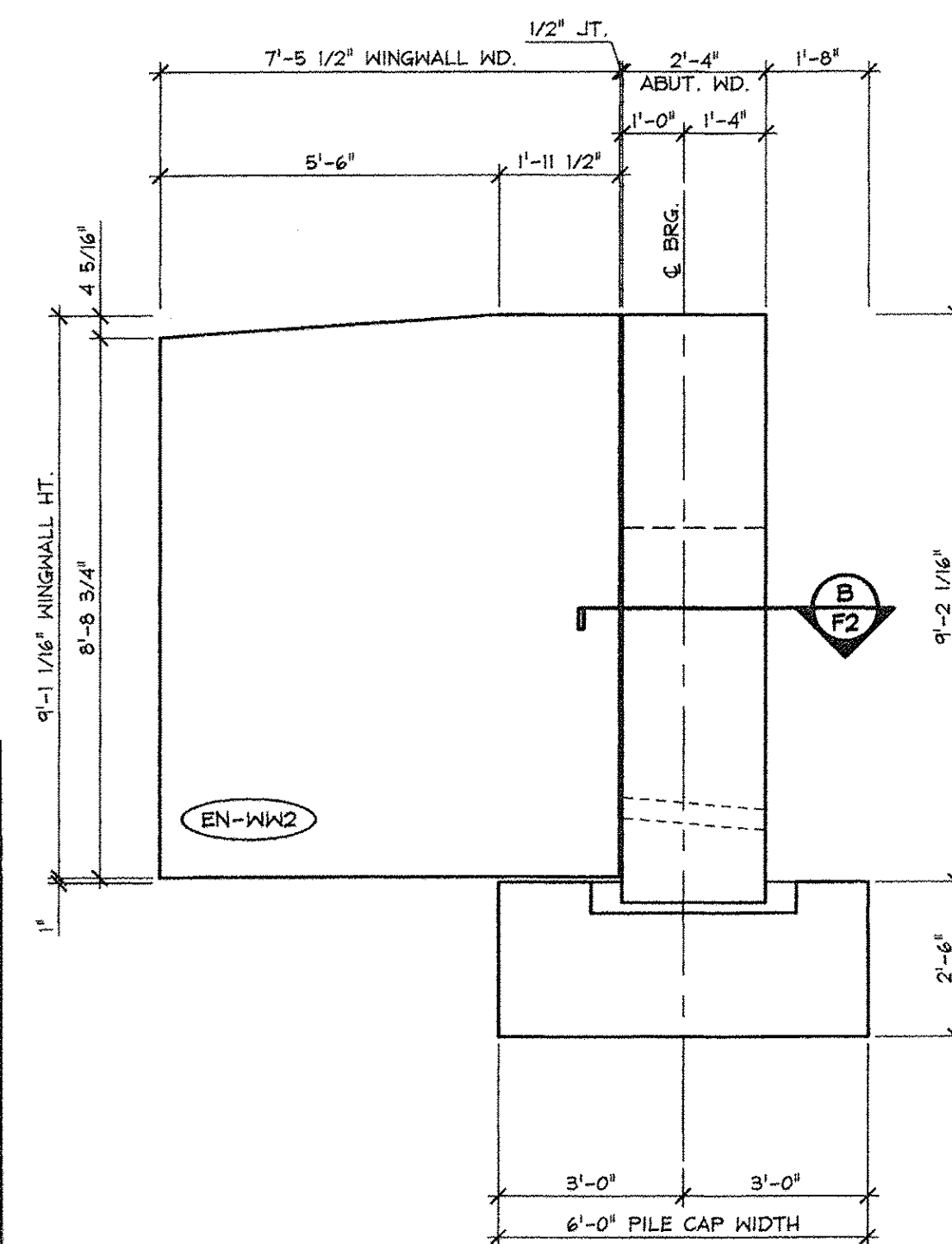
Vermont Agency of Transportation <b>RECEIVED</b> ON: April 9, 2014 and Checked for <b>CONFORMANCE</b> BY: Rob Young DATE: 04/14/2014		ISSUED FOR PRODUCTION APR 09 2014 J.P. CARRARA & SONS, INC. MIDDLEBURY, VT 05753
<b>J.P. CARRARA &amp; SONS INC.</b> A.L. ST. ONGE CONTRACTOR, INC. Precast & Prestress Manufacturer      CONTRACTOR <small>2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010</small> <small>MONTGOMERY CENTER, VERMONT</small>		
<b>STATE OF VERMONT AGENCY OF TRANSPORTATION</b> COUNTY OF FRANKLIN	DATE: JAN. 27, 2014 SCALE: NOTED	
TOWN OF ENOSBURG BOSTON POST ROAD T.H.2 CLASS 2 BRIDGE NO.: 48      PROJECT NO.: BRO 1448(40)	CHKD: M.W.      DFTM: B.L. JOB NO: 23418-013	
<b>PRECAST ABUTMENT LAYOUT</b>		DWG. NO: <b>F1</b>



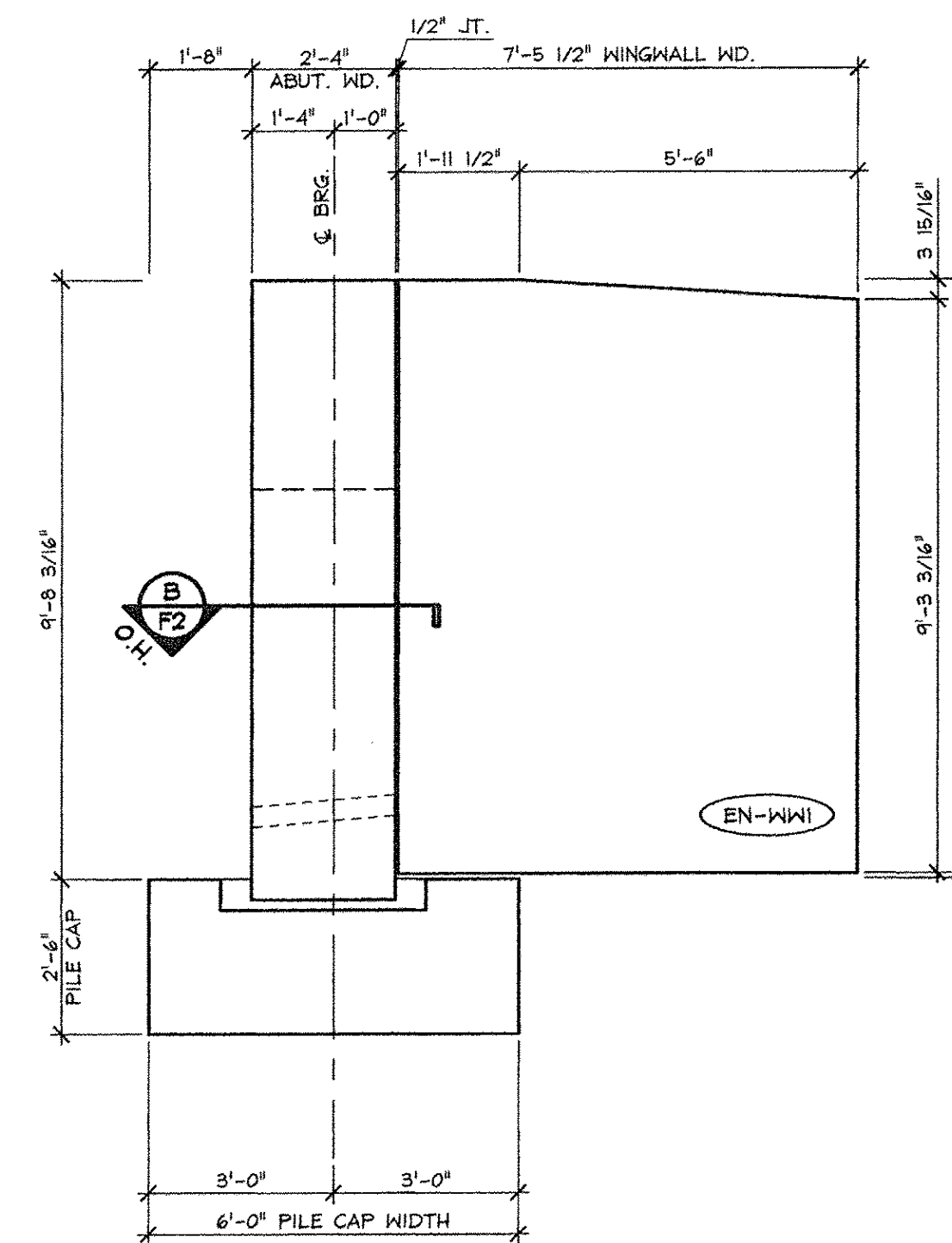
1 ABUTMENT #1 ELEVATION  
F2 3/8" = 1'-0"



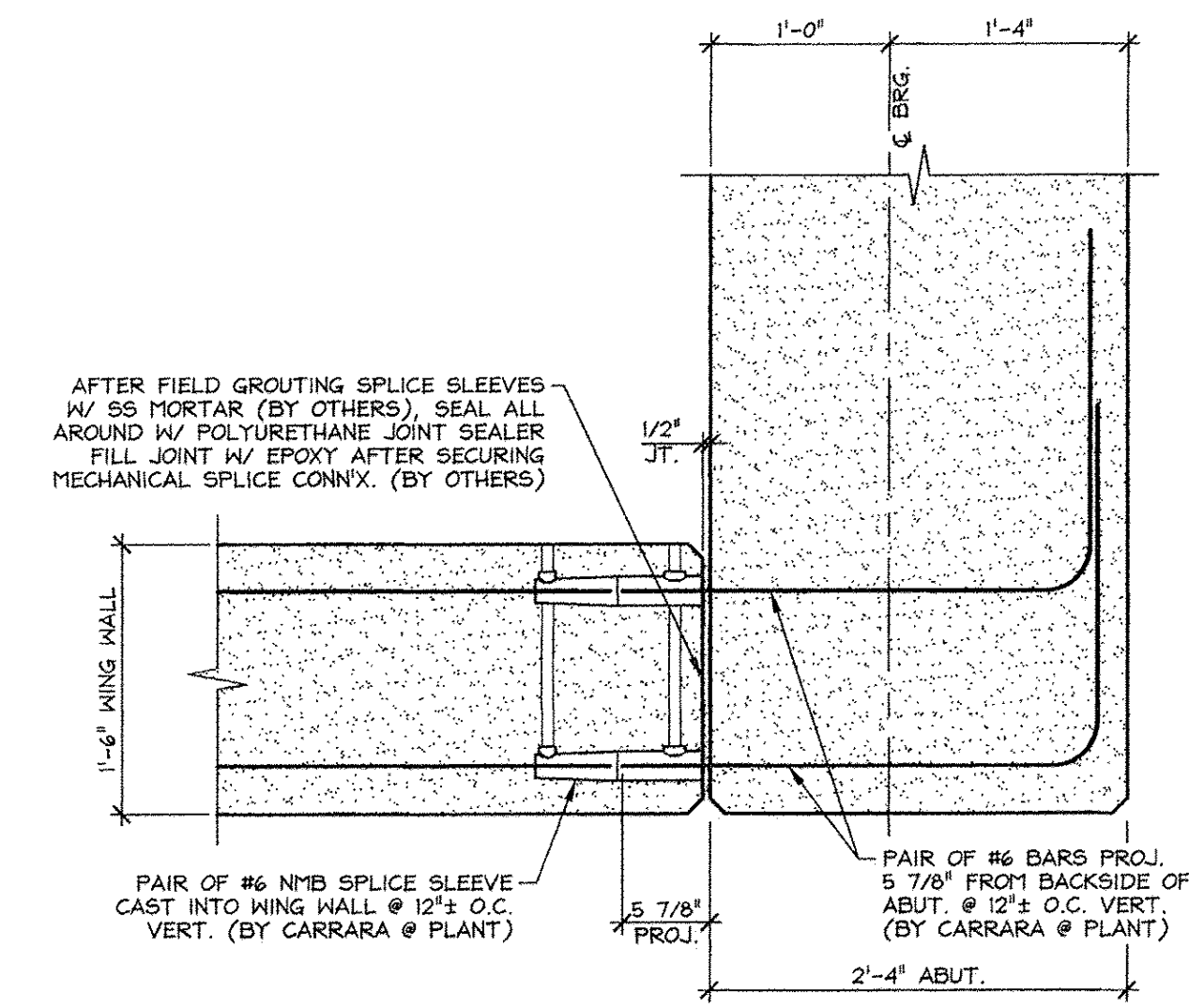
A ABUTMENT CONNECTION DETAIL  
F2 3/4" = 1'-0"



2 WINGWALL #2 ELEVATION  
F2 3/8" = 1'-0"



3 WINGWALL #1 ELEVATION  
F2 3/8" = 1'-0"



B WING WALL CONNECTION DETAIL  
F2 1" = 1'-0"

Vermont Agency of Transportation  
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ON: April 9, 2014  
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**CONFORMANCE**  
BY: Rob Young DATE: 04/14/2014

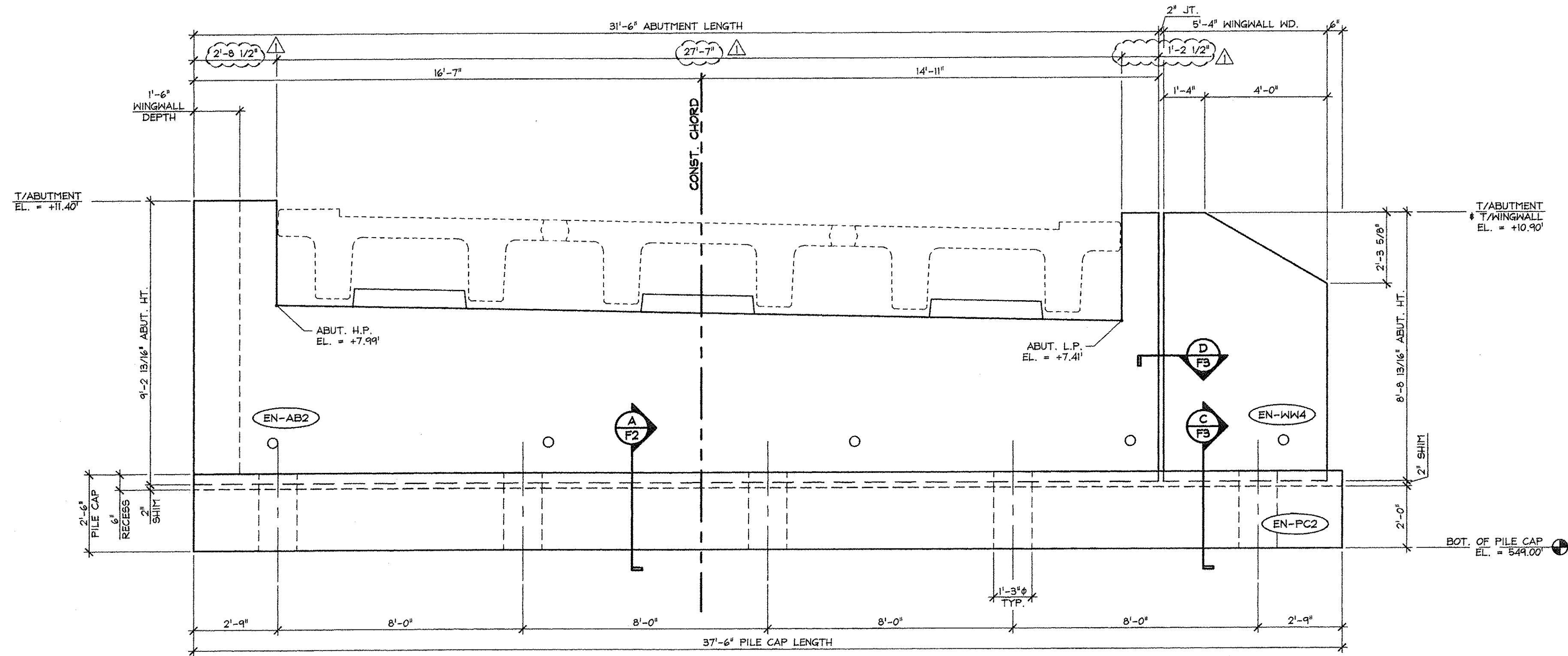
APPROVED: Approval of drawings and/or procedures indicates concurrence with the information presented and does not relieve the Contractor or Fabricator of compliance with all specifications and code requirements	X	Stantec
APPROVED AS NOTED		
REVISE AND RESUBMIT		
NOT REVIEWED		

Date: 4-11-2014  
By: James Hyatt  
This review by Stantec Consulting Services Inc. is for the sole purpose of ascertaining conformance with the general design concept. This review shall not mean that Stantec Consulting Services Inc. approves the detail design inherent in the shop drawings, responsibility for which shall remain with the Contractor. Submitting same, and such review shall not relieve the Contractor of his responsibility for errors or omissions in the shop drawing or of his responsibility for meeting all requirements of the Contract Documents. The contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to the fabrication processes or to techniques of construction and installation and for coordination of the work of all subcontractors.

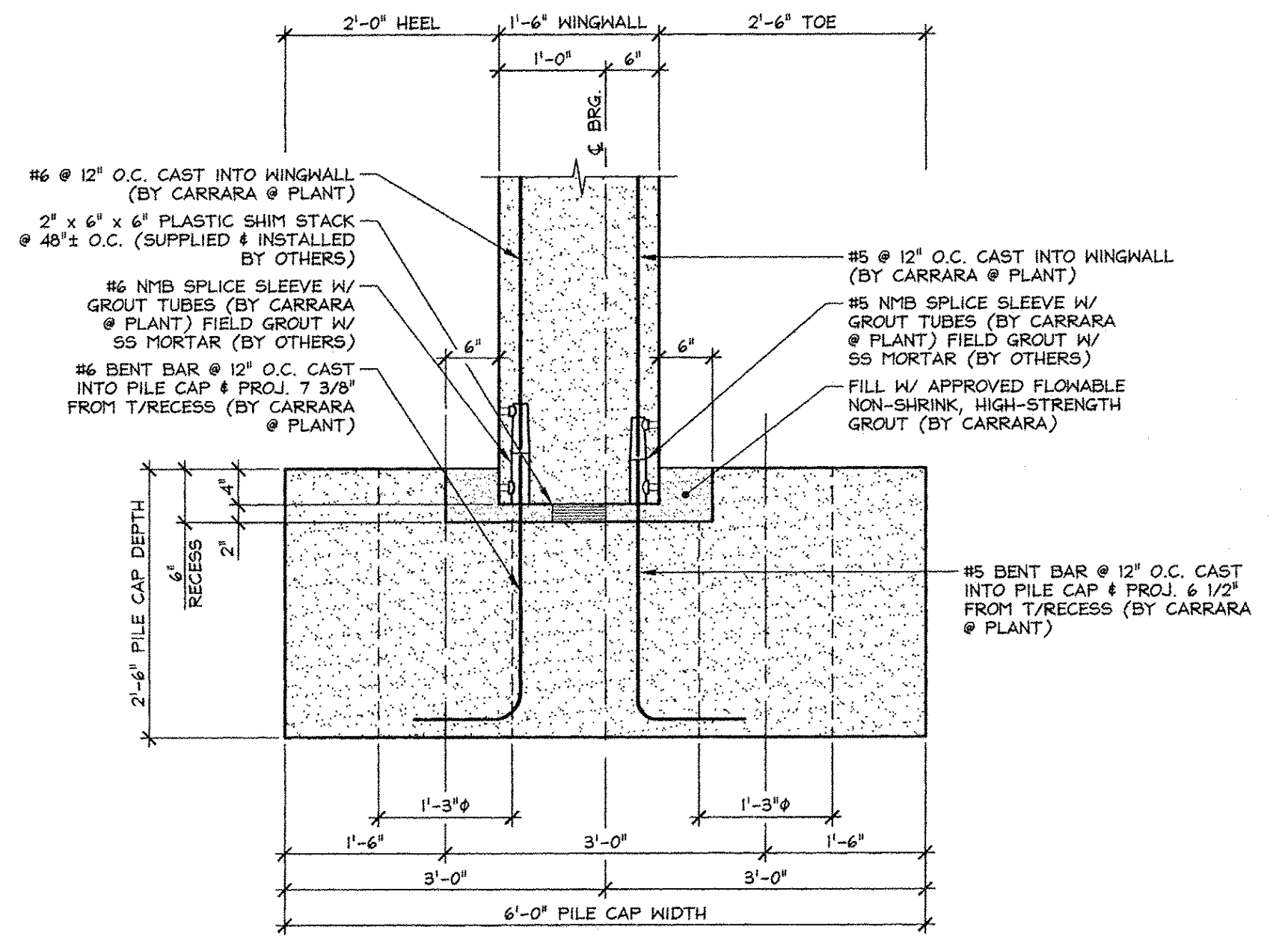
4-7-14 REVISED AS NOTED

APPROVAL STAMP:	J.P. CARRARA & SONS INC. Precast & Prestress Manufacturer 2464 OISE ST., MIDDLEBURY, VERMONT 05753 Phone: (802)388-6361 Fax: (802)388-9010	A.L. St. ONGE CONTRACTOR, INC. CONTRACTOR MONTGOMERY CENTER, VERMONT
STATE OF VERMONT AGENCY OF TRANSPORTATION COUNTY OF FRANKLIN		DATE: JAN. 27, 2014 SCALE: NOTED
TOWN OF ENOSBURG BOSTON POST ROAD T.H.2 CLASS 2 BRIDGE NO.: 48 PROJECT NO.: BRO 1448(40)		CHKD: M.M. DFTM: B.L. JOB NO: 23418-013
ABUTMENT #1 ELEVATIONS		DWG. NO: F2

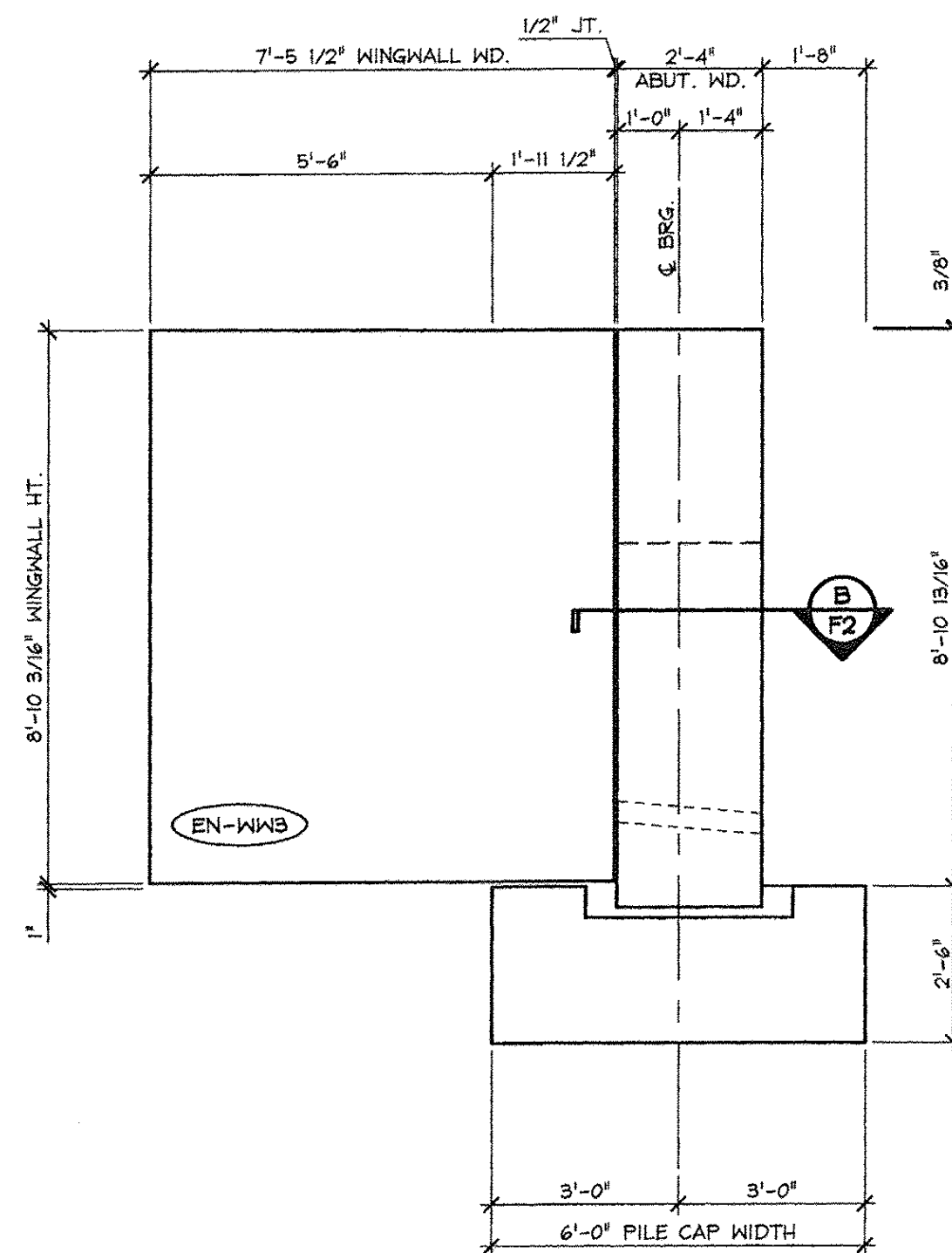
ISSUED FOR PRODUCTION  
APR 09 2014  
J.P. CARRARA & SONS, INC.  
MIDDLEBURY, VT 05753



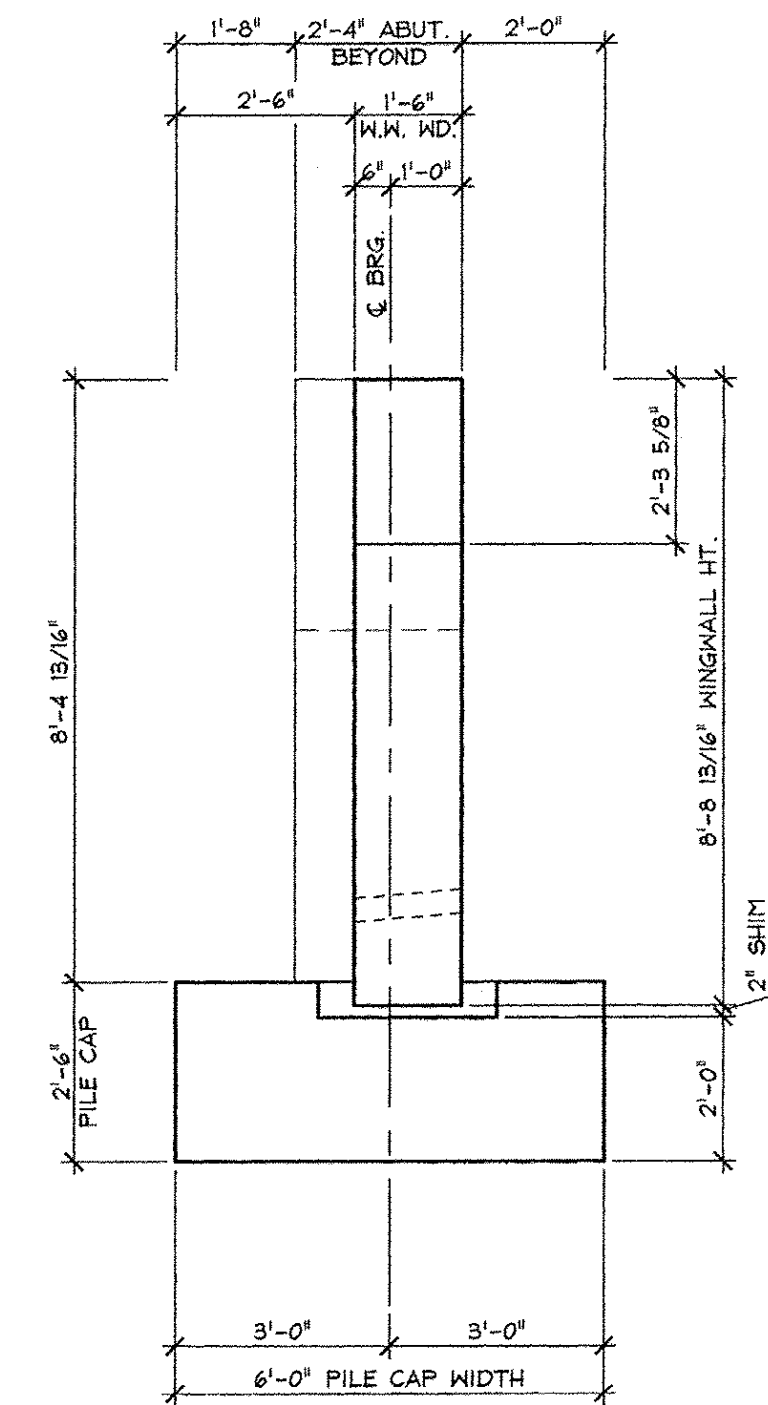
**1 ABUTMENT #2 ELEVATION**  
 F3 3/8" = 1'-0"



**C WINGWALL CONNECTION DETAIL**  
 F3 3/4" = 1'-0"

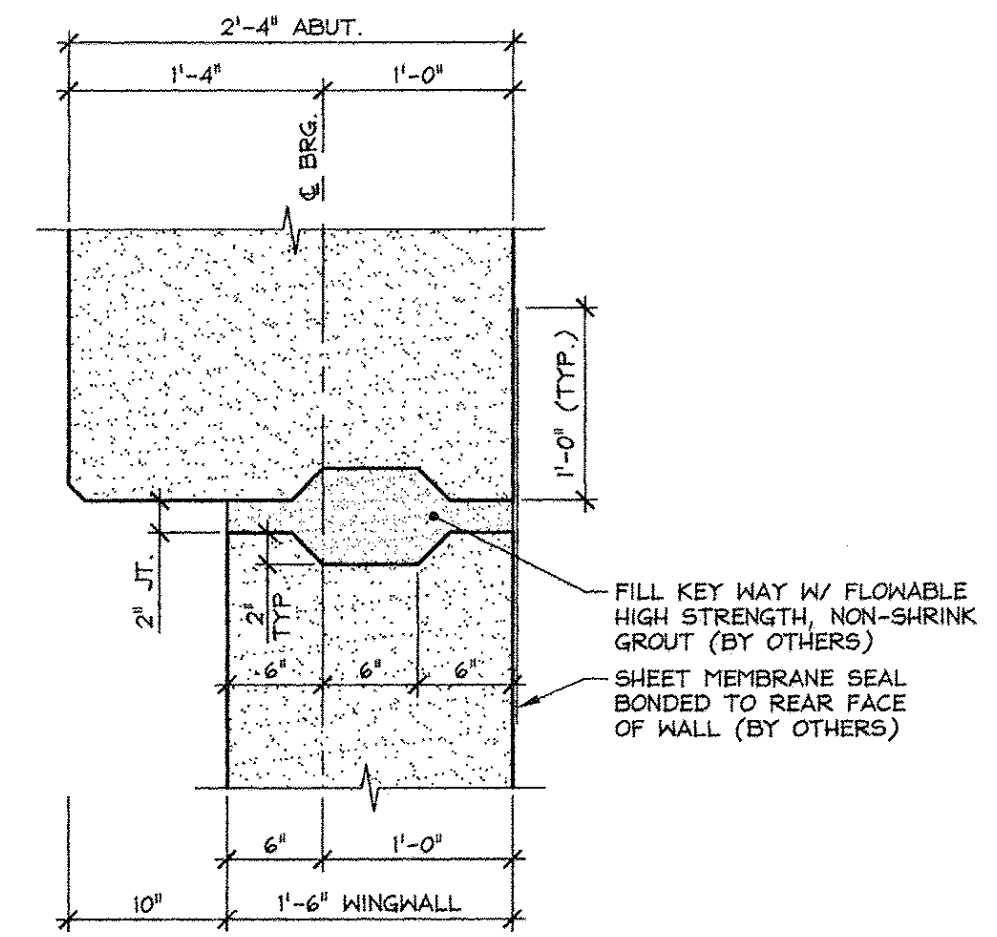


**2 WINGWALL #3 ELEVATION**  
 F3 3/8" = 1'-0"



**3 WINGWALL #4 ELEVATION**  
 F3 3/8" = 1'-0"

APPROVED: Approval of drawings and/or procedures indicates concurrence with the information presented and does not relieve the Contractor or Fabricator of compliance with all specifications and code requirements	X	
APPROVED AS NOTED		
REVISE AND RESUBMIT		
NOT REVIEWED		
Date:	4-11-2014	
By:	<i>James Young</i>	
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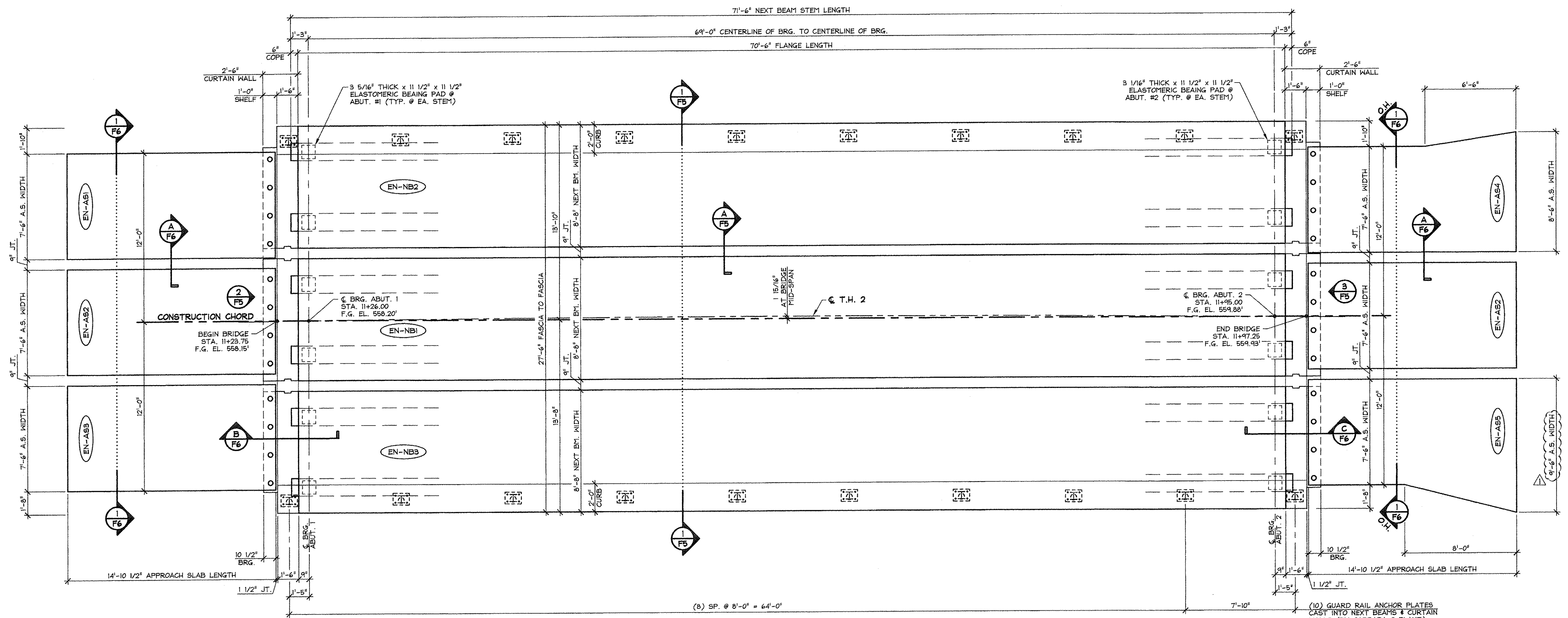
**D ABUTMENT / WING WALL SHEAR KEY DETAIL**  
 F3 1" = 1'-0"

Vermont Agency of Transportation  
**RECEIVED**  
 ON: April 9, 2014  
 and Checked for  
**CONFORMANCE**  
 BY: Rob Young DATE: 04/14/2014

4-7-14 REVISED AS NOTED

APPROVAL STAMP:	<b>J.P. CARRARA &amp; SONS INC.</b> Precast & Prestress Manufacturer <small>2464 CASE STR., WOODBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010</small>	<b>A.L. St. ONGE CONTRACTOR, INC.</b> CONTRACTOR <small>MONTGOMERY CENTER, VERMONT</small>
	<b>STATE OF VERMONT AGENCY OF TRANSPORTATION</b> COUNTY OF FRANKLIN	DATE: JAN. 27, 2014 SCALE: NOTED
	<b>TOWN OF ENOSBURG</b> BOSTON POST ROAD T.H.2 CLASS 2 BRIDGE NO.: 48 PROJECT NO.: BRO 1448(40)	CHKD: M.J.W. DFTM: B.L. JOB NO: 23418-01B
	<b>ABUTMENT #2 ELEVATIONS</b>	DWG. NO: <b>F3</b>

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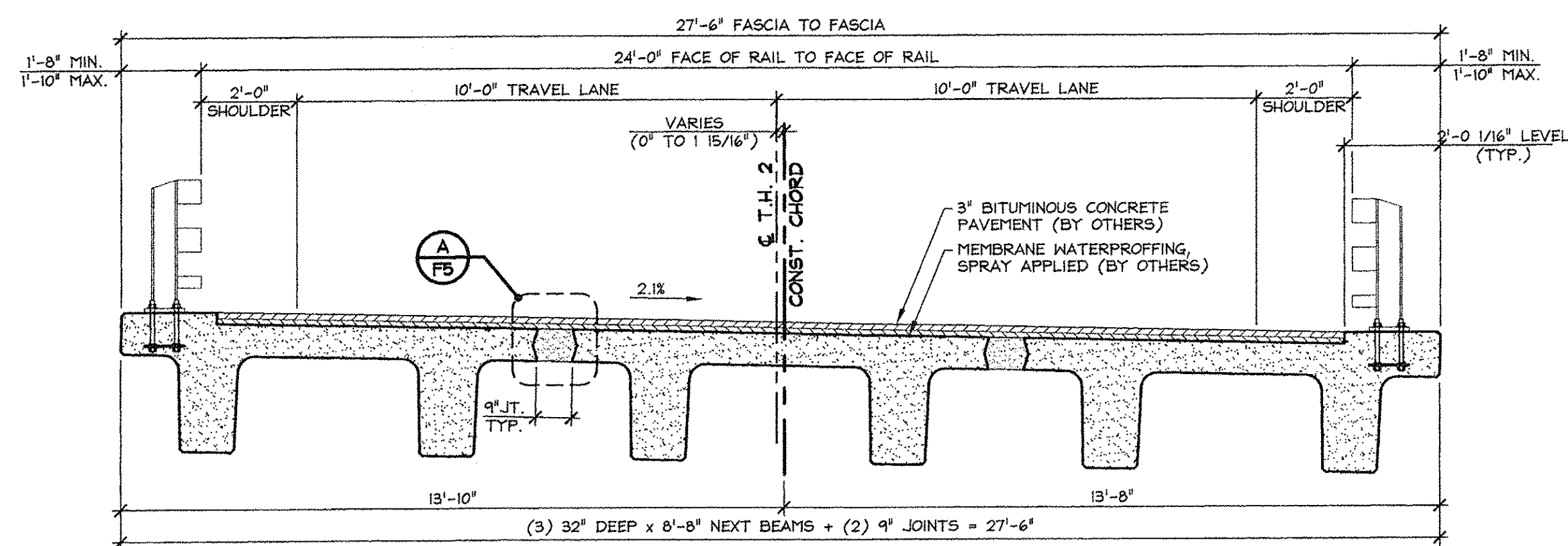
1
F4
NEXT BEAM & APPROACH SLAB LAYOUT  
1/4" = 1'-0"

APPROVED: Approval of drawings and/or procedures indicates concurrence with the information presented and does not relieve the Contractor or Fabricator of compliance with all specifications and code requirements APPROVED AS NOTED REVISE AND RESUBMIT NOT REVIEWED Date: <u>4-11-2014</u> By: <u>James Hyslop</u>	 X
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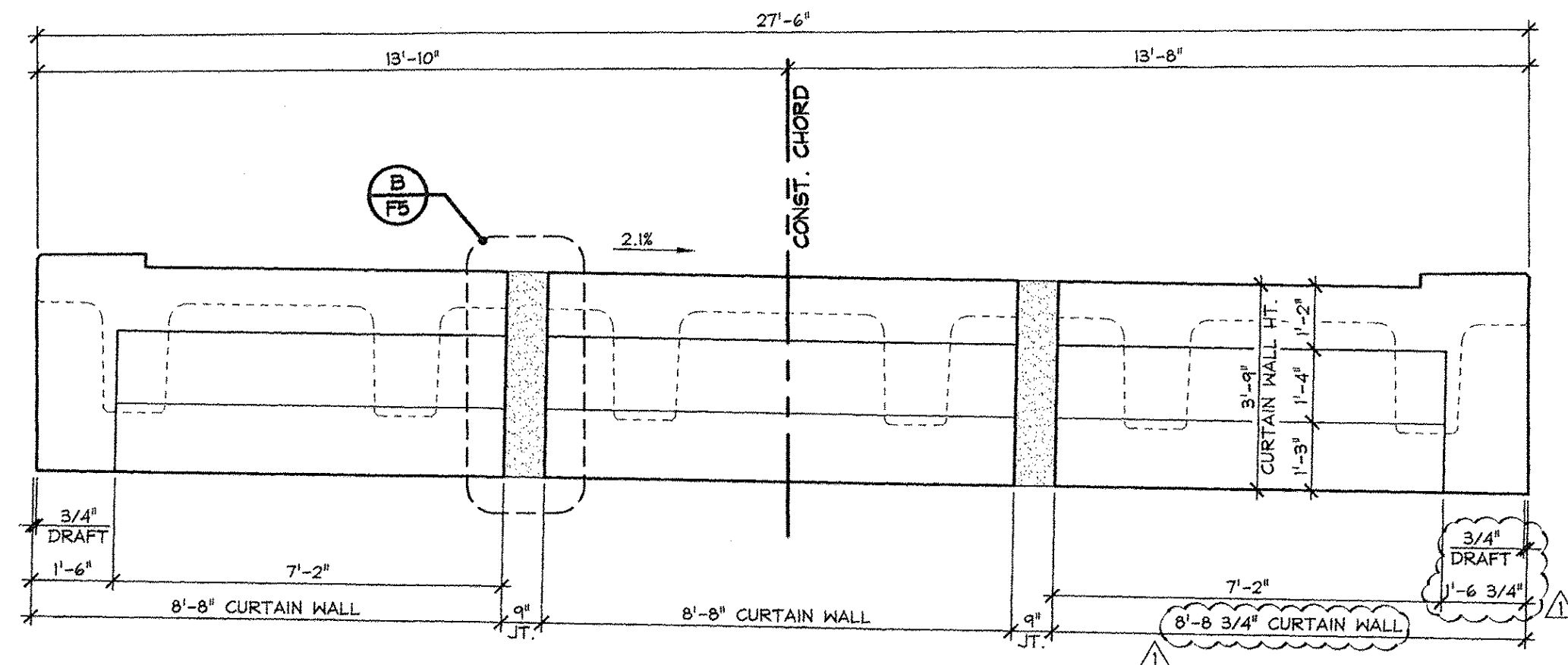
Vermont Agency of Transportation  
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**CONFORMANCE**  
 BY: Rob Young DATE: 04/14/2014

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J. P. CARRARA & SONS, INC.  
 MONTPELIER, VT 05753

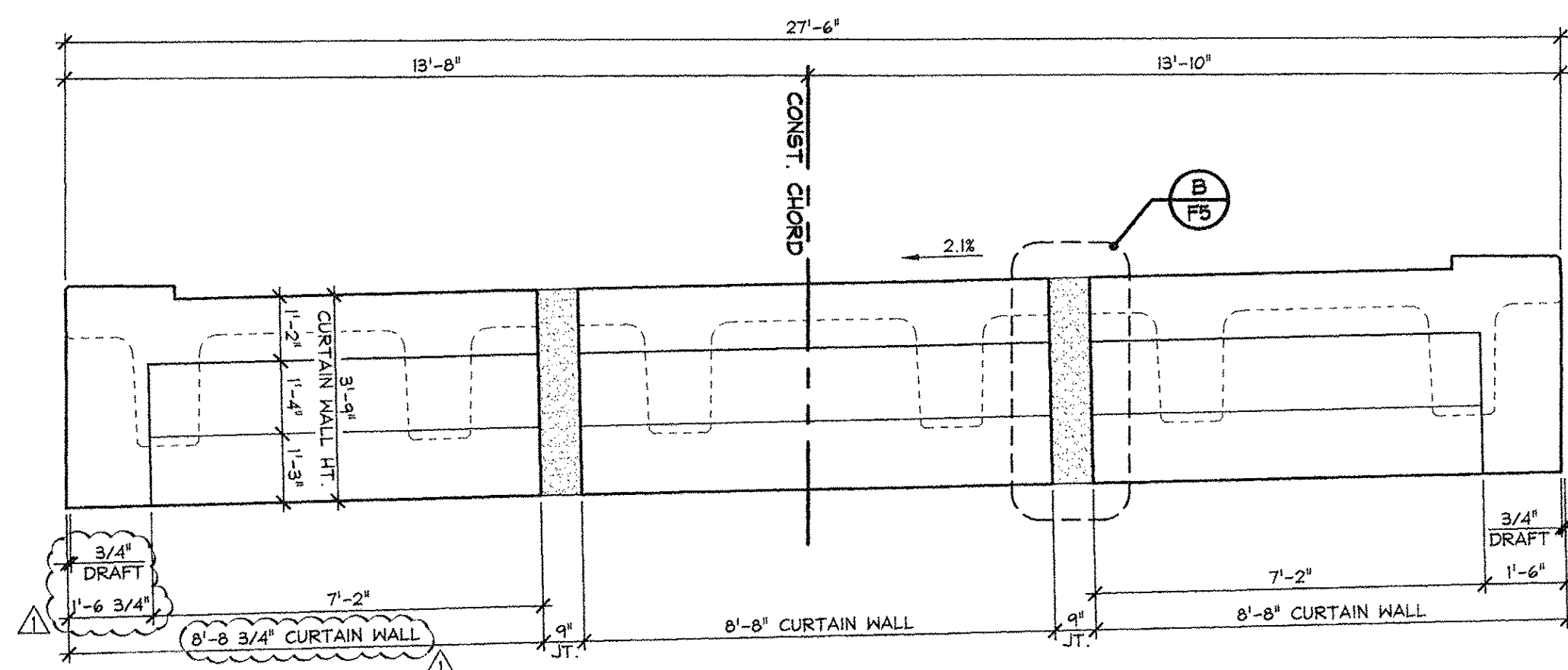
<b>J.P. CARRARA &amp; SONS INC.</b>		<b>A.L. ST. ONGE CONTRACTOR, INC.</b>	
Precast & Prestress Manufacturer		CONTRACTOR	
244 GAGE ST., MIDDLEBURY, VERMONT 05753 Phone: (802)388-6361 Fax: (802)388-8010		MONTGOMERY CENTER, VERMONT	
<b>STATE OF VERMONT AGENCY OF TRANSPORTATION</b>		DATE: JAN. 27, 2014	
COUNTY OF FRANKLIN		SCALE: NOTED	
TOWN OF ENOSBURG		CHKD: M.W.	DFTM: B.L.
BOSTON POST ROAD T.H.2 CLASS 2		JOB NO: 23418-013	
BRIDGE NO.: 48 PROJECT NO.: BRO 1448(40)			
<b>PRESTRESSED NEXT BEAM &amp; APPROACH SLAB LAYOUT</b>		DWG. NO: <b>F4</b>	



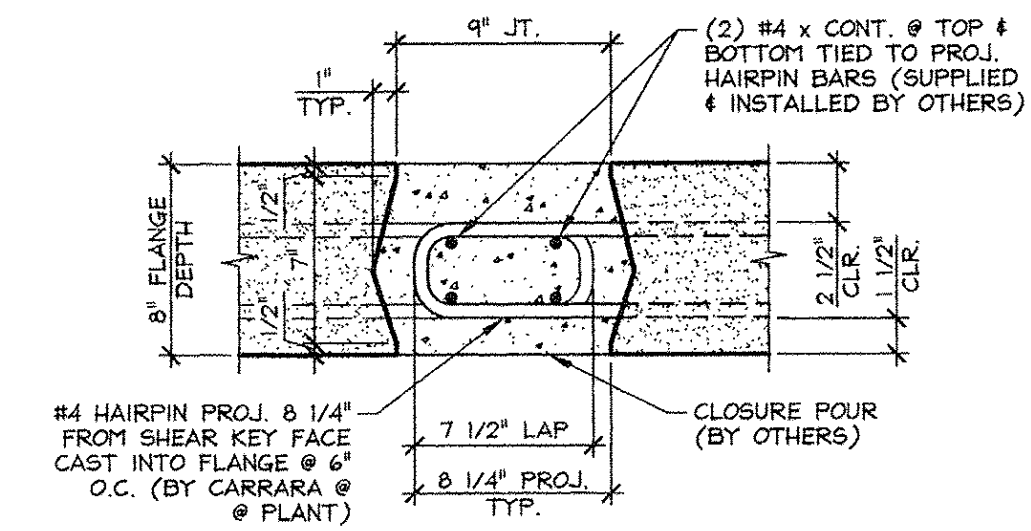
**1** TRANSVERSE NEXT BEAM SECTION  
F5  $3/8" = 1'-0"$



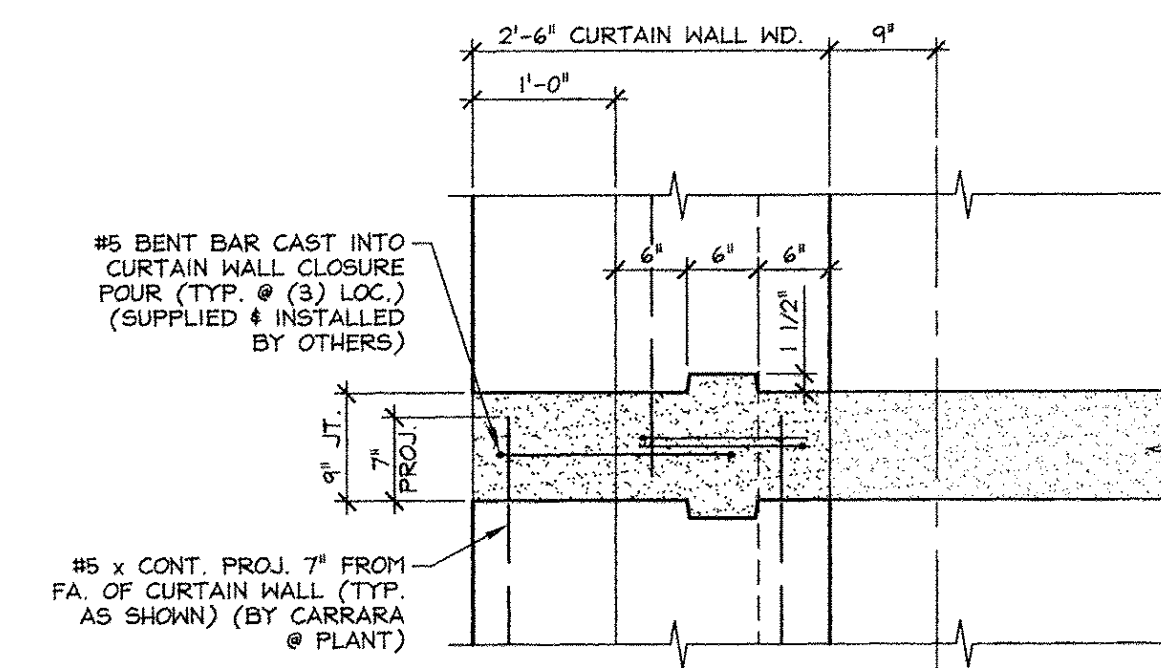
**2** CURTAIN WALL ELEVATION - ABUTMENT #1  
F5 (MARK END)  $3/8" = 1'-0"$



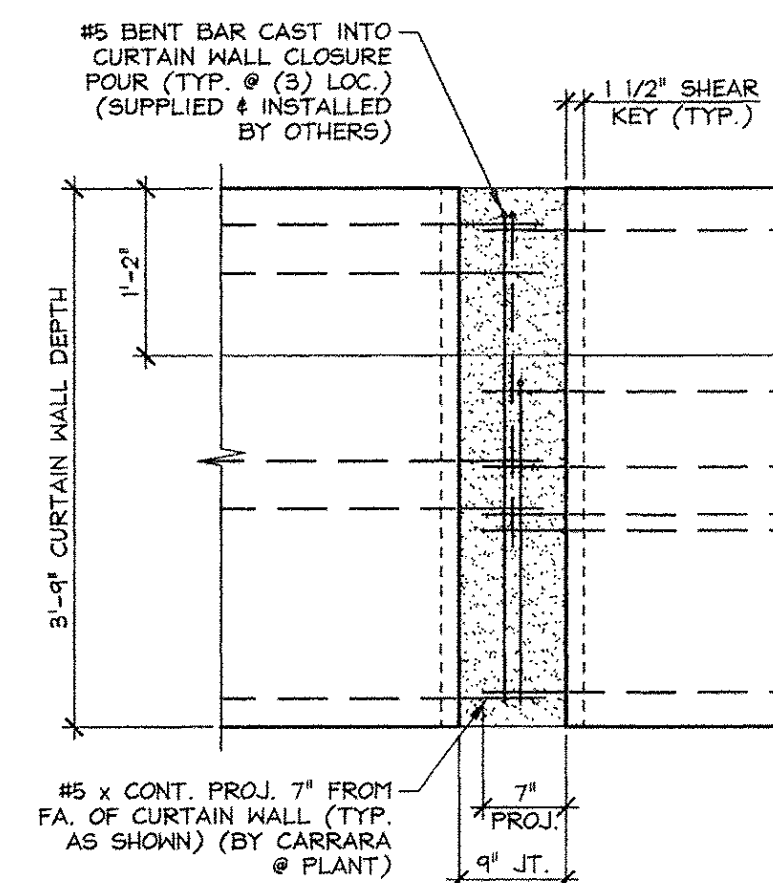
**3** CURTAIN WALL ELEVATION - ABUTMENT #2  
F5 (NON-MARK END)  $3/8" = 1'-0"$



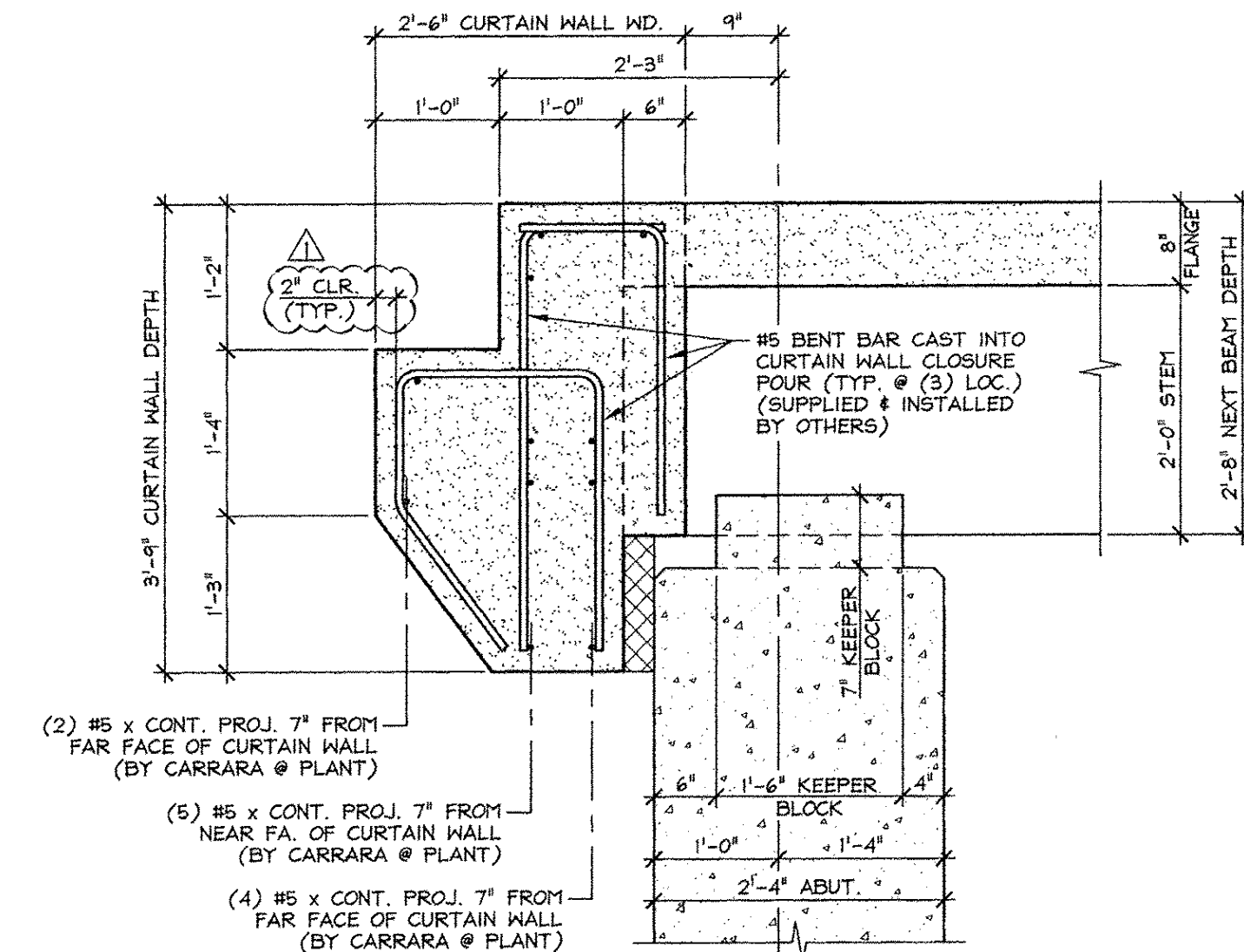
**A** NEXT BEAM CLOSURE POUR  
F5  $1 1/2" = 1'-0"$



PLAN



ELEVATION



SECTION

**B** CURTAIN WALL CLOSURE POUR DETAILS  
F5  $3/4" = 1'-0"$

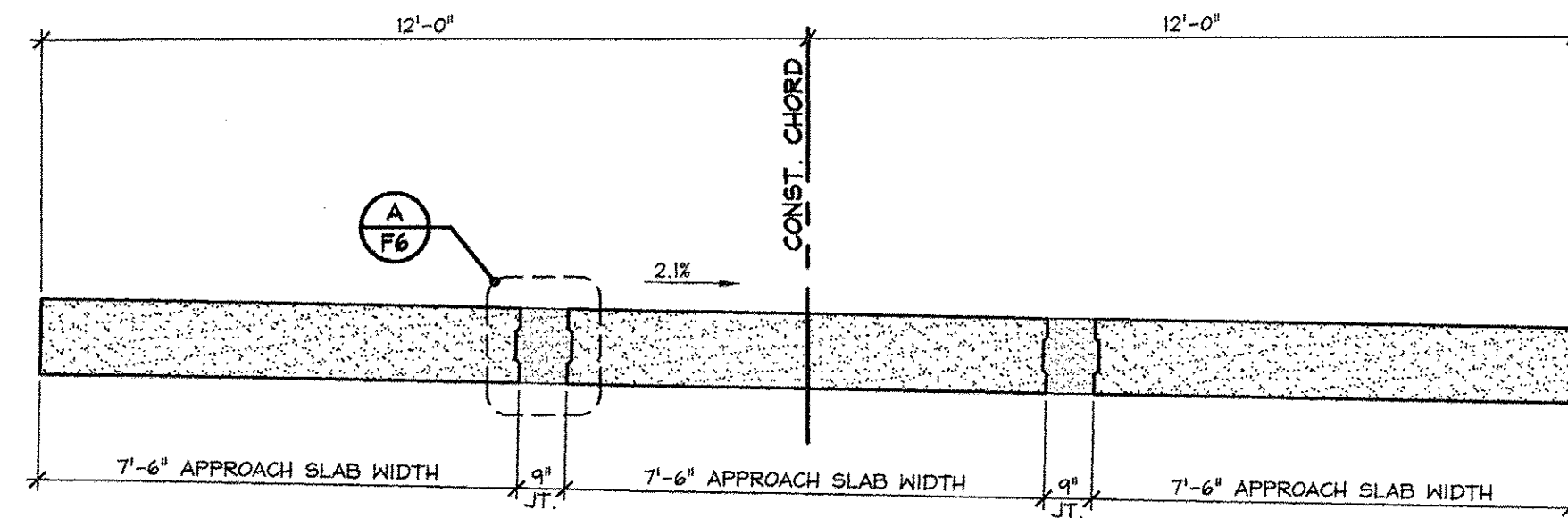
Vermont Agency of Transportation  
**RECEIVED**  
ON: April 9, 2014  
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BY: Rob Young DATE: 04/14/2014

APPROVED: Approval of drawings and/or procedures indicates concurrence with the information presented and does not relieve the Contractor or Fabricator of compliance with all specifications and code requirements	X	Stantec
APPROVED AS NOTED		
REVISE AND RESUBMIT		
NOT REVIEWED		
Date: 4-11-2014		
By: James H. [Signature]		
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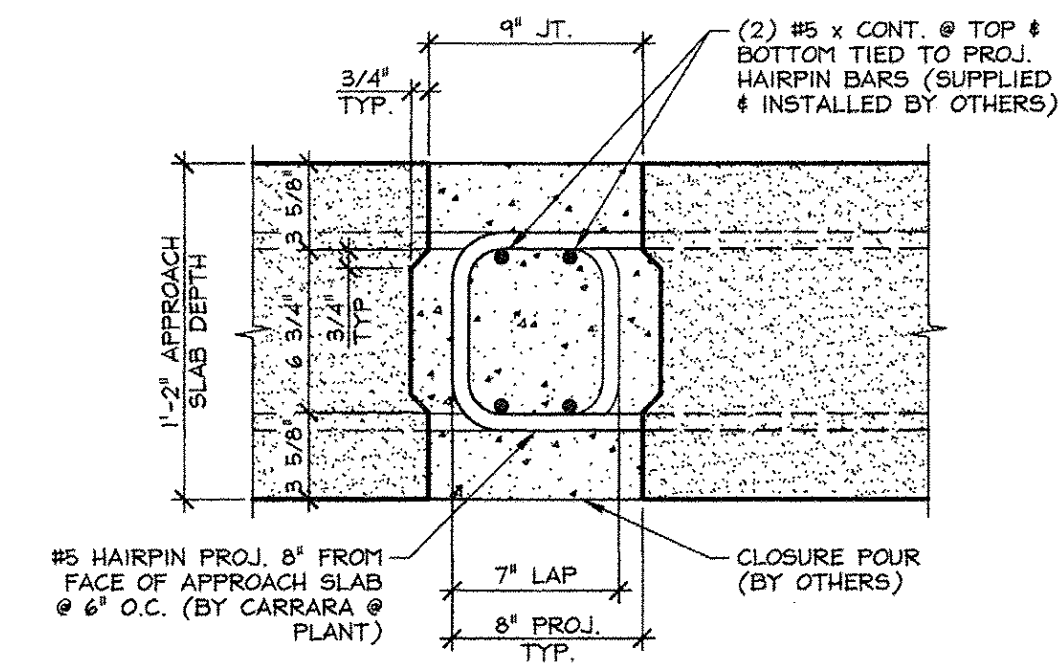
4-7-14 REVISED AS NOTED

APPROVAL STAMP:	J.P. CARRARA & SONS INC. Precast & Prestress Manufacturer 246A CASE ST., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010	A.L. ST. ONGE CONTRACTOR, INC. CONTRACTOR MONTGOMERY CENTER, VERMONT
DATE: JAN. 27, 2014	STATE OF VERMONT AGENCY OF TRANSPORTATION COUNTY OF FRANKLIN	SCALE: NOTED
CHKD: M.W. DFTM: B.L.	TOWN OF ENOSBURG BOSTON POST ROAD T.H.2 CLASS 2 BRIDGE NO.: 48 PROJECT NO.: BRO 1448(40)	JOB NO: 23418-013
DWG. NO: F5	NEXT BEAM SECTION & CURTAIN WALL ELEVATIONS	

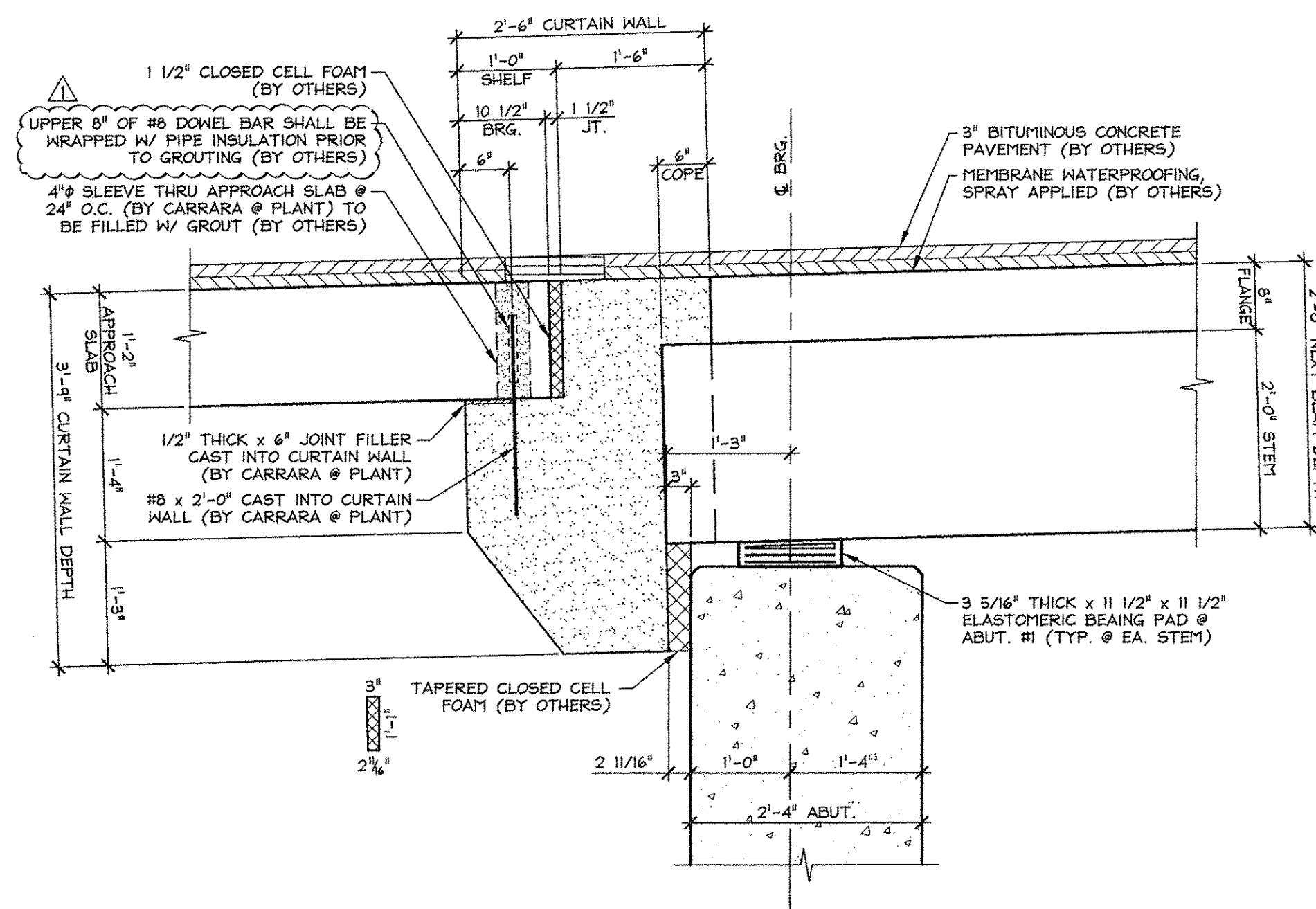
ISSUED FOR PRODUCTION  
APR 09 2014  
J. P. CARRARA & SONS, INC.  
MIDDLEBURY, VT 05753



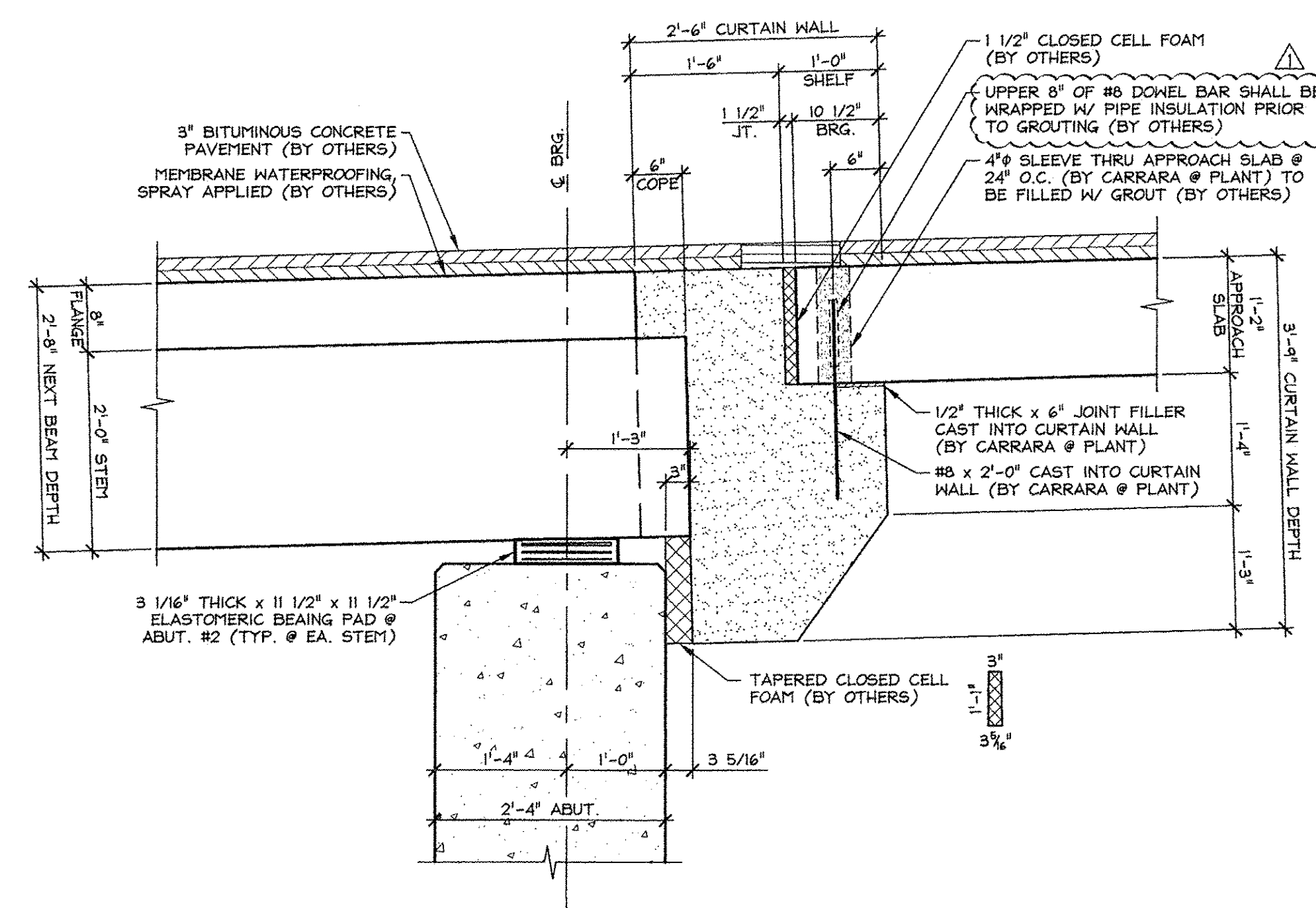
**1** TRANSVERSE APPROACH SLAB SECTION  
**F6** 3/8" = 1'-0"



**A** APPROACH SLAB CLOSURE POUR  
**F6** 1 1/2" = 1'-0"



**B** BEARING SECTION - ABUTMENT #1  
**F6** 3/4" = 1'-0"



**C** BEARING SECTION - ABUTMENT #2  
**F6** 3/4" = 1'-0"

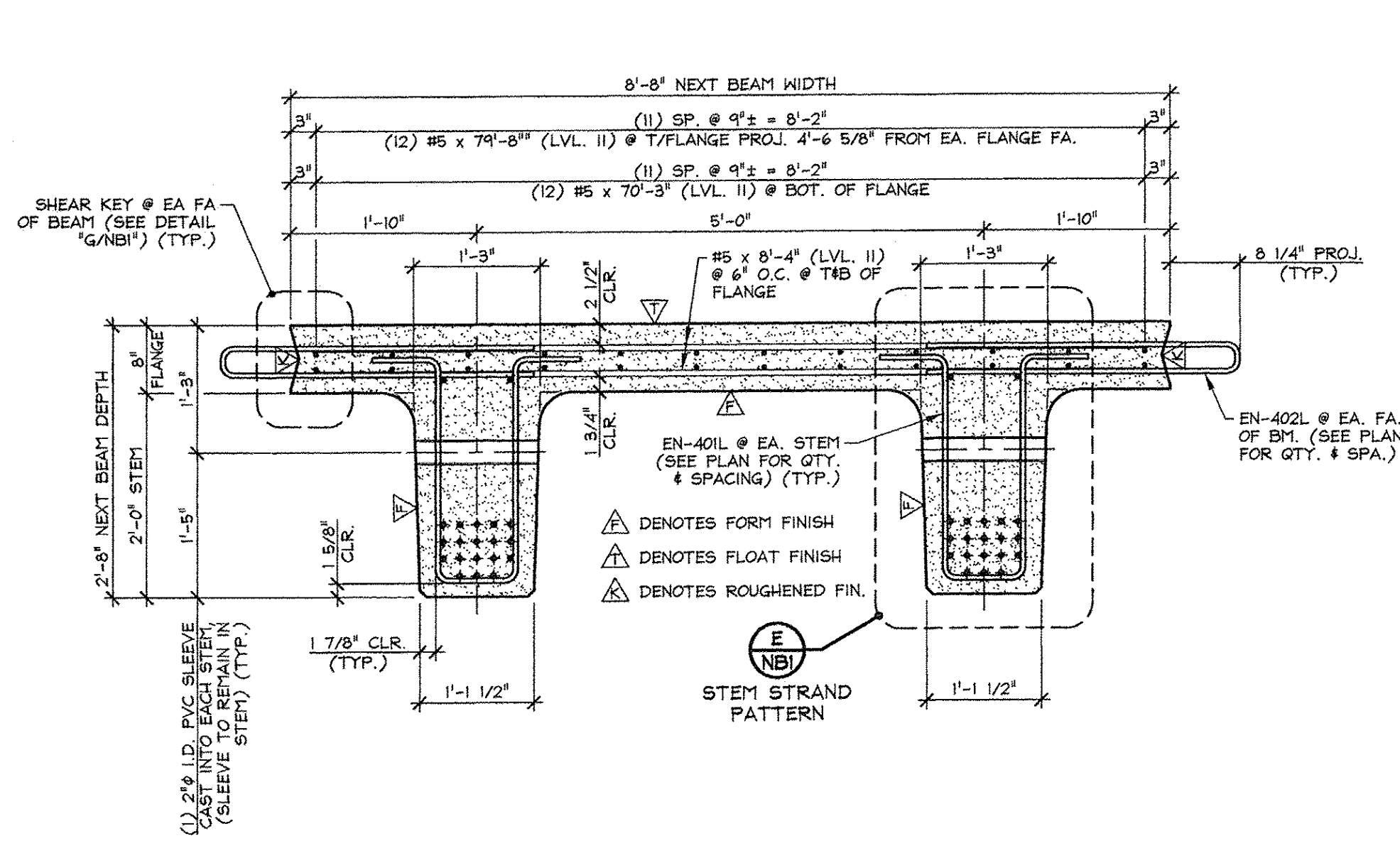
APPROVED: Approval of drawings and/or procedures indicates concurrence with the information presented and does not relieve the Contractor or Fabricator of compliance with all specifications and code requirements	X	Stantec
APPROVED AS NOTED		
REVISE AND RESUBMIT		
NOT REVIEWED		
Date:	4-11-2014	
By:	<i>James H. [Signature]</i>	
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Vermont Agency of Transportation  
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 BY: Rob Young DATE: 04/14/2014

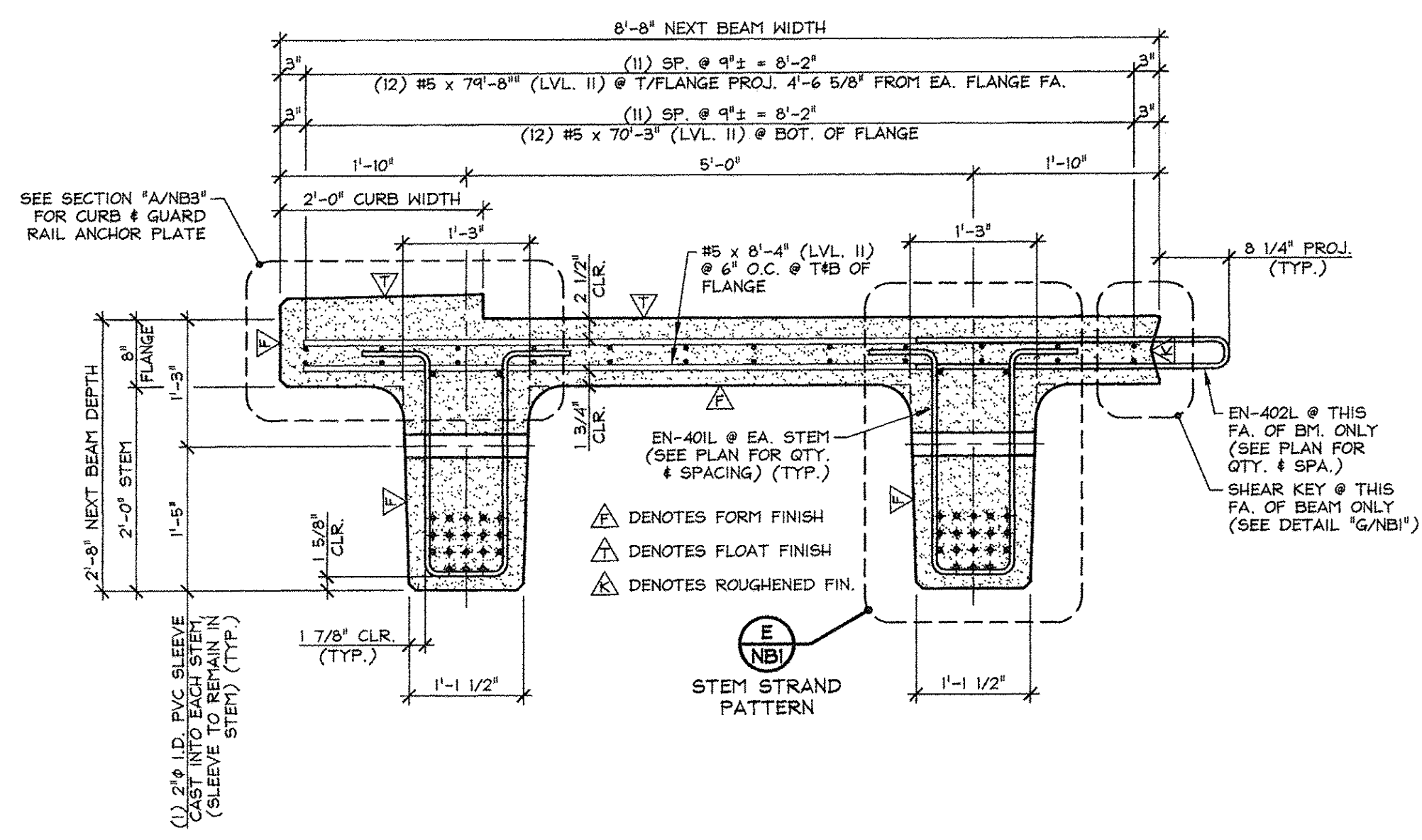
4-7-14 REVISED AS NOTED

APPROVAL STAMP:	J.P. CARRARA & SONS INC. A.L. ST. ONGE CONTRACTOR, INC. Precast & Prestress Manufacturer CONTRACTOR 244 DGE STR., MIDDLEBURY, VERMONT 05753 Phone: (802)388-6361 Fax: (802)388-9010 MONTGOMERY CENTER, VERMONT
STATE OF VERMONT AGENCY OF TRANSPORTATION COUNTY OF FRANKLIN	DATE: JAN. 27, 2014 SCALE: NOTED
TOWN OF ENOSBURG BOSTON POST ROAD T.H.2 CLASS 2 BRIDGE NO.: 48 PROJECT NO.: BRO 1448(40)	CHKD: M.W. DFTM: B.L. JOB NO: 23416-013
APPROACH SLAB SECTION & BEARING DETAILS	DWG. NO: <b>F6</b>

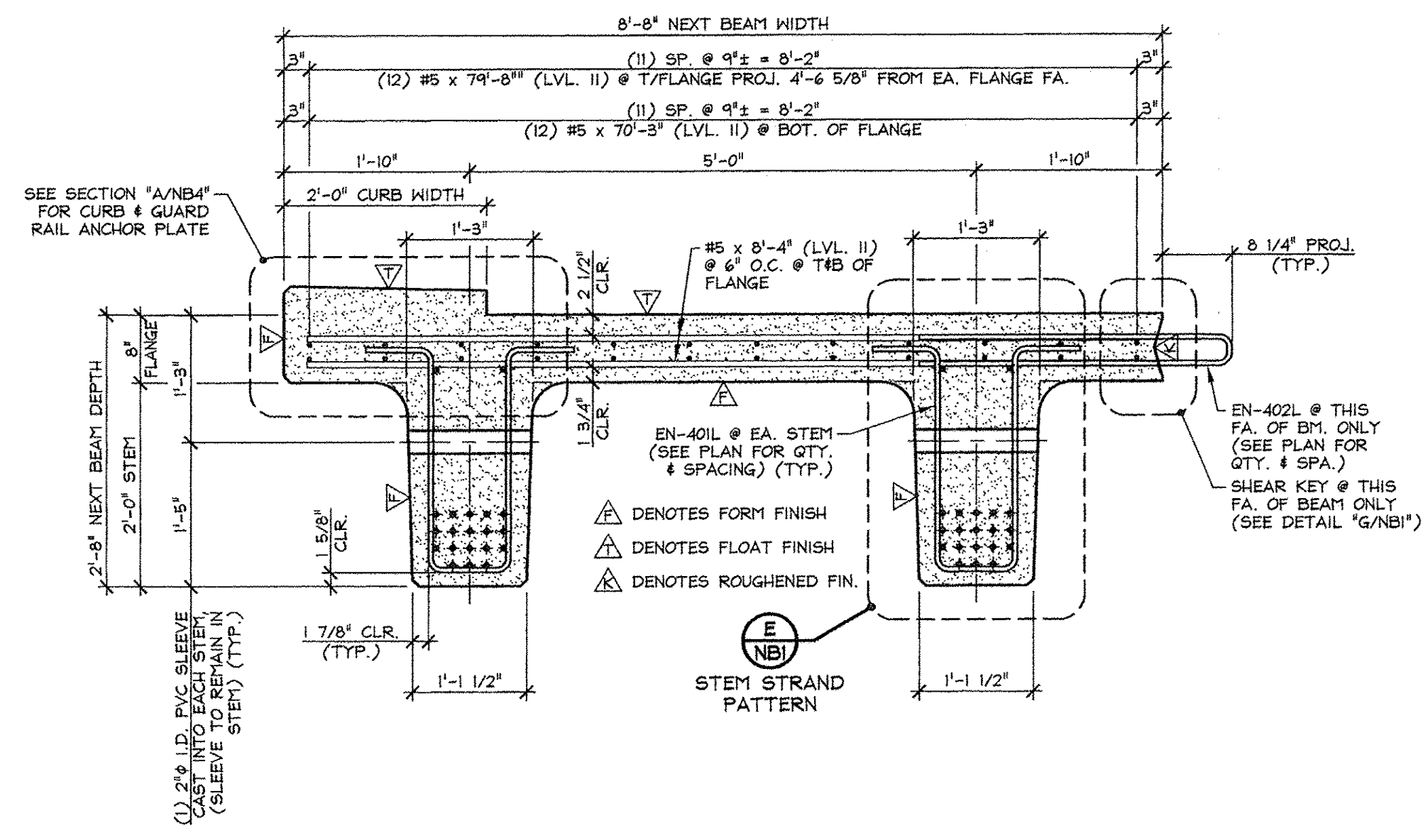
ISSUED FOR PRODUCTION  
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 J. P. CARRARA & SONS, INC.  
 MIDDLEBURY, VT 05753



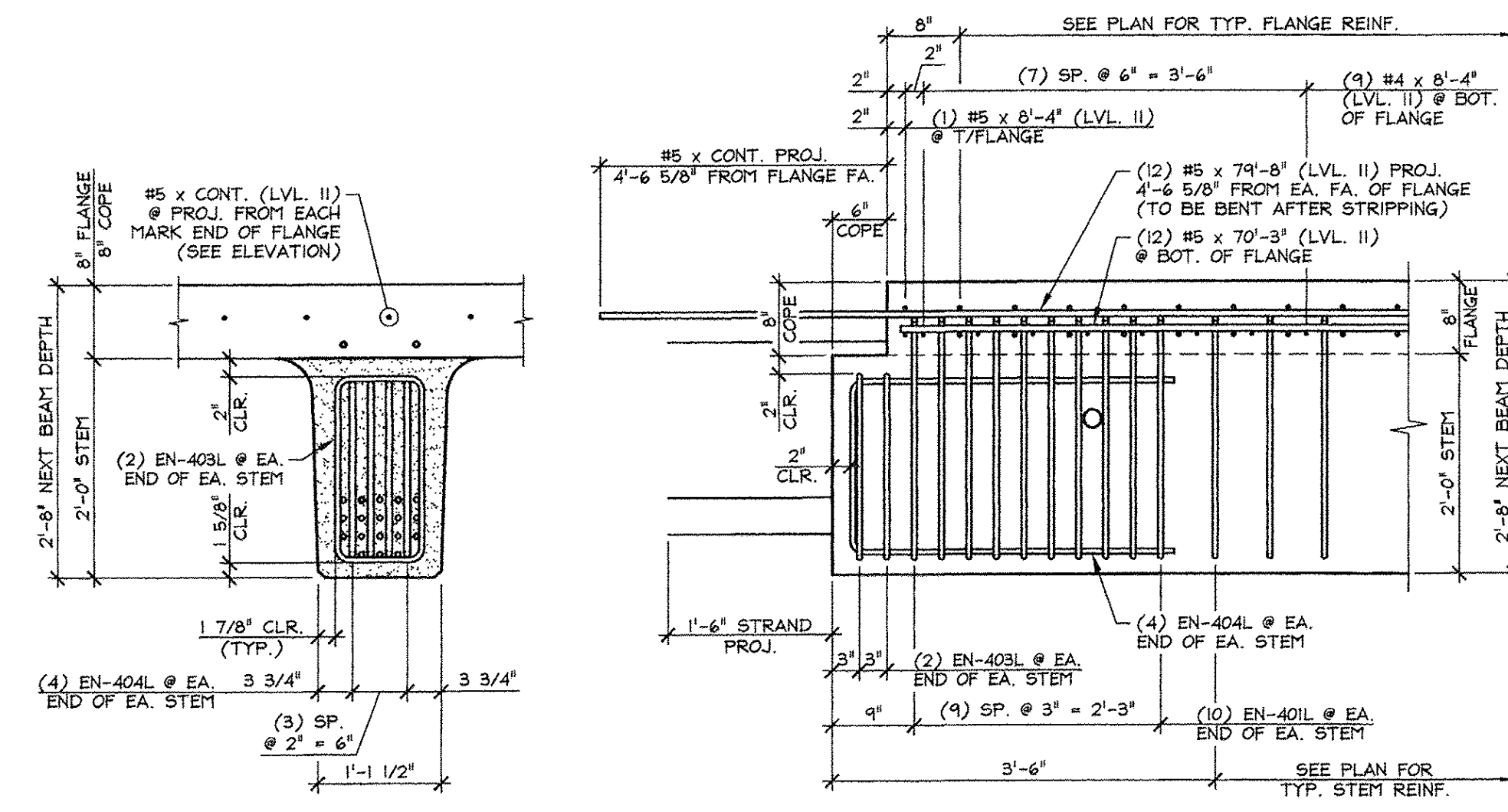
**A** DIMENSIONAL & REINFORCING SECTION  
NBI 3/4" = 1'-0"



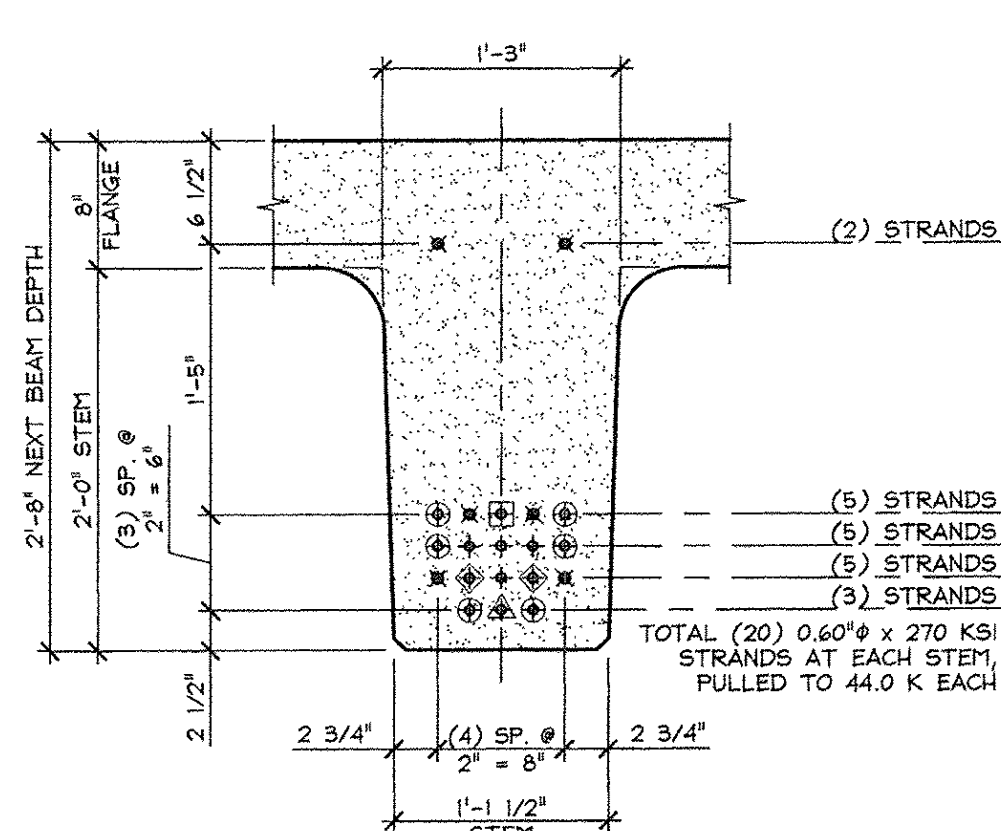
**B** DIMENSIONAL & REINFORCING SECTION  
NBI 3/4" = 1'-0"



**C** DIMENSIONAL & REINFORCING SECTION  
NBI 3/4" = 1'-0"



**D** END BLOCK STEM REINFORCING DETAILS  
NBI SEE CURTAIN WALL DETAILS FOR PROJECTING BAR BENDING & PROJECTING STRAND BENDING ('A/NBI.1'). 3/4" = 1'-0"

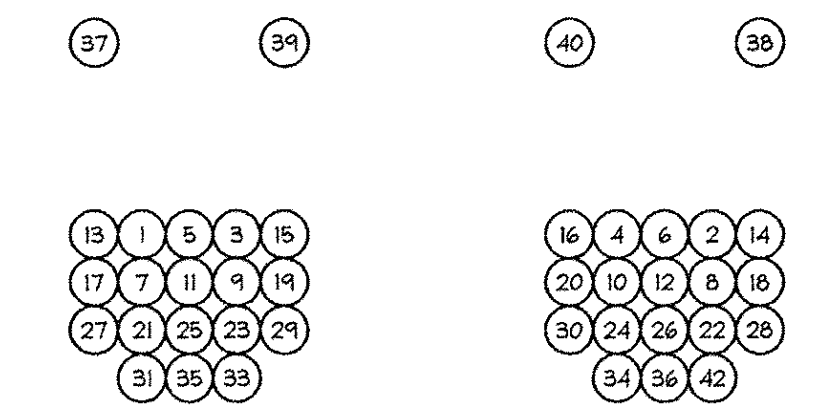


**E** STEM STRAND PATTERN  
NBI 1" = 1'-0"

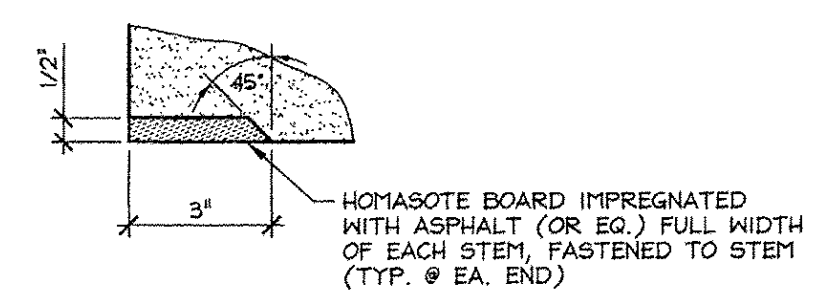
Vermont Agency of Transportation  
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REVISE AND RESUBMIT	
NOT REVIEWED	
Date: 4-11-2014	
By: <i>James H. [Signature]</i>	
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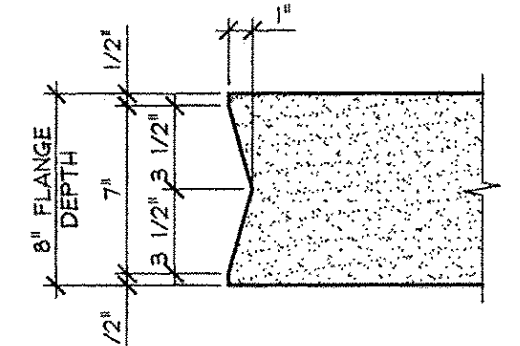
- PRESTRESSING NOTATIONS**
- ◆ DENOTES STRAIGHT STRANDS TO BE CUT FLUSH WITH EA. END OF EA. STEM
  - ✱ DENOTES STRAIGHT STRANDS TO PROJECT 1'-6" FROM EA. END OF EA. STEM
  - ⊕ DENOTES STRAIGHT STRANDS TO BE DEBONDED 6" FROM EA. END OF EA. STEM
  - ⊖ DENOTES STRAIGHT STRANDS TO BE DEBONDED 2'-0" FROM EA. END OF EA. STEM
  - ⊙ DENOTES STRAIGHT STRANDS TO BE DEBONDED 6'-0" FROM EA. END OF EA. STEM
  - ▲ DENOTES STRAIGHT STRANDS TO BE DEBONDED 8'-0" FROM EA. END OF EA. STEM



**G** DETENSIONING SCHEDULE  
N.T.S.



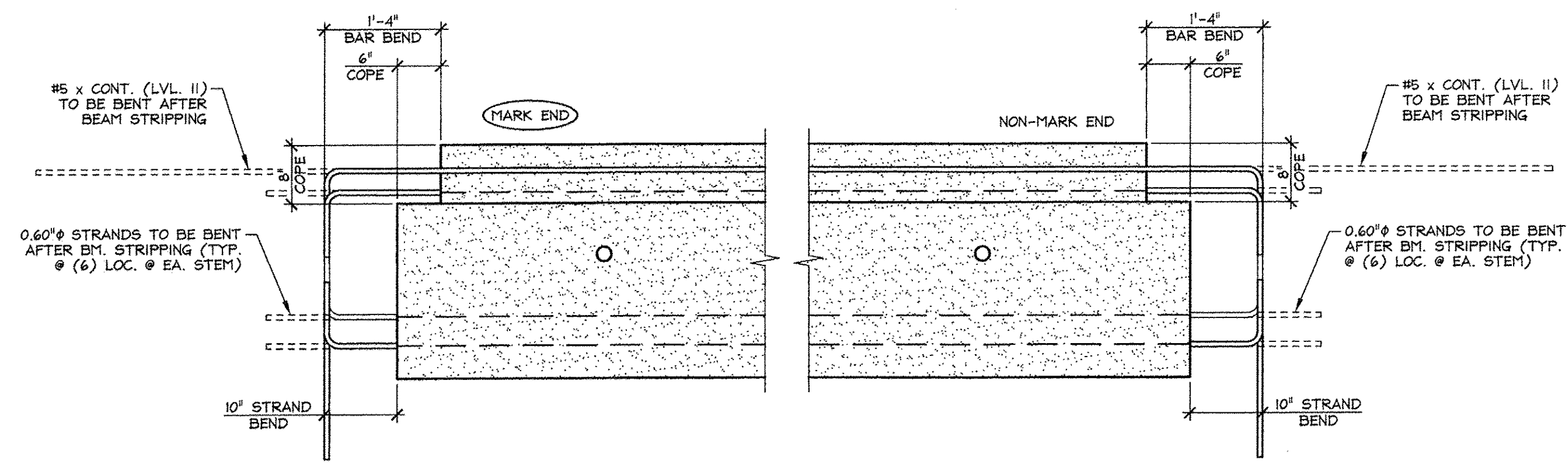
**F** HOMASOTE DETAIL  
NBI 3" = 1'-0"



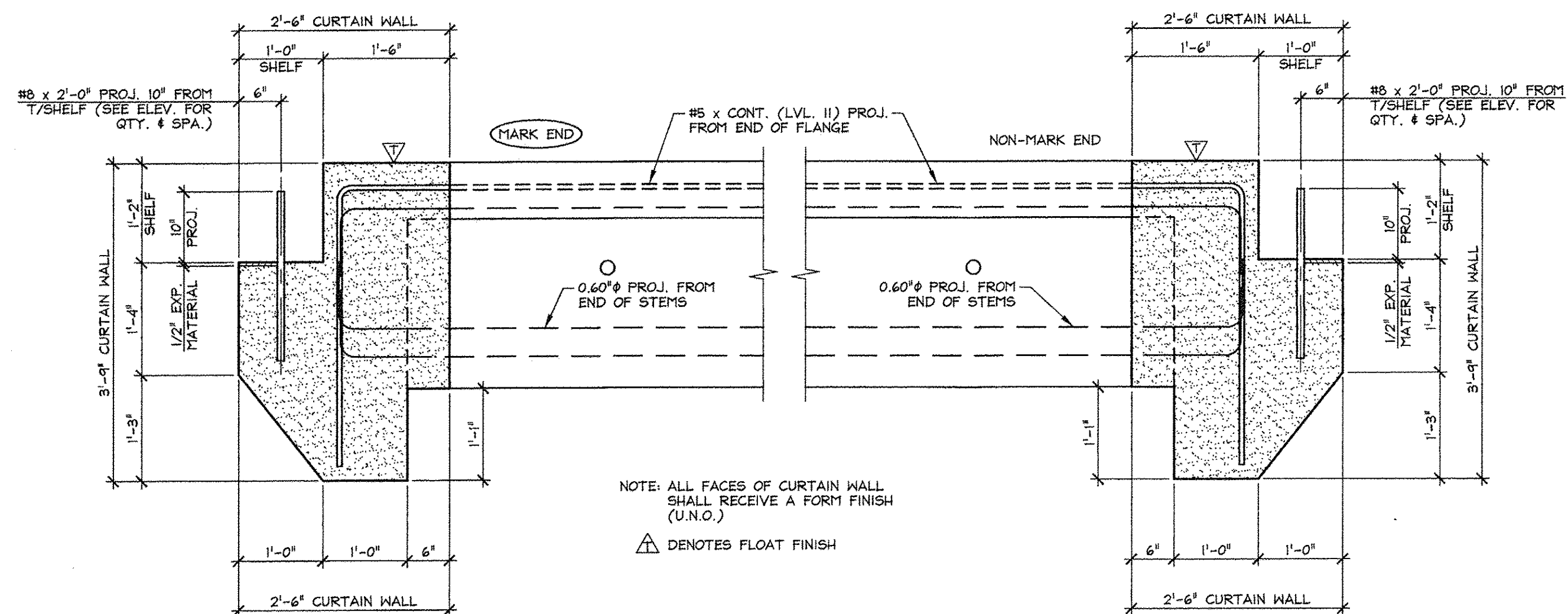
**G** SHEAR KEY DETAIL  
NBI 1 1/2" = 1'-0"

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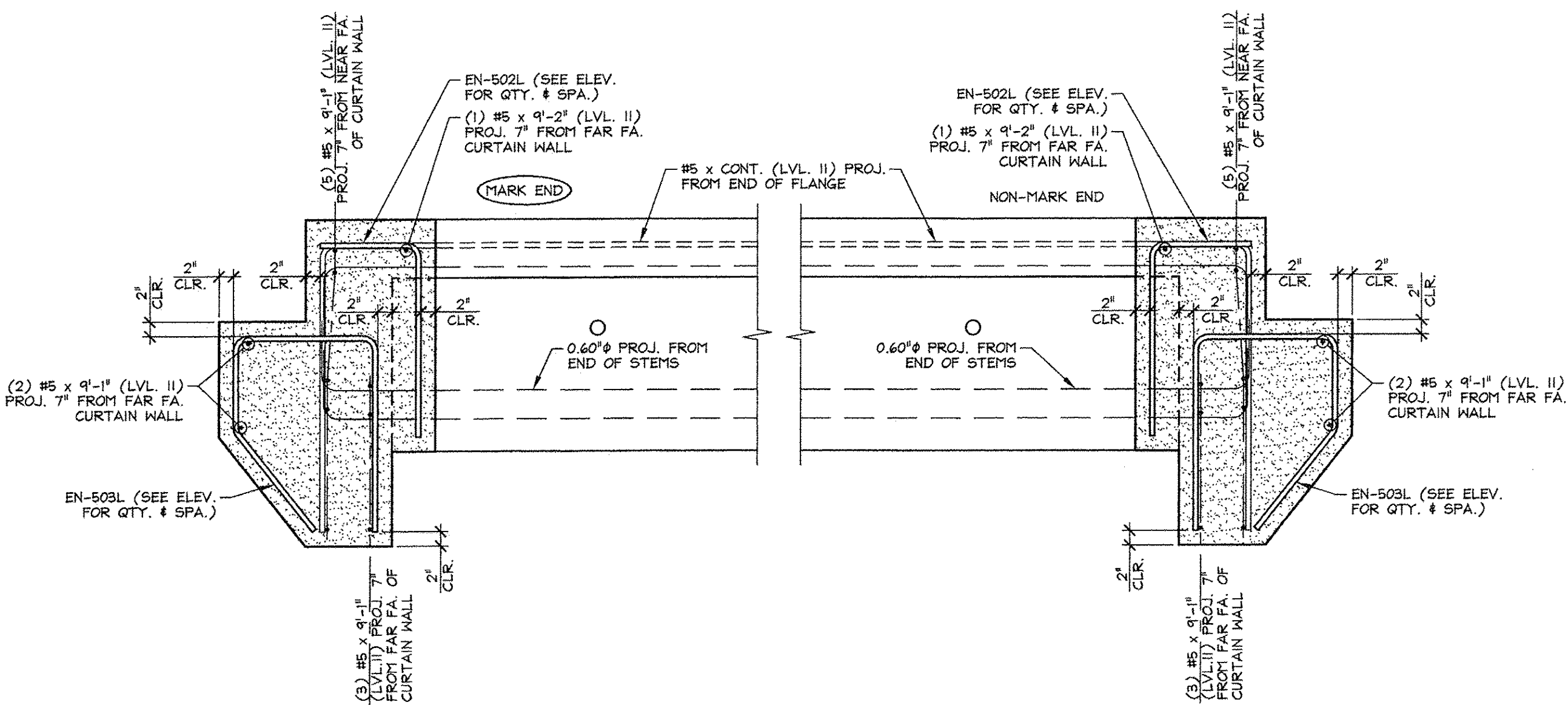
APPROVAL STAMP:	J.P. CARRARA & SONS INC. Precast & Prestress Manufacturer 2464 CASE ST., MIDDLEBURY, VERMONT 05753 Phone: (802)388-6361 Fax: (802)388-9010	A.L. St. ONGE CONTRACTOR, INC. CONTRACTOR MONTGOMERY CENTER, VERMONT
STATE OF VERMONT AGENCY OF TRANSPORTATION COUNTY OF FRANKLIN	DATE: JAN. 27, 2014	SCALE: NOTED
TOWN OF ENOSBURG BOSTON POST ROAD T.H.2 CLASS 2 BRIDGE NO.: 48 PROJECT NO.: BRO 1448(40)	CHKD: M.W. DFTM: B.L.	JOB NO: 23418-013
<b>PRESTRESSED NEXT BEAM DETAILS</b>	DWG. NO: <b>NBI</b>	



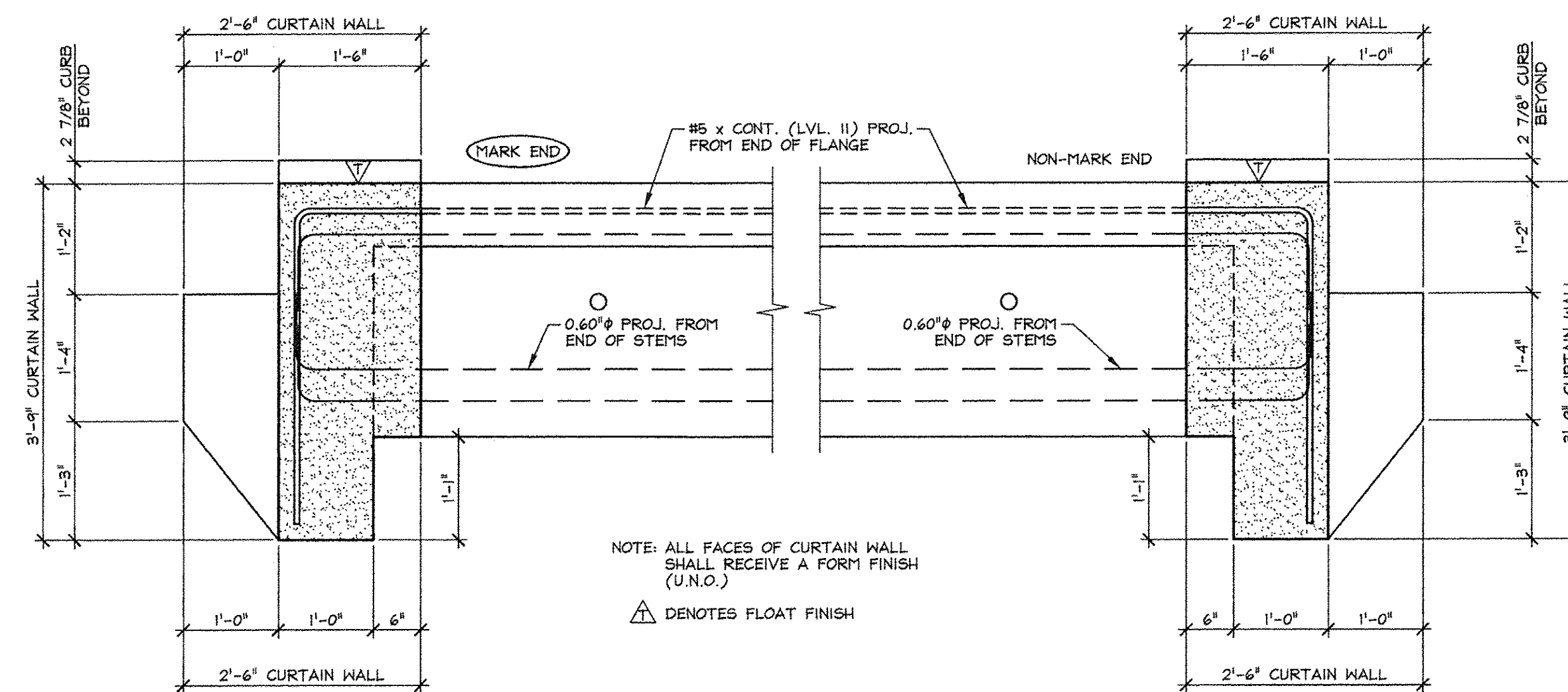
**A PROJECTING STRAND & PROJECTING BAR BEND DETAIL**  
 NBI.1 3/4" = 1'-0"



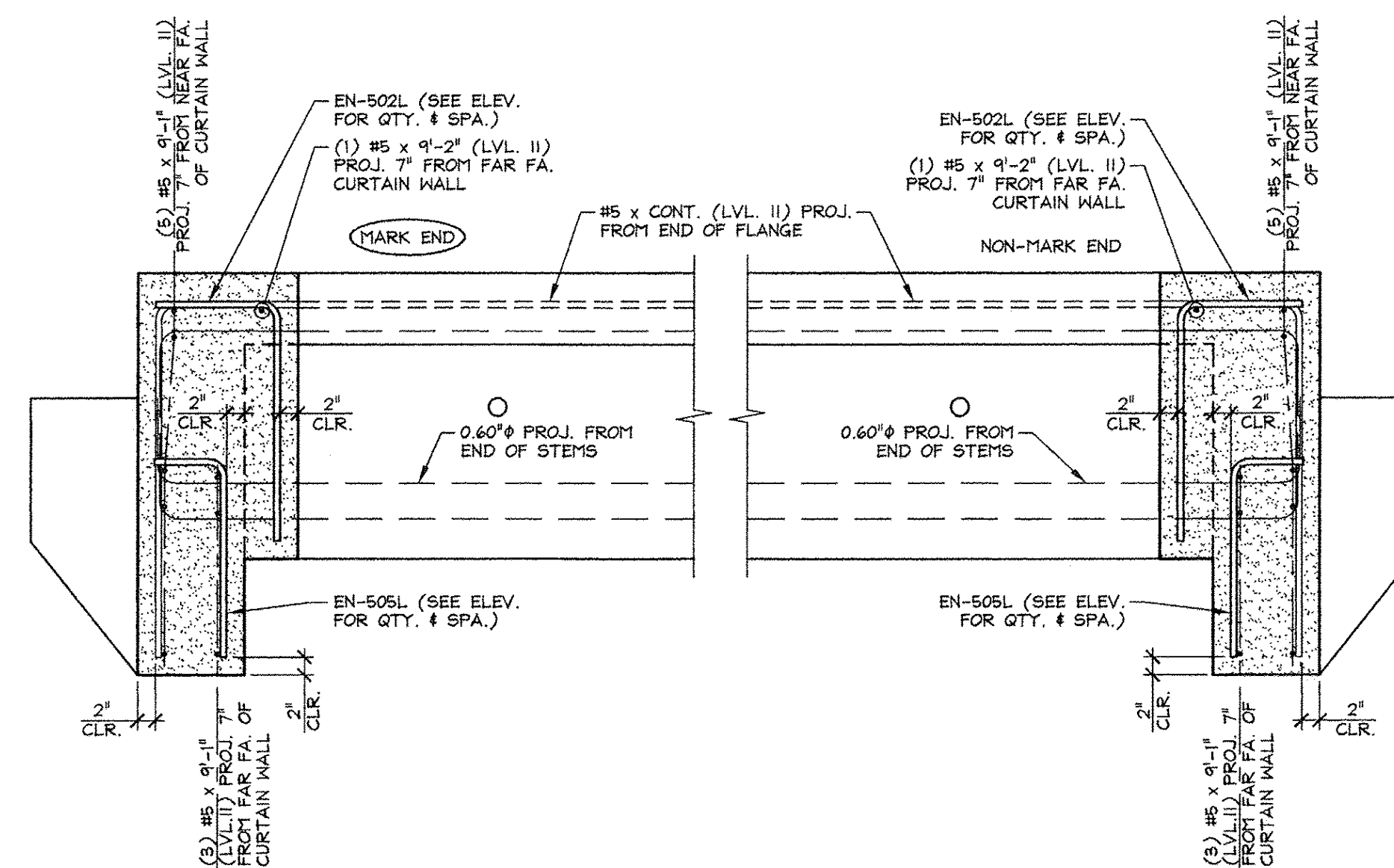
**B CURTAIN WALL DIMENSIONAL SECTIONS**  
 NBI.1 3/4" = 1'-0"



**C CURTAIN WALL REINFORCING SECTIONS**  
 NBI.1 SEE CURTAIN WALL ELEVATIONS FOR LONGITUDINAL BAR LENGTH CHANGES 3/4" = 1'-0"



**D CURTAIN WALL DIMENSIONAL SECTIONS**  
 NBI.1 3/4" = 1'-0"



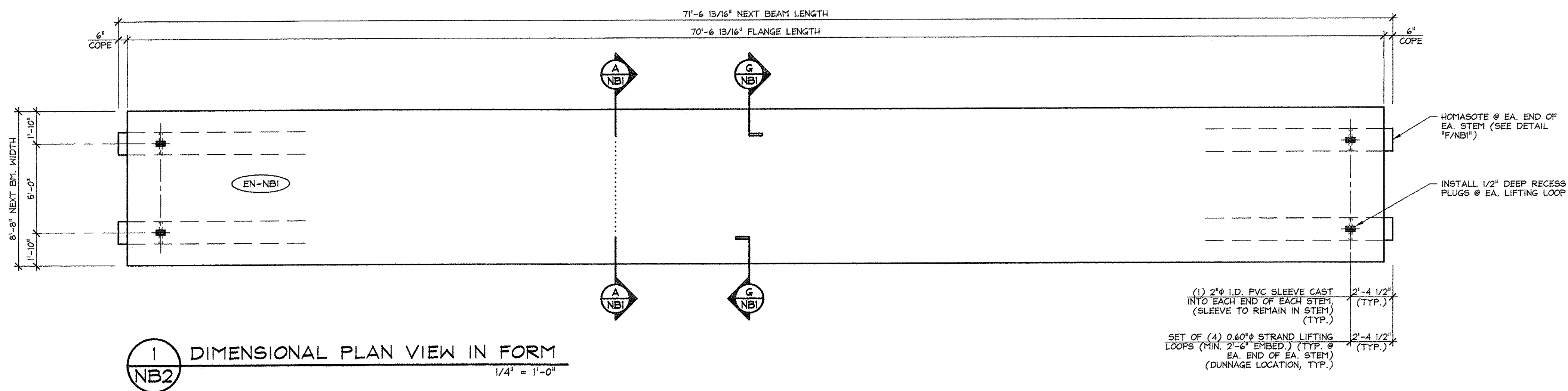
**E CURTAIN WALL REINFORCING SECTIONS**  
 NBI.1 SEE CURTAIN WALL ELEVATIONS FOR LONGITUDINAL BAR LENGTH CHANGES 3/4" = 1'-0"

Vermont Agency of Transportation  
**RECEIVED**  
 ON: April 9, 2014  
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**CONFORMANCE**  
 BY: Rob Young DATE: 04/14/2014

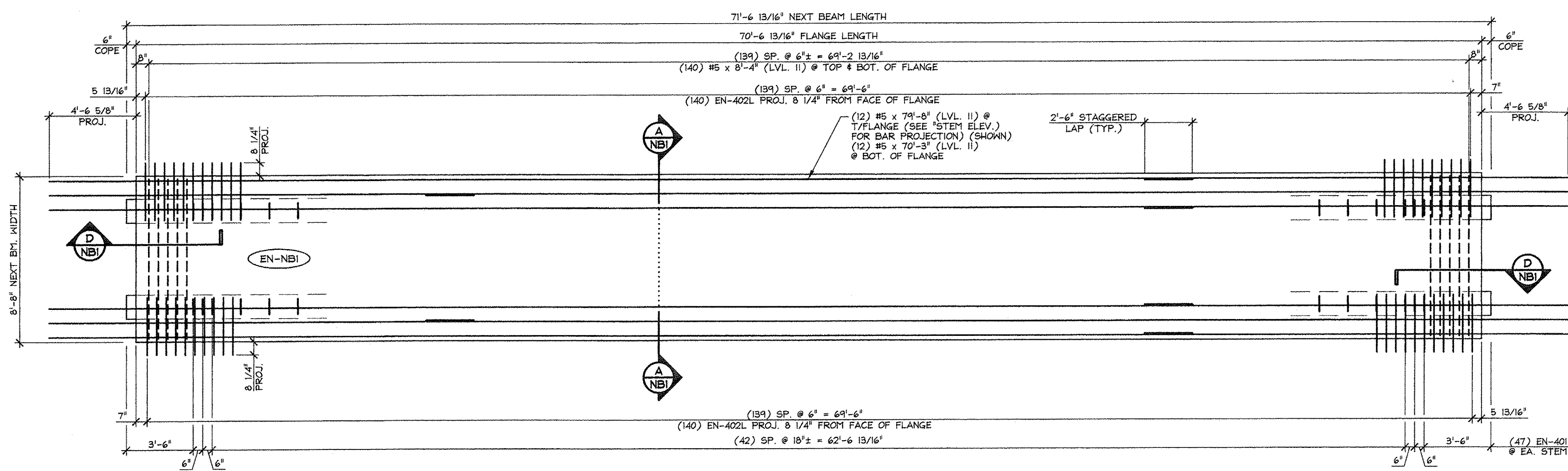
APPROVED: Approval of drawings and/or procedures indicates concurrence with the information presented and does not relieve the Contractor or Fabricator of compliance with all specifications and code requirements	
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REVISE AND RESUBMIT	
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Date: 4-11-2014	
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 J. P. CARRARA & SONS, INC.  
 MIDDLEBURY, VT 05753

<b>J.P. CARRARA &amp; SONS INC.</b> Precast & Prestress Manufacturer 244 CASE STR., MIDDLEBURY, VERMONT 05753 Phone: (802) 388-6361 Fax: (802) 388-8010	<b>A.L. ST. ONGE CONTRACTOR, INC.</b> CONTRACTOR MONTGOMERY CENTER, VERMONT
<b>STATE OF VERMONT AGENCY OF TRANSPORTATION</b> COUNTY OF FRANKLIN	DATE: JAN. 27, 2014 SCALE: NOTED CHKD: M.W. DFTM: B.L. JOB NO: 23418-013
<b>TOWN OF ENOSBURG</b> BOSTON POST ROAD T.H.2 CLASS 2 BRIDGE NO.: 48 PROJECT NO.: BRO 1448(40)	DWG. NO: <b>NBI.1</b>



1 DIMENSIONAL PLAN VIEW IN FORM  
NB2 1/4" = 1'-0"



2 REINFORCING PLAN VIEW IN FORM  
NB2 1/4" = 1'-0"

ISSUED FOR PRODUCTION  
APR 09 2014  
J.P. CARRARA & SONS, INC.  
MIDDLEBURY, VT 05753

MARK: EN-NB1	QTY.: 1	WT.: 56.25 T	VOL.: 27.78 cy
MATERIAL LIST / NEXT BEAM			
ITEM	MARK	DESCRIPTION	QTY.
1	EN-401L	#4 BENT BAR (LEVEL II, DUAL COATED)	134
2	EN-402L	#4 BENT BAR (LEVEL II, DUAL COATED)	280
3	EN-403L	#4 BENT BAR (LEVEL II, DUAL COATED)	8
4	EN-404L	#4 BENT BAR (LEVEL II, DUAL COATED)	16
5		#4 x 8'-4" (LEVEL II, DUAL COATED)	18
6			
7		#5 x 8'-4" (LEVEL II, DUAL COATED)	282
8		#5 x 7'-8" (W/ (1) 2'-6" STAGGERED LAP) (LVL. II, DUAL COATED)	12
9		#5 x 7'-3" (W/ (1) 2'-6" STAGGERED LAP) (LVL. II, DUAL COATED)	12
10			
11			
12			
13			
14		SET OF (4) 0.60" x 270 KSI STRAND LIFTING LOOPS	4
15			

APPROVED: Approval of drawings and/or procedures indicates concurrence with the information presented and does not relieve the Contractor or Fabricator of compliance with all specifications and code requirements

APPROVED AS NOTED

REVISE AND RESUBMIT

NOT REVIEWED

Date: 4-11-2014

By: James Hough

This review by Stantec Consulting Services Inc. is for the sole purpose of ascertaining conformance with the general design concept. This review shall not mean that Stantec Consulting Services Inc approves the detail design inherent in the shop drawings, responsibility for which shall remain with the Contractor. Submitting same, and such review shall not relieve the Contractor of his responsibility for errors or omissions in the shop drawing or of his responsibility for meeting all requirements of the Contract Documents. The contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to the fabrication processes or to techniques of construction and installation and for coordination of the work of all subtrades.

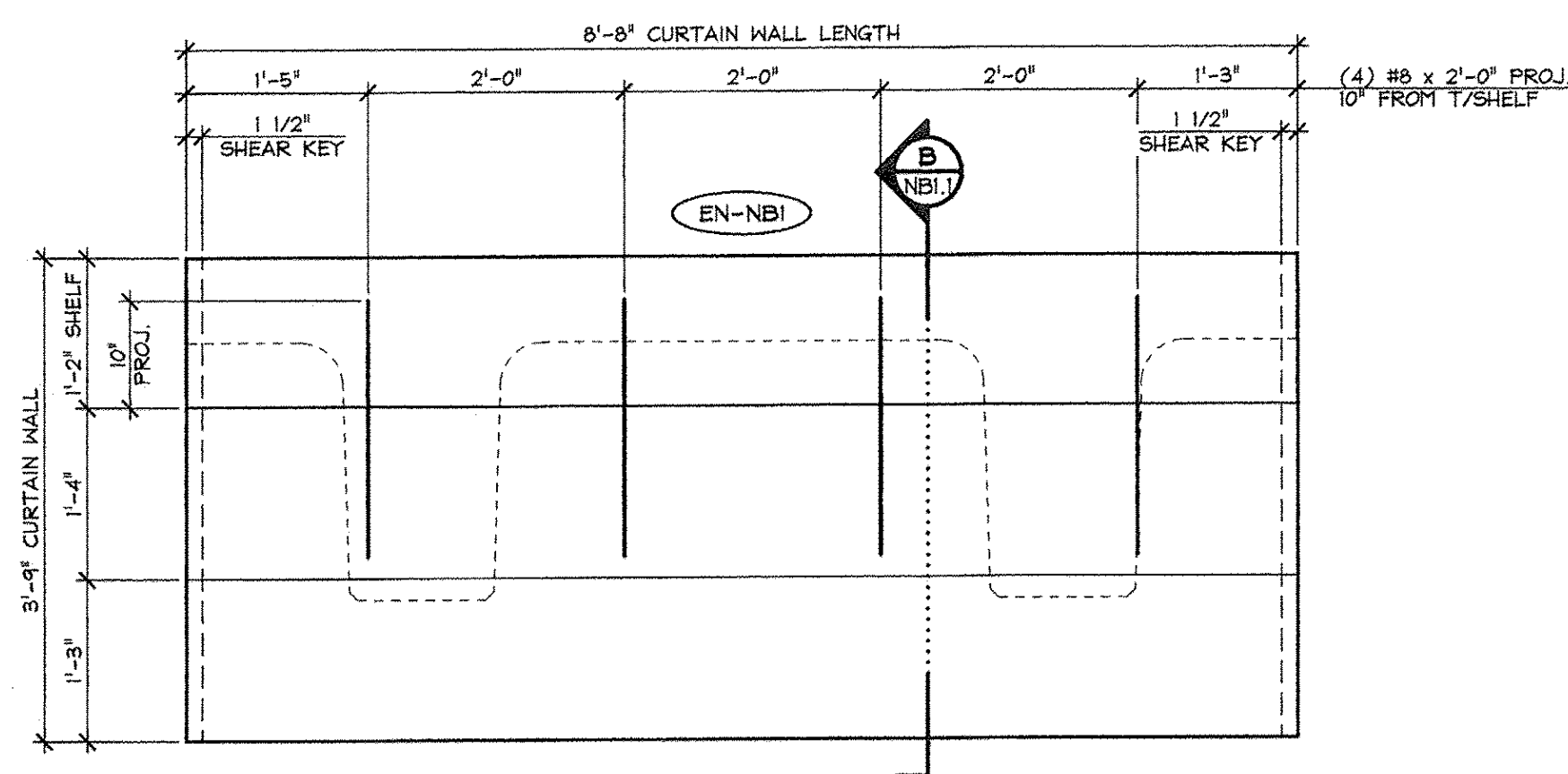
Vermont Agency of Transportation  
RECEIVED  
ON: April 9, 2014  
and Checked for CONFORMANCE  
BY: Rob Young DATE: 04/14/2014

J.P. CARRARA & SONS INC. A.L. St. ONGE CONTRACTOR, INC.  
Precast & Prestress Manufacturer CONTRACTOR  
264 OISE ST., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010 MONTGOMERY CENTER, VERMONT

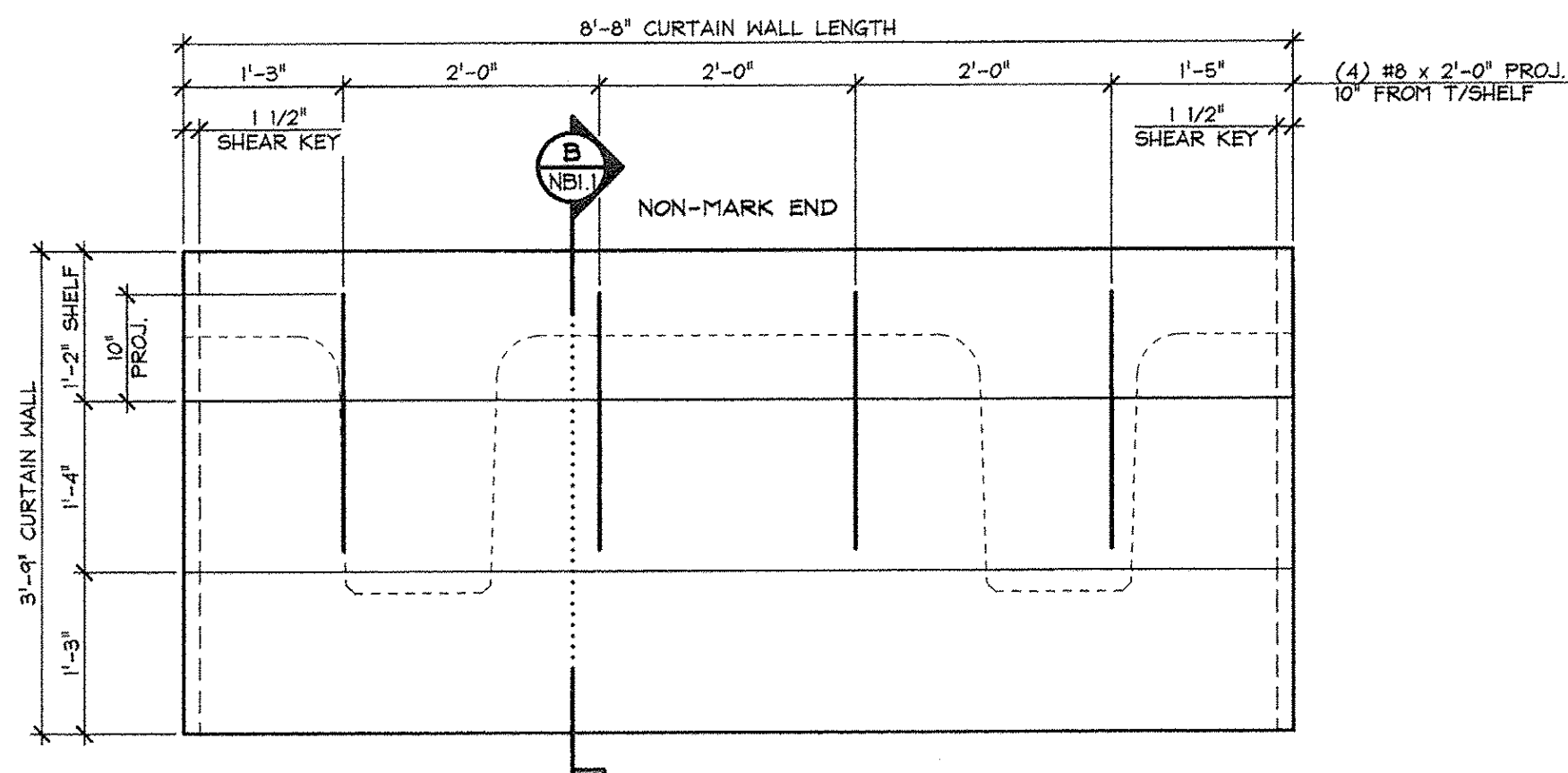
STATE OF VERMONT AGENCY OF TRANSPORTATION COUNTY OF FRANKLIN

TOWN OF ENOSBURG  
BOSTON POST ROAD T.H.2 CLASS 2  
BRIDGE NO.: 48 PROJECT NO.: BRO 1448(40)

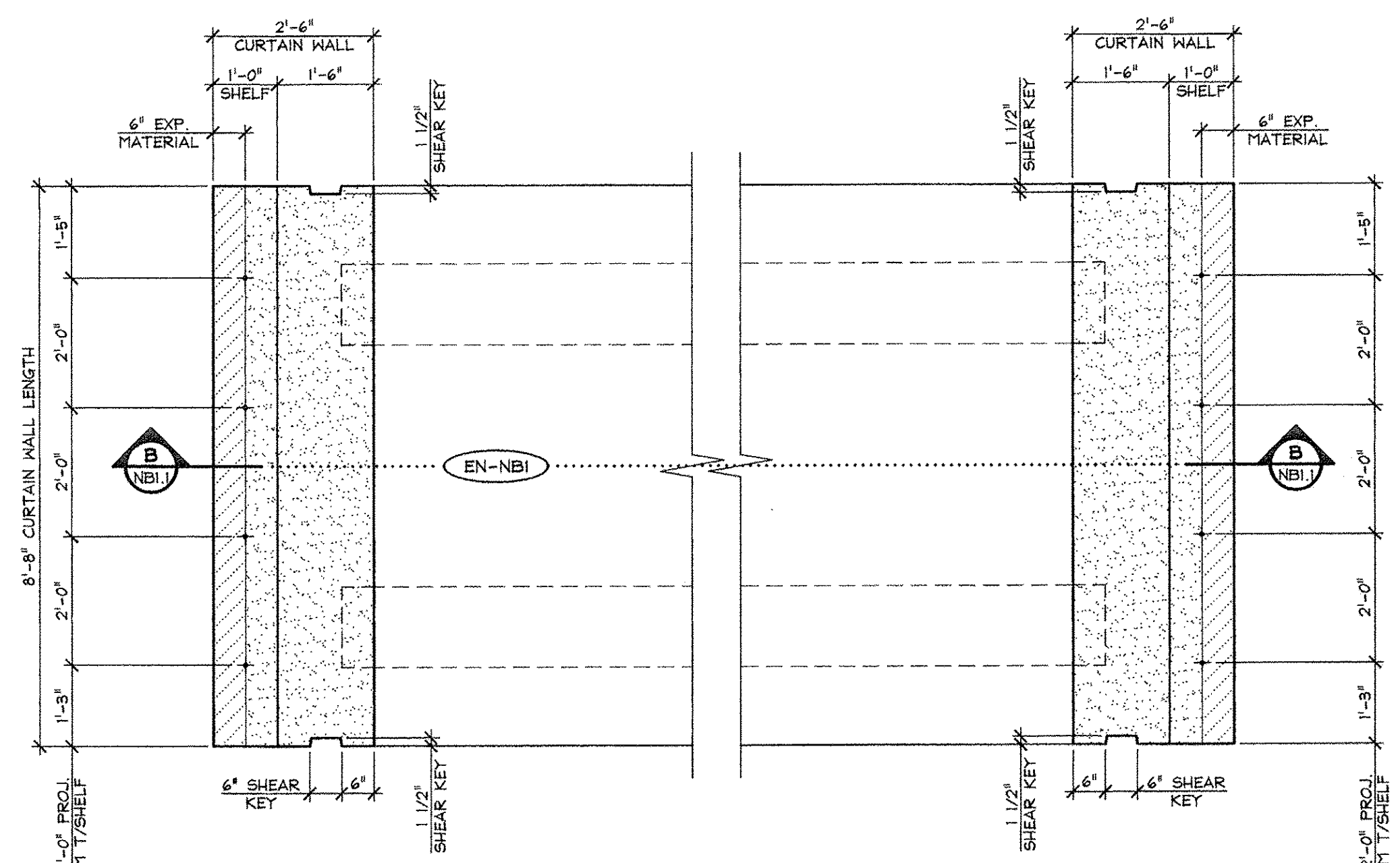
DATE: JAN. 27, 2014  
SCALE: NOTED  
CHKD: M.W. DFTM: B.L.  
JOB NO: 23418-013  
DWG. NO: NB2



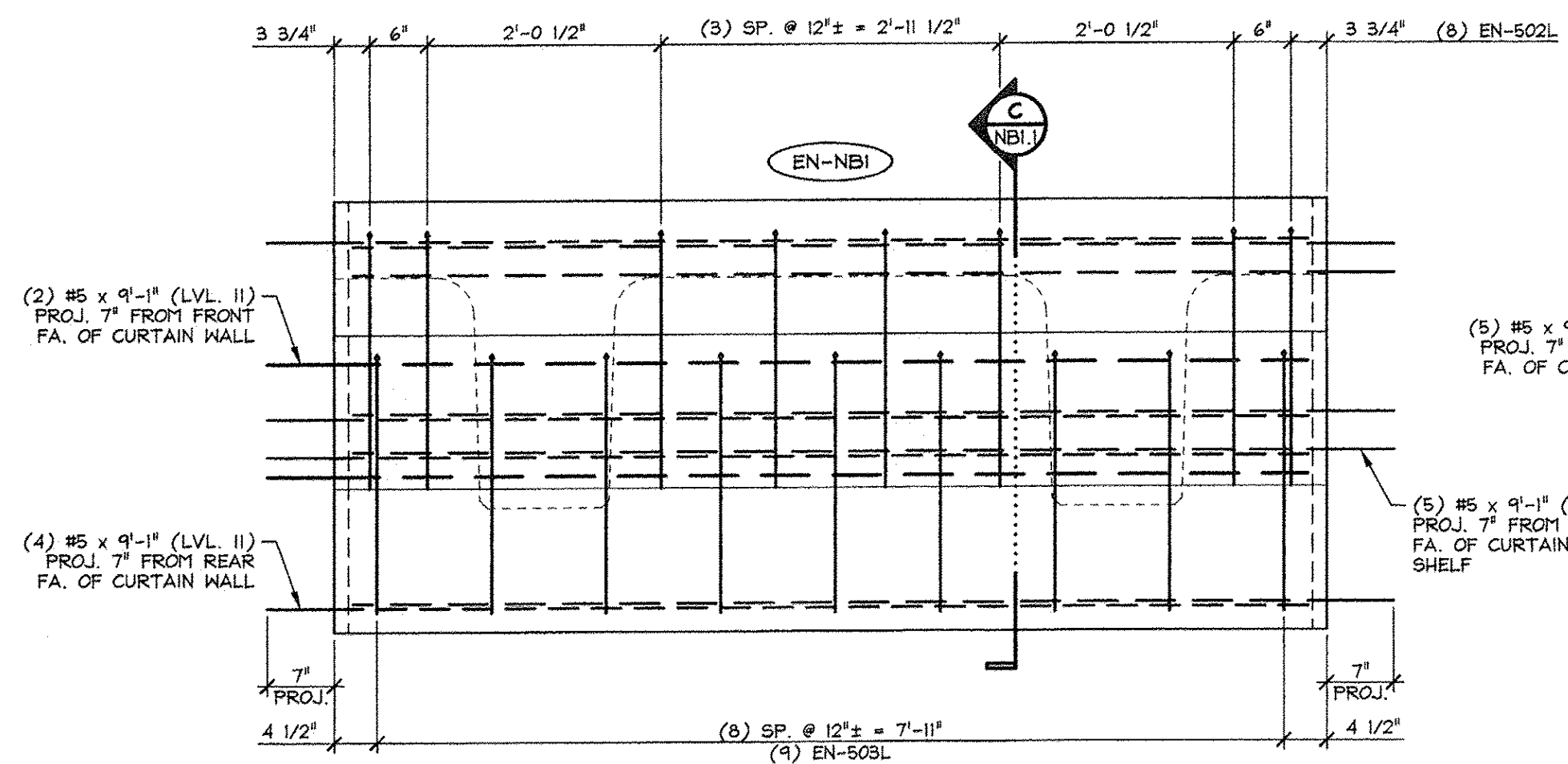
1 CURTAIN WALL DIMENSIONAL ELEVATION  
 NB2.1 VOL.: 2.17 cy WT.: 4.40 T 3/4" = 1'-0"



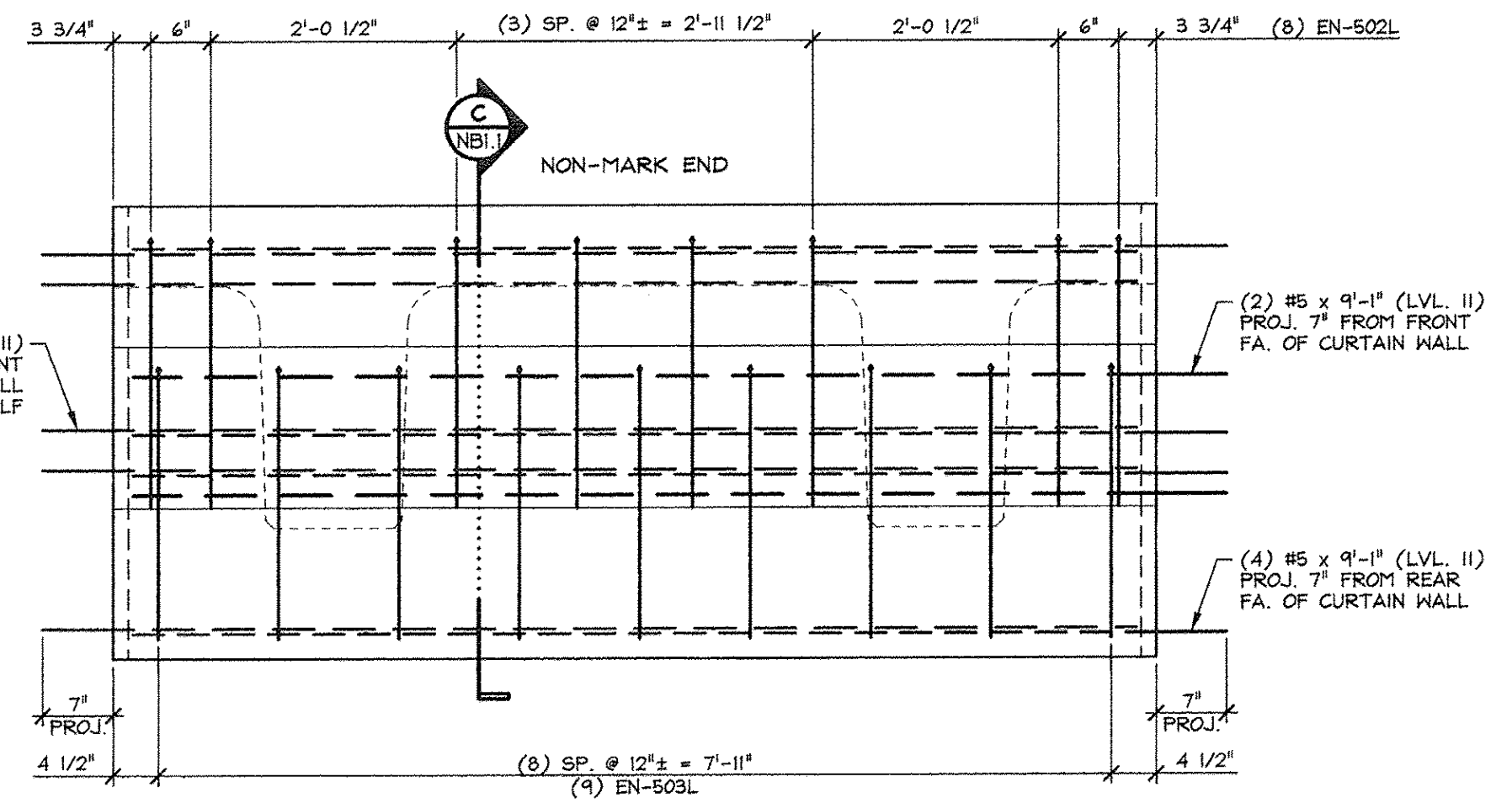
3 CURTAIN WALL DIMENSIONAL ELEVATION  
 NB2.1 VOL.: 2.17 cy WT.: 4.40 T 3/4" = 1'-0"



5 CURTAIN WALL DIMENSIONAL PLAN  
 NB2.1 1/2" = 1'-0"



2 CURTAIN WALL REINFORCING ELEVATION  
 NB2.1 3/4" = 1'-0"



4 CURTAIN WALL REINFORCING ELEVATION  
 NB2.1 3/4" = 1'-0"

56.25 T = NEXT BEAM  
 4.40 T = CURTAIN WALL (MARK END)  
 4.40 T = CURTAIN WALL (NON-MARK END)  
 65.1 T = TOTAL BEAM WT.

ISSUED FOR PRODUCTION  
 APR 09 2014  
 J.P. CARRARA & SONS, INC.  
 MIDDLEBURY, VT 05753

MARK: EN-NBI		QTY.: 1		
MATERIAL LIST / CURTAIN WALL				
ITEM	MARK	DESCRIPTION	QTY./CURTAIN WALL	
			MARK END	NON-MARK END
1	SH-502L	#5 BENT BAR (LEVEL II, DUAL COATED)	8	8
2	SH-503L	#5 BENT BAR (LEVEL II, DUAL COATED)	9	9
3				
4		#5 x 9'-1" (LVL. II, DUAL COATED)	11	11
5				
6				
7				
8		#8 x 2'-0" (LEVEL II, DUAL COATED)	4	4
9				
10				

APPROVED: Approval of drawings and/or procedures indicates concurrence with the information presented and does not relieve the Contractor or Fabricator of compliance with all specifications and code requirements	
APPROVED AS NOTED	
REVISE AND RESUBMIT	
NOT REVIEWED	

Date: 4-11-2014  
 By: James Hyslop  
 This review of Stantec Consulting Services Inc. is for the sole purpose of ascertaining conformance with the general design concept. This review shall not mean that Stantec Consulting Services Inc approves the detail design inherent in the shop drawings, responsibility for which shall remain with the Contractor. Submitting same, and such review shall not relieve the Contractor of his responsibility for errors or omissions in the shop drawing or of his responsibility for meeting all requirements of the Contract Documents. The contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to the fabrication processes or to techniques of construction and installation and for coordination of the work of all subcontractors.

Vermont Agency of Transportation  
**RECEIVED**  
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**CONFORMANCE**  
 BY: Rob Young DATE: 04/14/2014

**J.P. CARRARA & SONS INC.** Precast & Prestress Manufacturer  
 244 OSGE STR., MIDDLEBURY, VERMONT 05753 Phone: (802)389-6361 Fax: (802)389-9010

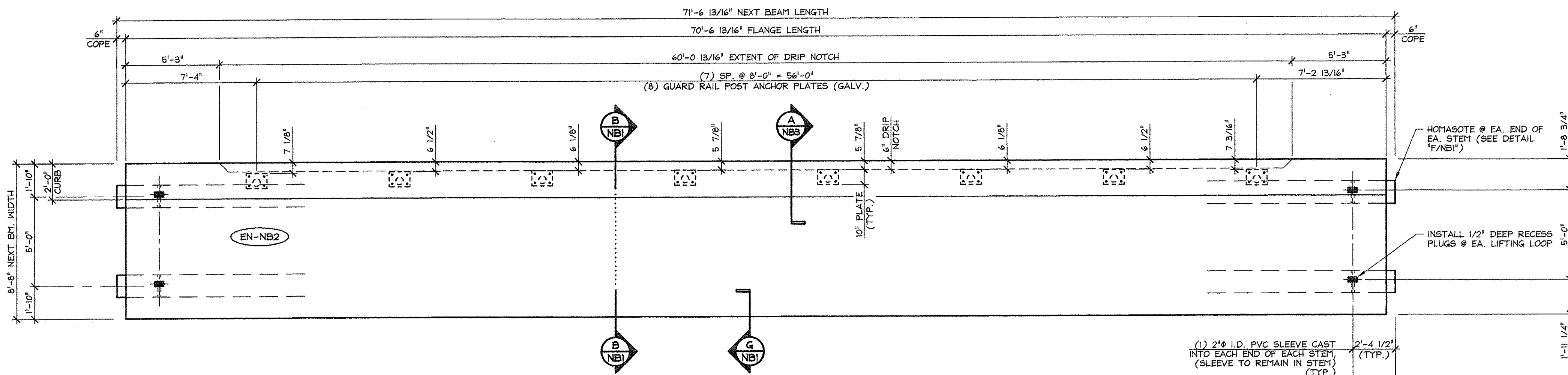
**A.L. ST. ONGE CONTRACTOR, INC.** CONTRACTOR  
 MONTGOMERY CENTER, VERMONT

**STATE OF VERMONT AGENCY OF TRANSPORTATION**  
 COUNTY OF FRANKLIN

**TOWN OF ENOSBURG**  
 BOSTON POST ROAD T.H.2 CLASS 2  
 BRIDGE NO.: 4B PROJECT NO.: BRO 1448(40)

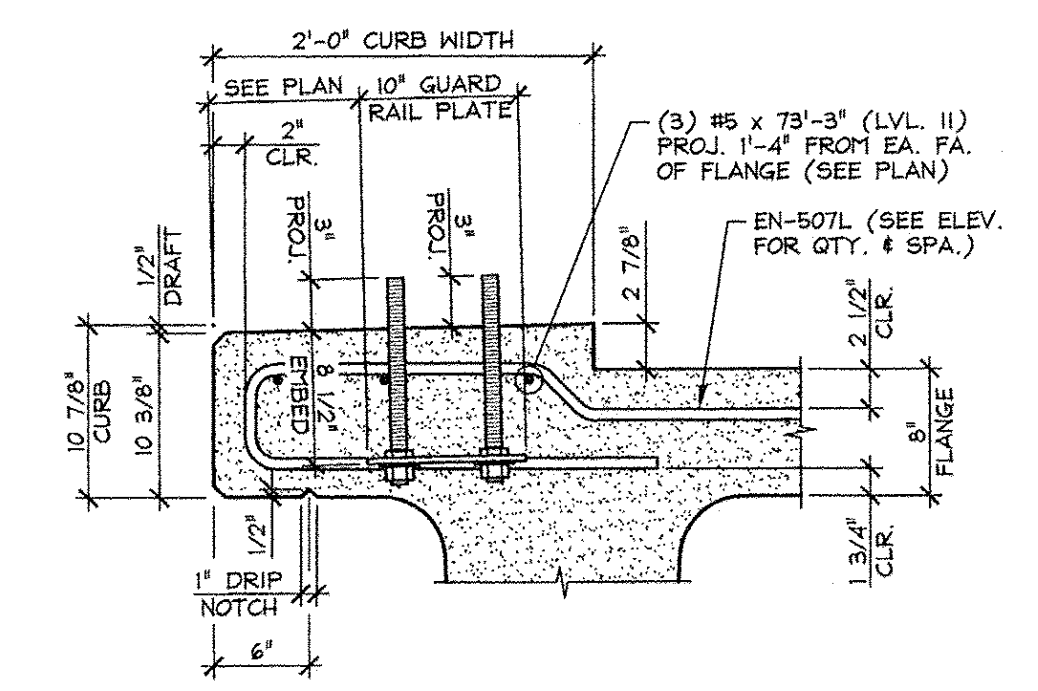
**PRECAST CURTAIN WALL DETAILS**

DATE: JAN. 27, 2014  
 SCALE: NOTED  
 CHKD: M.W. DFTM: B.L.  
 JOB NO: 23418-013  
 DWG. NO: NB2.1

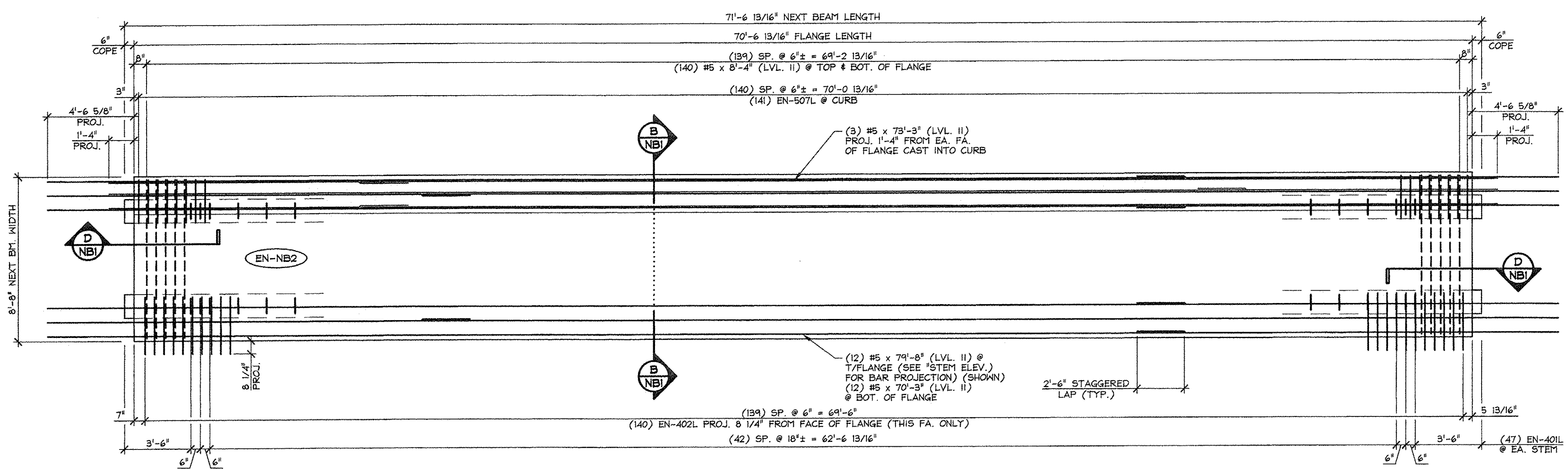


1 DIMENSIONAL PLAN VIEW IN FORM  
NBS 1/4" = 1'-0"

(1) 2" I.D. PVC SLEEVE CAST INTO EACH END OF EACH STEP (SLEEVE TO REMAIN IN STEP) (TYP.)  
 SET OF (4) 0.60" STRAND LIFTING LOOPS (MIN. 2'-0" EMBED.) (TYP. @ EA. END OF EA. STEP) (DUNNAGE LOCATION, TYP.)



A CURB & GUARD RAIL ANCHOR  
NBS PLATE SECTION 1" = 1'-0"  
TYP. BEAM REINF. NOT SHOWN FOR CLARITY

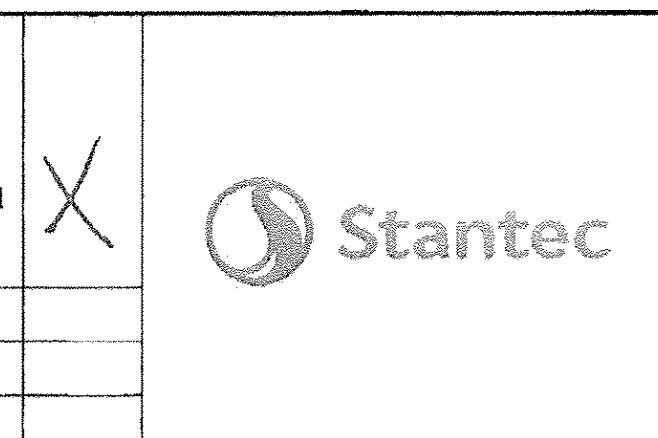


2 REINFORCING PLAN VIEW IN FORM  
NBS 1/4" = 1'-0"

ISSUED FOR PRODUCTION  
APR 09 2014  
J. P. CARRARA & SONS, INC.  
MIDDLEBURY, VT 05753

MARK: EN-NB2	QTY.: 1	WT.: 58.67 T	VOL.: 28.98 cy
MATERIAL LIST / NEXT BEAM			
ITEM	MARK	DESCRIPTION	QTY.
1	EN-401L	#4 BENT BAR (LEVEL II, DUAL COATED)	134
2	EN-402L	#4 BENT BAR (LEVEL II, DUAL COATED)	140
3	EN-403L	#4 BENT BAR (LEVEL II, DUAL COATED)	8
4	EN-404L	#4 BENT BAR (LEVEL II, DUAL COATED)	16
5		#4 x 8'-4" (LEVEL II, DUAL COATED)	18
6			
7	EN-507L	#5 BENT BAR (LEVEL II, DUAL COATED)	141
8		#5 x 8'-4" (LEVEL II, DUAL COATED)	282
9		#5 x 7'-8" (W/ (1) 2'-6" STAGGERED LAP) (LVL. II, DUAL COATED)	12
10		#5 x 7'-0" (W/ (1) 2'-6" STAGGERED LAP) (LVL. II, DUAL COATED)	12
11		#5 x 7'-3" (W/ (1) 2'-6" STAGGERED LAP) (LVL. II, DUAL COATED)	3
12			
13		GUARD RAIL ANCHOR PLATE (GALV.) (SUPPLIED BY OTHERS)	8
14		SET OF (4) 0.60" x 270 KSI STRAND LIFTING LOOPS	4
15			

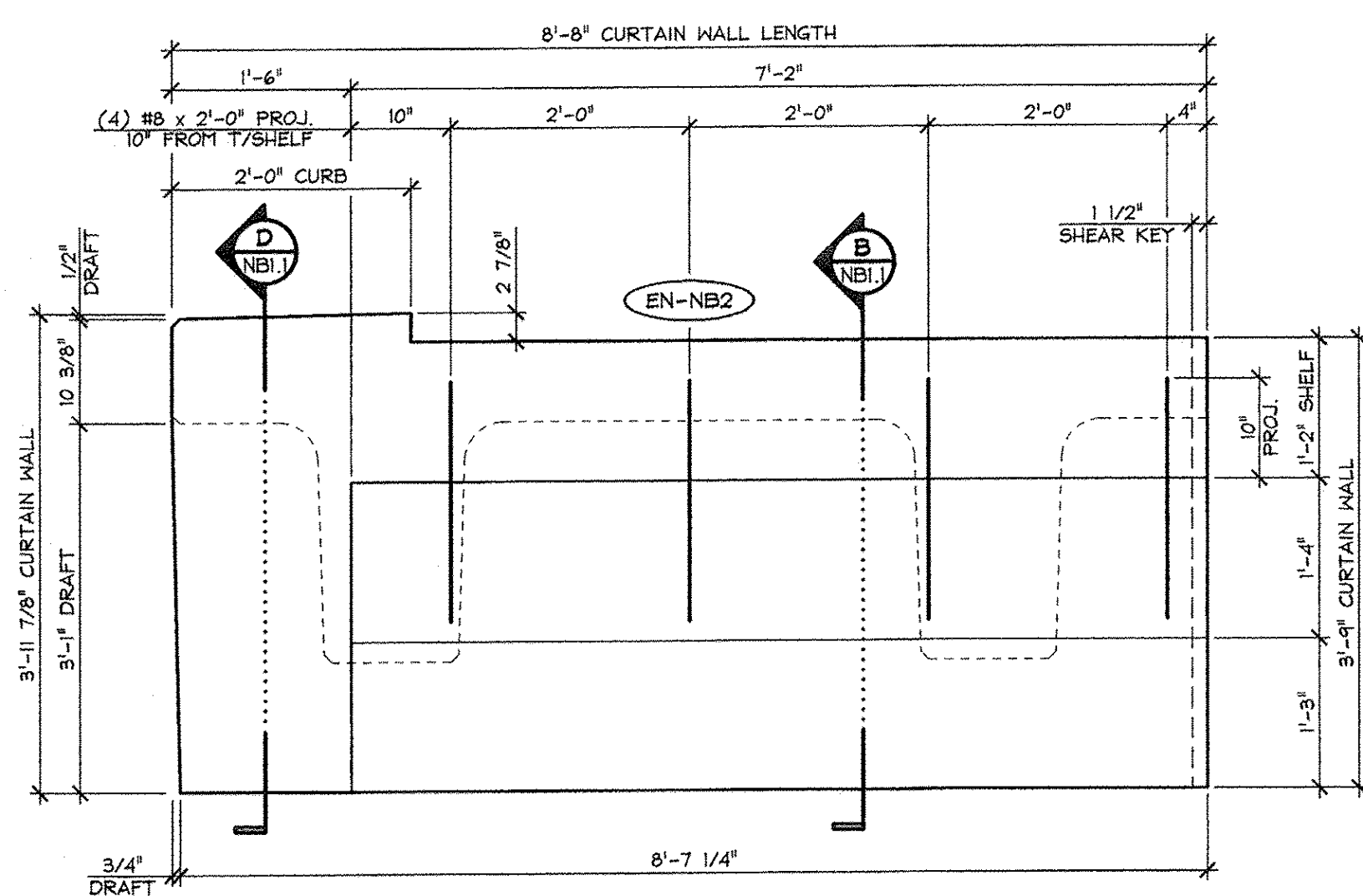
APPROVED: Approval of drawings and/or procedures indicates concurrence with the information presented and does not relieve the Contractor or Fabricator of compliance with all specifications and code requirements  
 APPROVED AS NOTED  
 REVISE AND RESUBMIT  
 NOT REVIEWED



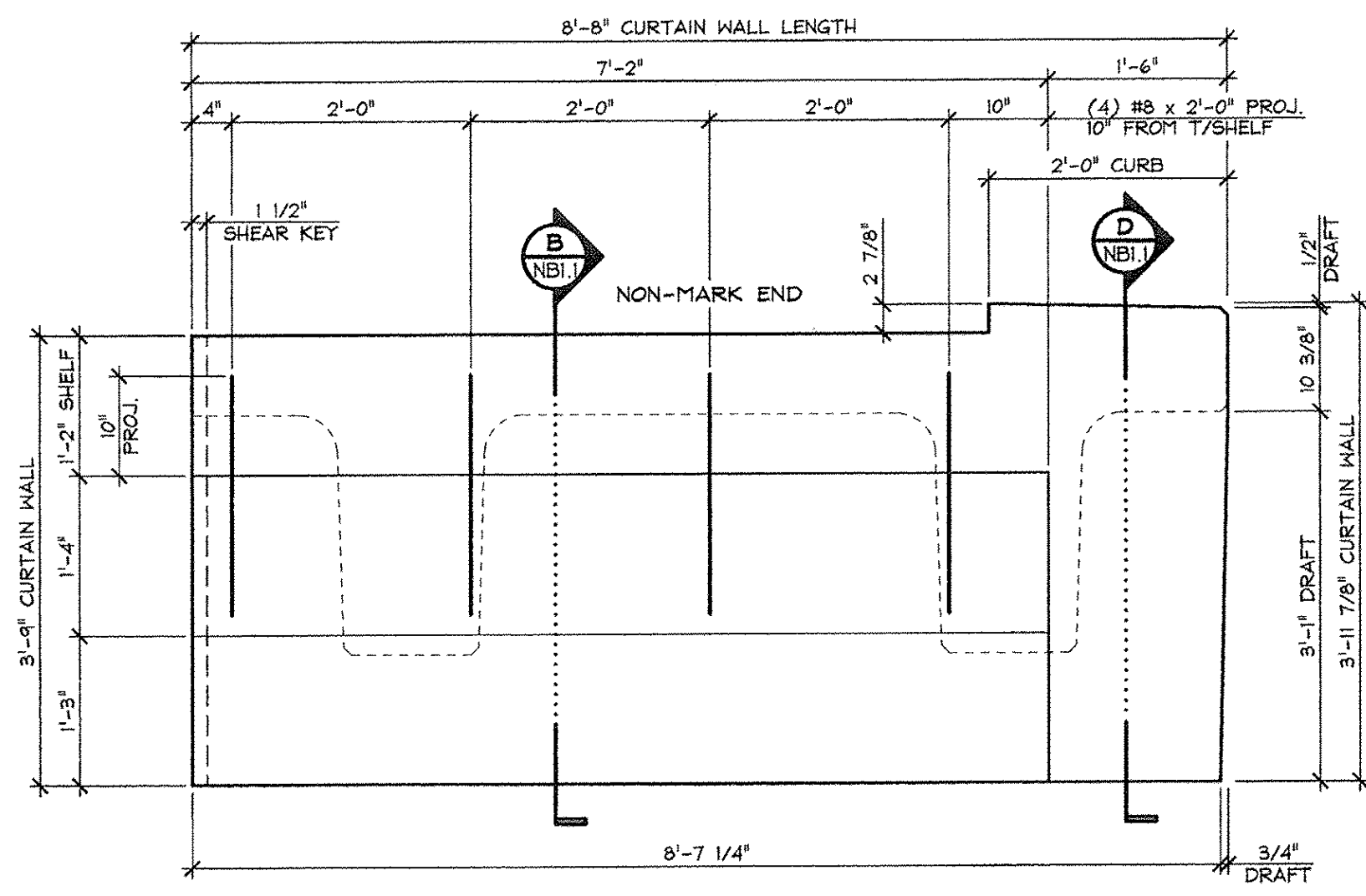
Date: 4-11-2014  
 By: James H. [unclear]  
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Vermont Agency of Transportation  
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**CONFORMANCE**  
 BY: Rob Young DATE: 04/14/2014

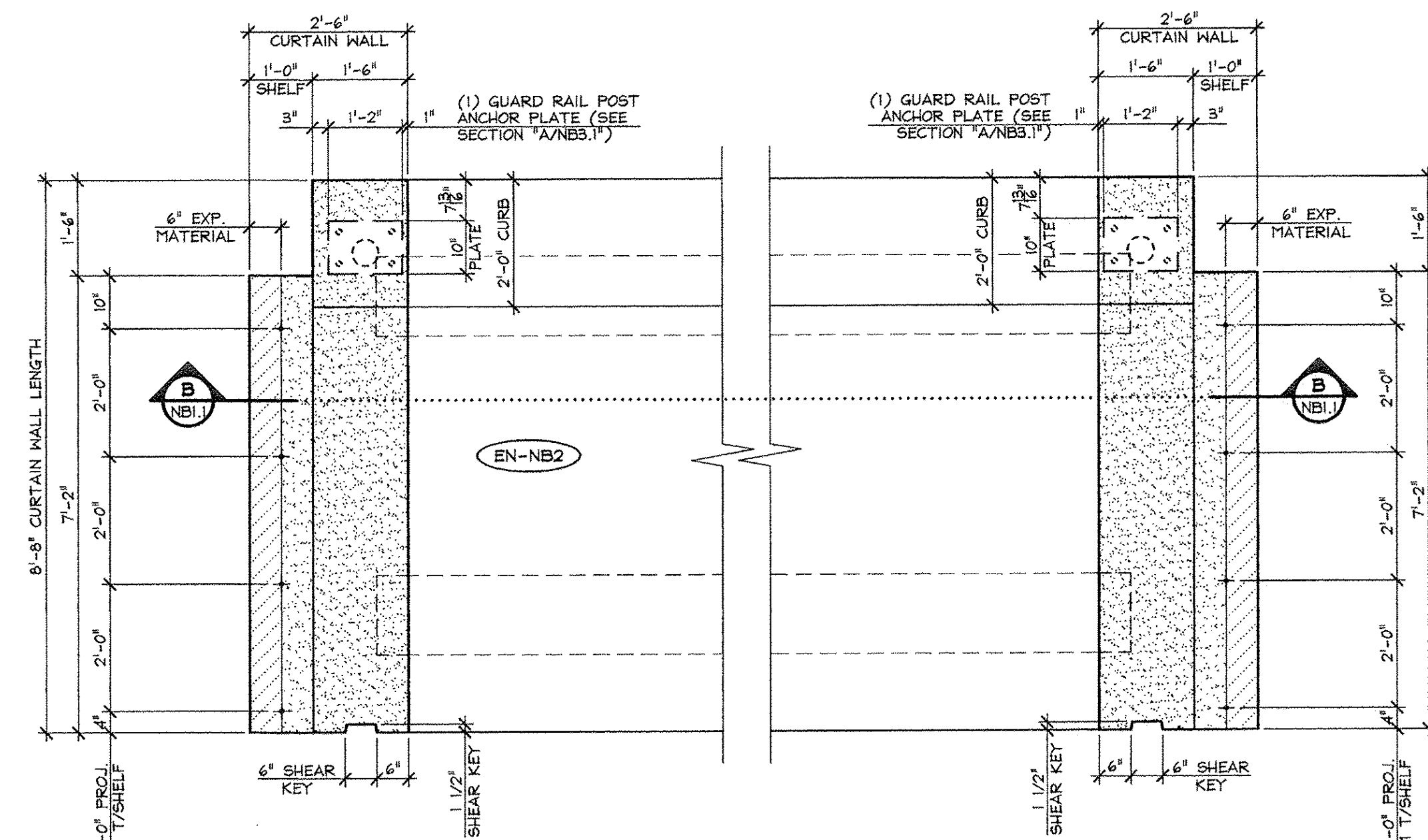
J.P. CARRARA & SONS INC. A.L. St. ONGE CONTRACTOR, INC.  
 Precast & Prestress Manufacturer CONTRACTOR  
 2464 CASE ST., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-8010 MONTGOMERY CENTER, VERMONT  
 STATE OF VERMONT AGENCY OF TRANSPORTATION COUNTY OF FRANKLIN  
 TOWN OF ENOSBURG  
 BOSTON POST ROAD T.H.2 CLASS 2  
 BRIDGE NO.: 48 PROJECT NO.: BRO 1448(40)  
 PRESTRESSED NEXT BEAM DETAILS DWG. NO: NBS3  
 DATE: JAN. 27, 2014  
 SCALE: NOTED  
 CHKD: M.W. DFTM: B.L.  
 JOB NO: 23418-013



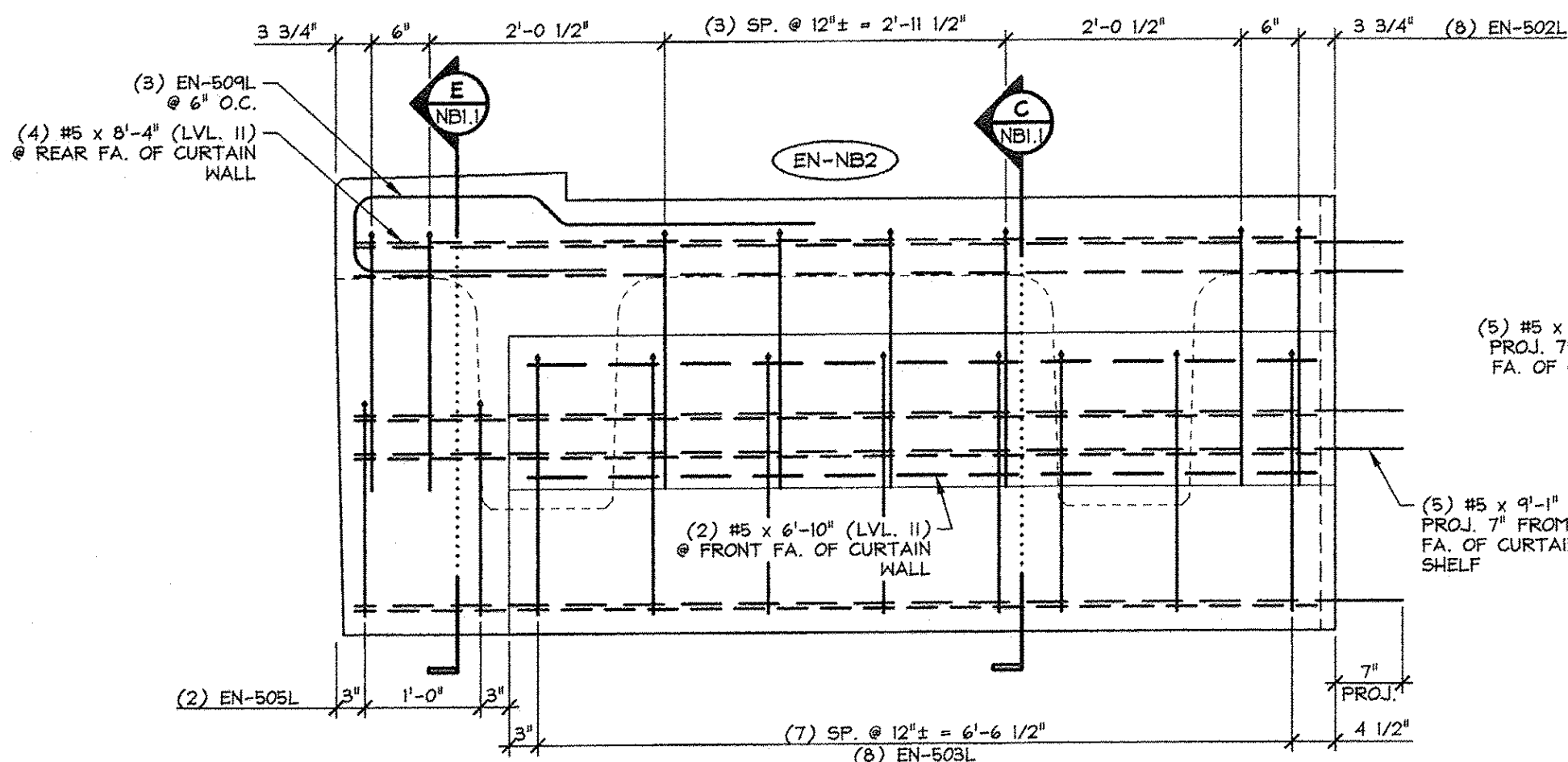
1 CURTAIN WALL DIMENSIONAL ELEVATION  
NB3.1 VOL.: 2.11 cy WT.: 4.28 T



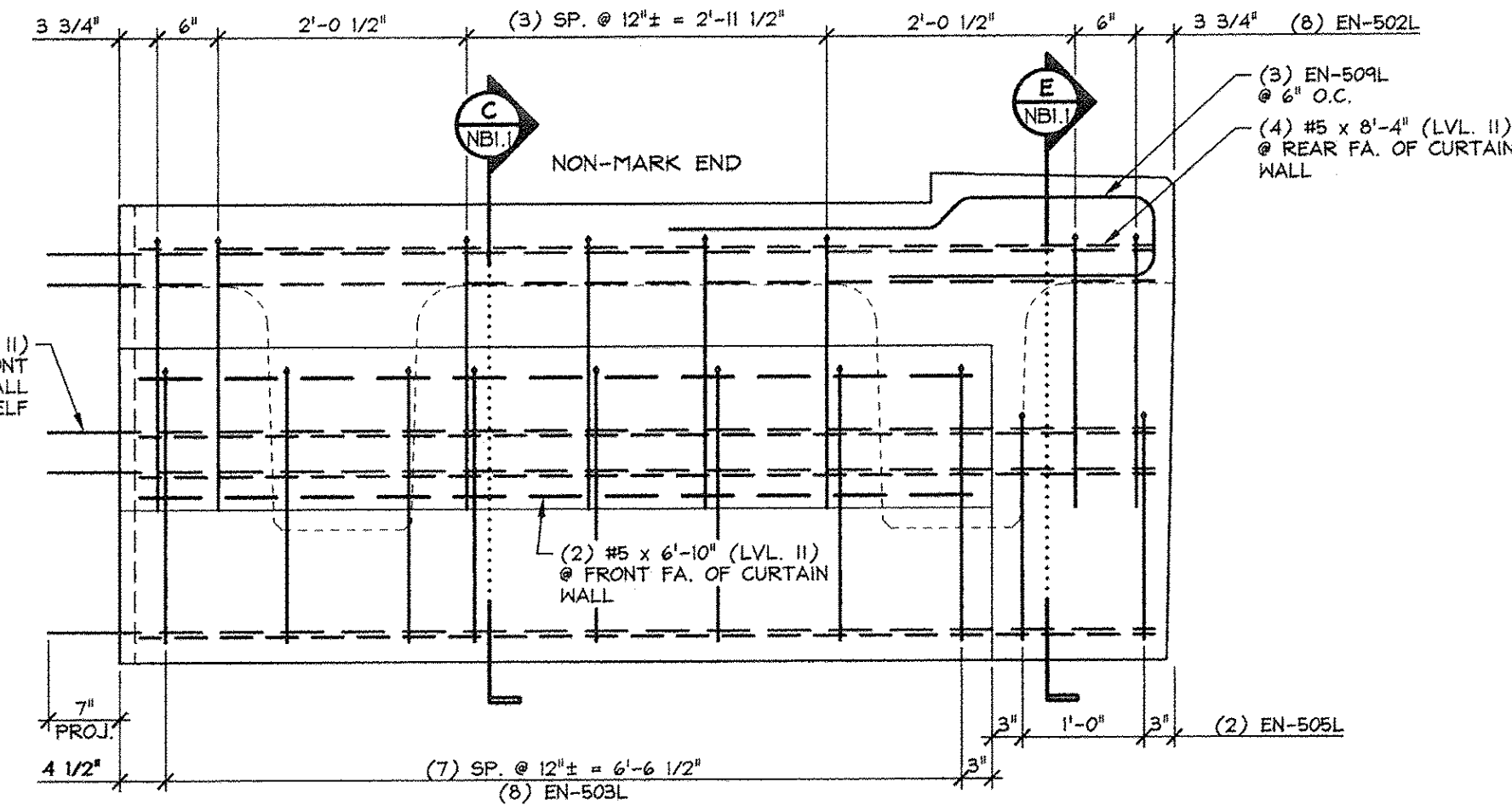
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NB3.1 VOL.: 2.11 cy WT.: 4.28 T



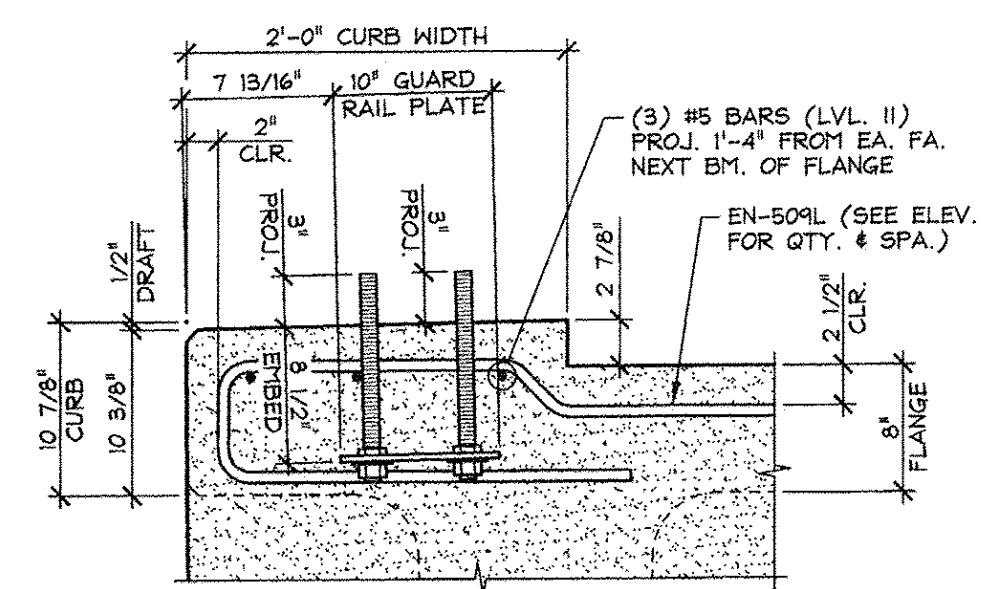
5 CURTAIN WALL DIMENSIONAL PLAN  
NB3.1 1/2\"/>



2 CURTAIN WALL REINFORCING ELEVATION  
NB3.1 3/4\"/>



4 CURTAIN WALL REINFORCING ELEVATION  
NB3.1 3/4\"/>



A CURB & GUARD RAIL ANCHOR PLATE SECTION  
NB3.1 1\"/>

58.67 T = NEXT BEAM  
4.28 T = CURTAIN WALL (MARK END)  
4.28 T = CURTAIN WALL (NON-MARK END)  
67.2 T = TOTAL BEAM WT.

ISSUED FOR PRODUCTION  
APR 09 2014  
J. P. CARRARA & SONS, INC.  
MIDDLEBURY, VT 05753

MATERIAL LIST / CURTAIN WALL				
ITEM	MARK	DESCRIPTION	QTY./CURTAIN WALL	
			MARK END	NON-MARK END
1	SH-502L	#5 BENT BAR (LEVEL II, DUAL COATED)	8	8
2	SH-503L	#5 BENT BAR (LEVEL II, DUAL COATED)	8	8
3	SH-505L	#5 BENT BAR (LEVEL II, DUAL COATED)	2	2
4	SH-509L	#5 BENT BAR (LEVEL II, DUAL COATED)	3	3
5				
6		#5 x 6'-10" (LVL. II, DUAL COATED)	2	2
7		#5 x 8'-4" (LVL. II, DUAL COATED)	4	4
8		#5 x 9'-1" (LVL. II, DUAL COATED)	5	5
9				
10				
11				
12				
13		GUARD RAIL ANCHOR PLATE (GALV.) (SUPPLIED BY OTHERS)	1	1
14		#8 x 2'-0" (LEVEL II, DUAL COATED)	4	4
15				

APPROVED: Approval of drawings and/or procedures indicates concurrence with the information presented and does not relieve the Contractor or Fabricator of compliance with all specifications and code requirements

APPROVED AS NOTED

REVISE AND RESUBMIT

NOT REVIEWED

Date: 4-11-2014

By: James H. [Signature]

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Stantec

Vermont Agency of Transportation  
RECEIVED  
ON: April 9, 2014  
and Checked for CONFORMANCE  
BY: Rob Young DATE: 04/14/2014

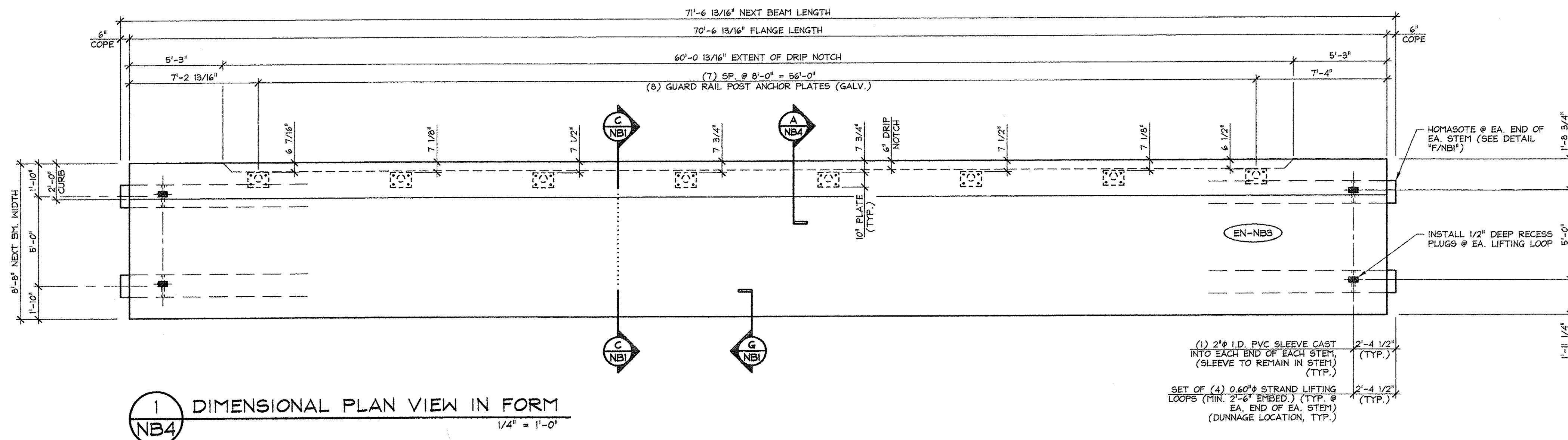
J.P. CARRARA & SONS INC. A.L. ST. ONGE CONTRACTOR, INC.  
Precast & Prestress Manufacturer CONTRACTOR  
244 OGE STR. MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010 MONTGOMERY CENTER, VERMONT

STATE OF VERMONT AGENCY OF TRANSPORTATION COUNTY OF FRANKLIN

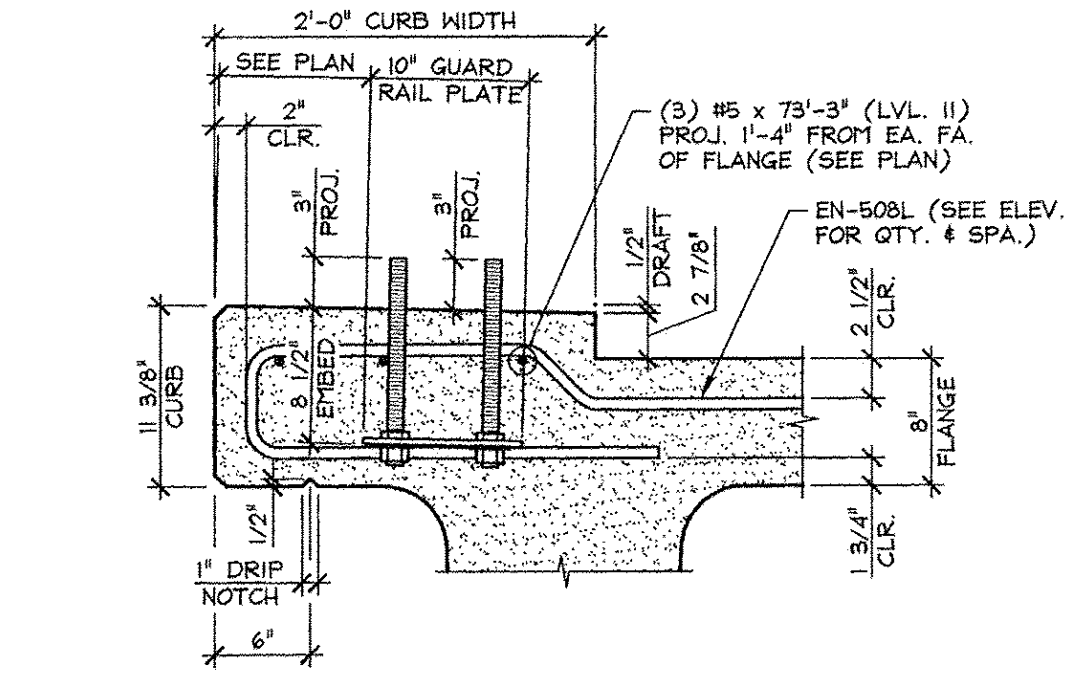
TOWN OF ENOSBURG  
BOSTON POST ROAD T.H.2 CLASS 2  
BRIDGE NO.: 48 PROJECT NO.: BRO 1448(40)

DATE: JAN. 27, 2014  
SCALE: NOTED  
CHKD: M.W. DFTM: B.L.  
JOB NO: 23418-013  
DWG. NO: NB3.1

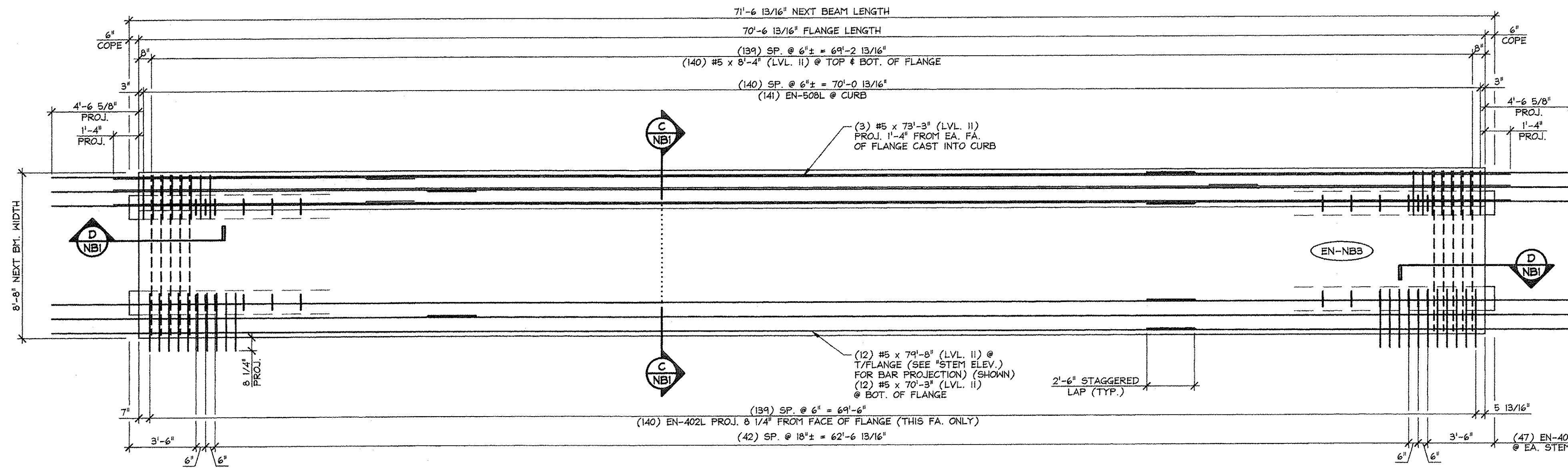
PRECAST CURTAIN WALL DETAILS



1 DIMENSIONAL PLAN VIEW IN FORM  
NB4 1/4" = 1'-0"



A CURB & GUARD RAIL ANCHOR  
NB4 PLATE SECTION 1" = 1'-0"  
TYP. BEAM REINF. NOT SHOWN FOR CLARITY



2 REINFORCING PLAN VIEW IN FORM  
NB4 1/4" = 1'-0"

ISSUED FOR PRODUCTION  
APR 09 2014  
J.P. CARRARA & SONS, INC.  
MIDDLEBURY, VT 05753

MARK: EN-NB3	QTY.: 1	WT.: 59.12 T	VOL.: 29.19 cy
MATERIAL LIST / NEXT BEAM			
ITEM	MARK	DESCRIPTION	QTY.
1	EN-401L	#4 BENT BAR (LEVEL II, DUAL COATED)	134
2	EN-402L	#4 BENT BAR (LEVEL II, DUAL COATED)	140
3	EN-403L	#4 BENT BAR (LEVEL II, DUAL COATED)	8
4	EN-404L	#4 BENT BAR (LEVEL II, DUAL COATED)	16
5		#4 x 8'-4" (LEVEL II, DUAL COATED)	18
6			
7	EN-508L	#5 BENT BAR (LEVEL II, DUAL COATED)	141
8		#5 x 8'-4" (LEVEL II, DUAL COATED)	282
9		#5 x 7'-8" (W/ (1) 2'-6" STAGGERED LAP) (LVL. II, DUAL COATED)	12
10		#5 x 7'-0" (W/ (1) 2'-6" STAGGERED LAP) (LVL. II, DUAL COATED)	12
11		#5 x 7'-3" (W/ (1) 2'-6" STAGGERED LAP) (LVL. II, DUAL COATED)	3
12			
13		GUARD RAIL ANCHOR PLATE (GALV.) (SUPPLIED BY OTHERS)	8
14		SET OF (4) 0.60" x 270 KSI STRAND LIFTING LOOPS	4
15			

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REVISE AND RESUBMIT

NOT REVIEWED

Date: 4-11-2014

By: James H. [Signature]

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**Stantec**

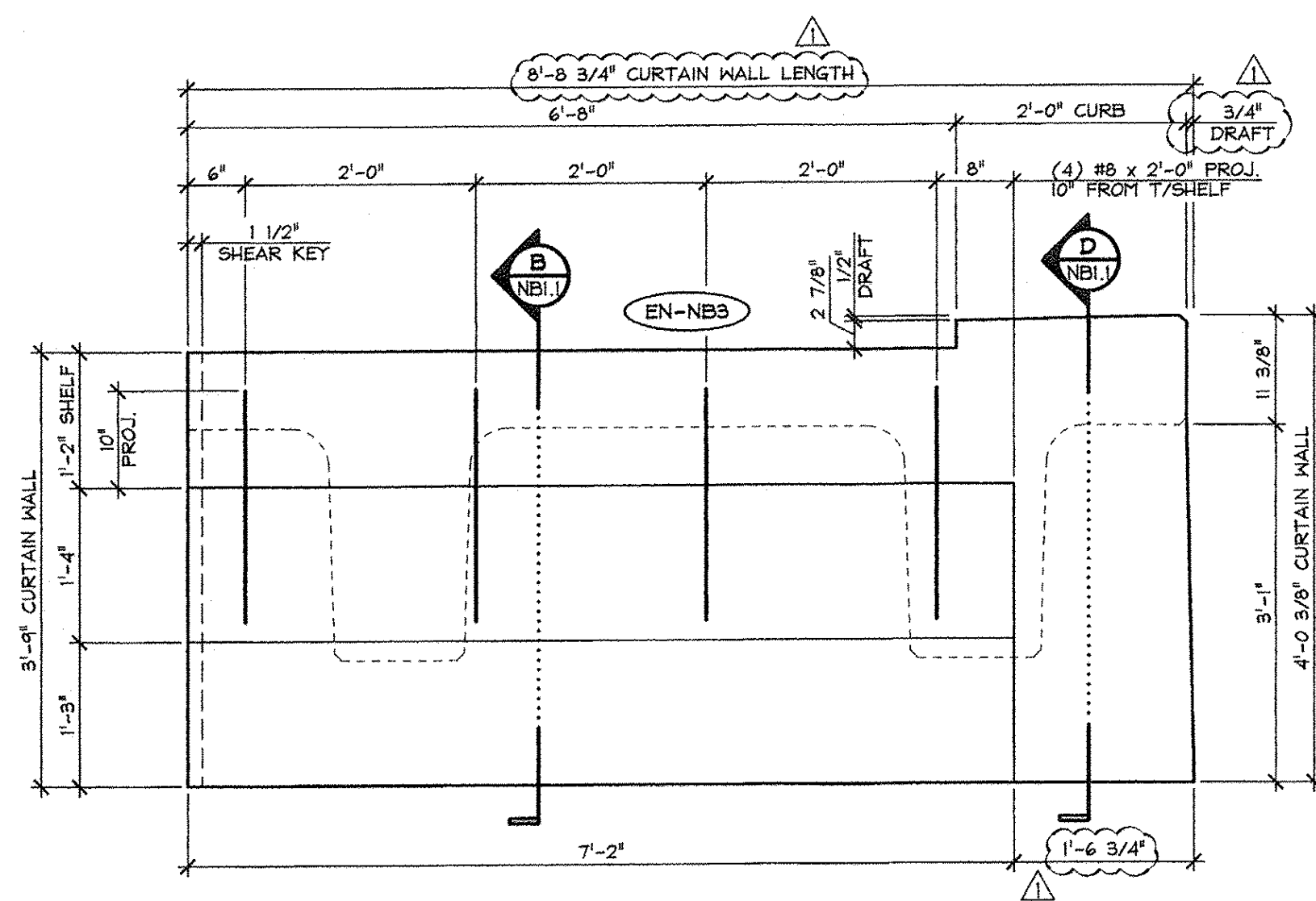
Vermont Agency of Transportation  
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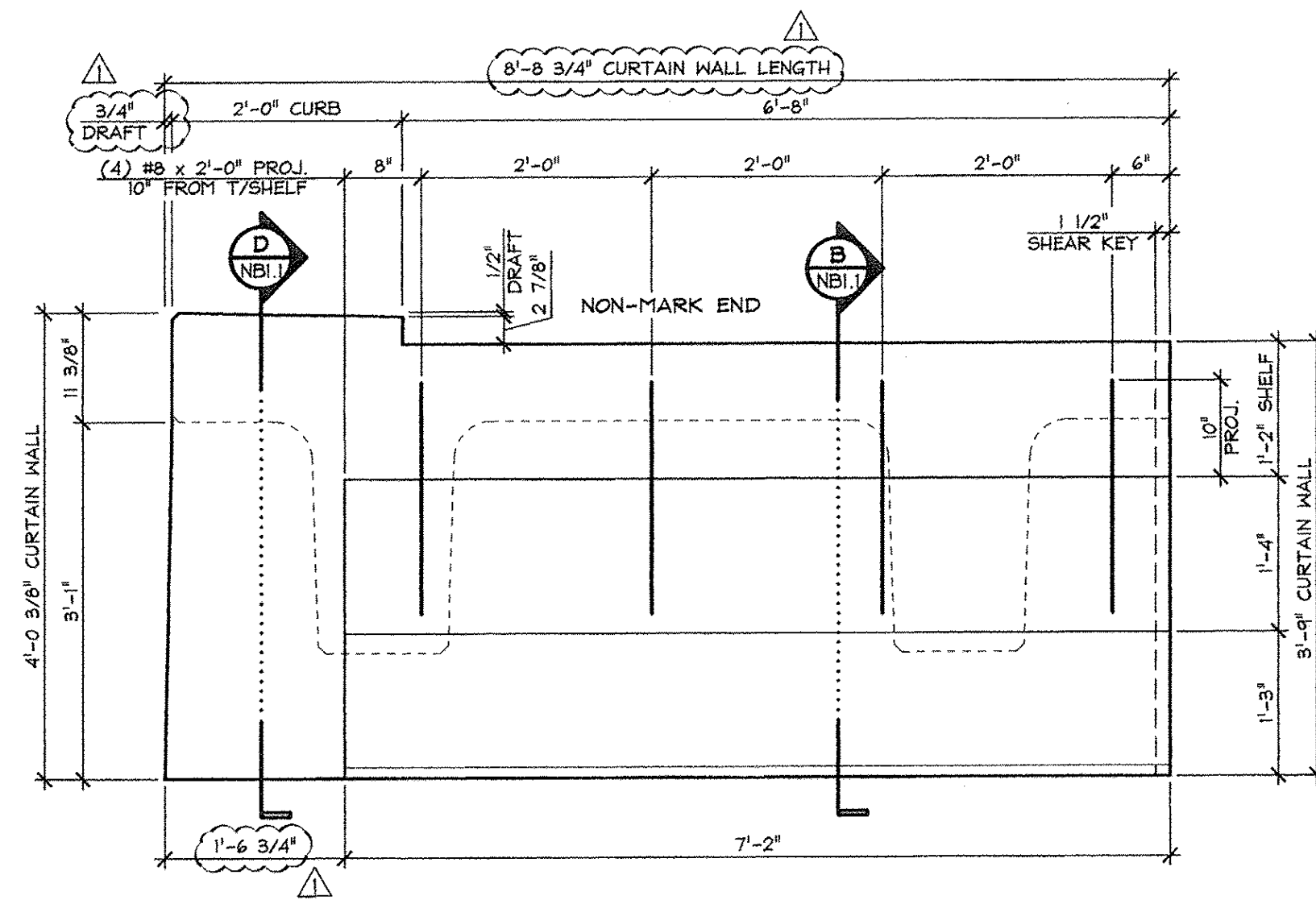
**STATE OF VERMONT AGENCY OF TRANSPORTATION** DATE: JAN. 27, 2014  
COUNTY OF FRANKLIN SCALE: NOTED

**TOWN OF ENOSBURG** CHKD: M.W. DFTM: B.L.  
BOSTON POST ROAD T.H.2 CLASS 2  
BRIDGE NO.: 48 PROJECT NO.: BRO 1448(40) JOB NO: 23418-013

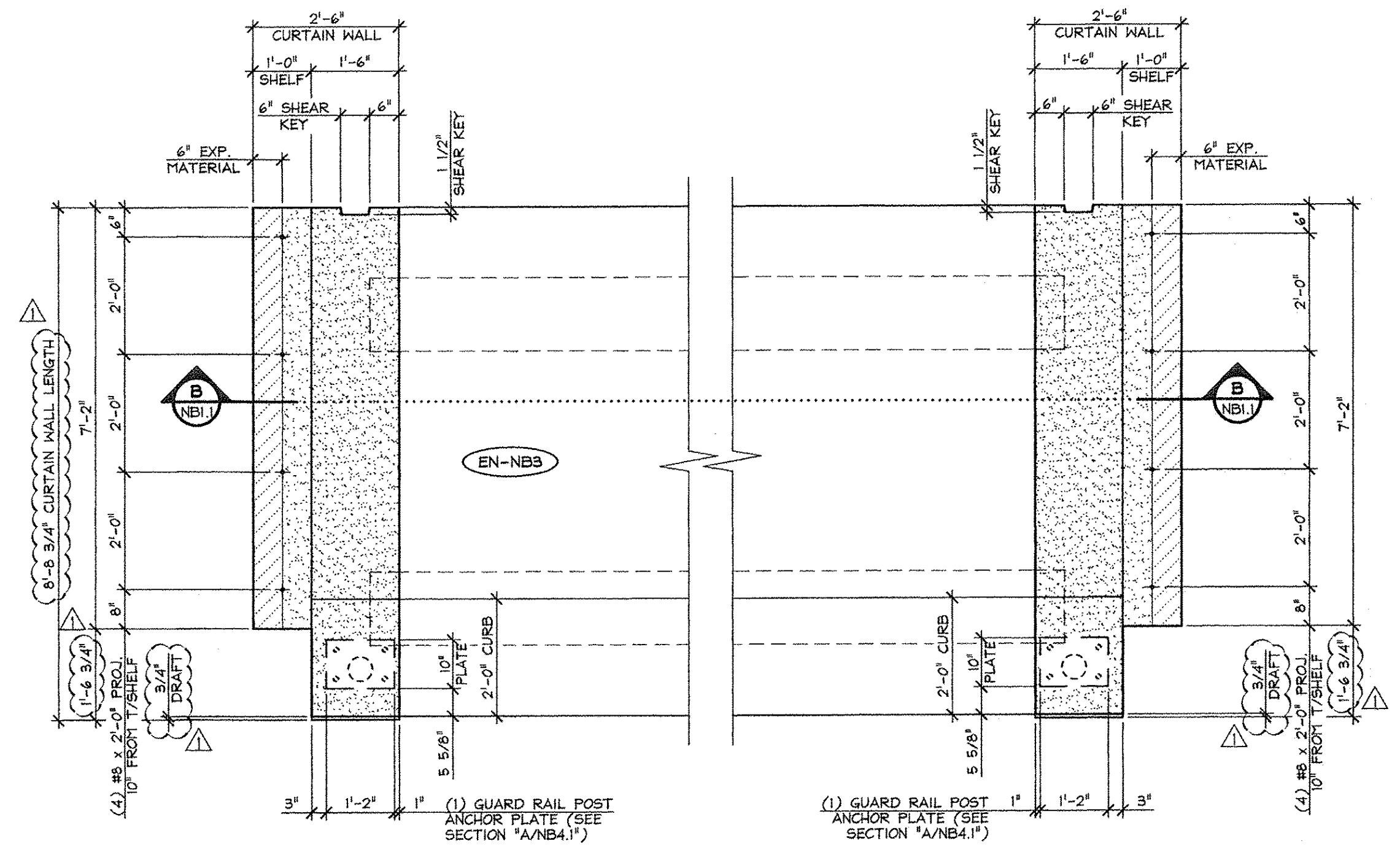
**PRESTRESSED NEXT BEAM DETAILS** DWG. NO: **NB4**



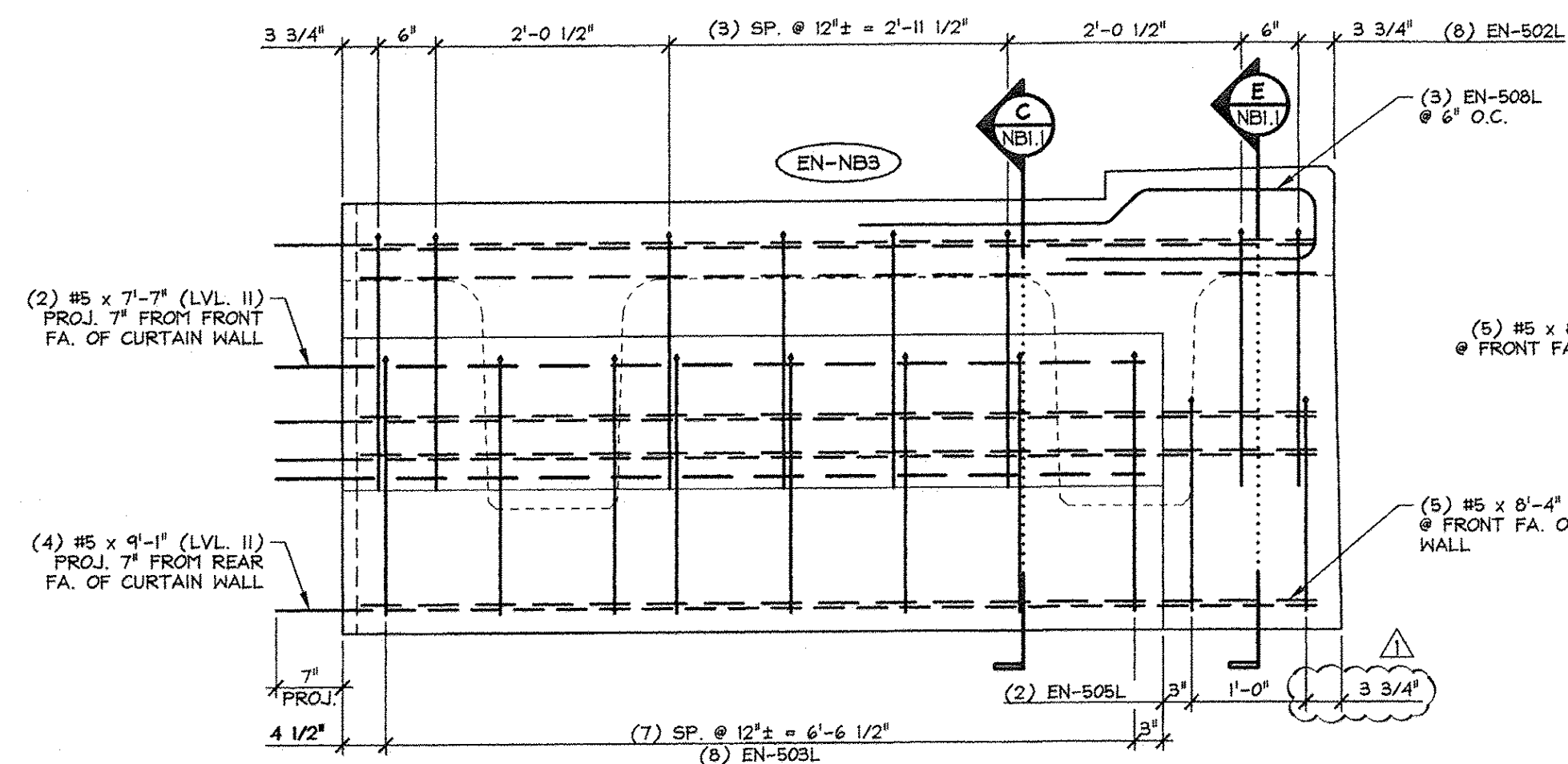
1 CURTAIN WALL DIMENSIONAL ELEVATION  
NB4.1 VOL.: 2.12 cy  
WT.: 4.30 T 3/4\"/>



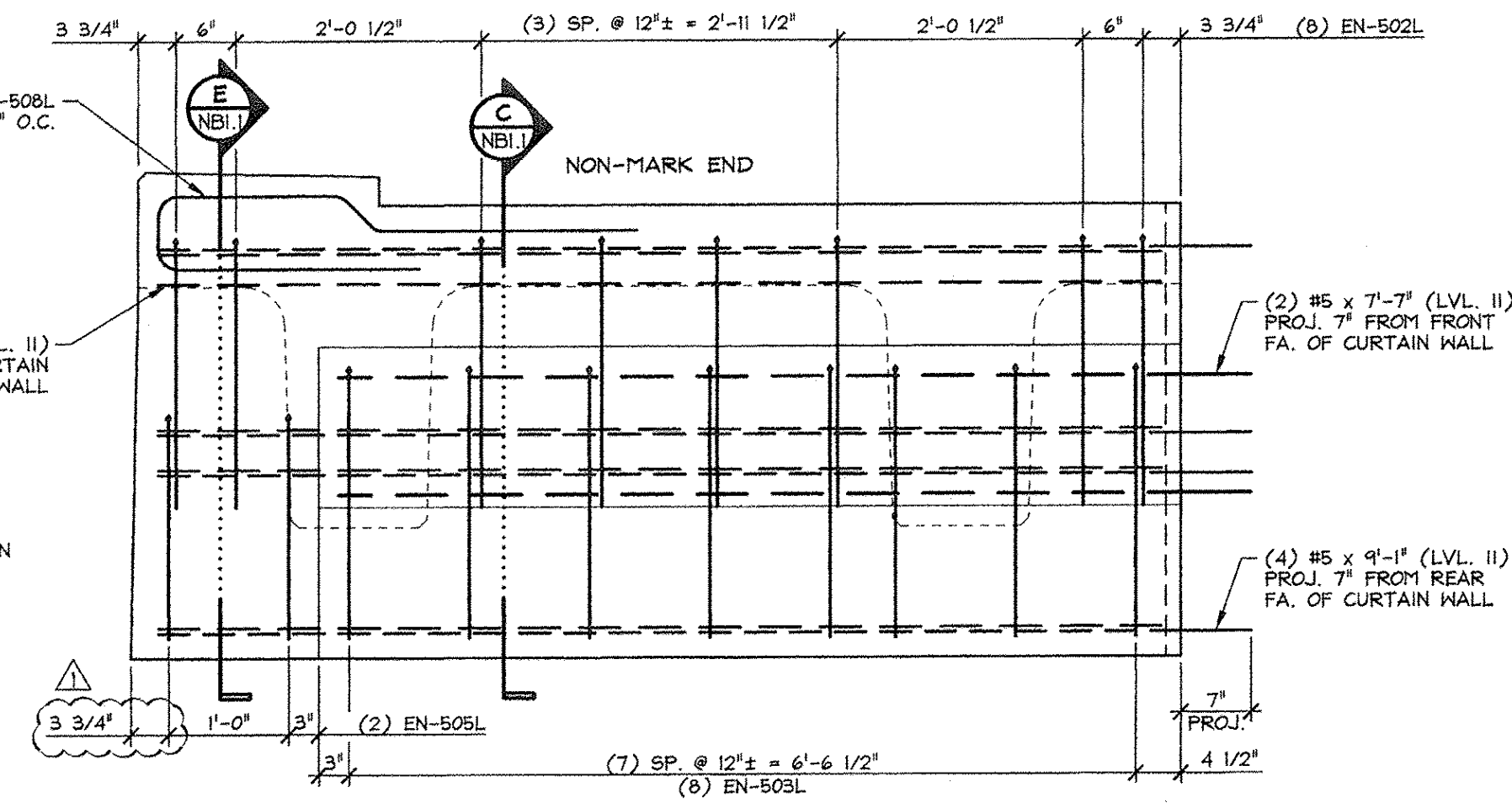
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NB4.1 VOL.: 2.12 cy  
WT.: 4.30 T 3/4\"/>



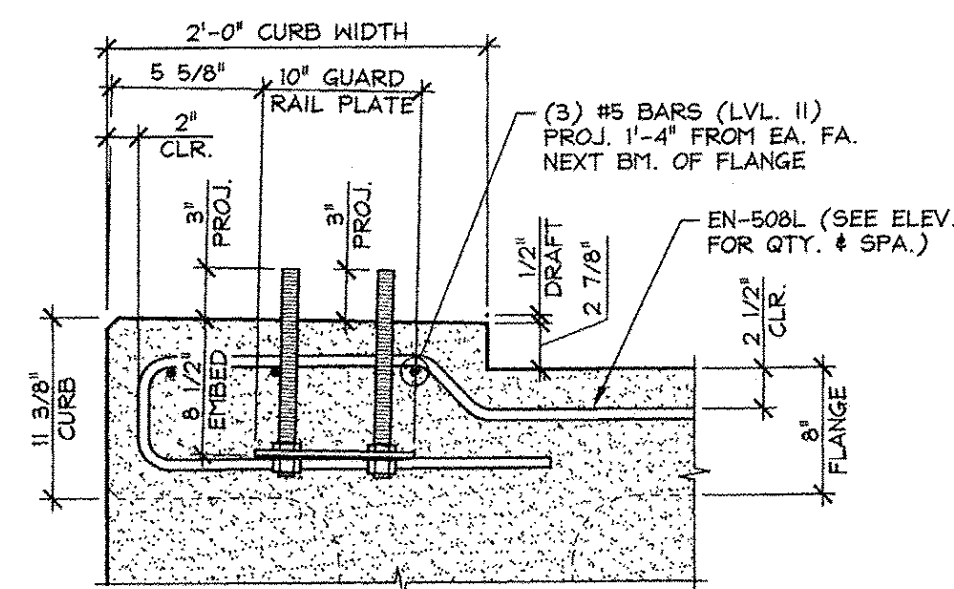
5 CURTAIN WALL DIMENSIONAL PLAN  
NB4.1 1/2\"/>



2 CURTAIN WALL REINFORCING ELEVATION  
NB4.1 3/4\"/>



4 CURTAIN WALL REINFORCING ELEVATION  
NB4.1 3/4\"/>



A CURB & GUARD RAIL ANCHOR PLATE SECTION  
NB4.1 1\"/>

59.12 T = NEXT BEAM  
4.30 T = CURTAIN WALL (MARK END)  
4.30 T = CURTAIN WALL (NON-MARK END)  
67.7 T = TOTAL BEAM WT.

ISSUED FOR PRODUCTION  
APR 09 2014  
J. P. CARRARA & SONS, INC.  
MIDDURHY, VT 05753

MARK: EN-NB3		QTY.: 1	MATERIAL LIST / CURTAIN WALL	
ITEM	MARK	DESCRIPTION	QTY./CURTAIN WALL	
			MARK END	NON-MARK END
1	SH-502L	#5 BENT BAR (LEVEL II, DUAL COATED)	8	8
2	SH-503L	#5 BENT BAR (LEVEL II, DUAL COATED)	8	8
3	SH-505L	#5 BENT BAR (LEVEL II, DUAL COATED)	2	2
4	SH-508L	#5 BENT BAR (LEVEL II, DUAL COATED)	3	3
5				
6		#5 x 7'-7\"/>		
7		#5 x 8'-4\"/>		
8		#5 x 9'-1\"/>		
9				
10				
11				
12				
13		GUARD RAIL ANCHOR PLATE (GALV.) (SUPPLIED BY OTHERS)	1	1
14		#8 x 2'-0\"/>		
15				

APPROVED: Approval of drawings and/or procedures indicates concurrence with the information presented and does not relieve the Contractor or Fabricator of compliance with all specifications and code requirements

APPROVED AS NOTED

REVISE AND RESUBMIT

NOT REVIEWED

Date: 4-11-2014

By: James Hyslop

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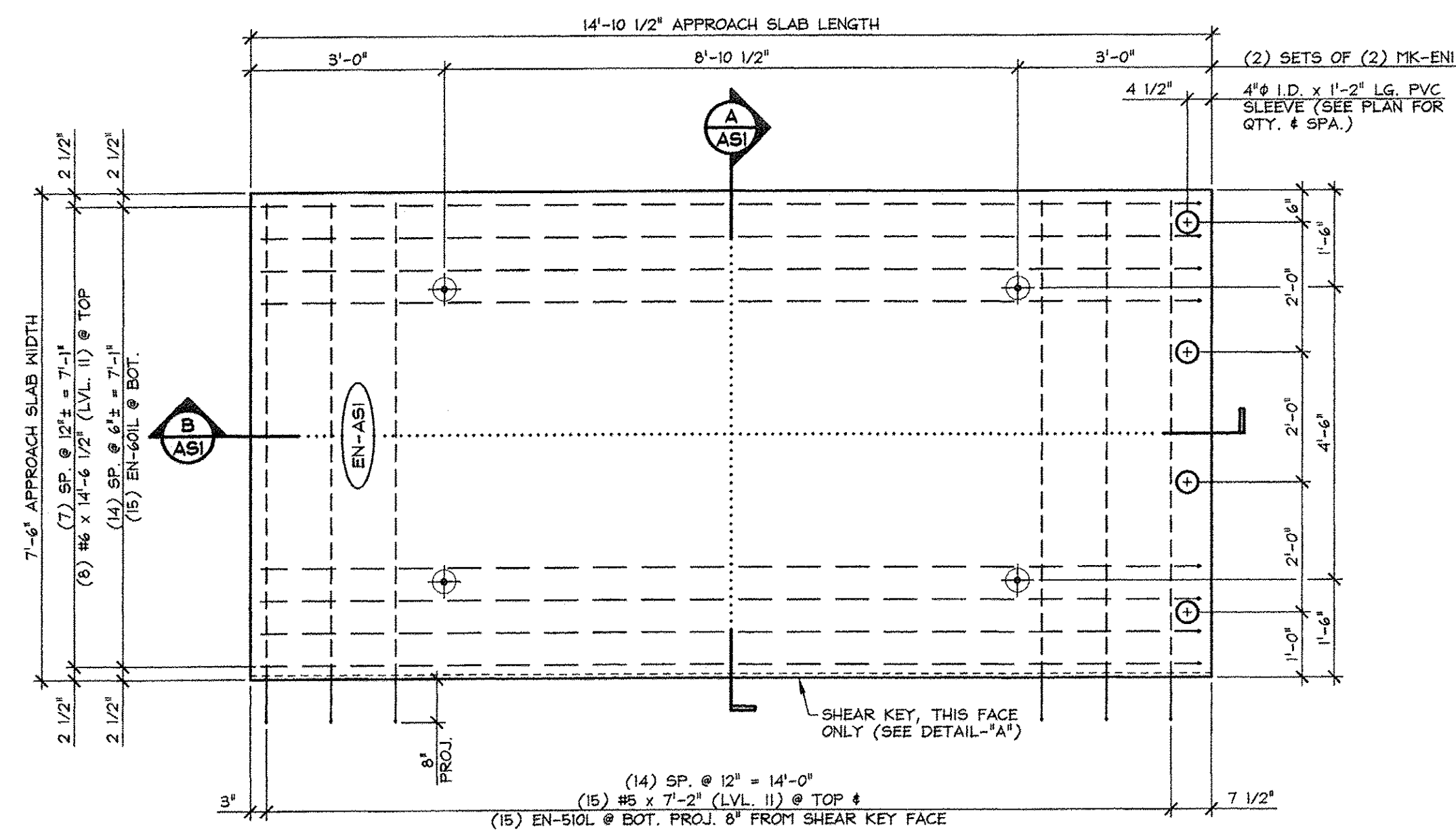
Vermont Agency of Transportation  
**RECEIVED**  
ON: April 9, 2014  
and Checked for  
**CONFORMANCE**  
BY: Rob Young DATE: 04/14/2014

J.P. CARRARA & SONS INC. A.L. ST. ONGE CONTRACTOR, INC.  
Precast & Prestress Manufacturer CONTRACTOR  
2464 CASE STR., MIDDURHY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010 MONTGOMERY CENTER, VERMONT

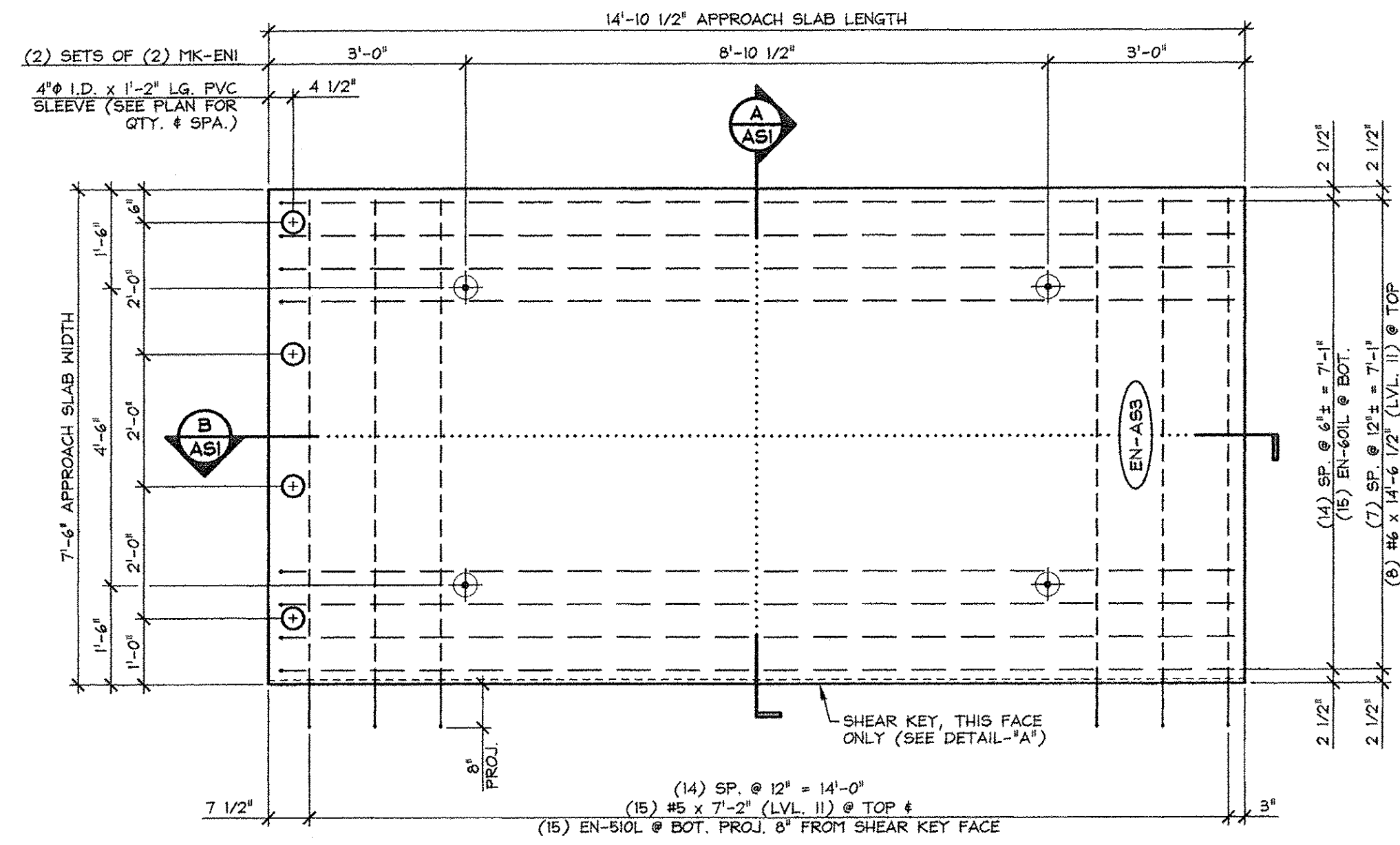
STATE OF VERMONT AGENCY OF TRANSPORTATION COUNTY OF FRANKLIN DATE: JAN. 27, 2014  
SCALE: NOTED

TOWN OF ENOSBURG CHKD: M.W. DFTM: B.L.  
BOSTON POST ROAD T.H.2 CLASS 2  
BRIDGE NO.: 48 PROJECT NO.: BRO 1448(40) JOB NO: 23418-015

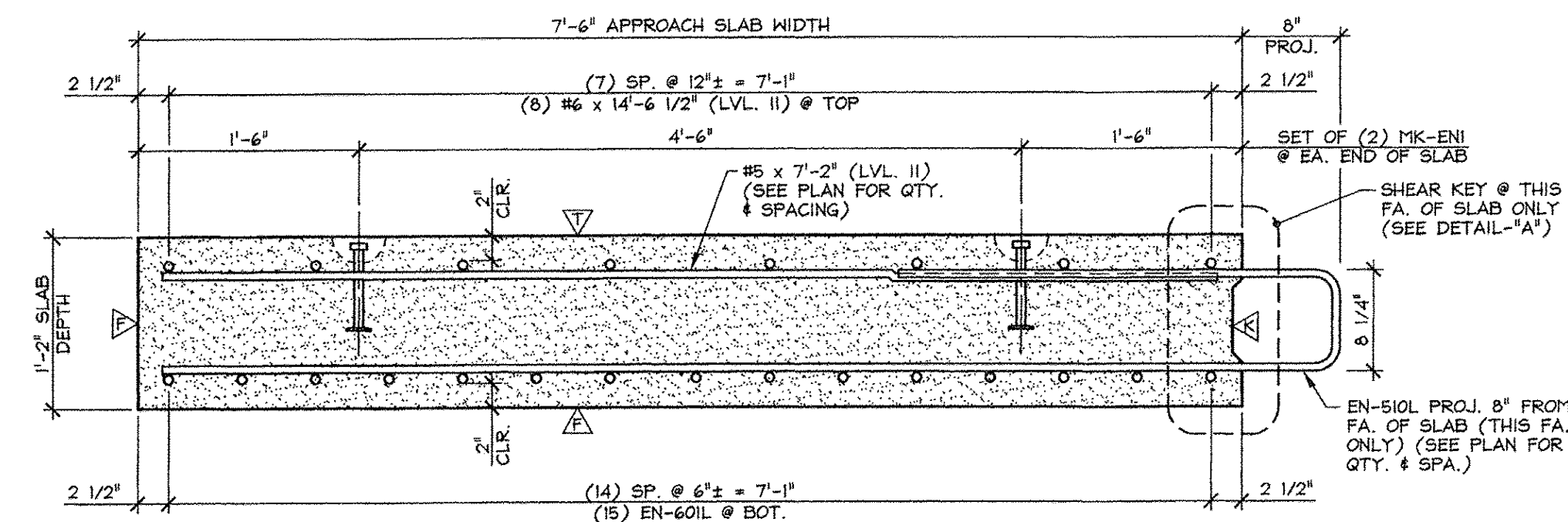
PRECAST CURTAIN WALL DETAILS DWG. NO: NB4.1



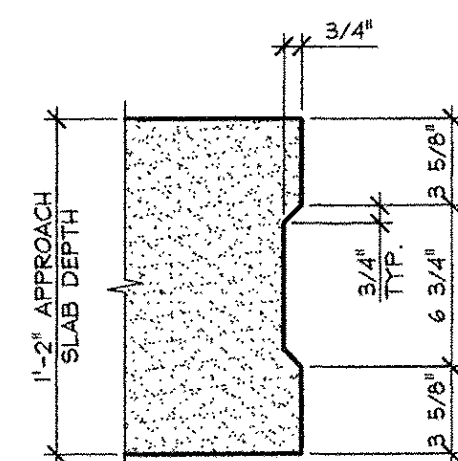
1 APPROACH SLAB PLAN VIEW IN FORM  
ASI  
1/2" = 1'-0"



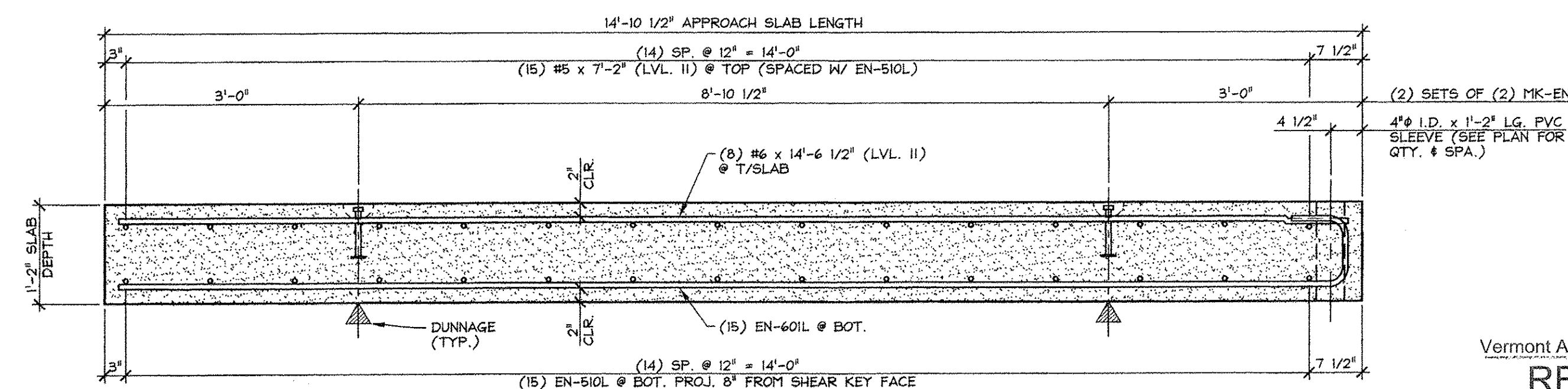
2 APPROACH SLAB PLAN VIEW IN FORM  
ASI  
1/2" = 1'-0"



A TRANSVERSE SECTION  
ASI  
1" = 1'-0"



DETAIL - "A"  
1 1/2" = 1'-0"



B LONGITUDINAL SECTION  
ASI  
3/4" = 1'-0"

- △ DENOTES FORM FINISH
- △ DENOTES FLOAT FINISH
- △ DENOTES ROUGHENED FINISH

MARK: EN-ASI	QTY.: 1	WT.: 9.7 T	VOL.: 4.8 cy
MARK: EN-AS3	QTY.: 1	WT.: 9.7 T	VOL.: 4.8 cy

MATERIAL LIST / APPROACH SLAB				
ITEM	MARK	DESCRIPTION	QTY./SLAB	
			EN-ASI	EN-AS3
1	EN-SIOL	#5 BENT BAR (LEVEL II, DUAL COATED)	15	15
2		#5 x 7'-2" (LEVEL II, DUAL COATED)	15	15
3				
4				
5	EN-60IL	#6 BENT BAR (LEVEL II, DUAL COATED)	15	15
6		#6 x 14'-6 1/2" (LEVEL II, DUAL COATED)	8	8
7				
8	MK-ENI	4T x 7 1/8" SHIFTS LIFT LIFTER (GALVANIZE) △	4	4
9		4" I.D. x 1'-2" PVC SLEEVE	4	4
10				

APPROVED: Approval of drawings and/or procedures indicates concurrence with the information presented and does not relieve the Contractor or Fabricator of compliance with all specifications and code requirements

APPROVED AS NOTED

REVISE AND RESUBMIT

NOT REVIEWED

Date: 4-11-2014

By: James H. [Signature]

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Stantec

Vermont Agency of Transportation  
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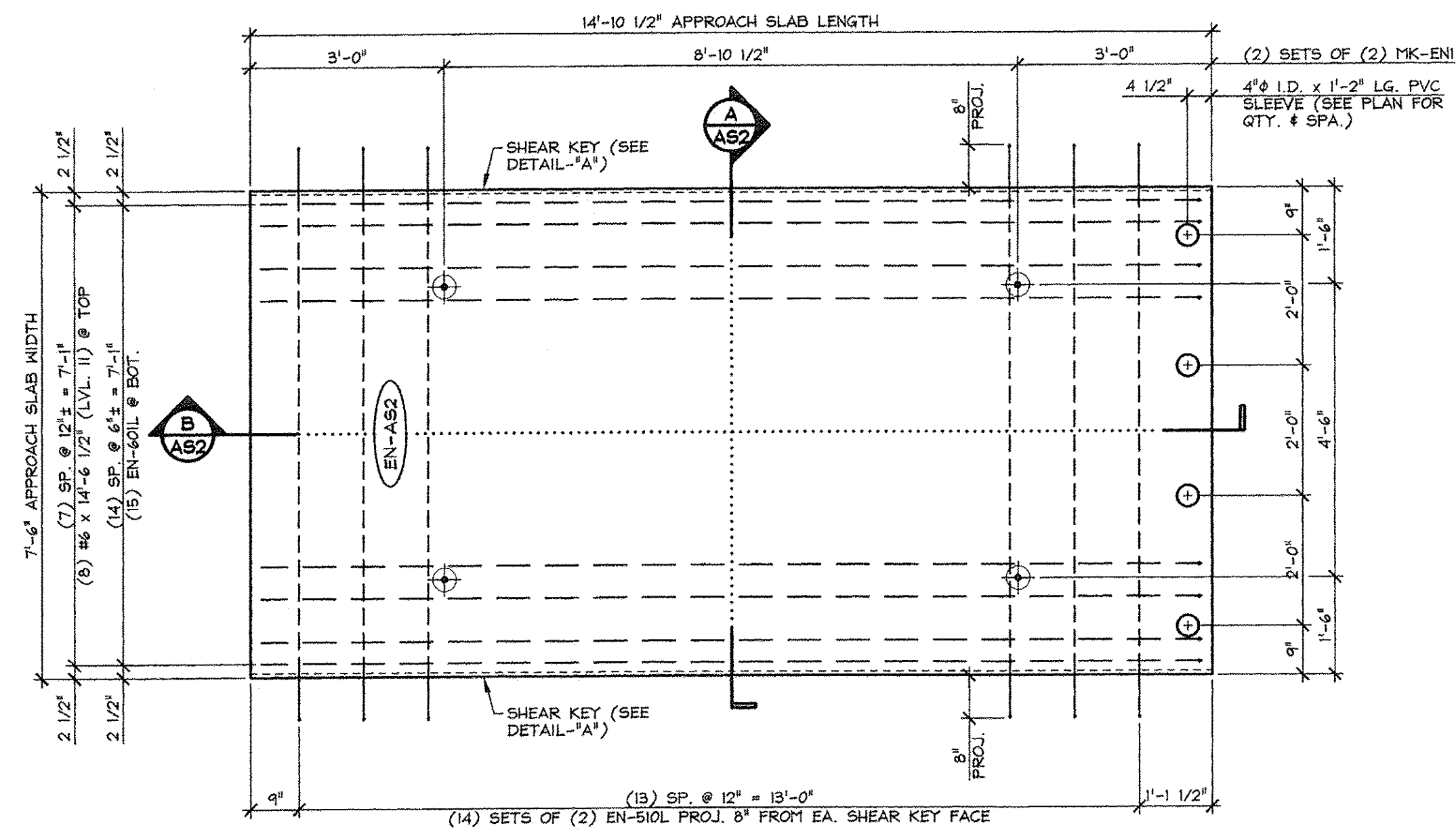
J.P. CARRARA & SONS INC. A.L. ST. ONGE CONTRACTOR, INC.  
 Precast & Prestress Manufacturer CONTRACTOR  
 2464 OAK ST., MIDDLEBURY, VERMONT 05753 Phone: (802)388-8361 Fax: (802)388-9010 MONTGOMERY CENTER, VERMONT

STATE OF VERMONT AGENCY OF TRANSPORTATION COUNTY OF FRANKLIN DATE: JAN. 27, 2014  
 SCALE: NOTED

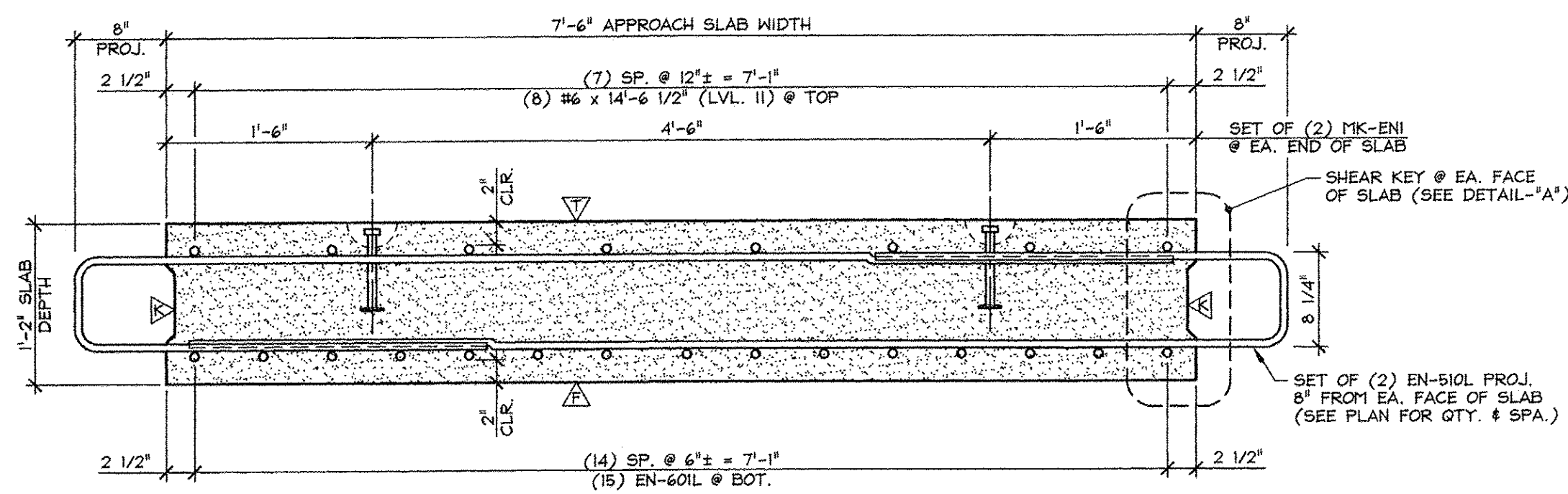
TOWN OF ENOSBURG  
 BOSTON POST ROAD T.H.2 CLASS 2  
 BRIDGE NO.: 48 PROJECT NO.: BRO 1448(40) CHKD: M.J.W. DFTM: B.L.  
 JOB NO: 23418-013

PRECAST APPROACH SLAB DETAILS DWG. NO: ASI

ISSUED FOR PRODUCTION  
 APR 09 2014  
 J.P. CARRARA & SONS, INC.  
 MIDDLEBURY, VT 05753

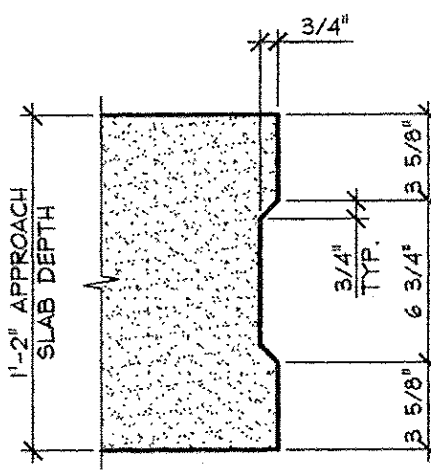


**1** APPROACH SLAB PLAN VIEW IN FORM  
AS2  
1/2" = 1'-0"

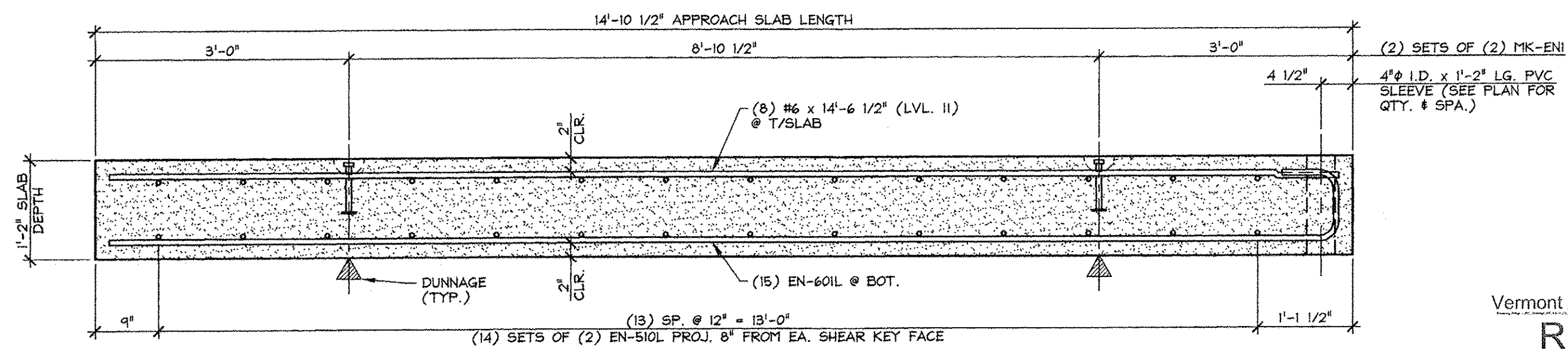


**A** TRANSVERSE SECTION  
AS2  
1" = 1'-0"

- △ DENOTES FORM FINISH
- △ DENOTES FLOAT FINISH
- △ DENOTES ROUGHENED FINISH



DETAIL - "A"  
1 1/2" = 1'-0"



**B** LONGITUDINAL SECTION  
AS2  
3/4" = 1'-0"

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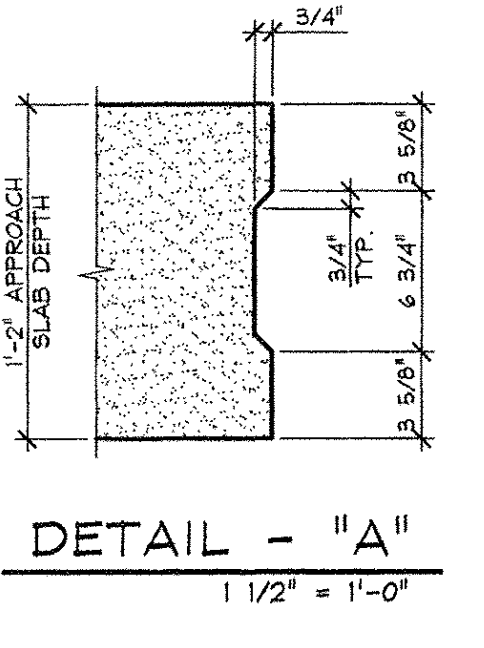
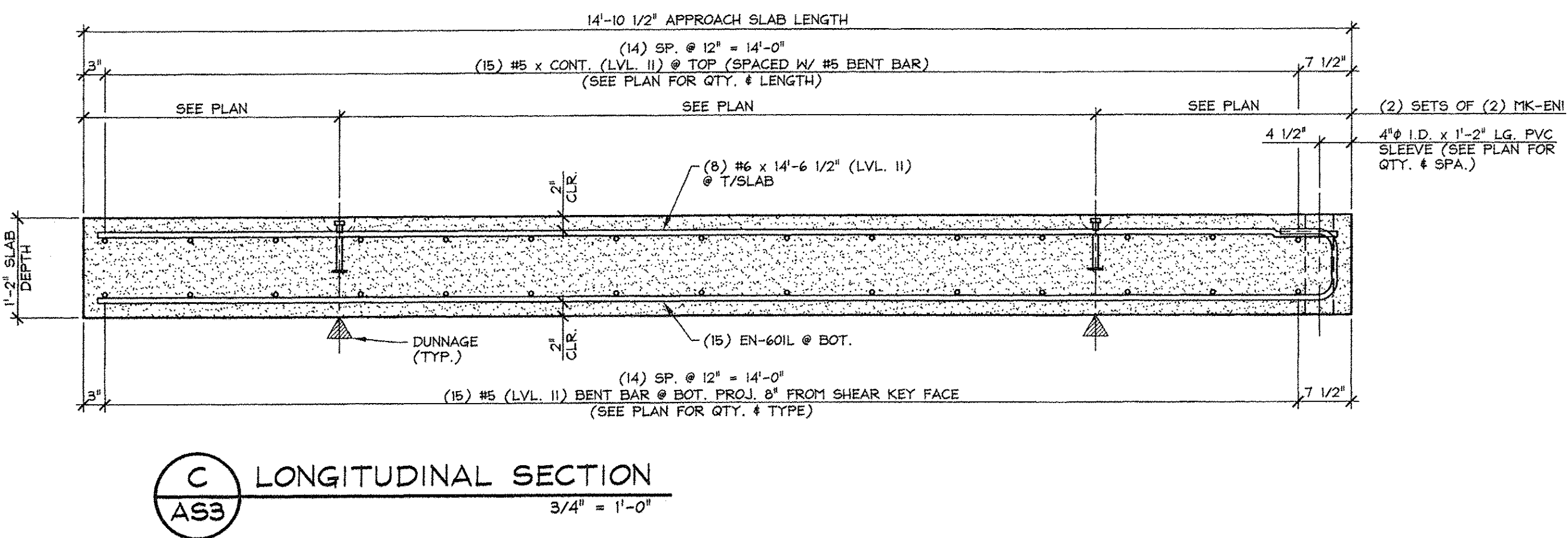
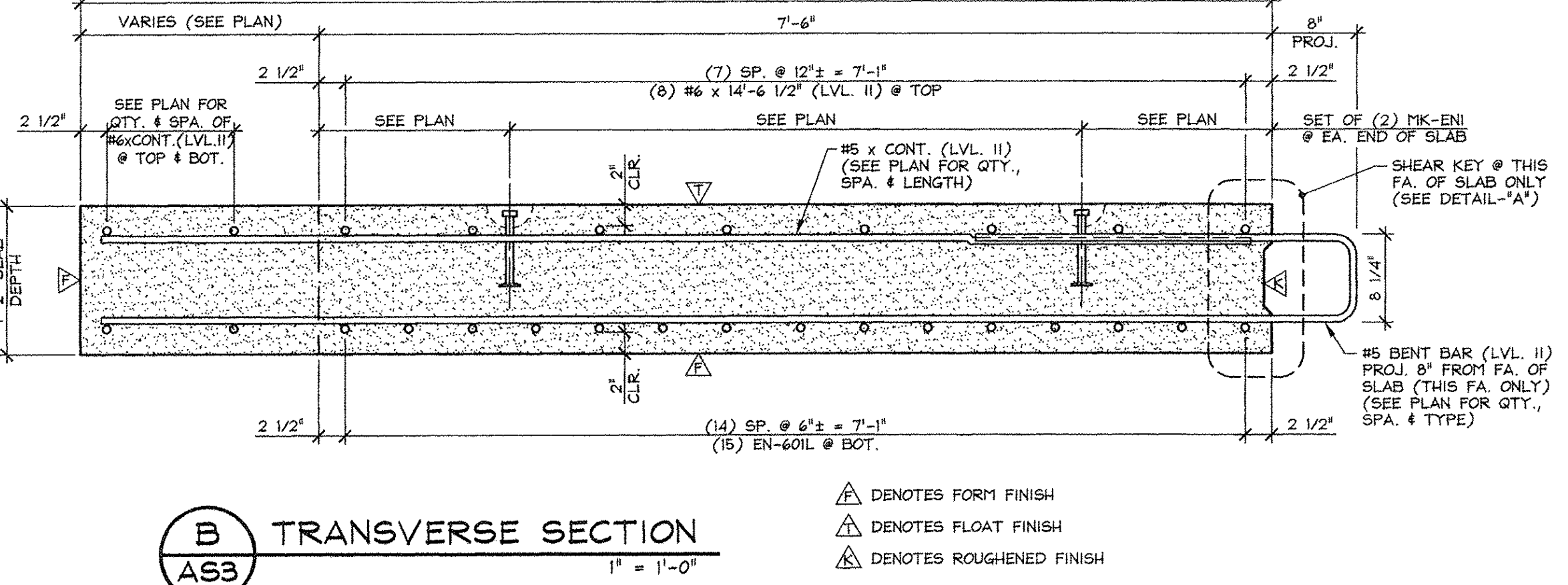
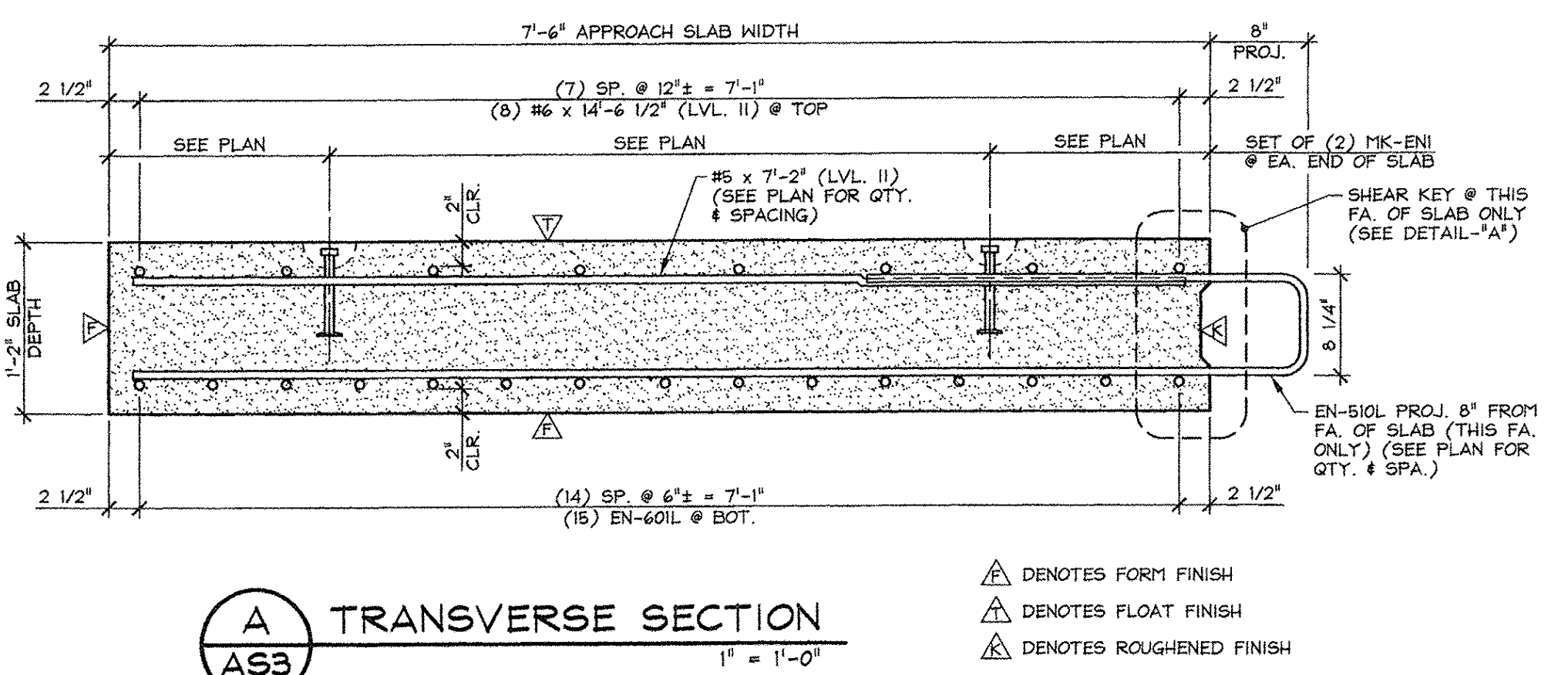
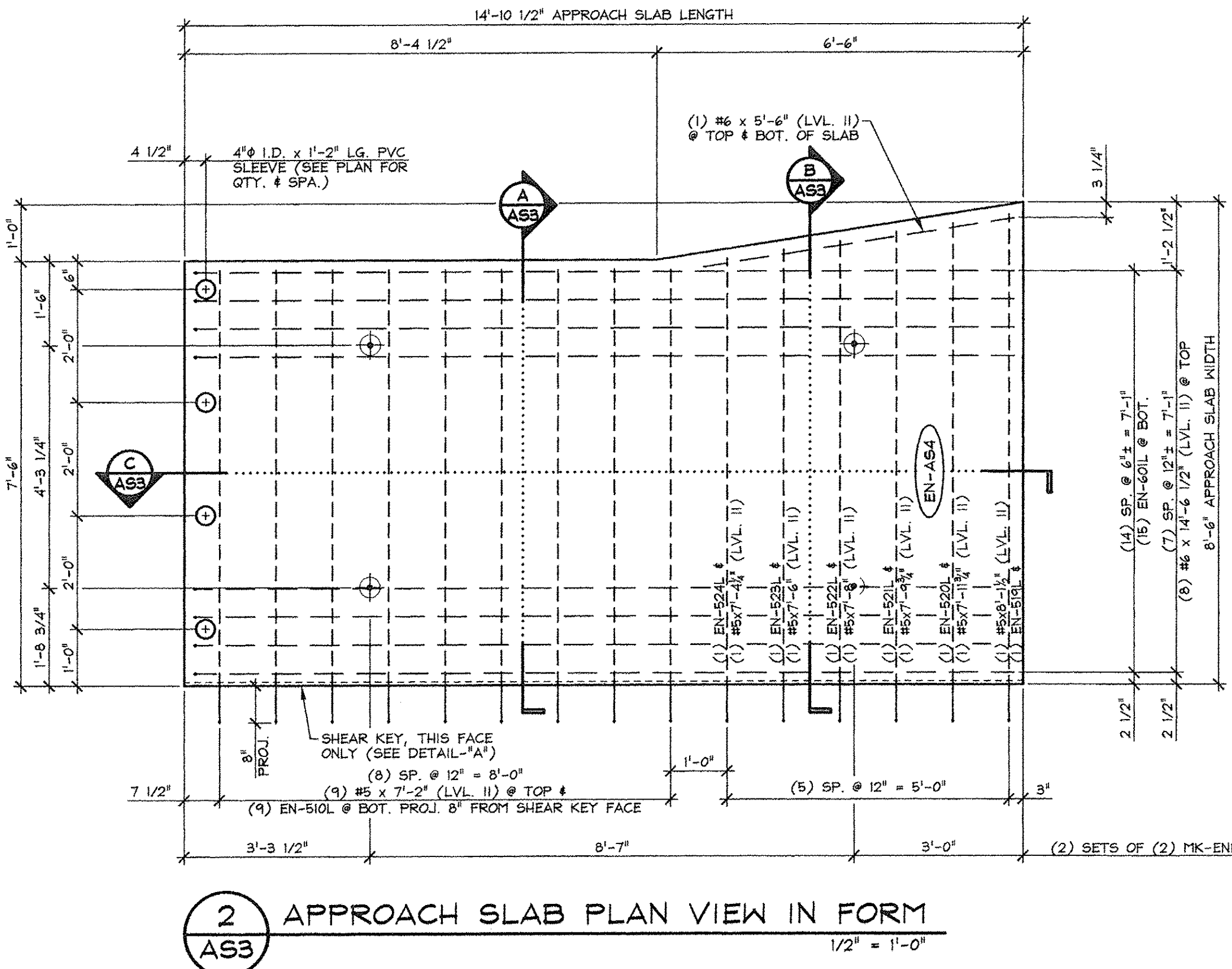
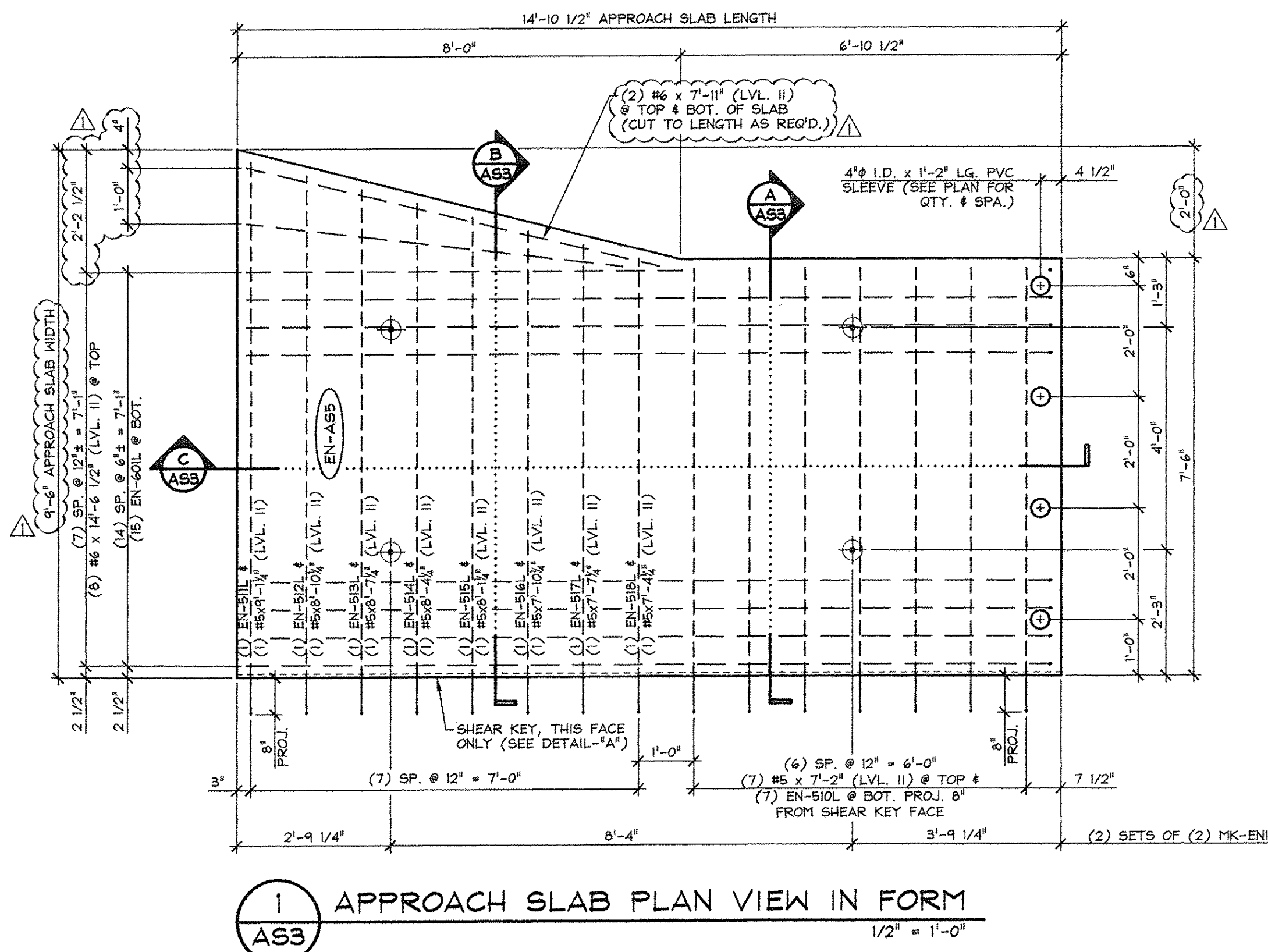
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APPROVED AS NOTED	
REVISE AND RESUBMIT	
NOT REVIEWED	

Date: 4-11-2014  
By: James H. [Signature]  
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ISSUED FOR PRODUCTION  
APR 09 2014  
J.P. CARRARA & SONS, INC.  
MIDDLEBURY, VT 05753

MARK: EN-AS2	QTY.: 2	WT.: 9.7 T	VOL.: 4.8 cy
MARK: -	QTY.: -	WT.: -	VOL.: -
MATERIAL LIST / APPROACH SLAB			
ITEM	MARK	DESCRIPTION	QTY./SLAB
1	EN-510L	#5 BENT BAR (LEVEL II, DUAL COATED)	28
2			
3			
4	EN-601L	#6 BENT BAR (LEVEL II, DUAL COATED)	15
5		#6 x 14'-6 1/2" (LEVEL II, DUAL COATED)	8
6			
7			
8	MK-ENI	4T x 7 1/8" SWIFT LIFT LIFTER (GALVANIZE)	4
9		4" I.D. x 1'-2" PVC SLEEVE	4
10			

<b>J.P. CARRARA &amp; SONS INC.</b> Precast & Prestress Manufacturer 2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone: (802)388-6361 Fax: (802)388-9010	<b>A.L. ST. ONGE CONTRACTOR, INC.</b> CONTRACTOR MONTGOMERY CENTER, VERMONT
<b>STATE OF VERMONT AGENCY OF TRANSPORTATION</b> COUNTY OF FRANKLIN	DATE: JAN. 27, 2014 SCALE: NOTED
<b>TOWN OF ENOSBURG</b> BOSTON POST ROAD T.H.2 CLASS 2 BRIDGE NO.: 48 PROJECT NO.: BRO 1448(40)	CHKD: M.J.W. DFTM: B.L. JOB NO: 23418-013
<b>PRECAST APPROACH SLAB DETAILS</b>	DWG. NO: AS2



Vermont Agency of Transportation  
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**CONFORMANCE**  
 BY: Rob Young DATE: 04/14/2014

ISSUED FOR PRODUCTION  
 APR 09 2014  
 J. P. CARRARA & SONS, INC.  
 MIDDLETOWN, VT 05753

MARK: EN-AS5	QTY.: 1	WT.: 10.81 T	VOL.: 5.34 cy
MARK: EN-AS4	QTY.: 1	WT.: 10.05 T	VOL.: 4.96 cy

MATERIAL LIST / APPROACH SLAB			
ITEM	MARK	DESCRIPTION	QTY./SLAB
			EN-AS5 EN-AS4
1	EN-50L	#5 BENT BAR (LEVEL II, DUAL COATED)	7 9
2	EN-51L	#5 BENT BAR (LEVEL II, DUAL COATED)	1
3	EN-52L	#5 BENT BAR (LEVEL II, DUAL COATED)	1
4	EN-53L	#5 BENT BAR (LEVEL II, DUAL COATED)	1
5	EN-54L	#5 BENT BAR (LEVEL II, DUAL COATED)	1
6	EN-55L	#5 BENT BAR (LEVEL II, DUAL COATED)	1
7	EN-56L	#5 BENT BAR (LEVEL II, DUAL COATED)	1
8	EN-57L	#5 BENT BAR (LEVEL II, DUAL COATED)	1
9	EN-58L	#5 BENT BAR (LEVEL II, DUAL COATED)	1
10	EN-59L	#5 BENT BAR (LEVEL II, DUAL COATED)	1
11	EN-520L	#5 BENT BAR (LEVEL II, DUAL COATED)	1
12	EN-521L	#5 BENT BAR (LEVEL II, DUAL COATED)	1
13	EN-522L	#5 BENT BAR (LEVEL II, DUAL COATED)	1
14	EN-523L	#5 BENT BAR (LEVEL II, DUAL COATED)	1
15	EN-524L	#5 BENT BAR (LEVEL II, DUAL COATED)	1
16		#5 x 7'-2" (LEVEL II, DUAL COATED)	7 9
17		#5 x 9'-1 1/4" (LEVEL II, DUAL COATED)	1
18		#5 x 8'-10 1/4" (LEVEL II, DUAL COATED)	1
19		#5 x 8'-7 1/4" (LEVEL II, DUAL COATED)	1
20		#5 x 8'-4 1/4" (LEVEL II, DUAL COATED)	1
21		#5 x 8'-1 1/4" (LEVEL II, DUAL COATED)	1
22		#5 x 7'-10 1/4" (LEVEL II, DUAL COATED)	1
23		#5 x 7'-7 1/4" (LEVEL II, DUAL COATED)	1
24		#5 x 7'-4 1/4" (LEVEL II, DUAL COATED)	1
25		#5 x 8'-1 1/2" (LEVEL II, DUAL COATED)	1
26		#5 x 7'-11 3/4" (LEVEL II, DUAL COATED)	1
27		#5 x 7'-9 3/4" (LEVEL II, DUAL COATED)	1
28		#5 x 7'-8" (LEVEL II, DUAL COATED)	1
29		#5 x 7'-6" (LEVEL II, DUAL COATED)	1
30		#5 x 7'-4 1/4" (LEVEL II, DUAL COATED)	1
31			
32	EN-60L	#6 BENT BAR (LEVEL II, DUAL COATED)	15 15
33		#6 x 14'-6 1/2" (LEVEL II, DUAL COATED)	8 8
34		#6 x 7'-11" (LEVEL II, DUAL COATED)	4 4
35		#6 x 5'-6" (LEVEL II, DUAL COATED)	2
36			
37	MK-ENI	4T x 7 1/8" SWIFT LIFT LIFTER (GALVANIZE)	4 4
38		4" I.D. x 1'-2" PVC SLEEVE	4 4
39			
40			

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APPROVED AS NOTED

REVISE AND RESUBMIT

NOT REVIEWED

Date: 4-11-2014

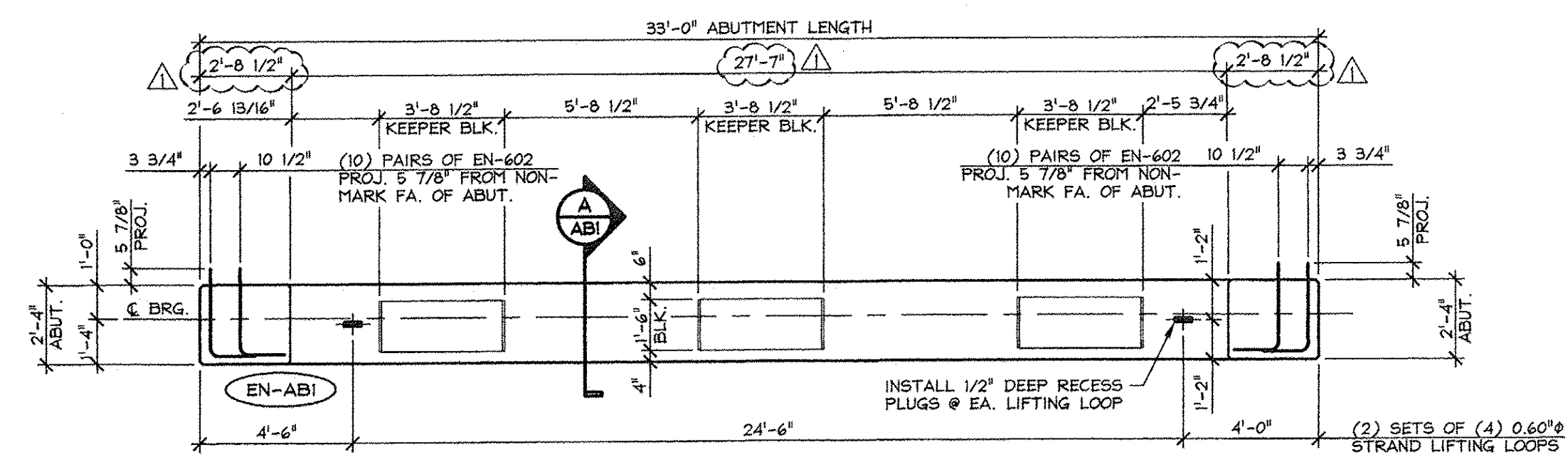
By: James H. [Signature]

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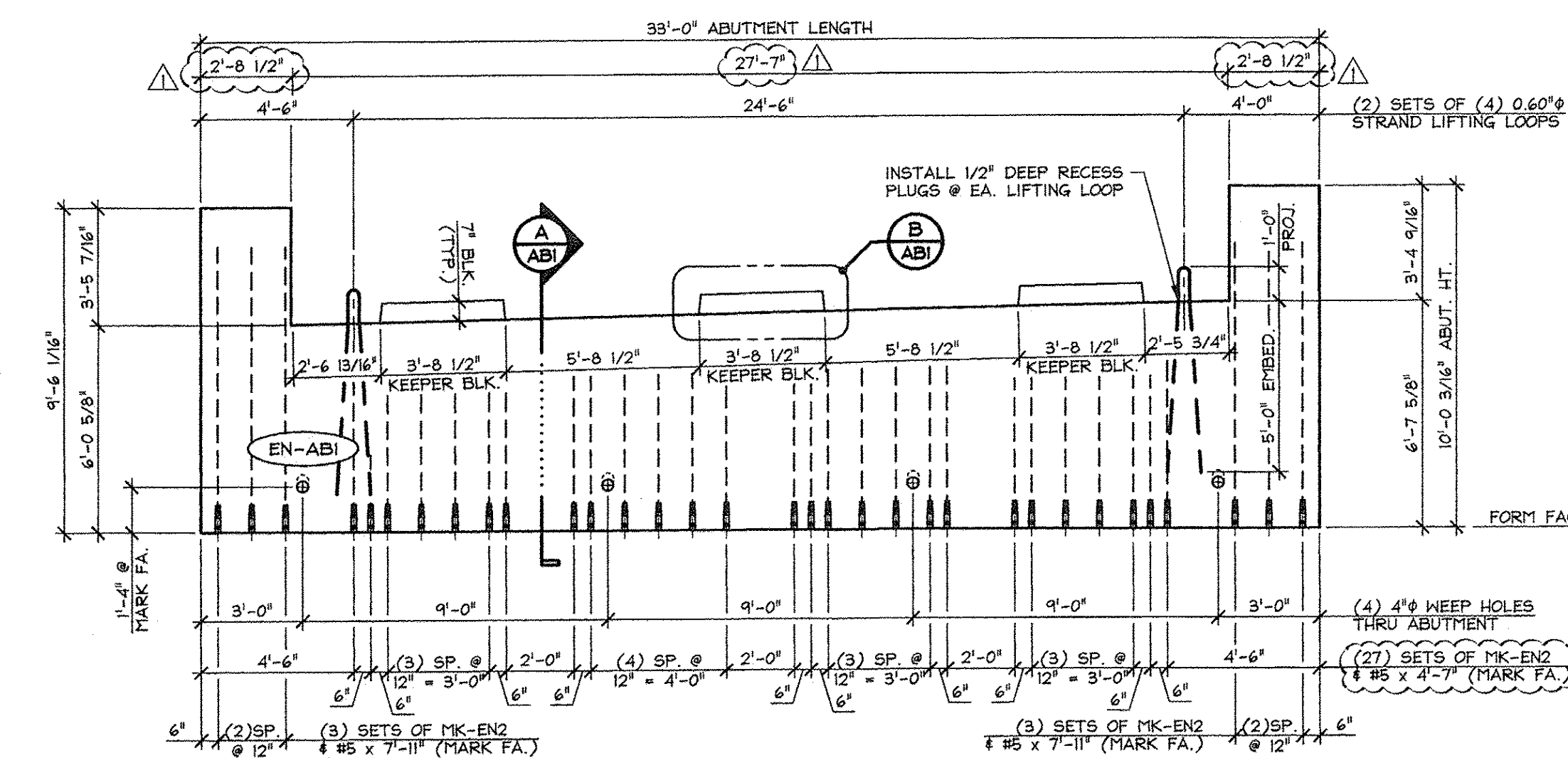
J.P. CARRARA & SONS INC. A.L. St. ONGE CONTRACTOR, INC.  
 Precast & Prestress Manufacturer CONTRACTOR  
 2464 DGE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-8010 MONTGOMERY CENTER, VERMONT

STATE OF VERMONT AGENCY OF TRANSPORTATION COUNTY OF FRANKLIN  
 TOWN OF ENOSBURG  
 BOSTON POST ROAD T.H.2 CLASS 2  
 BRIDGE NO.: 48 PROJECT NO.: BRO 1448(40)

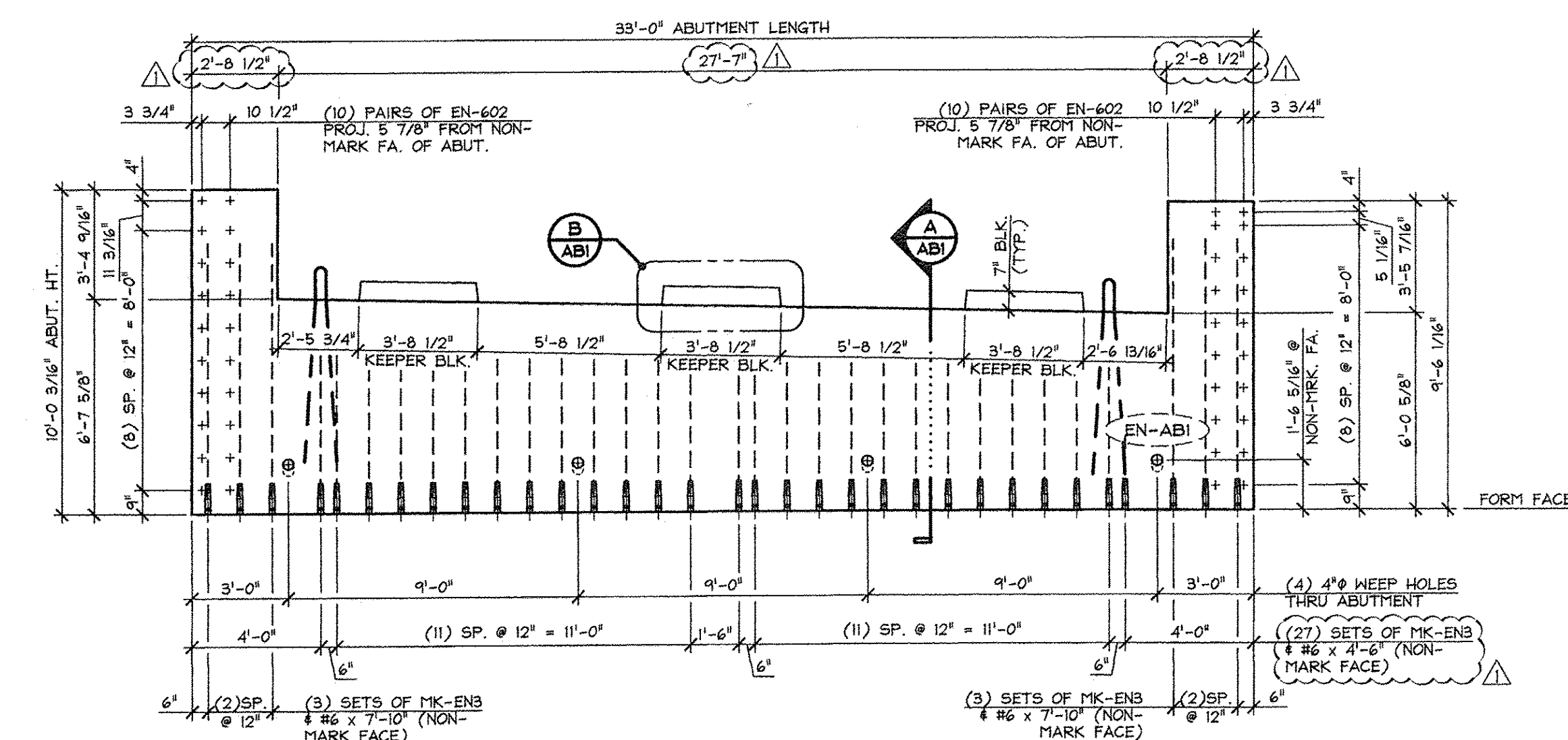
DATE: JAN. 27, 2014  
 SCALE: NOTED  
 CHKD: M.W. DFTM: B.L.  
 JOB NO: 23418-013  
 DWG. NO: AS3



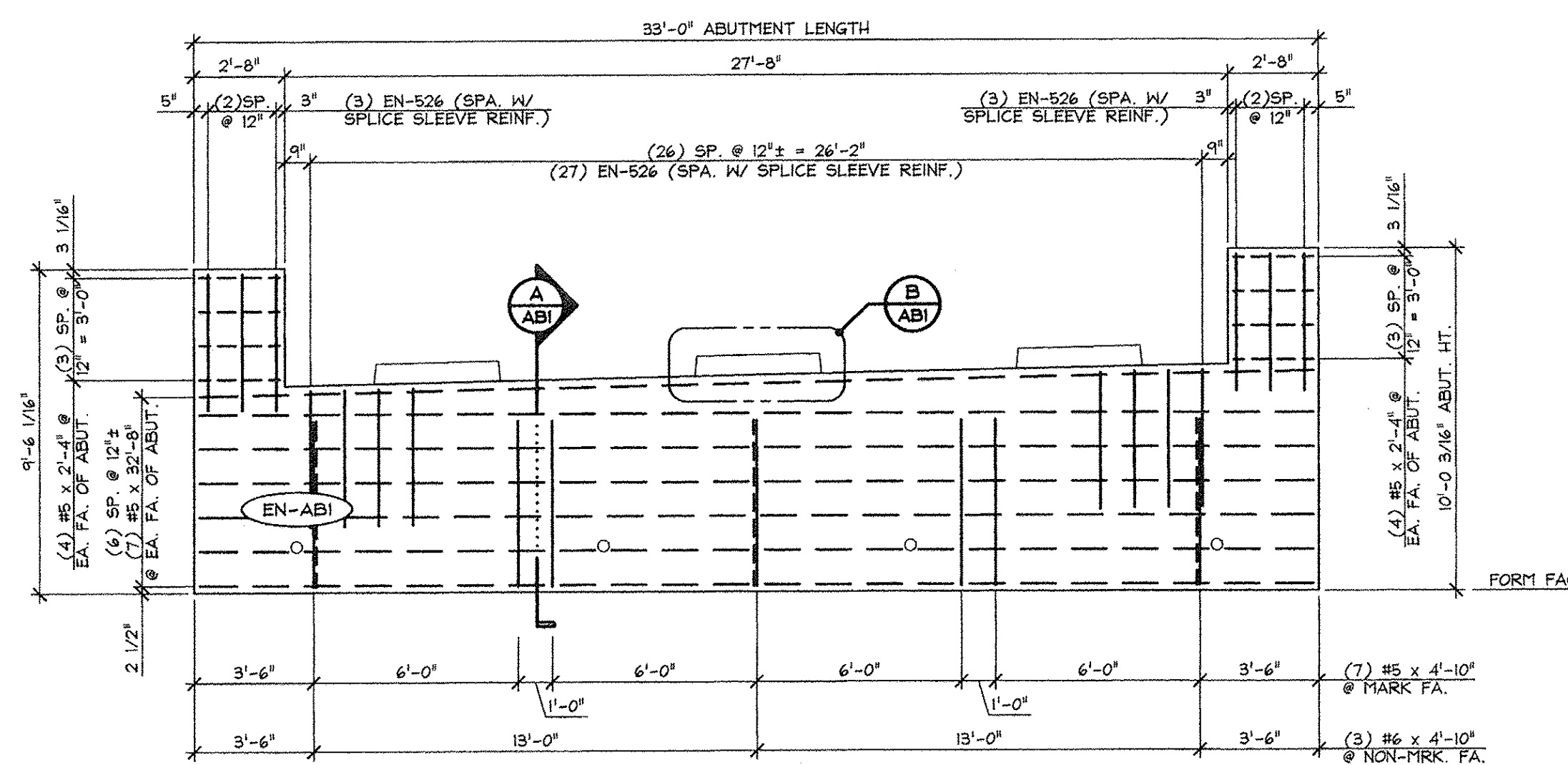
1 DIMENSIONAL PLAN VIEW IN FORM  
ABI  
1/4" = 1'-0"



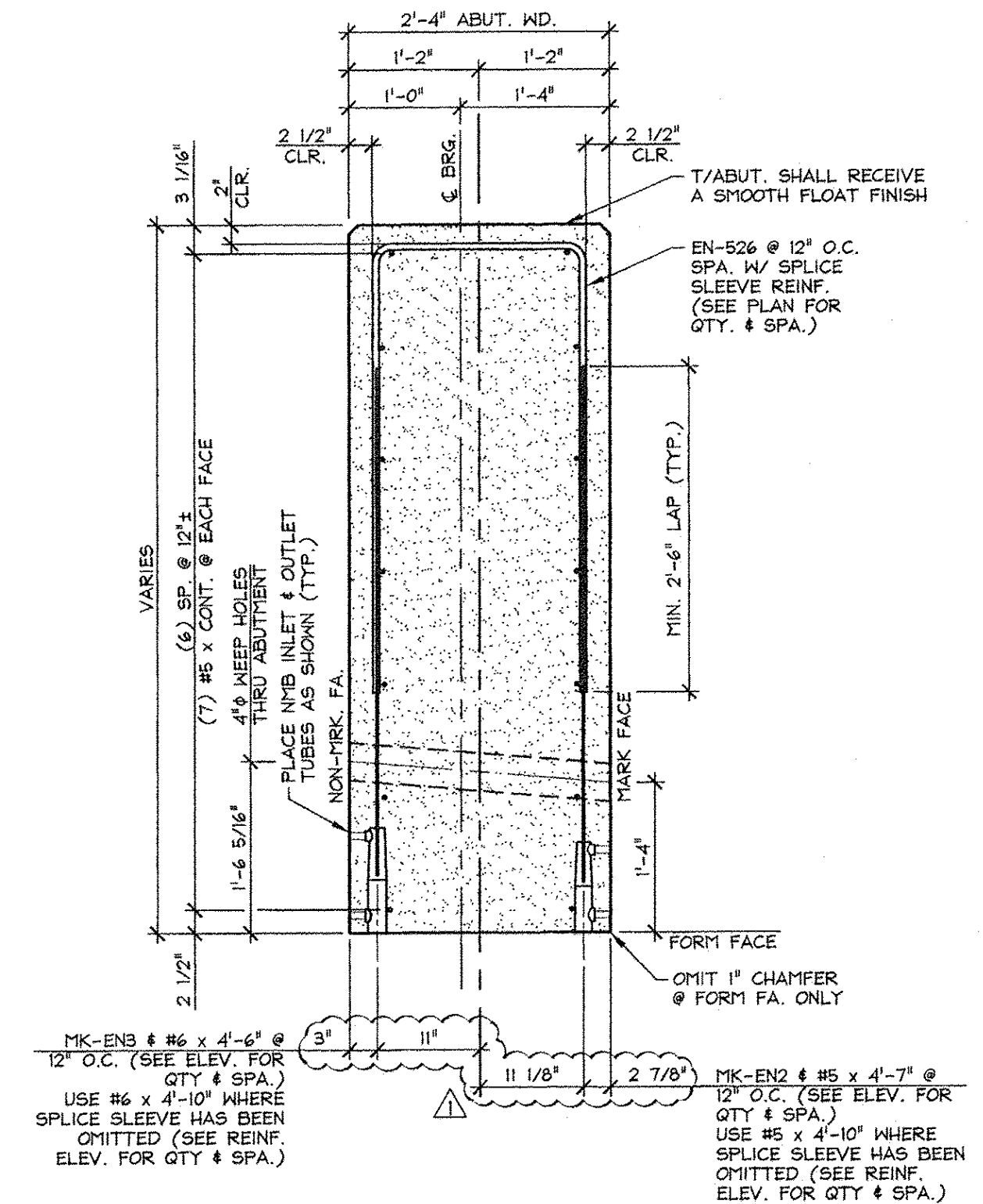
2 DIMENSIONAL ELEVATION (MARK FACE)  
ABI  
1/4" = 1'-0"



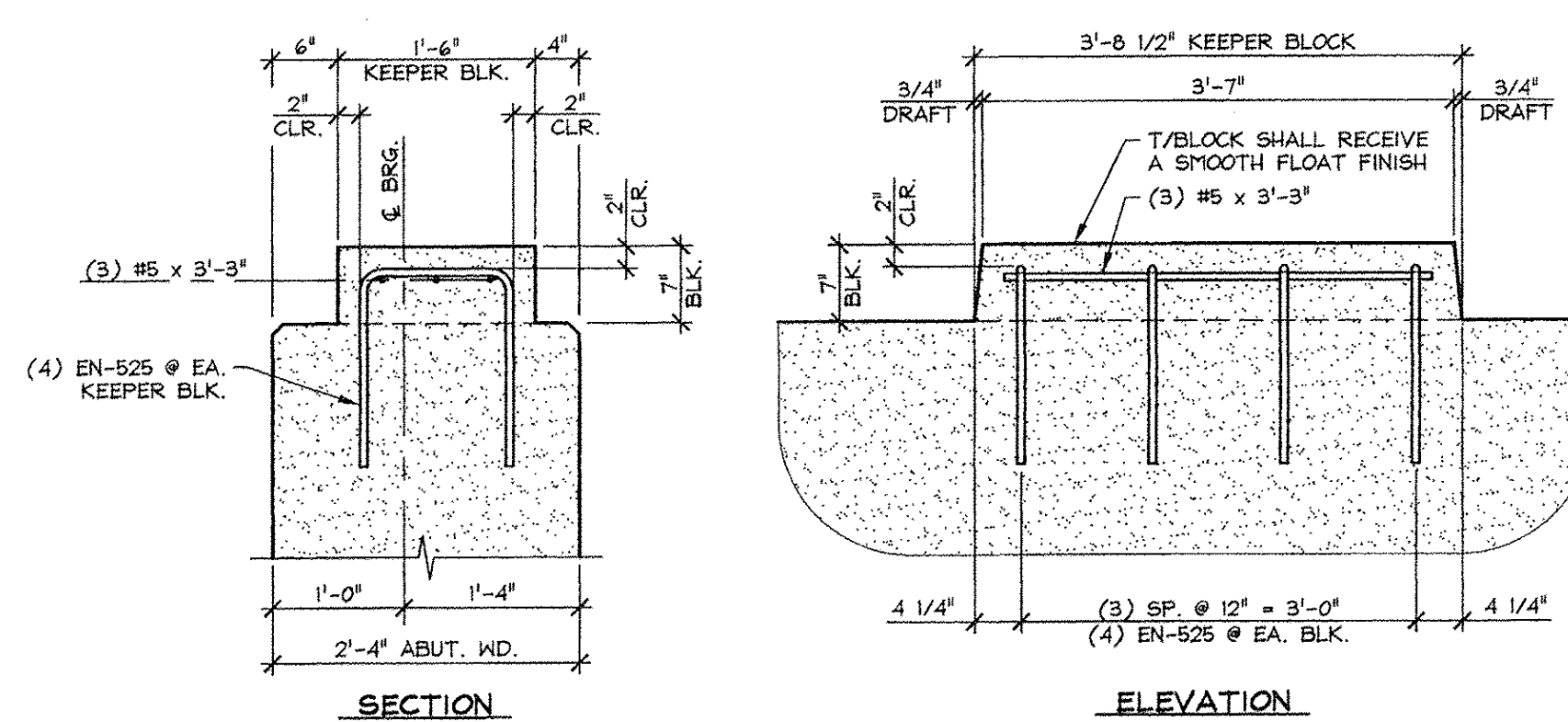
3 DIMENSIONAL ELEVATION (NON-MARK FACE)  
ABI  
1/4" = 1'-0"



4 REINFORCING ELEVATION  
ABI  
1/4" = 1'-0"



A ABUTMENT SECTION  
ABI  
3/4" = 1'-0"



B KEEPER BLOCK DETAILS  
ABI  
3/4" = 1'-0"

SHOP NOTE:  
F<sub>c</sub> = 5,000 PSI  
F<sub>s</sub> = 4,000 PSI  
MIX: #44MSCC

ISSUED FOR PRODUCTION  
APR 09 2014  
J.P. CARRARA & SONS, INC.  
MIDDLEBURY, VT 05753

MARK: EN-ABI QTY.: 1 WT.: 40.54 T VOL.: 20.02 cy

MATERIAL LIST / ABUTMENT			
ITEM	MARK	DESCRIPTION	QTY.
1	EN-526	#5 BENT BAR (LEVEL I, BLACK STEEL)	12
2	EN-526	#5 BENT BAR (LEVEL I, BLACK STEEL)	33
3	EN-526	#5 x 3'-3" (LEVEL I, BLACK STEEL)	9
4	EN-526	#5 x 4'-7" (LEVEL I, BLACK STEEL)	27
5	EN-526	#5 x 4'-10" (LEVEL I, BLACK STEEL)	7
6	EN-526	#5 x 7'-11" (LEVEL I, BLACK STEEL)	6
7	EN-526	#5 x 32'-8" (LEVEL I, BLACK STEEL)	14
8	EN-526	#5 x 2'-4" (LEVEL I, BLACK STEEL)	16
9			
10	EN-602	#6 BENT BAR (LEVEL I, BLACK STEEL)	40
11	EN-602	#6 x 4'-6" (LEVEL I, BLACK STEEL)	27
12	EN-602	#6 x 4'-10" (LEVEL I, BLACK STEEL)	3
13	EN-602	#6 x 7'-10" (LEVEL I, BLACK STEEL)	6
14			
15			
16			
17	MK-EN2	N/B SPLICE SLEEVE 5U-X(FG) (BLACK STEEL)	33
18	MK-EN3	N/B SPLICE SLEEVE 6U-X(FG) (BLACK STEEL)	33
19		SET OF (4) 0.60" STRAND LIFTING LOOPS	2
20			

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Date: 4-11-2014

By: James H. [Signature]

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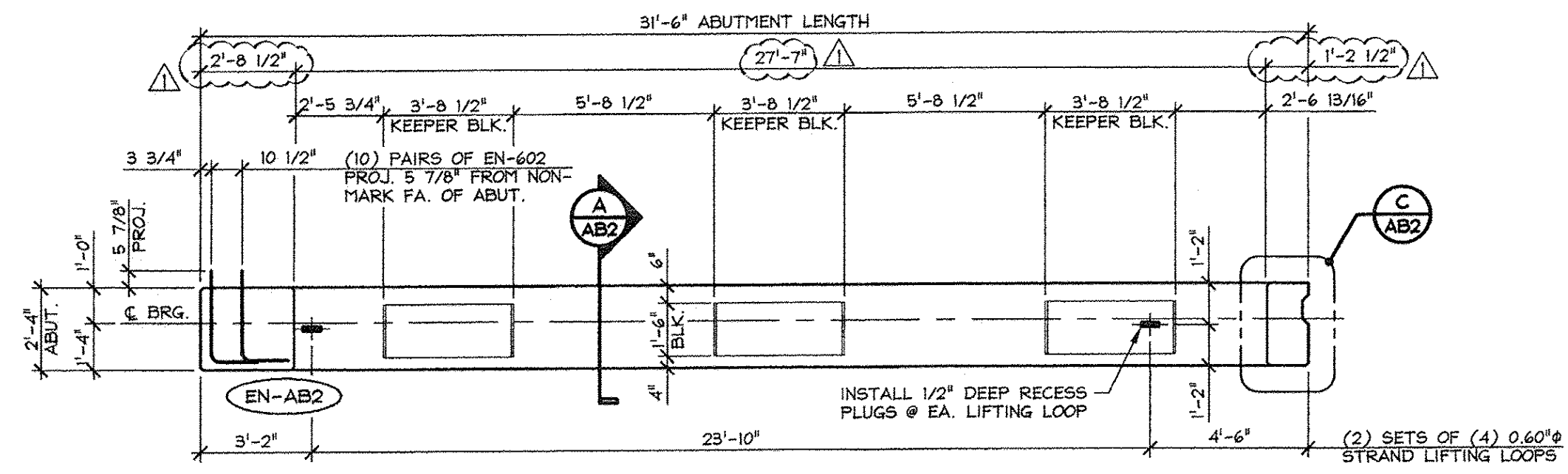
Vermont Agency of Transportation  
RECEIVED  
ON: April 9, 2014  
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BY: Rob Young DATE: 04/14/2014

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244 OAK ST., MIDDLEBURY, VERMONT 05753 Phone: (802)388-6261 Fax: (802)388-9010 MONTGOMERY CENTER, VERMONT

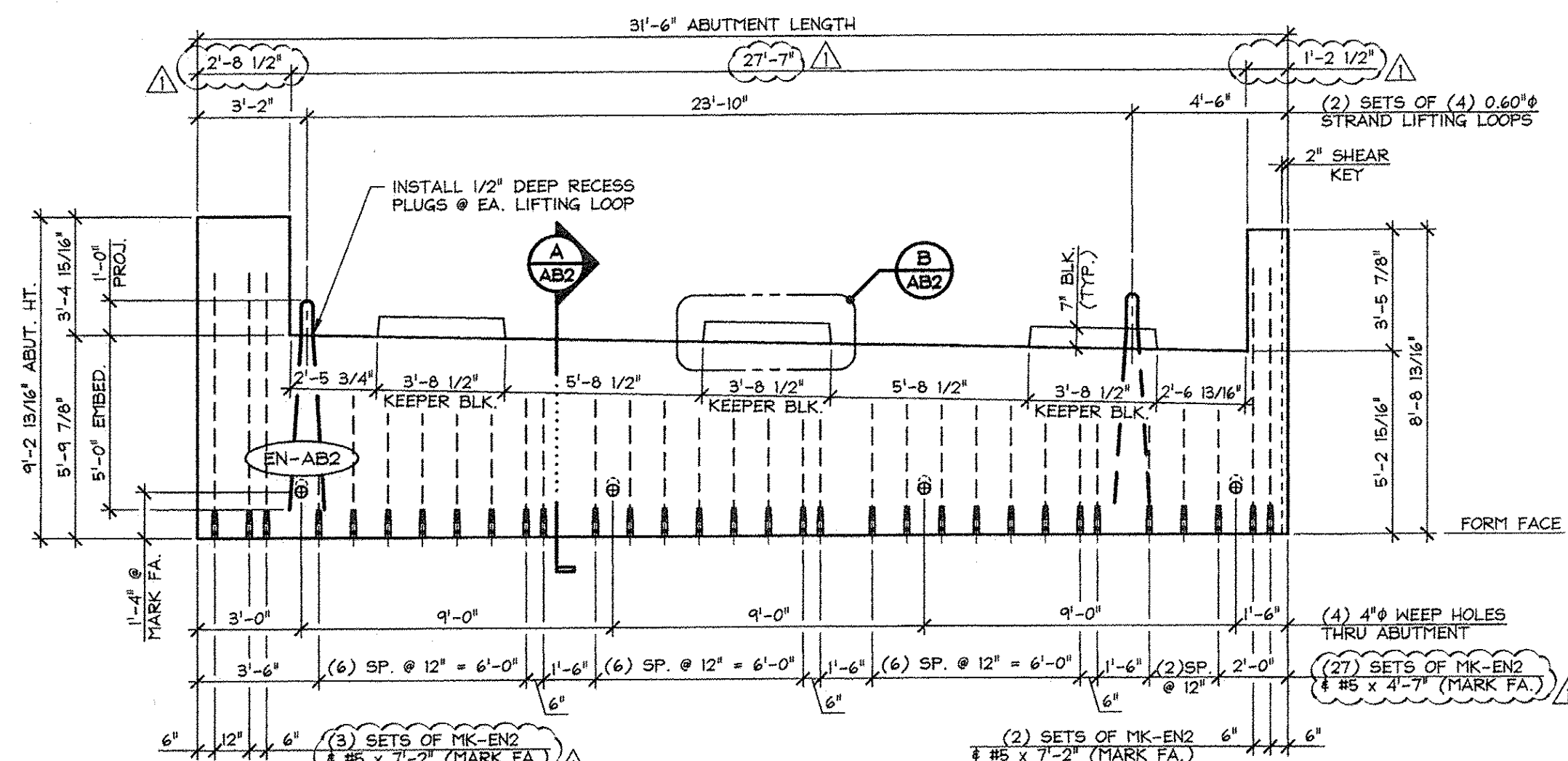
STATE OF VERMONT AGENCY OF TRANSPORTATION COUNTY OF FRANKLIN DATE: JAN. 27, 2014  
SCALE: NOTED

TOWN OF ENOSBURG  
BOSTON POST ROAD T.H.2 CLASS 2  
BRIDGE NO.: 48 PROJECT NO.: BRO 1448(40) CHKD: M.W. DFTM: B.L.  
JOB NO: 23418-013

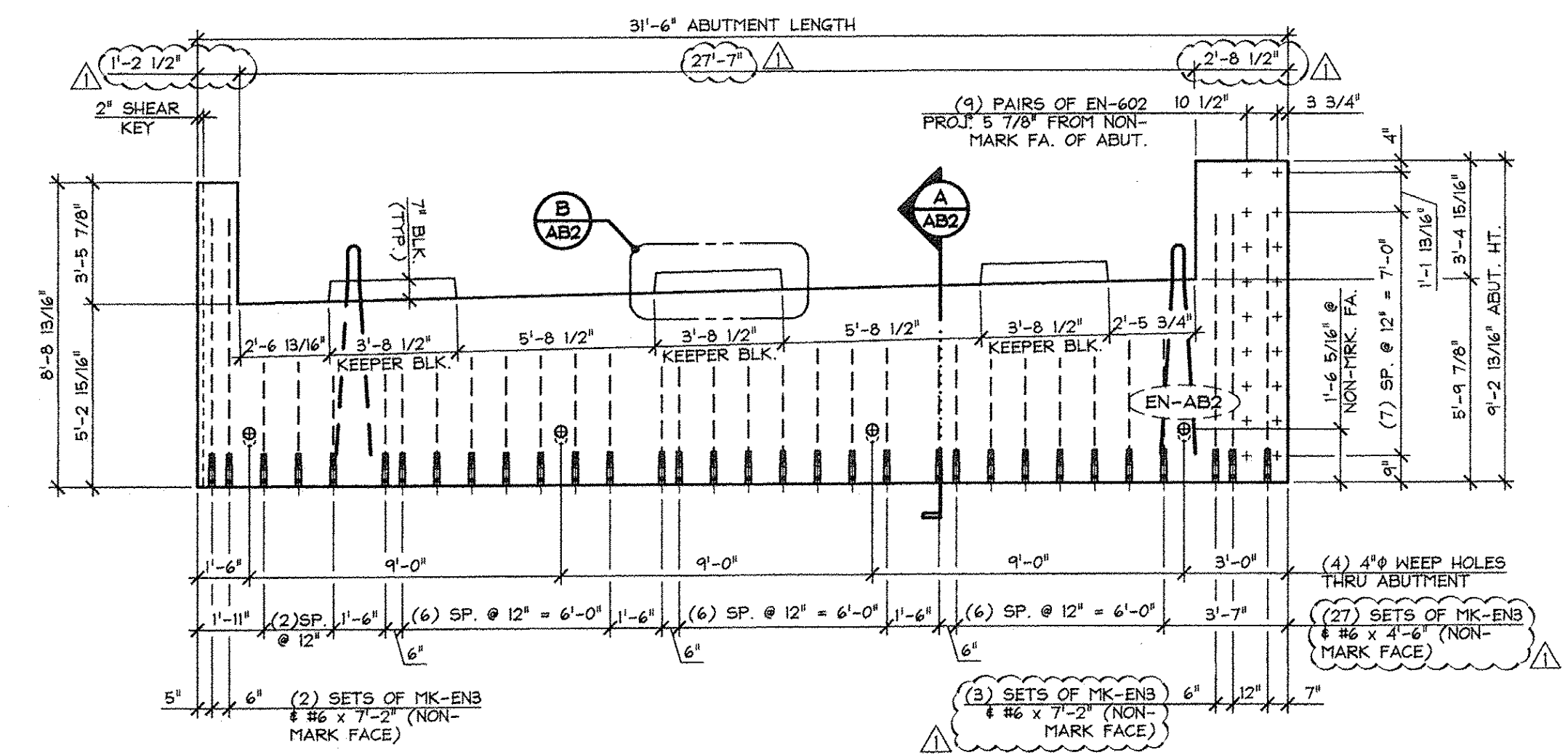
PRECAST ABUTMENT DETAILS DWG. NO: ABI



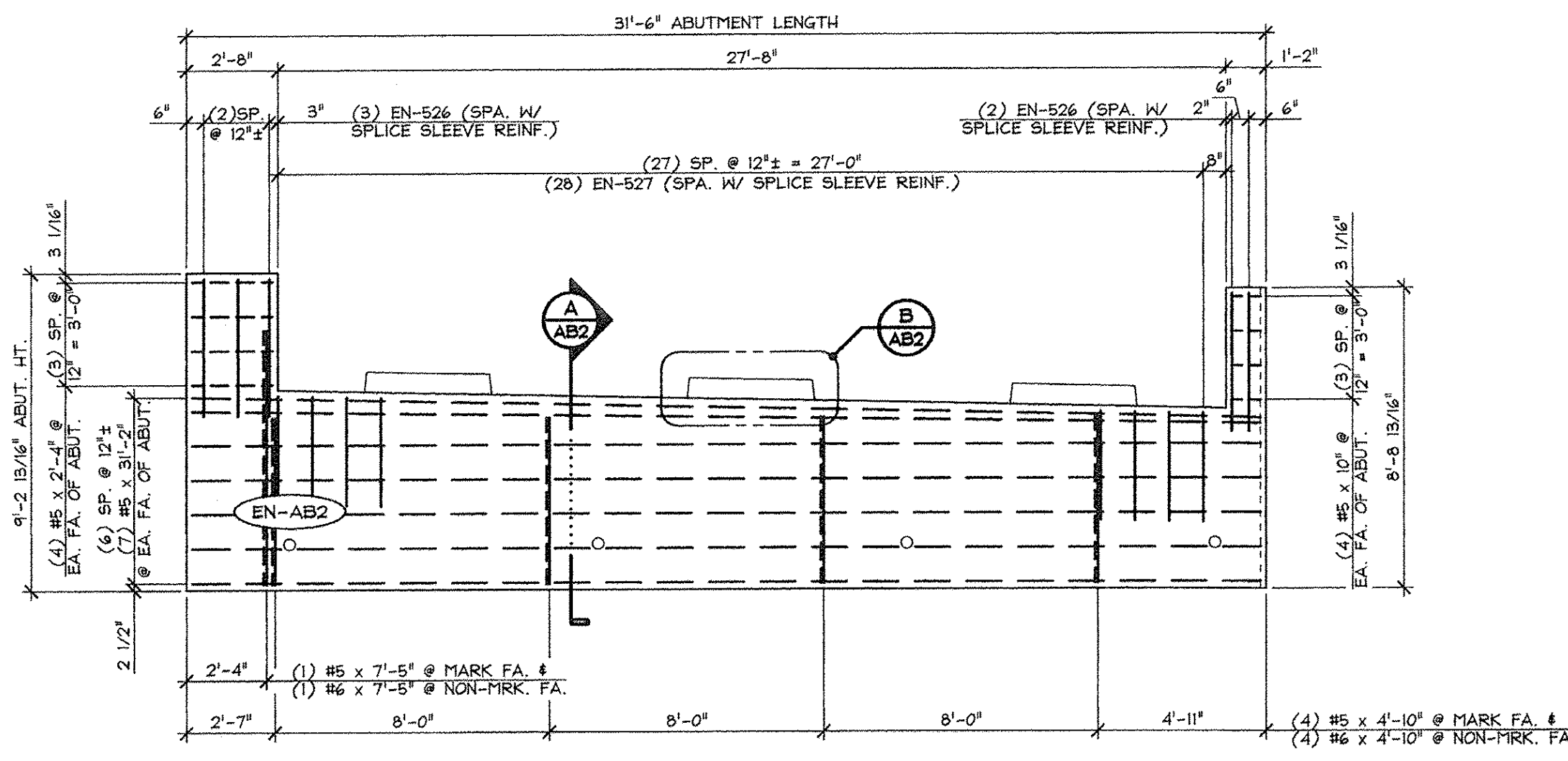
**1 DIMENSIONAL PLAN VIEW IN FORM**  
AB2  
1/4" = 1'-0"



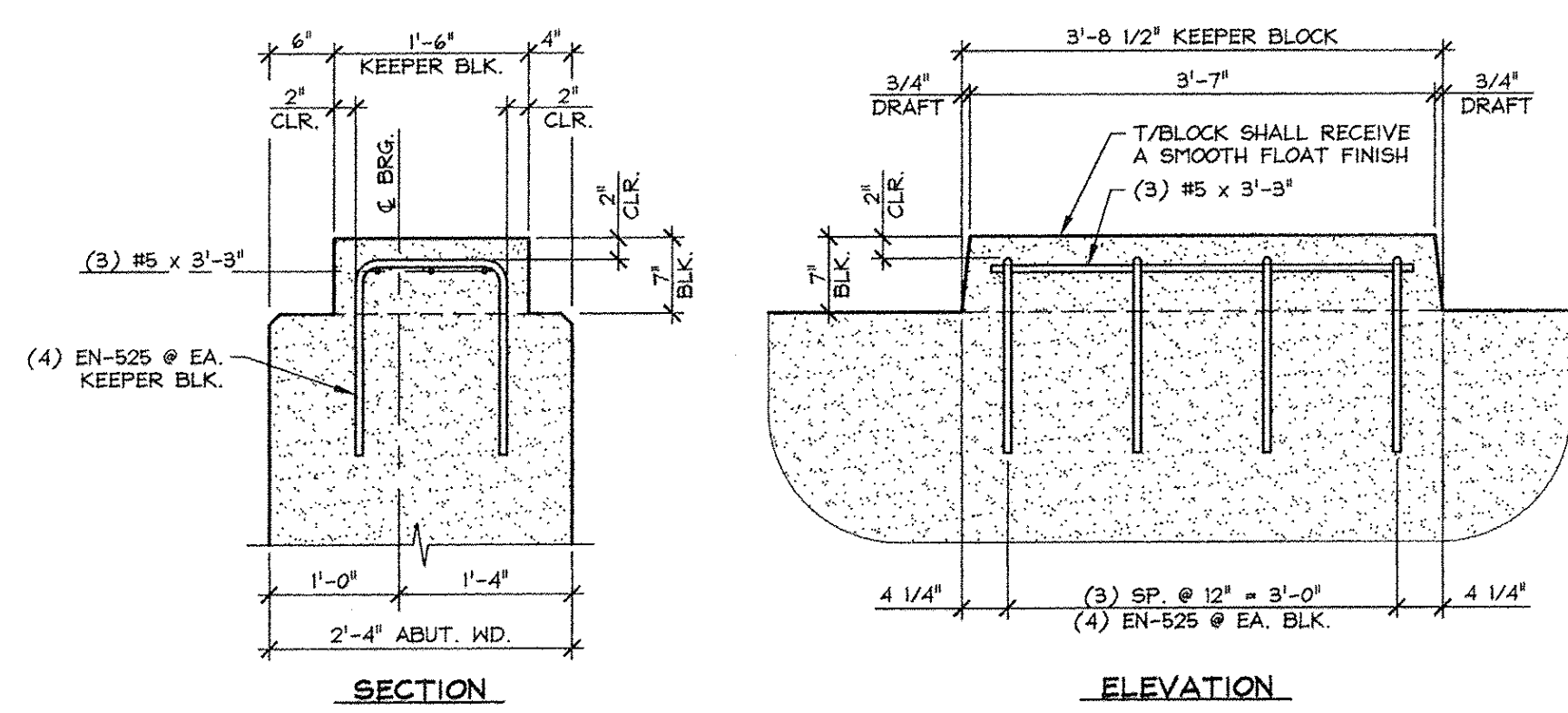
**2 DIMENSIONAL ELEVATION (MARK FACE)**  
AB2  
1/4" = 1'-0"



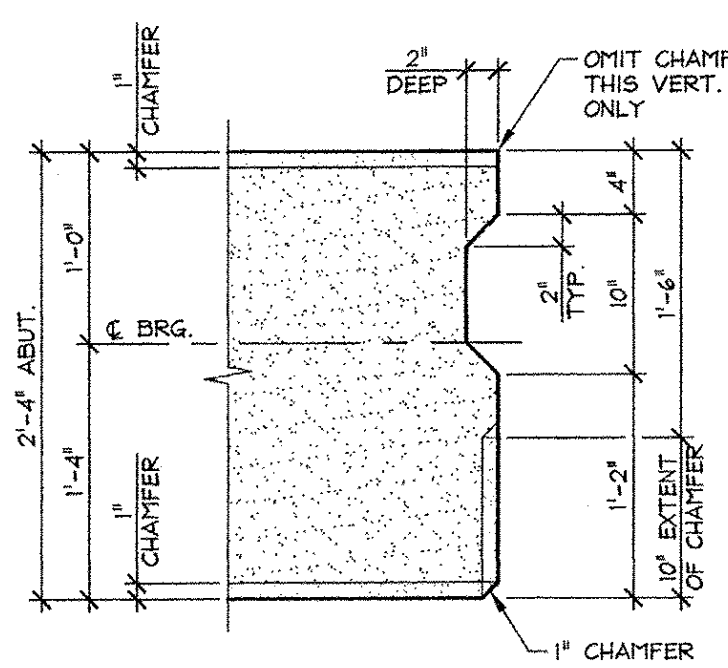
**3 DIMENSIONAL ELEVATION (NON-MARK FACE)**  
AB2  
1/4" = 1'-0"



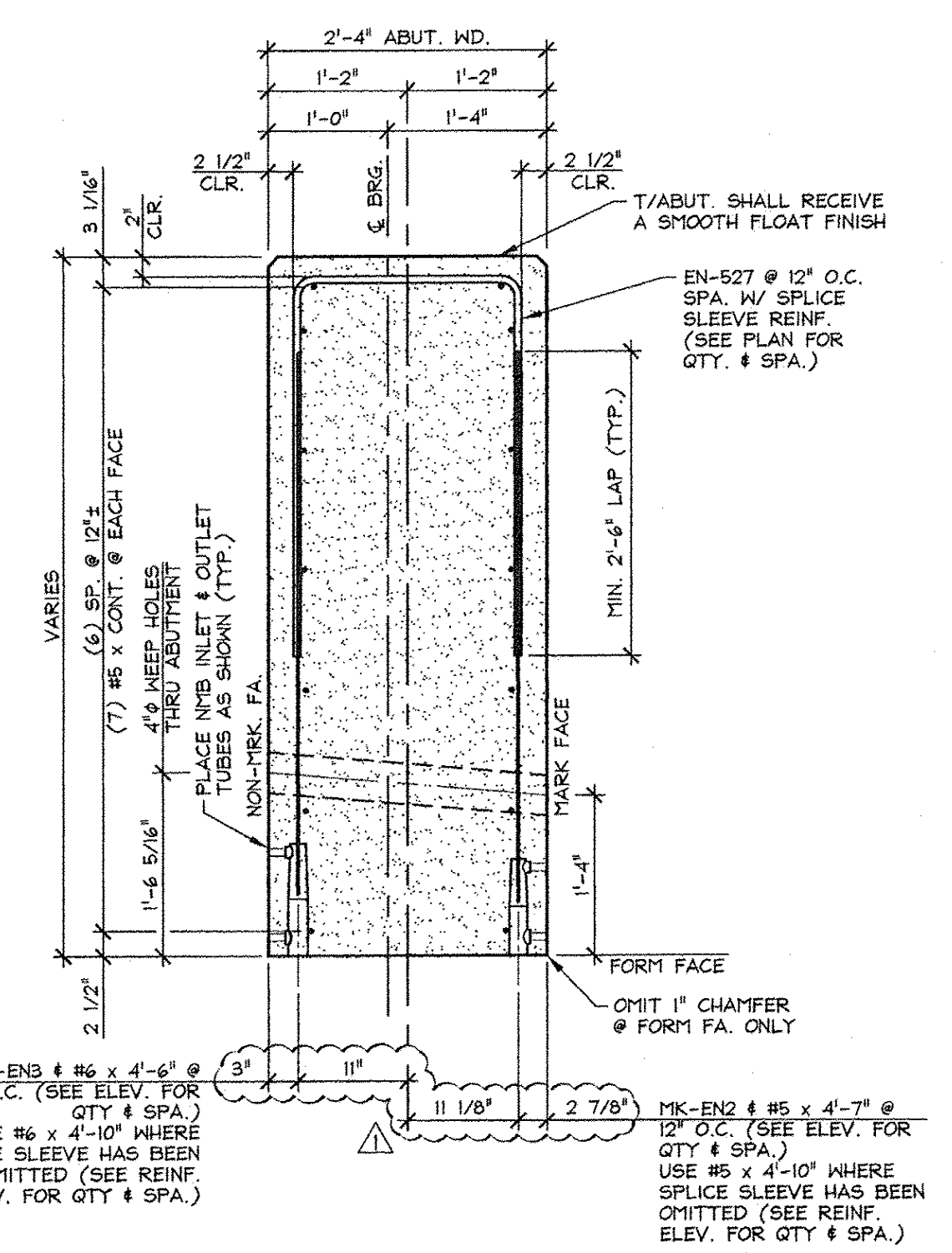
**4 REINFORCING ELEVATION**  
AB2  
1/4" = 1'-0"



**B KEEPER BLOCK DETAILS**  
AB2  
3/4" = 1'-0"



**C SHEAR KEY PLAN**  
AB2  
1" = 1'-0"



**A ABUTMENT SECTION**  
AB2  
3/4" = 1'-0"

**SHOP NOTE:**  
ALL EDGES OF ABUTMENT SHALL RECEIVE A 1" CHAMFER (U.N.O.)

**SHOP NOTE:**  
MK-EN2 #5 x 4'-6" @ 12" O.C. (SEE ELEV. FOR QTY & SPA.)  
USE #6 x 4'-10" WHERE SPLICE SLEEVE HAS BEEN OMITTED (SEE REIN. ELEV. FOR QTY & SPA.)  
USE #5 x 4'-10" WHERE SPLICE SLEEVE HAS BEEN OMITTED (SEE REIN. ELEV. FOR QTY & SPA.)

**SHOP NOTE:**  
ALL EDGES OF ABUTMENT SHALL RECEIVE A 1" CHAMFER (U.N.O.)

ISSUED FOR PRODUCTION  
APR 09 2014  
J.P. CARRARA & SONS, INC.  
MIDDLEBURY, VT 05753

MARK: EN-AB2	QTY.: 1	WT.: 33.53 T	VOL.: 16.56 cy
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MATERIAL LIST / ABUTMENT			
ITEM	MARK	DESCRIPTION	QTY.
1	EN-525	#5 BENT BAR (LEVEL I, BLACK STEEL)	12
2	EN-526	#5 BENT BAR (LEVEL I, BLACK STEEL)	5
3	EN-527	#5 BENT BAR (LEVEL I, BLACK STEEL)	28
4		#5 x 3'-3" (LEVEL I, BLACK STEEL)	9
5		#5 x 4'-7" (LEVEL I, BLACK STEEL)	27
6		#5 x 4'-10" (LEVEL I, BLACK STEEL)	4
7		#5 x 7'-2" (LEVEL I, BLACK STEEL)	5
8		#5 x 3'-2" (LEVEL I, BLACK STEEL)	14
9		#5 x 2'-4" (LEVEL I, BLACK STEEL)	8
10		#5 x 7'-5" (LEVEL I, BLACK STEEL)	1
11		#5 x 10" (LEVEL I, BLACK STEEL)	8
12			
13	EN-602	#6 BENT BAR (LEVEL I, BLACK STEEL)	18
14		#6 x 4'-6" (LEVEL I, BLACK STEEL)	27
15		#6 x 4'-10" (LEVEL I, BLACK STEEL)	4
16		#6 x 7'-2" (LEVEL I, BLACK STEEL)	5
17		#6 x 7'-5" (LEVEL I, BLACK STEEL)	1
18			
19			
20			
21	MK-EN2	N#B SPLICE SLEEVE 5U-X(PG) (BLACK STEEL)	32
22	MK-EN3	N#B SPLICE SLEEVE 6U-X(PG) (BLACK STEEL)	32
23		SET OF (4) 0.60" STRAND LIFTING LOOPS	2
24			
25			

Vermont Agency of Transportation  
**RECEIVED**  
ON: April 9, 2014  
and Checked for  
**CONFORMANCE**  
BY: Rob Young DATE: 04/14/2014

APPROVED: Approval of drawings and/or procedures indicates concurrence with the information presented and does not relieve the Contractor or Fabricator of compliance with all specifications and code requirements

APPROVED AS NOTED

REVISE AND RESUBMIT

NOT REVIEWED

Date: 4-11-2014

By: James H. [Signature]

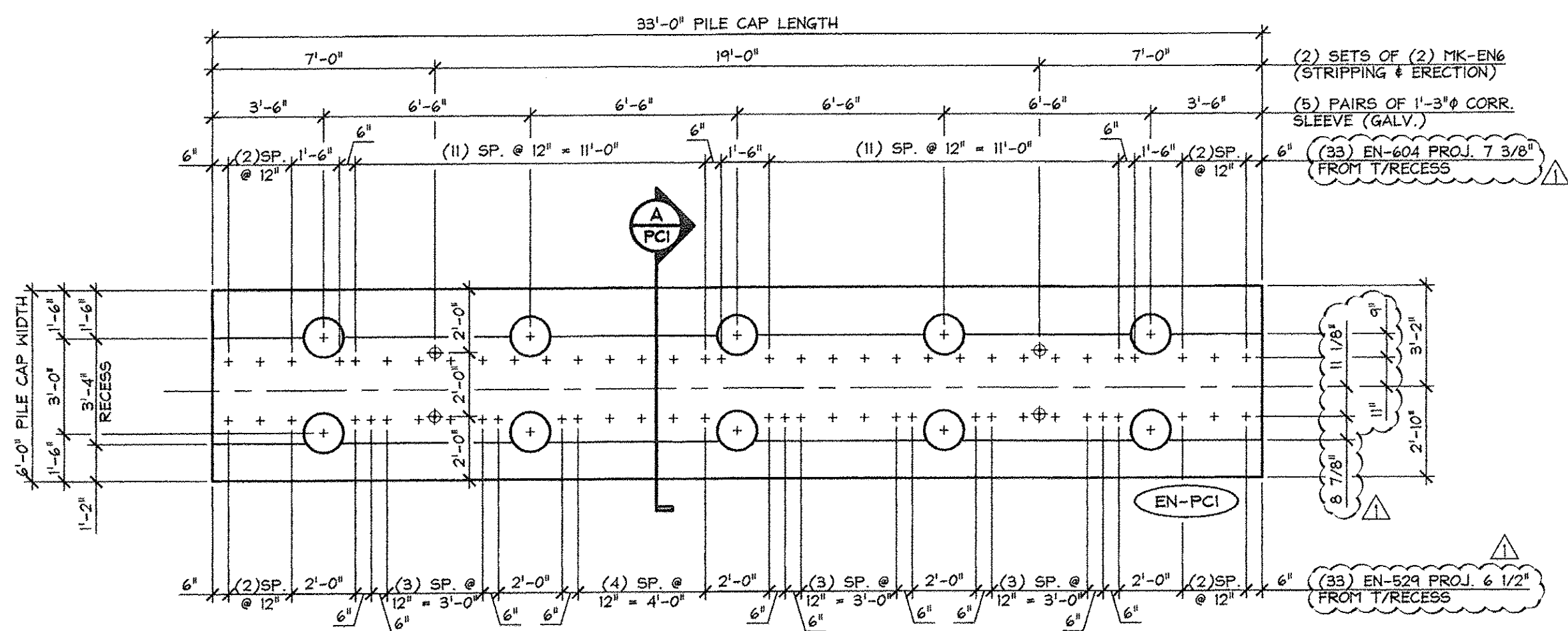
This review by Stantec Consulting Services Inc. is for the sole purpose of ascertaining conformance with the general design concept. This review shall not mean that Stantec Consulting Services Inc approves the detail design inherent in the shop drawings, responsibility for which shall remain with the Contractor. Submitting same, and such review shall not relieve the Contractor of his responsibility for errors or omissions in the shop drawing or of his responsibility for meeting all requirements of the Contract Documents. The contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to the fabrication processes or to techniques of construction and installation and for coordination of the work of all subtrades.

**J.P. CARRARA & SONS INC.** A.L. St. ONGE CONTRACTOR, INC.  
Precast & Prestress Manufacturer  
2464 GUSE STR., MIDDLEBURY, VERMONT 05753 Phone: (802)388-6361 Fax: (802)388-9010 MONTGOMERY CENTER, VERMONT

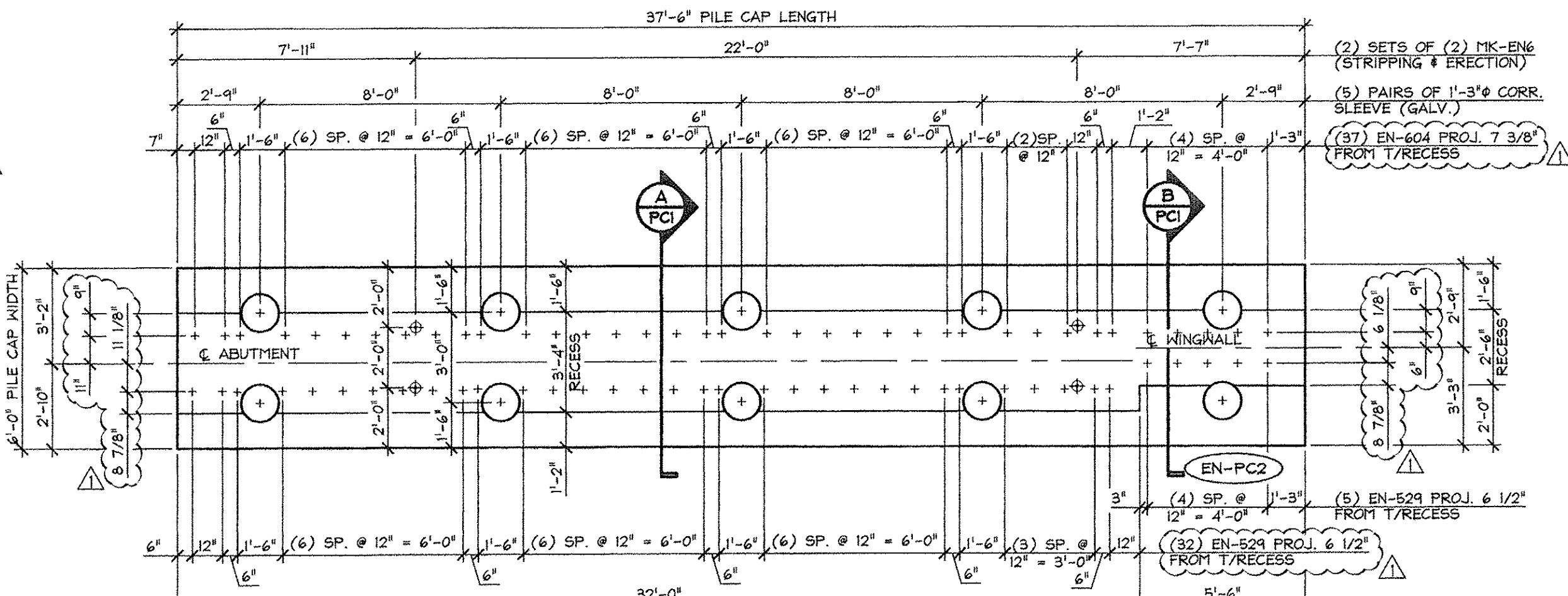
**STATE OF VERMONT AGENCY OF TRANSPORTATION** COUNTY OF FRANKLIN  
TOWN OF ENOSBURG  
BOSTON POST ROAD T.H.2 CLASS 2  
BRIDGE NO.: 48 PROJECT NO.: BRO 1448(40)

DATE: JAN. 27, 2014  
SCALE: NOTED  
CHKD: M.L. DFTM: B.L.  
JOB NO: 23418-018  
DWG. NO: AB2

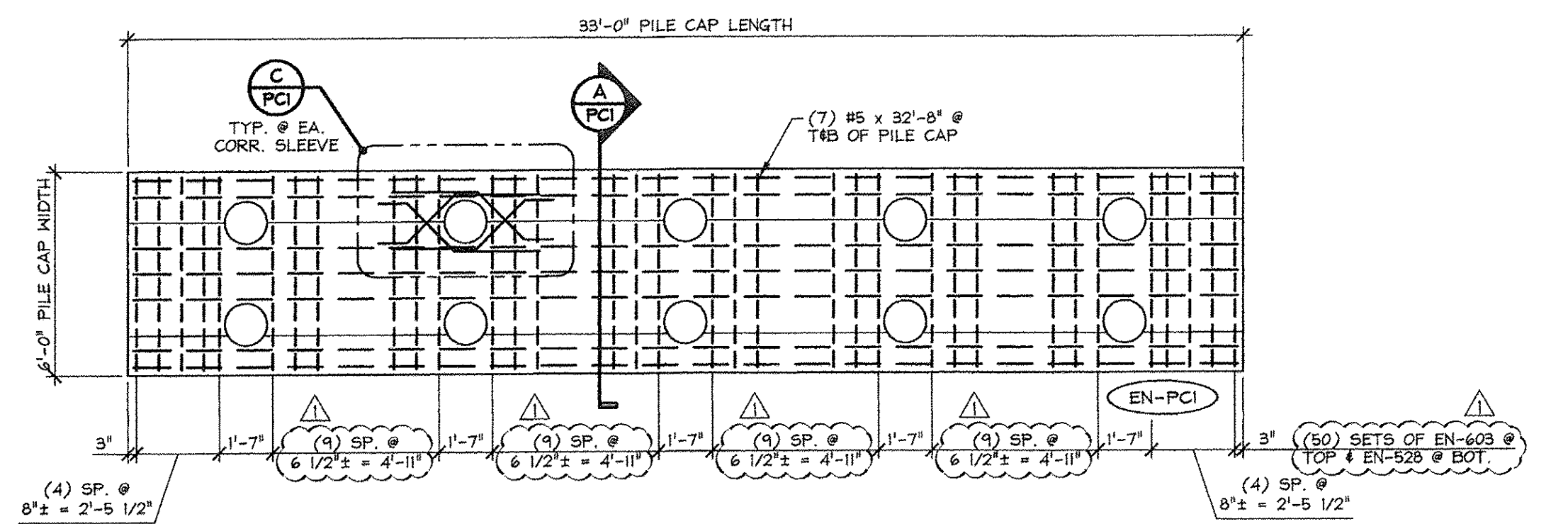
**PRECAST ABUTMENT DETAILS**



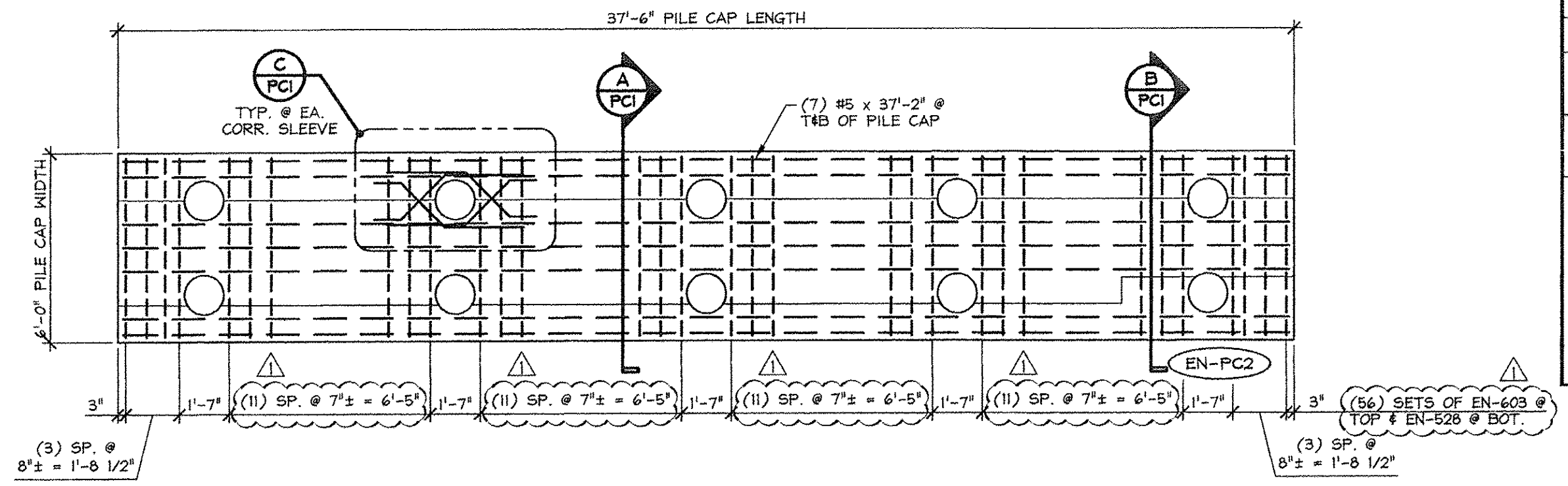
1 DIMENSIONAL PLAN VIEW IN FORM  
PCI 1/4" = 1'-0"



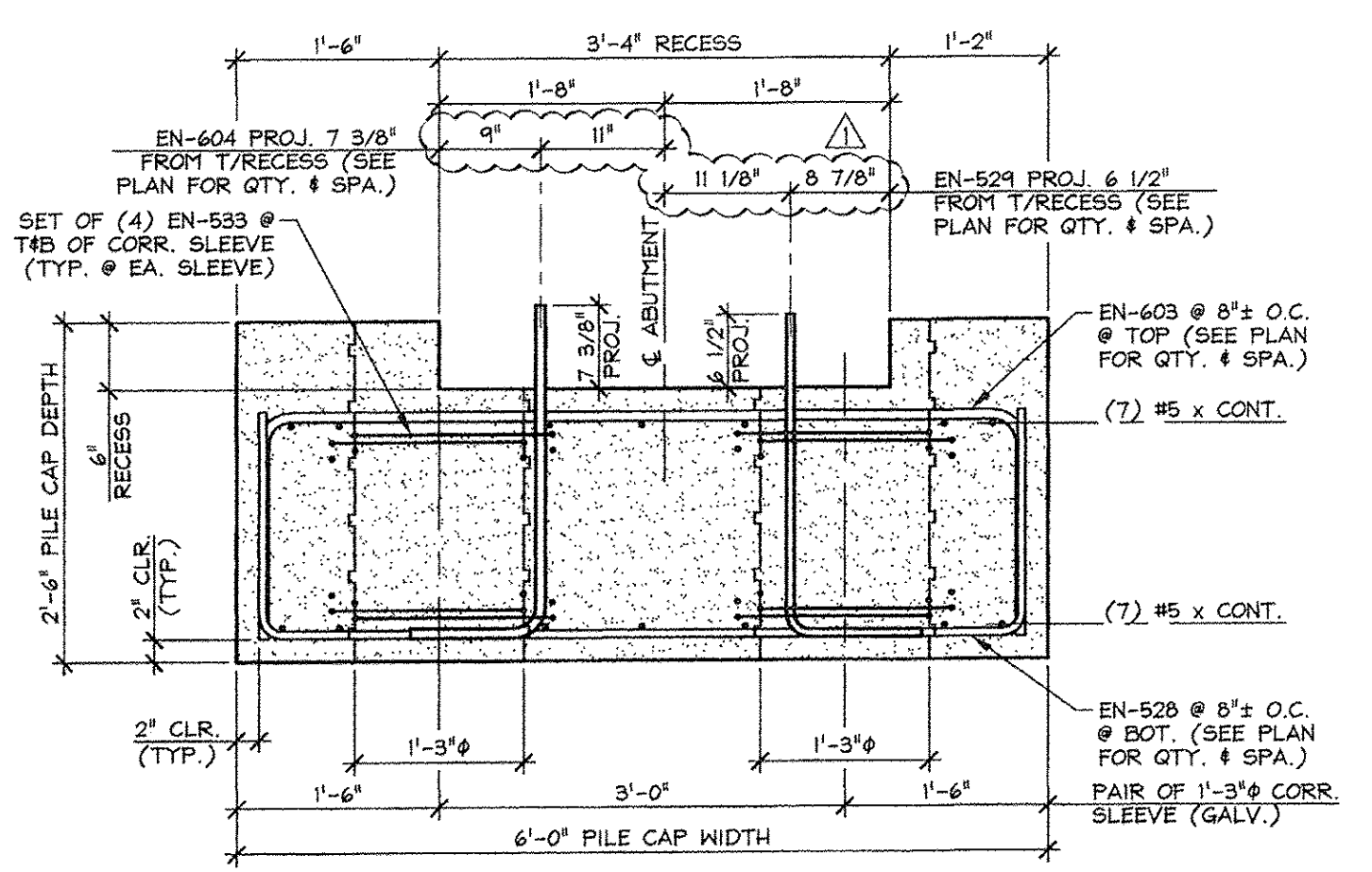
3 DIMENSIONAL PLAN VIEW IN FORM  
PCI 1/4" = 1'-0"



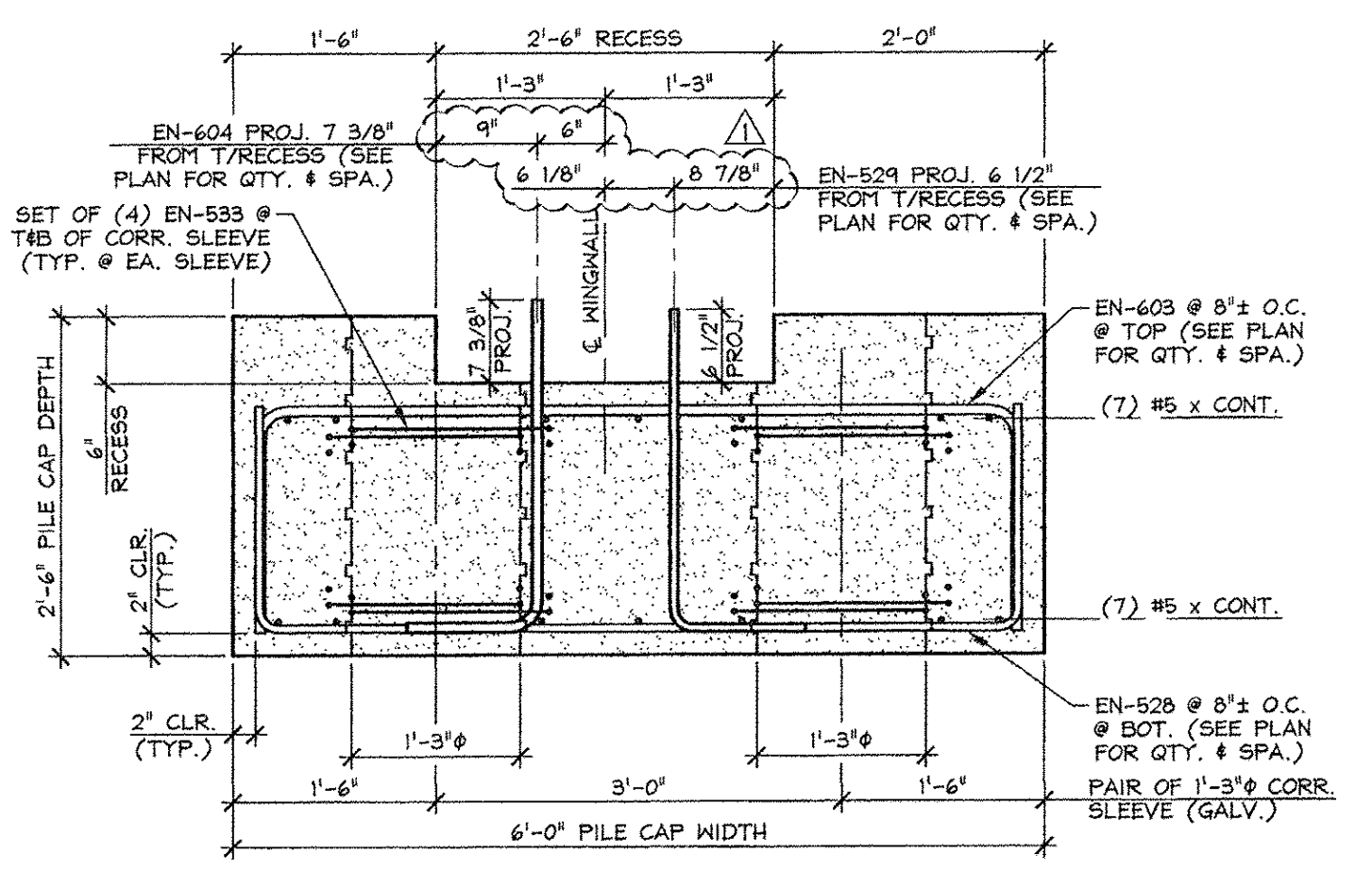
2 REINFORCING PLAN VIEW IN FORM  
PCI 1/4" = 1'-0"



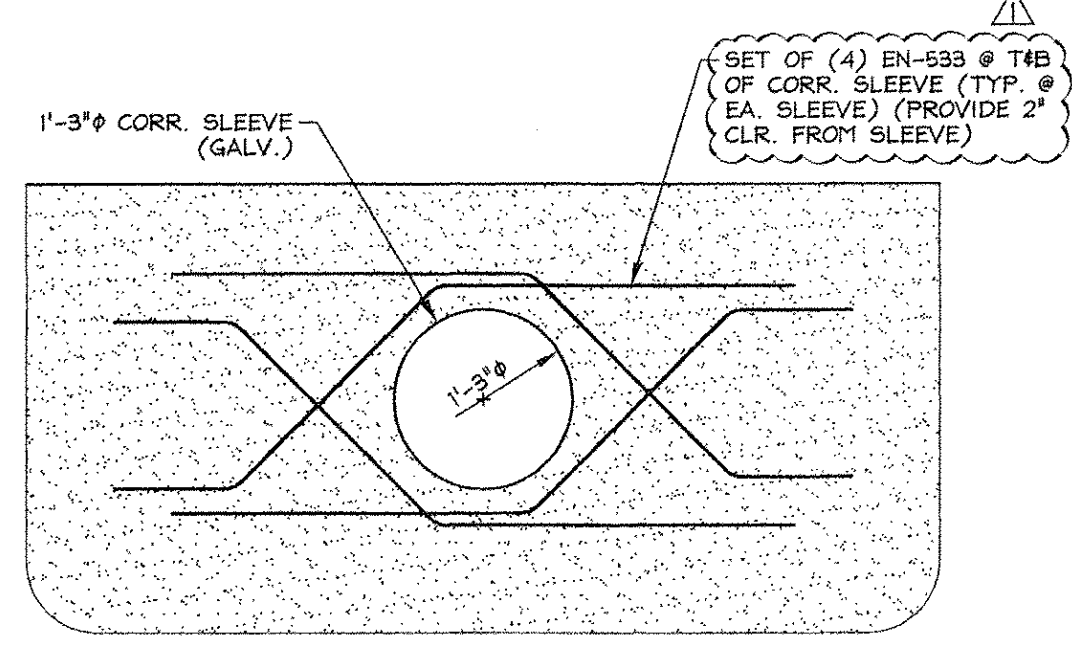
4 REINFORCING PLAN VIEW IN FORM  
PCI 1/4" = 1'-0"



A PILE CAP SECTION  
PCI 3/4" = 1'-0"



B PILE CAP SECTION  
PCI 3/4" = 1'-0"



C CORRUGATED SLEEVE  
PCI REINFORCING DETAIL 3/4" = 1'-0"

Vermont Agency of Transportation  
**RECEIVED**  
ON: April 9, 2014  
and Checked for  
**CONFORMANCE**  
BY: Rob Young DATE: 04/14/2014

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APPROVED AS NOTED		
REVISE AND RESUBMIT		
NOT REVIEWED		
Date:	4-11-2014	
By:	<i>James Hynes</i>	
<p>This review of Stantec Consulting Services Inc. is for the sole purpose of ascertaining conformance with the general design concept. This review shall not mean that Stantec Consulting Services Inc. approves the detail design inherent in the shop drawings, responsibility for which shall remain with the Contractor. Submitting same, and such review shall not relieve the Contractor of his responsibility for errors or omissions in the shop drawing or of his responsibility for meeting all requirements of the Contract Documents. The contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to the fabrication processes or to techniques of construction and installation and for coordination of the work of all subtrades.</p>		

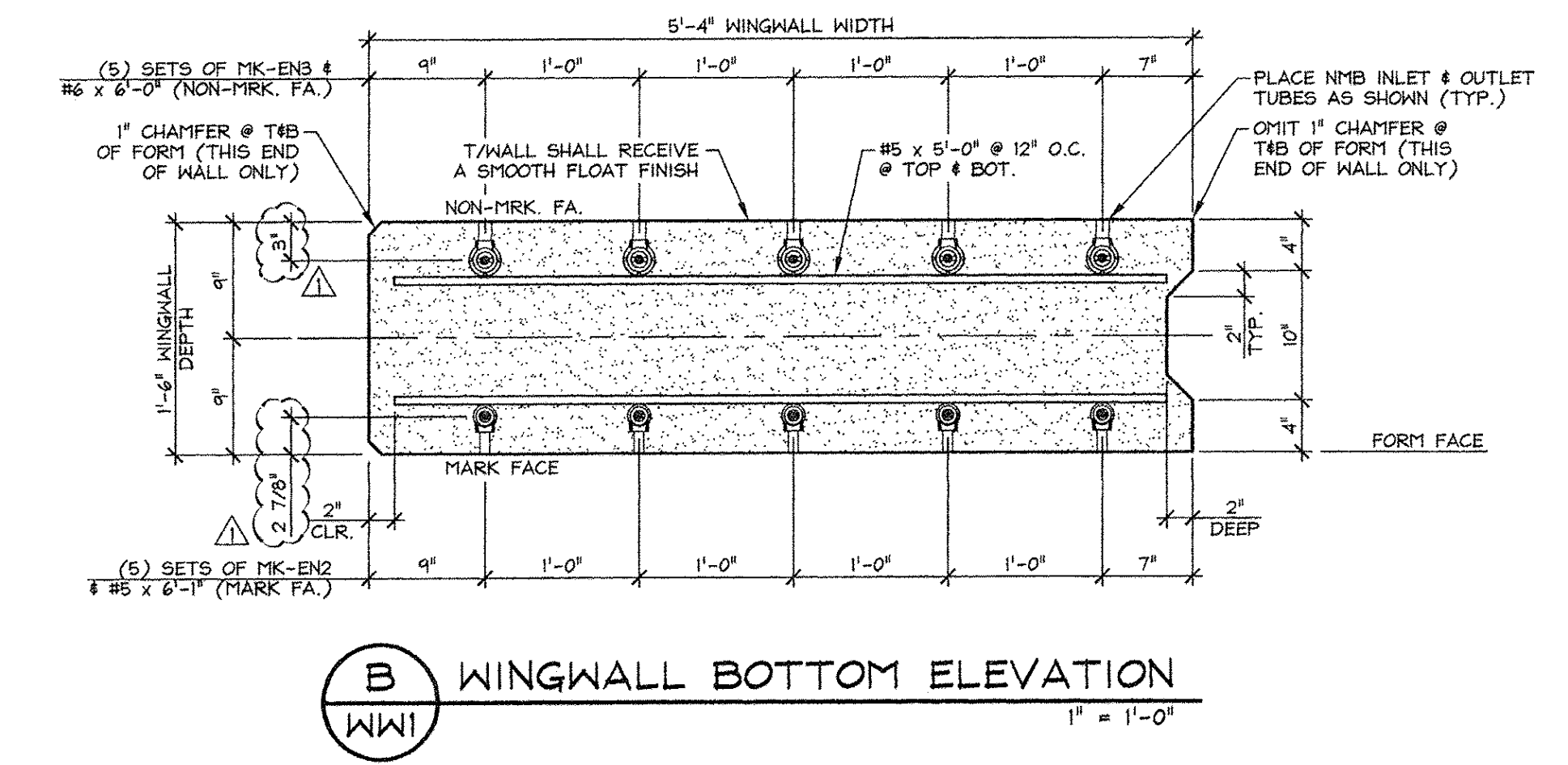
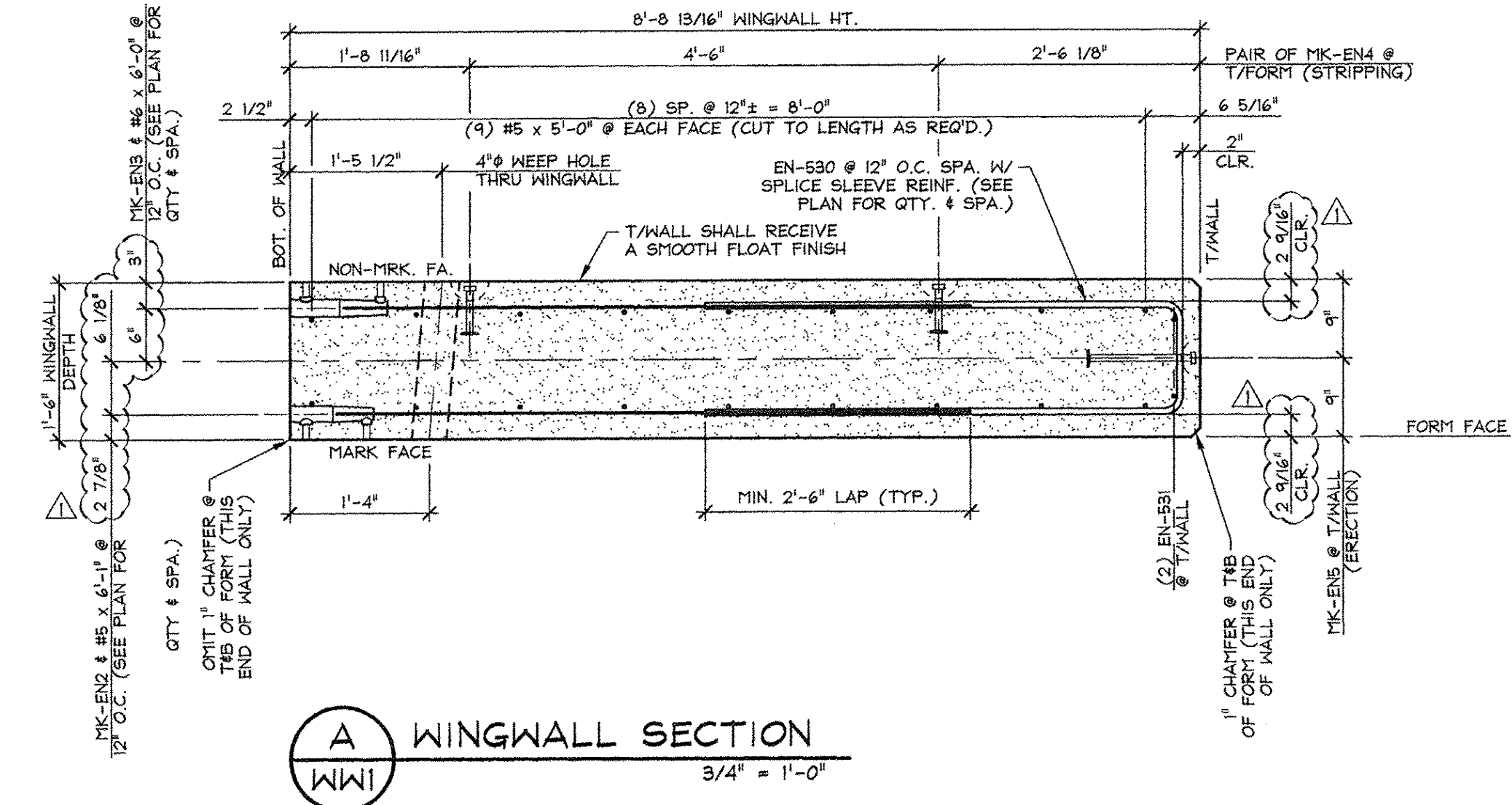
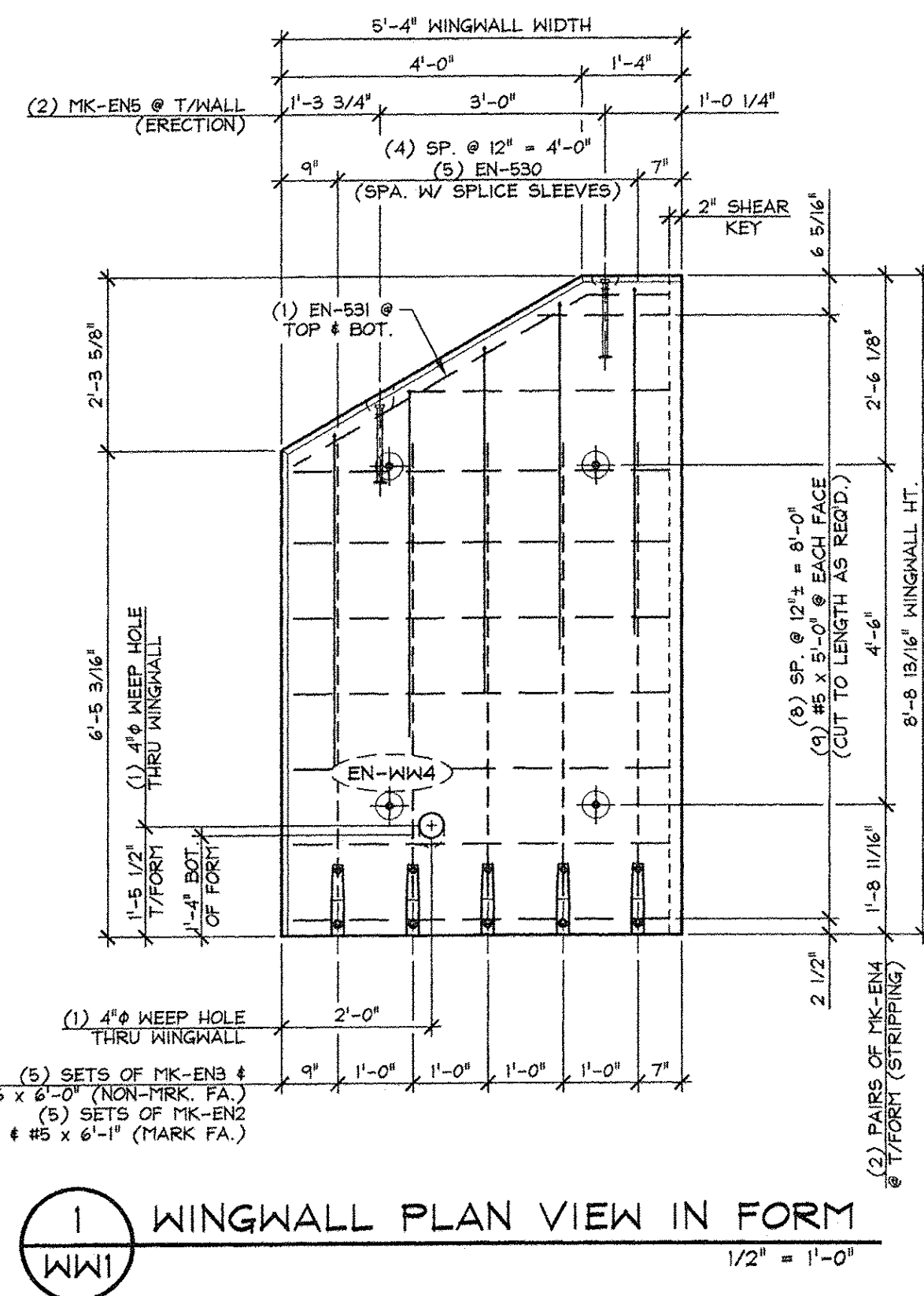
SHOP NOTE:  
Fc = 5,000 PSI  
Fci = 3,500 PSI  
MIX: #445TSCC

ISSUED FOR PRODUCTION  
APR 09 2014  
J. P. CARRARA & SONS, INC.  
MIDDLEBURY, VT 05753

MARK: EN-PC1	QTY.: 1	WT.: 31.2 T	VOL.: 15.4 cy
MARK: EN-PC2	QTY.: 1	WT.: 35.8 T	VOL.: 17.7 cy

MATERIAL LIST / PILE CAP				
ITEM	MARK	DESCRIPTION	QTY./PILE CAP	
			EN-PC1	EN-PC2
1	EN-528	#5 BENT BAR (LEVEL 1, BLACK STEEL)	50	56
2	EN-529	#5 BENT BAR (LEVEL 1, BLACK STEEL)	33	37
3	EN-533	#5 BENT BAR (LEVEL 1, BLACK STEEL)	80	80
4		#5 x 32'-8" (LEVEL 1, BLACK STEEL)	14	
5		#5 x 37'-2" (LEVEL 1, BLACK STEEL)		14
6				
7	EN-603	#6 BENT BAR (LEVEL 1, BLACK STEEL)	50	56
8	EN-604	#6 BENT BAR (LEVEL 1, BLACK STEEL)	33	37
9				
10		1'-3" x 2'-6" CORRUGATED SLEEVE (GALV.)	10	10
11				
12	MK-EN6	20 T x 19 3/4" SWIFT LIFT LIFTER	4	4
13				
14				
15				

APPROVAL STAMP:	J.P. CARRARA & SONS INC. Precast & Prestress Manufacturer 2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone: (802)388-6361 Fax: (802)388-9010	A.L. ST. ONGE CONTRACTOR, INC. CONTRACTOR MONTGOMERY CENTER, VERMONT
	STATE OF VERMONT AGENCY OF TRANSPORTATION COUNTY OF FRANKLIN	DATE: JAN. 27, 2014 SCALE: NOTED
	TOWN OF ENOSBURG BOSTON POST ROAD T.H.2 CLASS 2 BRIDGE NO.: 48 PROJECT NO.: BRO 1448(40)	CHKD: M.W. DFTM: B.L. JOB NO: 23418-013
	PRECAST PILE CAP DETAILS	DWG. NO: PCI



Vermont Agency of Transportation  
**RECEIVED**  
ON: April 9, 2014  
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**CONFORMANCE**  
BY: Rob Young DATE: 04/14/2014

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APPROVED AS NOTED		
REVISE AND RESUBMIT		
NOT REVIEWED		
Date:	4-11-2014	
By:	<i>James Hough</i>	
This review by Stantec Consulting Services Inc. is for the sole purpose of ascertaining conformance with the general design concept. This review shall not mean that Stantec Consulting Services Inc. approves the detail design inherent in the shop drawings, responsibility for which shall remain with the Contractor. Submitting same, and such review shall not relieve the Contractor of his responsibility for errors or omissions in the shop drawing or of his responsibility for meeting all requirements of the Contract Documents. The contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to the fabrication processes or to techniques of construction and installation and for coordination of the work of all subcontractors.		

**SHOP NOTE:**  
ALL EDGES OF WING WALLS, FORM FACE & T/WALL FACE, SHALL RECEIVE A 1" CHAMFER (UNLESS NOTED OTHERWISE)

**SHOP NOTE:**  
F<sub>c</sub> = 5,000 PSI  
F<sub>ci</sub> = 3,500 PSI  
MIX: #44B1M5CC

ISSUED FOR PRODUCTION  
APR 09 2014  
J. P. CARRARA & SONS, INC.  
MIDDLEBURY, VT 05753

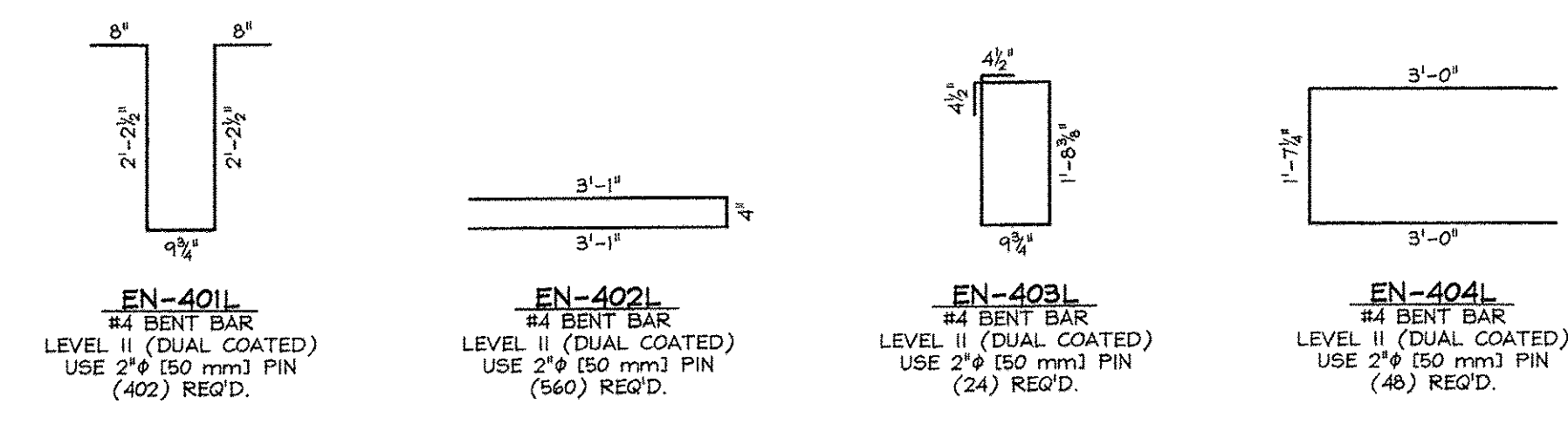
MARK: EN-WW4 QTY.: 1 WT.: 4.65 T VOL.: 2.30 cy

MATERIAL LIST / WINGWALL			
ITEM	MARK	DESCRIPTION	QTY.
1	EN-530	#5 BENT BAR (LEVEL I, BLACK STEEL)	5
2	EN-531	#5 BENT BAR (LEVEL I, BLACK STEEL)	2
3		#5 x 6'-1" (LEVEL I, BLACK STEEL)	5
4		#5 x 5'-0" (LEVEL I, BLACK STEEL)	18
5			
6		#6 x 6'-0" (LEVEL I, BLACK STEEL)	5
7			
8			
9	MK-EN2	NMB SPLICE SLEEVE 5U-X(PG) (BLACK STEEL)	5
10	MK-EN3	NMB SPLICE SLEEVE 6U-X(PG) (BLACK STEEL)	5
11	MK-EN4	4T x 7 1/8" SKIFFT LIFT LIFTER	4
12	MK-EN5	8T x 13 3/8" SKIFFT LIFT LIFTER	2
13			
14			
15			

4-7-14 REVISED AS NOTED

APPROVAL STAMP:	J.P. CARRARA & SONS INC. Precast & Prestress Manufacturer 2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6351 Fax:(802)388-9010	A.L. ST. ONGE CONTRACTOR, INC. CONTRACTOR MONTGOMERY CENTER, VERMONT
STATE OF VERMONT AGENCY OF TRANSPORTATION COUNTY OF FRANKLIN		DATE: JAN. 27, 2014 SCALE: NOTED
TOWN OF ENOSBURG BOSTON POST ROAD T.H.2 CLASS 2 BRIDGE NO.: 48 PROJECT NO.: BRO 1448(40)		CHKD: M.W. DFTM: B.L. JOB NO: 23418-013
PRECAST WINGWALL DETAILS		DWG. NO: WW1



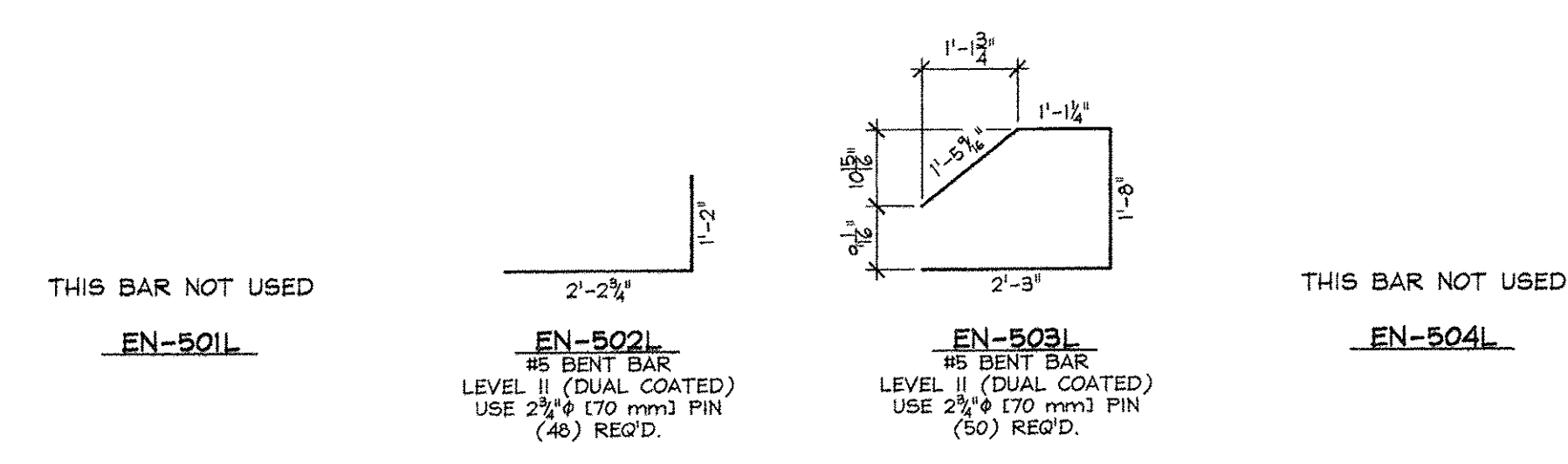


**EN-401L**  
#4 BENT BAR  
LEVEL II (DUAL COATED)  
USE 2 3/8" (50 mm) PIN  
(402) REQ'D.

**EN-402L**  
#4 BENT BAR  
LEVEL II (DUAL COATED)  
USE 2 3/8" (50 mm) PIN  
(560) REQ'D.

**EN-403L**  
#4 BENT BAR  
LEVEL II (DUAL COATED)  
USE 2 3/8" (50 mm) PIN  
(24) REQ'D.

**EN-404L**  
#4 BENT BAR  
LEVEL II (DUAL COATED)  
USE 2 3/8" (50 mm) PIN  
(48) REQ'D.

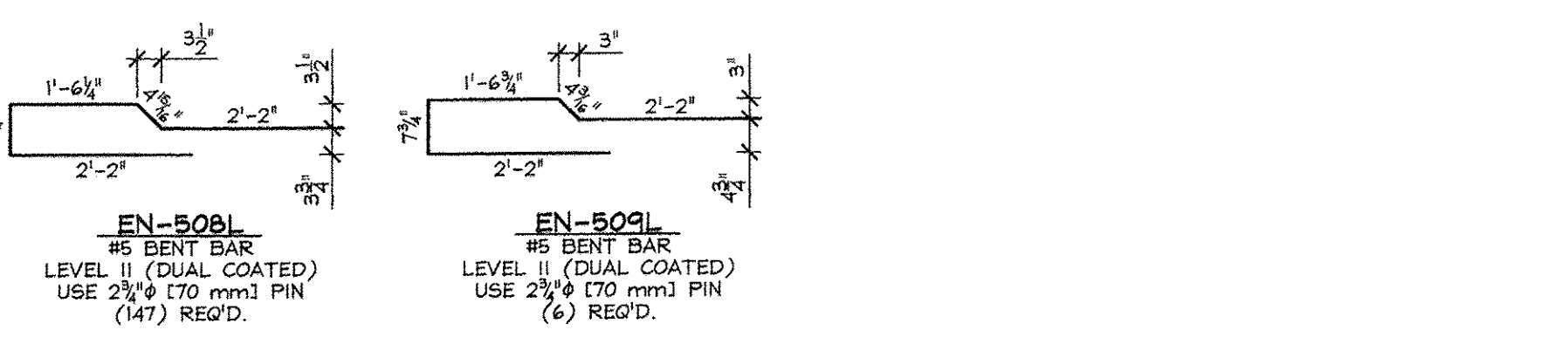


**EN-501L**  
#5 BENT BAR  
LEVEL II (DUAL COATED)  
USE 2 3/8" (70 mm) PIN  
(48) REQ'D.

**EN-502L**  
#5 BENT BAR  
LEVEL II (DUAL COATED)  
USE 2 3/8" (70 mm) PIN  
(50) REQ'D.

**EN-503L**  
#5 BENT BAR  
LEVEL II (DUAL COATED)  
USE 2 3/8" (70 mm) PIN  
(6) REQ'D.

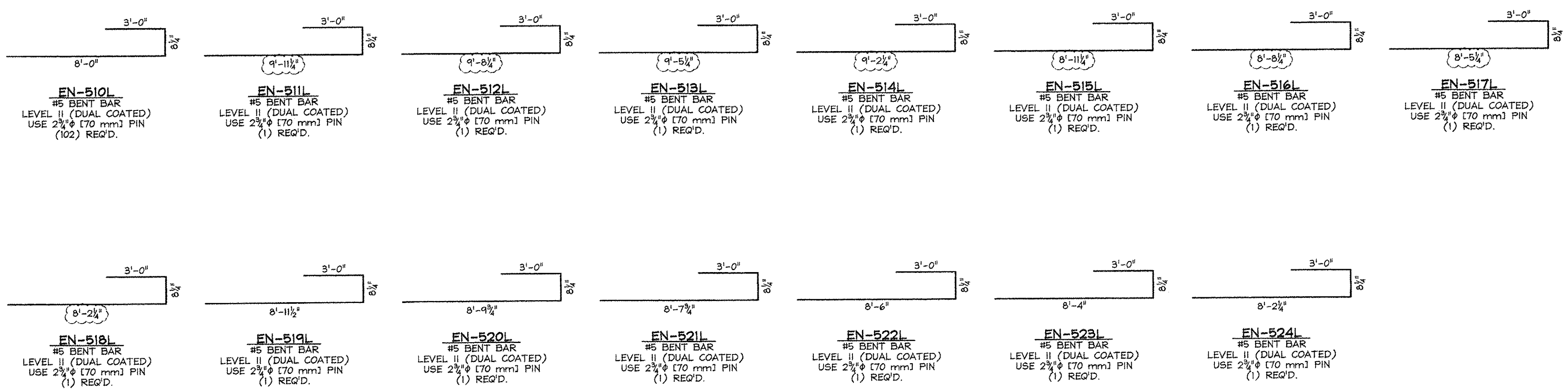
**EN-504L**  
#5 BENT BAR  
LEVEL II (DUAL COATED)  
USE 2 3/8" (70 mm) PIN  
(8) REQ'D.



**EN-508L**  
#5 BENT BAR  
LEVEL II (DUAL COATED)  
USE 2 3/8" (70 mm) PIN  
(147) REQ'D.

**EN-509L**  
#5 BENT BAR  
LEVEL II (DUAL COATED)  
USE 2 3/8" (70 mm) PIN  
(6) REQ'D.

**PRESTRESSED NEXT BEAMS**



**EN-510L**  
#5 BENT BAR  
LEVEL II (DUAL COATED)  
USE 2 3/8" (70 mm) PIN  
(102) REQ'D.

**EN-511L**  
#5 BENT BAR  
LEVEL II (DUAL COATED)  
USE 2 3/8" (70 mm) PIN  
(1) REQ'D.

**EN-512L**  
#5 BENT BAR  
LEVEL II (DUAL COATED)  
USE 2 3/8" (70 mm) PIN  
(1) REQ'D.

**EN-513L**  
#5 BENT BAR  
LEVEL II (DUAL COATED)  
USE 2 3/8" (70 mm) PIN  
(1) REQ'D.

**EN-514L**  
#5 BENT BAR  
LEVEL II (DUAL COATED)  
USE 2 3/8" (70 mm) PIN  
(1) REQ'D.

**EN-515L**  
#5 BENT BAR  
LEVEL II (DUAL COATED)  
USE 2 3/8" (70 mm) PIN  
(1) REQ'D.

**EN-516L**  
#5 BENT BAR  
LEVEL II (DUAL COATED)  
USE 2 3/8" (70 mm) PIN  
(1) REQ'D.

**EN-517L**  
#5 BENT BAR  
LEVEL II (DUAL COATED)  
USE 2 3/8" (70 mm) PIN  
(1) REQ'D.

**EN-518L**  
#5 BENT BAR  
LEVEL II (DUAL COATED)  
USE 2 3/8" (70 mm) PIN  
(1) REQ'D.

**EN-519L**  
#5 BENT BAR  
LEVEL II (DUAL COATED)  
USE 2 3/8" (70 mm) PIN  
(1) REQ'D.

**EN-520L**  
#5 BENT BAR  
LEVEL II (DUAL COATED)  
USE 2 3/8" (70 mm) PIN  
(1) REQ'D.

**EN-521L**  
#5 BENT BAR  
LEVEL II (DUAL COATED)  
USE 2 3/8" (70 mm) PIN  
(1) REQ'D.

**EN-522L**  
#5 BENT BAR  
LEVEL II (DUAL COATED)  
USE 2 3/8" (70 mm) PIN  
(1) REQ'D.

**EN-523L**  
#5 BENT BAR  
LEVEL II (DUAL COATED)  
USE 2 3/8" (70 mm) PIN  
(1) REQ'D.

**EN-524L**  
#5 BENT BAR  
LEVEL II (DUAL COATED)  
USE 2 3/8" (70 mm) PIN  
(1) REQ'D.



**EN-601L**  
#6 BENT BAR  
LEVEL II (DUAL COATED)  
USE 4" (100 mm) PIN  
(90) REQ'D.

**PRECAST APPROACH SLABS**

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APPROVED AS NOTED

REVISE AND RESUBMIT

NOT REVIEWED

Date: 4-11-2014

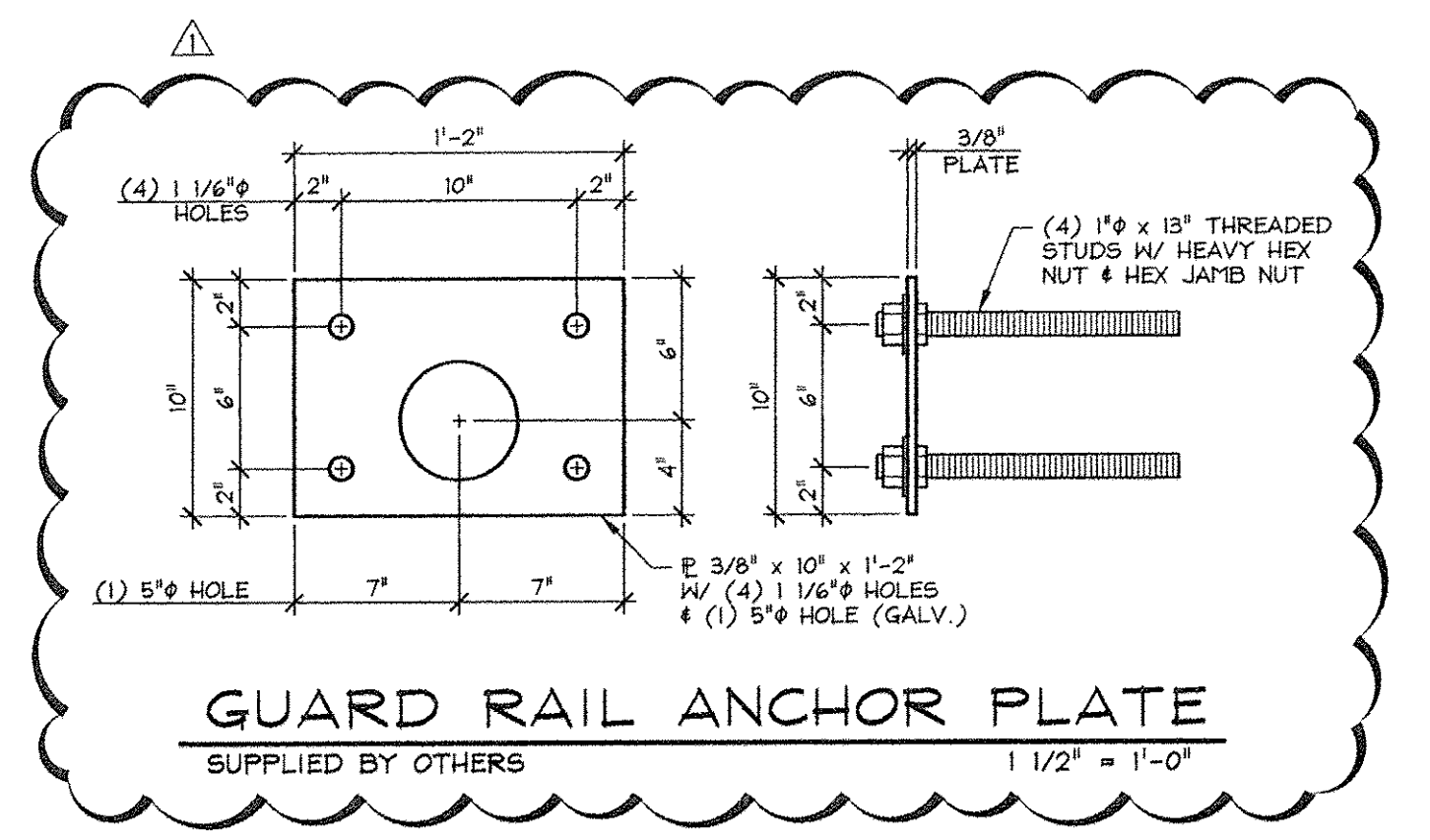
By: James Hyland

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Vermont Agency of Transportation  
**RECEIVED**  
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and Checked for  
**CONFORMANCE**  
BY: Rob Young DATE: 04/14/2014

NEXT BEAM & CURTAIN WALL MISCELLANEOUS MATERIALS				
ITEM	MARK	QTY.	DESCRIPTION	REMARKS
1		54	#4 x 8'-4" (LEVEL II, DUAL COATED)	
2				
3		864	#5 x 8'-4" (LEVEL II, DUAL COATED)	
4		36	#5 x 7'-8" (W/ (1) 2'-6" STAGGERED LAP) (LVL. II, DUAL COATED)	
5		36	#5 x 7'-8" (W/ (1) 2'-6" STAGGERED LAP) (LVL. II, DUAL COATED)	
6		6	#5 x 7'-8" (W/ (1) 2'-6" STAGGERED LAP) (LVL. II, DUAL COATED)	
7		40	#5 x 9'-1" (LVL. II, DUAL COATED)	
8		4	#5 x 6'-10" (LVL. II, DUAL COATED)	
9		4	#5 x 7'-7" (LVL. II, DUAL COATED)	
10				
11		24	#8 x 2'-0" (LEVEL II, DUAL COATED)	
12				
13				
14				
15		20	GUARD RAIL ANCHOR PLATE (GALV.)	△ SUPPLIED BY OTHERS. SEE DETAIL THIS SHEET
16		12	SET OF (4) 0.60" x 270 KSI STRAND LIFTING LOOPS	
17				
18				
19				
20				

APPROACH SLAB MISCELLANEOUS MATERIALS				
ITEM	MARK	QTY.	DESCRIPTION	REMARKS
1		46	#5 x 7'-2" (LEVEL II, DUAL COATED)	
2		1	#5 x 9'-1 1/4" (LEVEL II, DUAL COATED)	
3		1	#5 x 8'-10 1/4" (LEVEL II, DUAL COATED)	
4		1	#5 x 8'-7 1/4" (LEVEL II, DUAL COATED)	
5		1	#5 x 8'-4 1/4" (LEVEL II, DUAL COATED)	
6		1	#5 x 8'-1 1/4" (LEVEL II, DUAL COATED)	
7		1	#5 x 7'-10 1/4" (LEVEL II, DUAL COATED)	
8		1	#5 x 7'-7 1/4" (LEVEL II, DUAL COATED)	
9		1	#5 x 7'-4 1/4" (LEVEL II, DUAL COATED) △	
10		1	#5 x 8'-1 1/2" (LEVEL II, DUAL COATED)	
11		1	#5 x 7'-11 3/4" (LEVEL II, DUAL COATED)	
12		1	#5 x 7'-9 3/4" (LEVEL II, DUAL COATED)	
13		1	#5 x 7'-8" (LEVEL II, DUAL COATED)	
14		1	#5 x 7'-6" (LEVEL II, DUAL COATED)	
15		1	#5 x 7'-4 1/4" (LEVEL II, DUAL COATED)	
16				
17		48	#6 x 14'-6 1/2" (LEVEL II, DUAL COATED)	
18		(4)	#6 x 7'-11" (LEVEL II, DUAL COATED)	
19		2	#6 x 5'-6" (LEVEL II, DUAL COATED)	
20				
21				
22	PK-EN	24	4T x 7 1/8" SHIFT LIFT LIFTER	△ GALVANIZE
23		24	4" I.D. x 1'-2" PVC SLEEVE	
24				
25				



△ 4-7-14 REVISED AS NOTED

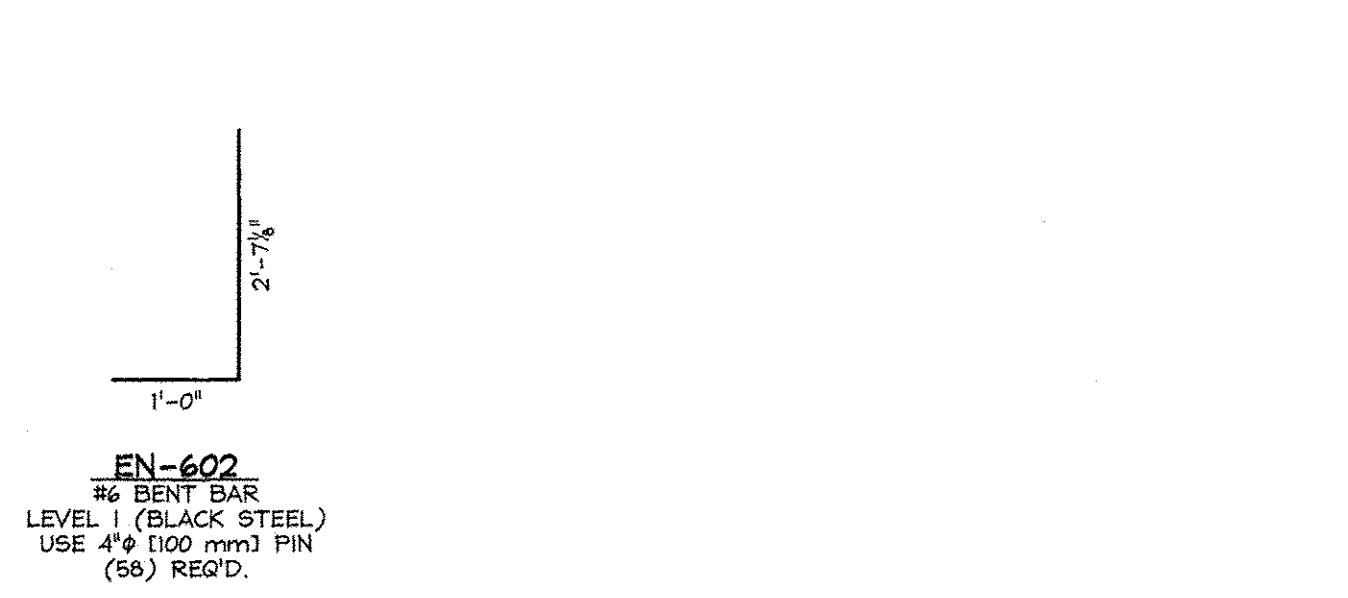
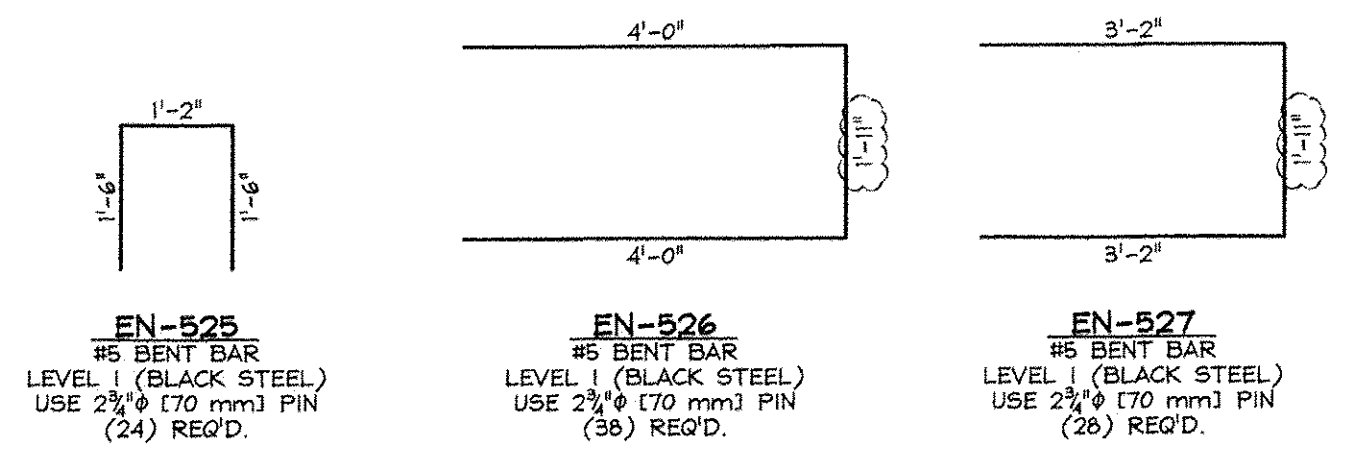
APPROVAL STAMP:	<b>J.P. CARRARA &amp; SONS INC.</b> A.L. ST. ONGE CONTRACTOR, INC. Precast & Prestress Manufacturer CONTRACTOR 2464 CASE ST., WOODBURY, VERMONT 05753 Phone: (802)388-6361 Fax: (802)388-9010 MONTGOMERY CENTER, VERMONT	
	STATE OF VERMONT AGENCY OF TRANSPORTATION COUNTY OF FRANKLIN	DATE: JAN. 27, 2014 SCALE: NOTED
	TOWN OF ENOSBURG BOSTON POST ROAD T.H.2 CLASS 2 BRIDGE NO.: 48 PROJECT NO.: BRO 1448(40)	CHKD: M.W. DFTM: B.L. JOB NO: 23418-018
	<b>MATERIALS LIST</b>	

ISSUED FOR PRODUCTION  
APR 09 2014  
J.P. Carrara & Sons, Inc.  
MIDDLEBURY, VT 05753

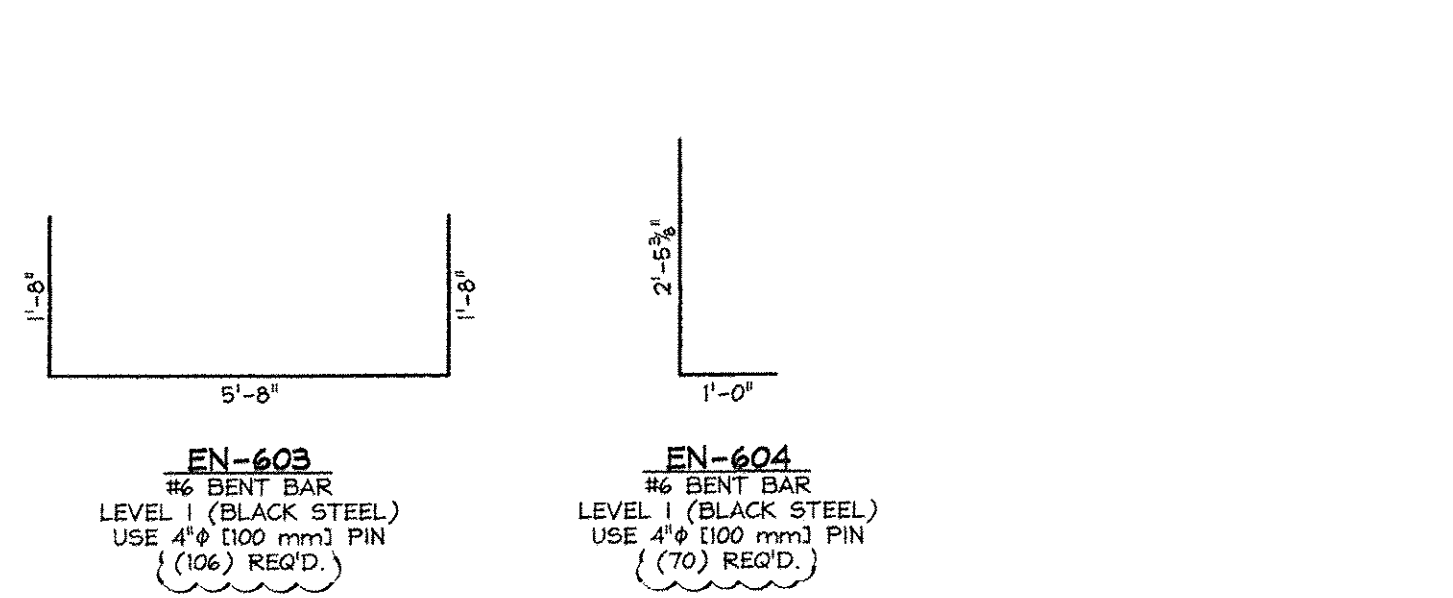
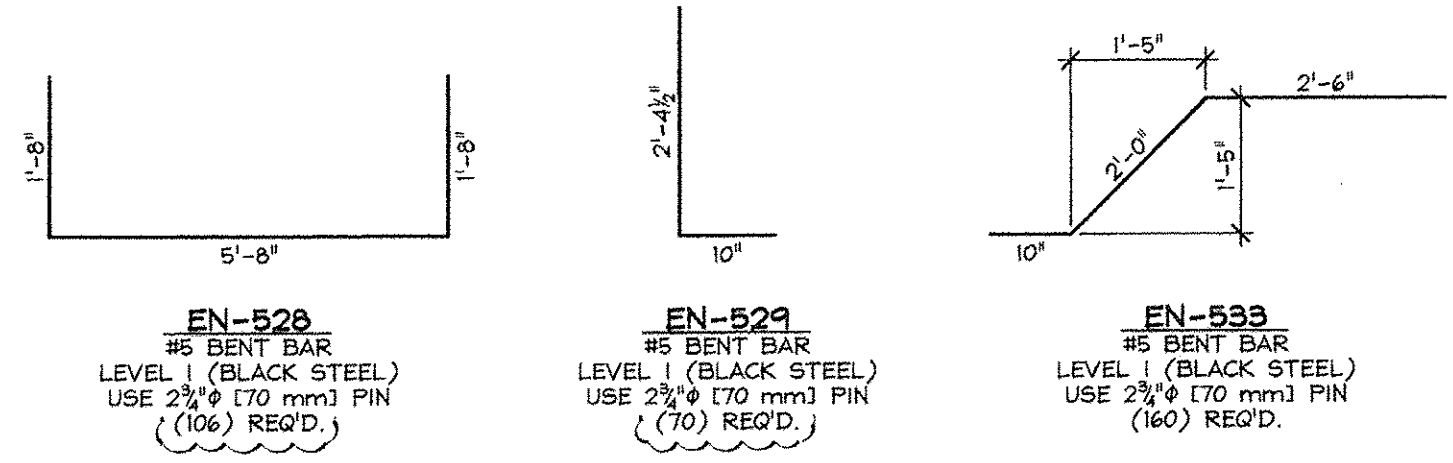
ABUTMENT MISCELLANEOUS MATERIALS				
ITEM	MARK	QTY.	DESCRIPTION	REMARKS
1		18	#5 x 3'-3" (LEVEL 1, BLACK STEEL)	
2		(54)	#5 x 4'-7" (LEVEL 1, BLACK STEEL)	
3		11	#5 x 4'-10" (LEVEL 1, BLACK STEEL)	
4		6	#5 x 7'-11" (LEVEL 1, BLACK STEEL)	
5		14	#5 x 32'-8" (LEVEL 1, BLACK STEEL)	
6		16	#5 x 2'-4" (LEVEL 1, BLACK STEEL)	
7		(5)	#5 x 7'-2" (LEVEL 1, BLACK STEEL)	
8		14	#5 x 31'-2" (LEVEL 1, BLACK STEEL)	
9		1	#5 x 7'-5" (LEVEL 1, BLACK STEEL)	
10		8	#5 x 10" (LEVEL 1, BLACK STEEL)	
11				
12		(54)	#6 x 4'-6" (LEVEL 1, BLACK STEEL)	
13		7	#6 x 4'-10" (LEVEL 1, BLACK STEEL)	
14		6	#6 x 7'-10" (LEVEL 1, BLACK STEEL)	
15		(5)	#6 x 7'-2" (LEVEL 1, BLACK STEEL)	
16		1	#6 x 7'-5" (LEVEL 1, BLACK STEEL)	
17				
18				
19	MK-EN2	(65)	NMB SPLICE SLEEVE 5U-X(PG) (BLACK STEEL)	
20	MK-EN3	(65)	NMB SPLICE SLEEVE 6U-X(PG) (BLACK STEEL)	
21		4	SET OF (4) 0.60" STRAND LIFTING LOOPS	
22				
23				
24				
25				

PILE CAP MISCELLANEOUS MATERIALS				
ITEM	MARK	QTY.	DESCRIPTION	REMARKS
1		14	#5 x 32'-8" (LEVEL 1, BLACK STEEL)	
2		14	#5 x 37'-2" (LEVEL 1, BLACK STEEL)	
3				
4				
5				
6		20	1'-3" x 2'-6" CORRUGATED SLEEVE (GALV.)	
7				
8	MK-EN6	8	20 T x 19 3/4" SWIFT LIFT LIFTER	
9				
10				

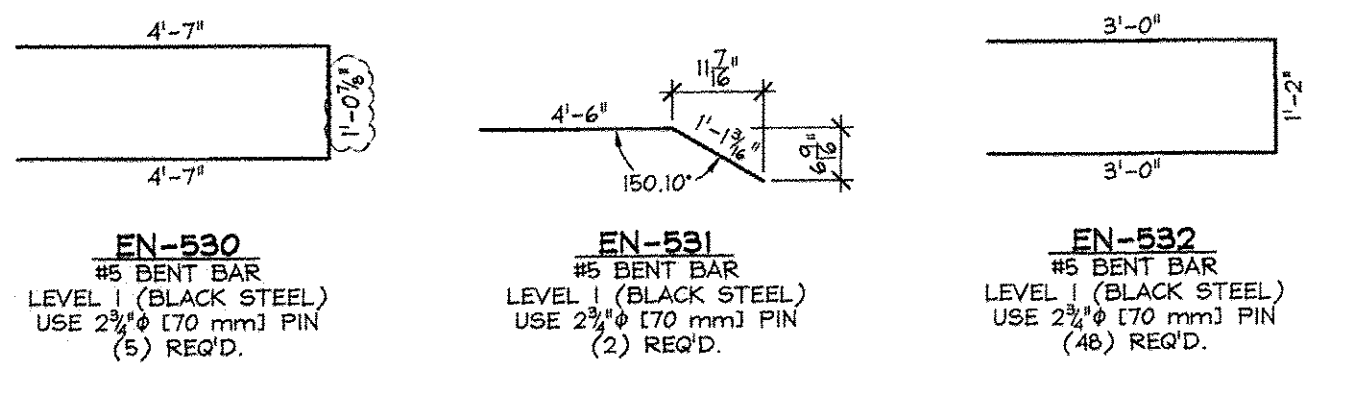
WINGWALL MISCELLANEOUS MATERIALS				
ITEM	MARK	QTY.	DESCRIPTION	REMARKS
1		5	#5 x 6'-1" (LEVEL 1, BLACK STEEL)	
2		18	#5 x 5'-0" (LEVEL 1, BLACK STEEL)	
3		48	#5 x 8'-4" (LEVEL 1, BLACK STEEL)	
4				
5		5	#6 x 6'-0" (LEVEL 1, BLACK STEEL)	
6		58	#6 x 6'-9" (LEVEL 1, BLACK STEEL)	
7				
8				
9	MK-EN2	5	NMB SPLICE SLEEVE 5U-X(PG) (BLACK STEEL)	
10	MK-EN3	63	NMB SPLICE SLEEVE 6U-X(PG) (BLACK STEEL)	
11	MK-EN4	16	4T x 7 1/8" SWIFT LIFT LIFTER	
12	MK-EN5	8	8T x 13 3/8" SWIFT LIFT LIFTER	
13				
14				
15				



**PRECAST ABUTMENTS**



**PRECAST PILE CAPS**



**PRECAST WINGWALLS**

APPROVED: Approval of drawings and/or procedures indicates concurrence with the information presented and does not relieve the Contractor or Fabricator of compliance with all specifications and code requirements

APPROVED AS NOTED

REVISE AND RESUBMIT

NOT REVIEWED

Date: 4-11-2014

By: James Hays

This review of Stantec Consulting Services Inc. is for the sole purpose of ascertaining conformance with the general design concept. This review shall not mean that Stantec Consulting Services Inc approves the detail design inherent in the shop drawings, responsibility for which shall remain with the Contractor. Submitting same, and such review shall not relieve the Contractor of his responsibility for errors or omissions in the shop drawing or of his responsibility for meeting all requirements of the Contract Documents. The contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to the fabrication processes or to techniques of construction and installation and for coordination of the work of all subtrades.

Vermont Agency of Transportation

**RECEIVED**

ON: April 9, 2014

and Checked for CONFORMANCE

BY: Rob Young DATE: 04/14/2014

ISSUED FOR PRODUCTION

APR 09 2014

J. P. CARRARA & SONS, INC. MIDDLEBURY, VT 05753

**J.P. CARRARA & SONS INC.** A.L. ST. ONGE CONTRACTOR, INC.

Precast & Prestress Manufacturer CONTRACTOR

2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010 MONTGOMERY CENTER, VERMONT

**STATE OF VERMONT AGENCY OF TRANSPORTATION** DATE: JAN. 27, 2014

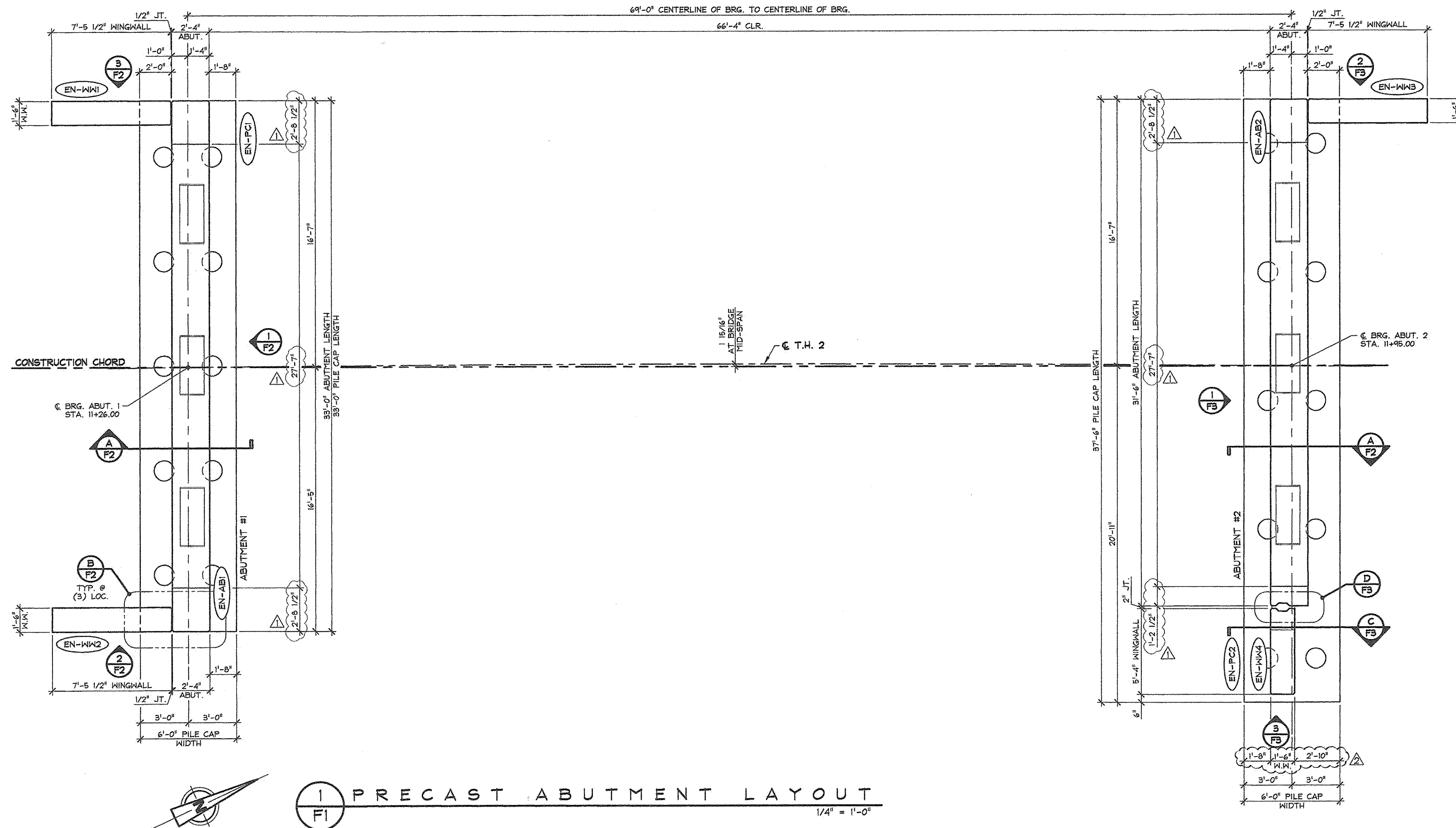
COUNTY OF FRANKLIN SCALE: NOTED

**TOWN OF ENOSBURG** CHKD: M.W. DFTM: B.L.

BOSTON POST ROAD T.H.2 CLASS 2

BRIDGE NO.: 48 PROJECT NO.: BRO 1448(40) JOB NO: 23418-013

**MATERIALS LIST** DWG. NO: M2



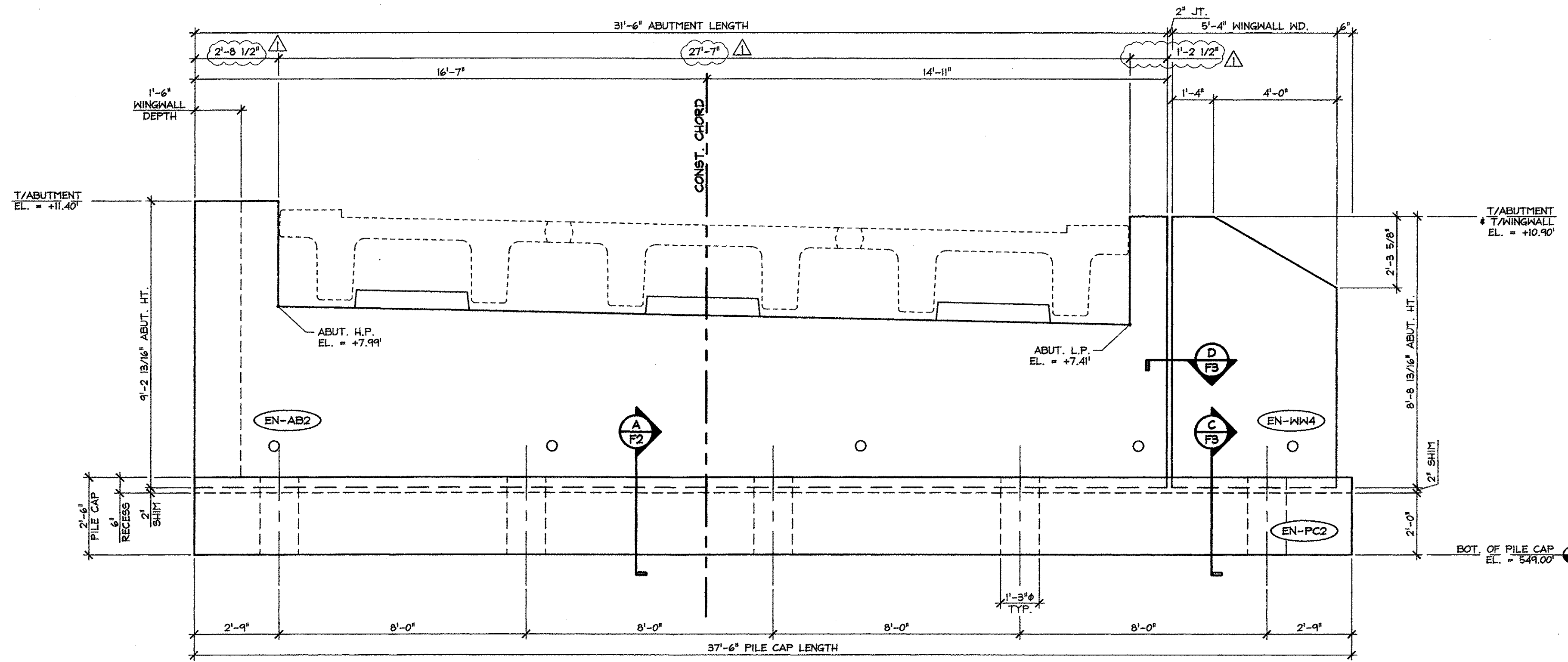
Vermont Agency of Transportation  
**RECEIVED**  
 ON: April 28, 2014  
 and Checked for  
**CONFORMANCE**  
 BY: Rob Young DATE: 05/01/2014

APPROVED: Approval of drawings and/or procedures indicates concurrence with the information presented and does not relieve the Contractor or Fabricator of compliance with all specifications and code requirements	✓	
APPROVED AS NOTED		
REVISE AND RESUBMIT		
NOT REVIEWED		
Date:	4-29-2014	
By:	<i>James Huffel</i>	
This review by Stantec Consulting Services Inc. is for the sole purpose of ascertaining conformance with the general design concept. This review shall not mean that Stantec Consulting Services Inc approves the detail design inherent in the shop drawings, responsibility for which shall remain with the Contractor. Submitting same, and such review shall not relieve the Contractor of his responsibility for errors or omissions in the shop drawing or of his responsibility for meeting all requirements of the Contract Documents. The contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to the fabrication processes or to techniques of construction and installation and for coordination of the work of all subtrades.		

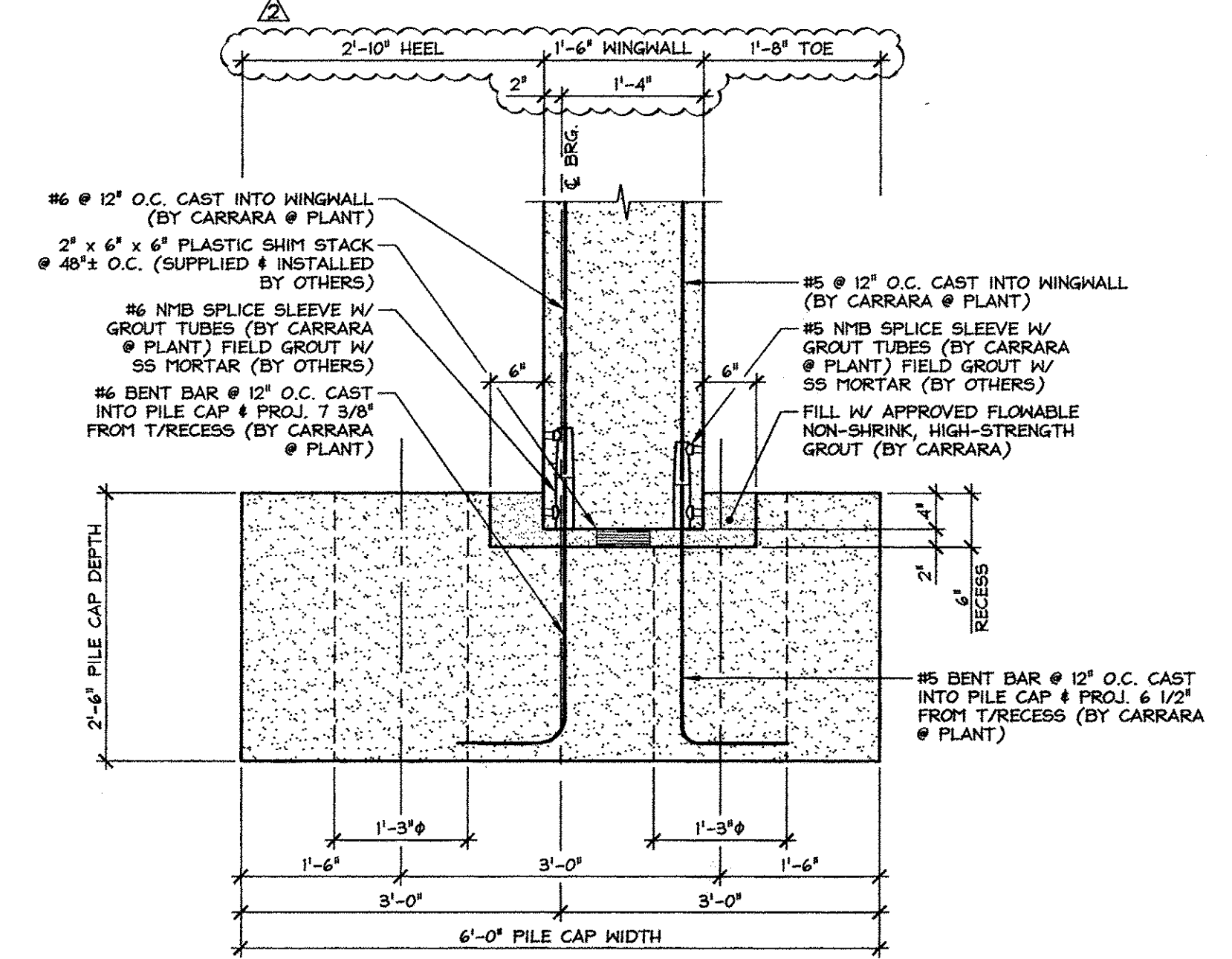
△ 4-28-14 REVISED AS NOTED  
 △ 4-7-14 REVISED AS NOTED

APPROVAL STAMP:	J.P. CARRARA & SONS INC. Precast & Prestress Manufacturer 2464 GISE STR., MIDDLEBURY, VERMONT 05753 Phone: (802)388-6361 Fax: (802)388-9010	A.L. St. ONGE CONTRACTOR, INC. CONTRACTOR MONTGOMERY CENTER, VERMONT
STATE OF VERMONT AGENCY OF TRANSPORTATION COUNTY OF FRANKLIN	DATE: JAN. 27, 2014 SCALE: NOTED	CHKD: M.W. DFTM: B.L. JOB NO: 23418-013
TOWN OF ENOSBURG BOSTON POST ROAD T.H.2 CLASS 2 BRIDGE NO.: 48 PROJECT NO.: BRO 1448(40)	DWG. NO: <b>FI</b>	

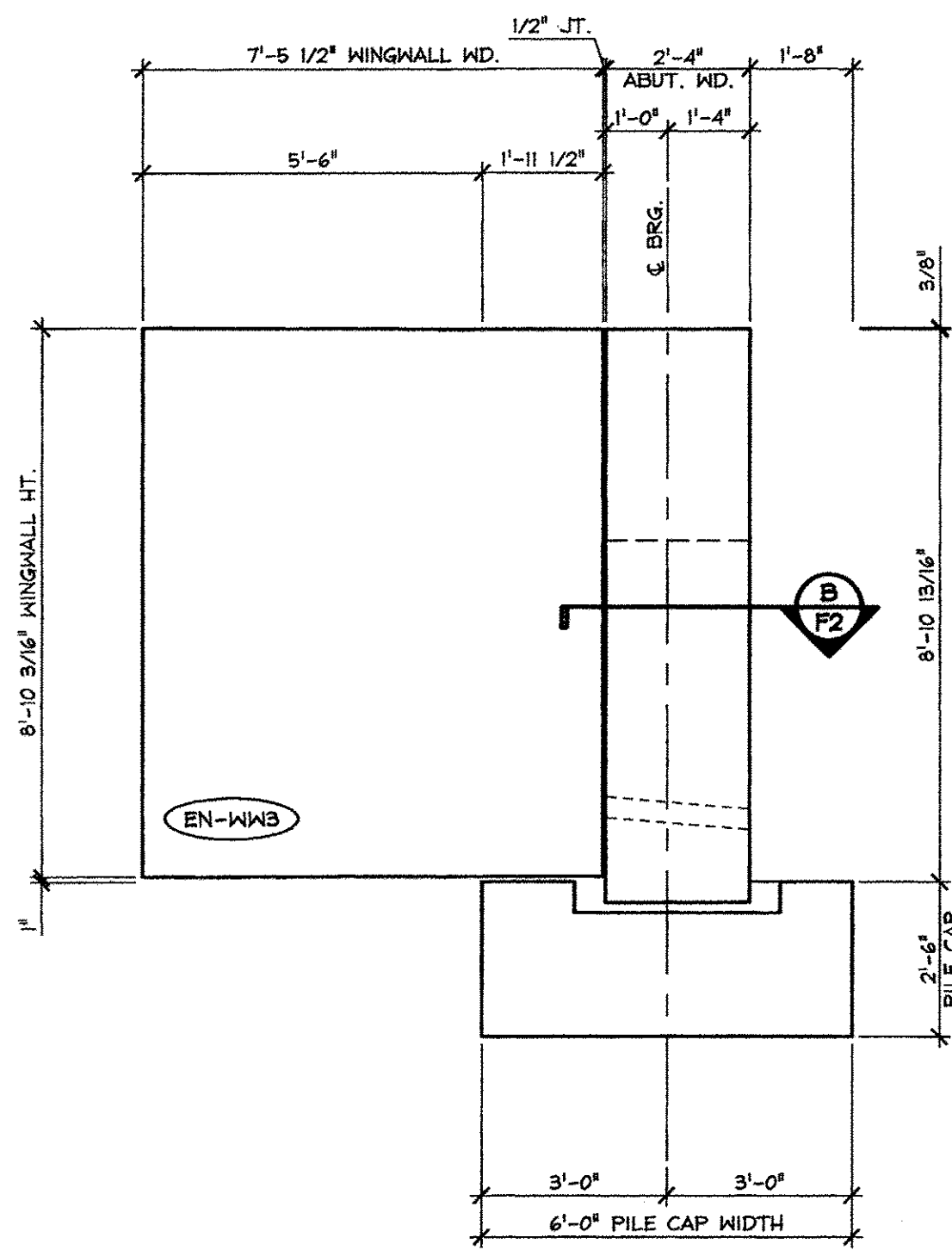
SUBMITTED  
 APR 28 2014  
 J.P. CARRARA & SONS, INC.  
 MIDDLEBURY, VT 05753



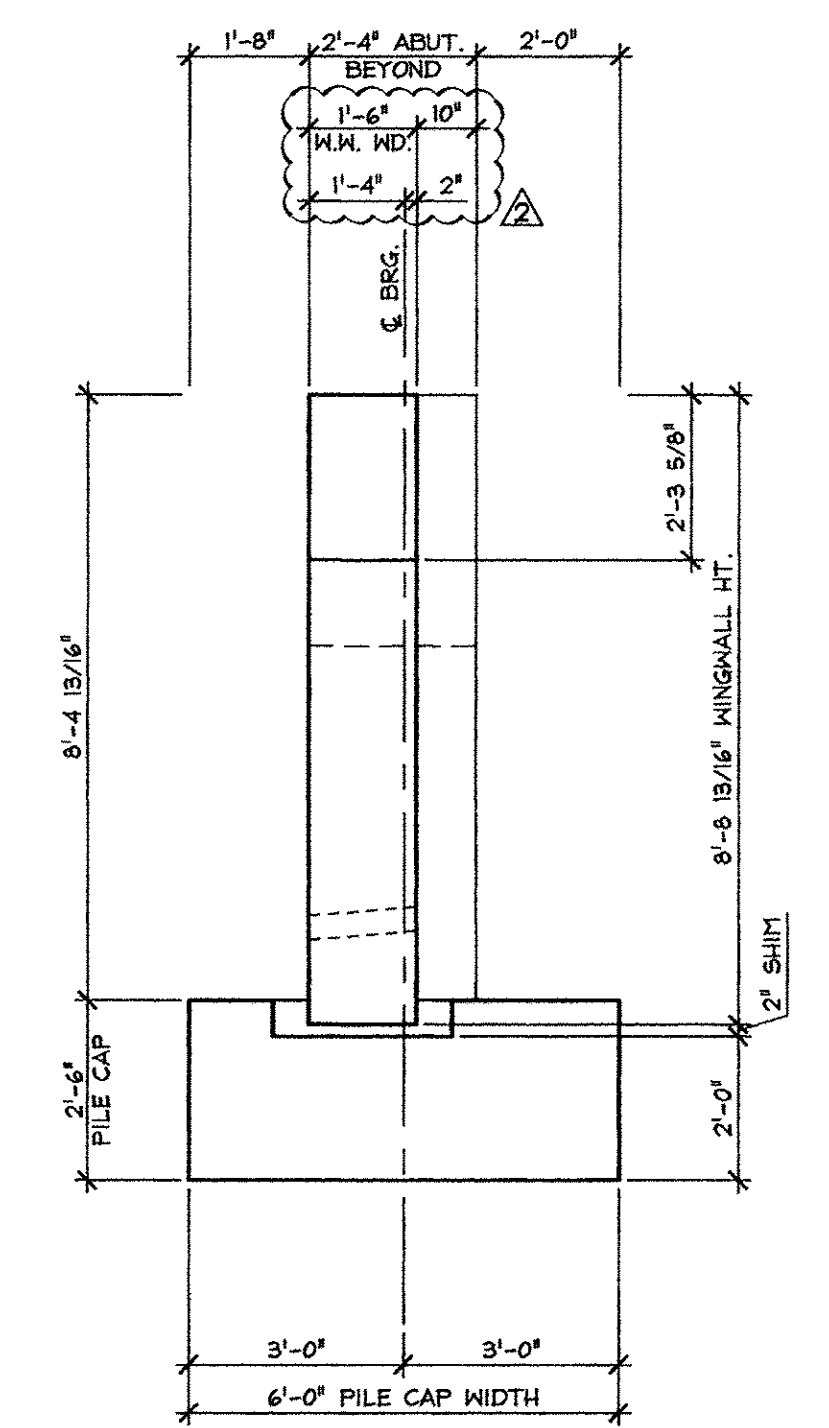
1 ABUTMENT #2 ELEVATION  
 F3 3/8" = 1'-0"



C WINGWALL CONNECTION DETAIL  
 F3 3/4" = 1'-0"



2 WINGWALL #3 ELEVATION  
 F3 3/8" = 1'-0"



3 WINGWALL #4 ELEVATION  
 F3 3/8" = 1'-0"

APPROVED: Approval of drawings and/or procedures indicates concurrence with the information presented and does not relieve the Contractor or Fabricator of compliance with all specifications and code requirements

APPROVED AS NOTED

REVISE AND RESUBMIT

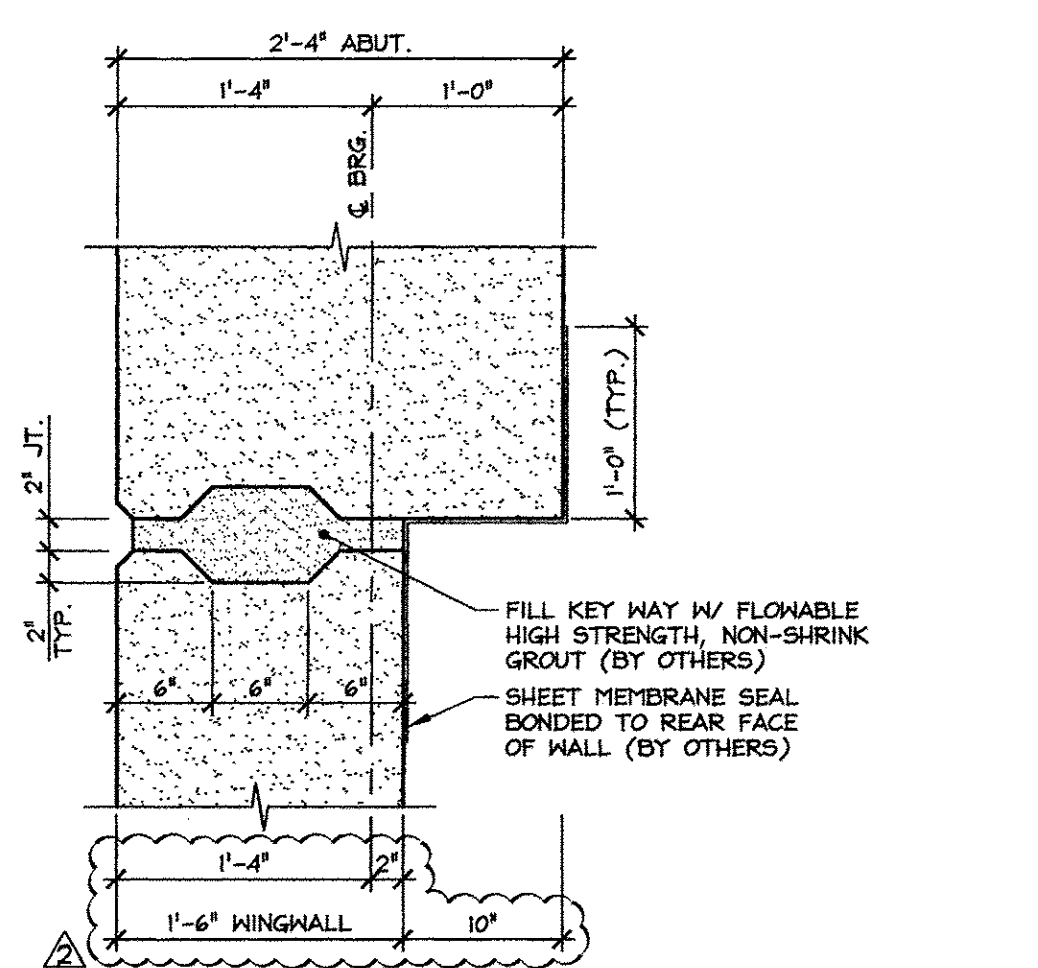
NOT REVIEWED

Date: 4-29-2014

By: *James Hynd*

This review by Stantec Consulting Services Inc. is for the sole purpose of ascertaining conformance with the general design concept. This review shall not mean that Stantec Consulting Services Inc approves the detail design inherent in the shop drawings, responsibility for which shall remain with the Contractor. Submitting same, and such review shall not relieve the Contractor of his responsibility for errors or omissions in the shop drawing or of his responsibility for meeting all requirements of the Contract Documents. The contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to the fabrication processes or to techniques of construction and installation and for coordination of the work of all subtrades.

Stantec



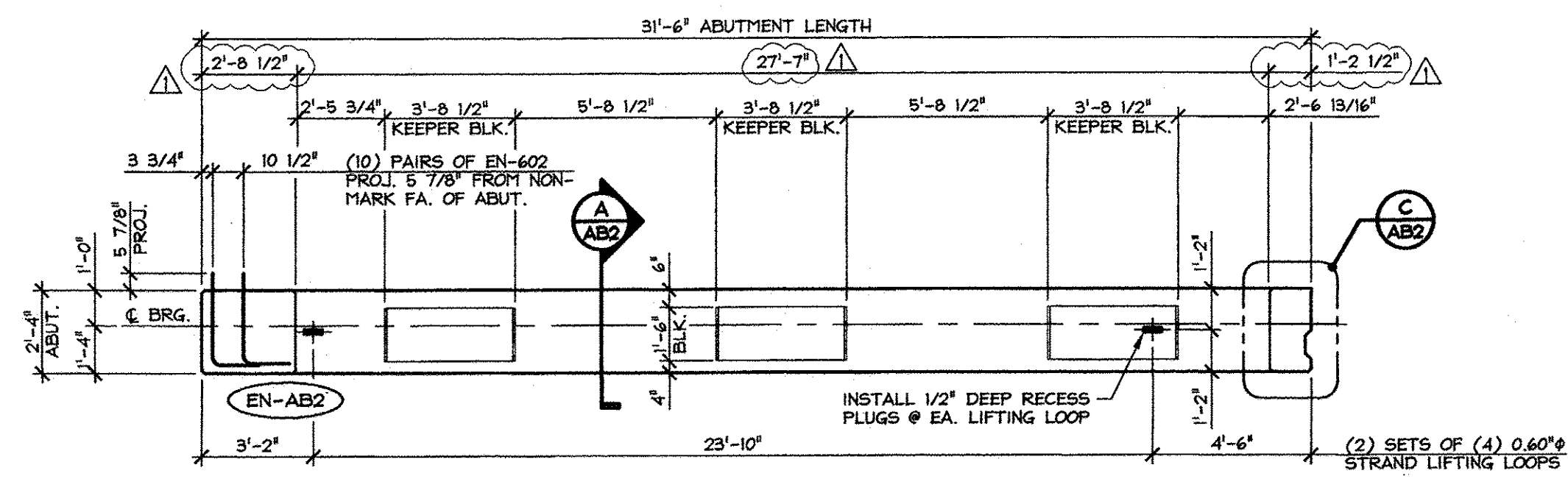
D ABUTMENT / WING WALL SHEAR KEY DETAIL  
 F3 1" = 1'-0"

- 4-28-14 REVISED AS NOTED
- 4-7-14 REVISED AS NOTED

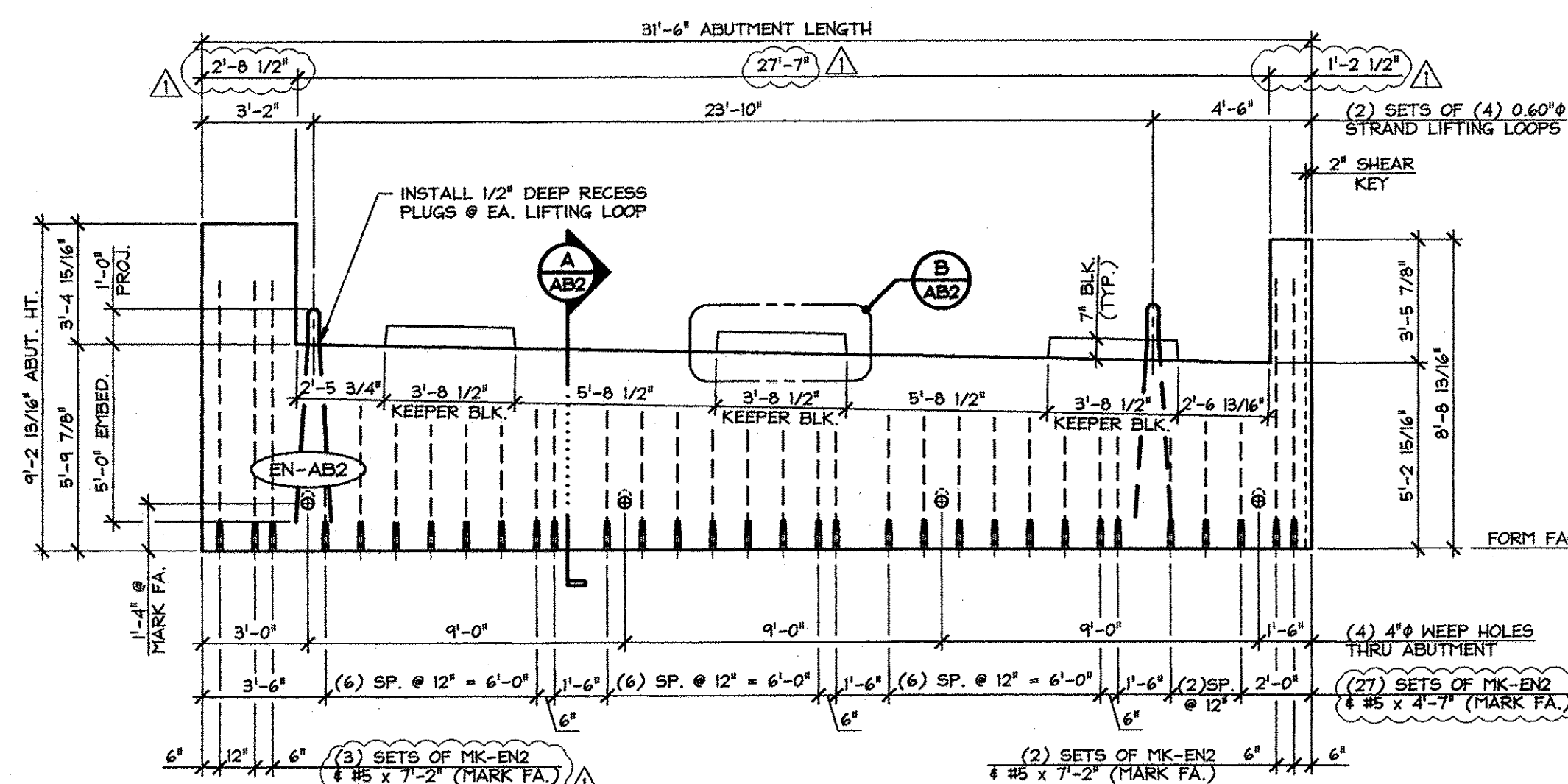
APPROVAL STAMP:	J.P. CARRARA & SONS INC. Precast & Prestress Manufacturer 2464 OSE ST., MIDDLEBURY, VERMONT 05753 Phone: (802)388-6361 Fax: (802)388-9010	A.L. ST. ONGE CONTRACTOR, INC. CONTRACTOR MONTGOMERY CENTER, VERMONT
STATE OF VERMONT AGENCY OF TRANSPORTATION COUNTY OF FRANKLIN		DATE: APR. 24, 2014 SCALE: NOTED
TOWN OF ENOSBURG BOSTON POST ROAD T.H.2 CLASS 2 BRIDGE NO.: 48 PROJECT NO.: BRO 1448(40)		CHKD: M.I.N. DFTM: B.L. JOB NO: 23418-013
ABUTMENT #2 ELEVATIONS		DWG. NO: F3

Vermont Agency of Transportation  
**RECEIVED**  
 ON: April 28, 2014  
 and Checked for  
**CONFORMANCE**  
 BY: Rob Young DATE: 05/01/2014

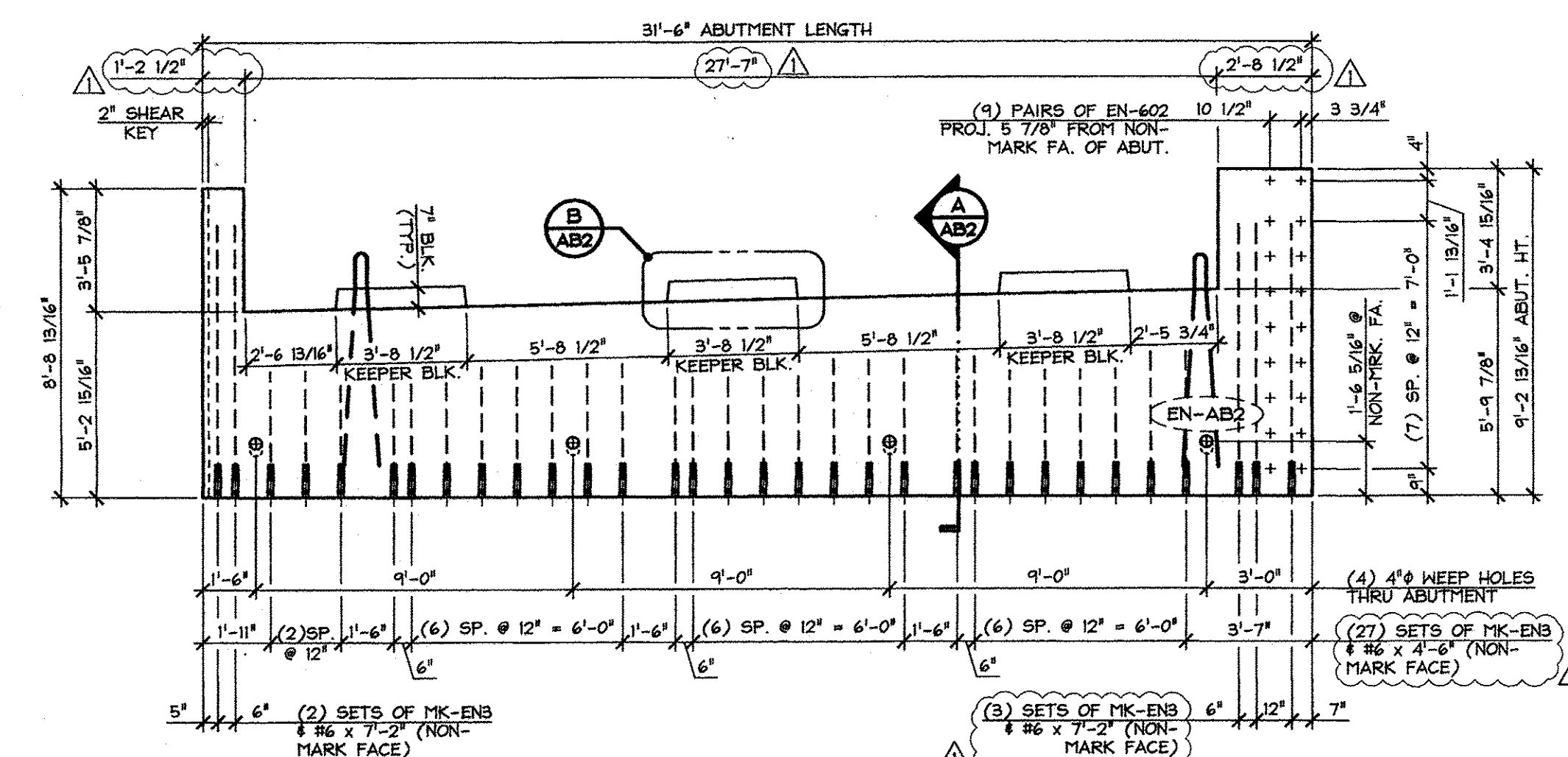
SUBMITTED  
 APR 28 2014  
 J.P. CARRARA & SONS, INC.  
 MIDDLEBURY, VT 05753



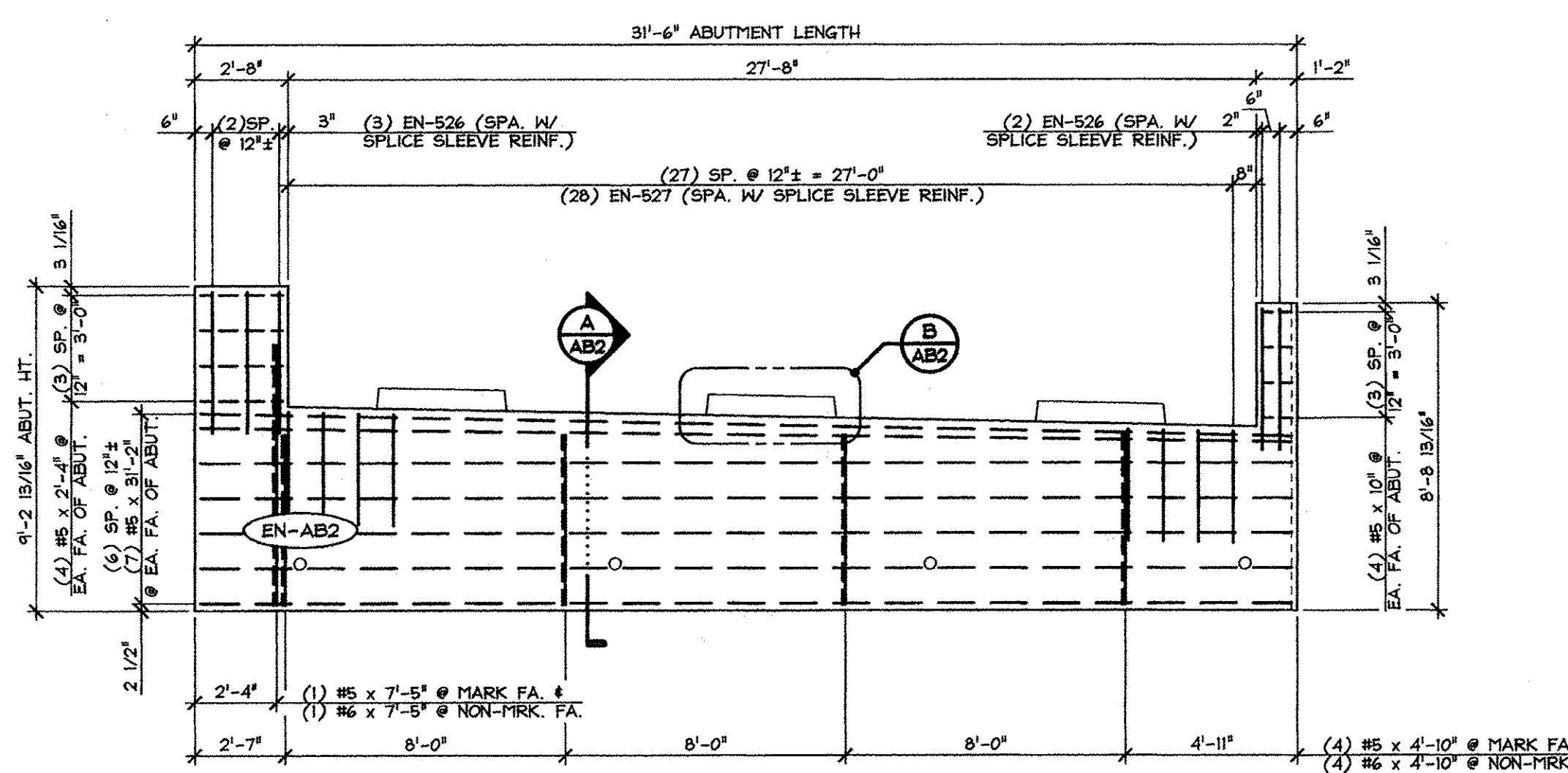
1 DIMENSIONAL PLAN VIEW IN FORM  
AB2  
1/4" = 1'-0"



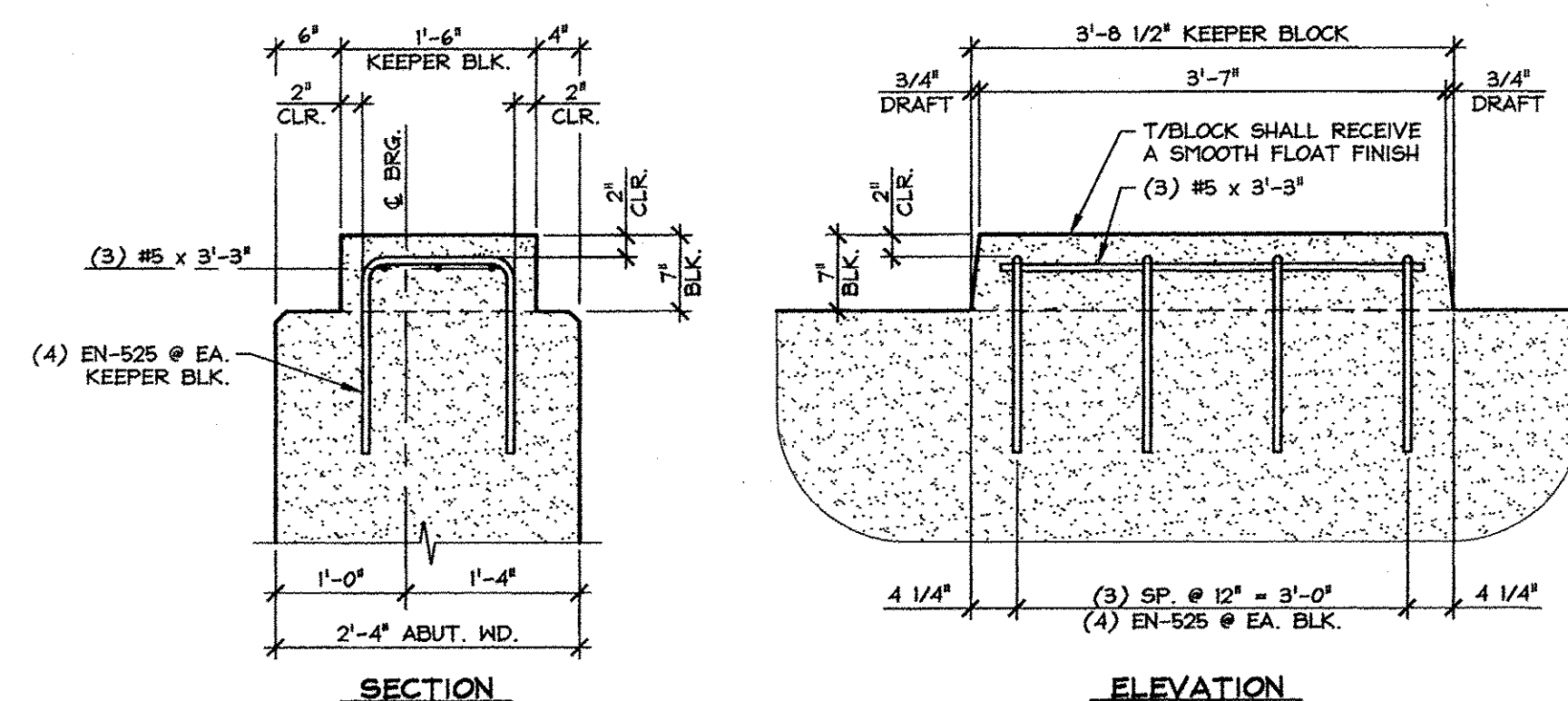
2 DIMENSIONAL ELEVATION (MARK FACE)  
AB2  
1/4" = 1'-0"



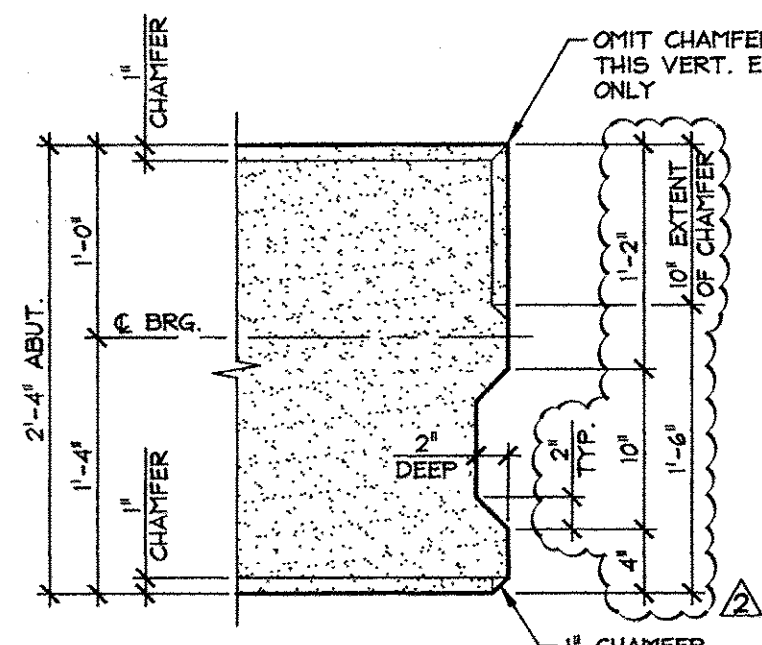
3 DIMENSIONAL ELEVATION (NON-MARK FACE)  
AB2  
1/4" = 1'-0"



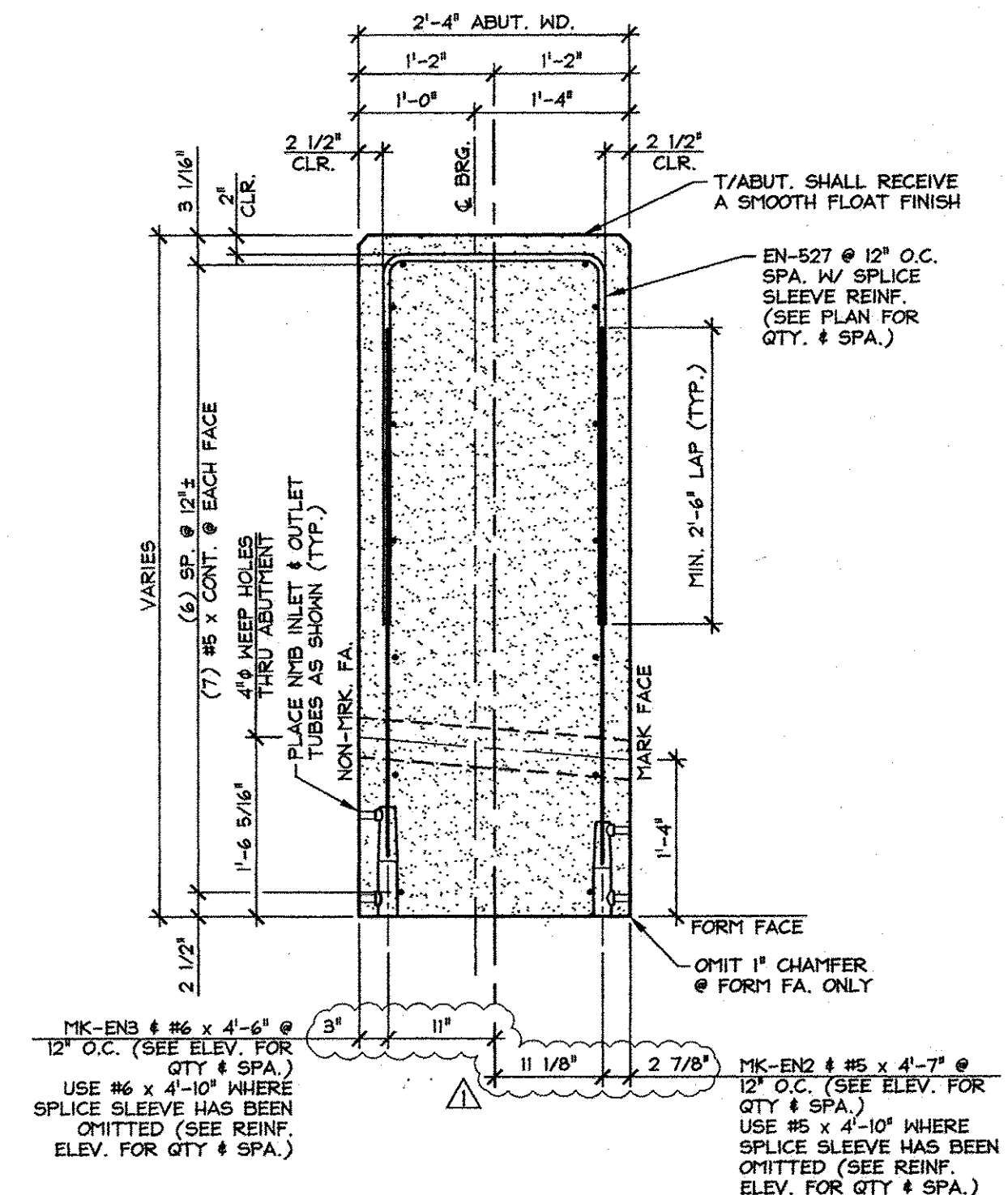
4 REINFORCING ELEVATION  
AB2  
1/4" = 1'-0"



B KEEPER BLOCK DETAILS  
AB2  
3/4" = 1'-0"



C SHEAR KEY PLAN  
AB2  
1" = 1'-0"



A ABUTMENT SECTION  
AB2  
3/4" = 1'-0"

Vermont Agency of Transportation  
**RECEIVED**  
ON: April 28, 2014  
and Checked for  
**CONFORMANCE**  
BY: Rob Young DATE: 05/01/2014

SHOP NOTE:  
Fc = 5,000 PSI  
Fcl = 4,000 PSI  
MK = #4#5#CC

MARK: EN-AB2	QTY.: 1	WT.: 33.53 T	VOL.: 16.56 cy
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MATERIAL LIST / ABUTMENT			
ITEM	MARK	DESCRIPTION	QTY.
1	EN-525	#5 BENT BAR (LEVEL I, BLACK STEEL)	12
2	EN-526	#5 BENT BAR (LEVEL I, BLACK STEEL)	5
3	EN-527	#5 BENT BAR (LEVEL I, BLACK STEEL)	26
4		#5 x 3'-3" (LEVEL I, BLACK STEEL)	9
5		#5 x 4'-7" (LEVEL I, BLACK STEEL)	27
6		#5 x 4'-10" (LEVEL I, BLACK STEEL)	4
7		#5 x 7'-2" (LEVEL I, BLACK STEEL)	5
8		#5 x 3i'-2" (LEVEL I, BLACK STEEL)	14
9		#5 x 2'-4" (LEVEL I, BLACK STEEL)	6
10		#5 x 7'-5" (LEVEL I, BLACK STEEL)	1
11		#5 x 10" (LEVEL I, BLACK STEEL)	8
12			
13	EN-602	#6 BENT BAR (LEVEL I, BLACK STEEL)	18
14		#6 x 4'-6" (LEVEL I, BLACK STEEL)	27
15		#6 x 4'-10" (LEVEL I, BLACK STEEL)	4
16		#6 x 7'-2" (LEVEL I, BLACK STEEL)	5
17		#6 x 7'-5" (LEVEL I, BLACK STEEL)	1
18			
19			
20			
21	MK-EN2	N#B SPLICE SLEEVE 5U-X(PG) (BLACK STEEL)	32
22	MK-EN5	N#B SPLICE SLEEVE 6U-X(PG) (BLACK STEEL)	32
23		SET OF (4) 0.60" STRAND LIFTING LOOPS	2
24			
25			

APPROVED: Approval of drawings and/or procedures indicates concurrence with the information presented and does not relieve the Contractor or Fabricator of compliance with all specifications and code requirements

APPROVED AS NOTED

REVISE AND RESUBMIT

NOT REVIEWED

Date: 4-29-2014

By: *Janet Hyslop*

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4-28-14 REVISED AS NOTED  
4-7-14 REVISED AS NOTED

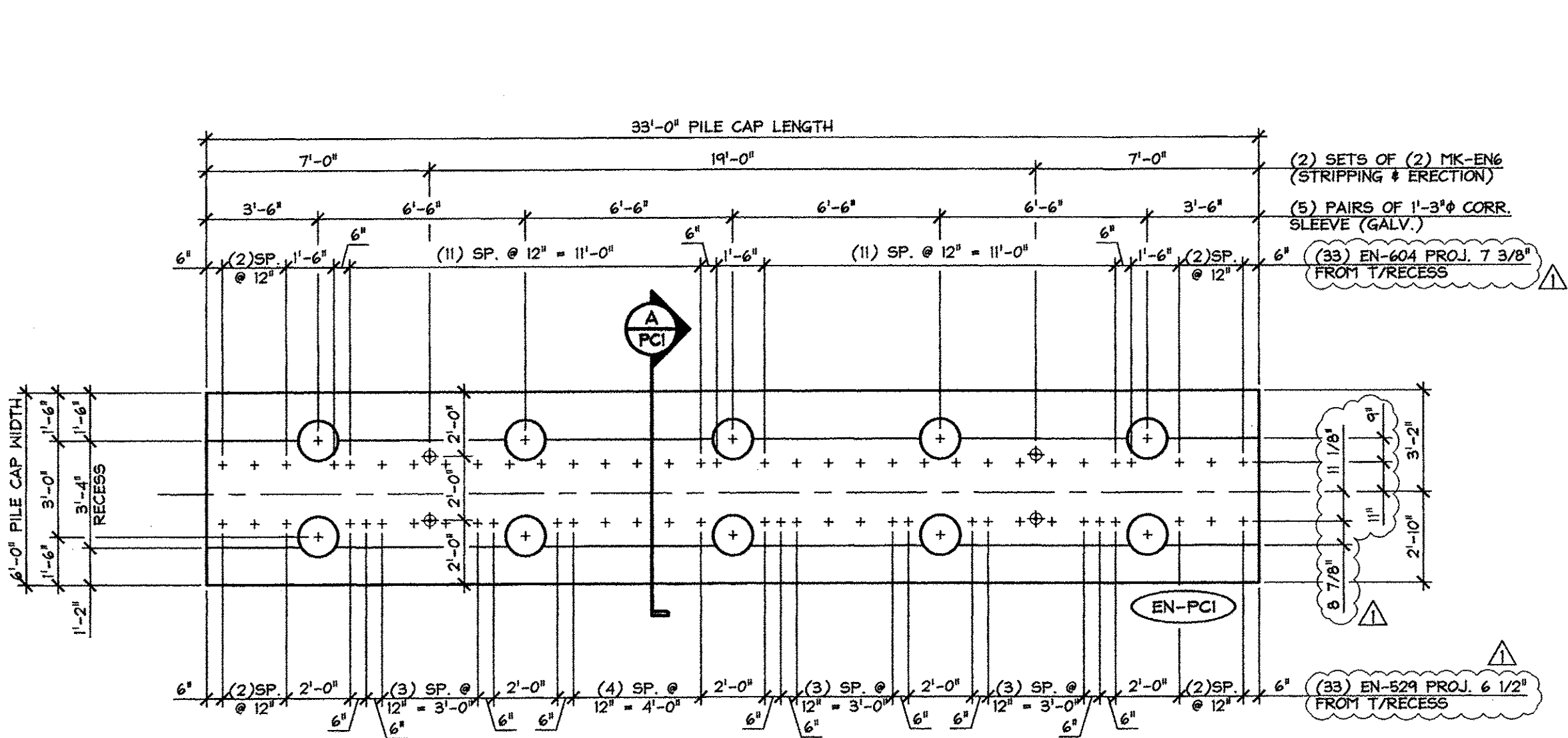
APPROVAL STAMP:

J.P. CARRARA & SONS INC. A.L. St. ONGE CONTRACTOR, INC.  
Precast & Prestress Manufacturer CONTRACTOR  
2644 OISE ST., MIDDLEBURY, VERMONT 05753 Phone: (802)388-6361 Fax: (802)388-9010 MONTGOMERY CENTER, VERMONT

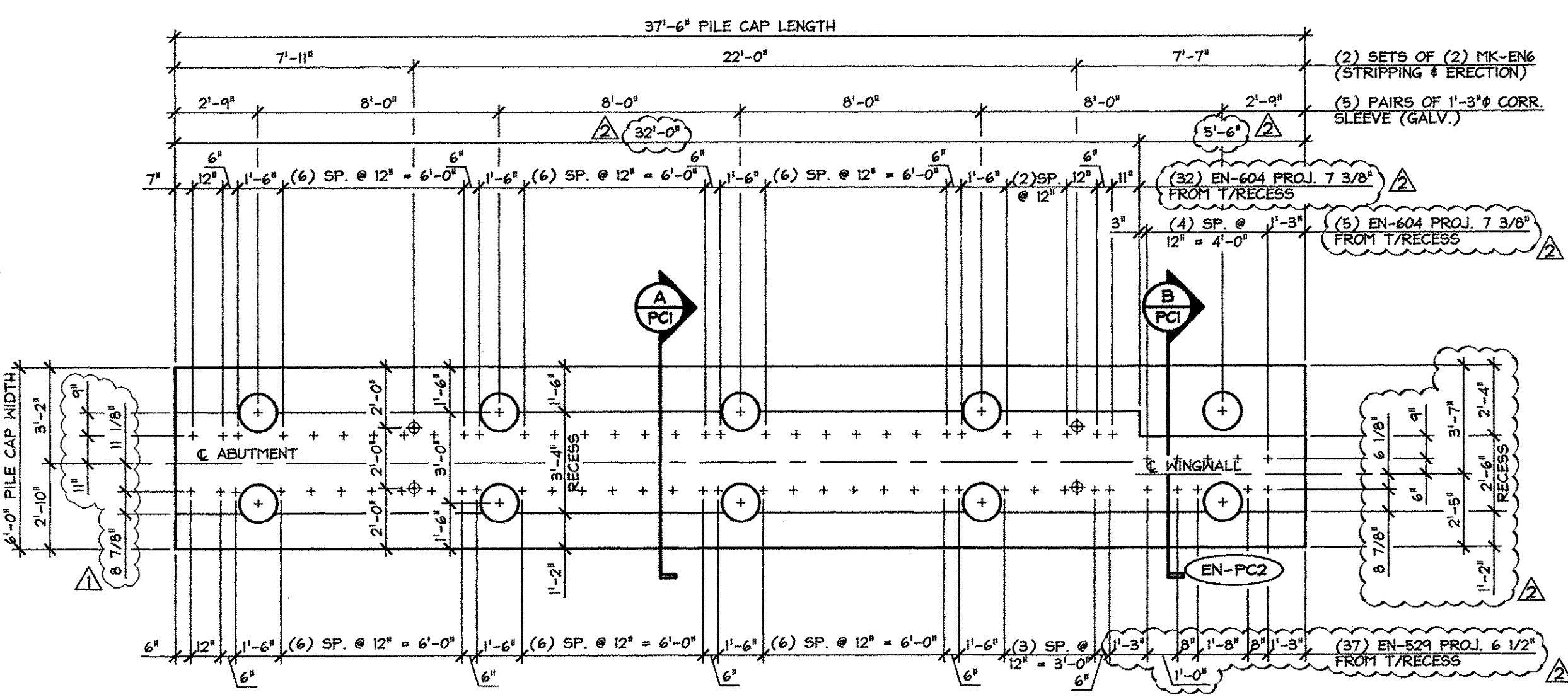
STATE OF VERMONT AGENCY OF TRANSPORTATION DATE: JAN. 27, 2014  
COUNTY OF FRANKLIN SCALE: NOTED

TOWN OF ENOSBURG CHKD: M.W. DFTM: B.L.  
BOSTON POST ROAD T.H.2 CLASS 2  
BRIDGE NO.: 48 PROJECT NO.: BRO 1448(40) JOB NO: 23418-015

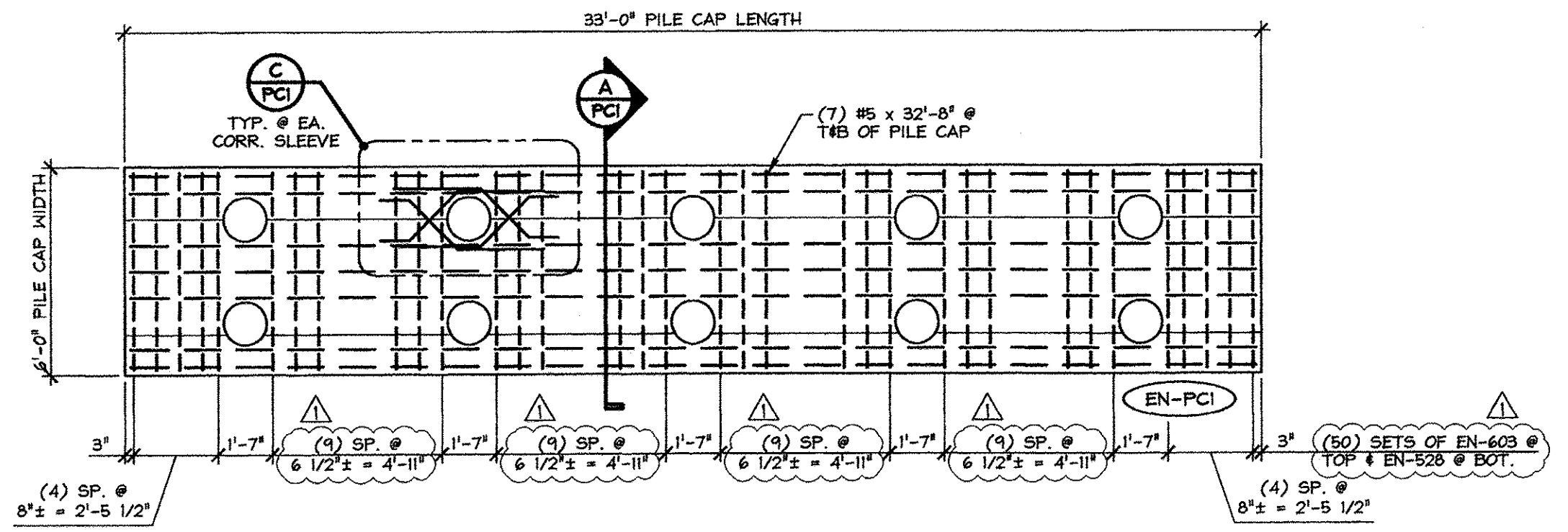
PRECAST ABUTMENT DETAILS DWG. NO: AB2



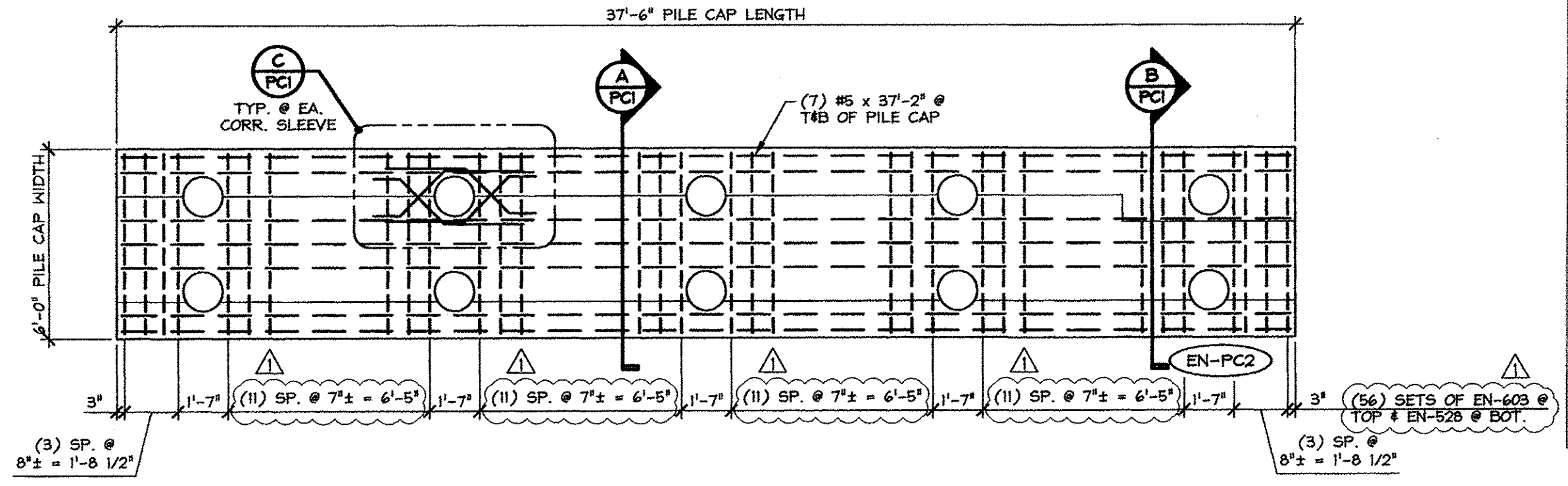
**1** DIMENSIONAL PLAN VIEW IN FORM  
PCI  
1/4" = 1'-0"



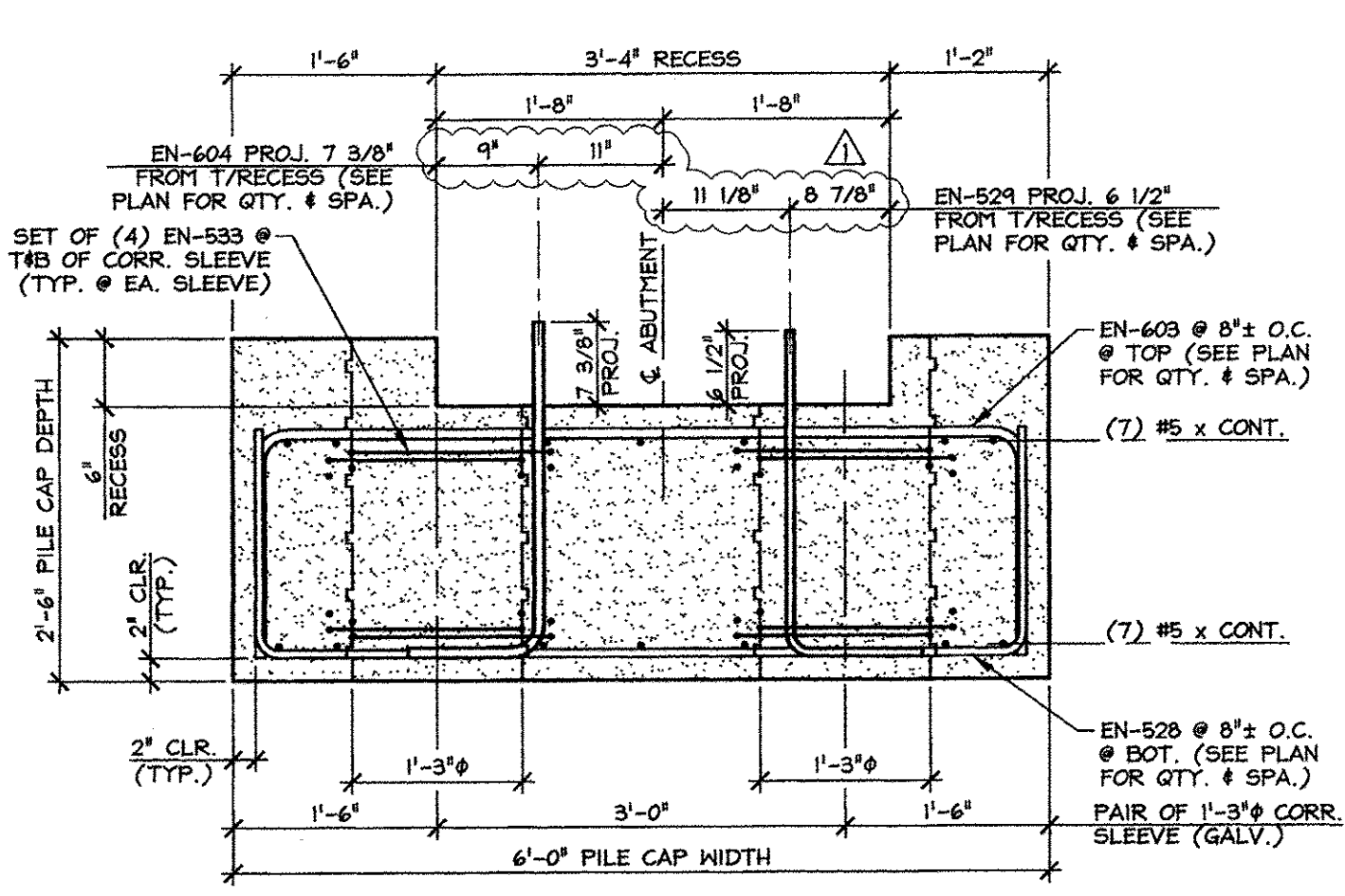
**3** DIMENSIONAL PLAN VIEW IN FORM  
PCI  
1/4" = 1'-0"



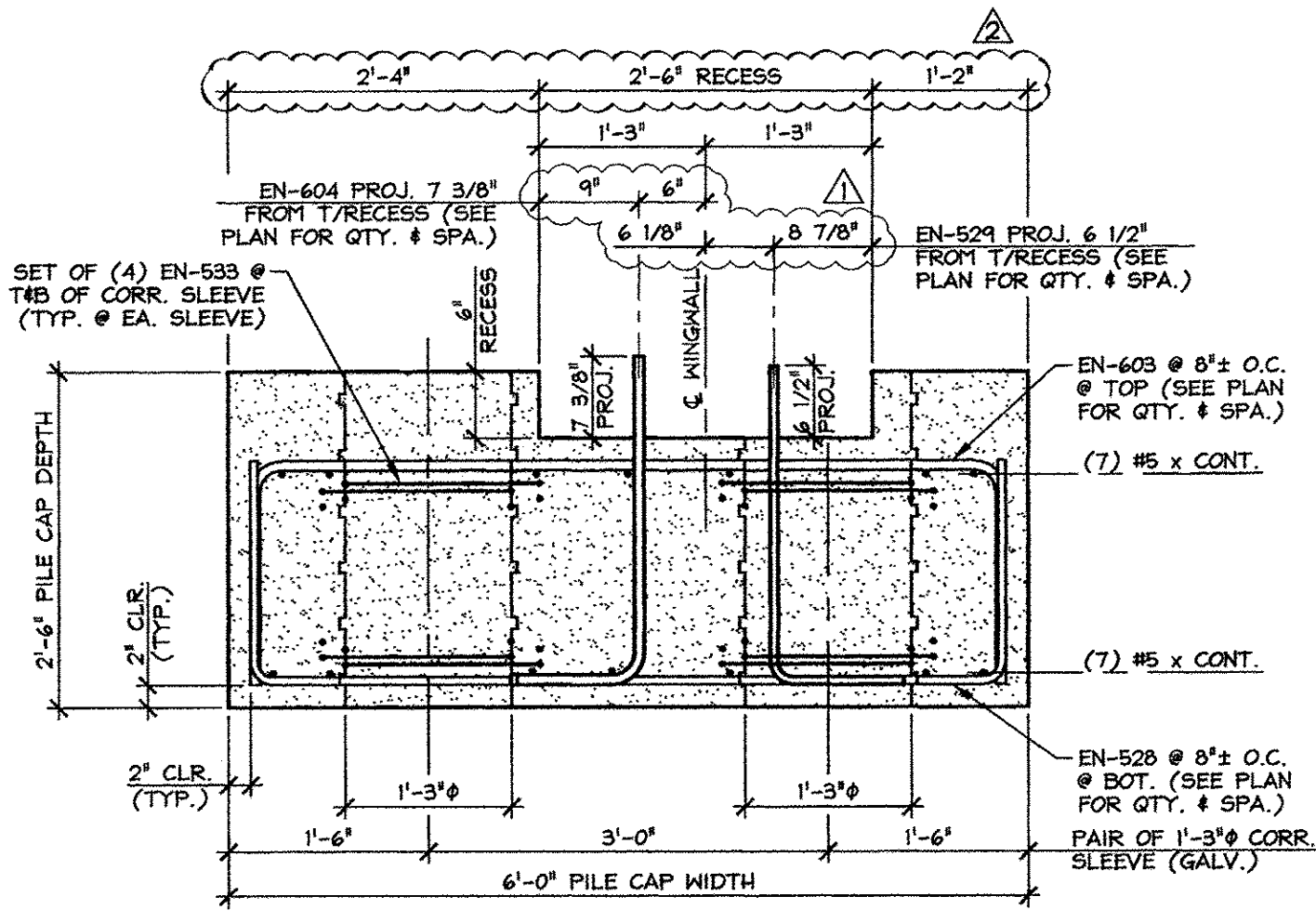
**2** REINFORCING PLAN VIEW IN FORM  
PCI  
1/4" = 1'-0"



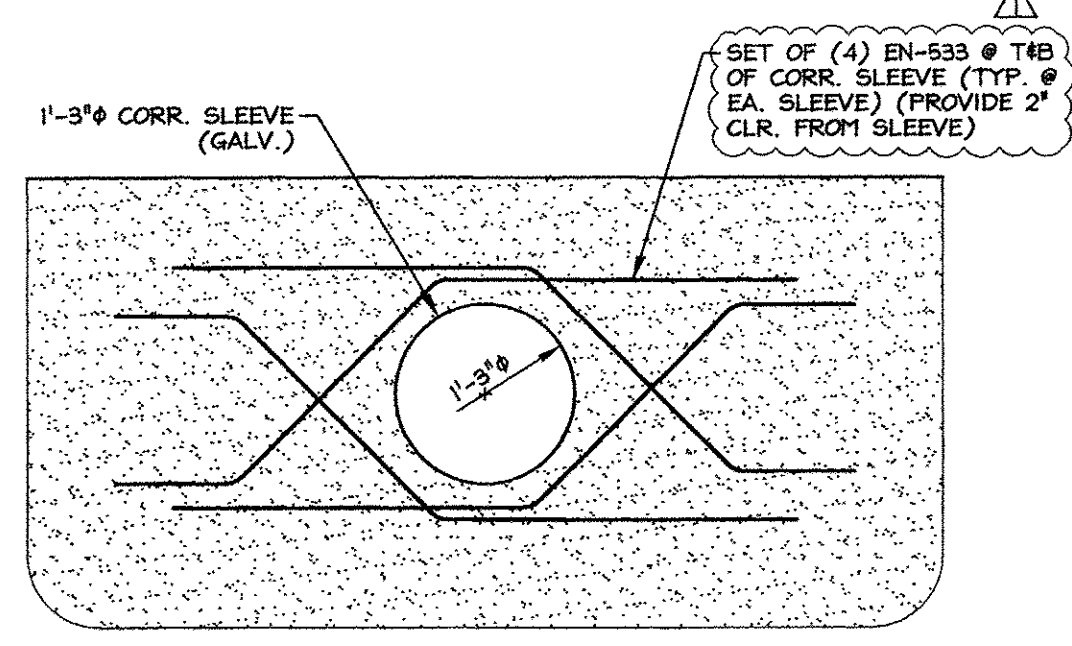
**4** REINFORCING PLAN VIEW IN FORM  
PCI  
1/4" = 1'-0"



**A** PILE CAP SECTION  
PCI  
3/4" = 1'-0"



**B** PILE CAP SECTION  
PCI  
3/4" = 1'-0"



**C** CORRUGATED SLEEVE  
PCI REINFORCING DETAIL  
3/4" = 1'-0"

4-28-14 REVISED AS NOTED  
4-7-14 REVISED AS NOTED

APPROVAL STAMP:

APPROVED: Approval of drawings and/or procedures indicates concurrence with the information presented and does not relieve the Contractor or Fabricator of compliance with all specifications and code requirements

APPROVED AS NOTED

REVISE AND RESUBMIT

NOT REVIEWED

Date: 4-29-2014

By: *James Hynd*

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Stantec

SHOP NOTE:  
Fc = 5,000 PSI  
Fcd = 3,500 PSI  
MIX: #4451M5CC

SUBMITTED  
APR 28 2014  
J. P. CARRARA & SONS, INC.  
MIDDLEBURY, VT 05753

MARK: EN-PCI	QTY.: 1	WT.: 31.2 T	VOL.: 15.4 cy
MARK: EN-PC2	QTY.: 1	WT.: 35.8 T	VOL.: 17.7 cy

MATERIAL LIST / PILE CAP				
ITEM	MARK	DESCRIPTION	QTY./PILE CAP	
			EN-PCI	EN-PC2
1	EN-528	#5 BENT BAR (LEVEL 1, BLACK STEEL)	(50)	(56)
2	EN-524	#5 BENT BAR (LEVEL 1, BLACK STEEL)	(33)	(37)
3	EN-533	#5 BENT BAR (LEVEL 1, BLACK STEEL)	80	80
4		#5 x 32'-8" (LEVEL 1, BLACK STEEL)	14	
5		#5 x 37'-2" (LEVEL 1, BLACK STEEL)	14	
6				
7	EN-603	#6 BENT BAR (LEVEL 1, BLACK STEEL)	(50)	(56)
8	EN-604	#6 BENT BAR (LEVEL 1, BLACK STEEL)	(33)	(37)
9				
10		1'-3" x 2'-6" CORRUGATED SLEEVE (GALV.)	10	10
11				
12	MK-ENG	20 T x 19 3/4" SWIFT LIFT LIFTER	4	4
13				
14				
15				

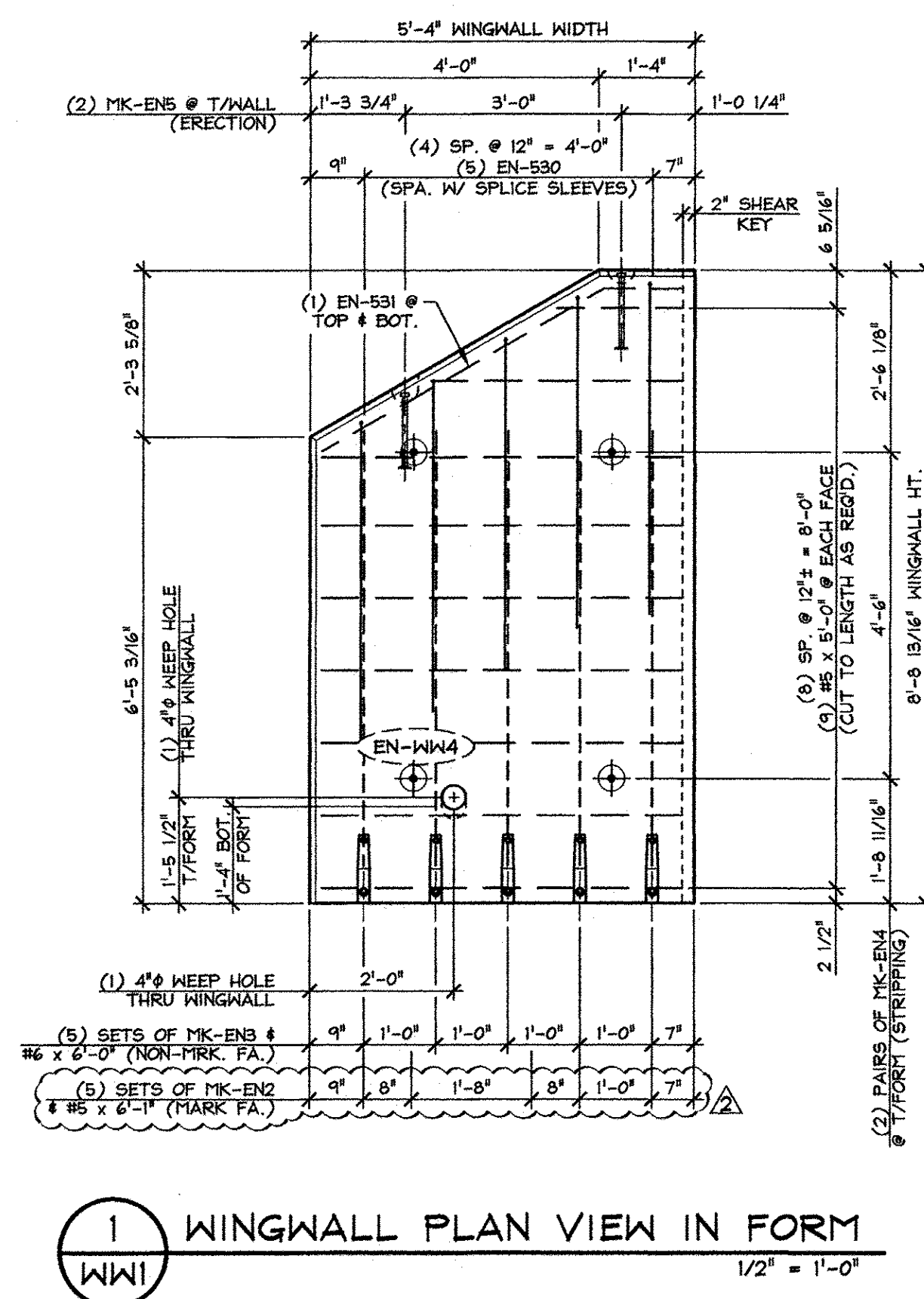
J.P. CARRARA & SONS INC. A.L. St. ONGE CONTRACTOR, INC.  
Precast & Prestress Manufacturer CONTRACTOR  
2484 ONE STR. MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010 MONTGOMERY CENTER, VERMONT

STATE OF VERMONT AGENCY OF TRANSPORTATION COUNTY OF FRANKLIN  
DATE: JAN. 27, 2014  
SCALE: NOTED

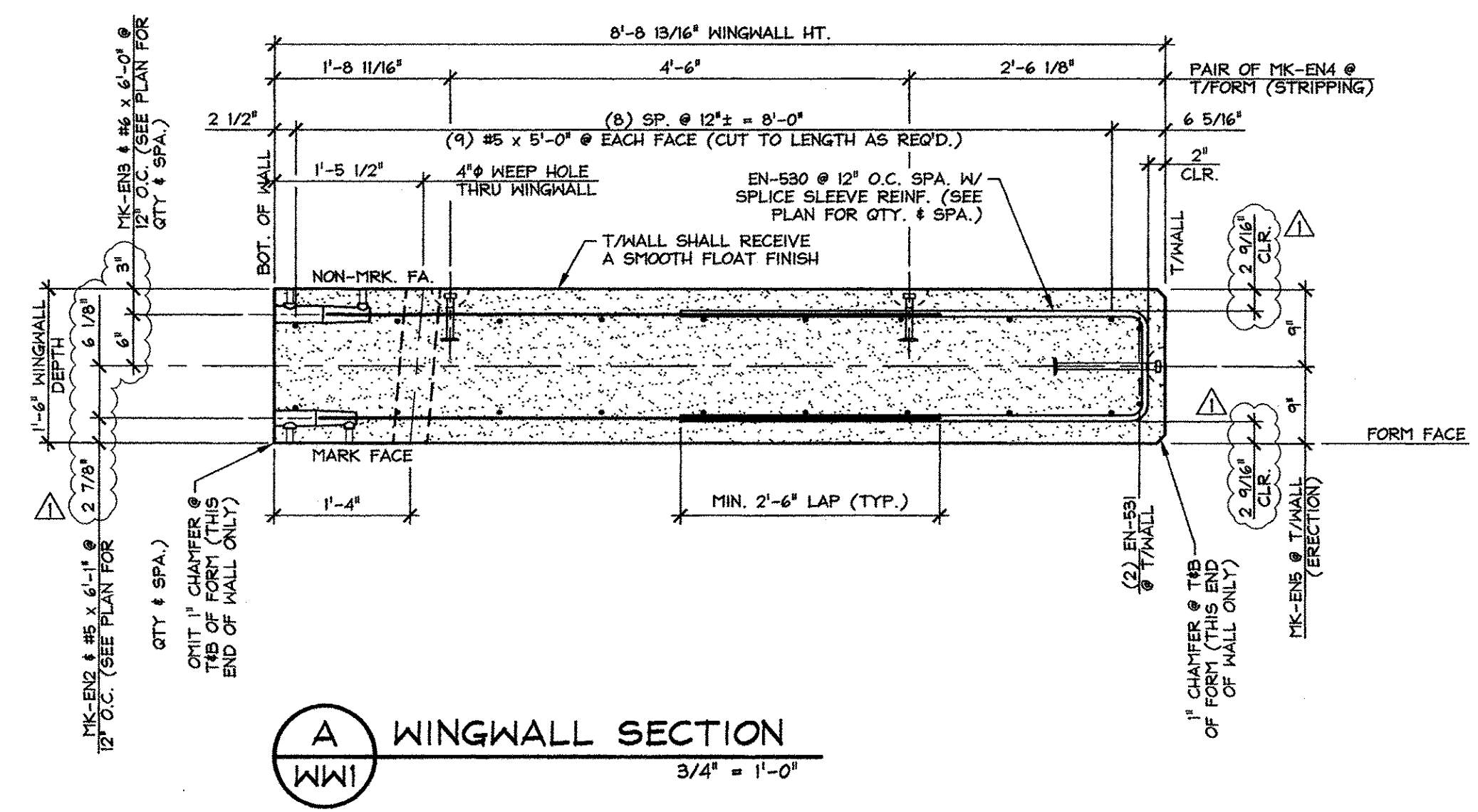
TOWN OF ENOSBURG BOSTON POST ROAD T.H.2 CLASS 2  
BRIDGE NO.: 48 PROJECT NO.: BRO 1448(40)  
CHKD: M.J.W. DFTM: B.L.  
JOB NO: 23418-013

PRECAST PILE CAP DETAILS  
DWG. NO: PCI

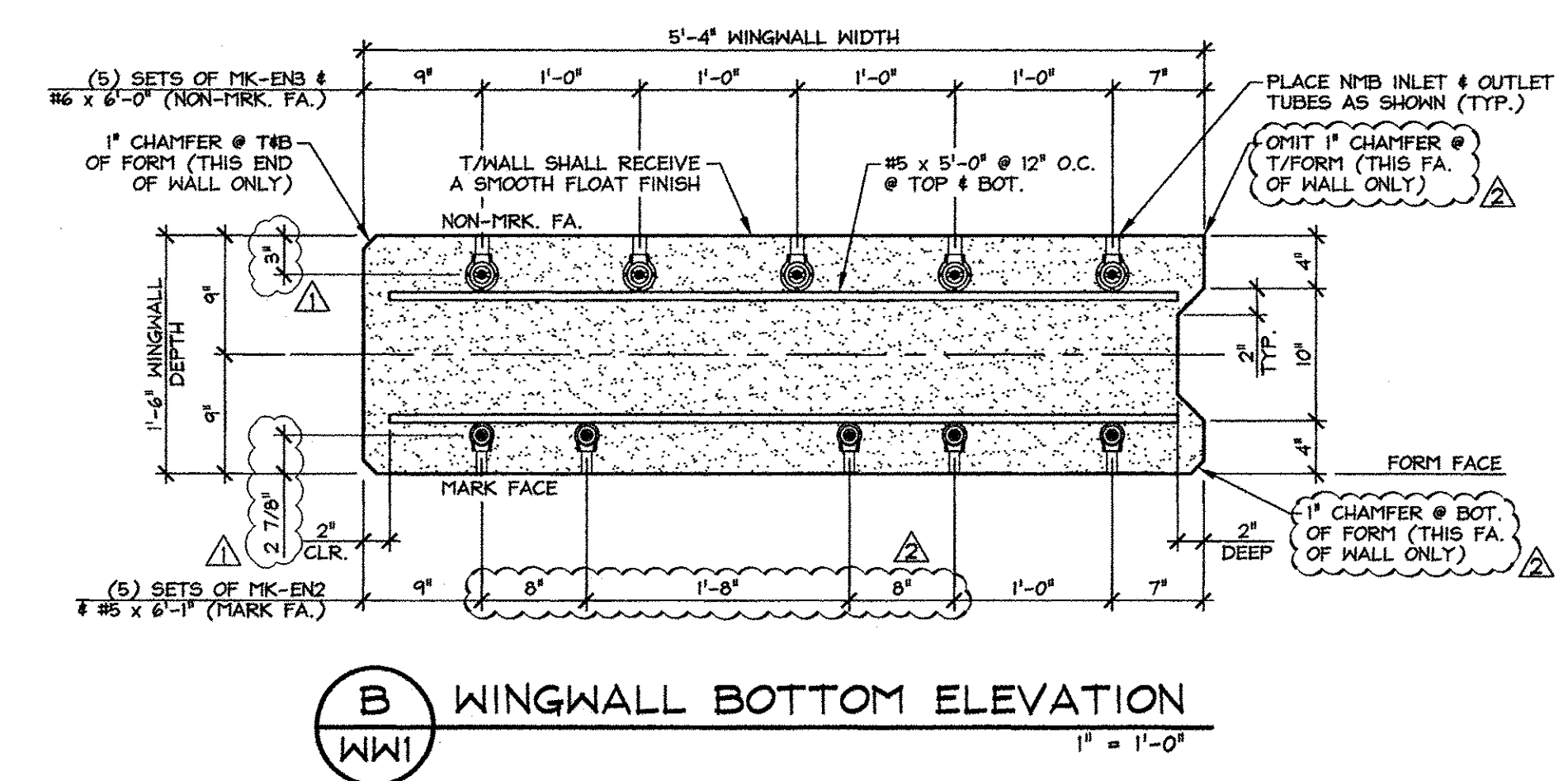
Vermont Agency of Transportation  
**RECEIVED**  
ON: April 28, 2014  
and Checked for  
**CONFORMANCE**  
BY: Rob Young DATE: 05/01/2014



**A WINGWALL PLAN VIEW IN FORM**  
 1/2" = 1'-0"



**B WINGWALL SECTION**  
 3/4" = 1'-0"



**C WINGWALL BOTTOM ELEVATION**  
 1" = 1'-0"

APPROVED: Approval of drawings and/or procedures indicates concurrence with the information presented and does not relieve the Contractor or Fabricator of compliance with all specifications and code requirements

APPROVED AS NOTED

REVISE AND RESUBMIT

NOT REVIEWED

Date: 4-29-2014

By: *James Hynd*

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**SHOP NOTE:**  
 ALL EDGES OF WING WALLS, FORM FACE & T/WALL FACE, SHALL RECEIVE A 1" CHAMFER (UNLESS NOTED OTHERWISE)

**SHOP NOTE:**  
 Fc = 5,000 PSI  
 Fd = 3,500 PSI  
 MIX: #44815CC

SUBMITTED  
 APR 28 2014  
 J.P. CARRARA & SONS, INC.  
 MIDDLEBURY, VT 05753

MARK: EN-WW4	QTY.: 1	WT.: 4.65 T	VOL.: 2.30 cy
MATERIAL LIST / WINGWALL			
ITEM	MARK	DESCRIPTION	QTY.
1	EN-530	#5 BENT BAR (LEVEL 1, BLACK STEEL)	5
2	EN-531	#5 BENT BAR (LEVEL 1, BLACK STEEL)	2
3		#5 x 6'-1" (LEVEL 1, BLACK STEEL)	5
4		#5 x 5'-0" (LEVEL 1, BLACK STEEL)	18
5			
6		#6 x 6'-0" (LEVEL 1, BLACK STEEL)	5
7			
8			
9	MK-EN2	N#B SPLICE SLEEVE 5U-X(PG) (BLACK STEEL)	5
10	MK-EN3	N#B SPLICE SLEEVE 6U-X(PG) (BLACK STEEL)	5
11	MK-EN4	4T x 7 1/8" SWIFT LIFT LIFTER	4
12	MK-EN5	8T x 13 3/8" SWIFT LIFT LIFTER	2
13			
14			
15			

△ 4-28-14 REVISED AS NOTED  
 △ 4-7-14 REVISED AS NOTED

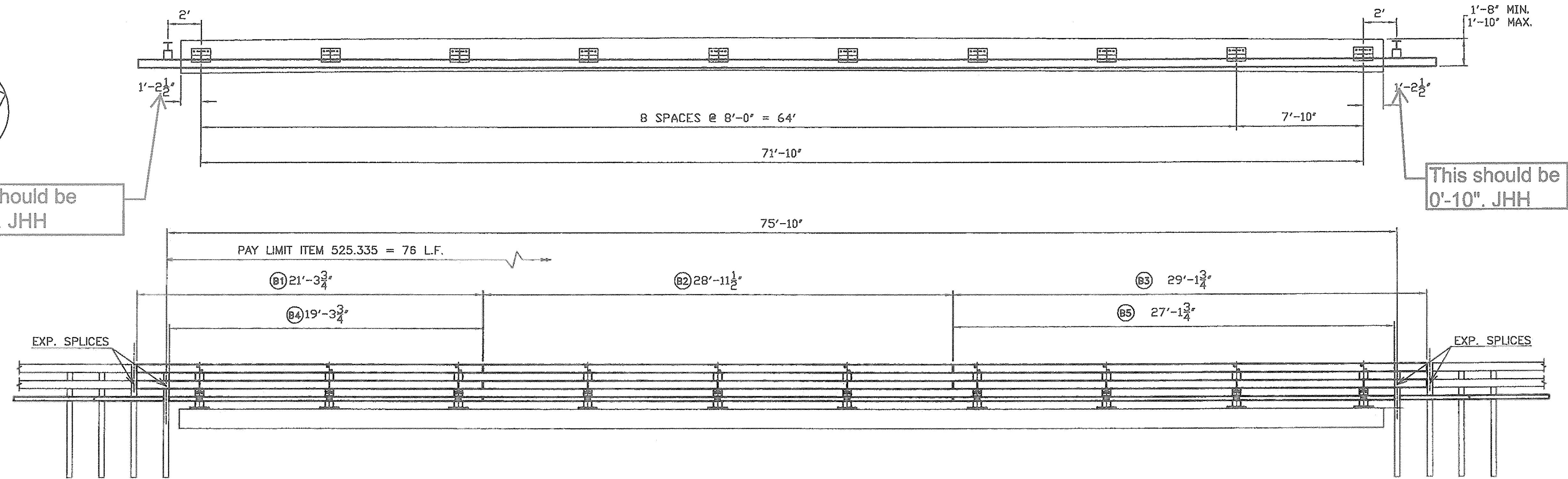
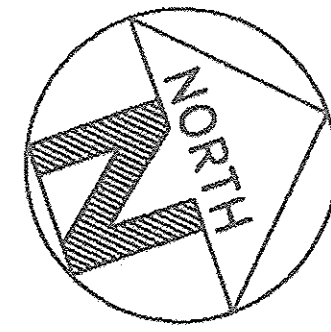
APPROVAL STAMP:

**J.P. CARRARA & SONS INC.** A.L. St. ONGE CONTRACTOR, INC.  
 Precast & Prestress Manufacturer CONTRACTOR  
 244 CARR ST., MIDDLEBURY, VERMONT 05753 Phone: (802)388-6361 Fax: (802)388-8010 MONTGOMERY CENTER, VERMONT

STATE OF VERMONT AGENCY OF TRANSPORTATION COUNTY OF FRANKLIN DATE: JAN. 27, 2014  
 SCALE: NOTED

TOWN OF ENOSBURG BOSTON POST ROAD T.H.2 CLASS 2 BRIDGE NO.: 48 PROJECT NO.: BRO 1448(40) CHKD: M.W. DFTM: B.L.  
 JOB NO: 23418-013

PRECAST WINGWALL DETAILS DWG. NO: WW1



**BRIDGE NO. 48**

WEST RAIL ELEVATION  
 LOOKING AT FACE OF RAIL FROM CENTER OF ROAD  
 EAST RAIL ELEVATION SIMILAR LOOKING FROM CENTER OF ROAD  
 SW & SE APPROACHES TYPICAL  
 SEE SHEET 3 OF 6 FOR NW CORNER  
 SEE SHEET 4 OF 6 FOR NE CORNER

**BILL OF MATERIAL - BRIDGE NO. 48 (EAST & WEST SIDE)**

Qty	mk	Description	Spec.
20		PED POST W6x25 2'-9.000" OAH (GALV) w/ 1.250" x 10" x 14" B.P	A572 gr 50
8		FIXED SPLICE TUBE (6x6) GALV TS 5x5x5/16 x 2'-3" OAL w/ (3) 1/4" fill plates	A500 gr B
8		EXP SPLICE TUBE (6x6) GALV TS 5x5x5/16 x 3'-0" OAL w/ (3) 1/4" fill plates	A500 gr B
4		FIXED SPLICE BAR (5x3) GALV 2.125 x 4.25 x 27.00"	A500 gr B
4		EXPANSION SPLICE BAR (5x3) GALV 2.125 x 4.25 x 36.00	A500 gr B
20		BRIDGE RAIL SHELF ANGLE (GALV) L 5 x 5 x 5/8 x 6" LONG	A572 gr 50
4	B1	TUBE 6 x 6 x 3/16 x 21 ft - 3.750 in LG (GALV) fixed splice 1 end, exp splice 1 end	A500 gr B
4	B2	TUBE 6 x 6 x 3/16 x 28 ft - 11.500 in LG (GALV) fixed splice both ends	A500 gr B
4	B3	TUBE 6 x 6 x 3/16 x 29 ft - 1.750 in LG (GALV) fixed splice 1 end, exp splice 1 end	A500 gr B
2	B4	TUBE 5 x 3 x 1/4 x 19 ft - 3.750 in LG (GALV) fixed splice 1 end, exp splice 1 end	A500 gr B
2	B2	TUBE 5 x 3 x 1/4 x 28 ft - 11.500 in LG (GALV) fixed splice both ends	A500 gr B
2	B5	TUBE 5 x 3 x 1/4 x 27 ft - 1.750 in LG (GALV) fixed splice 1 end, exp splice 1 end	A500 gr B
2		LOWER FLAREBACK TUBE 5 x 3 x 1/4 x 9'-4" oal w/welded cap (GALV) mitered w/exp. slots 1 end	A500 gr B
2		LOWER FLAREBACK TUBE 5 x 3 x 1/4 x 9'-4" oal w/welded cap (GALV) c&w + mitered w/exp. slots 1 end	A500 gr B
20		ANCHOR PLATE (GALV) PL 3/8" x 10.000" x 14.000"	A36
20		BEARING PAD 1/8" x 10.000" x 14.000" (80 durometer +/- 10 neoprene)	aashto M251
80		THREADED STUD (2 1/4" THREAD EACH SIDE) 1.000-08 x 13.000 HDG A449	A449
160		NUT HEX HEAVY (2) HI-STRENGTH 1.000-08 GALV	A563 DH
160		WASHER ROUND SMALL (2) F436 1.000 SAE GALV	F436
80		JAM NUT (1) 1.000-08 GALV	A563 DH
136		7/8 x 8 slotted head bolt w/ HN & LW SQW	A449
20		3/4 x 8 hex bolt w/ HN & LW (A325)	A325
40		3/4 x 2.5 hex bolt w/ HN & LW (A325)	A325
32		3/4 x 4.5 hex bolt w/ HN & 2 FW (A325)	A325
64		3/4 x 7.5 hex bolt w/ HN & 2 FW (A325)	A325
8		RETROREFLECTIVE DELINEATOR with fastening hardware (provided by others)	

SHOP DRAWINGS ARE REVIEWED UNLESS NOTED OTHERWISE

NO EXCEPTION TAKEN	
REVISE AS NOTED	REVISION NOT REQUIRED ✓
REVISE AS NOTED	REVISION REQUIRED
REJECTED	

DATE: 3/26/2014

SIGNATURE: *Jim Haysford*

REVIEW BY STANTEC IS FOR THE SOLE PURPOSE OF ASCERTAINING GENERAL CONFORMITY WITH DESIGN. CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS, FABRICATION AND CONSTRUCTION METHODS, COORDINATION OF SUB-TRADES, DETAIL DESIGN OF COMPONENTS, AND ERRORS OR OMISSIONS ON SHOP DRAWINGS.

Vermont Agency of Transportation  
**RECEIVED**  
 ON: March 20, 2014  
 and Checked for  
**CONFORMANCE**  
 BY: Rob Young DATE: 03/26/2014

ITEM 525.335 3 RAIL BOX BEAM BRIDGE RAILING(EAST & WEST) = 152 L.F.

No.	Remarks	Date
0	Initial submittal	3/6/14
REVISIONS		

**HIGHWAY SAFETY CORP**  
 GLASTONBURY, CT  
 860-633-9445

ITEM 525.335 3-RAIL BOX BEAM  
 TOWN OF ENOSBURG  
 COUNTY OF FRANKLIN  
 BOSTON POST ROAD T.H.2 CLASS 2  
 BRIDGE NO. 48  
 PROJECT NO. BRO 1448 (40)

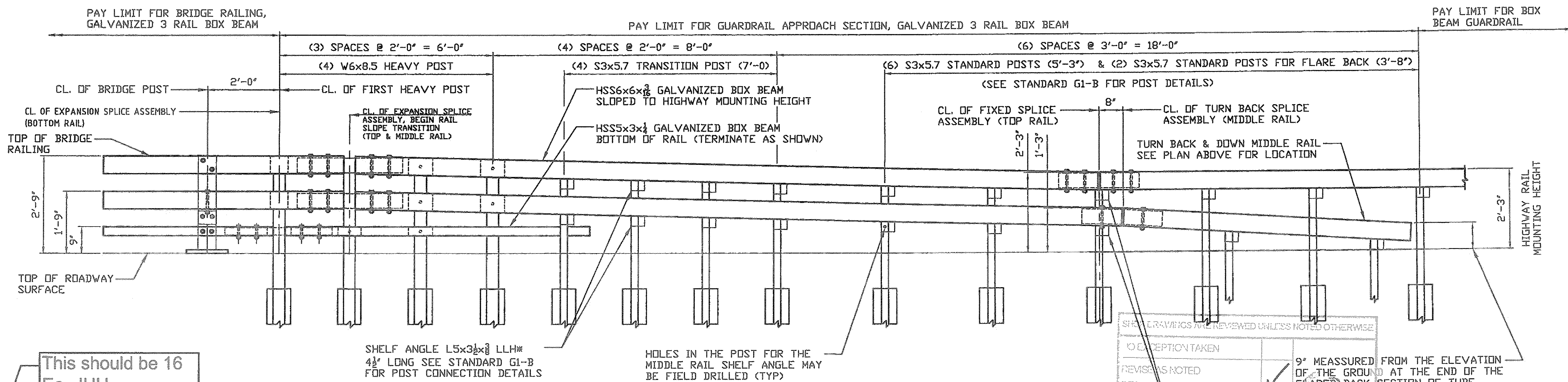
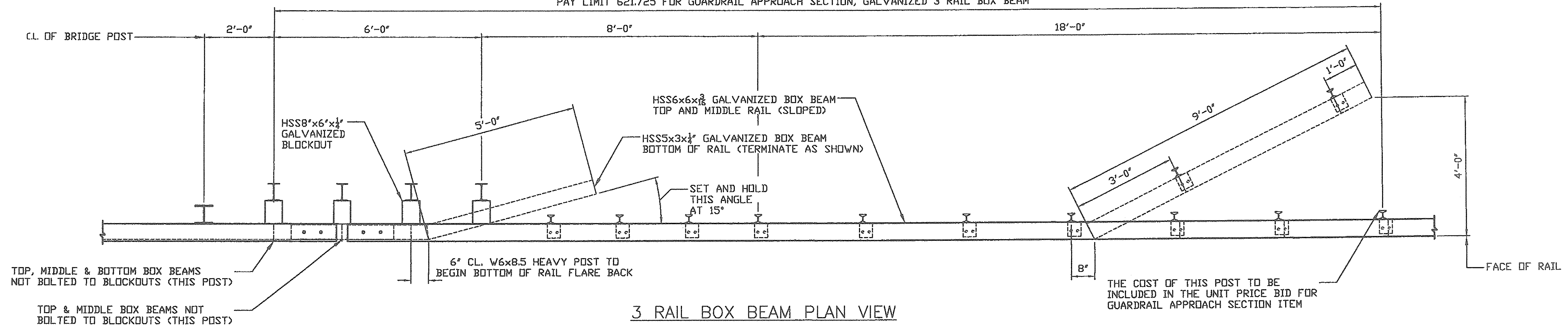
CERTIFIED FABRICATOR

GENERAL CONTRACTOR: LAFAYETTE

DATE: 3-4-14 SCALE: NONE SIZE: D

1976  
 1 of 6

PAY LIMIT 621.725 FOR GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM



This should be 16 Ea. JHH.

BILL OF MATERIAL - APPROACH (4 TOTAL)

Qty	mk	Description	Spec.
4		6 X 6 BM BM TOP @ 20-9.5" EXP	A500 gr B
4		6 X 6 BM BM BOTT @ 21-5" EXP	A500 gr B
12		W6 X 8.5 POST @ 7-0" W/SPADE	A992/A709 GR.50
24		3" I POST @ 7-0" W/2-8" SPADE	A36
24		3" I POST @ 5-3" W/SPADE STD	A36
8		3" I POST @ 3-11" W/SPADE	A36
32		TUBE BLOCKOUT 6" X 8" X 6" LONG	A500 gr B
8		TUBE BLOCKOUT 6" X 8" X 3" LONG	A500 gr B
4		9" BX BM TRANS FLAREBACK END	A500 gr B
4		5 X 5 DOUBLE BEND SPLICE TUBE	A500 gr B
4		5 X 5 FIXED TUBE SPLICE 27"	A500 gr B
8		5 X 5 EXP TUBE SPLICE 36"	A500 gr B
68		BOX BEAM CLIP ANGLE STD	A36
4		BOX BEAM END ANGLE STD	A36
32		3/4 X 8 CARR BOLT - N FW LW (2 per heavy post)	A307
4		3/4 X 8 HEX BOLT - N 2FW (1 per 9-0" flareback)	A307
72		1/2 X 1 1/2 HEX BOLT - N FW (1 per shelf / end angle)	A307
80		1/2 X 1 1/2 HEX BOLT - N 2FW LW (2 per tube block)	A307
72		3/8 X 7 1/2 HEX BOLT - N 2FW (1 per shelf angle)	A307
48		3/4 X 7 1/2 HEX BOLT W/ HN & 2 FW (A325) (4 per 6x6 splice)	A325
8		3/4 X 7 1/2 HEX BOLT W/ HN & 2 FW & LW (A325) (2 per angled turnback splice)	A325
4		RETROREFLECTIVE DELINEATOR with fastening hardware (provided by others)	

3 RAIL BOX BEAM ELEVATION

SE CORNER SHOWN/SW SIMILAR BUT OPPOSITE HAND  
SEE SHEET 3 OF 6 FOR LAYOUT OF NW CORNER  
SEE SHEET 4 OF 6 FOR LAYOUT OF NE CORNER

REVISIONS

NO EXCEPTION TAKEN	REVISIONS NOTED	NO DISCUSSION REQUIRED	REVISIONS NOTED	RESUBMISSION REQUIRED	REJECTED

DATE: 3/26/2014

SIGNATURE: *Ji Hynd*

REVIEW BY: FAITEC IS FOR THE SOLE PURPOSE OF ASCERTAINING GENERAL CONFORMITY WITH DESIGN. CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS, FABRICATION AND CONSTRUCTION METHODS, COORDINATION OF SUBTRADES, DETAIL DESIGN OF COMPONENTS, AND ERRORS OR OMISSIONS ON SHOP DRAWINGS.

ITEM 621.725 GUARDRAIL APPR. SECTION 3 RAIL = 4 EA.

**HIGHWAY SAFETY CORP**  
GLASTONBURY, CT  
860-633-9445

ITEM 621.725 APPROACH SECTION  
TOWN OF ENOSBURG  
COUNTY OF FRANKLIN  
BOSTON POST ROAD T.H.2 CLASS 2  
BRIDGE NO. 48  
PROJECT NO. BRO 1448 (40)

CERTIFIED FABRICATOR

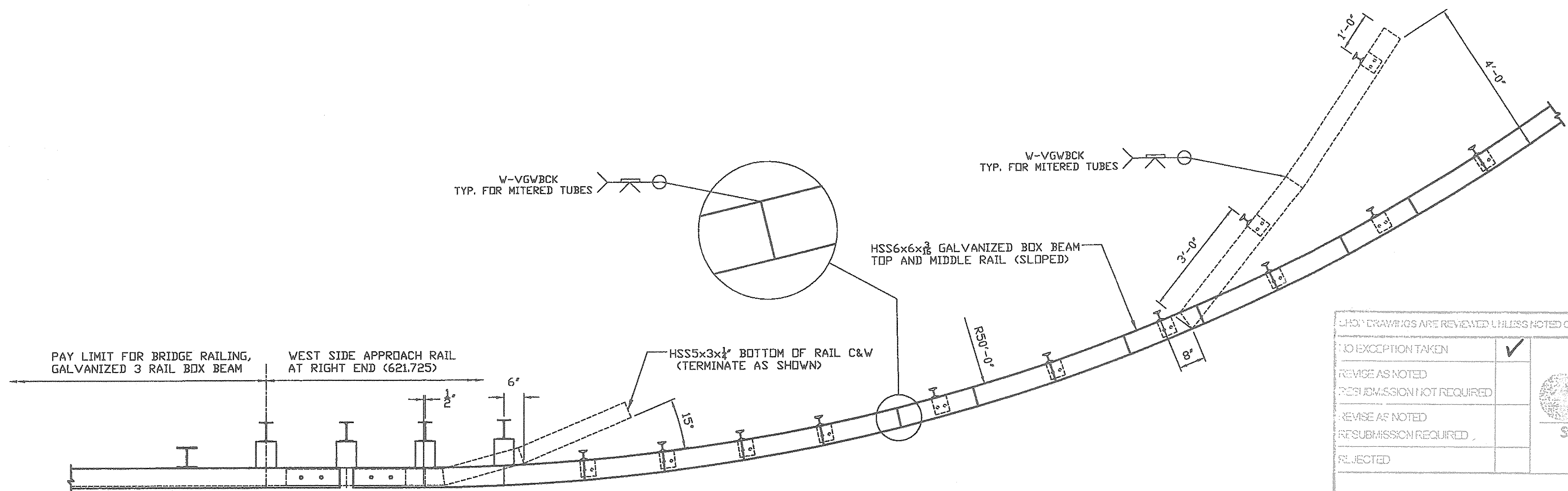
1976

2 of 6

LAFAYETTE

DATE: 3-4-14


Vermont Agency of Transportation  
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ON: March 20, 2014  
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**CONFORMANCE**  
BY: Rob Young DATE: 03/26/2014



**3 RAIL BOX BEAM PLAN**  
 WEST SIDE APPROACH ONLY (1 LOCATION- NW CORNER)  
 SEE SHEET 2 OF 6 FOR ADDITIONAL INFORMATION

UNLESS NOTED OTHERWISE  
 ALL DRAWINGS ARE REVIEWED UNLESS NOTED OTHERWISE



NO EXCEPTION TAKEN	<input checked="" type="checkbox"/>
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RESUBMISSION NOT REQUIRED	
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RESUBMISSION REQUIRED	
REJECTED	

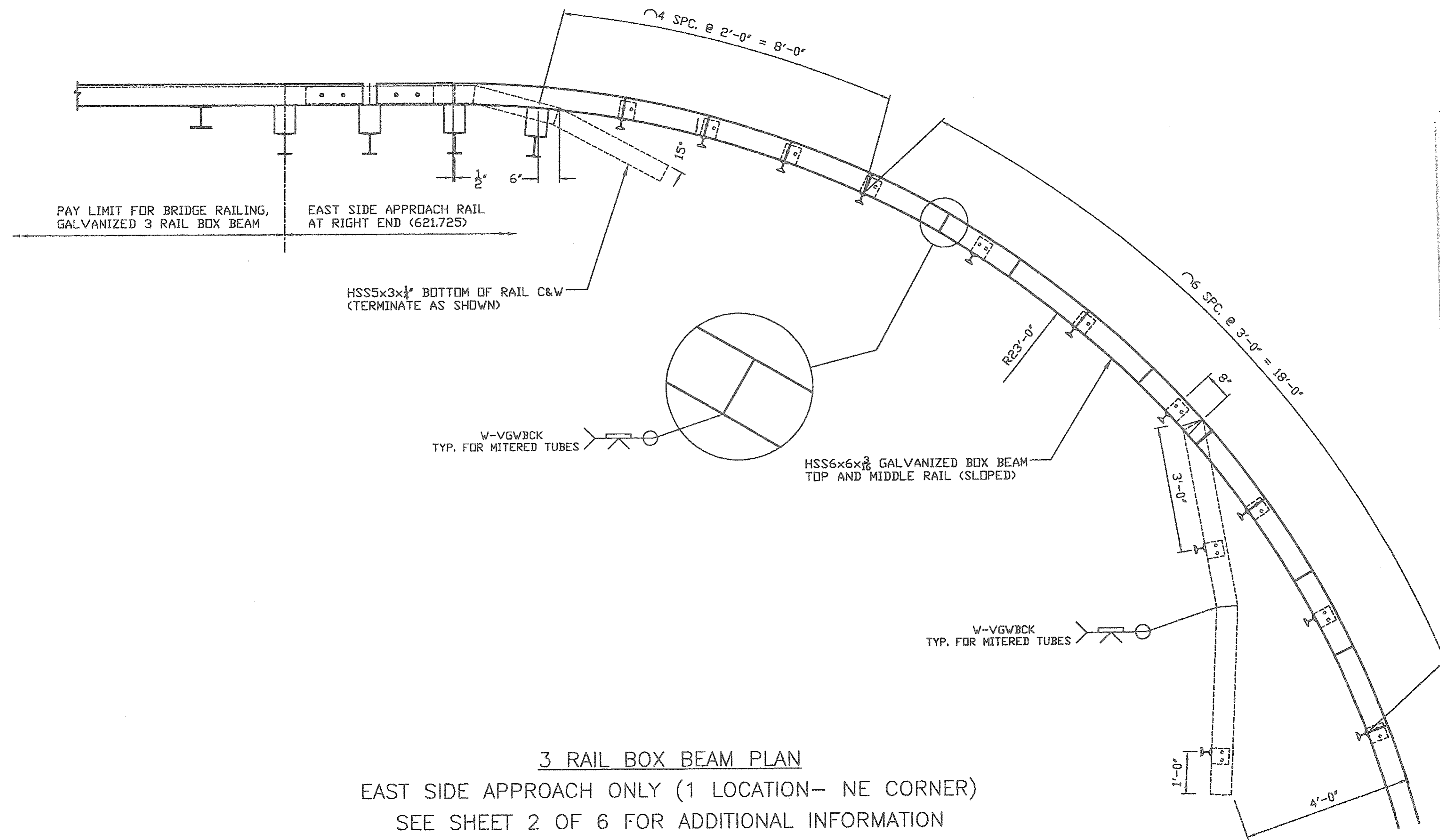
  
**Stantec**

DATE: *3/26/2014*  
 SIGNATURE: *Ji Ayup*


REVIEW BY: STANTEC IS FOR THE SOLE PURPOSE OF ASCERTAINING GENERAL CONFORMITY WITH DESIGN. CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS, FABRICATION AND CONSTRUCTION METHODS, COORDINATION OF SUB-TRADES, DETAIL DESIGN OF COMPONENTS, AND ERRORS OR OMISSIONS ON SHOP DRAWINGS.

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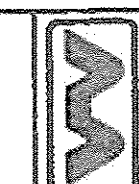

 <b>HIGHWAY SAFETY CORP</b> GLASTONBURY, CT 860-633-9445	
ITEM 621.725 APPROACH SECTION TOWN OF ENOSBURG COUNTY OF FRANKLIN BOSTON POST ROAD T.H.2 CLASS 2 BRIDGE NO. 48 PROJECT NO. BRO 1448 (40)	
GENERAL CONTRACTOR SUB CONTRACTOR <b>LAFAYETTE</b>	 <b>CERTIFIED FABRICATOR</b> HSDC JOB NO. <b>1976</b> SHEET NO. <b>3 of 6</b>
DRAWN: <b>BJB</b> CHECKED: _____ DATE: <b>3-4-14</b> SCALE: <b>NONE</b> SIZE: <b>C</b>	

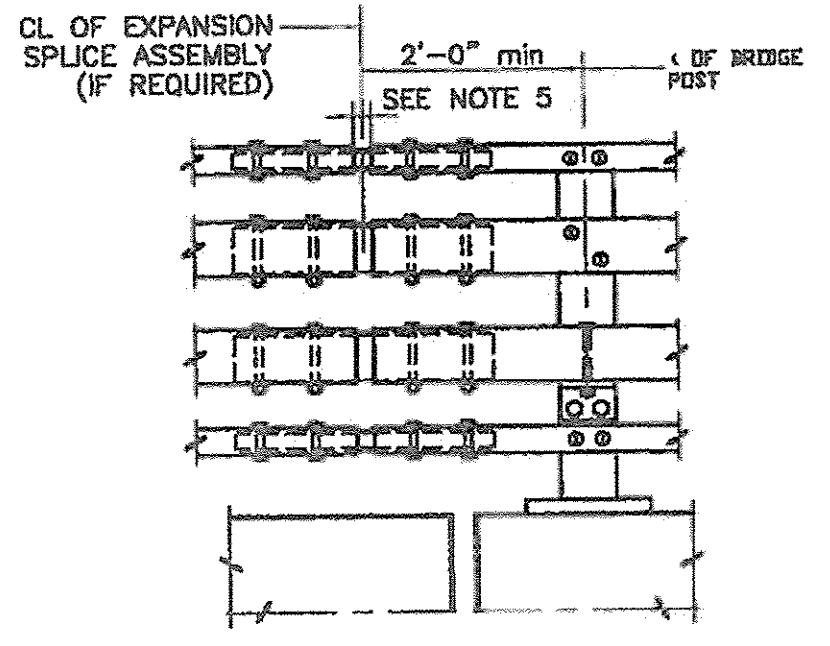
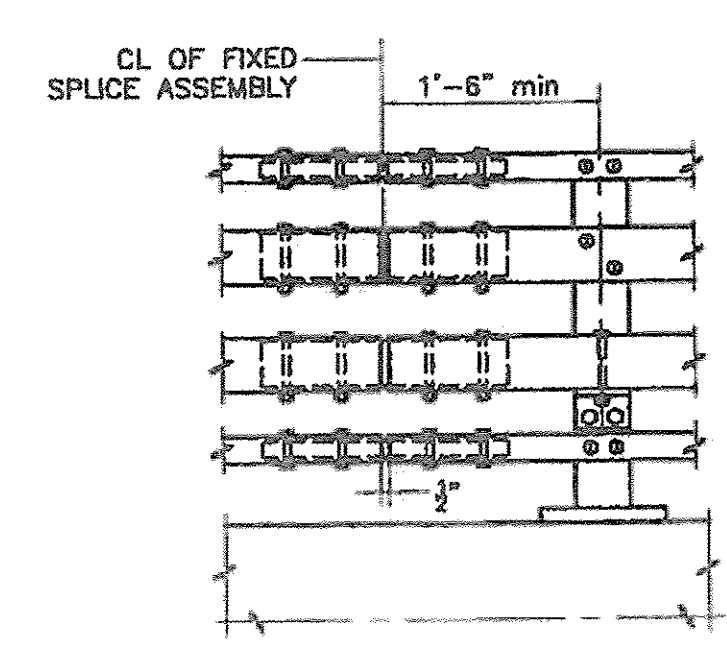
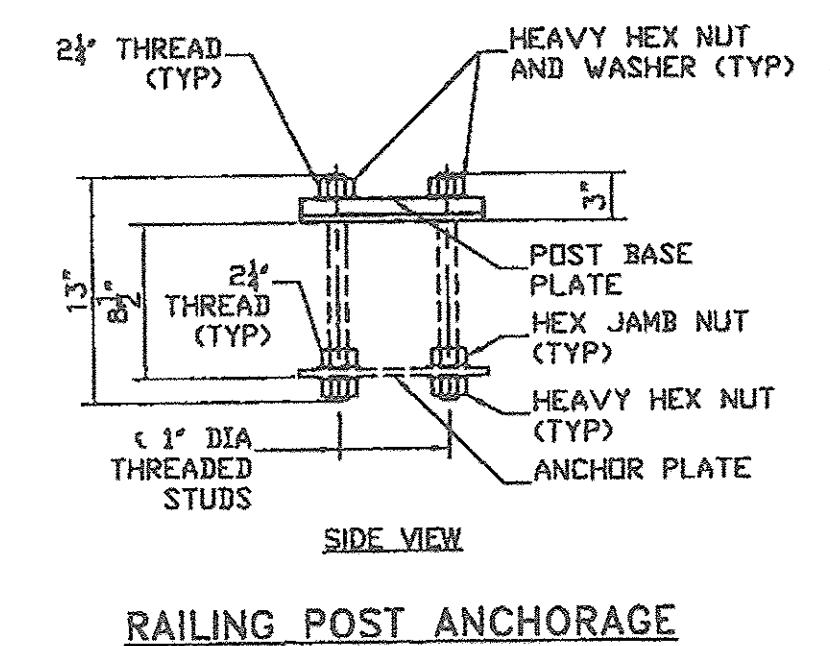
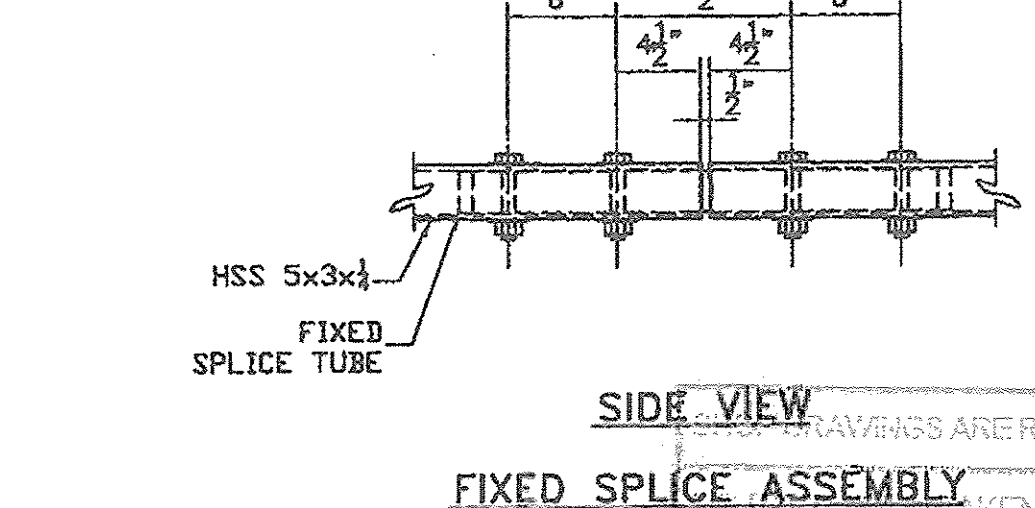
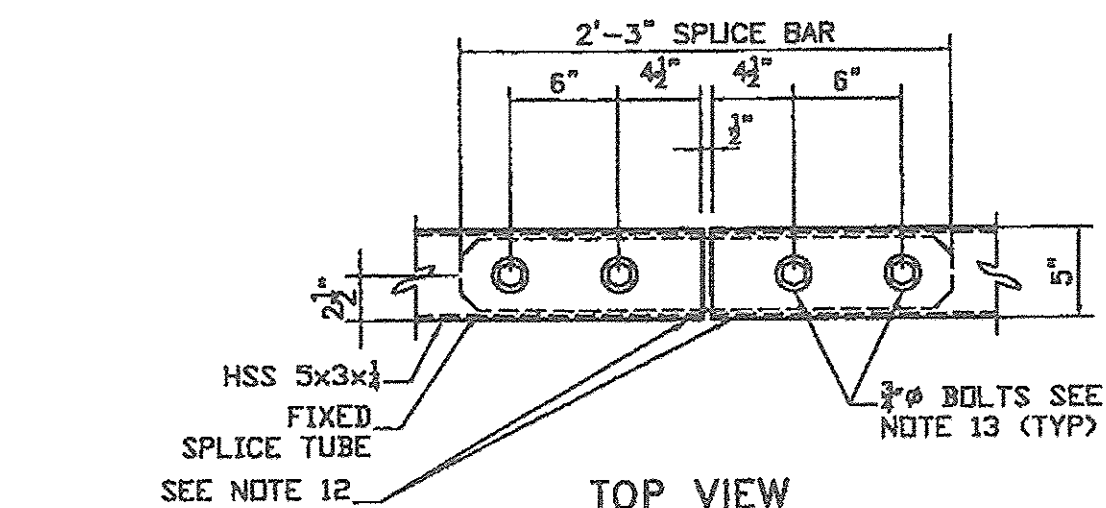
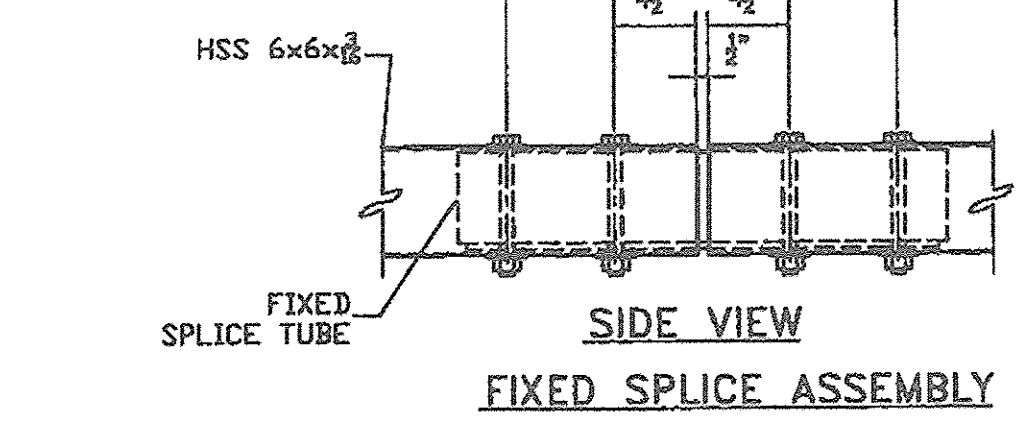
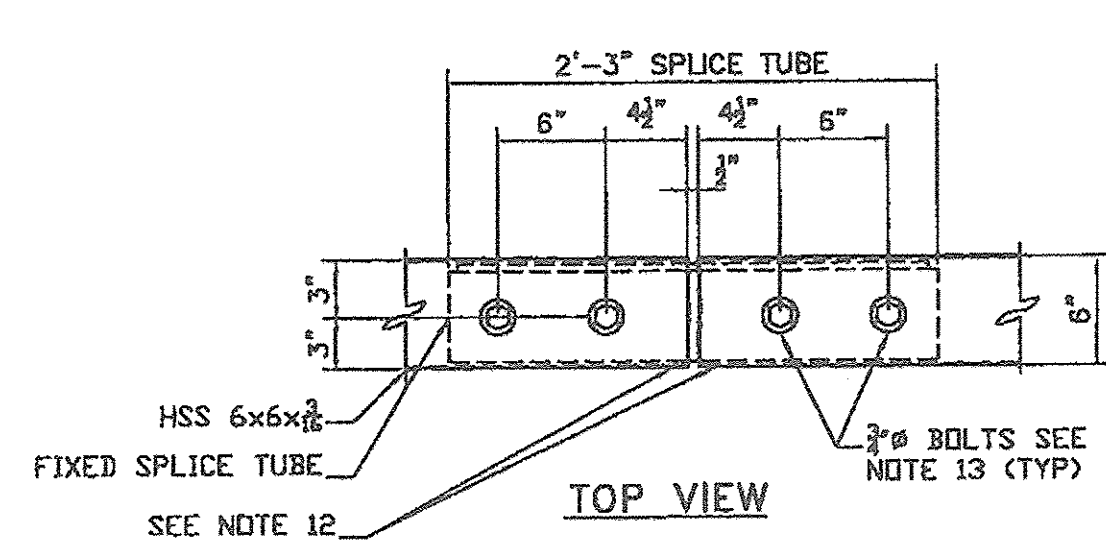
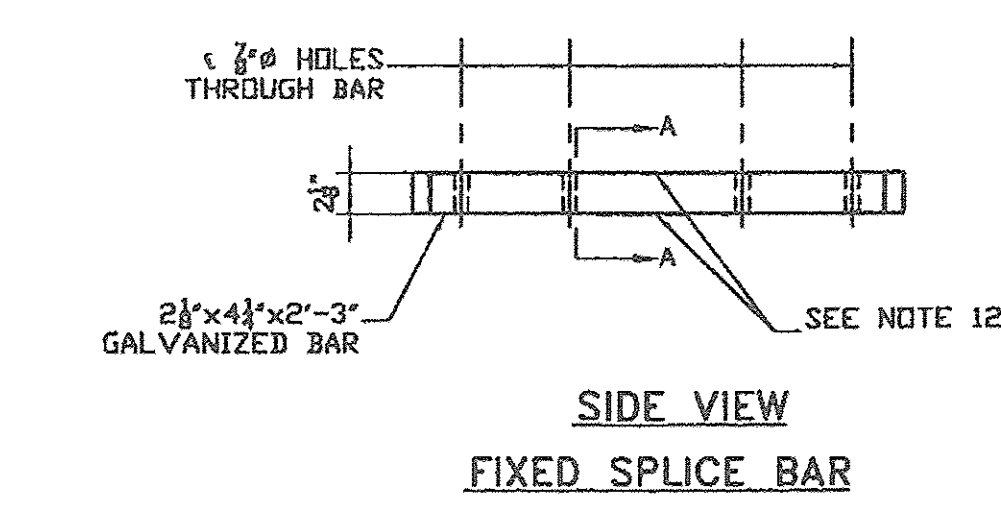
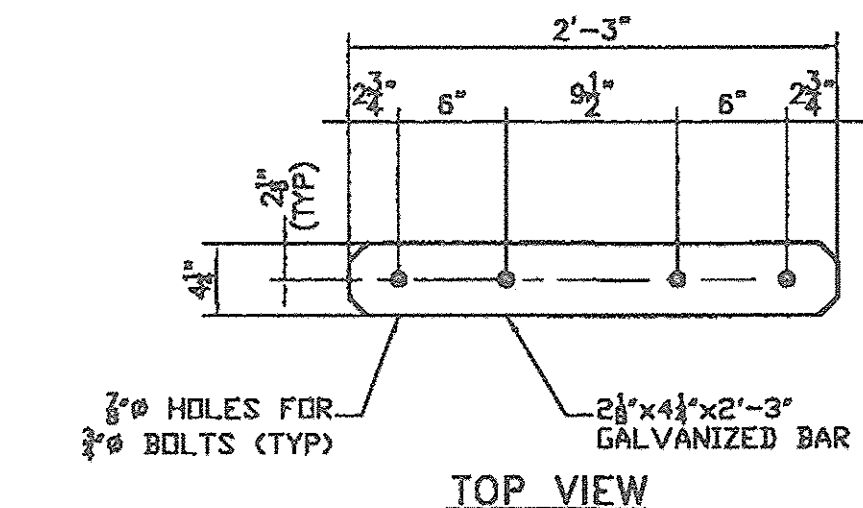
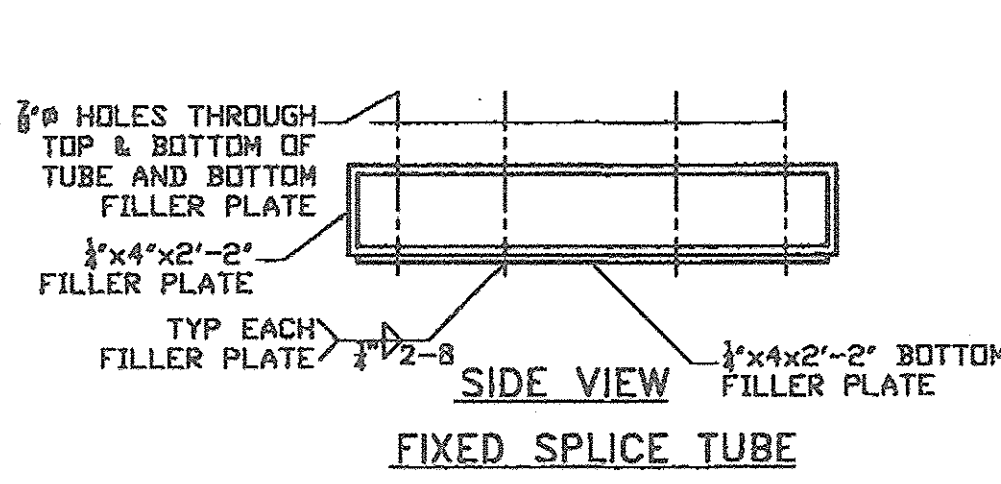
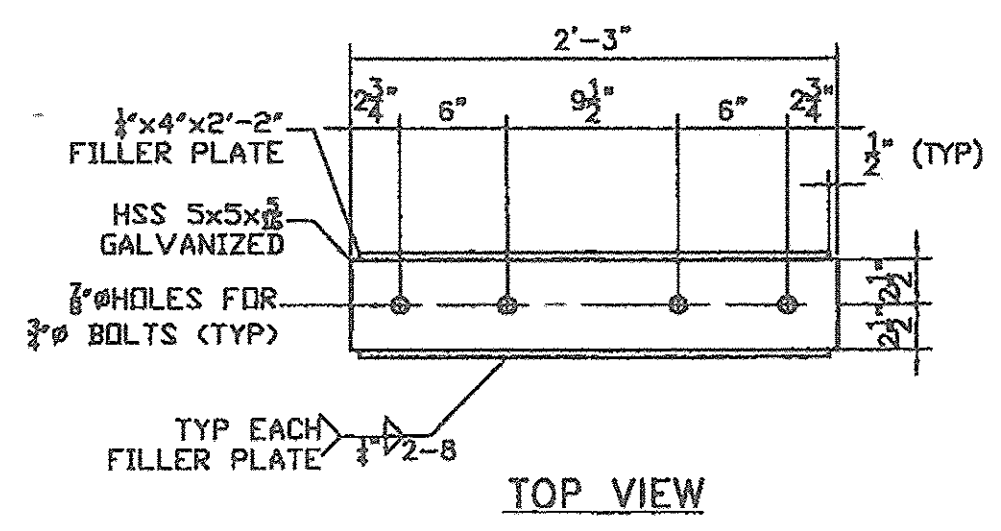
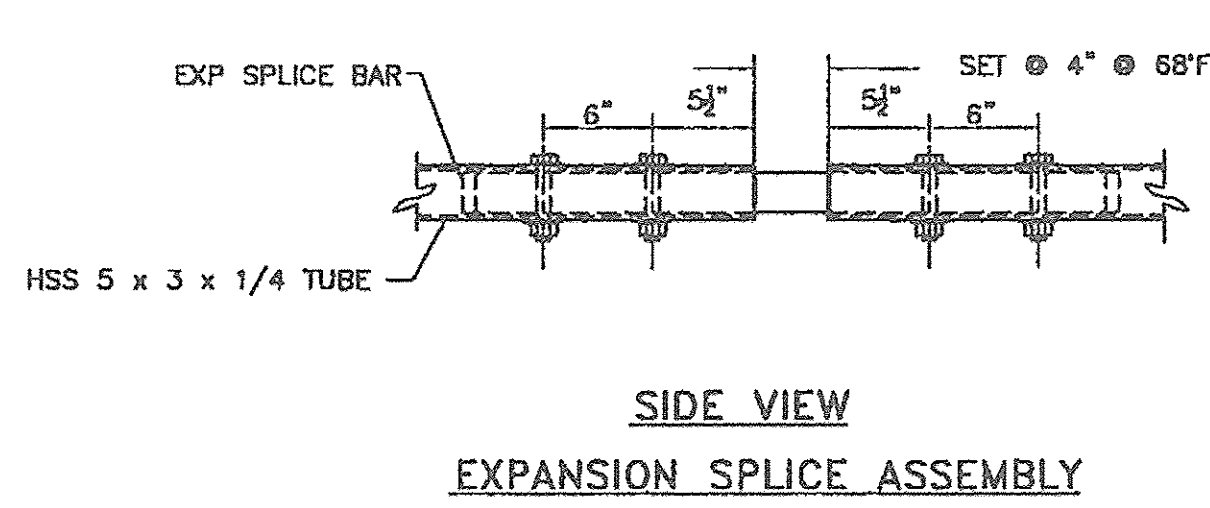
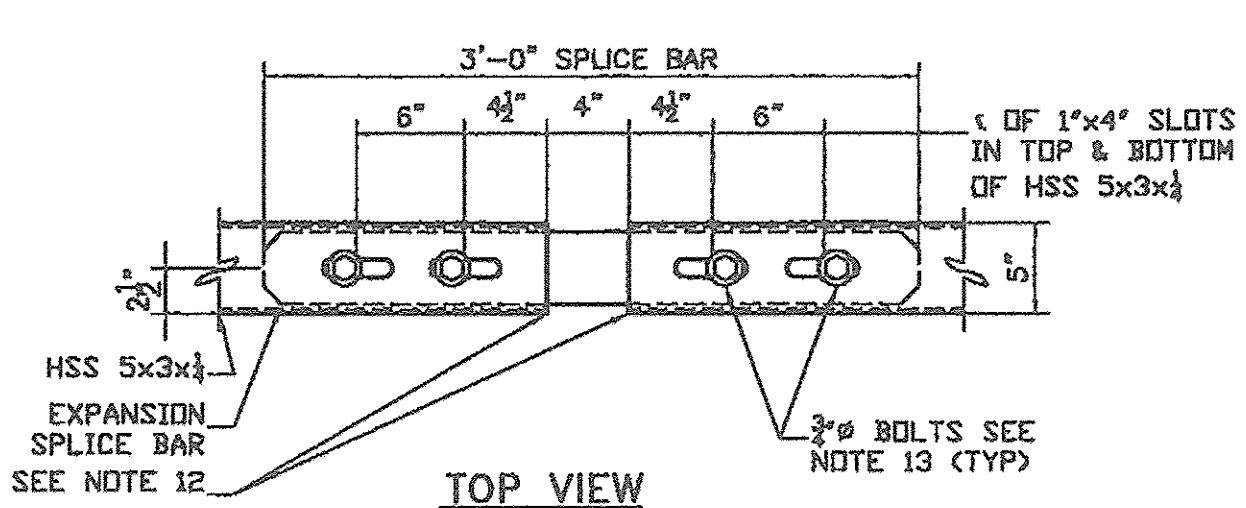
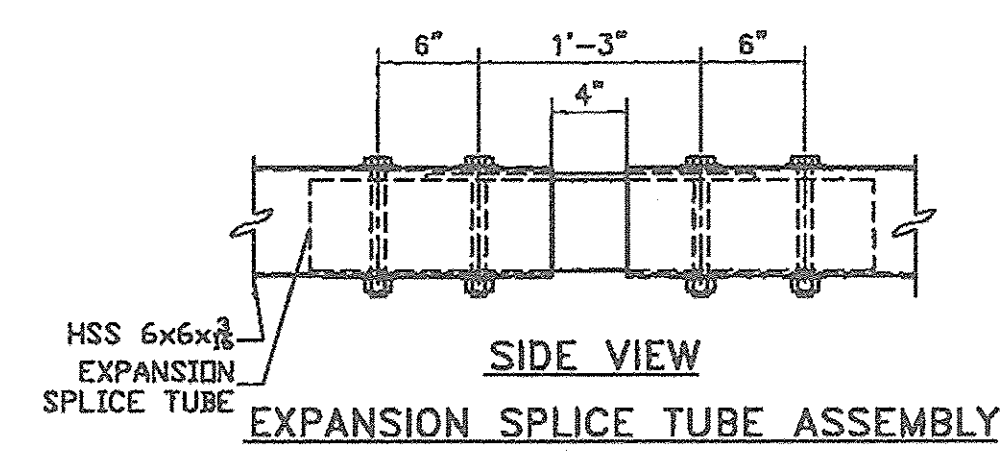
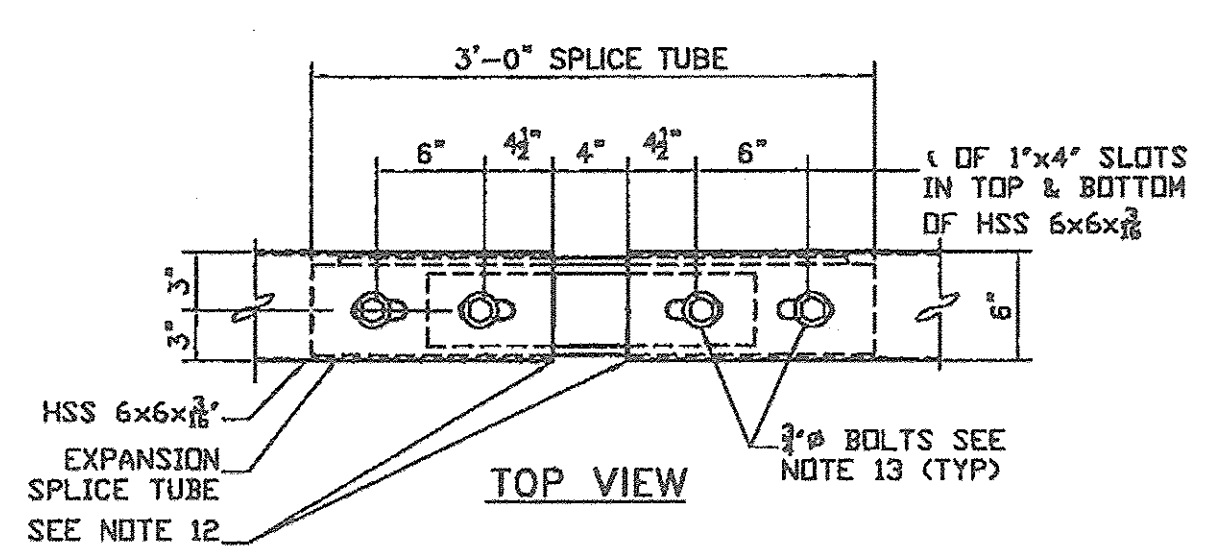
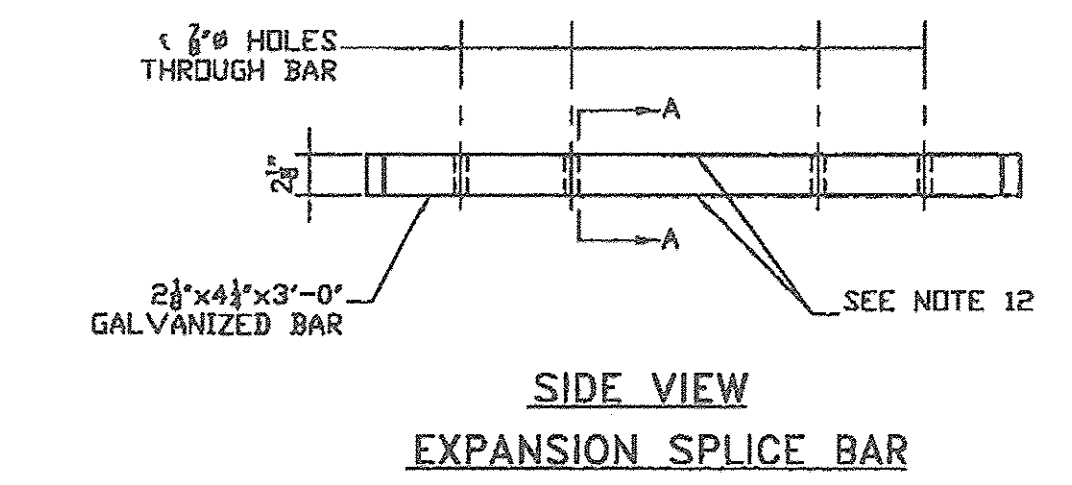
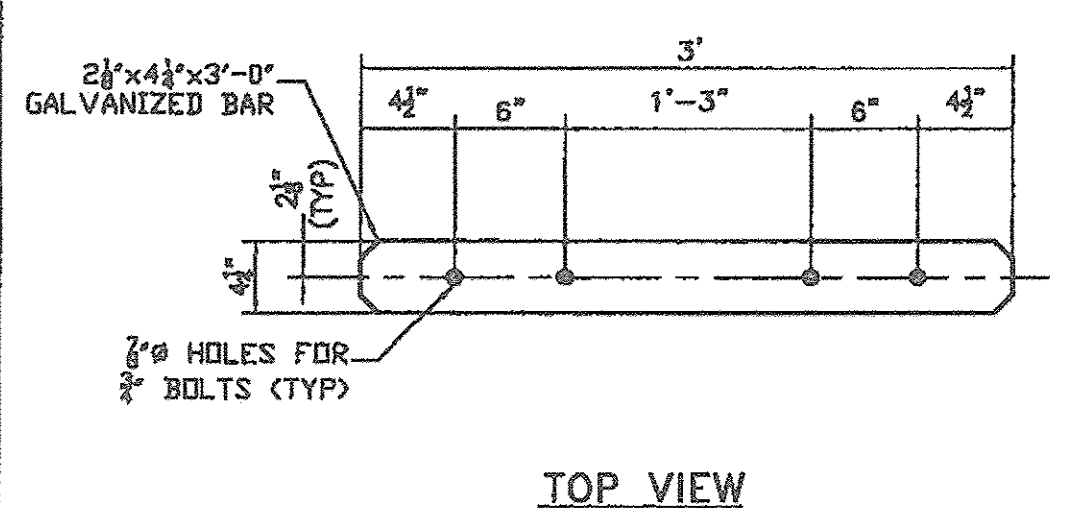
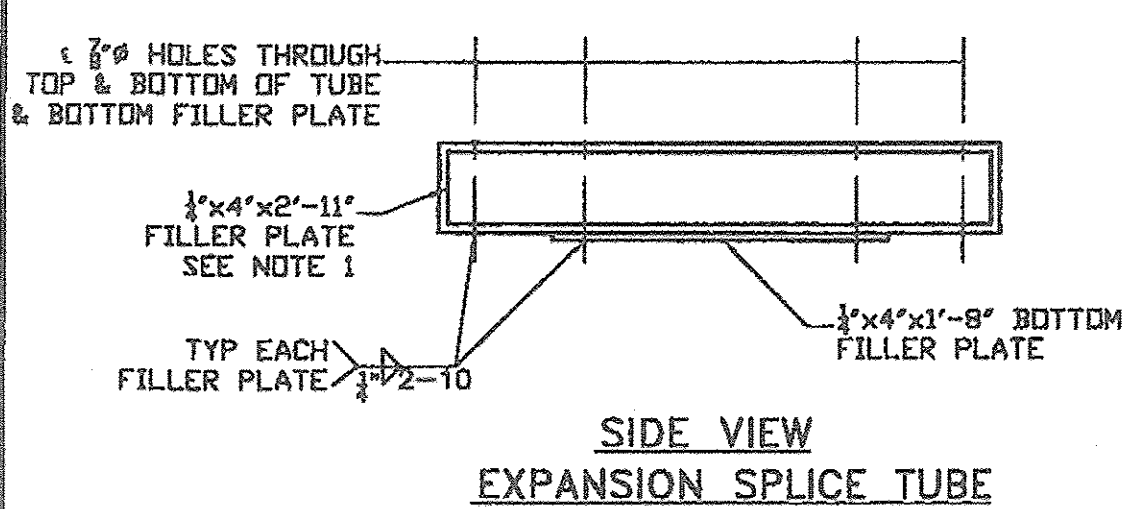
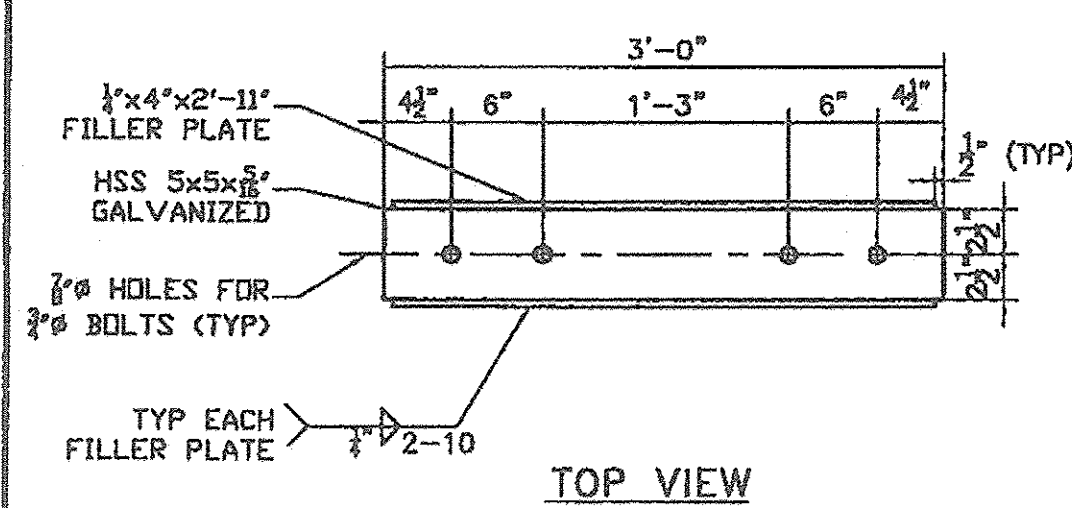


**3 RAIL BOX BEAM PLAN**  
 EAST SIDE APPROACH ONLY (1 LOCATION— NE CORNER)  
 SEE SHEET 2 OF 6 FOR ADDITIONAL INFORMATION

NOT EVALUATED UNLESS NOTED OTHERWISE	
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 StarTec	
DATE	3/26/2014
SIGNATURE	<i>Ji Hoopel</i>
REVIEW BY STARTEC IS FOR THE SOLE PURPOSE OF ASCERTAINING GENERAL CONFORMITY WITH DESIGN. CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS, FABRICATION AND CONSTRUCTION METHODS, COORDINATION OF SUB-TRADE, DETAIL DESIGN OF COMPONENTS, AND ERRORS OR OMISSIONS ON SHOP DRAWINGS.	

Vermont Agency of Transportation  
**RECEIVED**  
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 BY: Rob Young DATE: 03/26/2014

 <b>HIGHWAY SAFETY CORP</b> GLASTONBURY, CT 860-633-9445	
ITEM 621.725 APPROACH SECTION TOWN OF ENOSBURG COUNTY OF FRANKLIN BOSTON POST ROAD T.H.2 CLASS 2 BRIDGE NO. 48 PROJECT NO. BRO 1448 (40)	
 <b>CERTIFIED FABRICATOR</b>	
GENERAL CONTRACTOR	MSD JOB NO. <b>1976</b>
SUB CONTRACTOR	SHEET NO. <b>4 of 6</b>
DRAWN	DATE
BJB	3-4-14
CHECKED	SCALE
	NONE

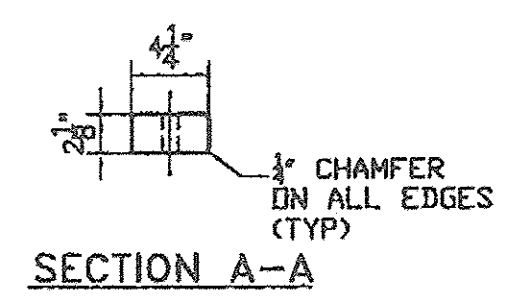


RAILING SPLICE DETAIL ELEVATION

A RAILING EXPANSION SPLICE IS REQUIRED IN ANY POST SPACING THAT CONTAINS A SUPERSTRUCTURE EXPANSION JOINT.

- NOTES:
- ALL WORK AND MATERIALS SHALL CONFORM TO SECTION 525.
  - PRIOR TO GALVANIZING THE ASSEMBLED POST, GRIND ALL EDGES TO A MINIMUM RADIUS OF 1/8".
  - ALL POSTS SHALL BE SET NORMAL TO GRADE. THE MAXIMUM CENTER TO CENTER SPACING OF BRIDGE RAIL POSTS IS 8'-3".
  - SECTIONS OF RAIL TUBE SHALL BE ATTACHED TO A MINIMUM OF TWO BRIDGE POST AND PREFERABLY TO AT LEAST 4 POSTS.
  - RAIL TUBE EXPANSION JOINTS SHALL BE PROVIDED IN ANY RAIL BAY SPANNING THE END OF AN INTEGRAL ABUTMENT BRIDGE AND AT ALL SUPERSTRUCTURE JOINTS. EXPANSION JOINT WIDTH SHALL BE 4" @ 68°F AND WILL BE ADJUSTED IN THE FIELD BY THE ENGINEER FOR OTHER TEMPERATURES.
  - HOLES IN RAILS FOR TUBE ATTACHMENT MAY BE FIELD-DRILLED. HOLES SHALL BE COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO INSTALLATION.
  - BOLTS SHALL BE TORQUED SNUG TIGHT (APPROXIMATELY 100 FT-LB).
  - SEE STANDARD DRAWING G-1B FOR DETAILS OF DELINEATORS. A DELINEATOR SHALL BE INSTALLED AT 30 FOOT SPACING FOR THE NEAREST POST. WHITE IS TO BE INSTALLED ON THE DRIVER'S RIGHT. FOR ONE WAY BRIDGES, YELLOW IS TO BE INSTALLED ON THE DRIVER'S LEFT. PAYMENT SHALL BE INCIDENTAL TO OTHER ITEMS.
  - ANY BENDING OF RAIL SHALL BE DONE AT THE FABRICATION PLANT ACCORDING TO A PROCEDURE PROVIDED BY THE FABRICATOR.
  - THE MINIMUM DISTANCE FROM THE POST TO AN EXPANSION JOINT SHALL BE DETERMINED BY THE MINIMUM EDGE DISTANCE OF 5" FROM ANY ANCHORS STUD TO THE END OF THE SLAB, OR TO THE EXPANSION JOINT RECESS POUR, IF ONE IS USED.
  - THIS RAILING MEETS THE REQUIREMENTS FOR A TL-4 SERVICE LEVEL.

- NOTES:
- PROTRUSIONS CAUSED BY WELDING OR GALVANIZING ARE NOT PERMITTED ON THE ADJOINING SURFACES OF THE BOX BEAM RAILS, SPLICE TUBES AND FILL PLATES.
  - FOUR (4) 3/8" DIAMETER BOLTS, 7 1/2" LONG WITH TWO (2) WASHERS AND HEAVY HEX NUT ON EACH BOLT. NUT TO BE FINGER TIGHT AND THE FIRST THREAD BELOW THE NUT TO BE BURRED TO PREVENT DISLODGING. FOUR (4) BOLTS AT EACH SPLICE.



REVISIONS ARE REMOVED UNLESS NOTED OTHERWISE

REVISION TAKEN	✓
REVISE AS NOTED	
RESUBMISSION NOT REQUIRED	
REVISE AS NOTED	
RESUBMISSION REQUIRED	
REJECTED	

DATE: 3/26/2014

SIGNATURE: *Jim Hough*

REVIEW BY STANTEC IS FOR THE SOLE PURPOSE OF ASCERTAINING GENERAL CONFORMITY WITH DESIGN. CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS, FABRICATION AND CONSTRUCTION METHODS, COORDINATION OF SUB-TRADES, DETAIL DESIGN OF COMPONENTS, AND ERRORS OR OMISSIONS ON SHOP DRAWINGS.

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 BY: Rob Young DATE: 03/26/2014

**HIGHWAY SAFETY CORP**  
 GLASTONBURY, CT  
 860-633-9445

BRIDGE RAIL DETAILS 525.335 & 621.725  
 TOWN OF ENOSBURG, COUNTY OF FRANKLIN  
 BOSTON POST ROAD T.H.2 CLASS 2  
 BRIDGE NO. 48  
 PROJECT NO. BRO 1448 (40)

CERTIFIED FABRICATOR

GENERAL CONTRACTOR: [Blank]  
 SHEET NO.: 1976  
 SUB CONTRACTOR: LAFAYETTE  
 SHEET NO.: 5 of 6  
 DRAWN: BJB CHECKED: [Blank] DATE: 3-4-14 SCALE: NONE SIZE: [Blank]

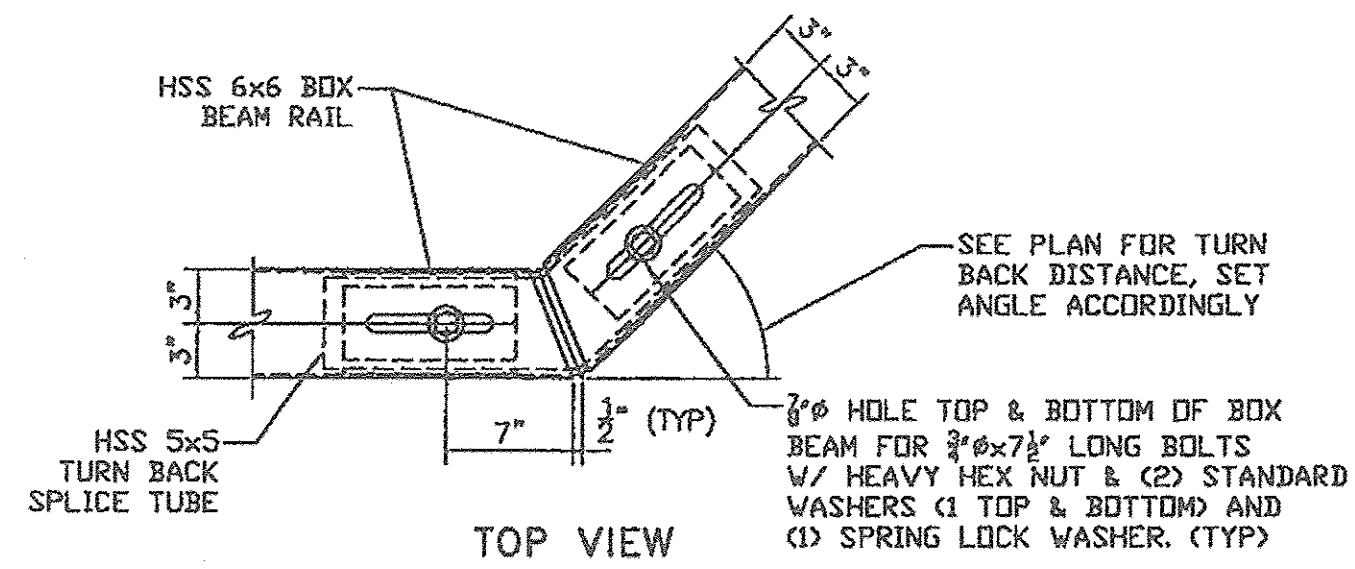
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ON: March 20, 2014

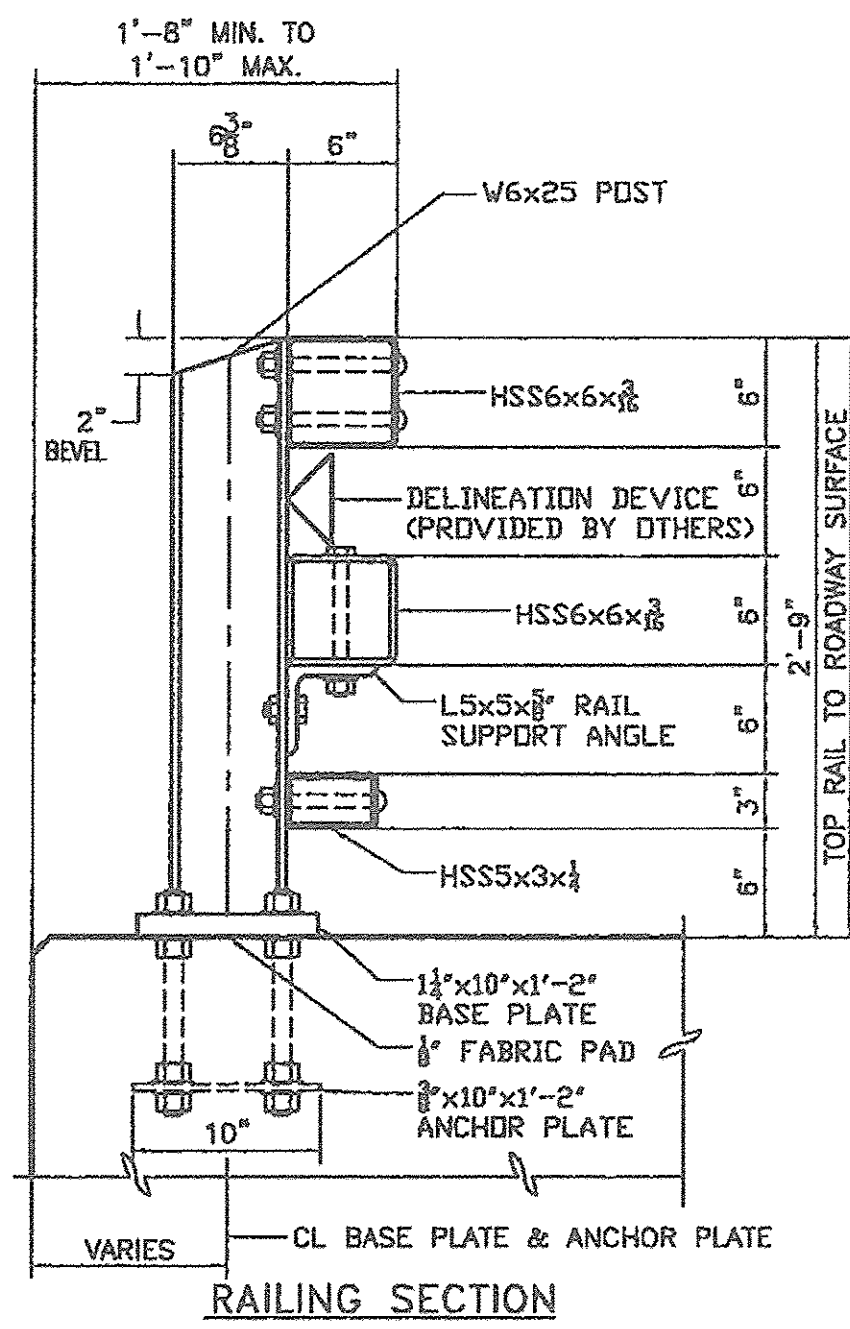
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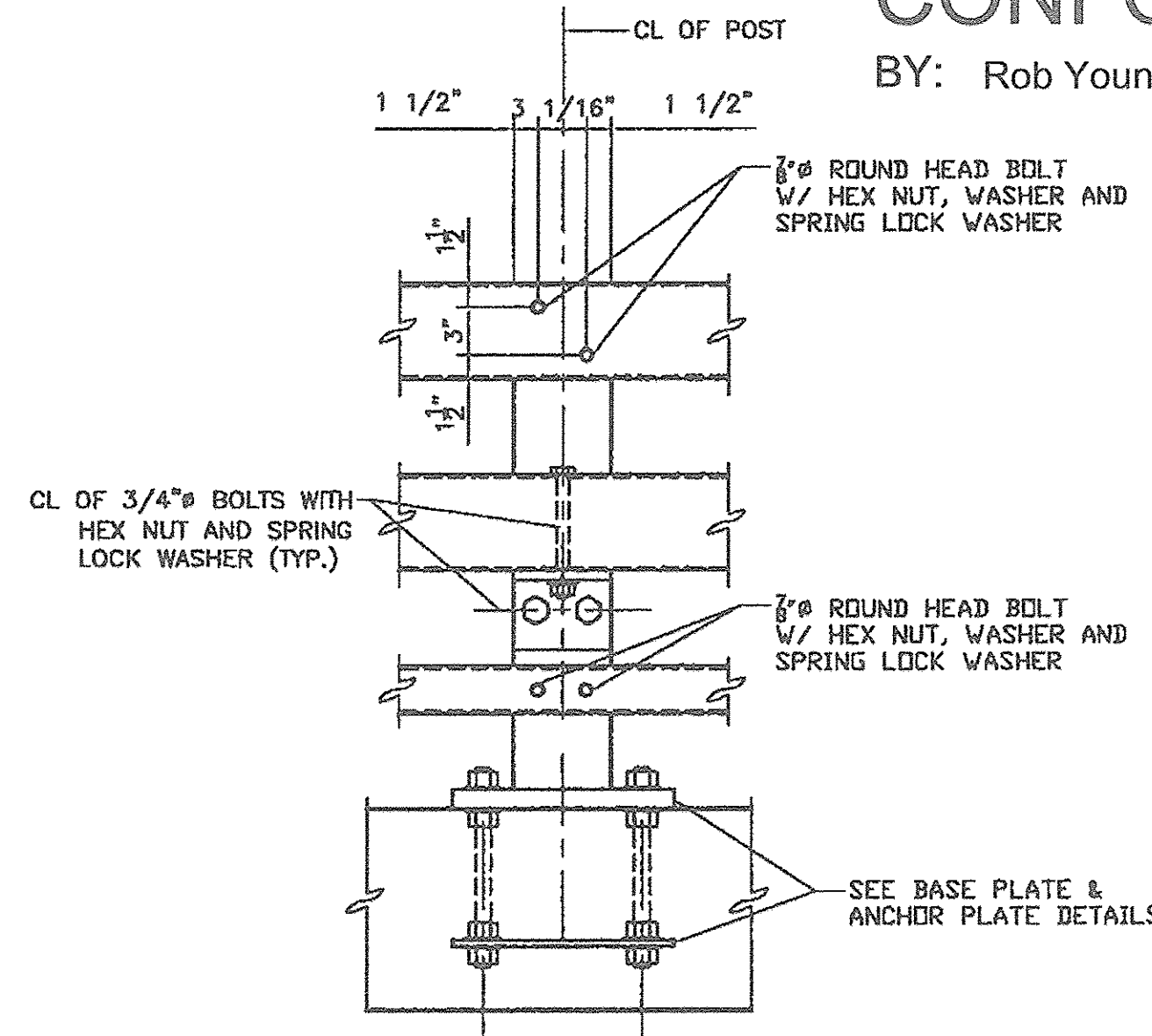
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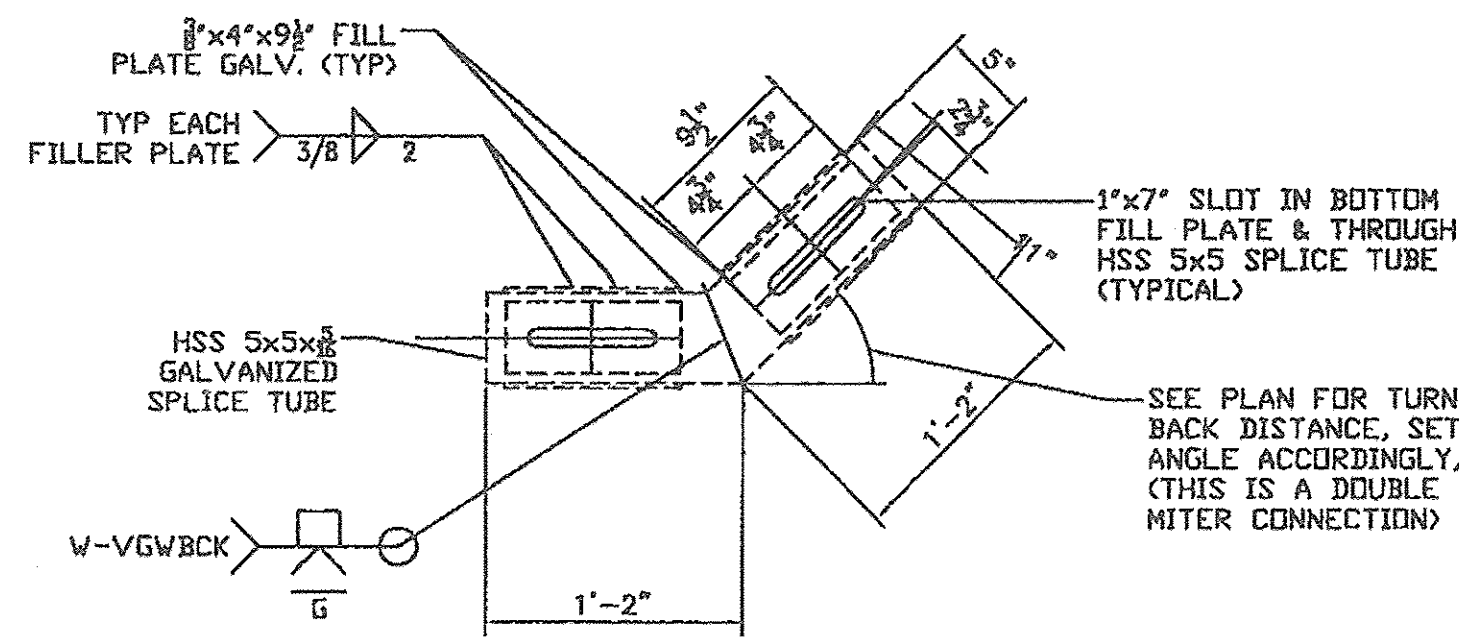
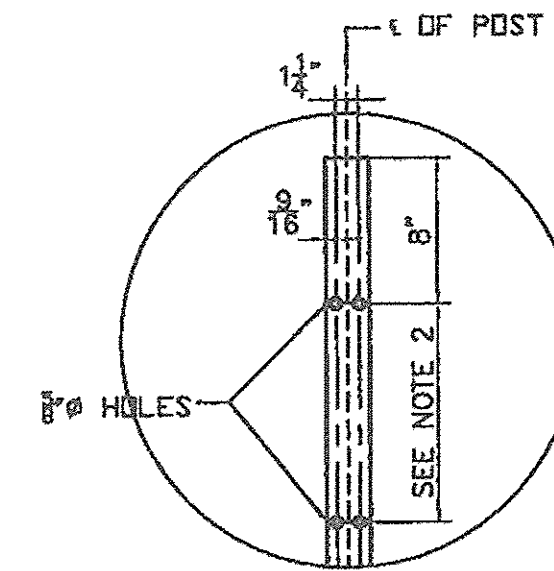
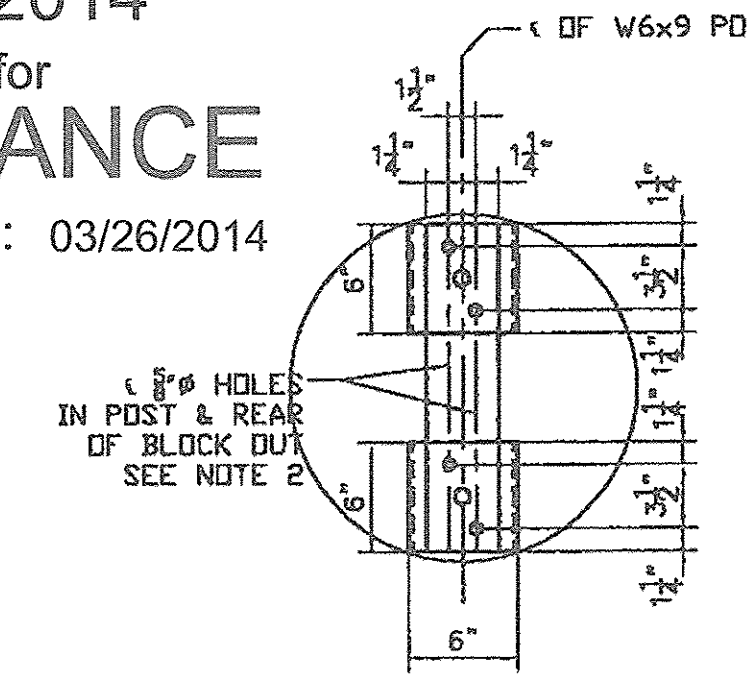
TURN BACK SPLICE TUBE ASSEMBLY



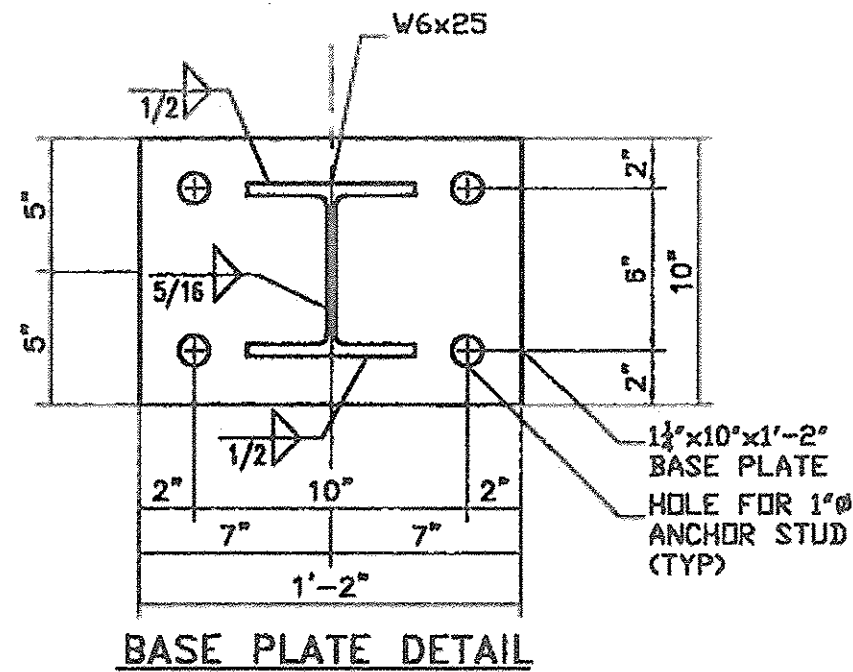
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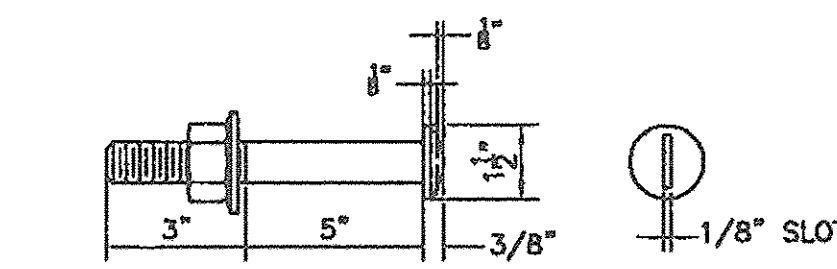
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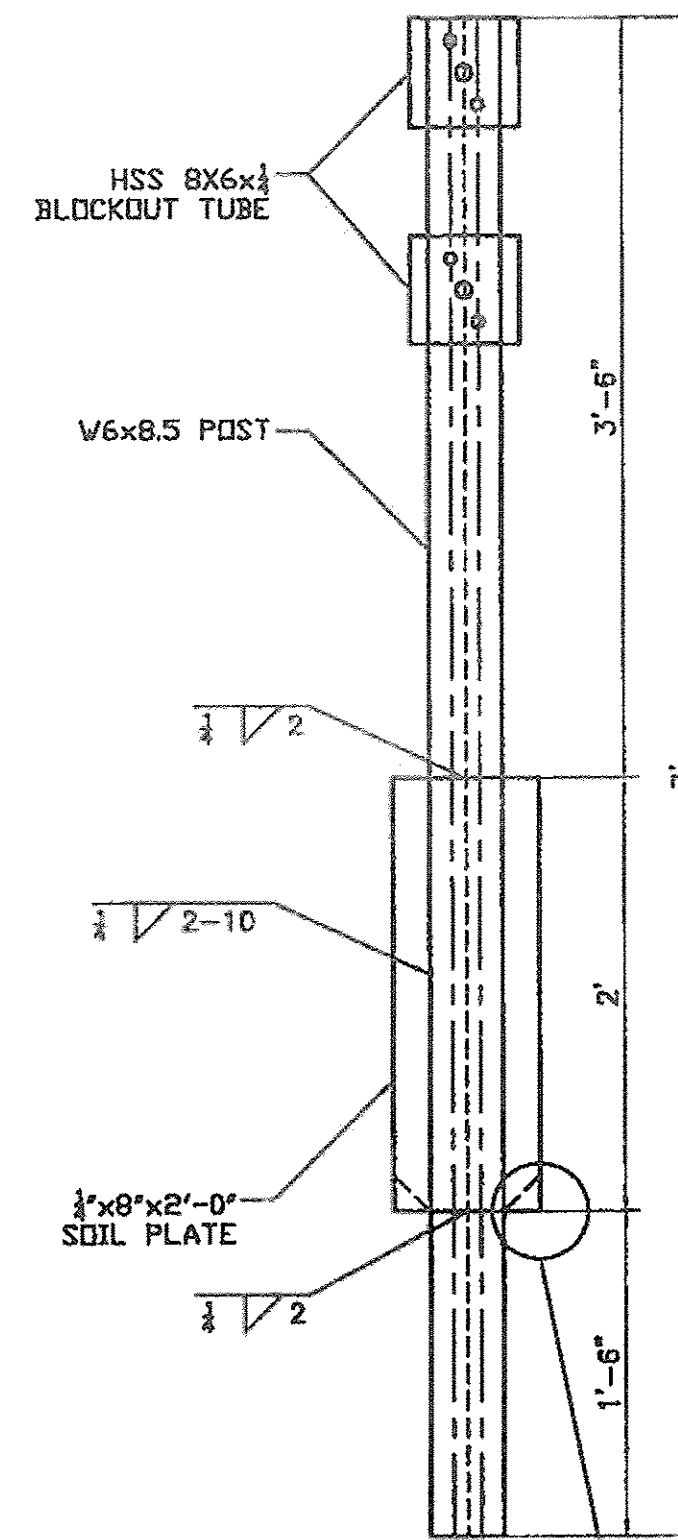
TOP VIEW



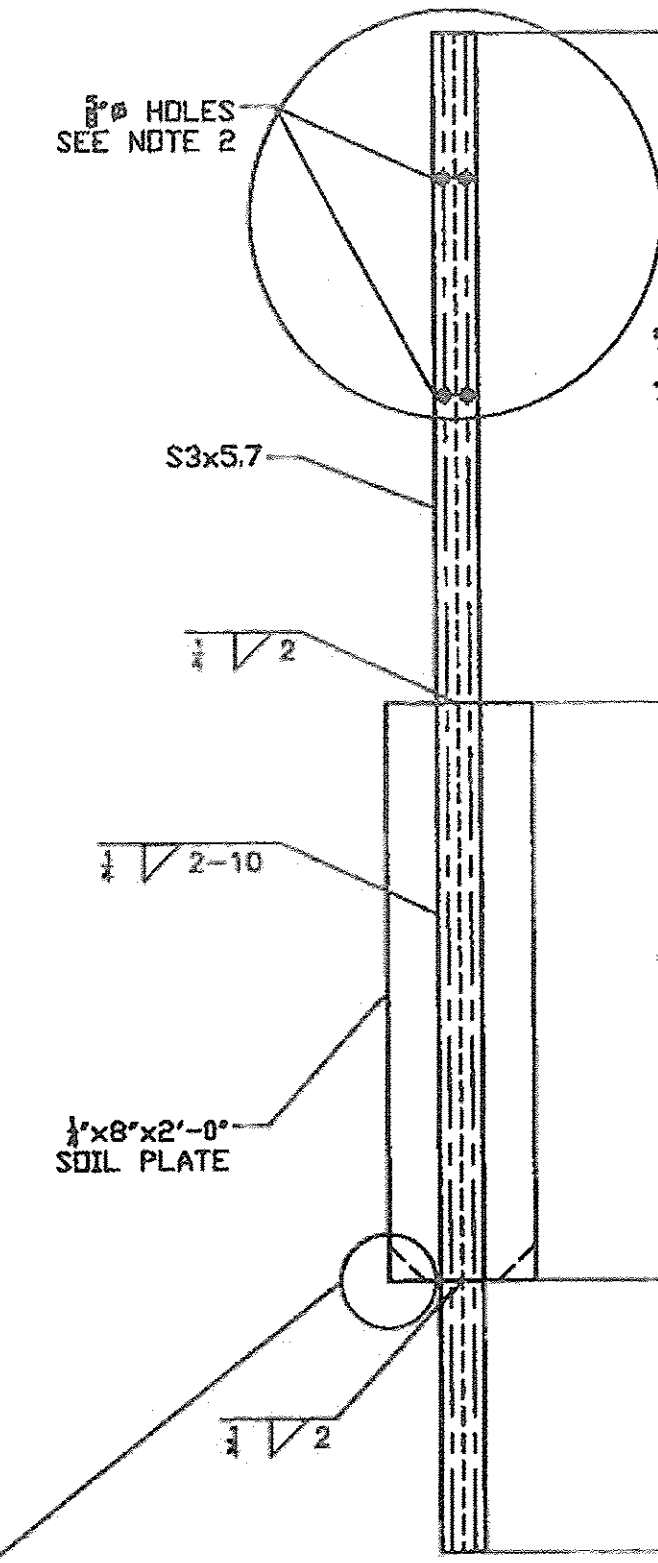
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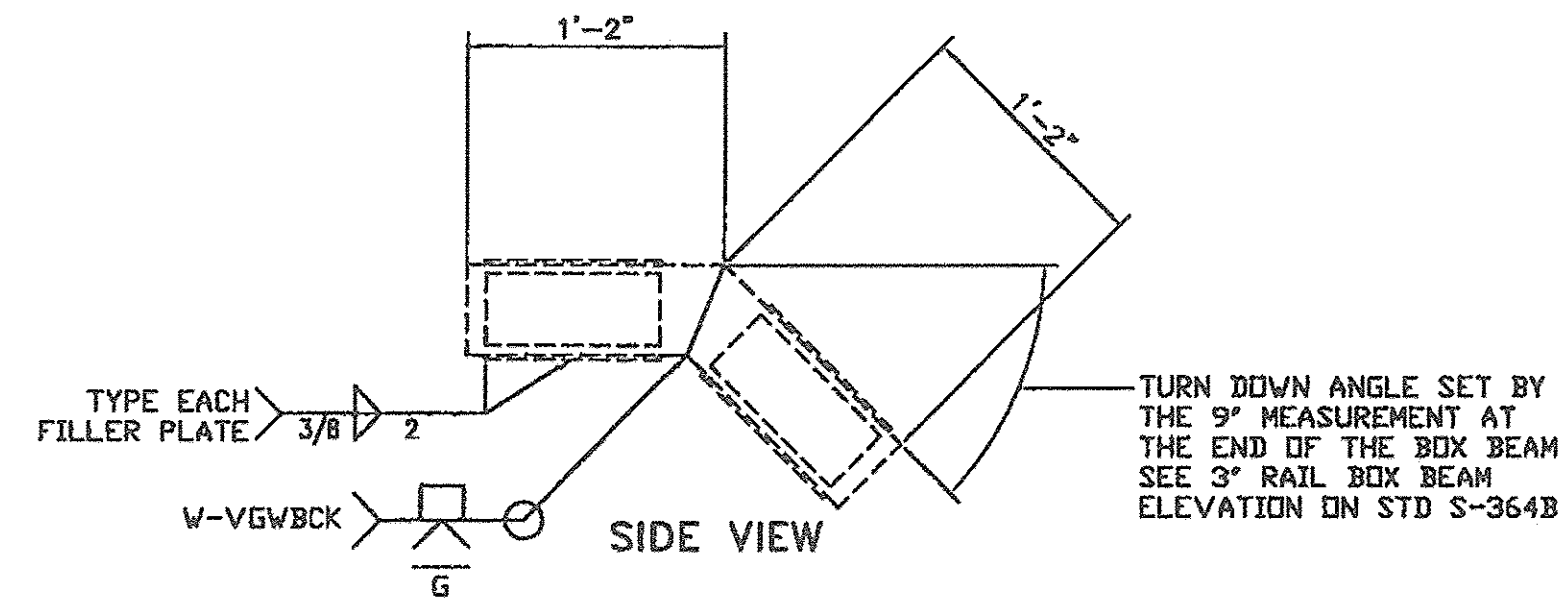
ROUND HEAD BOLT DETAIL



HEAVY POST DETAIL

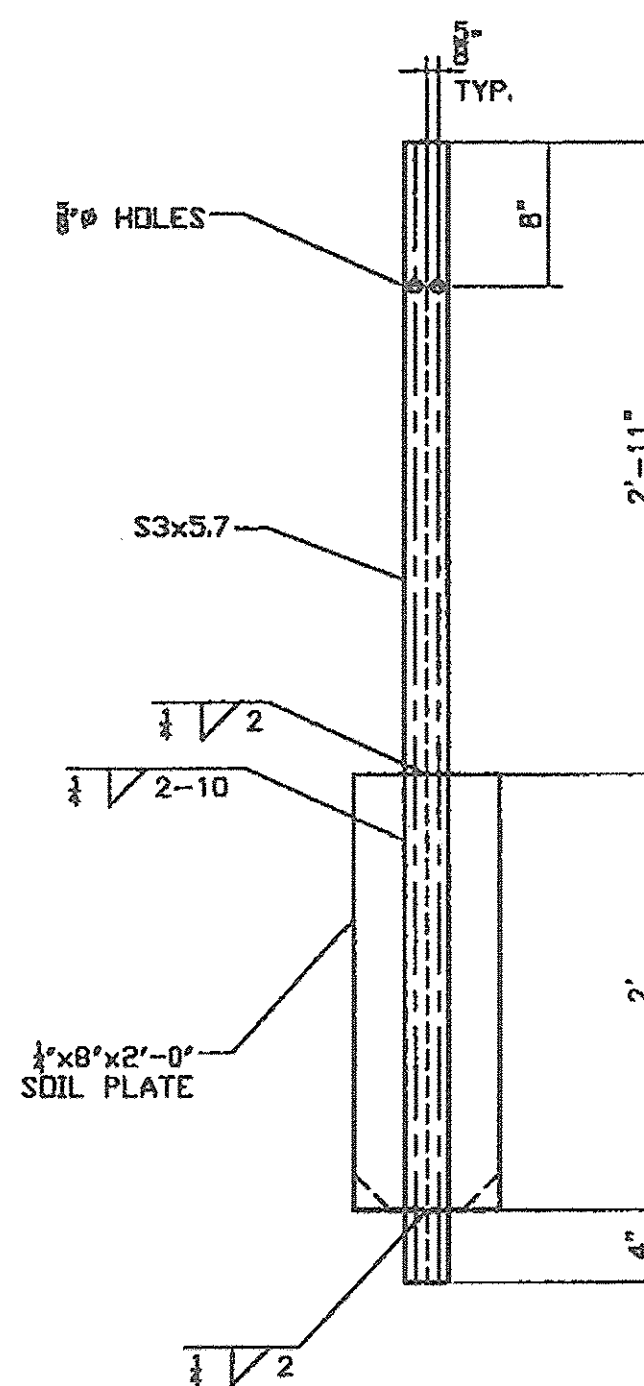


TRANSITION POST DETAIL 7'-0"

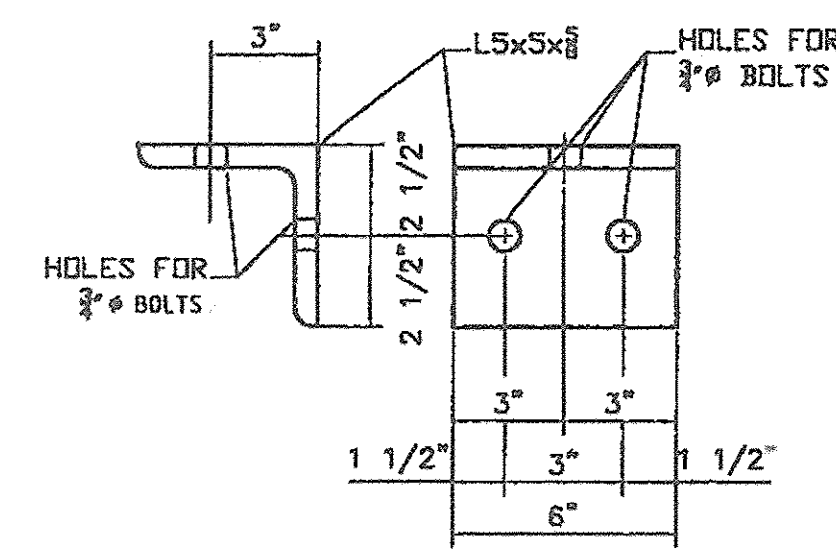


SIDE VIEW

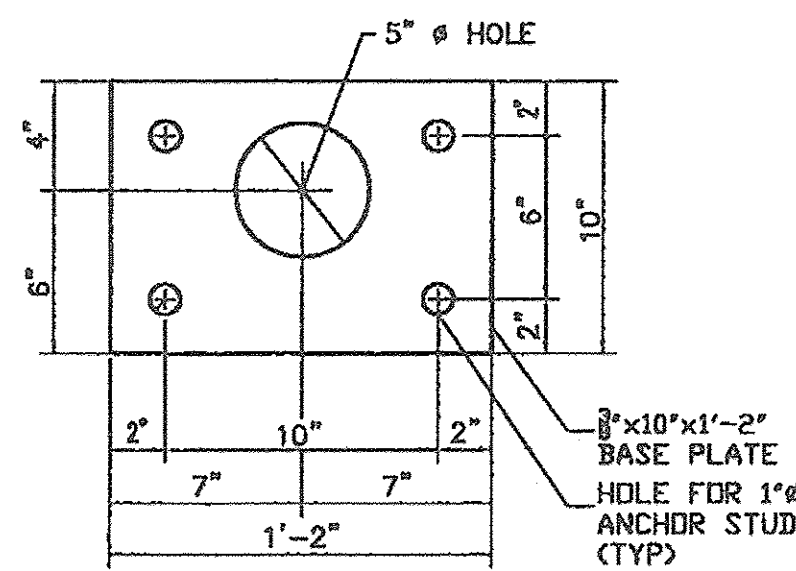
TURN BACK SPLICE TUBE DETAIL



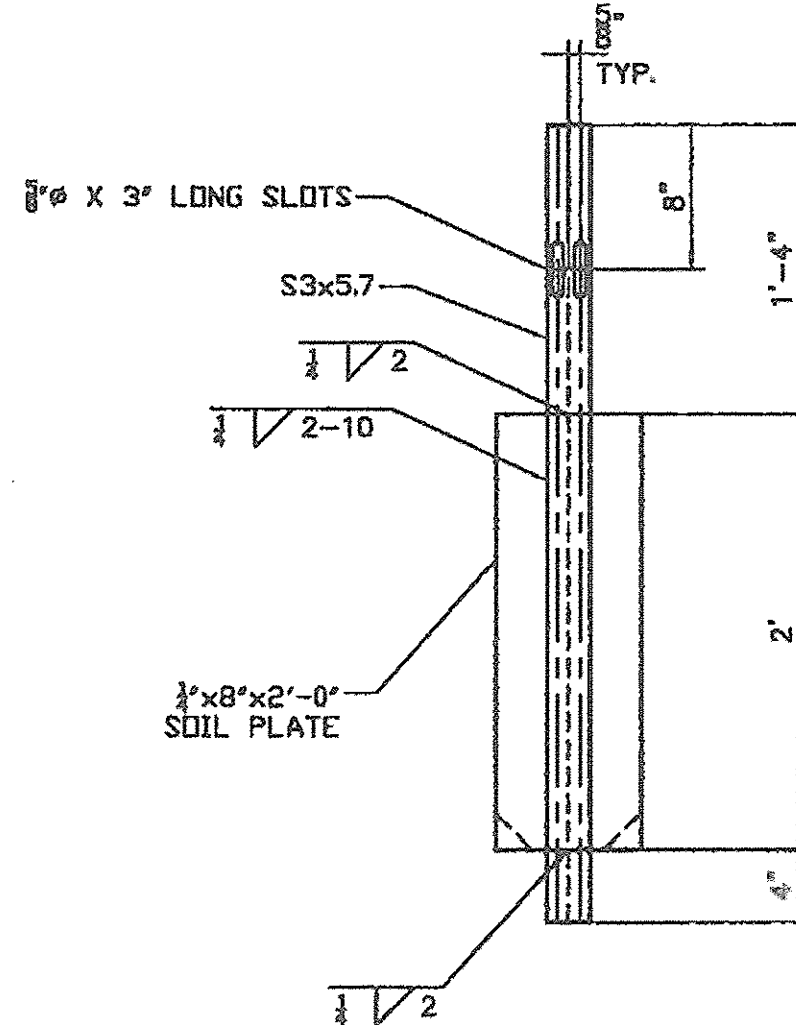
TRANSITION POST DETAIL 5'-3"



RAILING ANGLE DETAIL  
L5 x 5 x 5/8



ANCHOR PLATE DETAIL



TRANSITION POST DETAIL 3'-8"

SHOP DRAWINGS ARE FOR REVIEW UNLESS NOTED OTHERWISE	NO EXCEPTION TAKEN	REVISION AS NOTED	REVISION AS NOTED	REJECTED
REVISION AS NOTED	REVISION AS NOTED	REVISION AS NOTED	REVISION AS NOTED	REVISION AS NOTED
SEE ALL NOTES ON SHEET 5 OF 6 FOR ADDITIONAL INFORMATION DATE: 3/26/2014 SIGNATURE: <i>Jim Hooper</i>				
REVIEW BY: (blank) IS FOR THE SOLE PURPOSE OF ASCERTAINING GENERAL CONFORMITY WITH DESIGN. CONTRACTOR IS RESPONSIBLE FOR DESIGN, CONSTRUCTION AND CONSTRUCTION METHODS. COORDINATION OF SUB-TRADE DETAIL DESIGN OF COMPONENTS AND ERRO... CRO...				

**HIGHWAY SAFETY CORP**  
 GLASTONBURY, CT  
 860-633-9445

BRIDGE RAIL DETAILS 525.335 & 621.725  
 TOWN OF ENOSBURG, COUNTY OF FRANKLIN  
 BOSTON POST ROAD T.H.2 CLASS 2  
 BRIDGE NO. 48  
 PROJECT NO. BRO 1448 (40)

CERTIFIED FABRICATOR

HSC JOB NO. 1976  
 SHEET NO. 6 of 6

DATE: 3-4-14 SCALE: NONE SIZE: D